Full wwPDB X-ray Structure Validation Report ⓘ

Feb 28, 2024 – 06:35 PM EST

PDB ID	:	5T0O
Title	:	Crystal Structure of a membrane protein
Authors	:	Su, C.-C.; Yu, E.W.
Deposited on	:	2016-08-16
Resolution	:	3.15 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:

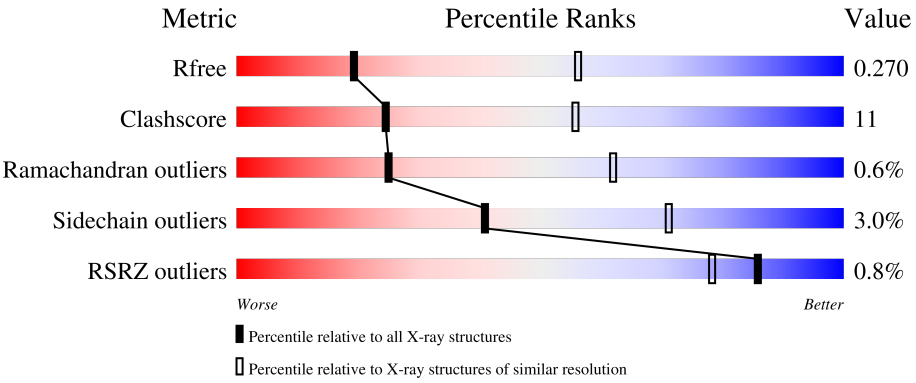
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation 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 3.15 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	1665 (3.20-3.12)
Clashscore	141614	1804 (3.20-3.12)
Ramachandran outliers	138981	1770 (3.20-3.12)
Sidechain outliers	138945	1769 (3.20-3.12)
RSRZ outliers	127900	1616 (3.20-3.12)

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 <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1040	72% 26%
1	B	1040	73% 24%
1	C	1040	74% 25%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 23901 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 CmeB.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1033	Total	C	N	O	S	0	0	0
			7971	5154	1301	1484	32			
1	B	1026	Total	C	N	O	S	0	0	0
			7914	5119	1292	1471	32			
1	C	1035	Total	C	N	O	S	0	0	0
			7991	5166	1307	1486	32			

- Molecule 2 is water.

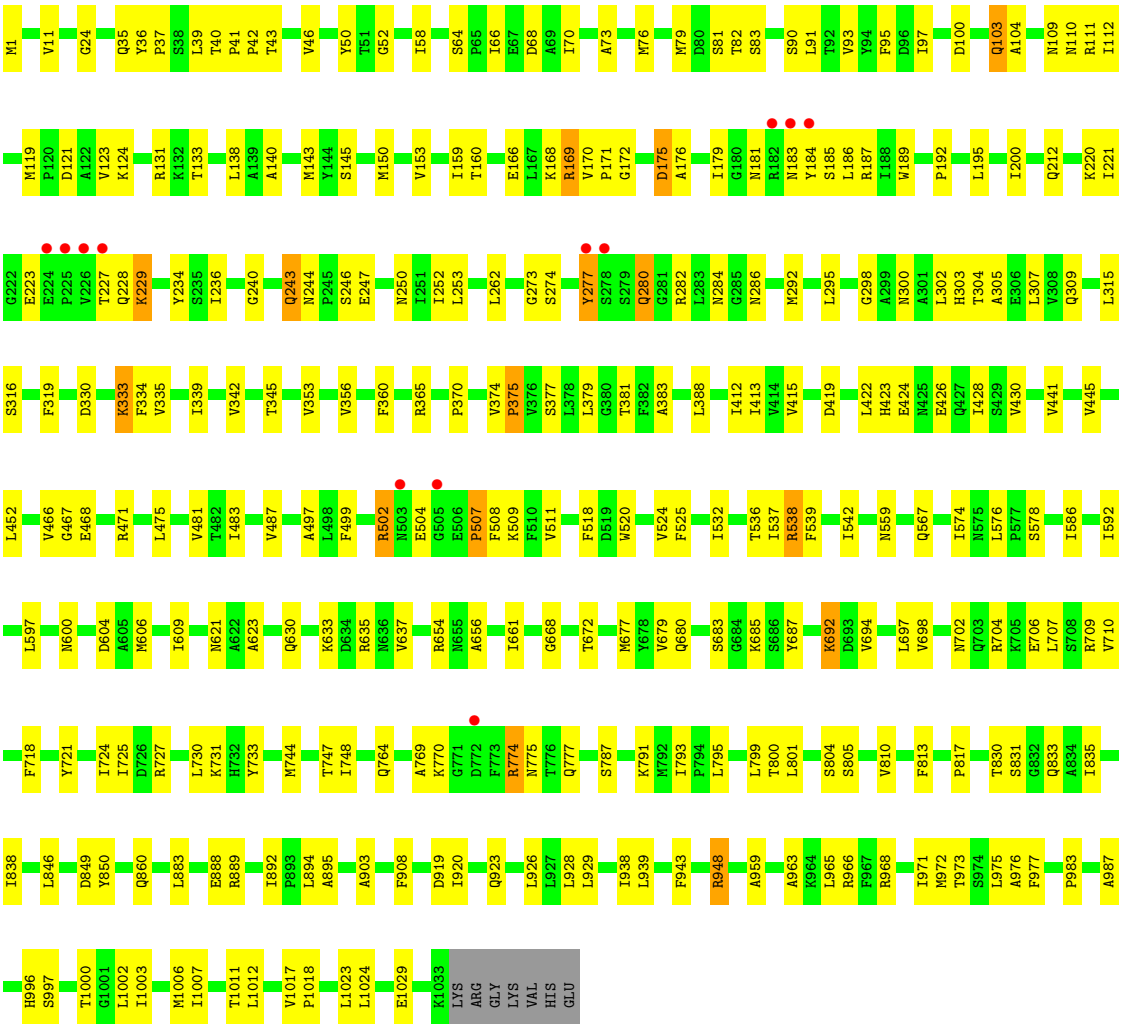
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	5	Total	O	0	0
			5	5		
2	B	11	Total	O	0	0
			11	11		
2	C	9	Total	O	0	0
			9	9		

