



# Full wwPDB X-ray Structure Validation Report ⓘ

Jun 19, 2024 – 01:14 PM EDT

PDB ID : 4DV2  
Title : Crystal structure of the *Thermus thermophilus* 30S ribosomal subunit with a 16S rRNA mutation, C912A  
Authors : Demirci, H.; Murphy IV, F.; Murphy, E.; Gregory, S.T.; Dahlberg, A.E.; Jogl, G.  
Deposited on : 2012-02-22  
Resolution : 3.65 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467  
Mogul : 2022.3.0, CSD as543be (2022)  
Xtriage (Phenix) : 1.20.1  
EDS : 2.37.1  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.37.1

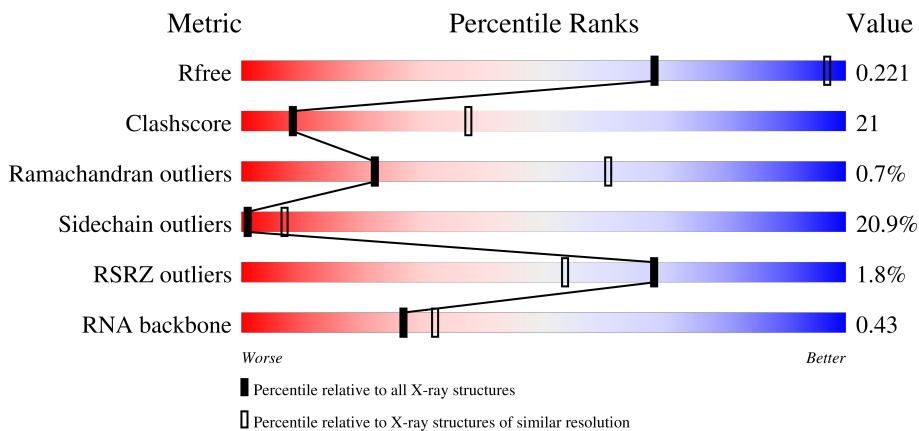
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.65 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.




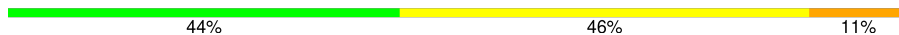

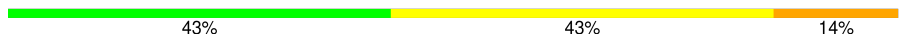
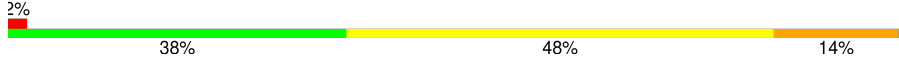


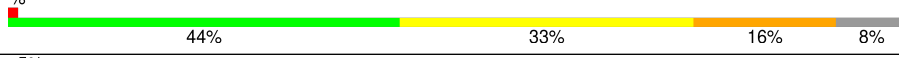
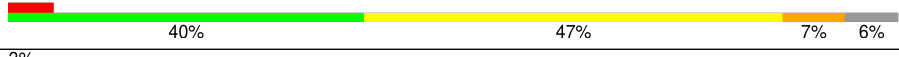
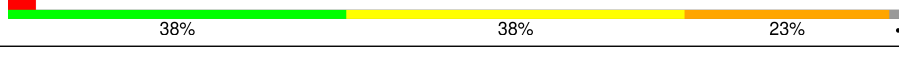
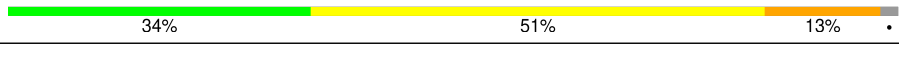
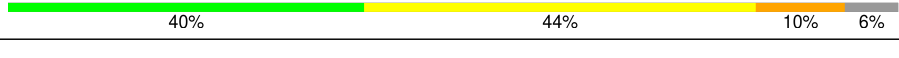
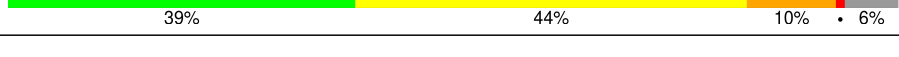
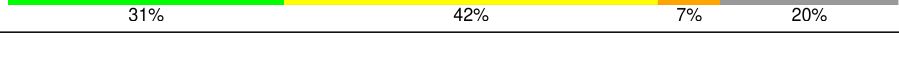

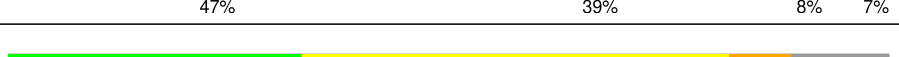
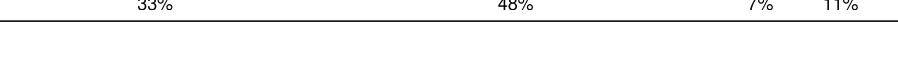
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	130704	1341 (3.78-3.50)
Clashscore	141614	1439 (3.78-3.50)
Ramachandran outliers	138981	1391 (3.78-3.50)
Sidechain outliers	138945	1391 (3.78-3.50)
RSRZ outliers	127900	1242 (3.78-3.50)
RNA backbone	3102	1019 (4.26-3.00)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1522	
2	B	256	
3	C	239	
4	D	209	

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Mol	Chain	Length	Quality of chain
5	E	162	
6	F	101	
7	G	156	
8	H	138	
9	I	128	
10	J	105	
11	K	129	
12	L	135	
13	M	126	
14	N	61	
15	O	89	
16	P	88	
17	Q	105	
18	R	88	
19	S	93	
20	T	106	
21	U	27	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
22	MG	A	1618	-	-	-	X
22	MG	A	1631	-	-	-	X
22	MG	A	1672	-	-	-	X
22	MG	A	1726	-	-	-	X
22	MG	A	1751	-	-	-	X
22	MG	A	1782	-	-	-	X
22	MG	A	1797	-	-	-	X
22	MG	A	1816	-	-	-	X

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<b>Mol</b>	<b>Type</b>	<b>Chain</b>	<b>Res</b>	<b>Chirality</b>	<b>Geometry</b>	<b>Clashes</b>	<b>Electron density</b>
22	MG	A	1829	-	-	-	X
22	MG	A	1850	-	-	-	X
22	MG	A	1851	-	-	-	X
22	MG	A	1859	-	-	-	X
22	MG	A	1863	-	-	-	X
22	MG	M	202	-	-	-	X
22	MG	P	102	-	-	-	X
22	MG	Q	201	-	-	-	X

## 2 Entry composition

There are 24 unique types of molecules in this entry. The entry contains 52441 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a RNA chain called 16S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	A	1512	32646	14541	6041	10546	1518	0	6	0

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	912	A	C	ENGINEERED MUTATION	GB M26923.1
A	1534	C	A	CONFLICT	GB M26923.1
A	1535	A	C	CONFLICT	GB M26923.1

- Molecule 2 is a protein called ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	234	1900	1213	341	341	5	0	0	0

- Molecule 3 is a protein called ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	C	206	1612	1016	314	281	1	0	0	0

- Molecule 4 is a protein called ribosomal protein S4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	D	208	1703	1066	339	291	7	0	0	0

- Molecule 5 is a protein called ribosomal protein S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	E	150	1146	724	217	201	4	0	0	0

- Molecule 6 is a protein called ribosomal protein S6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	F	101	843	531	155	154	3	0	0	0

- Molecule 7 is a protein called ribosomal protein S7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
7	G	155	1257	781	252	218	6	0	0	0

- Molecule 8 is a protein called ribosomal protein S8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
8	H	138	1116	705	215	193	3	0	0	0

- Molecule 9 is a protein called ribosomal protein S9.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace	
			Total	C	N	O				
9	I	127	1010	639	197	174		0	0	0

- Molecule 10 is a protein called ribosomal protein S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
10	J	98	792	498	156	137	1	0	0	0

- Molecule 11 is a protein called ribosomal protein S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
11	K	116	864	537	164	160	3	0	0	0

- Molecule 12 is a protein called ribosomal protein S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
12	L	124	972	612	195	163	2	0	0	0

- Molecule 13 is a protein called ribosomal protein S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
13	M	118	937	579	193	163	2	0	0	0

- Molecule 14 is a protein called ribosomal protein S14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
14	N	60	492	312	104	72	4	0	0	0

- Molecule 15 is a protein called ribosomal protein S15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
15	O	87	729	457	146	124	2	0	0	0

- Molecule 16 is a protein called ribosomal protein S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
16	P	83	700	443	139	117	1	0	0	0

- Molecule 17 is a protein called ribosomal protein S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
17	Q	99	823	528	152	141	2	0	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Q	96	GLN	GLU	CONFLICT	UNP Q5SHP7

- Molecule 18 is a protein called ribosomal protein S18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
18	R	70	574	367	112	95	0	0	0

- Molecule 19 is a protein called ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
19	S	80	647	414	119	112	2	0	0	0

- Molecule 20 is a protein called ribosomal protein S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
20	T	99	763	470	162	129	2	0	0	0

- Molecule 21 is a protein called ribosomal protein THX.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
21	U	24	208	128	50	30	0	0	0

- Molecule 22 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
22	A	268	Total 268	Mg 268	0	0
22	B	2	Total 2	Mg 2	0	0
22	C	2	Total 2	Mg 2	0	0
22	D	4	Total 4	Mg 4	0	0
22	E	1	Total 1	Mg 1	0	0
22	F	1	Total 1	Mg 1	0	0
22	I	1	Total 1	Mg 1	0	0
22	J	1	Total 1	Mg 1	0	0
22	L	1	Total 1	Mg 1	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
22	M	2	Total 2	Mg 2	0	0
22	P	2	Total 2	Mg 2	0	0
22	Q	2	Total 2	Mg 2	0	0
22	T	2	Total 2	Mg 2	0	0

- Molecule 23 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
23	D	1	Total 1	Zn 1	0	0
23	N	1	Total 1	Zn 1	0	0

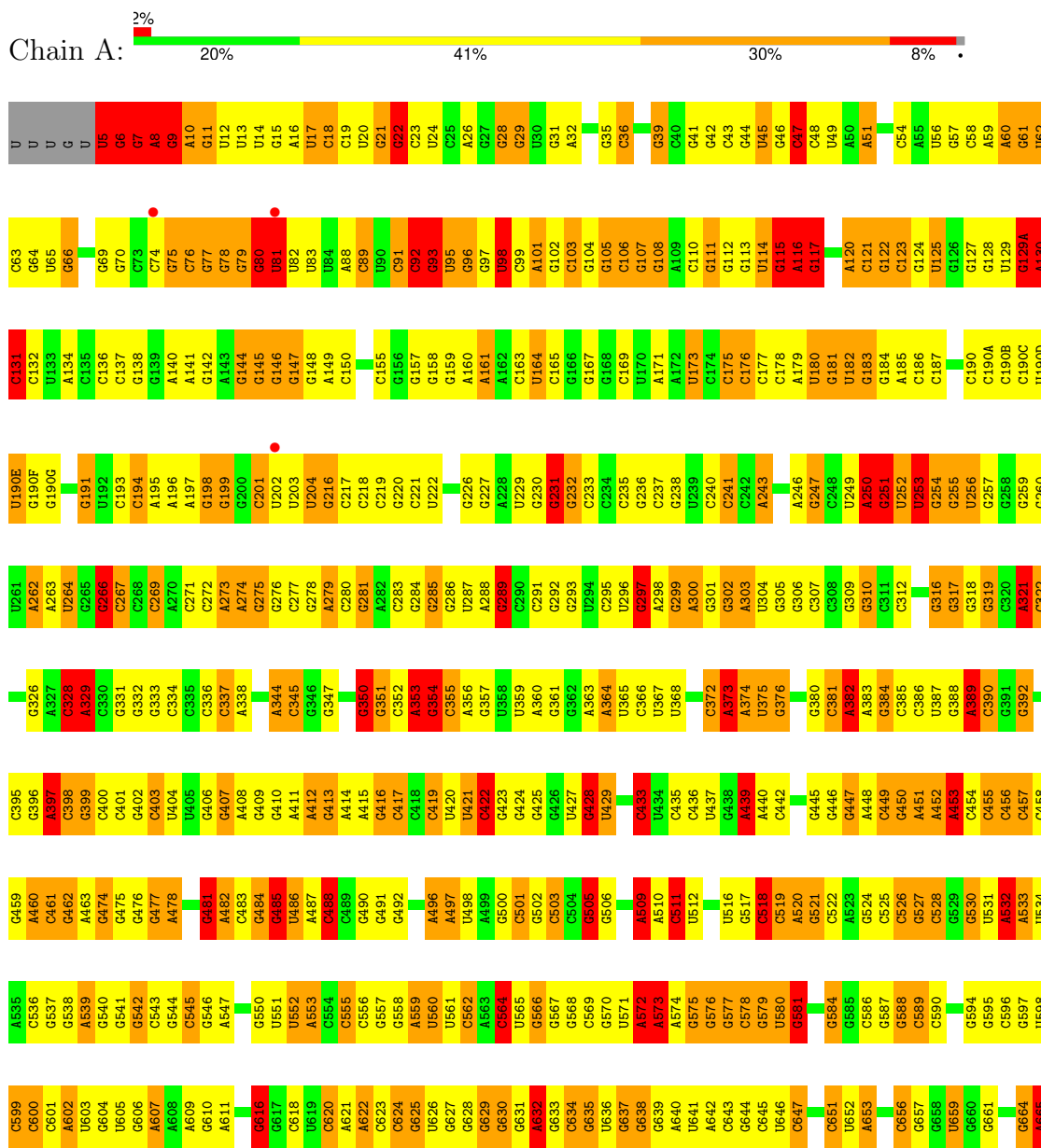
- Molecule 24 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
24	A	391	Total 391	O 391	0	0
24	B	1	Total 1	O 1	0	0
24	D	3	Total 3	O 3	0	0
24	E	4	Total 4	O 4	0	0
24	G	2	Total 2	O 2	0	0
24	J	2	Total 2	O 2	0	0
24	K	1	Total 1	O 1	0	0
24	M	3	Total 3	O 3	0	0
24	N	4	Total 4	O 4	0	0
24	P	4	Total 4	O 4	0	0
24	T	1	Total 1	O 1	0	0

### 3 Residue-property plots

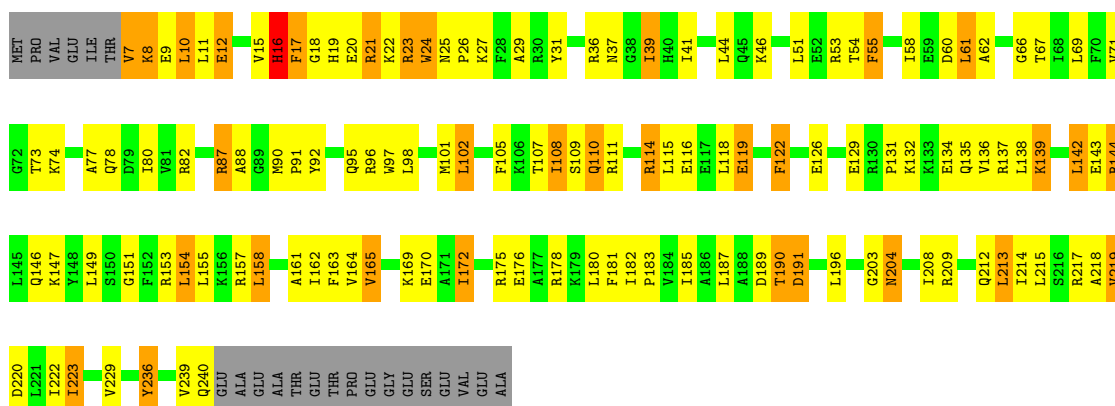
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: 16S rRNA

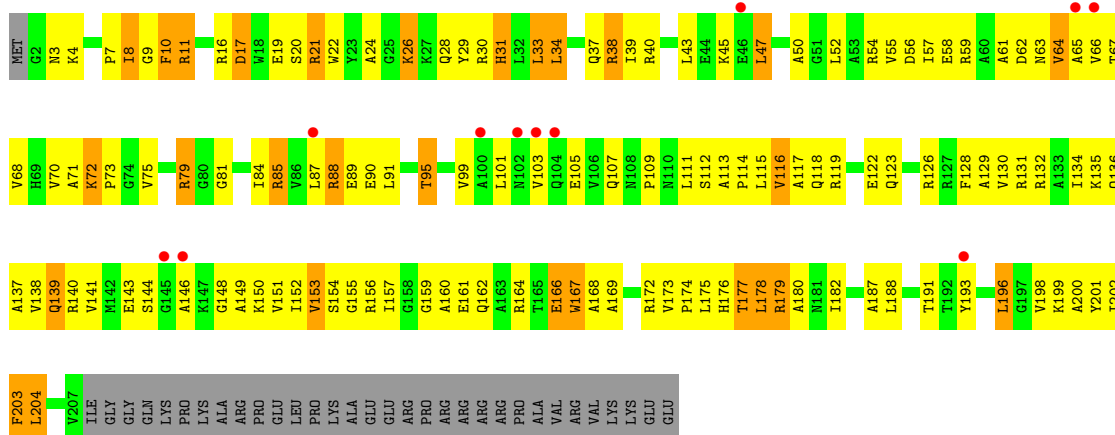


A1499	G1494	U1495	G1496	U1497	U1498	U1499	U1500	U1501	U1502	U1503	U1504	U1505	U1506	U1507	U1508	U1509	U1510	U1511	U1512	U1513	U1514	U1515	U1516	U1517	U1518	U1519	U1520	U1521	U1522	G1523	G1524	G1525	G1526	G1527	G1528	G1529	G1530	G1531	G1532	G1533	G1534	G1535	G1536	G1537	G1538	G1539	G1540	G1541	G1542	G1543	G1544																						
U1425	U1426	U1427	U1428	U1429	U1430	U1431	U1432	U1433	U1434	U1435	U1436	U1437	U1438	U1439	U1440	U1441	U1442	U1443	U1444	U1445	U1446	U1447	U1448	U1449	U1450	U1451	U1452	U1453	U1454	U1455	U1456	U1457	U1458	U1459	U1460	U1461	U1462	U1463	U1464	U1465	U1466	U1467	U1468	U1469	U1470	U1471	U1472	U1473	U1474	U1475	U1476	U1477	U1478	U1479	U1480	U1481	U1482	U1483	U1484	U1485	U1486	U1487	U1488	U1489	U1490	U1491	U1492	U1493	U1494	U1495	U1496	U1497	U1498
G1361	G1362	G1363	G1364	G1365	G1366	G1367	G1368	G1369	G1370	G1371	G1372	G1373	G1374	G1375	G1376	G1377	G1378	G1379	G1380	G1381	G1382	G1383	G1384	G1385	G1386	G1387	G1388	G1389	G1390	G1391	G1392	G1393	G1394	G1395	G1396	G1397	G1398	G1399	G1400	G1401	G1402	G1403	G1404	G1405	G1406	G1407	G1408	G1409	G1410	G1411	G1412	G1413	G1414	G1415	G1416	G1417	G1418	G1419	G1420	G1421	G1422	G1423											
U1301	U1302	U1303	U1304	U1305	U1306	U1307	U1308	U1309	U1310	U1311	U1312	U1313	U1314	U1315	U1316	U1317	U1318	U1319	U1320	U1321	U1322	U1323	U1324	U1325	U1326	U1327	U1328	U1329	U1330	U1331	U1332	U1333	U1334	U1335	U1336	U1337	U1338	U1339	U1340	U1341	U1342	U1343	U1344	U1345	U1346	U1347	U1348	U1349	U1350	U1351	U1352	U1353	U1354	U1355	U1356	U1357	U1358	U1359	U1360														
G1237	G1238	G1239	G1240	G1241	G1242	G1243	G1244	G1245	G1246	G1247	G1248	G1249	G1250	G1251	G1252	G1253	G1254	G1255	G1256	G1257	G1258	G1259	G1260	G1261	G1262	G1263	G1264	G1265	G1266	G1267	G1268	G1269	G1270	G1271	G1272	G1273	G1274	G1275	G1276	G1277	G1278	G1279	G1280	G1281	G1282	G1283	G1284	G1285	G1286	G1287	G1288	G1289	G1290	G1291	G1292	G1293	G1294	G1295	G1296	G1297	G1298	G1299	G1300										
U1175	U1176	U1177	U1178	U1179	U1180	U1181	U1182	U1183	U1184	U1185	U1186	U1187	U1188	U1189	U1190	U1191	U1192	U1193	U1194	U1195	U1196	U1197	U1198	U1199	U1200	U1201	U1202	U1203	U1204	U1205	U1206	U1207	U1208	U1209	U1210	U1211	U1212	U1213	U1214	U1215	U1216	U1217	U1218	U1219	U1220	U1221	U1222	U1223	U1224	U1225	U1226	U1227	U1228	U1229	U1230	U1231	U1232	U1233	U1234	U1235	U1236	U1237	U1238	U1239	U1240								
C1112	C1113	C1114	C1115	C1116	C1117	C1118	C1119	C1120	C1121	C1122	C1123	C1124	C1125	C1126	C1127	C1128	C1129	C1130	C1131	C1132	C1133	C1134	C1135	C1136	C1137	C1138	C1139	C1140	C1141	C1142	C1143	C1144	C1145	C1146	C1147	C1148	C1149	C1150	C1151	C1152	C1153	C1154	C1155	C1156	C1157	C1158	C1159	C1160	C1161	C1162	C1163	C1164	C1165	C1166	C1167	C1168	C1169	C1170	C1171	C1172	C1173	C1174											
G1048	G1049	G1050	G1051	G1052	G1053	G1054	G1055	G1056	G1057	G1058	G1059	G1060	G1061	G1062	G1063	G1064	G1065	G1066	G1067	G1068	G1069	G1070	G1071	G1072	G1073	G1074	G1075	G1076	G1077	G1078	G1079	G1080	G1081	G1082	G1083	G1084	G1085	G1086	G1087	G1088	G1089	G1090	G1091	G1092	G1093	G1094	G1095	G1096	G1097	G1098	G1099	G1100	G1101	G1102	G1103	G1104	G1105	G1106	G1107	G1108	G1109	G1110	G1111										
U0987	U0988	U0989	U0990	U0991	U0992	U0993	U0994	U0995	U0996	U0997	U0998	U0999	U1000	U1001	U1002	U1003	U1004	U1005	U1006	U1007	U1008	U1009	U1010	U1011	U1012	U1013	U1014	U1015	U1016	U1017	U1018	U1019	U1020	U1021	U1022	U1023	U1024	U1025	U1026	U1027	U1028	U1029	U1030	U1031	U1032	U1033	U1034	U1035	U1036	U1037	U1038	U1039	U1040	U1041	U1042	U1043	U1044	U1045	U1046	U1047													
G987	G988	G989	G990	G991	G992	G993	G994	G995	G996	G997	G998	G999	G1000	G1001	G1002	G1003	G1004	G1005	G1006	G1007	G1008	G1009	G1010	G1011	G1012	G1013	G1014	G1015	G1016	G1017	G1018	G1019	G1020	G1021	G1022	G1023	G1024	G1025	G1026	G1027	G1028	G1029	G1030	G1031	G1032	G1033	G1034	G1035	G1036	G1037	G1038	G1039	G1040	G1041	G1042	G1043	G1044	G1045	G1046	G1047													
G927	G928	G929	G930	G931	G932	G933	G934	G935	G936	G937	G938	G939	G940	G941	G942	G943	G944	G945	G946	G947	G948	G949	G950	G951	G952	G953	G954	G955	G956	G957	G958	G959	G960	G961	G962	G963	G964	G965	G966	G967	G968	G969	G970	G971	G972	G973	G974	G975	G976	G977	G978	G979	G980	G981	G982	G983	G984	G985	G986	G987	G988	G989	G990	G991	G992	G993	G994	G995	G996				
A864	A865	A866	A867	A868	A869	A870	A871	A872	A873	A874	A875	A876	A877	A878	A879	A880	A881	A882	A883	A884	A885	A886	A887	A888	A889	A890	A891	A892	A893	A894	A895	A896	A897	A898	A899	A900	A901	A902	A903	A904	A905	A906	A907	A908	A909	A910	A911	A912	A913	A914	A915	A916	A917	A918	A919	A920	A921	A922	A923	A924	A925												
U836	U837	U838	U839	U840	U841	U842	U843	U844	U845	U846	U847	U848	U849	U850	U851	U852	U853	U854	U855	U856	U857	U858	U859	U860	U861	U862	U863	U864	U865	U866	U867	U868	U869	U870	U871	U872	U873	U874	U875	U876	U877	U878	U879	U880	U881	U882	U883	U884	U885	U886	U887	U888	U889	U890	U891	U892	U893	U894	U895	U896	U897	U898	U899	U900									
G798	G799	G800	G801	G802	G803	G804	G805	G806	G807	G808	G809	G810	G811	G812	G813	G814	G815	G816	G817	G818	G819	G820	G821	G822	G823	G824	G825	G826	G827	G828	G829	G830	G831	G832	G833	G834	G835	G836	G837	G838	G839	G840	G841	G842	G843	G844	G845	G846	G847	G848	G849	G850	G851	G852	G853	G854	G855	G856	G857	G858	G859	G860	G861	G862	G863	G864	G865	G866	G867	G868	G869	G870	
C735	C736	C737	C738	C739	C740	C741	C742	C743	C744	C745	C746	C747	C748	C749	C750	C751	C752	C753	C754	C755	C756	C757	C758	C759	C760	C761	C762	C763	C764	C765	C766	C767	C768	C769	C770	C771	C772	C773	C774	C775	C776	C777	C778	C779	C780	C781	C782	C783	C784	C785	C786	C787	C788	C789	C790	C791	C792	C793	C794	C795	C796	C797											
G666	G667	G668	G669	G670	G671	G672	G673	G674	G675	G676	G677	G678	G679	G680	G681	G682	G683	G684	G685	G686	G687	G688	G689	G690	G691	G692	G693	G694	G695	G696	G697	G698	G699	G700	G701	G702	G703	G704	G705	G706	G707	G708	G709	G710	G711	G712	G713	G714	G715	G716	G717	G718	G719	G720	G721	G722	G723	G724	G725	G726	G727	G728	G729	G730	G731	G732	G733	G734					

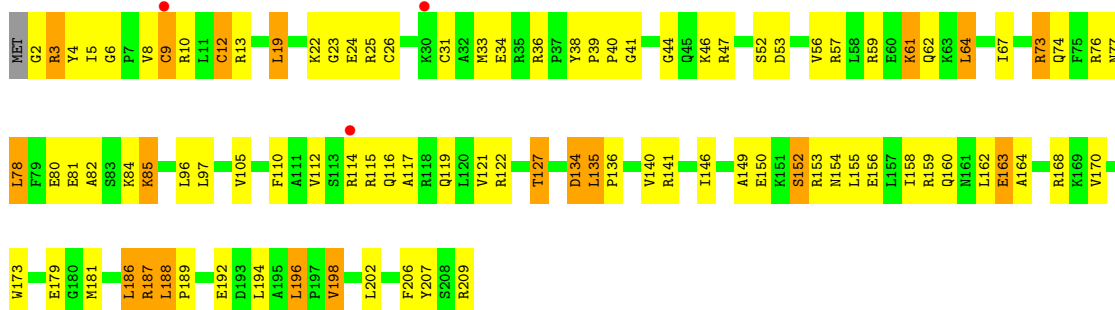
● Molecule 2: ribosomal protein S2



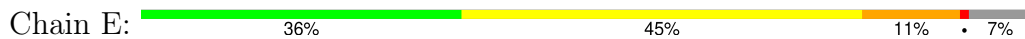
• Molecule 3: ribosomal protein S3

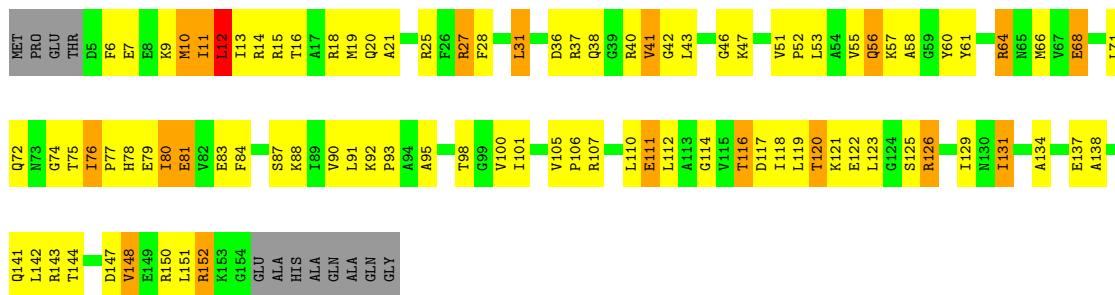


• Molecule 4: ribosomal protein S4



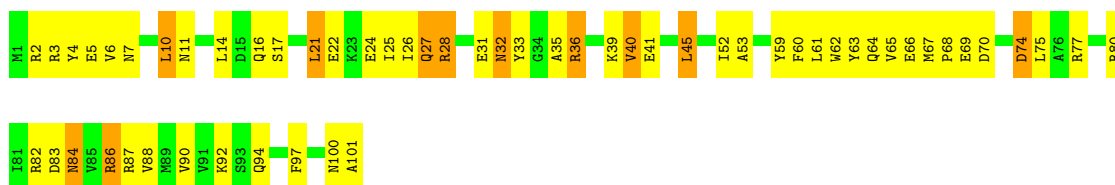
• Molecule 5: ribosomal protein S5





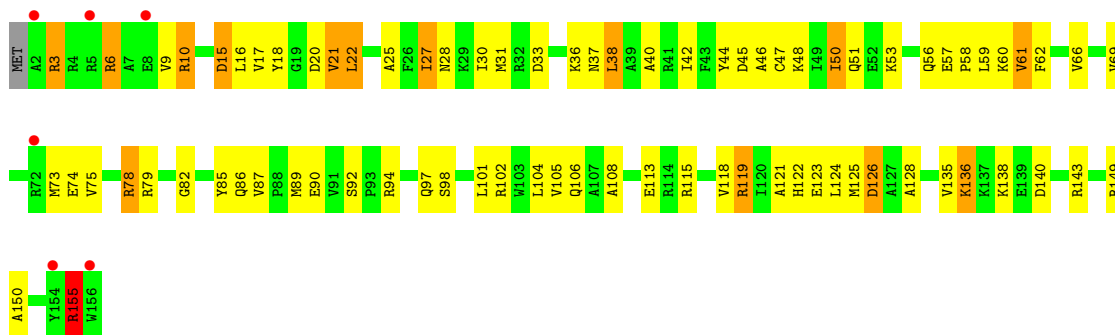
- Molecule 6: ribosomal protein S6

Chain F: 44% 46% 11%



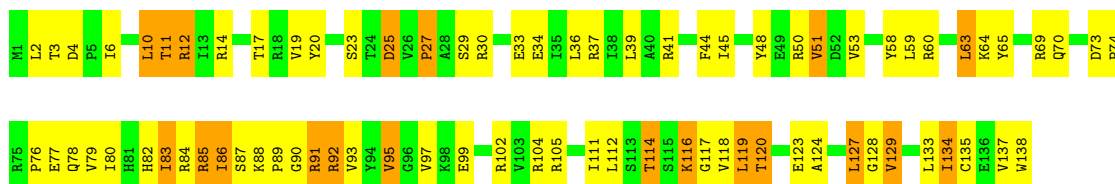
- Molecule 7: ribosomal protein S7

Chain G: 4% 49% 41% 9% ..



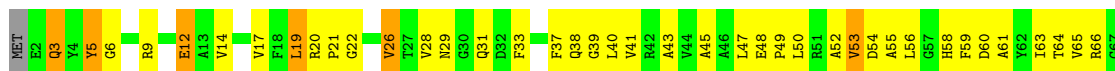
- Molecule 8: ribosomal protein S8

Chain H: 43% 43% 14%

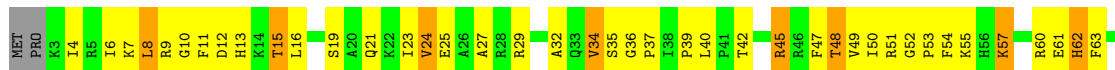


- Molecule 9: ribosomal protein S9

Chain I: 2% 38% 48% 14% .



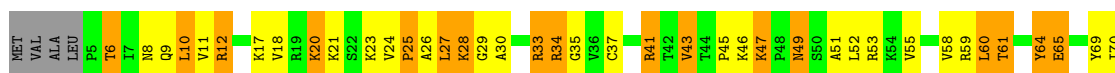
- Molecule 10: ribosomal protein S10



- Molecule 11: ribosomal protein S11



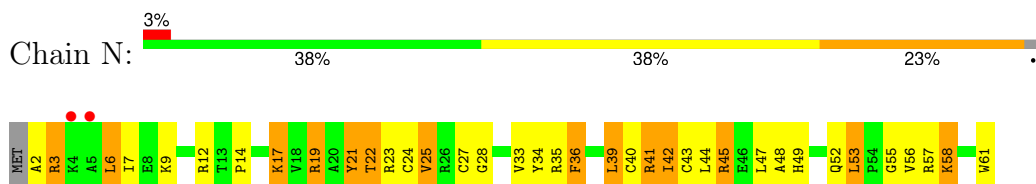
- Molecule 12: ribosomal protein S12



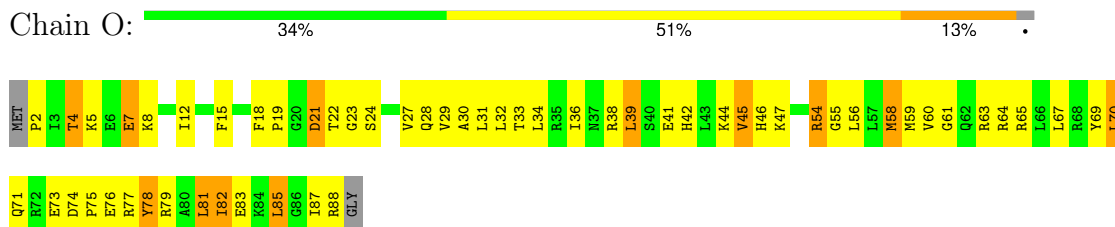
- Molecule 13: ribosomal protein S13



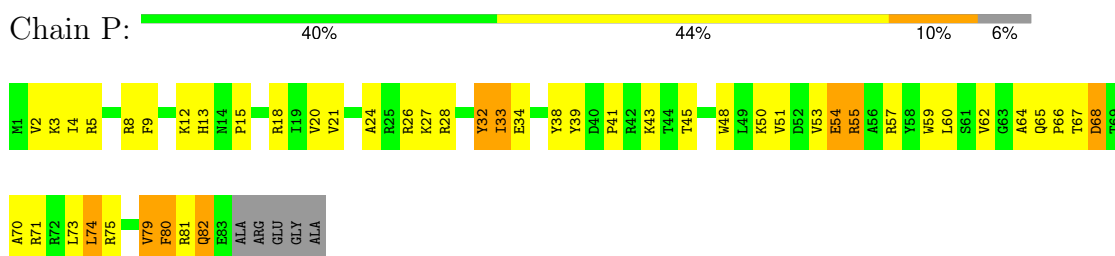
- Molecule 14: ribosomal protein S14



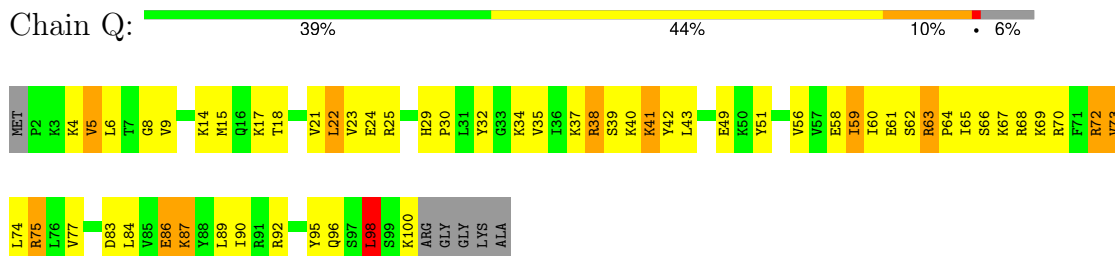
- Molecule 15: ribosomal protein S15



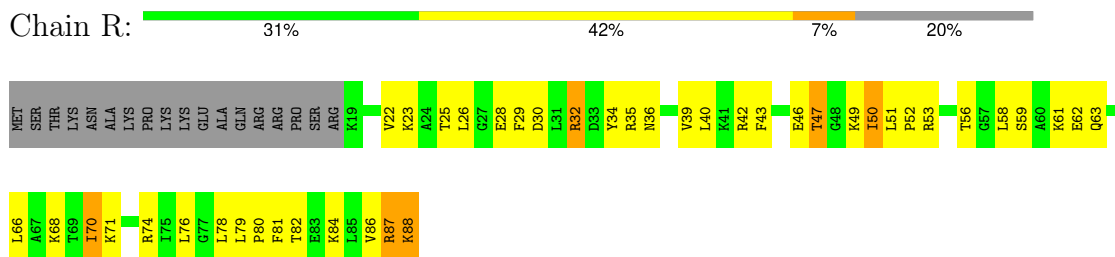
- Molecule 16: ribosomal protein S16



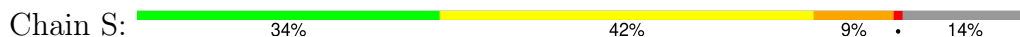
- Molecule 17: ribosomal protein S17

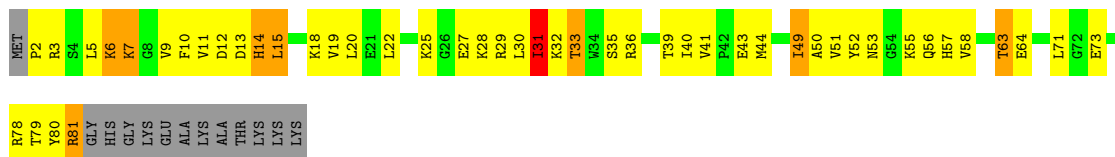


- Molecule 18: ribosomal protein S18



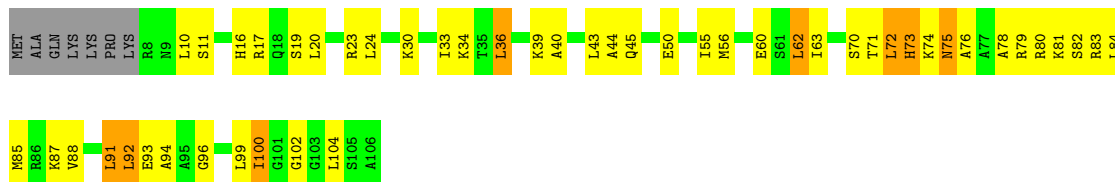
- Molecule 19: ribosomal protein S19





- Molecule 20: ribosomal protein S20

Chain T: 47% 39% 8% 7%



- Molecule 21: ribosomal protein THX

Chain U: 33% 48% 7% 11%





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	403.74Å 403.74Å 173.22Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.77 – 3.65 29.77 – 3.65	Depositor EDS
% Data completeness (in resolution range)	97.0 (29.77-3.65) 96.8 (29.77-3.65)	Depositor EDS
$R_{merge}$	0.12	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.97 (at 3.65Å)	Xtrriage
Refinement program	PHENIX dev_978	Depositor
R, $R_{free}$	0.165 , 0.223 0.164 , 0.221	Depositor DCC
$R_{free}$ test set	7642 reflections (4.98%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	137.5	Xtrriage
Anisotropy	0.320	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.23 , 127.2	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.47$ , $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.96	EDS
Total number of atoms	52441	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	173.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.78% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: 5MC, ZN, MG, UR3, 2MG, MA6, 0TD, 7MG, M2G, PSU, 4OC

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	1.20	163/36142 (0.5%)	1.88	1794/56401 (3.2%)
2	B	0.79	0/1935	0.96	1/2609 (0.0%)
3	C	0.58	0/1636	0.82	1/2205 (0.0%)
4	D	0.74	2/1733 (0.1%)	0.93	4/2318 (0.2%)
5	E	0.93	0/1162	1.12	4/1564 (0.3%)
6	F	0.65	0/856	0.84	0/1154
7	G	0.65	0/1276	0.83	0/1709
8	H	1.08	1/1136 (0.1%)	1.21	5/1527 (0.3%)
9	I	0.69	0/1029	0.86	1/1379 (0.1%)
10	J	0.57	0/805	0.83	0/1082
11	K	0.77	0/879	0.97	2/1187 (0.2%)
12	L	0.81	0/977	1.02	2/1306 (0.2%)
13	M	0.69	0/947	0.86	0/1270
14	N	0.59	0/501	0.85	0/664
15	O	0.80	0/740	1.05	3/987 (0.3%)
16	P	0.87	1/716 (0.1%)	1.00	1/963 (0.1%)
17	Q	1.01	0/836	1.21	6/1117 (0.5%)
18	R	0.74	0/579	0.98	1/768 (0.1%)
19	S	0.47	0/661	0.78	0/890
20	T	0.74	0/765	1.01	1/1007 (0.1%)
21	U	0.71	0/212	0.90	0/277
All	All	1.07	167/55523 (0.3%)	1.65	1826/82384 (2.2%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
2	B	0	1
3	C	0	2

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Mol	Chain	#Chirality outliers	#Planarity outliers
5	E	0	1
8	H	0	2
10	J	0	2
12	L	0	1
13	M	0	1
20	T	0	1
All	All	0	11

All (167) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	279	A	N3-C4	-11.90	1.27	1.34
1	A	279	A	N9-C4	-11.72	1.30	1.37
1	A	573	A	N7-C5	-10.54	1.32	1.39
1	A	1500	A	N3-C4	-9.71	1.29	1.34
1	A	1507	A	N9-C4	-9.58	1.32	1.37
1	A	1509	C	N1-C6	-9.51	1.31	1.37
1	A	586	C	N1-C6	-9.12	1.31	1.37
1	A	828	A	N9-C4	-8.42	1.32	1.37
1	A	1066	C	N1-C6	-7.96	1.32	1.37
1	A	574	A	C5-C4	-7.92	1.33	1.38
1	A	1079	G	N7-C5	-7.83	1.34	1.39
1	A	876	G	C5-C4	-7.72	1.32	1.38
1	A	1509	C	N3-C4	-7.68	1.28	1.33
1	A	824	C	N1-C6	-7.63	1.32	1.37
1	A	1287	A	N9-C4	7.54	1.42	1.37
1	A	79	G	N9-C4	7.48	1.44	1.38
1	A	856	C	N1-C6	-7.44	1.32	1.37
1	A	266	G	N9-C4	-7.29	1.32	1.38
1	A	566	G	N7-C5	-7.26	1.34	1.39
1	A	882	C	N3-C4	-7.24	1.28	1.33
1	A	882	C	N1-C6	-7.21	1.32	1.37
1	A	279	A	N7-C5	-7.18	1.34	1.39
1	A	572	A	N3-C4	-7.18	1.30	1.34
8	H	135	CYS	CB-SG	-7.07	1.70	1.82
1	A	780	A	N9-C4	-7.07	1.33	1.37
1	A	1500	A	N9-C4	-7.03	1.33	1.37
1	A	1514	C	N1-C6	-7.01	1.32	1.37
1	A	1103	C	N1-C6	-6.95	1.32	1.37
1	A	125	U	C2-N3	-6.94	1.32	1.37
1	A	1103	C	C2-N3	-6.89	1.30	1.35
1	A	481	G	N9-C4	6.87	1.43	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1510	U	C2-N3	-6.83	1.32	1.37
1	A	860	A	N3-C4	-6.81	1.30	1.34
1	A	1332	A	C6-N1	-6.79	1.30	1.35
1	A	572	A	C5-C4	-6.73	1.34	1.38
1	A	382	A	N7-C5	-6.72	1.35	1.39
4	D	12	CYS	CB-SG	6.71	1.93	1.82
1	A	640	A	N3-C4	-6.62	1.30	1.34
1	A	279	A	C5-C6	-6.61	1.35	1.41
1	A	722	A	C5-C6	-6.59	1.35	1.41
1	A	1064	G	N3-C4	-6.57	1.30	1.35
1	A	715	A	N9-C4	-6.56	1.33	1.37
1	A	802	A	C5-C4	-6.56	1.34	1.38
1	A	1502	A	C5-C6	-6.56	1.35	1.41
1	A	634	C	N1-C6	-6.53	1.33	1.37
1	A	715	A	N3-C4	-6.44	1.30	1.34
1	A	108	G	N9-C8	6.43	1.42	1.37
1	A	753	A	N3-C4	-6.38	1.31	1.34
1	A	904	C	N1-C6	-6.35	1.33	1.37
1	A	572	A	P-OP1	6.33	1.59	1.49
1	A	737	A	N9-C4	-6.33	1.34	1.37
1	A	817	C	N1-C6	-6.29	1.33	1.37
1	A	687	A	N7-C5	-6.27	1.35	1.39
1	A	602	A	N9-C4	-6.24	1.34	1.37
1	A	571	U	C5-C6	-6.23	1.28	1.34
1	A	785	G	C5-C6	-6.16	1.36	1.42
1	A	1103	C	C2-O2	-6.13	1.19	1.24
1	A	919	A	N9-C4	-6.12	1.34	1.37
1	A	570	G	C6-N1	-6.12	1.35	1.39
1	A	865	A	C6-N6	-6.11	1.29	1.33
1	A	1077	G	N9-C8	-6.09	1.33	1.37
1	A	1306	A	N9-C8	-6.08	1.32	1.37
1	A	570	G	N1-C2	-6.08	1.32	1.37
1	A	130	A	N9-C4	-6.06	1.34	1.37
1	A	321	A	N9-C4	-6.06	1.34	1.37
1	A	578	C	N1-C6	-6.04	1.33	1.37
1	A	912	A	N9-C4	-6.02	1.34	1.37
1	A	235	C	N1-C6	-6.01	1.33	1.37
1	A	1513	A	N9-C4	-6.00	1.34	1.37
1	A	1370	G	N9-C4	5.99	1.42	1.38
1	A	291	C	N1-C6	-5.97	1.33	1.37
1	A	639	G	C6-N1	-5.94	1.35	1.39
1	A	1377	A	N3-C4	-5.91	1.31	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	285	G	N3-C4	-5.90	1.31	1.35
1	A	562	C	N1-C6	-5.89	1.33	1.37
1	A	797	C	N1-C6	-5.88	1.33	1.37
16	P	59	TRP	CB-CG	-5.86	1.39	1.50
1	A	1504	G	C5-C4	-5.84	1.34	1.38
1	A	1074	G	N9-C4	5.84	1.42	1.38
1	A	876	G	C5-C6	-5.82	1.36	1.42
1	A	130	A	N3-C4	-5.79	1.31	1.34
1	A	1513	A	N3-C4	-5.78	1.31	1.34
1	A	572	A	N1-C2	-5.74	1.29	1.34
1	A	1401	G	C5-C4	-5.74	1.34	1.38
1	A	569	C	N3-C4	-5.73	1.29	1.33
1	A	1514	C	N3-C4	-5.71	1.29	1.33
1	A	889	A	N3-C4	-5.70	1.31	1.34
1	A	771	G	C5-C6	-5.65	1.36	1.42
1	A	807	A	N7-C5	-5.65	1.35	1.39
1	A	1346	A	C3'-O3'	5.64	1.50	1.42
1	A	1332	A	N3-C4	-5.63	1.31	1.34
1	A	1078	U	C4-O4	-5.62	1.19	1.23
1	A	1377	A	C5-C4	-5.60	1.34	1.38
1	A	733	A	N9-C4	-5.60	1.34	1.37
1	A	80	G	N9-C4	5.58	1.42	1.38
1	A	107	G	N7-C5	-5.58	1.35	1.39
1	A	1094	G	N1-C2	-5.58	1.33	1.37
1	A	862	C	C4-C5	-5.58	1.38	1.43
1	A	644	G	C5-C4	-5.56	1.34	1.38
1	A	1227	A	N9-C4	-5.56	1.34	1.37
1	A	833	U	C4-O4	5.55	1.28	1.23
1	A	884	U	C2-N3	-5.55	1.33	1.37
1	A	130	A	N7-C5	-5.55	1.35	1.39
1	A	860	A	N9-C4	-5.53	1.34	1.37
1	A	712	A	N3-C4	-5.53	1.31	1.34
1	A	144	G	C6-N1	5.51	1.43	1.39
1	A	766	A	C5-C6	-5.50	1.36	1.41
1	A	1376	U	C2-N3	-5.49	1.33	1.37
1	A	580	U	N1-C2	-5.48	1.33	1.38
1	A	915	A	N9-C4	-5.47	1.34	1.37
1	A	1377	A	N9-C4	-5.46	1.34	1.37
1	A	92	C	P-O5'	5.45	1.65	1.59
1	A	746	A	N7-C5	5.44	1.42	1.39
1	A	897	C	N3-C4	-5.44	1.30	1.33
1	A	901	A	N9-C4	-5.44	1.34	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1094	G	C6-N1	-5.44	1.35	1.39
1	A	131	C	N1-C6	-5.44	1.33	1.37
1	A	250	A	C5-C4	5.36	1.42	1.38
4	D	26	CYS	CB-SG	5.35	1.91	1.82
1	A	728	A	N3-C4	-5.33	1.31	1.34
1	A	1504	G	N7-C5	-5.33	1.36	1.39
1	A	481	G	N3-C4	5.32	1.39	1.35
1	A	860	A	N7-C5	-5.32	1.36	1.39
1	A	825	G	N9-C8	-5.32	1.34	1.37
1	A	599	C	N1-C6	-5.32	1.33	1.37
1	A	1064	G	N9-C4	-5.31	1.33	1.38
1	A	731	G	N9-C4	-5.30	1.33	1.38
1	A	828	A	C5-C6	-5.30	1.36	1.41
1	A	1502	A	N9-C4	-5.30	1.34	1.37
1	A	828	A	N7-C5	-5.29	1.36	1.39
1	A	574	A	N9-C8	-5.29	1.33	1.37
1	A	644	G	C6-N1	-5.28	1.35	1.39
1	A	801	U	C2-N3	-5.26	1.34	1.37
1	A	1241	G	N3-C4	-5.26	1.31	1.35
1	A	564	C	N1-C6	-5.26	1.33	1.37
1	A	752	G	N9-C4	-5.26	1.33	1.38
1	A	606	G	N9-C4	5.25	1.42	1.38
1	A	1417	G	N9-C4	5.24	1.42	1.38
1	A	575	G	N3-C4	-5.24	1.31	1.35
1	A	904	C	C4-C5	-5.23	1.38	1.43
1	A	634	C	N3-C4	-5.20	1.30	1.33
1	A	868	C	N1-C6	-5.19	1.34	1.37
1	A	728	A	N9-C4	-5.19	1.34	1.37
1	A	310	G	C5-C6	-5.19	1.37	1.42
1	A	903	G	C2-N2	-5.18	1.29	1.34
1	A	822	C	N1-C6	-5.17	1.34	1.37
1	A	288	A	N9-C4	-5.16	1.34	1.37
1	A	1080	A	N7-C5	-5.16	1.36	1.39
1	A	900	A	N7-C5	-5.15	1.36	1.39
1	A	93	G	N9-C4	5.15	1.42	1.38
1	A	817	C	N3-C4	-5.14	1.30	1.33
1	A	780	A	N3-C4	-5.14	1.31	1.34
1	A	274	A	C5-C4	-5.13	1.35	1.38
1	A	885	G	N7-C5	-5.11	1.36	1.39
1	A	594	G	N7-C5	-5.09	1.36	1.39
1	A	641	U	N3-C4	-5.09	1.33	1.38
1	A	357	G	C5-C4	-5.09	1.34	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	904	C	N3-C4	-5.06	1.30	1.33
1	A	719	C	C2-N3	-5.05	1.31	1.35
1	A	604	G	C6-O6	5.05	1.28	1.24
1	A	570	G	C5-C4	-5.04	1.34	1.38
1	A	389	A	N7-C5	-5.04	1.36	1.39
1	A	651	C	C2-O2	5.04	1.28	1.24
1	A	1529	G	N3-C4	-5.01	1.31	1.35
1	A	306	G	C6-N1	5.01	1.43	1.39
1	A	1329	A	N7-C5	-5.01	1.36	1.39
1	A	1510	U	N1-C6	-5.00	1.33	1.38

