



Full wwPDB EM Validation Report ⓘ

Nov 20, 2022 – 07:03 am GMT

PDB ID : 6H6F
EMDB ID : EMD-0150
Title : PTC3 holotoxin complex from *Photobacterium luminescens* - Mutant TcC-D651A
Authors : Gatsogiannis, C.; Merino, F.; Roderer, D.; Balchin, D.; Schubert, E.; Kuhlee, A.; Hayer-Hartl, M.; Raunser, S.
Deposited on : 2018-07-27
Resolution : 3.72 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

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>.

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

EMDB validation analysis : 0.0.1.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

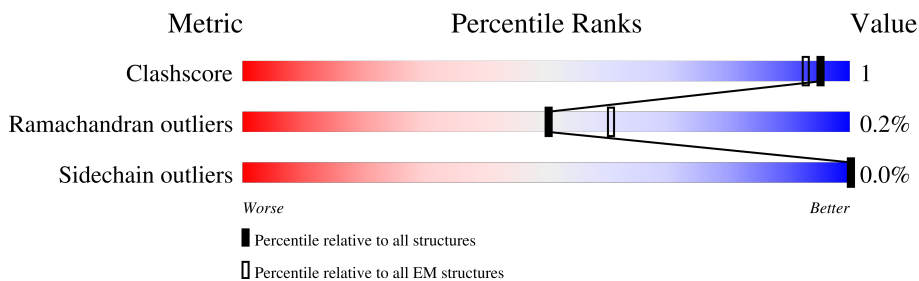
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.72 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)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 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 EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	2516	
1	B	2516	
1	C	2516	
1	D	2516	
1	E	2516	
2	F	2434	

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 114303 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, 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 protein called TcdA1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	2454	19477	12332	3310	3774	61	0	0
1	B	2454	19477	12332	3310	3774	61	0	0
1	C	2454	19477	12332	3310	3774	61	0	0
1	D	2454	19477	12332	3310	3774	61	0	0
1	E	2454	19477	12332	3310	3774	61	0	0

- Molecule 2 is a protein called TcdB2,TccC3,TccC3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	F	2118	16918	10601	3006	3277	34	0	0

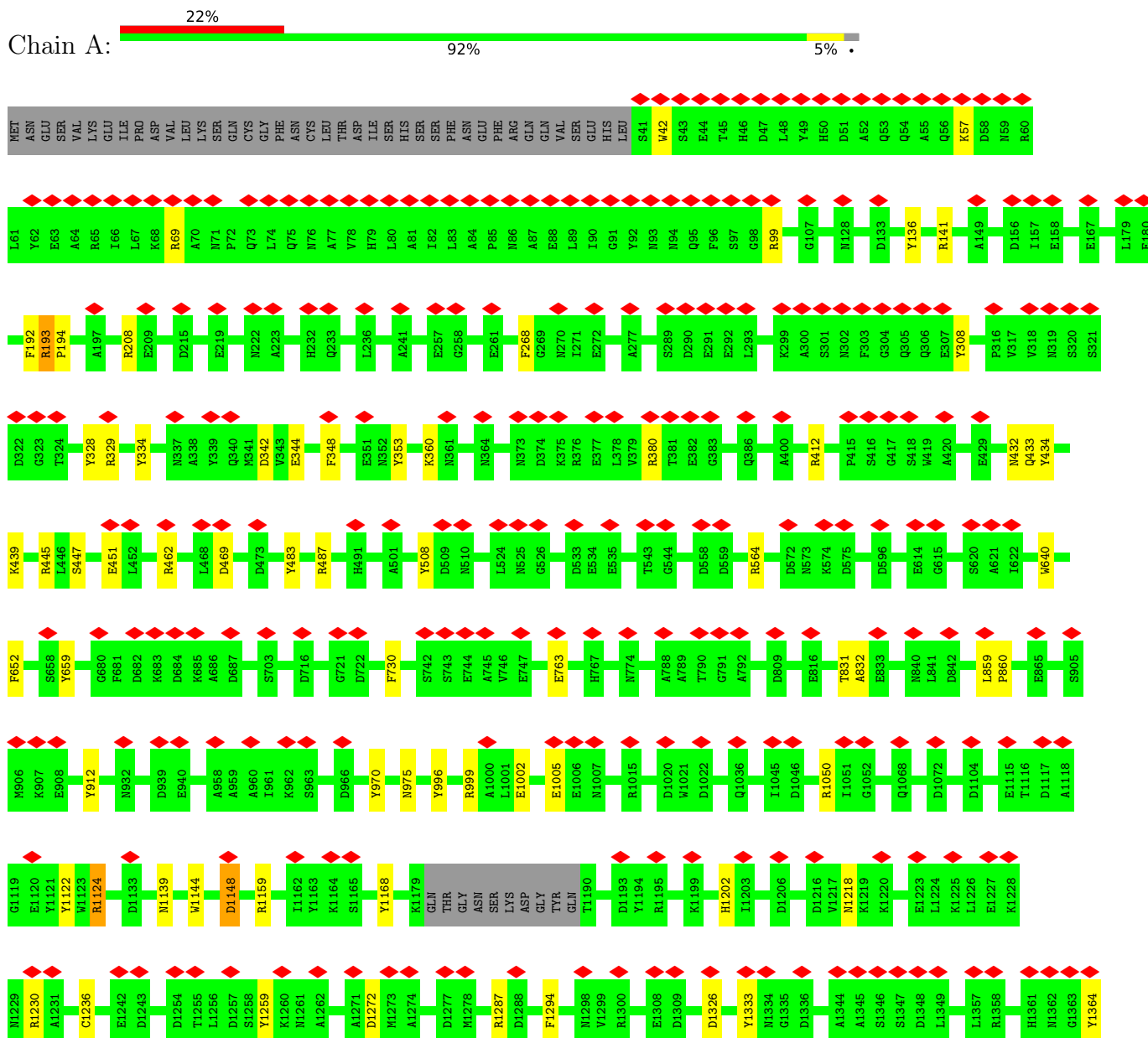
There is a discrepancy between the modelled and reference sequences:

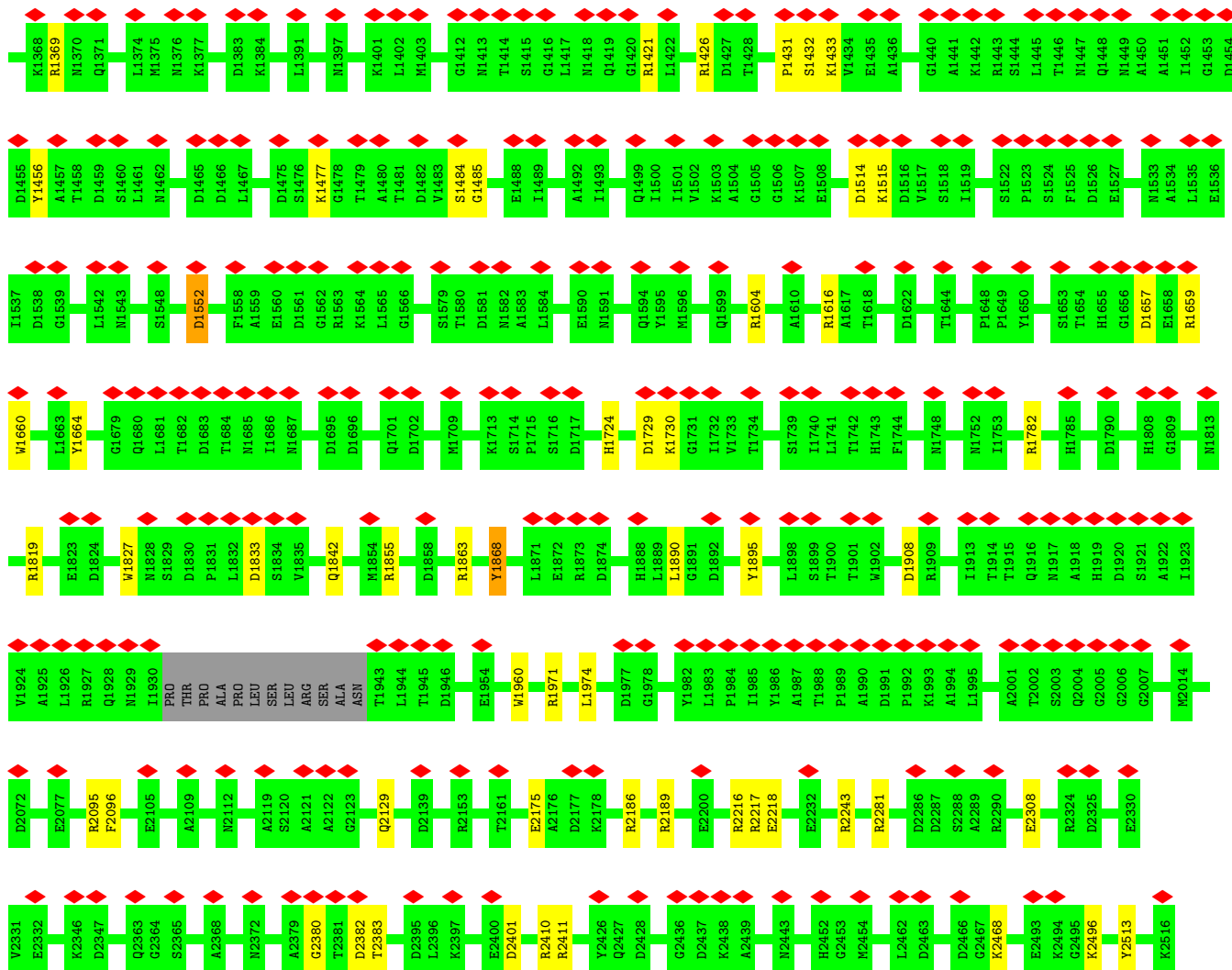
Chain	Residue	Modelled	Actual	Comment	Reference
F	2130	ALA	ASP	engineered mutation	UNP Q8GF97

3 Residue-property plots [i](#)

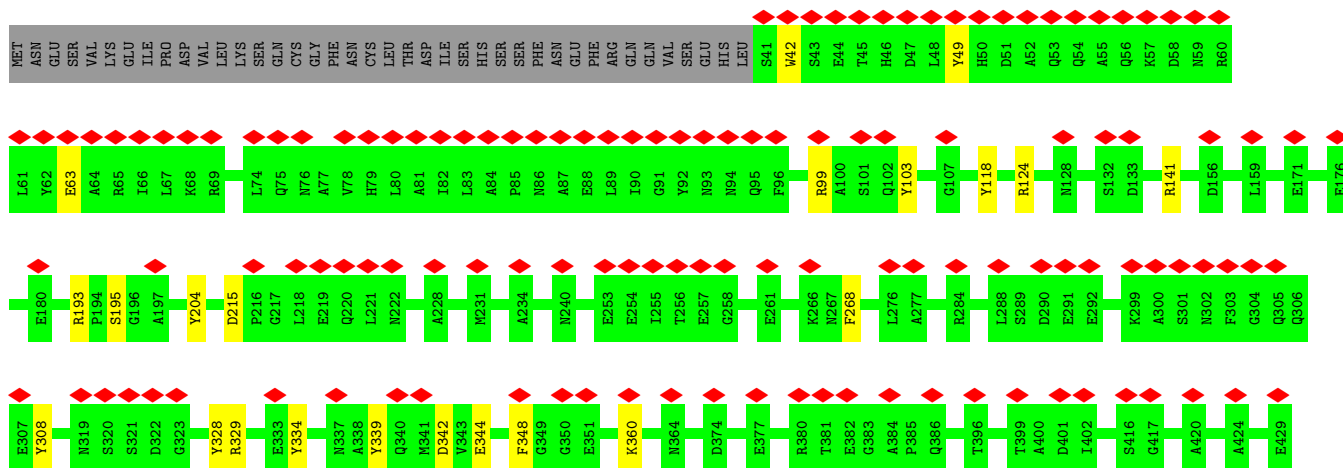
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map 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 diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). 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.

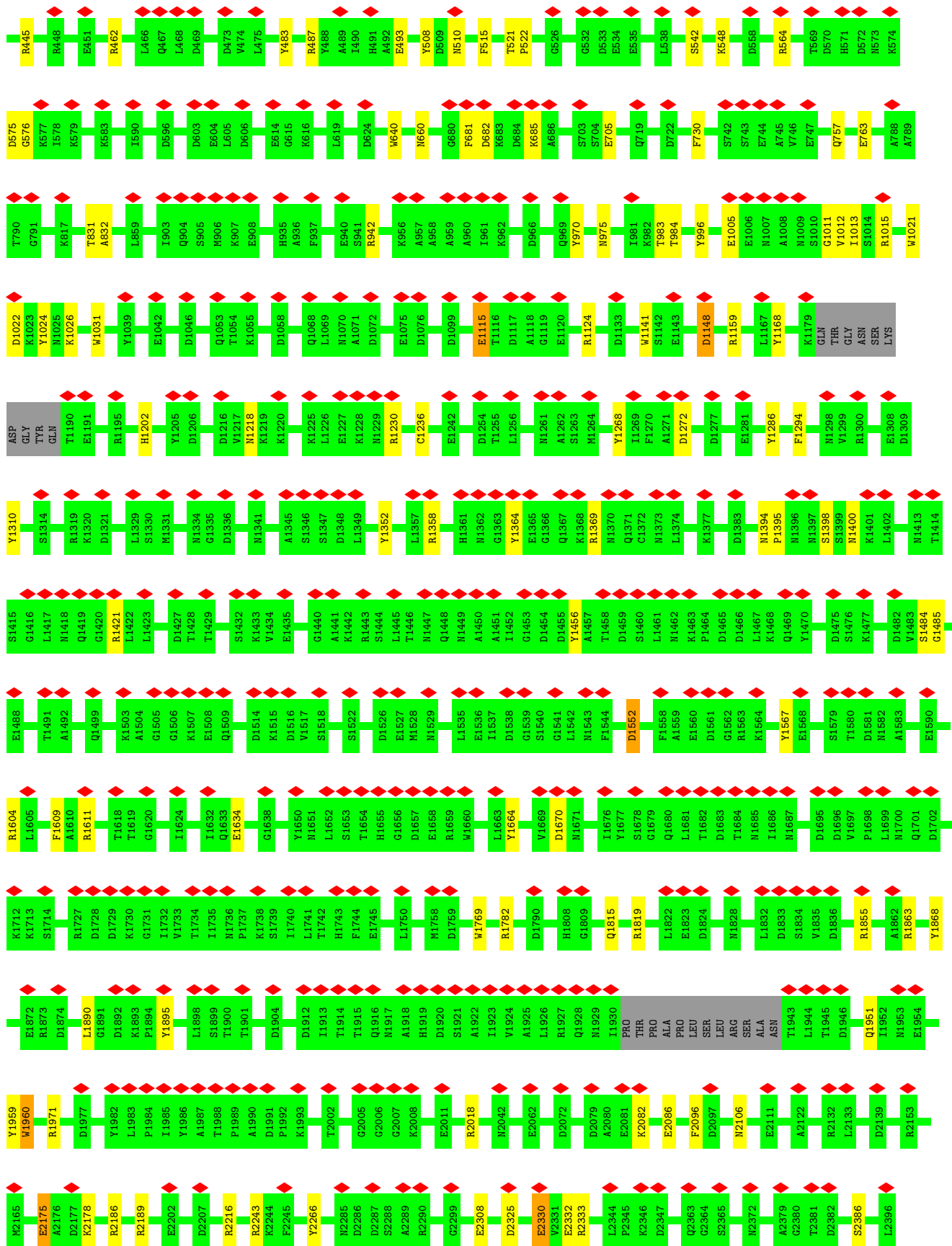
- Molecule 1: TcdA1

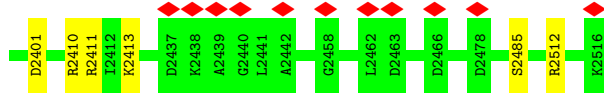




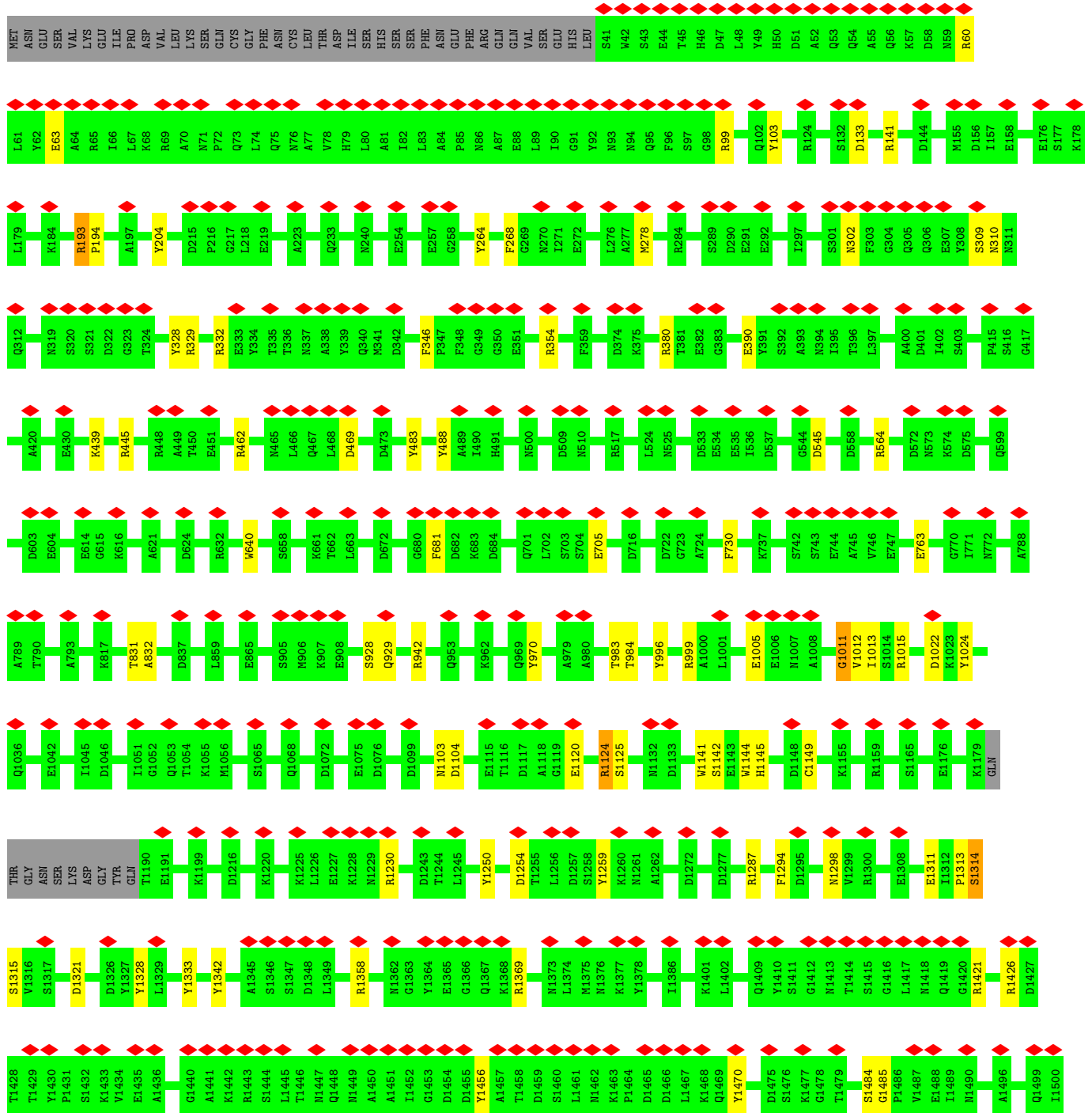
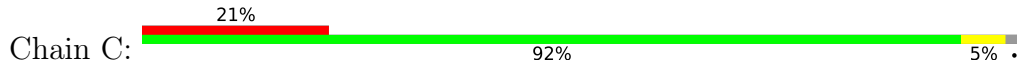
• Molecule 1: TcdA1

