



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 17, 2023 – 01:19 AM EDT

PDB ID : 2YU9
Title : RNA polymerase II elongation complex in 150 mM MG+2 with UTP
Authors : Wang, D.; Bushnell, D.A.; Westover, K.D.; Kaplan, C.D.; Kornberg, R.D.
Deposited on : 2007-04-06
Resolution : 3.40 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

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>.

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.36
buster-report : 1.1.7 (2018)
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) : 2.36

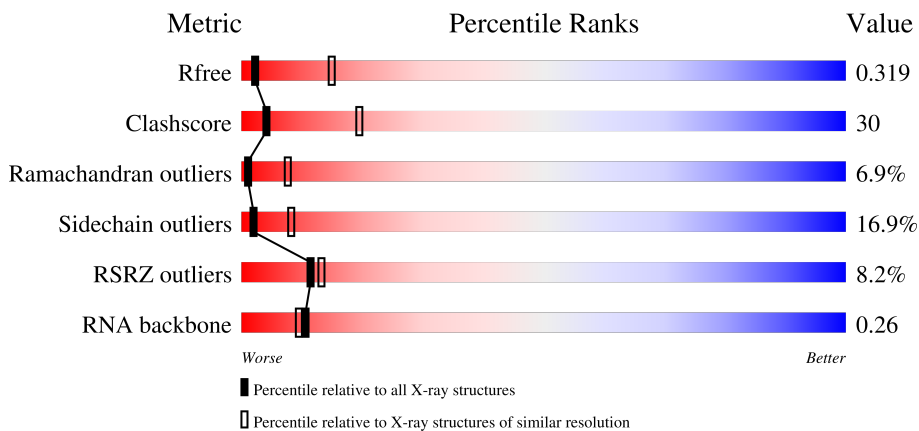
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.40 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	1026 (3.48-3.32)
Clashscore	141614	1055 (3.48-3.32)
Ramachandran outliers	138981	1038 (3.48-3.32)
Sidechain outliers	138945	1038 (3.48-3.32)
RSRZ outliers	127900	2173 (3.50-3.30)
RNA backbone	3102	1006 (3.84-2.96)

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 ≥ 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	R	10	
2	T	28	
3	N	14	
4	A	1733	

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Mol	Chain	Length	Quality of chain
5	B	1224	
6	C	318	
7	E	215	
8	F	155	
9	H	146	
10	I	122	
11	J	70	
12	K	120	
13	L	70	

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
16	UTP	A	2003[A]	-	-	X	-

2 Entry composition [i](#)

There are 16 unique types of molecules in this entry. The entry contains 29530 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 5'-R(*AP*UP*CP*GP*AP*GP*AP*GP*GP*A)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	R	10	216	98	45	64	9	0	0	0

- Molecule 2 is a DNA chain called 28-MER DNA template strand.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
2	T	28	566	271	104	164	27	0	0	0

- Molecule 3 is a DNA chain called 5'-D(*CP*TP*GP*CP*TP*TP*AP*TP*CP*GP*GP*TP*AP*G)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
3	N	14	284	137	49	85	13	0	0	0

- Molecule 4 is a protein called DNA-directed RNA polymerase II largest subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	A	1411	11094	6994	1945	2094	61	0	0	0

- Molecule 5 is a protein called DNA-directed RNA polymerase II 140 kDa polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	B	1121	8914	5643	1563	1653	55	0	0	0

- Molecule 6 is a protein called DNA-directed RNA polymerase II 45 kDa polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	C	266	2095	1317	348	417	13	0	0	0

- Molecule 7 is a protein called DNA-directed RNA polymerases I, II, and III 27 kDa polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
7	E	214	1752	1111	309	321	11	0	0	0

- Molecule 8 is a protein called DNA-directed RNA polymerases I, II, and III 23 kDa polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
8	F	85	688	439	116	130	3	0	0	0

- Molecule 9 is a protein called DNA-directed RNA polymerases I, II, and III 14.5 kDa polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
9	H	133	1068	673	180	211	4	0	0	0

- Molecule 10 is a protein called DNA-directed RNA polymerase II subunit 9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
10	I	119	971	596	179	186	10	0	0	0

- Molecule 11 is a protein called DNA-directed RNA polymerases I/II/III subunit 10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
11	J	65	532	339	93	94	6	0	0	0

- Molecule 12 is a protein called DNA-directed RNA polymerase II 13.6 kDa polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
12	K	114	919	590	156	171	2	0	0	0

- Molecule 13 is a protein called DNA-directed RNA polymerases I, II, and III 7.7 kDa polypeptide.

tide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	L	46	Total	C	N	O	S	0	0	0
			363	224	72	63	4			

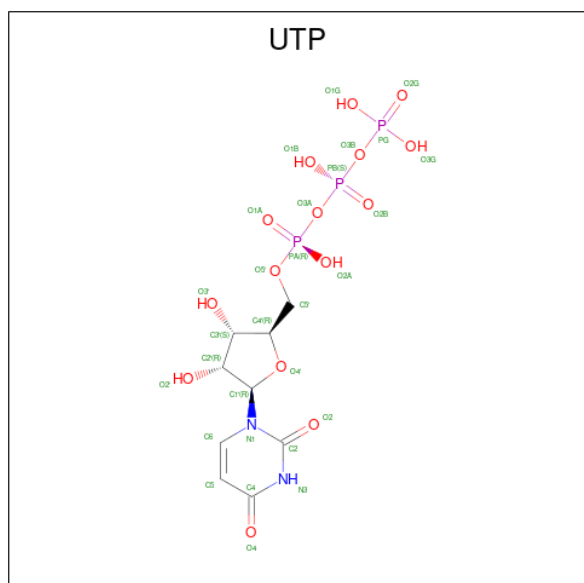
- Molecule 14 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
14	A	2	Total	Zn	0	0
			2	2		
14	B	1	Total	Zn	0	0
			1	1		
14	C	1	Total	Zn	0	0
			1	1		
14	I	2	Total	Zn	0	0
			2	2		
14	J	1	Total	Zn	0	0
			1	1		
14	L	1	Total	Zn	0	0
			1	1		

- Molecule 15 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
15	A	2	Total	Mg	0	0
			2	2		

- Molecule 16 is URIDINE 5'-TRIPHOSPHATE (three-letter code: UTP) (formula: C₉H₁₅N₂O₁₅P₃).

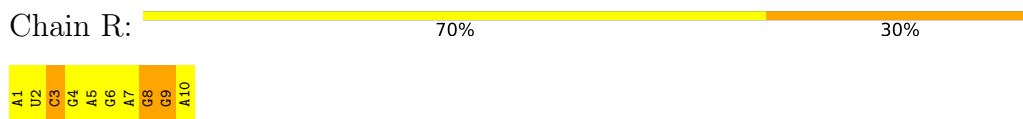


Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	P		
16	A	1	58	18	4	30	6	0	1

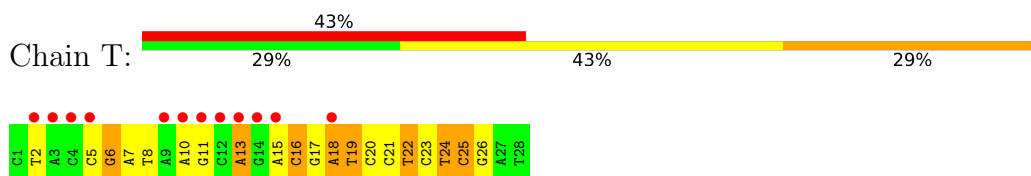
3 Residue-property plots

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.

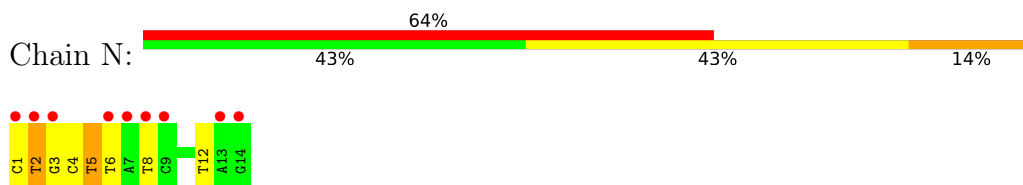
- Molecule 1: 5'-R(*AP*UP*CP*GP*AP*GP*AP*GP*GP*A)-3'



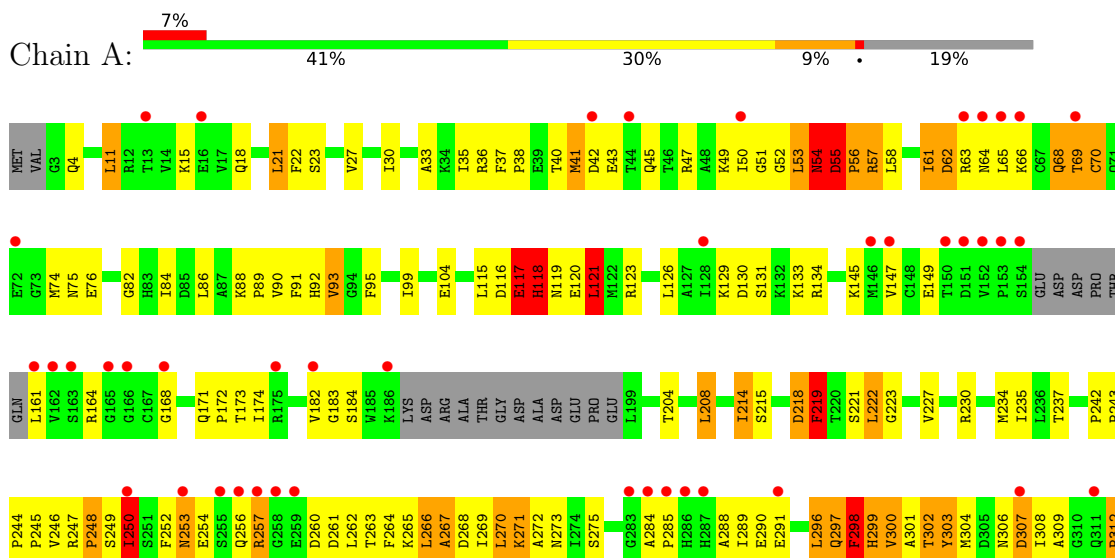
- Molecule 2: 28-MER DNA template strand

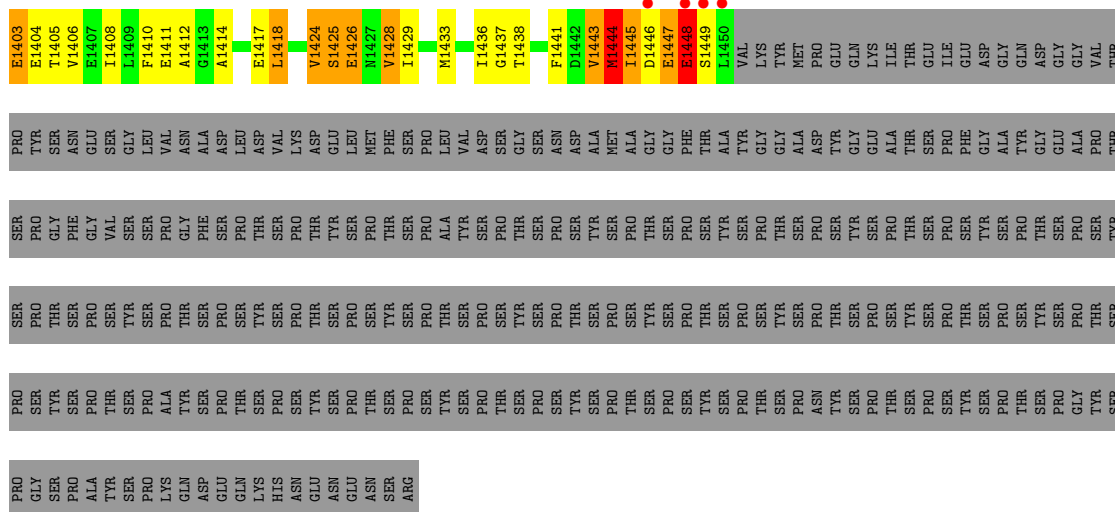


- Molecule 3: 5'-D(*CP*TP*GP*CP*TP*TP*AP*TP*CP*GP*GP*TP*AP*G)-3'

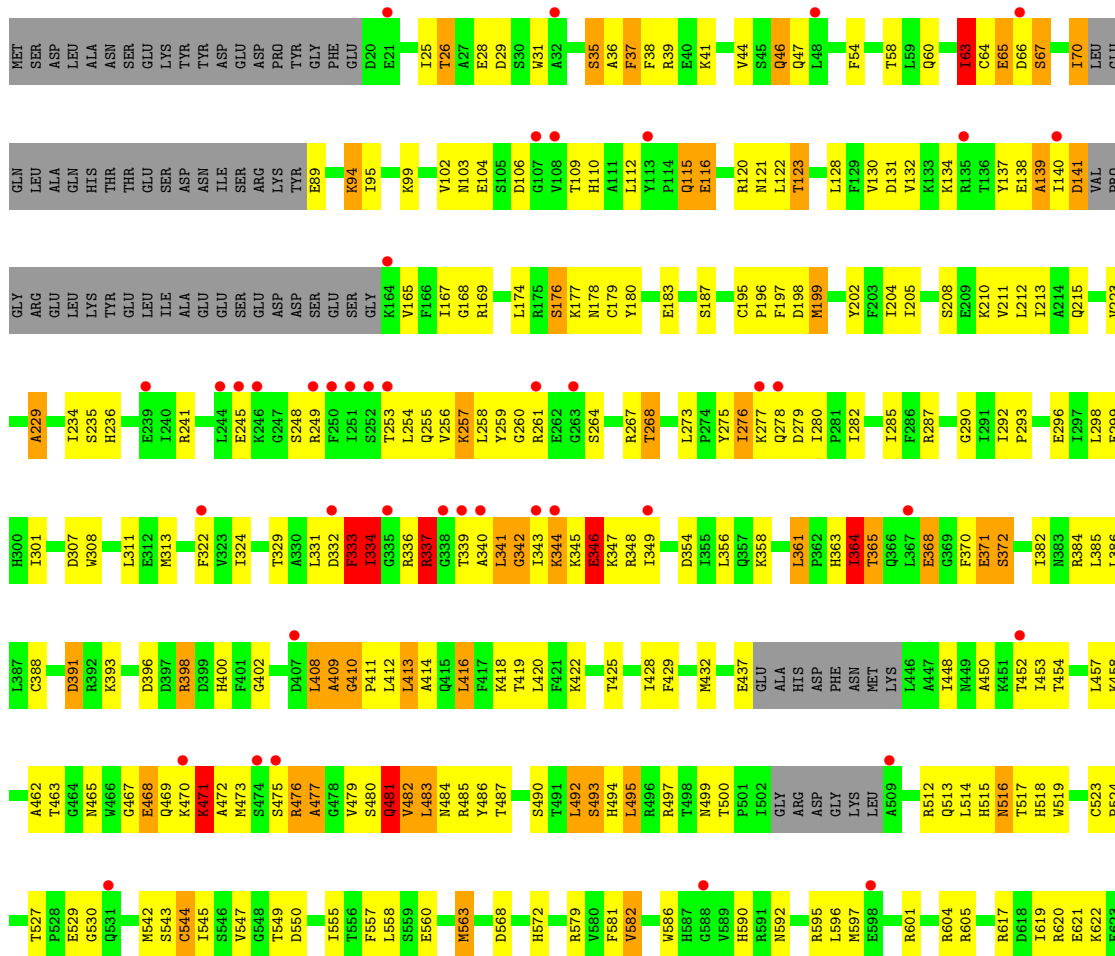


- Molecule 4: DNA-directed RNA polymerase II largest subunit



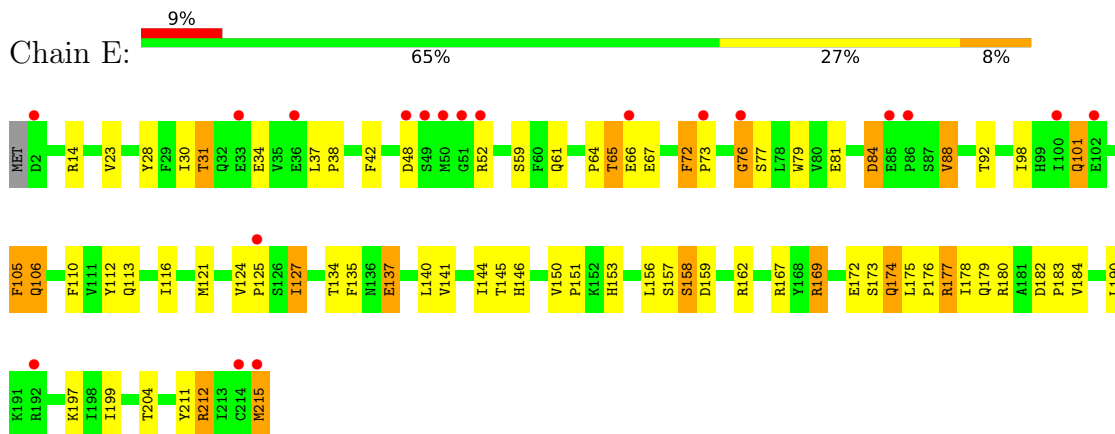


• Molecule 5: DNA-directed RNA polymerase II 140 kDa polypeptide

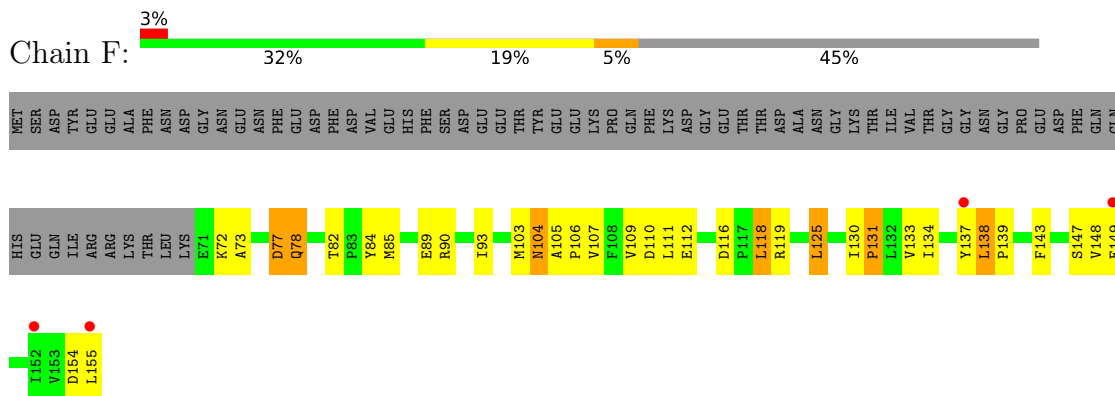


GLY
TYR
ASP
ASN
ALA
TRP

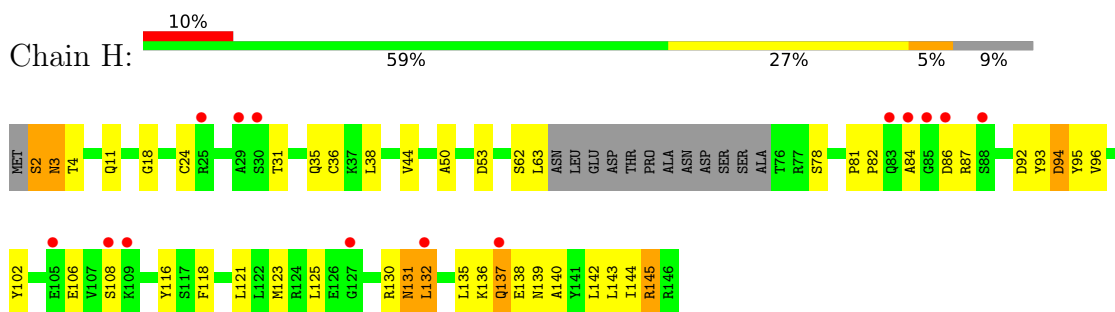
- Molecule 7: DNA-directed RNA polymerases I, II, and III 27 kDa polypeptide



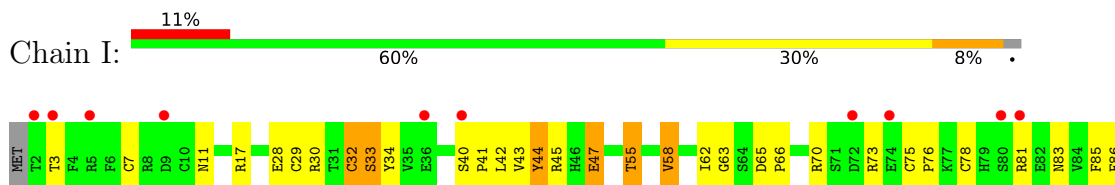
- Molecule 8: DNA-directed RNA polymerases I, II, and III 23 kDa polypeptide



- Molecule 9: DNA-directed RNA polymerases I, II, and III 14.5 kDa polypeptide



- Molecule 10: DNA-directed RNA polymerase II subunit 9



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	170.61Å 222.73Å 196.16Å 90.00° 101.87° 90.00°	Depositor
Resolution (Å)	19.98 – 3.40 19.97 – 3.40	Depositor EDS
% Data completeness (in resolution range)	90.0 (19.98-3.40) 90.0 (19.97-3.40)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.09	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.77 (at 3.44Å)	Xtrriage
Refinement program	REFMAC 5.2.0019	Depositor
R, R_{free}	0.283 , 0.344 0.271 , 0.319	Depositor DCC
R_{free} test set	2609 reflections (2.97%)	wwPDB-VP
Wilson B-factor (Å ²)	101.5	Xtrriage
Anisotropy	0.350	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.20 , 121.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.39$, $\langle L^2 \rangle = 0.22$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.90	EDS
Total number of atoms	29530	wwPDB-VP
Average B, all atoms (Å ²)	146.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.80% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical 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: UTP, MG, ZN

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	R	0.58	0/243	1.05	1/378 (0.3%)
2	T	0.91	1/634 (0.2%)	1.72	18/975 (1.8%)
3	N	1.12	1/317 (0.3%)	1.59	6/488 (1.2%)
4	A	0.49	0/11292	0.66	0/15267
5	B	0.54	0/9087	0.68	0/12253
6	C	0.56	0/2133	0.68	0/2891
7	E	0.46	0/1788	0.61	0/2406
8	F	0.46	0/700	0.65	0/945
9	H	0.44	0/1086	0.66	0/1470
10	I	0.46	0/989	0.65	0/1331
11	J	0.50	0/541	0.65	0/727
12	K	0.53	0/937	0.64	0/1265
13	L	0.59	0/365	0.83	0/485
All	All	0.53	2/30112 (0.0%)	0.73	25/40881 (0.1%)

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
4	A	0	18
5	B	0	20
6	C	0	1
9	H	0	1
11	J	0	4
All	All	0	44

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	N	12	DT	C5-C7	10.67	1.56	1.50
2	T	18	DA	O3'-P	7.41	1.70	1.61

All (25) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	T	25	DC	O4'-C1'-N1	13.75	117.62	108.00
3	N	1	DC	O4'-C1'-N1	10.87	115.61	108.00
2	T	16	DC	O4'-C1'-N1	10.29	115.21	108.00
2	T	25	DC	C1'-O4'-C4'	-10.21	99.89	110.10
2	T	25	DC	O4'-C4'-C3'	-9.01	100.60	106.00
2	T	18	DA	P-O3'-C3'	8.77	130.22	119.70
2	T	19	DT	P-O3'-C3'	-8.29	109.75	119.70
2	T	22	DT	O4'-C4'-C3'	-7.81	101.31	106.00
2	T	6	DG	P-O3'-C3'	7.03	128.13	119.70
2	T	11	DG	O4'-C1'-N9	7.00	112.90	108.00
2	T	16	DC	C1'-O4'-C4'	-6.36	103.74	110.10
1	R	3	C	O4'-C1'-N1	6.35	113.28	108.20
2	T	13	DA	C1'-O4'-C4'	-6.35	103.75	110.10
2	T	13	DA	O4'-C1'-N9	6.26	112.38	108.00
2	T	24	DT	C6-C5-C7	-6.25	119.15	122.90
2	T	8	DT	O4'-C1'-N1	6.19	112.34	108.00
2	T	16	DC	O4'-C4'-C3'	-5.98	102.11	104.50
2	T	22	DT	C5-C4-O4	-5.98	120.71	124.90
2	T	18	DA	OP1-P-O3'	5.82	118.01	105.20
2	T	2	DT	O4'-C1'-N1	5.82	112.07	108.00
3	N	2	DT	P-O3'-C3'	5.64	126.47	119.70
3	N	5	DT	O4'-C1'-N1	5.59	111.92	108.00
3	N	8	DT	P-O3'-C3'	5.59	126.40	119.70
3	N	6	DT	O4'-C1'-N1	5.16	111.61	108.00
3	N	2	DT	O4'-C1'-N1	5.08	111.56	108.00

There are no chirality outliers.

All (44) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
4	A	1039	LYS	Peptide
4	A	1040	GLN	Peptide
4	A	1082	ASN	Peptide
4	A	117	GLU	Peptide
4	A	1444	MET	Peptide
4	A	1445	ILE	Peptide

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Mol	Chain	Res	Type	Group
4	A	1447	GLU	Peptide
4	A	218	ASP	Peptide
4	A	222	LEU	Peptide
4	A	298	PHE	Peptide
4	A	330	LYS	Peptide
4	A	467	THR	Peptide
4	A	471	ASN	Peptide
4	A	53	LEU	Peptide
4	A	54	ASN	Peptide
4	A	882	SER	Peptide
4	A	883	LEU	Peptide
4	A	920	LEU	Peptide
5	B	1009	ASP	Peptide
5	B	1068	GLY	Peptide
5	B	1098	MET	Peptide
5	B	1177	HIS	Peptide
5	B	1222	ARG	Peptide
5	B	333	PHE	Peptide
5	B	334	ILE	Peptide
5	B	337	ARG	Peptide
5	B	342	GLY	Peptide
5	B	36	ALA	Peptide
5	B	368	GLU	Peptide
5	B	481	GLN	Peptide
5	B	744	HIS	Peptide
5	B	763	GLN	Peptide
5	B	836	GLU	Peptide
5	B	883	LEU	Peptide
5	B	886	LYS	Peptide
5	B	887	HIS	Peptide
5	B	945	GLU	Peptide
5	B	985	GLY	Peptide
6	C	39	ALA	Peptide
9	H	2	SER	Peptide
11	J	1	MET	Peptide
11	J	24	LEU	Peptide
11	J	39	LEU	Peptide
11	J	4	PRO	Peptide

5.2 Too-close contacts

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	R	216	0	109	59	0
2	T	566	0	316	44	0
3	N	284	0	161	3	0
4	A	11094	0	11178	663	0
5	B	8914	0	8953	727	0
6	C	2095	0	2051	120	0
7	E	1752	0	1776	52	0
8	F	688	0	707	23	0
9	H	1068	0	1040	38	0
10	I	971	0	927	30	0
11	J	532	0	542	121	0
12	K	919	0	929	41	0
13	L	363	0	386	10	0
14	A	2	0	0	0	0
14	B	1	0	0	0	0
14	C	1	0	0	0	0
14	I	2	0	0	0	0
14	J	1	0	0	0	0
14	L	1	0	0	0	0
15	A	2	0	0	0	0
16	A	58	0	22	12	0
All	All	29530	0	29097	1746	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 30.

