



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 15, 2023 – 06:04 PM EDT

PDB ID : 1TWF
Title : RNA polymerase II complexed with UTP at 2.3 Å resolution
Authors : Westover, K.D.; Bushnell, D.A.; Kornberg, R.D.
Deposited on : 2004-06-30
Resolution : 2.30 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 : 2.35
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) : 2.35

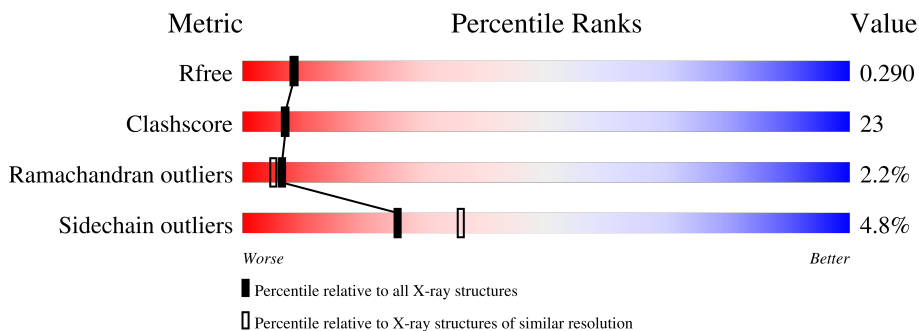
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.30 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	5042 (2.30-2.30)
Clashscore	141614	5643 (2.30-2.30)
Ramachandran outliers	138981	5575 (2.30-2.30)
Sidechain outliers	138945	5575 (2.30-2.30)

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 $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	A	1733	47% 31% 18%
2	B	1224	51% 36% 11%
3	C	318	44% 37% 16%
4	E	215	66% 33%
5	F	155	33% 21% 46%
6	H	146	45% 40% 7% 9%
7	I	122	68% 29%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
8	J	70	 44% 40% 9% 7%
9	K	120	 54% 38% 5% 5%
10	L	70	 31% 26% 9% 34%

2 Entry composition [i](#)

There are 13 unique types of molecules in this entry. The entry contains 28318 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 protein called DNA-directed RNA polymerase II largest subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	1419	11154	7023	1952	2118	61	0	0	0

- Molecule 2 is a protein called DNA-directed RNA polymerase II 140 kDa polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	1094	8711	5525	1519	1614	53	0	0	0

- Molecule 3 is a protein called DNA-directed RNA polymerase II 45 kDa polypeptide.

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

- Molecule 4 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			
4	E	215	1760	1116	310	322	12	0	0	0

- Molecule 5 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			
5	F	84	679	434	115	127	3	0	0	0

- Molecule 6 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			
6	H	133	1068	673	180	211	4	0	0	0

- Molecule 7 is a protein called DNA-directed RNA polymerase II 14.2 kDa polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
7	I	122	997	613	182	191	11	0	0	0

- Molecule 8 is a protein called DNA-directed RNA polymerases I, II, and III 8.3 kDa polypeptide.

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

- Molecule 9 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			
9	K	114	919	590	156	171	2	0	0	0

- Molecule 10 is a protein called DNA-directed RNA polymerases I, II, and III 7.7 kDa polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
10	L	46	364	224	72	64	4	0	0	0

- Molecule 11 is ZINC ION (three-letter code: ZN) (formula: Zn).

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

Continued on next page...

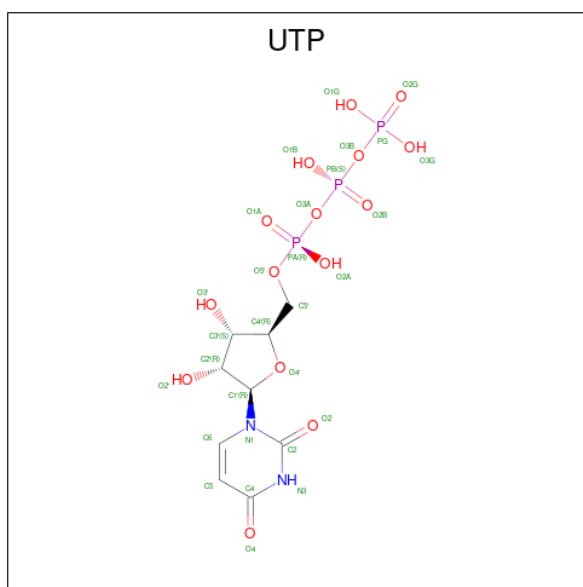
Continued from previous page...

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
11	L	1	Total	Zn	0	0
			1	1		

- Molecule 12 is MANGANESE (II) ION (three-letter code: MN) (formula: Mn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
12	A	2	Total	Mn	0	0
			2	2		

- Molecule 13 is URIDINE 5'-TRIPHOSPHATE (three-letter code: UTP) (formula: C₉H₁₅N₂O₁₅P₃).

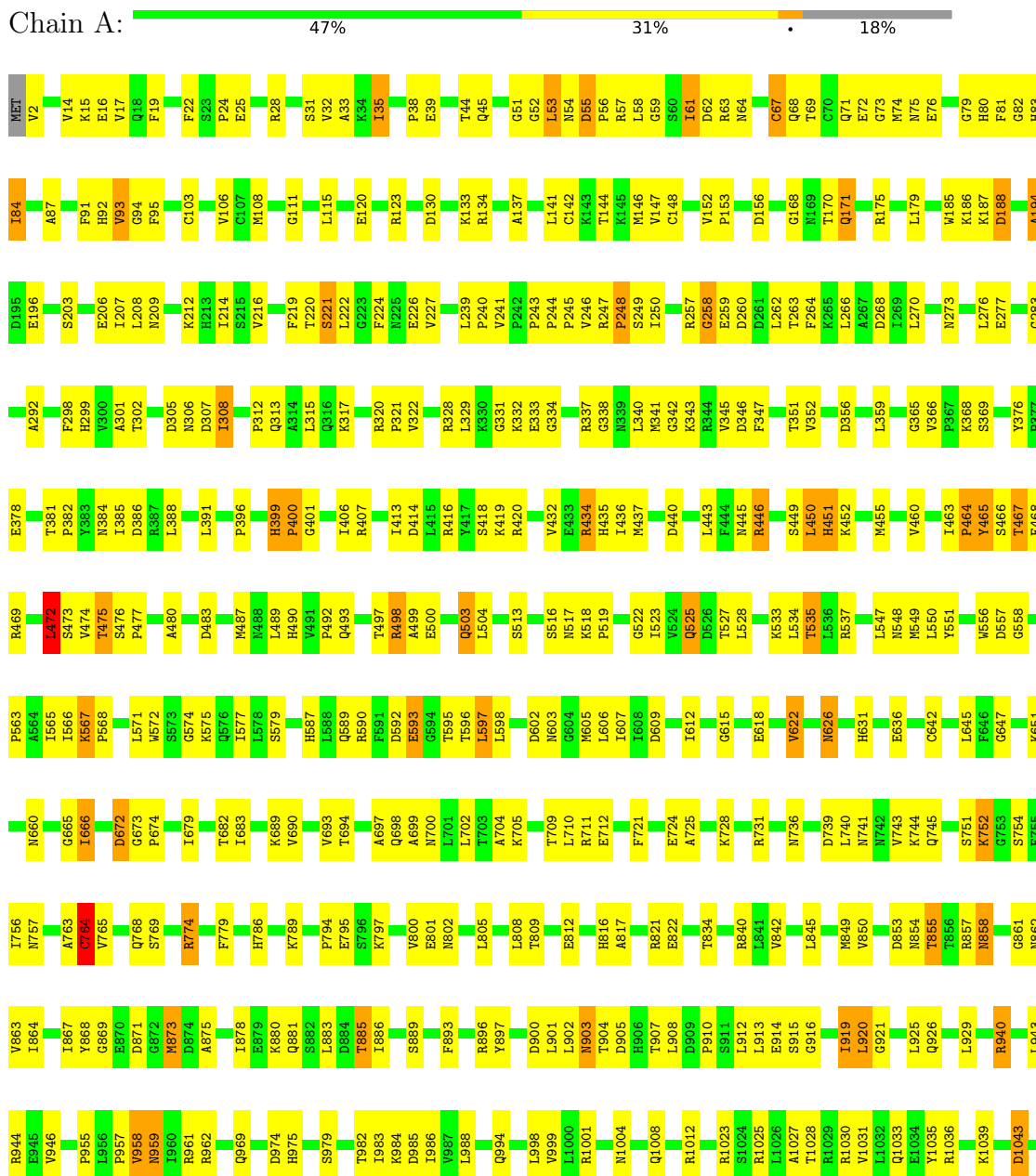


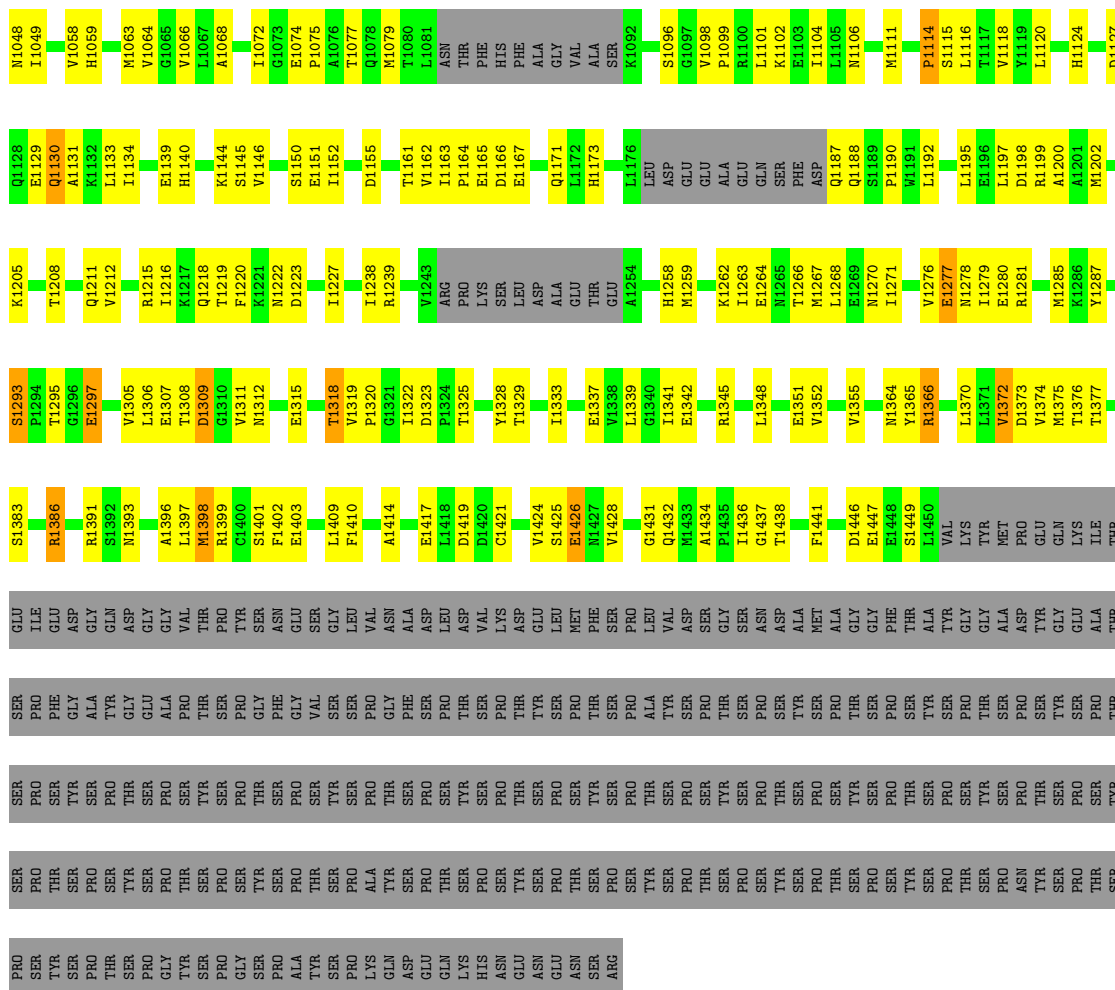
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
13	B	1	Total	C	N	O	P	0	0
			29	9	2	15	3		

3 Residue-property plots

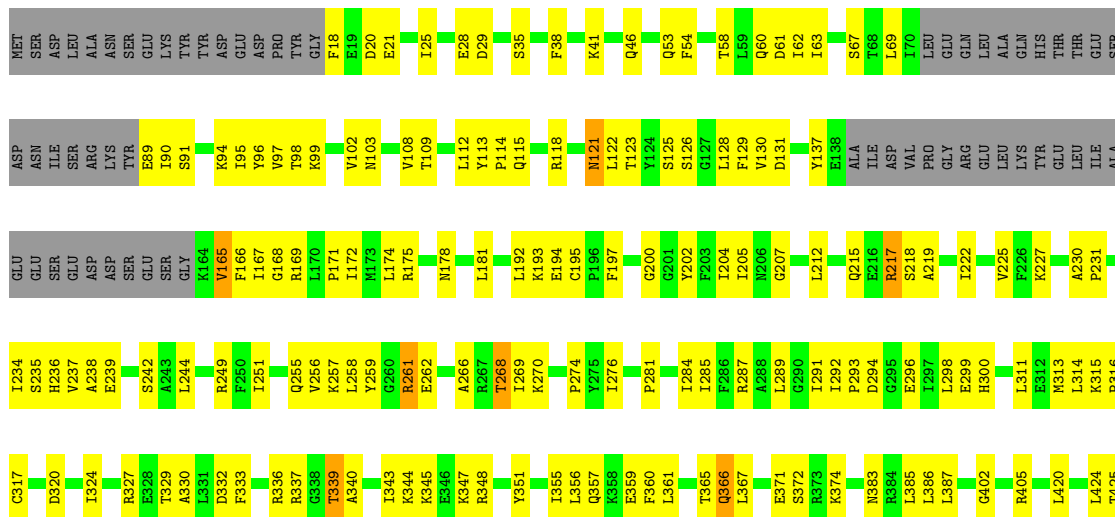
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded 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. 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.

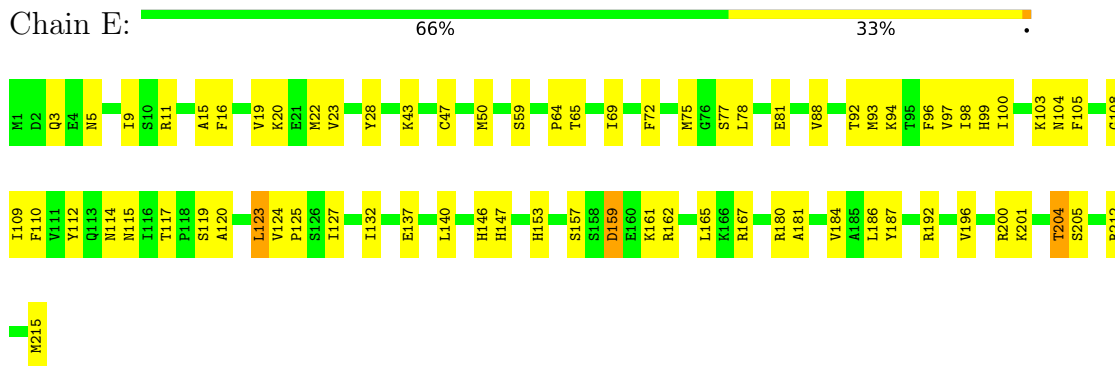
- Molecule 1: DNA-directed RNA polymerase II largest subunit



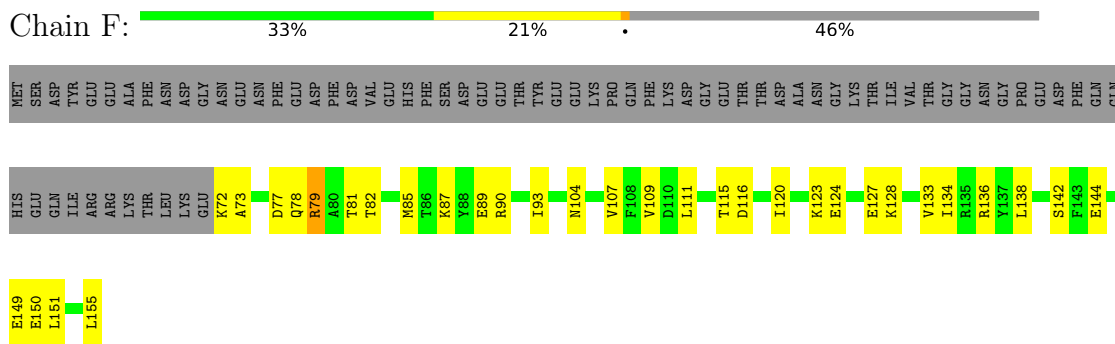


• Molecule 2: DNA-directed RNA polymerase II 140 kDa polypeptide

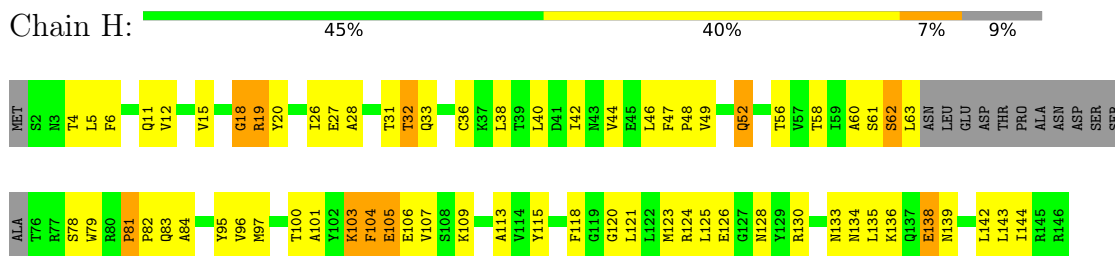




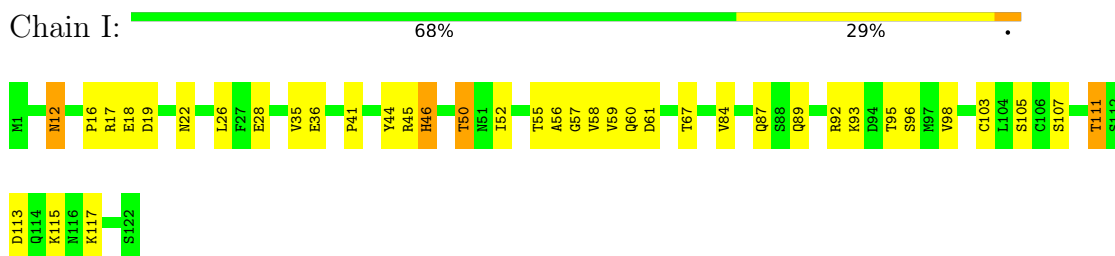
- Molecule 5: DNA-directed RNA polymerases I, II, and III 23 kDa polypeptide