3 Residue-property plots (i)

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

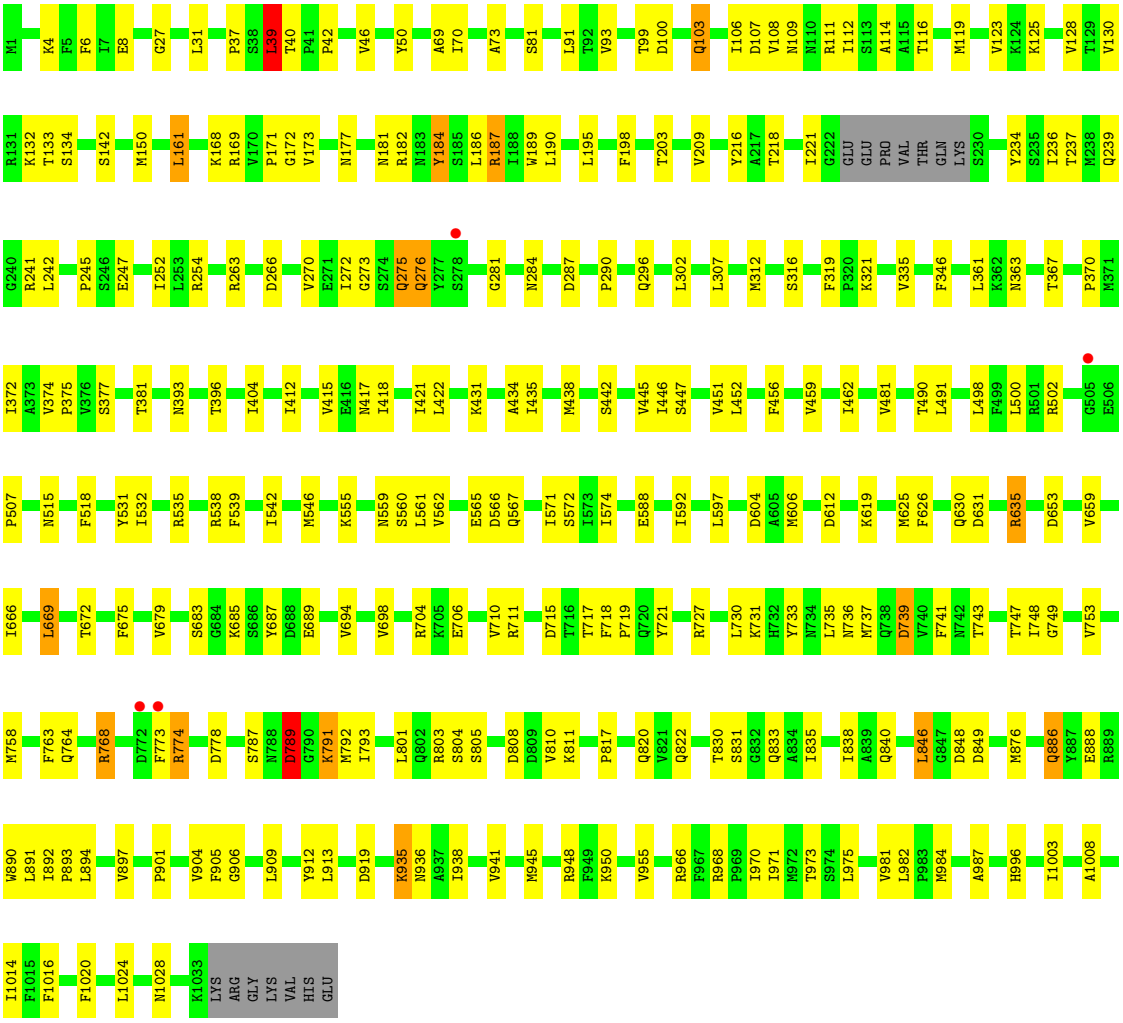
• Molecule 1: CmeB

Chain A:



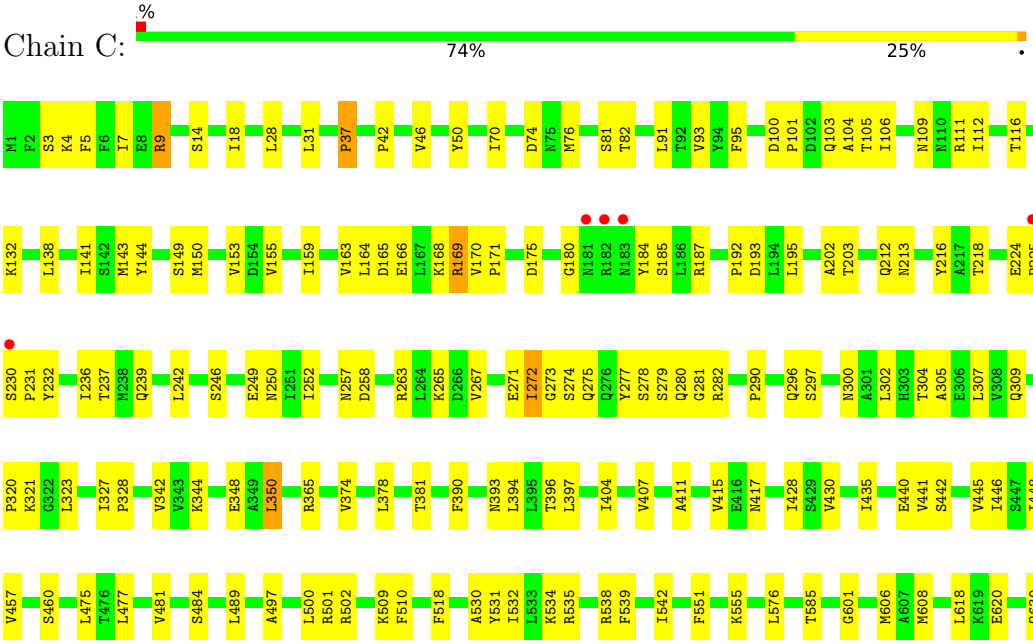
• Molecule 1: CmeB

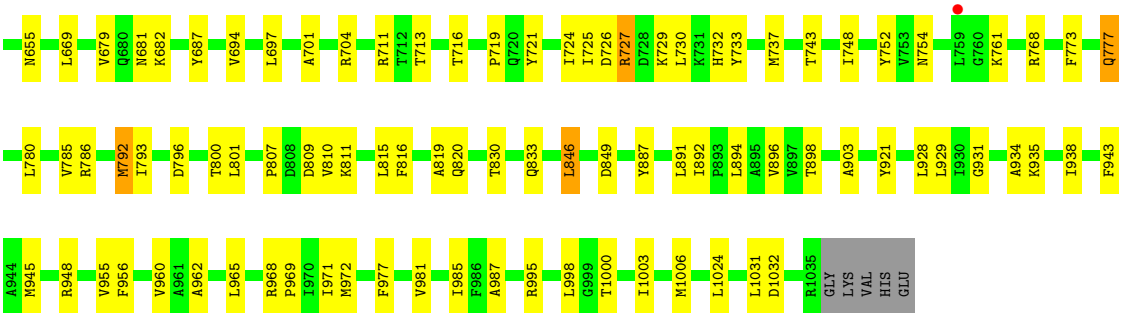
Chain B:



• Molecule 1: CmeB

Chain C:




N655 L669 V679 Q680 N681 K682 Y687 V694 L697 A701 R704 R711 T712 T713 T716 P719 Q720 Y721 I724 I725 D726 R727 D728 K729 L730 K731 H732 Y733 M737 T743 I748 Y752 V753 N754 L759 G760 K761 R768 F773 Q777
L780 V785 R786 M792 I793 D796 T800 L801 P807 D808 D809 V810 K811 L815 F816 A819 Q820 T830 Q833 L846 D849 Y887 L891 I892 P893 L894 A895 V896 V897 T898 A903 Y921 L928 L929 I930 G931 A934 K935 I938 F943
A944 M945 R948 V955 F956 V960 A961 A962 L965 R968 P969 I970 I971 M972 F977 V981 I985 F986 A987 R995 L998 G999 T1000 I1003 M1006 L1024 L1031 D1032 R1035 GLY LYS VAL HIS GLU

4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	300.71Å 147.54Å 120.03Å 90.00° 99.87° 90.00°	Depositor
Resolution (Å)	84.93 – 3.15 84.93 – 3.15	Depositor EDS
% Data completeness (in resolution range)	89.1 (84.93-3.15) 89.2 (84.93-3.15)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.78 (at 3.13Å)	Xtriage
Refinement program	PHENIX	Depositor
R, R_{free}	0.211 , 0.268 0.216 , 0.270	Depositor DCC
R_{free} test set	4020 reflections (5.05%)	wwPDB-VP
Wilson B-factor (Å^2)	57.2	Xtriage
Anisotropy	0.190	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.31 , 47.3	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.90	EDS
Total number of atoms	23901	wwPDB-VP
Average B, all atoms (Å^2)	42.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.33% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

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	0.30	2/8127 (0.0%)	0.48	0/11029
1	B	0.27	0/8068	0.48	4/10947 (0.0%)
1	C	0.29	0/8147	0.48	0/11054
All	All	0.29	2/24342 (0.0%)	0.48	4/33030 (0.0%)

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
1	B	0	2
1	C	0	1
All	All	0	3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	103	GLN	CD-OE1	-6.53	1.09	1.24
1	A	103	GLN	CD-NE2	-5.57	1.19	1.32

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	39	LEU	CA-CB-CG	7.16	131.76	115.30
1	B	789	ASP	CB-CG-OD2	5.60	123.34	118.30
1	B	161	LEU	CA-CB-CG	5.56	128.08	115.30
1	B	498	LEU	CA-CB-CG	5.49	127.93	115.30

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	275	GLN	Peptide
1	B	886	GLN	Peptide
1	C	185	SER	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	7971	0	8114	196	0
1	B	7914	0	8057	180	0
1	C	7991	0	8140	187	0
2	A	5	0	0	0	0
2	B	11	0	0	0	0
2	C	9	0	0	0	0
All	All	23901	0	24311	525	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 11.