All (1826) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1505	G	C8-N9-C4	-16.48	99.81	106.40
1	A	117	G	N1-C6-O6	15.84	129.41	119.90
1	A	279	A	C5-N7-C8	-15.12	96.34	103.90
1	A	722	A	N1-C6-N6	14.64	127.39	118.60
1	A	948	C	C6-N1-C2	14.42	126.07	120.30
1	A	873	A	C8-N9-C4	-14.18	100.13	105.80
1	A	722	A	C2-N3-C4	-13.96	103.62	110.60
1	A	279	A	N7-C8-N9	13.24	120.42	113.80
1	A	117	G	C6-C5-N7	-13.20	122.48	130.40
1	A	1502	A	C4-C5-N7	13.12	117.26	110.70
1	A	117	G	C5-C6-N1	-13.12	104.94	111.50
1	A	1370	G	C8-N9-C4	-13.09	101.16	106.40
1	A	1505	G	N7-C8-N9	12.88	119.54	113.10
1	A	1502	A	C5-N7-C8	-12.68	97.56	103.90
1	A	1502	A	N1-C6-N6	12.56	126.14	118.60
1	A	572	A	N9-C4-C5	12.55	110.82	105.80
1	A	481	G	N3-C4-N9	12.49	133.49	126.00
1	A	232	G	C4-C5-N7	12.25	115.70	110.80
1	A	753	A	N1-C2-N3	11.98	135.29	129.30
1	A	1103	C	C2-N3-C4	-11.95	113.92	119.90
1	A	526	C	C6-N1-C2	11.82	125.03	120.30
1	A	331	G	N1-C6-O6	11.80	126.98	119.90
1	A	1181	G	C8-N9-C4	11.78	111.11	106.40
1	A	382	A	C8-N9-C4	-11.66	101.14	105.80
1	A	144	G	N1-C6-O6	11.60	126.86	119.90
1	A	1455	G	N1-C6-O6	11.57	126.84	119.90
1	A	572	A	N1-C6-N6	-11.56	111.66	118.60
1	A	279	A	C6-C5-N7	-11.54	124.22	132.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	938	A	N1-C6-N6	-11.52	111.69	118.60
1	A	569	C	C5-C6-N1	-11.49	115.26	121.00
1	A	805	C	N3-C4-C5	11.40	126.46	121.90
1	A	865	A	C5-C6-N1	11.40	123.40	117.70
1	A	279	A	N1-C6-N6	11.38	125.43	118.60
1	A	912	A	C2-N3-C4	-11.38	104.91	110.60
1	A	232	G	N9-C4-C5	-11.37	100.85	105.40
1	A	106	C	C6-N1-C2	-11.31	115.78	120.30
1	A	15	G	N1-C6-O6	11.14	126.59	119.90
1	A	884	U	C5-C6-N1	-11.07	117.17	122.70
1	A	922	G	N1-C6-O6	-11.01	113.30	119.90
1	A	1452	C	C6-N1-C2	10.97	124.69	120.30
1	A	331	G	C5-C6-N1	-10.96	106.02	111.50
1	A	573	A	C8-N9-C4	-10.95	101.42	105.80
1	A	255	G	N1-C6-O6	10.93	126.46	119.90
1	A	1287	A	C8-N9-C4	-10.88	101.45	105.80
1	A	21	G	C8-N9-C4	10.87	110.75	106.40
1	A	573	A	C4-C5-C6	10.77	122.39	117.00
1	A	125	U	C5-C6-N1	-10.76	117.32	122.70
1	A	1332	A	N1-C6-N6	-10.75	112.15	118.60
1	A	802	A	C8-N9-C4	10.71	110.08	105.80
1	A	912	A	C5-C6-N1	-10.67	112.36	117.70
1	A	131	C	C5-C6-N1	-10.66	115.67	121.00
1	A	147	G	N1-C6-O6	10.64	126.29	119.90
1	A	903	G	N1-C2-N3	10.62	130.27	123.90
1	A	481	G	N3-C4-C5	-10.55	123.33	128.60
1	A	859	A	N1-C6-N6	10.51	124.91	118.60
1	A	293	G	N1-C6-O6	10.48	126.19	119.90
1	A	628	G	N3-C4-C5	-10.47	123.37	128.60
1	A	771	G	C4-C5-N7	10.46	114.98	110.80
1	A	945	G	C5-C6-N1	10.40	116.70	111.50
1	A	9	G	N1-C6-O6	10.39	126.14	119.90
1	A	828	A	C2-N3-C4	-10.37	105.42	110.60
1	A	1370	G	N7-C8-N9	10.34	118.27	113.10
1	A	1308	U	N3-C2-O2	10.33	129.43	122.20
1	A	130	A	C4-C5-C6	10.28	122.14	117.00
1	A	1526	G	C5-C6-O6	-10.24	122.46	128.60
1	A	805	C	C6-N1-C2	10.23	124.39	120.30
1	A	1502	A	C6-C5-N7	-10.23	125.14	132.30
1	A	771	G	N9-C4-C5	-10.19	101.32	105.40
1	A	1060	C	N3-C2-O2	-10.17	114.78	121.90
1	A	117	G	C4-C5-C6	10.12	124.87	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	130	A	N1-C6-N6	10.08	124.65	118.60
1	A	266	G	N3-C4-N9	-10.08	119.95	126.00
1	A	703	G	C4-C5-N7	-10.07	106.77	110.80
1	A	279	A	C8-N9-C4	-10.06	101.78	105.80
1	A	1369	C	C6-N1-C2	-10.05	116.28	120.30
1	A	797	C	C6-N1-C2	10.04	124.31	120.30
1	A	852	G	C5-C6-N1	-9.99	106.51	111.50
1	A	746	A	C8-N9-C4	9.88	109.75	105.80
1	A	29	G	C2-N3-C4	-9.87	106.97	111.90
1	A	651	C	C6-N1-C2	9.85	124.24	120.30
1	A	912	A	N1-C6-N6	9.83	124.50	118.60
1	A	1370	G	N3-C4-C5	-9.81	123.70	128.60
1	A	79	G	N3-C4-C5	-9.75	123.72	128.60
1	A	1526	G	N1-C6-O6	9.73	125.74	119.90
1	A	833	U	N3-C4-C5	-9.72	108.77	114.60
1	A	117	G	C8-N9-C1'	-9.71	114.38	127.00
1	A	638	G	N1-C6-O6	9.68	125.71	119.90
1	A	1452	C	N1-C2-N3	-9.66	112.44	119.20
1	A	945	G	C5-C6-O6	-9.66	122.81	128.60
1	A	828	A	N1-C6-N6	9.65	124.39	118.60
1	A	266	G	N3-C4-C5	9.54	133.37	128.60
1	A	1370	G	C4-N9-C1'	9.51	138.86	126.50
1	A	786	G	N1-C6-O6	9.50	125.60	119.90
1	A	80	G	C8-N9-C4	-9.49	102.61	106.40
1	A	875	C	C5-C6-N1	-9.47	116.26	121.00
1	A	839	U	N1-C2-O2	9.47	129.43	122.80
1	A	1149	C	C6-N1-C2	-9.46	116.51	120.30
1	A	722	A	N9-C4-C5	-9.45	102.02	105.80
1	A	1505	G	N9-C4-C5	9.43	109.17	105.40
1	A	482	A	N1-C6-N6	9.40	124.24	118.60
1	A	281	G	C5-N7-C8	-9.39	99.60	104.30
1	A	283	C	C6-N1-C2	-9.39	116.54	120.30
1	A	771	G	C2-N3-C4	-9.37	107.21	111.90
1	A	232	G	C6-C5-N7	-9.37	124.78	130.40
1	A	1060	C	N1-C2-O2	9.37	124.52	118.90
1	A	18	C	C5-C6-N1	-9.36	116.32	121.00
1	A	292	G	N1-C6-O6	9.36	125.52	119.90
1	A	565	U	N3-C4-C5	9.36	120.22	114.60
1	A	307	C	N1-C2-O2	9.35	124.51	118.90
1	A	302	G	C5-C6-N1	9.34	116.17	111.50
1	A	1452	C	N1-C2-O2	9.33	124.50	118.90
1	A	785	G	C5-C6-O6	-9.33	123.00	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	565	U	C6-N1-C2	9.31	126.59	121.00
1	A	851	G	C4-N9-C1'	9.29	138.58	126.50
1	A	860	A	N1-C2-N3	9.28	133.94	129.30
1	A	1074	G	C8-N9-C4	-9.27	102.69	106.40
1	A	1336	C	C2-N1-C1'	9.26	128.99	118.80
1	A	856	C	N3-C4-C5	-9.24	118.20	121.90
1	A	326	G	N3-C4-C5	-9.19	124.00	128.60
1	A	833	U	C4-C5-C6	9.19	125.21	119.70
1	A	288	A	C2-N3-C4	-9.15	106.03	110.60
1	A	885	G	N1-C6-O6	9.14	125.38	119.90
1	A	1417	G	C8-N9-C4	-9.13	102.75	106.40
1	A	713	G	N1-C6-O6	9.12	125.37	119.90
1	A	589	C	C6-N1-C2	9.11	123.94	120.30
1	A	722	A	C6-C5-N7	-9.11	125.92	132.30
1	A	789	U	C5-C4-O4	9.11	131.36	125.90
1	A	693	G	N1-C6-O6	9.10	125.36	119.90
1	A	128	G	N1-C6-O6	9.08	125.35	119.90
1	A	645	C	C5-C6-N1	9.08	125.54	121.00
1	A	283	C	C5-C6-N1	9.08	125.54	121.00
1	A	262	A	N1-C6-N6	-9.08	113.16	118.60
1	A	1103	C	C5-C6-N1	-9.05	116.47	121.00
1	A	785	G	C4-C5-N7	9.05	114.42	110.80
1	A	279	A	C4-C5-N7	9.03	115.22	110.70
1	A	1395	C	C6-N1-C2	9.03	123.91	120.30
1	A	232	G	N3-C2-N2	8.97	126.18	119.90
1	A	572	A	C5-C6-N1	8.96	122.18	117.70
1	A	1372	U	C5-C6-N1	8.96	127.18	122.70
1	A	1510	U	C5-C6-N1	-8.96	118.22	122.70
1	A	872	A	C5-N7-C8	-8.92	99.44	103.90
1	A	719	C	C5-C6-N1	-8.91	116.55	121.00
1	A	240	C	N3-C4-N4	8.91	124.24	118.00
1	A	865	A	C2-N3-C4	8.91	115.05	110.60
1	A	17	U	N3-C4-O4	8.89	125.62	119.40
1	A	589	C	C5-C6-N1	-8.89	116.56	121.00
1	A	284	G	N1-C6-O6	8.88	125.23	119.90
1	A	737	A	C2-N3-C4	-8.87	106.16	110.60
1	A	366	C	N1-C2-O2	8.87	124.22	118.90
1	A	734	G	N9-C4-C5	-8.87	101.85	105.40
1	A	295	C	C6-N1-C2	8.84	123.83	120.30
1	A	814	A	C2-N3-C4	-8.84	106.18	110.60
1	A	580	U	N1-C2-O2	-8.83	116.62	122.80
1	A	904	C	C6-N1-C2	-8.83	116.77	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	703	G	C5-C6-O6	8.82	133.90	128.60
1	A	1388	C	C6-N1-C2	8.81	123.83	120.30
1	A	279	A	C2-N3-C4	-8.80	106.20	110.60
1	A	292	G	C5-C6-O6	-8.79	123.33	128.60
1	A	789	U	N3-C2-O2	-8.78	116.05	122.20
1	A	255	G	C6-C5-N7	-8.78	125.13	130.40
1	A	873	A	N7-C8-N9	8.78	118.19	113.80
1	A	1282	C	C6-N1-C2	-8.76	116.80	120.30
1	A	572	A	C8-N9-C4	-8.74	102.30	105.80
1	A	825	G	C8-N9-C4	8.71	109.88	106.40
1	A	643	C	C6-N1-C2	-8.69	116.82	120.30
1	A	1350	A	C8-N9-C4	-8.69	102.32	105.80
1	A	1358	U	N1-C2-N3	8.68	120.11	114.90
1	A	735	C	C6-N1-C2	8.66	123.77	120.30
1	A	569	C	C6-N1-C2	8.66	123.76	120.30
1	A	103	C	N3-C4-C5	-8.65	118.44	121.90
1	A	1346	A	C5-C6-N1	8.65	122.02	117.70
1	A	661	G	C2-N3-C4	-8.64	107.58	111.90
1	A	1329	A	C8-N9-C4	-8.64	102.34	105.80
1	A	576	G	N3-C4-C5	-8.63	124.28	128.60
1	A	1310	G	N1-C6-O6	8.62	125.07	119.90
1	A	252	U	C5-C6-N1	-8.61	118.39	122.70
1	A	913	A	C8-N9-C4	-8.61	102.36	105.80
1	A	1336	C	N1-C2-O2	8.60	124.06	118.90
1	A	836	G	N1-C6-O6	8.59	125.06	119.90
1	A	130	A	C6-C5-N7	-8.57	126.30	132.30
1	A	20	U	C5-C4-O4	-8.54	120.77	125.90
1	A	572	A	C2-N3-C4	8.54	114.87	110.60
1	A	779	C	C2-N3-C4	-8.54	115.63	119.90
1	A	715	A	C2-N3-C4	-8.52	106.34	110.60
1	A	645	C	C6-N1-C2	-8.52	116.89	120.30
1	A	941	G	N1-C6-O6	8.51	125.01	119.90
1	A	1452	C	C6-N1-C1'	-8.51	110.59	120.80
1	A	920	U	C5-C4-O4	8.50	131.00	125.90
1	A	232	G	N3-C4-N9	8.49	131.09	126.00
1	A	1361(A)	C	C5-C6-N1	8.48	125.24	121.00
1	A	117	G	C4-N9-C1'	8.48	137.53	126.50
1	A	802	A	N7-C8-N9	-8.47	109.57	113.80
1	A	777	A	N1-C6-N6	8.45	123.67	118.60
1	A	571	U	C6-N1-C2	8.44	126.07	121.00
1	A	1187	G	C8-N9-C4	-8.44	103.02	106.40
1	A	1447	G	C8-N9-C4	-8.44	103.02	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	586	C	C5-C6-N1	-8.43	116.78	121.00
1	A	901	A	C2-N3-C4	-8.43	106.39	110.60
1	A	79	G	C2-N3-C4	8.41	116.11	111.90
1	A	852	G	C2-N3-C4	-8.40	107.70	111.90
1	A	1347	G	C8-N9-C4	8.40	109.76	106.40
1	A	784	C	C6-N1-C2	-8.38	116.95	120.30
1	A	1358	U	N3-C2-O2	-8.38	116.33	122.20
1	A	661	G	N1-C6-O6	8.38	124.93	119.90
1	A	129(A)	G	C6-C5-N7	-8.37	125.38	130.40
1	A	1530	G	N3-C4-C5	8.36	132.78	128.60
1	A	785	G	N1-C6-O6	8.36	124.92	119.90
1	A	175	C	C6-N1-C2	8.35	123.64	120.30
1	A	129(A)	G	C4-N9-C1'	8.34	137.34	126.50
1	A	1414	U	C2-N1-C1'	8.34	127.71	117.70
1	A	730	G	N1-C2-N2	-8.34	108.69	116.20
1	A	328	C	N1-C2-O2	8.33	123.90	118.90
1	A	638	G	C5-C6-N1	-8.32	107.34	111.50
1	A	1052	U	C5-C6-N1	8.31	126.86	122.70
1	A	281	G	C4-C5-N7	8.31	114.12	110.80
1	A	789	U	N1-C2-N3	8.30	119.88	114.90
1	A	881	G	N1-C6-O6	8.30	124.88	119.90
1	A	117	G	N9-C4-C5	-8.30	102.08	105.40
1	A	1181	G	N7-C8-N9	-8.29	108.95	113.10
1	A	789	U	N3-C4-C5	-8.29	109.63	114.60
1	A	21	G	N9-C4-C5	-8.28	102.09	105.40
1	A	310	G	C5-C6-O6	-8.26	123.64	128.60
1	A	309	G	C8-N9-C4	8.26	109.70	106.40
1	A	1502	A	N7-C8-N9	8.25	117.93	113.80
1	A	948	C	C5-C6-N1	-8.25	116.88	121.00
1	A	453	A	C8-N9-C4	8.23	109.09	105.80
1	A	382	A	N7-C8-N9	8.23	117.92	113.80
1	A	1347	G	N3-C4-N9	8.23	130.94	126.00
1	A	771	G	C6-C5-N7	-8.23	125.46	130.40
1	A	331	G	C6-C5-N7	-8.22	125.47	130.40
1	A	851	G	C8-N9-C1'	-8.22	116.31	127.00
1	A	518	C	N1-C2-O2	8.21	123.83	118.90
1	A	201	C	C6-N1-C2	-8.21	117.02	120.30
1	A	852	G	N1-C6-O6	8.21	124.82	119.90
1	A	255	G	C5-C6-O6	-8.20	123.68	128.60
1	A	36	C	C6-N1-C2	-8.20	117.02	120.30
1	A	1327	C	C6-N1-C2	8.19	123.58	120.30
1	A	235	C	C5-C6-N1	-8.19	116.90	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1186	G	C5-C6-N1	-8.17	107.42	111.50
1	A	635	G	N1-C6-O6	8.16	124.80	119.90
1	A	753	A	C2-N3-C4	-8.16	106.52	110.60
1	A	1417	G	N3-C4-C5	-8.15	124.53	128.60
1	A	1336	C	C5-C6-N1	8.13	125.06	121.00
1	A	1344	C	C2-N3-C4	-8.13	115.84	119.90
1	A	789	U	C6-N1-C2	-8.12	116.13	121.00
1	A	774	G	C5-C6-O6	-8.12	123.73	128.60
1	A	875	C	C6-N1-C2	8.12	123.55	120.30
1	A	730	G	N1-C2-N3	8.10	128.76	123.90
1	A	1507	A	C2-N3-C4	-8.10	106.55	110.60
1	A	1502	A	N9-C4-C5	-8.10	102.56	105.80
17	Q	22	LEU	CB-CG-CD2	-8.10	97.24	111.00
1	A	1076	C	C6-N1-C2	-8.09	117.06	120.30
1	A	201	C	C2-N1-C1'	8.09	127.70	118.80
1	A	872	A	C4-C5-N7	8.09	114.75	110.70
1	A	851	G	N3-C4-C5	-8.08	124.56	128.60
1	A	309	G	N9-C4-C5	-8.07	102.17	105.40
1	A	703	G	N9-C4-C5	8.07	108.63	105.40
1	A	562	C	N1-C2-O2	8.07	123.74	118.90
1	A	936	C	C6-N1-C2	8.07	123.53	120.30
1	A	598	U	C5-C6-N1	-8.02	118.69	122.70
1	A	667	G	N1-C6-O6	8.01	124.71	119.90
1	A	1509	C	C4-C5-C6	8.01	121.41	117.40
1	A	558	G	C8-N9-C4	-8.01	103.20	106.40
1	A	629	G	C8-N9-C4	-8.00	103.20	106.40
1	A	1447	G	N7-C8-N9	8.00	117.10	113.10
1	A	9	G	C5-C6-O6	-7.99	123.80	128.60
1	A	721	G	C4-N9-C1'	7.99	136.89	126.50
1	A	1375	A	N1-C6-N6	-7.99	113.81	118.60
1	A	117	G	C2-N3-C4	-7.99	107.91	111.90
1	A	80	G	N3-C4-C5	-7.98	124.61	128.60
1	A	562	C	C6-N1-C2	7.98	123.49	120.30
1	A	721	G	C8-N9-C1'	-7.97	116.64	127.00
1	A	606	G	N3-C4-C5	-7.96	124.62	128.60
1	A	766	A	N1-C6-N6	7.95	123.37	118.60
1	A	1149	C	C5-C6-N1	7.95	124.97	121.00
1	A	659	U	C5-C6-N1	-7.94	118.73	122.70
1	A	1087	G	N1-C6-O6	7.92	124.65	119.90
1	A	701	C	C6-N1-C2	7.92	123.47	120.30
1	A	1129	C	C6-N1-C2	-7.92	117.13	120.30
1	A	771	G	C5-C6-O6	-7.91	123.85	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1238	A	N9-C4-C5	7.91	108.97	105.80
1	A	1338	G	N1-C6-O6	-7.90	115.16	119.90
1	A	1530	G	C8-N9-C4	7.90	109.56	106.40
1	A	18	C	C6-N1-C2	7.89	123.46	120.30
1	A	779	C	C5-C6-N1	-7.89	117.06	121.00
1	A	752	G	N3-C4-N9	-7.88	121.27	126.00
1	A	931	C	C5-C6-N1	-7.88	117.06	121.00
1	A	872	A	C2-N3-C4	-7.88	106.66	110.60
1	A	929	G	C2-N3-C4	-7.87	107.96	111.90
1	A	814	A	N1-C2-N3	7.87	133.23	129.30
1	A	1344	C	C5-C6-N1	-7.86	117.07	121.00
1	A	753	A	N9-C4-C5	7.85	108.94	105.80
1	A	872	A	N1-C6-N6	7.85	123.31	118.60
1	A	1412	C	C6-N1-C2	-7.85	117.16	120.30
1	A	589	C	C2-N3-C4	-7.84	115.98	119.90
1	A	1103	C	N3-C2-O2	-7.84	116.42	121.90
1	A	368	U	N3-C4-O4	-7.83	113.92	119.40
1	A	331	G	C2-N3-C4	-7.82	107.99	111.90
1	A	310	G	C4-C5-N7	7.81	113.92	110.80
1	A	722	A	C5-C6-N1	-7.80	113.80	117.70
1	A	933	G	N1-C6-O6	7.80	124.58	119.90
1	A	860	A	C2-N3-C4	-7.78	106.71	110.60
1	A	1332	A	N9-C4-C5	7.78	108.91	105.80
1	A	1476	G	C8-N9-C4	-7.78	103.29	106.40
1	A	778	G	N3-C2-N2	-7.77	114.46	119.90
1	A	859	A	C4-C5-C6	7.77	120.88	117.00
1	A	907	A	N1-C2-N3	7.76	133.18	129.30
1	A	138	G	C8-N9-C4	7.75	109.50	106.40
1	A	130	A	C5-C6-N1	-7.75	113.83	117.70
1	A	1236	A	N1-C6-N6	7.75	123.25	118.60
1	A	1346	A	C2-N3-C4	7.73	114.47	110.60
1	A	194	C	N1-C2-O2	7.73	123.54	118.90
1	A	725	G	N1-C6-O6	7.72	124.53	119.90
1	A	326	G	C4-C5-N7	-7.72	107.71	110.80
1	A	788	U	C2-N1-C1'	7.71	126.95	117.70
1	A	667	G	C2-N3-C4	-7.71	108.04	111.90
1	A	1344	C	N3-C4-C5	7.71	124.98	121.90
1	A	299	G	N1-C6-O6	7.71	124.52	119.90
1	A	851	G	N3-C4-N9	7.70	130.62	126.00
1	A	107	G	N1-C6-O6	7.70	124.52	119.90
1	A	23	C	N3-C2-O2	-7.69	116.52	121.90
1	A	142	G	C2-N3-C4	7.69	115.75	111.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	930	C	N3-C4-C5	7.69	124.98	121.90
1	A	777	A	C5-N7-C8	-7.69	100.06	103.90
1	A	546	G	N3-C4-C5	-7.68	124.76	128.60
1	A	115	G	N1-C6-O6	7.68	124.51	119.90
1	A	580	U	N1-C2-N3	7.67	119.50	114.90
4	D	12	CYS	CA-CB-SG	7.67	127.81	114.00
1	A	922	G	C5-C6-O6	7.67	133.20	128.60
1	A	1442	G	C4-N9-C1'	7.67	136.47	126.50
1	A	22	G	N1-C2-N3	7.66	128.50	123.90
1	A	1354	C	C6-N1-C2	-7.66	117.23	120.30
1	A	913	A	N1-C6-N6	-7.65	114.01	118.60
1	A	698	G	N3-C4-C5	-7.65	124.78	128.60
1	A	112	G	N3-C2-N2	-7.64	114.55	119.90
1	A	571	U	C5-C6-N1	-7.64	118.88	122.70
1	A	610	G	C4-N9-C1'	7.62	136.41	126.50
1	A	1414	U	C5-C6-N1	7.62	126.51	122.70
1	A	719	C	N3-C4-N4	-7.61	112.67	118.00
1	A	5	U	C6-N1-C2	7.60	125.56	121.00
1	A	975	A	C5-C6-N1	-7.60	113.90	117.70
1	A	107	G	C6-C5-N7	-7.59	125.84	130.40
1	A	872	A	N7-C8-N9	7.59	117.60	113.80
1	A	945	G	C4-C5-N7	7.58	113.83	110.80
1	A	946	A	N1-C6-N6	-7.58	114.05	118.60
1	A	948	C	C2-N1-C1'	-7.58	110.46	118.80
1	A	481	G	C5-N7-C8	7.57	108.09	104.30
1	A	309	G	N3-C4-N9	7.57	130.54	126.00
1	A	938	A	C5-C6-N6	7.57	129.75	123.70
1	A	1502	A	C2-N3-C4	-7.56	106.82	110.60
1	A	24	U	N3-C2-O2	7.56	127.49	122.20
1	A	555	C	C6-N1-C2	-7.55	117.28	120.30
1	A	190	C	N3-C2-O2	-7.55	116.61	121.90
1	A	1477	C	C6-N1-C2	-7.55	117.28	120.30
1	A	131	C	C4-C5-C6	7.54	121.17	117.40
1	A	774	G	N1-C6-O6	7.52	124.41	119.90
1	A	526	C	C5-C6-N1	-7.52	117.24	121.00
1	A	1200	C	C2-N1-C1'	7.52	127.07	118.80
1	A	777	A	C6-C5-N7	-7.52	127.04	132.30
1	A	1367	C	C6-N1-C2	-7.51	117.29	120.30
1	A	600	C	N3-C4-C5	7.51	124.90	121.90
8	H	12	ARG	NE-CZ-NH1	-7.51	116.55	120.30
1	A	820	U	N1-C2-N3	7.50	119.40	114.90
1	A	266	G	C5-N7-C8	-7.50	100.55	104.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	877	C	C4-C5-C6	7.50	121.15	117.40
1	A	1181	G	C4-N9-C1'	-7.49	116.76	126.50
1	A	569	C	C2-N3-C4	-7.49	116.16	119.90
1	A	732	C	C6-N1-C2	7.48	123.29	120.30
1	A	1258	G	N3-C4-C5	-7.48	124.86	128.60
1	A	190	C	C6-N1-C2	-7.47	117.31	120.30
1	A	771	G	C8-N9-C4	7.47	109.39	106.40
1	A	1510	U	N3-C2-O2	-7.47	116.97	122.20
1	A	283	C	N3-C4-C5	-7.47	118.91	121.90
1	A	586	C	C2-N3-C4	-7.47	116.17	119.90
1	A	903	G	N3-C2-N2	-7.46	114.68	119.90
1	A	715	A	N1-C2-N3	7.46	133.03	129.30
1	A	1238	A	C4-C5-N7	-7.46	106.97	110.70
1	A	22	G	C6-C5-N7	-7.45	125.93	130.40
1	A	276	G	C8-N9-C4	7.45	109.38	106.40
1	A	635	G	N1-C2-N3	7.44	128.36	123.90
1	A	788	U	N3-C2-O2	-7.44	117.00	122.20
1	A	778	G	C5-C6-N1	-7.43	107.78	111.50
1	A	1437	C	N1-C2-O2	7.43	123.36	118.90
1	A	574	A	N7-C8-N9	-7.43	110.09	113.80
1	A	720	C	N1-C2-O2	7.41	123.35	118.90
1	A	1509	C	C2-N3-C4	-7.41	116.20	119.90
1	A	1346	A	C5-N7-C8	7.41	107.60	103.90
1	A	39	G	C5-C6-N1	7.40	115.20	111.50
1	A	1080	A	N1-C6-N6	-7.39	114.16	118.60
1	A	522	C	C6-N1-C2	7.39	123.26	120.30
1	A	885	G	C5-C6-N1	-7.38	107.81	111.50
1	A	8	A	C8-N9-C4	-7.37	102.85	105.80
1	A	885	G	C2-N3-C4	-7.37	108.22	111.90
1	A	232	G	C5-C6-O6	-7.36	124.18	128.60
1	A	1443	G	N1-C6-O6	7.36	124.32	119.90
1	A	173	U	N1-C2-N3	7.36	119.32	114.90
1	A	328	C	N3-C2-O2	-7.36	116.75	121.90
1	A	1238	A	N1-C6-N6	-7.36	114.19	118.60
1	A	1200	C	C5-C6-N1	7.35	124.68	121.00
1	A	812	C	N3-C4-C5	-7.35	118.96	121.90
1	A	628	G	C4-C5-N7	-7.35	107.86	110.80
1	A	605	U	C5-C4-O4	7.34	130.30	125.90
1	A	449	C	N1-C2-O2	7.34	123.30	118.90
1	A	232	G	N1-C6-O6	7.32	124.29	119.90
1	A	871	U	N1-C2-O2	7.32	127.92	122.80
1	A	1336	C	N3-C4-N4	7.32	123.12	118.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	587	G	N1-C6-O6	-7.32	115.51	119.90
1	A	820	U	N1-C2-O2	-7.32	117.68	122.80
1	A	713	G	C5-C6-O6	-7.31	124.21	128.60
1	A	131	C	C6-N1-C2	7.31	123.22	120.30
1	A	1529	G	C4-N9-C1'	7.30	136.00	126.50
1	A	771	G	N1-C6-O6	7.30	124.28	119.90
1	A	451	A	C4-C5-C6	-7.28	113.36	117.00
1	A	1268	A	C8-N9-C4	-7.27	102.89	105.80
8	H	12	ARG	NE-CZ-NH2	7.27	123.93	120.30
1	A	60	A	C8-N9-C4	7.26	108.71	105.80
1	A	574	A	C5-C6-N1	7.26	121.33	117.70
1	A	721	G	C6-C5-N7	-7.26	126.04	130.40
1	A	928	G	C5-C6-O6	-7.26	124.24	128.60
1	A	481	G	C2-N3-C4	7.26	115.53	111.90
1	A	774	G	C4-C5-N7	7.25	113.70	110.80
1	A	7	G	N3-C4-C5	-7.25	124.97	128.60
1	A	1516[A]	G	C8-N9-C4	-7.25	103.50	106.40
1	A	1516[B]	G	C8-N9-C4	-7.25	103.50	106.40
1	A	129(A)	G	C8-N9-C1'	-7.25	117.58	127.00
1	A	1336	C	C6-N1-C1'	-7.24	112.11	120.80
1	A	292	G	C6-C5-N7	-7.23	126.06	130.40
1	A	28	G	N1-C6-O6	7.22	124.23	119.90
1	A	602	A	C2-N3-C4	-7.21	107.00	110.60
1	A	1443	G	C5-C6-O6	-7.20	124.28	128.60
1	A	719	C	C2-N3-C4	-7.20	116.30	119.90
1	A	665	A	C8-N9-C4	-7.20	102.92	105.80
1	A	235	C	C6-N1-C2	7.19	123.18	120.30
1	A	819	A	C8-N9-C4	-7.19	102.92	105.80
1	A	251	G	C6-C5-N7	-7.19	126.09	130.40
1	A	1103	C	N3-C4-C5	7.19	124.78	121.90
1	A	874	G	N1-C2-N3	7.19	128.21	123.90
1	A	1346	A	C6-N1-C2	-7.18	114.29	118.60
1	A	1187	G	N7-C8-N9	7.18	116.69	113.10
1	A	306	G	N1-C6-O6	7.18	124.21	119.90
1	A	1443	G	N9-C4-C5	-7.17	102.53	105.40
1	A	180	U	C2-N1-C1'	7.17	126.30	117.70
1	A	589	C	N3-C4-C5	7.16	124.76	121.90
1	A	392	G	C6-C5-N7	-7.16	126.11	130.40
1	A	975	A	N1-C6-N6	7.15	122.89	118.60
1	A	1455	G	C5-C6-O6	-7.15	124.31	128.60
1	A	799	G	C4-C5-N7	7.15	113.66	110.80
1	A	865	A	N1-C2-N3	-7.14	125.73	129.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1332	A	C5-C6-N6	7.14	129.41	123.70
1	A	653	A	C5-C6-N6	7.14	129.41	123.70
1	A	600	C	C6-N1-C2	7.14	123.15	120.30
1	A	1306	A	N1-C6-N6	7.13	122.88	118.60
1	A	1434	A	N1-C6-N6	7.13	122.88	118.60
1	A	703	G	N3-C4-C5	-7.13	125.04	128.60
1	A	279	A	C4-C5-C6	7.12	120.56	117.00
1	A	104	G	N1-C6-O6	7.11	124.17	119.90
1	A	651	C	N3-C4-C5	7.11	124.74	121.90
1	A	1329	A	N7-C8-N9	7.11	117.35	113.80
1	A	638	G	C6-C5-N7	-7.10	126.14	130.40
1	A	8	A	N9-C4-C5	7.10	108.64	105.80
1	A	569	C	N3-C4-C5	7.10	124.74	121.90
1	A	194	C	N3-C2-O2	-7.09	116.93	121.90
1	A	21	G	N7-C8-N9	-7.09	109.55	113.10
1	A	610	G	C8-N9-C1'	-7.09	117.78	127.00
1	A	731	G	C5-C6-O6	-7.09	124.35	128.60
1	A	1181	G	N3-C4-C5	7.09	132.15	128.60
1	A	1327	C	C5-C6-N1	-7.09	117.45	121.00
1	A	1080	A	N9-C4-C5	7.09	108.64	105.80
1	A	1299	A	C4-C5-N7	7.08	114.24	110.70
1	A	776	G	N3-C4-C5	7.08	132.14	128.60
1	A	872	A	C6-C5-N7	-7.08	127.35	132.30
1	A	190(F)	G	C4-N9-C1'	-7.07	117.30	126.50
1	A	93	G	N3-C4-C5	-7.07	125.07	128.60
1	A	721	G	N3-C4-N9	7.06	130.24	126.00
1	A	878	G	N1-C2-N3	7.06	128.13	123.90
1	A	850	U	C5-C4-O4	7.05	130.13	125.90
1	A	901	A	C5-C6-N1	-7.05	114.17	117.70
1	A	180	U	N3-C4-O4	7.05	124.33	119.40
1	A	449	C	N3-C2-O2	-7.04	116.97	121.90
1	A	642	A	C8-N9-C4	-7.04	102.98	105.80
1	A	128	G	C5-C6-O6	-7.04	124.38	128.60
1	A	474	G	C6-C5-N7	-7.04	126.17	130.40
1	A	569	C	N3-C4-N4	-7.04	113.07	118.00
1	A	18	C	C2-N3-C4	-7.04	116.38	119.90
1	A	526	C	N3-C4-C5	7.03	124.71	121.90
1	A	129(A)	G	N3-C4-N9	7.02	130.21	126.00
1	A	326	G	N1-C2-N3	7.02	128.11	123.90
1	A	264	U	N1-C2-N3	7.01	119.11	114.90
1	A	1064	G	C2-N3-C4	-7.01	108.39	111.90
1	A	722	A	N1-C2-N3	7.00	132.80	129.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	745	C	C6-N1-C2	7.00	123.10	120.30
1	A	1306	A	C4-C5-C6	7.00	120.50	117.00
1	A	408	A	C8-N9-C4	-7.00	103.00	105.80
1	A	1195	C	N3-C4-N4	6.99	122.89	118.00
1	A	886	G	C4-C5-N7	6.98	113.59	110.80
1	A	577	G	C2-N3-C4	-6.98	108.41	111.90
1	A	366	C	C2-N1-C1'	6.98	126.48	118.80
1	A	722	A	C4-C5-N7	6.98	114.19	110.70
1	A	1365	G	C8-N9-C4	-6.98	103.61	106.40
1	A	882	C	N3-C2-O2	-6.97	117.02	121.90
1	A	805	C	C4-C5-C6	-6.96	113.92	117.40
1	A	1305	G	C8-N9-C4	-6.96	103.62	106.40
1	A	181	G	C8-N9-C4	-6.96	103.62	106.40
1	A	303	A	N1-C2-N3	6.96	132.78	129.30
1	A	577	G	N1-C6-O6	6.95	124.07	119.90
1	A	286	G	C5-C6-N1	6.94	114.97	111.50
1	A	482	A	C6-C5-N7	-6.94	127.44	132.30
1	A	722	A	C8-N9-C4	6.94	108.58	105.80
1	A	230	G	N9-C4-C5	-6.93	102.63	105.40
1	A	128	G	C6-C5-N7	-6.92	126.25	130.40
1	A	758	G	N3-C4-C5	6.92	132.06	128.60
1	A	809	G	C8-N9-C4	-6.90	103.64	106.40
1	A	570	G	N3-C4-C5	-6.90	125.15	128.60
1	A	803	G	N1-C6-O6	-6.88	115.77	119.90
1	A	874	G	C8-N9-C4	6.88	109.15	106.40
1	A	1388	C	C2-N1-C1'	-6.88	111.23	118.80
1	A	721	G	C4-C5-C6	6.88	122.93	118.80
1	A	785	G	C6-C5-N7	-6.88	126.27	130.40
1	A	416	G	N1-C6-O6	6.88	124.03	119.90
1	A	1235	U	N1-C2-O2	-6.88	117.99	122.80
1	A	1078	U	C5-C6-N1	6.87	126.14	122.70
1	A	1543	C	C6-N1-C2	6.87	123.05	120.30
1	A	231	G	C8-N9-C4	6.86	109.14	106.40
1	A	703	G	C8-N9-C4	-6.86	103.66	106.40
1	A	1287	A	N7-C8-N9	6.86	117.23	113.80
1	A	854	G	N1-C2-N3	6.86	128.01	123.90
1	A	15	G	C5-C6-N1	-6.84	108.08	111.50
1	A	825	G	N7-C8-N9	-6.84	109.68	113.10
1	A	871	U	N3-C2-O2	-6.84	117.41	122.20
1	A	173	U	C6-N1-C2	-6.84	116.90	121.00
1	A	283	C	C2-N3-C4	6.84	123.32	119.90
1	A	1194	U	C5-C6-N1	6.84	126.12	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1347	G	N7-C8-N9	-6.84	109.68	113.10
1	A	284	G	C5-C6-O6	-6.83	124.50	128.60
1	A	477	G	N1-C6-O6	6.83	124.00	119.90
1	A	777	A	C4-C5-N7	6.83	114.11	110.70
1	A	169	C	C6-N1-C2	-6.82	117.57	120.30
1	A	1149	C	C2-N1-C1'	6.82	126.31	118.80
1	A	1442	G	C8-N9-C1'	-6.82	118.13	127.00
1	A	309	G	C8-N9-C1'	-6.81	118.14	127.00
1	A	876	G	C5-C6-O6	-6.81	124.51	128.60
1	A	121	C	C5-C6-N1	-6.81	117.59	121.00
1	A	1502	A	C5-C6-N6	-6.81	118.25	123.70
1	A	1411	C	C5-C6-N1	6.81	124.40	121.00
1	A	882	C	N1-C2-N3	6.80	123.96	119.20
1	A	1268	A	N9-C4-C5	6.80	108.52	105.80
1	A	1332	A	N1-C2-N3	6.80	132.70	129.30
1	A	804	U	C5-C4-O4	6.80	129.98	125.90
1	A	400	C	N1-C2-O2	6.80	122.98	118.90
1	A	888	G	N3-C2-N2	-6.80	115.14	119.90
1	A	111	G	C5-C6-N1	-6.79	108.11	111.50
1	A	92	C	C2-N1-C1'	6.79	126.27	118.80
1	A	198	G	N1-C6-O6	6.79	123.97	119.90
1	A	796	C	N3-C2-O2	-6.78	117.15	121.90
1	A	92	C	N1-C2-O2	6.78	122.97	118.90
1	A	785	G	N9-C4-C5	-6.78	102.69	105.40
1	A	1131	G	N1-C6-O6	6.78	123.97	119.90
1	A	366	C	N3-C2-O2	-6.78	117.16	121.90
1	A	1377	A	C8-N9-C4	6.78	108.51	105.80
1	A	144	G	C5-C6-N1	-6.77	108.11	111.50
1	A	222	U	C6-N1-C2	6.77	125.06	121.00
1	A	1380	U	N1-C2-N3	6.77	118.96	114.90
1	A	1447	G	C5-C6-O6	-6.77	124.54	128.60
1	A	636	U	C5-C6-N1	-6.76	119.32	122.70
1	A	190(A)	C	C6-N1-C2	-6.76	117.60	120.30
1	A	79	G	N3-C4-N9	6.75	130.05	126.00
1	A	1289	A	C8-N9-C4	-6.75	103.10	105.80
1	A	190(F)	G	N3-C4-N9	-6.75	121.95	126.00
1	A	604	G	C5-C6-N1	-6.75	108.12	111.50
1	A	851	G	C4-C5-C6	6.75	122.85	118.80
1	A	664	G	C5-C6-O6	6.75	132.65	128.60
1	A	1250	A	N1-C6-N6	-6.75	114.55	118.60
1	A	122	G	C4-C5-N7	6.74	113.50	110.80
1	A	565	U	N1-C2-N3	-6.74	110.85	114.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	283	C	N3-C4-N4	6.74	122.72	118.00
1	A	128	G	C4-C5-N7	6.74	113.50	110.80
1	A	745	C	N3-C4-C5	6.74	124.60	121.90
1	A	941	G	C5-C6-O6	-6.73	124.56	128.60
1	A	1192	C	C5-C4-N4	6.73	124.91	120.20
1	A	1299	A	C5-N7-C8	-6.73	100.54	103.90
1	A	317	G	N1-C6-O6	6.73	123.94	119.90
1	A	562	C	C5-C6-N1	-6.72	117.64	121.00
4	D	19	LEU	CA-CB-CG	-6.72	99.83	115.30
1	A	1414	U	N1-C2-O2	6.72	127.50	122.80
1	A	75	G	N3-C4-N9	-6.72	121.97	126.00
1	A	1474	G	N1-C6-O6	6.72	123.93	119.90
1	A	856	C	N1-C2-O2	-6.71	114.87	118.90
1	A	23	C	N1-C2-N3	6.71	123.90	119.20
1	A	665	A	N9-C4-C5	6.71	108.48	105.80
1	A	693	G	C6-C5-N7	-6.71	126.37	130.40
1	A	1405	G	C4-C5-N7	-6.71	108.11	110.80
1	A	629	G	N3-C4-C5	-6.71	125.25	128.60
1	A	1200	C	C6-N1-C2	-6.71	117.62	120.30
1	A	885	G	C6-C5-N7	-6.71	126.38	130.40
1	A	1372	U	C6-N1-C2	-6.69	116.98	121.00
1	A	573	A	N3-C4-C5	-6.69	122.12	126.80
1	A	447	G	C5-C6-O6	6.69	132.61	128.60
1	A	587	G	N9-C4-C5	6.68	108.07	105.40
1	A	93	G	C8-N9-C4	-6.68	103.73	106.40
1	A	293	G	C2-N3-C4	-6.68	108.56	111.90
1	A	281	G	N7-C8-N9	6.68	116.44	113.10
1	A	830	G	C5-C6-N1	-6.68	108.16	111.50
1	A	230	G	C8-N9-C4	6.67	109.07	106.40
1	A	328	C	N3-C4-N4	-6.67	113.33	118.00
1	A	1376	U	C5-C4-O4	6.67	129.90	125.90
1	A	1455	G	C6-C5-N7	-6.67	126.40	130.40
1	A	201	C	C5-C6-N1	6.67	124.33	121.00
1	A	259	G	C8-N9-C4	-6.67	103.73	106.40
1	A	456	C	N1-C2-O2	6.67	122.90	118.90
1	A	1342	C	N1-C2-O2	-6.66	114.90	118.90
1	A	1297	C	N3-C4-C5	6.66	124.56	121.90
1	A	1327	C	C2-N1-C1'	-6.66	111.47	118.80
1	A	1139	G	N3-C4-C5	-6.66	125.27	128.60
1	A	1398	A	N1-C2-N3	6.66	132.63	129.30
1	A	39	G	C2-N3-C4	6.66	115.23	111.90
1	A	602	A	C8-N9-C4	6.66	108.46	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	828	A	C5-N7-C8	-6.66	100.57	103.90
1	A	1060	C	C6-N1-C2	-6.66	117.64	120.30
1	A	260	G	C4-C5-N7	6.65	113.46	110.80
1	A	58	C	C6-N1-C2	-6.64	117.64	120.30
1	A	542	G	N3-C4-C5	-6.64	125.28	128.60
1	A	276	G	N3-C2-N2	-6.64	115.25	119.90
1	A	628	G	C4-C5-C6	6.64	122.78	118.80
1	A	827	U	C2-N3-C4	-6.64	123.02	127.00
1	A	1388	C	C5-C6-N1	-6.64	117.68	121.00
1	A	1358	U	C6-N1-C2	-6.64	117.02	121.00
1	A	1200	C	N1-C2-O2	6.63	122.88	118.90
1	A	1065	U	N3-C2-O2	6.63	126.84	122.20
1	A	106	C	N1-C2-N3	6.63	123.84	119.20
1	A	799	G	C5-C6-O6	-6.63	124.62	128.60
1	A	181	G	N3-C4-C5	-6.63	125.29	128.60
1	A	750	G	N3-C4-C5	-6.62	125.29	128.60
1	A	1287	A	C4-C5-C6	6.61	120.31	117.00
1	A	1376	U	N3-C2-O2	-6.61	117.57	122.20
1	A	1378	C	C5-C6-N1	6.61	124.30	121.00
1	A	777	A	N7-C8-N9	6.61	117.10	113.80
1	A	122	G	N1-C6-O6	6.60	123.86	119.90
1	A	375	U	N1-C2-N3	6.60	118.86	114.90
1	A	752	G	N3-C4-C5	6.60	131.90	128.60
1	A	1238	A	C5-C6-N6	6.60	128.98	123.70
1	A	1512	U	N3-C4-O4	6.60	124.02	119.40
17	Q	98	LEU	CA-CB-CG	6.60	130.47	115.30
1	A	262	A	C6-C5-N7	6.59	136.92	132.30
1	A	886	G	N1-C6-O6	6.59	123.86	119.90
1	A	279	A	C4-N9-C1'	6.59	138.17	126.30
1	A	1525	G	N7-C8-N9	-6.59	109.80	113.10
1	A	147	G	C2-N3-C4	-6.59	108.61	111.90
1	A	758	G	C8-N9-C4	6.59	109.03	106.40
1	A	797	C	N3-C4-C5	6.58	124.53	121.90
1	A	771	G	N1-C2-N2	-6.58	110.27	116.20
1	A	1077	G	N1-C2-N2	-6.58	110.28	116.20
1	A	1147	C	C6-N1-C2	-6.58	117.67	120.30
1	A	1303	C	N3-C4-N4	-6.58	113.39	118.00
1	A	1346	A	N7-C8-N9	-6.57	110.51	113.80
1	A	279	A	N1-C2-N3	6.57	132.59	129.30
1	A	595	G	C4-C5-N7	-6.57	108.17	110.80
1	A	147	G	C5-C6-N1	-6.57	108.22	111.50
1	A	20	U	N3-C4-O4	6.57	124.00	119.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	262	A	C4-C5-C6	-6.57	113.72	117.00
1	A	811	C	C6-N1-C2	6.57	122.93	120.30
1	A	819	A	N7-C8-N9	6.57	117.08	113.80
1	A	835	U	C5-C4-O4	6.56	129.84	125.90
1	A	29	G	N1-C2-N3	6.55	127.83	123.90
1	A	622	A	C6-N1-C2	6.55	122.53	118.60
1	A	1452	C	C5-C4-N4	-6.55	115.61	120.20
1	A	281	G	C5-C6-O6	-6.55	124.67	128.60
1	A	820	U	C6-N1-C1'	6.55	130.37	121.20
1	A	850	U	N3-C2-O2	-6.55	117.61	122.20
1	A	853	G	C6-C5-N7	-6.55	126.47	130.40
1	A	703	G	C5-C6-N1	-6.54	108.23	111.50
1	A	1087	G	N3-C4-C5	6.54	131.87	128.60
1	A	116	A	N1-C6-N6	6.54	122.53	118.60
1	A	142	G	N1-C6-O6	-6.53	115.98	119.90
1	A	1505	G	C5-N7-C8	-6.53	101.03	104.30
1	A	572	A	C6-N1-C2	-6.53	114.68	118.60
1	A	736	C	N3-C2-O2	-6.52	117.33	121.90
1	A	975	A	N7-C8-N9	6.52	117.06	113.80
15	O	81	LEU	CA-CB-CG	6.52	130.30	115.30
1	A	1509	C	N1-C2-N3	6.52	123.76	119.20
1	A	171	A	N3-C4-C5	-6.51	122.24	126.80
1	A	832	C	C5-C4-N4	-6.51	115.64	120.20
1	A	873	A	N9-C4-C5	6.51	108.41	105.80
1	A	81	U	C5-C6-N1	6.51	125.95	122.70
1	A	439	A	C8-N9-C4	-6.51	103.20	105.80
1	A	9	G	C6-C5-N7	-6.51	126.50	130.40
1	A	789	U	C4-C5-C6	6.51	123.60	119.70
1	A	864	A	C5-C6-N6	6.50	128.90	123.70
1	A	873	A	C5-C6-N1	6.50	120.95	117.70
1	A	856	C	C4-C5-C6	6.50	120.65	117.40
1	A	326	G	C4-N9-C1'	6.50	134.94	126.50
1	A	886	G	C5-C6-O6	-6.49	124.70	128.60
1	A	266	G	C2-N3-C4	-6.49	108.66	111.90
1	A	81	U	C6-N1-C2	-6.49	117.11	121.00
1	A	721	G	N1-C2-N2	-6.49	110.36	116.20
1	A	720	C	N3-C2-O2	-6.48	117.36	121.90
1	A	667	G	N3-C4-C5	6.48	131.84	128.60
1	A	635	G	C5-C6-N1	-6.48	108.26	111.50
1	A	142	G	C5-C6-N1	6.47	114.74	111.50
1	A	1139	G	C8-N9-C4	-6.47	103.81	106.40
1	A	828	A	N1-C2-N3	6.47	132.53	129.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1521	G	N1-C6-O6	-6.47	116.02	119.90
1	A	890	G	C5-C6-O6	6.46	132.48	128.60
1	A	917	G	C2-N3-C4	-6.46	108.67	111.90
1	A	1294	G	C8-N9-C4	-6.45	103.82	106.40
1	A	146	G	N1-C6-O6	6.45	123.77	119.90
1	A	331	G	N9-C4-C5	-6.45	102.82	105.40
1	A	402	G	C8-N9-C4	-6.45	103.82	106.40
1	A	576	G	C4-C5-C6	6.45	122.67	118.80
1	A	190(C)	C	C6-N1-C2	-6.45	117.72	120.30
1	A	598	U	C6-N1-C2	6.44	124.86	121.00
1	A	576	G	N3-C4-N9	6.44	129.86	126.00
1	A	190(F)	G	N3-C4-C5	6.44	131.82	128.60
1	A	558	G	C4-C5-N7	6.44	113.38	110.80
1	A	1443	G	C4-C5-N7	6.44	113.38	110.80
1	A	1168	A	C8-N9-C4	6.43	108.37	105.80
1	A	1369	C	C5-C6-N1	6.43	124.22	121.00
1	A	945	G	C4-C5-C6	-6.43	114.94	118.80
1	A	597	G	N1-C2-N3	6.43	127.76	123.90
1	A	778	G	C4-C5-N7	-6.43	108.23	110.80
1	A	1103	C	N1-C2-N3	6.43	123.70	119.20
1	A	860	A	C4-C5-C6	6.42	120.21	117.00
1	A	859	A	C6-C5-N7	-6.42	127.81	132.30
1	A	131	C	C2-N3-C4	-6.42	116.69	119.90
1	A	81	U	C2-N1-C1'	6.41	125.39	117.70
1	A	917	G	N1-C2-N3	6.41	127.75	123.90
1	A	796	C	C5-C6-N1	-6.41	117.80	121.00
1	A	1390	U	N3-C4-C5	-6.40	110.76	114.60
1	A	562	C	C6-N1-C1'	-6.40	113.12	120.80
1	A	251	G	N1-C6-O6	6.40	123.74	119.90
1	A	814	A	C8-N9-C4	6.39	108.36	105.80
1	A	276	G	N1-C6-O6	6.39	123.73	119.90
1	A	1295	G	C8-N9-C4	-6.39	103.84	106.40
1	A	707	C	C6-N1-C2	6.38	122.85	120.30
1	A	818	G	N3-C4-N9	-6.38	122.17	126.00
1	A	1361(A)	C	N1-C2-O2	6.38	122.73	118.90
1	A	575	G	C8-N9-C4	6.38	108.95	106.40
1	A	518	C	C2-N1-C1'	6.37	125.80	118.80
1	A	788	U	N3-C4-O4	6.37	123.86	119.40
1	A	381	C	N1-C2-O2	6.36	122.72	118.90
1	A	757	U	C5-C6-N1	-6.36	119.52	122.70
1	A	93	G	N3-C4-N9	6.36	129.82	126.00
1	A	971	G	C8-N9-C4	6.36	108.94	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	819	A	C4-C5-C6	6.36	120.18	117.00
1	A	773	G	N9-C4-C5	-6.35	102.86	105.40
1	A	1528	U	C5-C4-O4	-6.35	122.09	125.90
1	A	653	A	N9-C4-C5	6.35	108.34	105.80
1	A	723	U	C5-C6-N1	6.35	125.87	122.70
1	A	819	A	N1-C2-N3	6.35	132.47	129.30
1	A	825	G	C5-C6-O6	-6.35	124.79	128.60
1	A	909	A	C8-N9-C4	-6.35	103.26	105.80
1	A	777	A	C5-C6-N6	-6.34	118.62	123.70
1	A	839	U	C2-N1-C1'	6.34	125.31	117.70
1	A	941	G	C4-C5-N7	6.34	113.34	110.80
1	A	281	G	N1-C6-O6	6.34	123.71	119.90
1	A	1336	C	C2-N3-C4	6.34	123.07	119.90
1	A	567	G	C4-C5-N7	-6.34	108.26	110.80
1	A	864	A	N1-C6-N6	-6.33	114.80	118.60
1	A	112	G	N3-C4-N9	-6.33	122.20	126.00
1	A	618	C	C6-N1-C2	6.33	122.83	120.30
1	A	176	C	C6-N1-C2	6.33	122.83	120.30
1	A	774	G	C6-C5-N7	-6.33	126.60	130.40
1	A	752	G	C5-C6-O6	6.33	132.40	128.60
1	A	108	G	C8-N9-C4	-6.32	103.87	106.40
1	A	1339	A	C2-N3-C4	6.31	113.76	110.60
1	A	1077	G	C8-N9-C4	6.30	108.92	106.40
1	A	255	G	C4-C5-N7	6.30	113.32	110.80
1	A	975	A	C5-N7-C8	-6.30	100.75	103.90
1	A	481	G	C8-N9-C1'	-6.30	118.81	127.00
1	A	713	G	C6-C5-N7	-6.30	126.62	130.40
1	A	875	C	C2-N3-C4	-6.29	116.75	119.90
1	A	726	C	C2-N3-C4	-6.29	116.76	119.90
1	A	558	G	C5-N7-C8	-6.29	101.16	104.30
1	A	881	G	C6-C5-N7	-6.29	126.63	130.40
1	A	1370	G	N3-C4-N9	6.28	129.77	126.00
1	A	703	G	C4-C5-C6	6.28	122.57	118.80
1	A	10	A	C2-N3-C4	-6.28	107.46	110.60
1	A	522	C	C2-N1-C1'	-6.28	111.89	118.80
1	A	310	G	N1-C6-O6	6.28	123.67	119.90
1	A	828	A	C5-C6-N6	-6.28	118.68	123.70
1	A	1455	G	C4-C5-N7	6.28	113.31	110.80
1	A	897	C	C5-C6-N1	-6.27	117.86	121.00
1	A	946	A	C6-N1-C2	-6.27	114.84	118.60
1	A	396	G	N3-C4-C5	-6.27	125.47	128.60
1	A	929	G	C8-N9-C4	6.27	108.91	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	389	A	N1-C2-N3	6.27	132.43	129.30
1	A	600	C	C5-C6-N1	-6.27	117.87	121.00
1	A	306	G	C5-C6-N1	-6.26	108.37	111.50
1	A	899	C	C6-N1-C2	-6.26	117.80	120.30
1	A	541	G	N3-C2-N2	-6.26	115.52	119.90
1	A	890	G	N1-C6-O6	-6.26	116.14	119.90
1	A	1134	G	C8-N9-C4	-6.26	103.90	106.40
1	A	180	U	C5-C4-O4	-6.25	122.15	125.90
1	A	302	G	N3-C4-N9	6.25	129.75	126.00
1	A	1136	U	C6-N1-C2	-6.25	117.25	121.00
1	A	625	G	N3-C4-C5	-6.24	125.48	128.60
1	A	17	U	C4-C5-C6	6.24	123.44	119.70
1	A	227	G	N3-C4-C5	6.23	131.72	128.60
1	A	881	G	C8-N9-C4	6.22	108.89	106.40
1	A	190(G)	G	N7-C8-N9	6.22	116.21	113.10
1	A	907	A	C2-N3-C4	-6.21	107.49	110.60
1	A	93	G	N7-C8-N9	6.21	116.21	113.10
1	A	190(F)	G	N7-C8-N9	-6.21	109.99	113.10
1	A	586	C	C4-C5-C6	6.21	120.50	117.40
1	A	815	A	C5-C6-N6	-6.21	118.73	123.70
1	A	283	C	C2-N1-C1'	6.21	125.63	118.80
1	A	641	U	C5-C6-N1	-6.21	119.59	122.70
1	A	129(A)	G	N7-C8-N9	6.21	116.20	113.10
1	A	733	A	C5-N7-C8	-6.21	100.80	103.90
1	A	66	G	C6-C5-N7	-6.20	126.68	130.40
1	A	1384	C	N3-C4-C5	-6.20	119.42	121.90
1	A	765	G	C5-C6-N1	-6.20	108.40	111.50
1	A	839	U	N3-C2-O2	-6.20	117.86	122.20
1	A	643	C	N3-C2-O2	-6.20	117.56	121.90
1	A	912	A	N3-C4-C5	6.20	131.14	126.80
1	A	279	A	C5-C6-N1	-6.19	114.61	117.70
1	A	703	G	C5-N7-C8	6.19	107.39	104.30
1	A	853	G	C4-N9-C1'	6.19	134.55	126.50
1	A	693	G	C5-C6-O6	-6.19	124.89	128.60
1	A	558	G	N7-C8-N9	6.19	116.19	113.10
1	A	1078	U	C6-N1-C2	-6.19	117.29	121.00
1	A	1303	C	N3-C4-C5	6.19	124.38	121.90
1	A	144	G	N3-C4-C5	6.18	131.69	128.60
1	A	907	A	N1-C6-N6	-6.18	114.89	118.60
1	A	1064	G	N3-C2-N2	-6.18	115.57	119.90
1	A	838	G	C8-N9-C4	6.18	108.87	106.40
1	A	1443	G	C8-N9-C4	6.18	108.87	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1447	G	C5-N7-C8	-6.18	101.21	104.30
1	A	913	A	P-O3'-C3'	6.18	127.12	119.70
1	A	309	G	N1-C2-N3	6.18	127.61	123.90
1	A	1347	G	C2-N3-C4	6.18	114.99	111.90
1	A	302	G	C6-N1-C2	-6.17	121.39	125.10
1	A	522	C	C5-C6-N1	-6.17	117.91	121.00
1	A	373	A	N7-C8-N9	6.17	116.89	113.80
1	A	912	A	C6-C5-N7	-6.17	127.98	132.30
1	A	1436	U	N3-C2-O2	-6.17	117.88	122.20
1	A	653	A	N1-C6-N6	-6.16	114.90	118.60
1	A	828	A	C4-C5-N7	6.16	113.78	110.70
1	A	975	A	C2-N3-C4	-6.16	107.52	110.60
1	A	1437	C	C5-C6-N1	6.16	124.08	121.00
1	A	256	U	C5-C4-O4	-6.16	122.20	125.90
1	A	570	G	C6-N1-C2	-6.16	121.41	125.10
1	A	125	U	C2-N3-C4	-6.16	123.31	127.00
1	A	145	G	C5-C6-N1	-6.16	108.42	111.50
1	A	375	U	C6-N1-C2	-6.15	117.31	121.00
1	A	587	G	C6-C5-N7	6.15	134.09	130.40
5	E	152	ARG	NE-CZ-NH2	-6.15	117.22	120.30
1	A	864	A	N9-C4-C5	6.15	108.26	105.80
1	A	1490	C	C5-C6-N1	6.14	124.07	121.00
1	A	913	A	N7-C8-N9	6.14	116.87	113.80
1	A	70	G	N3-C4-C5	6.14	131.67	128.60
1	A	773	G	C6-C5-N7	-6.14	126.72	130.40
1	A	227	G	N3-C2-N2	-6.14	115.60	119.90
1	A	815	A	N1-C6-N6	6.13	122.28	118.60
1	A	851	G	C6-C5-N7	-6.13	126.72	130.40
1	A	1225	A	C8-N9-C4	-6.13	103.35	105.80
1	A	1441	G	C8-N9-C4	-6.13	103.95	106.40
1	A	575	G	N1-C6-O6	6.12	123.57	119.90
1	A	78	G	N3-C2-N2	-6.12	115.62	119.90
1	A	483	C	C5-C4-N4	6.12	124.48	120.20
1	A	59	A	C5-C6-N6	-6.11	118.81	123.70
1	A	1469	G	N7-C8-N9	6.11	116.16	113.10
1	A	942	G	N1-C6-O6	6.11	123.57	119.90
1	A	1190	G	P-O3'-C3'	6.11	127.03	119.70
1	A	573	A	C6-C5-N7	-6.11	128.02	132.30
1	A	827	U	N3-C2-O2	-6.11	117.92	122.20
1	A	288	A	C5-C6-N1	-6.11	114.65	117.70
1	A	722	A	C5-C6-N6	-6.11	118.82	123.70
1	A	606	G	C2-N3-C4	6.10	114.95	111.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	635	G	C4-C5-C6	6.10	122.46	118.80
1	A	751	U	C6-N1-C2	6.10	124.66	121.00
1	A	1066	C	C5-C6-N1	-6.10	117.95	121.00
1	A	199	G	N1-C6-O6	6.10	123.56	119.90
1	A	720	C	C6-N1-C1'	-6.10	113.48	120.80
1	A	353	A	N7-C8-N9	-6.09	110.75	113.80
1	A	929	G	N3-C4-C5	6.09	131.65	128.60
1	A	746	A	N7-C8-N9	-6.09	110.75	113.80
1	A	1077	G	N3-C2-N2	6.09	124.16	119.90
1	A	1371	G	C8-N9-C4	-6.09	103.96	106.40
1	A	229	U	N1-C2-N3	6.09	118.55	114.90
1	A	293	G	C5-C6-N1	-6.09	108.46	111.50
1	A	23	C	C4-C5-C6	6.08	120.44	117.40
1	A	336	C	C5-C4-N4	-6.08	115.94	120.20
1	A	127	G	N1-C6-O6	6.08	123.55	119.90
1	A	482	A	C5-C6-N6	-6.08	118.83	123.70
1	A	769	G	C8-N9-C4	6.08	108.83	106.40
1	A	833	U	N3-C2-O2	-6.08	117.94	122.20
1	A	873	A	C5-N7-C8	-6.08	100.86	103.90
1	A	938	A	N9-C4-C5	6.08	108.23	105.80
1	A	199	G	C2-N3-C4	-6.08	108.86	111.90
1	A	922	G	C4-C5-N7	-6.08	108.37	110.80
1	A	928	G	N1-C6-O6	6.07	123.54	119.90
1	A	610	G	N1-C2-N3	6.07	127.54	123.90
1	A	922	G	C6-C5-N7	6.07	134.04	130.40
1	A	1132	C	C6-N1-C2	-6.07	117.87	120.30
1	A	1079	G	C8-N9-C4	-6.07	103.97	106.40
1	A	376	G	C5-N7-C8	6.06	107.33	104.30
1	A	829	G	C8-N9-C1'	-6.06	119.12	127.00
1	A	1196	U	N1-C2-O2	6.06	127.04	122.80
1	A	734	G	C8-N9-C4	6.06	108.82	106.40
1	A	309	G	N1-C2-N2	-6.05	110.75	116.20
1	A	1306	A	C6-C5-N7	-6.05	128.07	132.30
1	A	227	G	N1-C2-N2	6.04	121.64	116.20
1	A	232	G	N1-C2-N2	-6.04	110.76	116.20
1	A	1529	G	C8-N9-C1'	-6.04	119.14	127.00
1	A	302	G	N9-C4-C5	-6.04	102.98	105.40
1	A	723	U	C2-N1-C1'	6.04	124.95	117.70
1	A	825	G	N1-C6-O6	6.04	123.53	119.90
1	A	875	C	C4-C5-C6	6.04	120.42	117.40
1	A	578	C	C5-C6-N1	-6.04	117.98	121.00
1	A	1249	C	C5-C6-N1	6.04	124.02	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	66	G	N1-C6-O6	6.04	123.52	119.90
8	H	119	LEU	CA-CB-CG	6.04	129.18	115.30
1	A	190(F)	G	C6-C5-N7	6.03	134.02	130.40
1	A	503	C	N1-C2-O2	-6.03	115.28	118.90
1	A	1371	G	C2-N3-C4	6.03	114.92	111.90
1	A	266	G	N7-C8-N9	6.03	116.11	113.10
1	A	128	G	C5-N7-C8	-6.03	101.29	104.30
1	A	673	G	C8-N9-C4	-6.03	103.99	106.40
1	A	697	U	N3-C2-O2	-6.03	117.98	122.20
1	A	130	A	C8-N9-C1'	-6.02	116.86	127.70
1	A	481	G	C8-N9-C4	6.02	108.81	106.40
1	A	561	U	C5-C6-N1	-6.01	119.69	122.70
1	A	293	G	N3-C2-N2	-6.01	115.69	119.90
1	A	916	G	C6-N1-C2	-6.01	121.49	125.10
1	A	977	A	C2-N3-C4	6.01	113.61	110.60
1	A	1442	G	C6-C5-N7	-6.01	126.79	130.40
1	A	1338	G	C5-C6-O6	6.01	132.21	128.60
1	A	912	A	C6-N1-C2	6.01	122.20	118.60
1	A	1298	C	C6-N1-C2	6.01	122.70	120.30
1	A	129(A)	G	C4-C5-N7	6.00	113.20	110.80
1	A	907	A	C5-C6-N6	6.00	128.50	123.70
1	A	1077	G	N9-C4-C5	-6.00	103.00	105.40
1	A	1514	C	N1-C2-O2	-6.00	115.30	118.90
1	A	1469	G	C6-C5-N7	-5.99	126.80	130.40
1	A	302	G	C8-N9-C4	5.99	108.80	106.40
1	A	387	U	C5-C4-O4	5.99	129.50	125.90
1	A	587	G	C4-C5-N7	-5.99	108.41	110.80
1	A	735	C	C5-C6-N1	-5.99	118.01	121.00
1	A	137	C	N3-C4-C5	5.98	124.29	121.90
1	A	1197	G	C8-N9-C1'	-5.98	119.22	127.00
1	A	328	C	C2-N1-C1'	5.98	125.38	118.80
1	A	881	G	C2-N3-C4	-5.98	108.91	111.90
1	A	930	C	C2-N3-C4	-5.98	116.91	119.90
1	A	1334	G	C5-C6-O6	5.98	132.19	128.60
1	A	1268	A	N1-C6-N6	-5.97	115.02	118.60
1	A	734	G	N1-C6-O6	5.97	123.48	119.90
1	A	1060	C	C2-N1-C1'	5.97	125.37	118.80
1	A	827	U	C5-C6-N1	-5.97	119.71	122.70
1	A	1526	G	N3-C2-N2	-5.97	115.72	119.90
1	A	240	C	C5-C4-N4	-5.97	116.02	120.20
1	A	630	G	C5-C6-N1	-5.97	108.52	111.50
1	A	1434	A	N9-C4-C5	-5.97	103.41	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	900	A	C2-N3-C4	-5.96	107.62	110.60
1	A	933	G	C5-C6-O6	-5.96	125.02	128.60
1	A	296	U	C5-C6-N1	-5.96	119.72	122.70
1	A	328	C	N3-C4-C5	5.96	124.28	121.90
1	A	331	G	N3-C4-C5	5.96	131.58	128.60
1	A	1230	C	N1-C2-O2	5.96	122.48	118.90
1	A	1539	C	N1-C2-O2	5.96	122.48	118.90
1	A	1542	U	C6-N1-C2	5.96	124.58	121.00
1	A	1064	G	N1-C2-N3	5.96	127.48	123.90
1	A	144	G	C5-C6-O6	-5.96	125.02	128.60
1	A	552	U	C5-C6-N1	-5.96	119.72	122.70
1	A	900	A	N1-C2-N3	5.96	132.28	129.30
1	A	924	C	C6-N1-C2	-5.96	117.92	120.30
1	A	1469	G	C8-N9-C4	-5.96	104.02	106.40
1	A	877	C	C2-N3-C4	-5.96	116.92	119.90
1	A	121	C	C2-N3-C4	-5.95	116.92	119.90
1	A	1346	A	P-O3'-C3'	5.95	126.84	119.70
1	A	1117	G	C8-N9-C4	5.95	108.78	106.40
1	A	1310	G	C6-C5-N7	-5.95	126.83	130.40
1	A	753	A	N1-C6-N6	-5.94	115.03	118.60
1	A	28	G	C5-C6-O6	-5.94	125.04	128.60
1	A	180	U	C5-C6-N1	5.94	125.67	122.70
1	A	1308	U	N1-C2-O2	-5.94	118.64	122.80
1	A	128	G	N7-C8-N9	5.94	116.07	113.10
1	A	569	C	C4-C5-C6	5.94	120.37	117.40
1	A	815	A	C8-N9-C4	5.94	108.17	105.80
1	A	1197	G	C4-N9-C1'	5.94	134.22	126.50
1	A	1507	A	N3-C4-C5	5.94	130.96	126.80
1	A	1066	C	C2-N3-C4	-5.94	116.93	119.90
1	A	1370	G	C6-C5-N7	-5.94	126.84	130.40
1	A	897	C	C2-N3-C4	-5.93	116.93	119.90
1	A	39	G	N1-C6-O6	-5.93	116.34	119.90
1	A	607	A	N1-C6-N6	5.93	122.16	118.60
1	A	557	G	N1-C6-O6	5.92	123.45	119.90
1	A	7	G	C6-N1-C2	-5.92	121.55	125.10
1	A	7	G	N3-C4-N9	5.92	129.55	126.00
1	A	422	C	N1-C2-O2	5.92	122.45	118.90
1	A	1461	G	C8-N9-C4	5.92	108.77	106.40
1	A	1501	C	N1-C2-O2	5.92	122.45	118.90
1	A	803	G	N1-C2-N2	-5.92	110.88	116.20
1	A	831	U	N3-C4-O4	5.92	123.54	119.40
1	A	638	G	C2-N3-C4	-5.91	108.94	111.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	750	G	C6-N1-C2	-5.91	121.55	125.10
1	A	570	G	C4-N9-C1'	5.91	134.18	126.50
1	A	725	G	C5-C6-O6	-5.91	125.05	128.60
1	A	730	G	C8-N9-C1'	-5.91	119.32	127.00
1	A	310	G	N9-C4-C5	-5.91	103.04	105.40
1	A	600	C	C2-N3-C4	-5.90	116.95	119.90
1	A	98	U	C6-N1-C2	-5.90	117.46	121.00
1	A	58	C	C5-C6-N1	5.90	123.95	121.00
1	A	816	A	C2-N3-C4	-5.90	107.65	110.60
1	A	823	G	N1-C2-N3	5.90	127.44	123.90
1	A	1367	C	C5-C6-N1	5.90	123.95	121.00
1	A	376	G	C4-C5-N7	-5.89	108.44	110.80
1	A	1241	G	N3-C4-N9	-5.89	122.46	126.00
1	A	1411	C	C2-N1-C1'	5.89	125.28	118.80
1	A	191	G	C2-N3-C4	-5.89	108.95	111.90
1	A	725	G	C4-C5-N7	5.89	113.16	110.80
1	A	886	G	N9-C4-C5	-5.89	103.04	105.40
1	A	125	U	N3-C2-O2	-5.89	118.08	122.20
1	A	351	G	N1-C6-O6	5.89	123.43	119.90
1	A	580	U	N3-C4-C5	-5.89	111.07	114.60
1	A	828	A	C6-C5-N7	-5.88	128.18	132.30
1	A	1399	C	C6-N1-C2	5.88	122.65	120.30
1	A	16	A	N1-C6-N6	-5.88	115.07	118.60
1	A	929	G	N1-C6-O6	5.88	123.43	119.90
1	A	1094	G	N3-C4-N9	5.88	129.53	126.00
1	A	1361(A)	C	C6-N1-C2	-5.88	117.95	120.30
1	A	701	C	N1-C2-O2	5.88	122.42	118.90
1	A	836	G	C5-C6-N1	-5.87	108.56	111.50
1	A	945	G	C5-N7-C8	-5.87	101.36	104.30
1	A	930	C	C5-C6-N1	-5.87	118.06	121.00
1	A	788	U	C6-N1-C2	-5.87	117.48	121.00
1	A	389	A	C4-C5-C6	5.87	119.93	117.00
1	A	599	C	C6-N1-C2	5.87	122.65	120.30
1	A	1411	C	C6-N1-C2	-5.87	117.95	120.30
1	A	250	A	N1-C6-N6	5.86	122.12	118.60
1	A	380	G	N3-C4-N9	-5.86	122.48	126.00
1	A	407	G	C6-C5-N7	5.86	133.92	130.40
1	A	638	G	N9-C4-C5	-5.86	103.06	105.40
1	A	108	G	N3-C4-N9	-5.86	122.48	126.00
1	A	241	C	C6-N1-C2	5.86	122.64	120.30
1	A	734	G	C4-C5-N7	5.86	113.14	110.80
1	A	1416	G	C8-N9-C4	-5.86	104.06	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	749	C	C5-C6-N1	5.86	123.93	121.00
1	A	1525	G	C5-N7-C8	5.86	107.23	104.30
1	A	106	C	N3-C2-O2	-5.86	117.80	121.90
1	A	839	U	C6-N1-C1'	-5.86	113.00	121.20
1	A	877	C	C5-C6-N1	-5.86	118.07	121.00
1	A	930	C	C6-N1-C2	5.86	122.64	120.30
1	A	262	A	C5-C6-N6	5.85	128.38	123.70
1	A	812	C	C4-C5-C6	5.85	120.33	117.40
1	A	136	C	C6-N1-C2	-5.85	117.96	120.30
1	A	773	G	N1-C6-O6	5.85	123.41	119.90
1	A	812	C	C5-C4-N4	5.85	124.30	120.20
1	A	872	A	N9-C4-C5	-5.85	103.46	105.80
1	A	720	C	C2-N1-C1'	5.85	125.23	118.80
1	A	1442	G	N3-C4-N9	5.85	129.51	126.00
1	A	628	G	N3-C4-N9	5.85	129.51	126.00
1	A	1509	C	C5-C6-N1	-5.85	118.08	121.00
1	A	606	G	C8-N9-C4	-5.84	104.06	106.40
1	A	1087	G	C4-C5-N7	5.84	113.14	110.80
1	A	249	U	C6-N1-C2	-5.84	117.50	121.00
1	A	584	G	N1-C6-O6	5.84	123.40	119.90
1	A	11	G	C5-C6-O6	-5.84	125.10	128.60
1	A	227	G	N3-C4-N9	-5.83	122.50	126.00
1	A	1310	G	N9-C4-C5	-5.83	103.07	105.40
1	A	1525	G	C8-N9-C4	5.83	108.73	106.40
1	A	373	A	N1-C2-N3	5.83	132.22	129.30
1	A	1265	G	C8-N9-C4	-5.83	104.07	106.40
1	A	112	G	C5-C6-N1	-5.83	108.59	111.50
1	A	1067	A	P-O3'-C3'	5.83	126.69	119.70
1	A	622	A	N1-C2-N3	-5.83	126.39	129.30
1	A	125	U	N3-C4-O4	-5.82	115.32	119.40
1	A	862	C	C5-C4-N4	-5.82	116.12	120.20
1	A	1417	G	N7-C8-N9	5.82	116.01	113.10
1	A	1187	G	C6-C5-N7	-5.82	126.91	130.40
1	A	1494	G	C8-N9-C4	5.82	108.73	106.40
1	A	865	A	N1-C6-N6	-5.82	115.11	118.60
1	A	1416	G	N7-C8-N9	5.82	116.01	113.10
1	A	734	G	C6-C5-N7	-5.82	126.91	130.40
1	A	1530	G	C4-N9-C1'	-5.82	118.94	126.50
1	A	5	U	P-O3'-C3'	5.81	126.68	119.70
1	A	482	A	N7-C8-N9	5.81	116.71	113.80
1	A	562	C	N3-C2-O2	-5.81	117.83	121.90
1	A	890	G	C4-C5-N7	-5.81	108.47	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1468	A	N1-C6-N6	5.81	122.09	118.60
1	A	581	G	C2-N3-C4	-5.81	109.00	111.90
1	A	17	U	N3-C4-C5	-5.80	111.12	114.60
1	A	183	G	C6-C5-N7	-5.80	126.92	130.40
1	A	22	G	C2-N3-C4	-5.80	109.00	111.90
1	A	501	C	C6-N1-C2	-5.80	117.98	120.30
1	A	827	U	N1-C2-N3	5.80	118.38	114.90
1	A	753	A	C6-N1-C2	-5.80	115.12	118.60
1	A	854	G	C2-N3-C4	-5.80	109.00	111.90
1	A	1180	A	C8-N9-C4	-5.80	103.48	105.80
1	A	36	C	N3-C4-C5	-5.79	119.58	121.90
1	A	1421	G	C8-N9-C4	-5.79	104.08	106.40
1	A	860	A	C6-C5-N7	-5.79	128.25	132.30
1	A	877	C	N1-C2-N3	5.79	123.25	119.20
1	A	1419	G	C8-N9-C4	-5.79	104.08	106.40
1	A	786	G	C5-C6-O6	-5.79	125.13	128.60
1	A	437	U	C5-C6-N1	-5.79	119.81	122.70
1	A	876	G	C8-N9-C4	5.79	108.71	106.40
1	A	890	G	N9-C4-C5	5.79	107.71	105.40
1	A	1136	U	C5-C6-N1	5.79	125.59	122.70
1	A	1525	G	C4-C5-N7	-5.79	108.49	110.80
1	A	289	G	N1-C6-O6	5.78	123.37	119.90
1	A	1246	C	C6-N1-C2	-5.78	117.99	120.30
20	T	94	ALA	N-CA-C	-5.78	95.38	111.00
1	A	295	C	C5-C6-N1	-5.78	118.11	121.00
1	A	647	C	C6-N1-C2	5.78	122.61	120.30
1	A	803	G	C5-C6-N1	5.78	114.39	111.50
1	A	1300	G	N1-C6-O6	-5.78	116.43	119.90
1	A	1362	C	C6-N1-C2	-5.78	117.99	120.30
1	A	190(G)	G	N1-C6-O6	5.77	123.36	119.90
1	A	322	C	C6-N1-C2	5.77	122.61	120.30
1	A	933	G	C4-C5-N7	5.77	113.11	110.80
1	A	712	A	N1-C2-N3	5.77	132.18	129.30
1	A	931	C	C6-N1-C2	5.77	122.61	120.30
1	A	190(G)	G	C8-N9-C4	-5.77	104.09	106.40
1	A	666	G	C2-N3-C4	-5.77	109.02	111.90
1	A	722	A	C4-C5-C6	5.77	119.88	117.00
1	A	1348	U	C2-N1-C1'	5.77	124.62	117.70
1	A	190(F)	G	C8-N9-C4	5.76	108.71	106.40
1	A	255	G	C4-N9-C1'	5.76	134.00	126.50
1	A	812	C	N3-C2-O2	-5.76	117.86	121.90
1	A	876	G	N7-C8-N9	-5.76	110.22	113.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1078	U	C5-C4-O4	-5.76	122.44	125.90
1	A	1528	U	N3-C4-O4	5.76	123.44	119.40
1	A	1249	C	C6-N1-C2	-5.76	118.00	120.30
1	A	1310	G	C5-C6-O6	-5.76	125.14	128.60
1	A	1347	G	N3-C4-C5	-5.76	125.72	128.60
1	A	738	C	N3-C2-O2	-5.76	117.87	121.90
1	A	309	G	C5-C6-O6	-5.76	125.14	128.60
1	A	707	C	C5-C6-N1	-5.76	118.12	121.00
1	A	1158	C	N3-C4-C5	-5.76	119.60	121.90
1	A	198	G	C4-C5-N7	5.76	113.10	110.80
1	A	977	A	N1-C6-N6	-5.76	115.15	118.60
1	A	26	A	N1-C2-N3	5.75	132.18	129.30
1	A	728	A	C2-N3-C4	-5.75	107.72	110.60
1	A	1173	G	C8-N9-C4	5.75	108.70	106.40
1	A	1067	A	C2-N3-C4	5.75	113.47	110.60
1	A	1074	G	N7-C8-N9	5.75	115.97	113.10
1	A	408	A	N9-C4-C5	5.74	108.10	105.80
1	A	1067	A	N3-C4-C5	-5.74	122.78	126.80
1	A	574	A	C8-N9-C4	5.74	108.10	105.80
1	A	888	G	C4-C5-N7	-5.74	108.50	110.80
1	A	1349	A	N1-C6-N6	-5.74	115.16	118.60
1	A	76	C	C5-C4-N4	5.74	124.22	120.20
1	A	893	C	C6-N1-C2	-5.74	118.00	120.30
11	K	91	ARG	N-CA-C	-5.74	95.50	111.00
1	A	284	G	C6-C5-N7	-5.74	126.96	130.40
1	A	884	U	C6-N1-C2	5.74	124.44	121.00
1	A	926	G	N3-C4-C5	-5.74	125.73	128.60
1	A	190(E)	U	C5-C4-O4	-5.74	122.46	125.90
1	A	250	A	C5-C6-N1	-5.74	114.83	117.70
1	A	1191	A	C6-N1-C2	-5.74	115.16	118.60
1	A	1403	C	N3-C2-O2	5.74	125.92	121.90
1	A	106	C	C4-C5-C6	5.73	120.27	117.40
1	A	453	A	N7-C8-N9	-5.73	110.93	113.80
1	A	664	G	N1-C6-O6	-5.73	116.46	119.90
1	A	1203	C	C5-C6-N1	5.73	123.87	121.00
1	A	721	G	N3-C4-C5	-5.73	125.74	128.60
1	A	1346	A	N3-C4-C5	-5.73	122.79	126.80
1	A	29	G	C5-C6-N1	-5.72	108.64	111.50
1	A	269	C	C5-C6-N1	-5.72	118.14	121.00
1	A	912	A	C5-N7-C8	-5.72	101.04	103.90
17	Q	32	TYR	CB-CG-CD2	-5.72	117.57	121.00
1	A	853	G	C8-N9-C1'	-5.72	119.57	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1204	A	N1-C6-N6	-5.72	115.17	118.60
1	A	1074	G	N3-C4-C5	-5.72	125.74	128.60
1	A	253	U	N3-C2-O2	5.72	126.20	122.20
1	A	1479	C	C6-N1-C2	-5.72	118.01	120.30
1	A	765	G	N1-C6-O6	5.71	123.33	119.90
1	A	903	G	C6-N1-C2	-5.71	121.67	125.10
1	A	1401	G	C5-C6-N1	5.71	114.36	111.50
1	A	382	A	N9-C4-C5	5.71	108.08	105.80
1	A	564	C	N1-C2-N3	-5.71	115.20	119.20
1	A	1455	G	N3-C2-N2	-5.71	115.91	119.90
1	A	251	G	N7-C8-N9	5.70	115.95	113.10
1	A	29	G	N3-C4-C5	5.70	131.45	128.60
1	A	147	G	C6-C5-N7	-5.70	126.98	130.40
1	A	373	A	C5-N7-C8	-5.70	101.05	103.90
1	A	795	C	N3-C2-O2	5.70	125.89	121.90
1	A	941	G	C2-N3-C4	-5.70	109.05	111.90
1	A	1510	U	C4-C5-C6	5.70	123.12	119.70
1	A	665	A	N1-C2-N3	5.70	132.15	129.30
1	A	580	U	C5-C4-O4	5.69	129.32	125.90
1	A	571	U	N1-C2-O2	5.69	126.78	122.80
1	A	1347	G	C5-N7-C8	5.69	107.14	104.30
1	A	1487	G	C5-C6-O6	-5.69	125.19	128.60
1	A	818	G	N3-C2-N2	-5.69	115.92	119.90
1	A	651	C	N3-C2-O2	5.69	125.88	121.90
1	A	639	G	N1-C6-O6	-5.68	116.49	119.90
1	A	1087	G	C5-N7-C8	-5.68	101.46	104.30
12	L	85	ILE	CB-CA-C	-5.68	100.23	111.60
1	A	826	C	N3-C4-C5	5.68	124.17	121.90
1	A	908	A	N1-C2-N3	5.68	132.14	129.30
1	A	1258	G	C8-N9-C4	-5.68	104.13	106.40
1	A	144	G	C4-C5-N7	5.68	113.07	110.80
1	A	567	G	C5-C6-O6	5.68	132.01	128.60
1	A	637	G	C6-C5-N7	-5.67	127.00	130.40
1	A	1336	C	N3-C4-C5	-5.67	119.63	121.90
1	A	316	G	N1-C6-O6	5.67	123.30	119.90
1	A	881	G	C5-C6-O6	-5.67	125.20	128.60
1	A	553	A	N1-C2-N3	5.67	132.13	129.30
1	A	653	A	N1-C2-N3	5.67	132.13	129.30
1	A	190(D)	U	C5-C6-N1	-5.67	119.87	122.70
1	A	450	G	C5-C6-O6	5.67	132.00	128.60
1	A	897	C	N3-C2-O2	-5.67	117.93	121.90
9	I	107	ARG	NE-CZ-NH1	5.67	123.13	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	948	C	N3-C4-C5	5.66	124.17	121.90
1	A	380	G	C5-C6-N1	-5.66	108.67	111.50
1	A	762	C	N3-C4-N4	5.66	121.96	118.00
1	A	1434	A	C5-C6-N6	-5.66	119.17	123.70
1	A	575	G	C2-N3-C4	-5.66	109.07	111.90
1	A	1351	U	C6-N1-C2	-5.66	117.61	121.00
1	A	975	A	C6-C5-N7	-5.66	128.34	132.30
1	A	1077	G	C6-C5-N7	-5.66	127.01	130.40
1	A	10	A	C8-N9-C4	5.65	108.06	105.80
1	A	1098	C	C5-C6-N1	-5.65	118.17	121.00
1	A	310	G	C8-N9-C4	5.65	108.66	106.40
1	A	326	G	C8-N9-C1'	-5.65	119.66	127.00
1	A	564	C	C2-N3-C4	5.65	122.72	119.90
1	A	805	C	N1-C2-N3	-5.65	115.25	119.20
1	A	416	G	C6-C5-N7	-5.65	127.01	130.40
1	A	500	G	N1-C6-O6	5.65	123.29	119.90
1	A	1052	U	C6-N1-C2	-5.65	117.61	121.00
1	A	155	C	C6-N1-C2	-5.65	118.04	120.30
1	A	198	G	C6-C5-N7	-5.64	127.01	130.40
1	A	287	U	N1-C2-N3	5.64	118.29	114.90
1	A	373	A	C6-C5-N7	-5.64	128.35	132.30
1	A	21	G	N1-C6-O6	5.64	123.29	119.90
1	A	1240	U	C5-C4-O4	5.64	129.28	125.90
1	A	589	C	N3-C4-N4	-5.64	114.05	118.00
1	A	1374	A	C5-C6-N1	-5.64	114.88	117.70
1	A	400	C	N3-C4-C5	5.64	124.16	121.90
1	A	776	G	C2-N3-C4	-5.64	109.08	111.90
1	A	1064	G	N3-C4-N9	-5.64	122.62	126.00
5	E	41	VAL	CB-CA-C	-5.64	100.69	111.40
1	A	191	G	N3-C4-C5	5.63	131.42	128.60
1	A	482	A	C4-C5-C6	5.63	119.82	117.00
1	A	970	C	N1-C2-O2	5.63	122.28	118.90
1	A	558	G	N1-C6-O6	5.63	123.28	119.90
1	A	24	U	C5-C4-O4	-5.63	122.52	125.90
1	A	750	G	N3-C4-N9	5.63	129.38	126.00
1	A	1354	C	C5-C6-N1	5.63	123.82	121.00
1	A	231	G	N3-C4-N9	5.63	129.38	126.00
1	A	14	U	C6-N1-C2	-5.63	117.62	121.00
1	A	926	G	C8-N9-C4	-5.62	104.15	106.40
1	A	194	C	C6-N1-C2	-5.62	118.05	120.30
1	A	1374	A	N1-C2-N3	5.62	132.11	129.30
1	A	227	G	C8-N9-C1'	5.62	134.30	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	231	G	N9-C4-C5	-5.62	103.15	105.40
1	A	640	A	C8-N9-C4	-5.62	103.55	105.80
1	A	804	U	N1-C2-N3	5.62	118.27	114.90
1	A	9	G	C4-C5-N7	5.61	113.05	110.80
1	A	677	U	C5-C4-O4	5.61	129.26	125.90
1	A	108	G	N3-C2-N2	-5.61	115.98	119.90
1	A	190(B)	C	C5-C6-N1	5.61	123.80	121.00
1	A	277	C	C6-N1-C2	5.61	122.54	120.30
1	A	269	C	C4-C5-C6	5.60	120.20	117.40
1	A	1098	C	C6-N1-C2	5.60	122.54	120.30
1	A	1238	A	N1-C2-N3	5.59	132.10	129.30
1	A	1528	U	N3-C2-O2	5.59	126.11	122.20
1	A	930	C	N3-C4-N4	-5.59	114.09	118.00
1	A	1195	C	C2-N1-C1'	5.59	124.95	118.80
1	A	1411	C	N1-C2-O2	5.59	122.25	118.90
1	A	546	G	N3-C4-N9	5.59	129.35	126.00
1	A	70	G	N1-C6-O6	5.59	123.25	119.90
1	A	509	A	C3'-C2'-C1'	-5.59	97.03	101.50
1	A	1465	C	N1-C2-O2	5.58	122.25	118.90
1	A	635	G	C8-N9-C1'	-5.58	119.74	127.00
1	A	190(G)	G	C6-C5-N7	-5.58	127.05	130.40
1	A	253	U	N1-C2-O2	-5.58	118.89	122.80
1	A	350	G	C8-N9-C4	-5.58	104.17	106.40
1	A	396	G	N1-C2-N2	-5.58	111.18	116.20
1	A	546	G	C4-N9-C1'	5.58	133.75	126.50
1	A	1103	C	C6-N1-C2	5.58	122.53	120.30
1	A	616	G	C5-C6-N1	-5.57	108.71	111.50
1	A	971	G	N7-C8-N9	-5.57	110.31	113.10
1	A	316	G	C6-C5-N7	-5.57	127.06	130.40
1	A	741	G	N1-C6-O6	5.57	123.24	119.90
1	A	830	G	C8-N9-C4	-5.57	104.17	106.40
1	A	1304	G	C8-N9-C4	-5.57	104.17	106.40
1	A	552	U	C2-N3-C4	-5.57	123.66	127.00
1	A	567	G	N1-C2-N3	5.57	127.24	123.90
1	A	387	U	N3-C2-O2	-5.57	118.30	122.20
1	A	1031	G	C8-N9-C4	-5.57	104.17	106.40
1	A	1481	U	C6-N1-C2	-5.57	117.66	121.00
1	A	923	A	N1-C6-N6	5.57	121.94	118.60
1	A	941	G	C6-C5-N7	-5.56	127.06	130.40
1	A	23	C	C2-N3-C4	-5.56	117.12	119.90
1	A	350	G	N7-C8-N9	5.56	115.88	113.10
1	A	1374	A	C5-C6-N6	5.56	128.15	123.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	22	G	N1-C2-N2	-5.56	111.20	116.20
1	A	521	G	N1-C6-O6	-5.56	116.57	119.90
1	A	59	A	C5-C6-N1	5.55	120.48	117.70
1	A	238	G	C8-N9-C4	-5.55	104.18	106.40
1	A	733	A	N7-C8-N9	5.55	116.58	113.80
1	A	644	G	C5-C6-N1	5.55	114.28	111.50
1	A	481	G	N9-C4-C5	-5.55	103.18	105.40
1	A	1371	G	N1-C2-N3	-5.55	120.57	123.90
1	A	201	C	N1-C2-O2	5.55	122.23	118.90
1	A	837	G	C8-N9-C4	5.55	108.62	106.40
1	A	436	C	N1-C2-O2	5.54	122.23	118.90
1	A	1251	A	C8-N9-C4	-5.54	103.58	105.80
1	A	433	C	C6-N1-C2	-5.54	118.08	120.30
1	A	1477	C	C5-C6-N1	5.54	123.77	121.00
1	A	632	A	C5-N7-C8	-5.54	101.13	103.90
1	A	1468	A	C4-C5-N7	5.54	113.47	110.70
1	A	309	G	C6-N1-C2	-5.54	121.78	125.10
1	A	355	C	C6-N1-C2	-5.54	118.09	120.30
1	A	380	G	C4-C5-N7	-5.54	108.59	110.80
1	A	804	U	C6-N1-C1'	5.54	128.95	121.20
1	A	1521	G	C5-N7-C8	5.54	107.07	104.30
1	A	299	G	C5-C6-O6	-5.53	125.28	128.60
1	A	1082	G	C2-N3-C4	-5.53	109.13	111.90
1	A	19	C	N3-C4-C5	5.53	124.11	121.90
1	A	125	U	C6-N1-C2	5.53	124.32	121.00
1	A	131	C	N3-C2-O2	-5.53	118.03	121.90
1	A	882	C	C6-N1-C2	-5.53	118.09	120.30
1	A	963	G	C8-N9-C4	-5.53	104.19	106.40
1	A	576	G	C5-N7-C8	5.53	107.06	104.30
1	A	597	G	C6-N1-C2	-5.53	121.78	125.10
1	A	882	C	C4-C5-C6	5.53	120.16	117.40
1	A	573	A	N7-C8-N9	5.53	116.56	113.80
1	A	1390	U	C5-C4-O4	5.53	129.22	125.90
1	A	376	G	N7-C8-N9	-5.52	110.34	113.10
1	A	299	G	C8-N9-C4	5.52	108.61	106.40
1	A	723	U	C6-N1-C2	-5.52	117.69	121.00
1	A	120	A	C2-N3-C4	-5.52	107.84	110.60
1	A	1241	G	N3-C4-C5	5.52	131.36	128.60
1	A	762	C	C5-C4-N4	-5.52	116.34	120.20
1	A	19	C	C6-N1-C2	5.51	122.51	120.30
1	A	610	G	C6-C5-N7	-5.51	127.09	130.40
1	A	618	C	N1-C2-N3	-5.51	115.34	119.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1062	U	C6-N1-C2	-5.51	117.69	121.00
1	A	1147	C	N3-C4-C5	-5.51	119.69	121.90
1	A	1377	A	C5-C6-N1	5.51	120.45	117.70
1	A	1469	G	N1-C6-O6	5.51	123.20	119.90
1	A	396	G	N3-C4-N9	5.50	129.30	126.00
1	A	75	G	C4-N9-C1'	-5.50	119.34	126.50
1	A	795	C	C6-N1-C2	5.50	122.50	120.30
1	A	749	C	C5-C4-N4	-5.50	116.35	120.20
1	A	17	U	N1-C2-O2	-5.50	118.95	122.80
1	A	734	G	N3-C4-N9	5.50	129.30	126.00
1	A	403	C	C5-C6-N1	-5.49	118.25	121.00
1	A	1425	U	C5-C4-O4	5.49	129.20	125.90
1	A	61	G	N1-C6-O6	5.49	123.19	119.90
1	A	229	U	C6-N1-C2	-5.49	117.70	121.00
1	A	250	A	C2-N3-C4	-5.49	107.85	110.60
1	A	606	G	C4-C5-N7	-5.49	108.60	110.80
1	A	1370	G	C8-N9-C1'	-5.49	119.86	127.00
1	A	392	G	N1-C6-O6	5.49	123.19	119.90
1	A	74	C	C6-N1-C2	-5.49	118.11	120.30
1	A	852	G	C6-C5-N7	-5.49	127.11	130.40
1	A	723	U	N1-C2-O2	5.48	126.64	122.80
1	A	260	G	C5-C6-O6	-5.48	125.31	128.60
1	A	884	U	C4-C5-C6	5.48	122.98	119.70
1	A	392	G	C4-N9-C1'	5.47	133.62	126.50
1	A	474	G	N1-C6-O6	5.47	123.19	119.90
1	A	488	C	N1-C2-O2	5.47	122.19	118.90
1	A	194	C	C2-N1-C1'	5.47	124.82	118.80
1	A	481	G	N3-C2-N2	5.47	123.73	119.90
1	A	865	A	C4-C5-C6	-5.47	114.27	117.00
8	H	10	LEU	CB-CG-CD2	-5.47	101.71	111.00
1	A	734	G	C8-N9-C1'	-5.46	119.90	127.00
1	A	1375	A	C5-N7-C8	5.46	106.63	103.90
1	A	562	C	C4-C5-C6	5.46	120.13	117.40
1	A	636	U	C4-C5-C6	5.46	122.97	119.70
1	A	1296	C	C6-N1-C2	5.46	122.48	120.30
1	A	701	C	C5-C6-N1	-5.46	118.27	121.00
1	A	913	A	N9-C4-C5	5.46	107.98	105.80
1	A	260	G	C6-C5-N7	-5.46	127.13	130.40
1	A	275	G	N9-C4-C5	-5.46	103.22	105.40
1	A	326	G	C4-C5-C6	5.46	122.07	118.80
1	A	869	G	N3-C4-N9	-5.45	122.73	126.00
1	A	15	G	C5-C6-O6	-5.45	125.33	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	238	G	C5-C6-N1	-5.45	108.78	111.50
1	A	641	U	N1-C2-N3	5.45	118.17	114.90
1	A	600	C	N3-C4-N4	-5.45	114.19	118.00
1	A	75	G	N3-C4-C5	5.45	131.32	128.60
1	A	353	A	C5-N7-C8	5.45	106.62	103.90
1	A	627	G	C4-C5-N7	5.44	112.98	110.80
1	A	637	G	N1-C6-O6	5.44	123.16	119.90
1	A	697	U	C5-C4-O4	5.44	129.16	125.90
1	A	912	A	C4-C5-N7	5.44	113.42	110.70
1	A	919	A	C5-N7-C8	-5.44	101.18	103.90
1	A	505	G	C8-N9-C4	5.44	108.58	106.40
1	A	1233	G	C6-C5-N7	-5.44	127.14	130.40
1	A	1250	A	N9-C4-C5	5.44	107.97	105.80
1	A	937	A	C8-N9-C4	-5.44	103.62	105.80
1	A	157	G	N1-C6-O6	5.43	123.16	119.90
1	A	518	C	C6-N1-C1'	-5.43	114.28	120.80
1	A	627	G	C5-C6-O6	-5.43	125.34	128.60
1	A	771	G	N1-C2-N3	5.43	127.16	123.90
1	A	786	G	C6-C5-N7	-5.43	127.14	130.40
1	A	806	C	N3-C4-C5	5.43	124.07	121.90
1	A	1501	C	N3-C4-C5	5.43	124.07	121.90
1	A	509	A	C5-C6-N1	5.43	120.42	117.70
1	A	571	U	N1-C2-N3	-5.43	111.64	114.90
1	A	809	G	N7-C8-N9	5.43	115.82	113.10
1	A	400	C	N3-C4-N4	-5.43	114.20	118.00
1	A	511	C	C5-C6-N1	-5.42	118.29	121.00
1	A	570	G	C5-C6-N1	5.42	114.21	111.50
1	A	1417	G	N1-C6-O6	-5.42	116.65	119.90
1	A	720	C	N3-C4-C5	5.42	124.07	121.90
1	A	727	G	C5-C6-O6	5.42	131.85	128.60
1	A	292	G	C4-C5-N7	5.42	112.97	110.80
1	A	416	G	C5-C6-O6	-5.42	125.35	128.60
1	A	1064	G	N3-C4-C5	5.42	131.31	128.60
1	A	1474	G	C6-C5-N7	-5.42	127.15	130.40
1	A	47	C	C2-N1-C1'	5.42	124.76	118.80
1	A	397	A	C8-N9-C4	-5.42	103.63	105.80
1	A	532	A	C8-N9-C4	-5.42	103.63	105.80
1	A	777	A	C8-N9-C4	-5.42	103.63	105.80
1	A	815	A	N7-C8-N9	-5.42	111.09	113.80
1	A	1234	C	N3-C4-N4	5.42	121.79	118.00
1	A	1485	U	C6-N1-C2	-5.42	117.75	121.00
1	A	293	G	C5-C6-O6	-5.42	125.35	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	305	G	C2-N3-C4	-5.42	109.19	111.90
1	A	1080	A	C4-C5-N7	-5.42	107.99	110.70
1	A	450	G	C4-C5-N7	-5.41	108.63	110.80
1	A	639	G	N1-C2-N3	5.41	127.15	123.90
1	A	715	A	C5-C6-N6	5.41	128.03	123.70
1	A	1117	G	N3-C4-C5	5.41	131.31	128.60
1	A	928	G	C4-C5-N7	5.41	112.96	110.80
15	O	54	ARG	NE-CZ-NH1	5.41	123.00	120.30
1	A	75	G	C8-N9-C1'	5.41	134.03	127.00
1	A	76	C	C2-N1-C1'	-5.41	112.85	118.80
1	A	1079	G	C5-C6-O6	5.41	131.84	128.60
1	A	276	G	N7-C8-N9	-5.41	110.40	113.10
1	A	518	C	N3-C2-O2	-5.41	118.12	121.90
1	A	891	U	C2-N1-C1'	5.41	124.19	117.70
1	A	115	G	C5-C6-O6	-5.40	125.36	128.60
1	A	157	G	C5-C6-N1	-5.40	108.80	111.50
1	A	198	G	C5-C6-O6	-5.40	125.36	128.60
1	A	1072	G	N3-C2-N2	-5.40	116.12	119.90
1	A	256	U	C5-C6-N1	5.40	125.40	122.70
1	A	981	U	C5-C6-N1	5.40	125.40	122.70
1	A	478	A	N1-C6-N6	5.40	121.84	118.60
1	A	1065	U	N1-C2-O2	-5.40	119.02	122.80
1	A	240	C	N3-C4-C5	-5.40	119.74	121.90
1	A	331	G	C8-N9-C4	5.40	108.56	106.40
1	A	859	A	N3-C4-N9	5.40	131.72	127.40
1	A	121	C	N1-C2-O2	-5.39	115.66	118.90
1	A	891	U	C6-N1-C1'	-5.39	113.65	121.20
1	A	656	C	C2-N3-C4	-5.39	117.20	119.90
1	A	252	U	C2-N3-C4	-5.39	123.77	127.00
1	A	787	A	N1-C6-N6	-5.39	115.37	118.60
1	A	399	G	C2-N3-C4	-5.39	109.20	111.90
1	A	869	G	N3-C4-C5	5.39	131.29	128.60
1	A	481	G	N7-C8-N9	-5.38	110.41	113.10
1	A	329	A	N1-C6-N6	5.38	121.83	118.60
1	A	392	G	C4-C5-C6	5.38	122.03	118.80
1	A	407	G	C4-N9-C1'	-5.38	119.50	126.50
1	A	802	A	N9-C4-C5	-5.38	103.65	105.80
1	A	176	C	N3-C2-O2	5.38	125.67	121.90
1	A	447	G	C4-C5-N7	-5.38	108.65	110.80
1	A	833	U	C5-C4-O4	5.38	129.13	125.90
2	B	102	LEU	CA-CB-CG	-5.38	102.93	115.30
1	A	291	C	C2-N3-C4	-5.38	117.21	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	937	A	N1-C6-N6	-5.38	115.37	118.60
1	A	866	C	C5-C6-N1	-5.37	118.31	121.00
1	A	917	G	N3-C2-N2	-5.37	116.14	119.90
1	A	144	G	C5-N7-C8	-5.37	101.61	104.30
1	A	227	G	N1-C6-O6	5.37	123.12	119.90
1	A	773	G	C4-C5-N7	5.37	112.95	110.80
1	A	778	G	C2-N3-C4	-5.37	109.21	111.90
1	A	755	G	C5-C6-O6	-5.37	125.38	128.60
1	A	747	C	N3-C4-C5	5.37	124.05	121.90
1	A	779	C	C4-C5-C6	5.37	120.08	117.40
1	A	1344	C	C6-N1-C2	5.37	122.45	120.30
1	A	929	G	N9-C4-C5	-5.37	103.25	105.40
1	A	18	C	C4-C5-C6	5.37	120.08	117.40
1	A	366	C	C6-N1-C1'	-5.36	114.36	120.80
1	A	530	G	C4-N9-C1'	5.36	133.47	126.50
1	A	815	A	C6-N1-C2	-5.36	115.38	118.60
1	A	1327	C	N3-C4-N4	-5.36	114.25	118.00
1	A	601	C	C6-N1-C2	5.36	122.44	120.30
1	A	603	U	C4-C5-C6	5.36	122.92	119.70
1	A	565	U	N3-C2-O2	5.36	125.95	122.20
1	A	761	G	N3-C2-N2	5.36	123.65	119.90
1	A	1341	U	C2-N1-C1'	-5.36	111.27	117.70
1	A	93	G	C4-N9-C1'	5.36	133.47	126.50
1	A	145	G	C4-C5-N7	-5.36	108.66	110.80
1	A	848	C	N3-C4-C5	5.36	124.04	121.90
1	A	105	G	N1-C2-N2	-5.35	111.38	116.20
1	A	595	G	C5-C6-O6	5.35	131.81	128.60
1	A	637	G	C8-N9-C1'	-5.35	120.04	127.00
1	A	880	C	N3-C4-N4	5.35	121.75	118.00
1	A	1528	U	C6-N1-C2	5.35	124.21	121.00
1	A	888	G	C5-C6-N1	-5.35	108.83	111.50
1	A	1447	G	C4-C5-N7	5.35	112.94	110.80
1	A	129(A)	G	N1-C6-O6	5.35	123.11	119.90
1	A	753	A	C8-N9-C4	-5.35	103.66	105.80
1	A	1481	U	C5-C4-O4	5.35	129.11	125.90
1	A	1452	C	C2-N1-C1'	5.34	124.68	118.80
1	A	1501	C	N3-C2-O2	-5.34	118.16	121.90
1	A	15	G	C6-C5-N7	-5.34	127.19	130.40
1	A	249	U	N3-C4-C5	-5.34	111.40	114.60
1	A	260	G	C5-N7-C8	-5.34	101.63	104.30
1	A	796	C	C2-N3-C4	-5.34	117.23	119.90
1	A	120	A	N1-C2-N3	5.34	131.97	129.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	653	A	C8-N9-C4	-5.33	103.67	105.80
1	A	1361(A)	C	C4-C5-C6	-5.33	114.73	117.40
1	A	337	C	C4-C5-C6	5.33	120.06	117.40
1	A	354	G	N3-C4-C5	-5.33	125.94	128.60
1	A	719	C	C2-N1-C1'	-5.33	112.94	118.80
1	A	266	G	C8-N9-C4	-5.33	104.27	106.40
1	A	731	G	C5-N7-C8	-5.33	101.64	104.30
1	A	1094	G	N3-C2-N2	5.33	123.63	119.90
11	K	117	ASN	N-CA-C	5.33	125.38	111.00
1	A	456	C	N3-C2-O2	-5.33	118.17	121.90
1	A	859	A	C5-C6-N6	-5.33	119.44	123.70
1	A	1479	C	C5-C6-N1	5.33	123.66	121.00
1	A	1339	A	N1-C6-N6	-5.32	115.41	118.60
1	A	722	A	N3-C4-C5	5.32	130.53	126.80
1	A	373	A	N1-C6-N6	5.32	121.79	118.60
1	A	715	A	N3-C4-N9	-5.32	123.14	127.40
3	C	47	LEU	CA-CB-CG	5.32	127.53	115.30
1	A	364	A	C6-N1-C2	-5.32	115.41	118.60
1	A	874	G	C6-N1-C2	-5.32	121.91	125.10
1	A	719	C	C5-C4-N4	5.31	123.92	120.20
1	A	726	C	N3-C4-C5	5.31	124.03	121.90
1	A	771	G	C5-N7-C8	-5.31	101.64	104.30
1	A	1287	A	N9-C4-C5	5.31	107.92	105.80
1	A	699	C	N3-C2-O2	5.31	125.62	121.90
1	A	1058	G	C4-N9-C1'	5.31	133.40	126.50
1	A	511	C	N3-C4-C5	5.31	124.02	121.90
1	A	1455	G	C5-C6-N1	-5.31	108.85	111.50
1	A	238	G	N3-C4-N9	-5.30	122.82	126.00
1	A	353	A	C8-N9-C4	5.30	107.92	105.80
1	A	979	C	C6-N1-C2	-5.30	118.18	120.30
1	A	120	A	C8-N9-C4	5.30	107.92	105.80
1	A	1334	G	N1-C6-O6	-5.30	116.72	119.90
1	A	1405	G	C6-C5-N7	5.30	133.58	130.40
1	A	89	C	C6-N1-C2	-5.30	118.18	120.30
1	A	147	G	C8-N9-C4	5.30	108.52	106.40
1	A	1081	G	C8-N9-C4	-5.30	104.28	106.40
1	A	558	G	C6-C5-N7	-5.29	127.22	130.40
1	A	820	U	C2-N1-C1'	-5.29	111.35	117.70
1	A	888	G	N9-C4-C5	5.29	107.52	105.40
1	A	912	A	N9-C4-C5	-5.29	103.68	105.80
17	Q	5	VAL	CB-CA-C	-5.29	101.34	111.40
1	A	95	U	C6-N1-C1'	5.29	128.61	121.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	639	G	N1-C2-N2	-5.29	111.44	116.20
1	A	1080	A	C5-C6-N6	5.29	127.93	123.70
1	A	908	A	C2-N3-C4	-5.29	107.96	110.60
1	A	22	G	C4-N9-C1'	5.28	133.37	126.50
1	A	1414	U	N3-C2-O2	-5.28	118.50	122.20
1	A	187	C	N3-C4-N4	5.28	121.70	118.00
1	A	252	U	C6-N1-C2	5.28	124.17	121.00
1	A	853	G	N1-C2-N3	5.28	127.07	123.90
1	A	1077	G	N3-C4-N9	5.28	129.17	126.00
1	A	293	G	N3-C4-C5	5.28	131.24	128.60
1	A	543	C	N1-C2-O2	-5.28	115.73	118.90
1	A	725	G	C5-N7-C8	-5.28	101.66	104.30
1	A	850	U	C6-N1-C2	-5.28	117.83	121.00
1	A	1158	C	N3-C2-O2	-5.28	118.21	121.90
1	A	1162	C	N1-C2-O2	5.27	122.06	118.90
1	A	1191	A	N1-C6-N6	-5.27	115.44	118.60
1	A	542	G	N3-C4-N9	5.27	129.16	126.00
1	A	545	C	C6-N1-C2	-5.27	118.19	120.30
1	A	1542	U	N1-C2-N3	-5.27	111.74	114.90
1	A	395	C	N3-C4-C5	-5.27	119.79	121.90
1	A	326	G	C6-N1-C2	-5.27	121.94	125.10
1	A	730	G	C4-C5-C6	5.27	121.96	118.80
1	A	1249	C	C2-N1-C1'	5.27	124.59	118.80
1	A	1332	A	C4-C5-N7	-5.27	108.07	110.70
1	A	1061	G	C8-N9-C4	-5.26	104.29	106.40
1	A	111	G	N3-C4-N9	-5.26	122.84	126.00
1	A	1350	A	N9-C4-C5	5.26	107.90	105.80
1	A	190(G)	G	C5-C6-N1	-5.26	108.87	111.50
1	A	274	A	C6-N1-C2	-5.26	115.44	118.60
1	A	694	A	C5-C6-N1	-5.26	115.07	117.70
4	D	97	LEU	CB-CG-CD2	-5.26	102.06	111.00
1	A	318	G	N3-C2-N2	-5.26	116.22	119.90
1	A	140	A	N1-C6-N6	5.25	121.75	118.60
1	A	232	G	C5-N7-C8	-5.25	101.67	104.30
1	A	1529	G	C5-C6-N1	-5.25	108.87	111.50
1	A	266	G	C5-C6-N1	-5.25	108.87	111.50
1	A	1250	A	C5-C6-N6	5.25	127.90	123.70
1	A	1507	A	N1-C6-N6	5.25	121.75	118.60
1	A	575	G	N9-C4-C5	-5.25	103.30	105.40
1	A	231	G	C8-N9-C1'	-5.25	120.18	127.00
1	A	860	A	N7-C8-N9	5.25	116.42	113.80
1	A	1306	A	N7-C8-N9	5.25	116.42	113.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	136	C	N3-C2-O2	-5.25	118.23	121.90
1	A	454	C	C5-C6-N1	5.25	123.62	121.00
1	A	758	G	C4-C5-N7	5.25	112.90	110.80
1	A	364	A	C4-C5-C6	5.24	119.62	117.00
1	A	853	G	C2-N3-C4	-5.24	109.28	111.90
1	A	1333	A	N1-C6-N6	5.24	121.75	118.60
1	A	439	A	N7-C8-N9	5.24	116.42	113.80
1	A	1416	G	N3-C4-C5	-5.24	125.98	128.60
1	A	26	A	C2-N3-C4	-5.24	107.98	110.60
1	A	326	G	C5-C6-O6	5.24	131.74	128.60
1	A	733	A	N3-C4-N9	-5.24	123.21	127.40
1	A	454	C	C6-N1-C2	-5.24	118.20	120.30
1	A	570	G	C8-N9-C1'	-5.24	120.19	127.00
1	A	918	A	C2-N3-C4	-5.24	107.98	110.60
1	A	1478	C	C6-N1-C2	-5.24	118.20	120.30
1	A	76	C	C5-C6-N1	-5.24	118.38	121.00
1	A	130	A	C4-N9-C1'	5.24	135.72	126.30
1	A	570	G	N3-C4-N9	5.24	129.14	126.00
1	A	693	G	C4-C5-N7	5.24	112.89	110.80
12	L	10	LEU	CB-CG-CD2	5.24	119.90	111.00
1	A	1390	U	N1-C2-N3	5.23	118.04	114.90
1	A	485	G	P-O3'-C3'	5.23	125.98	119.70
1	A	706	A	C8-N9-C4	5.23	107.89	105.80
1	A	62	U	N3-C2-O2	-5.23	118.54	122.20
1	A	138	G	N1-C6-O6	5.22	123.03	119.90
1	A	397	A	N7-C8-N9	5.22	116.41	113.80
1	A	634	C	N1-C2-N3	5.22	122.86	119.20
1	A	694	A	C2-N3-C4	-5.22	107.99	110.60
1	A	1068	G	C6-C5-N7	-5.22	127.27	130.40
1	A	1104	G	N1-C6-O6	5.22	123.03	119.90
5	E	10	MET	CG-SD-CE	5.22	108.56	100.20
1	A	131	C	C6-N1-C1'	-5.22	114.53	120.80
1	A	819	A	C6-C5-N7	-5.22	128.65	132.30
1	A	1248	A	C2-N3-C4	5.22	113.21	110.60
1	A	1455	G	C2-N3-C4	-5.22	109.29	111.90
1	A	726	C	C5-C4-N4	-5.22	116.55	120.20
1	A	1238	A	C5-N7-C8	5.22	106.51	103.90
1	A	1209	C	N3-C2-O2	-5.22	118.25	121.90
1	A	1132	C	C5-C6-N1	5.22	123.61	121.00
1	A	1262	C	C6-N1-C2	-5.22	118.21	120.30
1	A	1513	A	N1-C2-N3	5.22	131.91	129.30
1	A	173	U	N3-C2-O2	-5.22	118.55	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	610	G	C4-C5-C6	5.22	121.93	118.80
1	A	817	C	C6-N1-C1'	-5.22	114.54	120.80
1	A	836	G	C8-N9-C1'	-5.22	120.22	127.00
1	A	970	C	N3-C2-O2	-5.22	118.25	121.90
1	A	853	G	N1-C2-N2	-5.21	111.51	116.20
1	A	1375	A	C4-C5-N7	-5.21	108.09	110.70
1	A	285	G	N3-C4-N9	-5.21	122.87	126.00
1	A	651	C	N1-C2-N3	-5.21	115.55	119.20
1	A	171	A	C6-N1-C2	-5.21	115.48	118.60
1	A	753	A	C5-C6-N6	5.20	127.86	123.70
1	A	1530	G	N1-C6-O6	5.20	123.02	119.90
17	Q	63	ARG	NE-CZ-NH1	-5.20	117.70	120.30
1	A	300	A	N9-C4-C5	5.20	107.88	105.80
1	A	730	G	C4-N9-C1'	5.20	133.25	126.50
1	A	1528	U	C6-N1-C1'	-5.20	113.93	121.20
1	A	635	G	C2-N3-C4	-5.19	109.30	111.90
1	A	402	G	N9-C4-C5	5.19	107.48	105.40
1	A	833	U	N1-C2-N3	5.19	118.02	114.90
1	A	259	G	N1-C2-N3	5.19	127.01	123.90
1	A	318	G	N1-C6-O6	5.19	123.01	119.90
1	A	462	G	N3-C4-N9	5.19	129.11	126.00
1	A	564	C	C5-C6-N1	5.19	123.59	121.00
5	E	12	LEU	CA-CB-CG	5.19	127.23	115.30
1	A	1237	C	C4-C5-C6	5.19	119.99	117.40
1	A	144	G	C6-N1-C2	5.18	128.21	125.10
1	A	334	C	N1-C2-O2	5.18	122.01	118.90
1	A	642	A	N9-C4-C5	5.18	107.87	105.80
1	A	1230	C	N3-C2-O2	-5.18	118.27	121.90
1	A	917	G	C6-N1-C2	-5.18	121.99	125.10
1	A	1155	G	C8-N9-C4	-5.18	104.33	106.40
1	A	1345	U	N1-C2-O2	-5.18	119.18	122.80
1	A	1395	C	C5-C6-N1	-5.18	118.41	121.00
1	A	260	G	C8-N9-C4	-5.17	104.33	106.40
1	A	576	G	C4-C5-N7	-5.17	108.73	110.80
1	A	725	G	N3-C4-C5	5.17	131.19	128.60
1	A	738	C	N1-C2-O2	5.17	122.00	118.90
1	A	1378	C	C6-N1-C2	-5.17	118.23	120.30
1	A	368	U	C5-C4-O4	5.17	129.00	125.90
1	A	1328	C	C5-C4-N4	-5.17	116.58	120.20
1	A	727	G	N1-C6-O6	-5.17	116.80	119.90
1	A	59	A	C4-C5-N7	5.17	113.28	110.70
1	A	147	G	C5-C6-O6	-5.17	125.50	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1347	G	N9-C4-C5	-5.17	103.33	105.40
1	A	637	G	N3-C4-N9	5.17	129.10	126.00
1	A	351	G	C4-C5-N7	5.16	112.87	110.80
1	A	935	A	C8-N9-C4	5.16	107.86	105.80
1	A	946	A	N1-C2-N3	5.16	131.88	129.30
1	A	1087	G	C2-N3-C4	-5.16	109.32	111.90
1	A	1233	G	C5-C6-O6	-5.16	125.50	128.60
1	A	755	G	C6-N1-C2	-5.16	122.01	125.10
1	A	75	G	N3-C2-N2	-5.16	116.29	119.90
1	A	1158	C	N1-C2-O2	5.15	121.99	118.90
1	A	1345	U	C5-C6-N1	-5.15	120.12	122.70
1	A	114	U	C5-C6-N1	-5.15	120.12	122.70
1	A	190(F)	G	C8-N9-C1'	5.15	133.69	127.00
1	A	259	G	N7-C8-N9	5.15	115.67	113.10
1	A	1454	G	C4-C5-N7	5.15	112.86	110.80
1	A	295	C	N3-C4-C5	5.15	123.96	121.90
1	A	1086	U	N3-C2-O2	5.15	125.80	122.20
17	Q	74	LEU	CB-CG-CD1	-5.15	102.25	111.00
1	A	389	A	C8-N9-C4	-5.15	103.74	105.80
1	A	1052	U	N3-C4-O4	5.14	123.00	119.40
1	A	257	G	C6-C5-N7	-5.14	127.31	130.40
1	A	328	C	P-O3'-C3'	5.14	125.87	119.70
1	A	1452	C	C2-N3-C4	5.14	122.47	119.90
1	A	1510	U	N1-C2-N3	5.14	117.98	114.90
1	A	1529	G	N7-C8-N9	5.14	115.67	113.10
4	D	26	CYS	CA-CB-SG	5.14	123.26	114.00
1	A	383	A	N1-C2-N3	-5.14	126.73	129.30
1	A	788	U	N1-C2-O2	5.14	126.40	122.80
1	A	337	C	N3-C4-C5	-5.14	119.84	121.90
1	A	785	G	C2-N3-C4	-5.14	109.33	111.90
1	A	905	U	N3-C2-O2	-5.14	118.60	122.20
1	A	909	A	N7-C8-N9	5.14	116.37	113.80
1	A	243	A	N1-C2-N3	5.14	131.87	129.30
1	A	835	U	N3-C2-O2	-5.14	118.60	122.20
1	A	829	G	C4-N9-C1'	5.13	133.17	126.50
1	A	1442	G	N3-C4-C5	-5.13	126.03	128.60
15	O	69	TYR	CB-CA-C	-5.13	100.13	110.40
1	A	267	C	C6-N1-C2	-5.13	118.25	120.30
1	A	1242	C	C6-N1-C2	-5.13	118.25	120.30
1	A	221	C	N3-C4-C5	5.13	123.95	121.90
1	A	645	C	N3-C4-C5	-5.13	119.85	121.90
1	A	609	A	C5-C6-N1	-5.12	115.14	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	326	G	N1-C2-N2	-5.12	111.59	116.20
1	A	1191	A	C5-C6-N1	5.12	120.26	117.70
1	A	1268	A	N3-C4-C5	-5.12	123.21	126.80
1	A	668	G	C8-N9-C4	5.12	108.45	106.40
1	A	123	C	N3-C4-C5	-5.12	119.85	121.90
1	A	976	G	C4-C5-N7	-5.12	108.75	110.80
1	A	637	G	C4-N9-C1'	5.12	133.15	126.50
1	A	791	G	C4-C5-C6	5.12	121.87	118.80
18	R	50	ILE	CB-CA-C	-5.12	101.37	111.60
1	A	96	G	N3-C4-C5	5.12	131.16	128.60
1	A	322	C	N3-C2-O2	5.12	125.48	121.90
1	A	759	A	C8-N9-C4	-5.11	103.75	105.80
1	A	1507	A	C8-N9-C4	5.11	107.85	105.80
1	A	319	G	N1-C6-O6	5.11	122.97	119.90
1	A	611	A	N1-C6-N6	-5.11	115.53	118.60
1	A	1108	G	N3-C4-C5	-5.11	126.05	128.60
1	A	783	C	C6-N1-C2	5.11	122.34	120.30
1	A	860	A	C8-N9-C4	-5.11	103.76	105.80
1	A	1403	C	N1-C2-O2	-5.11	115.83	118.90
1	A	264	U	N3-C2-O2	-5.11	118.62	122.20
1	A	289	G	C8-N9-C4	-5.11	104.36	106.40
1	A	1345	U	C2-N3-C4	-5.11	123.94	127.00
1	A	11	G	C6-N1-C2	-5.10	122.04	125.10
1	A	79	G	C8-N9-C4	-5.10	104.36	106.40
1	A	709	G	N3-C4-C5	5.10	131.15	128.60
1	A	1377	A	C2-N3-C4	5.10	113.15	110.60
8	H	134	ILE	CB-CA-C	-5.10	101.41	111.60
1	A	799	G	N9-C4-C5	-5.10	103.36	105.40
1	A	1468	A	C5-C6-N6	-5.10	119.62	123.70
1	A	251	G	C4-C5-N7	5.09	112.84	110.80
1	A	396	G	N1-C2-N3	5.09	126.95	123.90
1	A	1248	A	N1-C2-N3	-5.09	126.76	129.30
1	A	1341	U	N3-C2-O2	5.09	125.76	122.20
1	A	1061	G	N7-C8-N9	5.08	115.64	113.10
1	A	1187	G	N1-C6-O6	5.08	122.95	119.90
1	A	187	C	N3-C4-C5	-5.08	119.87	121.90
1	A	331	G	C4-C5-C6	5.08	121.85	118.80
1	A	881	G	N9-C4-C5	-5.08	103.37	105.40
1	A	791	G	C8-N9-C4	-5.08	104.37	106.40
1	A	164	U	C5-C4-O4	5.07	128.94	125.90
1	A	896	C	C6-N1-C2	-5.07	118.27	120.30
1	A	1236	A	N1-C2-N3	-5.07	126.76	129.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1398	A	C4-C5-N7	-5.07	108.16	110.70
16	P	51	VAL	N-CA-C	5.07	124.70	111.00
1	A	1233	G	C4-C5-N7	5.07	112.83	110.80
1	A	291	C	C4-C5-C6	5.07	119.94	117.40
1	A	1186	G	N3-C4-N9	-5.07	122.96	126.00
1	A	1192	C	N3-C4-N4	-5.07	114.45	118.00
1	A	19	C	C5-C6-N1	-5.07	118.47	121.00
1	A	428	G	P-O3'-C3'	5.07	125.78	119.70
1	A	1102	A	C8-N9-C4	5.07	107.83	105.80
1	A	1108	G	C6-C5-N7	-5.07	127.36	130.40
1	A	565	U	C5-C4-O4	-5.06	122.86	125.90
1	A	800	G	N3-C4-N9	5.06	129.04	126.00
1	A	1399	C	N3-C2-O2	5.06	125.44	121.90
1	A	577	G	C5-C6-O6	-5.06	125.56	128.60
1	A	1487	G	N1-C6-O6	5.06	122.94	119.90
1	A	129(A)	G	C5-C6-O6	-5.06	125.56	128.60
1	A	947	G	C2-N3-C4	-5.06	109.37	111.90
1	A	196	A	N1-C6-N6	-5.06	115.56	118.60
1	A	1228	C	C6-N1-C2	-5.06	118.28	120.30
1	A	1300	G	C6-C5-N7	5.06	133.44	130.40
1	A	630	G	N1-C6-O6	5.06	122.94	119.90
1	A	1190	G	C8-N9-C4	5.06	108.42	106.40
1	A	672	U	C6-N1-C2	5.05	124.03	121.00
1	A	944	G	C8-N9-C4	-5.05	104.38	106.40
1	A	1199	U	N3-C2-O2	5.05	125.74	122.20
1	A	364	A	N1-C2-N3	5.05	131.83	129.30
1	A	1076	C	C2-N1-C1'	5.05	124.36	118.80
1	A	76	C	C4-C5-C6	5.05	119.93	117.40
1	A	138	G	N7-C8-N9	-5.05	110.57	113.10
1	A	837	G	N9-C4-C5	-5.05	103.38	105.40
1	A	1160	G	N3-C4-N9	5.05	129.03	126.00
1	A	1485	U	C5-C4-O4	5.05	128.93	125.90
1	A	306	G	N3-C2-N2	-5.05	116.37	119.90
1	A	606	G	C4-N9-C1'	5.05	133.06	126.50
1	A	1308	U	C5-C4-O4	-5.05	122.87	125.90
1	A	77	G	N3-C2-N2	5.04	123.43	119.90
1	A	668	G	C8-N9-C1'	-5.04	120.44	127.00
1	A	6	G	C5-C6-O6	-5.04	125.57	128.60
1	A	1350	A	N7-C8-N9	5.04	116.32	113.80
1	A	31	G	C5-C6-O6	-5.04	125.58	128.60
1	A	1160	G	C5-C6-O6	-5.04	125.58	128.60
1	A	107	G	N9-C4-C5	-5.04	103.39	105.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	897	C	N3-C4-C5	5.04	123.91	121.90
1	A	905	U	C5-C6-N1	5.04	125.22	122.70
1	A	58	C	N3-C4-C5	5.03	123.91	121.90
1	A	190(G)	G	C4-N9-C1'	5.03	133.04	126.50
1	A	661	G	N3-C4-C5	5.03	131.11	128.60
1	A	928	G	C6-C5-N7	-5.03	127.38	130.40
1	A	1344	C	N3-C4-N4	-5.03	114.48	118.00
1	A	22	G	C4-C5-C6	5.03	121.82	118.80
1	A	1246	C	C5-C6-N1	5.03	123.51	121.00
1	A	1355	G	C8-N9-C4	-5.03	104.39	106.40
1	A	115	G	N3-C2-N2	-5.02	116.38	119.90
1	A	1498	UR3	P-O3'-C3'	5.02	125.73	119.70
1	A	380	G	C5-C6-O6	5.02	131.61	128.60
1	A	947	G	C8-N9-C4	5.02	108.41	106.40
1	A	1139	G	C4-C5-N7	-5.02	108.79	110.80
1	A	884	U	C5-C4-O4	5.02	128.91	125.90
1	A	101	A	N1-C6-N6	-5.02	115.59	118.60
1	A	7	G	C5-C6-N1	5.02	114.01	111.50
1	A	201	C	N3-C2-O2	-5.02	118.39	121.90
1	A	1287	A	C4-N9-C1'	5.02	135.33	126.30
1	A	1226	C	C6-N1-C2	-5.01	118.29	120.30
1	A	297	G	N3-C4-C5	-5.01	126.09	128.60
1	A	754	C	N3-C2-O2	-5.01	118.39	121.90
1	A	300	A	C8-N9-C4	-5.01	103.80	105.80
1	A	230	G	C8-N9-C1'	-5.01	120.49	127.00
1	A	474	G	C4-C5-N7	5.01	112.80	110.80
1	A	570	G	N1-C6-O6	-5.01	116.90	119.90
1	A	831	U	C4-C5-C6	5.01	122.70	119.70
1	A	80	G	N7-C8-N9	5.00	115.60	113.10
1	A	255	G	C8-N9-C1'	-5.00	120.49	127.00
1	A	9	G	N9-C4-C5	-5.00	103.40	105.40
1	A	511	C	N3-C4-N4	-5.00	114.50	118.00
1	A	773	G	C2-N3-C4	-5.00	109.40	111.90
1	A	830	G	N9-C4-C5	5.00	107.40	105.40