- Molecule 6: DNA-directed RNA polymerases I, II, and III 14.5 kDa polypeptide

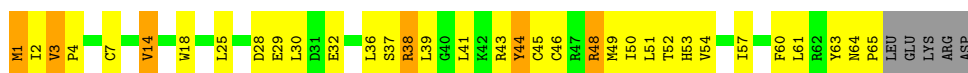


- Molecule 7: DNA-directed RNA polymerase II 14.2 kDa polypeptide



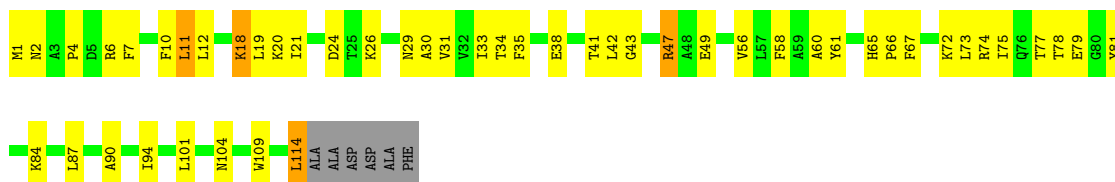
- Molecule 8: DNA-directed RNA polymerases I, II, and III 8.3 kDa polypeptide





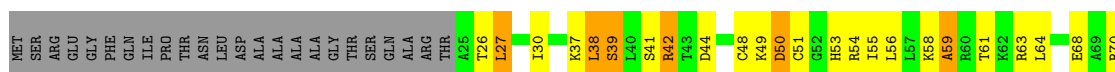
- Molecule 9: DNA-directed RNA polymerase II 13.6 kDa polypeptide

Chain K: 54% 38% 5%



- Molecule 10: DNA-directed RNA polymerases I, II, and III 7.7 kDa polypeptide

Chain L: 31% 26% 9% 34%



4 Data and refinement statistics

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, α , β , γ	123.00Å 223.00Å 374.00Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	40.00 – 2.30 39.69 – 2.19	Depositor EDS
% Data completeness (in resolution range)	(Not available) (40.00-2.30) 90.5 (39.69-2.19)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	0.95 (at 2.20Å)	Xtrriage
Refinement program	CNS	Depositor
R, R_{free}	0.247 , 0.294 0.292 , 0.290	Depositor DCC
R_{free} test set	5166 reflections (2.00%)	wwPDB-VP
Wilson B-factor (Å ²)	47.4	Xtrriage
Anisotropy	0.331	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 46.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	28318	wwPDB-VP
Average B, all atoms (Å ²)	65.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.09% 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: MN, UTP, 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	A	0.43	1/11352 (0.0%)	0.66	2/15352 (0.0%)
2	B	0.41	0/8882	0.64	1/11976 (0.0%)
3	C	0.41	0/2133	0.60	0/2891
4	E	0.41	0/1796	0.63	1/2416 (0.0%)
5	F	0.44	0/691	0.63	0/933
6	H	0.30	0/1086	0.58	0/1470
7	I	0.40	0/1016	0.60	0/1365
8	J	0.41	0/541	0.65	0/727
9	K	0.39	0/937	0.56	0/1265
10	L	0.37	0/366	0.55	0/485
All	All	0.41	1/28800 (0.0%)	0.64	4/38880 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	764	CYS	CB-SG	-7.44	1.69	1.82

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	472	LEU	CA-CB-CG	-7.72	97.54	115.30
2	B	829	CYS	N-CA-C	-6.17	94.35	111.00
4	E	200	ARG	NE-CZ-NH2	-6.02	117.29	120.30
1	A	779	PHE	N-CA-C	-5.00	97.50	111.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	11154	0	11224	555	0
2	B	8711	0	8738	427	0
3	C	2095	0	2051	139	0
4	E	1760	0	1788	53	0
5	F	679	0	701	34	0
6	H	1068	0	1040	57	0
7	I	997	0	953	40	0
8	J	532	0	542	53	0
9	K	919	0	929	62	0
10	L	364	0	389	33	0
11	A	2	0	0	0	0
11	B	1	0	0	0	0
11	C	1	0	0	0	0
11	I	2	0	0	0	0
11	J	1	0	0	0	0
11	L	1	0	0	0	0
12	A	2	0	0	0	0
13	B	29	0	11	1	0
All	All	28318	0	28366	1291	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 23.

All (1291) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:855:THR:HG21	1:A:857:ARG:HE	1.09	1.14
6:H:130:ARG:HA	6:H:133:ASN:HD22	1.11	1.11
1:A:1364:ASN:ND2	1:A:1366:ARG:HH11	1.53	1.05
1:A:351:THR:HG22	1:A:352:VAL:H	1.20	1.05
1:A:1364:ASN:HD21	1:A:1366:ARG:NH1	1.58	0.99
1:A:901:LEU:H	1:A:926:GLN:NE2	1.60	0.98
2:B:680:THR:HG22	2:B:681:TRP:H	1.28	0.98
1:A:725:ALA:HA	1:A:728:LYS:HE3	1.48	0.95
9:K:65:HIS:HD2	9:K:67:PHE:H	1.01	0.94

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1161:THR:HG22	1:A:1163:ILE:H	1.32	0.93
2:B:118:ARG:NH1	2:B:204:ILE:HD11	1.83	0.93
1:A:1162:VAL:HG11	7:I:41:PRO:HG3	1.51	0.92
3:C:137:LYS:H	3:C:137:LYS:HD2	1.35	0.91
8:J:48:ARG:HH11	8:J:48:ARG:HG2	1.34	0.91
1:A:337:ARG:HG2	1:A:341:MET:HE2	1.51	0.91
1:A:901:LEU:H	1:A:926:GLN:HE21	1.19	0.90
1:A:187:LYS:HB2	1:A:194:ALA:HB1	1.53	0.90
1:A:1376:THR:HG22	4:E:212:ARG:HH22	1.37	0.89
1:A:902:LEU:HG	1:A:926:GLN:HG3	1.55	0.89
1:A:567:LYS:HB2	1:A:568:PRO:CD	2.03	0.88
1:A:446:ARG:HD3	1:A:480:ALA:HB2	1.52	0.88
5:F:81:THR:CG2	5:F:136:ARG:HH11	1.87	0.88
2:B:63:ILE:HB	2:B:95:ILE:HD11	1.55	0.87
1:A:868:TYR:CE1	1:A:1064:VAL:HG11	2.09	0.87
3:C:242:GLN:HE21	3:C:246:ARG:HH21	1.23	0.87
1:A:1116:LEU:HD12	1:A:1329:THR:HB	1.57	0.86
1:A:55:ASP:H	1:A:56:PRO:HD2	1.40	0.86
1:A:313:GLN:HE21	1:A:322:VAL:HG12	1.40	0.86
2:B:999:MET:HG3	2:B:1000:PRO:HD2	1.57	0.86
1:A:351:THR:HG22	1:A:352:VAL:N	1.90	0.86
2:B:705:MET:HE2	2:B:745:PRO:HB3	1.57	0.86
2:B:952:VAL:HB	10:L:58:LYS:HB2	1.56	0.85
1:A:1376:THR:HG22	4:E:212:ARG:NH2	1.91	0.85
1:A:875:ALA:HB2	1:A:1366:ARG:HD2	1.58	0.85
1:A:1364:ASN:HD21	1:A:1366:ARG:HH11	0.86	0.85
1:A:246:VAL:HG12	1:A:328:ARG:HH12	1.39	0.85
2:B:726:ALA:HB1	2:B:1051:THR:HG21	1.57	0.85
5:F:90:ARG:HD3	5:F:155:LEU:HD12	1.58	0.85
2:B:763:GLN:HG2	2:B:765:PRO:HD2	1.58	0.85
1:A:317:LYS:HD2	1:A:321:PRO:HG2	1.57	0.85
1:A:414:ASP:OD1	1:A:416:ARG:HG2	1.76	0.85
1:A:1208:THR:HB	1:A:1211:GLN:HG3	1.59	0.85
3:C:167:HIS:HD2	3:C:169:LYS:H	1.21	0.85
9:K:65:HIS:CD2	9:K:67:PHE:H	1.93	0.84
3:C:73:GLN:HE21	3:C:75:MET:H	1.25	0.84
6:H:101:ALA:HB1	6:H:103:LYS:HG3	1.58	0.84
1:A:901:LEU:HD22	1:A:919:ILE:HG23	1.58	0.84
2:B:29:ASP:HB3	2:B:658:ILE:HD13	1.58	0.84
1:A:1118:VAL:HG22	1:A:1306:LEU:HB2	1.60	0.83
2:B:118:ARG:HH11	2:B:204:ILE:HD11	1.43	0.83

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:169:ARG:HB2	2:B:454:THR:HG23	1.59	0.83
2:B:29:ASP:HB3	2:B:658:ILE:CD1	2.08	0.83
2:B:526:GLU:HG2	2:B:538:ASN:ND2	1.93	0.83
3:C:56:THR:HG23	3:C:58:LEU:H	1.42	0.83
5:F:93:ILE:HD11	5:F:134:ILE:HD11	1.60	0.83
2:B:864:LYS:HB3	2:B:871:THR:HA	1.58	0.83
4:E:124:VAL:HG13	4:E:132:ILE:HB	1.59	0.83
5:F:81:THR:HG22	5:F:136:ARG:NH1	1.93	0.82
3:C:258:ILE:HD11	9:K:42:LEU:HD21	1.61	0.82
2:B:1008:PRO:HB3	2:B:1087:PHE:HE1	1.44	0.82
2:B:25:ILE:HD12	2:B:653:VAL:HG23	1.62	0.82
3:C:54:ASN:OD1	3:C:56:THR:HG22	1.80	0.82
1:A:356:ASP:HB3	1:A:359:LEU:HD12	1.62	0.81
1:A:869:GLY:O	4:E:204:THR:HG21	1.80	0.81
1:A:1398:MET:HG3	1:A:1426:GLU:HG2	1.62	0.81
7:I:98:VAL:HG21	7:I:113:ASP:HB2	1.63	0.81
1:A:666:ILE:HD12	2:B:1030:LEU:HD22	1.64	0.80
1:A:871:ASP:HB3	4:E:204:THR:HG23	1.63	0.80
1:A:982:THR:O	1:A:985:ASP:HB2	1.82	0.80
1:A:855:THR:CG2	1:A:857:ARG:HE	1.91	0.80
1:A:1409:LEU:HD13	2:B:1207:LEU:HD21	1.64	0.79
2:B:871:THR:HG22	2:B:872:GLU:H	1.44	0.79
2:B:215:GLN:HE22	2:B:499:ASN:HD22	1.29	0.79
2:B:800:GLN:HB3	8:J:52:THR:CG2	2.13	0.79
1:A:1266:THR:HG23	1:A:1270:ASN:HD22	1.48	0.79
3:C:258:ILE:HD13	9:K:35:PHE:HE2	1.48	0.78
1:A:741:ASN:HD22	1:A:744:LYS:H	1.31	0.78
5:F:81:THR:HG22	5:F:136:ARG:HH11	1.49	0.78
1:A:1446:ASP:HB2	5:F:133:VAL:HG23	1.63	0.78
2:B:882:THR:HG21	2:B:935:ARG:HG2	1.67	0.77
1:A:1398:MET:HG2	1:A:1425:SER:HB2	1.65	0.77
2:B:193:LYS:HE2	8:J:65:PRO:HG3	1.66	0.77
1:A:14:VAL:H	1:A:1432:GLN:HE22	1.30	0.77
2:B:1006:ILE:HD11	8:J:43:ARG:HB2	1.67	0.77
2:B:1051:THR:HG22	2:B:1053:GLU:H	1.49	0.77
3:C:73:GLN:NE2	3:C:75:MET:HB2	2.00	0.77
6:H:26:ILE:HD12	6:H:42:ILE:HD12	1.65	0.76
1:A:472:LEU:HD13	2:B:835:GLN:NE2	1.98	0.76
1:A:672:ASP:H	1:A:736:ASN:ND2	1.84	0.76
1:A:709:THR:HB	1:A:712:GLU:HG3	1.66	0.76
2:B:801:LYS:O	8:J:52:THR:HG23	1.86	0.76

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:399:HIS:O	1:A:401:GLY:N	2.18	0.76
1:A:855:THR:HG21	1:A:857:ARG:NE	1.94	0.76
1:A:108:MET:H	1:A:171:GLN:NE2	1.83	0.75
1:A:840:ARG:HH11	1:A:1386:ARG:HB3	1.51	0.75
2:B:515:HIS:HD2	2:B:517:THR:H	1.33	0.75
1:A:1410:PHE:HD2	2:B:1212:ILE:HD11	1.52	0.74
2:B:901:PRO:HD3	10:L:58:LYS:HB3	1.69	0.74
2:B:918:ILE:HD12	2:B:935:ARG:HD2	1.68	0.74
3:C:124:LEU:O	3:C:127:ARG:HG2	1.87	0.74
1:A:55:ASP:N	1:A:56:PRO:HD2	2.02	0.74
1:A:445:ASN:HB2	1:A:455:MET:HG2	1.69	0.74
2:B:809:MET:HG2	2:B:814:PHE:HB3	1.70	0.74
1:A:855:THR:HG23	1:A:857:ARG:HG3	1.69	0.74
2:B:680:THR:HG22	2:B:681:TRP:N	2.02	0.74
1:A:179:LEU:HG	1:A:308:ILE:HG21	1.67	0.74
5:F:81:THR:CG2	5:F:136:ARG:NH1	2.50	0.74
1:A:946:VAL:HG22	4:E:201:LYS:HD2	1.69	0.74
1:A:1215:ARG:HA	1:A:1218:GLN:HE21	1.53	0.74
1:A:450:LEU:HD12	1:A:450:LEU:H	1.50	0.73
1:A:666:ILE:HD11	2:B:1030:LEU:HB2	1.69	0.73
2:B:324:ILE:HG12	2:B:329:THR:HG22	1.70	0.73
10:L:38:LEU:HG	10:L:39:SER:H	1.53	0.73
2:B:953:LEU:HD21	2:B:955:THR:HG23	1.68	0.73
2:B:914:LYS:HB3	2:B:937:ALA:O	1.87	0.73
3:C:51:VAL:HG22	3:C:155:LEU:HD22	1.71	0.73
1:A:907:THR:HG22	1:A:908:LEU:H	1.53	0.73
1:A:79:GLY:HA3	1:A:245:PRO:HG3	1.71	0.73
3:C:42:PRO:HB3	3:C:161:LYS:HE3	1.69	0.72
4:E:96:PHE:CZ	4:E:100:ILE:HD11	2.24	0.72
1:A:1151:GLU:HG2	7:I:45:ARG:HD2	1.71	0.72
2:B:46:GLN:HE22	2:B:496:ARG:HB3	1.54	0.72
1:A:567:LYS:HB3	6:H:96:VAL:N	2.05	0.72
3:C:57:VAL:HG11	8:J:60:PHE:HB3	1.72	0.72
1:A:571:LEU:HD22	6:H:46:LEU:HD11	1.71	0.72
9:K:43:GLY:O	9:K:47:ARG:HB2	1.89	0.72
1:A:1342:GLU:OE2	4:E:212:ARG:NH1	2.23	0.72
2:B:294:ASP:H	7:I:12:ASN:ND2	1.87	0.72
3:C:214:ASN:HB2	3:C:217:ASP:OD2	1.90	0.71
2:B:281:PRO:HG2	2:B:284:ILE:HD12	1.71	0.71
2:B:822:ASN:HD22	8:J:52:THR:HG21	1.54	0.71
1:A:103:CYS:SG	1:A:207:ILE:HD12	2.31	0.71

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:208:LEU:HD21	1:A:212:LYS:HE3	1.72	0.71
1:A:868:TYR:CE1	1:A:1064:VAL:CG1	2.73	0.71
1:A:1161:THR:HG22	1:A:1163:ILE:N	2.04	0.71
1:A:875:ALA:HB2	1:A:1366:ARG:CD	2.19	0.71
1:A:523:ILE:HB	1:A:622:VAL:HG13	1.73	0.71
2:B:1222:ARG:H	2:B:1222:ARG:HD2	1.55	0.71
2:B:800:GLN:HB3	8:J:52:THR:HG22	1.72	0.71
5:F:72:LYS:N	5:F:142:SER:HA	2.06	0.71
1:A:55:ASP:H	1:A:56:PRO:CD	2.04	0.71
1:A:567:LYS:HB3	6:H:96:VAL:H	1.55	0.71
1:A:1192:LEU:HD11	1:A:1239:ARG:HB2	1.73	0.70
1:A:1438:THR:HG22	2:B:1144:ALA:H	1.56	0.70
2:B:644:GLU:HB2	2:B:654:ARG:HH22	1.55	0.70
1:A:587:HIS:HA	1:A:607:ILE:O	1.91	0.70
2:B:806:THR:HG22	2:B:809:MET:H	1.57	0.70
1:A:567:LYS:HE2	6:H:95:TYR:CZ	2.27	0.70
1:A:246:VAL:HG12	1:A:328:ARG:NH1	2.06	0.70
1:A:407:ARG:HD2	1:A:413:ILE:HD11	1.72	0.70
2:B:705:MET:CE	2:B:745:PRO:HB3	2.21	0.70
1:A:535:THR:HG23	1:A:575:LYS:HG2	1.72	0.70
1:A:754:SER:H	1:A:757:ASN:HD22	1.38	0.70
1:A:1364:ASN:ND2	1:A:1366:ARG:H	1.89	0.70
1:A:340:LEU:HD13	1:A:1399:ARG:HG2	1.74	0.70
1:A:574:GLY:O	1:A:577:ILE:HG13	1.92	0.70
2:B:864:LYS:HG2	2:B:871:THR:HG23	1.73	0.70
1:A:1059:HIS:HE1	5:F:155:LEU:HD22	1.56	0.70
1:A:1276:VAL:HB	1:A:1279:ILE:HD13	1.72	0.70
2:B:824:ILE:HD11	8:J:48:ARG:NH1	2.07	0.70
2:B:200:GLY:HA2	2:B:202:TYR:CE2	2.27	0.69
2:B:324:ILE:HD13	2:B:330:ALA:HA	1.73	0.69
1:A:134:ARG:HD2	1:A:221:SER:O	1.91	0.69
6:H:81:PRO:HB2	6:H:82:PRO:HD3	1.75	0.69
2:B:824:ILE:HD11	8:J:48:ARG:HH12	1.57	0.69
2:B:900:ALA:HB3	10:L:61:THR:HG23	1.73	0.69
1:A:264:PHE:HD1	1:A:315:LEU:HB3	1.58	0.69
3:C:20:PHE:HE1	3:C:22:LEU:HG	1.58	0.69
2:B:755:ILE:HG22	2:B:755:ILE:O	1.91	0.69
2:B:957:ASN:ND2	2:B:958:GLN:H	1.91	0.69
3:C:56:THR:HG21	3:C:63:ILE:HD11	1.73	0.68
1:A:87:ALA:HB3	1:A:276:LEU:HD23	1.76	0.68
1:A:683:ILE:HD11	1:A:764:CYS:HB2	1.74	0.68