All (525) 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:B:789:ASP:OD2	1:B:791:LYS:NZ	1.91	1.01
1:A:333:LYS:NZ	1:A:567:GLN:O	2.06	0.89
1:C:687:TYR:CZ	1:C:810:VAL:HG13	2.10	0.86
1:C:82:THR:HB	1:C:811:LYS:HE3	1.59	0.84
1:C:46:VAL:HG13	1:C:130:VAL:HG12	1.60	0.84
1:C:725:ILE:HD11	1:C:730:LEU:HD22	1.59	0.83
1:A:388:LEU:HD12	1:A:475:LEU:HD21	1.61	0.82
1:A:721:TYR:HB2	1:C:236:ILE:HG22	1.63	0.80
1:C:716:THR:HG22	1:C:807:PRO:HG3	1.65	0.79
1:B:971:ILE:HG23	1:B:975:LEU:HD23	1.65	0.79
1:A:100:ASP:HB3	1:A:103:GLN:HB3	1.63	0.79
1:C:203:THR:HG23	1:C:743:THR:HG23	1.64	0.79
1:B:447:SER:OG	1:B:886:GLN:OE1	2.01	0.78
1:B:184:TYR:CE2	1:B:273:GLY:HA3	2.20	0.77
1:B:659:VAL:HG21	1:B:711:ARG:HD3	1.67	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:221:ILE:HG23	1:A:236:ILE:HD11	1.67	0.76
1:A:212:GLN:O	1:B:727:ARG:NH2	2.19	0.75
1:C:166:GLU:HG2	1:C:315:LEU:HD21	1.66	0.75
1:B:81:SER:HB3	1:B:91:LEU:HD23	1.68	0.75
1:C:252:ILE:HG22	1:C:263:ARG:HG2	1.69	0.75
1:C:887:TYR:HE2	1:C:938:ILE:HD11	1.51	0.75
1:A:356:VAL:HG11	1:A:976:ALA:HA	1.69	0.74
1:B:236:ILE:HG22	1:C:721:TYR:HB2	1.70	0.74
1:C:168:LYS:NZ	1:C:175:ASP:HA	2.03	0.73
1:B:515:ASN:OD1	1:B:968:ARG:NH2	2.20	0.73
1:B:447:SER:HB3	1:B:938:ILE:HD13	1.69	0.73
1:C:70:ILE:HG21	1:C:93:VAL:HG21	1.72	0.72
1:B:198:PHE:O	1:B:254:ARG:NH2	2.23	0.72
1:A:698:VAL:O	1:A:702:ASN:ND2	2.23	0.72
1:A:168:LYS:HG2	1:A:176:ALA:HB3	1.72	0.71
1:C:733:TYR:HB3	1:C:793:ILE:HD13	1.72	0.71
1:B:452:LEU:HD22	1:B:481:VAL:HG21	1.72	0.71
1:B:242:LEU:HD22	1:B:247:GLU:HB3	1.71	0.71
1:C:168:LYS:HZ3	1:C:175:ASP:HA	1.55	0.70
1:A:697:LEU:HD12	1:A:846:LEU:HD11	1.73	0.70
1:B:935:LYS:NZ	1:B:936:ASN:OD1	2.25	0.70
1:B:203:THR:HG23	1:B:743:THR:HG23	1.75	0.69
1:A:97:ILE:HD11	1:A:860:GLN:HE22	1.58	0.69
1:A:683:SER:HB3	1:A:685:LYS:HG3	1.73	0.69
1:A:727:ARG:NH2	1:C:212:GLN:O	2.27	0.68
1:C:42:PRO:HG2	1:C:95:PHE:HB2	1.75	0.68
1:C:887:TYR:CE2	1:C:938:ILE:HD11	2.28	0.67
1:B:119:MET:HE2	1:B:123:VAL:HG11	1.76	0.67
1:B:252:ILE:HG22	1:B:263:ARG:HG2	1.76	0.67
1:B:184:TYR:CZ	1:B:273:GLY:HA3	2.29	0.67
1:C:165:ASP:OD2	1:C:761:LYS:NZ	2.25	0.67
1:C:713:THR:HG21	1:C:820:GLN:HE21	1.59	0.67
1:A:43:THR:OG1	1:A:133:THR:O	2.13	0.66
1:B:236:ILE:HD11	1:C:748:ILE:HG21	1.77	0.66
1:B:758:MET:HG2	1:B:763:PHE:HE1	1.61	0.66
1:A:252:ILE:HD11	1:B:731:LYS:HG3	1.78	0.66
1:C:780:LEU:HB3	1:C:796:ASP:HB3	1.76	0.66
1:C:275:GLN:HE21	1:C:768:ARG:HH12	1.43	0.65
1:B:46:VAL:HG13	1:B:130:VAL:HG12	1.79	0.64
1:A:223:GLU:HB3	1:B:768:ARG:HH12	1.63	0.64
1:A:536:THR:HG21	1:A:1023:LEU:HD21	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:245:PRO:HG3	1:B:272:ILE:HD13	1.79	0.64
1:B:721:TYR:CZ	1:B:803:ARG:HG3	2.33	0.64
1:C:697:LEU:HD12	1:C:846:LEU:HD13	1.80	0.64
1:A:748:ILE:HG21	1:C:236:ILE:HD11	1.80	0.64
1:B:683:SER:HB2	1:B:849:ASP:HB2	1.79	0.63
1:A:795:LEU:HB3	1:A:799:LEU:HD12	1.80	0.63
1:A:775:ASN:ND2	1:A:777:GLN:OE1	2.32	0.63
1:B:370:PRO:HG3	1:B:415:VAL:HG21	1.79	0.63
1:C:278:SER:HB2	1:C:618:LEU:HD22	1.80	0.63
1:B:172:GLY:HA2	1:B:296:GLN:HE21	1.63	0.62
1:C:100:ASP:HB3	1:C:103:GLN:HB3	1.80	0.62
1:A:220:LYS:HB2	1:A:223:GLU:HG2	1.81	0.62
1:C:7:ILE:HD12	1:C:435:ILE:HD13	1.82	0.61
1:A:724:ILE:HB	1:A:800:THR:HG23	1.83	0.61
1:B:948:ARG:HD2	1:B:955:VAL:HG22	1.83	0.61
1:C:894:LEU:HD12	1:C:1024:LEU:HD11	1.81	0.61
1:B:374:VAL:HB	1:B:375:PRO:HD3	1.82	0.60
1:B:418:ILE:HG21	1:B:500:LEU:HD23	1.83	0.60
1:B:811:LYS:HZ2	1:B:820:GLN:H	1.48	0.60
1:A:687:TYR:CZ	1:A:810:VAL:HG13	2.37	0.59
1:C:300:ASN:O	1:C:304:THR:OG1	2.15	0.59
1:B:112:ILE:O	1:B:116:THR:OG1	2.18	0.59
1:B:571:ILE:HD11	1:B:672:THR:HG22	1.85	0.59