There are no chirality outliers.

All (11) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	77	ALA	Peptide
3	C	166	GLU	Peptide
3	C	179	ARG	Peptide

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Mol	Chain	Res	Type	Group
5	E	20	GLN	Peptide
8	H	27	PRO	Peptide
8	H	90	GLY	Peptide
10	J	35	SER	Peptide
10	J	87	THR	Peptide
12	L	25	PRO	Peptide
13	M	117	VAL	Peptide
20	T	93	GLU	Peptide

## 5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	32646	0	16503	873	1
2	B	1900	0	1951	105	0
3	C	1612	0	1677	109	0
4	D	1703	0	1763	68	0
5	E	1146	0	1207	71	0
6	F	843	0	857	46	0
7	G	1257	0	1296	60	0
8	H	1116	0	1177	71	0
9	I	1010	0	1037	78	0
10	J	792	0	835	59	0
11	K	864	0	881	41	0
12	L	972	0	1058	59	0
13	M	937	0	995	52	0
14	N	492	0	529	47	0
15	O	729	0	768	41	0
16	P	700	0	720	41	0
17	Q	823	0	893	58	0
18	R	574	0	644	37	0
19	S	647	0	673	35	0
20	T	763	0	861	37	0
21	U	208	0	221	14	0
22	A	268	0	0	0	0
22	B	2	0	0	0	0
22	C	2	0	0	0	0
22	D	4	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
22	E	1	0	0	0	0
22	F	1	0	0	0	0
22	I	1	0	0	0	0
22	J	1	0	0	0	0
22	L	1	0	0	0	0
22	M	2	0	0	0	0
22	P	2	0	0	0	0
22	Q	2	0	0	0	0
22	T	2	0	0	0	0
23	D	1	0	0	0	0
23	N	1	0	0	0	0
24	A	391	0	0	6	0
24	B	1	0	0	2	0
24	D	3	0	0	0	0
24	E	4	0	0	0	0
24	G	2	0	0	1	0
24	J	2	0	0	2	0
24	K	1	0	0	0	0
24	M	3	0	0	1	0
24	N	4	0	0	1	0
24	P	4	0	0	3	0
24	T	1	0	0	1	0
All	All	52441	0	36546	1809	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 21.