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:381:THR:HG22	5:F:104:ASN:OD1	1.93	0.68
2:B:172:ILE:HD13	2:B:178:ASN:HB3	1.75	0.68
2:B:955:THR:HG22	10:L:55:ILE:HA	1.73	0.68
2:B:955:THR:HG22	10:L:54:ARG:O	1.94	0.68
1:A:533:LYS:NZ	1:A:660:ASN:HD21	1.92	0.68
2:B:67:SER:O	2:B:91:SER:HA	1.93	0.68
2:B:102:VAL:HG22	2:B:112:LEU:HB2	1.75	0.68
1:A:351:THR:CG2	1:A:352:VAL:H	2.01	0.68
1:A:914:GLU:HG3	1:A:979:SER:O	1.94	0.68
2:B:69:LEU:HD21	2:B:425:THR:HG23	1.73	0.68
1:A:567:LYS:HE2	6:H:95:TYR:CE1	2.29	0.68
3:C:114:TYR:CD2	3:C:140:ASN:HB3	2.29	0.68
1:A:53:LEU:HD23	1:A:54:ASN:H	1.58	0.67
2:B:1056:SER:HB3	2:B:1066:SER:HB2	1.76	0.67
1:A:598:LEU:HG	6:H:115:TYR:HE2	1.60	0.67
1:A:1277:GLU:O	1:A:1278:ASN:HB2	1.92	0.67
1:A:786:HIS:HE1	2:B:742:GLU:OE2	1.76	0.67
1:A:853:ASP:OD1	1:A:855:THR:HB	1.95	0.67
1:A:82:GLY:HA3	1:A:241:VAL:HB	1.76	0.67
1:A:567:LYS:HG3	1:A:568:PRO:HD2	1.77	0.67
2:B:879:ARG:HB3	2:B:883:LEU:HD23	1.77	0.67
3:C:73:GLN:HE21	3:C:75:MET:N	1.92	0.67
1:A:567:LYS:HB2	1:A:568:PRO:HD2	1.76	0.67
2:B:268:THR:HG21	2:B:270:LYS:HE3	1.76	0.67
2:B:293:PRO:HG2	2:B:296:GLU:HB2	1.77	0.67
1:A:901:LEU:HD22	1:A:919:ILE:CG2	2.25	0.67
1:A:907:THR:HG22	1:A:908:LEU:N	2.09	0.67
6:H:40:LEU:HD13	6:H:123:MET:HB2	1.76	0.66
1:A:1066:VAL:HG12	2:B:1140:ALA:HB2	1.77	0.66
2:B:950:ASP:HB2	2:B:969:ARG:HB2	1.77	0.66
5:F:109:VAL:HG11	5:F:123:LYS:HG2	1.77	0.66
6:H:79:TRP:CZ3	6:H:81:PRO:HG3	2.30	0.66
2:B:324:ILE:HD11	2:B:333:PHE:HB2	1.76	0.66
3:C:35:ARG:NH1	9:K:41:THR:N	2.43	0.66
1:A:203:SER:OG	1:A:206:GLU:HG3	1.95	0.66
2:B:876:LYS:HE3	2:B:893:LEU:O	1.96	0.66
3:C:166:GLU:HG2	10:L:70:ARG:NH1	2.09	0.66
1:A:472:LEU:O	1:A:475:THR:HB	1.96	0.66
2:B:114:PRO:HG3	2:B:181:LEU:HD11	1.77	0.66
6:H:103:LYS:HB3	6:H:105:GLU:OE2	1.96	0.66
1:A:93:VAL:HG13	1:A:301:ALA:HB1	1.76	0.66

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:H:130:ARG:HA	6:H:133:ASN:ND2	1.97	0.66
1:A:31:SER:HB2	1:A:83:HIS:HB2	1.78	0.65
2:B:834:ASN:HB3	2:B:840:ILE:HG13	1.77	0.65
1:A:1124:HIS:HB3	1:A:1130:GLN:HG3	1.77	0.65
1:A:1145:SER:HB2	1:A:1205:LYS:NZ	2.10	0.65
2:B:175:ARG:HH11	2:B:175:ARG:HB3	1.61	0.65
1:A:694:THR:O	1:A:698:GLN:HG3	1.96	0.65
1:A:1098:VAL:N	1:A:1099:PRO:HD2	2.12	0.65
2:B:841:MET:HE2	2:B:1010:LEU:HD11	1.79	0.65
2:B:1065:GLN:NE2	2:B:1067:ARG:H	1.93	0.65
1:A:910:PRO:HA	1:A:916:GLY:HA3	1.78	0.65
2:B:1174:LYS:HD2	2:B:1179:GLN:HB2	1.77	0.65
3:C:39:ALA:HA	3:C:164:ALA:HB3	1.77	0.65
1:A:130:ASP:HB3	1:A:133:LYS:HB2	1.78	0.65
1:A:834:THR:HG21	1:A:1077:THR:HA	1.79	0.65
2:B:864:LYS:CG	2:B:871:THR:HG23	2.27	0.65
3:C:57:VAL:HG11	8:J:60:PHE:CB	2.26	0.65
1:A:567:LYS:CB	1:A:568:PRO:CD	2.75	0.65
2:B:89:GLU:HB2	2:B:137:TYR:HB2	1.79	0.65
1:A:867:ILE:HD11	1:A:999:VAL:HG11	1.79	0.65
1:A:1279:ILE:HD11	1:A:1312:ASN:HB3	1.77	0.65
1:A:998:LEU:HD12	1:A:1001:ARG:NH1	2.10	0.64
1:A:1068:ALA:O	1:A:1072:ILE:HG13	1.97	0.64
5:F:87:LYS:HA	5:F:155:LEU:HD13	1.78	0.64
1:A:1263:ILE:O	1:A:1267:MET:HG3	1.96	0.64
2:B:276:ILE:HG23	2:B:337:ARG:HB2	1.80	0.64
8:J:36:LEU:HD11	8:J:51:LEU:HB2	1.80	0.64
1:A:347:PHE:H	2:B:1107:ALA:HA	1.63	0.64
1:A:673:GLY:N	1:A:674:PRO:HD2	2.12	0.64
5:F:81:THR:HG21	5:F:136:ARG:HH11	1.59	0.64
2:B:872:GLU:HB3	2:B:914:LYS:HD3	1.78	0.64
1:A:534:LEU:HD11	1:A:577:ILE:HD11	1.78	0.64
1:A:1449:SER:HB3	5:F:149:GLU:OE2	1.97	0.64
3:C:196:ASP:HB3	3:C:199:LYS:HB2	1.78	0.64
1:A:903:ASN:ND2	1:A:905:ASP:H	1.95	0.64
2:B:125:SER:HA	2:B:171:PRO:HA	1.80	0.64
2:B:25:ILE:HD13	2:B:658:ILE:HD11	1.80	0.63
2:B:577:ALA:HB1	2:B:589:VAL:HG22	1.80	0.63
1:A:1258:HIS:O	1:A:1262:LYS:HG3	1.98	0.63
2:B:205:ILE:HD11	2:B:461:LEU:HD23	1.80	0.63
3:C:248:ILE:HD13	9:K:101:LEU:HD13	1.80	0.63

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:754:SER:N	1:A:757:ASN:HD22	1.95	0.63
1:A:789:LYS:HE3	7:I:67:THR:OG1	1.98	0.63
1:A:986:ILE:HG21	1:A:1028:THR:HA	1.81	0.63
2:B:464:GLY:O	2:B:477:ALA:HB3	1.98	0.63
6:H:4:THR:HA	6:H:60:ALA:HA	1.79	0.63
1:A:864:ILE:HD13	1:A:1374:VAL:HG22	1.80	0.63
1:A:1151:GLU:CG	7:I:45:ARG:HD2	2.28	0.63
2:B:550:ASP:OD1	2:B:552:MET:HG3	1.98	0.63
2:B:195:CYS:SG	2:B:783:THR:HG23	2.38	0.63
2:B:839:MET:CE	2:B:1010:LEU:HG	2.28	0.63
1:A:443:LEU:HB3	1:A:490:HIS:HB2	1.80	0.63
1:A:567:LYS:HD3	6:H:96:VAL:H	1.64	0.63
1:A:672:ASP:H	1:A:736:ASN:HD21	1.47	0.63
3:C:22:LEU:HD12	3:C:230:MET:CE	2.29	0.63
2:B:130:VAL:HG12	2:B:131:ASP:H	1.63	0.63
4:E:43:LYS:O	4:E:47:CYS:HB2	1.98	0.63
4:E:64:PRO:HG2	4:E:75:MET:O	1.98	0.63
3:C:242:GLN:NE2	3:C:246:ARG:HH21	1.94	0.62
10:L:27:LEU:HD13	10:L:37:LYS:HE2	1.81	0.62
1:A:728:LYS:HA	1:A:731:ARG:HD2	1.80	0.62
2:B:58:THR:O	2:B:62:ILE:HG13	1.98	0.62
3:C:241:ASP:HB3	9:K:109:TRP:CE2	2.34	0.62
2:B:839:MET:HE1	2:B:1010:LEU:HG	1.82	0.62
1:A:873:MET:HE2	1:A:957:PRO:HG3	1.80	0.62
7:I:59:VAL:HG12	7:I:60:GLN:H	1.65	0.62
1:A:329:LEU:O	1:A:333:GLU:HG2	2.00	0.62
1:A:31:SER:CB	1:A:83:HIS:HB2	2.30	0.62
1:A:873:MET:CE	1:A:957:PRO:HG3	2.30	0.62
1:A:525:GLN:HB2	2:B:835:GLN:OE1	2.00	0.62
1:A:563:PRO:HG3	1:A:572:TRP:CZ2	2.35	0.62
1:A:665:GLY:C	2:B:1026:LEU:HD13	2.20	0.62
3:C:92:CYS:SG	3:C:94:LYS:HB2	2.40	0.62
5:F:79:ARG:HH22	5:F:150:GLU:CD	2.03	0.62
1:A:901:LEU:N	1:A:926:GLN:NE2	2.43	0.62
1:A:1318:THR:HG21	4:E:11:ARG:HH12	1.65	0.62
1:A:1025:ARG:HD3	1:A:1030:ARG:HH21	1.64	0.62
2:B:477:ALA:HB1	2:B:479:VAL:HG23	1.82	0.62
1:A:867:ILE:HD11	1:A:999:VAL:CG1	2.30	0.61
1:A:1195:LEU:HD11	1:A:1267:MET:HE3	1.83	0.61
1:A:1164:PRO:O	1:A:1167:GLU:HG3	1.99	0.61
7:I:50:THR:HG22	7:I:52:ILE:HG22	1.81	0.61