All (1746) 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)
16:A:2003[A]:UTP:C6	16:A:2003[A]:UTP:H5'2	1.44	1.52
9:H:2:SER:CB	9:H:3:ASN:HB2	1.35	1.50
4:A:1444:MET:CG	4:A:1445:ILE:HG13	1.49	1.42
9:H:2:SER:HB2	9:H:3:ASN:CB	1.52	1.40
4:A:1040:GLN:N	4:A:1041:ALA:HB3	1.43	1.31
4:A:116:ASP:CB	4:A:117:GLU:HB2	1.61	1.30

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:140:ILE:CG2	5:B:141:ASP:HB2	1.62	1.29
4:A:1040:GLN:H	4:A:1041:ALA:CB	1.55	1.20
4:A:1447:GLU:HA	4:A:1448:GLU:CG	1.72	1.20
5:B:886:LYS:HB3	5:B:887:HIS:CA	1.71	1.20
5:B:1097:HIS:O	5:B:1098:MET:HG3	1.40	1.19
5:B:140:ILE:HB	5:B:141:ASP:CB	1.73	1.19
5:B:333:PHE:CB	5:B:334:ILE:HG12	1.74	1.18
5:B:1031:LEU:HD12	5:B:1031:LEU:O	1.42	1.17
4:A:298:PHE:HA	4:A:299:HIS:O	1.40	1.15
4:A:665:GLY:HA2	5:B:1086:PHE:HD1	1.08	1.14
5:B:647:GLY:HA3	5:B:648:HIS:HB2	1.21	1.13
5:B:980:PHE:CE2	5:B:1094:ARG:HG2	1.82	1.13
4:A:920:LEU:HD22	4:A:921:GLY:H	1.07	1.13
1:R:6:G:H2'	1:R:7:A:H8	1.00	1.12
10:I:118:ARG:HG2	10:I:118:ARG:HH11	1.09	1.12
16:A:2003[A]:UTP:C6	16:A:2003[A]:UTP:C5'	2.31	1.12
5:B:333:PHE:N	5:B:334:ILE:HB	1.63	1.12
4:A:737:LEU:HA	4:A:738:LYS:HB2	1.24	1.12
5:B:647:GLY:HA3	5:B:648:HIS:CB	1.80	1.11
4:A:1004:ASN:HB2	4:A:1007:ILE:HD13	1.23	1.10
11:J:7:CYS:CA	11:J:49:MET:HE3	1.82	1.10
4:A:1172:LEU:HA	4:A:1173:HIS:HB2	1.18	1.09
4:A:1444:MET:HG3	4:A:1445:ILE:CG1	1.81	1.09
4:A:116:ASP:HB3	4:A:117:GLU:CB	1.83	1.09
4:A:1447:GLU:HA	4:A:1448:GLU:CB	1.80	1.09
5:B:341:LEU:HD13	5:B:343:ILE:HB	1.27	1.09
6:C:189:THR:HG22	6:C:190:ASP:H	1.17	1.09
5:B:980:PHE:HE2	5:B:1094:ARG:HG2	0.92	1.08
4:A:55:ASP:H	4:A:56:PRO:HD2	1.13	1.08
5:B:807:ARG:HG3	5:B:807:ARG:HH11	1.13	1.07
5:B:829:CYS:SG	5:B:1014:PRO:HG2	1.95	1.06
5:B:887:HIS:HB3	5:B:888:GLY:O	1.55	1.06
5:B:955:THR:HG22	5:B:956:THR:H	1.15	1.06
1:R:6:G:H2'	1:R:7:A:C8	1.88	1.06
5:B:337:ARG:HD3	5:B:339:THR:HG23	1.10	1.05
5:B:140:ILE:HB	5:B:141:ASP:HB3	1.33	1.04
5:B:140:ILE:HG22	5:B:141:ASP:HB2	1.07	1.04
5:B:1012:ILE:HG13	5:B:1013:ASN:N	1.72	1.04
5:B:341:LEU:CD1	5:B:343:ILE:HB	1.87	1.03
5:B:778:MET:HE2	5:B:1094:ARG:HD2	1.34	1.03
11:J:7:CYS:CB	11:J:49:MET:HE3	1.87	1.03