All (1809) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:967:5MC:H4'	9:I:128:ARG:HG3	1.33	1.06
1:A:75:G:N2	1:A:76:C:N3	2.07	1.02
1:A:949:A:N6	24:A:2225:HOH:O	1.90	1.02
1:A:1152:A:H5''	10:J:13:HIS:HB2	1.44	1.00
20:T:50:GLU:HA	20:T:100:ILE:HG13	1.47	0.95
1:A:1532:U:H2'	1:A:1533:C:H3'	1.50	0.92
1:A:1073:U:OP2	5:E:57:LYS:NZ	2.01	0.92
1:A:184:G:H2'	1:A:185:A:H8	1.35	0.91
1:A:1347:G:H3'	9:I:108:VAL:O	1.70	0.91
3:C:182:ILE:HG12	3:C:203:PHE:HB2	1.51	0.91
13:M:23:TYR:HE2	13:M:70:LEU:HD22	1.36	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1125:U:OP2	1:A:1145:C:N4	2.04	0.89
1:A:130:A:OP2	1:A:190(E):U:O2'	1.89	0.89
8:H:4:ASP:OD2	8:H:85:ARG:NH1	2.06	0.89
3:C:138:VAL:HG13	3:C:149:ALA:HB3	1.54	0.88
10:J:55:LYS:HB2	10:J:57:LYS:HE3	1.56	0.88
16:P:21:VAL:HG12	16:P:33:ILE:HD12	1.56	0.87
1:A:1415:G:H2'	1:A:1416:G:H8	1.38	0.87
1:A:1417:G:O2'	1:A:1483:A:N6	2.06	0.87
1:A:1426:C:H42	1:A:1474:G:H1	1.23	0.86
20:T:100:ILE:HG22	20:T:102:GLY:H	1.39	0.86
1:A:1368:G:H5''	9:I:112:LYS:HB3	1.56	0.86
3:C:137:ALA:HA	3:C:140:ARG:HD2	1.55	0.86
1:A:1415:G:H2'	1:A:1416:G:C8	2.09	0.85
1:A:446:G:H1	1:A:488:C:H42	1.21	0.84
11:K:121:PRO:HG2	11:K:126:ARG:HG2	1.60	0.84
10:J:12:ASP:HB3	10:J:15:THR:HB	1.60	0.84
1:A:517:G:N1	1:A:533:A:OP2	2.09	0.84
8:H:41:ARG:NH1	8:H:123:GLU:OE2	2.11	0.84
12:L:24:VAL:HG13	12:L:98:TYR:HE2	1.42	0.83
1:A:91:C:O2'	1:A:92:C:OP1	1.95	0.83
1:A:1515[B]:C:H42	1:A:1520[B]:G:H1	1.27	0.82
3:C:150:LYS:HB2	3:C:173:VAL:HG21	1.60	0.81
1:A:664:G:H22	1:A:741:G:H1	1.27	0.81
1:A:101:A:H2'	1:A:102:G:H8	1.46	0.81
1:A:501:C:H2'	1:A:502:G:C8	2.15	0.81
19:S:41:VAL:HG22	19:S:44:MET:HG3	1.61	0.81
1:A:1195:C:H3'	1:A:1196:U:H5''	1.60	0.81
1:A:686:U:HO2'	1:A:687:A:H8	1.26	0.80
1:A:1436:U:H2'	1:A:1437:C:H6	1.46	0.80
1:A:1149:C:O2'	1:A:1280:A:N1	2.15	0.80
1:A:279:A:H5'	1:A:279:A:H8	1.47	0.80
1:A:279:A:OP2	17:Q:95:TYR:OH	1.98	0.80
7:G:56:GLN:HG2	7:G:60:LYS:HD3	1.64	0.80
1:A:1518[B]:MA6:H102	1:A:1519[B]:MA6:H103	1.65	0.79
8:H:6:ILE:HB	8:H:85:ARG:HH12	1.45	0.79
15:O:39:LEU:HD13	15:O:56:LEU:HB2	1.64	0.79
1:A:103:C:OP1	20:T:17:ARG:NH1	2.15	0.79
1:A:951:G:OP2	13:M:102:ARG:NH2	2.16	0.79
1:A:1009:G:H1	1:A:1020:U:H3	1.30	0.79
4:D:57:ARG:HG2	4:D:202:LEU:HD12	1.65	0.79
1:A:184:G:H2'	1:A:185:A:C8	2.17	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:140:ASP:HA	7:G:143:ARG:HB2	1.65	0.79
1:A:384:G:H2'	1:A:385:C:C6	2.18	0.78
3:C:85:ARG:HD2	3:C:88:ARG:HH11	1.48	0.78
1:A:1426:C:N3	1:A:1474:G:N2	2.29	0.78
20:T:45:GLN:HG3	20:T:91:LEU:HD11	1.65	0.77
1:A:1198:G:H2'	1:A:1199:U:C6	2.20	0.77
1:A:1314:C:H5	19:S:6:LYS:HD3	1.49	0.77
4:D:64:LEU:HD23	4:D:198:VAL:HG21	1.65	0.77
1:A:505:G:O6	1:A:526:C:N4	2.17	0.77
1:A:1266:G:N2	1:A:1269:A:OP2	2.15	0.77
13:M:23:TYR:CE2	13:M:70:LEU:HD22	2.20	0.77
1:A:1250:A:O2'	1:A:1370:G:O2'	2.02	0.77
10:J:53:PRO:HA	14:N:41:ARG:HH22	1.51	0.76
1:A:79:G:N1	1:A:80:G:N7	2.34	0.76
3:C:130:VAL:HG11	3:C:153:VAL:HG21	1.65	0.76
12:L:34:ARG:O	12:L:61:THR:OG1	2.04	0.76
16:P:3:LYS:HG3	16:P:24:ALA:HB2	1.67	0.76
3:C:43:LEU:HA	3:C:47:LEU:HD13	1.68	0.75
8:H:85:ARG:NE	8:H:87:SER:O	2.17	0.75
1:A:1404:5MC:H1'	1:A:1499:A:C2	2.21	0.75
1:A:1415:G:N2	1:A:1486:G:N3	2.34	0.75
3:C:180:ALA:HB1	3:C:203:PHE:HE1	1.51	0.75
16:P:80:PHE:N	24:P:204:HOH:O	2.10	0.75
1:A:36:C:H5''	12:L:123:LYS:HD3	1.69	0.75
10:J:47:PHE:HB3	14:N:34:TYR:HE2	1.49	0.75
1:A:115:G:O2'	1:A:116:A:OP2	2.05	0.75
1:A:953:G:H5'	1:A:965:A:H61	1.52	0.75
12:L:24:VAL:HG13	12:L:98:TYR:CE2	2.21	0.75
14:N:24:CYS:HB2	14:N:39:LEU:HA	1.67	0.74
1:A:1373:G:H5''	7:G:36:LYS:HE2	1.70	0.74
1:A:1497:G:H2'	1:A:1498:UR3:H5'	1.70	0.74
1:A:1249:C:O2'	9:I:73:GLN:NE2	2.19	0.74
1:A:584:G:OP2	17:Q:87:LYS:NZ	2.21	0.73
1:A:455:C:H2'	1:A:456:C:H6	1.53	0.73
14:N:40:CYS:O	14:N:44:LEU:N	2.17	0.73
1:A:1435:G:H2'	1:A:1436:U:C6	2.24	0.73
1:A:1310:G:OP1	13:M:77:ASN:ND2	2.22	0.73
8:H:6:ILE:HB	8:H:85:ARG:NH1	2.04	0.73
13:M:22:ILE:HG22	13:M:23:TYR:H	1.52	0.73
13:M:96:LEU:O	13:M:110:ARG:NH1	2.22	0.73
1:A:1241:G:H2'	1:A:1242:C:H6	1.54	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:13:ARG:NH1	4:D:38:TYR:O	2.22	0.72
8:H:114:THR:HB	8:H:116:LYS:H	1.54	0.72
1:A:81:U:H2'	1:A:83:U:OP2	1.89	0.72
1:A:1003:G:N2	1:A:1039:C:N3	2.35	0.72
1:A:1242:C:H42	1:A:1295:G:H1	1.37	0.72
1:A:1145:C:O2'	1:A:1146:A:O5'	2.07	0.72
1:A:1188:A:O3'	14:N:58:LYS:NZ	2.22	0.72
1:A:1316:G:N2	1:A:1319:A:OP2	2.22	0.72
1:A:992:U:H3	1:A:1044:A:N6	1.87	0.72
1:A:1399:C:H4'	1:A:1400:5MC:H5''	1.71	0.72
1:A:1192:C:O2	5:E:25:ARG:NH2	2.22	0.72
1:A:9:G:OP2	5:E:121:LYS:NZ	2.16	0.72
1:A:113:G:H1'	1:A:354:G:H5'	1.70	0.72
1:A:1113:C:H42	1:A:1187:G:H1	1.37	0.72
1:A:1347:G:HO2'	1:A:1348:U:H6	1.38	0.72
1:A:836:G:OP1	18:R:61:LYS:NZ	2.23	0.71
9:I:5:TYR:HD1	9:I:6:GLY:N	1.88	0.71
20:T:44:ALA:HB1	20:T:91:LEU:HB3	1.72	0.71
13:M:91:ARG:HB3	13:M:98:VAL:HG22	1.72	0.71
19:S:12:ASP:OD1	19:S:35:SER:OG	2.08	0.71
2:B:16:HIS:CD2	2:B:204:ASN:H	2.08	0.71
10:J:61:GLU:HA	24:J:302:HOH:O	1.91	0.71
12:L:27:LEU:HG	12:L:28:LYS:H	1.56	0.71
1:A:1498:UR3:O2'	1:A:1499:A:OP2	2.06	0.71
13:M:10:PRO:HB2	13:M:18:ALA:HB1	1.73	0.71
1:A:1201:A:H4'	1:A:1202:G:C5'	2.21	0.71
11:K:57:THR:HG23	11:K:60:ALA:H	1.53	0.71
1:A:1300:G:O2'	1:A:1301:U:OP2	2.09	0.70
10:J:39:PRO:HA	10:J:70:ARG:HG3	1.72	0.70
17:Q:75:ARG:HH22	17:Q:77:VAL:HG13	1.57	0.70
1:A:216:G:H2'	1:A:217:C:C6	2.27	0.70
13:M:108:ARG:NH2	13:M:112:GLY:O	2.23	0.70
16:P:57:ARG:NE	16:P:79:VAL:O	2.19	0.70
10:J:79:ARG:HH12	10:J:82:ILE:HB	1.56	0.70
7:G:10:ARG:HH11	7:G:10:ARG:HB2	1.57	0.70
3:C:129:ALA:HB3	3:C:132:ARG:HG3	1.73	0.70
1:A:1078:U:H5''	1:A:1079:G:OP2	1.92	0.69
7:G:113:GLU:O	7:G:119:ARG:HD3	1.92	0.69
3:C:134:ILE:HG23	3:C:151:VAL:HB	1.75	0.69
1:A:103:C:P	20:T:17:ARG:HH12	2.16	0.69
21:U:5:ASP:HB3	21:U:8:THR:OG1	1.92	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:298:A:N6	24:A:2047:HOH:O	2.09	0.69
1:A:411:A:OP2	4:D:25:ARG:NH2	2.25	0.69
5:E:137:GLU:O	5:E:141:GLN:HG3	1.93	0.69
20:T:33:ILE:HG12	20:T:62:LEU:HD13	1.75	0.69
21:U:6:ARG:HD3	21:U:15:ARG:HH12	1.57	0.69
1:A:255:G:H1	1:A:271:C:H42	1.38	0.69
1:A:975:A:H5'	1:A:975:A:H8	1.57	0.69
7:G:69:VAL:HG21	7:G:104:LEU:HD21	1.75	0.69
17:Q:4:LYS:HG2	17:Q:6:LEU:HD21	1.75	0.69
17:Q:66:SER:O	17:Q:70:ARG:NH1	2.26	0.69
21:U:10:ARG:HA	21:U:13:ILE:HD12	1.74	0.69
1:A:537:G:H5''	12:L:113:ARG:HH21	1.57	0.68
1:A:1144:G:H22	1:A:1146:A:H62	1.40	0.68
7:G:47:CYS:HB3	7:G:58:PRO:HG2	1.76	0.68
8:H:10:LEU:HD22	8:H:83:ILE:HD12	1.74	0.68
8:H:20:TYR:CE1	8:H:76:PRO:HG2	2.29	0.68
20:T:60:GLU:HA	20:T:63:ILE:HD12	1.74	0.68
1:A:359:U:H2'	1:A:360:A:C8	2.29	0.68
8:H:87:SER:HA	8:H:93:VAL:HG13	1.76	0.68
13:M:20:THR:HG22	24:M:303:HOH:O	1.94	0.68
2:B:18:GLY:HA3	2:B:41:ILE:HA	1.74	0.68
1:A:198:G:H1	1:A:219:C:H42	1.42	0.68
8:H:25:ASP:OD1	8:H:25:ASP:N	2.26	0.68
1:A:972:C:H4'	10:J:57:LYS:HG2	1.76	0.68
13:M:54:VAL:HG22	13:M:57:ARG:HH12	1.59	0.68
1:A:501:C:H2'	1:A:502:G:H8	1.59	0.67
1:A:1053:G:N2	1:A:1058:G:O6	2.26	0.67
1:A:130:A:O2'	1:A:131:C:H5''	1.94	0.67
5:E:142:LEU:O	5:E:143:ARG:HD3	1.95	0.67
1:A:559:A:OP1	5:E:126:ARG:NH2	2.26	0.67
2:B:139:LYS:NZ	2:B:139:LYS:O	2.27	0.67
4:D:187:ARG:HD2	4:D:188:LEU:H	1.56	0.67
1:A:1510:U:H2'	1:A:1511:G:C8	2.30	0.67
4:D:80:GLU:O	4:D:84:LYS:HG2	1.95	0.67
8:H:20:TYR:HE1	8:H:76:PRO:HG2	1.58	0.67
14:N:24:CYS:HB2	14:N:39:LEU:HD23	1.77	0.67
1:A:781:A:H2'	1:A:782:A:H5'	1.76	0.67
5:E:84:PHE:HB2	5:E:134:ALA:HB2	1.76	0.67
4:D:13:ARG:NH2	4:D:40:PRO:HA	2.10	0.67
1:A:966:M2G:HM22	1:A:967:5MC:H1'	1.77	0.66
6:F:2:ARG:O	6:F:66:GLU:HA	1.95	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:50:LEU:HB3	9:I:55:ALA:HB3	1.76	0.66
1:A:1338:G:H2'	1:A:1339:A:C8	2.30	0.66
1:A:1418:A:H61	1:A:1482:G:H1'	1.60	0.66
1:A:1195:C:H3'	1:A:1196:U:C5'	2.24	0.66
2:B:97:TRP:HH2	2:B:176:GLU:CD	1.99	0.66
10:J:62:HIS:ND1	24:J:301:HOH:O	2.27	0.66
1:A:1250:A:HO2'	1:A:1370:G:HO2'	1.41	0.66
5:E:126:ARG:HG3	5:E:126:ARG:HH11	1.59	0.66
4:D:19:LEU:HD21	4:D:67:ILE:HG12	1.78	0.66
20:T:92:LEU:O	20:T:96:GLY:HA2	1.95	0.66
19:S:53:ASN:HB2	19:S:55:LYS:H	1.60	0.66
1:A:838:G:H1	1:A:848:C:H42	1.44	0.66
7:G:20:ASP:OD2	7:G:22:LEU:N	2.27	0.66
1:A:216:G:H2'	1:A:217:C:H6	1.61	0.65
1:A:1118:C:H1'	1:A:1179:A:C4	2.31	0.65
1:A:1497:G:C2'	1:A:1498:UR3:H5'	2.26	0.65
1:A:1139:G:O2'	1:A:1140:C:OP2	2.13	0.65
14:N:23:ARG:NH1	14:N:28:GLY:O	2.29	0.65
1:A:279:A:H5'	1:A:279:A:C8	2.31	0.65
1:A:1007:C:H1'	1:A:1023:G:H1	1.60	0.65
2:B:158:LEU:H	2:B:158:LEU:HD12	1.60	0.65
7:G:15:ASP:OD2	7:G:44:TYR:OH	2.13	0.65
9:I:19:LEU:HD21	9:I:59:PHE:HB3	1.79	0.65
1:A:1515[B]:C:N4	1:A:1520[B]:G:H1	1.94	0.65
1:A:457:C:H2'	1:A:458:C:C6	2.32	0.65
3:C:123:GLN:HA	3:C:126:ARG:HD2	1.78	0.65
17:Q:86:GLU:HG3	17:Q:90:ILE:HD11	1.79	0.65
1:A:1143:G:H2'	1:A:1144:G:C8	2.32	0.65
14:N:2:ALA:N	14:N:27:CYS:O	2.29	0.65
1:A:77:G:H2'	1:A:78:G:C8	2.32	0.65
17:Q:24:GLU:HA	17:Q:39:SER:HB3	1.79	0.65
1:A:17:U:H2'	1:A:18:C:C6	2.33	0.65
1:A:485:G:O2'	1:A:486:U:OP2	2.15	0.64
8:H:17:THR:O	8:H:78:GLN:NE2	2.30	0.64
12:L:87:GLY:HA2	12:L:98:TYR:HA	1.78	0.64
17:Q:40:LYS:HD3	17:Q:42:TYR:CZ	2.32	0.64
1:A:77:G:H2'	1:A:78:G:H8	1.62	0.64
7:G:18:TYR:HE2	7:G:59:LEU:HB2	1.62	0.64
20:T:87:LYS:O	20:T:91:LEU:HB2	1.96	0.64
1:A:1305:G:O2'	1:A:1306:A:H8	1.80	0.64
1:A:1347:G:N2	1:A:1374:A:OP2	2.26	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:11:ARG:HA	3:C:178:LEU:HD11	1.77	0.64
17:Q:51:TYR:HE1	17:Q:73:VAL:HB	1.62	0.64
1:A:572:A:H5'	1:A:573:A:OP2	1.98	0.64
12:L:84:LEU:HD23	12:L:101:VAL:HG21	1.79	0.64
1:A:973:G:H3'	1:A:974:A:H5''	1.79	0.64
1:A:1006:C:N4	1:A:1024:G:H21	1.95	0.64
1:A:279:A:H5''	1:A:281:G:O4'	1.97	0.64
9:I:21:PRO:HA	9:I:59:PHE:HA	1.79	0.64
1:A:967:5MC:O2'	9:I:128:ARG:NH1	2.31	0.64
1:A:1098:C:OP2	2:B:144:ARG:NH2	2.31	0.64
1:A:1241:G:H2'	1:A:1242:C:C6	2.33	0.64
17:Q:5:VAL:HG22	17:Q:60:ILE:HD12	1.80	0.64
1:A:250:A:H4'	1:A:251:G:O5'	1.98	0.63
1:A:1314:C:C5	19:S:6:LYS:HD3	2.33	0.63
5:E:42:GLY:N	5:E:66:MET:SD	2.71	0.63
1:A:447:G:H1	1:A:485:G:HO2'	1.44	0.63
1:A:1240:U:OP1	7:G:119:ARG:NH2	2.30	0.63
1:A:217:C:H2'	1:A:218:C:H6	1.63	0.63
6:F:94:GLN:HB2	18:R:32:ARG:HD3	1.80	0.63
9:I:108:VAL:HG12	9:I:109:VAL:H	1.63	0.63
12:L:53:ARG:HD3	12:L:93:LEU:HD21	1.80	0.63
1:A:551:U:O2'	12:L:86:ARG:HD2	1.97	0.63
1:A:980:C:H3'	1:A:981:U:H6	1.63	0.63
1:A:1305:G:O2'	1:A:1306:A:O5'	2.16	0.63
6:F:41:GLU:OE1	18:R:35:ARG:NH1	2.31	0.63
11:K:101:SER:HG	11:K:103:LEU:H	1.45	0.63
1:A:588:G:H1	1:A:651:C:H42	1.44	0.63
2:B:61:LEU:HD13	2:B:66:GLY:HA3	1.80	0.63
7:G:115:ARG:HB2	7:G:118:VAL:HG23	1.80	0.63
12:L:27:LEU:O	12:L:29:GLY:N	2.32	0.63
1:A:129:U:O3'	1:A:129(A):G:H3'	1.98	0.63
1:A:1318:A:H4'	19:S:10:PHE:CE2	2.34	0.63
1:A:1244:C:H42	1:A:1293:G:H1	1.44	0.63
1:A:1255:G:C6	1:A:1279:A:N7	2.67	0.63
2:B:131:PRO:HG2	2:B:134:GLU:HG2	1.80	0.63
13:M:4:ILE:HG12	13:M:56:LEU:HD12	1.81	0.63
15:O:2:PRO:O	15:O:38:ARG:NH1	2.32	0.63
1:A:78:G:C2	1:A:92:C:N4	2.66	0.63
3:C:29:TYR:HD2	3:C:33:LEU:HD22	1.64	0.63
12:L:27:LEU:C	12:L:29:GLY:H	2.03	0.63
1:A:512:U:OP1	4:D:46:LYS:NZ	2.31	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:126:ARG:HH11	5:E:126:ARG:CG	2.12	0.62
10:J:24:VAL:HG21	10:J:37:PRO:HG3	1.80	0.62
12:L:55:VAL:HG12	12:L:69:TYR:HA	1.80	0.62
1:A:1168:A:H2'	1:A:1169:A:C8	2.34	0.62
12:L:93:LEU:O	12:L:96:VAL:HG23	1.99	0.62
1:A:407:G:H5''	4:D:115:ARG:HB3	1.82	0.62
1:A:1111:A:N1	3:C:177:THR:HB	2.13	0.62
1:A:1465:C:H2'	1:A:1466:C:O4'	2.00	0.62
1:A:1096:C:H2'	1:A:1097:C:H6	1.65	0.62
1:A:481:G:HO2'	1:A:482:A:H8	1.48	0.62
1:A:1045:C:H2'	1:A:1046:A:H8	1.64	0.62
1:A:1436:U:H2'	1:A:1437:C:C6	2.32	0.62
1:A:299:G:H2'	1:A:300:A:C8	2.35	0.62
1:A:457:C:H2'	1:A:458:C:H6	1.64	0.62
1:A:1001:A:H2'	1:A:1002:G:H8	1.65	0.62
19:S:19:VAL:HG13	19:S:22:LEU:HD12	1.81	0.62
1:A:1361(A):C:HO2'	1:A:1362:C:H6	1.48	0.61
7:G:40:ALA:HB1	9:I:41:VAL:HG21	1.82	0.61
2:B:116:GLU:HG2	2:B:153:ARG:HH12	1.65	0.61
1:A:992:U:H3	1:A:1044:A:H61	1.47	0.61
2:B:240:GLN:OE1	2:B:240:GLN:N	2.33	0.61
9:I:26:VAL:HG23	9:I:33:PHE:HB2	1.82	0.61
9:I:38:GLN:OE1	9:I:39:GLY:N	2.34	0.61
14:N:39:LEU:HD13	14:N:43:CYS:HB3	1.83	0.61
17:Q:95:TYR:HA	17:Q:98:LEU:HD11	1.81	0.61
4:D:156:GLU:O	4:D:160:GLN:HG2	1.99	0.61
8:H:82:HIS:HD1	8:H:138:TRP:HE1	1.48	0.61
1:A:75:G:N2	1:A:96:G:H1	1.98	0.61
1:A:1328:C:H2'	1:A:1329:A:H8	1.64	0.61
3:C:58:GLU:H	3:C:65:ALA:HB3	1.65	0.61
10:J:45:ARG:HB3	10:J:45:ARG:HH11	1.65	0.61
12:L:25:PRO:C	12:L:27:LEU:H	2.03	0.61
1:A:578:C:O2'	1:A:728:A:N3	2.28	0.61
2:B:98:LEU:HB2	2:B:101:MET:SD	2.40	0.61
7:G:17:VAL:HG12	7:G:18:TYR:HD1	1.66	0.61
3:C:132:ARG:HA	3:C:135:LYS:HE2	1.82	0.61
14:N:12:ARG:HG3	14:N:14:PRO:HD3	1.82	0.61
1:A:427:U:OP1	4:D:13:ARG:NH2	2.34	0.60
1:A:1243:C:H2'	1:A:1244:C:H6	1.65	0.60
1:A:1473:A:H2'	1:A:1474:G:C8	2.36	0.60
17:Q:60:ILE:O	17:Q:62:SER:OG	2.20	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:247:G:OP2	17:Q:100:LYS:HG3	2.00	0.60
1:A:989:C:H42	1:A:1216:G:H1	1.49	0.60
1:A:1113:C:N4	1:A:1187:G:H1	1.99	0.60
9:I:96:LEU:HD23	9:I:102:LEU:HD21	1.82	0.60
9:I:28:VAL:HG12	9:I:29:ASN:OD1	2.01	0.60
8:H:127:LEU:O	8:H:127:LEU:HD12	2.01	0.60
17:Q:18:THR:HG23	17:Q:69:LYS:HE3	1.84	0.60
18:R:86:VAL:HG12	18:R:87:ARG:H	1.67	0.60
21:U:6:ARG:HD3	21:U:15:ARG:NH1	2.17	0.60
1:A:92:C:H2'	1:A:92:C:O2	2.00	0.60
1:A:275:G:H5'	17:Q:14:LYS:HD3	1.84	0.60
1:A:1347:G:O2'	1:A:1348:U:O5'	2.19	0.60
3:C:56:ASP:HB2	3:C:67:THR:HB	1.83	0.60
8:H:111:ILE:HG22	8:H:134:ILE:HD12	1.83	0.60
9:I:45:ALA:HA	9:I:48:GLU:HB2	1.83	0.60
11:K:84:VAL:HG11	11:K:91:ARG:HD3	1.84	0.60
11:K:108:ILE:HB	18:R:87:ARG:O	2.02	0.60
2:B:181:PHE:CE2	8:H:70:GLN:HB3	2.37	0.60
1:A:970:C:OP1	10:J:57:LYS:NZ	2.26	0.60
6:F:11:ASN:HB2	6:F:86:ARG:NH2	2.17	0.60
17:Q:63:ARG:O	17:Q:65:ILE:HD12	2.02	0.60
1:A:1504:G:OP1	1:A:1507:A:H4'	2.00	0.60
2:B:98:LEU:HA	24:B:401:HOH:O	2.02	0.60
4:D:39:PRO:HG2	4:D:44:GLY:HA2	1.82	0.60
4:D:187:ARG:HD2	4:D:188:LEU:N	2.16	0.60
1:A:1152:A:H2'	1:A:1153:C:C6	2.37	0.59
7:G:75:VAL:HG11	7:G:86:GLN:HB3	1.83	0.59
1:A:5:U:H4'	1:A:6:G:O5'	2.02	0.59
1:A:1368:G:OP2	9:I:112:LYS:HD3	2.01	0.59
11:K:21:ILE:HD12	11:K:95:ILE:HG23	1.84	0.59
1:A:668:G:H1'	15:O:46:HIS:HD2	1.67	0.59
1:A:1326:C:OP2	21:U:6:ARG:NH1	2.35	0.59
1:A:1499:A:H1'	1:A:1520[A]:G:OP1	2.02	0.59
7:G:46:ALA:O	7:G:50:ILE:HB	2.02	0.59
1:A:877:C:O2'	8:H:3:THR:HG23	2.03	0.59
1:A:1402:4OC:H2'	1:A:1403:C:C6	2.38	0.59
1:A:345:C:OP2	1:A:345:C:H6	1.86	0.59
1:A:376:G:OP2	16:P:67:THR:HG21	2.03	0.59
17:Q:29:HIS:CG	17:Q:30:PRO:HD2	2.37	0.59
1:A:79:G:C4	1:A:91:C:N3	2.70	0.59
1:A:101:A:H2'	1:A:102:G:C8	2.34	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:802:A:H2'	1:A:803:G:O4'	2.03	0.59
1:A:1257:U:O2'	1:A:1258:G:H8	1.84	0.59
1:A:1442:G:N7	1:A:1446:A:N6	2.50	0.59
2:B:23:ARG:O	2:B:24:TRP:HD1	1.86	0.59
4:D:36:ARG:HG2	4:D:38:TYR:OH	2.02	0.59
8:H:83:ILE:HG12	8:H:137:VAL:HG13	1.84	0.59
9:I:3:GLN:O	9:I:3:GLN:NE2	2.35	0.59
1:A:1238:A:OP1	1:A:1336:C:N4	2.32	0.59
1:A:1349:A:OP1	9:I:118:LYS:NZ	2.35	0.59
2:B:15:VAL:HG21	2:B:209:ARG:HG2	1.83	0.59
1:A:836:G:C6	1:A:851:G:C6	2.90	0.59
1:A:1187:G:H1'	14:N:61:TRP:OXT	2.02	0.59
13:M:59:TYR:CE1	13:M:63:THR:HG21	2.37	0.59
1:A:719:C:H42	18:R:74:ARG:HH12	1.50	0.59
1:A:1127:G:H1	1:A:1145:C:H42	1.50	0.59
1:A:1221:G:H5'	19:S:36:ARG:HH11	1.66	0.59
1:A:1356:G:H2'	1:A:1357:A:C8	2.38	0.59
12:L:84:LEU:O	12:L:101:VAL:HG23	2.02	0.59
15:O:18:PHE:HB2	15:O:19:PRO:HD2	1.84	0.59
16:P:43:LYS:HG2	16:P:48:TRP:CG	2.37	0.59
1:A:344:A:H5'	1:A:345:C:C5	2.38	0.59
3:C:39:ILE:HG21	3:C:57:ILE:HD11	1.84	0.59
9:I:28:VAL:N	9:I:31:GLN:O	2.30	0.59
1:A:1033:G:H2'	1:A:1034:G:C8	2.38	0.58
3:C:155:GLY:HA2	3:C:164:ARG:O	2.03	0.58
9:I:71:SER:HA	9:I:74:ILE:HG13	1.84	0.58
13:M:107:ALA:HB3	13:M:111:LYS:HE3	1.85	0.58
19:S:56:GLN:HG2	19:S:57:HIS:H	1.68	0.58
1:A:1347:G:O2'	1:A:1348:U:H6	1.85	0.58
1:A:1025:U:O2'	1:A:1026:G:O4'	2.21	0.58
1:A:1152:A:H2'	1:A:1153:C:H6	1.68	0.58
2:B:189:ASP:HB3	2:B:203:GLY:O	2.03	0.58
12:L:82:VAL:HG13	12:L:106:ASP:OD1	2.03	0.58
13:M:22:ILE:HG22	13:M:23:TYR:N	2.18	0.58
18:R:87:ARG:H	18:R:87:ARG:NH1	2.00	0.58
1:A:92:C:O2	1:A:93:G:C8	2.57	0.58
1:A:967:5MC:C4'	9:I:128:ARG:HG3	2.22	0.58
1:A:1474:G:H2'	1:A:1475:G:C8	2.38	0.58
3:C:148:GLY:HA3	3:C:172:ARG:O	2.03	0.58
4:D:112:VAL:HG23	4:D:116:GLN:OE1	2.02	0.58
17:Q:8:GLY:O	17:Q:56:VAL:HA	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:S:3:ARG:NH2	19:S:73:GLU:OE2	2.35	0.58
19:S:7:LYS:NZ	19:S:7:LYS:HB3	2.17	0.58
19:S:31:ILE:HG21	19:S:49:ILE:HD13	1.85	0.58
1:A:948:C:H42	1:A:1233:G:H1	1.49	0.58
2:B:55:PHE:CD2	2:B:58:ILE:HD12	2.38	0.58
3:C:30:ARG:HE	3:C:31:HIS:CE1	2.20	0.58
1:A:528:C:H41	12:L:49:ASN:HD21	1.52	0.58
1:A:933:G:OP2	7:G:3:ARG:HB3	2.03	0.58
1:A:1160:G:O4'	2:B:132:LYS:NZ	2.36	0.58
1:A:1328:C:H2'	1:A:1329:A:C8	2.39	0.58
1:A:753:A:H4'	1:A:754:C:O5'	2.03	0.58
11:K:59:TYR:O	11:K:62:GLN:HB3	2.04	0.58
2:B:82:ARG:HA	2:B:92:TYR:CE1	2.39	0.58
1:A:328:C:O2	1:A:328:C:H2'	2.02	0.58
1:A:1366:C:O3'	10:J:60:ARG:NH2	2.36	0.58
16:P:74:LEU:HB3	16:P:79:VAL:HG21	1.86	0.58
7:G:22:LEU:O	7:G:25:ALA:HB3	2.04	0.58
1:A:310:G:OP2	16:P:27:LYS:NZ	2.35	0.57
1:A:1358:U:H5''	14:N:35:ARG:HG3	1.85	0.57
1:A:1443:G:H5''	1:A:1446:A:H5''	1.85	0.57
8:H:124:ALA:O	8:H:128:GLY:N	2.34	0.57
16:P:39:TYR:HE2	16:P:41:PRO:HB3	1.69	0.57
1:A:263:A:OP2	20:T:79:ARG:NH1	2.37	0.57
5:E:92:LYS:O	5:E:118:ILE:HG13	2.04	0.57
19:S:18:LYS:O	19:S:22:LEU:HG	2.05	0.57
1:A:463:A:H2'	1:A:474:G:H8	1.70	0.57
1:A:1057:G:H5''	3:C:154:SER:HB2	1.86	0.57
9:I:96:LEU:HB3	9:I:102:LEU:HG	1.85	0.57
1:A:76:C:H41	1:A:93:G:H1	1.49	0.57
1:A:719:C:H42	18:R:74:ARG:NH1	2.02	0.57
1:A:1006:C:H42	1:A:1024:G:H21	1.51	0.57
1:A:1370:G:H5''	9:I:109:VAL:HG11	1.86	0.57
19:S:51:VAL:HG12	19:S:52:TYR:H	1.68	0.57
1:A:372:C:H4'	1:A:373:A:O5'	2.05	0.57
1:A:946:A:H2'	1:A:947:G:C8	2.39	0.57
1:A:1347:G:H2'	1:A:1373:G:H1	1.68	0.57
1:A:1370:G:C5'	9:I:109:VAL:HG11	2.34	0.57
20:T:63:ILE:HG21	20:T:81:LYS:HG3	1.85	0.57
1:A:1305:G:N2	1:A:1331:G:H1'	2.19	0.57
1:A:403:C:H4'	4:D:122:ARG:NH1	2.19	0.57
1:A:945:G:O6	1:A:1236:A:N1	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1216:G:OP1	14:N:3:ARG:NH2	2.38	0.57
20:T:79:ARG:O	20:T:83:ARG:HG3	2.04	0.57
1:A:77:G:C2	1:A:93:G:C2	2.93	0.57
13:M:99:ARG:HH12	19:S:2:PRO:HD2	1.70	0.57
1:A:60:A:H4'	1:A:61:G:O5'	2.05	0.57
1:A:355:C:H5'	1:A:389:A:OP2	2.05	0.57
1:A:1267:C:H1'	21:U:20:LYS:HE3	1.86	0.57
1:A:1357:A:H2'	1:A:1358:U:C6	2.40	0.57
3:C:38:ARG:HH11	3:C:38:ARG:HB2	1.69	0.57
4:D:9:CYS:O	4:D:12:CYS:HB2	2.04	0.57
1:A:237:C:OP2	17:Q:40:LYS:NZ	2.36	0.57
1:A:1255:G:O2'	1:A:1258:G:H1'	2.04	0.57
1:A:926:G:H3'	1:A:1505:G:H21	1.70	0.56
1:A:407:G:OP1	4:D:115:ARG:HD3	2.05	0.56
1:A:1127:G:H1	1:A:1145:C:N4	2.03	0.56
1:A:1261:A:H1'	1:A:1283:G:H5''	1.87	0.56
4:D:78:LEU:O	4:D:81:GLU:HB3	2.05	0.56
1:A:91:C:H2'	1:A:92:C:C5	2.40	0.56
1:A:95:U:H2'	1:A:96:G:C8	2.40	0.56
2:B:23:ARG:NH1	2:B:23:ARG:HB2	2.20	0.56
5:E:27:ARG:HG2	5:E:27:ARG:HH11	1.70	0.56
9:I:50:LEU:HD11	9:I:81:ILE:HD12	1.87	0.56
8:H:83:ILE:HD11	8:H:137:VAL:HG22	1.88	0.56
9:I:17:VAL:HG21	9:I:80:GLY:HA3	1.88	0.56
1:A:44:G:OP2	16:P:12:LYS:HB2	2.06	0.56
1:A:620:C:H2'	1:A:621:A:O4'	2.06	0.56
1:A:1031:G:H2'	1:A:1032:G:C8	2.41	0.56
1:A:1352:C:H2'	1:A:1353:G:C8	2.41	0.56
3:C:159:GLY:HA2	3:C:193:TYR:CZ	2.40	0.56
10:J:49:VAL:HG13	14:N:41:ARG:HB2	1.87	0.56
16:P:66:PRO:HG2	16:P:71:ARG:NH1	2.20	0.56
1:A:131:C:O2	1:A:231:G:N2	2.39	0.56
1:A:552:U:H2'	1:A:553:A:C8	2.41	0.56
1:A:1337:G:H5''	1:A:1338:G:OP1	2.06	0.56
9:I:48:GLU:N	9:I:49:PRO:HD2	2.21	0.56
17:Q:75:ARG:HH12	17:Q:77:VAL:HA	1.71	0.56
1:A:106:C:C2'	1:A:107:G:H5'	2.35	0.56
1:A:1133:G:N2	1:A:1141:C:O2	2.38	0.56
1:A:1172:C:H2'	1:A:1173:G:H8	1.71	0.56
21:U:13:ILE:O	21:U:16:GLY:N	2.34	0.56
1:A:976:G:C8	1:A:1358:U:O2	2.59	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1043:C:H2'	1:A:1044:A:C8	2.41	0.56
1:A:1484:C:H2'	1:A:1485:U:O4'	2.06	0.56
3:C:139:GLN:O	3:C:143:GLU:N	2.33	0.56
1:A:130:A:H5'	17:Q:63:ARG:HE	1.71	0.56
14:N:22:THR:HB	14:N:33:VAL:HB	1.87	0.56
1:A:509:A:C8	1:A:509:A:H3'	2.41	0.56
1:A:975:A:H5'	1:A:975:A:C8	2.38	0.56
1:A:236:G:OP1	17:Q:40:LYS:NZ	2.38	0.55
1:A:1242:C:N4	1:A:1295:G:H1	2.03	0.55
1:A:1255:G:N2	1:A:1259:C:O2	2.37	0.55
2:B:23:ARG:HH11	2:B:23:ARG:N	2.04	0.55
4:D:155:LEU:HB2	4:D:158:ILE:HG12	1.88	0.55
7:G:38:LEU:O	7:G:42:ILE:HG13	2.06	0.55
12:L:89:ARG:HH21	12:L:97:ARG:HB3	1.71	0.55
20:T:73:HIS:O	20:T:76:ALA:HB3	2.06	0.55
1:A:344:A:H4'	1:A:345:C:OP2	2.06	0.55
3:C:8:ILE:HD11	3:C:16:ARG:NH2	2.22	0.55
12:L:55:VAL:HA	12:L:70:ILE:HG13	1.87	0.55
13:M:15:VAL:HG21	13:M:48:LEU:HD21	1.89	0.55
1:A:976:G:OP2	1:A:1358:U:O2'	2.22	0.55
15:O:70:LEU:HD13	15:O:78:TYR:HB2	1.89	0.55
10:J:57:LYS:H	10:J:57:LYS:HD2	1.70	0.55
15:O:55:GLY:O	15:O:59:MET:HG3	2.06	0.55
17:Q:6:LEU:HD23	17:Q:6:LEU:N	2.22	0.55
1:A:147:G:H1	1:A:175:C:H42	1.53	0.55
1:A:373:A:H1'	1:A:481:G:H1'	1.88	0.55
1:A:401:C:H1'	1:A:622:A:H1'	1.89	0.55
1:A:673:G:H2'	1:A:674:G:C8	2.42	0.55
1:A:1254:C:OP1	10:J:45:ARG:HD2	2.06	0.55
1:A:1329:A:P	13:M:28:ALA:HB3	2.47	0.55
1:A:1367:C:H5'	10:J:60:ARG:HE	1.71	0.55
2:B:115:LEU:O	2:B:119:GLU:HB2	2.06	0.55
1:A:64:G:H4'	1:A:65:U:H5''	1.88	0.55
7:G:123:GLU:O	7:G:126:ASP:N	2.40	0.55
13:M:2:ALA:O	13:M:10:PRO:HD2	2.06	0.55
14:N:19:ARG:HB3	14:N:19:ARG:HH11	1.70	0.55
1:A:191:G:H21	20:T:104:LEU:HA	1.72	0.55
1:A:359:U:H2'	1:A:360:A:H8	1.70	0.55
3:C:131:ARG:HA	3:C:134:ILE:HD12	1.89	0.55
5:E:101:ILE:O	5:E:120:THR:HB	2.07	0.55
17:Q:86:GLU:O	17:Q:89:LEU:N	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:S:5:LEU:HD13	19:S:9:VAL:HG13	1.87	0.55
1:A:77:G:C6	1:A:93:G:N1	2.74	0.55
1:A:1505:G:C8	1:A:1505:G:H3'	2.42	0.55
1:A:1435:G:H2'	1:A:1436:U:H6	1.72	0.55
5:E:68:GLU:O	5:E:68:GLU:HG3	2.07	0.55
5:E:78:HIS:HD1	8:H:104:ARG:HG3	1.71	0.55
6:F:36:ARG:HB3	6:F:36:ARG:HH11	1.71	0.55
10:J:87:THR:HG23	10:J:89:ASP:H	1.72	0.55
11:K:41:THR:HG21	11:K:71:LYS:HB3	1.88	0.55
1:A:411:A:N7	1:A:413:G:N3	2.54	0.55
1:A:1128:C:O2'	1:A:1130:A:N7	2.40	0.55
1:A:1143:G:H2'	1:A:1144:G:H8	1.71	0.55
1:A:1437:C:H5''	1:A:1438:G:OP2	2.06	0.55
3:C:116:VAL:O	3:C:119:ARG:HB3	2.07	0.55
7:G:20:ASP:OD2	7:G:21:VAL:N	2.40	0.55
1:A:463:A:H2'	1:A:474:G:C8	2.42	0.54
1:A:1147:C:O2'	9:I:5:TYR:OH	2.14	0.54
1:A:1188:A:H4'	24:N:202:HOH:O	2.06	0.54
8:H:119:LEU:HD12	8:H:124:ALA:HB2	1.89	0.54
15:O:15:PHE:CD2	15:O:30:ALA:HB2	2.41	0.54
1:A:579:G:O3'	15:O:54:ARG:NH2	2.38	0.54
1:A:1257:U:O2'	1:A:1258:G:O5'	2.26	0.54
1:A:1498:UR3:O4'	1:A:1519[A]:MA6:H2	2.06	0.54
2:B:22:LYS:O	2:B:23:ARG:HD3	2.07	0.54
5:E:88:LYS:HB3	5:E:123:LEU:HB2	1.89	0.54
11:K:94:ALA:O	11:K:98:LEU:HB2	2.07	0.54
1:A:384:G:H2'	1:A:385:C:C5	2.41	0.54
1:A:633:G:H2'	1:A:634:C:C6	2.43	0.54
1:A:746:A:O2'	1:A:747:C:H5'	2.06	0.54
1:A:1181:G:O2'	1:A:1182:G:O5'	2.22	0.54
1:A:1416:G:C2'	1:A:1417:G:H5'	2.38	0.54
11:K:71:LYS:O	11:K:74:ALA:HB3	2.07	0.54
1:A:838:G:H1	1:A:848:C:N4	2.05	0.54
1:A:1200:C:H1'	1:A:1204:A:N6	2.23	0.54
1:A:1378:C:H2'	1:A:1379:G:O4'	2.08	0.54
1:A:1499:A:C1'	1:A:1520[A]:G:H5'	2.37	0.54
4:D:117:ALA:O	4:D:121:VAL:HG23	2.07	0.54
12:L:46:LYS:NZ	12:L:47:LYS:HE3	2.23	0.54
1:A:1355:G:H2'	1:A:1356:G:H8	1.71	0.54
3:C:131:ARG:O	3:C:134:ILE:HB	2.08	0.54
4:D:52:SER:O	4:D:56:VAL:HG23	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1237:C:N4	1:A:1336:C:O2	2.41	0.54
1:A:1342:C:O2'	9:I:124:GLN:HG2	2.07	0.54
1:A:1369:C:H2'	1:A:1370:G:C8	2.42	0.54
2:B:17:PHE:HA	2:B:44:LEU:HD11	1.90	0.54
3:C:43:LEU:O	3:C:47:LEU:HB2	2.07	0.54
7:G:79:ARG:NE	7:G:82:GLY:O	2.37	0.54
1:A:36:C:OP1	12:L:123:LYS:NZ	2.28	0.54
1:A:853:G:C2'	1:A:854:G:H5'	2.37	0.54
1:A:1048:G:H5''	14:N:3:ARG:HH21	1.73	0.54
1:A:1085:U:C6	1:A:1094:G:N1	2.76	0.54
1:A:1406:U:H4'	1:A:1518[B]:MA6:H1'	1.90	0.54
4:D:127:THR:OG1	4:D:149:ALA:HB2	2.08	0.54
5:E:72:GLN:O	5:E:75:THR:HG22	2.07	0.54
1:A:560:U:H5'	1:A:566:G:C2	2.42	0.54
3:C:26:LYS:H	3:C:26:LYS:HD3	1.72	0.54
3:C:152:ILE:HB	3:C:199:LYS:HB2	1.90	0.54
10:J:82:ILE:H	10:J:82:ILE:HD12	1.72	0.54
13:M:25:ILE:HD11	13:M:66:LEU:HD11	1.90	0.54
18:R:87:ARG:HH11	18:R:87:ARG:HA	1.73	0.54
1:A:75:G:N2	1:A:96:G:N1	2.56	0.54
1:A:390:C:O3'	16:P:28:ARG:NH2	2.41	0.54
1:A:707:C:H2'	1:A:708:C:C6	2.43	0.54
1:A:1332:A:H2'	1:A:1333:A:C8	2.43	0.54
6:F:35:ALA:HA	6:F:67:MET:HB3	1.87	0.54
1:A:707:C:H2'	1:A:708:C:H6	1.72	0.54
2:B:172:ILE:H	2:B:172:ILE:HD12	1.71	0.54
2:B:191:ASP:OD1	2:B:191:ASP:N	2.37	0.54
4:D:209:ARG:HG2	4:D:209:ARG:O	2.08	0.54
18:R:86:VAL:HG12	18:R:87:ARG:NH1	2.23	0.54
1:A:1197:G:H5''	24:A:2054:HOH:O	2.08	0.53
1:A:1422:G:H2'	1:A:1423:G:H8	1.73	0.53
5:E:105:VAL:HG11	5:E:131:ILE:HG22	1.90	0.53
10:J:4:ILE:HG22	10:J:6:ILE:HD11	1.90	0.53
1:A:1181:G:C2	1:A:1182:G:N2	2.76	0.53
1:A:1329:A:C2	1:A:1330:U:C2	2.96	0.53
5:E:27:ARG:HG2	5:E:27:ARG:NH1	2.24	0.53
1:A:1014:A:H4'	19:S:14:HIS:CE1	2.43	0.53
2:B:91:PRO:HB3	2:B:154:LEU:HB3	1.91	0.53
4:D:114:ARG:HH11	4:D:114:ARG:HG3	1.74	0.53
16:P:79:VAL:N	24:P:204:HOH:O	2.40	0.53
1:A:62:U:OP1	1:A:385:C:O2'	2.25	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:381:C:H2'	1:A:382:A:O4'	2.09	0.53
1:A:1128:C:OP1	9:I:66:ARG:NH2	2.41	0.53
1:A:1244:C:H5''	1:A:1245:A:OP2	2.08	0.53
2:B:126:GLU:HG3	2:B:129:GLU:HB2	1.90	0.53
9:I:22:GLY:HA3	9:I:60:ASP:HB2	1.89	0.53
13:M:11:ARG:HA	13:M:45:VAL:HG11	1.90	0.53
1:A:241:C:H42	1:A:285:G:H1	1.57	0.53
1:A:677:U:H3	1:A:713:G:H22	1.55	0.53
1:A:1526:G:H2'	1:A:1527:C:H6	1.74	0.53
14:N:24:CYS:H	14:N:33:VAL:HG21	1.73	0.53
1:A:665:A:N3	1:A:732:C:H2'	2.23	0.53
2:B:139:LYS:NZ	2:B:143:GLU:HG3	2.23	0.53
4:D:121:VAL:HG11	4:D:136:PRO:HA	1.88	0.53
13:M:16:ASP:N	13:M:16:ASP:OD1	2.41	0.53
15:O:29:VAL:HG11	15:O:81:LEU:HD11	1.91	0.53
17:Q:21:VAL:HG21	17:Q:59:ILE:HG13	1.91	0.53
17:Q:66:SER:HB3	17:Q:69:LYS:HG3	1.90	0.53
1:A:1305:G:O2'	1:A:1306:A:P	2.67	0.53
3:C:70:VAL:HG12	3:C:72:LYS:H	1.73	0.53
5:E:84:PHE:CB	5:E:134:ALA:HB2	2.38	0.53
10:J:52:GLY:O	14:N:41:ARG:NH2	2.41	0.53
1:A:404:U:O4	4:D:2:GLY:N	2.42	0.53
1:A:778:G:H8	1:A:778:G:O5'	1.92	0.53
1:A:1305:G:H5''	21:U:4:GLY:HA3	1.90	0.53
1:A:1320:C:N4	19:S:36:ARG:HG3	2.24	0.53
1:A:1329:A:OP1	13:M:28:ALA:HB3	2.08	0.53
2:B:7:VAL:N	2:B:8:LYS:HZ3	2.06	0.53
2:B:180:LEU:O	2:B:181:PHE:HB2	2.09	0.53
3:C:114:PRO:O	3:C:118:GLN:NE2	2.42	0.53
4:D:150:GLU:HA	4:D:153:ARG:HG3	1.91	0.53
9:I:28:VAL:O	9:I:31:GLN:N	2.39	0.53
18:R:46:GLU:OE1	18:R:46:GLU:N	2.37	0.53
20:T:81:LYS:O	20:T:85:MET:HG3	2.09	0.53
1:A:47:C:H6	1:A:365:U:H2'	1.74	0.53
1:A:939:G:H5''	7:G:102:ARG:NH1	2.24	0.53
1:A:1190:G:OP1	3:C:4:LYS:HA	2.07	0.53
1:A:1250:A:H4'	9:I:68:GLY:O	2.09	0.53
1:A:1399:C:O2	1:A:1401:G:C5	2.62	0.53
2:B:19:HIS:ND1	2:B:20:GLU:HG2	2.24	0.53
6:F:4:TYR:HD1	6:F:92:LYS:HA	1.74	0.53
12:L:58:VAL:O	12:L:65:GLU:HA	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:4:THR:N	15:O:7:GLU:OE1	2.28	0.53
1:A:56:U:H2'	1:A:57:G:H8	1.74	0.53
1:A:1032:G:H2'	1:A:1033:G:O4'	2.08	0.53
1:A:1064:G:H1'	1:A:1190:G:H21	1.74	0.53
8:H:83:ILE:CD1	8:H:137:VAL:HG22	2.39	0.53
15:O:29:VAL:HG21	15:O:67:LEU:HD23	1.91	0.53
1:A:273:A:N6	1:A:274:A:C6	2.77	0.52
1:A:416:G:H2'	1:A:417:C:C6	2.44	0.52
1:A:1311:G:H1	1:A:1326:C:H42	1.57	0.52
1:A:1397:C:O2'	1:A:1398:A:OP1	2.26	0.52
3:C:202:ILE:HG22	3:C:204:LEU:HD23	1.91	0.52
1:A:409:G:OP2	4:D:22:LYS:HD3	2.10	0.52
1:A:686:U:O2'	1:A:687:A:H8	1.88	0.52
1:A:731:G:OP1	1:A:766:A:H1'	2.08	0.52
2:B:51:LEU:O	2:B:55:PHE:HB2	2.09	0.52
4:D:152:SER:HA	4:D:155:LEU:HG	1.91	0.52
13:M:84:ILE:HG13	13:M:86:CYS:H	1.74	0.52
13:M:96:LEU:HB3	13:M:97:PRO:HD2	1.91	0.52
18:R:22:VAL:HG23	18:R:56:THR:HA	1.89	0.52
1:A:579:G:H5'	1:A:728:A:H1'	1.90	0.52
1:A:864:A:H2'	1:A:865:A:C8	2.44	0.52
1:A:885:G:H1	1:A:912:A:H2	1.57	0.52
1:A:1285:A:H4'	1:A:1286:A:O5'	2.09	0.52
11:K:72:ALA:HB1	11:K:77:MET:HG3	1.91	0.52
1:A:421:U:H5'	1:A:422:C:H5	1.74	0.52
1:A:502:G:P	12:L:118:SER:HG	2.32	0.52
1:A:790:A:H2'	1:A:791:G:C8	2.44	0.52
1:A:1391:U:H2'	1:A:1392:G:C8	2.44	0.52
2:B:36:ARG:O	2:B:39:ILE:HD12	2.09	0.52
3:C:156:ARG:NH1	3:C:160:ALA:O	2.40	0.52
3:C:187:ALA:HB3	3:C:198:VAL:HB	1.91	0.52
12:L:45:PRO:HD3	12:L:51:ALA:O	2.09	0.52
1:A:589:C:O2'	1:A:590:C:H5'	2.09	0.52
1:A:902:G:H2'	1:A:903:G:H8	1.75	0.52
1:A:943:U:C2'	1:A:944:G:H5'	2.39	0.52
1:A:949:A:C2	1:A:1233:G:N3	2.78	0.52
12:L:53:ARG:NH1	12:L:92:0TD:OD2	2.43	0.52
21:U:12:LYS:O	21:U:22:ARG:NH1	2.41	0.52
1:A:459:G:H1'	1:A:463:A:H61	1.75	0.52
1:A:551:U:H2'	1:A:552:U:C6	2.44	0.52
1:A:1499:A:H1'	1:A:1520[A]:G:H5'	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:39:LYS:HG2	20:T:55:ILE:HD13	1.91	0.52
1:A:581:G:O3'	15:O:64:ARG:NH2	2.42	0.52
1:A:1172:C:H2'	1:A:1173:G:C8	2.45	0.52
5:E:91:LEU:HB3	5:E:118:ILE:HD11	1.91	0.52
6:F:97:PHE:HE1	18:R:61:LYS:HE2	1.74	0.52
8:H:77:GLU:HG2	8:H:78:GLN:H	1.73	0.52
12:L:8:ASN:O	12:L:12:ARG:HG2	2.09	0.52
1:A:350:G:H5''	1:A:350:G:H8	1.74	0.52
1:A:766:A:H2'	1:A:767:A:O4'	2.10	0.52
3:C:11:ARG:NH2	3:C:175:LEU:O	2.41	0.52
12:L:113:ARG:HB3	12:L:122:THR:HG21	1.92	0.52
18:R:43:PHE:C	18:R:51:LEU:HD12	2.29	0.52
1:A:423:G:H3'	1:A:423:G:N3	2.24	0.52
1:A:673:G:H5''	6:F:87:ARG:NH1	2.25	0.52
2:B:23:ARG:HB2	2:B:23:ARG:CZ	2.39	0.52
1:A:1045:C:H2'	1:A:1046:A:C8	2.44	0.52
2:B:134:GLU:HA	2:B:137:ARG:HG3	1.92	0.52
3:C:136:GLN:HA	3:C:139:GLN:HG3	1.90	0.52
9:I:5:TYR:CD1	9:I:6:GLY:N	2.75	0.52
11:K:54:ARG:O	11:K:57:THR:HG22	2.08	0.52
19:S:22:LEU:HD22	19:S:28:LYS:HB2	1.92	0.52
1:A:337:C:H2'	1:A:338:A:H8	1.74	0.51
1:A:981:U:H5''	1:A:982:U:H5''	1.92	0.51
1:A:1118:C:O2'	1:A:1119:C:H5'	2.10	0.51
4:D:46:LYS:HG2	4:D:47:ARG:H	1.75	0.51
5:E:107:ARG:O	5:E:111:GLU:HB2	2.10	0.51
1:A:47:C:C6	1:A:365:U:H2'	2.46	0.51
1:A:528:C:N4	12:L:49:ASN:HD21	2.08	0.51
1:A:1305:G:O2'	1:A:1306:A:C8	2.58	0.51
3:C:130:VAL:O	3:C:134:ILE:HG13	2.10	0.51
12:L:27:LEU:C	12:L:29:GLY:N	2.63	0.51
1:A:254:G:OP1	17:Q:67:LYS:O	2.28	0.51
1:A:1338:G:C6	1:A:1339:A:C6	2.98	0.51
1:A:1502:A:C2	1:A:1504:G:C4	2.97	0.51
1:A:412:A:H5''	1:A:413:G:OP1	2.09	0.51
1:A:1000:U:H2'	1:A:1001:A:C8	2.46	0.51
1:A:1188:A:H5''	24:A:2233:HOH:O	2.10	0.51
1:A:1376:U:OP1	7:G:98:SER:OG	2.20	0.51
6:F:100:ASN:HB2	18:R:23:LYS:HG3	1.92	0.51
10:J:79:ARG:NH1	10:J:79:ARG:O	2.43	0.51
13:M:82:MET:HA	13:M:89:GLY:HA3	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:236:G:H2'	1:A:237:C:O4'	2.10	0.51
1:A:1163:C:H2'	1:A:1164:G:O4'	2.11	0.51
2:B:23:ARG:O	2:B:24:TRP:CD1	2.63	0.51
11:K:32:ILE:HD12	11:K:72:ALA:HB2	1.93	0.51
12:L:89:ARG:NH2	12:L:97:ARG:HB3	2.25	0.51
13:M:27:LYS:HE2	13:M:27:LYS:HA	1.93	0.51
1:A:1221:G:OP1	19:S:36:ARG:HD3	2.10	0.51
1:A:1358:U:O2'	1:A:1359:C:OP1	2.28	0.51
7:G:22:LEU:HD21	7:G:66:VAL:HG21	1.93	0.51
9:I:118:LYS:NZ	9:I:118:LYS:O	2.41	0.51
15:O:75:PRO:O	15:O:79:ARG:HG3	2.11	0.51
21:U:10:ARG:O	21:U:13:ILE:HB	2.10	0.51
1:A:1351:U:H4'	7:G:33:ASP:CG	2.31	0.51
11:K:90:GLY:HA2	11:K:93:GLN:HB2	1.92	0.51
20:T:71:THR:O	20:T:72:LEU:HD23	2.10	0.51
5:E:36:ASP:OD1	5:E:38:GLN:N	2.38	0.51
5:E:60:TYR:HE1	5:E:64:ARG:HE	1.58	0.51
1:A:79:G:C2	1:A:80:G:C8	2.99	0.51
1:A:204:U:H4'	1:A:216:G:O4'	2.09	0.51
1:A:1355:G:H2'	1:A:1356:G:C8	2.46	0.51
1:A:1412:C:C5	1:A:1413:A:C6	2.99	0.51
1:A:1483:A:H2'	1:A:1484:C:O4'	2.11	0.51
2:B:24:TRP:HZ3	2:B:29:ALA:HB2	1.75	0.51
7:G:115:ARG:H	7:G:115:ARG:HD2	1.76	0.51
7:G:118:VAL:O	7:G:122:HIS:HB2	2.10	0.51
9:I:103:THR:HG22	9:I:104:ARG:O	2.11	0.51
14:N:3:ARG:NH1	14:N:3:ARG:HB3	2.26	0.51
9:I:79:LEU:O	9:I:83:ARG:HG2	2.11	0.51
10:J:27:ALA:HB2	10:J:85:LEU:HD21	1.93	0.51
14:N:9:LYS:HD2	14:N:23:ARG:HB2	1.91	0.51
16:P:8:ARG:NH2	16:P:15:PRO:HB3	2.26	0.51
1:A:1125:U:H5	10:J:73:ASP:OD2	1.94	0.50
1:A:1225:A:H2'	1:A:1225:A:N3	2.26	0.50
2:B:161:ALA:HB1	2:B:185:ILE:HD11	1.92	0.50
4:D:23:GLY:HA3	4:D:112:VAL:HG12	1.93	0.50
7:G:10:ARG:HB2	7:G:10:ARG:NH1	2.25	0.50
8:H:95:VAL:HG12	8:H:99:GLU:HB2	1.92	0.50
13:M:12:ASN:H	13:M:45:VAL:HB	1.76	0.50
18:R:70:ILE:HG22	18:R:71:LYS:N	2.26	0.50
7:G:22:LEU:HD12	7:G:97:GLN:HE22	1.77	0.50
7:G:28:ASN:O	7:G:31:MET:HB3	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:59:SER:H	18:R:62:GLU:HB2	1.76	0.50
1:A:144:G:H1	1:A:178:C:H42	1.57	0.50
1:A:985:C:N3	1:A:1221:G:N2	2.59	0.50
1:A:1003(A):G:N1	1:A:1038:C:N3	2.59	0.50
1:A:1222:G:OP2	1:A:1322:C:N4	2.41	0.50
7:G:40:ALA:CB	9:I:41:VAL:HG21	2.40	0.50
9:I:91:ASP:N	9:I:91:ASP:OD1	2.44	0.50
12:L:11:VAL:HG12	12:L:12:ARG:N	2.26	0.50
1:A:616:G:H1'	1:A:625:G:N2	2.26	0.50
1:A:736:C:H2'	1:A:737:A:C8	2.47	0.50
1:A:757:U:H2'	1:A:758:G:O4'	2.12	0.50
1:A:795:C:H5''	1:A:796:C:OP2	2.12	0.50
1:A:1092:A:N3	1:A:1183:A:N6	2.60	0.50
2:B:21:ARG:HA	2:B:39:ILE:HG23	1.94	0.50
3:C:58:GLU:HB3	10:J:92:THR:HG21	1.91	0.50
5:E:81:GLU:OE2	5:E:88:LYS:HE2	2.11	0.50
11:K:32:ILE:O	11:K:40:ILE:N	2.44	0.50
15:O:56:LEU:HA	15:O:59:MET:HE2	1.93	0.50
19:S:50:ALA:HA	19:S:58:VAL:O	2.12	0.50
1:A:620:C:C2	4:D:135:LEU:HD13	2.46	0.50
1:A:835:U:H3	1:A:851:G:H1	1.59	0.50
1:A:1214:C:O2'	1:A:1215:G:H5'	2.11	0.50
2:B:136:VAL:HA	2:B:139:LYS:HB3	1.93	0.50
2:B:142:LEU:HD22	2:B:146:GLN:NE2	2.27	0.50
6:F:60:PHE:CZ	18:R:78:LEU:HD21	2.46	0.50
7:G:17:VAL:HG12	7:G:18:TYR:CD1	2.45	0.50
1:A:518:C:H4'	1:A:519:C:O5'	2.11	0.50
1:A:946:A:H2'	1:A:947:G:H8	1.76	0.50
1:A:1104:G:H4'	2:B:111:ARG:NH2	2.27	0.50
1:A:1257:U:HO2'	1:A:1258:G:P	2.34	0.50
1:A:1314:C:H2'	1:A:1315:U:C6	2.46	0.50
3:C:95:THR:O	3:C:95:THR:OG1	2.30	0.50
3:C:116:VAL:HG21	3:C:202:ILE:HD11	1.92	0.50
6:F:36:ARG:HB3	6:F:36:ARG:NH1	2.27	0.50
15:O:55:GLY:HA2	15:O:58:MET:HG3	1.92	0.50
1:A:1148:U:H4'	9:I:14:VAL:HG11	1.94	0.50
1:A:1443:G:H4'	1:A:1446:A:H5''	1.93	0.50
3:C:180:ALA:HB1	3:C:203:PHE:CE1	2.40	0.50
6:F:33:TYR:CD1	6:F:75:LEU:HA	2.46	0.50
13:M:4:ILE:HG12	13:M:56:LEU:CD1	2.40	0.50
1:A:123:C:OP1	1:A:312:C:H5'	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:29:TYR:CD2	3:C:33:LEU:HD22	2.46	0.50
10:J:6:ILE:HD13	10:J:72:VAL:HB	1.93	0.50
17:Q:63:ARG:HG2	17:Q:64:PRO:CD	2.42	0.50
17:Q:67:LYS:O	17:Q:68:ARG:HB2	2.11	0.50
1:A:114:U:O2'	1:A:115:G:H5'	2.12	0.50
1:A:552:U:H2'	1:A:553:A:H8	1.76	0.50
1:A:580:U:H2'	1:A:581:G:O4'	2.12	0.50
1:A:600:C:H42	1:A:638:G:H1	1.60	0.50
1:A:789:U:O2	1:A:791:G:C8	2.65	0.50
1:A:953:G:H2'	1:A:954:G:O4'	2.12	0.50
1:A:1058:G:H2'	1:A:1059:C:O4'	2.12	0.50
1:A:1101:A:H4'	1:A:1102:A:O5'	2.12	0.50
1:A:1201:A:H4'	1:A:1202:G:O5'	2.11	0.50
2:B:142:LEU:HD13	2:B:146:GLN:HE22	1.76	0.50
3:C:156:ARG:HA	3:C:160:ALA:HB3	1.94	0.50
3:C:167:TRP:HE3	3:C:168:ALA:H	1.58	0.50
18:R:50:ILE:HD13	18:R:70:ILE:HD13	1.94	0.50
1:A:10:A:OP2	5:E:126:ARG:HD3	2.12	0.49
1:A:385:C:H2'	1:A:386:C:H6	1.77	0.49
1:A:918:A:H2'	1:A:919:A:O4'	2.12	0.49
1:A:980:C:H3'	1:A:981:U:C6	2.46	0.49
1:A:1505:G:H3'	1:A:1505:G:H8	1.77	0.49
17:Q:83:ASP:OD1	17:Q:83:ASP:N	2.45	0.49
1:A:44:G:N2	1:A:399:G:C4	2.80	0.49
1:A:45:U:H2'	1:A:46:G:C8	2.47	0.49
1:A:96:G:O2'	1:A:97:G:H5'	2.12	0.49
1:A:442:C:H42	1:A:492:G:H1	1.59	0.49
1:A:451:A:N6	1:A:481:G:C4	2.80	0.49
1:A:485:G:O2'	1:A:486:U:P	2.71	0.49
1:A:814:A:H2'	1:A:816:A:H5''	1.94	0.49
1:A:1065:U:H4'	1:A:1066:C:O5'	2.12	0.49
1:A:1481:U:C2	1:A:1482:G:C8	3.00	0.49
3:C:19:GLU:HB3	3:C:40:ARG:NH2	2.27	0.49
4:D:36:ARG:HA	4:D:38:TYR:CE2	2.46	0.49
13:M:108:ARG:CZ	13:M:114:ARG:HG2	2.41	0.49
1:A:409:G:H1	1:A:433:C:H42	1.60	0.49
1:A:1521:G:H2'	1:A:1522:U:O4'	2.11	0.49
7:G:16:LEU:HD11	9:I:45:ALA:HB2	1.95	0.49
5:E:116:THR:HG23	5:E:117:ASP:OD1	2.12	0.49
6:F:3:ARG:HA	6:F:65:VAL:O	2.13	0.49
12:L:46:LYS:HZ2	12:L:47:LYS:HE3	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:53:LEU:HD12	14:N:56:VAL:HG21	1.94	0.49
18:R:34:TYR:CE1	18:R:35:ARG:HG3	2.47	0.49
1:A:117:G:O5'	1:A:117:G:H8	1.95	0.49
1:A:1339:A:H2'	1:A:1340:A:O4'	2.12	0.49
1:A:1398:A:H5'	1:A:1401:G:H4'	1.94	0.49
9:I:26:VAL:HG12	9:I:61:ALA:HB3	1.93	0.49
18:R:86:VAL:HG12	18:R:87:ARG:HH12	1.76	0.49
1:A:1518[A]:MA6:H93	1:A:1519[A]:MA6:H92	1.93	0.49
1:A:56:U:H2'	1:A:57:G:C8	2.47	0.49
1:A:496:A:H4'	1:A:497:A:OP1	2.12	0.49
1:A:1163:C:H2'	1:A:1164:G:C8	2.48	0.49
5:E:144:THR:O	5:E:147:ASP:HB2	2.13	0.49
10:J:48:THR:OG1	10:J:62:HIS:HB3	2.13	0.49
15:O:39:LEU:CD1	15:O:56:LEU:HB2	2.37	0.49
16:P:20:VAL:CG1	16:P:32:TYR:HB2	2.43	0.49
1:A:255:G:H2'	1:A:256:U:C6	2.47	0.49
1:A:477:G:H2'	1:A:478:A:C8	2.48	0.49
1:A:629:G:H2'	1:A:630:G:O4'	2.13	0.49
1:A:1287:A:H2'	1:A:1288:A:C8	2.48	0.49
5:E:46:GLY:H	5:E:58:ALA:HB2	1.78	0.49
11:K:48:ILE:HG22	11:K:49:GLY:H	1.78	0.49
11:K:91:ARG:HB3	11:K:91:ARG:HH11	1.77	0.49
1:A:193:C:H2'	1:A:194:C:H6	1.78	0.49
1:A:1269:A:N1	1:A:1312:G:O2'	2.42	0.49
3:C:8:ILE:HD11	3:C:16:ARG:HH21	1.78	0.49
1:A:299:G:C6	1:A:300:A:C6	3.01	0.49
5:E:118:ILE:O	5:E:119:LEU:HD23	2.11	0.49
9:I:53:VAL:HG21	9:I:59:PHE:HE1	1.77	0.49
1:A:21:G:H2'	1:A:22:G:C8	2.48	0.48
1:A:182:U:H3'	1:A:182:U:P	2.53	0.48
1:A:456:C:C2	1:A:457:C:C5	3.01	0.48
9:I:69:GLY:O	9:I:73:GLN:HG3	2.13	0.48
9:I:126:SER:HB2	9:I:127:LYS:HD2	1.95	0.48
13:M:36:LYS:HD3	13:M:59:TYR:CE2	2.48	0.48
1:A:91:C:HO2'	1:A:92:C:P	2.32	0.48
1:A:231:G:O2'	1:A:232:G:H5'	2.13	0.48
1:A:865:A:C2	1:A:918:A:H4'	2.48	0.48
3:C:52:LEU:HD13	3:C:68:VAL:HG13	1.95	0.48
3:C:150:LYS:HB3	3:C:201:TYR:HB2	1.94	0.48
10:J:10:GLY:O	10:J:67:THR:HA	2.12	0.48
15:O:39:LEU:HB3	15:O:56:LEU:HD12	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:63:ARG:HG2	17:Q:64:PRO:HD2	1.94	0.48
19:S:11:VAL:HG22	19:S:39:THR:HB	1.93	0.48
1:A:491:G:N2	1:A:492:G:H1'	2.28	0.48
1:A:679:C:H2'	1:A:680:C:H6	1.79	0.48
1:A:1347:G:H2'	1:A:1373:G:N1	2.27	0.48
1:A:1366:C:H2'	1:A:1367:C:H6	1.77	0.48
1:A:1418:A:N6	1:A:1482:G:H1'	2.27	0.48
5:E:78:HIS:ND1	8:H:104:ARG:HG3	2.28	0.48
8:H:11:THR:OG1	8:H:14:ARG:NH1	2.34	0.48
1:A:459:G:H1'	1:A:463:A:N6	2.28	0.48
1:A:689:C:OP1	11:K:44:SER:OG	2.21	0.48
1:A:912:A:H8	1:A:912:A:O5'	1.96	0.48
1:A:1022:G:N2	1:A:1023:G:O6	2.46	0.48
1:A:1300:G:HO2'	1:A:1301:U:P	2.34	0.48
1:A:1499:A:O5'	1:A:1499:A:H8	1.96	0.48
2:B:144:ARG:O	2:B:147:LYS:N	2.46	0.48
5:E:7:GLU:OE1	5:E:37:ARG:NE	2.46	0.48
6:F:39:LYS:HB2	6:F:39:LYS:HE3	1.44	0.48
8:H:34:GLU:HB3	8:H:118:VAL:HG21	1.95	0.48
9:I:97:LYS:HB2	9:I:102:LEU:HD12	1.94	0.48
18:R:74:ARG:HB3	18:R:81:PHE:CE1	2.48	0.48
19:S:40:ILE:HA	19:S:44:MET:SD	2.53	0.48
1:A:1065:U:H5''	1:A:1190:G:N2	2.28	0.48
1:A:1152:A:H5'	10:J:70:ARG:NH2	2.28	0.48
1:A:1191:A:H2'	1:A:1192:C:H6	1.78	0.48
1:A:1244:C:N4	1:A:1293:G:H1	2.11	0.48
1:A:1402:4OC:H2'	1:A:1403:C:O4'	2.13	0.48
1:A:1416:G:H2'	1:A:1417:G:H5'	1.95	0.48
4:D:173:TRP:HB2	4:D:187:ARG:O	2.14	0.48
15:O:36:ILE:HD13	15:O:59:MET:HE3	1.95	0.48