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:243:PRO:HB2	1:A:245:PRO:HD2	1.81	0.61
3:C:148:ARG:NH1	8:J:64:ASN:HA	2.15	0.61
1:A:32:VAL:HG11	1:A:68:GLN:HE22	1.65	0.61
1:A:137:ALA:O	1:A:141:LEU:HD13	2.00	0.61
1:A:902:LEU:HD23	1:A:921:GLY:HA2	1.82	0.61
2:B:638:PHE:CE1	2:B:743:ILE:HA	2.36	0.61
1:A:59:GLY:HA2	1:A:67:CYS:SG	2.41	0.61
1:A:579:SER:OG	1:A:612:ILE:HG22	2.01	0.61
1:A:567:LYS:CG	1:A:568:PRO:HD2	2.30	0.61
1:A:1318:THR:CG2	4:E:11:ARG:HH12	2.13	0.61
3:C:38:ILE:HG13	3:C:176:ILE:HD12	1.81	0.61
1:A:857:ARG:HG2	1:A:863:VAL:HA	1.81	0.61
3:C:58:LEU:HD11	8:J:2:ILE:CD1	2.31	0.61
9:K:47:ARG:HH11	9:K:47:ARG:HB3	1.66	0.60
10:L:26:THR:HG22	10:L:27:LEU:H	1.65	0.60
9:K:7:PHE:HB2	9:K:11:LEU:HD22	1.82	0.60
1:A:1364:ASN:HD22	1:A:1366:ARG:HG2	1.66	0.60
7:I:59:VAL:HG12	7:I:60:GLN:N	2.16	0.60
1:A:187:LYS:HB2	1:A:194:ALA:CB	2.31	0.60
1:A:567:LYS:CB	1:A:568:PRO:HD2	2.31	0.60
1:A:901:LEU:HG	1:A:926:GLN:HE21	1.65	0.60
1:A:1197:LEU:HD11	1:A:1238:ILE:HD11	1.82	0.60
1:A:345:VAL:HG11	2:B:1129:ARG:HA	1.84	0.60
2:B:981:ALA:HB2	2:B:987:LYS:HA	1.82	0.60
7:I:56:ALA:O	7:I:89:GLN:HG3	2.02	0.60
1:A:535:THR:CG2	1:A:575:LYS:HG2	2.31	0.60
1:A:565:ILE:HG23	1:A:567:LYS:HG2	1.82	0.60
1:A:1219:THR:HG21	1:A:1271:ILE:HG12	1.82	0.60
2:B:531:GLN:CD	2:B:531:GLN:H	2.05	0.60
2:B:983:ARG:HH11	2:B:1091:TYR:HB3	1.67	0.60
2:B:1002:THR:HG22	2:B:1006:ILE:H	1.65	0.60
7:I:45:ARG:HG2	7:I:45:ARG:HH11	1.65	0.60
1:A:535:THR:O	1:A:575:LYS:HE2	2.02	0.60
1:A:1333:ILE:O	1:A:1337:GLU:HG3	2.02	0.60
2:B:515:HIS:H	2:B:518:HIS:CD2	2.19	0.60
3:C:166:GLU:HG2	10:L:70:ARG:HH12	1.67	0.60
2:B:60:GLN:HA	2:B:95:ILE:HD12	1.84	0.60
1:A:1118:VAL:CG2	1:A:1306:LEU:HB2	2.31	0.59
2:B:193:LYS:HD3	2:B:787:VAL:HG11	1.83	0.59
2:B:365:THR:HG22	2:B:367:LEU:H	1.65	0.59
1:A:1323:ASP:OD1	1:A:1325:THR:HB	2.03	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:521:LEU:HD22	2:B:633:VAL:HG12	1.84	0.59
3:C:258:ILE:CD1	9:K:42:LEU:HD21	2.31	0.59
1:A:35:ILE:HD12	1:A:35:ILE:N	2.18	0.59
2:B:25:ILE:HD12	2:B:653:VAL:CG2	2.32	0.59
4:E:117:THR:HG22	4:E:119:SER:H	1.67	0.59
8:J:48:ARG:HG2	8:J:48:ARG:NH1	2.11	0.59
1:A:61:ILE:HG22	1:A:62:ASP:H	1.67	0.59
1:A:388:LEU:HD22	1:A:432:VAL:HB	1.85	0.59
1:A:903:ASN:HD22	1:A:904:THR:N	2.00	0.59
2:B:115:GLN:HG2	2:B:193:LYS:HB2	1.84	0.59
2:B:911:ILE:HD11	2:B:941:LEU:HD13	1.84	0.59
9:K:29:ASN:HD21	9:K:79:GLU:HA	1.67	0.59
1:A:80:HIS:O	1:A:243:PRO:HB3	2.02	0.59
1:A:399:HIS:HB3	1:A:400:PRO:HD3	1.83	0.59
2:B:1008:PRO:HB3	2:B:1087:PHE:CE1	2.32	0.59
1:A:903:ASN:HD22	1:A:903:ASN:C	2.06	0.59
2:B:885:MET:HA	2:B:936:ASP:HB2	1.85	0.59
10:L:27:LEU:HB3	10:L:37:LYS:HD3	1.84	0.59
1:A:523:ILE:HD12	1:A:523:ILE:N	2.17	0.59
2:B:755:ILE:O	2:B:755:ILE:CG2	2.50	0.59
1:A:883:LEU:O	1:A:886:ILE:HG22	2.03	0.58
3:C:71:PRO:O	3:C:72:LEU:HD23	2.03	0.58
6:H:6:PHE:O	6:H:58:THR:HG23	2.03	0.58
2:B:239:GLU:CD	2:B:255:GLN:HE21	2.07	0.58
2:B:651:LEU:CD2	2:B:710:LEU:HD11	2.33	0.58
2:B:874:PHE:O	2:B:875:GLU:HG3	2.04	0.58
1:A:587:HIS:CE1	1:A:609:ASP:H	2.21	0.58
1:A:1096:SER:O	1:A:1099:PRO:HG2	2.03	0.58
2:B:130:VAL:HG21	2:B:167:ILE:HD12	1.85	0.58
2:B:792:MET:SD	2:B:857:ARG:NH2	2.76	0.58
1:A:264:PHE:HB3	1:A:315:LEU:HD22	1.85	0.58
1:A:537:ARG:NH1	6:H:120:GLY:O	2.36	0.58
1:A:598:LEU:HG	6:H:115:TYR:CE2	2.38	0.58
1:A:858:ASN:C	1:A:858:ASN:HD22	2.06	0.58
2:B:953:LEU:HD21	2:B:955:THR:CG2	2.33	0.58
3:C:62:PHE:O	3:C:66:ARG:HG3	2.03	0.58
1:A:914:GLU:C	1:A:916:GLY:H	2.06	0.58
1:A:1064:VAL:HG12	1:A:1370:LEU:CD2	2.34	0.58
2:B:791:THR:HG22	2:B:792:MET:HG3	1.85	0.58
3:C:39:ALA:O	3:C:163:ILE:HG23	2.04	0.58
1:A:739:ASP:OD2	6:H:19:ARG:HD2	2.03	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:523:ILE:HB	1:A:622:VAL:CG1	2.33	0.58
2:B:25:ILE:HG23	2:B:29:ASP:HB2	1.85	0.58
1:A:317:LYS:CD	1:A:321:PRO:HG2	2.31	0.58
9:K:10:PHE:CD1	9:K:11:LEU:HD13	2.38	0.58
2:B:1084:GLN:NE2	3:C:192:TRP:H	2.02	0.58
4:E:180:ARG:HH21	4:E:192:ARG:HB2	1.69	0.57
1:A:451:HIS:CG	1:A:1074:GLU:HG3	2.40	0.57
1:A:986:ILE:HD12	1:A:1028:THR:HG23	1.86	0.57
2:B:757:PRO:HG2	2:B:984:HIS:CE1	2.39	0.57
7:I:17:ARG:HG3	7:I:28:GLU:HG2	1.86	0.57
1:A:913:LEU:HD12	1:A:914:GLU:N	2.19	0.57
1:A:1066:VAL:CG1	2:B:1140:ALA:HB2	2.34	0.57
4:E:15:ALA:O	4:E:19:VAL:HG23	2.03	0.57
9:K:20:LYS:HB2	9:K:34:THR:HB	1.86	0.57
1:A:878:ILE:CG2	1:A:955:PRO:HB2	2.34	0.57
8:J:2:ILE:HG22	8:J:3:VAL:N	2.20	0.57
1:A:741:ASN:HD21	1:A:743:VAL:HB	1.70	0.57
1:A:1220:PHE:O	1:A:1223:ASP:HB2	2.05	0.57
1:A:1364:ASN:ND2	1:A:1366:ARG:HG2	2.20	0.57
2:B:1065:GLN:HE21	2:B:1067:ARG:H	1.52	0.57
1:A:329:LEU:HB3	1:A:333:GLU:HB3	1.86	0.57
1:A:550:LEU:HD22	1:A:556:TRP:NE1	2.19	0.57
1:A:244:PRO:N	1:A:245:PRO:HD2	2.20	0.57
2:B:522:VAL:HG11	2:B:537:LYS:HD2	1.85	0.57
2:B:754:SER:HB3	2:B:812:LEU:HD11	1.87	0.57
2:B:785:TYR:CD2	2:B:795:ILE:HG12	2.40	0.57
2:B:824:ILE:CD1	8:J:48:ARG:HH12	2.18	0.57
2:B:834:ASN:HA	2:B:838:SER:OG	2.05	0.57
1:A:1441:PHE:CZ	5:F:89:GLU:HA	2.40	0.57
2:B:230:ALA:N	2:B:231:PRO:HD2	2.20	0.56
7:I:103:CYS:O	7:I:107:SER:HA	2.05	0.56
2:B:172:ILE:HD11	2:B:178:ASN:HD22	1.70	0.56
1:A:886:ILE:HD12	1:A:943:LEU:HB3	1.87	0.56
1:A:913:LEU:HD12	1:A:914:GLU:H	1.68	0.56
1:A:1364:ASN:HD22	1:A:1366:ARG:H	1.53	0.56
1:A:1366:ARG:HB3	1:A:1366:ARG:CZ	2.36	0.56
2:B:258:LEU:HB2	2:B:385:LEU:HD21	1.88	0.56
2:B:879:ARG:HD3	2:B:883:LEU:HD22	1.88	0.56
1:A:243:PRO:C	1:A:245:PRO:HD2	2.26	0.56
2:B:1065:GLN:O	2:B:1065:GLN:HG3	2.05	0.56
1:A:14:VAL:N	1:A:1432:GLN:HE22	2.00	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:679:ILE:HD13	1:A:763:ALA:HB2	1.88	0.56
2:B:356:LEU:HA	2:B:360:PHE:HB3	1.86	0.56
1:A:858:ASN:ND2	1:A:862:ASN:H	2.03	0.56
2:B:175:ARG:HB3	2:B:175:ARG:NH1	2.21	0.56
2:B:215:GLN:HE22	2:B:499:ASN:ND2	2.03	0.56
1:A:489:LEU:C	1:A:489:LEU:HD23	2.26	0.56
1:A:849:MET:CE	1:A:1436:ILE:HA	2.35	0.56
1:A:1127:ASP:HB2	1:A:1130:GLN:HB2	1.87	0.56
2:B:1159:ARG:HH11	2:B:1159:ARG:HB3	1.71	0.56
4:E:19:VAL:HG22	4:E:140:LEU:HD13	1.87	0.56
1:A:451:HIS:CD2	1:A:1074:GLU:HG3	2.40	0.56
2:B:102:VAL:CG2	2:B:112:LEU:HB2	2.36	0.56
3:C:6:PRO:HG2	9:K:101:LEU:HB2	1.87	0.56
1:A:587:HIS:NE2	1:A:969:GLN:HG2	2.21	0.56
2:B:809:MET:HG2	2:B:814:PHE:CB	2.36	0.56
2:B:751:VAL:HG13	2:B:812:LEU:HD22	1.87	0.55
1:A:1025:ARG:HD3	1:A:1030:ARG:NH2	2.20	0.55
2:B:871:THR:HG22	2:B:872:GLU:N	2.17	0.55
8:J:48:ARG:NE	8:J:49:MET:HE2	2.22	0.55
10:L:38:LEU:HG	10:L:39:SER:N	2.21	0.55
1:A:106:VAL:HG21	1:A:214:ILE:HG12	1.88	0.55
2:B:800:GLN:HB3	8:J:52:THR:HG21	1.88	0.55
3:C:56:THR:HG23	3:C:58:LEU:N	2.18	0.55
6:H:118:PHE:HB2	6:H:121:LEU:HB2	1.88	0.55
1:A:492:PRO:HB2	1:A:497:THR:HG22	1.87	0.55
2:B:680:THR:O	2:B:683:SER:HB2	2.07	0.55
2:B:822:ASN:ND2	8:J:52:THR:HG21	2.21	0.55
2:B:871:THR:O	2:B:917:PRO:HD2	2.07	0.55
3:C:22:LEU:HD21	9:K:101:LEU:HD21	1.89	0.55
9:K:24:ASP:HB3	9:K:30:ALA:HB3	1.89	0.55
1:A:503:GLN:HE21	5:F:90:ARG:HH21	1.55	0.55
2:B:193:LYS:CE	8:J:65:PRO:HG3	2.35	0.55
2:B:680:THR:CG2	2:B:681:TRP:H	2.09	0.55
2:B:800:GLN:CB	8:J:52:THR:HG22	2.37	0.55
2:B:604:ARG:NH1	2:B:691:GLU:OE2	2.39	0.55
3:C:248:ILE:HD13	9:K:101:LEU:CD1	2.37	0.55
5:F:93:ILE:CD1	5:F:134:ILE:HD11	2.35	0.55
6:H:113:ALA:HB1	6:H:124:ARG:HE	1.72	0.55
1:A:901:LEU:O	1:A:920:LEU:HD23	2.07	0.54
1:A:15:LYS:O	1:A:1421:CYS:HB2	2.07	0.54
1:A:273:ASN:O	1:A:277:GLU:HG3	2.07	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:841:MET:HG3	2:B:1010:LEU:HD12	1.90	0.54
2:B:859:TYR:OH	2:B:941:LEU:HD12	2.08	0.54
3:C:258:ILE:HD13	9:K:35:PHE:CE2	2.37	0.54
6:H:12:VAL:HA	6:H:28:ALA:HB2	1.88	0.54
7:I:55:THR:O	7:I:58:VAL:HG23	2.07	0.54
7:I:115:LYS:O	7:I:117:LYS:HG3	2.06	0.54
1:A:709:THR:HG22	1:A:710:LEU:N	2.22	0.54
1:A:1101:LEU:HB2	1:A:1355:VAL:HG11	1.89	0.54
2:B:971:THR:OG1	3:C:61:GLU:HG3	2.07	0.54
3:C:11:ARG:HD2	3:C:21:ILE:HD11	1.89	0.54
4:E:5:ASN:O	4:E:9:ILE:HG13	2.07	0.54
2:B:952:VAL:HG22	2:B:966:VAL:HG13	1.90	0.54
1:A:313:GLN:HB3	1:A:320:ARG:C	2.27	0.54
1:A:693:VAL:HG21	1:A:721:PHE:HE1	1.73	0.54
1:A:885:THR:HG22	1:A:893:PHE:HE1	1.73	0.54
2:B:1051:THR:O	2:B:1055:ILE:HG13	2.07	0.54
1:A:519:PRO:HD3	1:A:631:HIS:ND1	2.23	0.54
1:A:567:LYS:HB2	1:A:568:PRO:HD3	1.89	0.54
1:A:1195:LEU:HD11	1:A:1267:MET:CE	2.37	0.54
2:B:172:ILE:CD1	2:B:178:ASN:HD22	2.20	0.54
3:C:43:THR:HG22	3:C:44:LEU:N	2.23	0.54
8:J:48:ARG:NH1	8:J:48:ARG:CG	2.71	0.54
2:B:757:PRO:HD3	2:B:983:ARG:NH2	2.23	0.54
4:E:100:ILE:HG23	4:E:105:PHE:HB2	1.88	0.54
1:A:208:LEU:C	1:A:208:LEU:HD23	2.28	0.54
1:A:697:ALA:HB2	1:A:702:LEU:HD23	1.89	0.54
1:A:816:HIS:CD2	2:B:764:SER:HB2	2.43	0.54
1:A:896:ARG:HD3	1:A:897:TYR:CE1	2.43	0.54
1:A:464:PRO:O	1:A:465:TYR:O	2.25	0.54
7:I:57:GLY:O	7:I:59:VAL:HG23	2.08	0.54
10:L:26:THR:HG22	10:L:27:LEU:N	2.23	0.54
1:A:689:LYS:O	1:A:693:VAL:HG23	2.08	0.54
1:A:929:LEU:HD11	1:A:983:ILE:HD13	1.90	0.54
2:B:41:LYS:HE2	2:B:544:CYS:SG	2.48	0.54
2:B:205:ILE:HG21	2:B:462:ALA:HB2	1.89	0.54
2:B:639:ILE:HD11	2:B:691:GLU:HG3	1.90	0.54
2:B:644:GLU:CD	2:B:646:LEU:HB2	2.29	0.54
2:B:1017:ILE:HB	2:B:1018:PRO:HD3	1.90	0.54
4:E:96:PHE:CE2	4:E:110:PHE:HB2	2.43	0.54
9:K:56:VAL:HA	9:K:77:THR:HG22	1.89	0.54
1:A:500:GLU:OE2	1:A:1438:THR:HG21	2.08	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:666:ILE:CD1	2:B:1030:LEU:HD22	2.36	0.53
1:A:1102:LYS:HD3	1:A:1106:ASN:HD21	1.73	0.53
2:B:339:THR:HG23	2:B:343:ILE:HD12	1.89	0.53
5:F:77:ASP:O	5:F:78:GLN:HB2	2.07	0.53
1:A:69:THR:O	2:B:1174:LYS:HG2	2.08	0.53
1:A:500:GLU:OE2	2:B:1145:SER:HB2	2.09	0.53
2:B:281:PRO:HG2	2:B:284:ILE:CD1	2.38	0.53
7:I:50:THR:HB	7:I:92:ARG:HH22	1.73	0.53
1:A:523:ILE:HG23	1:A:527:THR:HB	1.90	0.53
2:B:1023:VAL:HG12	2:B:1027:ILE:HD11	1.90	0.53
3:C:25:VAL:HG23	3:C:228:PHE:HE1	1.73	0.53
5:F:107:VAL:HG11	5:F:111:LEU:HD11	1.90	0.53
8:J:48:ARG:HH11	8:J:48:ARG:CG	2.10	0.53
1:A:320:ARG:N	1:A:321:PRO:HD3	2.24	0.53
1:A:709:THR:HG22	1:A:711:ARG:H	1.74	0.53
1:A:868:TYR:HE1	1:A:1064:VAL:HG11	1.71	0.53
3:C:41:ILE:HB	3:C:172:PRO:HG3	1.91	0.53
4:E:114:ASN:OD1	4:E:115:ASN:N	2.42	0.53
1:A:434:ARG:HH21	1:A:437:MET:HG3	1.74	0.53
1:A:1111:MET:CE	1:A:1114:PRO:HA	2.38	0.53
2:B:515:HIS:H	2:B:518:HIS:HD2	1.56	0.53
2:B:845:SER:HB3	2:B:850:LEU:HD22	1.91	0.53
2:B:868:MET:O	2:B:870:ILE:HG13	2.08	0.53
2:B:954:VAL:O	10:L:55:ILE:O	2.26	0.53
1:A:1199:ARG:HA	1:A:1202:MET:HB2	1.91	0.53
3:C:258:ILE:HD11	9:K:42:LEU:CD2	2.38	0.53
4:E:161:LYS:HE2	4:E:165:LEU:HD11	1.91	0.53
8:J:25:LEU:O	8:J:29:GLU:HA	2.09	0.53
1:A:858:ASN:HD21	1:A:862:ASN:H	1.56	0.53
3:C:27:LEU:HA	3:C:228:PHE:CZ	2.44	0.53
4:E:127:ILE:HD11	4:E:132:ILE:HD11	1.91	0.53
1:A:366:VAL:HG11	1:A:436:ILE:HD11	1.90	0.53
1:A:499:ALA:O	1:A:503:GLN:HB2	2.08	0.53
1:A:849:MET:HE3	1:A:1063:MET:SD	2.49	0.53
2:B:344:LYS:H	2:B:347:LYS:HE3	1.74	0.53
2:B:429:PHE:HA	2:B:432:MET:CE	2.39	0.53
3:C:58:LEU:HD11	8:J:2:ILE:HD12	1.91	0.53
1:A:55:ASP:N	1:A:56:PRO:CD	2.69	0.52
1:A:152:VAL:HG13	1:A:153:PRO:HD2	1.91	0.52
1:A:556:TRP:CZ3	1:A:558:GLY:HA2	2.44	0.52
5:F:128:LYS:HD2	5:F:149:GLU:HA	1.91	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1264:GLU:OE1	7:I:44:TYR:HE2	1.93	0.52
1:A:1279:ILE:N	1:A:1279:ILE:HD12	2.24	0.52
2:B:636:PRO:HA	2:B:691:GLU:O	2.08	0.52
3:C:21:ILE:HG12	3:C:229:TYR:HD2	1.74	0.52
4:E:181:ALA:HA	4:E:186:LEU:HD21	1.91	0.52
5:F:107:VAL:HG12	5:F:109:VAL:H	1.74	0.52
7:I:50:THR:CB	7:I:92:ARG:HH22	2.22	0.52
1:A:528:LEU:HD23	1:A:751:SER:HB3	1.91	0.52
1:A:93:VAL:HG22	1:A:301:ALA:HA	1.92	0.52
1:A:516:SER:O	1:A:518:LYS:HG2	2.10	0.52
1:A:533:LYS:NZ	1:A:660:ASN:ND2	2.56	0.52
1:A:901:LEU:HD23	1:A:907:THR:HG23	1.92	0.52
2:B:249:ARG:O	2:B:251:ILE:HG13	2.10	0.52
2:B:296:GLU:O	2:B:300:HIS:HD2	1.93	0.52
2:B:898:LEU:HD21	2:B:964:VAL:HG11	1.92	0.52
4:E:124:VAL:HB	4:E:125:PRO:HD3	1.90	0.52
6:H:81:PRO:HB2	6:H:82:PRO:CD	2.38	0.52
9:K:1:MET:HG3	9:K:2:ASN:N	2.25	0.52
2:B:759:PRO:HG2	2:B:1046:PRO:HB3	1.91	0.52
3:C:242:GLN:OE1	3:C:242:GLN:HA	2.10	0.52
1:A:817:ALA:HA	2:B:764:SER:OG	2.09	0.52
2:B:1002:THR:HG22	2:B:1006:ILE:N	2.24	0.52
4:E:124:VAL:HB	4:E:125:PRO:CD	2.40	0.52
1:A:492:PRO:CB	1:A:497:THR:HG22	2.40	0.52
1:A:868:TYR:HE1	1:A:1064:VAL:CG1	2.23	0.52
2:B:998:ASP:OD1	3:C:35:ARG:NH2	2.43	0.52
1:A:1162:VAL:CG1	7:I:41:PRO:HG3	2.34	0.52
2:B:552:MET:N	2:B:553:PRO:HD2	2.25	0.52
2:B:864:LYS:HB2	2:B:864:LYS:NZ	2.25	0.52
3:C:6:PRO:HB2	9:K:101:LEU:HD23	1.92	0.52
1:A:795:GLU:HG2	2:B:731:VAL:CG2	2.40	0.52
2:B:528:PRO:HG3	2:B:536:VAL:HB	1.92	0.52
2:B:846:ILE:HG12	2:B:974:PRO:HB2	1.92	0.52
3:C:75:MET:HB3	3:C:128:ASN:HB3	1.92	0.52
6:H:44:VAL:HG13	6:H:48:PRO:HA	1.92	0.52
1:A:575:LYS:HD3	1:A:612:ILE:CD1	2.40	0.51
2:B:292:ILE:N	2:B:293:PRO:HD2	2.26	0.51
5:F:109:VAL:HG21	5:F:124:GLU:HA	1.92	0.51
1:A:24:PRO:HG2	1:A:25:GLU:OE2	2.10	0.51
2:B:314:LEU:O	2:B:317:CYS:HB2	2.11	0.51
2:B:885:MET:HA	2:B:936:ASP:CB	2.40	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:145:CYS:SG	3:C:146:LYS:N	2.83	0.51
1:A:1345:ARG:HG2	1:A:1372:VAL:CG1	2.41	0.51
2:B:128:LEU:HB3	2:B:167:ILE:O	2.11	0.51
2:B:852:ARG:NH2	10:L:70:ARG:O	2.38	0.51
3:C:53:THR:O	3:C:153:LEU:HA	2.10	0.51
1:A:384:ASN:OD1	1:A:388:LEU:HD12	2.10	0.51
1:A:465:TYR:CE2	9:K:4:PRO:HD2	2.45	0.51
1:A:673:GLY:N	1:A:674:PRO:CD	2.73	0.51
1:A:1376:THR:HG22	1:A:1376:THR:O	2.09	0.51
1:A:1187:GLN:HG3	1:A:1188:GLN:H	1.75	0.51
4:E:23:VAL:HG12	4:E:28:TYR:HB2	1.93	0.51
1:A:1341:ILE:HG23	1:A:1342:GLU:N	2.25	0.51
2:B:574:SER:HB3	2:B:591:ARG:NH2	2.26	0.51
2:B:859:TYR:O	2:B:965:LYS:HA	2.11	0.51
2:B:1037:LEU:HD21	8:J:44:TYR:HD2	1.75	0.51
4:E:93:MET:O	4:E:97:VAL:HG23	2.10	0.51
1:A:32:VAL:HG23	1:A:33:ALA:N	2.24	0.51
1:A:523:ILE:CG2	1:A:527:THR:HB	2.41	0.51
1:A:705:LYS:H	1:A:705:LYS:HD2	1.75	0.51
1:A:840:ARG:NH1	1:A:1386:ARG:HB3	2.23	0.51
2:B:577:ALA:HB1	2:B:589:VAL:CG2	2.39	0.51
2:B:653:VAL:HG13	2:B:689:LEU:HB3	1.92	0.51
2:B:1198:TYR:CE1	2:B:1201:LYS:HD2	2.46	0.51
3:C:18:VAL:HG23	3:C:240:VAL:CG1	2.39	0.51
2:B:291:ILE:HD13	2:B:300:HIS:NE2	2.26	0.51
2:B:788:ARG:NH1	2:B:790:ASP:OD1	2.44	0.51
1:A:2:VAL:HG21	2:B:1157:ALA:O	2.11	0.51
1:A:216:VAL:HA	1:A:219:PHE:CZ	2.46	0.51
1:A:809:THR:OG1	1:A:812:GLU:HG3	2.11	0.51
1:A:903:ASN:HD22	1:A:905:ASP:H	1.58	0.51
1:A:1348:LEU:HD21	1:A:1375:MET:CE	2.40	0.51
2:B:847:ASP:O	3:C:65:HIS:HE1	1.94	0.51
3:C:58:LEU:HD11	8:J:2:ILE:HD11	1.92	0.51
5:F:81:THR:HB	5:F:144:GLU:OE1	2.11	0.51
7:I:98:VAL:CG2	7:I:113:ASP:HB2	2.39	0.51
8:J:57:ILE:O	8:J:61:LEU:HG	2.10	0.51
1:A:95:PHE:CE2	1:A:1414:ALA:HB2	2.46	0.51
1:A:313:GLN:HB2	1:A:320:ARG:HB3	1.93	0.51
2:B:121:ASN:HA	2:B:207:GLY:HA3	1.93	0.51
2:B:913:GLY:HA2	2:B:938:SER:CB	2.41	0.50
3:C:14:SER:HA	9:K:114:LEU:O	2.10	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:H:104:PHE:O	6:H:106:GLU:N	2.44	0.50
9:K:49:GLU:HG3	9:K:94:ILE:CG1	2.41	0.50
1:A:497:THR:HG23	2:B:1146:PHE:HD1	1.76	0.50
1:A:518:LYS:HB2	1:A:519:PRO:HD2	1.93	0.50
1:A:208:LEU:CD2	1:A:212:LYS:HE3	2.41	0.50
1:A:605:MET:HE2	1:A:606:LEU:H	1.75	0.50