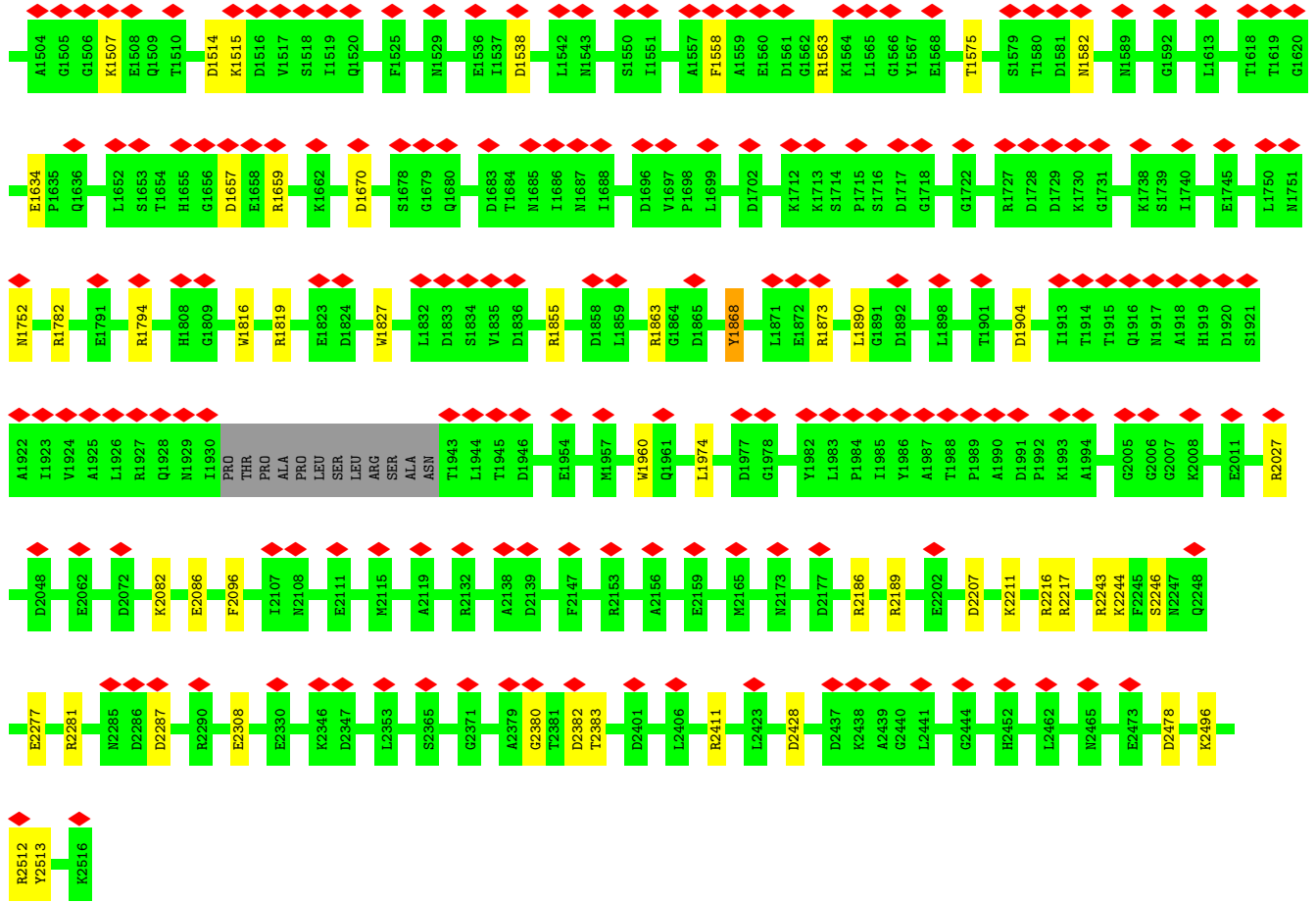




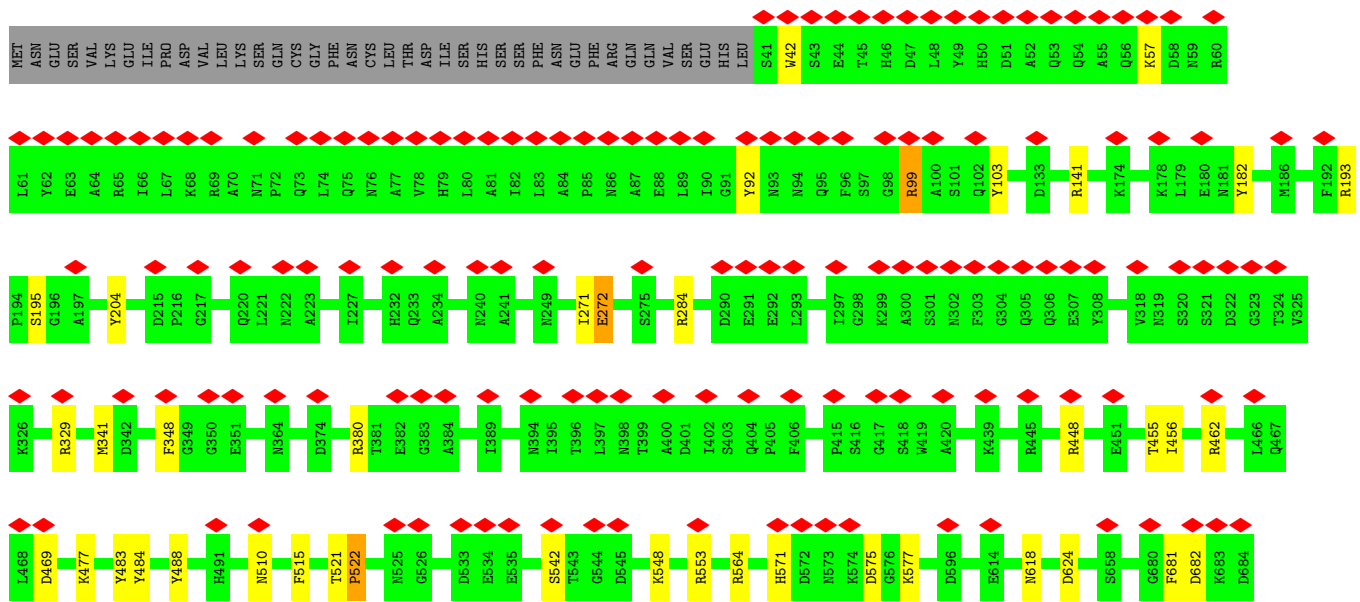
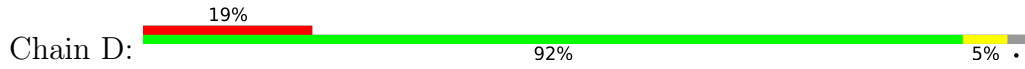


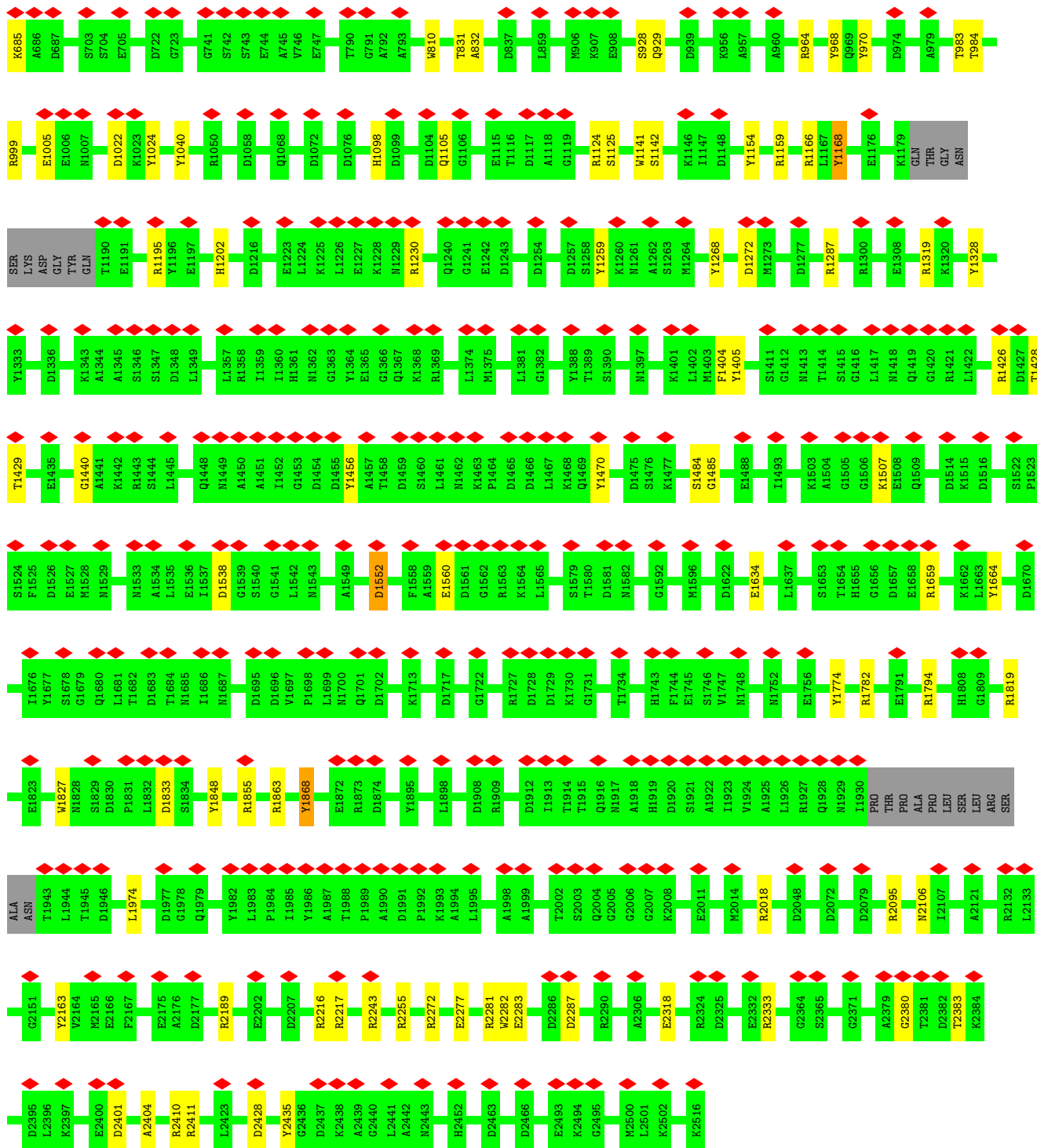
• Molecule 1: TcdA1



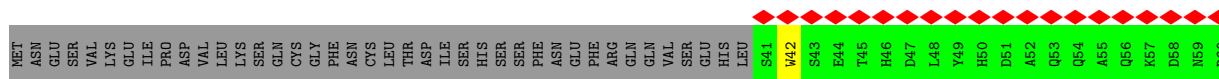
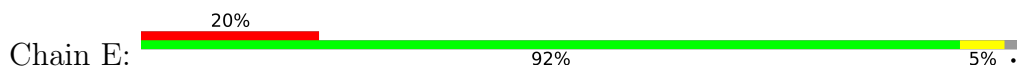