16:P:82:GLN:H	16:P:82:GLN:HG2	1.50	0.48
1:A:78:G:N2	1:A:92:C:C4	2.82	0.48
1:A:1029:C:H42	1:A:1033:G:N2	2.11	0.48
1:A:1265:G:C6	1:A:1266:G:C6	3.00	0.48
1:A:1417:G:C8	1:A:1417:G:OP2	2.67	0.48
2:B:17:PHE:CD1	2:B:18:GLY:N	2.81	0.48
2:B:101:MET:HB2	2:B:102:LEU:HD12	1.94	0.48
3:C:112:SER:O	3:C:115:LEU:HB2	2.13	0.48
4:D:78:LEU:HD21	4:D:96:LEU:HB3	1.95	0.48
7:G:97:GLN:O	7:G:101:LEU:HD12	2.13	0.48
10:J:27:ALA:HB2	10:J:85:LEU:HD11	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:25:PRO:C	12:L:27:LEU:N	2.64	0.48
1:A:264:U:H4'	17:Q:63:ARG:HD3	1.96	0.48
1:A:550:G:C5	1:A:551:U:C5	3.02	0.48
1:A:1249:C:H2'	1:A:1250:A:H5'	1.95	0.48
1:A:1350:A:C5	1:A:1351:U:C5	3.02	0.48
8:H:104:ARG:CZ	8:H:138:TRP:CZ2	2.96	0.48
9:I:33:PHE:CE2	9:I:47:LEU:HD11	2.49	0.48
11:K:18:ARG:O	11:K:33:THR:HG23	2.14	0.48
12:L:6:THR:HB	12:L:8:ASN:H	1.79	0.48
17:Q:15:MET:HE3	17:Q:18:THR:HB	1.96	0.48
20:T:72:LEU:HD21	20:T:80:ARG:HH12	1.79	0.48
1:A:303:A:H2'	1:A:304:U:O4'	2.13	0.48
1:A:646:U:H2'	1:A:647:C:C6	2.49	0.48
1:A:679:C:H2'	1:A:680:C:C6	2.49	0.48
1:A:1516[A]:G:H2'	1:A:1518[A]:MA6:OP2	2.14	0.48
3:C:157:ILE:HD13	3:C:166:GLU:HG2	1.96	0.48
4:D:164:ALA:O	4:D:168:ARG:HD3	2.13	0.48
11:K:110:ASP:HB2	18:R:88:LYS:HD2	1.94	0.48
15:O:12:ILE:HG23	15:O:27:VAL:CG1	2.43	0.48
1:A:77:G:N1	1:A:93:G:C2	2.82	0.48
1:A:217:C:H2'	1:A:218:C:C6	2.47	0.48
1:A:481:G:O2'	1:A:482:A:H8	1.97	0.48
1:A:502:G:H2'	1:A:503:C:O4'	2.14	0.48
1:A:625:G:H2'	1:A:626:U:C6	2.49	0.48
4:D:19:LEU:HA	4:D:19:LEU:HD23	1.45	0.48
12:L:28:LYS:C	12:L:30:ALA:H	2.16	0.48
13:M:67:GLU:HG3	13:M:68:GLY:H	1.78	0.48
15:O:12:ILE:HG12	15:O:31:LEU:HD11	1.94	0.48
1:A:76:C:C6	1:A:77:G:C8	3.02	0.48
1:A:106:C:H2'	1:A:107:G:H5'	1.95	0.48
1:A:176:C:H2'	1:A:177:C:C6	2.49	0.48
1:A:1437:C:O2	1:A:1437:C:H2'	2.13	0.48
7:G:73:MET:SD	7:G:90:GLU:HA	2.54	0.48
9:I:79:LEU:HD21	9:I:102:LEU:O	2.14	0.48
1:A:35:G:C6	1:A:36:C:N4	2.82	0.47
1:A:484:G:O2'	1:A:485:G:OP2	2.26	0.47
1:A:501:C:O3'	12:L:118:SER:OG	2.31	0.47
1:A:1049:U:H5'	1:A:1201:A:OP2	2.14	0.47
1:A:1058:G:C2	1:A:1059:C:C2	3.02	0.47
1:A:1413:A:H2'	1:A:1414:U:C6	2.49	0.47
12:L:35:GLY:HA3	12:L:60:LEU:HD13	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:53:VAL:O	16:P:54:GLU:C	2.51	0.47
1:A:1116:C:O2'	9:I:108:VAL:HG21	2.14	0.47
1:A:1144:G:N2	1:A:1146:A:H62	2.11	0.47
1:A:1157:A:C8	1:A:1158:C:C4	3.02	0.47
1:A:1203:C:O5'	1:A:1203:C:H6	1.97	0.47
1:A:1347:G:O2'	1:A:1348:U:P	2.72	0.47
2:B:219:VAL:HG13	2:B:223:ILE:HD11	1.96	0.47
10:J:87:THR:HG23	10:J:89:ASP:N	2.29	0.47
1:A:723:U:O2	1:A:723:U:H2'	2.14	0.47
1:A:757:U:O2'	1:A:879:C:O2	2.31	0.47
1:A:833:U:H2'	1:A:834:C:C6	2.48	0.47
2:B:21:ARG:HG3	2:B:22:LYS:H	1.80	0.47
2:B:62:ALA:HB1	2:B:222:ILE:HG23	1.95	0.47
5:E:10:MET:SD	5:E:13:ILE:HG23	2.55	0.47
6:F:53:ALA:HB3	6:F:86:ARG:NH1	2.29	0.47
12:L:46:LYS:HG2	12:L:47:LYS:HG3	1.96	0.47
1:A:115:G:H5''	24:A:2260:HOH:O	2.14	0.47
1:A:902:G:H2'	1:A:903:G:C8	2.49	0.47
1:A:1496:C:H2'	1:A:1497:G:O4'	2.14	0.47
13:M:106:ASN:HA	13:M:108:ARG:HG2	1.97	0.47
16:P:18:ARG:O	16:P:20:VAL:HG23	2.14	0.47
16:P:53:VAL:O	16:P:55:ARG:N	2.47	0.47
20:T:39:LYS:O	20:T:43:LEU:HD23	2.14	0.47
1:A:164:U:H2'	1:A:165:C:C6	2.49	0.47
1:A:945:G:N1	1:A:1337:G:C2	2.82	0.47
1:A:986:A:H2'	1:A:987:G:C8	2.49	0.47
1:A:1007:C:H2'	1:A:1008:C:C6	2.50	0.47
1:A:1064:G:N2	1:A:1190:G:O2'	2.48	0.47
1:A:1160:G:O6	1:A:1181:G:C6	2.67	0.47
3:C:22:TRP:CD1	3:C:59:ARG:HG3	2.49	0.47
6:F:27:GLN:O	6:F:31:GLU:HG3	2.14	0.47
9:I:97:LYS:HB2	9:I:97:LYS:HE2	1.68	0.47
10:J:15:THR:HG23	10:J:94:VAL:HG13	1.95	0.47
11:K:63:LEU:HD23	11:K:63:LEU:HA	1.52	0.47
16:P:9:PHE:HD1	16:P:18:ARG:HG3	1.79	0.47
17:Q:86:GLU:CG	17:Q:90:ILE:HD11	2.44	0.47
20:T:30:LYS:O	20:T:34:LYS:HG2	2.14	0.47
5:E:83:GLU:HG2	5:E:88:LYS:HG3	1.96	0.47
11:K:29:ILE:HD12	11:K:30:VAL:N	2.30	0.47
16:P:3:LYS:HD2	16:P:65:GLN:O	2.15	0.47
1:A:79:G:N1	1:A:80:G:C5	2.83	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:124:G:H2'	1:A:125:U:C6	2.49	0.47
1:A:316:G:H1	1:A:337:C:H42	1.61	0.47
1:A:923:A:OP1	5:E:21:ALA:HB2	2.15	0.47
1:A:1157:A:C4	1:A:1181:G:N2	2.82	0.47
1:A:1526:G:C4	1:A:1527:C:C5	3.03	0.47
4:D:152:SER:O	4:D:155:LEU:HG	2.14	0.47
5:E:6:PHE:HD2	5:E:36:ASP:HB3	1.80	0.47
15:O:30:ALA:HA	15:O:85:LEU:HD11	1.96	0.47
16:P:20:VAL:HG13	16:P:32:TYR:HB2	1.96	0.47
17:Q:40:LYS:HD3	17:Q:42:TYR:OH	2.15	0.47
18:R:39:VAL:HG13	18:R:40:LEU:HD23	1.96	0.47
20:T:36:LEU:HA	20:T:36:LEU:HD23	1.61	0.47
20:T:36:LEU:O	20:T:39:LYS:HB3	2.14	0.47
1:A:8:A:C2	4:D:209:ARG:HD2	2.50	0.47
1:A:88:A:H2'	1:A:89:C:O4'	2.14	0.47
1:A:113:G:C1'	1:A:354:G:H5'	2.41	0.47
1:A:1029:C:H42	1:A:1033:G:H21	1.61	0.47
1:A:1068:G:OP2	1:A:1068:G:H8	1.98	0.47
1:A:1336:C:H6	1:A:1336:C:H5''	1.80	0.47
4:D:206:PHE:CD2	4:D:207:TYR:CE2	3.03	0.47
8:H:33:GLU:OE2	8:H:50:ARG:NH2	2.48	0.47
8:H:36:LEU:HA	8:H:39:LEU:HD12	1.96	0.47
9:I:74:ILE:HA	9:I:77:ILE:HD12	1.96	0.47
10:J:6:ILE:O	10:J:71:LEU:HD12	2.15	0.47
10:J:49:VAL:CG1	14:N:41:ARG:HB2	2.44	0.47
15:O:87:ILE:HG22	15:O:88:ARG:N	2.30	0.47
16:P:38:TYR:HE2	16:P:50:LYS:HE2	1.80	0.47
1:A:1096:C:H2'	1:A:1097:C:C6	2.49	0.47
1:A:1366:C:H2'	1:A:1367:C:C6	2.49	0.47
2:B:54:THR:O	2:B:58:ILE:HG13	2.15	0.47
2:B:217:ARG:HA	2:B:217:ARG:HD3	1.71	0.47
3:C:64:VAL:HG12	3:C:65:ALA:H	1.80	0.47
3:C:123:GLN:O	3:C:128:PHE:HB2	2.15	0.47
7:G:124:LEU:HD23	7:G:124:LEU:HA	1.63	0.47
9:I:126:SER:OG	9:I:127:LYS:N	2.48	0.47
16:P:4:ILE:HG22	16:P:70:ALA:HB1	1.96	0.47
1:A:110:C:H2'	1:A:111:G:O4'	2.15	0.47
1:A:376:G:H5''	16:P:5:ARG:HB2	1.97	0.47
1:A:1053:G:H4'	1:A:1054:C:H5'	1.97	0.47
1:A:1103:C:H2'	1:A:1104:G:O4'	2.15	0.47
1:A:1174:G:H2'	1:A:1175:G:H8	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1349:A:OP1	9:I:120:ARG:HB2	2.15	0.47
3:C:24:ALA:HB1	3:C:28:GLN:HB2	1.97	0.47
5:E:37:ARG:O	5:E:114:GLY:HA3	2.14	0.47
10:J:15:THR:HG23	10:J:94:VAL:CG1	2.45	0.47
10:J:61:GLU:OE1	14:N:45:ARG:NH1	2.42	0.47
13:M:34:LEU:HG	13:M:41:PRO:HA	1.97	0.47
1:A:1150:U:O4	1:A:1151:A:N6	2.48	0.46
1:A:1218:C:H2'	1:A:1219:U:C6	2.49	0.46
3:C:117:ALA:HB1	3:C:187:ALA:HB2	1.97	0.46
14:N:9:LYS:HE2	14:N:12:ARG:HH12	1.80	0.46
15:O:18:PHE:CE2	15:O:21:ASP:HB2	2.50	0.46
1:A:1003(A):G:N2	1:A:1038:C:O2	2.49	0.46
2:B:97:TRP:HH2	2:B:176:GLU:OE2	1.96	0.46
3:C:199:LYS:HB3	3:C:201:TYR:HE1	1.81	0.46
7:G:150:ALA:HA	11:K:59:TYR:CD2	2.51	0.46
10:J:21:GLN:O	10:J:25:GLU:HG3	2.15	0.46
18:R:79:LEU:CD2	18:R:80:PRO:HD2	2.45	0.46
1:A:397:A:H3'	1:A:397:A:N3	2.30	0.46
1:A:978:A:N7	1:A:1361:G:N2	2.64	0.46
1:A:997:U:H2'	1:A:998:G:C8	2.51	0.46
1:A:1202:G:N3	14:N:42:ILE:HD12	2.31	0.46
1:A:1376:U:O4	7:G:10:ARG:NH1	2.49	0.46
1:A:1414:U:O2	1:A:1414:U:H2'	2.15	0.46
1:A:1434:A:N7	1:A:1435:G:C5	2.83	0.46
1:A:1498:UR3:H4'	1:A:1519[A]:MA6:N1	2.31	0.46
4:D:73:ARG:O	4:D:77:ASN:HB2	2.15	0.46
5:E:31:LEU:HA	5:E:31:LEU:HD23	1.60	0.46
5:E:152:ARG:O	8:H:64:LYS:NZ	2.48	0.46
6:F:26:ILE:HG21	6:F:63:TYR:HE2	1.81	0.46
8:H:84:ARG:HG3	8:H:85:ARG:N	2.28	0.46
8:H:112:LEU:N	8:H:112:LEU:HD23	2.29	0.46
1:A:78:G:N2	1:A:79:G:H1'	2.30	0.46
1:A:892:A:C2	1:A:907:A:C4	3.04	0.46
1:A:966:M2G:HM22	1:A:967:5MC:C2	2.50	0.46
1:A:988:G:N1	1:A:989:C:O2	2.48	0.46
1:A:1435:G:C2	1:A:1436:U:C4	3.04	0.46
2:B:118:LEU:O	2:B:122:PHE:N	2.49	0.46
8:H:114:THR:OG1	8:H:117:GLY:O	2.22	0.46
10:J:32:ALA:O	10:J:34:VAL:HG23	2.15	0.46
15:O:74:ASP:CG	15:O:77:ARG:HG3	2.36	0.46
18:R:36:ASN:OD1	18:R:39:VAL:HG12	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1145:C:HO2'	1:A:1146:A:P	2.37	0.46
1:A:1214:C:H3'	1:A:1215:G:C8	2.50	0.46
2:B:98:LEU:HD13	24:B:401:HOH:O	2.16	0.46
3:C:21:ARG:HG3	3:C:58:GLU:HG2	1.97	0.46
11:K:101:SER:OG	11:K:102:GLY:N	2.49	0.46
1:A:78:G:N2	1:A:92:C:C5	2.84	0.46
1:A:564:C:O2'	8:H:91:ARG:NH2	2.44	0.46
1:A:1202:G:O2'	14:N:27:CYS:SG	2.64	0.46
1:A:1425:U:O2'	1:A:1426:C:H5'	2.16	0.46
2:B:31:TYR:N	2:B:31:TYR:CD1	2.84	0.46
6:F:10:LEU:HB3	6:F:84:ASN:O	2.16	0.46
8:H:51:VAL:HG21	8:H:60:ARG:NH2	2.31	0.46
10:J:34:VAL:HG13	10:J:74:ILE:HA	1.97	0.46
1:A:297:G:H5''	1:A:298:A:OP2	2.15	0.46
1:A:881:G:H2'	1:A:882:C:O4'	2.15	0.46
1:A:989:C:N3	1:A:1216:G:N2	2.64	0.46
1:A:1371:G:O3'	9:I:69:GLY:HA3	2.15	0.46
1:A:1422:G:H2'	1:A:1423:G:C8	2.51	0.46
9:I:126:SER:CB	9:I:127:LYS:HD2	2.46	0.46
12:L:25:PRO:HA	12:L:27:LEU:H	1.81	0.46
16:P:75:ARG:HH11	16:P:75:ARG:HG3	1.81	0.46
20:T:83:ARG:NH2	24:T:301:HOH:O	2.49	0.46
1:A:991:U:O2'	1:A:992:U:P	2.74	0.46
1:A:1015:A:N6	1:A:1016:A:C6	2.84	0.46
1:A:1196:U:H3'	1:A:1197:G:H5'	1.98	0.46
4:D:140:VAL:HG11	4:D:146:ILE:HD11	1.98	0.46
6:F:33:TYR:CE1	6:F:75:LEU:HA	2.51	0.46
12:L:60:LEU:HD13	12:L:60:LEU:HA	1.52	0.46
13:M:29:ARG:HB3	13:M:64:TRP:CH2	2.51	0.46
16:P:43:LYS:HG2	16:P:48:TRP:CD2	2.50	0.46
1:A:129(A):G:H1'	1:A:190(E):U:H2'	1.97	0.46
1:A:316:G:H2'	1:A:317:G:H8	1.81	0.46
1:A:446:G:N2	1:A:488:C:N3	2.50	0.46
1:A:981:U:H4'	14:N:21:TYR:CE2	2.51	0.46
1:A:1030:C:H42	1:A:1031:G:H22	1.64	0.46
1:A:1174:G:C2	1:A:1175:G:C5	3.04	0.46
1:A:1278:U:H5'	1:A:1279:A:H5'	1.96	0.46
1:A:1369:C:H2'	1:A:1370:G:H8	1.80	0.46
1:A:1518[B]:MA6:H93	1:A:1519[B]:MA6:C2	2.46	0.46
2:B:134:GLU:HB2	2:B:137:ARG:HE	1.80	0.46
3:C:151:VAL:O	3:C:152:ILE:HD13	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:27:ASN:OD1	11:K:28:THR:N	2.49	0.46
17:Q:4:LYS:CG	17:Q:6:LEU:HD21	2.44	0.46
18:R:51:LEU:HD23	18:R:52:PRO:HD2	1.98	0.46
19:S:15:LEU:HD21	19:S:71:LEU:HD11	1.97	0.46
1:A:106:C:O2'	1:A:107:G:H5'	2.16	0.46
1:A:130:A:H1'	1:A:263:A:O2'	2.16	0.46
1:A:1067:A:N1	1:A:1108:G:O2'	2.44	0.46
1:A:1093:A:N3	1:A:1109:C:O2'	2.41	0.46
5:E:80:ILE:HD11	5:E:138:ALA:HA	1.98	0.46
10:J:91:PRO:HB2	10:J:94:VAL:CG2	2.46	0.46
12:L:20:LYS:H	12:L:20:LYS:HG3	1.57	0.46
12:L:58:VAL:HG12	12:L:59:ARG:O	2.14	0.46
13:M:40:ASN:HD22	13:M:43:THR:HG23	1.81	0.46
1:A:280:C:H4'	1:A:281:G:OP2	2.15	0.45
1:A:877:C:O2	8:H:3:THR:HG21	2.15	0.45
1:A:1090:U:H2'	1:A:1091:U:H6	1.81	0.45
1:A:1243:C:H2'	1:A:1244:C:C6	2.48	0.45
1:A:1300:G:OP2	1:A:1335:C:N4	2.50	0.45
1:A:1417:G:H21	1:A:1484:C:H42	1.63	0.45
5:E:95:ALA:O	5:E:98:THR:OG1	2.28	0.45
11:K:59:TYR:CE1	11:K:63:LEU:HD11	2.51	0.45
1:A:130:A:H5'	17:Q:63:ARG:NE	2.30	0.45
1:A:344:A:H5'	1:A:345:C:H5	1.79	0.45
1:A:1332:A:H2'	1:A:1333:A:H8	1.81	0.45
2:B:24:TRP:HA	2:B:190:THR:O	2.16	0.45
8:H:10:LEU:HD23	8:H:10:LEU:HA	1.48	0.45
8:H:65:TYR:HA	8:H:79:VAL:HG23	1.98	0.45
11:K:90:GLY:HA2	11:K:93:GLN:H	1.80	0.45
17:Q:38:ARG:N	17:Q:38:ARG:HD2	2.32	0.45
20:T:75:ASN:HA	20:T:78:ALA:HB3	1.98	0.45
1:A:452:A:H2'	1:A:453:A:C8	2.52	0.45
1:A:939:G:H2'	1:A:940:C:C6	2.51	0.45
1:A:1117:G:H5''	9:I:104:ARG:NH2	2.30	0.45
2:B:122:PHE:CZ	2:B:139:LYS:HE2	2.51	0.45
11:K:44:SER:O	11:K:47:VAL:HB	2.16	0.45
16:P:38:TYR:CE2	16:P:50:LYS:HE2	2.51	0.45
16:P:39:TYR:CD1	16:P:73:LEU:HD13	2.51	0.45
1:A:51:A:C6	1:A:353:A:C2	3.05	0.45
1:A:120:A:H2'	1:A:122:G:C8	2.52	0.45
1:A:419:C:H42	1:A:424:G:H1	1.63	0.45
1:A:926:G:H3'	1:A:1505:G:N2	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1417:G:H21	1:A:1484:C:N4	2.15	0.45
2:B:97:TRP:CZ3	2:B:98:LEU:O	2.70	0.45
10:J:8:LEU:HD11	10:J:72:VAL:HG22	1.98	0.45
1:A:542:G:H5'	4:D:41:GLY:HA3	1.99	0.45
1:A:544:G:C6	1:A:545:C:C4	3.04	0.45
1:A:1035:A:H2'	1:A:1036:G:C8	2.51	0.45
2:B:55:PHE:HD2	2:B:58:ILE:HD12	1.80	0.45
5:E:51:VAL:HB	5:E:52:PRO:HD3	1.98	0.45
6:F:14:LEU:HD21	6:F:84:ASN:OD1	2.15	0.45
8:H:97:VAL:HG23	8:H:129:VAL:O	2.17	0.45
10:J:89:ASP:OD2	10:J:91:PRO:HD2	2.15	0.45
13:M:80:ARG:NH1	13:M:81:LEU:HB3	2.32	0.45
1:A:588:G:H1	1:A:651:C:N4	2.12	0.45
1:A:838:G:N2	1:A:849:C:C2	2.85	0.45
1:A:1361(A):C:O2'	1:A:1362:C:H6	2.00	0.45
5:E:87:SER:HB3	5:E:131:ILE:HD13	1.98	0.45
6:F:4:TYR:HB2	6:F:65:VAL:HG22	1.98	0.45
6:F:10:LEU:HD11	6:F:61:LEU:HD11	1.98	0.45
7:G:102:ARG:O	7:G:106:GLN:HG3	2.16	0.45
8:H:102:ARG:HG3	8:H:102:ARG:O	2.17	0.45
9:I:83:ARG:O	9:I:86:VAL:HG12	2.17	0.45
11:K:47:VAL:HG12	11:K:48:ILE:N	2.31	0.45
1:A:1174:G:H2'	1:A:1175:G:C8	2.51	0.45
1:A:1406:U:O2'	1:A:1517[B]:G:N2	2.50	0.45
2:B:87:ARG:HB3	2:B:87:ARG:HH11	1.82	0.45
3:C:64:VAL:HB	3:C:99:VAL:HG23	1.99	0.45
3:C:117:ALA:HB2	3:C:200:ALA:CB	2.46	0.45
5:E:36:ASP:OD2	5:E:40:ARG:HB2	2.16	0.45
8:H:87:SER:CA	8:H:93:VAL:HG13	2.44	0.45
11:K:70:LYS:HE2	11:K:70:LYS:HB3	1.76	0.45
12:L:46:LYS:HD2	12:L:94:PRO:HG3	1.99	0.45
16:P:34:GLU:OE2	16:P:55:ARG:HD2	2.17	0.45
17:Q:43:LEU:HD12	17:Q:68:ARG:HB3	1.99	0.45
17:Q:60:ILE:HG13	17:Q:61:GLU:N	2.31	0.45
18:R:26:LEU:HD23	18:R:29:PHE:CE2	2.52	0.45
1:A:445:G:C2	1:A:490:G:C2	3.05	0.45
1:A:1112:C:H1'	3:C:179:ARG:NH2	2.31	0.45
1:A:1288:A:H2'	1:A:1289:A:H8	1.82	0.45
1:A:1481:U:C4	1:A:1482:G:N7	2.84	0.45
2:B:24:TRP:CZ3	2:B:26:PRO:HA	2.52	0.45
2:B:108:ILE:HD12	2:B:108:ILE:HA	1.74	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:162:ILE:HG22	2:B:164:VAL:HG23	1.98	0.45
8:H:86:ILE:HG22	8:H:87:SER:N	2.30	0.45
13:M:54:VAL:O	13:M:58:GLU:HG2	2.16	0.45
18:R:76:LEU:HD23	18:R:76:LEU:HA	1.58	0.45
1:A:452:A:O2'	1:A:453:A:O5'	2.34	0.45
1:A:832:C:H2'	1:A:833:U:O4'	2.17	0.45
1:A:955:U:H1'	1:A:1227:A:N6	2.31	0.45
1:A:1346:A:H62	1:A:1375:A:H62	1.65	0.45
1:A:1397:C:HO2'	1:A:1398:A:P	2.40	0.45
2:B:21:ARG:HA	2:B:39:ILE:HA	1.98	0.45
4:D:73:ARG:HD3	4:D:77:ASN:OD1	2.16	0.45
7:G:108:ALA:O	7:G:119:ARG:HG2	2.17	0.45
9:I:9:ARG:CG	9:I:14:VAL:HG13	2.47	0.45
9:I:75:ASP:O	9:I:78:LYS:HB3	2.17	0.45
10:J:7:LYS:HB3	10:J:97:GLU:HB2	1.98	0.45
11:K:80:VAL:HG21	11:K:103:LEU:HD13	1.99	0.45
12:L:17:LYS:HB2	12:L:17:LYS:HE3	1.74	0.45
21:U:18:TYR:HE2	21:U:22:ARG:HE	1.65	0.45
1:A:7:G:H5'	1:A:298:A:H5'	1.98	0.45
1:A:410:G:C2	1:A:429:U:C2	3.05	0.45
1:A:1417:G:N2	1:A:1484:C:H42	2.15	0.45
1:A:1513:A:H2'	1:A:1514:C:C6	2.52	0.45
2:B:101:MET:O	2:B:105:PHE:HD1	2.00	0.45
3:C:66:VAL:HG21	3:C:91:LEU:HD21	1.99	0.45
6:F:22:GLU:OE1	6:F:82:ARG:NH2	2.50	0.45
8:H:36:LEU:HA	8:H:36:LEU:HD23	1.70	0.45
13:M:79:LYS:O	13:M:83:ASP:HB2	2.17	0.45
1:A:75:G:N2	1:A:96:G:H22	2.15	0.44
1:A:659:U:OP2	15:O:8:LYS:NZ	2.42	0.44
1:A:980:C:H5''	1:A:981:U:C5	2.52	0.44
1:A:1124:G:H2'	1:A:1145:C:H41	1.81	0.44
2:B:107:THR:HG23	2:B:110:GLN:OE1	2.17	0.44
3:C:37:GLN:HE22	14:N:52:GLN:CD	2.21	0.44
5:E:90:VAL:HG23	5:E:121:LYS:O	2.16	0.44
7:G:37:ASN:HB3	24:G:201:HOH:O	2.17	0.44
8:H:27:PRO:HA	8:H:58:TYR:CD2	2.51	0.44
9:I:117:HIS:HB2	9:I:121:ARG:HG2	1.98	0.44
1:A:11:G:C5	1:A:12:U:C5	3.05	0.44
1:A:448:A:P	1:A:485:G:H22	2.40	0.44
1:A:853:G:H2'	1:A:854:G:H5'	1.99	0.44
1:A:1215:G:H2'	1:A:1215:G:N3	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:85:ARG:HA	3:C:88:ARG:HD2	1.99	0.44
5:E:98:THR:HB	5:E:117:ASP:HB3	1.99	0.44
7:G:89:MET:HA	7:G:155:ARG:NH1	2.32	0.44
7:G:136:LYS:HE3	7:G:136:LYS:HB3	1.77	0.44
8:H:120:THR:H	8:H:123:GLU:HB2	1.83	0.44
10:J:91:PRO:HB2	10:J:94:VAL:HG21	1.99	0.44
11:K:114:VAL:HG23	11:K:115:PRO:HD2	2.00	0.44
15:O:60:VAL:HG12	15:O:61:GLY:N	2.33	0.44
20:T:33:ILE:CD1	20:T:63:ILE:HA	2.47	0.44
1:A:28:G:C6	1:A:29:G:C5	3.06	0.44
1:A:966:M2G:N7	1:A:967:5MC:HM52	2.33	0.44
1:A:981:U:H5'	14:N:21:TYR:OH	2.17	0.44
1:A:1124:G:C8	1:A:1145:C:C5	3.06	0.44
3:C:84:ILE:HG23	3:C:88:ARG:NH1	2.32	0.44
3:C:112:SER:HB3	3:C:115:LEU:HD12	1.97	0.44
10:J:51:ARG:NH1	10:J:61:GLU:OE1	2.50	0.44
12:L:33:ARG:NH1	12:L:61:THR:HB	2.32	0.44
1:A:333:G:H4'	20:T:16:HIS:CE1	2.52	0.44
1:A:460:A:O2'	1:A:461:C:H5''	2.18	0.44
1:A:519:C:H2'	1:A:520:A:C8	2.51	0.44
1:A:803:G:H2'	1:A:804:U:O4'	2.17	0.44
1:A:923:A:H8	1:A:923:A:O5'	2.00	0.44
3:C:4:LYS:HB2	3:C:4:LYS:NZ	2.32	0.44
3:C:10:PHE:HD2	3:C:10:PHE:O	2.00	0.44
6:F:69:GLU:OE1	6:F:69:GLU:N	2.48	0.44
7:G:108:ALA:HB2	7:G:123:GLU:HG2	1.99	0.44
8:H:85:ARG:HH11	8:H:85:ARG:HG3	1.82	0.44
13:M:40:ASN:ND2	13:M:43:THR:HG23	2.33	0.44
18:R:79:LEU:HD23	18:R:79:LEU:HA	1.66	0.44
1:A:93:G:C2	1:A:95:U:N3	2.86	0.44
1:A:415:A:H2'	1:A:416:G:O4'	2.17	0.44
1:A:719:C:N4	18:R:74:ARG:HH12	2.14	0.44
1:A:828:A:H4'	1:A:828:A:OP1	2.16	0.44
2:B:215:LEU:HD23	2:B:215:LEU:HA	1.43	0.44
3:C:9:GLY:HA3	14:N:49:HIS:HD1	1.81	0.44
3:C:91:LEU:HG	3:C:99:VAL:HG11	2.00	0.44
4:D:3:ARG:NH1	4:D:74:GLN:OE1	2.51	0.44
5:E:112:LEU:HA	5:E:112:LEU:HD23	1.70	0.44
7:G:85:TYR:O	7:G:87:VAL:HG13	2.17	0.44
8:H:20:TYR:HA	8:H:65:TYR:CE2	2.53	0.44
8:H:82:HIS:ND1	8:H:138:TRP:NE1	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:11:PHE:HB3	14:N:55:GLY:HA2	2.00	0.44
1:A:505:G:H2'	1:A:506:G:C8	2.52	0.44
1:A:579:G:H2'	1:A:580:U:C6	2.53	0.44
1:A:1417:G:OP2	1:A:1417:G:H8	2.01	0.44
3:C:119:ARG:O	3:C:122:GLU:HB2	2.18	0.44
4:D:159:ARG:O	4:D:163:GLU:HB2	2.18	0.44
5:E:144:THR:O	5:E:148:VAL:HG23	2.17	0.44
9:I:9:ARG:HG3	9:I:14:VAL:HG13	1.99	0.44
9:I:89:ASN:O	9:I:92:TYR:HB2	2.17	0.44
15:O:70:LEU:HA	15:O:70:LEU:HD23	1.51	0.44
1:A:524:G:H2'	1:A:525:C:C6	2.53	0.44
1:A:1054:C:OP1	1:A:1197:G:OP1	2.36	0.44
1:A:1219:U:C4	1:A:1220:G:N7	2.86	0.44
1:A:1223:C:P	19:S:78:ARG:HH22	2.41	0.44
3:C:79:ARG:H	3:C:79:ARG:HG3	1.73	0.44
5:E:121:LYS:HG2	5:E:123:LEU:HD21	1.99	0.44
10:J:63:PHE:HE1	14:N:45:ARG:HA	1.83	0.44
14:N:6:LEU:O	14:N:23:ARG:NE	2.39	0.44
15:O:36:ILE:HD12	15:O:60:VAL:HG23	1.99	0.44
1:A:651:C:O2'	1:A:652:U:H5'	2.18	0.44
1:A:1069:C:O2'	1:A:1192:C:H1'	2.18	0.44
1:A:1185:G:O2'	1:A:1186:G:H5'	2.18	0.44
2:B:17:PHE:HD1	2:B:18:GLY:N	2.15	0.44
2:B:25:ASN:O	2:B:27:LYS:N	2.51	0.44
2:B:55:PHE:HE2	2:B:218:ALA:HA	1.83	0.44
5:E:28:PHE:O	5:E:47:LYS:HA	2.18	0.44
5:E:51:VAL:HG12	5:E:52:PRO:N	2.32	0.44
5:E:92:LYS:HB3	5:E:119:LEU:HB2	1.99	0.44
6:F:10:LEU:HD12	6:F:59:TYR:HB3	1.99	0.44
9:I:118:LYS:O	9:I:120:ARG:N	2.44	0.44
11:K:58:PRO:O	11:K:61:ALA:HB3	2.18	0.44
1:A:80:G:H2'	1:A:81:U:H5'	2.00	0.44
1:A:279:A:OP1	1:A:280:C:O2'	2.32	0.44
1:A:321:A:N6	1:A:329:A:OP2	2.50	0.44
1:A:673:G:H5''	6:F:87:ARG:CZ	2.47	0.44
1:A:825:G:H21	8:H:11:THR:HG21	1.83	0.44
1:A:990:C:N3	1:A:1216:G:N2	2.66	0.44
1:A:1257:U:O2'	1:A:1258:G:C8	2.70	0.44
1:A:1290:G:H2'	1:A:1291:G:H8	1.83	0.44
4:D:186:LEU:H	4:D:186:LEU:HG	1.47	0.44
11:K:87:THR:HG22	11:K:88:GLY:N	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:120:TYR:N	12:L:120:TYR:CD2	2.86	0.44
16:P:12:LYS:O	16:P:13:HIS:HB2	2.17	0.44
1:A:176:C:H2'	1:A:177:C:C5	2.53	0.43
1:A:701:C:H4'	1:A:702:A:O5'	2.18	0.43
1:A:1136:U:H4'	1:A:1137:C:OP2	2.17	0.43
1:A:1196:U:OP1	1:A:1197:G:H5'	2.18	0.43
1:A:1329:A:H2'	1:A:1330:U:O4'	2.18	0.43
1:A:1354:C:H2'	1:A:1355:G:H8	1.83	0.43
1:A:1375:A:C2	1:A:1376:U:C2	3.06	0.43
1:A:1473:A:C6	1:A:1474:G:C6	3.06	0.43
4:D:121:VAL:HG12	4:D:134:ASP:O	2.17	0.43
5:E:12:LEU:O	5:E:12:LEU:HD22	2.18	0.43
8:H:114:THR:HG21	8:H:129:VAL:HB	2.00	0.43
12:L:11:VAL:HG22	17:Q:29:HIS:CD2	2.53	0.43
13:M:23:TYR:HB2	13:M:67:GLU:OE2	2.18	0.43
16:P:65:GLN:HA	16:P:66:PRO:HD2	1.76	0.43
18:R:63:GLN:O	18:R:66:LEU:HB3	2.18	0.43
19:S:31:ILE:HG23	19:S:32:LYS:N	2.33	0.43
20:T:100:ILE:HG22	20:T:102:GLY:N	2.20	0.43
1:A:98:U:H6	1:A:98:U:OP2	2.00	0.43
1:A:602:A:C2	1:A:637:G:C2	3.06	0.43
1:A:988:G:C6	1:A:989:C:C2	3.07	0.43
1:A:1221:G:H5'	19:S:36:ARG:NH1	2.32	0.43
5:E:60:TYR:O	5:E:64:ARG:HG2	2.18	0.43
6:F:80:ARG:HG3	6:F:88:VAL:HB	2.00	0.43
13:M:37:THR:HG23	13:M:55:ARG:HB3	2.00	0.43
13:M:80:ARG:HB3	13:M:80:ARG:HH11	1.83	0.43
1:A:773:G:N2	1:A:806:C:O2	2.50	0.43
1:A:1254:C:H4'	1:A:1357:A:OP1	2.18	0.43
1:A:1311:G:H1	1:A:1326:C:N4	2.16	0.43
1:A:1349:A:C2	1:A:1374:A:C4	3.06	0.43
2:B:139:LYS:HZ2	2:B:143:GLU:HG3	1.83	0.43
4:D:173:TRP:CD1	4:D:189:PRO:HD3	2.54	0.43
8:H:63:LEU:HD23	8:H:65:TYR:OH	2.18	0.43
8:H:78:GLN:OE1	8:H:78:GLN:HA	2.18	0.43
11:K:98:LEU:HD23	11:K:98:LEU:HA	1.70	0.43
14:N:23:ARG:HD3	14:N:28:GLY:O	2.19	0.43
1:A:147:G:C2	1:A:148:G:C8	3.06	0.43
1:A:403:C:H4'	4:D:122:ARG:HH11	1.82	0.43
1:A:448:A:C4	1:A:487:A:C2	3.06	0.43
1:A:539:A:H2'	1:A:540:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:622:A:H2'	1:A:623:C:H5'	2.00	0.43
1:A:671:G:H5'	6:F:77:ARG:NH2	2.33	0.43
1:A:1341:U:O5'	1:A:1341:U:H6	2.00	0.43
1:A:1374:A:C4	1:A:1375:A:C8	3.07	0.43
1:A:1399:C:C2	1:A:1502:A:N6	2.86	0.43
2:B:180:LEU:HD23	2:B:180:LEU:HA	1.59	0.43
5:E:71:LEU:HD23	5:E:71:LEU:HA	1.66	0.43
6:F:4:TYR:CD1	6:F:92:LYS:HA	2.53	0.43
8:H:89:PRO:HA	8:H:92:ARG:NH1	2.33	0.43
11:K:92:GLU:HB3	11:K:96:ARG:NH2	2.33	0.43
15:O:39:LEU:HB3	15:O:56:LEU:CD1	2.47	0.43
15:O:78:TYR:CZ	15:O:82:ILE:HD12	2.54	0.43
16:P:68:ASP:OD1	16:P:68:ASP:N	2.50	0.43
17:Q:67:LYS:HA	17:Q:70:ARG:HH12	1.84	0.43
1:A:253:U:H2'	1:A:254:G:H8	1.84	0.43
1:A:1320:C:C4	19:S:36:ARG:HG3	2.53	0.43
1:A:1371:G:C5	1:A:1372:U:C5	3.07	0.43
1:A:1408:A:C6	1:A:1494:G:C6	3.07	0.43
3:C:113:ALA:O	3:C:116:VAL:HG23	2.18	0.43
4:D:31:CYS:C	4:D:33:MET:H	2.21	0.43
5:E:11:ILE:HD13	5:E:11:ILE:HA	1.61	0.43
5:E:122:GLU:HG2	5:E:131:ILE:HG13	1.99	0.43
12:L:60:LEU:HB2	12:L:64:TYR:O	2.19	0.43
12:L:84:LEU:HB3	12:L:104:VAL:HG11	2.00	0.43
13:M:80:ARG:HH12	13:M:81:LEU:HB3	1.83	0.43
14:N:17:LYS:HE2	14:N:17:LYS:HB2	1.79	0.43
17:Q:22:LEU:HD12	17:Q:23:VAL:N	2.34	0.43
20:T:74:LYS:HB2	20:T:76:ALA:H	1.82	0.43
1:A:455:C:H2'	1:A:456:C:C6	2.43	0.43
1:A:657:G:H4'	15:O:28:GLN:HG2	2.01	0.43
1:A:1001:A:H2'	1:A:1002:G:C8	2.48	0.43
1:A:1007:C:O2	1:A:1023:G:N1	2.51	0.43
1:A:1370:G:C2	1:A:1371:G:N7	2.87	0.43
1:A:1419:G:H2'	1:A:1420:C:O4'	2.18	0.43
2:B:55:PHE:HA	2:B:58:ILE:HD12	2.00	0.43
3:C:17:ASP:O	3:C:54:ARG:NH1	2.48	0.43
3:C:40:ARG:HE	3:C:55:VAL:HB	1.81	0.43
3:C:81:GLY:O	3:C:84:ILE:HG22	2.17	0.43
3:C:87:LEU:HD13	3:C:87:LEU:HA	1.82	0.43
4:D:207:TYR:HD2	4:D:207:TYR:HA	1.66	0.43
7:G:47:CYS:HB3	7:G:58:PRO:CG	2.47	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:77:LEU:HA	12:L:77:LEU:HD23	1.63	0.43
17:Q:5:VAL:C	17:Q:6:LEU:HD23	2.39	0.43
1:A:9:G:H5'	5:E:122:GLU:OE2	2.19	0.43
1:A:49:U:C2	1:A:361:G:N2	2.86	0.43
1:A:289:G:H5'	1:A:289:G:H8	1.83	0.43
1:A:1067:A:N6	1:A:1109:C:H5'	2.34	0.43
2:B:149:LEU:O	2:B:153:ARG:HB2	2.18	0.43
5:E:76:ILE:HG22	5:E:93:PRO:HG3	2.00	0.43
6:F:45:LEU:HA	6:F:45:LEU:HD23	1.80	0.43
1:A:8:A:N1	4:D:209:ARG:HD2	2.34	0.43
1:A:78:G:C6	1:A:79:G:C8	3.07	0.43
1:A:145:G:C2	1:A:146:G:C5	3.07	0.43
1:A:475:G:H2'	1:A:476:G:C8	2.54	0.43
1:A:631:G:H5''	1:A:632:A:OP1	2.19	0.43
1:A:673:G:O3'	6:F:87:ARG:NH2	2.52	0.43
1:A:687:A:H4'	1:A:688:G:O5'	2.19	0.43
1:A:902:G:O2'	1:A:903:G:H5'	2.19	0.43
1:A:1167:A:C6	1:A:1168:A:C6	3.07	0.43
1:A:1220:G:H2'	1:A:1221:G:O4'	2.19	0.43
7:G:45:ASP:HA	7:G:48:LYS:HG3	1.99	0.43
8:H:112:LEU:HD22	8:H:133:LEU:HA	2.01	0.43
9:I:37:PHE:CZ	9:I:74:ILE:HG12	2.53	0.43
17:Q:75:ARG:NH2	17:Q:77:VAL:HG13	2.30	0.43
19:S:33:THR:HG22	19:S:35:SER:H	1.84	0.43
1:A:675:A:H1'	11:K:116:HIS:CG	2.53	0.43
1:A:980:C:H5''	1:A:981:U:H5	1.84	0.43
1:A:992:U:N3	1:A:1044:A:N6	2.60	0.43
1:A:1346:A:OP1	9:I:120:ARG:NH1	2.45	0.43
1:A:1421:G:H2'	1:A:1422:G:O4'	2.19	0.43
1:A:1491:G:N2	1:A:1492:A:H62	2.16	0.43
2:B:204:ASN:N	2:B:204:ASN:OD1	2.51	0.43
5:E:77:PRO:HD2	5:E:142:LEU:HD13	2.01	0.43
7:G:18:TYR:OH	7:G:58:PRO:HB2	2.19	0.43
7:G:118:VAL:HG12	7:G:122:HIS:HD1	1.83	0.43
17:Q:83:ASP:OD1	17:Q:84:LEU:N	2.49	0.43
1:A:120:A:H2'	1:A:122:G:N7	2.34	0.43
1:A:1268:A:O3'	21:U:19:GLY:HA2	2.19	0.43
1:A:1305:G:H22	1:A:1331:G:H1'	1.81	0.43
2:B:114:ARG:O	2:B:114:ARG:HD3	2.19	0.43
4:D:82:ALA:HA	4:D:85:LYS:HG3	2.00	0.43
12:L:53:ARG:HH12	12:L:92:OTD:CG	2.31	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:15:PHE:CZ	15:O:85:LEU:HD21	2.53	0.43
15:O:70:LEU:O	15:O:73:GLU:N	2.50	0.43
20:T:20:LEU:O	20:T:23:ARG:HB3	2.18	0.43
1:A:321:A:H2'	1:A:322:C:C6	2.54	0.42
1:A:337:C:H2'	1:A:338:A:C8	2.54	0.42
1:A:376:G:H5''	16:P:5:ARG:HD2	2.00	0.42
1:A:631:G:O3'	1:A:632:A:H8	2.01	0.42
1:A:1526:G:H2'	1:A:1527:C:C6	2.53	0.42
2:B:10:LEU:HD12	2:B:10:LEU:H	1.84	0.42
2:B:92:TYR:O	2:B:151:GLY:HA3	2.19	0.42
3:C:10:PHE:CE2	3:C:178:LEU:HB2	2.54	0.42
6:F:11:ASN:HB2	6:F:86:ARG:CZ	2.49	0.42
6:F:62:TRP:CH2	6:F:64:GLN:HB2	2.54	0.42
7:G:115:ARG:HB2	7:G:118:VAL:CG2	2.47	0.42
8:H:83:ILE:HD12	8:H:83:ILE:HG23	1.73	0.42
1:A:376:G:H4'	16:P:5:ARG:HD2	2.01	0.42
1:A:688:G:C5	1:A:700:G:C2	3.07	0.42
1:A:1123:A:H2'	1:A:1124:G:C8	2.54	0.42
1:A:1148:U:H2'	1:A:1149:C:O4'	2.19	0.42
1:A:1491:G:C5	1:A:1493:A:C2	3.07	0.42
1:A:1514:C:H2'	1:A:1515[A]:C:O4'	2.19	0.42
2:B:88:ALA:O	2:B:90:MET:N	2.52	0.42
2:B:172:ILE:H	2:B:172:ILE:CD1	2.26	0.42
3:C:19:GLU:O	3:C:56:ASP:HA	2.19	0.42
3:C:24:ALA:HB3	3:C:29:TYR:CD1	2.54	0.42
5:E:6:PHE:CD2	5:E:36:ASP:HB3	2.54	0.42
5:E:80:ILE:HD11	5:E:138:ALA:HB1	2.01	0.42
13:M:82:MET:HA	13:M:89:GLY:CA	2.49	0.42
16:P:32:TYR:O	16:P:32:TYR:HD2	2.02	0.42
17:Q:17:LYS:N	17:Q:49:GLU:OE2	2.36	0.42
17:Q:43:LEU:HD23	17:Q:43:LEU:HA	1.77	0.42
17:Q:59:ILE:HA	17:Q:59:ILE:HD13	1.64	0.42
1:A:62:U:H2'	1:A:63:C:C6	2.55	0.42
1:A:75:G:N2	1:A:96:G:N2	2.68	0.42
1:A:160:A:N6	1:A:161:A:C2	2.88	0.42
1:A:665:A:H3'	1:A:725:G:N2	2.34	0.42
2:B:222:ILE:HD13	2:B:222:ILE:HG21	1.77	0.42
5:E:106:PRO:O	5:E:110:LEU:HG	2.18	0.42
8:H:53:VAL:HB	8:H:58:TYR:CE1	2.54	0.42
10:J:36:GLY:HA3	10:J:37:PRO:HD3	1.70	0.42
11:K:48:ILE:HD13	11:K:63:LEU:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:7:GLU:H	15:O:7:GLU:HG3	1.63	0.42
19:S:80:TYR:CG	19:S:81:ARG:N	2.87	0.42
1:A:439:A:C4	1:A:497:A:C2	3.07	0.42
1:A:599:C:O2'	8:H:129:VAL:HG12	2.20	0.42
1:A:740:U:O2'	1:A:741:G:H5'	2.19	0.42
1:A:768:A:C5	1:A:769:G:C8	3.08	0.42
1:A:865:A:H2	1:A:918:A:H4'	1.84	0.42
1:A:905:U:H2'	1:A:906:G:H5'	2.01	0.42
1:A:1370:G:C2	1:A:1371:G:C8	3.08	0.42
2:B:10:LEU:C	2:B:12:GLU:H	2.21	0.42
2:B:102:LEU:HB3	2:B:180:LEU:HD12	2.01	0.42
2:B:217:ARG:O	2:B:220:ASP:HB2	2.20	0.42
3:C:7:PRO:O	3:C:11:ARG:NE	2.52	0.42
5:E:11:ILE:HB	5:E:31:LEU:HB3	2.00	0.42
5:E:74:GLY:HA3	5:E:116:THR:HG22	2.00	0.42
6:F:67:MET:HB2	6:F:68:PRO:HD2	2.02	0.42
9:I:54:ASP:O	9:I:58:HIS:ND1	2.52	0.42
9:I:97:LYS:O	9:I:100:GLY:N	2.51	0.42
14:N:36:PHE:C	14:N:36:PHE:CD1	2.93	0.42
1:A:76:C:N4	1:A:93:G:H1	2.16	0.42
1:A:266:G:H5''	1:A:266:G:H8	1.83	0.42
1:A:403:C:O3'	4:D:122:ARG:HD3	2.19	0.42
1:A:424:G:H2'	1:A:425:G:C8	2.55	0.42
1:A:511:C:O2'	1:A:534:U:H1'	2.20	0.42
1:A:690:G:C6	1:A:691:G:C6	3.07	0.42
1:A:994:A:C8	1:A:1216:G:H4'	2.54	0.42
1:A:1149:C:H6	1:A:1149:C:O5'	2.03	0.42
1:A:1304:G:OP1	21:U:2:GLY:N	2.53	0.42
3:C:34:LEU:HD21	14:N:25:VAL:HG21	2.01	0.42
3:C:115:LEU:HA	3:C:115:LEU:HD23	1.77	0.42
13:M:34:LEU:HA	13:M:34:LEU:HD13	1.88	0.42
13:M:87:TYR:O	13:M:90:LEU:N	2.52	0.42
15:O:4:THR:HG23	15:O:7:GLU:OE1	2.20	0.42
16:P:4:ILE:HG13	16:P:64:ALA:HB1	2.01	0.42
1:A:77:G:C4	1:A:93:G:N2	2.87	0.42
1:A:1324:A:H2'	1:A:1325:C:O4'	2.18	0.42
1:A:1474:G:H8	1:A:1474:G:O5'	2.02	0.42
1:A:1520[A]:G:H2'	1:A:1521:G:C8	2.54	0.42
2:B:7:VAL:O	2:B:8:LYS:HB3	2.19	0.42
3:C:87:LEU:O	3:C:91:LEU:HB2	2.18	0.42
3:C:155:GLY:O	3:C:196:LEU:HG	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:6:ARG:HG3	7:G:6:ARG:O	2.20	0.42
9:I:102:LEU:HA	9:I:102:LEU:HD23	1.70	0.42
10:J:47:PHE:HB3	14:N:34:TYR:CE2	2.40	0.42
12:L:127:GLU:H	12:L:127:GLU:HG2	1.68	0.42
13:M:4:ILE:HG22	13:M:5:ALA:N	2.35	0.42
1:A:97:G:C2'	1:A:98:U:H5'	2.49	0.42
1:A:105:G:H2'	1:A:106:C:C6	2.54	0.42
1:A:429:U:OP1	4:D:36:ARG:NH1	2.52	0.42
1:A:912:A:H5''	12:L:46:LYS:HZ1	1.84	0.42
1:A:1169:A:H2'	1:A:1171:G:O4'	2.19	0.42
1:A:1208:C:C4	1:A:1209:C:C5	3.08	0.42
3:C:11:ARG:HB3	3:C:16:ARG:HB2	2.02	0.42
4:D:162:LEU:HA	4:D:162:LEU:HD23	1.64	0.42
6:F:5:GLU:HG2	6:F:62:TRP:CZ2	2.55	0.42
8:H:11:THR:O	8:H:12:ARG:C	2.58	0.42
9:I:52:ALA:HB1	9:I:95:LYS:HD2	2.01	0.42
10:J:6:ILE:C	10:J:71:LEU:HD12	2.39	0.42
14:N:39:LEU:HA	14:N:39:LEU:HD23	1.77	0.42
1:A:79:G:C2	1:A:80:G:N7	2.87	0.42
1:A:149:A:H2'	1:A:150:C:C6	2.55	0.42
1:A:363:A:N6	1:A:364:A:N1	2.67	0.42
1:A:461:C:H4'	1:A:462:G:OP2	2.20	0.42
1:A:943:U:H2'	1:A:944:G:H5'	2.00	0.42
1:A:1037:C:N3	1:A:1038:C:N4	2.68	0.42
1:A:1191:A:H2'	1:A:1192:C:C6	2.55	0.42
1:A:1374:A:H2'	1:A:1375:A:C8	2.54	0.42
8:H:51:VAL:HG11	8:H:60:ARG:HB2	2.01	0.42
9:I:14:VAL:O	9:I:65:VAL:HG23	2.20	0.42
20:T:43:LEU:HG	20:T:55:ILE:CD1	2.50	0.42
20:T:60:GLU:O	20:T:63:ILE:HB	2.19	0.42
1:A:77:G:C2	1:A:93:G:N3	2.88	0.42
1:A:145:G:H2'	1:A:146:G:H8	1.85	0.42
1:A:539:A:H2'	1:A:540:G:H8	1.83	0.42
1:A:782:A:C6	1:A:801:U:C2	3.08	0.42
1:A:956:U:H2'	1:A:957:U:O4'	2.20	0.42
1:A:1109:C:H2'	1:A:1110:A:O4'	2.19	0.42
1:A:1402:4OC:HM23	1:A:1402:4OC:H1'	1.48	0.42
2:B:46:LYS:HE3	2:B:46:LYS:HB2	1.95	0.42
2:B:51:LEU:HD23	2:B:51:LEU:HA	1.88	0.42
2:B:236:TYR:CD2	2:B:239:VAL:HG21	2.55	0.42
5:E:11:ILE:HG23	5:E:11:ILE:HD12	1.59	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:79:ARG:HH21	7:G:82:GLY:HA2	1.84	0.42
1:A:374:A:C6	1:A:375:U:C4	3.08	0.42
1:A:1056:U:O2'	1:A:1057:G:H5'	2.20	0.42
1:A:1098:C:H2'	1:A:1099:G:O4'	2.20	0.42
2:B:24:TRP:CZ3	2:B:29:ALA:HB2	2.54	0.42
2:B:95:GLN:NE2	2:B:147:LYS:HE2	2.35	0.42
5:E:55:VAL:HG12	5:E:56:GLN:N	2.34	0.42
5:E:131:ILE:HD13	5:E:131:ILE:HA	1.54	0.42
9:I:28:VAL:HA	9:I:63:ILE:O	2.19	0.42
12:L:24:VAL:HG12	12:L:26:ALA:H	1.85	0.42
14:N:6:LEU:HB3	14:N:23:ARG:HH21	1.85	0.42
1:A:596:C:O5'	1:A:596:C:H6	2.02	0.41
1:A:1250:A:H2'	1:A:1251:A:C8	2.55	0.41
1:A:1311:G:C2	1:A:1327:C:N3	2.88	0.41
3:C:73:PRO:HG3	3:C:105:GLU:OE1	2.20	0.41
3:C:161:GLU:O	3:C:161:GLU:HG2	2.20	0.41
10:J:19:SER:CB	10:J:94:VAL:HG11	2.50	0.41
10:J:42:THR:HG23	10:J:67:THR:C	2.41	0.41
11:K:106:LYS:HD3	11:K:106:LYS:HA	1.95	0.41
1:A:141:A:H1'	1:A:182:U:O2	2.19	0.41
1:A:532:A:H2'	1:A:533:A:H5''	2.01	0.41
1:A:623:C:H2'	1:A:624:C:O4'	2.19	0.41
1:A:689:C:H2'	1:A:690:G:O4'	2.19	0.41
1:A:1004:A:H4'	1:A:1005:A:OP1	2.20	0.41
1:A:1114:C:H42	1:A:1186:G:H1	1.68	0.41
1:A:1196:U:H3'	1:A:1197:G:C5'	2.50	0.41
2:B:88:ALA:HB3	2:B:219:VAL:HG22	2.01	0.41
3:C:150:LYS:O	3:C:201:TYR:HB2	2.20	0.41
12:L:46:LYS:HE3	12:L:47:LYS:NZ	2.35	0.41
14:N:36:PHE:C	14:N:36:PHE:HD1	2.22	0.41
14:N:48:ALA:HA	14:N:53:LEU:HB2	2.02	0.41
20:T:40:ALA:HB2	20:T:55:ILE:CG2	2.50	0.41
1:A:428:G:H1'	1:A:429:U:OP2	2.20	0.41
1:A:794:A:C5	1:A:795:C:C4	3.09	0.41
1:A:986:A:O2'	19:S:52:TYR:OH	2.14	0.41
1:A:1084:G:O2'	1:A:1085:U:OP1	2.26	0.41
1:A:1201:A:H4'	1:A:1202:G:H5''	2.00	0.41
1:A:1221:G:C4	1:A:1222:G:C8	3.08	0.41
2:B:95:GLN:OE1	2:B:95:GLN:HA	2.19	0.41
4:D:4:TYR:HE2	4:D:6:GLY:O	2.03	0.41
4:D:105:VAL:HG13	4:D:110:PHE:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:196:LEU:O	4:D:198:VAL:N	2.51	0.41
8:H:48:TYR:CD1	8:H:59:LEU:HD22	2.55	0.41
17:Q:60:ILE:HG22	17:Q:72:ARG:O	2.20	0.41
1:A:191:G:O2'	20:T:102:GLY:O	2.24	0.41
1:A:901:A:C5	1:A:902:G:H1'	2.56	0.41
1:A:1257:U:O2'	1:A:1258:G:P	2.78	0.41
1:A:1279:A:H5''	10:J:7:LYS:HE2	2.02	0.41
1:A:1354:C:H2'	1:A:1355:G:C8	2.55	0.41
1:A:1417:G:O3'	1:A:1418:A:H8	2.03	0.41
1:A:1434:A:H2'	1:A:1435:G:O4'	2.20	0.41
2:B:74:LYS:O	2:B:78:GLN:HG3	2.20	0.41
4:D:8:VAL:O	4:D:10:ARG:N	2.54	0.41
6:F:70:ASP:OD1	6:F:70:ASP:N	2.49	0.41
7:G:78:ARG:HG3	7:G:87:VAL:HG21	2.01	0.41
17:Q:35:VAL:O	17:Q:35:VAL:HG12	2.21	0.41
1:A:255:G:O6	1:A:266:G:O6	2.38	0.41
1:A:446:G:H1	1:A:488:C:N4	2.03	0.41
1:A:750:G:N3	15:O:23:GLY:HA3	2.34	0.41
1:A:973:G:C3'	1:A:974:A:H5''	2.49	0.41
1:A:980:C:H5'	1:A:981:U:OP2	2.20	0.41
1:A:1103:C:H5'	2:B:98:LEU:HD12	2.03	0.41
1:A:1376:U:H2'	1:A:1377:A:C8	2.56	0.41
1:A:1408:A:N6	1:A:1494:G:C6	2.89	0.41
1:A:1416:G:N2	1:A:1484:C:O2	2.53	0.41
1:A:1443:G:C4'	1:A:1446:A:H5''	2.50	0.41
2:B:102:LEU:HB2	2:B:176:GLU:OE1	2.20	0.41
2:B:134:GLU:O	2:B:138:LEU:HD12	2.21	0.41
3:C:154:SER:OG	3:C:155:GLY:N	2.48	0.41
3:C:175:LEU:HD21	3:C:201:TYR:CE2	2.56	0.41
6:F:21:LEU:O	6:F:25:ILE:HG12	2.20	0.41
8:H:80:ILE:HG21	8:H:80:ILE:HD13	1.72	0.41
9:I:93:ARG:HG3	9:I:102:LEU:HD11	2.03	0.41
1:A:289:G:P	24:A:1909:HOH:O	2.79	0.41
1:A:302:G:N3	1:A:556:C:H4'	2.36	0.41
1:A:397:A:H5'	1:A:398:C:P	2.61	0.41
1:A:460:A:C6	1:A:462:G:C5	3.09	0.41
1:A:506:G:H1	1:A:525:C:H42	1.68	0.41
1:A:854:G:H3'	1:A:871:U:O4	2.21	0.41
1:A:938:A:H2'	1:A:939:G:O4'	2.20	0.41
1:A:981:U:H5''	1:A:982:U:C5'	2.50	0.41
1:A:1048:G:N2	1:A:1050:G:C4	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1228:C:O3'	13:M:116:THR:HG23	2.20	0.41
1:A:1443:G:C5'	1:A:1446:A:H5''	2.50	0.41
1:A:1486:G:N2	1:A:1487:G:N3	2.68	0.41
3:C:113:ALA:HA	3:C:116:VAL:CG2	2.51	0.41
4:D:187:ARG:NH2	4:D:188:LEU:HD12	2.36	0.41
6:F:4:TYR:HD1	6:F:92:LYS:CA	2.34	0.41
6:F:74:ASP:OD2	6:F:74:ASP:N	2.48	0.41
7:G:27:ILE:HA	7:G:30:ILE:HD12	2.03	0.41
8:H:27:PRO:HB3	8:H:58:TYR:CE2	2.56	0.41
8:H:73:ASP:HA	8:H:74:PRO:HD2	1.75	0.41
10:J:72:VAL:O	10:J:73:ASP:HB2	2.20	0.41
11:K:48:ILE:H	11:K:48:ILE:HG13	1.36	0.41
13:M:19:LEU:O	13:M:22:ILE:HG13	2.20	0.41
1:A:7:G:H5'	1:A:298:A:O4'	2.20	0.41
1:A:92:C:O2	1:A:92:C:C2'	2.66	0.41
1:A:262:A:C6	1:A:263:A:C6	3.08	0.41
1:A:413:G:C8	1:A:413:G:H3'	2.55	0.41
1:A:555:C:H2'	1:A:556:C:C6	2.55	0.41
1:A:620:C:N1	4:D:135:LEU:HD13	2.35	0.41
1:A:634:C:H2'	1:A:635:G:H8	1.85	0.41
1:A:1030(C):G:C6	1:A:1030(D):A:N1	2.89	0.41
1:A:1228:C:OP1	13:M:115:LYS:NZ	2.39	0.41
1:A:1372:U:N3	1:A:1373:G:C4	2.89	0.41
3:C:61:ALA:C	3:C:63:ASN:H	2.24	0.41
3:C:149:ALA:O	3:C:169:ALA:HB1	2.20	0.41
4:D:110:PHE:CZ	4:D:181:MET:O	2.73	0.41
5:E:12:LEU:HD13	5:E:31:LEU:HB2	2.02	0.41
6:F:4:TYR:CE1	6:F:92:LYS:HB3	2.56	0.41
7:G:61:VAL:HG22	7:G:128:ALA:HB1	2.03	0.41
8:H:2:LEU:HD23	8:H:2:LEU:HA	1.88	0.41
10:J:34:VAL:HG22	10:J:75:ILE:H	1.86	0.41
17:Q:58:GLU:O	17:Q:59:ILE:HD13	2.20	0.41
1:A:474:G:H8	1:A:474:G:O5'	2.04	0.41
1:A:517:G:N2	1:A:530:G:OP1	2.50	0.41
1:A:841:U:H3	2:B:37:ASN:HA	1.84	0.41
1:A:938:A:N3	1:A:1376:U:O2'	2.40	0.41
1:A:1133:G:C2	1:A:1142:G:C2	3.08	0.41
1:A:1251:A:H4'	9:I:12:GLU:OE2	2.21	0.41
1:A:1320:C:H2'	1:A:1321:C:O4'	2.20	0.41
1:A:1433:A:C8	1:A:1467:G:N2	2.89	0.41
2:B:80:ILE:HD12	2:B:80:ILE:N	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:213:LEU:HD23	2:B:214:ILE:HG12	2.02	0.41
3:C:72:LYS:HB2	3:C:75:VAL:HG23	2.02	0.41
3:C:141:VAL:O	3:C:146:ALA:HB3	2.21	0.41
5:E:152:ARG:NE	8:H:44:PHE:CE1	2.89	0.41
6:F:6:VAL:HG22	6:F:90:VAL:HG22	2.03	0.41
7:G:135:VAL:HA	7:G:138:LYS:HB3	2.03	0.41
8:H:77:GLU:HG2	8:H:78:GLN:N	2.35	0.41
12:L:6:THR:OG1	12:L:9:GLN:HG3	2.21	0.41
15:O:76:GLU:O	15:O:77:ARG:C	2.59	0.41
19:S:80:TYR:CE1	19:S:81:ARG:HB3	2.56	0.41
1:A:179:A:H2'	1:A:180:U:C6	2.56	0.41
1:A:255:G:C2	1:A:272:C:C2	3.08	0.41
1:A:278:G:OP2	17:Q:41:LYS:NZ	2.44	0.41
1:A:985:C:C4	1:A:1221:G:N2	2.89	0.41
1:A:999:C:O2'	1:A:1000:U:H5'	2.21	0.41
1:A:1003:G:N2	1:A:1039:C:C2	2.89	0.41
2:B:71:VAL:O	2:B:165:VAL:HG23	2.20	0.41
2:B:132:LYS:HA	2:B:135:GLN:HB3	2.03	0.41
3:C:8:ILE:HA	3:C:11:ARG:HB2	2.03	0.41
3:C:68:VAL:HG12	3:C:70:VAL:HG22	2.03	0.41
3:C:71:ALA:CB	3:C:109:PRO:HB3	2.51	0.41
3:C:174:PRO:O	3:C:177:THR:HG23	2.21	0.41
3:C:178:LEU:HA	3:C:178:LEU:HD23	1.69	0.41
6:F:10:LEU:HD12	6:F:10:LEU:H	1.86	0.41
9:I:43:ALA:HA	9:I:74:ILE:HD13	2.02	0.41
9:I:116:LYS:HB3	9:I:121:ARG:O	2.20	0.41
11:K:34:ASP:OD1	11:K:38:ASN:N	2.54	0.41
12:L:41:ARG:HD3	12:L:43:VAL:HG22	2.02	0.41
12:L:98:TYR:CD1	12:L:98:TYR:N	2.88	0.41
15:O:44:LYS:HE2	15:O:44:LYS:HB3	1.82	0.41
17:Q:29:HIS:ND1	17:Q:30:PRO:HD2	2.35	0.41
18:R:47:THR:O	18:R:49:LYS:N	2.54	0.41
19:S:63:THR:HG22	19:S:64:GLU:H	1.86	0.41
20:T:33:ILE:HD11	20:T:63:ILE:HA	2.03	0.41
1:A:35:G:C6	1:A:36:C:C4	3.09	0.41
1:A:184:G:C4	1:A:185:A:N7	2.89	0.41
1:A:409:G:OP1	4:D:24:GLU:O	2.38	0.41
1:A:462:G:C6	1:A:463:A:C5	3.09	0.41
1:A:463:A:O2'	16:P:82:GLN:HG2	2.20	0.41
1:A:1236:A:OP1	21:U:3:LYS:HG3	2.21	0.41
1:A:1380:U:H1'	1:A:1381:U:OP2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1495:U:H2'	1:A:1496:C:C6	2.56	0.41
6:F:101:ALA:HA	18:R:28:GLU:HG3	2.03	0.41
7:G:44:TYR:O	7:G:48:LYS:HG3	2.21	0.41
8:H:63:LEU:N	8:H:63:LEU:HD13	2.36	0.41
10:J:79:ARG:NH2	10:J:82:ILE:HD13	2.36	0.41
13:M:54:VAL:HG22	13:M:57:ARG:NH1	2.32	0.41
18:R:58:LEU:HD23	18:R:58:LEU:HA	1.70	0.41
1:A:42:G:H2'	1:A:43:C:O4'	2.20	0.40
1:A:232:G:H2'	1:A:233:C:C6	2.56	0.40
1:A:934:C:H42	1:A:938:A:H61	1.69	0.40
1:A:948:C:N4	1:A:1233:G:H1	2.18	0.40
1:A:1004:A:HO2'	1:A:1005:A:P	2.44	0.40
1:A:1135:U:O2'	1:A:1136:U:H2'	2.21	0.40
1:A:1251:A:H2'	1:A:1252:A:C8	2.56	0.40
1:A:1261:A:H5''	1:A:1262:C:OP2	2.21	0.40
1:A:1338:G:C6	1:A:1339:A:N6	2.89	0.40
1:A:1402:4OC:H2'	1:A:1403:C:H6	1.83	0.40
6:F:28:ARG:O	6:F:32:ASN:HB2	2.21	0.40
14:N:7:ILE:HG22	14:N:7:ILE:O	2.21	0.40
15:O:42:HIS:O	15:O:46:HIS:HB2	2.20	0.40
17:Q:37:LYS:C	17:Q:38:ARG:HD2	2.41	0.40
17:Q:84:LEU:N	17:Q:84:LEU:HD23	2.36	0.40
19:S:41:VAL:HG23	19:S:43:GLU:HG2	2.01	0.40
1:A:35:G:C5	1:A:36:C:C5	3.09	0.40
1:A:782:A:H2'	1:A:783:C:O4'	2.21	0.40
1:A:991:U:HO2'	1:A:992:U:P	2.45	0.40
1:A:1014:A:H2'	1:A:1015:A:C8	2.57	0.40
1:A:1474:G:H2'	1:A:1475:G:H8	1.80	0.40
3:C:123:GLN:O	3:C:126:ARG:HB2	2.21	0.40
4:D:61:LYS:HD3	4:D:62:GLN:HG2	2.03	0.40
7:G:22:LEU:CD2	7:G:66:VAL:HG21	2.51	0.40
9:I:126:SER:OG	9:I:127:LYS:HD2	2.21	0.40
10:J:53:PRO:HA	14:N:41:ARG:NH2	2.28	0.40
16:P:81:ARG:N	24:P:201:HOH:O	2.53	0.40
17:Q:65:ILE:HD12	17:Q:65:ILE:N	2.36	0.40
1:A:1200:C:H1'	1:A:1204:A:H62	1.86	0.40
1:A:1202:G:C4	14:N:42:ILE:HD12	2.56	0.40
1:A:1231:G:H2'	1:A:1232:U:O4'	2.22	0.40
1:A:1263:C:C2	1:A:1273:G:N2	2.89	0.40
8:H:137:VAL:HG12	8:H:138:TRP:N	2.36	0.40
15:O:59:MET:HE2	15:O:59:MET:HB2	1.93	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:60:LEU:HD23	16:P:60:LEU:HA	1.68	0.40
17:Q:59:ILE:CD1	17:Q:73:VAL:HG13	2.51	0.40
1:A:102:G:H2'	1:A:103:C:H6	1.86	0.40
1:A:241:C:N4	1:A:285:G:H1	2.20	0.40
1:A:416:G:C5	1:A:417:C:C4	3.10	0.40
1:A:449:C:C5	1:A:450:G:C5	3.09	0.40
1:A:581:G:O6	1:A:758:G:C8	2.75	0.40
1:A:714:G:H2'	1:A:715:A:C8	2.56	0.40
1:A:934:C:N4	1:A:938:A:H61	2.19	0.40
1:A:1157:A:H8	1:A:1158:C:C4	2.39	0.40
2:B:182:ILE:HA	2:B:183:PRO:HD3	1.98	0.40
3:C:50:ALA:HA	3:C:72:LYS:HD3	2.04	0.40
3:C:157:ILE:HB	3:C:164:ARG:HH12	1.86	0.40
3:C:172:ARG:NH1	3:C:174:PRO:HG3	2.37	0.40
5:E:80:ILE:HA	8:H:104:ARG:NH2	2.36	0.40
9:I:118:LYS:HZ2	9:I:121:ARG:HB3	1.86	0.40
14:N:41:ARG:HA	14:N:44:LEU:HB3	2.03	0.40
15:O:33:THR:OG1	15:O:63:ARG:HD2	2.21	0.40
16:P:43:LYS:HA	16:P:48:TRP:HB3	2.03	0.40
20:T:10:LEU:HD22	20:T:11:SER:H	1.87	0.40
20:T:82:SER:O	20:T:83:ARG:C	2.60	0.40
1:A:449:C:H3'	1:A:450:G:H8	1.87	0.40
1:A:778:G:O5'	1:A:778:G:C8	2.73	0.40
1:A:794:A:C6	1:A:795:C:C4	3.10	0.40
1:A:865:A:O5'	1:A:865:A:H8	2.05	0.40
1:A:1288:A:H2'	1:A:1289:A:C8	2.56	0.40
1:A:1296:C:H4'	1:A:1302:U:C5	2.56	0.40
1:A:1367:C:P	10:J:60:ARG:HH21	2.45	0.40
1:A:1399:C:C2	1:A:1401:G:C5	3.09	0.40
2:B:9:GLU:HG2	2:B:10:LEU:H	1.86	0.40
6:F:40:VAL:HB	6:F:63:TYR:CD1	2.57	0.40
7:G:46:ALA:HB1	7:G:121:ALA:HB2	2.04	0.40
18:R:30:ASP:OD2	18:R:32:ARG:HB3	2.22	0.40
18:R:79:LEU:HD22	18:R:80:PRO:HD2	2.02	0.40
19:S:41:VAL:CG2	19:S:44:MET:HG3	2.41	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:92:C:O2'	1:A:1338:G:O2'[3_545]	2.18	0.02



## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	B	232/256 (91%)	195 (84%)	33 (14%)	4 (2%)	9	43
3	C	204/239 (85%)	172 (84%)	32 (16%)	0	100	100
4	D	206/209 (99%)	197 (96%)	9 (4%)	0	100	100
5	E	148/162 (91%)	137 (93%)	10 (7%)	1 (1%)	22	61
6	F	99/101 (98%)	93 (94%)	6 (6%)	0	100	100
7	G	153/156 (98%)	139 (91%)	13 (8%)	1 (1%)	22	61
8	H	136/138 (99%)	125 (92%)	11 (8%)	0	100	100
9	I	125/128 (98%)	109 (87%)	15 (12%)	1 (1%)	19	58
10	J	96/105 (91%)	82 (85%)	12 (12%)	2 (2%)	7	39
11	K	114/129 (88%)	104 (91%)	10 (9%)	0	100	100
12	L	121/135 (90%)	111 (92%)	8 (7%)	2 (2%)	9	43
13	M	116/126 (92%)	99 (85%)	17 (15%)	0	100	100
14	N	58/61 (95%)	51 (88%)	7 (12%)	0	100	100
15	O	85/89 (96%)	80 (94%)	4 (5%)	1 (1%)	13	50
16	P	81/88 (92%)	77 (95%)	4 (5%)	0	100	100
17	Q	97/105 (92%)	88 (91%)	9 (9%)	0	100	100
18	R	68/88 (77%)	59 (87%)	9 (13%)	0	100	100
19	S	78/93 (84%)	69 (88%)	7 (9%)	2 (3%)	5	34
20	T	97/106 (92%)	81 (84%)	14 (14%)	2 (2%)	7	39
21	U	22/27 (82%)	19 (86%)	3 (14%)	0	100	100
All	All	2336/2541 (92%)	2087 (89%)	233 (10%)	16 (1%)	22	61