1:A:994:GLN:HE22	1:A:1023:ARG:HE	1.59	0.50
2:B:914:LYS:HD2	2:B:937:ALA:HB3	1.92	0.50
10:L:30:ILE:HG13	10:L:59:ALA:HB2	1.93	0.50
1:A:38:PRO:HB3	1:A:270:LEU:HB3	1.92	0.50
1:A:1004:ASN:ND2	4:E:167:ARG:HD2	2.26	0.50
2:B:558:LEU:O	2:B:563:MET:HB2	2.12	0.50
1:A:683:ILE:HG21	1:A:801:GLU:HG3	1.92	0.50
1:A:849:MET:HE3	1:A:1436:ILE:HA	1.92	0.50
1:A:1391:ARG:NH2	1:A:1417:GLU:OE2	2.44	0.50
4:E:65:THR:O	4:E:69:ILE:HG13	2.12	0.50
8:J:64:ASN:N	8:J:65:PRO:HD2	2.26	0.50
1:A:1155:ASP:OD1	1:A:1162:VAL:HG23	2.12	0.50
1:A:1376:THR:O	1:A:1376:THR:CG2	2.59	0.50
3:C:73:GLN:NE2	3:C:75:MET:CB	2.74	0.50
2:B:38:PHE:HZ	2:B:541:LEU:HB3	1.77	0.50
2:B:168:GLY:H	2:B:450:ALA:HB1	1.77	0.50
1:A:53:LEU:CD2	1:A:54:ASN:H	2.23	0.50
1:A:147:VAL:HG22	1:A:170:THR:HG22	1.93	0.50
2:B:63:ILE:CB	2:B:95:ILE:HD11	2.34	0.50
2:B:169:ARG:O	2:B:457:LEU:HD12	2.11	0.50
1:A:1399:ARG:HH11	1:A:1401:SER:HA	1.75	0.49
2:B:314:LEU:HD21	2:B:386:LEU:HD11	1.92	0.49
2:B:1177:HIS:CB	2:B:1179:GLN:HE21	2.23	0.49
10:L:38:LEU:HD13	10:L:48:CYS:HA	1.94	0.49
1:A:338:GLY:HA2	1:A:343:LYS:HD2	1.94	0.49
1:A:1120:LEU:HG	1:A:1134:ILE:HD12	1.94	0.49
4:E:100:ILE:HD13	4:E:108:GLY:HA3	1.94	0.49
4:E:112:TYR:O	4:E:137:GLU:HG3	2.12	0.49
2:B:901:PRO:CD	10:L:58:LYS:HB3	2.40	0.49
3:C:50:GLU:HB2	3:C:156:THR:HB	1.93	0.49
1:A:219:PHE:O	1:A:224:PHE:HB2	2.13	0.49
1:A:786:HIS:CE1	2:B:742:GLU:OE2	2.62	0.49
2:B:492:LEU:O	2:B:496:ARG:HG2	2.12	0.49
1:A:19:PHE:HZ	1:A:1397:LEU:HG	1.78	0.49
2:B:870:ILE:HG23	2:B:917:PRO:O	2.13	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:46:ILE:HB	3:C:68:GLY:HA2	1.93	0.49
6:H:11:GLN:HE21	6:H:52:GLN:HA	1.77	0.49
1:A:463:ILE:HD11	1:A:469:ARG:HG3	1.94	0.49
1:A:1285:MET:HG3	1:A:1307:GLU:OE1	2.13	0.49
2:B:1051:THR:HG22	2:B:1052:VAL:N	2.28	0.49
1:A:17:VAL:HB	1:A:1419:ASP:HB2	1.94	0.49
1:A:71:GLN:HG2	2:B:1176:ASN:ND2	2.27	0.49
1:A:434:ARG:NH2	1:A:440:ASP:OD2	2.45	0.49
1:A:724:GLU:O	1:A:728:LYS:HG2	2.13	0.49
2:B:204:ILE:C	2:B:205:ILE:HD12	2.32	0.49
3:C:177:GLU:HB2	3:C:231:ASN:HB3	1.95	0.49
1:A:58:LEU:HD22	1:A:80:HIS:O	2.12	0.49
1:A:75:ASN:HB2	1:A:76:GLU:OE2	2.13	0.49
1:A:1139:GLU:HG3	1:A:1280:GLU:O	2.13	0.49
1:A:1348:LEU:O	1:A:1352:VAL:HG23	2.12	0.49
2:B:332:ASP:O	2:B:336:ARG:HG3	2.13	0.49
2:B:806:THR:CG2	2:B:808:ALA:H	2.26	0.49
3:C:73:GLN:NE2	3:C:75:MET:N	2.60	0.49
1:A:376:TYR:CZ	1:A:498:ARG:HD2	2.48	0.49
1:A:1438:THR:HG23	2:B:1144:ALA:HB3	1.95	0.49
2:B:219:ALA:HB3	2:B:222:ILE:HD12	1.94	0.49
2:B:650:GLU:HG3	2:B:651:LEU:N	2.28	0.49
3:C:137:LYS:H	3:C:137:LYS:CD	2.10	0.49
1:A:148:CYS:O	1:A:168:GLY:HA2	2.13	0.49
2:B:54:PHE:HA	2:B:58:THR:HB	1.95	0.49
2:B:234:ILE:HD13	2:B:257:LYS:HD3	1.95	0.49
2:B:913:GLY:HA2	2:B:938:SER:HB3	1.94	0.49
2:B:918:ILE:CD1	2:B:935:ARG:HD2	2.41	0.49
2:B:1001:PHE:CZ	2:B:1073:TYR:HB2	2.48	0.49
3:C:12:GLU:HB2	3:C:19:ASP:HB3	1.94	0.49
1:A:984:LYS:HB3	1:A:988:LEU:HD12	1.94	0.48
1:A:1215:ARG:HA	1:A:1218:GLN:HG2	1.95	0.48
1:A:1410:PHE:CD2	2:B:1212:ILE:HD11	2.39	0.48
2:B:1022:THR:HG23	2:B:1022:THR:O	2.13	0.48
2:B:1084:GLN:HG2	3:C:201:TRP:CZ2	2.48	0.48
1:A:1146:VAL:HG12	1:A:1197:LEU:HD22	1.95	0.48
2:B:269:ILE:HD11	2:B:386:LEU:HD21	1.95	0.48
2:B:591:ARG:O	2:B:592:ASN:HB2	2.13	0.48
2:B:843:GLN:HB2	2:B:993:THR:HB	1.94	0.48
9:K:47:ARG:C	9:K:47:ARG:HD2	2.32	0.48
1:A:1116:LEU:HD13	1:A:1311:VAL:HG13	1.94	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1341:ILE:HD11	1:A:1376:THR:HG23	1.94	0.48
2:B:25:ILE:HG23	2:B:29:ASP:CB	2.43	0.48
2:B:167:ILE:HG22	2:B:453:ILE:HD12	1.95	0.48
2:B:545:ILE:HG12	2:B:633:VAL:HG22	1.94	0.48
3:C:163:ILE:HG23	3:C:165:LYS:H	1.78	0.48
6:H:95:TYR:CE2	6:H:97:MET:HG3	2.49	0.48
9:K:12:LEU:HD12	9:K:12:LEU:N	2.28	0.48
9:K:20:LYS:O	9:K:33:ILE:HA	2.13	0.48
1:A:597:LEU:HD12	1:A:597:LEU:H	1.78	0.48
2:B:1065:GLN:HE21	2:B:1067:ARG:N	2.11	0.48
1:A:38:PRO:HB3	1:A:270:LEU:HD23	1.95	0.48
1:A:338:GLY:CA	1:A:343:LYS:HD2	2.44	0.48
1:A:534:LEU:O	1:A:574:GLY:HA3	2.14	0.48
1:A:845:LEU:HD22	1:A:1374:VAL:HG21	1.94	0.48
2:B:122:LEU:CD2	2:B:958:GLN:HG2	2.43	0.48
10:L:42:ARG:C	10:L:44:ASP:H	2.17	0.48
10:L:48:CYS:SG	10:L:49:LYS:N	2.87	0.48
1:A:765:VAL:HG23	1:A:802:ASN:O	2.14	0.48
1:A:849:MET:CE	1:A:1063:MET:SD	3.01	0.48
1:A:1198:ASP:OD1	1:A:1200:ALA:HB3	2.13	0.48
2:B:298:LEU:HD22	2:B:314:LEU:HD13	1.93	0.48
2:B:807:ARG:HG2	2:B:1045:SER:OG	2.13	0.48
2:B:864:LYS:HB2	2:B:864:LYS:HZ2	1.77	0.48
2:B:979:LYS:CE	2:B:987:LYS:HD2	2.44	0.48
2:B:979:LYS:HE3	2:B:987:LYS:HD2	1.95	0.48
6:H:26:ILE:HD13	6:H:49:VAL:HG11	1.95	0.48
9:K:61:TYR:HA	9:K:72:LYS:O	2.12	0.48
1:A:472:LEU:HD21	2:B:835:GLN:HB2	1.96	0.48
1:A:517:ASN:HB2	1:A:878:ILE:O	2.13	0.48
1:A:547:LEU:HD22	9:K:58:PHE:CD1	2.48	0.48
1:A:1102:LYS:HD3	1:A:1106:ASN:ND2	2.28	0.48
2:B:315:LYS:N	2:B:316:PRO:HD2	2.27	0.48
2:B:497:ARG:HH22	2:B:775:LYS:HE3	1.78	0.48
2:B:806:THR:HG23	2:B:808:ALA:H	1.79	0.48
1:A:1434:ALA:O	1:A:1436:ILE:N	2.41	0.48
1:A:1447:GLU:OE1	1:A:1447:GLU:HA	2.14	0.48
2:B:324:ILE:HD11	2:B:333:PHE:CB	2.43	0.48
2:B:429:PHE:HA	2:B:432:MET:HE3	1.95	0.48
3:C:134:ILE:HG21	3:C:139:GLY:HA2	1.96	0.48
9:K:30:ALA:HA	9:K:75:ILE:O	2.14	0.48
1:A:249:SER:HB2	1:A:258:GLY:O	2.13	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:98:THR:HG22	2:B:99:LYS:N	2.28	0.48
2:B:953:LEU:C	2:B:953:LEU:HD23	2.34	0.48
6:H:125:LEU:C	6:H:130:ARG:HH12	2.17	0.48
8:J:1:MET:HG3	8:J:60:PHE:HE2	1.78	0.48
1:A:51:GLY:O	1:A:56:PRO:HB3	2.13	0.48
1:A:682:THR:HG21	1:A:728:LYS:HG3	1.96	0.48
1:A:857:ARG:HD3	1:A:861:GLY:O	2.14	0.48
2:B:564:GLU:HB2	2:B:589:VAL:HG12	1.96	0.48
3:C:209:TYR:CD1	3:C:209:TYR:N	2.82	0.48
3:C:238:ILE:HG23	3:C:242:GLN:HB2	1.96	0.48
1:A:740:LEU:HD12	1:A:740:LEU:N	2.29	0.47
2:B:294:ASP:H	7:I:12:ASN:HD22	1.57	0.47
2:B:776:GLN:HA	2:B:1096:ARG:NH1	2.29	0.47
3:C:108:GLU:OE1	3:C:149:LYS:HD3	2.14	0.47
3:C:121:VAL:HG12	3:C:121:VAL:O	2.14	0.47
7:I:50:THR:CB	7:I:92:ARG:HH12	2.27	0.47
1:A:1145:SER:HB2	1:A:1205:LYS:HZ3	1.78	0.47
2:B:285:ILE:O	2:B:289:LEU:HG	2.13	0.47
3:C:166:GLU:CG	10:L:70:ARG:HH12	2.27	0.47
4:E:99:HIS:O	4:E:103:LYS:HG2	2.15	0.47
1:A:602:ASP:O	1:A:615:GLY:HA2	2.14	0.47
1:A:1118:VAL:CG2	1:A:1306:LEU:HD12	2.44	0.47
2:B:911:ILE:HD11	2:B:941:LEU:CD1	2.44	0.47
3:C:22:LEU:HD12	3:C:230:MET:HE1	1.95	0.47
3:C:73:GLN:NE2	3:C:75:MET:H	2.05	0.47
1:A:144:THR:O	1:A:146:MET:HG3	2.14	0.47
1:A:483:ASP:OD1	13:B:3571:UTP:O1B	2.32	0.47
1:A:1279:ILE:HD11	1:A:1312:ASN:CB	2.43	0.47
1:A:1281:ARG:HB2	1:A:1309:ASP:HB2	1.97	0.47
2:B:108:VAL:HG12	2:B:109:THR:N	2.29	0.47
2:B:202:TYR:CD2	2:B:202:TYR:N	2.83	0.47
2:B:528:PRO:CG	2:B:536:VAL:HB	2.44	0.47
2:B:1001:PHE:HE1	3:C:178:PHE:HB3	1.79	0.47
3:C:244:VAL:O	3:C:248:ILE:HG13	2.14	0.47
10:L:58:LYS:O	10:L:59:ALA:HB3	2.14	0.47
1:A:346:ASP:O	1:A:347:PHE:HB2	2.15	0.47
9:K:49:GLU:HG3	9:K:94:ILE:HG12	1.95	0.47
1:A:984:LYS:O	1:A:988:LEU:HB2	2.14	0.47
2:B:914:LYS:HG2	2:B:915:THR:N	2.28	0.47
2:B:955:THR:CG2	10:L:55:ILE:HA	2.43	0.47
2:B:1165:ILE:HG13	2:B:1187:ASN:ND2	2.29	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:169:LYS:HZ3	10:L:70:ARG:HG2	1.79	0.47
7:I:50:THR:CG2	7:I:52:ILE:HG22	2.45	0.47
7:I:95:THR:HG22	7:I:96:SER:O	2.14	0.47
1:A:44:THR:O	1:A:45:GLN:HB2	2.14	0.47
1:A:440:ASP:O	1:A:460:VAL:HG23	2.15	0.47
1:A:598:LEU:HD11	6:H:124:ARG:CB	2.44	0.47
1:A:842:VAL:HG11	2:B:1136:ASP:CG	2.35	0.47
1:A:1167:GLU:O	1:A:1171:GLN:HG3	2.14	0.47
1:A:1431:GLY:HA2	2:B:1152:MET:CE	2.45	0.47
3:C:167:HIS:CD2	3:C:169:LYS:H	2.13	0.47
5:F:81:THR:HG21	5:F:136:ARG:HD3	1.96	0.47
5:F:109:VAL:HG13	5:F:127:GLU:OE1	2.15	0.47
6:H:40:LEU:CD1	6:H:123:MET:HB2	2.42	0.47
6:H:100:THR:HG23	6:H:138:GLU:HG3	1.96	0.47
7:I:98:VAL:HG22	7:I:111:THR:HG22	1.97	0.47
8:J:2:ILE:HD11	8:J:57:ILE:CD1	2.45	0.47
2:B:1060:ARG:NH2	3:C:202:PRO:HG3	2.30	0.47
5:F:134:ILE:HD12	5:F:151:LEU:CD1	2.45	0.47
8:J:2:ILE:HD11	8:J:57:ILE:HD12	1.96	0.47
8:J:3:VAL:HG21	8:J:18:TRP:HB2	1.96	0.47
1:A:381:THR:HB	1:A:382:PRO:HD2	1.97	0.47
1:A:880:LYS:HA	1:A:955:PRO:HA	1.95	0.47
2:B:461:LEU:HD12	2:B:466:TRP:HH2	1.80	0.47
1:A:365:GLY:O	1:A:468:PHE:HA	2.14	0.47
1:A:516:SER:O	1:A:517:ASN:C	2.52	0.47
1:A:1146:VAL:HG11	1:A:1202:MET:SD	2.55	0.47
1:A:1351:GLU:O	1:A:1355:VAL:HG23	2.14	0.47
3:C:55:THR:HB	3:C:152:GLU:H	1.80	0.47
4:E:120:ALA:O	4:E:123:LEU:HB2	2.15	0.47
1:A:268:ASP:HB3	1:A:299:HIS:CD2	2.51	0.46
1:A:563:PRO:HG3	1:A:572:TRP:CE2	2.51	0.46
1:A:1064:VAL:HG12	1:A:1370:LEU:HD22	1.97	0.46
1:A:1124:HIS:CB	1:A:1130:GLN:HG3	2.45	0.46
2:B:683:SER:O	2:B:687:GLU:HG3	2.14	0.46
3:C:35:ARG:NH1	9:K:41:THR:H	2.12	0.46
6:H:96:VAL:HG13	6:H:143:LEU:CD2	2.45	0.46
6:H:125:LEU:HB3	6:H:130:ARG:NH1	2.31	0.46
10:L:51:CYS:HB3	10:L:53:HIS:CD2	2.50	0.46
1:A:115:LEU:CD1	1:A:141:LEU:HB3	2.44	0.46
1:A:1277:GLU:O	1:A:1278:ASN:CB	2.61	0.46
2:B:287:ARG:NH1	2:B:324:ILE:O	2.48	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:796:LEU:HB3	2:B:799:PRO:HG3	1.97	0.46
2:B:889:THR:HG22	2:B:891:ASP:H	1.80	0.46
7:I:95:THR:HG22	7:I:96:SER:N	2.31	0.46
1:A:418:SER:C	1:A:420:ARG:H	2.17	0.46
1:A:565:ILE:HG23	1:A:567:LYS:CG	2.44	0.46
1:A:907:THR:CG2	1:A:908:LEU:H	2.26	0.46
1:A:1129:GLU:O	1:A:1133:LEU:HG	2.15	0.46
2:B:60:GLN:O	2:B:63:ILE:HG22	2.16	0.46
2:B:97:VAL:HG12	2:B:178:ASN:HD21	1.80	0.46
2:B:98:THR:O	2:B:126:SER:HB3	2.15	0.46
2:B:420:LEU:HD13	2:B:453:ILE:HA	1.97	0.46
2:B:778:MET:SD	2:B:1094:ARG:HD3	2.56	0.46
3:C:44:LEU:HG	3:C:159:ALA:HB1	1.97	0.46
3:C:162:GLY:HA3	3:C:170:TRP:CE2	2.51	0.46
1:A:1293:SER:HB3	1:A:1297:GLU:O	2.15	0.46
2:B:642:ASP:HB3	2:B:649:LYS:HG2	1.98	0.46
2:B:651:LEU:HD23	2:B:710:LEU:HD11	1.96	0.46
1:A:345:VAL:CG1	2:B:1129:ARG:HA	2.46	0.46
1:A:401:GLY:H	1:A:435:HIS:HD1	1.64	0.46
1:A:704:ALA:HB2	1:A:710:LEU:HD12	1.98	0.46
8:J:30:LEU:HD11	8:J:38:ARG:NH2	2.31	0.46
2:B:103:ASN:HB2	2:B:169:ARG:NH1	2.31	0.46
2:B:859:TYR:CD1	2:B:859:TYR:N	2.83	0.46
2:B:884:ARG:O	2:B:936:ASP:HB2	2.16	0.46
6:H:12:VAL:HG13	6:H:26:ILE:HG23	1.98	0.46
6:H:130:ARG:HD3	6:H:134:ASN:HD21	1.81	0.46
1:A:912:LEU:HD22	1:A:1033:GLN:HA	1.97	0.46
1:A:1039:LYS:O	1:A:1043:ASP:OD1	2.34	0.46
3:C:11:ARG:HD2	3:C:21:ILE:CD1	2.46	0.46
1:A:226:GLU:HG3	1:A:227:VAL:HG23	1.98	0.46
1:A:1339:LEU:HD13	4:E:147:HIS:CD2	2.51	0.46
1:A:1396:ALA:HB2	1:A:1417:GLU:OE1	2.16	0.46
2:B:25:ILE:HG13	2:B:654:ARG:HA	1.97	0.46
2:B:174:LEU:O	2:B:200:GLY:O	2.33	0.46
2:B:616:ILE:HG13	2:B:697:GLU:HA	1.98	0.46
3:C:102:GLN:OE1	3:C:154:LYS:HE2	2.16	0.46
3:C:242:GLN:HE21	3:C:246:ARG:NH2	2.03	0.46
3:C:89:GLU:O	3:C:90:ASP:HB3	2.16	0.46
3:C:249:ASP:O	3:C:252:GLN:HB3	2.16	0.46
6:H:12:VAL:HA	6:H:28:ALA:CB	2.46	0.46
1:A:666:ILE:HG12	2:B:1026:LEU:HB3	1.98	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1152:ILE:HB	7:I:44:TYR:HB3	1.97	0.46
1:A:1212:VAL:O	1:A:1216:ILE:HG13	2.16	0.46
2:B:493:SER:OG	2:B:497:ARG:NH2	2.49	0.46
4:E:16:PHE:CZ	4:E:20:LYS:HE2	2.50	0.46
1:A:35:ILE:HD13	1:A:83:HIS:H	1.81	0.45
1:A:752:LYS:HG2	2:B:1015:HIS:O	2.17	0.45
1:A:795:GLU:HG2	2:B:731:VAL:HG22	1.98	0.45
2:B:593:PRO:HG2	2:B:617:ARG:NH2	2.30	0.45
2:B:705:MET:HB3	2:B:706:GLN:NE2	2.31	0.45
10:L:49:LYS:O	10:L:50:ASP:HB2	2.16	0.45
2:B:227:LYS:NZ	2:B:236:HIS:HE1	2.15	0.45
2:B:1191:ILE:HG22	2:B:1192:TYR:N	2.30	0.45
3:C:42:PRO:HG3	3:C:163:ILE:HD11	1.97	0.45
3:C:55:THR:HG22	3:C:55:THR:O	2.16	0.45
4:E:180:ARG:HB2	4:E:215:MET:OXT	2.16	0.45
1:A:62:ASP:HB2	1:A:64:ASN:ND2	2.31	0.45
1:A:239:LEU:HD23	1:A:240:PRO:N	2.31	0.45
1:A:1259:MET:O	1:A:1263:ILE:HG13	2.15	0.45
2:B:118:ARG:HG3	2:B:204:ILE:HD13	1.97	0.45
2:B:1051:THR:HG22	2:B:1053:GLU:N	2.23	0.45
3:C:6:PRO:CB	9:K:101:LEU:HD23	2.46	0.45
3:C:100:THR:HG22	3:C:101:LEU:N	2.32	0.45
6:H:105:GLU:O	6:H:107:VAL:HG23	2.15	0.45
1:A:489:LEU:HD23	1:A:490:HIS:N	2.31	0.45
1:A:565:ILE:HG23	1:A:567:LYS:HE3	1.98	0.45
1:A:853:ASP:O	1:A:854:ASN:HB2	2.17	0.45
6:H:31:THR:HG22	6:H:32:THR:N	2.31	0.45
1:A:1295:THR:HB	1:A:1297:GLU:OE1	2.17	0.45
1:A:1386:ARG:O	1:A:1386:ARG:HG3	2.16	0.45
2:B:113:TYR:CD2	2:B:192:LEU:HD22	2.51	0.45
2:B:904:ARG:HH21	2:B:948:ILE:HD11	1.81	0.45
3:C:6:PRO:HA	3:C:25:VAL:HG13	1.98	0.45
3:C:57:VAL:HG12	3:C:57:VAL:O	2.17	0.45
3:C:70:ILE:HD11	3:C:144:ILE:HG12	1.98	0.45
6:H:56:THR:O	6:H:144:ILE:HA	2.17	0.45
9:K:33:ILE:HD13	9:K:87:LEU:HD22	1.97	0.45
10:L:41:SER:HB2	10:L:42:ARG:HH21	1.82	0.45
1:A:71:GLN:HG2	2:B:1176:ASN:HD22	1.82	0.45
1:A:84:ILE:HG23	1:A:84:ILE:O	2.17	0.45
1:A:464:PRO:HB2	9:K:4:PRO:HD3	1.98	0.45
1:A:765:VAL:HB	1:A:800:VAL:CG1	2.47	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:822:GLU:HG3	2:B:513:GLN:HE22	1.81	0.45
1:A:1322:ILE:HG13	1:A:1323:ASP:N	2.31	0.45
2:B:276:ILE:CD1	2:B:355:ILE:HD13	2.47	0.45
2:B:830:TYR:CE1	2:B:1000:PRO:HB3	2.51	0.45
2:B:879:ARG:HG3	2:B:885:MET:HE1	1.97	0.45
10:L:38:LEU:O	10:L:39:SER:HB2	2.17	0.45
1:A:1364:ASN:ND2	1:A:1366:ARG:CG	2.79	0.45
2:B:1084:GLN:NE2	3:C:192:TRP:N	2.65	0.45
3:C:25:VAL:HG23	3:C:228:PHE:CE1	2.49	0.45
9:K:12:LEU:HD12	9:K:12:LEU:H	1.82	0.45
1:A:368:LYS:NZ	1:A:368:LYS:HB2	2.32	0.45
1:A:889:SER:HB3	1:A:1297:GLU:HG3	1.98	0.45
2:B:276:ILE:HD11	2:B:355:ILE:HD13	1.98	0.45
2:B:638:PHE:HB2	2:B:741:CYS:O	2.17	0.45
3:C:48:SER:HB3	3:C:158:VAL:HB	1.99	0.45
8:J:48:ARG:NH2	8:J:49:MET:HE1	2.31	0.45
1:A:329:LEU:HA	1:A:332:LYS:HB2	1.99	0.45
1:A:805:LEU:CD1	2:B:1052:VAL:HG21	2.47	0.45
2:B:28:GLU:OE1	2:B:807:ARG:NH2	2.50	0.45
2:B:1023:VAL:O	2:B:1027:ILE:HG13	2.17	0.45
2:B:1079:LYS:HB2	3:C:27:LEU:HD21	1.97	0.45
4:E:88:VAL:HG13	4:E:92:THR:HB	1.99	0.45
6:H:31:THR:HG22	6:H:32:THR:H	1.81	0.45
8:J:14:VAL:HG23	8:J:41:LEU:HD21	1.99	0.45
8:J:36:LEU:HD21	8:J:50:ILE:HB	1.99	0.45
1:A:388:LEU:HD22	1:A:432:VAL:CB	2.46	0.45
2:B:98:THR:HG22	2:B:99:LYS:H	1.82	0.45
2:B:345:LYS:HA	2:B:348:ARG:NH1	2.32	0.45
2:B:402:GLY:HA2	2:B:695:ALA:HB3	1.99	0.45
9:K:21:ILE:HG12	9:K:33:ILE:HG12	1.97	0.45
1:A:682:THR:HG23	1:A:728:LYS:NZ	2.32	0.44
1:A:709:THR:HG21	7:I:93:LYS:O	2.17	0.44
2:B:757:PRO:HD3	2:B:983:ARG:CZ	2.47	0.44
3:C:71:PRO:C	3:C:72:LEU:HD23	2.38	0.44
3:C:261:ALA:O	3:C:265:MET:HB2	2.17	0.44
5:F:85:MET:O	5:F:155:LEU:HD21	2.17	0.44
10:L:68:GLU:C	10:L:70:ARG:H	2.21	0.44
1:A:849:MET:CE	1:A:1437:GLY:H	2.31	0.44
1:A:1025:ARG:O	1:A:1035:TYR:HE1	2.00	0.44
1:A:1348:LEU:HD21	1:A:1375:MET:HE2	1.99	0.44
2:B:872:GLU:HG2	2:B:916:THR:OG1	2.17	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:35:ARG:HH12	9:K:41:THR:H	1.64	0.44
3:C:239:PRO:O	3:C:242:GLN:HB2	2.16	0.44
8:J:3:VAL:HG11	8:J:18:TRP:HB2	1.98	0.44
1:A:35:ILE:HA	1:A:52:GLY:O	2.17	0.44
1:A:208:LEU:HD23	1:A:208:LEU:O	2.17	0.44
1:A:589:GLN:HB2	1:A:961:ARG:NH2	2.32	0.44
1:A:704:ALA:HB2	1:A:710:LEU:HA	1.99	0.44
1:A:1150:SER:HB3	1:A:1195:LEU:HD22	2.00	0.44
1:A:1190:PRO:HG3	7:I:18:GLU:OE2	2.18	0.44
1:A:54:ASN:HD21	1:A:259:GLU:HG2	1.83	0.44
1:A:472:LEU:HD13	2:B:835:GLN:HE21	1.82	0.44
1:A:854:ASN:O	1:A:867:ILE:HA	2.17	0.44
1:A:1144:LYS:HB2	1:A:1268:LEU:O	2.18	0.44
2:B:405:ARG:HA	2:B:631:GLY:O	2.17	0.44