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:630:ILE:H	4:A:630:ILE:HD12	1.17	1.03
5:B:140:ILE:CB	5:B:141:ASP:CB	2.36	1.03
11:J:5:VAL:HG12	11:J:6:ARG:H	1.24	1.02
16:A:2003[A]:UTP:O3A	16:A:2003[A]:UTP:H4'	1.57	1.02
5:B:828:ALA:HB2	5:B:1085:ILE:HG21	1.39	1.02
5:B:886:LYS:HB3	5:B:887:HIS:HA	1.05	1.02
5:B:778:MET:CE	5:B:1094:ARG:HD2	1.88	1.02
5:B:886:LYS:CB	5:B:887:HIS:HA	1.90	1.02
4:A:1172:LEU:HA	4:A:1173:HIS:CB	1.88	1.01
4:A:53:LEU:HG	4:A:54:ASN:H	1.24	1.01
5:B:140:ILE:CG2	5:B:141:ASP:CB	2.37	1.01
4:A:920:LEU:HD22	4:A:921:GLY:N	1.74	1.01
9:H:2:SER:CA	9:H:3:ASN:HB2	1.84	1.01
4:A:343:LYS:NZ	5:B:1197:PRO:HB3	1.76	1.00
5:B:1013:ASN:OD1	5:B:1015:HIS:HD2	1.44	1.00
4:A:1446:ASP:O	4:A:1447:GLU:HG3	1.60	1.00
5:B:708:GLU:O	5:B:712:PRO:HD3	1.61	1.00
11:J:44:TYR:HA	11:J:47:ARG:HB2	1.42	1.00
4:A:351:THR:HG23	5:B:1103:ILE:HG13	1.41	1.00
5:B:1012:ILE:HG13	5:B:1013:ASN:H	1.25	1.00
6:C:142:VAL:H	11:J:16:ASP:HB3	1.25	0.99
4:A:1444:MET:HG3	4:A:1445:ILE:HG13	1.02	0.99
1:R:8:G:N2	2:T:22:DT:C2	2.30	0.99
4:A:116:ASP:HB3	4:A:117:GLU:HB2	0.99	0.99
4:A:1007:ILE:HD12	4:A:1007:ILE:H	1.21	0.99
5:B:1010:LEU:HD21	5:B:1092:TYR:CD1	1.97	0.98
16:A:2003[A]:UTP:H5'2	16:A:2003[A]:UTP:N1	1.76	0.98
5:B:333:PHE:HB2	5:B:334:ILE:HG12	1.45	0.98
4:A:1348:LEU:HD23	4:A:1372:VAL:HG22	1.44	0.97
4:A:1444:MET:HG2	4:A:1445:ILE:N	1.78	0.97
4:A:1447:GLU:HA	4:A:1448:GLU:HG3	1.42	0.97
4:A:1447:GLU:CA	4:A:1448:GLU:HB3	1.95	0.97
1:R:8:G:C2	2:T:22:DT:N3	2.33	0.96
5:B:337:ARG:CD	5:B:339:THR:HG23	1.95	0.96
5:B:757:PRO:HG2	5:B:1028:GLU:OE2	1.64	0.96
4:A:665:GLY:HA2	5:B:1086:PHE:CD1	2.01	0.95
4:A:116:ASP:CA	4:A:117:GLU:HB2	1.95	0.95
11:J:5:VAL:O	11:J:6:ARG:O	1.85	0.95
1:R:5:A:H5''	5:B:476:ARG:NH1	1.82	0.95
11:J:44:TYR:HD2	11:J:44:TYR:N	1.63	0.95
5:B:140:ILE:HB	5:B:141:ASP:C	1.87	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:416:ARG:HG2	4:A:416:ARG:HH11	1.30	0.95
4:A:1172:LEU:CA	4:A:1173:HIS:HB2	1.97	0.95
11:J:48:ARG:HH12	11:J:49:MET:HE1	1.30	0.95
4:A:828:ALA:HB2	5:B:530:GLY:HA2	1.49	0.94
4:A:737:LEU:HA	4:A:738:LYS:CB	1.97	0.94
4:A:1063:MET:HG3	4:A:1436:ILE:HG23	1.49	0.94
4:A:343:LYS:HZ3	5:B:1197:PRO:HB3	1.30	0.94
5:B:140:ILE:H	5:B:141:ASP:C	1.69	0.94
5:B:337:ARG:HD3	5:B:339:THR:CG2	1.97	0.94
1:R:8:G:N1	2:T:22:DT:C4	2.35	0.94
4:A:1444:MET:HB2	4:A:1445:ILE:HG23	1.46	0.94
5:B:999:MET:HG3	5:B:1000:PRO:HD2	1.50	0.94
5:B:340:ALA:O	5:B:342:GLY:HA2	1.67	0.93
1:R:5:A:C2	1:R:6:G:C5	2.56	0.93
5:B:840:ILE:HG22	5:B:841:MET:H	1.32	0.93
4:A:667:GLY:HA2	4:A:670:ILE:HG12	1.51	0.92
5:B:333:PHE:HB3	5:B:334:ILE:HG12	1.48	0.92
5:B:341:LEU:HB2	5:B:342:GLY:HA2	1.51	0.92
5:B:976:ILE:HG23	5:B:977:GLY:H	1.32	0.92
4:A:1063:MET:CG	4:A:1436:ILE:HG23	2.00	0.92
4:A:737:LEU:CA	4:A:738:LYS:HB2	2.00	0.92
4:A:1447:GLU:CA	4:A:1448:GLU:CB	2.48	0.91
4:A:351:THR:HG23	5:B:1103:ILE:CG1	2.01	0.91
5:B:952:VAL:HG22	5:B:966:VAL:HG22	1.52	0.91
1:R:5:A:C2	1:R:6:G:C4	2.58	0.91
4:A:351:THR:HG22	4:A:352:VAL:H	1.35	0.91
4:A:567:LYS:HB3	9:H:96:VAL:H	1.36	0.91
5:B:199:MET:N	5:B:199:MET:SD	2.42	0.90
8:F:93:ILE:HD11	8:F:134:ILE:HD11	1.52	0.90
5:B:211:VAL:HG21	5:B:483:LEU:HD13	1.54	0.90
5:B:345:LYS:HA	5:B:347:LYS:H	1.35	0.89
11:J:7:CYS:HA	11:J:49:MET:HE3	1.53	0.89
5:B:140:ILE:HB	5:B:141:ASP:CA	2.02	0.89
5:B:828:ALA:HB2	5:B:1085:ILE:CG2	2.02	0.88
4:A:416:ARG:HH11	4:A:416:ARG:CG	1.87	0.88
4:A:1004:ASN:HB2	4:A:1007:ILE:CD1	2.03	0.88
6:C:37:MET:O	6:C:41:ILE:HD11	1.73	0.88
4:A:55:ASP:N	4:A:56:PRO:HD2	1.88	0.88
5:B:340:ALA:O	5:B:341:LEU:HB2	1.72	0.88
5:B:1069:PHE:H	5:B:1069:PHE:HD1	1.21	0.88
4:A:374:LEU:CB	4:A:436:ILE:HD13	2.03	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:978:ASP:HA	5:B:1098:MET:HB3	1.54	0.87
4:A:393:ARG:O	4:A:394:ASN:HB2	1.73	0.87
4:A:1444:MET:CG	4:A:1445:ILE:CG1	2.43	0.87
11:J:36:LEU:HB2	11:J:47:ARG:HH21	1.40	0.87
5:B:945:GLU:O	5:B:946:ASN:HB3	1.75	0.87
5:B:1106:ARG:CZ	5:B:1109:GLY:H	1.86	0.87
4:A:1444:MET:HB2	4:A:1445:ILE:CG2	2.05	0.86
5:B:331:LEU:O	5:B:334:ILE:HG21	1.76	0.86
5:B:846:ILE:HG12	5:B:974:PRO:HG2	1.57	0.86
5:B:785:TYR:CD1	5:B:795:ILE:HG12	2.09	0.86
5:B:957:ASN:HD22	5:B:958:GLN:N	1.73	0.86
4:A:57:ARG:O	4:A:68:GLN:HG2	1.76	0.86
11:J:7:CYS:HB2	11:J:49:MET:CE	2.05	0.85
5:B:983:ARG:HD2	5:B:1091:TYR:HD2	1.41	0.85
4:A:90:VAL:HA	4:A:204:THR:HG21	1.57	0.85
5:B:211:VAL:CG2	5:B:483:LEU:HD13	2.05	0.85
4:A:662:PHE:CD1	4:A:663:SER:N	2.45	0.85
5:B:1013:ASN:OD1	5:B:1015:HIS:CD2	2.30	0.85
4:A:133:LYS:HE3	4:A:1391:ARG:HH12	1.42	0.85
1:R:7:A:C2'	1:R:8:G:H5'	2.07	0.85
4:A:1007:ILE:HD12	4:A:1007:ILE:N	1.92	0.84
4:A:665:GLY:CA	5:B:1086:PHE:HD1	1.90	0.84
4:A:208:LEU:HD23	4:A:235:ILE:HD11	1.59	0.84
11:J:7:CYS:HB2	11:J:49:MET:HE3	1.58	0.84
4:A:351:THR:CG2	5:B:1103:ILE:CG1	2.56	0.84
4:A:1444:MET:CB	4:A:1445:ILE:HG13	2.07	0.84
6:C:45:ALA:HA	6:C:72:LEU:HD12	1.58	0.84
4:A:787:PHE:CE1	4:A:796:SER:HA	2.12	0.83
4:A:1007:ILE:H	4:A:1007:ILE:CD1	1.91	0.83
11:J:44:TYR:HD2	11:J:44:TYR:H	0.86	0.83
5:B:211:VAL:O	5:B:480:SER:HA	1.79	0.83
5:B:516:ASN:HD22	5:B:516:ASN:H	1.24	0.83
5:B:637:LEU:CD1	5:B:740:HIS:HB3	2.09	0.83
5:B:807:ARG:HG3	5:B:807:ARG:NH1	1.87	0.83
5:B:886:LYS:HB2	5:B:890:TYR:HE1	1.43	0.83
6:C:189:THR:HG22	6:C:190:ASP:N	1.94	0.83
5:B:333:PHE:N	5:B:334:ILE:CB	2.42	0.82
4:A:1444:MET:CB	4:A:1445:ILE:HG23	2.09	0.82
5:B:955:THR:HG22	5:B:956:THR:N	1.93	0.82
4:A:55:ASP:H	4:A:56:PRO:CD	1.93	0.82
4:A:828:ALA:CB	5:B:530:GLY:HA2	2.08	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:467:GLY:O	5:B:468:GLU:HB3	1.79	0.82
4:A:253:ASN:HD22	4:A:253:ASN:H	1.26	0.82
5:B:103:ASN:HD22	5:B:169:ARG:HH22	1.26	0.82
11:J:48:ARG:NH1	11:J:49:MET:CE	2.42	0.81
5:B:805:THR:HG21	5:B:815:ARG:HH21	1.42	0.81
5:B:834:ASN:ND2	5:B:1013:ASN:HD22	1.78	0.81
5:B:1001:PHE:CE2	5:B:1073:TYR:HB2	2.16	0.81
5:B:343:ILE:HG13	5:B:344:LYS:H	1.44	0.81
4:A:351:THR:CG2	5:B:1103:ILE:HG13	2.11	0.81
4:A:1025:ARG:CG	4:A:1025:ARG:HH11	1.93	0.81
1:R:5:A:H5''	5:B:476:ARG:HH12	1.44	0.81
5:B:1106:ARG:NH2	5:B:1109:GLY:H	1.79	0.80
4:A:343:LYS:HZ1	5:B:1197:PRO:CG	1.93	0.80
5:B:843:GLN:HB2	5:B:993:THR:HB	1.63	0.80
10:I:96:SER:HB2	10:I:98:VAL:HG23	1.64	0.80
4:A:1444:MET:CA	4:A:1445:ILE:HG23	2.12	0.80
16:A:2003[A]:UTP:O3A	16:A:2003[A]:UTP:C4'	2.30	0.80
5:B:978:ASP:OD1	5:B:978:ASP:N	2.14	0.80
5:B:708:GLU:O	5:B:712:PRO:CD	2.30	0.79
13:L:48:CYS:SG	13:L:49:LYS:N	2.55	0.79
4:A:406:ILE:HB	4:A:431:LYS:HB2	1.64	0.79
4:A:1444:MET:HA	4:A:1445:ILE:HG23	1.63	0.79
4:A:1364:ASN:HD22	4:A:1364:ASN:C	1.86	0.79
5:B:333:PHE:CB	5:B:334:ILE:CG1	2.60	0.79
11:J:25:LEU:HD12	11:J:25:LEU:N	1.97	0.79
4:A:1444:MET:HG2	4:A:1445:ILE:H	1.44	0.78
12:K:21:ILE:HG22	12:K:33:ILE:HG12	1.63	0.78
5:B:1084:GLN:HE21	6:C:189:THR:CG2	1.97	0.78
11:J:48:ARG:NH1	11:J:49:MET:HE1	1.96	0.78
4:A:1444:MET:HB2	4:A:1445:ILE:CG1	2.13	0.78
5:B:887:HIS:CB	5:B:888:GLY:O	2.32	0.78
11:J:7:CYS:CB	11:J:49:MET:CE	2.61	0.78
2:T:15:DA:H2''	2:T:16:DC:O5'	1.84	0.78
1:R:7:A:H2'	1:R:8:G:H5'	1.65	0.78
5:B:345:LYS:HA	5:B:346:GLU:HB3	1.64	0.78
5:B:710:LEU:O	5:B:711:GLU:HB3	1.84	0.78
9:H:2:SER:HB2	9:H:3:ASN:HB2	0.79	0.78
5:B:1033:LYS:HB2	5:B:1089:PRO:HD2	1.65	0.78
6:C:32:SER:O	6:C:36:VAL:HG12	1.83	0.78
5:B:801:LYS:O	11:J:52:THR:HG22	1.84	0.78
9:H:2:SER:CB	9:H:3:ASN:CB	2.30	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:140:ILE:N	5:B:141:ASP:C	2.36	0.77
4:A:451:HIS:C	4:A:453:MET:H	1.87	0.77
4:A:1219:THR:HG21	4:A:1271:ILE:HD11	1.64	0.77
5:B:333:PHE:HB3	5:B:334:ILE:CG1	2.13	0.77
5:B:840:ILE:HG22	5:B:841:MET:N	1.99	0.77
5:B:41:LYS:HE2	5:B:544:CYS:SG	2.25	0.77
4:A:416:ARG:HG2	4:A:416:ARG:NH1	1.98	0.77
6:C:57:VAL:HG11	11:J:60:PHE:HB2	1.65	0.77
11:J:41:LEU:O	11:J:47:ARG:CD	2.33	0.77
4:A:667:GLY:HA2	4:A:670:ILE:CG1	2.14	0.76
9:H:137:GLN:C	9:H:139:ASN:H	1.89	0.76
4:A:374:LEU:HB3	4:A:436:ILE:HD13	1.66	0.76
10:I:118:ARG:HG2	10:I:118:ARG:NH1	1.90	0.76
5:B:140:ILE:CB	5:B:141:ASP:HB2	2.10	0.76
4:A:315:LEU:HD12	4:A:316:GLN:H	1.51	0.76
4:A:709:THR:HB	4:A:712:GLU:H	1.46	0.76
5:B:710:LEU:O	5:B:711:GLU:CB	2.33	0.76
5:B:844:SER:O	5:B:847:ASP:HB2	1.86	0.76
4:A:1441:PHE:CZ	8:F:89:GLU:HA	2.22	0.75
4:A:775:ILE:HG13	4:A:798:GLY:HA3	1.69	0.75
4:A:1171:GLN:HB3	4:A:1172:LEU:HB2	1.69	0.75
4:A:1118:VAL:CG2	4:A:1306:LEU:HB2	2.15	0.75
5:B:337:ARG:HB3	5:B:340:ALA:N	2.01	0.75
7:E:31:THR:HG23	7:E:34:GLU:HB2	1.68	0.75
11:J:8:PHE:H	11:J:49:MET:CE	2.00	0.75
5:B:333:PHE:CA	5:B:334:ILE:HB	2.15	0.75
5:B:647:GLY:CA	5:B:648:HIS:CB	2.63	0.75
11:J:41:LEU:O	11:J:47:ARG:HD2	1.87	0.75
11:J:2:ILE:HG23	11:J:2:ILE:O	1.85	0.75
5:B:341:LEU:HD13	5:B:343:ILE:CB	2.13	0.75
12:K:46:ILE:O	12:K:50:LEU:HB2	1.86	0.75
4:A:343:LYS:NZ	5:B:1197:PRO:CB	2.49	0.75
5:B:711:GLU:H	5:B:712:PRO:CD	1.99	0.74
5:B:824:ILE:HD11	11:J:48:ARG:NH2	2.02	0.74
5:B:785:TYR:CE1	5:B:795:ILE:HG12	2.22	0.74
5:B:280:ILE:HB	5:B:285:ILE:HD11	1.69	0.74
5:B:953:LEU:HD11	13:L:55:ILE:HG22	1.69	0.74
4:A:1025:ARG:HH11	4:A:1025:ARG:HG2	1.49	0.74
6:C:124:LEU:C	6:C:126:GLY:H	1.91	0.74
4:A:609:ASP:O	4:A:611:GLN:N	2.20	0.74
5:B:653:VAL:HG12	5:B:689:LEU:HD13	1.70	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:189:THR:CG2	6:C:190:ASP:H	1.99	0.73
6:C:234:SER:HB3	6:C:240:VAL:HG13	1.69	0.73
5:B:807:ARG:HH11	5:B:807:ARG:CG	1.96	0.73
4:A:343:LYS:HZ1	5:B:1197:PRO:CB	2.02	0.73
4:A:374:LEU:HB2	4:A:436:ILE:HD13	1.69	0.73
4:A:506:ALA:O	4:A:509:LEU:HG	1.87	0.73
5:B:344:LYS:O	5:B:346:GLU:HB3	1.89	0.73
7:E:88:VAL:HG21	7:E:112:TYR:HB2	1.70	0.73
9:H:50:ALA:O	9:H:53:ASP:HB2	1.87	0.73
4:A:346:ASP:HB2	5:B:1154:ALA:HB1	1.71	0.73
4:A:351:THR:CG2	5:B:1103:ILE:HG12	2.17	0.73
5:B:345:LYS:CA	5:B:346:GLU:CB	2.67	0.73
4:A:1410:PHE:HD2	5:B:1212:ILE:HD11	1.53	0.73
5:B:212:LEU:HD13	5:B:409:ALA:HA	1.71	0.73
4:A:134:ARG:HD3	4:A:221:SER:O	1.88	0.73
4:A:479:ASN:ND2	16:A:2003[B]:UTP:O3'	2.22	0.73
4:A:1059:HIS:HE1	8:F:155:LEU:HD21	1.52	0.73
5:B:886:LYS:HB2	5:B:890:TYR:CE1	2.23	0.73
4:A:567:LYS:HB2	4:A:568:PRO:HD2	1.69	0.72
4:A:1171:GLN:H	4:A:1172:LEU:CB	2.02	0.72
5:B:422:LYS:HA	5:B:425:THR:HG22	1.71	0.72
10:I:118:ARG:HH11	10:I:118:ARG:CG	1.95	0.72
11:J:5:VAL:HG12	11:J:6:ARG:N	2.03	0.72
11:J:44:TYR:HA	11:J:47:ARG:CB	2.18	0.72
4:A:466:SER:HB2	5:B:1103:ILE:HD13	1.70	0.72
5:B:260:GLY:O	5:B:267:ARG:NH1	2.22	0.72
5:B:337:ARG:HB2	5:B:340:ALA:HB2	1.71	0.72
4:A:1243:VAL:HG13	4:A:1244:ARG:HG3	1.71	0.72
5:B:140:ILE:CB	5:B:141:ASP:HB3	2.08	0.72
4:A:1444:MET:CB	4:A:1445:ILE:CG1	2.68	0.72
11:J:36:LEU:HB2	11:J:47:ARG:NH2	2.04	0.72
4:A:54:ASN:HD22	4:A:54:ASN:N	1.88	0.72
5:B:778:MET:O	5:B:796:LEU:HD12	1.90	0.71
9:H:93:TYR:CD2	9:H:145:ARG:HB3	2.25	0.71
11:J:53:HIS:HE1	11:J:55:ASP:OD1	1.72	0.71
2:T:19:DT:C4	2:T:20:DC:C4	2.77	0.71
5:B:322:PHE:CZ	10:I:30:ARG:HG3	2.25	0.71
9:H:38:LEU:HD12	9:H:125:LEU:HD13	1.72	0.71
4:A:483:ASP:HB2	5:B:987:LYS:HE3	1.72	0.71
4:A:1082:ASN:HA	4:A:1097:GLY:HA3	1.72	0.71
5:B:999:MET:CG	5:B:1000:PRO:HD2	2.18	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:338:GLY:HA2	5:B:1129:ARG:HH22	1.54	0.71
4:A:387:ARG:O	4:A:391:LEU:HD13	1.89	0.71
5:B:322:PHE:HZ	10:I:30:ARG:HG3	1.54	0.71
5:B:846:ILE:CG1	5:B:974:PRO:HG2	2.21	0.71
5:B:1222:ARG:O	5:B:1223:ASP:HB2	1.90	0.71
11:J:57:ILE:O	11:J:61:LEU:HD12	1.91	0.71
5:B:299:GLU:OE1	5:B:572:HIS:HB3	1.90	0.71
5:B:486:TYR:HE2	5:B:776:GLN:O	1.73	0.71
4:A:99:ILE:HD11	4:A:234:MET:HB3	1.73	0.71
4:A:244:PRO:HB2	4:A:245:PRO:HD3	1.71	0.71
4:A:423:ASP:CG	4:A:424:ILE:H	1.93	0.71
5:B:333:PHE:H	5:B:334:ILE:CG1	2.03	0.71
4:A:853:ASP:OD1	4:A:855:THR:HG22	1.89	0.71
5:B:103:ASN:HD22	5:B:169:ARG:NH2	1.89	0.70
5:B:198:ASP:OD1	5:B:485:ARG:NH2	2.22	0.70
5:B:333:PHE:HB3	5:B:334:ILE:CA	2.21	0.70
5:B:340:ALA:O	5:B:341:LEU:CB	2.39	0.70
6:C:144:ILE:HG22	6:C:145:CYS:HB3	1.71	0.70
2:T:15:DA:H2'	2:T:15:DA:N3	2.04	0.70
4:A:451:HIS:C	4:A:453:MET:N	2.45	0.70
1:R:2:U:H2'	1:R:3:C:C6	2.26	0.70
1:R:10:A:C2	2:T:19:DT:N3	2.58	0.70
4:A:920:LEU:HD13	4:A:920:LEU:C	2.12	0.70
5:B:1031:LEU:O	5:B:1031:LEU:CD1	2.31	0.70
5:B:1166:CYS:HB3	5:B:1185:CYS:SG	2.32	0.70
4:A:360:GLU:H	4:A:360:GLU:CD	1.94	0.70
5:B:287:ARG:NH1	5:B:324:ILE:O	2.23	0.70
5:B:834:ASN:HD21	5:B:1013:ASN:HD22	1.35	0.70
1:R:8:G:C2	2:T:22:DT:C2	2.77	0.70
5:B:345:LYS:HA	5:B:346:GLU:CB	2.20	0.70
11:J:14:VAL:HG21	11:J:49:MET:HG2	1.73	0.70
4:A:117:GLU:H	4:A:118:HIS:CB	2.05	0.69
5:B:140:ILE:CB	5:B:141:ASP:C	2.60	0.69
5:B:773:MET:HE2	5:B:981:ALA:CB	2.21	0.69
1:R:6:G:C4	1:R:7:A:N7	2.61	0.69
6:C:45:ALA:HA	6:C:72:LEU:CD1	2.21	0.69
4:A:453:MET:HG3	4:A:456:MET:HE1	1.74	0.69
4:A:719:VAL:HG12	4:A:723:ASN:ND2	2.07	0.69
5:B:490:SER:HB3	5:B:775:LYS:HG2	1.74	0.69
11:J:2:ILE:O	11:J:2:ILE:CG2	2.40	0.69
11:J:8:PHE:H	11:J:49:MET:HE1	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:399:HIS:HB3	4:A:400:PRO:HD3	1.73	0.69
5:B:337:ARG:HB3	5:B:340:ALA:H	1.56	0.69
4:A:535:THR:HG21	4:A:617:VAL:H	1.56	0.69
5:B:806:THR:HG22	5:B:808:ALA:H	1.58	0.69
4:A:37:PHE:HB2	4:A:52:GLY:HA3	1.74	0.69
4:A:53:LEU:CG	4:A:54:ASN:H	2.04	0.69
4:A:54:ASN:H	4:A:54:ASN:HD22	1.38	0.69
4:A:298:PHE:HA	4:A:299:HIS:C	2.12	0.69
4:A:1040:GLN:N	4:A:1041:ALA:CB	2.30	0.69
5:B:711:GLU:N	5:B:712:PRO:HD3	2.08	0.69
5:B:211:VAL:HG21	5:B:483:LEU:CD1	2.22	0.69
5:B:793:ALA:HB3	5:B:856:PHE:HB2	1.73	0.69
4:A:860:LEU:HD12	4:A:862:ASN:HD21	1.57	0.68
5:B:340:ALA:C	5:B:342:GLY:HA2	2.13	0.68
4:A:404:TYR:HD2	4:A:412:ARG:HD3	1.55	0.68
5:B:1082:MET:HA	6:C:189:THR:HA	1.75	0.68
5:B:345:LYS:HA	5:B:347:LYS:N	2.06	0.68
5:B:1154:ALA:O	5:B:1155:SER:HB3	1.92	0.68
4:A:490:HIS:HB3	5:B:1150:ARG:NH1	2.09	0.68
5:B:755:ILE:HD12	5:B:814:PHE:CD1	2.28	0.68
5:B:778:MET:O	5:B:796:LEU:CD1	2.42	0.68
5:B:955:THR:CG2	5:B:956:THR:H	1.98	0.68
4:A:575:LYS:HD3	4:A:612:ILE:HD11	1.76	0.68
5:B:779:GLY:HA2	5:B:796:LEU:HD12	1.74	0.68
8:F:77:ASP:O	8:F:78:GLN:HB2	1.93	0.68
6:C:164:ALA:HA	6:C:167:HIS:O	1.93	0.68
7:E:176:PRO:HG2	7:E:211:TYR:O	1.93	0.68
2:T:19:DT:C4	2:T:20:DC:N4	2.61	0.68
4:A:1063:MET:HG3	4:A:1436:ILE:CG2	2.21	0.68
5:B:978:ASP:HA	5:B:1098:MET:CB	2.24	0.68
4:A:38:PRO:HB3	4:A:270:LEU:HB3	1.76	0.68
6:C:238:ILE:HG23	6:C:242:GLN:HB2	1.76	0.68
4:A:351:THR:HG21	5:B:1103:ILE:HG12	1.74	0.68
5:B:757:PRO:O	5:B:758:PHE:HB2	1.94	0.68
5:B:955:THR:HG23	13:L:54:ARG:O	1.94	0.68
4:A:68:GLN:O	4:A:70:CYS:N	2.25	0.67
4:A:884:ASP:O	4:A:886:ILE:N	2.26	0.67
6:C:238:ILE:CG2	6:C:242:GLN:HB2	2.24	0.67
5:B:822:ASN:ND2	11:J:52:THR:HG21	2.09	0.67
2:T:18:DA:H2''	2:T:19:DT:H5'	1.74	0.67
5:B:822:ASN:HD22	11:J:52:THR:HG21	1.59	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:704:ALA:H	4:A:705:LYS:HA	1.58	0.67
4:A:1364:ASN:ND2	4:A:1366:ARG:HG2	2.10	0.67
4:A:827:THR:C	4:A:829:VAL:H	1.97	0.67
1:R:8:G:N2	2:T:22:DT:N3	2.38	0.67
1:R:8:G:C2	2:T:22:DT:C4	2.79	0.67
4:A:272:ALA:HA	4:A:275:SER:HB3	1.77	0.67
6:C:37:MET:HA	6:C:41:ILE:HD11	1.77	0.67
4:A:53:LEU:HG	4:A:54:ASN:N	2.03	0.67
4:A:848:ILE:HD13	4:A:858:ASN:HB3	1.77	0.67
16:A:2003[A]:UTP:H4'	16:A:2003[A]:UTP:PB	2.34	0.67
5:B:794:ASN:O	5:B:795:ILE:HD12	1.94	0.67
5:B:983:ARG:HD2	5:B:1091:TYR:CD2	2.27	0.67
5:B:805:THR:HG21	5:B:815:ARG:NH2	2.09	0.67
4:A:53:LEU:HG	4:A:54:ASN:HD22	1.60	0.66
4:A:565:ILE:HG23	4:A:567:LYS:HE3	1.76	0.66
4:A:1096:SER:HA	4:A:1100:ARG:HB2	1.77	0.66
5:B:174:LEU:HD13	5:B:202:TYR:CE1	2.30	0.66
5:B:711:GLU:N	5:B:712:PRO:CD	2.57	0.66
5:B:773:MET:O	5:B:775:LYS:N	2.25	0.66
4:A:365:GLY:O	4:A:468:PHE:HA	1.95	0.66
4:A:1448:GLU:HG3	4:A:1449:SER:N	2.10	0.66
11:J:14:VAL:HG21	11:J:49:MET:CG	2.25	0.66
5:B:308:TRP:HA	5:B:311:LEU:HD12	1.77	0.66
4:A:404:TYR:N	4:A:404:TYR:HD1	1.94	0.66
4:A:1040:GLN:H	4:A:1041:ALA:HB3	0.62	0.66
4:A:579:SER:HB3	4:A:611:GLN:HA	1.77	0.66
4:A:1118:VAL:HG22	4:A:1306:LEU:HB2	1.78	0.66
4:A:1171:GLN:N	4:A:1172:LEU:HB2	2.11	0.66
5:B:1152:MET:HB2	5:B:1153:GLU:OE2	1.96	0.66
1:R:8:G:N2	2:T:21:DC:O2	2.29	0.66
4:A:55:ASP:N	4:A:56:PRO:CD	2.53	0.66
5:B:840:ILE:CG2	5:B:841:MET:H	2.06	0.66
5:B:120:ARG:HB2	5:B:122:LEU:HG	1.77	0.66
5:B:957:ASN:ND2	5:B:958:GLN:H	1.94	0.66
5:B:957:ASN:ND2	5:B:958:GLN:N	2.44	0.66
5:B:1023:VAL:HA	5:B:1026:LEU:HD12	1.77	0.66
1:R:5:A:H2'	1:R:6:G:C8	2.31	0.66
5:B:705:MET:HA	5:B:705:MET:CE	2.26	0.66
5:B:911:ILE:HD11	5:B:941:LEU:HA	1.77	0.66
4:A:1444:MET:HG2	4:A:1445:ILE:HG13	1.65	0.66
4:A:104:GLU:HG3	4:A:174:ILE:HD12	1.79	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:1171:GLN:CB	4:A:1172:LEU:HB2	2.25	0.65
11:J:25:LEU:HD12	11:J:25:LEU:H	1.59	0.65
4:A:1376:THR:HG22	7:E:212:ARG:HH22	1.60	0.65
5:B:115:GLN:OE1	5:B:115:GLN:HA	1.97	0.65
5:B:120:ARG:HG2	5:B:955:THR:HG21	1.77	0.65
5:B:976:ILE:HG23	5:B:977:GLY:N	2.08	0.65
4:A:827:THR:O	4:A:829:VAL:N	2.28	0.65
4:A:875:ALA:HA	4:A:878:ILE:HD13	1.78	0.65
5:B:25:ILE:HG23	5:B:29:ASP:HB2	1.78	0.65
12:K:102:LYS:O	12:K:106:GLU:HG2	1.96	0.65
4:A:117:GLU:H	4:A:118:HIS:CA	2.09	0.65
4:A:436:ILE:HD11	4:A:491:VAL:HG11	1.78	0.65
5:B:886:LYS:HB3	5:B:887:HIS:C	2.17	0.65
5:B:1041:GLU:HG2	5:B:1042:GLY:O	1.96	0.65
5:B:1068:GLY:O	5:B:1069:PHE:O	2.13	0.65
5:B:848:ARG:HD2	11:J:8:PHE:HA	1.76	0.65
5:B:855:PHE:HD1	5:B:856:PHE:N	1.95	0.65
6:C:164:ALA:HB2	6:C:171:GLY:CA	2.27	0.65
4:A:587:HIS:CE1	4:A:969:GLN:HG3	2.32	0.65
4:A:1171:GLN:N	4:A:1172:LEU:CB	2.59	0.65
5:B:346:GLU:H	5:B:349:ILE:HD13	1.61	0.65
11:J:44:TYR:N	11:J:44:TYR:CD2	2.38	0.65
5:B:915:THR:HB	5:B:934:LYS:HB3	1.79	0.65
4:A:214:ILE:HG22	4:A:215:SER:H	1.62	0.65
16:A:2003[A]:UTP:O2	16:A:2003[A]:UTP:H2'	1.97	0.65
6:C:262:LEU:HD11	12:K:87:LEU:HD23	1.79	0.65
9:H:2:SER:N	9:H:3:ASN:O	2.30	0.65
2:T:22:DT:H2'	2:T:23:DC:H6	1.61	0.65
4:A:299:HIS:O	4:A:301:ALA:N	2.30	0.65
4:A:323:LYS:HG2	4:A:324:SER:N	2.12	0.64
5:B:708:GLU:O	5:B:710:LEU:N	2.30	0.64
5:B:845:SER:O	5:B:847:ASP:N	2.30	0.64
5:B:1055:ILE:O	5:B:1058:LEU:N	2.30	0.64
4:A:214:ILE:HG22	4:A:215:SER:N	2.11	0.64
5:B:278:GLN:HG2	5:B:279:ASP:H	1.61	0.64
5:B:341:LEU:HB2	5:B:342:GLY:CA	2.24	0.64
5:B:773:MET:CE	5:B:981:ALA:CB	2.75	0.64
4:A:22:PHE:HB2	5:B:1211:ASN:OD1	1.98	0.64
5:B:710:LEU:HD11	5:B:732:SER:O	1.96	0.64
1:R:9:G:P	5:B:776:GLN:HE22	2.21	0.64
4:A:744:LYS:O	4:A:748:MET:HB2	1.97	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:778:MET:HE3	5:B:1094:ARG:HH11	1.62	0.64
1:R:5:A:C5'	5:B:476:ARG:NH1	2.59	0.64
4:A:1443:VAL:O	4:A:1444:MET:HB3	1.97	0.64
5:B:710:LEU:O	5:B:711:GLU:HG2	1.97	0.64
5:B:957:ASN:HD22	5:B:958:GLN:H	1.46	0.64
4:A:691:LEU:CD1	4:A:695:LYS:HD3	2.28	0.64
4:A:1209:MET:HE2	4:A:1209:MET:HA	1.80	0.64
4:A:1219:THR:HG21	4:A:1271:ILE:CD1	2.27	0.64
1:R:7:A:O2'	1:R:8:G:H5'	1.98	0.64
5:B:483:LEU:HG	5:B:484:ASN:H	1.63	0.64
5:B:834:ASN:HB3	5:B:840:ILE:CD1	2.26	0.64
5:B:836:GLU:O	5:B:838:SER:N	2.30	0.64
11:J:12:LYS:O	11:J:14:VAL:N	2.31	0.64
4:A:868:TYR:CE1	4:A:1064:VAL:HG11	2.31	0.64
5:B:709:ASP:O	5:B:710:LEU:HD22	1.96	0.64
5:B:494:HIS:HA	5:B:497:ARG:HE	1.63	0.64
5:B:1097:HIS:O	5:B:1098:MET:CG	2.32	0.64
5:B:102:VAL:HG21	5:B:122:LEU:HD13	1.80	0.63
5:B:1012:ILE:CG1	5:B:1013:ASN:H	1.98	0.63
5:B:1106:ARG:HD2	5:B:1126:GLY:O	1.98	0.63
6:C:167:HIS:CD2	6:C:169:LYS:HG2	2.33	0.63
11:J:36:LEU:CB	11:J:47:ARG:HH21	2.10	0.63
5:B:333:PHE:CA	5:B:334:ILE:CB	2.75	0.63
5:B:887:HIS:HB3	5:B:888:GLY:C	2.19	0.63
5:B:979:LYS:HE3	5:B:987:LYS:HD2	1.81	0.63
7:E:177:ARG:HG2	7:E:215:MET:SD	2.38	0.63
11:J:64:ASN:N	11:J:65:PRO:CD	2.61	0.63
4:A:782:ARG:NH1	4:A:785:PRO:HA	2.13	0.63
4:A:901:LEU:HG	4:A:926:GLN:HE21	1.63	0.63
16:A:2003[A]:UTP:H5'2	16:A:2003[A]:UTP:C5	2.27	0.63
1:R:4:G:H2'	1:R:5:A:H8	1.64	0.63
4:A:469:ARG:NH1	4:A:469:ARG:HB3	2.12	0.63
4:A:1171:GLN:H	4:A:1172:LEU:CA	2.11	0.63
5:B:843:GLN:NE2	5:B:847:ASP:OD1	2.32	0.63
4:A:1041:ALA:O	4:A:1043:ASP:N	2.31	0.63
1:R:5:A:H2	1:R:6:G:C4	2.13	0.63
4:A:404:TYR:N	4:A:404:TYR:CD1	2.65	0.63
4:A:471:ASN:C	4:A:471:ASN:OD1	2.37	0.63
5:B:471:LYS:HD2	5:B:471:LYS:C	2.19	0.63
5:B:654:ARG:H	5:B:657:HIS:HD2	1.45	0.63
4:A:253:ASN:HD22	4:A:253:ASN:N	1.94	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:475:SER:O	5:B:477:ALA:N	2.31	0.62
6:C:235:VAL:HG12	11:J:13:VAL:HG22	1.80	0.62
13:L:32:ALA:HB3	13:L:55:ILE:HD12	1.81	0.62
4:A:1004:ASN:ND2	7:E:167:ARG:HD2	2.13	0.62
5:B:882:THR:O	5:B:884:ARG:N	2.32	0.62
6:C:180:TYR:OH	6:C:188:HIS:CD2	2.52	0.62
5:B:1072:MET:CE	5:B:1085:ILE:HB	2.28	0.62
11:J:5:VAL:O	11:J:6:ARG:C	2.36	0.62
4:A:466:SER:HB2	5:B:1103:ILE:CD1	2.29	0.62
5:B:475:SER:C	5:B:477:ALA:H	2.03	0.62
5:B:516:ASN:H	5:B:516:ASN:ND2	1.97	0.62
5:B:1036:ALA:O	11:J:47:ARG:NH1	2.33	0.62
5:B:1119:VAL:O	5:B:1126:GLY:HA2	1.99	0.62
8:F:147:SER:C	8:F:149:GLU:H	2.02	0.62
4:A:41:MET:HB2	4:A:49:LYS:HA	1.82	0.62
4:A:1040:GLN:CA	4:A:1041:ALA:HB3	2.28	0.62
11:J:1:MET:N	11:J:56:LEU:H	1.98	0.62
4:A:1446:ASP:C	4:A:1447:GLU:HG3	2.19	0.62
5:B:1064:TYR:O	5:B:1065:GLN:C	2.38	0.62
1:R:8:G:N1	2:T:22:DT:O4	2.33	0.62
5:B:684:LEU:HD22	5:B:689:LEU:HD12	1.82	0.62
5:B:901:PRO:HA	5:B:949:VAL:HG12	1.82	0.62
5:B:976:ILE:O	5:B:990:ILE:HB	2.00	0.62
5:B:1208:MET:O	5:B:1211:ASN:N	2.31	0.62
5:B:276:ILE:HD13	5:B:277:LYS:H	1.64	0.62
4:A:630:ILE:H	4:A:630:ILE:CD1	1.97	0.61
5:B:463:THR:HB	5:B:465:ASN:HD22	1.65	0.61
11:J:1:MET:N	11:J:57:ILE:H	1.98	0.61
5:B:282:ILE:HG21	5:B:382:ILE:HD11	1.82	0.61
5:B:773:MET:HE2	5:B:981:ALA:HB1	1.82	0.61
5:B:979:LYS:CE	5:B:987:LYS:HD2	2.30	0.61
6:C:44:LEU:HD22	6:C:129:ILE:HG23	1.81	0.61
5:B:54:PHE:HA	5:B:58:THR:HB	1.82	0.61
5:B:638:PHE:CE1	5:B:743:ILE:HA	2.35	0.61
5:B:1044:ALA:O	5:B:1045:SER:O	2.19	0.61
11:J:3:VAL:HG11	11:J:18:TRP:HB2	1.83	0.61
5:B:848:ARG:NH1	11:J:8:PHE:O	2.32	0.61
4:A:351:THR:HG21	5:B:1103:ILE:CG1	2.30	0.61
9:H:116:TYR:HB2	9:H:123:MET:HB3	1.83	0.61
4:A:913:LEU:HG	4:A:915:SER:H	1.65	0.61
5:B:555:ILE:HD11	5:B:582:VAL:HG11	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:624:LEU:C	5:B:624:LEU:CD1	2.69	0.61
5:B:797:TYR:HD2	5:B:852:ARG:CB	2.14	0.61
2:T:10:DA:H61	3:N:5:DT:H3	1.49	0.60
4:A:446:ARG:HB2	4:A:487:MET:CE	2.31	0.60
16:A:2003[A]:UTP:C5'	16:A:2003[A]:UTP:N1	2.56	0.60
5:B:334:ILE:HG23	5:B:334:ILE:O	2.01	0.60
5:B:834:ASN:HB3	5:B:840:ILE:HD12	1.83	0.60
12:K:6:ARG:O	12:K:8:GLU:N	2.33	0.60
1:R:8:G:C2'	1:R:9:G:O5'	2.49	0.60
4:A:458:HIS:CE1	4:A:507:VAL:HG21	2.36	0.60
5:B:523:CYS:SG	5:B:524:PRO:HD2	2.41	0.60
5:B:640:VAL:HG22	5:B:651:LEU:HD22	1.81	0.60
6:C:56:THR:HG22	6:C:57:VAL:N	2.16	0.60
1:R:6:G:N3	1:R:7:A:C8	2.70	0.60
4:A:567:LYS:CB	4:A:568:PRO:HD2	2.32	0.60
4:A:1447:GLU:N	4:A:1448:GLU:HB3	2.15	0.60
5:B:882:THR:O	5:B:883:LEU:C	2.39	0.60
5:B:1087:PHE:HD2	5:B:1087:PHE:C	2.05	0.60
4:A:471:ASN:OD1	4:A:472:LEU:N	2.34	0.60
4:A:768:GLN:NE2	4:A:816:HIS:ND1	2.48	0.60
1:R:8:G:N2	2:T:22:DT:N1	2.49	0.60
4:A:658:LEU:HD13	5:B:831:SER:HA	1.83	0.60
5:B:95:ILE:HD12	5:B:130:VAL:HG12	1.83	0.60
4:A:320:ARG:CZ	4:A:320:ARG:H	2.14	0.60
4:A:662:PHE:CE1	4:A:663:SER:O	2.55	0.60
4:A:800:VAL:HG22	4:A:812:GLU:HB3	1.84	0.60
4:A:350:ARG:HH11	4:A:350:ARG:HG3	1.67	0.60
4:A:836:TYR:CZ	4:A:840:ARG:HD2	2.36	0.60
4:A:1364:ASN:C	4:A:1364:ASN:ND2	2.53	0.60
4:A:1400:CYS:O	4:A:1405:THR:HG23	2.02	0.60
5:B:999:MET:HE2	5:B:1008:PRO:HG2	1.82	0.60
5:B:1074:ASN:OD1	5:B:1076:HIS:N	2.35	0.60
6:C:233:GLU:OE1	11:J:43:ARG:NH2	2.30	0.60
5:B:1099:VAL:C	5:B:1101:ASP:H	2.05	0.60
6:C:7:GLN:HB2	6:C:23:SER:HB2	1.83	0.60
4:A:1333:ILE:O	4:A:1333:ILE:HD13	2.02	0.60
5:B:773:MET:CE	5:B:981:ALA:HB1	2.32	0.60
5:B:840:ILE:HG21	5:B:994:TYR:HD1	1.67	0.60
2:T:19:DT:H2'	2:T:20:DC:C6	2.37	0.59
4:A:492:PRO:HB3	4:A:497:THR:HG22	1.84	0.59
1:R:9:G:OP1	5:B:776:GLN:NE2	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:381:THR:HG22	4:A:382:PRO:HD2	1.83	0.59
4:A:528:LEU:HD23	4:A:751:SER:HA	1.83	0.59
4:A:868:TYR:HE1	4:A:1064:VAL:HG11	1.65	0.59
5:B:132:VAL:HG23	5:B:165:VAL:HG21	1.83	0.59
5:B:333:PHE:N	5:B:334:ILE:CG1	2.63	0.59
4:A:629:LEU:HD22	4:A:633:VAL:CG2	2.32	0.59
5:B:862:GLN:HB3	5:B:963:PHE:HB2	1.83	0.59
5:B:1177:HIS:O	5:B:1179:GLN:N	2.36	0.59
5:B:1194:ILE:H	5:B:1194:ILE:HD13	1.67	0.59
11:J:3:VAL:HG22	11:J:4:PRO:HD2	1.84	0.59
4:A:335:ARG:HD2	5:B:1202:LEU:HD12	1.83	0.59
5:B:1069:PHE:CD1	5:B:1069:PHE:N	2.66	0.59
6:C:208:GLU:HB3	6:C:209:TYR:CD1	2.36	0.59
7:E:88:VAL:HG21	7:E:112:TYR:CB	2.33	0.59
1:R:7:A:C2	1:R:8:G:C4	2.90	0.59
5:B:334:ILE:O	5:B:334:ILE:CG2	2.51	0.59
5:B:1010:LEU:CD2	5:B:1092:TYR:CD1	2.80	0.59
1:R:6:G:O2'	1:R:7:A:H5'	2.02	0.59
4:A:780:VAL:HG12	5:B:699:GLU:OE2	2.02	0.59
5:B:781:PHE:CE2	5:B:785:TYR:HB2	2.38	0.59
4:A:351:THR:HG22	4:A:352:VAL:N	2.13	0.59
5:B:710:LEU:O	5:B:711:GLU:CG	2.50	0.59
5:B:1082:MET:HG2	6:C:188:HIS:O	2.03	0.59
4:A:117:GLU:H	4:A:118:HIS:C	2.06	0.59
4:A:453:MET:HG3	4:A:456:MET:CE	2.33	0.59
4:A:700:ASN:HD22	10:I:116:ASN:HD21	1.50	0.59
4:A:700:ASN:ND2	10:I:116:ASN:HD21	2.00	0.59
4:A:451:HIS:O	4:A:453:MET:N	2.35	0.58
5:B:341:LEU:CD1	5:B:343:ILE:CB	2.73	0.58
4:A:387:ARG:O	4:A:387:ARG:HG2	2.02	0.58
4:A:399:HIS:O	4:A:401:GLY:N	2.36	0.58
4:A:663:SER:HB2	5:B:1085:ILE:HG23	1.84	0.58
9:H:93:TYR:HD2	9:H:145:ARG:HB3	1.68	0.58
5:B:708:GLU:C	5:B:710:LEU:H	2.07	0.58