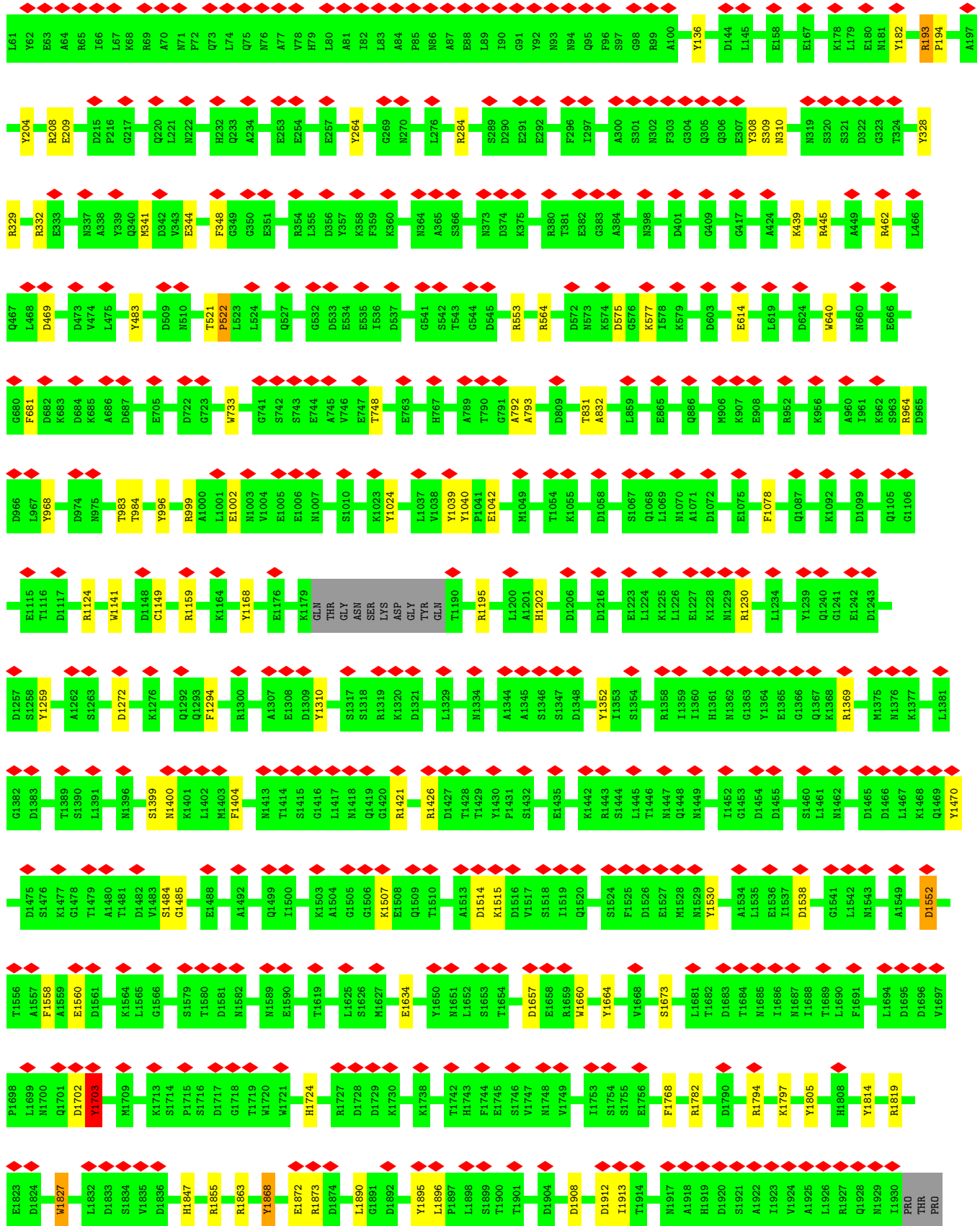
• Molecule 1: TcdA1

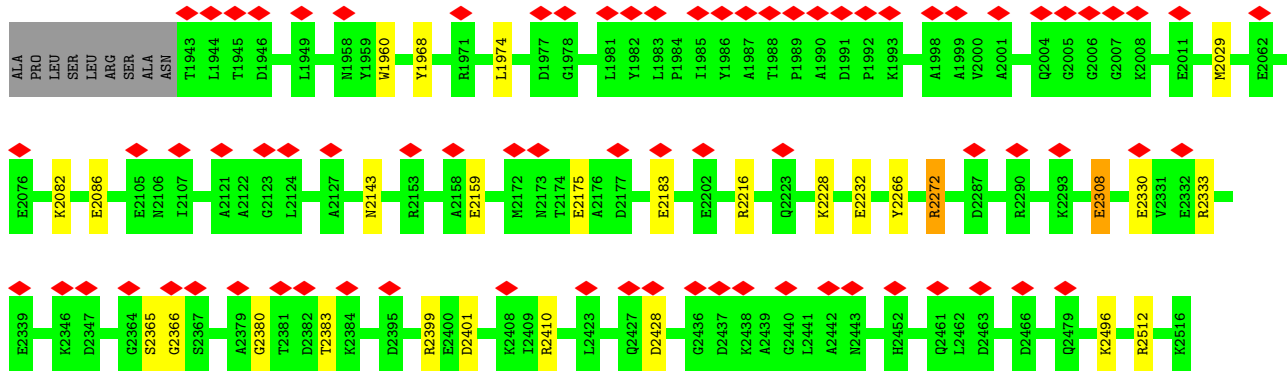




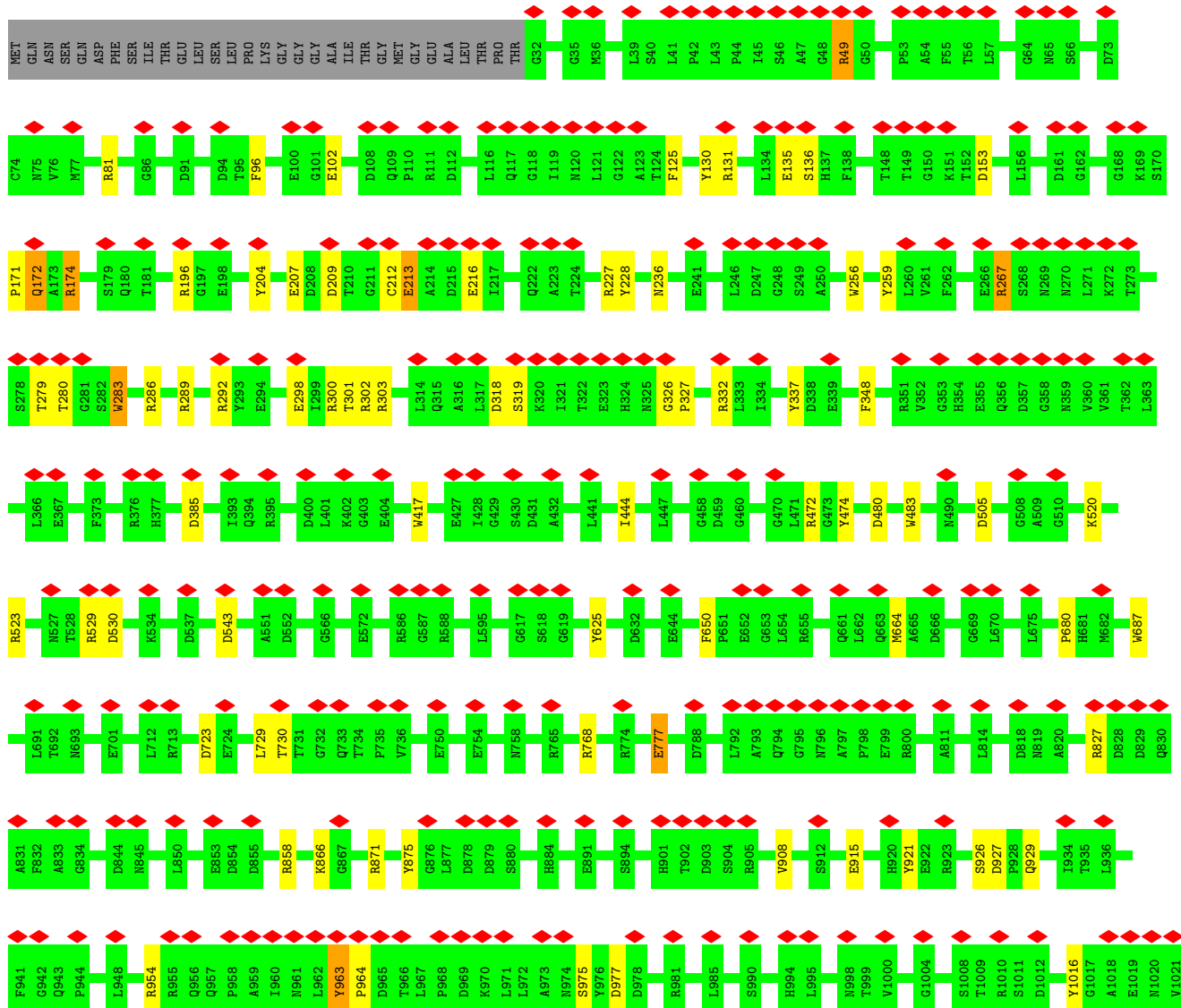
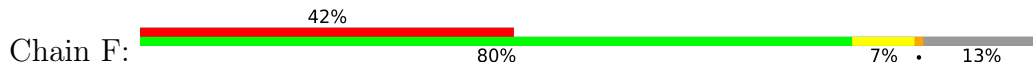
• Molecule 1: TcdA1







• Molecule 2: TcdB2,TccC3,TccC3



P1022	A1023	G1024	G1025	L1026	N1027	L1028	E1029	L1030	L1031	S1032	D1033	K1034	N1035	S1036	L1037	I1038	A1039	D1040	D1041	K1042	P1043	R1044	E1045	Y1046	L1047	G1048	K1051	T1052	T1055	D1056	G1057	Q1058	N1059	T1060	T1061	Q1064	T1065	P1066	Q1069	L1072	E1076	S1083	T1084	L1085	S1086	A1087	F1088	N1089	G1090	S1091	T1092	P1093				
S1094	D1095	K1096	L1097	E1102	Q1107	Q1108	T1109	N1110	Y1111	L1112	F1113	P1114	R1115	T1116	G1117	E1118	D1119	K1120	H1125	H1126	G1127	Y1128	G1132	T1133	A1134	A1135	R1139	S1144	N1145	T1149	K1150	K1151	I1152	T1153	L1154	N1159	Y1160	C1161	T1166	R1167	D1168	A1169	A1170	G1171	L1172	T1173	T1174	S1175	A1176	K1177						
Y1178	R1181	F1182	L1183	L1188	T1189	D1190	I1191	N1192	D1193	H1196	D1201	L1202	L1203	G1204	R1205	T1208	L1209	R1210	E1215	N1216	G1217	K1218	M1219	Y1222	S1223	S1224	P1225	E1226	A1227	A1228	S1229	F1230	S1231	S1234	D1235	V1236	A1239	N1240	E1241	L1242	K1243	K1244	P1245	L1246	Q1250	Y1254	V1262									
L1263	S1264	Q1265	K1266	T1267	F1268	N1269	R1270	L1271	A1272	E1273	Q1274	D1275	V1276	Q1277	K1278	L1279	Y1280	M1281	A1282	R1283	E1287	D1288	G1289	R1290	L1294	R1298	W1299	V1300	Q1301	S1302	Q1303	K1304	A1305	I1306	P1307	Q1308	L1309	I1310	S1311	L1312	L1313	M1314	N1315	G1316	P1317	R1318	L1324	T1325	L1326	T1327	N1328	D1329	R1330	Y1331	D1332	
H1333	D1334	P1335	E1336	Q1337	Q1338	I1339	R1340	Q1341	D1347	G1348	F1349	G1350	R1351	L1352	L1353	Q1354	A1355	R1358	H1359	E1360	A1361	G1362	M1363	A1364	Q1365	Q1366	R1367	N1368	E1369	D1370	G1371	S1372	L1373	I1374	I1375	M1376	V1377	Q1378	H1379	T1380	E1381	N1382	A1385	V1386	T1387	G1388	R1389	T1390	E1391	Y1392	D1393	N1394	K1395	G1396	Q1397	
R1400	D1409	W1410	R1411	Y1412	S1413	M1414	N1415	D1416	S1417	A1418	R1419	Q1420	E1421	K1422	E1423	A1424	Y1425	A1426	D1427	T1428	H1429	D1432	P1433	I1434	G1435	R1436	E1437	T1442	A1443	K1444	G1445	W1446	F1447	R1448	R1449	T1450	L1451	F1452	W1455	N1459	A1460	D1461	E1462	T1465	A1466	A1467	A1468	V1469	K1470	LYS	VAL	LYS	MET			
MET	LYS	N1482	I1483	D1484	P1485	K1486	L1487	Y1488	Q1489	K1490	T1493	V1494	S1495	V1496	Y1497	R1500	G1501	L1502	I1503	I1504	R1505	D1508	R1511	T1512	A1513	A1514	N1515	G1516	D1517	P1518	A1519	T1520	R1521	I1522	T1523	R1524	I1529	H1530	G1531	H1532	I1537	D1538	K1545	Q1546	T1547	N1548	M1549	Q1560	T1561	P1562	E1563	F1565				
L1556	W1557	Q1558	Y1559	D1560	L1561	T1562	G1563	L1566	C1567	T1568	E1569	S1570	I1571	D1572	A1573	G1574	R1575	T1576	V1577	T1578	L1579	M1580	D1581	I1582	E1583	G1584	L1587	L1588	T1589	V1590	T1591	A1592	T1593	G1594	V1595	I1596	T1598	R1599	E1602	T1603	S1604	S1605	G1608	R1609	V1613	Q1616	T1617	P1618	E1619	E1620	K1621	T1622				
S1623	E1627	R1628	L1629	I1630	W1631	A1632	G1633	N1634	T1635	E1636	A1637	D1640	H1641	N1642	L1643	A1644	G1645	D1652	T1653	A1654	G1655	V1656	T1657	R1658	L1659	L1662	Q1663	L1664	T1665	G1666	A1667	V1668	Q1671	L1675	L1676	I1677	D1678	T1679	Q1680	E1681	A1682	T1685	G1686	D1687	N1688	E1689	L1690	V1691	W1692	Q1693	M1694	M1695				
L1696	A1697	D1698	D1699	I1700	Y1701	T1702	T1703	L1704	S1705	T1706	F1707	D1708	A1709	T1710	G1711	I1712	L1713	Q1716	T1717	D1718	A1719	K1720	G1721	M1722	I1723	Q1724	R1725	L1726	A1731	Q1732	Q1733	L1734	M1735	G1736	L1739	T1740	L1741	K1742	G1743	Q1744	T1745	E1746	Q1747	V1748	I1749	I1750	A1751	K1752	L1753	T1754	Y1755	S1756	A1757	A1758	G1759	
R1763	E1764	G1767	N1768	D1769	E1773	Y1774	S1775	Y1776	E1777	T1780	Q1781	R1782	L1783	I1784	G1785	I1786	K1787	R1788	R1789	K1790	P1791	S1792	T1793	T1794	Y1795	K1796	L1797	Q1798	D1799	L1800	R1801	Y1802	E1803	Y1804	P1806	Y1807	G1808	N1809	V1810	I1811	S1812	I1813	R1814	N1815	D1816	A1817	E1818	A1819	T1820	R1821	F1822	W1823	A1824	R1825	K1826	
K1827	V1828	M1829	P1830	E1831	T1835	Y1836	D1837	S1838	S1839	Y1840	Q1841	L1842	G1847	R1848	E1849	M1850	A1851	N1852	L1853	G1854	Q1855	K1856	S1857	H1858	Q1859	F1860	R1861	S1862	L1865	P1866	S1867	D1868	M1869	M1874	R1877	T1878	Y1879	T1880	Y1881	D1882	R1883	G1884	G1885	L1886	L1887	T1888	K1889	L1890	Q1891	P1895	A1896	T1897	Q1898			
M1899	N1900	Y1901	T1902	T1903	N1904	I1905	M1909	R1910	S1911	L1912	N1913	A1914	V1915	L1916	S1917	T1918	L1919	T1920	E1921	D1922	P1923	A1924	Q1925	S1926	D1927	A1928	L1929	F1930	D1931	G1932	G1933	H1934	H1935	Q1936	N1937	T1938	L1939	I1940	S1941	G1942	Q1943	N1944	L1945	T1949	R1950	G1951	E1952	L1953	T1957	L1958	V1959	K1960	R1961	T1962	K1963	G1964

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	132000	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	2.2	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	59000	Depositor
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.141	Depositor
Minimum map value	-0.113	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.03	Depositor
Map size (\AA)	528.0, 528.0, 528.0	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.1, 1.1, 1.1	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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	1.10	33/19896 (0.2%)	0.92	57/27024 (0.2%)
1	B	1.11	45/19896 (0.2%)	0.94	50/27024 (0.2%)
1	C	1.10	37/19896 (0.2%)	0.92	54/27024 (0.2%)
1	D	1.13	38/19896 (0.2%)	0.93	55/27024 (0.2%)
1	E	1.10	44/19896 (0.2%)	0.92	51/27024 (0.2%)
2	F	1.11	40/17337 (0.2%)	1.00	70/23638 (0.3%)
All	All	1.11	237/116817 (0.2%)	0.94	337/158758 (0.2%)

All (237) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	308	TYR	CB-CG	-8.79	1.38	1.51
2	F	875	TYR	CB-CG	-8.14	1.39	1.51
1	D	483	TYR	CB-CG	-7.98	1.39	1.51
1	E	1310	TYR	CB-CG	-7.65	1.40	1.51
1	D	103	TYR	CB-CG	-7.62	1.40	1.51
1	D	1328	TYR	CB-CG	-7.48	1.40	1.51
1	B	483	TYR	CB-CG	-7.47	1.40	1.51
1	D	1868	TYR	CD2-CE2	-7.37	1.28	1.39
1	D	968	TYR	CG-CD1	-7.35	1.29	1.39
2	F	348	PHE	CB-CG	-7.32	1.39	1.51
1	C	483	TYR	CB-CG	-7.04	1.41	1.51
1	A	308	TYR	CB-CG	-6.89	1.41	1.51
1	D	1005	GLU	CG-CD	-6.86	1.41	1.51
2	F	96	PHE	CB-CG	-6.83	1.39	1.51
1	B	1769	TRP	CB-CG	-6.76	1.38	1.50
1	E	483	TYR	CB-CG	-6.76	1.41	1.51
1	E	1149	CYS	CB-SG	-6.75	1.70	1.82
1	C	1868	TYR	CD2-CE2	-6.69	1.29	1.39
1	E	308	TYR	CB-CG	-6.68	1.41	1.51
1	C	996	TYR	CB-CG	-6.63	1.41	1.51
2	F	483	TRP	CB-CG	-6.60	1.38	1.50
1	C	1868	TYR	CB-CG	-6.55	1.41	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	681	PHE	CB-CG	-6.54	1.40	1.51
1	B	996	TYR	CB-CG	-6.52	1.41	1.51
1	B	508	TYR	CB-CG	-6.52	1.41	1.51
1	B	2096	PHE	CB-CG	-6.52	1.40	1.51
1	C	1259	TYR	CB-CG	-6.51	1.41	1.51
2	F	1111	TYR	CB-CG	-6.47	1.42	1.51
1	E	1805	TYR	CB-CG	-6.46	1.42	1.51
1	D	488	TYR	CB-CG	-6.46	1.42	1.51
2	F	236	ASN	CB-CG	-6.43	1.36	1.51
1	A	348	PHE	CB-CG	-6.43	1.40	1.51
1	B	103	TYR	CB-CG	-6.42	1.42	1.51
1	B	1268	TYR	CB-CG	-6.41	1.42	1.51
1	A	1236	CYS	CB-SG	-6.39	1.71	1.82
2	F	283	TRP	CZ3-CH2	-6.38	1.29	1.40
1	D	1259	TYR	CB-CG	-6.37	1.42	1.51
2	F	1280	TYR	CB-CG	-6.35	1.42	1.51
1	E	640	TRP	CB-CG	-6.30	1.39	1.50
1	D	1404	PHE	CB-CG	-6.30	1.40	1.51
1	C	141	ARG	CG-CD	-6.29	1.36	1.51
1	D	1634	GLU	CG-CD	-6.27	1.42	1.51
2	F	1446	TRP	CZ3-CH2	-6.24	1.30	1.40
1	A	1660	TRP	CB-CG	-6.21	1.39	1.50
1	A	652	PHE	CB-CG	-6.18	1.40	1.51
1	E	264	TYR	CB-CG	-6.17	1.42	1.51
1	E	1868	TYR	CD2-CE2	-6.17	1.30	1.39
1	B	2332	GLU	CD-OE1	-6.15	1.18	1.25
2	F	2126	TRP	CD2-CE3	-6.13	1.31	1.40
1	A	763	GLU	CG-CD	-6.12	1.42	1.51
1	C	204	TYR	CG-CD1	-6.11	1.31	1.39
1	B	348	PHE	CB-CG	-6.10	1.41	1.51
1	D	1868	TYR	CB-CG	-6.09	1.42	1.51
1	B	204	TYR	CG-CD1	-6.09	1.31	1.39
1	D	2163	TYR	CB-CG	-6.09	1.42	1.51
1	A	996	TYR	CB-CG	-6.08	1.42	1.51
2	F	2118	TYR	CB-CG	-6.07	1.42	1.51
1	B	1664	TYR	CB-CG	-6.06	1.42	1.51
1	E	182	TYR	CB-CG	-6.06	1.42	1.51
1	E	348	PHE	CB-CG	-6.04	1.41	1.51
1	E	1560	GLU	CG-CD	-6.04	1.42	1.51
1	D	204	TYR	CG-CD1	-6.04	1.31	1.39
1	A	1664	TYR	CB-CG	-6.01	1.42	1.51
1	E	968	TYR	CG-CD1	-6.00	1.31	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	141	ARG	CD-NE	-5.99	1.36	1.46
1	A	1868	TYR	CD2-CE2	-5.98	1.30	1.39
1	C	2096	PHE	CB-CG	-5.91	1.41	1.51
1	E	1827	TRP	CB-CG	-5.91	1.39	1.50
1	E	1768	PHE	CB-CG	-5.89	1.41	1.51
1	C	103	TYR	CB-CG	-5.87	1.42	1.51
1	B	204	TYR	CB-CG	-5.86	1.42	1.51
1	A	1364	TYR	CB-CG	-5.85	1.42	1.51
1	B	730	PHE	CB-CG	-5.85	1.41	1.51
1	A	268	PHE	CB-CG	-5.83	1.41	1.51
1	D	1268	TYR	CB-CG	-5.83	1.42	1.51
2	F	256	TRP	CD2-CE3	-5.83	1.31	1.40
1	D	1664	TYR	CB-CG	-5.82	1.43	1.51
1	A	2096	PHE	CB-CG	-5.81	1.41	1.51
1	D	2318	GLU	CD-OE2	-5.81	1.19	1.25
2	F	723	ASP	CB-CG	-5.79	1.39	1.51
1	E	2175	GLU	CD-OE2	-5.78	1.19	1.25
1	D	1456	TYR	CB-CG	-5.77	1.43	1.51
1	A	1724	HIS	CB-CG	-5.75	1.39	1.50
1	D	348	PHE	CB-CG	-5.75	1.41	1.51
2	F	298	GLU	CD-OE1	-5.74	1.19	1.25
2	F	216	GLU	CD-OE2	-5.74	1.19	1.25
1	B	2175	GLU	CD-OE1	-5.72	1.19	1.25
1	A	508	TYR	CB-CG	-5.72	1.43	1.51
1	C	1328	TYR	CB-CG	-5.68	1.43	1.51
1	E	1470	TYR	CB-CG	-5.68	1.43	1.51
1	A	1139	ASN	CB-CG	-5.67	1.38	1.51
1	C	1321	ASP	CB-CG	-5.66	1.39	1.51
1	B	1456	TYR	CB-CG	-5.65	1.43	1.51
1	E	1002	GLU	CD-OE2	-5.65	1.19	1.25
1	E	1259	TYR	CB-CG	-5.65	1.43	1.51
1	D	1827	TRP	CB-CG	-5.65	1.40	1.50
1	C	1149	CYS	CB-SG	-5.63	1.72	1.81
1	E	614	GLU	CD-OE1	-5.63	1.19	1.25
1	B	640	TRP	CB-CG	-5.62	1.40	1.50
2	F	474	TYR	CB-CG	-5.62	1.43	1.51
1	C	488	TYR	CB-CG	-5.61	1.43	1.51
1	E	1404	PHE	CB-CG	-5.61	1.41	1.51
1	C	1819	ARG	CD-NE	-5.60	1.36	1.46
1	E	1634	GLU	CD-OE1	-5.57	1.19	1.25
2	F	2076	GLU	CD-OE2	-5.57	1.19	1.25
2	F	664	MET	CG-SD	-5.56	1.66	1.81