All (16) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	21	ARG

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Mol	Chain	Res	Type
7	G	155	ARG
19	S	31	ILE
9	I	119	ALA
10	J	86	MET
12	L	28	LYS
2	B	87	ARG
20	T	73	HIS
2	B	16	HIS
12	L	27	LEU
19	S	14	HIS
10	J	34	VAL
5	E	129	ILE
20	T	88	VAL
2	B	229	VAL
15	O	45	VAL

### 5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
2	B	202/220 (92%)	153 (76%)	49 (24%)	0 4
3	C	160/188 (85%)	120 (75%)	40 (25%)	0 4
4	D	180/181 (99%)	151 (84%)	29 (16%)	2 15
5	E	115/123 (94%)	84 (73%)	31 (27%)	0 3
6	F	90/90 (100%)	73 (81%)	17 (19%)	1 9
7	G	126/127 (99%)	100 (79%)	26 (21%)	1 7
8	H	119/119 (100%)	95 (80%)	24 (20%)	1 8
9	I	98/99 (99%)	75 (76%)	23 (24%)	1 5
10	J	87/92 (95%)	65 (75%)	22 (25%)	0 4
11	K	88/99 (89%)	77 (88%)	11 (12%)	4 25
12	L	103/110 (94%)	78 (76%)	25 (24%)	0 4
13	M	94/101 (93%)	81 (86%)	13 (14%)	3 22

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
14	N	49/50 (98%)	33 (67%)	16 (33%)	0	1
15	O	79/80 (99%)	59 (75%)	20 (25%)	0	4
16	P	72/74 (97%)	59 (82%)	13 (18%)	1	10
17	Q	94/97 (97%)	80 (85%)	14 (15%)	3	19
18	R	61/77 (79%)	50 (82%)	11 (18%)	1	10
19	S	71/80 (89%)	56 (79%)	15 (21%)	1	7
20	T	76/82 (93%)	63 (83%)	13 (17%)	2	13
21	U	19/22 (86%)	17 (90%)	2 (10%)	7	32
All	All	1983/2111 (94%)	1569 (79%)	414 (21%)	1	7

All (414) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	7	VAL
2	B	8	LYS
2	B	10	LEU
2	B	11	LEU
2	B	12	GLU
2	B	16	HIS
2	B	17	PHE
2	B	23	ARG
2	B	24	TRP
2	B	39	ILE
2	B	53	ARG
2	B	55	PHE
2	B	60	ASP
2	B	61	LEU
2	B	67	THR
2	B	69	LEU
2	B	73	THR
2	B	96	ARG
2	B	108	ILE
2	B	109	SER
2	B	110	GLN
2	B	114	ARG
2	B	119	GLU
2	B	122	PHE
2	B	139	LYS
2	B	142	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	B	144	ARG
2	B	154	LEU
2	B	155	LEU
2	B	157	ARG
2	B	158	LEU
2	B	163	PHE
2	B	165	VAL
2	B	169	LYS
2	B	170	GLU
2	B	172	ILE
2	B	175	ARG
2	B	178	ARG
2	B	187	LEU
2	B	190	THR
2	B	191	ASP
2	B	196	LEU
2	B	204	ASN
2	B	208	ILE
2	B	212	GLN
2	B	213	LEU
2	B	219	VAL
2	B	223	ILE
2	B	236	TYR
3	C	3	ASN
3	C	8	ILE
3	C	10	PHE
3	C	11	ARG
3	C	17	ASP
3	C	20	SER
3	C	21	ARG
3	C	26	LYS
3	C	31	HIS
3	C	33	LEU
3	C	34	LEU
3	C	38	ARG
3	C	45	LYS
3	C	62	ASP
3	C	64	VAL
3	C	72	LYS
3	C	79	ARG
3	C	85	ARG
3	C	88	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	C	89	GLU
3	C	90	GLU
3	C	95	THR
3	C	101	LEU
3	C	103	VAL
3	C	107	GLN
3	C	111	LEU
3	C	116	VAL
3	C	139	GLN
3	C	144	SER
3	C	153	VAL
3	C	162	GLN
3	C	167	TRP
3	C	176	HIS
3	C	177	THR
3	C	178	LEU
3	C	188	LEU
3	C	191	THR
3	C	196	LEU
3	C	203	PHE
3	C	204	LEU
4	D	3	ARG
4	D	5	ILE
4	D	9	CYS
4	D	34	GLU
4	D	53	ASP
4	D	59	ARG
4	D	61	LYS
4	D	64	LEU
4	D	73	ARG
4	D	76	ARG
4	D	78	LEU
4	D	85	LYS
4	D	119	GLN
4	D	127	THR
4	D	134	ASP
4	D	135	LEU
4	D	141	ARG
4	D	152	SER
4	D	154	ASN
4	D	163	GLU
4	D	170	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
4	D	179	GLU
4	D	186	LEU
4	D	187	ARG
4	D	188	LEU
4	D	192	GLU
4	D	194	LEU
4	D	196	LEU
4	D	198	VAL
5	E	9	LYS
5	E	11	ILE
5	E	12	LEU
5	E	14	ARG
5	E	15	ARG
5	E	16	THR
5	E	18	ARG
5	E	19	MET
5	E	27	ARG
5	E	31	LEU
5	E	41	VAL
5	E	43	LEU
5	E	53	LEU
5	E	56	GLN
5	E	61	TYR
5	E	64	ARG
5	E	68	GLU
5	E	76	ILE
5	E	79	GLU
5	E	80	ILE
5	E	81	GLU
5	E	100	VAL
5	E	111	GLU
5	E	116	THR
5	E	120	THR
5	E	125	SER
5	E	126	ARG
5	E	131	ILE
5	E	148	VAL
5	E	150	ARG
5	E	151	LEU
6	F	7	ASN
6	F	10	LEU
6	F	16	GLN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
6	F	17	SER
6	F	21	LEU
6	F	24	GLU
6	F	27	GLN
6	F	28	ARG
6	F	32	ASN
6	F	36	ARG
6	F	40	VAL
6	F	45	LEU
6	F	52	ILE
6	F	74	ASP
6	F	83	ASP
6	F	84	ASN
6	F	86	ARG
7	G	3	ARG
7	G	6	ARG
7	G	9	VAL
7	G	10	ARG
7	G	15	ASP
7	G	21	VAL
7	G	22	LEU
7	G	27	ILE
7	G	38	LEU
7	G	50	ILE
7	G	51	GLN
7	G	53	LYS
7	G	57	GLU
7	G	61	VAL
7	G	62	PHE
7	G	74	GLU
7	G	78	ARG
7	G	92	SER
7	G	94	ARG
7	G	105	VAL
7	G	119	ARG
7	G	125	MET
7	G	126	ASP
7	G	136	LYS
7	G	149	ARG
7	G	155	ARG
8	H	11	THR
8	H	19	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
8	H	23	SER
8	H	25	ASP
8	H	29	SER
8	H	30	ARG
8	H	37	ARG
8	H	45	ILE
8	H	51	VAL
8	H	63	LEU
8	H	69	ARG
8	H	83	ILE
8	H	85	ARG
8	H	86	ILE
8	H	88	LYS
8	H	91	ARG
8	H	92	ARG
8	H	95	VAL
8	H	105	ARG
8	H	114	THR
8	H	116	LYS
8	H	120	THR
8	H	127	LEU
8	H	129	VAL
9	I	3	GLN
9	I	5	TYR
9	I	12	GLU
9	I	19	LEU
9	I	20	ARG
9	I	26	VAL
9	I	40	LEU
9	I	53	VAL
9	I	56	LEU
9	I	64	THR
9	I	78	LYS
9	I	79	LEU
9	I	83	ARG
9	I	86	VAL
9	I	91	ASP
9	I	92	TYR
9	I	95	LYS
9	I	99	LEU
9	I	104	ARG
9	I	108	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
9	I	109	VAL
9	I	118	LYS
9	I	127	LYS
10	J	8	LEU
10	J	9	ARG
10	J	15	THR
10	J	16	LEU
10	J	23	ILE
10	J	24	VAL
10	J	29	ARG
10	J	40	LEU
10	J	45	ARG
10	J	48	THR
10	J	50	ILE
10	J	54	PHE
10	J	57	LYS
10	J	62	HIS
10	J	66	ARG
10	J	68	HIS
10	J	78	ASN
10	J	79	ARG
10	J	80	LYS
10	J	82	ILE
10	J	83	GLU
10	J	88	LEU
11	K	11	LYS
11	K	12	ARG
11	K	29	ILE
11	K	33	THR
11	K	53	SER
11	K	79	SER
11	K	91	ARG
11	K	95	ILE
11	K	98	LEU
11	K	119	CYS
11	K	126	ARG
12	L	6	THR
12	L	10	LEU
12	L	12	ARG
12	L	18	VAL
12	L	20	LYS
12	L	21	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
12	L	23	LYS
12	L	33	ARG
12	L	34	ARG
12	L	37	CYS
12	L	41	ARG
12	L	43	VAL
12	L	47	LYS
12	L	49	ASN
12	L	52	LEU
12	L	60	LEU
12	L	61	THR
12	L	64	TYR
12	L	65	GLU
12	L	79	GLU
12	L	80	HIS
12	L	89	ARG
12	L	112	ASP
12	L	113	ARG
12	L	122	THR
13	M	17	VAL
13	M	27	LYS
13	M	32	GLU
13	M	43	THR
13	M	48	LEU
13	M	53	VAL
13	M	80	ARG
13	M	81	LEU
13	M	87	TYR
13	M	90	LEU
13	M	91	ARG
13	M	93	ARG
13	M	117	VAL
14	N	3	ARG
14	N	6	LEU
14	N	17	LYS
14	N	19	ARG
14	N	21	TYR
14	N	22	THR
14	N	25	VAL
14	N	36	PHE
14	N	39	LEU
14	N	41	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
14	N	42	ILE
14	N	45	ARG
14	N	47	LEU
14	N	53	LEU
14	N	57	ARG
14	N	58	LYS
15	O	4	THR
15	O	5	LYS
15	O	7	GLU
15	O	21	ASP
15	O	22	THR
15	O	24	SER
15	O	32	LEU
15	O	34	LEU
15	O	39	LEU
15	O	41	GLU
15	O	45	VAL
15	O	47	LYS
15	O	58	MET
15	O	65	ARG
15	O	70	LEU
15	O	71	GLN
15	O	78	TYR
15	O	82	ILE
15	O	83	GLU
15	O	85	LEU
16	P	2	VAL
16	P	26	ARG
16	P	32	TYR
16	P	33	ILE
16	P	45	THR
16	P	54	GLU
16	P	55	ARG
16	P	62	VAL
16	P	68	ASP
16	P	74	LEU
16	P	79	VAL
16	P	80	PHE
16	P	82	GLN
17	Q	9	VAL
17	Q	25	ARG
17	Q	34	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
17	Q	38	ARG
17	Q	41	LYS
17	Q	59	ILE
17	Q	72	ARG
17	Q	73	VAL
17	Q	75	ARG
17	Q	86	GLU
17	Q	87	LYS
17	Q	92	ARG
17	Q	96	GLN
17	Q	98	LEU
18	R	25	THR
18	R	32	ARG
18	R	42	ARG
18	R	47	THR
18	R	53	ARG
18	R	68	LYS
18	R	70	ILE
18	R	82	THR
18	R	84	LYS
18	R	87	ARG
18	R	88	LYS
19	S	6	LYS
19	S	7	LYS
19	S	13	ASP
19	S	15	LEU
19	S	20	LEU
19	S	25	LYS
19	S	27	GLU
19	S	29	ARG
19	S	30	LEU
19	S	31	ILE
19	S	33	THR
19	S	49	ILE
19	S	63	THR
19	S	79	THR
19	S	81	ARG
20	T	19	SER
20	T	24	LEU
20	T	36	LEU
20	T	56	MET
20	T	62	LEU

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Mol	Chain	Res	Type
20	T	70	SER
20	T	72	LEU
20	T	75	ASN
20	T	84	LEU
20	T	91	LEU
20	T	92	LEU
20	T	99	LEU
20	T	100	ILE
21	U	8	THR
21	U	22	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	16	HIS
3	C	37	GLN
9	I	73	GLN
10	J	56	HIS
10	J	62	HIS
11	K	26	ASN
15	O	46	HIS
19	S	14	HIS

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1504/1522 (98%)	402 (26%)	50 (3%)