5:B:855:PHE:O	5:B:969:ARG:HA	2.02	0.58
6:C:100:THR:O	6:C:119:VAL:HG12	2.04	0.58
5:B:332:ASP:C	5:B:334:ILE:HB	2.24	0.58
5:B:408:LEU:O	5:B:410:GLY:N	2.36	0.58
5:B:815:ARG:HB3	5:B:815:ARG:CZ	2.34	0.58
5:B:1166:CYS:CB	5:B:1185:CYS:SG	2.92	0.58
10:I:73:ARG:O	10:I:81:ARG:HG2	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:J:28:ASP:O	11:J:30:LEU:HD12	2.04	0.58
4:A:541:ILE:HG22	4:A:545:GLN:HE22	1.68	0.58
4:A:871:ASP:OD1	4:A:1366:ARG:NH2	2.37	0.58
4:A:901:LEU:H	4:A:926:GLN:NE2	2.02	0.58
4:A:1436:ILE:O	4:A:1438:THR:N	2.36	0.58
5:B:25:ILE:HG23	5:B:29:ASP:CB	2.33	0.58
5:B:140:ILE:CA	5:B:141:ASP:C	2.71	0.58
10:I:58:VAL:HA	10:I:62:ILE:HD12	1.85	0.58
4:A:298:PHE:CG	4:A:298:PHE:O	2.57	0.58
4:A:981:LEU:HD21	4:A:1039:LYS:HA	1.84	0.58
4:A:1171:GLN:CA	4:A:1172:LEU:HB2	2.33	0.58
6:C:142:VAL:N	11:J:16:ASP:HB3	2.08	0.58
4:A:392:VAL:HG13	4:A:415:LEU:HD22	1.86	0.58
4:A:1064:VAL:HG12	4:A:1370:LEU:HD22	1.85	0.58
4:A:1084:PHE:CZ	4:A:1093:LYS:HA	2.39	0.58
5:B:653:VAL:HG13	5:B:689:LEU:HB3	1.85	0.58
11:J:22:LEU:O	11:J:26:GLN:HB2	2.03	0.58
11:J:24:LEU:HD12	11:J:24:LEU:N	2.19	0.58
5:B:542:MET:HE1	5:B:743:ILE:HB	1.86	0.58
4:A:269:ILE:HG22	4:A:299:HIS:HB2	1.86	0.58
4:A:447:GLN:HA	4:A:448:PRO:C	2.24	0.58
4:A:963:ILE:HG22	4:A:1045:VAL:HG22	1.84	0.58
6:C:84:ARG:HD3	12:K:11:LEU:HD11	1.84	0.58
4:A:404:TYR:CD2	4:A:412:ARG:HD3	2.37	0.57
4:A:534:LEU:O	4:A:534:LEU:HG	2.03	0.57
4:A:565:ILE:HG12	4:A:567:LYS:HZ1	1.69	0.57
5:B:416:LEU:HD23	5:B:420:LEU:HD12	1.85	0.57
9:H:137:GLN:O	9:H:139:ASN:N	2.35	0.57
5:B:25:ILE:HG22	5:B:26:THR:O	2.03	0.57
6:C:57:VAL:CG1	11:J:60:PHE:HB2	2.32	0.57
4:A:507:VAL:HG13	4:A:521:MET:HE1	1.86	0.57
4:A:512:VAL:HA	4:A:519:PRO:HA	1.86	0.57
4:A:1119:TYR:HD1	4:A:1326:ARG:HB2	1.69	0.57
5:B:1084:GLN:HE21	6:C:189:THR:HG22	1.68	0.57
4:A:1162:VAL:HG11	10:I:41:PRO:HG2	1.85	0.57
1:R:7:A:C2	1:R:8:G:C5	2.92	0.57
4:A:54:ASN:N	4:A:54:ASN:ND2	2.52	0.57
4:A:1155:ASP:OD1	4:A:1162:VAL:HG23	2.05	0.57
5:B:764:SER:N	5:B:765:PRO:HD2	2.17	0.57
11:J:64:ASN:O	11:J:65:PRO:C	2.43	0.57
4:A:11:LEU:HA	5:B:1193:GLN:O	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:298:PHE:HD2	4:A:302:THR:HB	1.69	0.57
4:A:370:ILE:C	4:A:372:LYS:H	2.07	0.57
4:A:423:ASP:O	4:A:424:ILE:HB	2.04	0.57
4:A:1446:ASP:O	4:A:1447:GLU:CG	2.45	0.57
5:B:1087:PHE:C	5:B:1087:PHE:CD2	2.78	0.57
11:J:44:TYR:O	11:J:48:ARG:N	2.37	0.57
2:T:21:DC:H2'	2:T:22:DT:H6	1.69	0.57
4:A:47:ARG:CZ	4:A:47:ARG:HA	2.35	0.57
4:A:218:ASP:H	4:A:219:PHE:CB	2.17	0.57
4:A:366:VAL:HG22	4:A:468:PHE:HE2	1.70	0.57
4:A:668:ASP:OD2	4:A:742:ASN:ND2	2.31	0.57
5:B:254:LEU:HD22	5:B:361:LEU:HD11	1.86	0.57
5:B:773:MET:C	5:B:775:LYS:H	2.06	0.57
5:B:1015:HIS:C	5:B:1017:ILE:H	2.08	0.57
5:B:1180:PHE:O	5:B:1181:GLU:HG2	2.04	0.57
6:C:56:THR:HG22	6:C:57:VAL:H	1.68	0.57
12:K:39:ASP:OD1	12:K:39:ASP:N	2.38	0.57
13:L:55:ILE:O	13:L:56:LEU:HB2	2.04	0.57
4:A:875:ALA:HB2	4:A:1366:ARG:HD3	1.87	0.57
4:A:1384:VAL:HG23	4:A:1384:VAL:O	2.03	0.57
5:B:428:ILE:O	5:B:432:MET:HB2	2.04	0.57
5:B:1096:ARG:HG3	5:B:1097:HIS:CD2	2.39	0.57
6:C:11:ARG:HD3	6:C:209:TYR:OH	2.05	0.57
6:C:58:LEU:HD12	6:C:145:CYS:SG	2.45	0.57
1:R:8:G:H2'	1:R:9:G:H8	1.69	0.57
1:R:6:G:N3	1:R:7:A:N7	2.53	0.56
4:A:447:GLN:HG2	5:B:1134:GLU:OE2	2.05	0.56
4:A:1091:SER:C	4:A:1093:LYS:H	2.08	0.56
4:A:452:LYS:N	4:A:1070:GLN:OE1	2.37	0.56
5:B:345:LYS:CA	5:B:346:GLU:HB3	2.29	0.56
5:B:773:MET:CE	5:B:981:ALA:HB2	2.35	0.56
6:C:16:ASP:C	6:C:17:ASN:HD22	2.08	0.56
6:C:166:GLU:HG3	12:K:10:PHE:HZ	1.69	0.56
1:R:4:G:H2'	1:R:5:A:C8	2.40	0.56
4:A:56:PRO:C	4:A:57:ARG:HG3	2.25	0.56
4:A:587:HIS:HE1	4:A:969:GLN:HG3	1.68	0.56
4:A:1006:ILE:HD11	7:E:167:ARG:HB2	1.87	0.56
4:A:1116:LEU:HD13	4:A:1329:THR:OG1	2.05	0.56
4:A:1389:PHE:O	4:A:1392:SER:HB3	2.05	0.56
5:B:337:ARG:HB2	5:B:340:ALA:CB	2.35	0.56
5:B:647:GLY:CA	5:B:648:HIS:HB2	2.14	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:757:PRO:HG3	5:B:983:ARG:CZ	2.35	0.56
6:C:196:ASP:O	6:C:200:GLU:HB2	2.05	0.56
11:J:8:PHE:N	11:J:49:MET:HE3	2.20	0.56
4:A:807:GLY:HA3	5:B:728:ARG:NH2	2.20	0.56
5:B:208:SER:OG	5:B:210:LYS:NZ	2.38	0.56
5:B:1033:LYS:CD	11:J:44:TYR:HE1	2.19	0.56
9:H:84:ALA:HA	9:H:87:ARG:HB2	1.86	0.56
12:K:52:ASN:N	12:K:52:ASN:HD22	2.02	0.56
4:A:23:SER:O	4:A:27:VAL:HG23	2.06	0.56
5:B:63:ILE:O	5:B:67:SER:HB3	2.05	0.56
5:B:769:TYR:H	5:B:769:TYR:HD2	1.53	0.56
5:B:1159:ARG:HG3	5:B:1193:GLN:OE1	2.06	0.56
11:J:41:LEU:CB	11:J:47:ARG:HG2	2.36	0.56
1:R:8:G:N1	2:T:22:DT:N3	2.49	0.56
1:R:10:A:H2	2:T:19:DT:O2	1.88	0.56
4:A:218:ASP:H	4:A:219:PHE:HB3	1.70	0.56
4:A:341:MET:CE	5:B:1135:ARG:CZ	2.83	0.56
5:B:197:PHE:CD1	5:B:817:LEU:HD11	2.41	0.56
5:B:411:PRO:HA	5:B:414:ALA:HB3	1.88	0.56
5:B:711:GLU:HG3	5:B:711:GLU:O	2.06	0.56
5:B:1184:GLY:C	5:B:1186:ASP:H	2.09	0.56
4:A:117:GLU:C	4:A:118:HIS:O	2.44	0.56
4:A:256:GLN:HG3	4:A:257:ARG:H	1.69	0.56
4:A:409:SER:O	4:A:411:ASP:N	2.31	0.56
5:B:743:ILE:O	5:B:744:HIS:CB	2.54	0.56
6:C:37:MET:O	6:C:41:ILE:CD1	2.52	0.56
4:A:1444:MET:CG	4:A:1445:ILE:N	2.52	0.56
5:B:35:SER:HG	5:B:811:TYR:HE2	1.53	0.56
4:A:345:VAL:HG22	5:B:1128:LEU:O	2.06	0.56
5:B:797:TYR:HD2	5:B:852:ARG:HB2	1.70	0.56
4:A:117:GLU:H	4:A:118:HIS:HB2	1.71	0.56
4:A:754:SER:H	4:A:757:ASN:HD22	1.53	0.56
4:A:849:MET:HB3	4:A:1063:MET:SD	2.46	0.56
5:B:400:HIS:CE1	5:B:517:THR:HG21	2.42	0.56
5:B:807:ARG:HB2	5:B:1045:SER:OG	2.06	0.56
6:C:43:THR:HG22	6:C:44:LEU:H	1.71	0.56
5:B:770:GLN:NE2	5:B:1093:GLN:HE22	2.04	0.55
1:R:10:A:H2	2:T:19:DT:C2	2.23	0.55
4:A:131:SER:HB3	4:A:223:GLY:HA2	1.88	0.55
4:A:343:LYS:NZ	5:B:1197:PRO:CG	2.65	0.55
5:B:458:LYS:O	5:B:462:ALA:HB2	2.05	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:797:TYR:CD2	5:B:852:ARG:HB3	2.42	0.55
9:H:2:SER:HB2	9:H:3:ASN:HB3	1.76	0.55
4:A:15:LYS:HE2	5:B:1220:ARG:HG2	1.88	0.55
4:A:246:VAL:O	4:A:246:VAL:HG12	2.06	0.55
4:A:456:MET:HB2	4:A:478:TYR:OH	2.07	0.55
4:A:896:ARG:NH2	4:A:1030:ARG:HH21	2.04	0.55
4:A:1063:MET:HG2	4:A:1436:ILE:HG23	1.85	0.55
5:B:845:SER:C	5:B:847:ASP:H	2.10	0.55
4:A:350:ARG:HG3	4:A:350:ARG:NH1	2.21	0.55
4:A:1197:LEU:HD13	4:A:1209:MET:HE3	1.89	0.55
5:B:102:VAL:HG12	5:B:110:HIS:HB3	1.89	0.55
12:K:45:LEU:HG	12:K:94:ILE:HD13	1.88	0.55
1:R:2:U:H2'	1:R:3:C:H6	1.68	0.55
2:T:20:DC:H4'	4:A:447:GLN:NE2	2.22	0.55
4:A:265:LYS:HG2	4:A:303:TYR:HB2	1.87	0.55
4:A:590:ARG:NH2	4:A:620:LYS:O	2.38	0.55
6:C:239:PRO:O	6:C:241:ASP:N	2.40	0.55
6:C:241:ASP:O	6:C:245:VAL:HG23	2.07	0.55
8:F:93:ILE:CD1	8:F:134:ILE:HD11	2.33	0.55
5:B:63:ILE:HG22	5:B:64:CYS:N	2.21	0.55
5:B:1212:ILE:O	5:B:1214:PRO:HD3	2.06	0.55
10:I:44:TYR:HD2	10:I:44:TYR:C	2.09	0.55
5:B:334:ILE:HG22	5:B:348:ARG:HG3	1.89	0.55
6:C:37:MET:CA	6:C:41:ILE:HD11	2.37	0.55
6:C:73:GLN:NE2	6:C:237:SER:O	2.40	0.55
1:R:8:G:N2	2:T:22:DT:C4	2.74	0.55
4:A:691:LEU:HD13	4:A:695:LYS:HD3	1.89	0.55
5:B:913:GLY:HA2	5:B:938:SER:OG	2.07	0.55
5:B:999:MET:HE3	5:B:1011:ILE:HD11	1.89	0.55
5:B:1007:VAL:CG2	5:B:1008:PRO:HD2	2.37	0.55
1:R:5:A:N1	1:R:6:G:C6	2.74	0.55
5:B:341:LEU:CB	5:B:342:GLY:CA	2.83	0.55
5:B:343:ILE:O	5:B:345:LYS:HG3	2.07	0.55
5:B:848:ARG:CD	11:J:8:PHE:HA	2.36	0.55
11:J:7:CYS:HB2	11:J:49:MET:HE2	1.86	0.55
4:A:399:HIS:O	4:A:400:PRO:C	2.41	0.55
5:B:1087:PHE:HD2	5:B:1088:GLY:N	2.05	0.55
4:A:445:ASN:HA	4:A:454:SER:O	2.07	0.54
6:C:148:ARG:H	6:C:151:GLN:HG3	1.72	0.54
12:K:92:ASN:O	12:K:95:ILE:HB	2.06	0.54
1:R:9:G:P	5:B:776:GLN:NE2	2.80	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:42:ASP:OD2	4:A:45:GLN:HA	2.06	0.54
4:A:668:ASP:CG	4:A:742:ASN:HD22	2.10	0.54
4:A:1006:ILE:HG13	4:A:1007:ILE:HD12	1.90	0.54
5:B:341:LEU:HD12	5:B:343:ILE:HB	1.86	0.54
10:I:44:TYR:C	10:I:44:TYR:CD2	2.81	0.54
4:A:351:THR:O	4:A:486:GLU:HB2	2.08	0.54
5:B:777:ALA:HA	5:B:1095:LEU:HA	1.89	0.54
5:B:1106:ARG:CZ	5:B:1109:GLY:N	2.66	0.54
6:C:164:ALA:HB2	6:C:171:GLY:N	2.23	0.54
2:T:5:DC:H2'	2:T:6:DG:C8	2.43	0.54
4:A:353:ILE:HG21	4:A:487:MET:SD	2.48	0.54
4:A:608:ILE:O	4:A:608:ILE:HG22	2.07	0.54
5:B:261:ARG:N	5:B:264:SER:HB3	2.22	0.54
5:B:336:ARG:O	5:B:337:ARG:O	2.25	0.54
5:B:845:SER:C	5:B:847:ASP:N	2.60	0.54
10:I:106:CYS:SG	10:I:108:HIS:HB3	2.47	0.54
4:A:527:THR:HG21	4:A:650:GLN:HG2	1.89	0.54
5:B:235:SER:HG	5:B:236:HIS:HD1	1.55	0.54
5:B:1050:ILE:HG23	5:B:1055:ILE:CD1	2.37	0.54
10:I:63:GLY:HA3	10:I:104:LEU:HD11	1.89	0.54
4:A:120:GLU:O	4:A:121:LEU:HB2	2.07	0.54
5:B:343:ILE:HG13	5:B:344:LYS:N	2.18	0.54
5:B:639:ILE:HD11	5:B:691:GLU:HB2	1.90	0.54
5:B:764:SER:N	5:B:765:PRO:CD	2.71	0.54
6:C:235:VAL:CG1	11:J:13:VAL:HG22	2.38	0.54
4:A:629:LEU:HD22	4:A:633:VAL:HG23	1.90	0.54
5:B:54:PHE:HE1	5:B:414:ALA:HA	1.72	0.54
5:B:123:THR:HG23	5:B:205:ILE:HA	1.88	0.54
11:J:1:MET:H3	11:J:56:LEU:H	1.54	0.54
4:A:215:SER:HB3	4:A:218:ASP:OD2	2.08	0.54
4:A:366:VAL:HG22	4:A:468:PHE:CE2	2.43	0.54
4:A:608:ILE:O	4:A:609:ASP:HB3	2.07	0.54
4:A:704:ALA:N	4:A:705:LYS:HA	2.19	0.54
4:A:966:ASN:HB3	4:A:1044:TRP:HH2	1.73	0.54
5:B:44:VAL:HG11	5:B:495:LEU:HD22	1.89	0.54
5:B:341:LEU:HB2	5:B:343:ILE:N	2.23	0.54
5:B:774:GLY:HA2	5:B:777:ALA:HB3	1.90	0.54
6:C:209:TYR:CD1	6:C:209:TYR:N	2.76	0.54
7:E:28:TYR:HA	7:E:64:PRO:HA	1.90	0.54
7:E:77:SER:HB3	7:E:105:PHE:HA	1.89	0.54
4:A:907:THR:HG21	4:A:920:LEU:HD23	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:259:TYR:HB2	5:B:268:THR:HG23	1.89	0.54
12:K:24:ASP:HB3	12:K:30:ALA:HB3	1.90	0.54
2:T:21:DC:H2'	2:T:22:DT:C6	2.43	0.54
4:A:740:LEU:O	6:C:192:TRP:CD1	2.61	0.54
5:B:103:ASN:ND2	5:B:169:ARG:HH22	2.02	0.54
10:I:40:SER:C	10:I:42:LEU:H	2.12	0.54
2:T:18:DA:H2'	2:T:19:DT:C6	2.43	0.53
4:A:182:VAL:HG12	4:A:183:GLY:H	1.73	0.53
4:A:768:GLN:HB3	4:A:775:ILE:HD11	1.90	0.53
5:B:982:SER:N	5:B:1092:TYR:CE2	2.76	0.53
4:A:879:GLU:OE2	4:A:962:ARG:NH2	2.31	0.53
5:B:140:ILE:CB	5:B:141:ASP:CA	2.70	0.53
5:B:1051:THR:O	5:B:1055:ILE:HD13	2.08	0.53
6:C:134:ILE:HD12	6:C:141:GLY:H	1.72	0.53
6:C:166:GLU:O	12:K:6:ARG:CZ	2.56	0.53
10:I:106:CYS:SG	10:I:108:HIS:CB	2.96	0.53
4:A:341:MET:SD	4:A:1428:VAL:HG11	2.49	0.53
4:A:346:ASP:H	5:B:1154:ALA:HB1	1.73	0.53
4:A:662:PHE:HE1	4:A:742:ASN:HB3	1.73	0.53
4:A:901:LEU:HA	4:A:907:THR:HG22	1.88	0.53
4:A:1025:ARG:HG2	4:A:1025:ARG:NH1	2.21	0.53
6:C:98:VAL:H	6:C:122:SER:HB2	1.73	0.53
4:A:944:ARG:HE	4:A:1298:TYR:HE1	1.56	0.53
5:B:764:SER:OG	5:B:765:PRO:HD3	2.07	0.53
11:J:46:CYS:O	11:J:49:MET:HB2	2.09	0.53
4:A:50:ILE:O	4:A:56:PRO:HD3	2.09	0.53
6:C:106:GLU:HA	6:C:106:GLU:OE2	2.08	0.53
4:A:809:THR:HG23	5:B:730:ARG:HH21	1.73	0.53
5:B:833:TYR:OH	12:K:66:PRO:CG	2.57	0.53
9:H:135:LEU:O	9:H:137:GLN:N	2.41	0.53
11:J:53:HIS:CE1	11:J:55:ASP:OD1	2.59	0.53
1:R:7:A:N1	1:R:8:G:C5	2.77	0.53
4:A:95:PHE:HE2	4:A:1414:ALA:HB2	1.73	0.53
4:A:719:VAL:HG12	4:A:723:ASN:HD21	1.73	0.53
4:A:1444:MET:O	8:F:133:VAL:N	2.41	0.53
5:B:647:GLY:HA3	5:B:648:HIS:HB3	1.82	0.53
5:B:836:GLU:O	5:B:837:ASP:C	2.47	0.53
5:B:1072:MET:HE1	5:B:1085:ILE:HB	1.89	0.53
7:E:199:ILE:O	7:E:199:ILE:HG22	2.09	0.53
5:B:753:ALA:O	5:B:755:ILE:N	2.39	0.53
11:J:12:LYS:O	11:J:13:VAL:C	2.47	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:589:GLN:HB3	4:A:961:ARG:NH2	2.23	0.53
4:A:845:LEU:O	4:A:847:ASP:N	2.42	0.53
5:B:333:PHE:HB3	5:B:334:ILE:HA	1.91	0.53
5:B:370:PHE:O	5:B:372:SER:N	2.42	0.53
5:B:416:LEU:HD22	5:B:457:LEU:HD23	1.90	0.53
7:E:14:ARG:HB3	7:E:141:VAL:O	2.09	0.53
4:A:567:LYS:HB3	9:H:96:VAL:N	2.17	0.53
5:B:1081:LEU:O	5:B:1083:ALA:N	2.42	0.53
4:A:567:LYS:O	4:A:568:PRO:C	2.46	0.52
4:A:836:TYR:CE2	4:A:840:ARG:HD2	2.44	0.52
4:A:1004:ASN:CG	7:E:167:ARG:HD2	2.30	0.52
5:B:329:THR:HA	5:B:332:ASP:HB3	1.91	0.52
5:B:753:ALA:C	5:B:755:ILE:H	2.11	0.52
5:B:1086:PHE:HD2	5:B:1087:PHE:N	2.07	0.52
6:C:177:GLU:HG3	6:C:231:ASN:HD22	1.74	0.52
7:E:37:LEU:HD22	7:E:42:PHE:HB2	1.90	0.52
4:A:57:ARG:C	4:A:68:GLN:HG2	2.28	0.52
4:A:650:GLN:O	4:A:654:ASN:HB2	2.08	0.52
5:B:463:THR:CB	5:B:465:ASN:HD22	2.22	0.52
6:C:252:GLN:HE21	12:K:95:ILE:HG23	1.74	0.52
1:R:7:A:N1	1:R:8:G:C6	2.77	0.52
4:A:751:SER:OG	5:B:1015:HIS:CE1	2.63	0.52
4:A:1058:VAL:O	4:A:1060:PRO:HD3	2.09	0.52
7:E:64:PRO:HG3	7:E:76:GLY:HA2	1.90	0.52
2:T:22:DT:H2'	2:T:23:DC:C6	2.44	0.52
4:A:328:ARG:HD3	5:B:1206:GLU:OE1	2.09	0.52
4:A:856:THR:O	4:A:864:ILE:HG12	2.10	0.52
4:A:959:ASN:HD22	4:A:962:ARG:NH2	2.08	0.52
5:B:746:SER:HB2	5:B:1046:PRO:HG2	1.92	0.52
4:A:737:LEU:HD22	4:A:741:ASN:ND2	2.24	0.52
6:C:180:TYR:OH	6:C:188:HIS:HD2	1.93	0.52
4:A:827:THR:CG2	4:A:828:ALA:N	2.72	0.52
4:A:1353:TYR:C	4:A:1355:VAL:H	2.12	0.52
4:A:1394:THR:HB	4:A:1399:ARG:HD3	1.92	0.52
10:I:45:ARG:HE	10:I:47:GLU:HG2	1.74	0.52
5:B:757:PRO:CG	5:B:1028:GLU:OE2	2.46	0.52
6:C:57:VAL:CG1	11:J:60:PHE:HD2	2.23	0.52
11:J:8:PHE:N	11:J:49:MET:CE	2.70	0.52
11:J:43:ARG:C	11:J:47:ARG:HG3	2.29	0.52
4:A:265:LYS:C	4:A:267:ALA:H	2.13	0.52
4:A:1042:PHE:O	4:A:1045:VAL:N	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:1153:TYR:HB2	4:A:1192:LEU:HD23	1.90	0.52
5:B:1174:LYS:O	5:B:1177:HIS:O	2.28	0.52
5:B:1206:GLU:O	5:B:1210:MET:HB2	2.10	0.52
11:J:41:LEU:HB3	11:J:47:ARG:HG2	1.92	0.52
4:A:116:ASP:HA	4:A:117:GLU:HB2	1.85	0.52
5:B:402:GLY:HA3	5:B:695:ALA:HB3	1.92	0.52
5:B:1013:ASN:O	5:B:1014:PRO:C	2.48	0.52
9:H:137:GLN:C	9:H:139:ASN:N	2.60	0.52
4:A:503:GLN:OE1	4:A:503:GLN:HA	2.10	0.52
5:B:104:GLU:OE1	13:L:54:ARG:NH1	2.43	0.52
5:B:826:ALA:O	5:B:828:ALA:N	2.38	0.52
4:A:862:ASN:OD1	7:E:174:GLN:HA	2.09	0.51
5:B:343:ILE:H	5:B:345:LYS:NZ	2.08	0.51
4:A:133:LYS:HE3	4:A:1391:ARG:NH1	2.19	0.51
5:B:248:SER:H	5:B:418:LYS:HE3	1.75	0.51
5:B:834:ASN:HD21	5:B:1013:ASN:ND2	2.05	0.51
5:B:1060:ARG:HB2	5:B:1066:SER:HB3	1.91	0.51
6:C:124:LEU:O	6:C:126:GLY:N	2.43	0.51
2:T:26:DG:H4'	5:B:462:ALA:HB1	1.91	0.51
5:B:336:ARG:O	5:B:340:ALA:HB3	2.10	0.51
5:B:825:VAL:HA	5:B:1010:LEU:HB3	1.91	0.51
5:B:906:SER:O	5:B:909:ASP:OD2	2.27	0.51
10:I:32:CYS:O	10:I:33:SER:HB2	2.10	0.51
1:R:6:G:C2	1:R:7:A:C5	2.98	0.51
4:A:116:ASP:CA	4:A:117:GLU:CB	2.71	0.51
5:B:1156:ASP:HB3	5:B:1197:PRO:HA	1.92	0.51
7:E:61:GLN:HB2	7:E:79:TRP:HE3	1.75	0.51
11:J:3:VAL:HG23	11:J:53:HIS:CE1	2.46	0.51
11:J:8:PHE:H	11:J:49:MET:HE3	1.73	0.51
4:A:35:ILE:CG2	4:A:84:ILE:HD12	2.40	0.51
4:A:381:THR:HG21	4:A:383:TYR:CD1	2.45	0.51
4:A:672:ASP:HB2	4:A:736:ASN:HD21	1.76	0.51
5:B:1043:ASP:O	5:B:1050:ILE:HD13	2.10	0.51
4:A:669:THR:HG21	4:A:761:MET:HG3	1.92	0.51
4:A:1040:GLN:N	4:A:1041:ALA:CA	2.74	0.51
4:A:1072:ILE:HD11	4:A:1368:MET:HA	1.92	0.51
5:B:344:LYS:C	5:B:346:GLU:HB3	2.30	0.51
12:K:38:GLU:O	12:K:71:PHE:HD2	1.94	0.51
4:A:91:PHE:HA	4:A:235:ILE:HG22	1.92	0.51
4:A:360:GLU:CD	4:A:360:GLU:N	2.63	0.51
4:A:1197:LEU:HD13	4:A:1209:MET:CE	2.40	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:46:GLN:OE1	5:B:47:GLN:N	2.43	0.51
5:B:364:ILE:O	5:B:365:THR:HB	2.10	0.51
5:B:769:TYR:N	5:B:769:TYR:CD2	2.79	0.51
5:B:773:MET:C	5:B:775:LYS:N	2.64	0.51
6:C:124:LEU:C	6:C:126:GLY:N	2.62	0.51
11:J:5:VAL:CG1	11:J:6:ARG:H	2.07	0.51
4:A:55:ASP:O	4:A:57:ARG:N	2.44	0.51
4:A:323:LYS:HG2	4:A:324:SER:H	1.76	0.51
4:A:1410:PHE:CD2	5:B:1212:ILE:HD11	2.40	0.51
4:A:1448:GLU:CG	4:A:1449:SER:N	2.73	0.51
5:B:37:PHE:O	5:B:38:PHE:HB2	2.11	0.51
5:B:757:PRO:HG3	5:B:983:ARG:NH2	2.26	0.51
5:B:1069:PHE:HA	5:B:1086:PHE:HA	1.93	0.51
9:H:116:TYR:HE2	9:H:140:ALA:CB	2.24	0.51
11:J:23:ASN:HB3	11:J:24:LEU:HD12	1.92	0.51
4:A:116:ASP:HA	4:A:117:GLU:CB	2.41	0.51
4:A:218:ASP:HB2	4:A:219:PHE:HB2	1.93	0.51
5:B:637:LEU:HA	5:B:743:ILE:HD11	1.93	0.51
5:B:778:MET:CE	5:B:1094:ARG:HH11	2.22	0.51
6:C:52:GLU:HA	13:L:64:LEU:HD22	1.93	0.51
9:H:62:SER:OG	9:H:63:LEU:N	2.43	0.51
1:R:8:G:N2	2:T:22:DT:C6	2.79	0.51
4:A:446:ARG:HB2	4:A:487:MET:HE2	1.92	0.51
4:A:650:GLN:HB3	4:A:654:ASN:ND2	2.26	0.51
4:A:896:ARG:HD2	4:A:897:TYR:CE1	2.45	0.51
5:B:783:THR:HB	11:J:63:TYR:OH	2.11	0.51
4:A:349:ALA:HB1	4:A:370:ILE:HD13	1.92	0.50
4:A:662:PHE:CG	4:A:663:SER:N	2.79	0.50
4:A:709:THR:HG21	10:I:93:LYS:O	2.11	0.50
5:B:797:TYR:CD2	5:B:852:ARG:CB	2.95	0.50
2:T:20:DC:H2'	2:T:21:DC:O4'	2.11	0.50
5:B:1196:ILE:HD12	5:B:1200:ALA:HB3	1.92	0.50
4:A:92:HIS:HE1	5:B:1211:ASN:HB3	1.76	0.50
4:A:848:ILE:HG22	4:A:856:THR:HG22	1.94	0.50
5:B:969:ARG:NH1	6:C:61:GLU:OE1	2.45	0.50
7:E:23:VAL:HG12	7:E:30:ILE:HD11	1.93	0.50
1:R:10:A:H2	2:T:19:DT:N3	2.09	0.50
4:A:346:ASP:HB2	5:B:1154:ALA:CB	2.40	0.50
4:A:776:ALA:O	4:A:778:GLY:N	2.44	0.50
4:A:1447:GLU:HA	4:A:1448:GLU:HB3	1.61	0.50
5:B:398:ARG:HB3	5:B:398:ARG:HH11	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:545:ILE:HG23	5:B:631:GLY:HA2	1.94	0.50
7:E:127:ILE:O	7:E:127:ILE:HG12	2.12	0.50
5:B:257:LYS:HG3	5:B:259:TYR:HE1	1.77	0.50
5:B:637:LEU:HD12	5:B:740:HIS:HB3	1.91	0.50
5:B:837:ASP:O	5:B:988:GLY:HA2	2.11	0.50
7:E:180:ARG:HB2	7:E:215:MET:OXT	2.12	0.50
4:A:49:LYS:HZ1	4:A:61:ILE:H	1.60	0.50
4:A:663:SER:O	4:A:742:ASN:HB3	2.12	0.50
4:A:1037:LEU:HD22	4:A:1042:PHE:H	1.76	0.50
4:A:1341:ILE:HG21	7:E:178:ILE:HG13	1.92	0.50
4:A:1394:THR:HG21	4:A:1398:MET:CE	2.41	0.50
4:A:1425:SER:O	4:A:1429:ILE:HG13	2.11	0.50
5:B:235:SER:OG	5:B:236:HIS:ND1	2.44	0.50
5:B:848:ARG:HD2	11:J:8:PHE:O	2.11	0.50
5:B:999:MET:HG3	5:B:1000:PRO:CD	2.34	0.50
5:B:1133:MET:O	5:B:1136:ASP:HB2	2.12	0.50
11:J:41:LEU:O	11:J:47:ARG:NE	2.44	0.50
4:A:630:ILE:HD12	4:A:630:ILE:N	2.02	0.50
6:C:37:MET:C	6:C:41:ILE:HD11	2.30	0.50
6:C:166:GLU:HG3	12:K:10:PHE:CZ	2.45	0.50
4:A:457:ALA:HB3	4:A:506:ALA:HA	1.94	0.50
4:A:902:LEU:HG	4:A:926:GLN:HG3	1.93	0.50
5:B:293:PRO:HG2	5:B:296:GLU:HB2	1.94	0.50
2:T:24:DT:H2"	2:T:25:DC:C6	2.47	0.49
4:A:390:GLN:O	4:A:393:ARG:O	2.31	0.49
4:A:1444:MET:HB2	4:A:1445:ILE:CB	2.42	0.49
5:B:544:CYS:HB3	5:B:634:TYR:CZ	2.47	0.49
7:E:88:VAL:HB	7:E:116:ILE:HD13	1.93	0.49
8:F:138:LEU:HB3	8:F:139:PRO:HD2	1.93	0.49
4:A:33:ALA:HB2	4:A:82:GLY:HA2	1.93	0.49
5:B:333:PHE:HB3	5:B:334:ILE:CB	2.42	0.49
5:B:755:ILE:HD12	5:B:814:PHE:CE1	2.48	0.49
5:B:769:TYR:HD2	5:B:769:TYR:N	2.08	0.49
5:B:886:LYS:CB	5:B:887:HIS:CA	2.58	0.49
6:C:57:VAL:CG1	11:J:60:PHE:CB	2.90	0.49
11:J:36:LEU:HD11	11:J:51:LEU:CD1	2.42	0.49
4:A:908:LEU:HB3	4:A:912:LEU:HD12	1.94	0.49
8:F:148:VAL:HG12	8:F:148:VAL:O	2.13	0.49
5:B:132:VAL:CG2	5:B:165:VAL:HG21	2.42	0.49
5:B:770:GLN:HE22	5:B:1093:GLN:HE22	1.58	0.49
5:B:833:TYR:OH	12:K:66:PRO:HG3	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:137:TYR:CD2	8:F:143:PHE:HB3	2.48	0.49
4:A:827:THR:HG22	4:A:828:ALA:H	1.78	0.49
5:B:1119:VAL:O	5:B:1126:GLY:CA	2.61	0.49
9:H:2:SER:N	9:H:3:ASN:C	2.66	0.49
11:J:64:ASN:N	11:J:65:PRO:HD2	2.26	0.49
2:T:20:DC:O5'	2:T:20:DC:H6	1.96	0.49
4:A:53:LEU:CG	4:A:54:ASN:N	2.71	0.49
5:B:179:CYS:SG	5:B:180:TYR:N	2.86	0.49
5:B:708:GLU:C	5:B:710:LEU:N	2.66	0.49
4:A:271:LYS:O	4:A:275:SER:HB2	2.12	0.49
4:A:399:HIS:CB	4:A:400:PRO:HD3	2.42	0.49
5:B:711:GLU:H	5:B:712:PRO:HD3	1.70	0.49
5:B:848:ARG:HD2	11:J:8:PHE:CA	2.41	0.49
8:F:147:SER:C	8:F:149:GLU:N	2.66	0.49
13:L:69:ALA:O	13:L:70:ARG:HG2	2.12	0.49
1:R:8:G:O2'	1:R:9:G:O5'	2.29	0.49
4:A:33:ALA:CB	4:A:82:GLY:HA2	2.43	0.49
4:A:381:THR:CG2	4:A:382:PRO:HD2	2.42	0.49
4:A:540:PHE:HB3	4:A:571:LEU:HD12	1.95	0.49
4:A:590:ARG:O	4:A:591:PHE:HB2	2.13	0.49
5:B:213:ILE:CD1	5:B:481:GLN:OE1	2.61	0.49
5:B:880:THR:O	5:B:933:SER:HB2	2.13	0.49
6:C:31:ASN:ND2	6:C:35:ARG:HD2	2.28	0.49
11:J:28:ASP:O	11:J:30:LEU:N	2.46	0.49
4:A:446:ARG:HB2	4:A:487:MET:HE3	1.94	0.49
4:A:853:ASP:CG	4:A:855:THR:HG22	2.33	0.49
4:A:1118:VAL:HG12	4:A:1327:ILE:HD11	1.95	0.49
5:B:391:ASP:HB3	10:I:92:ARG:HB2	1.94	0.49
5:B:829:CYS:SG	5:B:1014:PRO:CG	2.86	0.49
6:C:44:LEU:HD22	6:C:129:ILE:CG2	2.43	0.49
6:C:62:PHE:O	6:C:63:ILE:C	2.50	0.49
6:C:164:ALA:HB2	6:C:171:GLY:HA2	1.93	0.49
8:F:116:ASP:HB3	8:F:119:ARG:HG3	1.94	0.49
11:J:7:CYS:C	11:J:49:MET:HE3	2.32	0.49
4:A:315:LEU:HD23	4:A:320:ARG:HH21	1.78	0.49
5:B:910:VAL:HG13	5:B:938:SER:HB3	1.95	0.49
5:B:980:PHE:HE1	5:B:990:ILE:HD11	1.77	0.49
6:C:99:LEU:HB2	6:C:157:CYS:HB2	1.94	0.49
4:A:35:ILE:HG21	4:A:84:ILE:HD12	1.94	0.48
4:A:334:GLY:O	4:A:336:ILE:N	2.46	0.48
4:A:873:MET:HG2	4:A:957:PRO:HG3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:515:HIS:CD2	5:B:517:THR:H	2.30	0.48
5:B:906:SER:HA	5:B:946:ASN:HA	1.95	0.48
11:J:1:MET:HB2	11:J:56:LEU:HD12	1.95	0.48
4:A:297:GLN:O	4:A:299:HIS:O	2.31	0.48
4:A:444:PHE:HE2	4:A:470:LEU:HD22	1.77	0.48
4:A:1433:MET:CE	5:B:1145:SER:HB3	2.43	0.48
5:B:708:GLU:HG3	5:B:709:ASP:H	1.78	0.48
5:B:711:GLU:H	5:B:712:PRO:HD2	1.78	0.48
1:R:5:A:H2'	1:R:6:G:H8	1.77	0.48
2:T:18:DA:H2''	2:T:19:DT:C5'	2.44	0.48
4:A:30:ILE:HG23	5:B:1170:THR:HG23	1.94	0.48
4:A:472:LEU:HD11	5:B:835:GLN:NE2	2.28	0.48
4:A:663:SER:CB	5:B:1085:ILE:HA	2.43	0.48
4:A:760:GLN:NE2	4:A:765:VAL:HA	2.29	0.48
4:A:821:ARG:HH12	5:B:514:LEU:HD13	1.78	0.48
5:B:801:LYS:O	5:B:801:LYS:HG3	2.12	0.48
5:B:841:MET:HG3	5:B:1009:ASP:O	2.14	0.48
5:B:1174:LYS:HB2	5:B:1179:GLN:O	2.13	0.48
12:K:10:PHE:N	12:K:10:PHE:CD2	2.81	0.48
4:A:709:THR:HB	4:A:712:GLU:HB2	1.94	0.48
4:A:850:VAL:HG21	4:A:1058:VAL:HG11	1.94	0.48
4:A:1116:LEU:HB2	4:A:1308:THR:HB	1.96	0.48
11:J:1:MET:O	11:J:2:ILE:O	2.32	0.48
11:J:1:MET:H1	11:J:57:ILE:H	1.62	0.48
12:K:6:ARG:C	12:K:8:GLU:H	2.17	0.48
5:B:840:ILE:HG21	5:B:994:TYR:CD1	2.47	0.48
11:J:56:LEU:C	11:J:58:GLU:N	2.62	0.48
5:B:658:ILE:HA	5:B:661:LEU:HD12	1.95	0.48
5:B:754:SER:C	5:B:755:ILE:HG12	2.33	0.48
7:E:59:SER:OG	7:E:81:GLU:HG3	2.13	0.48
2:T:19:DT:H2'	2:T:20:DC:O5'	2.14	0.48
4:A:370:ILE:C	4:A:372:LYS:N	2.67	0.48
4:A:851:HIS:ND1	4:A:857:ARG:HD2	2.29	0.48
4:A:1319:VAL:HG12	4:A:1320:PRO:O	2.14	0.48
5:B:635:ARG:HB2	5:B:636:PRO:HD2	1.94	0.48
5:B:653:VAL:CG1	5:B:689:LEU:HD13	2.41	0.48
5:B:762:ASN:HB2	5:B:767:ASN:HD21	1.79	0.48
5:B:843:GLN:N	5:B:994:TYR:O	2.44	0.48
5:B:882:THR:HG23	5:B:883:LEU:N	2.28	0.48
7:E:112:TYR:HE2	7:E:134:THR:HB	1.77	0.48
5:B:744:HIS:HA	5:B:745:PRO:HD3	1.63	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:882:THR:HG23	5:B:883:LEU:H	1.77	0.48
6:C:258:ILE:CD1	12:K:42:LEU:HD21	2.44	0.48
9:H:2:SER:N	9:H:3:ASN:CA	2.77	0.48
4:A:442:VAL:O	4:A:457:ALA:HA	2.13	0.48
4:A:541:ILE:HG22	4:A:545:GLN:NE2	2.28	0.48
5:B:824:ILE:HD11	11:J:48:ARG:HH21	1.76	0.48
5:B:1085:ILE:O	5:B:1086:PHE:C	2.52	0.48
6:C:209:TYR:N	6:C:209:TYR:HD1	2.11	0.48
9:H:2:SER:CA	9:H:3:ASN:CB	2.65	0.48
4:A:667:GLY:CA	4:A:670:ILE:HG12	2.33	0.48
4:A:778:GLY:HA3	5:B:516:ASN:HB2	1.96	0.48
5:B:493:SER:O	5:B:495:LEU:N	2.47	0.48
5:B:743:ILE:O	5:B:744:HIS:HB2	2.13	0.48
7:E:135:PHE:HB3	7:E:140:LEU:HD11	1.95	0.48
1:R:8:G:O3'	5:B:776:GLN:NE2	2.47	0.47
5:B:980:PHE:O	5:B:987:LYS:O	2.32	0.47
5:B:1166:CYS:O	5:B:1215:ARG:NH1	2.47	0.47
4:A:368:LYS:O	4:A:370:ILE:N	2.47	0.47
4:A:658:LEU:HD21	5:B:1076:HIS:HD2	1.80	0.47
4:A:1161:THR:HG22	4:A:1163:ILE:H	1.79	0.47
5:B:653:VAL:HG12	5:B:689:LEU:CD1	2.42	0.47
5:B:827:ILE:HG22	5:B:827:ILE:O	2.13	0.47
10:I:118:ARG:NH1	10:I:118:ARG:CG	2.64	0.47
4:A:423:ASP:CG	4:A:424:ILE:N	2.64	0.47
4:A:920:LEU:HD13	4:A:920:LEU:O	2.14	0.47
4:A:947:PHE:CE2	4:A:954:TRP:CE2	3.02	0.47
4:A:1059:HIS:CE1	8:F:155:LEU:HD21	2.42	0.47
5:B:778:MET:HE3	5:B:1094:ARG:HD2	1.90	0.47
5:B:824:ILE:CD1	11:J:48:ARG:NH2	2.76	0.47
4:A:68:GLN:O	4:A:68:GLN:CD	2.53	0.47
4:A:330:LYS:O	4:A:334:GLY:HA3	2.14	0.47
4:A:675:THR:HA	4:A:678:GLU:HB2	1.95	0.47
5:B:241:ARG:HA	5:B:253:THR:HG22	1.95	0.47
5:B:842:ASN:HB2	5:B:1009:ASP:HA	1.96	0.47
6:C:173:ALA:O	6:C:174:ALA:HB3	2.15	0.47
11:J:36:LEU:CD1	11:J:51:LEU:HD13	2.44	0.47
4:A:1064:VAL:O	4:A:1064:VAL:CG1	2.62	0.47
5:B:558:LEU:C	5:B:560:GLU:H	2.17	0.47
5:B:1007:VAL:HG23	5:B:1008:PRO:HD2	1.97	0.47
5:B:1055:ILE:O	5:B:1056:SER:C	2.52	0.47
5:B:1121:GLY:O	5:B:1124:ARG:N	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:K:82:ASP:HA	12:K:83:PRO:HD2	1.71	0.47
4:A:760:GLN:HE21	4:A:765:VAL:HA	1.78	0.47
4:A:1447:GLU:CA	4:A:1448:GLU:CG	2.67	0.47
5:B:471:LYS:HD2	5:B:471:LYS:O	2.14	0.47
11:J:43:ARG:O	11:J:47:ARG:HG3	2.14	0.47
4:A:242:PRO:HD2	4:A:266:LEU:HD11	1.96	0.47
4:A:264:PHE:O	4:A:268:ASP:HB2	2.15	0.47
4:A:525:GLN:CB	5:B:835:GLN:HG2	2.45	0.47
4:A:807:GLY:HA3	5:B:728:ARG:HH21	1.78	0.47
4:A:944:ARG:HD3	4:A:1298:TYR:OH	2.15	0.47
5:B:758:PHE:HD2	5:B:761:HIS:CD2	2.33	0.47
5:B:995:ARG:HD2	5:B:997:GLU:OE2	2.15	0.47
5:B:1084:GLN:NE2	6:C:189:THR:HG22	2.29	0.47
6:C:144:ILE:HG22	6:C:145:CYS:CB	2.42	0.47
1:R:3:C:H2'	1:R:4:G:C8	2.50	0.47
5:B:824:ILE:CD1	11:J:48:ARG:HH21	2.27	0.47
5:B:835:GLN:O	5:B:836:GLU:O	2.33	0.47
5:B:941:LEU:HD21	5:B:946:ASN:N	2.30	0.47
5:B:942:ARG:HB2	5:B:945:GLU:HB2	1.96	0.47
7:E:121:MET:HA	7:E:124:VAL:HG23	1.96	0.47
11:J:45:CYS:O	11:J:48:ARG:HG3	2.14	0.47
4:A:250:ILE:HD11	5:B:1113:VAL:HG21	1.96	0.47
4:A:483:ASP:HB2	5:B:987:LYS:CE	2.43	0.47
4:A:789:LYS:HD3	5:B:620:ARG:HH12	1.79	0.47
4:A:1410:PHE:O	4:A:1412:ALA:N	2.48	0.47
5:B:70:ILE:HD13	5:B:70:ILE:HA	1.84	0.47
5:B:210:LYS:NZ	5:B:482:VAL:HG13	2.30	0.47
5:B:213:ILE:HD11	5:B:481:GLN:OE1	2.15	0.47
5:B:1015:HIS:O	5:B:1017:ILE:N	2.48	0.47
6:C:180:TYR:CE1	6:C:188:HIS:HD2	2.32	0.47
9:H:2:SER:N	9:H:3:ASN:CB	2.78	0.47
11:J:5:VAL:HG12	11:J:6:ARG:HG2	1.96	0.47