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	1039	TYR	CB-CG	-5.54	1.43	1.51
1	C	1456	TYR	CB-CG	-5.54	1.43	1.51
2	F	2119	TYR	CD1-CE1	-5.54	1.31	1.39
2	F	1425	TYR	CG-CD2	-5.54	1.31	1.39
1	B	268	PHE	CB-CG	-5.53	1.42	1.51
2	F	174	ARG	CD-NE	-5.52	1.37	1.46
1	C	264	TYR	CB-CG	-5.52	1.43	1.51
1	B	705	GLU	CD-OE2	-5.52	1.19	1.25
1	D	1634	GLU	CD-OE1	-5.51	1.19	1.25
1	A	483	TYR	CB-CG	-5.51	1.43	1.51
1	D	1168	TYR	CB-CG	-5.51	1.43	1.51
1	D	2277	GLU	CD-OE1	-5.51	1.19	1.25
1	A	1005	GLU	CD-OE1	-5.50	1.19	1.25
1	A	1868	TYR	CB-CG	-5.49	1.43	1.51
1	E	681	PHE	CB-CG	-5.49	1.42	1.51
2	F	1836	TYR	CB-CG	-5.47	1.43	1.51
2	F	1583	GLU	CD-OE1	-5.46	1.19	1.25
1	D	515	PHE	CB-CG	-5.46	1.42	1.51
2	F	207	GLU	CD-OE2	-5.43	1.19	1.25
1	C	640	TRP	CB-CG	-5.43	1.40	1.50
1	C	1141	TRP	CB-CG	-5.42	1.40	1.50
1	A	730	PHE	CB-CG	-5.42	1.42	1.51
2	F	777	GLU	CD-OE1	-5.41	1.19	1.25
1	C	1634	GLU	CD-OE1	-5.41	1.19	1.25
1	B	515	PHE	CB-CG	-5.41	1.42	1.51
1	D	204	TYR	CB-CG	-5.40	1.43	1.51
1	D	1868	TYR	CE2-CZ	-5.40	1.31	1.38
1	E	1078	PHE	CB-CG	-5.40	1.42	1.51
1	E	1868	TYR	CE2-CZ	-5.39	1.31	1.38
1	A	1819	ARG	CD-NE	-5.39	1.37	1.46
1	B	1959	TYR	CG-CD1	-5.39	1.32	1.39
1	E	2183	GLU	CD-OE1	-5.38	1.19	1.25
1	A	192	PHE	CB-CG	-5.38	1.42	1.51
1	B	2330	GLU	CD-OE1	-5.36	1.19	1.25
1	C	1005	GLU	CD-OE1	-5.36	1.19	1.25
1	D	1634	GLU	CD-OE2	-5.36	1.19	1.25
2	F	204	TYR	CB-CG	-5.35	1.43	1.51
1	D	681	PHE	CB-CG	-5.34	1.42	1.51
1	B	1634	GLU	CD-OE1	-5.33	1.19	1.25
1	A	1456	TYR	CB-CG	-5.32	1.43	1.51
1	B	1031	TRP	CB-CG	-5.31	1.40	1.50
1	E	1634	GLU	CD-OE2	-5.31	1.19	1.25

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	1814	TYR	CB-CG	-5.31	1.43	1.51
1	C	1333	TYR	CB-CG	-5.31	1.43	1.51
1	A	136	TYR	CG-CD2	-5.30	1.32	1.39
2	F	135	GLU	CG-CD	-5.30	1.44	1.51
2	F	977	ASP	CB-CG	5.30	1.62	1.51
1	B	1609	PHE	CB-CG	-5.29	1.42	1.51
1	C	1145	HIS	CB-CG	-5.29	1.40	1.50
1	E	344	GLU	CD-OE2	-5.29	1.19	1.25
1	D	2435	TYR	CB-CG	-5.29	1.43	1.51
1	A	2218	GLU	CD-OE2	-5.28	1.19	1.25
1	D	2282	TRP	CB-CG	-5.28	1.40	1.50
2	F	2118	TYR	CD1-CE1	-5.28	1.31	1.39
2	F	125	PHE	CB-CG	-5.27	1.42	1.51
1	A	1122	TYR	CB-CG	-5.27	1.43	1.51
2	F	915	GLU	CD-OE1	-5.26	1.19	1.25
1	E	1673	SER	CB-OG	-5.26	1.35	1.42
1	E	1558	PHE	CB-CG	-5.25	1.42	1.51
1	D	1819	ARG	CD-NE	-5.25	1.37	1.46
1	E	1352	TYR	CB-CG	-5.25	1.43	1.51
1	C	1558	PHE	CB-CG	-5.25	1.42	1.51
1	B	2018	ARG	CD-NE	-5.24	1.37	1.46
1	C	2277	GLU	CD-OE1	-5.24	1.19	1.25
1	B	1115	GLU	CD-OE2	-5.23	1.19	1.25
1	E	996	TYR	CB-CG	-5.23	1.43	1.51
1	D	810	TRP	CB-CG	-5.22	1.40	1.50
1	C	1816	TRP	CB-CG	-5.22	1.40	1.50
1	E	1664	TYR	CB-CG	-5.21	1.43	1.51
1	A	1333	TYR	CB-CG	-5.20	1.43	1.51
1	D	1141	TRP	CB-CG	-5.20	1.40	1.50
1	B	2308	GLU	CD-OE2	-5.19	1.20	1.25
1	E	1847	HIS	CB-CG	-5.19	1.40	1.50
1	E	2159	GLU	CD-OE1	-5.18	1.20	1.25
1	E	2330	GLU	CD-OE1	-5.18	1.20	1.25
1	E	1968	TYR	CB-CG	-5.17	1.43	1.51
1	D	2018	ARG	CD-NE	-5.17	1.37	1.46
1	A	344	GLU	CD-OE2	-5.17	1.20	1.25
1	B	1960	TRP	CE2-CZ2	-5.16	1.30	1.39
2	F	1764	GLU	CD-OE2	-5.16	1.20	1.25
1	B	493	GLU	CD-OE1	-5.16	1.20	1.25
1	B	1005	GLU	CD-OE1	-5.16	1.20	1.25
1	E	1660	TRP	CD2-CE2	-5.16	1.35	1.41
1	B	763	GLU	CD-OE2	-5.15	1.20	1.25

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	63	GLU	CG-CD	-5.15	1.44	1.51
2	F	174	ARG	CZ-NH2	-5.15	1.26	1.33
1	B	1218	ASN	CB-CG	-5.14	1.39	1.51
1	B	681	PHE	CB-CG	-5.14	1.42	1.51
1	A	1218	ASN	CB-CG	-5.14	1.39	1.51
1	D	1405	TYR	CD1-CE1	-5.13	1.31	1.39
2	F	2064	GLU	CD-OE1	-5.12	1.20	1.25
1	D	1005	GLU	CD-OE1	-5.12	1.20	1.25
1	C	2308	GLU	CD-OE2	-5.11	1.20	1.25
1	B	1310	TYR	CB-CG	-5.11	1.44	1.51
1	C	1634	GLU	CD-OE2	-5.11	1.20	1.25
2	F	1128	TYR	CB-CG	-5.10	1.44	1.51
1	B	1364	TYR	CB-CG	-5.09	1.44	1.51
1	C	1868	TYR	CE2-CZ	-5.09	1.31	1.38
1	C	730	PHE	CB-CG	-5.08	1.42	1.51
1	B	344	GLU	CG-CD	-5.08	1.44	1.51
1	B	1236	CYS	CB-SG	-5.07	1.73	1.81
1	B	118	TYR	CG-CD1	-5.06	1.32	1.39
1	E	1141	TRP	CB-CG	-5.06	1.41	1.50
1	C	346	PHE	CB-CG	-5.06	1.42	1.51
1	C	1342	TYR	CB-CG	-5.06	1.44	1.51
1	B	1352	TYR	CB-CG	-5.06	1.44	1.51
1	E	209	GLU	CD-OE1	-5.05	1.20	1.25
1	B	1634	GLU	CD-OE2	-5.05	1.20	1.25
1	A	2175	GLU	CD-OE2	-5.05	1.20	1.25
1	D	2283	GLU	CD-OE1	-5.05	1.20	1.25
1	B	1951	GLN	CG-CD	-5.04	1.39	1.51
2	F	1831	GLU	CD-OE2	-5.04	1.20	1.25
1	C	390	GLU	CD-OE2	-5.04	1.20	1.25
1	A	353	TYR	CB-CG	-5.04	1.44	1.51
1	B	1141	TRP	CB-CG	-5.04	1.41	1.50
1	E	2308	GLU	CD-OE2	-5.04	1.20	1.25
2	F	1437	GLU	CD-OE2	-5.04	1.20	1.25
1	C	763	GLU	CD-OE2	-5.03	1.20	1.25
2	F	687	TRP	CB-CG	-5.03	1.41	1.50
1	B	1567	TYR	CB-CG	-5.03	1.44	1.51
1	A	640	TRP	CB-CG	-5.03	1.41	1.50
1	C	705	GLU	CD-OE2	-5.03	1.20	1.25
1	D	469	ASP	CB-CG	5.03	1.62	1.51
1	A	1002	GLU	CD-OE2	-5.02	1.20	1.25
1	E	204	TYR	CG-CD1	-5.02	1.32	1.39
2	F	102	GLU	CD-OE1	-5.02	1.20	1.25

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	49	TYR	CB-CG	-5.02	1.44	1.51
1	D	1560	GLU	CD-OE1	-5.02	1.20	1.25
1	E	1042	GLU	CD-OE2	-5.02	1.20	1.25
1	A	2308	GLU	CD-OE2	-5.01	1.20	1.25
2	F	1836	TYR	CD1-CE1	-5.00	1.31	1.39