1:A:452:LEU:HD13	1:A:481:VAL:HG21	1.85	0.58
1:B:535:ARG:HD2	1:B:538:ARG:NH2	2.18	0.58
1:C:143:MET:HB2	1:C:159:ILE:HD11	1.86	0.58
1:C:246:SER:O	1:C:250:ASN:ND2	2.33	0.58
1:B:539:PHE:HA	1:B:542:ILE:HD12	1.86	0.58
1:A:277:TYR:CD1	1:C:224:GLU:HG3	2.38	0.58
1:A:333:LYS:HD2	1:A:334:PHE:N	2.19	0.58
1:A:889:ARG:HD3	1:A:892:ILE:HD13	1.85	0.57
1:B:711:ARG:NH2	1:B:822:GLN:OE1	2.38	0.57
1:C:218:THR:HG23	1:C:237:THR:HG22	1.86	0.57
1:C:390:PHE:CZ	1:C:475:LEU:HD22	2.39	0.57
1:C:531:TYR:CE1	1:C:535:ARG:HD2	2.39	0.57
1:B:721:TYR:HB3	1:B:801:LEU:HD11	1.86	0.57
1:C:891:LEU:HB3	1:C:1024:LEU:HD22	1.87	0.57
1:A:538:ARG:HD3	1:A:538:ARG:N	2.19	0.57
1:A:97:ILE:HD12	1:A:97:ILE:H	1.70	0.57
1:C:187:ARG:HH12	1:C:768:ARG:HH11	1.52	0.57
1:A:228:GLN:HG3	1:A:229:LYS:H	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:81:SER:HB3	1:C:91:LEU:HD13	1.86	0.56
1:C:227:THR:OG1	1:C:228:GLN:N	2.38	0.56
1:C:446:ILE:HD11	1:C:489:LEU:HD11	1.87	0.56
1:B:679:VAL:CG2	1:B:846:LEU:HD21	2.36	0.56
1:C:724:ILE:HB	1:C:800:THR:HG23	1.86	0.56
1:C:150:MET:HB2	1:C:155:VAL:HG13	1.87	0.56
1:C:896:VAL:HG21	1:C:938:ILE:HD13	1.87	0.56
1:B:182:ARG:N	1:B:182:ARG:HD2	2.21	0.55
1:C:977:PHE:HD2	1:C:1006:MET:HG2	1.70	0.55
1:A:604:ASP:OD1	1:A:604:ASP:N	2.39	0.55
1:A:539:PHE:HA	1:A:542:ILE:HD12	1.89	0.55
1:B:184:TYR:HB3	1:B:763:PHE:CD2	2.41	0.55
1:C:576:LEU:HD13	1:C:585:THR:HG23	1.88	0.55
1:A:683:SER:HB2	1:A:849:ASP:HB2	1.88	0.55
1:C:733:TYR:HD2	1:C:793:ILE:HG12	1.71	0.55
1:A:316:SER:HA	1:A:319:PHE:CD2	2.42	0.55
1:A:356:VAL:HG21	1:A:975:LEU:HB3	1.88	0.55
1:A:70:ILE:HG21	1:A:93:VAL:HG21	1.89	0.55
1:A:532:ILE:HG23	1:A:539:PHE:CG	2.42	0.55
1:A:774:ARG:HE	1:C:228:GLN:HG2	1.72	0.55
1:C:171:PRO:HD2	1:C:307:LEU:HD13	1.89	0.55
1:C:430:VAL:HG12	1:C:497:ALA:HA	1.88	0.55
1:A:661:ILE:HG21	1:A:672:THR:HB	1.88	0.54
1:B:987:ALA:HB3	1:B:996:HIS:CD2	2.42	0.54
1:C:407:VAL:HG22	1:C:484:SER:HB3	1.90	0.54
1:A:518:PHE:HE2	1:A:968:ARG:HG3	1.72	0.54
1:B:1016:PHE:HB3	1:B:1020:PHE:HE1	1.72	0.54
1:A:888:GLU:CD	1:C:9:ARG:HB2	2.27	0.54
1:B:572:SER:HB3	1:B:625:MET:HB3	1.88	0.54
1:B:687:TYR:CZ	1:B:810:VAL:HG13	2.42	0.54
1:A:422:LEU:HD21	1:A:430:VAL:HG22	1.88	0.54
1:B:679:VAL:HG11	1:B:694:VAL:HG22	1.89	0.54
1:B:106:ILE:HD12	1:B:107:ASP:N	2.23	0.54
1:B:704:ARG:NH1	1:B:706:GLU:OE2	2.40	0.54
1:A:895:ALA:HB2	1:A:1024:LEU:HD12	1.90	0.54
1:B:698:VAL:HG13	1:B:710:VAL:HG12	1.89	0.53
1:C:448:ILE:HG12	1:C:935:LYS:HG3	1.89	0.53
1:C:943:PHE:CZ	1:C:965:LEU:HD12	2.43	0.53
1:C:302:LEU:HD12	1:C:302:LEU:H	1.73	0.53
1:A:302:LEU:HD12	1:A:302:LEU:H	1.73	0.52
1:B:377:SER:O	1:B:381:THR:HG23	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:428:ILE:O	1:C:502:ARG:NH2	2.41	0.52
1:C:538:ARG:O	1:C:542:ILE:HG13	2.09	0.52
1:A:52:GLY:HA3	1:C:216:TYR:HB2	1.91	0.52
1:B:535:ARG:HB3	1:B:538:ARG:HD3	1.92	0.52
1:B:40:THR:HG22	1:B:669:LEU:HG	1.90	0.52
1:A:943:PHE:CZ	1:A:965:LEU:HD12	2.45	0.52
1:B:4:LYS:NZ	1:B:8:GLU:OE2	2.43	0.52
1:A:339:ILE:O	1:A:342:VAL:HG12	2.10	0.52
1:A:987:ALA:HB3	1:A:996:HIS:CD2	2.45	0.52
1:A:240:GLY:HA3	1:B:741:PHE:HZ	1.74	0.52
1:B:142:SER:OG	1:B:606:MET:SD	2.67	0.52
1:C:192:PRO:HA	1:C:195:LEU:HD12	1.92	0.52
1:C:216:TYR:CE1	1:C:239:GLN:HG3	2.45	0.52
1:C:969:PRO:HA	1:C:972:MET:HG2	1.90	0.52
1:A:184:TYR:CD2	1:A:273:GLY:HA3	2.45	0.51
1:A:284:ASN:HA	1:A:597:LEU:HD11	1.92	0.51
1:A:574:ILE:HD13	1:A:592:ILE:HD12	1.91	0.51
1:B:715:ASP:OD1	1:B:717:THR:OG1	2.27	0.51
1:B:70:ILE:HD11	1:B:112:ILE:HD11	1.92	0.51
1:A:687:TYR:OH	1:A:817:PRO:HB3	2.10	0.51
1:B:236:ILE:HA	1:C:721:TYR:O	2.11	0.51
1:B:442:SER:O	1:B:446:ILE:HG12	2.10	0.51