1:R:5:A:C2	1:R:6:G:C6	3.02	0.47
4:A:784:LEU:HB3	4:A:785:PRO:CD	2.44	0.47
4:A:908:LEU:HD22	4:A:1032:LEU:HD12	1.97	0.47
4:A:1098:VAL:N	4:A:1099:PRO:HD2	2.30	0.47
5:B:800:GLN:OE1	5:B:822:ASN:N	2.37	0.47
6:C:194:GLU:H	6:C:194:GLU:HG3	1.46	0.47
4:A:1171:GLN:N	4:A:1172:LEU:O	2.48	0.46
4:A:1322:ILE:HG12	4:A:1323:ASP:N	2.30	0.46
5:B:386:LEU:C	5:B:388:CYS:H	2.18	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:1050:ILE:HG23	5:B:1055:ILE:HD11	1.97	0.46
5:B:1099:VAL:C	5:B:1101:ASP:N	2.68	0.46
9:H:118:PHE:HE1	9:H:123:MET:HB2	1.80	0.46
13:L:55:ILE:O	13:L:56:LEU:CB	2.62	0.46
4:A:64:ASN:C	4:A:66:LYS:H	2.18	0.46
4:A:312:PRO:C	4:A:313:GLN:HE21	2.17	0.46
4:A:596:THR:C	4:A:598:LEU:H	2.19	0.46
4:A:761:MET:HA	4:A:804:TYR:H	1.80	0.46
4:A:870:GLU:HB2	7:E:204:THR:CG2	2.44	0.46
5:B:967:ARG:HG2	5:B:967:ARG:HH11	1.80	0.46
11:J:48:ARG:HH11	11:J:49:MET:CE	2.24	0.46
4:A:871:ASP:HA	4:A:1014:ALA:HB1	1.97	0.46
5:B:345:LYS:N	5:B:346:GLU:HB2	2.31	0.46
7:E:65:THR:C	7:E:67:GLU:N	2.69	0.46
1:R:8:G:H2'	1:R:9:G:O5'	2.15	0.46
1:R:10:A:H4'	4:A:485:ASP:OD1	2.15	0.46
1:R:10:A:OP1	5:B:979:LYS:HE3	2.15	0.46
4:A:737:LEU:CB	4:A:738:LYS:HB2	2.44	0.46
4:A:875:ALA:HB2	4:A:1366:ARG:CD	2.46	0.46
4:A:1171:GLN:H	4:A:1172:LEU:C	2.19	0.46
5:B:492:LEU:HD23	5:B:492:LEU:HA	1.70	0.46
5:B:941:LEU:HG	5:B:942:ARG:N	2.30	0.46
11:J:7:CYS:N	11:J:14:VAL:HG22	2.29	0.46
4:A:665:GLY:O	4:A:668:ASP:HB2	2.16	0.46
4:A:901:LEU:H	4:A:926:GLN:HE21	1.61	0.46
5:B:254:LEU:HG	5:B:255:GLN:N	2.30	0.46
5:B:778:MET:O	5:B:796:LEU:HD11	2.14	0.46
5:B:1121:GLY:O	5:B:1122:ARG:C	2.53	0.46
6:C:90:ASP:O	6:C:91:HIS:HB3	2.16	0.46
4:A:115:LEU:HD21	4:A:145:LYS:HD2	1.97	0.46
4:A:393:ARG:O	4:A:394:ASN:CB	2.51	0.46
5:B:592:ASN:HD21	5:B:595:ARG:HD2	1.80	0.46
5:B:918:ILE:HD13	5:B:918:ILE:HA	1.80	0.46
6:C:11:ARG:HD3	6:C:209:TYR:CE2	2.51	0.46
8:F:107:VAL:HG12	8:F:109:VAL:H	1.80	0.46
1:R:6:G:C2	1:R:7:A:N7	2.84	0.46
4:A:18:GLN:NE2	4:A:1418:LEU:HD12	2.30	0.46
4:A:450:LEU:H	4:A:450:LEU:HD12	1.80	0.46
4:A:482:PHE:C	4:A:484:GLY:H	2.19	0.46
4:A:534:LEU:O	4:A:574:GLY:HA3	2.15	0.46
4:A:1433:MET:HE2	5:B:1145:SER:HB3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:275:TYR:O	5:B:336:ARG:NH2	2.47	0.46
9:H:96:VAL:HG23	9:H:143:LEU:HG	1.98	0.46
2:T:15:DA:C2'	2:T:16:DC:O5'	2.62	0.46
4:A:18:GLN:HB3	5:B:1215:ARG:HB2	1.98	0.46
4:A:53:LEU:O	4:A:54:ASN:C	2.54	0.46
4:A:70:CYS:HB2	5:B:1172:ILE:CG2	2.46	0.46
4:A:375:THR:HA	4:A:434:ARG:O	2.16	0.46
4:A:481:ASP:OD2	16:A:2003[B]:UTP:O2A	2.34	0.46
4:A:827:THR:C	4:A:829:VAL:N	2.66	0.46
4:A:1446:ASP:O	4:A:1448:GLU:HG2	2.16	0.46
5:B:210:LYS:HD3	5:B:210:LYS:HA	1.73	0.46
5:B:258:LEU:HB2	5:B:385:LEU:HD21	1.98	0.46
5:B:1072:MET:HE3	5:B:1085:ILE:HD12	1.98	0.46
11:J:1:MET:H1	11:J:57:ILE:N	2.14	0.46
11:J:48:ARG:O	11:J:52:THR:OG1	2.34	0.46
4:A:1144:LYS:HG3	4:A:1268:LEU:HB3	1.96	0.46
7:E:169:ARG:HD3	8:F:138:LEU:HD22	1.96	0.46
11:J:44:TYR:HA	11:J:47:ARG:CG	2.45	0.46
4:A:341:MET:HE3	5:B:1135:ARG:CZ	2.46	0.45
4:A:578:LEU:C	4:A:580:VAL:H	2.19	0.45
4:A:862:ASN:HA	7:E:174:GLN:HB3	1.97	0.45
5:B:25:ILE:CG2	5:B:29:ASP:HB2	2.44	0.45
5:B:579:ARG:HD2	5:B:586:TRP:CZ2	2.51	0.45
5:B:997:GLU:H	5:B:997:GLU:HG3	1.42	0.45
4:A:171:GLN:HG3	4:A:172:PRO:HD2	1.98	0.45
4:A:218:ASP:O	4:A:221:SER:HB2	2.16	0.45
4:A:1105:LEU:HD22	4:A:1384:VAL:HG21	1.99	0.45
4:A:1410:PHE:C	4:A:1412:ALA:H	2.20	0.45
5:B:402:GLY:CA	5:B:695:ALA:HB3	2.46	0.45
5:B:408:LEU:C	5:B:410:GLY:N	2.67	0.45
5:B:841:MET:HG3	5:B:842:ASN:H	1.81	0.45
6:C:82:TYR:HB3	6:C:84:ARG:HG2	1.98	0.45
2:T:19:DT:C2'	2:T:20:DC:O5'	2.64	0.45
4:A:1155:ASP:OD2	4:A:1161:THR:HA	2.17	0.45
4:A:1341:ILE:CG2	7:E:178:ILE:HG13	2.45	0.45
5:B:287:ARG:HD3	5:B:292:ILE:HA	1.97	0.45
5:B:516:ASN:HD22	5:B:516:ASN:N	2.04	0.45
6:C:57:VAL:CG1	11:J:60:PHE:CD2	2.99	0.45
11:J:16:ASP:OD1	11:J:16:ASP:N	2.50	0.45
4:A:312:PRO:O	4:A:313:GLN:NE2	2.39	0.45
4:A:323:LYS:O	4:A:324:SER:CB	2.64	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:563:PRO:HG3	4:A:572:TRP:CZ2	2.52	0.45
4:A:679:ILE:HG23	4:A:729:ALA:HB1	1.98	0.45
5:B:333:PHE:CB	5:B:334:ILE:CB	2.94	0.45
5:B:705:MET:HA	5:B:705:MET:HE3	1.97	0.45
5:B:795:ILE:O	5:B:854:LEU:N	2.40	0.45
4:A:672:ASP:HB2	4:A:736:ASN:ND2	2.32	0.45
4:A:1341:ILE:HG22	7:E:182:ASP:OD2	2.17	0.45
4:A:1364:ASN:HD22	4:A:1365:TYR:N	2.14	0.45
5:B:412:LEU:HA	5:B:412:LEU:HD23	1.67	0.45
5:B:793:ALA:HB3	5:B:856:PHE:CB	2.43	0.45
5:B:893:LEU:HD13	5:B:897:GLY:O	2.17	0.45
5:B:996:ARG:NH1	11:J:10:CYS:O	2.46	0.45
7:E:105:PHE:HB3	7:E:106:GLN:H	1.62	0.45
11:J:12:LYS:O	11:J:14:VAL:HG13	2.15	0.45
11:J:25:LEU:HB3	11:J:30:LEU:O	2.17	0.45
4:A:737:LEU:HA	4:A:738:LYS:CG	2.45	0.45
4:A:1072:ILE:O	4:A:1072:ILE:HG22	2.16	0.45
5:B:273:LEU:HD11	5:B:285:ILE:HD12	1.98	0.45
5:B:696:GLU:O	5:B:699:GLU:HB2	2.17	0.45
5:B:724:ASP:HA	5:B:725:PRO:HD3	1.80	0.45
5:B:1178:ASN:O	5:B:1179:GLN:C	2.55	0.45
12:K:37:LYS:HA	12:K:69:ALA:HB3	1.97	0.45
4:A:396:PRO:HG3	4:A:416:ARG:HB3	1.98	0.45
4:A:464:PRO:HB2	12:K:4:PRO:HD3	1.99	0.45
4:A:660:ASN:C	4:A:660:ASN:ND2	2.70	0.45
4:A:860:LEU:HD21	4:A:1393:ASN:O	2.16	0.45
4:A:920:LEU:HD22	4:A:920:LEU:C	2.36	0.45
4:A:1128:GLN:HG2	4:A:1304:TRP:NE1	2.32	0.45
5:B:202:TYR:HB3	5:B:211:VAL:HG22	1.97	0.45
5:B:331:LEU:C	5:B:334:ILE:HG13	2.37	0.45
5:B:624:LEU:C	5:B:624:LEU:HD12	2.37	0.45
5:B:828:ALA:HB2	5:B:1085:ILE:HG23	1.94	0.45
5:B:1050:ILE:HG23	5:B:1055:ILE:HD13	1.99	0.45
6:C:76:ASP:N	6:C:76:ASP:OD1	2.49	0.45
12:K:101:LEU:O	12:K:101:LEU:HD22	2.16	0.45
1:R:1:A:C2	1:R:2:U:C4	3.05	0.45
4:A:403:LYS:O	4:A:415:LEU:CD1	2.65	0.45
4:A:737:LEU:HD13	4:A:744:LYS:HB2	1.98	0.45
4:A:1376:THR:HG22	7:E:212:ARG:NH2	2.29	0.45
5:B:581:PHE:HB2	5:B:625:LYS:HA	1.98	0.45
5:B:873:THR:O	5:B:914:LYS:HA	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:166:GLU:O	12:K:6:ARG:NH1	2.50	0.45
7:E:65:THR:C	7:E:67:GLU:H	2.19	0.45
7:E:197:LYS:HE3	7:E:199:ILE:HD11	1.98	0.45
4:A:21:LEU:HD23	4:A:22:PHE:H	1.81	0.45
5:B:762:ASN:OD1	5:B:984:HIS:HD2	1.99	0.45
6:C:120:ILE:H	6:C:120:ILE:HD12	1.81	0.45
4:A:222:LEU:HD12	4:A:222:LEU:O	2.17	0.45
4:A:481:ASP:OD1	4:A:483:ASP:CG	2.56	0.45
4:A:814:PHE:CE1	5:B:514:LEU:HD21	2.52	0.45
4:A:1345:ARG:HG2	4:A:1372:VAL:CG1	2.47	0.45
5:B:1065:GLN:HG3	5:B:1065:GLN:O	2.16	0.45
4:A:1340:GLY:HA2	7:E:183:PRO:HD2	1.99	0.44
5:B:254:LEU:CD2	5:B:361:LEU:HD11	2.46	0.44
5:B:1027:ILE:O	5:B:1029:CYS:N	2.50	0.44
5:B:1184:GLY:C	5:B:1186:ASP:N	2.70	0.44
9:H:93:TYR:HB3	9:H:144:ILE:O	2.17	0.44
4:A:260:ASP:CG	4:A:261:ASP:N	2.71	0.44
4:A:403:LYS:CB	4:A:404:TYR:HD1	2.31	0.44
4:A:406:ILE:O	4:A:430:TRP:HB3	2.17	0.44
4:A:867:ILE:O	4:A:868:TYR:C	2.55	0.44
4:A:1025:ARG:HH11	4:A:1025:ARG:HG3	1.76	0.44
4:A:1027:ALA:O	4:A:1031:VAL:HG23	2.17	0.44
4:A:1110:ASN:H	4:A:1110:ASN:ND2	2.14	0.44
5:B:702:LEU:HD21	5:B:735:ALA:HB1	1.98	0.44
5:B:848:ARG:HG3	11:J:8:PHE:HA	1.99	0.44
5:B:1198:TYR:CD2	5:B:1198:TYR:O	2.70	0.44
6:C:131:HIS:O	6:C:132:PRO:C	2.55	0.44
8:F:82:THR:HG22	8:F:84:TYR:HB2	1.99	0.44
8:F:130:ILE:HA	8:F:131:PRO:HD3	1.75	0.44
4:A:567:LYS:HD3	9:H:95:TYR:CG	2.52	0.44
4:A:645:LEU:HD11	4:A:649:ILE:HD11	1.98	0.44
4:A:665:GLY:CA	5:B:1086:PHE:CD1	2.79	0.44
4:A:1198:ASP:HB3	4:A:1201:ALA:HB3	1.99	0.44
5:B:261:ARG:H	5:B:264:SER:HB3	1.83	0.44
5:B:1080:LYS:HB2	6:C:188:HIS:HB3	1.99	0.44
6:C:167:HIS:CD2	6:C:169:LYS:H	2.35	0.44
4:A:70:CYS:HB2	5:B:1172:ILE:HG22	1.99	0.44
4:A:262:LEU:HB2	4:A:323:LYS:HE3	1.99	0.44
4:A:1089:VAL:HG11	4:A:1092:LYS:HD3	1.99	0.44
4:A:1400:CYS:C	4:A:1402:PHE:H	2.20	0.44
5:B:212:LEU:HD12	5:B:409:ALA:CB	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:341:LEU:HD12	5:B:343:ILE:CG2	2.48	0.44
5:B:470:LYS:C	5:B:472:ALA:H	2.21	0.44
5:B:979:LYS:HE2	5:B:987:LYS:HD2	1.99	0.44
6:C:138:GLU:OE1	6:C:138:GLU:N	2.50	0.44
10:I:65:ASP:HA	10:I:66:PRO:HD3	1.84	0.44
11:J:7:CYS:HA	11:J:49:MET:CE	2.38	0.44
4:A:50:ILE:HG22	4:A:51:GLY:H	1.82	0.44
4:A:265:LYS:CG	4:A:303:TYR:HB2	2.47	0.44
4:A:350:ARG:NH1	4:A:488:ASN:OD1	2.50	0.44
4:A:446:ARG:HD2	4:A:478:TYR:O	2.18	0.44
4:A:909:ASP:HA	4:A:910:PRO:HD2	1.83	0.44
4:A:1025:ARG:CG	4:A:1025:ARG:NH1	2.62	0.44
4:A:1393:ASN:HD22	4:A:1393:ASN:N	2.16	0.44
5:B:493:SER:C	5:B:495:LEU:H	2.21	0.44
5:B:745:PRO:HB2	5:B:1047:PHE:CD1	2.52	0.44
9:H:93:TYR:HD1	9:H:143:LEU:HB3	1.82	0.44
9:H:94:ASP:OD1	9:H:94:ASP:N	2.50	0.44
11:J:7:CYS:HB2	11:J:49:MET:HG2	1.99	0.44
11:J:56:LEU:O	11:J:59:LYS:N	2.43	0.44
4:A:332:LYS:O	4:A:333:GLU:HB2	2.17	0.44
4:A:719:VAL:O	4:A:723:ASN:ND2	2.51	0.44
4:A:1223:ASP:HA	4:A:1243:VAL:HB	2.00	0.44
5:B:212:LEU:CD1	5:B:409:ALA:HA	2.43	0.44
5:B:475:SER:C	5:B:477:ALA:N	2.69	0.44
4:A:416:ARG:CG	4:A:416:ARG:NH1	2.57	0.44
4:A:453:MET:C	4:A:455:MET:H	2.20	0.44
4:A:979:SER:OG	4:A:981:LEU:HD12	2.17	0.44
5:B:1215:ARG:HB3	5:B:1217:TYR:HE1	1.82	0.44
9:H:123:MET:HE2	9:H:142:LEU:HD13	1.99	0.44
4:A:438:ASP:HA	4:A:460:VAL:O	2.17	0.44
4:A:1112:LYS:O	4:A:1114:PRO:HD3	2.18	0.44
5:B:38:PHE:O	5:B:39:ARG:C	2.56	0.44
5:B:195:CYS:SG	5:B:197:PHE:N	2.90	0.44
5:B:332:ASP:O	5:B:332:ASP:CG	2.55	0.44
5:B:385:LEU:HD23	5:B:386:LEU:HD23	2.00	0.44
6:C:46:ILE:HD13	6:C:159:ALA:HB2	2.00	0.44
6:C:84:ARG:CD	12:K:11:LEU:HD11	2.47	0.44
8:F:125:LEU:HG	8:F:125:LEU:O	2.17	0.44
9:H:135:LEU:C	9:H:137:GLN:H	2.21	0.44
4:A:469:ARG:HB3	4:A:469:ARG:CZ	2.48	0.43
4:A:789:LYS:O	4:A:790:ASP:HB2	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:886:ILE:HG21	4:A:950:GLY:O	2.18	0.43
4:A:1356:ILE:HG21	4:A:1363:VAL:HG23	1.99	0.43
5:B:337:ARG:CG	5:B:339:THR:HG23	2.45	0.43
5:B:337:ARG:CB	5:B:340:ALA:H	2.28	0.43
5:B:996:ARG:HE	6:C:38:ILE:HD12	1.83	0.43
5:B:1015:HIS:C	5:B:1017:ILE:N	2.69	0.43
5:B:1073:TYR:CE2	5:B:1080:LYS:HG2	2.52	0.43
2:T:6:DG:C6	2:T:7:DA:C6	3.06	0.43
4:A:253:ASN:N	4:A:253:ASN:ND2	2.65	0.43
4:A:397:ASN:HD22	4:A:397:ASN:HA	1.58	0.43
4:A:525:GLN:HB3	5:B:835:GLN:HG2	2.00	0.43
4:A:574:GLY:O	4:A:575:LYS:C	2.56	0.43
4:A:628:GLY:O	4:A:632:VAL:HG23	2.17	0.43
4:A:658:LEU:HD21	5:B:1076:HIS:CD2	2.53	0.43
4:A:780:VAL:N	5:B:699:GLU:OE1	2.38	0.43
4:A:1127:ASP:O	4:A:1129:GLU:N	2.51	0.43
4:A:1128:GLN:HG2	4:A:1304:TRP:CE2	2.54	0.43
5:B:112:LEU:CD1	5:B:116:GLU:HB3	2.48	0.43
5:B:519:TRP:CH2	5:B:748:ILE:HD13	2.53	0.43
5:B:1104:HIS:HD2	5:B:1128:LEU:HD21	1.83	0.43
6:C:34:ARG:HG3	6:C:176:ILE:HG21	1.99	0.43
8:F:103:MET:O	8:F:105:ALA:N	2.51	0.43
9:H:50:ALA:O	9:H:53:ASP:CB	2.63	0.43
11:J:44:TYR:CA	11:J:47:ARG:HB2	2.30	0.43
4:A:55:ASP:O	4:A:56:PRO:C	2.56	0.43
4:A:367:PRO:HA	4:A:463:ILE:HD12	1.99	0.43
4:A:374:LEU:HB3	4:A:436:ILE:CD1	2.44	0.43
5:B:313:MET:HE3	5:B:386:LEU:HB3	2.00	0.43
5:B:337:ARG:CD	5:B:339:THR:CG2	2.76	0.43
6:C:25:VAL:HG12	6:C:26:ASP:N	2.32	0.43
10:I:55:THR:HG22	10:I:58:VAL:HG21	2.00	0.43
11:J:3:VAL:HG21	11:J:18:TRP:CE3	2.53	0.43
4:A:298:PHE:O	4:A:298:PHE:CD1	2.72	0.43
5:B:332:ASP:O	5:B:332:ASP:OD1	2.36	0.43
7:E:176:PRO:O	7:E:212:ARG:HA	2.18	0.43
4:A:285:PRO:HB2	4:A:288:ALA:HB3	2.00	0.43
4:A:335:ARG:CD	5:B:1202:LEU:HD12	2.48	0.43
4:A:432:VAL:O	4:A:434:ARG:N	2.52	0.43
5:B:116:GLU:HG2	5:B:120:ARG:CD	2.48	0.43
5:B:363:HIS:O	5:B:364:ILE:HB	2.18	0.43
5:B:764:SER:H	5:B:765:PRO:HD2	1.81	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:794:ASN:C	5:B:795:ILE:HD12	2.38	0.43
5:B:841:MET:HA	5:B:1009:ASP:O	2.19	0.43
5:B:1099:VAL:O	5:B:1101:ASP:N	2.50	0.43
5:B:1177:HIS:O	5:B:1178:ASN:C	2.57	0.43
6:C:31:ASN:HD21	6:C:35:ARG:HD2	1.84	0.43
7:E:72:PHE:HA	7:E:73:PRO:HD3	1.85	0.43
1:R:6:G:H8	1:R:6:G:O5'	2.02	0.43
4:A:242:PRO:HA	4:A:243:PRO:HD3	1.82	0.43
4:A:343:LYS:NZ	5:B:1197:PRO:HG3	2.32	0.43
4:A:501:LEU:HD13	4:A:501:LEU:HA	1.75	0.43
4:A:513:SER:HA	4:A:514:PRO:HD3	1.73	0.43
4:A:1243:VAL:HG22	4:A:1244:ARG:HA	2.00	0.43
5:B:345:LYS:N	5:B:346:GLU:CB	2.80	0.43
5:B:601:ARG:O	5:B:605:ARG:HD2	2.18	0.43
7:E:153:HIS:CG	7:E:184:VAL:HG11	2.54	0.43
10:I:40:SER:C	10:I:42:LEU:N	2.71	0.43
4:A:589:GLN:HB3	4:A:961:ARG:HH22	1.82	0.43
4:A:873:MET:HG3	4:A:1056:SER:O	2.18	0.43
4:A:1131:ALA:HA	4:A:1134:ILE:HD12	1.99	0.43
5:B:138:GLU:O	5:B:139:ALA:O	2.36	0.43
5:B:409:ALA:O	5:B:413:LEU:HB2	2.18	0.43
5:B:637:LEU:HD11	5:B:740:HIS:HB3	1.92	0.43
5:B:850:LEU:HD13	11:J:8:PHE:HD1	1.84	0.43
11:J:21:TYR:HE1	11:J:36:LEU:HG	1.83	0.43
4:A:50:ILE:HG22	4:A:51:GLY:N	2.34	0.43
4:A:247:ARG:O	4:A:248:PRO:O	2.36	0.43
4:A:775:ILE:H	4:A:775:ILE:HG12	1.50	0.43
4:A:868:TYR:CD2	4:A:1058:VAL:HG21	2.54	0.43
4:A:947:PHE:CD2	4:A:954:TRP:NE1	2.86	0.43
5:B:174:LEU:HD13	5:B:202:TYR:CD1	2.54	0.43
5:B:778:MET:CE	5:B:1094:ARG:CD	2.78	0.43
5:B:834:ASN:ND2	5:B:1012:ILE:O	2.49	0.43
7:E:105:PHE:O	7:E:106:GLN:HB2	2.18	0.43
10:I:43:VAL:O	10:I:43:VAL:HG12	2.19	0.43
4:A:265:LYS:O	4:A:268:ASP:N	2.48	0.43
4:A:300:VAL:O	4:A:301:ALA:C	2.58	0.43
4:A:506:ALA:C	4:A:508:PRO:HD2	2.39	0.43
4:A:1004:ASN:CB	4:A:1007:ILE:HD13	2.17	0.43
4:A:1403:GLU:O	4:A:1404:GLU:C	2.57	0.43
5:B:99:LYS:HD3	5:B:178:ASN:O	2.18	0.43
5:B:307:ASP:O	5:B:311:LEU:HG	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:758:PHE:HB2	5:B:1024:ALA:HB1	2.01	0.43
6:C:128:ASN:O	6:C:129:ILE:HG13	2.18	0.43
7:E:84:ASP:O	7:E:113:GLN:NE2	2.51	0.43
8:F:109:VAL:HG22	8:F:110:ASP:N	2.33	0.43
4:A:117:GLU:N	4:A:118:HIS:CB	2.79	0.43
4:A:363:GLN:HG2	4:A:459:ARG:HB2	2.01	0.43
4:A:381:THR:HG23	8:F:104:ASN:HB3	2.00	0.43
4:A:709:THR:CB	4:A:712:GLU:HB2	2.48	0.43
4:A:775:ILE:O	4:A:797:LYS:HE2	2.19	0.43
4:A:825:ILE:HD12	5:B:512:ARG:HB3	1.99	0.43
5:B:710:LEU:HD13	5:B:733:HIS:HA	2.00	0.43
5:B:756:ILE:HG21	5:B:767:ASN:OD1	2.18	0.43
5:B:758:PHE:CE1	5:B:1044:ALA:HA	2.54	0.43
5:B:780:VAL:O	5:B:782:LEU:N	2.52	0.43
2:T:19:DT:O4	2:T:20:DC:N4	2.52	0.42
4:A:222:LEU:O	4:A:222:LEU:CD1	2.67	0.42
4:A:372:LYS:O	4:A:435:HIS:CD2	2.72	0.42
4:A:542:GLU:O	4:A:546:VAL:HG23	2.19	0.42
4:A:738:LYS:HB3	4:A:741:ASN:HB2	2.01	0.42
4:A:764:CYS:HB2	4:A:801:GLU:O	2.19	0.42
5:B:386:LEU:C	5:B:388:CYS:N	2.73	0.42
7:E:150:VAL:HA	7:E:151:PRO:HD3	1.85	0.42
11:J:48:ARG:NH1	11:J:49:MET:HE2	2.31	0.42
4:A:171:GLN:HE21	4:A:171:GLN:HB2	1.66	0.42
5:B:215:GLN:HE22	5:B:499:ASN:HD22	1.66	0.42
5:B:605:ARG:CZ	5:B:639:ILE:HD13	2.49	0.42
5:B:753:ALA:HA	5:B:756:ILE:CD1	2.49	0.42
5:B:763:GLN:HG2	5:B:765:PRO:HD2	2.01	0.42
5:B:872:GLU:OE2	5:B:916:THR:HB	2.19	0.42
5:B:1006:ILE:HG22	5:B:1007:VAL:N	2.33	0.42
4:A:1355:VAL:HG12	4:A:1356:ILE:HD13	2.00	0.42
5:B:121:ASN:OD1	5:B:963:PHE:CE1	2.72	0.42
6:C:264:GLN:C	6:C:266:ASP:H	2.22	0.42
11:J:24:LEU:N	11:J:24:LEU:CD1	2.83	0.42
4:A:273:ASN:HA	4:A:296:LEU:HD11	2.00	0.42
4:A:845:LEU:HD12	4:A:1069:ALA:HB2	2.01	0.42
4:A:1412:ALA:HA	4:A:1417:GLU:HG2	2.02	0.42
5:B:35:SER:OG	5:B:811:TYR:HE2	2.02	0.42
5:B:680:THR:O	5:B:681:TRP:C	2.58	0.42
5:B:879:ARG:HB3	5:B:880:THR:H	1.65	0.42
12:K:35:PHE:O	12:K:70:ARG:HA	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:37:PHE:HA	4:A:38:PRO:HD3	1.94	0.42
4:A:88:LYS:HA	4:A:89:PRO:HD3	1.75	0.42
4:A:116:ASP:CB	4:A:117:GLU:CB	2.57	0.42
4:A:1410:PHE:C	4:A:1412:ALA:N	2.72	0.42
5:B:582:VAL:HG23	5:B:626:ILE:HB	2.01	0.42
5:B:597:MET:SD	5:B:624:LEU:HD21	2.60	0.42
5:B:619:ILE:HG13	10:I:65:ASP:HB2	2.01	0.42
5:B:889:THR:HG22	5:B:891:ASP:HB2	2.01	0.42
5:B:941:LEU:HG	5:B:942:ARG:H	1.84	0.42
6:C:208:GLU:HB3	6:C:209:TYR:CE1	2.55	0.42
2:T:18:DA:H2	16:A:2003[B]:UTP:O2	2.02	0.42
4:A:404:TYR:HD2	4:A:412:ARG:CD	2.26	0.42
4:A:650:GLN:HB3	4:A:654:ASN:HD21	1.84	0.42
4:A:770:VAL:O	4:A:773:LYS:O	2.37	0.42
4:A:1021:LEU:O	4:A:1024:SER:N	2.52	0.42
5:B:66:ASP:OD2	5:B:422:LYS:HE3	2.20	0.42
5:B:705:MET:HA	5:B:705:MET:HE2	2.00	0.42
5:B:856:PHE:CD2	5:B:967:ARG:HD2	2.55	0.42
6:C:39:ALA:O	6:C:164:ALA:HB3	2.20	0.42
4:A:38:PRO:HA	4:A:270:LEU:HD13	2.02	0.42
4:A:306:ASN:O	4:A:307:ASP:CB	2.67	0.42
4:A:541:ILE:HD13	4:A:546:VAL:HG22	2.02	0.42
4:A:896:ARG:HB3	4:A:897:TYR:CD1	2.55	0.42
4:A:1140:HIS:CE1	4:A:1272:THR:HG22	2.55	0.42
5:B:95:ILE:HG23	5:B:95:ILE:O	2.19	0.42
5:B:797:TYR:CD2	5:B:852:ARG:HD2	2.54	0.42
5:B:797:TYR:HB2	5:B:852:ARG:O	2.20	0.42
5:B:855:PHE:HD1	5:B:856:PHE:H	1.66	0.42
10:I:85:PHE:HB3	10:I:101:PHE:CD2	2.55	0.42
11:J:36:LEU:HD11	11:J:51:LEU:HD12	2.02	0.42
12:K:6:ARG:C	12:K:8:GLU:N	2.73	0.42
4:A:284:ALA:HB1	4:A:289:ILE:HD11	2.00	0.42
4:A:374:LEU:HD13	4:A:491:VAL:HG21	2.02	0.42
4:A:533:LYS:HE2	4:A:745:GLN:HE22	1.84	0.42
4:A:784:LEU:HD12	4:A:815:PHE:CZ	2.55	0.42
5:B:169:ARG:N	5:B:454:THR:OG1	2.52	0.42
5:B:470:LYS:O	5:B:471:LYS:HG3	2.20	0.42
5:B:516:ASN:O	5:B:518:HIS:N	2.53	0.42
5:B:823:ALA:CB	5:B:1010:LEU:HD22	2.49	0.42
6:C:80:LEU:HD12	6:C:127:ARG:NH2	2.35	0.42
6:C:241:ASP:CG	6:C:242:GLN:N	2.73	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:37:LEU:HD23	7:E:38:PRO:O	2.20	0.42
4:A:129:LYS:O	4:A:130:ASP:HB2	2.19	0.42
4:A:297:GLN:O	4:A:300:VAL:HB	2.20	0.42
4:A:535:THR:CG2	4:A:617:VAL:H	2.30	0.42
4:A:996:ASN:HB3	4:A:1050:GLU:OE2	2.20	0.42
7:E:124:VAL:HB	7:E:125:PRO:HD3	2.02	0.42
7:E:173:SER:OG	7:E:174:GLN:N	2.52	0.42
10:I:45:ARG:HE	10:I:47:GLU:CG	2.32	0.42
1:R:5:A:N3	1:R:6:G:C8	2.88	0.42
4:A:323:LYS:NZ	4:A:324:SER:H	2.17	0.42
4:A:368:LYS:O	4:A:372:LYS:N	2.52	0.42
4:A:403:LYS:O	4:A:415:LEU:HG	2.19	0.42
5:B:363:HIS:O	5:B:364:ILE:CB	2.67	0.42
5:B:1187:ASN:HD21	5:B:1190:ASP:HB3	1.84	0.42
6:C:180:TYR:HB3	6:C:228:PHE:CD2	2.55	0.42
10:I:116:ASN:OD1	10:I:116:ASN:N	2.53	0.42
12:K:58:PHE:HE2	12:K:74:ARG:HE	1.68	0.42
4:A:1075:PRO:O	4:A:1076:ALA:C	2.59	0.41
5:B:777:ALA:HB2	5:B:1095:LEU:HD23	2.03	0.41
5:B:1139:ILE:O	5:B:1140:ALA:C	2.58	0.41
5:B:1198:TYR:CD2	5:B:1198:TYR:C	2.94	0.41
5:B:1213:THR:HG21	5:B:1215:ARG:HH21	1.85	0.41
6:C:22:LEU:O	6:C:227:THR:HA	2.20	0.41
6:C:43:THR:HG22	6:C:44:LEU:N	2.34	0.41
6:C:175:ALA:HB3	11:J:43:ARG:CZ	2.50	0.41
11:J:24:LEU:O	11:J:25:LEU:HG	2.20	0.41
4:A:242:PRO:HD2	4:A:266:LEU:CD1	2.50	0.41
4:A:313:GLN:HG2	4:A:322:VAL:HG22	2.02	0.41
4:A:457:ALA:HB2	4:A:501:LEU:HD12	2.01	0.41
4:A:1098:VAL:O	4:A:1099:PRO:C	2.58	0.41
4:A:1192:LEU:HG	4:A:1193:LEU:N	2.35	0.41
4:A:1356:ILE:HG22	4:A:1361:SER:HB2	2.02	0.41
4:A:1391:ARG:HD3	4:A:1391:ARG:C	2.40	0.41
5:B:685:LEU:HD21	5:B:692:TYR:CE1	2.55	0.41
5:B:1006:ILE:HG22	5:B:1007:VAL:H	1.85	0.41
5:B:1111:MET:HG2	5:B:1117:GLN:C	2.40	0.41
7:E:137:GLU:O	7:E:141:VAL:HG23	2.20	0.41
12:K:73:LEU:HD21	12:K:75:ILE:HD11	2.00	0.41
3:N:3:DG:H2''	3:N:4:DC:O5'	2.20	0.41
4:A:357:PRO:HG3	5:B:832:GLY:HA3	2.02	0.41
4:A:780:VAL:HG13	4:A:789:LYS:HE2	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:886:ILE:HD11	4:A:943:LEU:HB3	2.01	0.41
5:B:683:SER:O	5:B:687:GLU:HB2	2.20	0.41
5:B:805:THR:CG2	5:B:815:ARG:HH21	2.24	0.41
5:B:841:MET:CG	5:B:842:ASN:N	2.83	0.41
5:B:845:SER:O	5:B:846:ILE:C	2.58	0.41
5:B:1091:TYR:HD1	5:B:1091:TYR:HA	1.70	0.41
6:C:148:ARG:N	6:C:151:GLN:HG3	2.34	0.41
6:C:177:GLU:HB2	6:C:231:ASN:HB3	2.02	0.41
11:J:12:LYS:HB2	11:J:46:CYS:SG	2.60	0.41
4:A:709:THR:HB	4:A:712:GLU:CB	2.51	0.41
5:B:273:LEU:O	5:B:276:ILE:HG22	2.20	0.41
5:B:334:ILE:HA	5:B:334:ILE:HD13	1.94	0.41
5:B:490:SER:CB	5:B:775:LYS:HG2	2.47	0.41
5:B:768:THR:O	5:B:771:SER:OG	2.29	0.41
5:B:1023:VAL:O	5:B:1026:LEU:N	2.54	0.41
8:F:85:MET:SD	8:F:90:ARG:HB3	2.60	0.41
11:J:10:CYS:SG	11:J:43:ARG:HD2	2.60	0.41
13:L:26:THR:HA	13:L:62:LYS:NZ	2.35	0.41
2:T:13:DA:N6	3:N:2:DT:C6	2.88	0.41
4:A:499:ALA:HA	8:F:118:LEU:HD11	2.02	0.41
4:A:811:GLN:HE22	5:B:731:VAL:HG21	1.86	0.41
4:A:915:SER:HB3	4:A:919:ILE:HD13	2.03	0.41
5:B:31:TRP:CH2	5:B:807:ARG:HB3	2.55	0.41
5:B:176:SER:O	5:B:178:ASN:N	2.52	0.41
5:B:773:MET:HE3	5:B:981:ALA:HB2	2.02	0.41
5:B:839:MET:HE3	5:B:1010:LEU:HD11	2.02	0.41
7:E:156:LEU:HD23	7:E:197:LYS:HB2	2.03	0.41
9:H:131:ASN:HB3	9:H:132:LEU:H	1.56	0.41
4:A:548:ASN:OD1	12:K:60:ALA:HB1	2.21	0.41
4:A:660:ASN:ND2	4:A:661:GLY:O	2.53	0.41
4:A:991:LYS:O	4:A:994:GLN:HB3	2.20	0.41
4:A:1343:ALA:O	4:A:1344:GLY:C	2.58	0.41
5:B:344:LYS:C	5:B:346:GLU:CB	2.88	0.41
5:B:398:ARG:HB3	5:B:398:ARG:NH1	2.35	0.41
5:B:733:HIS:HB2	5:B:734:HIS:H	1.64	0.41
5:B:864:LYS:HD3	5:B:865:LYS:N	2.36	0.41
5:B:1048:THR:HB	5:B:1049:ASP:H	1.69	0.41
5:B:1084:GLN:HE21	6:C:189:THR:HG21	1.81	0.41
6:C:259:LEU:HD13	12:K:91:CYS:HB3	2.03	0.41
4:A:117:GLU:N	4:A:118:HIS:CA	2.82	0.41
4:A:303:TYR:CD2	4:A:304:MET:HG3	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:363:GLN:HE21	4:A:459:ARG:NH1	2.19	0.41
4:A:662:PHE:HD1	4:A:663:SER:H	1.50	0.41
5:B:120:ARG:HH21	5:B:956:THR:HG22	1.85	0.41
5:B:463:THR:HB	5:B:465:ASN:ND2	2.31	0.41
5:B:557:PHE:CD2	5:B:557:PHE:C	2.94	0.41
5:B:788:ARG:NH1	5:B:790:ASP:OD1	2.54	0.41
12:K:57:LEU:HD21	12:K:78:THR:HG23	2.03	0.41
12:K:82:ASP:OD2	12:K:84:LYS:HB2	2.21	0.41
4:A:42:ASP:OD1	4:A:45:GLN:N	2.54	0.41
4:A:117:GLU:N	4:A:118:HIS:C	2.74	0.41
4:A:657:LEU:HD21	5:B:829:CYS:HB2	2.03	0.41
5:B:393:LYS:HD2	5:B:393:LYS:HA	1.90	0.41
5:B:490:SER:HB3	5:B:775:LYS:CG	2.47	0.41
5:B:644:GLU:HB3	5:B:645:SER:H	1.70	0.41
5:B:708:GLU:O	5:B:712:PRO:CG	2.68	0.41
5:B:709:ASP:C	5:B:710:LEU:HD22	2.40	0.41
5:B:846:ILE:HG22	5:B:847:ASP:OD1	2.20	0.41
12:K:65:HIS:CD2	12:K:67:PHE:HB2	2.56	0.41
2:T:17:DG:OP1	4:A:337:ARG:NH2	2.52	0.41
4:A:173:THR:HB	4:A:184:SER:HB3	2.02	0.41
4:A:219:PHE:CZ	4:A:230:ARG:HG2	2.55	0.41
4:A:332:LYS:HA	4:A:332:LYS:HD2	1.71	0.41
4:A:672:ASP:HB2	4:A:736:ASN:OD1	2.20	0.41
4:A:1140:HIS:HE1	4:A:1272:THR:HG22	1.86	0.41
4:A:1313:LEU:C	4:A:1315:GLU:H	2.24	0.41
5:B:60:GLN:HE22	5:B:94:LYS:HA	1.85	0.41
5:B:168:GLY:H	5:B:450:ALA:HB1	1.86	0.41
5:B:256:VAL:HG11	5:B:382:ILE:HD13	2.03	0.41
5:B:590:HIS:CD2	5:B:596:LEU:HD22	2.56	0.41
5:B:624:LEU:C	5:B:624:LEU:HD13	2.40	0.41
5:B:797:TYR:CD1	6:C:62:PHE:CE2	3.09	0.41
5:B:906:SER:OG	5:B:946:ASN:HB2	2.20	0.41
5:B:1089:PRO:C	5:B:1090:THR:OG1	2.59	0.41
5:B:1131:GLY:O	5:B:1134:GLU:N	2.54	0.41
6:C:169:LYS:HD2	6:C:170:TRP:CD2	2.56	0.41
7:E:173:SER:O	7:E:175:LEU:N	2.53	0.41
9:H:95:TYR:HB3	9:H:144:ILE:HB	2.03	0.41
12:K:12:LEU:HA	12:K:37:LYS:HG3	2.02	0.41
4:A:751:SER:OG	5:B:1015:HIS:HE1	2.02	0.41
4:A:1365:TYR:O	4:A:1366:ARG:C	2.59	0.41
5:B:140:ILE:CG2	5:B:141:ASP:HB3	2.34	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:195:CYS:C	5:B:197:PHE:H	2.25	0.41
5:B:1028:GLU:OE1	5:B:1090:THR:HG22	2.21	0.41
6:C:32:SER:O	6:C:36:VAL:CG1	2.64	0.41
6:C:35:ARG:NH1	12:K:41:THR:OG1	2.54	0.41
7:E:157:SER:O	7:E:158:SER:C	2.60	0.41
4:A:960:ILE:O	4:A:961:ARG:C	2.59	0.40
5:B:28:GLU:O	5:B:28:GLU:HG3	2.21	0.40
5:B:621:GLU:O	5:B:622:LYS:C	2.60	0.40
5:B:753:ALA:C	5:B:755:ILE:N	2.74	0.40
5:B:781:PHE:HE1	5:B:788:ARG:NH1	2.19	0.40
6:C:31:ASN:O	6:C:35:ARG:HG3	2.21	0.40
6:C:248:ILE:HD13	12:K:101:LEU:HD13	2.04	0.40
7:E:144:ILE:HG13	7:E:145:THR:N	2.36	0.40
4:A:74:MET:O	4:A:75:ASN:HB3	2.20	0.40
4:A:298:PHE:CD2	4:A:302:THR:HB	2.53	0.40
4:A:497:THR:HG23	5:B:1146:PHE:HB2	2.04	0.40
4:A:575:LYS:HB3	4:A:612:ILE:HD11	2.03	0.40
4:A:1424:VAL:O	4:A:1426:GLU:N	2.54	0.40
5:B:354:ASP:O	5:B:358:LYS:N	2.53	0.40
5:B:549:THR:HG22	5:B:550:ASP:H	1.86	0.40
5:B:731:VAL:O	5:B:732:SER:CB	2.69	0.40
5:B:778:MET:HG3	5:B:1094:ARG:O	2.20	0.40
5:B:999:MET:CE	5:B:1011:ILE:HD11	2.52	0.40
5:B:1031:LEU:HD12	5:B:1031:LEU:C	2.30	0.40
9:H:81:PRO:HA	9:H:82:PRO:HD3	1.97	0.40
11:J:48:ARG:C	11:J:48:ARG:CD	2.89	0.40
2:T:20:DC:H2'	2:T:21:DC:C6	2.55	0.40
4:A:537:ARG:NH2	4:A:599:SER:O	2.49	0.40
4:A:540:PHE:HZ	9:H:121:LEU:HD11	1.86	0.40
4:A:845:LEU:O	4:A:846:GLU:C	2.59	0.40
5:B:31:TRP:CD1	5:B:807:ARG:NH1	2.90	0.40
5:B:493:SER:C	5:B:495:LEU:N	2.74	0.40
5:B:731:VAL:O	5:B:732:SER:HB2	2.21	0.40
6:C:56:THR:HG21	6:C:145:CYS:SG	2.61	0.40
6:C:146:LYS:O	6:C:147:LEU:HD23	2.21	0.40
4:A:117:GLU:O	4:A:123:ARG:HG2	2.21	0.40
4:A:443:LEU:HD21	4:A:455:MET:HG3	2.03	0.40
4:A:569:LYS:HA	4:A:570:PRO:HD3	1.95	0.40
4:A:1308:THR:HG22	4:A:1309:ASP:N	2.36	0.40
4:A:1393:ASN:HD22	4:A:1393:ASN:H	1.70	0.40
5:B:95:ILE:HD12	5:B:130:VAL:CG1	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:333:PHE:H	5:B:334:ILE:HG12	1.84	0.40
5:B:333:PHE:H	5:B:334:ILE:HG13	1.85	0.40
5:B:708:GLU:H	5:B:708:GLU:HG2	1.71	0.40
5:B:784:ASN:OD1	5:B:784:ASN:N	2.50	0.40
5:B:839:MET:CE	5:B:1010:LEU:HD11	2.52	0.40
5:B:980:PHE:CE2	5:B:1094:ARG:CG	2.76	0.40
6:C:73:GLN:HE21	6:C:74:SER:N	2.19	0.40
6:C:167:HIS:HD2	6:C:169:LYS:H	1.69	0.40
12:K:47:ARG:HD2	12:K:60:ALA:HA	2.03	0.40
4:A:356:ASP:HA	4:A:357:PRO:HD2	1.79	0.40
4:A:362:ASP:HB3	4:A:508:PRO:HD3	2.02	0.40
4:A:1074:GLU:O	4:A:1075:PRO:C	2.60	0.40
4:A:1444:MET:HB2	4:A:1445:ILE:HG12	1.95	0.40
5:B:229:ALA:O	5:B:261:ARG:NH2	2.54	0.40
5:B:643:ASP:O	5:B:644:GLU:CB	2.69	0.40
6:C:35:ARG:O	6:C:38:ILE:N	2.53	0.40
7:E:101:GLN:OE1	7:E:127:ILE:HG13	2.21	0.40
12:K:38:GLU:OE1	12:K:38:GLU:HA	2.21	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 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	
4	A	1401/1733 (81%)	1052 (75%)	250 (18%)	99 (7%)	1	7
5	B	1105/1224 (90%)	836 (76%)	177 (16%)	92 (8%)	1	5
6	C	264/318 (83%)	197 (75%)	54 (20%)	13 (5%)	2	14
7	E	212/215 (99%)	184 (87%)	22 (10%)	6 (3%)	5	24
8	F	83/155 (54%)	70 (84%)	7 (8%)	6 (7%)	1	7
9	H	129/146 (88%)	99 (77%)	22 (17%)	8 (6%)	1	10