4:E:159:ASP:HA	4:E:162:ARG:NH1	2.32	0.44
1:A:549:MET:HE1	1:A:577:ILE:HD13	1.99	0.44
1:A:940:ARG:O	1:A:944:ARG:HG3	2.18	0.44
1:A:1220:PHE:HE1	1:A:1267:MET:HG2	1.83	0.44
2:B:654:ARG:N	2:B:657:HIS:HD2	2.16	0.44
2:B:744:HIS:HD2	2:B:746:SER:H	1.66	0.44
2:B:1159:ARG:CG	2:B:1193:GLN:HE21	2.31	0.44
6:H:42:ILE:HG23	6:H:95:TYR:CE1	2.53	0.44
8:J:45:CYS:O	8:J:48:ARG:HG3	2.18	0.44
1:A:247:ARG:HD3	1:A:263:THR:OG1	2.17	0.44
1:A:1079:MET:HE3	1:A:1098:VAL:HG22	1.99	0.44
2:B:53:GLN:HB2	2:B:547:VAL:CG2	2.48	0.44
2:B:238:ALA:HB3	2:B:256:VAL:HB	2.00	0.44
2:B:849:GLY:HA2	2:B:852:ARG:HG3	1.99	0.44
2:B:1177:HIS:HB2	2:B:1179:GLN:HE21	1.81	0.44
3:C:66:ARG:NH2	8:J:3:VAL:O	2.51	0.44
1:A:16:GLU:HG3	2:B:1220:ARG:HA	1.99	0.44
1:A:57:ARG:O	1:A:68:GLN:HG3	2.16	0.44
1:A:248:PRO:O	1:A:260:ASP:HB2	2.17	0.44
1:A:672:ASP:HB2	1:A:736:ASN:OD1	2.17	0.44
1:A:1295:THR:HG22	1:A:1295:THR:O	2.18	0.44
1:A:1315:GLU:O	1:A:1318:THR:HG22	2.17	0.44
1:A:1424:VAL:O	1:A:1428:VAL:HG23	2.17	0.44
2:B:46:GLN:HE21	2:B:496:ARG:HH11	1.66	0.44
2:B:1009:ASP:O	2:B:1010:LEU:HD12	2.18	0.44
5:F:138:LEU:HD12	5:F:142:SER:OG	2.18	0.44
10:L:61:THR:HB	10:L:63:ARG:HG2	1.99	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:185:TRP:O	1:A:186:LYS:HB2	2.18	0.44
1:A:302:THR:HG21	1:A:312:PRO:CG	2.48	0.44
2:B:299:GLU:HG2	2:B:571:PRO:HG2	1.98	0.44
2:B:791:THR:O	2:B:857:ARG:HA	2.18	0.44
6:H:81:PRO:HD2	6:H:82:PRO:HD2	1.99	0.44
1:A:445:ASN:ND2	1:A:446:ARG:N	2.65	0.44
5:F:81:THR:HG21	5:F:136:ARG:CD	2.48	0.44
6:H:62:SER:O	6:H:63:LEU:C	2.56	0.44
7:I:50:THR:HB	7:I:92:ARG:HH12	1.82	0.44
1:A:647:GLY:O	1:A:651:LYS:HG3	2.18	0.43
1:A:768:GLN:HG3	1:A:816:HIS:HA	2.00	0.43
1:A:1364:ASN:HD22	1:A:1366:ARG:N	2.15	0.43
2:B:491:THR:O	2:B:495:LEU:HD12	2.18	0.43
2:B:979:LYS:NZ	2:B:987:LYS:HD2	2.33	0.43
8:J:64:ASN:N	8:J:65:PRO:CD	2.81	0.43
1:A:523:ILE:HD13	1:A:622:VAL:HG13	2.00	0.43
2:B:235:SER:OG	2:B:236:HIS:HD2	2.01	0.43
2:B:900:ALA:HB2	10:L:58:LYS:HD2	2.00	0.43
3:C:62:PHE:CD2	3:C:66:ARG:HD2	2.53	0.43
8:J:64:ASN:H	8:J:65:PRO:HD2	1.81	0.43
1:A:533:LYS:HE3	1:A:745:GLN:HE22	1.83	0.43
1:A:642:CYS:O	1:A:645:LEU:HB3	2.19	0.43
1:A:800:VAL:HG22	1:A:812:GLU:HB3	2.00	0.43
1:A:901:LEU:HB2	1:A:926:GLN:HG2	1.99	0.43
1:A:1152:ILE:HA	1:A:1192:LEU:O	2.18	0.43
1:A:1328:TYR:CG	1:A:1329:THR:N	2.86	0.43
2:B:548:GLY:N	2:B:612:GLU:OE2	2.51	0.43
3:C:136:ASP:C	3:C:138:GLU:H	2.21	0.43
3:C:148:ARG:HD2	8:J:61:LEU:O	2.19	0.43
4:E:93:MET:HG3	4:E:97:VAL:HG23	2.00	0.43
7:I:45:ARG:HG2	7:I:45:ARG:NH1	2.28	0.43
1:A:276:LEU:HD13	1:A:292:ALA:HB3	2.01	0.43
1:A:958:VAL:HG11	1:A:1049:ILE:HG23	2.00	0.43
1:A:1074:GLU:N	1:A:1075:PRO:HD2	2.33	0.43
1:A:1341:ILE:CG1	1:A:1376:THR:HG23	2.48	0.43
1:A:1438:THR:CG2	2:B:1144:ALA:H	2.29	0.43
2:B:785:TYR:CE2	2:B:795:ILE:HG12	2.53	0.43
2:B:798:TYR:CD2	8:J:4:PRO:HG3	2.54	0.43
2:B:973:ILE:O	2:B:975:GLN:HG3	2.18	0.43
3:C:38:ILE:CG1	3:C:176:ILE:HD12	2.48	0.43
5:F:116:ASP:O	5:F:120:ILE:HG13	2.18	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:79:GLY:HA3	1:A:245:PRO:CG	2.45	0.43
1:A:313:GLN:HG2	1:A:322:VAL:HB	2.00	0.43
1:A:446:ARG:HB2	1:A:487:MET:HE2	2.00	0.43
1:A:774:ARG:HB2	1:A:797:LYS:HB3	2.00	0.43
1:A:1104:ILE:HD13	1:A:1351:GLU:HB3	2.01	0.43
2:B:46:GLN:HE21	2:B:496:ARG:NH1	2.16	0.43
2:B:446:LEU:O	2:B:448:ILE:HG13	2.18	0.43
2:B:979:LYS:HE2	2:B:1095:LEU:HD12	2.00	0.43
3:C:185:LYS:HG2	3:C:213:PRO:HB3	2.00	0.43
4:E:204:THR:CG2	4:E:205:SER:N	2.81	0.43
5:F:109:VAL:HG23	5:F:124:GLU:HG2	2.00	0.43
2:B:274:PRO:HG3	2:B:359:GLU:HB3	2.00	0.43
2:B:327:ARG:NH2	2:B:371:GLU:HG2	2.34	0.43
2:B:800:GLN:O	2:B:818:PRO:HB2	2.18	0.43
3:C:242:GLN:NE2	3:C:246:ARG:HE	2.16	0.43
1:A:881:GLN:CD	1:A:959:ASN:HA	2.39	0.43
1:A:1264:GLU:HA	1:A:1267:MET:HE2	2.01	0.43
2:B:195:CYS:SG	2:B:197:PHE:HB2	2.59	0.43
2:B:212:LEU:HD11	2:B:461:LEU:HD11	2.00	0.43
2:B:860:MET:HA	2:B:964:VAL:O	2.18	0.43
2:B:877:PRO:HB3	2:B:915:THR:CG2	2.48	0.43
1:A:440:ASP:OD1	1:A:498:ARG:NH2	2.52	0.43
1:A:605:MET:HE3	1:A:612:ILE:HG13	2.01	0.43
1:A:1287:TYR:CD1	1:A:1305:VAL:HG21	2.54	0.43
2:B:557:PHE:CZ	2:B:603:LEU:HD11	2.54	0.43
2:B:561:TRP:O	2:B:590:HIS:HE1	2.02	0.43
2:B:1222:ARG:H	2:B:1222:ARG:CD	2.21	0.43
3:C:260:LEU:HD12	3:C:260:LEU:O	2.18	0.43
4:E:22:MET:HA	4:E:187:TYR:CZ	2.54	0.43
1:A:262:LEU:O	1:A:266:LEU:HG	2.19	0.43
1:A:566:ILE:O	1:A:567:LYS:O	2.37	0.43
1:A:1118:VAL:O	1:A:1118:VAL:HG23	2.18	0.43
2:B:281:PRO:CG	2:B:284:ILE:HD12	2.46	0.43
2:B:681:TRP:CH2	2:B:690:VAL:HG11	2.54	0.43
2:B:796:LEU:O	2:B:799:PRO:HD3	2.18	0.43
2:B:1212:ILE:O	2:B:1214:PRO:HD3	2.19	0.43
3:C:58:LEU:HD22	3:C:62:PHE:CE2	2.53	0.43
6:H:18:GLY:O	6:H:20:TYR:N	2.52	0.43
7:I:19:ASP:OD1	7:I:22:ASN:HB2	2.19	0.43
1:A:187:LYS:O	1:A:188:ASP:HB2	2.18	0.43
1:A:329:LEU:C	1:A:331:GLY:H	2.21	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:293:PRO:HG2	2:B:296:GLU:CB	2.47	0.43
2:B:986:GLN:NE2	2:B:987:LYS:O	2.48	0.43
3:C:43:THR:O	3:C:161:LYS:HA	2.19	0.43
4:E:153:HIS:CG	4:E:184:VAL:HG11	2.54	0.43
7:I:50:THR:HB	7:I:92:ARG:NH2	2.33	0.43
3:C:63:ILE:O	3:C:67:LEU:HG	2.19	0.42
3:C:169:LYS:NZ	10:L:70:ARG:HG2	2.34	0.42
1:A:73:GLY:C	1:A:75:ASN:H	2.22	0.42
1:A:550:LEU:HD13	1:A:556:TRP:CZ2	2.54	0.42
1:A:914:GLU:C	1:A:916:GLY:N	2.72	0.42
2:B:497:ARG:HG3	2:B:498:THR:H	1.84	0.42
3:C:13:ALA:O	9:K:114:LEU:HB3	2.18	0.42
1:A:914:GLU:O	1:A:916:GLY:N	2.52	0.42
1:A:1341:ILE:CG2	1:A:1342:GLU:N	2.83	0.42
2:B:268:THR:CG2	2:B:270:LYS:HE3	2.46	0.42
2:B:281:PRO:HB3	2:B:320:ASP:OD2	2.19	0.42
3:C:112:ASN:ND2	3:C:146:LYS:HG2	2.34	0.42
4:E:77:SER:HG	4:E:105:PHE:HD2	1.64	0.42
1:A:1173:HIS:NE2	1:A:1227:ILE:HG23	2.35	0.42
2:B:225:VAL:HA	2:B:237:VAL:O	2.20	0.42
2:B:424:LEU:O	2:B:428:ILE:HG13	2.19	0.42
2:B:750:GLY:O	2:B:754:SER:HB2	2.19	0.42
2:B:794:ASN:C	2:B:795:ILE:HD12	2.39	0.42
9:K:78:THR:HG22	9:K:79:GLU:N	2.35	0.42
1:A:38:PRO:C	1:A:39:GLU:HG3	2.38	0.42
1:A:557:ASP:HA	9:K:26:LYS:HD2	2.02	0.42
1:A:741:ASN:ND2	1:A:743:VAL:HB	2.34	0.42
1:A:974:ASP:HA	6:H:136:LYS:HE2	2.01	0.42
1:A:1436:ILE:O	1:A:1437:GLY:C	2.58	0.42
2:B:760:ASP:OD1	2:B:760:ASP:N	2.53	0.42
2:B:784:ASN:HB3	8:J:63:TYR:OH	2.19	0.42
2:B:875:GLU:HG2	2:B:895:ASP:O	2.20	0.42
2:B:953:LEU:CD2	2:B:955:THR:HG23	2.43	0.42
2:B:983:ARG:HH11	2:B:1091:TYR:CB	2.32	0.42
3:C:18:VAL:HG12	3:C:20:PHE:HD2	1.84	0.42
9:K:58:PHE:HE2	9:K:74:ARG:HB3	1.84	0.42
1:A:450:LEU:HD12	1:A:450:LEU:N	2.25	0.42
1:A:636:GLU:OE2	1:A:962:ARG:HD3	2.19	0.42
1:A:699:ALA:O	1:A:700:ASN:HB3	2.20	0.42
1:A:853:ASP:OD1	1:A:855:THR:CB	2.66	0.42
1:A:1008:GLN:O	1:A:1012:ARG:HG3	2.18	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:46:GLN:NE2	2:B:496:ARG:HB3	2.28	0.42
2:B:244:LEU:HD11	2:B:366:GLN:HE22	1.85	0.42
2:B:1023:VAL:HG12	2:B:1027:ILE:CD1	2.49	0.42
4:E:16:PHE:CE2	4:E:20:LYS:HE2	2.54	0.42
1:A:342:GLY:O	1:A:345:VAL:HG13	2.20	0.42
1:A:808:LEU:HD12	1:A:808:LEU:N	2.34	0.42
2:B:315:LYS:HE3	2:B:315:LYS:HB2	1.80	0.42
2:B:586:TRP:NE1	2:B:588:GLY:O	2.52	0.42
2:B:957:ASN:ND2	2:B:958:GLN:N	2.65	0.42
3:C:57:VAL:O	3:C:57:VAL:CG1	2.67	0.42
7:I:17:ARG:CG	7:I:28:GLU:HG2	2.48	0.42
9:K:90:ALA:O	9:K:94:ILE:HG13	2.19	0.42
1:A:551:TYR:CE1	9:K:74:ARG:HD3	2.55	0.42
2:B:653:VAL:HG12	2:B:689:LEU:HD13	2.02	0.42
2:B:654:ARG:H	2:B:657:HIS:HD2	1.67	0.42
2:B:950:ASP:O	2:B:951:GLN:HB2	2.20	0.42
3:C:181:ASP:CG	3:C:186:LEU:HD13	2.40	0.42
8:J:32:GLU:H	8:J:32:GLU:CD	2.23	0.42
9:K:21:ILE:HG23	9:K:31:VAL:CG1	2.50	0.42
1:A:92:HIS:CD2	1:A:94:GLY:H	2.38	0.42
1:A:329:LEU:HD23	1:A:332:LYS:HB2	2.00	0.42
2:B:102:VAL:HG11	2:B:122:LEU:HD13	2.01	0.42
2:B:174:LEU:HD12	2:B:174:LEU:N	2.35	0.42
2:B:1007:VAL:HG22	2:B:1008:PRO:HD2	2.01	0.42
4:E:78:LEU:HD11	4:E:109:ILE:HG13	2.02	0.42
1:A:2:VAL:O	1:A:2:VAL:HG13	2.20	0.42
1:A:337:ARG:HH12	1:A:1403:GLU:HA	1.85	0.42
2:B:383:ASN:O	2:B:387:LEU:HB2	2.20	0.42
3:C:58:LEU:HD12	3:C:145:CYS:SG	2.60	0.42
7:I:35:VAL:HG22	7:I:36:GLU:N	2.35	0.42
1:A:834:THR:HG21	1:A:1077:THR:CA	2.47	0.41
2:B:35:SER:HA	2:B:811:TYR:CE2	2.55	0.41
2:B:844:SER:OG	2:B:996:ARG:N	2.43	0.41
2:B:1002:THR:HG21	2:B:1006:ILE:HB	2.02	0.41
3:C:42:PRO:HA	3:C:163:ILE:HD12	2.02	0.41
3:C:43:THR:CG2	3:C:44:LEU:N	2.83	0.41
6:H:97:MET:CE	6:H:142:LEU:HD23	2.50	0.41
1:A:855:THR:CG2	1:A:857:ARG:HG3	2.43	0.41
1:A:1115:SER:HA	1:A:1308:THR:O	2.21	0.41
2:B:94:LYS:HD3	2:B:96:TYR:CZ	2.55	0.41
2:B:858:SER:HA	2:B:966:VAL:O	2.20	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:E:204:THR:HG22	4:E:205:SER:N	2.36	0.41
9:K:18:LYS:HE3	9:K:38:GLU:HG2	2.02	0.41
1:A:391:LEU:HD23	1:A:400:PRO:O	2.20	0.41
1:A:925:LEU:HD13	1:A:983:ILE:HD12	2.02	0.41
1:A:975:HIS:ND1	1:A:1036:ARG:HG3	2.35	0.41
1:A:1319:VAL:HG13	1:A:1320:PRO:HD2	2.03	0.41
2:B:1163:CYS:SG	2:B:1165:ILE:HB	2.61	0.41
3:C:166:GLU:HA	9:K:6:ARG:HB3	2.01	0.41
4:E:59:SER:OG	4:E:81:GLU:HA	2.21	0.41
4:E:88:VAL:HG21	4:E:110:PHE:CE2	2.55	0.41
6:H:125:LEU:HB3	6:H:130:ARG:CZ	2.50	0.41
8:J:52:THR:HG22	8:J:52:THR:O	2.19	0.41
9:K:21:ILE:HD13	9:K:84:LYS:HE2	2.01	0.41
1:A:103:CYS:SG	1:A:207:ILE:HG23	2.60	0.41
1:A:369:SER:CB	9:K:2:ASN:HD21	2.33	0.41
2:B:339:THR:CG2	2:B:343:ILE:HB	2.50	0.41
2:B:402:GLY:CA	2:B:695:ALA:HB3	2.49	0.41
2:B:640:VAL:HG22	2:B:651:LEU:CD2	2.50	0.41
3:C:35:ARG:HH11	9:K:41:THR:N	2.18	0.41
3:C:265:MET:HE1	9:K:19:LEU:O	2.20	0.41
4:E:94:LYS:O	4:E:98:ILE:HG13	2.20	0.41
6:H:82:PRO:O	6:H:84:ALA:N	2.52	0.41
1:A:63:ARG:HA	1:A:74:MET:HE2	2.02	0.41
1:A:106:VAL:CG2	1:A:111:GLY:C	2.89	0.41
1:A:246:VAL:O	1:A:328:ARG:NH2	2.54	0.41
1:A:356:ASP:OD2	9:K:65:HIS:HE1	2.04	0.41
1:A:396:PRO:HG3	1:A:416:ARG:HB3	2.02	0.41
1:A:605:MET:CE	1:A:612:ILE:HG13	2.51	0.41
1:A:1164:PRO:HG2	1:A:1165:GLU:H	1.85	0.41
2:B:121:ASN:HA	2:B:207:GLY:CA	2.51	0.41
2:B:235:SER:HA	2:B:261:ARG:NH2	2.35	0.41
2:B:361:LEU:O	2:B:374:LYS:HE2	2.21	0.41
2:B:875:GLU:O	2:B:877:PRO:HD3	2.21	0.41
2:B:995:ARG:HD2	2:B:997:GLU:OE2	2.20	0.41
3:C:22:LEU:CD2	9:K:101:LEU:HD21	2.50	0.41
8:J:57:ILE:HA	8:J:60:PHE:CD2	2.55	0.41
1:A:476:SER:N	1:A:477:PRO:HD2	2.36	0.41
1:A:556:TRP:CH2	1:A:558:GLY:HA2	2.56	0.41
2:B:242:SER:O	2:B:251:ILE:HA	2.19	0.41
2:B:324:ILE:HD11	2:B:333:PHE:CG	2.56	0.41
2:B:515:HIS:CD2	2:B:517:THR:H	2.23	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1159:ARG:HG3	2:B:1193:GLN:HE21	1.85	0.41
7:I:16:PRO:HA	7:I:26:LEU:O	2.21	0.41
9:K:65:HIS:CD2	9:K:66:PRO:HD2	2.55	0.41
1:A:32:VAL:HG23	1:A:33:ALA:H	1.85	0.41
1:A:406:ILE:HD12	1:A:406:ILE:N	2.36	0.41
1:A:1345:ARG:HD2	1:A:1373:ASP:OD1	2.21	0.41
2:B:123:THR:OG1	2:B:458:LYS:HE3	2.21	0.41
2:B:757:PRO:HD3	2:B:983:ARG:HH21	1.86	0.41
2:B:886:LYS:C	2:B:888:GLY:H	2.24	0.41
2:B:1183:LYS:C	2:B:1185:CYS:H	2.24	0.41
3:C:258:ILE:HG23	9:K:19:LEU:HD11	2.02	0.41
6:H:5:LEU:HD11	6:H:135:LEU:HG	2.03	0.41
1:A:81:PHE:HA	1:A:243:PRO:HD3	2.03	0.41
1:A:186:LYS:HG2	1:A:187:LYS:H	1.86	0.41
1:A:378:GLU:OE1	1:A:434:ARG:HD3	2.21	0.41
2:B:115:GLN:HG2	2:B:193:LYS:CB	2.50	0.41
2:B:339:THR:HG22	2:B:340:ALA:O	2.20	0.41
2:B:870:ILE:HD11	2:B:919:SER:OG	2.21	0.41
6:H:12:VAL:HG13	6:H:26:ILE:CG2	2.51	0.41
6:H:113:ALA:HA	6:H:125:LEU:O	2.21	0.41
7:I:98:VAL:CG2	7:I:111:THR:HG22	2.50	0.41
7:I:103:CYS:SG	7:I:105:SER:HB2	2.60	0.41
10:L:26:THR:C	10:L:27:LEU:HD23	2.41	0.41
1:A:91:PHE:HZ	1:A:207:ILE:HG13	1.86	0.41
1:A:220:THR:O	1:A:222:LEU:O	2.39	0.41
1:A:313:GLN:CB	1:A:320:ARG:HB3	2.51	0.41
1:A:590:ARG:HH11	1:A:590:ARG:HG2	1.86	0.41
1:A:850:VAL:HG21	1:A:1058:VAL:HG21	2.03	0.41
1:A:1027:ALA:O	1:A:1031:VAL:HG23	2.21	0.41
1:A:1104:ILE:CD1	1:A:1351:GLU:HB3	2.51	0.41
2:B:97:VAL:HG12	2:B:178:ASN:ND2	2.35	0.41
2:B:129:PHE:CZ	2:B:166:PHE:HB2	2.56	0.41
2:B:165:VAL:HG12	2:B:167:ILE:HG13	2.03	0.41
2:B:351:TYR:CE2	2:B:355:ILE:HD11	2.55	0.41
2:B:1006:ILE:HD11	8:J:43:ARG:CB	2.46	0.41
3:C:40:GLU:OE2	3:C:254:LYS:NZ	2.44	0.41
3:C:62:PHE:CE2	3:C:66:ARG:HD2	2.55	0.41
3:C:163:ILE:CG2	3:C:165:LYS:H	2.33	0.41
4:E:72:PHE:HE2	4:E:157:SER:HA	1.85	0.41
6:H:15:VAL:HG22	6:H:26:ILE:HG12	2.03	0.41
6:H:36:CYS:HA	6:H:126:GLU:O	2.21	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:J:39:LEU:HD23	8:J:39:LEU:HA	1.92	0.41
8:J:41:LEU:HD22	8:J:46:CYS:HB3	2.02	0.41
1:A:120:GLU:HG3	1:A:123:ARG:NH2	2.36	0.41
1:A:900:ASP:HA	1:A:926:GLN:NE2	2.36	0.41
1:A:901:LEU:HA	1:A:907:THR:HG23	2.03	0.41
1:A:946:VAL:CG2	4:E:201:LYS:HD2	2.45	0.41
1:A:1059:HIS:CE1	5:F:155:LEU:HD22	2.45	0.41
1:A:1074:GLU:HB3	1:A:1075:PRO:CD	2.51	0.41
2:B:795:ILE:HD12	2:B:795:ILE:N	2.36	0.41
2:B:906:SER:O	2:B:907:GLY:C	2.58	0.41
9:K:21:ILE:HG21	9:K:84:LYS:HE2	2.03	0.41
1:A:24:PRO:O	1:A:28:ARG:HG3	2.21	0.40
1:A:334:GLY:HA2	1:A:337:ARG:HB3	2.02	0.40
1:A:463:ILE:HB	1:A:464:PRO:HD2	2.03	0.40
1:A:473:SER:OG	1:A:522:GLY:O	2.23	0.40
1:A:548:ASN:HA	9:K:60:ALA:HB1	2.02	0.40
2:B:324:ILE:HG12	2:B:329:THR:CG2	2.45	0.40
6:H:27:GLU:HA	6:H:38:LEU:O	2.20	0.40
9:K:29:ASN:ND2	9:K:79:GLU:HA	2.35	0.40
1:A:849:MET:HE1	1:A:1436:ILE:HA	2.00	0.40
1:A:1120:LEU:HD21	1:A:1131:ALA:HA	2.02	0.40
1:A:1150:SER:OG	7:I:46:HIS:HB3	2.21	0.40
1:A:115:LEU:HD12	1:A:142:CYS:SG	2.61	0.40
1:A:302:THR:HG23	1:A:306:ASN:ND2	2.36	0.40
1:A:595:THR:OG1	1:A:603:ASN:HB3	2.21	0.40
1:A:1140:HIS:HB2	1:A:1276:VAL:O	2.21	0.40
1:A:1345:ARG:NH1	1:A:1373:ASP:OD1	2.54	0.40
2:B:217:ARG:HG2	2:B:218:SER:O	2.21	0.40
4:E:201:LYS:HD3	4:E:201:LYS:HA	1.92	0.40
9:K:18:LYS:HE3	9:K:38:GLU:CG	2.52	0.40
1:A:305:ASP:O	1:A:308:ILE:HD11	2.21	0.40
1:A:690:VAL:HG11	1:A:794:PRO:HD3	2.03	0.40
1:A:1365:TYR:CD2	1:A:1365:TYR:C	2.94	0.40
1:A:1376:THR:CG2	4:E:212:ARG:NH2	2.76	0.40
2:B:344:LYS:HB2	2:B:347:LYS:HE2	2.02	0.40
2:B:483:LEU:HD11	2:B:491:THR:HG23	2.04	0.40
2:B:882:THR:HB	2:B:934:LYS:O	2.22	0.40
2:B:1057:LYS:O	2:B:1061:GLU:HG3	2.21	0.40
3:C:73:GLN:HA	3:C:133:ILE:HD11	2.02	0.40
5:F:107:VAL:HG13	5:F:124:GLU:OE2	2.22	0.40
1:A:298:PHE:CZ	1:A:312:PRO:HD3	2.57	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:333:GLU:O	1:A:337:ARG:HB2	2.22	0.40
1:A:592:ASP:O	1:A:593:GLU:C	2.60	0.40
1:A:901:LEU:CD2	1:A:907:THR:HG23	2.51	0.40
2:B:259:TYR:HB2	2:B:268:THR:HG22	2.04	0.40
2:B:311:LEU:HA	2:B:314:LEU:HD12	2.04	0.40
2:B:840:ILE:HB	2:B:1011:ILE:HB	2.04	0.40
2:B:996:ARG:NH2	3:C:174:ALA:O	2.54	0.40
3:C:3:GLU:HB2	9:K:104:ASN:OD1	2.21	0.40
3:C:250:THR:O	3:C:254:LYS:HG3	2.22	0.40
6:H:32:THR:HB	6:H:33:GLN:H	1.54	0.40
8:J:53:HIS:CG	8:J:54:VAL:N	2.90	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	
1	A	1411/1733 (81%)	1250 (89%)	123 (9%)	38 (3%)	5	3
2	B	1074/1224 (88%)	950 (88%)	110 (10%)	14 (1%)	12	12
3	C	264/318 (83%)	236 (89%)	24 (9%)	4 (2%)	10	10
4	E	213/215 (99%)	189 (89%)	22 (10%)	2 (1%)	17	20
5	F	82/155 (53%)	76 (93%)	5 (6%)	1 (1%)	13	14
6	H	129/146 (88%)	93 (72%)	21 (16%)	15 (12%)	0	0
7	I	120/122 (98%)	103 (86%)	17 (14%)	0	100	100
8	J	63/70 (90%)	59 (94%)	3 (5%)	1 (2%)	9	9
9	K	112/120 (93%)	106 (95%)	6 (5%)	0	100	100
10	L	44/70 (63%)	25 (57%)	16 (36%)	3 (7%)	1	0
All	All	3512/4173 (84%)	3087 (88%)	347 (10%)	78 (2%)	6	5