1:B:312:MET:O	1:B:316:SER:OG	2.21	0.51
1:C:509:LYS:HG2	1:C:510:PHE:N	2.24	0.51
1:C:532:ILE:HG23	1:C:539:PHE:CD2	2.46	0.51
1:A:138:LEU:HD23	1:A:295:LEU:HB2	1.91	0.51
1:A:200:ILE:HG21	1:A:253:LEU:HD13	1.93	0.51
1:B:490:THR:OG1	1:B:491:LEU:N	2.44	0.51
1:B:532:ILE:HG23	1:B:539:PHE:CG	2.46	0.51
1:C:153:VAL:CG2	1:C:274:SER:HB2	2.40	0.51
1:B:221:ILE:HD12	1:B:234:TYR:HB2	1.92	0.51
1:B:566:ASP:OD2	1:B:635:ARG:NH2	2.42	0.51
1:C:279:SER:HB3	1:C:618:LEU:HD23	1.93	0.51
1:C:101:PRO:HB2	1:C:132:LYS:HE2	1.93	0.51
1:A:236:ILE:HD12	1:B:748:ILE:HG21	1.92	0.51
1:C:777:GLN:HG3	1:C:801:LEU:HD13	1.93	0.50
1:B:876:MET:HE1	1:B:897:VAL:HG13	1.93	0.50
1:C:216:TYR:HE1	1:C:239:GLN:HG3	1.76	0.50
1:A:52:GLY:HA2	1:C:218:THR:OG1	2.11	0.50
1:A:537:ILE:HB	1:A:538:ARG:HH21	1.75	0.50
1:A:145:SER:HB2	1:A:150:MET:HB2	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:908:PHE:HE2	1:A:926:LEU:HD21	1.76	0.50
1:A:919:ASP:O	1:A:923:GLN:HG3	2.11	0.50
1:A:375:PRO:O	1:A:379:LEU:HB2	2.12	0.50
1:A:883:LEU:HD11	1:A:938:ILE:HD11	1.93	0.50
1:B:431:LYS:O	1:B:435:ILE:HG13	2.12	0.50
1:B:758:MET:HG2	1:B:763:PHE:CE1	2.45	0.50
1:C:170:VAL:CG2	1:C:307:LEU:HB3	2.41	0.50
1:C:309:GLN:HG2	1:C:327:ILE:HD12	1.93	0.50
1:B:37:PRO:O	1:B:39:LEU:HD13	2.10	0.50
1:C:159:ILE:HA	1:C:163:VAL:HB	1.94	0.50
1:A:721:TYR:O	1:C:236:ILE:HA	2.12	0.50
1:A:977:PHE:HD2	1:A:1006:MET:HG2	1.77	0.50
1:B:982:LEU:HA	1:B:1003:ILE:HD11	1.93	0.49
1:A:111:ARG:NH1	1:C:296:GLN:OE1	2.25	0.49
1:B:518:PHE:CZ	1:B:971:ILE:HG21	2.47	0.49
1:A:252:ILE:HD11	1:B:731:LYS:CG	2.42	0.49
1:C:213:ASN:ND2	1:C:754:ASN:OD1	2.45	0.49
1:C:320:PRO:HD2	1:C:323:LEU:HD23	1.93	0.49
1:C:985:ILE:HD12	1:C:1000:THR:HA	1.94	0.49
1:B:69:ALA:O	1:B:111:ARG:HD2	2.13	0.49
1:B:704:ARG:HH21	1:B:840:GLN:HB3	1.77	0.49
1:C:164:LEU:O	1:C:168:LYS:HG2	2.13	0.49
1:C:679:VAL:CG2	1:C:846:LEU:HD21	2.41	0.49
1:C:679:VAL:HG23	1:C:846:LEU:HD21	1.93	0.49
1:A:36:TYR:HB3	1:A:39:LEU:HD12	1.95	0.49
1:B:735:LEU:HD23	1:B:787:SER:HA	1.93	0.49
1:B:906:GLY:HA3	1:B:1008:ALA:HB2	1.94	0.49
1:B:168:LYS:HA	1:B:173:VAL:HG21	1.94	0.49
1:B:169:ARG:HD2	1:C:815:LEU:HD13	1.93	0.49
1:C:249:GLU:HB3	1:C:265:LYS:HB3	1.93	0.49
1:C:457:VAL:O	1:C:460:SER:OG	2.30	0.49
1:A:586:ILE:HG12	1:A:609:ILE:HG21	1.93	0.49
1:B:891:LEU:HB3	1:B:1024:LEU:HD22	1.95	0.49
1:A:68:ASP:OD2	1:C:169:ARG:NH1	2.44	0.49
1:A:240:GLY:HA3	1:B:741:PHE:CZ	2.47	0.49
1:B:571:ILE:HD11	1:B:672:THR:CG2	2.42	0.49
1:C:393:ASN:O	1:C:396:THR:N	2.46	0.49
1:A:520:TRP:O	1:A:524:VAL:HG23	2.13	0.48
1:B:606:MET:HB3	1:B:626:PHE:HB2	1.95	0.48
1:A:309:GLN:NE2	1:A:330:ASP:OD2	2.46	0.48
1:B:73:ALA:HA	1:B:111:ARG:NH2	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:76:MET:HA	1:C:95:PHE:HA	1.94	0.48
1:A:11:VAL:HB	1:B:888:GLU:OE2	2.13	0.48
1:B:848:ASP:OD2	1:B:848:ASP:N	2.45	0.48
1:C:411:ALA:O	1:C:415:VAL:HG23	2.13	0.48
1:A:24:GLY:HA3	1:A:379:LEU:O	2.13	0.48
1:A:578:SER:HA	1:A:621:ASN:ND2	2.28	0.48
1:B:209:VAL:HG12	1:B:753:VAL:HG11	1.95	0.48
1:A:95:PHE:CE2	1:A:104:ALA:HB1	2.48	0.48
1:A:58:ILE:HG22	1:A:83:SER:HB3	1.95	0.48
1:A:721:TYR:CD2	1:A:801:LEU:HD21	2.49	0.48
1:C:106:ILE:HA	1:C:109:ASN:HB2	1.96	0.48
1:C:184:TYR:CZ	1:C:273:GLY:HA3	2.49	0.48
1:C:230:SER:OG	1:C:231:PRO:O	2.25	0.48
1:C:687:TYR:CZ	1:C:810:VAL:CG1	2.90	0.48
1:A:727:ARG:NH2	1:C:242:LEU:HD21	2.29	0.48
1:B:116:THR:HA	1:B:119:MET:HG2	1.95	0.48
1:B:316:SER:HA	1:B:319:PHE:CD2	2.49	0.48
1:B:361:LEU:O	1:B:363:ASN:N	2.45	0.48
1:C:202:ALA:HB3	1:C:743:THR:HG22	1.95	0.48
1:C:290:PRO:HG3	1:C:608:MET:HG3	1.96	0.48
1:A:804:SER:OG	1:A:805:SER:N	2.47	0.48