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
10	I	117/122 (96%)	88 (75%)	22 (19%)	7 (6%)	1	10
11	J	63/70 (90%)	49 (78%)	7 (11%)	7 (11%)	0	3
12	K	112/120 (93%)	96 (86%)	14 (12%)	2 (2%)	8	32
13	L	44/70 (63%)	26 (59%)	14 (32%)	4 (9%)	1	4
All	All	3530/4173 (85%)	2697 (76%)	589 (17%)	244 (7%)	1	8

All (244) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	A	55	ASP
4	A	68	GLN
4	A	93	VAL
4	A	117	GLU
4	A	118	HIS
4	A	119	ASN
4	A	121	LEU
4	A	248	PRO
4	A	250	ILE
4	A	254	GLU
4	A	300	VAL
4	A	394	ASN
4	A	399	HIS
4	A	610	GLY
4	A	777	PHE
4	A	828	ALA
4	A	846	GLU
4	A	885	THR
4	A	1004	ASN
4	A	1041	ALA
4	A	1042	PHE
4	A	1127	ASP
4	A	1128	GLN
4	A	1365	TYR
4	A	1424	VAL
4	A	1448	GLU
5	B	229	ALA
5	B	333	PHE
5	B	334	ILE
5	B	341	LEU
5	B	409	ALA
5	B	468	GLU