All (402) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	6	G
1	A	7	G
1	A	8	A
1	A	9	G
1	A	13	U
1	A	22	G
1	A	32	A
1	A	39	G
1	A	41	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	45	U
1	A	47	C
1	A	48	C
1	A	51	A
1	A	54	C
1	A	66	G
1	A	69	G
1	A	80	G
1	A	81	U
1	A	82	U
1	A	91	C
1	A	92	C
1	A	93	G
1	A	98	U
1	A	99	C
1	A	108	G
1	A	115	G
1	A	116	A
1	A	117	G
1	A	121	C
1	A	129(A)	G
1	A	130	A
1	A	131	C
1	A	132	C
1	A	134	A
1	A	158	G
1	A	159	G
1	A	161	A
1	A	163	C
1	A	167	G
1	A	173	U
1	A	182	U
1	A	183	G
1	A	186	C
1	A	195	A
1	A	197	A
1	A	199	G
1	A	201	C
1	A	202	U
1	A	203	U
1	A	216	G
1	A	220	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	226	G
1	A	231	G
1	A	246	A
1	A	247	G
1	A	250	A
1	A	251	G
1	A	252	U
1	A	253	U
1	A	254	G
1	A	266	G
1	A	267	C
1	A	269	C
1	A	273	A
1	A	289	G
1	A	297	G
1	A	301	G
1	A	319	G
1	A	321	A
1	A	328	C
1	A	329	A
1	A	332	G
1	A	344	A
1	A	345	C
1	A	347	G
1	A	350	G
1	A	351	G
1	A	352	C
1	A	353	A
1	A	354	G
1	A	356	A
1	A	367	U
1	A	372	C
1	A	373	A
1	A	374	A
1	A	382	A
1	A	384	G
1	A	388	G
1	A	389	A
1	A	390	C
1	A	392	G
1	A	397	A
1	A	398	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	406	G
1	A	412	A
1	A	413	G
1	A	414	A
1	A	417	C
1	A	419	C
1	A	420	U
1	A	421	U
1	A	422	C
1	A	428	G
1	A	429	U
1	A	433	C
1	A	435	C
1	A	439	A
1	A	440	A
1	A	452	A
1	A	453	A
1	A	455	C
1	A	457	C
1	A	460	A
1	A	461	C
1	A	481	G
1	A	485	G
1	A	486	U
1	A	488	C
1	A	497	A
1	A	498	U
1	A	505	G
1	A	509	A
1	A	510	A
1	A	511	C
1	A	518	C
1	A	519	C
1	A	520	A
1	A	521	G
1	A	527	7MG
1	A	528	C
1	A	531	U
1	A	532	A
1	A	533	A
1	A	536	C
1	A	538	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	539	A
1	A	547	A
1	A	559	A
1	A	560	U
1	A	562	C
1	A	564	C
1	A	568	G
1	A	572	A
1	A	573	A
1	A	576	G
1	A	577	G
1	A	579	G
1	A	581	G
1	A	588	G
1	A	607	A
1	A	616	G
1	A	620	C
1	A	624	C
1	A	632	A
1	A	653	A
1	A	656	C
1	A	665	A
1	A	666	G
1	A	670	G
1	A	671	G
1	A	686	U
1	A	687	A
1	A	688	G
1	A	693	G
1	A	694	A
1	A	697	U
1	A	701	C
1	A	702	A
1	A	703	G
1	A	722	A
1	A	723	U
1	A	724	G
1	A	731	G
1	A	733	A
1	A	741	G
1	A	748	C
1	A	749	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	754	C
1	A	755	G
1	A	759	A
1	A	760	G
1	A	777	A
1	A	781	A
1	A	782	A
1	A	792	A
1	A	793	U
1	A	794	A
1	A	795	C
1	A	799	G
1	A	812	C
1	A	813	U
1	A	815	A
1	A	817	C
1	A	818	G
1	A	828	A
1	A	838	G
1	A	839	U
1	A	840	C
1	A	841	U
1	A	848	C
1	A	852	G
1	A	857	C
1	A	858	G
1	A	859	A
1	A	873	A
1	A	874	G
1	A	876	G
1	A	902	G
1	A	914	A
1	A	926	G
1	A	927	G
1	A	934	C
1	A	935	A
1	A	938	A
1	A	940	C
1	A	942	G
1	A	944	G
1	A	954	G
1	A	960	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	961	U
1	A	964	A
1	A	966	M2G
1	A	969	A
1	A	971	G
1	A	974	A
1	A	975	A
1	A	976	G
1	A	977	A
1	A	978	A
1	A	981	U
1	A	982	U
1	A	983	A
1	A	984	C
1	A	988	G
1	A	990	C
1	A	992	U
1	A	993	G
1	A	994	A
1	A	1004	A
1	A	1005	A
1	A	1006	C
1	A	1007	C
1	A	1016	A
1	A	1019	C
1	A	1023	G
1	A	1025	U
1	A	1026	G
1	A	1028	C
1	A	1030(B)	C
1	A	1031	G
1	A	1038	C
1	A	1045	C
1	A	1051	C
1	A	1053	G
1	A	1054	C
1	A	1055	A
1	A	1060	C
1	A	1065	U
1	A	1066	C
1	A	1068	G
1	A	1072	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	1078	U
1	A	1085	U
1	A	1092	A
1	A	1094	G
1	A	1095	U
1	A	1096	C
1	A	1101	A
1	A	1120	G
1	A	1124	G
1	A	1125	U
1	A	1126	U
1	A	1127	G
1	A	1128	C
1	A	1129	C
1	A	1130	A
1	A	1132	C
1	A	1135	U
1	A	1137	C
1	A	1139	G
1	A	1140	C
1	A	1141	C
1	A	1145	C
1	A	1146	A
1	A	1152	A
1	A	1153	C
1	A	1157	A
1	A	1159	U
1	A	1160	G
1	A	1162	C
1	A	1164	G
1	A	1171	G
1	A	1176	A
1	A	1182	G
1	A	1183	A
1	A	1191	A
1	A	1196	U
1	A	1197	G
1	A	1198	G
1	A	1200	C
1	A	1201	A
1	A	1202	G
1	A	1207	2MG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	1211	U
1	A	1212	U
1	A	1214	C
1	A	1224	G
1	A	1225	A
1	A	1226	C
1	A	1227	A
1	A	1228	C
1	A	1229	A
1	A	1238	A
1	A	1241	G
1	A	1242	C
1	A	1243	C
1	A	1244	C
1	A	1249	C
1	A	1256	A
1	A	1258	G
1	A	1261	A
1	A	1268	A
1	A	1270	C
1	A	1278	U
1	A	1280	A
1	A	1285	A
1	A	1286	A
1	A	1287	A
1	A	1289	A
1	A	1297	C
1	A	1298	C
1	A	1300	G
1	A	1301	U
1	A	1302	U
1	A	1303	C
1	A	1305	G
1	A	1306	A
1	A	1315	U
1	A	1316	G
1	A	1320	C
1	A	1336	C
1	A	1338	G
1	A	1346	A
1	A	1347	G
1	A	1348	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	1349	A
1	A	1353	G
1	A	1359	C
1	A	1362	C
1	A	1364	U
1	A	1365	G
1	A	1370	G
1	A	1378	C
1	A	1381	U
1	A	1394	A
1	A	1396	A
1	A	1397	C
1	A	1398	A
1	A	1399	C
1	A	1400	5MC
1	A	1406	U
1	A	1408	A
1	A	1411	C
1	A	1412	C
1	A	1414	U
1	A	1415	G
1	A	1416	G
1	A	1417	G
1	A	1418	A
1	A	1419	G
1	A	1430	C
1	A	1437	C
1	A	1442	G
1	A	1443	G
1	A	1446	A
1	A	1447	G
1	A	1451	A
1	A	1452	C
1	A	1453	G
1	A	1454	G
1	A	1459	C
1	A	1475	G
1	A	1479	C
1	A	1487	G
1	A	1489	G
1	A	1490	C
1	A	1491	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	1492	A
1	A	1493	A
1	A	1497	G
1	A	1498	UR3
1	A	1499	A
1	A	1503	A
1	A	1504	G
1	A	1505	G
1	A	1506	U
1	A	1507	A
1	A	1529	G
1	A	1530	G
1	A	1531	A
1	A	1532	U
1	A	1533	C

All (50) RNA pucker outliers are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	5	U
1	A	91	C
1	A	115	G
1	A	129(A)	G
1	A	181	G
1	A	204	U
1	A	243	A
1	A	246	A
1	A	250	A
1	A	251	G
1	A	328	C
1	A	350	G
1	A	372	C
1	A	428	G
1	A	484	G
1	A	485	G
1	A	496	A
1	A	509	A
1	A	518	C
1	A	559	A
1	A	575	G
1	A	686	U
1	A	687	A

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Mol	Chain	Res	Type
1	A	701	C
1	A	748	C
1	A	792	A
1	A	812	C
1	A	872	A
1	A	913	A
1	A	960	U
1	A	975	A
1	A	991	U
1	A	992	U
1	A	1004	A
1	A	1065	U
1	A	1067	A
1	A	1139	G
1	A	1145	C
1	A	1182	G
1	A	1190	G
1	A	1201	A
1	A	1257	U
1	A	1285	A
1	A	1300	G
1	A	1305	G
1	A	1346	A
1	A	1347	G
1	A	1358	U
1	A	1380	U
1	A	1505	G

## 5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

17 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
1	PSU	A	1541	1	18,21,22	1.17	1 (5%)	21,30,33	1.69	3 (14%)



Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
1	MA6	A	1518[A]	1	19,26,27	0.79	0	18,38,41	0.97	2 (11%)
1	MA6	A	1519[A]	1	19,26,27	1.04	1 (5%)	18,38,41	1.03	2 (11%)
1	PSU	A	516	1,22	18,21,22	1.24	2 (11%)	21,30,33	2.09	6 (28%)
1	MA6	A	1519[B]	1	19,26,27	1.42	3 (15%)	18,38,41	0.67	0
1	UR3	A	1498	1,22	19,22,23	1.41	3 (15%)	26,32,35	1.31	1 (3%)
1	7MG	A	527	1	23,26,27	3.47	4 (17%)	27,39,42	2.26	9 (33%)
1	2MG	A	1207	1	18,26,27	1.54	4 (22%)	16,38,41	1.31	2 (12%)
1	5MC	A	1400	1	19,22,23	1.87	4 (21%)	26,32,35	1.27	4 (15%)
1	PSU	A	1540	1	18,21,22	1.10	1 (5%)	21,30,33	1.72	4 (19%)
1	M2G	A	966	1	20,27,28	1.51	4 (20%)	19,40,43	1.73	3 (15%)
1	5MC	A	1407	1	19,22,23	1.47	4 (21%)	26,32,35	0.98	1 (3%)
1	5MC	A	967	1	19,22,23	0.91	1 (5%)	26,32,35	1.07	2 (7%)
1	4OC	A	1402	1	20,23,24	1.54	4 (20%)	25,32,35	0.87	0
1	MA6	A	1518[B]	1	19,26,27	1.43	3 (15%)	18,38,41	0.70	0
12	0TD	L	92	12	8,9,10	1.36	0	6,11,13	2.64	3 (50%)
1	5MC	A	1404	1	19,22,23	1.33	2 (10%)	26,32,35	1.11	3 (11%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. <sup>1,2</sup> means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	PSU	A	1541	1	-	0/7/25/26	0/2/2/2
1	MA6	A	1518[A]	1	-	1/7/29/30	0/3/3/3
1	MA6	A	1519[A]	1	-	2/7/29/30	0/3/3/3
1	PSU	A	516	1,22	-	0/7/25/26	0/2/2/2
1	MA6	A	1519[B]	1	-	4/7/29/30	0/3/3/3
1	UR3	A	1498	1,22	-	2/7/25/26	0/2/2/2
1	7MG	A	527	1	-	2/7/37/38	0/3/3/3
1	2MG	A	1207	1	-	2/5/27/28	0/3/3/3
1	5MC	A	1400	1	-	2/7/25/26	0/2/2/2
1	PSU	A	1540	1	-	1/7/25/26	0/2/2/2
1	M2G	A	966	1	-	4/7/29/30	0/3/3/3
1	5MC	A	1407	1	-	0/7/25/26	0/2/2/2
1	5MC	A	967	1	-	0/7/25/26	0/2/2/2
1	4OC	A	1402	1	-	3/9/29/30	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	MA6	A	1518[B]	1	-	0/7/29/30	0/3/3/3
12	0TD	L	92	12	-	2/7/12/14	-
1	5MC	A	1404	1	-	0/7/25/26	0/2/2/2

All (41) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	527	7MG	C8-N9	-14.06	1.36	1.45
1	A	527	7MG	C5-N7	7.21	1.44	1.35
1	A	1400	5MC	C2-N1	5.01	1.50	1.40
1	A	966	M2G	C2-N3	4.48	1.37	1.30
1	A	1518[B]	MA6	C6-N1	4.45	1.38	1.32
1	A	1541	PSU	C6-C5	4.16	1.39	1.35
1	A	1498	UR3	C4-N3	-4.10	1.32	1.40
1	A	516	PSU	C6-C5	4.07	1.39	1.35
1	A	1400	5MC	C2-N3	4.01	1.44	1.36
1	A	1540	PSU	C6-C5	3.99	1.39	1.35
1	A	1207	2MG	C6-N1	3.70	1.43	1.37
1	A	1407	5MC	C5-C4	3.52	1.46	1.44
1	A	527	7MG	C2-N2	3.41	1.42	1.34
1	A	1404	5MC	C2-N3	3.26	1.42	1.36
1	A	1519[B]	MA6	C6-N1	3.24	1.37	1.32
1	A	1519[B]	MA6	C2-N1	3.22	1.39	1.33
1	A	1207	2MG	C2-N2	3.09	1.39	1.33
1	A	1207	2MG	C2-N1	3.05	1.41	1.36
1	A	1407	5MC	C2-N3	3.00	1.42	1.36
1	A	1400	5MC	C6-C5	2.98	1.39	1.34
1	A	1407	5MC	C4-N4	2.90	1.41	1.34
1	A	1519[A]	MA6	C2-N1	2.89	1.39	1.33
1	A	966	M2G	C2-N2	2.84	1.40	1.35
1	A	1402	4OC	C2-N1	2.80	1.45	1.40
1	A	1404	5MC	C2-N1	2.71	1.45	1.40
1	A	1207	2MG	C5-C6	-2.70	1.42	1.47
1	A	1518[B]	MA6	C4-N3	2.64	1.39	1.35
1	A	1498	UR3	C6-N1	-2.54	1.32	1.38
1	A	1402	4OC	O2-C2	-2.49	1.19	1.23
1	A	1402	4OC	C2-N3	2.48	1.41	1.36
1	A	1402	4OC	CM4-N4	2.47	1.50	1.45
1	A	1498	UR3	C3U-N3	-2.47	1.42	1.47
1	A	1519[B]	MA6	C2-N3	2.47	1.35	1.32
1	A	1400	5MC	C4-N3	2.46	1.38	1.34
1	A	1407	5MC	C2-N1	2.45	1.45	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1518[B]	MA6	C2-N1	2.36	1.38	1.33
1	A	966	M2G	C4-N3	2.25	1.42	1.37
1	A	967	5MC	O2-C2	-2.15	1.19	1.23
1	A	966	M2G	C6-N1	2.07	1.41	1.37
1	A	527	7MG	C5-C6	2.01	1.48	1.43
1	A	516	PSU	C4-C5	-2.00	1.38	1.44

All (45) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	966	M2G	O6-C6-N1	-5.75	113.80	120.62
1	A	516	PSU	N1-C2-N3	5.36	120.82	115.17
12	L	92	0TD	CSB-SB-CB	-5.06	93.27	102.36
1	A	516	PSU	C4-N3-C2	-4.89	119.64	126.37
1	A	527	7MG	C5-C6-N1	4.74	119.29	110.94
1	A	1541	PSU	C4-N3-C2	-4.51	120.16	126.37
1	A	1540	PSU	N1-C2-N3	4.43	119.84	115.17
1	A	527	7MG	C6-C5-N7	4.41	138.77	131.93
1	A	527	7MG	C2-N3-C4	4.34	119.78	112.30
1	A	1540	PSU	C4-N3-C2	-4.34	120.39	126.37
1	A	1541	PSU	N1-C2-N3	4.23	119.63	115.17
1	A	966	M2G	O6-C6-C5	3.69	131.63	124.32
1	A	1207	2MG	O6-C6-N1	-3.49	116.48	120.62
1	A	527	7MG	C5-C4-N3	-3.47	121.62	128.13
1	A	527	7MG	C6-C5-C4	-3.45	116.32	122.40
1	A	527	7MG	C2-N1-C6	-3.44	118.87	125.11
1	A	516	PSU	C6-N1-C2	-3.38	119.56	122.69
1	A	1498	UR3	C6-N1-C2	-3.33	119.08	121.80
1	A	1400	5MC	C1'-N1-C6	-3.12	116.02	121.15
1	A	1207	2MG	O6-C6-C5	3.11	130.48	124.32
1	A	527	7MG	N9-C8-N7	3.07	107.71	103.37
1	A	527	7MG	N9-C4-N3	2.79	129.55	125.46
1	A	1400	5MC	C5-C4-N3	2.76	124.58	121.75
1	A	1407	5MC	N4-C4-N3	-2.61	113.79	118.51
1	A	967	5MC	N4-C4-N3	-2.58	113.84	118.51
1	A	967	5MC	C1'-N1-C6	-2.54	116.97	121.15
1	A	516	PSU	C6-C5-C4	2.53	119.88	118.17
1	A	1404	5MC	N4-C4-N3	-2.46	114.05	118.51
1	A	1404	5MC	C5-C4-N3	2.44	124.26	121.75
1	A	527	7MG	N2-C2-N3	-2.40	114.99	119.67
1	A	1540	PSU	C6-N1-C2	-2.31	120.55	122.69
1	A	1540	PSU	O2-C2-N1	-2.26	120.46	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1400	5MC	C1'-N1-C2	2.24	123.38	118.44
1	A	516	PSU	O2-C2-N1	-2.23	120.49	122.79
1	A	516	PSU	O4'-C1'-C2'	2.20	108.19	105.15
12	L	92	0TD	CB-CA-N	-2.18	104.68	109.10
1	A	1518[A]	MA6	C10-N6-C6	2.17	125.40	119.40
1	A	1400	5MC	O2-C2-N1	2.17	123.15	118.90
1	A	1541	PSU	C6-N1-C2	-2.16	120.68	122.69
12	L	92	0TD	OD1-CG-CB	-2.11	118.02	122.44
1	A	966	M2G	C8-N7-C5	2.10	106.12	102.55
1	A	1519[A]	MA6	C1'-N9-C4	-2.08	122.99	126.64
1	A	1519[A]	MA6	N3-C2-N1	2.05	131.46	128.67
1	A	1404	5MC	C4-N3-C2	-2.03	118.00	120.81
1	A	1518[A]	MA6	N1-C6-N6	-2.02	114.50	116.83

There are no chirality outliers.

All (25) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	527	7MG	O4'-C4'-C5'-O5'
1	A	966	M2G	N1-C2-N2-CM1
1	A	966	M2G	N1-C2-N2-CM2
1	A	966	M2G	N3-C2-N2-CM1
1	A	966	M2G	N3-C2-N2-CM2
1	A	1400	5MC	O4'-C4'-C5'-O5'
1	A	1402	4OC	O4'-C4'-C5'-O5'
1	A	1402	4OC	C1'-C2'-O2'-CM2
1	A	1518[A]	MA6	C5-C6-N6-C10
1	A	1519[A]	MA6	O4'-C4'-C5'-O5'
1	A	1519[B]	MA6	C5-C6-N6-C9
1	A	1519[B]	MA6	N1-C6-N6-C9
1	A	527	7MG	C3'-C4'-C5'-O5'
1	A	1207	2MG	O4'-C4'-C5'-O5'
1	A	1207	2MG	C3'-C4'-C5'-O5'
1	A	1400	5MC	C3'-C4'-C5'-O5'
1	A	1519[A]	MA6	C3'-C4'-C5'-O5'
1	A	1402	4OC	C3'-C4'-C5'-O5'
1	A	1519[B]	MA6	C3'-C4'-C5'-O5'
1	A	1498	UR3	O4'-C4'-C5'-O5'
1	A	1498	UR3	C3'-C4'-C5'-O5'
1	A	1519[B]	MA6	O4'-C4'-C5'-O5'
12	L	92	0TD	CG-CB-SB-CSB
12	L	92	0TD	SB-CB-CG-OD1

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Mol	Chain	Res	Type	Atoms
1	A	1540	PSU	O4'-C4'-C5'-O5'

There are no ring outliers.

11 monomers are involved in 24 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	1518[A]	MA6	2	0
1	A	1519[A]	MA6	3	0
1	A	1519[B]	MA6	2	0
1	A	1498	UR3	5	0
1	A	1400	5MC	1	0
1	A	966	M2G	3	0
1	A	967	5MC	6	0
1	A	1402	4OC	4	0
1	A	1518[B]	MA6	3	0
12	L	92	0TD	2	0
1	A	1404	5MC	1	0

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 291 ligands modelled in this entry, 291 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

## 6 Fit of model and data i

### 6.1 Protein, DNA and RNA chains i

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	A	1498/1522 (98%)	-0.28	35 (2%) 60 44	85, 156, 308, 384	0
2	B	234/256 (91%)	-0.64	0 100 100	105, 165, 249, 269	0
3	C	206/239 (86%)	-0.06	11 (5%) 26 17	164, 235, 290, 329	0
4	D	208/209 (99%)	-0.52	3 (1%) 75 62	99, 159, 211, 239	0
5	E	150/162 (92%)	-0.68	0 100 100	79, 122, 163, 194	0
6	F	101/101 (100%)	-0.78	0 100 100	130, 175, 208, 240	0
7	G	155/156 (99%)	-0.36	6 (3%) 39 26	150, 203, 268, 323	0
8	H	138/138 (100%)	-0.72	0 100 100	74, 108, 152, 181	0
9	I	127/128 (99%)	-0.43	2 (1%) 72 58	173, 226, 272, 298	0
10	J	98/105 (93%)	-0.23	3 (3%) 49 33	194, 237, 302, 326	0
11	K	116/129 (89%)	-0.71	0 100 100	111, 146, 197, 222	0
12	L	123/135 (91%)	-0.57	1 (0%) 86 76	79, 155, 195, 227	0
13	M	118/126 (93%)	-0.27	6 (5%) 28 18	139, 190, 229, 290	0
14	N	60/61 (98%)	-0.15	2 (3%) 46 31	185, 222, 274, 306	0
15	O	87/89 (97%)	-0.72	0 100 100	92, 132, 179, 209	0
16	P	83/88 (94%)	-0.59	0 100 100	110, 146, 187, 230	0
17	Q	99/105 (94%)	-0.82	0 100 100	95, 125, 176, 185	0
18	R	70/88 (79%)	-0.70	0 100 100	107, 145, 200, 231	0
19	S	80/93 (86%)	0.03	0 100 100	197, 254, 313, 320	0
20	T	99/106 (93%)	-0.74	0 100 100	112, 149, 204, 232	0
21	U	24/27 (88%)	0.22	0 100 100	169, 204, 229, 238	0
All	All	3874/4063 (95%)	-0.41	69 (1%) 68 53	74, 166, 278, 384	0

All (69) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	1018	C	8.3
1	A	1036	G	7.0
3	C	65	ALA	6.9
1	A	993	G	6.4
1	A	1017	G	5.7
1	A	1129	C	5.7
13	M	118	ALA	5.4
1	A	1037	C	5.4
1	A	1050	G	5.4
1	A	1006	C	5.0
1	A	1019	C	5.0
3	C	193	TYR	4.9
3	C	102	ASN	4.7
1	A	1005	A	4.5
3	C	146	ALA	4.2
10	J	90	LEU	4.0
1	A	985	C	3.6
3	C	104	GLN	3.6
14	N	4	LYS	3.6
3	C	103	VAL	3.5
3	C	145	GLY	3.4
10	J	99	LYS	3.4
7	G	5	ARG	3.3
1	A	1001	A	3.3
7	G	154	TYR	3.2
7	G	156	TRP	3.2
14	N	5	ALA	3.2
13	M	117	VAL	3.2
13	M	7	VAL	3.1
1	A	1533	C	3.1
1	A	1213	A	3.1
3	C	46	GLU	3.1
1	A	1002	G	3.1
7	G	8	GLU	3.0
13	M	65	LYS	3.0
7	G	2	ALA	2.9
1	A	1411	C	2.9
1	A	1532	U	2.9
7	G	72	ARG	2.8
1	A	1321	C	2.8
1	A	1215	G	2.7
1	A	1531	A	2.7
1	A	1047	G	2.6

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Mol	Chain	Res	Type	RSRZ
9	I	128	ARG	2.5
1	A	1003(A)	G	2.4
1	A	1004	A	2.4
1	A	81	U	2.4
1	A	1030	C	2.4
1	A	984	C	2.3
1	A	202	U	2.3
1	A	74	C	2.3
3	C	66	VAL	2.3
10	J	100	THR	2.2
13	M	119	GLY	2.2
1	A	994	A	2.2
1	A	1020	U	2.2
3	C	100	ALA	2.2
4	D	9	CYS	2.2
3	C	87	LEU	2.2
4	D	114	ARG	2.1
1	A	1048	G	2.1
9	I	126	SER	2.1
1	A	1016	A	2.1
13	M	100	GLY	2.1
1	A	1417	G	2.1
1	A	1000	U	2.1
1	A	1255	G	2.1
12	L	114	LYS	2.0
4	D	30	LYS	2.0

## 6.2 Non-standard residues in protein, DNA, RNA chains [\(i\)](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
1	PSU	A	1540	20/21	0.88	0.35	271,280,285,287	0
1	PSU	A	1541	20/21	0.90	0.23	223,263,279,284	0
1	2MG	A	1207	24/25	0.91	0.27	263,291,297,309	0
1	M2G	A	966	25/26	0.93	0.15	165,177,184,186	0
1	5MC	A	1400	21/22	0.94	0.16	114,142,154,174	0
1	5MC	A	1404	21/22	0.94	0.22	112,135,164,183	0
1	PSU	A	516	20/21	0.95	0.12	162,181,197,197	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
1	5MC	A	967	21/22	0.95	0.12	162,170,190,199	0
1	4OC	A	1402	22/23	0.95	0.22	124,137,170,187	0
1	5MC	A	1407	21/22	0.96	0.10	149,172,180,188	0
1	UR3	A	1498	21/22	0.96	0.20	117,143,151,155	0
12	0TD	L	92	10/11	0.96	0.25	157,170,178,331	0
1	7MG	A	527	24/25	0.97	0.12	116,135,155,161	0
1	MA6	A	1519[A]	24/25	0.97	0.22	109,115,125,137	24
1	MA6	A	1519[B]	24/25	0.97	0.22	106,118,129,130	24
1	MA6	A	1518[B]	24/25	0.98	0.21	126,135,138,138	24
1	MA6	A	1518[A]	24/25	0.98	0.21	118,131,141,143	24

### 6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
22	MG	A	1693	1/1	-0.04	0.25	146,146,146,146	0
22	MG	M	202	1/1	0.38	0.85	122,122,122,122	0
22	MG	A	1672	1/1	0.44	0.94	130,130,130,130	0
22	MG	A	1850	1/1	0.55	0.52	134,134,134,134	0
22	MG	A	1856	1/1	0.58	0.34	108,108,108,108	0
22	MG	A	1816	1/1	0.61	0.49	170,170,170,170	0
22	MG	A	1779	1/1	0.64	0.32	159,159,159,159	0
22	MG	A	1631	1/1	0.65	0.68	118,118,118,118	0
22	MG	P	102	1/1	0.66	0.40	128,128,128,128	0
22	MG	A	1805	1/1	0.69	0.23	153,153,153,153	0
22	MG	A	1782	1/1	0.69	0.51	144,144,144,144	0
22	MG	A	1823	1/1	0.71	0.30	168,168,168,168	0
22	MG	A	1807	1/1	0.72	0.27	141,141,141,141	0
22	MG	A	1853	1/1	0.73	0.15	91,91,91,91	0
22	MG	A	1859	1/1	0.73	0.59	132,132,132,132	0
22	MG	D	304	1/1	0.74	0.11	106,106,106,106	0
22	MG	Q	201	1/1	0.74	0.41	140,140,140,140	0
22	MG	A	1726	1/1	0.75	0.50	106,106,106,106	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
22	MG	A	1742	1/1	0.75	0.25	132,132,132,132	0
22	MG	A	1863	1/1	0.75	0.43	103,103,103,103	0
22	MG	D	303	1/1	0.75	0.10	141,141,141,141	0
22	MG	A	1864	1/1	0.76	0.14	123,123,123,123	0
22	MG	A	1797	1/1	0.77	0.48	367,367,367,367	0
22	MG	A	1751	1/1	0.77	1.43	136,136,136,136	0
22	MG	A	1829	1/1	0.78	0.62	286,286,286,286	0
22	MG	A	1762	1/1	0.78	0.21	219,219,219,219	0
22	MG	A	1735	1/1	0.78	0.22	114,114,114,114	0
22	MG	A	1703	1/1	0.79	0.38	138,138,138,138	0
22	MG	A	1618	1/1	0.79	0.45	125,125,125,125	0
22	MG	A	1840	1/1	0.79	0.14	149,149,149,149	0
22	MG	A	1774	1/1	0.79	0.12	134,134,134,134	0
22	MG	A	1851	1/1	0.79	0.41	126,126,126,126	0
22	MG	A	1786	1/1	0.80	0.34	234,234,234,234	0
22	MG	A	1677	1/1	0.80	0.33	125,125,125,125	0
22	MG	A	1801	1/1	0.80	0.25	152,152,152,152	0
22	MG	A	1820	1/1	0.81	0.29	495,495,495,495	0
22	MG	A	1854	1/1	0.82	0.25	94,94,94,94	0
22	MG	A	1845	1/1	0.82	0.71	106,106,106,106	0
22	MG	A	1601	1/1	0.82	0.50	137,137,137,137	0
22	MG	A	1623	1/1	0.82	0.35	125,125,125,125	0
22	MG	A	1796	1/1	0.82	1.12	383,383,383,383	0
22	MG	Q	202	1/1	0.82	0.36	105,105,105,105	0
22	MG	A	1626	1/1	0.83	0.60	150,150,150,150	0
22	MG	A	1846	1/1	0.83	0.43	131,131,131,131	0
22	MG	A	1858	1/1	0.83	0.37	90,90,90,90	0
22	MG	P	101	1/1	0.83	0.34	90,90,90,90	0
22	MG	A	1640	1/1	0.83	0.37	111,111,111,111	0
22	MG	A	1725	1/1	0.83	0.33	142,142,142,142	0
22	MG	A	1746	1/1	0.83	0.38	126,126,126,126	0
22	MG	D	305	1/1	0.84	1.10	122,122,122,122	0
22	MG	A	1659	1/1	0.84	0.53	95,95,95,95	0
22	MG	A	1819	1/1	0.85	0.81	141,141,141,141	0
22	MG	A	1646	1/1	0.85	0.32	143,143,143,143	0
22	MG	A	1711	1/1	0.85	0.28	85,85,85,85	0
22	MG	A	1803	1/1	0.85	0.36	147,147,147,147	0
22	MG	A	1769	1/1	0.86	0.16	142,142,142,142	0
22	MG	A	1783	1/1	0.86	0.38	133,133,133,133	0
22	MG	A	1661	1/1	0.86	0.10	148,148,148,148	0
22	MG	A	1787	1/1	0.86	0.23	140,140,140,140	0
22	MG	A	1671	1/1	0.86	0.23	162,162,162,162	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
22	MG	D	302	1/1	0.87	0.38	142,142,142,142	0
22	MG	A	1739	1/1	0.87	0.38	126,126,126,126	0
22	MG	A	1717	1/1	0.87	0.32	146,146,146,146	0
22	MG	A	1720	1/1	0.87	0.34	109,109,109,109	0
22	MG	A	1700	1/1	0.87	0.22	438,438,438,438	0
22	MG	A	1625	1/1	0.87	0.21	214,214,214,214	0
22	MG	A	1768	1/1	0.87	0.57	118,118,118,118	0
22	MG	A	1849	1/1	0.87	0.27	123,123,123,123	0
22	MG	A	1656	1/1	0.87	0.61	133,133,133,133	0
22	MG	A	1744	1/1	0.88	0.13	151,151,151,151	0
22	MG	A	1857	1/1	0.88	0.20	115,115,115,115	0
22	MG	A	1778	1/1	0.88	0.12	137,137,137,137	0
22	MG	A	1713	1/1	0.89	0.28	106,106,106,106	0
22	MG	A	1745	1/1	0.89	0.49	127,127,127,127	0
22	MG	A	1649	1/1	0.89	0.33	145,145,145,145	0
22	MG	A	1748	1/1	0.89	0.24	144,144,144,144	0
22	MG	A	1867	1/1	0.89	0.48	139,139,139,139	0
22	MG	A	1710	1/1	0.89	0.20	162,162,162,162	0
22	MG	A	1689	1/1	0.89	0.13	238,238,238,238	0
22	MG	A	1843	1/1	0.90	0.21	163,163,163,163	0
22	MG	A	1668	1/1	0.90	0.17	111,111,111,111	0
22	MG	A	1865	1/1	0.90	0.29	120,120,120,120	0
22	MG	A	1729	1/1	0.90	0.59	120,120,120,120	0
22	MG	A	1813	1/1	0.90	0.31	210,210,210,210	0
22	MG	A	1678	1/1	0.90	0.24	143,143,143,143	0
22	MG	A	1629	1/1	0.90	0.49	106,106,106,106	0
22	MG	A	1800	1/1	0.90	0.20	389,389,389,389	0
22	MG	A	1724	1/1	0.90	0.53	146,146,146,146	0
22	MG	A	1802	1/1	0.90	0.21	137,137,137,137	0
22	MG	A	1832	1/1	0.90	0.52	364,364,364,364	0
22	MG	A	1624	1/1	0.90	0.65	68,68,68,68	0
22	MG	A	1841	1/1	0.90	0.40	175,175,175,175	0
22	MG	A	1767	1/1	0.91	0.11	184,184,184,184	0
22	MG	A	1838	1/1	0.91	0.23	386,386,386,386	0
22	MG	A	1736	1/1	0.91	0.28	99,99,99,99	0
22	MG	A	1609	1/1	0.91	0.36	113,113,113,113	0
22	MG	A	1842	1/1	0.91	0.57	244,244,244,244	0
22	MG	M	201	1/1	0.91	0.74	388,388,388,388	0
22	MG	A	1818	1/1	0.91	0.46	247,247,247,247	0
22	MG	A	1704	1/1	0.91	0.55	118,118,118,118	0
22	MG	A	1763	1/1	0.91	0.19	240,240,240,240	0
22	MG	A	1790	1/1	0.91	0.29	159,159,159,159	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
22	MG	A	1795	1/1	0.91	0.37	253,253,253,253	0
22	MG	A	1861	1/1	0.92	0.25	135,135,135,135	0
22	MG	A	1811	1/1	0.92	0.21	242,242,242,242	0
22	MG	A	1777	1/1	0.92	0.12	93,93,93,93	0
22	MG	A	1603	1/1	0.92	0.32	111,111,111,111	0
22	MG	A	1685	1/1	0.92	0.42	116,116,116,116	0
22	MG	A	1664	1/1	0.92	0.17	126,126,126,126	0
22	MG	A	1690	1/1	0.92	0.14	160,160,160,160	0
22	MG	A	1727	1/1	0.92	0.41	178,178,178,178	0
22	MG	A	1828	1/1	0.92	0.40	156,156,156,156	0
22	MG	I	201	1/1	0.92	0.18	143,143,143,143	0
22	MG	A	1772	1/1	0.92	0.27	126,126,126,126	0
22	MG	A	1855	1/1	0.92	0.20	139,139,139,139	0
22	MG	A	1804	1/1	0.92	0.23	305,305,305,305	0
22	MG	A	1789	1/1	0.92	0.14	174,174,174,174	0
22	MG	A	1806	1/1	0.92	0.10	408,408,408,408	0
22	MG	A	1758	1/1	0.92	0.32	107,107,107,107	0
22	MG	T	201	1/1	0.92	0.20	155,155,155,155	0
22	MG	T	202	1/1	0.92	0.29	96,96,96,96	0
22	MG	A	1761	1/1	0.93	0.38	156,156,156,156	0
22	MG	A	1707	1/1	0.93	0.57	120,120,120,120	0
22	MG	A	1826	1/1	0.93	0.16	447,447,447,447	0
22	MG	A	1731	1/1	0.93	0.47	103,103,103,103	0
22	MG	A	1680	1/1	0.93	0.28	139,139,139,139	0
22	MG	A	1655	1/1	0.93	0.23	141,141,141,141	0
22	MG	A	1737	1/1	0.93	0.26	142,142,142,142	0
22	MG	A	1839	1/1	0.93	0.17	318,318,318,318	0
22	MG	A	1688	1/1	0.93	0.51	113,113,113,113	0
22	MG	A	1714	1/1	0.93	0.78	116,116,116,116	0
22	MG	A	1776	1/1	0.93	0.15	129,129,129,129	0
22	MG	A	1669	1/1	0.93	0.20	145,145,145,145	0
22	MG	A	1654	1/1	0.93	0.17	117,117,117,117	0
22	MG	A	1658	1/1	0.93	0.18	123,123,123,123	0
22	MG	A	1780	1/1	0.93	0.21	162,162,162,162	0
22	MG	A	1665	1/1	0.93	0.13	117,117,117,117	0
22	MG	A	1812	1/1	0.93	0.26	365,365,365,365	0
22	MG	A	1667	1/1	0.93	0.26	274,274,274,274	0
22	MG	A	1784	1/1	0.93	0.34	318,318,318,318	0
22	MG	A	1753	1/1	0.93	0.27	169,169,169,169	0
22	MG	A	1679	1/1	0.93	0.63	177,177,177,177	0
22	MG	A	1848	1/1	0.94	0.06	166,166,166,166	0
22	MG	A	1755	1/1	0.94	0.24	131,131,131,131	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
22	MG	A	1868	1/1	0.94	0.20	139,139,139,139	0
22	MG	A	1756	1/1	0.94	0.32	140,140,140,140	0
22	MG	A	1691	1/1	0.94	0.20	136,136,136,136	0
22	MG	A	1791	1/1	0.94	0.15	160,160,160,160	0
22	MG	A	1837	1/1	0.94	0.35	226,226,226,226	0
22	MG	A	1792	1/1	0.94	0.12	398,398,398,398	0
22	MG	J	201	1/1	0.94	0.20	497,497,497,497	0
22	MG	A	1644	1/1	0.94	0.21	253,253,253,253	0
22	MG	A	1712	1/1	0.94	0.23	103,103,103,103	0
22	MG	A	1686	1/1	0.94	0.35	124,124,124,124	0
22	MG	A	1702	1/1	0.94	0.11	322,322,322,322	0
22	MG	A	1637	1/1	0.94	0.14	329,329,329,329	0
22	MG	A	1862	1/1	0.94	0.17	99,99,99,99	0
22	MG	A	1639	1/1	0.94	0.17	173,173,173,173	0
22	MG	A	1608	1/1	0.94	0.52	127,127,127,127	0
22	MG	A	1770	1/1	0.95	0.12	166,166,166,166	0
22	MG	A	1788	1/1	0.95	0.17	330,330,330,330	0
22	MG	A	1771	1/1	0.95	0.23	158,158,158,158	0
22	MG	A	1612	1/1	0.95	0.05	136,136,136,136	0
22	MG	A	1611	1/1	0.95	0.07	182,182,182,182	0
22	MG	A	1621	1/1	0.95	0.18	118,118,118,118	0
22	MG	A	1817	1/1	0.95	0.15	297,297,297,297	0
22	MG	B	301	1/1	0.95	0.65	154,154,154,154	0
22	MG	A	1847	1/1	0.95	0.56	145,145,145,145	0
22	MG	A	1743	1/1	0.95	0.29	135,135,135,135	0
22	MG	A	1759	1/1	0.95	0.19	98,98,98,98	0
22	MG	A	1728	1/1	0.95	0.24	129,129,129,129	0
22	MG	A	1799	1/1	0.95	0.12	287,287,287,287	0
22	MG	A	1852	1/1	0.95	0.37	121,121,121,121	0
22	MG	A	1824	1/1	0.95	0.22	435,435,435,435	0
22	MG	A	1676	1/1	0.95	0.16	136,136,136,136	0
22	MG	A	1635	1/1	0.95	0.39	151,151,151,151	0
22	MG	A	1709	1/1	0.95	0.17	165,165,165,165	0
22	MG	A	1749	1/1	0.95	0.30	121,121,121,121	0
22	MG	A	1785	1/1	0.95	0.35	394,394,394,394	0
22	MG	A	1697	1/1	0.95	0.21	139,139,139,139	0
22	MG	A	1860	1/1	0.95	0.17	115,115,115,115	0
22	MG	A	1694	1/1	0.96	0.28	376,376,376,376	0
22	MG	A	1866	1/1	0.96	0.29	149,149,149,149	0
22	MG	A	1718	1/1	0.96	0.32	96,96,96,96	0
22	MG	A	1822	1/1	0.96	0.73	333,333,333,333	0
22	MG	A	1607	1/1	0.96	0.04	165,165,165,165	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
22	MG	C	301	1/1	0.96	0.14	150,150,150,150	0
22	MG	A	1734	1/1	0.96	0.19	99,99,99,99	0
22	MG	A	1781	1/1	0.96	0.28	116,116,116,116	0
22	MG	A	1705	1/1	0.96	0.16	118,118,118,118	0
22	MG	A	1765	1/1	0.96	0.23	390,390,390,390	0
22	MG	A	1692	1/1	0.96	0.12	167,167,167,167	0
22	MG	A	1648	1/1	0.96	0.26	82,82,82,82	0
22	MG	A	1738	1/1	0.96	0.32	102,102,102,102	0
22	MG	A	1715	1/1	0.96	0.45	148,148,148,148	0
22	MG	A	1754	1/1	0.96	0.13	107,107,107,107	0
22	MG	A	1740	1/1	0.96	0.14	107,107,107,107	0
22	MG	A	1773	1/1	0.96	0.13	164,164,164,164	0
22	MG	A	1741	1/1	0.96	0.15	111,111,111,111	0
22	MG	A	1775	1/1	0.96	0.21	101,101,101,101	0
22	MG	A	1757	1/1	0.96	0.16	123,123,123,123	0
22	MG	A	1834	1/1	0.97	0.28	232,232,232,232	0
22	MG	A	1835	1/1	0.97	0.20	317,317,317,317	0
22	MG	A	1836	1/1	0.97	0.35	231,231,231,231	0
22	MG	A	1810	1/1	0.97	0.07	122,122,122,122	0
22	MG	A	1628	1/1	0.97	0.28	69,69,69,69	0
22	MG	A	1605	1/1	0.97	0.22	102,102,102,102	0
22	MG	A	1793	1/1	0.97	0.15	182,182,182,182	0
22	MG	A	1815	1/1	0.97	0.13	197,197,197,197	0
22	MG	A	1627	1/1	0.97	0.14	96,96,96,96	0
22	MG	A	1766	1/1	0.97	0.14	282,282,282,282	0
22	MG	B	302	1/1	0.97	0.24	166,166,166,166	0
22	MG	A	1750	1/1	0.97	0.34	128,128,128,128	0
22	MG	A	1721	1/1	0.97	0.20	128,128,128,128	0
22	MG	A	1633	1/1	0.97	0.09	105,105,105,105	0
22	MG	A	1821	1/1	0.97	0.37	399,399,399,399	0
22	MG	A	1650	1/1	0.97	0.21	118,118,118,118	0
22	MG	E	201	1/1	0.97	0.17	152,152,152,152	0
22	MG	F	201	1/1	0.97	0.60	149,149,149,149	0
22	MG	A	1682	1/1	0.97	0.45	137,137,137,137	0
22	MG	A	1652	1/1	0.97	0.12	126,126,126,126	0
22	MG	L	201	1/1	0.97	0.07	122,122,122,122	0
22	MG	A	1825	1/1	0.97	0.20	404,404,404,404	0
22	MG	A	1663	1/1	0.97	0.14	148,148,148,148	0
22	MG	A	1827	1/1	0.97	0.26	148,148,148,148	0
22	MG	A	1687	1/1	0.97	0.06	151,151,151,151	0
22	MG	A	1673	1/1	0.97	0.20	130,130,130,130	0
22	MG	A	1831	1/1	0.97	0.26	191,191,191,191	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
22	MG	A	1733	1/1	0.97	0.16	91,91,91,91	0
22	MG	A	1833	1/1	0.97	0.14	450,450,450,450	0
23	ZN	N	101	1/1	0.97	0.15	395,395,395,395	0
22	MG	A	1675	1/1	0.98	0.26	275,275,275,275	0
22	MG	A	1752	1/1	0.98	0.09	90,90,90,90	0
22	MG	A	1695	1/1	0.98	0.17	125,125,125,125	0
22	MG	A	1722	1/1	0.98	0.15	129,129,129,129	0
22	MG	A	1696	1/1	0.98	0.15	193,193,193,193	0
22	MG	A	1645	1/1	0.98	0.52	132,132,132,132	0
22	MG	A	1698	1/1	0.98	0.17	192,192,192,192	0
22	MG	A	1699	1/1	0.98	0.09	117,117,117,117	0
22	MG	A	1613	1/1	0.98	0.11	117,117,117,117	0
22	MG	A	1760	1/1	0.98	0.14	137,137,137,137	0
22	MG	A	1701	1/1	0.98	0.16	216,216,216,216	0
22	MG	A	1830	1/1	0.98	0.10	199,199,199,199	0
22	MG	A	1794	1/1	0.98	0.34	422,422,422,422	0
22	MG	A	1730	1/1	0.98	0.26	107,107,107,107	0
22	MG	A	1647	1/1	0.98	0.12	110,110,110,110	0
22	MG	A	1636	1/1	0.98	0.45	112,112,112,112	0
22	MG	A	1798	1/1	0.98	0.33	208,208,208,208	0
22	MG	A	1615	1/1	0.98	0.19	86,86,86,86	0
22	MG	A	1617	1/1	0.98	0.17	97,97,97,97	0
22	MG	A	1706	1/1	0.98	0.21	151,151,151,151	0
22	MG	A	1684	1/1	0.98	0.09	128,128,128,128	0
22	MG	A	1708	1/1	0.98	0.10	113,113,113,113	0
22	MG	A	1666	1/1	0.98	0.13	147,147,147,147	0
22	MG	A	1602	1/1	0.98	0.47	168,168,168,168	0
22	MG	A	1653	1/1	0.98	0.09	118,118,118,118	0
22	MG	A	1641	1/1	0.98	0.36	78,78,78,78	0
22	MG	A	1809	1/1	0.98	0.28	330,330,330,330	0
22	MG	A	1670	1/1	0.98	0.12	129,129,129,129	0
22	MG	A	1643	1/1	0.98	0.17	102,102,102,102	0
22	MG	A	1620	1/1	0.98	0.24	136,136,136,136	0
22	MG	A	1716	1/1	0.98	0.11	95,95,95,95	0
22	MG	A	1747	1/1	0.98	0.17	137,137,137,137	0
22	MG	A	1657	1/1	0.98	0.19	124,124,124,124	0
22	MG	A	1674	1/1	0.98	0.04	168,168,168,168	0
23	ZN	D	301	1/1	0.98	0.33	127,127,127,127	0
22	MG	A	1719	1/1	0.98	0.11	143,143,143,143	0
22	MG	A	1808	1/1	0.99	0.20	278,278,278,278	0
22	MG	A	1660	1/1	0.99	0.07	129,129,129,129	0
22	MG	C	302	1/1	0.99	0.23	163,163,163,163	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
22	MG	A	1614	1/1	0.99	0.17	152,152,152,152	0
22	MG	A	1662	1/1	0.99	0.13	144,144,144,144	0
22	MG	A	1723	1/1	0.99	0.13	122,122,122,122	0
22	MG	A	1638	1/1	0.99	0.18	124,124,124,124	0
22	MG	A	1814	1/1	0.99	0.21	224,224,224,224	0
22	MG	A	1606	1/1	0.99	0.08	114,114,114,114	0
22	MG	A	1651	1/1	0.99	0.14	173,173,173,173	0
22	MG	A	1622	1/1	0.99	0.19	75,75,75,75	0
22	MG	A	1630	1/1	0.99	0.12	129,129,129,129	0
22	MG	A	1683	1/1	0.99	0.15	237,237,237,237	0
22	MG	A	1764	1/1	0.99	0.13	290,290,290,290	0
22	MG	A	1642	1/1	0.99	0.21	176,176,176,176	0
22	MG	A	1616	1/1	0.99	0.19	79,79,79,79	0
22	MG	A	1732	1/1	0.99	0.19	134,134,134,134	0
22	MG	A	1844	1/1	0.99	0.16	276,276,276,276	0
22	MG	A	1632	1/1	0.99	0.29	231,231,231,231	0
22	MG	A	1604	1/1	0.99	0.17	141,141,141,141	0
22	MG	A	1610	1/1	0.99	0.18	110,110,110,110	0
22	MG	A	1619	1/1	0.99	0.25	95,95,95,95	0
22	MG	A	1634	1/1	1.00	0.19	73,73,73,73	0
22	MG	A	1681	1/1	1.00	0.14	162,162,162,162	0

## 6.5 Other polymers [\(i\)](#)

There are no such residues in this entry.