All (78) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	55	ASP
1	A	464	PRO
1	A	465	TYR
1	A	466	SER
1	A	567	LYS
1	A	593	GLU
1	A	1393	ASN
2	B	1222	ARG
6	H	128	ASN
1	A	35	ILE
1	A	307	ASP
1	A	467	THR
1	A	525	GLN
1	A	1398	MET
2	B	646	LEU
2	B	879	ARG
2	B	887	HIS
3	C	4	GLU
3	C	231	ASN
4	E	3	GLN
4	E	50	MET
6	H	18	GLY
6	H	19	ARG
6	H	61	SER
6	H	78	SER
6	H	105	GLU
6	H	138	GLU
1	A	67	CYS
1	A	156	ASP
1	A	258	GLY
1	A	283	GLY
1	A	626	ASN
1	A	915	SER
1	A	958	VAL
1	A	1386	ARG
2	B	165	VAL
2	B	262	GLU
2	B	266	ALA
2	B	1190	ASP
3	C	90	ASP
3	C	137	LYS
5	F	73	ALA

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	H	52	GLN
6	H	81	PRO
6	H	103	LYS
8	J	44	TYR
10	L	39	SER
1	A	72	GLU
1	A	188	ASP
1	A	194	ALA
1	A	196	GLU
1	A	248	PRO
1	A	752	LYS
1	A	764	CYS
2	B	864	LYS
2	B	1100	ASP
6	H	62	SER
10	L	56	LEU
10	L	59	ALA
1	A	257	ARG
1	A	308	ILE
1	A	419	LYS
1	A	959	ASN
1	A	1402	PHE
2	B	90	ILE
2	B	1099	VAL
6	H	83	GLN
6	H	109	LYS
6	H	139	ASN
1	A	250	ILE
6	H	47	PHE
1	A	84	ILE
1	A	399	HIS
2	B	1214	PRO
1	A	61	ILE
2	B	1109	GLY
1	A	1114	PRO
1	A	400	PRO