1:B:181:ASN:HB2	1:B:276:GLN:HG2	1.94	0.48
1:B:218:THR:HG23	1:B:237:THR:HG22	1.95	0.48
1:C:342:VAL:HG11	1:C:397:LEU:HB3	1.96	0.48
1:A:525:PHE:CE2	1:A:963:ALA:HB1	2.49	0.48
1:C:28:LEU:HA	1:C:31:LEU:HD12	1.96	0.48
1:C:451:VAL:HG11	1:C:934:ALA:HB3	1.94	0.48
1:A:680:GLN:NE2	1:A:813:PHE:O	2.47	0.47
1:B:171:PRO:HD2	1:B:307:LEU:HD13	1.96	0.47
1:A:11:VAL:HG22	1:B:890:TRP:NE1	2.29	0.47
1:C:630:GLN:O	1:C:635:ARG:NH1	2.45	0.47
1:B:189:TRP:HH2	1:B:768:ARG:HE	1.63	0.47
1:B:456:PHE:HA	1:B:459:VAL:HG22	1.96	0.47
1:C:694:VAL:HG21	1:C:819:ALA:HB3	1.94	0.47
1:C:894:LEU:O	1:C:898:THR:HG23	2.14	0.47
1:A:428:ILE:O	1:A:502:ARG:NH1	2.48	0.47
1:C:442:SER:O	1:C:446:ILE:HG12	2.14	0.47
1:B:242:LEU:HD21	1:C:727:ARG:HH21	1.79	0.47
1:A:576:LEU:HG	1:A:656:ALA:HB2	1.95	0.47
1:B:181:ASN:N	1:B:276:GLN:HG3	2.29	0.47
1:C:328:PRO:HG2	1:C:606:MET:HE2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:507:PRO:O	1:A:511:VAL:HB	2.15	0.47
1:A:630:GLN:HB2	1:A:635:ARG:HG2	1.97	0.47
1:A:704:ARG:HB3	1:A:706:GLU:OE1	2.15	0.47
1:B:679:VAL:HG21	1:B:846:LEU:HD21	1.96	0.47
1:B:685:LYS:HG2	1:B:689:GLU:HB3	1.97	0.47
1:C:378:LEU:O	1:C:381:THR:HG22	2.14	0.47
1:C:687:TYR:CE1	1:C:810:VAL:HG13	2.49	0.47
1:A:1011:THR:OG1	1:A:1012:LEU:N	2.48	0.47
1:C:3:SER:O	1:C:7:ILE:HG13	2.15	0.47
1:A:140:ALA:HB3	1:A:606:MET:HE1	1.97	0.46
1:A:600:ASN:ND2	1:A:637:VAL:HG11	2.30	0.46
1:B:6:PHE:CG	1:B:490:THR:HB	2.49	0.46
1:B:417:ASN:O	1:B:421:ILE:HD13	2.15	0.46
1:C:5:PHE:O	1:C:9:ARG:HG2	2.16	0.46
1:C:112:ILE:HG12	1:C:130:VAL:HG11	1.97	0.46
1:C:727:ARG:NH1	1:C:737:MET:HE1	2.30	0.46
1:A:119:MET:HE3	1:A:123:VAL:HG11	1.97	0.46
1:A:300:ASN:OD1	1:A:303:HIS:N	2.44	0.46
1:A:452:LEU:HD13	1:A:481:VAL:HG11	1.97	0.46
1:A:725:ILE:HD11	1:A:730:LEU:HD22	1.97	0.46
1:A:35:GLN:NE2	1:A:335:VAL:HG22	2.30	0.46
1:A:888:GLU:OE1	1:C:9:ARG:HB2	2.16	0.46
1:C:168:LYS:HB3	1:C:168:LYS:HE3	1.77	0.46
1:A:121:ASP:OD2	1:C:752:TYR:OH	2.18	0.46
1:B:666:ILE:HB	1:B:669:LEU:HD12	1.97	0.46
1:A:721:TYR:HD2	1:A:801:LEU:HD21	1.81	0.46
1:A:413:ILE:HD11	1:A:939:LEU:HD11	1.98	0.46
1:B:372:ILE:O	1:B:375:PRO:HD2	2.15	0.46
1:C:452:LEU:HD22	1:C:481:VAL:HG21	1.97	0.46
1:C:452:LEU:HD12	1:C:931:GLY:HA3	1.97	0.46
1:A:172:GLY:HA3	1:A:304:THR:HG21	1.97	0.46
1:B:630:GLN:O	1:B:635:ARG:HD3	2.15	0.46
1:C:481:VAL:O	1:C:484:SER:OG	2.29	0.46
1:C:620:GLU:CD	1:C:620:GLU:H	2.19	0.46
1:C:956:PHE:O	1:C:960:VAL:HG23	2.16	0.46
1:B:190:LEU:HD22	1:B:195:LEU:HD11	1.98	0.46
1:C:153:VAL:HG22	1:C:274:SER:HB2	1.97	0.46
1:C:441:VAL:O	1:C:445:VAL:HG13	2.16	0.46
1:A:846:LEU:HD23	1:A:850:TYR:HB3	1.98	0.46
1:B:42:PRO:HG2	1:B:99:THR:HB	1.96	0.46
1:B:302:LEU:HG	1:B:335:VAL:HG11	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:187:ARG:HG3	1:C:271:GLU:HB3	1.98	0.46
1:C:892:ILE:HG21	1:C:945:MET:SD	2.56	0.46
1:A:179:ILE:HD11	1:A:292:MET:HG3	1.99	0.45
1:C:894:LEU:CD1	1:C:1024:LEU:HD11	2.46	0.45
1:C:903:ALA:HB1	1:C:929:LEU:HB3	1.98	0.45
1:A:97:ILE:HD11	1:A:860:GLN:NE2	2.28	0.45
1:B:187:ARG:HH11	1:B:187:ARG:HB3	1.82	0.45
1:C:518:PHE:HE2	1:C:968:ARG:HG3	1.81	0.45
1:A:744:MET:SD	1:A:748:ILE:HD12	2.56	0.45
1:A:70:ILE:HD11	1:A:112:ILE:HD11	1.97	0.45
1:B:418:ILE:O	1:B:422:LEU:HB2	2.16	0.45
1:B:730:LEU:HD21	1:B:737:MET:HG3	1.97	0.45
1:C:809:ASP:O	1:C:810:VAL:HG23	2.17	0.45
1:A:41:PRO:HB3	1:A:95:PHE:O	2.16	0.45
1:A:441:VAL:O	1:A:445:VAL:HG13	2.17	0.45
1:A:483:ILE:O	1:A:487:VAL:HG23	2.16	0.45
1:C:344:LYS:O	1:C:348:GLU:HG2	2.17	0.45
1:C:679:VAL:HG11	1:C:694:VAL:HG22	1.97	0.45
1:C:894:LEU:HD12	1:C:1024:LEU:HD21	1.98	0.45
1:A:243:GLN:HE21	1:A:247:GLU:CD	2.19	0.45
1:A:181:ASN:HB3	1:A:183:ASN:O	2.17	0.45