All (337) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	2333	ARG	NE-CZ-NH2	-11.90	114.35	120.30
1	B	329	ARG	NE-CZ-NH2	-11.52	114.54	120.30
1	E	462	ARG	NE-CZ-NH2	-11.36	114.62	120.30
1	C	1819	ARG	NE-CZ-NH2	-10.94	114.83	120.30
1	C	329	ARG	NE-CZ-NH2	-10.84	114.88	120.30
1	A	1819	ARG	NE-CZ-NH2	-10.70	114.95	120.30
1	E	329	ARG	NE-CZ-NH2	-10.52	115.04	120.30
1	D	2333	ARG	NE-CZ-NH2	-10.50	115.05	120.30
1	E	1819	ARG	NE-CZ-NH2	-10.37	115.11	120.30
1	B	462	ARG	NE-CZ-NH2	-10.37	115.12	120.30
1	B	2018	ARG	NE-CZ-NH2	-10.09	115.25	120.30
1	B	1819	ARG	NE-CZ-NH2	-10.01	115.29	120.30
1	D	1319	ARG	NE-CZ-NH2	-9.99	115.30	120.30
1	B	2186	ARG	NE-CZ-NH2	-9.95	115.33	120.30
1	A	329	ARG	NE-CZ-NH2	-9.90	115.35	120.30
1	C	462	ARG	NE-CZ-NH2	-9.81	115.39	120.30
2	F	1115	ARG	NE-CZ-NH2	-9.81	115.40	120.30
1	B	1421	ARG	NE-CZ-NH2	-9.62	115.49	120.30
1	D	1819	ARG	NE-CZ-NH2	-9.58	115.51	120.30
1	A	1287	ARG	NE-CZ-NH2	-9.52	115.54	120.30
1	B	329	ARG	NE-CZ-NH1	9.51	125.06	120.30
1	E	284	ARG	NE-CZ-NH2	-9.51	115.54	120.30
1	D	380	ARG	NE-CZ-NH2	-9.16	115.72	120.30
1	A	2243	ARG	NE-CZ-NH2	-9.14	115.73	120.30
1	C	193	ARG	NE-CZ-NH2	-9.04	115.78	120.30
1	C	329	ARG	NE-CZ-NH1	8.99	124.80	120.30
1	C	354	ARG	NE-CZ-NH2	-8.98	115.81	120.30
1	A	1159	ARG	NE-CZ-NH1	8.93	124.76	120.30
2	F	174	ARG	NE-CZ-NH1	8.92	124.76	120.30
1	A	999	ARG	NE-CZ-NH2	-8.88	115.86	120.30
2	F	1658	ARG	NE-CZ-NH2	-8.87	115.86	120.30
1	D	193	ARG	NE-CZ-NH2	-8.86	115.87	120.30
1	A	141	ARG	NE-CZ-NH1	8.83	124.72	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	267	ARG	NE-CZ-NH2	-8.71	115.94	120.30
1	C	2512	ARG	NE-CZ-NH2	-8.64	115.98	120.30
1	E	462	ARG	NE-CZ-NH1	8.64	124.62	120.30
1	C	1124	ARG	NE-CZ-NH2	-8.61	115.99	120.30
1	A	1124	ARG	NE-CZ-NH2	-8.58	116.01	120.30
1	B	1358	ARG	NE-CZ-NH2	-8.58	116.01	120.30
1	C	1782	ARG	NE-CZ-NH2	-8.56	116.02	120.30
1	A	1159	ARG	NE-CZ-NH2	-8.56	116.02	120.30
2	F	131	ARG	NE-CZ-NH2	-8.56	116.02	120.30
2	F	292	ARG	NE-CZ-NH2	-8.43	116.08	120.30
2	F	1974	TYR	CB-CG-CD2	-8.43	115.94	121.00
1	C	380	ARG	NE-CZ-NH2	-8.43	116.09	120.30
1	E	1230	ARG	NE-CZ-NH2	-8.39	116.10	120.30
2	F	1210	ARG	NE-CZ-NH2	-8.35	116.12	120.30
1	B	1015	ARG	NE-CZ-NH2	-8.34	116.13	120.30
1	E	1159	ARG	NE-CZ-NH2	-8.30	116.15	120.30
1	D	2018	ARG	NE-CZ-NH2	-8.28	116.16	120.30
1	D	1782	ARG	NE-CZ-NH1	8.28	124.44	120.30
1	B	1159	ARG	NE-CZ-NH1	8.27	124.44	120.30
1	E	329	ARG	NE-CZ-NH1	8.26	124.43	120.30
1	B	193	ARG	NE-CZ-NH2	-8.22	116.19	120.30
1	A	380	ARG	NE-CZ-NH2	-8.15	116.22	120.30
1	B	1124	ARG	NE-CZ-NH2	-8.06	116.27	120.30
1	D	329	ARG	NE-CZ-NH2	-8.00	116.30	120.30
2	F	1910	ARG	NE-CZ-NH2	-7.98	116.31	120.30
1	A	2411	ARG	NE-CZ-NH2	-7.97	116.32	120.30
1	D	448	ARG	NE-CZ-NH2	-7.96	116.32	120.30
1	C	999	ARG	NE-CZ-NH2	-7.96	116.32	120.30
1	D	462	ARG	NE-CZ-NH1	7.93	124.26	120.30
1	A	445	ARG	NE-CZ-NH1	7.91	124.25	120.30
1	A	462	ARG	NE-CZ-NH2	-7.89	116.35	120.30
1	A	1369	ARG	NE-CZ-NH2	-7.88	116.36	120.30
1	E	2512	ARG	NE-CZ-NH2	-7.88	116.36	120.30
1	A	1863	ARG	NE-CZ-NH1	7.82	124.21	120.30
1	B	1868	TYR	CB-CG-CD2	-7.81	116.32	121.00
1	D	1159	ARG	NE-CZ-NH1	7.78	124.19	120.30
1	E	1124	ARG	NE-CZ-NH2	-7.78	116.41	120.30
1	D	1159	ARG	NE-CZ-NH2	-7.73	116.44	120.30
2	F	2007	ARG	NE-CZ-NH2	-7.72	116.44	120.30
1	E	1159	ARG	NE-CZ-NH1	7.69	124.15	120.30
1	B	1148	ASP	CB-CG-OD2	7.68	125.22	118.30
1	B	462	ARG	NE-CZ-NH1	7.68	124.14	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	1421	ARG	NE-CZ-NH2	-7.67	116.46	120.30
1	B	1782	ARG	NE-CZ-NH1	7.63	124.11	120.30
1	A	1604	ARG	NE-CZ-NH1	7.62	124.11	120.30
1	E	1552	ASP	CB-CG-OD1	7.59	125.13	118.30
1	E	2333	ARG	NE-CZ-NH2	-7.57	116.52	120.30
1	A	1895	TYR	CB-CG-CD1	-7.55	116.47	121.00
1	B	1782	ARG	NE-CZ-NH2	-7.54	116.53	120.30
2	F	827	ARG	NE-CZ-NH2	-7.53	116.54	120.30
2	F	858	ARG	NE-CZ-NH2	-7.50	116.55	120.30
1	E	999	ARG	NE-CZ-NH2	-7.50	116.55	120.30
2	F	1411	ARG	NE-CZ-NH2	-7.48	116.56	120.30
1	B	1552	ASP	CB-CG-OD1	7.42	124.98	118.30
1	A	193	ARG	NE-CZ-NH2	-7.42	116.59	120.30
1	B	1159	ARG	NE-CZ-NH2	-7.38	116.61	120.30
2	F	174	ARG	NE-CZ-NH2	-7.33	116.63	120.30
1	A	1782	ARG	NE-CZ-NH1	7.31	123.96	120.30
1	E	193	ARG	NE-CZ-NH2	-7.28	116.66	120.30
1	D	2243	ARG	NE-CZ-NH2	-7.25	116.67	120.30
1	D	1782	ARG	NE-CZ-NH2	-7.19	116.70	120.30
1	C	1287	ARG	NE-CZ-NH2	-7.14	116.73	120.30
1	B	1863	ARG	NE-CZ-NH1	7.12	123.86	120.30
2	F	1840	TYR	CB-CG-CD1	-7.10	116.74	121.00
1	A	1148	ASP	CB-CG-OD2	7.10	124.69	118.30
2	F	2051	ARG	NE-CZ-NH2	-7.09	116.75	120.30
2	F	1913	ARG	NE-CZ-NH2	-7.09	116.75	120.30
2	F	259	TYR	CB-CG-CD1	-7.09	116.75	121.00
1	A	2281	ARG	NE-CZ-NH2	-7.07	116.77	120.30
1	E	964	ARG	NE-CZ-NH2	-7.07	116.77	120.30
1	E	1782	ARG	NE-CZ-NH2	-7.07	116.77	120.30
1	B	2410	ARG	NE-CZ-NH2	-7.06	116.77	120.30
1	A	208	ARG	NE-CZ-NH2	-7.05	116.77	120.30
1	C	2189	ARG	NE-CZ-NH2	-6.98	116.81	120.30
1	B	2189	ARG	NE-CZ-NH2	-6.95	116.82	120.30
1	C	2512	ARG	NE-CZ-NH1	6.95	123.77	120.30
1	D	2216	ARG	NE-CZ-NH2	-6.90	116.85	120.30
2	F	2106	ARG	NE-CZ-NH1	6.87	123.73	120.30
2	F	1389	ARG	NE-CZ-NH1	6.83	123.72	120.30
1	A	2410	ARG	NE-CZ-NH2	-6.83	116.89	120.30
1	D	1552	ASP	CB-CG-OD1	6.81	124.43	118.30
2	F	2125	ARG	NE-CZ-NH2	-6.80	116.90	120.30
1	D	2333	ARG	NE-CZ-NH1	6.77	123.68	120.30
2	F	332	ARG	NE-CZ-NH1	6.77	123.68	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	329	ARG	NE-CZ-NH1	6.77	123.68	120.30
1	A	1552	ASP	CB-CG-OD1	6.75	124.37	118.30
1	C	445	ARG	NE-CZ-NH1	6.73	123.67	120.30
2	F	1436	ARG	NE-CZ-NH2	-6.73	116.94	120.30
1	A	2216	ARG	NE-CZ-NH2	-6.72	116.94	120.30
1	D	2189	ARG	NE-CZ-NH2	-6.69	116.95	120.30
2	F	1111	TYR	CB-CG-CD1	-6.65	117.01	121.00
1	E	2216	ARG	NE-CZ-NH2	-6.65	116.98	120.30
2	F	332	ARG	NE-CZ-NH2	-6.64	116.98	120.30
1	C	564	ARG	NE-CZ-NH2	-6.63	116.98	120.30
1	C	2281	ARG	NE-CZ-NH2	-6.63	116.98	120.30
1	B	2333	ARG	NE-CZ-NH1	6.62	123.61	120.30
2	F	1972	TYR	CB-CG-CD1	-6.61	117.03	121.00
1	D	1855	ARG	NE-CZ-NH2	-6.57	117.01	120.30
1	A	208	ARG	NE-CZ-NH1	6.57	123.58	120.30
1	D	1426	ARG	NE-CZ-NH2	-6.57	117.02	120.30
1	A	1971	ARG	NE-CZ-NH2	-6.57	117.02	120.30
1	E	1369	ARG	NE-CZ-NH2	-6.55	117.03	120.30
1	E	2399	ARG	NE-CZ-NH2	-6.53	117.03	120.30
1	B	204	TYR	CB-CG-CD1	-6.52	117.09	121.00
2	F	81	ARG	NE-CZ-NH2	-6.51	117.04	120.30
2	F	529	ARG	NE-CZ-NH2	-6.48	117.06	120.30
2	F	871	ARG	NE-CZ-NH2	-6.48	117.06	120.30
1	C	204	TYR	CB-CG-CD1	-6.45	117.13	121.00
1	A	1259	TYR	CB-CG-CD2	-6.45	117.13	121.00
2	F	625	TYR	CB-CG-CD1	-6.44	117.13	121.00
1	C	1369	ARG	NE-CZ-NH2	-6.44	117.08	120.30
2	F	286	ARG	NE-CZ-NH1	6.44	123.52	120.30
1	C	328	TYR	CB-CG-CD2	-6.44	117.14	121.00
1	D	329	ARG	NE-CZ-NH1	6.43	123.52	120.30
2	F	2118	TYR	CB-CG-CD1	-6.41	117.16	121.00
1	B	334	TYR	CB-CG-CD2	-6.40	117.16	121.00
2	F	650	PHE	CB-CG-CD2	-6.40	116.32	120.80
1	C	1358	ARG	NE-CZ-NH2	-6.38	117.11	120.30
1	A	328	TYR	CB-CG-CD2	-6.38	117.17	121.00
1	B	2186	ARG	NE-CZ-NH1	6.37	123.48	120.30
1	E	1863	ARG	NE-CZ-NH1	6.36	123.48	120.30
1	E	284	ARG	NE-CZ-NH1	6.34	123.47	120.30
1	D	1230	ARG	NE-CZ-NH2	-6.33	117.13	120.30
1	A	2189	ARG	NE-CZ-NH2	-6.32	117.14	120.30
1	D	204	TYR	CB-CG-CD1	-6.32	117.21	121.00
1	C	1294	PHE	CB-CG-CD2	-6.31	116.38	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	564	ARG	NE-CZ-NH2	-6.30	117.15	120.30
2	F	1205	ARG	NE-CZ-NH2	-6.29	117.16	120.30
1	B	445	ARG	NE-CZ-NH1	6.27	123.44	120.30
1	C	332	ARG	NE-CZ-NH2	-6.26	117.17	120.30
1	D	2281	ARG	NE-CZ-NH2	-6.26	117.17	120.30
2	F	286	ARG	NE-CZ-NH2	-6.23	117.19	120.30
1	D	2411	ARG	NE-CZ-NH2	-6.22	117.19	120.30
1	D	999	ARG	NE-CZ-NH2	-6.21	117.19	120.30
1	D	1124	ARG	NE-CZ-NH2	-6.20	117.20	120.30
1	A	487	ARG	NE-CZ-NH2	-6.20	117.20	120.30
1	E	1040	TYR	CB-CG-CD2	-6.20	117.28	121.00
1	D	1166	ARG	NE-CZ-NH2	-6.19	117.21	120.30
1	A	412	ARG	NE-CZ-NH1	6.18	123.39	120.30
2	F	1521	ARG	NE-CZ-NH2	-6.18	117.21	120.30
1	D	2428	ASP	CB-CG-OD1	6.18	123.86	118.30
1	E	2512	ARG	NE-CZ-NH1	6.18	123.39	120.30
1	A	1782	ARG	NE-CZ-NH2	-6.17	117.22	120.30
1	B	1855	ARG	NE-CZ-NH2	-6.16	117.22	120.30
1	A	1426	ARG	NE-CZ-NH2	6.16	123.38	120.30
1	C	2216	ARG	NE-CZ-NH2	-6.14	117.23	120.30
1	C	2243	ARG	NE-CZ-NH2	-6.14	117.23	120.30
1	E	208	ARG	NE-CZ-NH2	-6.12	117.24	120.30
2	F	1016	TYR	CB-CG-CD2	-6.10	117.34	121.00
1	C	2411	ARG	NE-CZ-NH2	-6.09	117.25	120.30
1	D	2410	ARG	NE-CZ-NH2	-6.09	117.26	120.30
1	A	1050	ARG	NE-CZ-NH2	-6.08	117.26	120.30
1	A	659	TYR	CB-CG-CD1	-6.08	117.35	121.00
1	D	1863	ARG	NE-CZ-NH1	6.08	123.34	120.30
2	F	1511	ARG	NE-CZ-NH2	-6.05	117.27	120.30
1	B	2266	TYR	CB-CG-CD2	-6.04	117.37	121.00
1	B	1148	ASP	CB-CG-OD1	-6.04	112.86	118.30
2	F	1128	TYR	CB-CG-CD2	-6.04	117.38	121.00
1	D	999	ARG	NE-CZ-NH1	6.02	123.31	120.30
1	A	1294	PHE	CB-CG-CD1	6.02	125.01	120.80
1	B	1971	ARG	NE-CZ-NH2	-6.01	117.29	120.30
1	E	2401	ASP	CB-CG-OD1	6.01	123.71	118.30
2	F	1814	ARG	NE-CZ-NH2	-6.01	117.30	120.30
2	F	650	PHE	CB-CG-CD1	6.00	125.00	120.80
1	D	964	ARG	NE-CZ-NH2	-5.99	117.30	120.30
1	E	445	ARG	NE-CZ-NH1	5.98	123.29	120.30
1	A	1230	ARG	NE-CZ-NH2	-5.98	117.31	120.30
1	B	328	TYR	CB-CG-CD2	-5.97	117.42	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	1412	TYR	CB-CG-CD1	-5.97	117.42	121.00
1	B	487	ARG	NE-CZ-NH2	-5.94	117.33	120.30
1	B	2411	ARG	NE-CZ-NH2	-5.91	117.34	120.30
1	A	2186	ARG	NE-CZ-NH1	5.89	123.25	120.30
1	B	2216	ARG	NE-CZ-NH2	-5.89	117.36	120.30
1	A	1148	ASP	CB-CG-OD1	-5.88	113.00	118.30
1	C	60	ARG	NE-CZ-NH2	-5.87	117.36	120.30
1	E	1195	ARG	NE-CZ-NH1	5.86	123.23	120.30
1	C	1230	ARG	NE-CZ-NH2	-5.85	117.38	120.30
1	B	1369	ARG	NE-CZ-NH2	-5.79	117.41	120.30
1	C	1659	ARG	NE-CZ-NH1	5.76	123.18	120.30
1	A	2513	TYR	CB-CG-CD1	-5.76	117.55	121.00
1	D	284	ARG	NE-CZ-NH2	-5.73	117.44	120.30
1	E	1855	ARG	NE-CZ-NH2	-5.71	117.44	120.30
1	C	1426	ARG	NE-CZ-NH2	-5.71	117.44	120.30
1	C	462	ARG	NE-CZ-NH1	5.70	123.15	120.30
1	E	1230	ARG	NE-CZ-NH1	5.69	123.15	120.30
1	C	2478	ASP	CB-CG-OD1	5.69	123.42	118.30
1	A	1294	PHE	CB-CG-CD2	-5.68	116.82	120.80
1	E	2410	ARG	NE-CZ-NH2	-5.66	117.47	120.30
1	D	1794	ARG	NE-CZ-NH1	5.64	123.12	120.30
1	C	1421	ARG	NE-CZ-NH2	-5.62	117.49	120.30
1	C	1863	ARG	NE-CZ-NH1	5.61	123.11	120.30
1	C	2186	ARG	NE-CZ-NH2	-5.61	117.50	120.30
1	A	99	ARG	NE-CZ-NH1	5.60	123.10	120.30
1	C	2513	TYR	CB-CG-CD1	-5.60	117.64	121.00
1	B	141	ARG	NE-CZ-NH2	-5.58	117.51	120.30
1	C	2217	ARG	NE-CZ-NH2	-5.58	117.51	120.30
1	D	1319	ARG	NE-CZ-NH1	5.57	123.08	120.30
1	C	1855	ARG	NE-CZ-NH2	-5.55	117.52	120.30
1	A	1326	ASP	CB-CG-OD1	5.55	123.30	118.30
1	C	2428	ASP	CB-CG-OD1	5.55	123.29	118.30
1	D	1287	ARG	NE-CZ-NH2	-5.55	117.53	120.30
1	E	2410	ARG	NE-CZ-NH1	5.53	123.06	120.30
2	F	472	ARG	NE-CZ-NH1	5.52	123.06	120.30
1	B	2243	ARG	NE-CZ-NH2	-5.51	117.54	120.30
2	F	1425	TYR	CB-CG-CD2	-5.50	117.70	121.00
1	C	1294	PHE	CB-CG-CD1	5.49	124.64	120.80
1	D	141	ARG	NE-CZ-NH2	-5.49	117.55	120.30
1	E	2266	TYR	CB-CG-CD2	-5.49	117.70	121.00
1	D	1040	TYR	CB-CG-CD2	-5.49	117.71	121.00
2	F	337	TYR	CB-CG-CD2	-5.49	117.71	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	1794	ARG	NE-CZ-NH1	5.48	123.04	120.30
1	B	215	ASP	CB-CG-OD1	5.47	123.22	118.30
1	E	1470	TYR	CB-CG-CD2	-5.46	117.72	121.00
1	D	484	TYR	CB-CG-CD1	-5.46	117.73	121.00
1	C	1250	TYR	CB-CG-CD2	-5.45	117.73	121.00
2	F	1836	TYR	CB-CG-CD1	-5.45	117.73	121.00
2	F	1280	TYR	CB-CG-CD1	-5.43	117.74	121.00
1	B	942	ARG	NE-CZ-NH2	-5.43	117.58	120.30
1	D	2095	ARG	NE-CZ-NH2	-5.43	117.58	120.30
1	C	1563	ARG	NE-CZ-NH2	-5.42	117.59	120.30
1	B	2512	ARG	NE-CZ-NH2	-5.40	117.60	120.30
2	F	523	ARG	NE-CZ-NH2	-5.39	117.60	120.30
1	D	2255	ARG	NE-CZ-NH2	5.39	123.00	120.30
1	B	124	ARG	NE-CZ-NH1	-5.39	117.61	120.30
2	F	1950	ARG	NE-CZ-NH1	5.37	122.99	120.30
1	A	445	ARG	NE-CZ-NH2	-5.37	117.61	120.30
1	D	970	TYR	CB-CG-CD1	-5.37	117.78	121.00
1	A	564	ARG	NE-CZ-NH1	5.36	122.98	120.30
1	C	1470	TYR	CB-CG-CD2	-5.36	117.79	121.00
2	F	2051	ARG	NE-CZ-NH1	5.36	122.98	120.30
2	F	49	ARG	NE-CZ-NH2	-5.35	117.62	120.30
1	C	942	ARG	NE-CZ-NH2	-5.34	117.63	120.30
2	F	1367	ARG	NE-CZ-NH2	5.34	122.97	120.30
1	E	1426	ARG	NE-CZ-NH2	5.33	122.97	120.30
1	E	2272	ARG	NE-CZ-NH2	-5.33	117.64	120.30
2	F	300	ARG	NE-CZ-NH2	-5.33	117.64	120.30
1	B	1895	TYR	CB-CG-CD1	-5.32	117.81	121.00
1	E	136	TYR	CB-CG-CD2	-5.32	117.81	121.00
1	A	69	ARG	NE-CZ-NH1	5.30	122.95	120.30
1	D	1154	TYR	CB-CG-CD2	-5.30	117.82	121.00
1	E	564	ARG	NE-CZ-NH1	5.30	122.95	120.30
1	C	2027	ARG	NE-CZ-NH2	-5.30	117.65	120.30
1	E	2428	ASP	CB-CG-OD1	5.30	123.07	118.30
1	A	1855	ARG	NE-CZ-NH2	-5.30	117.65	120.30
1	D	564	ARG	NE-CZ-NH2	5.29	122.95	120.30
1	C	1011	GLY	N-CA-C	-5.29	99.88	113.10
1	A	1616	ARG	NE-CZ-NH1	5.28	122.94	120.30
1	E	264	TYR	CB-CG-CD1	-5.27	117.84	121.00
1	D	182	TYR	CB-CG-CD2	-5.27	117.84	121.00
1	C	1015	ARG	NE-CZ-NH2	-5.26	117.67	120.30
2	F	1115	ARG	NE-CZ-NH1	5.25	122.93	120.30
2	F	768	ARG	NE-CZ-NH2	-5.25	117.68	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	130	TYR	CB-CG-CD2	-5.24	117.86	121.00
1	B	1604	ARG	NE-CZ-NH1	5.23	122.92	120.30
1	A	334	TYR	CB-CG-CD2	-5.23	117.86	121.00
1	E	332	ARG	NE-CZ-NH2	-5.23	117.69	120.30
2	F	1139	ARG	NE-CZ-NH2	-5.21	117.70	120.30
2	F	1449	ARG	NE-CZ-NH1	5.20	122.90	120.30
1	A	1659	ARG	NE-CZ-NH1	5.20	122.90	120.30
2	F	1222	TYR	CB-CG-CD1	-5.20	117.88	121.00
1	A	2095	ARG	NE-CZ-NH2	-5.18	117.71	120.30
1	B	1230	ARG	NE-CZ-NH2	-5.17	117.71	120.30
1	D	462	ARG	NE-CZ-NH2	-5.17	117.71	120.30
1	C	2428	ASP	CB-CG-OD2	-5.17	113.65	118.30
2	F	196	ARG	NE-CZ-NH2	-5.17	117.72	120.30
1	E	1530	TYR	CB-CG-CD2	-5.17	117.90	121.00
1	A	1421	ARG	NE-CZ-NH2	-5.16	117.72	120.30
1	C	99	ARG	NE-CZ-NH2	-5.16	117.72	120.30
1	E	553	ARG	NE-CZ-NH1	5.16	122.88	120.30
1	E	1794	ARG	NE-CZ-NH1	5.16	122.88	120.30
2	F	2080	TYR	CB-CG-CD2	-5.16	117.91	121.00
1	C	1873	ARG	NE-CZ-NH2	-5.15	117.72	120.30
1	D	553	ARG	NE-CZ-NH1	5.15	122.88	120.30
1	E	208	ARG	NE-CZ-NH1	5.15	122.88	120.30
1	B	1286	TYR	CB-CG-CD1	-5.15	117.91	121.00
2	F	1505	ARG	NE-CZ-NH1	5.15	122.87	120.30
2	F	2119	TYR	CB-CG-CD1	-5.13	117.92	121.00
1	E	1195	ARG	NE-CZ-NH2	-5.13	117.74	120.30
1	E	1294	PHE	CB-CG-CD2	-5.12	117.21	120.80
2	F	921	TYR	CB-CG-CD2	-5.12	117.92	121.00
1	B	1294	PHE	CB-CG-CD2	-5.12	117.21	120.80
1	D	1195	ARG	NE-CZ-NH1	5.12	122.86	120.30
1	D	2272	ARG	NE-CZ-NH2	-5.12	117.74	120.30
2	F	1881	TYR	CB-CG-CD2	-5.12	117.93	121.00
1	A	2217	ARG	NE-CZ-NH2	-5.12	117.74	120.30
1	E	1703	TYR	CB-CG-CD2	-5.12	117.93	121.00
1	C	264	TYR	CB-CG-CD1	-5.11	117.94	121.00
2	F	227	ARG	NE-CZ-NH1	5.11	122.85	120.30
1	D	2428	ASP	CB-CG-OD2	-5.10	113.71	118.30
1	C	278	MET	CG-SD-CE	5.10	108.36	100.20
1	A	99	ARG	NE-CZ-NH2	-5.09	117.76	120.30
1	E	328	TYR	CB-CG-CD2	-5.07	117.96	121.00
1	A	912	TYR	CB-CG-CD1	-5.07	117.96	121.00
1	D	99	ARG	NE-CZ-NH2	-5.07	117.77	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	1559	TYR	CB-CG-CD1	-5.06	117.96	121.00
2	F	1330	ARG	NE-CZ-NH1	5.06	122.83	120.30
1	D	1470	TYR	CB-CG-CD2	-5.05	117.97	121.00
1	E	204	TYR	CB-CG-CD1	-5.05	117.97	121.00
1	C	268	PHE	CB-CG-CD1	-5.03	117.28	120.80
1	D	2217	ARG	NE-CZ-NH2	-5.03	117.78	120.30
2	F	1950	ARG	NE-CZ-NH2	-5.02	117.79	120.30
2	F	1290	ARG	NE-CZ-NH1	5.01	122.81	120.30
1	D	1659	ARG	NE-CZ-NH1	5.01	122.81	120.30
1	B	124	ARG	NE-CZ-NH2	5.01	122.81	120.30