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Mol	Chain	Res	Type
5	B	476	ARG
5	B	644	GLU
5	B	648	HIS
5	B	711	GLU
5	B	732	SER
5	B	744	HIS
5	B	773	MET
5	B	827	ILE
5	B	837	ASP
5	B	846	ILE
5	B	946	ASN
5	B	976	ILE
5	B	982	SER
5	B	1014	PRO
5	B	1045	SER
5	B	1082	MET
5	B	1096	ARG
5	B	1100	ASP
5	B	1122	ARG
5	B	1223	ASP
6	C	60	ASP
6	C	240	VAL
8	F	73	ALA
8	F	104	ASN
9	H	3	ASN
9	H	108	SER
9	H	131	ASN
9	H	136	LYS
9	H	138	GLU
10	I	33	SER
11	J	6	ARG
11	J	13	VAL
11	J	29	GLU
11	J	32	GLU
13	L	55	ILE
13	L	56	LEU
4	A	56	PRO
4	A	62	ASP
4	A	69	THR
4	A	76	GLU
4	A	126	LEU
4	A	266	LEU

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Mol	Chain	Res	Type
4	A	299	HIS
4	A	324	SER
4	A	369	SER
4	A	410	GLY
4	A	424	ILE
4	A	452	LYS
4	A	593	GLU
4	A	624	SER
4	A	738	LYS
4	A	870	GLU
4	A	916	GLY
4	A	979	SER
4	A	1081	LEU
4	A	1411	GLU
4	A	1437	GLY
4	A	1444	MET
5	B	67	SER
5	B	106	ASP
5	B	139	ALA
5	B	290	GLY
5	B	337	ARG
5	B	346	GLU
5	B	371	GLU
5	B	453	ILE
5	B	471	LYS
5	B	563	MET
5	B	754	SER
5	B	785	TYR
5	B	836	GLU
5	B	879	ARG
5	B	883	LEU
5	B	885	MET
5	B	1012	ILE
5	B	1046	PRO
5	B	1066	SER
5	B	1069	PHE
5	B	1108	ARG
5	B	1126	GLY
5	B	1155	SER
5	B	1157	ALA
6	C	102	GLN
6	C	215	GLU

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Mol	Chain	Res	Type
7	E	106	GLN
7	E	172	GLU
7	E	174	GLN
8	F	78	GLN
9	H	18	GLY
9	H	92	ASP
10	I	3	THR
10	I	34	TYR
10	I	47	GLU
11	J	2	ILE
12	K	7	PHE
4	A	54	ASN
4	A	219	PHE
4	A	257	ARG
4	A	315	LEU
4	A	335	ARG
4	A	377	PRO
4	A	423	ASP
4	A	465	TYR
4	A	517	ASN
4	A	544	ASP
4	A	761	MET
4	A	975	HIS
4	A	1083	THR
4	A	1221	LYS
4	A	1312	ASN
4	A	1394	THR
5	B	37	PHE
5	B	137	TYR
5	B	177	LYS
5	B	410	GLY
5	B	469	GLN
5	B	709	ASP
5	B	712	PRO
5	B	733	HIS
5	B	772	ALA
5	B	868	MET
5	B	887	HIS
5	B	1016	ALA
5	B	1030	LEU
5	B	1057	LYS
5	B	1181	GLU

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Mol	Chain	Res	Type
6	C	63	ILE
6	C	125	MET
6	C	164	ALA
8	F	106	PRO
10	I	11	ASN
10	I	58	VAL
4	A	149	GLU
4	A	214	ILE
4	A	267	ALA
4	A	307	ASP
4	A	309	ALA
4	A	312	PRO
4	A	371	ALA
4	A	433	GLU
4	A	483	ASP
4	A	569	LYS
4	A	958	VAL
4	A	1084	PHE
4	A	1425	SER
5	B	65	GLU
5	B	419	THR
5	B	477	ALA
5	B	758	PHE
5	B	894	ASP
5	B	997	GLU
5	B	1010	LEU
5	B	1097	HIS
5	B	1098	MET
5	B	1211	ASN
6	C	28	ALA
6	C	174	ALA
7	E	48	ASP
7	E	76	GLY
7	E	105	PHE
9	H	137	GLN
11	J	40	GLY
4	A	65	LEU
4	A	168	GLY
4	A	249	SER
4	A	308	ILE
4	A	736	ASN
4	A	875	ALA

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Mol	Chain	Res	Type
4	A	1107	VAL
4	A	1206	ASP
4	A	1366	ARG
5	B	479	VAL
5	B	482	VAL
5	B	483	LEU
5	B	513	GLN
5	B	792	MET
5	B	864	LYS
5	B	1017	ILE
5	B	1065	GLN
6	C	142	VAL
6	C	181	ASP
8	F	154	ASP
13	L	42	ARG
13	L	53	HIS
4	A	418	SER
4	A	579	SER
4	A	652	VAL
4	A	910	PRO
4	A	1172	LEU
4	A	1314	SER
5	B	681	TRP
5	B	1003	ALA
6	C	213	PRO
12	K	41	THR
5	B	1054	GLY
4	A	886	ILE
5	B	364	ILE
5	B	1214	PRO
10	I	76	PRO
11	J	14	VAL
4	A	567	LYS
4	A	639	PRO
4	A	810	PRO
5	B	63	ILE
5	B	301	ILE
5	B	780	VAL
6	C	132	PRO
4	A	829	VAL
4	A	1099	PRO
5	B	196	PRO

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Mol	Chain	Res	Type
8	F	131	PRO
4	A	775	ILE

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
4	A	1231/1520 (81%)	1016 (82%)	215 (18%)	2 7
5	B	972/1061 (92%)	799 (82%)	173 (18%)	2 6
6	C	234/274 (85%)	204 (87%)	30 (13%)	4 16
7	E	196/197 (100%)	173 (88%)	23 (12%)	5 20
8	F	75/137 (55%)	68 (91%)	7 (9%)	9 31
9	H	117/128 (91%)	102 (87%)	15 (13%)	4 16
10	I	113/116 (97%)	93 (82%)	20 (18%)	2 6
11	J	60/65 (92%)	40 (67%)	20 (33%)	0 1
12	K	99/102 (97%)	80 (81%)	19 (19%)	1 4
13	L	40/57 (70%)	32 (80%)	8 (20%)	1 3
All	All	3137/3657 (86%)	2607 (83%)	530 (17%)	2 8

All (530) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	A	4	GLN
4	A	11	LEU
4	A	21	LEU
4	A	36	ARG
4	A	40	THR
4	A	41	MET
4	A	43	GLU
4	A	54	ASN
4	A	55	ASP
4	A	57	ARG
4	A	58	LEU

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Mol	Chain	Res	Type
4	A	61	ILE
4	A	62	ASP
4	A	63	ARG
4	A	69	THR
4	A	70	CYS
4	A	86	LEU
4	A	93	VAL
4	A	118	HIS
4	A	121	LEU
4	A	147	VAL
4	A	161	LEU
4	A	164	ARG
4	A	208	LEU
4	A	219	PHE
4	A	227	VAL
4	A	237	THR
4	A	250	ILE
4	A	252	PHE
4	A	253	ASN
4	A	263	THR
4	A	270	LEU
4	A	271	LYS
4	A	290	GLU
4	A	291	GLU
4	A	296	LEU
4	A	297	GLN
4	A	298	PHE
4	A	302	THR
4	A	303	TYR
4	A	313	GLN
4	A	315	LEU
4	A	316	GLN
4	A	320	ARG
4	A	323	LYS
4	A	326	ARG
4	A	328	ARG
4	A	350	ARG
4	A	351	THR
4	A	360	GLU
4	A	375	THR
4	A	394	ASN
4	A	404	TYR

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Mol	Chain	Res	Type
4	A	416	ARG
4	A	437	MET
4	A	438	ASP
4	A	440	ASP
4	A	442	VAL
4	A	443	LEU
4	A	444	PHE
4	A	450	LEU
4	A	451	HIS
4	A	452	LYS
4	A	455	MET
4	A	460	VAL
4	A	463	ILE
4	A	466	SER
4	A	469	ARG
4	A	470	LEU
4	A	471	ASN
4	A	472	LEU
4	A	474	VAL
4	A	475	THR
4	A	489	LEU
4	A	498	ARG
4	A	501	LEU
4	A	509	LEU
4	A	512	VAL
4	A	513	SER
4	A	532	ARG
4	A	534	LEU
4	A	535	THR
4	A	541	ILE
4	A	549	MET
4	A	557	ASP
4	A	566	ILE
4	A	567	LYS
4	A	588	LEU
4	A	596	THR
4	A	598	LEU
4	A	599	SER
4	A	618	GLU
4	A	622	VAL
4	A	629	LEU
4	A	630	ILE

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Mol	Chain	Res	Type
4	A	646	PHE
4	A	649	ILE
4	A	657	LEU
4	A	660	ASN
4	A	662	PHE
4	A	672	ASP
4	A	675	THR
4	A	676	MET
4	A	691	LEU
4	A	702	LEU
4	A	708	MET
4	A	710	LEU
4	A	722	LEU
4	A	740	LEU
4	A	744	LYS
4	A	761	MET
4	A	762	SER
4	A	764	CYS
4	A	768	GLN
4	A	770	VAL
4	A	786	HIS
4	A	801	GLU
4	A	803	SER
4	A	821	ARG
4	A	827	THR
4	A	829	VAL
4	A	839	ARG
4	A	864	ILE
4	A	871	ASP
4	A	878	ILE
4	A	880	LYS
4	A	883	LEU
4	A	884	ASP
4	A	896	ARG
4	A	905	ASP
4	A	908	LEU
4	A	919	ILE
4	A	920	LEU
4	A	923	LEU
4	A	924	LYS
4	A	929	LEU
4	A	931	GLU

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Mol	Chain	Res	Type
4	A	938	LYS
4	A	965	GLN
4	A	982	THR
4	A	999	VAL
4	A	1000	LEU
4	A	1005	GLU
4	A	1007	ILE
4	A	1011	GLN
4	A	1012	ARG
4	A	1024	SER
4	A	1025	ARG
4	A	1029	ARG
4	A	1035	TYR
4	A	1038	THR
4	A	1040	GLN
4	A	1047	SER
4	A	1048	ASN
4	A	1067	LEU
4	A	1077	THR
4	A	1082	ASN
4	A	1084	PHE
4	A	1085	HIS
4	A	1089	VAL
4	A	1095	THR
4	A	1110	ASN
4	A	1114	PRO
4	A	1115	SER
4	A	1116	LEU
4	A	1120	LEU
4	A	1129	GLU
4	A	1141	THR
4	A	1146	VAL
4	A	1148	ILE
4	A	1159	ARG
4	A	1171	GLN
4	A	1173	HIS
4	A	1174	PHE
4	A	1199	ARG
4	A	1205	LYS
4	A	1222	ASN
4	A	1223	ASP
4	A	1243	VAL

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Mol	Chain	Res	Type
4	A	1244	ARG
4	A	1261	LYS
4	A	1264	GLU
4	A	1270	ASN
4	A	1274	ARG
4	A	1280	GLU
4	A	1288	ASP
4	A	1297	GLU
4	A	1301	GLU
4	A	1322	ILE
4	A	1326	ARG
4	A	1329	THR
4	A	1331	SER
4	A	1333	ILE
4	A	1336	MET
4	A	1350	LYS
4	A	1354	ASN
4	A	1359	ASP
4	A	1364	ASN
4	A	1366	ARG
4	A	1381	LEU
4	A	1382	THR
4	A	1385	THR
4	A	1386	ARG
4	A	1391	ARG
4	A	1393	ASN
4	A	1398	MET
4	A	1403	GLU
4	A	1406	VAL
4	A	1408	ILE
4	A	1418	LEU
4	A	1426	GLU
4	A	1428	VAL
4	A	1443	VAL
4	A	1444	MET
4	A	1448	GLU
5	B	26	THR
5	B	35	SER
5	B	46	GLN
5	B	63	ILE
5	B	65	GLU
5	B	70	ILE

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Mol	Chain	Res	Type
5	B	89	GLU
5	B	94	LYS
5	B	109	THR
5	B	115	GLN
5	B	116	GLU
5	B	123	THR
5	B	128	LEU
5	B	131	ASP
5	B	134	LYS
5	B	141	ASP
5	B	167	ILE
5	B	176	SER
5	B	183	GLU
5	B	187	SER
5	B	199	MET
5	B	204	ILE
5	B	223	VAL
5	B	234	ILE
5	B	245	GLU
5	B	249	ARG
5	B	257	LYS
5	B	268	THR
5	B	276	ILE
5	B	298	LEU
5	B	334	ILE
5	B	344	LYS
5	B	346	GLU
5	B	356	LEU
5	B	361	LEU
5	B	364	ILE
5	B	365	THR
5	B	368	GLU
5	B	371	GLU
5	B	372	SER
5	B	384	ARG
5	B	391	ASP
5	B	396	ASP
5	B	398	ARG
5	B	408	LEU
5	B	413	LEU
5	B	416	LEU
5	B	429	PHE

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Mol	Chain	Res	Type
5	B	437	GLU
5	B	448	ILE
5	B	452	THR
5	B	471	LYS
5	B	473	MET
5	B	481	GLN
5	B	487	THR
5	B	492	LEU
5	B	493	SER
5	B	495	LEU
5	B	500	THR
5	B	516	ASN
5	B	527	THR
5	B	529	GLU
5	B	543	SER
5	B	544	CYS
5	B	547	VAL
5	B	563	MET
5	B	568	ASP
5	B	582	VAL
5	B	604	ARG
5	B	617	ARG
5	B	624	LEU
5	B	628	THR
5	B	635	ARG
5	B	637	LEU
5	B	642	ASP
5	B	644	GLU
5	B	646	LEU
5	B	650	GLU
5	B	651	LEU
5	B	653	VAL
5	B	655	LYS
5	B	662	MET
5	B	664	THR
5	B	666	TYR
5	B	705	MET
5	B	706	GLN
5	B	732	SER
5	B	739	THR
5	B	746	SER
5	B	751	VAL

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Mol	Chain	Res	Type
5	B	760	ASP
5	B	769	TYR
5	B	778	MET
5	B	780	VAL
5	B	790	ASP
5	B	791	THR
5	B	792	MET
5	B	797	TYR
5	B	805	THR
5	B	807	ARG
5	B	810	GLU
5	B	815	ARG
5	B	824	ILE
5	B	825	VAL
5	B	829	CYS
5	B	830	TYR
5	B	835	GLN
5	B	844	SER
5	B	846	ILE
5	B	855	PHE
5	B	857	ARG
5	B	864	LYS
5	B	870	ILE
5	B	878	GLN
5	B	879	ARG
5	B	883	LEU
5	B	885	MET
5	B	886	LYS
5	B	904	ARG
5	B	918	ILE
5	B	939	THR
5	B	944	THR
5	B	945	GLU
5	B	946	ASN
5	B	956	THR
5	B	957	ASN
5	B	963	PHE
5	B	970	THR
5	B	971	THR
5	B	978	ASP
5	B	994	TYR
5	B	995	ARG

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Mol	Chain	Res	Type
5	B	997	GLU
5	B	999	MET
5	B	1002	THR
5	B	1028	GLU
5	B	1031	LEU
5	B	1032	SER
5	B	1045	SER
5	B	1057	LYS
5	B	1060	ARG
5	B	1065	GLN
5	B	1069	PHE
5	B	1077	THR
5	B	1082	MET
5	B	1086	PHE
5	B	1087	PHE
5	B	1090	THR
5	B	1091	TYR
5	B	1094	ARG
5	B	1096	ARG
5	B	1098	MET
5	B	1099	VAL
5	B	1102	LYS
5	B	1113	VAL
5	B	1119	VAL
5	B	1122	ARG
5	B	1124	ARG
5	B	1138	MET
5	B	1150	ARG
5	B	1151	LEU
5	B	1160	VAL
5	B	1163	CYS
5	B	1175	LEU
5	B	1176	ASN
5	B	1182	CYS
5	B	1185	CYS
5	B	1186	ASP
5	B	1188	LYS
5	B	1189	ILE
5	B	1194	ILE
5	B	1221	SER
5	B	1223	ASP
6	C	14	SER

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Mol	Chain	Res	Type
6	C	15	LYS
6	C	41	ILE
6	C	51	VAL
6	C	62	PHE
6	C	65	HIS
6	C	76	ASP
6	C	77	ILE
6	C	93	ASP
6	C	102	GLN
6	C	137	LYS
6	C	140	ASN
6	C	148	ARG
6	C	149	LYS
6	C	166	GLU
6	C	169	LYS
6	C	181	ASP
6	C	194	GLU
6	C	200	GLU
6	C	203	GLN
6	C	209	TYR
6	C	215	GLU
6	C	224	GLN
6	C	227	THR
6	C	235	VAL
6	C	240	VAL
6	C	241	ASP
6	C	263	THR
6	C	266	ASP
6	C	268	ASP
7	E	31	THR
7	E	52	ARG
7	E	65	THR
7	E	66	GLU
7	E	72	PHE
7	E	84	ASP
7	E	88	VAL
7	E	92	THR
7	E	98	ILE
7	E	101	GLN
7	E	110	PHE
7	E	127	ILE
7	E	137	GLU