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	
1	A	1239/1520 (82%)	1180 (95%)	59 (5%)	25	36
2	B	950/1061 (90%)	903 (95%)	47 (5%)	25	35
3	C	234/274 (85%)	226 (97%)	8 (3%)	37	51
4	E	197/197 (100%)	191 (97%)	6 (3%)	41	57
5	F	74/137 (54%)	71 (96%)	3 (4%)	30	43
6	H	117/128 (91%)	115 (98%)	2 (2%)	60	76
7	I	116/116 (100%)	109 (94%)	7 (6%)	19	26
8	J	60/65 (92%)	52 (87%)	8 (13%)	4	4
9	K	99/102 (97%)	93 (94%)	6 (6%)	18	25
10	L	40/57 (70%)	35 (88%)	5 (12%)	4	5
All	All	3126/3657 (86%)	2975 (95%)	151 (5%)	25	36

All (151) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	22	PHE
1	A	53	LEU
1	A	93	VAL
1	A	171	GLN
1	A	175	ARG
1	A	209	ASN
1	A	221	SER
1	A	385	ILE
1	A	386	ASP
1	A	434	ARG
1	A	446	ARG
1	A	449	SER
1	A	450	LEU
1	A	451	HIS
1	A	452	LYS
1	A	467	THR
1	A	472	LEU
1	A	474	VAL
1	A	475	THR
1	A	493	GLN
1	A	498	ARG
1	A	503	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	504	LEU
1	A	513	SER
1	A	535	THR
1	A	596	THR
1	A	597	LEU
1	A	618	GLU
1	A	622	VAL
1	A	626	ASN
1	A	666	ILE
1	A	672	ASP
1	A	756	ILE
1	A	769	SER
1	A	774	ARG
1	A	821	ARG
1	A	855	THR
1	A	858	ASN
1	A	873	MET
1	A	885	THR
1	A	903	ASN
1	A	919	ILE
1	A	920	LEU
1	A	940	ARG
1	A	1043	ASP
1	A	1048	ASN
1	A	1130	GLN
1	A	1166	ASP
1	A	1222	ASN
1	A	1277	GLU
1	A	1293	SER
1	A	1297	GLU
1	A	1309	ASP
1	A	1318	THR
1	A	1366	ARG
1	A	1372	VAL
1	A	1377	THR
1	A	1383	SER
1	A	1426	GLU
2	B	18	PHE
2	B	20	ASP
2	B	21	GLU
2	B	61	ASP
2	B	121	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	B	194	GLU
2	B	217	ARG
2	B	261	ARG
2	B	268	THR
2	B	313	MET
2	B	339	THR
2	B	357	GLN
2	B	366	GLN
2	B	372	SER
2	B	463	THR
2	B	466	TRP
2	B	485	ARG
2	B	496	ARG
2	B	540	SER
2	B	563	MET
2	B	567	GLU
2	B	589	VAL
2	B	612	GLU
2	B	636	PRO
2	B	641	GLU
2	B	644	GLU
2	B	737	THR
2	B	754	SER
2	B	790	ASP
2	B	806	THR
2	B	864	LYS
2	B	895	ASP
2	B	957	ASN
2	B	970	THR
2	B	997	GLU
2	B	999	MET
2	B	1007	VAL
2	B	1065	GLN
2	B	1097	HIS
2	B	1099	VAL
2	B	1145	SER
2	B	1150	ARG
2	B	1152	MET
2	B	1159	ARG
2	B	1186	ASP
2	B	1219	ASP
2	B	1222	ARG

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	C	23	SER
3	C	26	ASP
3	C	50	GLU
3	C	77	ILE
3	C	163	ILE
3	C	170	TRP
3	C	209	TYR
3	C	240	VAL
4	E	104	ASN
4	E	123	LEU
4	E	146	HIS
4	E	159	ASP
4	E	196	VAL
4	E	204	THR
5	F	79	ARG
5	F	82	THR
5	F	115	THR
6	H	32	THR
6	H	104	PHE
7	I	12	ASN
7	I	46	HIS
7	I	50	THR
7	I	61	ASP
7	I	84	VAL
7	I	87	GLN
7	I	111	THR
8	J	1	MET
8	J	3	VAL
8	J	7	CYS
8	J	14	VAL
8	J	28	ASP
8	J	37	SER
8	J	38	ARG
8	J	48	ARG
9	K	11	LEU
9	K	18	LYS
9	K	47	ARG
9	K	73	LEU
9	K	81	TYR
9	K	114	LEU
10	L	27	LEU
10	L	38	LEU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
10	L	42	ARG
10	L	50	ASP
10	L	64	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (84) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	64	ASN
1	A	68	GLN
1	A	83	HIS
1	A	92	HIS
1	A	171	GLN
1	A	313	GLN
1	A	390	GLN
1	A	394	ASN
1	A	397	ASN
1	A	479	ASN
1	A	503	GLN
1	A	517	ASN
1	A	660	ASN
1	A	736	ASN
1	A	741	ASN
1	A	742	ASN
1	A	745	GLN
1	A	757	ASN
1	A	768	GLN
1	A	854	ASN
1	A	858	ASN
1	A	903	ASN
1	A	906	HIS
1	A	926	GLN
1	A	994	GLN
1	A	1048	ASN
1	A	1052	GLN
1	A	1218	GLN
1	A	1265	ASN
1	A	1270	ASN
1	A	1364	ASN
1	A	1387	HIS
1	A	1432	GLN
2	B	46	GLN
2	B	178	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	B	215	GLN
2	B	236	HIS
2	B	255	GLN
2	B	325	GLN
2	B	363	HIS
2	B	366	GLN
2	B	465	ASN
2	B	484	ASN
2	B	513	GLN
2	B	515	HIS
2	B	516	ASN
2	B	518	HIS
2	B	587	HIS
2	B	590	HIS
2	B	657	HIS
2	B	706	GLN
2	B	734	HIS
2	B	744	HIS
2	B	786	ASN
2	B	957	ASN
2	B	1015	HIS
2	B	1062	HIS
2	B	1065	GLN
2	B	1084	GLN
2	B	1161	HIS
2	B	1176	ASN
2	B	1179	GLN
2	B	1187	ASN
2	B	1193	GLN
3	C	65	HIS
3	C	73	GLN
3	C	112	ASN
3	C	167	HIS
3	C	242	GLN
4	E	101	GLN
4	E	104	ASN
4	E	113	GLN
4	E	147	HIS
6	H	11	GLN
6	H	133	ASN
6	H	134	ASN
7	I	12	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
7	I	116	ASN
8	J	53	HIS
9	K	29	ASN
9	K	65	HIS
9	K	76	GLN
9	K	110	ASN
10	L	53	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 11 ligands modelled in this entry, 10 are monoatomic - leaving 1 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
13	UTP	B	3571	12	22,30,30	1.40	3 (13%)	27,47,47	1.36	2 (7%)

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
13	UTP	B	3571	12	-	5/20/38/38	0/2/2/2

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
13	B	3571	UTP	C4-N3	4.38	1.40	1.33
13	B	3571	UTP	C6-N1	3.12	1.39	1.35
13	B	3571	UTP	PB-O1B	-2.09	1.45	1.55

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
13	B	3571	UTP	O4'-C1'-C2'	-4.26	100.70	106.93
13	B	3571	UTP	C5-C4-N3	-3.98	114.55	123.31

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
13	B	3571	UTP	PA-O3A-PB-O2B
13	B	3571	UTP	PB-O3B-PG-O2G
13	B	3571	UTP	PA-O3A-PB-O1B
13	B	3571	UTP	PB-O3B-PG-O1G
13	B	3571	UTP	PB-O3B-PG-O3G

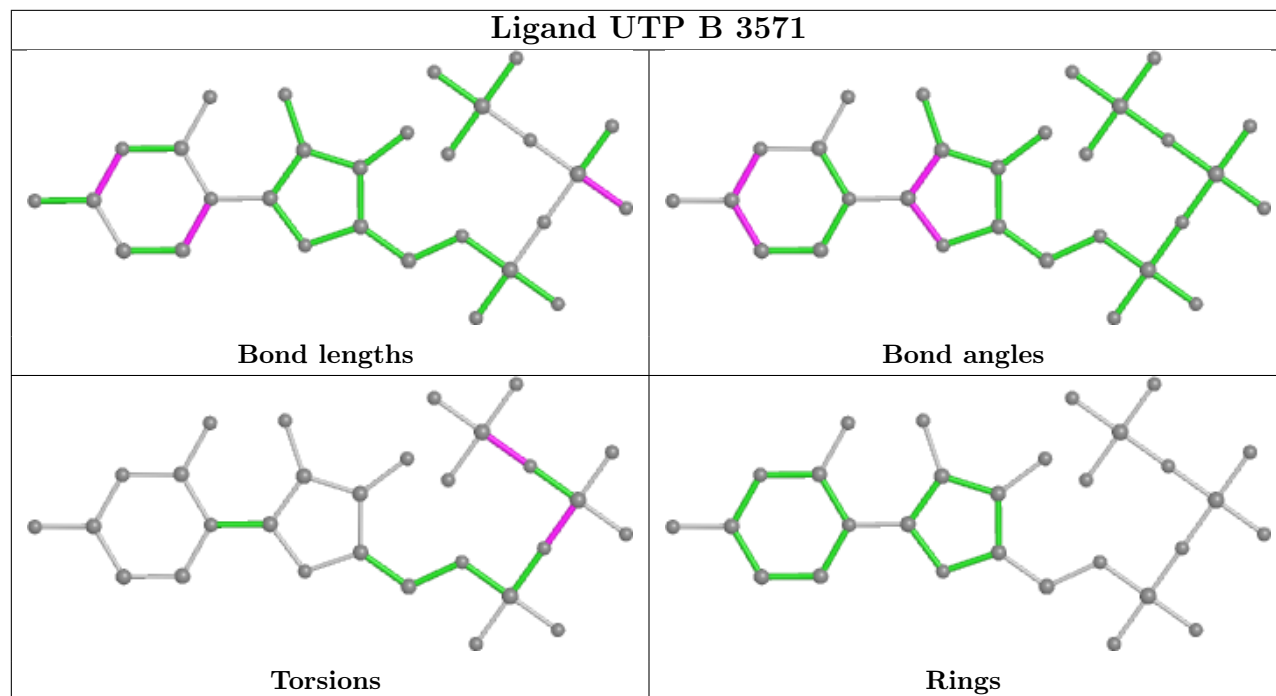
There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
13	B	3571	UTP	1	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

Unable to reproduce the depositors R factor - this section is therefore empty.

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

Unable to reproduce the depositors R factor - this section is therefore empty.

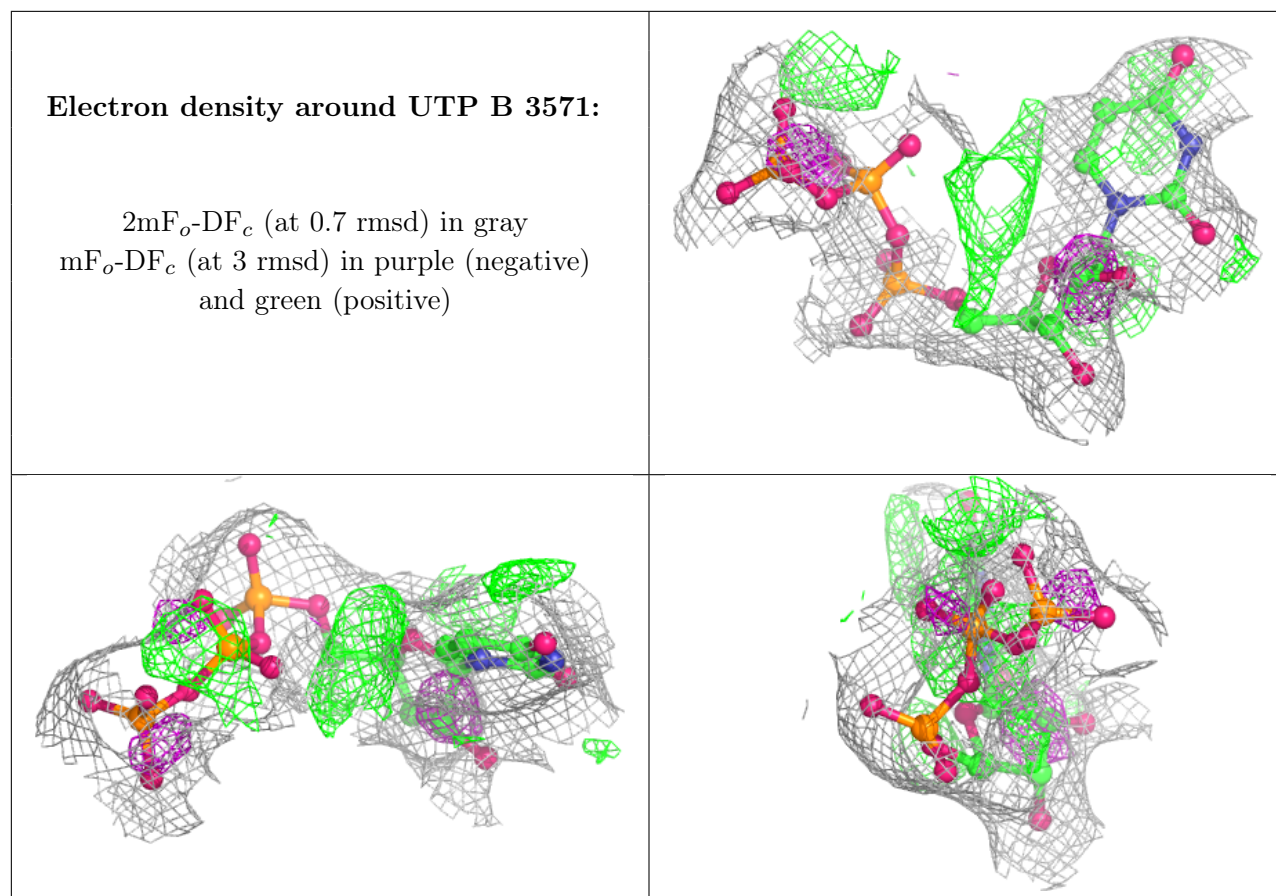
6.3 Carbohydrates

Unable to reproduce the depositors R factor - this section is therefore empty.

6.4 Ligands

Unable to reproduce the depositors R factor - this section is therefore empty.

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.



6.5 Other polymers [i](#)

Unable to reproduce the depositors R factor - this section is therefore empty.