There are no chirality outliers.

There are no planarity outliers.

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	19477	0	19046	32	0
1	B	19477	0	19046	31	0
1	C	19477	0	19046	38	0
1	D	19477	0	19046	30	0
1	E	19477	0	19046	35	0
2	F	16918	0	16285	55	0
All	All	114303	0	111515	214	0

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 1.

All (214) 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)
2:F:228:TYR:HH	2:F:301:THR:HG1	1.36	0.71
1:D:92:TYR:OH	1:D:99:ARG:NH1	2.26	0.69
1:E:733:TRP:HE1	1:E:748:THR:HG1	1.43	0.64
1:E:1868:TYR:OH	1:E:1974:LEU:O	2.19	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1868:TYR:OH	1:C:1974:LEU:O	2.22	0.58
1:D:521:THR:O	1:D:522:PRO:C	2.44	0.56
1:B:342:ASP:OD1	1:B:360:LYS:NZ	2.38	0.56
1:E:521:THR:O	1:E:522:PRO:C	2.44	0.55
2:F:1329:ASP:OD1	2:F:1329:ASP:N	2.30	0.55
1:D:57:LYS:NZ	1:D:1833:ASP:OD1	2.40	0.55
1:A:1868:TYR:OH	1:A:1974:LEU:O	2.24	0.55
2:F:530:ASP:N	2:F:530:ASP:OD1	2.39	0.54
1:C:1011:GLY:O	1:C:1013:ILE:N	2.41	0.54
1:B:1148:ASP:OD1	1:B:1148:ASP:N	2.34	0.54
1:C:2207:ASP:OD2	1:C:2211:LYS:NZ	2.40	0.54
2:F:49:ARG:NH2	2:F:1159:ASN:O	2.41	0.54
1:E:1702:ASP:O	1:E:1703:TYR:C	2.46	0.54
1:A:57:LYS:NZ	1:A:1833:ASP:OD1	2.33	0.53
1:B:542:SER:O	1:B:548:LYS:NZ	2.41	0.53
1:B:1011:GLY:O	1:B:1013:ILE:N	2.42	0.53
1:C:2244:LYS:NZ	1:C:2246:SER:O	2.42	0.53
1:D:1868:TYR:OH	1:D:1974:LEU:O	2.27	0.52
2:F:209:ASP:OD1	2:F:302:ARG:NH1	2.43	0.52
2:F:318:ASP:OD1	2:F:1177:LYS:NZ	2.43	0.52
2:F:520:LYS:NZ	2:F:543:ASP:OD1	2.42	0.52
2:F:963:TYR:N	2:F:964:PRO:CD	2.74	0.51
1:D:1125:SER:H	1:D:1142:SER:HG	1.58	0.51
1:D:2287:ASP:OD1	1:D:2287:ASP:N	2.38	0.51
1:B:682:ASP:OD2	1:B:685:LYS:NZ	2.39	0.51
2:F:1795:LYS:NZ	2:F:1818:GLU:OE1	2.43	0.51
2:F:153:ASP:O	2:F:174:ARG:NH2	2.44	0.50
1:E:42:TRP:N	1:E:1552:ASP:OD2	2.45	0.50
1:E:1399:SER:OG	1:E:1400:ASN:N	2.44	0.50
1:A:1514:ASP:OD2	1:A:1515:LYS:NZ	2.42	0.50
1:A:2401:ASP:OD1	1:E:2496:LYS:NZ	2.40	0.50
2:F:1687:ASP:OD1	2:F:1687:ASP:N	2.39	0.50
1:C:1514:ASP:OD2	1:C:1515:LYS:NZ	2.42	0.49
1:E:1514:ASP:OD2	1:E:1515:LYS:NZ	2.42	0.49
2:F:385:ASP:OD1	2:F:385:ASP:N	2.38	0.49
1:A:42:TRP:N	1:A:1552:ASP:OD2	2.46	0.49
1:A:1431:PRO:O	1:A:1477:LYS:NZ	2.44	0.48
1:D:1507:LYS:NZ	1:D:1538:ASP:OD2	2.41	0.48
1:A:432:ASN:O	1:A:434:TYR:N	2.46	0.48
1:B:42:TRP:N	1:B:1552:ASP:OD2	2.47	0.48
1:A:1432:SER:OG	1:A:1433:LYS:N	2.45	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:271:ILE:O	1:D:272:GLU:HB3	2.14	0.48
1:E:1912:ASP:OD1	1:E:1913:ILE:N	2.46	0.48
2:F:2129:SER:OG	2:F:2130:ALA:N	2.46	0.48
1:D:42:TRP:N	1:D:1552:ASP:OD2	2.47	0.48
1:B:575:ASP:OD1	1:B:576:GLY:N	2.47	0.47
1:B:2386:SER:HG	1:B:2485:SER:HG	1.54	0.47
1:D:1774:TYR:OH	1:D:1848:TYR:OH	2.32	0.47
2:F:777:GLU:OE2	2:F:866:LYS:NZ	2.47	0.47
1:D:510:ASN:OD1	1:D:510:ASN:N	2.46	0.47
1:E:309:SER:O	1:E:310:ASN:C	2.53	0.47
1:E:2029:MET:HG3	1:E:2272:ARG:HG3	1.97	0.47
2:F:926:SER:OG	2:F:927:ASP:N	2.47	0.47
2:F:171:PRO:O	2:F:172:GLN:HB2	2.15	0.47
1:A:1484:SER:OG	1:A:1485:GLY:N	2.48	0.47
1:A:1827:TRP:CE3	1:A:1842:GLN:HG3	2.50	0.47
1:C:1125:SER:H	1:C:1142:SER:HG	1.63	0.47
2:F:326:GLY:N	2:F:327:PRO:HD2	2.29	0.47
1:C:133:ASP:OD1	1:C:133:ASP:N	2.45	0.47
1:E:1657:ASP:OD1	1:E:1657:ASP:N	2.48	0.47
1:A:2468:LYS:NZ	1:B:2325:ASP:OD2	2.45	0.47
1:C:1311:GLU:HB3	1:C:1575:THR:HB	1.96	0.47
2:F:283:TRP:CE3	2:F:303:ARG:HB3	2.50	0.47
2:F:505:ASP:OD1	2:F:505:ASP:C	2.52	0.47
1:B:1272:ASP:N	1:B:1272:ASP:OD1	2.45	0.46
1:D:2380:GLY:N	1:D:2383:THR:OG1	2.47	0.46
1:C:928:SER:OG	1:C:929:GLN:N	2.48	0.46
1:D:1428:THR:OG1	1:D:1429:THR:N	2.47	0.46
2:F:1288:ASP:OD1	2:F:1288:ASP:N	2.46	0.46
1:C:1890:LEU:HB3	1:C:1960:TRP:CH2	2.51	0.46
1:D:928:SER:OG	1:D:929:GLN:N	2.48	0.46
1:D:1868:TYR:CD2	1:D:1868:TYR:C	2.88	0.46
2:F:1805:ASP:HB2	2:F:1806:PRO:HD2	1.96	0.46
1:A:2380:GLY:N	1:A:2383:THR:OG1	2.47	0.46
1:C:439:LYS:NZ	1:C:469:ASP:OD1	2.49	0.46
1:A:1148:ASP:N	1:A:1148:ASP:OD1	2.35	0.46
2:F:212:CYS:O	2:F:213:GLU:CB	2.63	0.46
2:F:1055:THR:OG1	2:F:1056:ASP:N	2.49	0.46
2:F:1819:ALA:O	2:F:1820:THR:CB	2.63	0.46
2:F:1837:ASP:OD1	2:F:1837:ASP:C	2.54	0.46
2:F:1909:ASN:N	2:F:1909:ASN:OD1	2.48	0.46
1:B:1115:GLU:OE2	1:B:1611:ARG:NH2	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1168:TYR:CD2	1:E:1202:HIS:HB3	2.51	0.46
2:F:279:THR:OG1	2:F:280:THR:N	2.48	0.45
2:F:480:ASP:OD1	2:F:480:ASP:N	2.44	0.45
1:A:1272:ASP:N	1:A:1272:ASP:OD1	2.45	0.45
1:E:1908:ASP:N	1:E:1908:ASP:OD1	2.47	0.45
1:C:302:ASN:N	1:C:302:ASN:OD1	2.46	0.45
2:F:1975:SER:OG	2:F:1976:GLY:N	2.50	0.45
1:B:1484:SER:OG	1:B:1485:GLY:N	2.50	0.45
2:F:1133:THR:OG1	2:F:1134:ALA:N	2.49	0.45
1:B:1021:TRP:O	1:B:1026:LYS:HB2	2.17	0.45
1:D:455:THR:OG1	1:D:456:ILE:N	2.50	0.45
1:E:2228:LYS:NZ	1:E:2232:GLU:OE2	2.48	0.45
2:F:1552:LYS:NZ	2:F:1569:GLU:OE2	2.40	0.45
1:A:1908:ASP:N	1:A:1908:ASP:OD1	2.49	0.45
1:C:1104:ASP:OD1	1:C:1104:ASP:N	2.42	0.45
1:A:1729:ASP:OD1	1:A:1729:ASP:N	2.50	0.44
1:E:2082:LYS:NZ	1:E:2086:GLU:OE2	2.48	0.44
2:F:1367:ARG:NH1	2:F:1411:ARG:O	2.50	0.44
2:F:1740:THR:OG1	2:F:1744:GLN:O	2.36	0.44
1:E:2365:SER:OG	1:E:2366:GLY:N	2.50	0.44
1:C:1484:SER:OG	1:C:1485:GLY:N	2.49	0.44
1:B:1890:LEU:HB3	1:B:1960:TRP:CH2	2.53	0.44
1:C:1314:SER:OG	1:C:1315:SER:N	2.51	0.44
1:A:1168:TYR:CD2	1:A:1202:HIS:HB3	2.53	0.44
1:B:1815:GLN:N	1:B:1815:GLN:OE1	2.51	0.44
1:E:193:ARG:N	1:E:194:PRO:CD	2.81	0.44
1:A:1729:ASP:OD2	1:A:1730:LYS:NZ	2.42	0.44
1:D:831:THR:OG1	1:D:832:ALA:N	2.51	0.44
1:D:1484:SER:OG	1:D:1485:GLY:N	2.50	0.44
1:E:1895:TYR:CG	1:E:1896:LEU:N	2.86	0.43
2:F:1991:ASN:N	2:F:1991:ASN:OD1	2.49	0.43
1:A:193:ARG:N	1:A:194:PRO:CD	2.81	0.43
1:A:342:ASP:OD2	1:A:360:LYS:NZ	2.52	0.43
1:A:1124:ARG:HD2	1:A:1144:TRP:CE2	2.53	0.43
1:B:831:THR:OG1	1:B:832:ALA:N	2.51	0.43
1:C:309:SER:O	1:C:310:ASN:HB2	2.18	0.43
1:C:1313:PRO:O	1:C:1315:SER:N	2.51	0.43
2:F:1549:ASN:N	2:F:1549:ASN:OD1	2.49	0.43
2:F:1931:ASP:OD1	2:F:1931:ASP:C	2.55	0.43
1:E:983:THR:OG1	1:E:984:THR:N	2.51	0.43
1:A:2496:LYS:NZ	1:B:2401:ASP:OD1	2.47	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:521:THR:N	1:B:522:PRO:CD	2.81	0.43
2:F:963:TYR:N	2:F:964:PRO:HD3	2.33	0.43
1:B:975:ASN:OD1	1:B:975:ASN:N	2.40	0.43
1:C:2382:ASP:OD2	1:D:2404:ALA:N	2.51	0.43
1:E:2380:GLY:N	1:E:2383:THR:OG1	2.52	0.43
2:F:963:TYR:N	2:F:963:TYR:CD2	2.85	0.43
1:B:1168:TYR:CD2	1:B:1202:HIS:HB3	2.53	0.43
2:F:954:ARG:NH1	2:F:975:SER:O	2.50	0.43
2:F:2114:TYR:O	2:F:2115:GLY:C	2.56	0.43
2:F:1109:THR:OG1	2:F:1110:ASN:N	2.50	0.43
1:C:2496:LYS:NZ	1:D:2401:ASP:OD1	2.41	0.43
1:B:2330:GLU:OE2	1:B:2413:LYS:NZ	2.49	0.43
1:D:575:ASP:OD2	1:D:577:LYS:NZ	2.42	0.43
1:C:1254:ASP:N	1:C:1254:ASP:OD1	2.44	0.42
1:D:542:SER:O	1:D:548:LYS:NZ	2.52	0.42
2:F:2118:TYR:CD1	2:F:2118:TYR:N	2.86	0.42
1:E:1890:LEU:HB3	1:E:1960:TRP:CH2	2.55	0.42
1:A:1890:LEU:HB3	1:A:1960:TRP:CH2	2.54	0.42
1:C:1868:TYR:C	1:C:1868:TYR:CD2	2.92	0.42
1:C:2380:GLY:N	1:C:2383:THR:OG1	2.52	0.42
1:A:439:LYS:NZ	1:A:469:ASP:OD1	2.52	0.42
1:E:439:LYS:NZ	1:E:469:ASP:OD1	2.51	0.42
2:F:1496:VAL:HB	2:F:1505:ARG:HB2	2.02	0.42
1:B:510:ASN:OD1	1:B:510:ASN:N	2.51	0.42
1:E:1507:LYS:NZ	1:E:1538:ASP:OD2	2.50	0.42
2:F:1698:ASP:OD1	2:F:1698:ASP:N	2.43	0.42
1:B:983:THR:OG1	1:B:984:THR:N	2.51	0.42
1:B:2082:LYS:NZ	1:B:2086:GLU:OE2	2.48	0.42
2:F:1692:TRP:CD1	2:F:1692:TRP:N	2.86	0.42
1:A:1868:TYR:CD2	1:A:1868:TYR:C	2.92	0.42
2:F:417:TRP:H	2:F:444:ILE:CD1	2.32	0.42
1:E:1272:ASP:OD1	1:E:1272:ASP:N	2.45	0.42
2:F:1461:ASP:C	2:F:1461:ASP:OD1	2.59	0.42
1:C:1507:LYS:NZ	1:C:1538:ASP:OD2	2.52	0.41
1:C:1752:ASN:OD1	1:C:1752:ASN:N	2.50	0.41
1:D:1098:HIS:NE2	1:D:1105:GLN:O	2.53	0.41
1:D:1022:ASP:OD2	1:E:1797:LYS:NZ	2.47	0.41
1:D:1168:TYR:CD2	1:D:1202:HIS:HB3	2.55	0.41
1:E:2143:ASN:OD1	1:E:2143:ASN:N	2.49	0.41
1:C:1124:ARG:HD2	1:C:1144:TRP:CE2	2.55	0.41
1:B:1394:ASN:HA	1:B:1395:PRO:HD3	1.91	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:831:THR:OG1	1:C:832:ALA:N	2.53	0.41
1:C:1298:ASN:OD1	1:C:1298:ASN:N	2.49	0.41
1:D:1272:ASP:OD1	1:D:1272:ASP:N	2.47	0.41
1:E:1484:SER:OG	1:E:1485:GLY:N	2.54	0.41
1:E:2308:GLU:OE1	1:E:2308:GLU:N	2.50	0.41
2:F:2117:ARG:HG2	2:F:2126:TRP:CE3	2.55	0.41
1:A:1657:ASP:OD1	1:A:1657:ASP:N	2.44	0.41
1:A:2129:GLN:NE2	1:C:1120:GLU:OE2	2.54	0.41
1:E:1703:TYR:HB3	1:E:1724:HIS:HB3	2.02	0.41
1:D:477:LYS:HZ1	1:D:624:ASP:CG	2.24	0.41
1:D:983:THR:OG1	1:D:984:THR:N	2.53	0.41
2:F:1144:SER:OG	2:F:1149:THR:OG1	2.32	0.41
2:F:1272:ALA:O	2:F:1273:GLU:C	2.56	0.41
1:A:831:THR:OG1	1:A:832:ALA:N	2.54	0.41
1:C:1022:ASP:OD1	1:C:1022:ASP:N	2.46	0.41
1:C:1103:ASN:ND2	1:C:1582:ASN:O	2.54	0.41
1:C:1657:ASP:OD1	1:C:1657:ASP:N	2.47	0.41
1:C:1827:TRP:O	1:C:1827:TRP:CG	2.74	0.41
1:C:2082:LYS:NZ	1:C:2086:GLU:OE2	2.49	0.41
1:E:575:ASP:OD2	1:E:577:LYS:NZ	2.41	0.41
1:E:792:ALA:O	1:E:793:ALA:C	2.59	0.41
1:B:660:ASN:O	1:B:757:GLN:NE2	2.52	0.41
1:B:1670:ASP:OD1	1:B:1670:ASP:C	2.59	0.41
1:C:983:THR:OG1	1:C:984:THR:N	2.53	0.41
1:A:859:LEU:HB3	1:A:860:PRO:CD	2.51	0.40
1:C:1670:ASP:OD1	1:C:1670:ASP:C	2.59	0.40
1:E:1872:GLU:O	1:E:1873:ARG:C	2.59	0.40
2:F:1370:ASP:N	2:F:1370:ASP:OD1	2.49	0.40
1:A:975:ASN:OD1	1:A:975:ASN:N	2.41	0.40
1:B:1398:SER:OG	1:B:1400:ASN:O	2.38	0.40
1:B:2175:GLU:OE2	1:B:2178:LYS:NZ	2.46	0.40
1:C:193:ARG:N	1:C:194:PRO:CD	2.84	0.40
1:C:2287:ASP:N	1:C:2287:ASP:OD1	2.39	0.40
1:D:682:ASP:OD2	1:D:685:LYS:NZ	2.43	0.40
2:F:929:GLN:HG2	2:F:1455:TRP:CZ2	2.56	0.40
1:C:545:ASP:OD1	1:C:545:ASP:C	2.59	0.40
1:D:571:HIS:ND1	1:D:618:ASN:OD1	2.55	0.40
1:E:831:THR:OG1	1:E:832:ALA:N	2.54	0.40
1:B:63:GLU:OE2	1:B:99:ARG:NH1	2.55	0.40
1:E:1827:TRP:O	1:E:1827:TRP:CG	2.74	0.40
2:F:729:LEU:O	2:F:730:THR:HB	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:447:SER:O	1:A:451:GLU:N	2.55	0.40
1:A:2382:ASP:OD1	1:A:2382:ASP:N	2.48	0.40
1:B:1022:ASP:N	1:B:1022:ASP:OD1	2.50	0.40
2:F:1153:THR:OG1	2:F:1154:LEU:N	2.53	0.40
2:F:2158:MET:N	2:F:2159:PRO:CD	2.84	0.40