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Mol	Chain	Res	Type
7	E	146	HIS
7	E	158	SER
7	E	159	ASP
7	E	162	ARG
7	E	169	ARG
7	E	177	ARG
7	E	179	GLN
7	E	190	LEU
7	E	212	ARG
7	E	215	MET
8	F	72	LYS
8	F	77	ASP
8	F	111	LEU
8	F	112	GLU
8	F	118	LEU
8	F	125	LEU
8	F	138	LEU
9	H	4	THR
9	H	11	GLN
9	H	24	CYS
9	H	31	THR
9	H	35	GLN
9	H	36	CYS
9	H	44	VAL
9	H	78	SER
9	H	86	ASP
9	H	94	ASP
9	H	102	TYR
9	H	106	GLU
9	H	130	ARG
9	H	132	LEU
9	H	145	ARG
10	I	7	CYS
10	I	17	ARG
10	I	28	GLU
10	I	29	CYS
10	I	32	CYS
10	I	44	TYR
10	I	55	THR
10	I	70	ARG
10	I	75	CYS
10	I	78	CYS

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Mol	Chain	Res	Type
10	I	83	ASN
10	I	86	PHE
10	I	91	ARG
10	I	92	ARG
10	I	95	THR
10	I	96	SER
10	I	109	ILE
10	I	113	ASP
10	I	116	ASN
10	I	118	ARG
11	J	2	ILE
11	J	6	ARG
11	J	7	CYS
11	J	9	SER
11	J	12	LYS
11	J	13	VAL
11	J	16	ASP
11	J	22	LEU
11	J	25	LEU
11	J	29	GLU
11	J	30	LEU
11	J	31	ASP
11	J	38	ARG
11	J	42	LYS
11	J	43	ARG
11	J	44	TYR
11	J	48	ARG
11	J	49	MET
11	J	52	THR
11	J	55	ASP
12	K	5	ASP
12	K	10	PHE
12	K	11	LEU
12	K	12	LEU
12	K	18	LYS
12	K	20	LYS
12	K	21	ILE
12	K	50	LEU
12	K	52	ASN
12	K	61	TYR
12	K	72	LYS
12	K	73	LEU

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Mol	Chain	Res	Type
12	K	74	ARG
12	K	78	THR
12	K	101	LEU
12	K	103	THR
12	K	107	THR
12	K	113	THR
12	K	114	LEU
13	L	30	ILE
13	L	31	CYS
13	L	34	CYS
13	L	42	ARG
13	L	47	ARG
13	L	48	CYS
13	L	54	ARG
13	L	57	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (79) such sidechains are listed below:

Mol	Chain	Res	Type
4	A	54	ASN
4	A	68	GLN
4	A	83	HIS
4	A	92	HIS
4	A	171	GLN
4	A	225	ASN
4	A	253	ASN
4	A	282	ASN
4	A	397	ASN
4	A	447	GLN
4	A	479	ASN
4	A	517	ASN
4	A	545	GLN
4	A	587	HIS
4	A	611	GLN
4	A	654	ASN
4	A	660	ASN
4	A	700	ASN
4	A	723	ASN
4	A	741	ASN
4	A	742	ASN
4	A	757	ASN
4	A	760	GLN

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Mol	Chain	Res	Type
4	A	767	GLN
4	A	768	GLN
4	A	811	GLN
4	A	926	GLN
4	A	965	GLN
4	A	1033	GLN
4	A	1059	HIS
4	A	1110	ASN
4	A	1140	HIS
4	A	1364	ASN
4	A	1393	ASN
5	B	103	ASN
5	B	178	ASN
5	B	278	GLN
5	B	366	GLN
5	B	400	HIS
5	B	465	ASN
5	B	499	ASN
5	B	515	HIS
5	B	516	ASN
5	B	518	HIS
5	B	657	HIS
5	B	733	HIS
5	B	734	HIS
5	B	762	ASN
5	B	770	GLN
5	B	822	ASN
5	B	834	ASN
5	B	878	GLN
5	B	887	HIS
5	B	957	ASN
5	B	984	HIS
5	B	1015	HIS
5	B	1076	HIS
5	B	1104	HIS
5	B	1161	HIS
6	C	17	ASN
6	C	73	GLN
6	C	112	ASN
6	C	140	ASN
6	C	167	HIS
6	C	188	HIS

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Mol	Chain	Res	Type
6	C	224	GLN
6	C	231	ASN
6	C	242	GLN
6	C	252	GLN
7	E	99	HIS
7	E	104	ASN
7	E	147	HIS
10	I	60	GLN
11	J	53	HIS
12	K	40	HIS
12	K	52	ASN
12	K	65	HIS
12	K	76	GLN
12	K	96	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	R	8/10 (80%)	2 (25%)	0

All (2) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	R	8	G
1	R	9	G

There are no RNA pucker outliers to report.

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](#)

Of 12 ligands modelled in this entry, 10 are monoatomic - leaving 2 for Mogul analysis.

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
16	UTP	A	2003[B]	-	22,30,30	1.68	4 (18%)	27,47,47	1.47	4 (14%)
16	UTP	A	2003[A]	-	22,30,30	1.68	4 (18%)	27,47,47	1.47	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. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
16	UTP	A	2003[B]	-	-	1/20/38/38	0/2/2/2
16	UTP	A	2003[A]	-	-	5/20/38/38	0/2/2/2

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	A	2003[A]	UTP	C4-N3	4.24	1.40	1.33
16	A	2003[B]	UTP	C4-N3	4.24	1.40	1.33
16	A	2003[A]	UTP	C6-N1	3.78	1.40	1.35
16	A	2003[B]	UTP	C6-N1	3.75	1.40	1.35
16	A	2003[B]	UTP	PG-O2G	3.39	1.61	1.50
16	A	2003[A]	UTP	PG-O2G	3.36	1.61	1.50
16	A	2003[B]	UTP	O4'-C1'	2.10	1.44	1.41
16	A	2003[A]	UTP	O4'-C1'	2.06	1.43	1.41

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
16	A	2003[A]	UTP	PB-O3B-PG	-3.75	119.95	132.83
16	A	2003[B]	UTP	PB-O3B-PG	-3.73	120.01	132.83
16	A	2003[A]	UTP	PB-O3A-PA	-3.73	120.03	132.83
16	A	2003[B]	UTP	PB-O3A-PA	-3.73	120.03	132.83
16	A	2003[B]	UTP	O1G-PG-O3B	2.45	112.86	104.64
16	A	2003[A]	UTP	O1G-PG-O3B	2.45	112.86	104.64
16	A	2003[B]	UTP	O4'-C1'-C2'	-2.01	103.98	106.93

There are no chirality outliers.

All (6) torsion outliers are listed below:

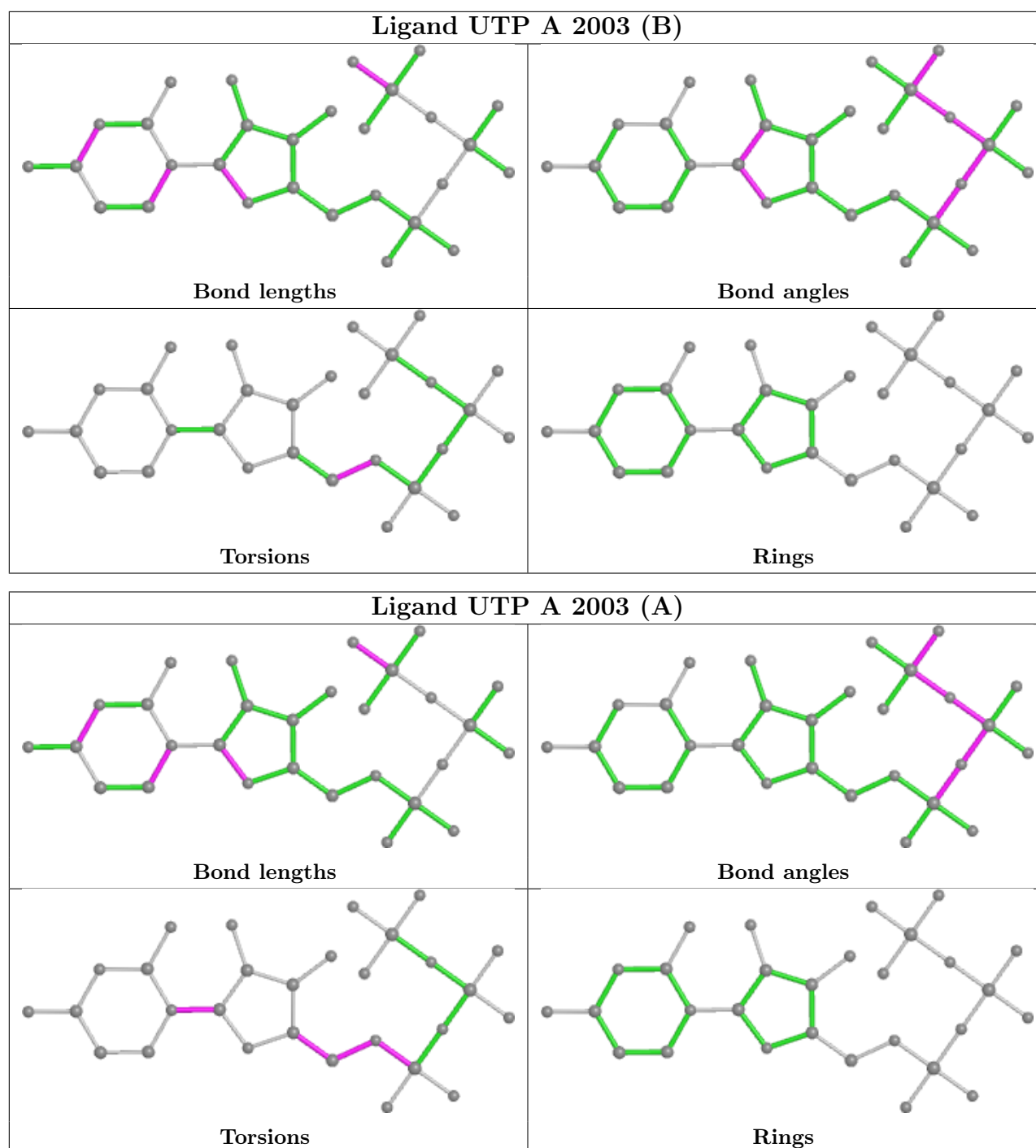
Mol	Chain	Res	Type	Atoms
16	A	2003[A]	UTP	C4'-C5'-O5'-PA
16	A	2003[A]	UTP	C2'-C1'-N1-C6
16	A	2003[A]	UTP	C3'-C4'-C5'-O5'
16	A	2003[A]	UTP	O4'-C4'-C5'-O5'
16	A	2003[B]	UTP	C4'-C5'-O5'-PA
16	A	2003[A]	UTP	C5'-O5'-PA-O1A

There are no ring outliers.

2 monomers are involved in 12 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
16	A	2003[B]	UTP	3	0
16	A	2003[A]	UTP	9	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

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, 95th 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 ²)	Q<0.9
1	R	10/10 (100%)	0.66	0 100 100	118, 142, 150, 153	0
2	T	28/28 (100%)	1.72	12 (42%) 0 0	138, 167, 200, 200	0
3	N	14/14 (100%)	2.74	9 (64%) 0 0	155, 184, 200, 200	0
4	A	1411/1733 (81%)	0.40	114 (8%) 12 13	101, 149, 166, 193	0
5	B	1121/1224 (91%)	0.34	81 (7%) 15 17	84, 141, 159, 176	0
6	C	266/318 (83%)	0.27	15 (5%) 24 25	109, 139, 155, 178	0
7	E	214/215 (99%)	0.57	19 (8%) 9 11	147, 163, 172, 177	0
8	F	85/155 (54%)	0.30	4 (4%) 31 31	144, 160, 173, 178	0
9	H	133/146 (91%)	0.54	14 (10%) 6 7	141, 154, 173, 182	0
10	I	119/122 (97%)	0.75	14 (11%) 4 5	134, 153, 168, 171	0
11	J	65/70 (92%)	0.04	1 (1%) 73 72	99, 120, 137, 144	0
12	K	114/120 (95%)	0.26	4 (3%) 44 43	130, 147, 166, 171	0
13	L	46/70 (65%)	1.20	11 (23%) 0 0	148, 174, 178, 178	0
All	All	3626/4225 (85%)	0.42	298 (8%) 11 13	84, 147, 169, 200	0

All (298) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
5	B	250	PHE	10.2
5	B	1221	SER	10.0
5	B	339	THR	8.9
4	A	1090	ALA	7.7
5	B	1224	PHE	7.5
7	E	48	ASP	7.0
4	A	1087	ALA	6.8
3	N	14	DG	6.8
4	A	163	SER	6.8

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Mol	Chain	Res	Type	RSRZ
4	A	1089	VAL	6.7
7	E	49	SER	6.6
7	E	86	PRO	6.5
4	A	1091	SER	6.5
4	A	168	GLY	6.4
9	H	85	GLY	6.3
5	B	869	SER	6.3
4	A	146	MET	5.7
4	A	1082	ASN	5.7
4	A	255	SER	5.7
2	T	14	DG	5.6
4	A	1175	SER	5.5
5	B	1183	LYS	5.5
10	I	74	GLU	5.2
4	A	42	ASP	5.2
13	L	27	LEU	5.2
4	A	286	HIS	5.2
7	E	50	MET	5.2
7	E	66	GLU	5.2
3	N	7	DA	5.1
5	B	1223	ASP	5.1
4	A	692	ASP	5.1
5	B	645	SER	5.1
4	A	161	LEU	5.0
13	L	26	THR	5.0
9	H	29	ALA	4.9
5	B	883	LEU	4.9
6	C	202	PRO	4.9
5	B	251	ILE	4.9
2	T	12	DC	4.8
7	E	125	PRO	4.7
4	A	165	GLY	4.5
4	A	65	LEU	4.5
9	H	86	ASP	4.5
4	A	425	GLN	4.5
6	C	203	GLN	4.5
5	B	895	ASP	4.5
4	A	1083	THR	4.4
10	I	119	THR	4.4
6	C	214	ASN	4.4
5	B	108	VAL	4.4
3	N	8	DT	4.3

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Mol	Chain	Res	Type	RSRZ
5	B	244	LEU	4.3
4	A	1234	GLU	4.3
2	T	3	DA	4.3
4	A	250	ILE	4.2
6	C	213	PRO	4.2
4	A	64	ASN	4.1
4	A	258	GLY	4.1
4	A	283	GLY	4.1
4	A	1232	ASN	4.1
5	B	647	GLY	4.1
5	B	343	ILE	4.1
4	A	788	SER	4.0
2	T	4	DC	4.0
4	A	257	ARG	4.0
4	A	147	VAL	4.0
4	A	1446	ASP	4.0
5	B	868	MET	4.0
12	K	16	GLU	4.0
13	L	31	CYS	3.9
3	N	2	DT	3.9
4	A	186	LYS	3.9
5	B	887	HIS	3.9
4	A	1449	SER	3.9
5	B	344	LYS	3.9
2	T	10	DA	3.9
4	A	1204	ASP	3.8
4	A	1231	ASP	3.8
4	A	1287	TYR	3.8
4	A	69	THR	3.8
3	N	13	DA	3.8
4	A	751	SER	3.8
4	A	595	THR	3.8
4	A	386	ASP	3.7
5	B	135	ARG	3.7
5	B	21	GLU	3.7
4	A	397	ASN	3.7
9	H	132	LEU	3.7
5	B	367	LEU	3.6
4	A	1188	GLN	3.6
7	E	214	CYS	3.6
4	A	284	ALA	3.6
9	H	88	SER	3.6

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Mol	Chain	Res	Type	RSRZ
2	T	13	DA	3.5
5	B	933	SER	3.5
4	A	50	ILE	3.5
4	A	256	GLN	3.5
10	I	2	THR	3.5
4	A	162	VAL	3.5
4	A	1080	THR	3.5
8	F	155	LEU	3.5
4	A	941	LYS	3.4
2	T	11	DG	3.4
5	B	870	ILE	3.4
4	A	1165	GLU	3.4
13	L	50	ASP	3.4
5	B	1220	ARG	3.4
4	A	750	GLY	3.4
5	B	1041	GLU	3.4
5	B	263	GLY	3.4
5	B	349	ILE	3.4
9	H	84	ALA	3.3
4	A	154	SER	3.3
13	L	45	ALA	3.3
5	B	866	TYR	3.3
5	B	531	GLN	3.3
4	A	166	GLY	3.3
10	I	105	SER	3.3
8	F	152	ILE	3.2
6	C	12	GLU	3.2
9	H	137	GLN	3.2
4	A	311	GLN	3.2
5	B	245	GLU	3.2
5	B	865	LYS	3.2
4	A	700	ASN	3.1
4	A	1378	GLN	3.1
4	A	317	LYS	3.1
13	L	33	GLU	3.1
4	A	318	SER	3.1
5	B	867	GLY	3.1
4	A	1258	HIS	3.1
9	H	108	SER	3.1
6	C	268	ASP	3.0
4	A	398	GLU	3.0
5	B	452	THR	3.0

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Mol	Chain	Res	Type	RSRZ
8	F	149	GLU	3.0
10	I	36	GLU	3.0
4	A	1168	GLU	3.0
5	B	1161	HIS	3.0
5	B	332	ASP	3.0
5	B	252	SER	3.0
4	A	44	THR	2.9
4	A	291	GLU	2.9
4	A	972	HIS	2.9
7	E	102	GLU	2.9
4	A	1261	LYS	2.9
4	A	701	LEU	2.9
5	B	629	ASP	2.9
5	B	1219	ASP	2.9
6	C	13	ALA	2.9
5	B	335	GLY	2.9
10	I	9	ASP	2.9
4	A	287	HIS	2.9
5	B	261	ARG	2.9
7	E	36	GLU	2.9
9	H	25	ARG	2.8
4	A	1450	LEU	2.8
12	K	15	GLY	2.8
4	A	1225	PHE	2.8
3	N	6	DT	2.8
5	B	474	SER	2.8
5	B	1153	GLU	2.8
4	A	1288	ASP	2.8
5	B	239	GLU	2.8
10	I	3	THR	2.8
5	B	340	ALA	2.8
2	T	9	DA	2.8
5	B	470	LYS	2.8
13	L	44	ASP	2.8
6	C	233	GLU	2.7
12	K	110	ASN	2.7
5	B	1100	ASP	2.7
4	A	697	ALA	2.7
3	N	3	DG	2.7
3	N	9	DC	2.7
5	B	140	ILE	2.7
4	A	153	PRO	2.7

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Mol	Chain	Res	Type	RSRZ
4	A	970	THR	2.7
4	A	1055	ARG	2.7
5	B	407	ASP	2.7
6	C	94	LYS	2.7
8	F	137	TYR	2.7
9	H	83	GLN	2.7
5	B	871	THR	2.7
7	E	73	PRO	2.7
7	E	51	GLY	2.6
10	I	5	ARG	2.6
12	K	14	GLU	2.6
4	A	151	ASP	2.6
4	A	253	ASN	2.6
9	H	30	SER	2.6
4	A	862	ASN	2.6
13	L	52	GLY	2.6
2	T	5	DC	2.6
5	B	113	TYR	2.6
4	A	1240	CYS	2.6
5	B	736	THR	2.6
4	A	897	TYR	2.6
7	E	76	GLY	2.6
6	C	138	GLU	2.5
4	A	182	VAL	2.5
5	B	1119	VAL	2.5
7	E	85	GLU	2.5
3	N	1	DC	2.5
5	B	882	THR	2.5
5	B	164	LYS	2.5
9	H	109	LYS	2.5
4	A	1257	ASP	2.5
6	C	136	ASP	2.5
2	T	15	DA	2.5
9	H	105	GLU	2.5
10	I	80	SER	2.5
4	A	1448	GLU	2.5
7	E	215	MET	2.5
4	A	428	TYR	2.5
5	B	338	GLY	2.5
5	B	598	GLU	2.5
5	B	107	GLY	2.4
4	A	705	LYS	2.4

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Mol	Chain	Res	Type	RSRZ
4	A	128	ILE	2.4
5	B	1110	PRO	2.4
4	A	1119	TYR	2.4
5	B	32	ALA	2.4
10	I	104	LEU	2.4
4	A	1281	ARG	2.4
5	B	66	ASP	2.4
10	I	72	ASP	2.4
4	A	1092	LYS	2.4
5	B	246	LYS	2.4
6	C	151	GLN	2.4
4	A	66	LYS	2.4
5	B	277	LYS	2.4
4	A	411	ASP	2.3
5	B	709	ASP	2.3
5	B	509	ALA	2.3
13	L	43	THR	2.3
4	A	259	GLU	2.3
4	A	1244	ARG	2.3
4	A	1020	CYS	2.3
5	B	278	GLN	2.3
5	B	891	ASP	2.3
5	B	908	GLU	2.3
4	A	72	GLU	2.3
5	B	737	THR	2.2
5	B	738	PHE	2.2
4	A	466	SER	2.2
5	B	1097	HIS	2.2
4	A	1303	GLU	2.2
5	B	249	ARG	2.2
5	B	322	PHE	2.2
7	E	52	ARG	2.2
4	A	152	VAL	2.2
5	B	475	SER	2.2
5	B	646	LEU	2.2
5	B	993	THR	2.2
2	T	18	DA	2.2
6	C	212	PRO	2.2
4	A	1086	PHE	2.2
5	B	48	LEU	2.2
2	T	2	DT	2.2
13	L	46	VAL	2.2

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Mol	Chain	Res	Type	RSRZ
4	A	971	PHE	2.2
4	A	895	LYS	2.2
5	B	886	LYS	2.2
6	C	211	ASP	2.1
4	A	316	GLN	2.1
11	J	27	GLU	2.1
4	A	410	GLY	2.1
4	A	1286	LYS	2.1
4	A	150	THR	2.1
7	E	100	ILE	2.1
4	A	175	ARG	2.1
4	A	307	ASP	2.1
4	A	285	PRO	2.1
4	A	480	ALA	2.1
13	L	51	CYS	2.1
6	C	217	ASP	2.1
10	I	118	ARG	2.1
5	B	1098	MET	2.1
4	A	313	GLN	2.1
10	I	81	ARG	2.1
4	A	1290	LYS	2.1
7	E	192	ARG	2.1
10	I	40	SER	2.1
7	E	2	ASP	2.0
4	A	16	GLU	2.0
4	A	454	SER	2.0
5	B	1120	GLU	2.0
4	A	896	ARG	2.0
5	B	253	THR	2.0
4	A	945	GLU	2.0
4	A	404	TYR	2.0
4	A	753	GLY	2.0
5	B	588	GLY	2.0
9	H	127	GLY	2.0
4	A	13	THR	2.0
7	E	33	GLU	2.0
4	A	63	ARG	2.0

6.2 Non-standard residues in protein, DNA, RNA chains

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

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

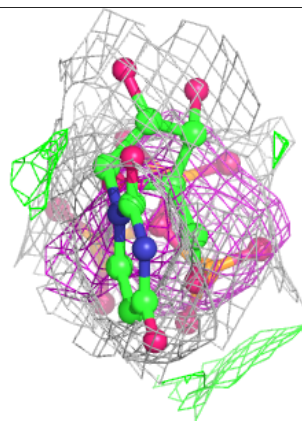
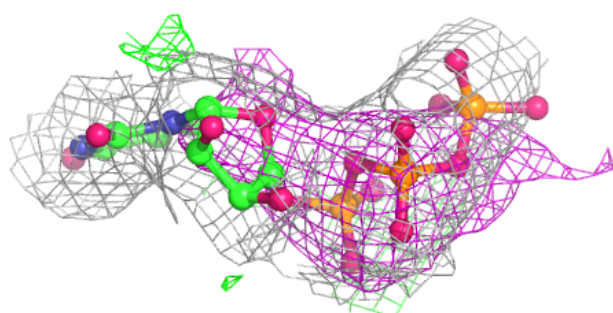
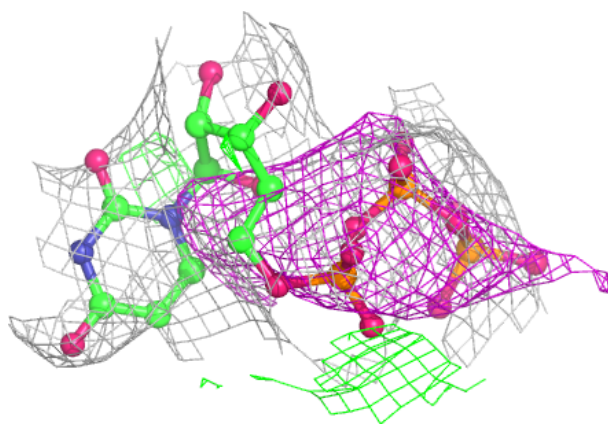
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
14	ZN	I	204	1/1	0.81	0.12	154,154,154,154	0
16	UTP	A	2003[A]	29/29	0.82	0.38	132,133,138,138	29
16	UTP	A	2003[B]	29/29	0.82	0.38	137,137,137,137	29
14	ZN	A	1734	1/1	0.87	0.25	157,157,157,157	0
14	ZN	I	203	1/1	0.90	0.10	141,141,141,141	0
15	MG	A	2001	1/1	0.91	0.15	124,124,124,124	0
14	ZN	A	1735	1/1	0.93	0.08	149,149,149,149	0
14	ZN	L	105	1/1	0.95	0.27	175,175,175,175	0
14	ZN	C	319	1/1	0.95	0.09	149,149,149,149	0
14	ZN	B	1307	1/1	0.96	0.19	142,142,142,142	0
15	MG	A	2002	1/1	0.96	0.33	59,59,59,59	0
14	ZN	J	101	1/1	0.98	0.07	109,109,109,109	0

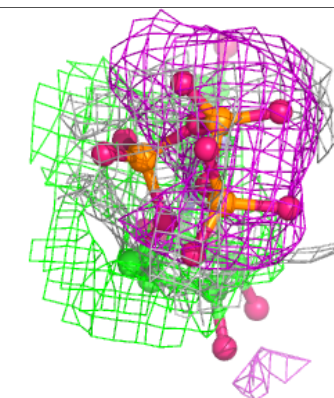
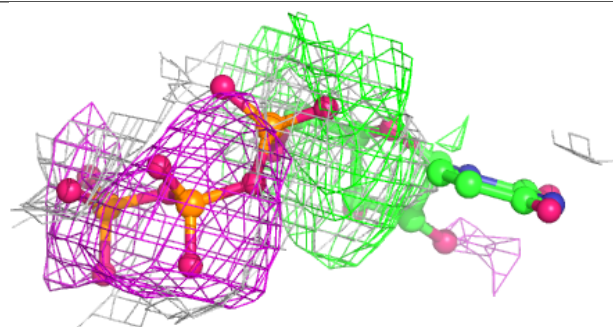
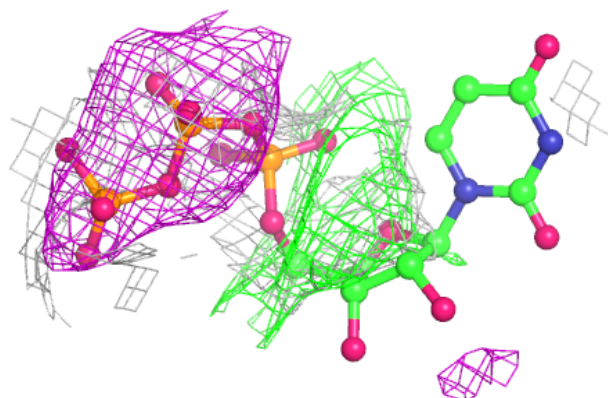
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around UTP A 2003 (A):

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

**Electron density around UTP A 2003 (B):**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



6.5 Other polymers [i](#)

There are no such residues in this entry.