There are no symmetry-related clashes.

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 PDB entries followed by that with respect to all EM entries.

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	
1	A	2448/2516 (97%)	2401 (98%)	45 (2%)	2 (0%)	51	83
1	B	2448/2516 (97%)	2410 (98%)	32 (1%)	6 (0%)	47	78
1	C	2448/2516 (97%)	2413 (99%)	30 (1%)	5 (0%)	47	78
1	D	2448/2516 (97%)	2408 (98%)	34 (1%)	6 (0%)	47	78
1	E	2448/2516 (97%)	2407 (98%)	38 (2%)	3 (0%)	51	83
2	F	2114/2434 (87%)	2046 (97%)	58 (3%)	10 (0%)	29	65
All	All	14354/15014 (96%)	14085 (98%)	237 (2%)	32 (0%)	50	78

All (32) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	433	GLN
1	C	1314	SER
1	D	522	PRO
1	E	522	PRO
2	F	680	PRO
2	F	908	VAL
2	F	1820	THR

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Mol	Chain	Res	Type
1	B	970	TYR
1	E	1703	TYR
2	F	172	GLN
2	F	319	SER
1	B	1024	TYR
1	C	1012	VAL
1	C	1024	TYR
1	D	1024	TYR
2	F	213	GLU
1	A	970	TYR
1	B	195	SER
1	B	1012	VAL
1	B	2106	ASN
1	D	272	GLU
1	D	1440	GLY
1	D	2106	ASN
1	E	1024	TYR
2	F	136	SER
2	F	1208	THR
2	F	1678	ASP
1	B	339	TYR
1	C	970	TYR
1	C	1904	ASP
1	D	195	SER
2	F	963	TYR

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 PDB entries followed by that with respect to all EM entries.

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	
1	A	2100/2157 (97%)	2100 (100%)	0	100	100
1	B	2100/2157 (97%)	2100 (100%)	0	100	100
1	C	2100/2157 (97%)	2100 (100%)	0	100	100
1	D	2100/2157 (97%)	2099 (100%)	1 (0%)	100	100
1	E	2100/2157 (97%)	2099 (100%)	1 (0%)	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	F	1831/2104 (87%)	1827 (100%)	4 (0%)	93	97
All	All	12331/12889 (96%)	12325 (100%)	6 (0%)	100	100

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	341	MET
1	E	341	MET
2	F	267	ARG
2	F	289	ARG
2	F	1044	ARG
2	F	2117	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1671	ASN
1	B	1671	ASN
1	B	2452	HIS
1	D	1671	ASN
2	F	1125	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

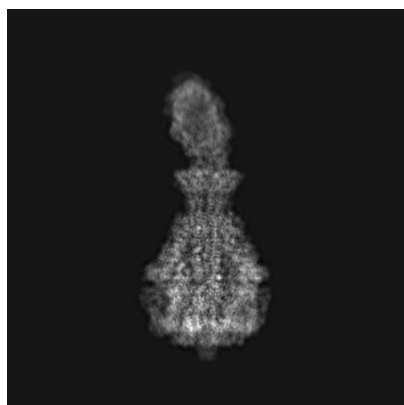
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-0150. These allow visual inspection of the internal detail of the map and identification of artifacts.

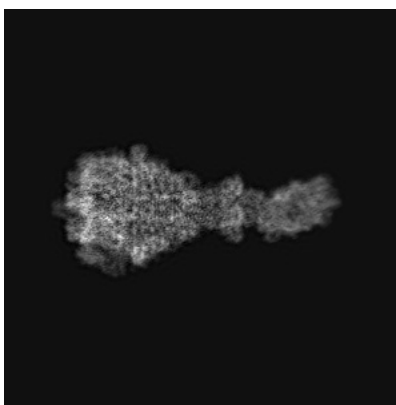
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

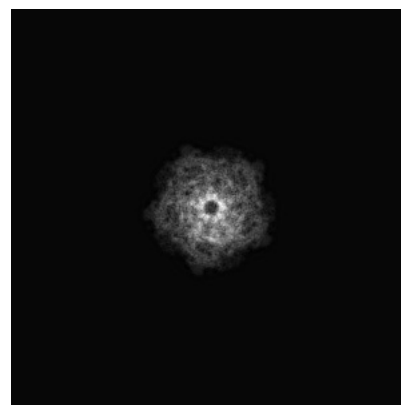
6.1.1 Primary map



X



Y

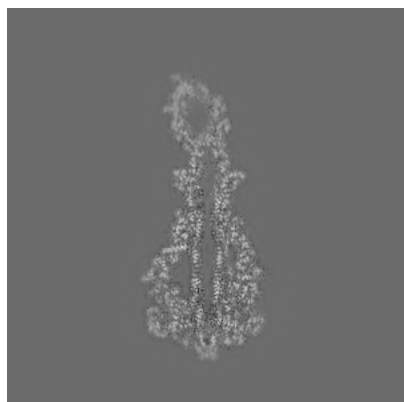


Z

The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

6.2.1 Primary map



X Index: 240



Y Index: 240

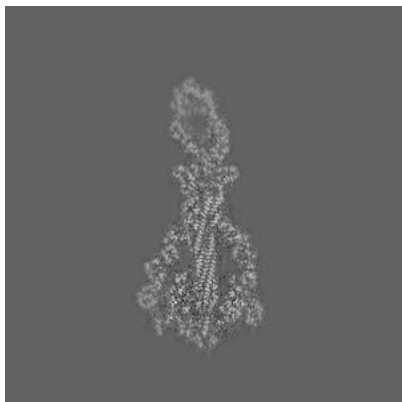


Z Index: 240

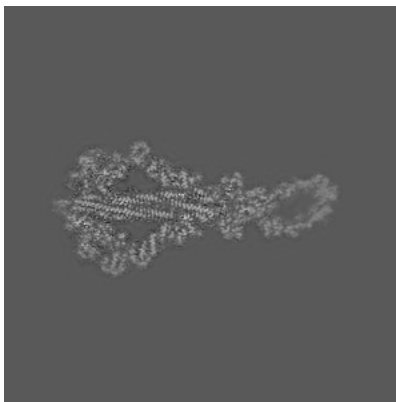
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

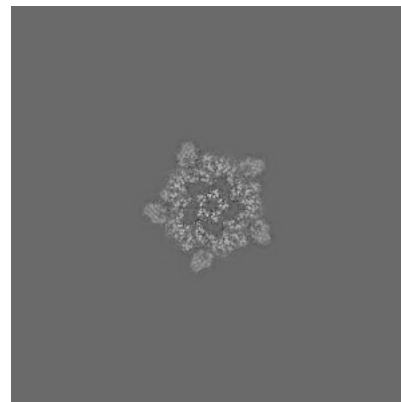
6.3.1 Primary map



X Index: 228



Y Index: 230



Z Index: 140

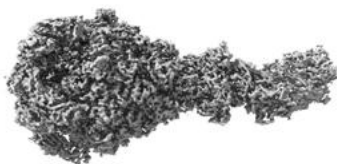
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

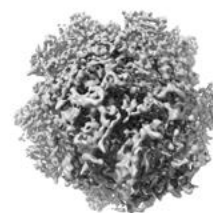
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.03. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

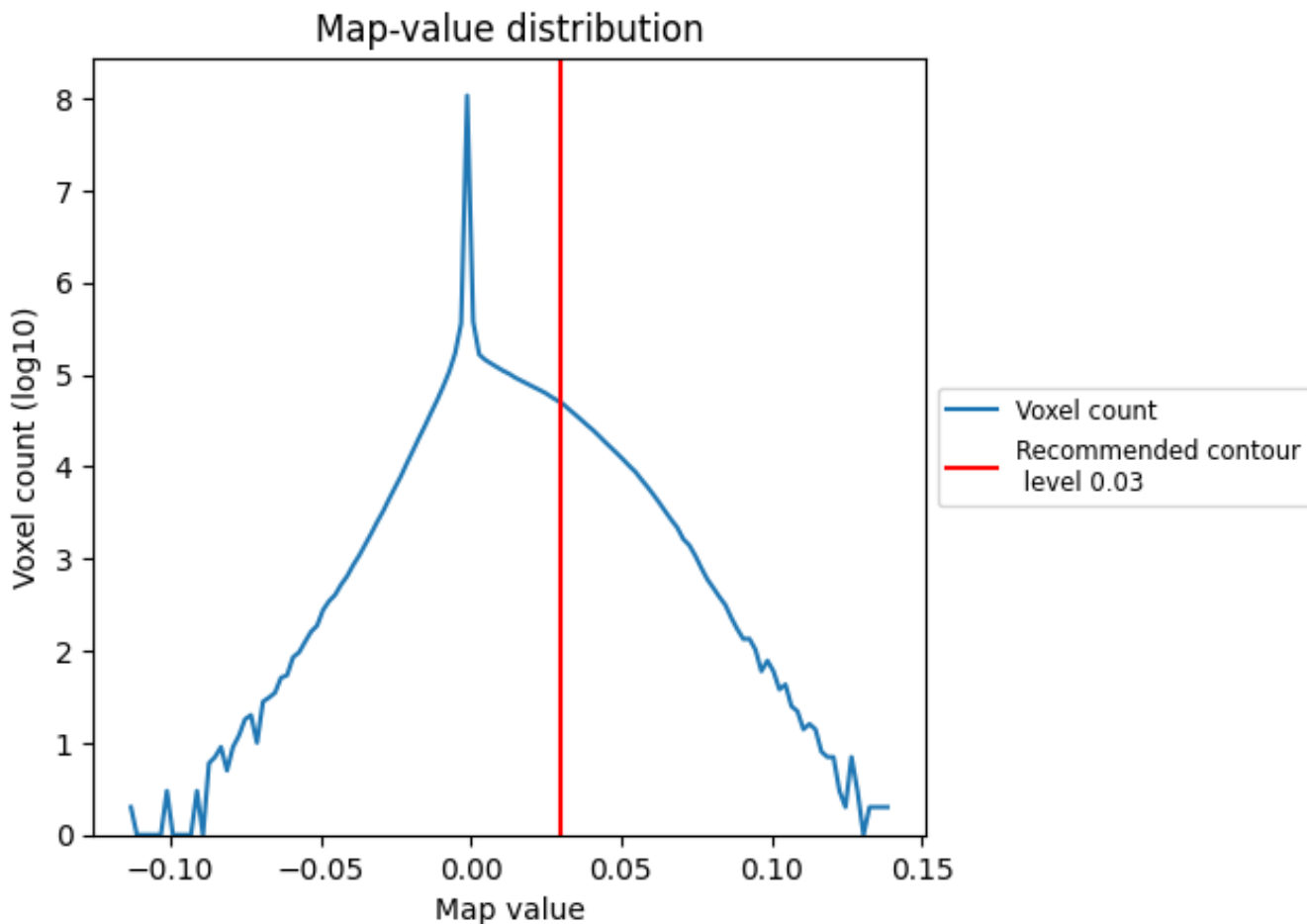
6.5 Mask visualisation

This section was not generated. No masks/segmentation were deposited.

7 Map analysis [i](#)

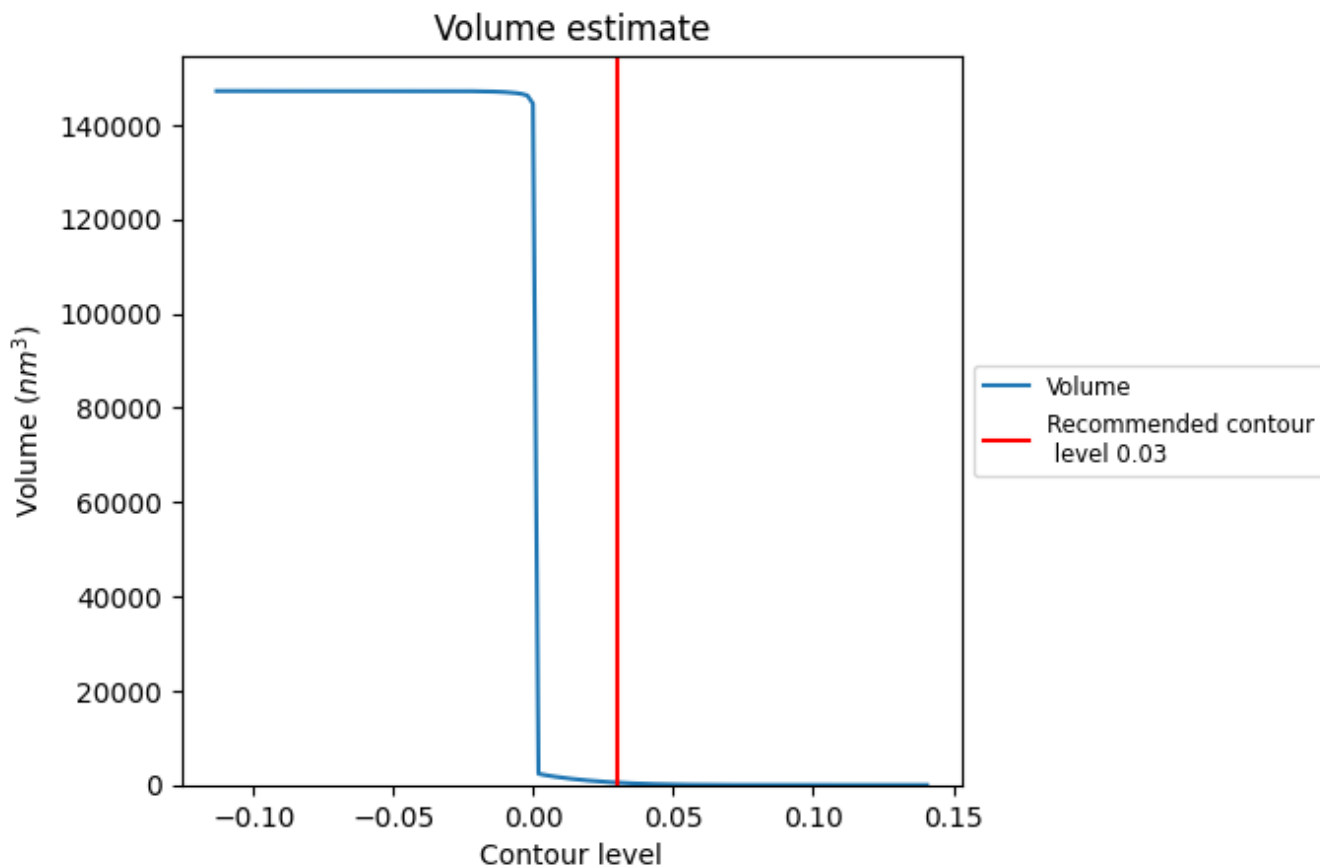
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

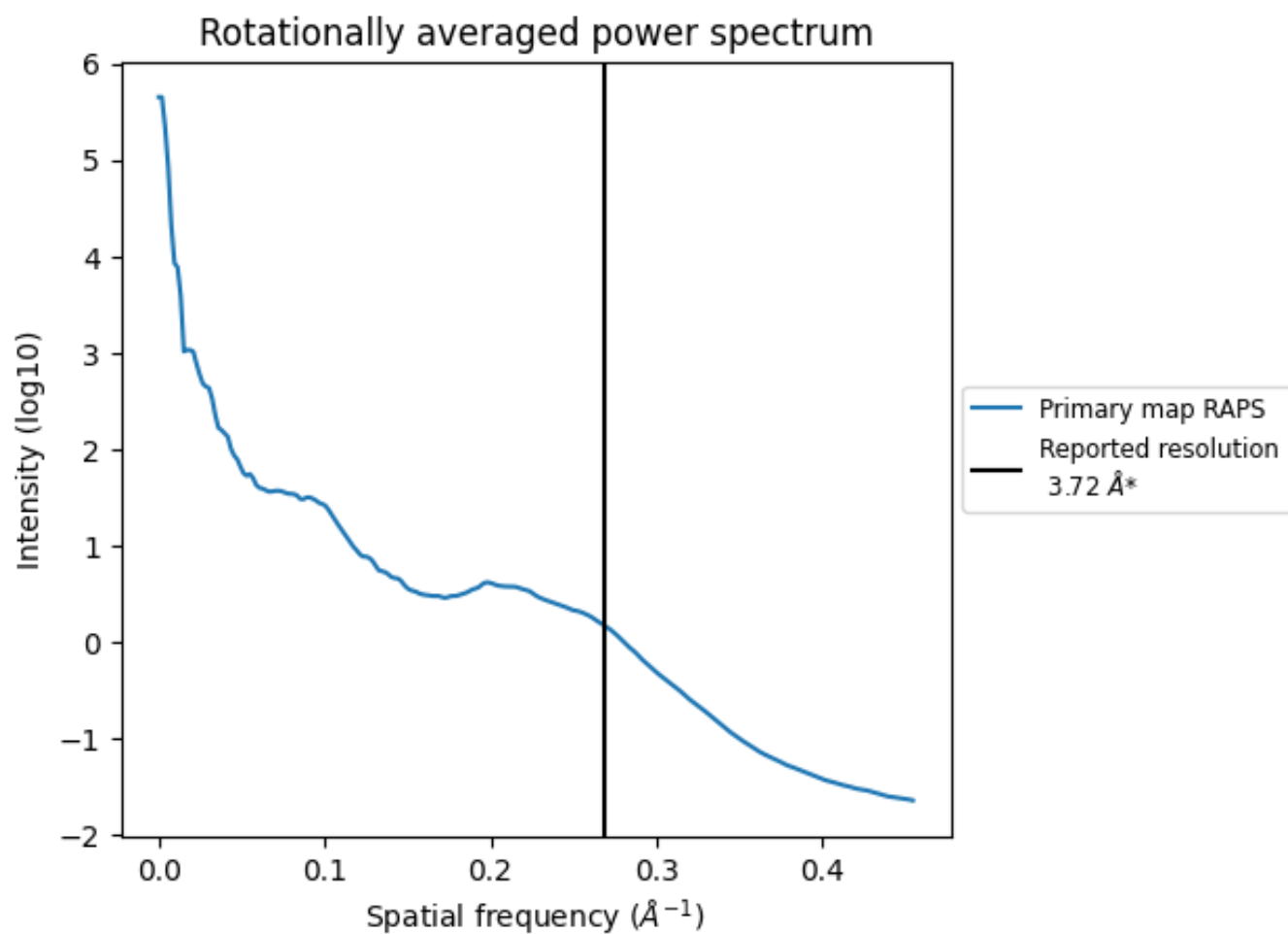
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 491 nm³; this corresponds to an approximate mass of 444 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum [i](#)



*Reported resolution corresponds to spatial frequency of 0.269 Å⁻¹

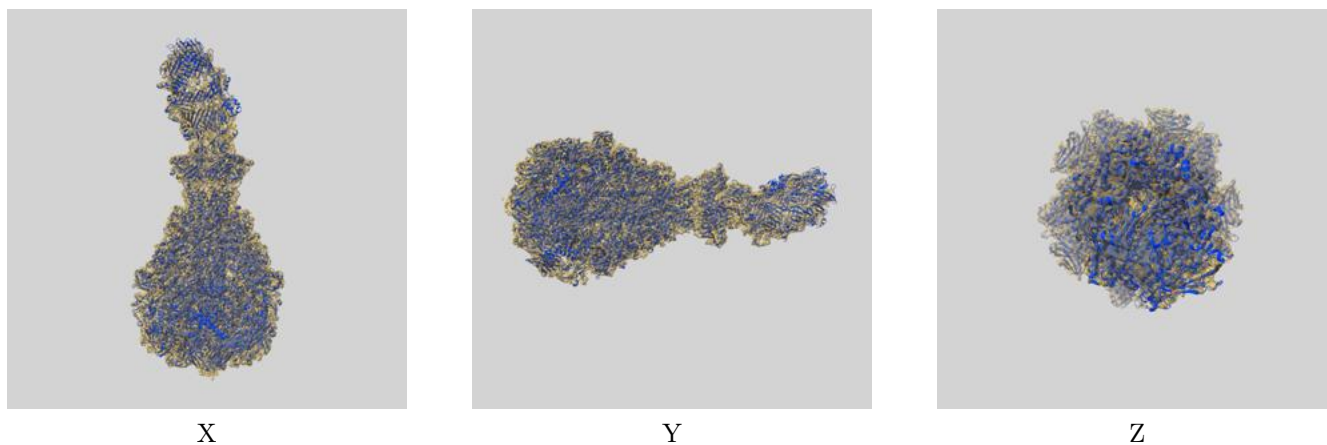
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

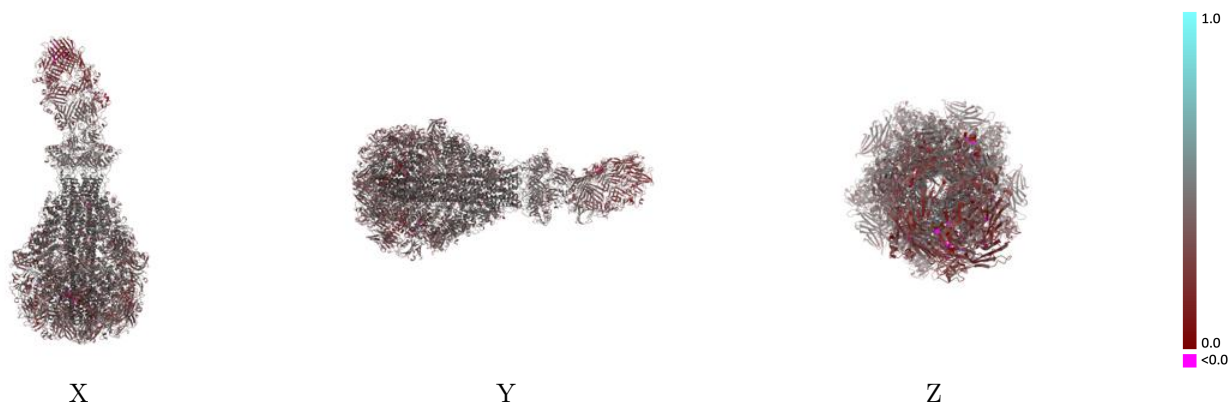
This section contains information regarding the fit between EMDB map EMD-0150 and PDB model 6H6F. Per-residue inclusion information can be found in section 3 on page 4.

9.1 Map-model overlay [i](#)



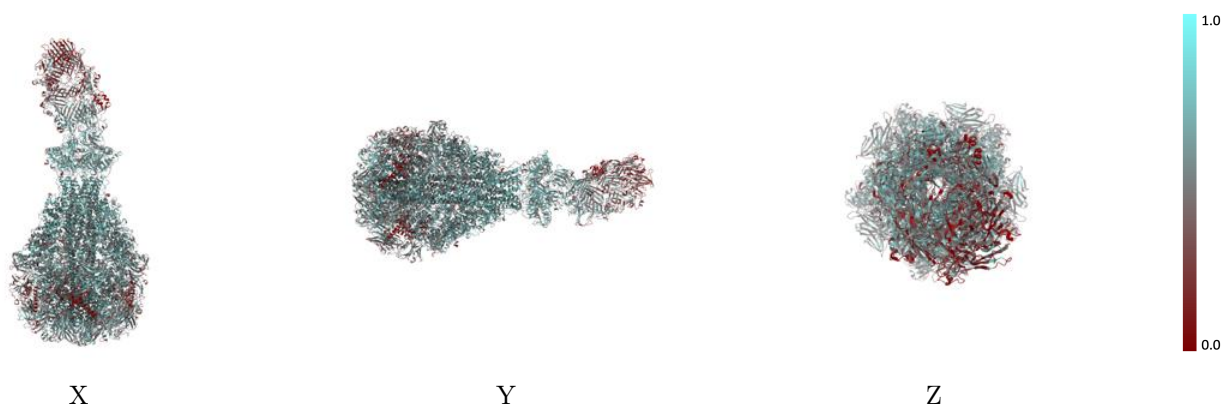
The images above show the 3D surface view of the map at the recommended contour level 0.03 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



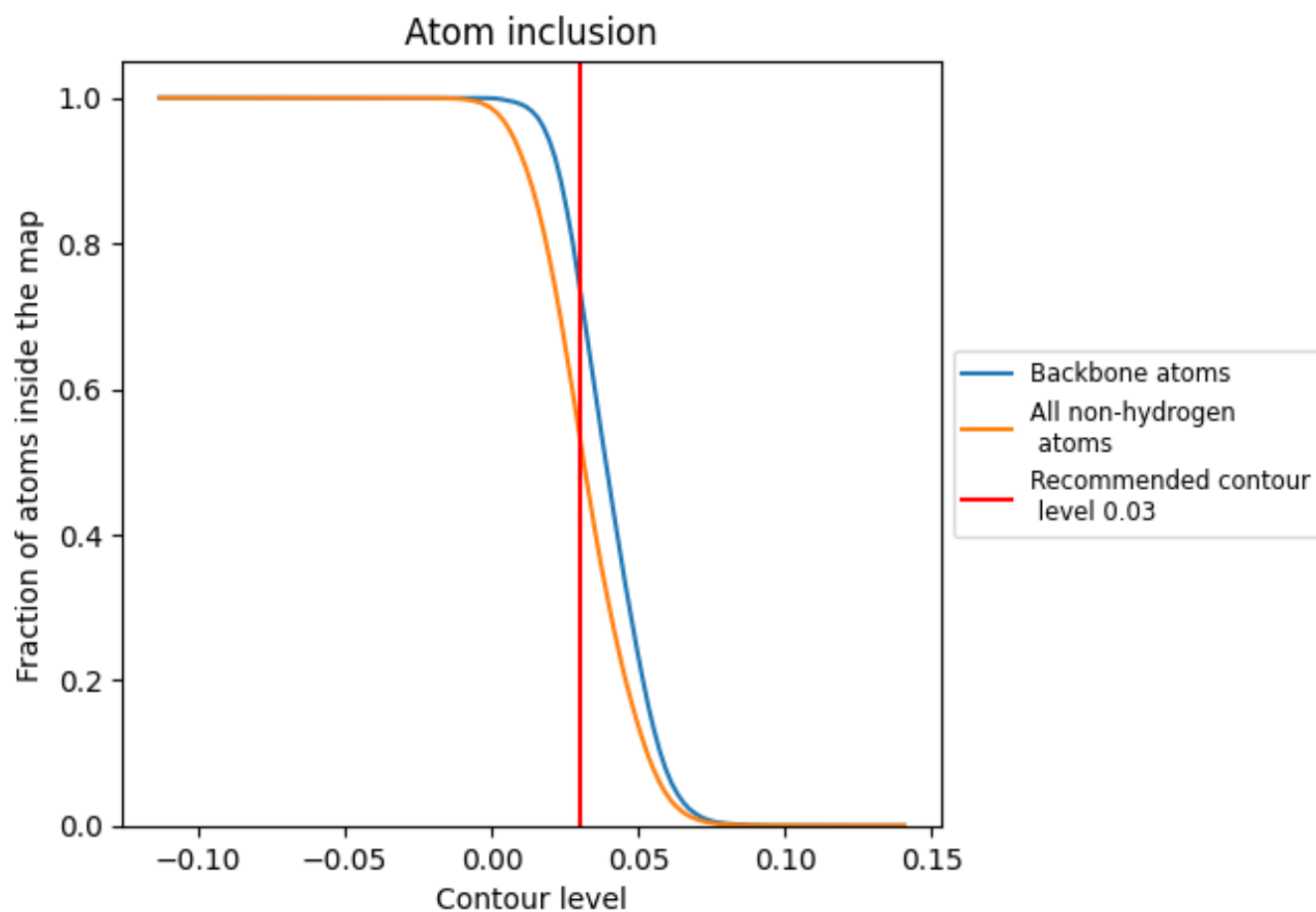
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.03).















9.4 Atom inclusion [i](#)



At the recommended contour level, 74% of all backbone atoms, 54% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5352	 0.3750
A	 0.5515	 0.3850
B	 0.5568	 0.3840
C	 0.5574	 0.3850
D	 0.5619	 0.3910
E	 0.5576	 0.3890
F	 0.4085	 0.3090