1:A:24:GLY:HA2	1:A:383:ALA:HB2	1.99	0.45
1:A:333:LYS:HD2	1:A:333:LYS:C	2.36	0.45
1:B:1016:PHE:HB3	1:B:1020:PHE:CE1	2.51	0.45
1:C:280:GLN:HE21	1:C:282:ARG:HH12	1.65	0.45
1:C:830:THR:H	1:C:833:GLN:HG3	1.80	0.45
1:B:281:GLY:HA3	1:B:290:PRO:HD3	1.97	0.45
1:C:275:GLN:HE21	1:C:768:ARG:NH1	2.14	0.45
1:C:530:ALA:O	1:C:534:LYS:HG2	2.17	0.45
1:A:731:LYS:HG3	1:C:252:ILE:HD11	1.99	0.45
1:B:172:GLY:O	1:B:296:GLN:HG2	2.17	0.44
1:B:749:GLY:O	1:B:768:ARG:HG3	2.17	0.44
1:B:791:LYS:HE3	1:B:791:LYS:HB3	1.76	0.44
1:C:743:THR:HG21	1:C:785:VAL:HB	1.98	0.44
1:A:175:ASP:OD1	1:A:175:ASP:N	2.50	0.44
1:A:227:THR:HG23	1:A:228:GLN:N	2.33	0.44
1:A:687:TYR:CZ	1:A:817:PRO:HB3	2.53	0.44
1:B:412:ILE:HD11	1:B:973:THR:HG22	1.99	0.44
1:C:42:PRO:HD2	1:C:95:PHE:O	2.17	0.44
1:A:160:THR:HG21	1:A:184:TYR:CD1	2.52	0.44
1:A:192:PRO:HA	1:A:195:LEU:HB2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:600:ASN:OD1	1:A:600:ASN:N	2.49	0.44
1:B:284:ASN:HA	1:B:597:LEU:HD11	1.99	0.44
1:A:426:GLU:HA	1:A:502:ARG:HH22	1.83	0.44
1:B:296:GLN:OE1	1:C:111:ARG:NH2	2.51	0.44
1:A:124:LYS:H	1:A:124:LYS:HG3	1.60	0.44
1:A:1017:VAL:HB	1:A:1018:PRO:HD3	2.00	0.44
1:B:718:PHE:CE2	1:B:808:ASP:HB2	2.52	0.44
1:B:894:LEU:HD22	1:B:1024:LEU:HD11	2.00	0.44
1:C:116:THR:O	1:C:124:LYS:HE2	2.17	0.44
1:A:76:MET:HA	1:A:95:PHE:HA	1.99	0.44
1:A:82:THR:HG23	1:A:90:SER:HB3	2.00	0.44
1:A:353:VAL:O	1:A:356:VAL:HG12	2.18	0.44
1:B:574:ILE:HD13	1:B:592:ILE:HD12	1.98	0.44
1:B:687:TYR:OH	1:B:817:PRO:HB3	2.18	0.44
1:B:735:LEU:HD23	1:B:735:LEU:HA	1.89	0.44
1:C:101:PRO:O	1:C:105:THR:OG1	2.31	0.44
1:C:518:PHE:HE1	1:C:971:ILE:HG21	1.82	0.44
1:B:132:LYS:HB3	1:B:132:LYS:HE2	1.82	0.44
1:B:892:ILE:H	1:B:893:PRO:HD2	1.82	0.44
1:C:95:PHE:CE2	1:C:104:ALA:HB1	2.52	0.44
1:C:682:LYS:HG2	1:C:816:PHE:CE1	2.53	0.44
1:B:346:PHE:CE1	1:B:404:ILE:HD11	2.53	0.44
1:A:698:VAL:HG13	1:A:710:VAL:HG12	2.00	0.43
1:A:959:ALA:HB1	1:A:1018:PRO:HB3	2.00	0.43
1:C:4:LYS:HG3	1:C:435:ILE:HD12	1.99	0.43
1:A:41:PRO:HA	1:A:42:PRO:HD3	1.92	0.43
1:A:170:VAL:HA	1:A:171:PRO:HD3	1.88	0.43
1:A:365:ARG:NH1	1:A:499:PHE:O	2.51	0.43
1:B:393:ASN:H	1:B:396:THR:HB	1.82	0.43
1:B:459:VAL:HA	1:B:462:ILE:HD12	1.99	0.43
1:B:565:GLU:O	1:B:567:GLN:HG3	2.19	0.43
1:B:909:LEU:O	1:B:913:LEU:HD13	2.18	0.43
1:C:894:LEU:O	1:C:894:LEU:HD13	2.18	0.43
1:A:733:TYR:CD2	1:A:793:ILE:HG12	2.52	0.43
1:A:747:THR:HA	1:A:769:ALA:HB2	2.00	0.43
1:A:939:LEU:O	1:A:966:ARG:HG3	2.18	0.43
1:C:187:ARG:NH1	1:C:768:ARG:HH11	2.15	0.43
1:C:281:GLY:HA3	1:C:290:PRO:HD3	2.00	0.43
1:C:407:VAL:CG2	1:C:484:SER:HB3	2.47	0.43
1:A:153:VAL:HG22	1:A:274:SER:HB2	1.99	0.43
1:A:365:ARG:HD2	1:A:504:GLU:OE1	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:150:MET:H	1:C:150:MET:HG2	1.56	0.43
1:A:692:LYS:N	1:A:692:LYS:HD2	2.32	0.43
1:A:774:ARG:HA	1:C:228:GLN:HG2	2.01	0.43
1:B:830:THR:OG1	1:B:833:GLN:HG3	2.18	0.43
1:C:502:ARG:O	1:C:502:ARG:HD3	2.18	0.43
1:A:171:PRO:HD2	1:A:307:LEU:HD13	1.99	0.43
1:A:280:GLN:HG2	1:A:282:ARG:NH1	2.34	0.43
1:B:100:ASP:HB3	1:B:103:GLN:HB3	2.00	0.43
1:B:560:SER:HB3	1:B:919:ASP:HB3	2.01	0.43
1:C:37:PRO:HD3	1:C:393:ASN:ND2	2.34	0.43
1:C:446:ILE:CD1	1:C:489:LEU:HD11	2.48	0.43
1:A:246:SER:O	1:A:250:ASN:ND2	2.41	0.43
1:B:108:VAL:O	1:B:112:ILE:HD13	2.18	0.43
1:B:804:SER:OG	1:B:805:SER:N	2.51	0.43
1:C:141:ILE:HG23	1:C:327:ILE:HG12	2.00	0.43
1:C:404:ILE:O	1:C:407:VAL:HG12	2.17	0.43
1:A:345:THR:HG23	1:A:983:PRO:HB2	2.00	0.43
1:B:133:THR:OG1	1:B:134:SER:N	2.50	0.43
1:C:921:TYR:HB3	1:C:998:LEU:HB3	2.01	0.43
1:A:189:TRP:HB3	1:A:770:LYS:HB2	2.01	0.43
1:A:253:LEU:HD23	1:A:253:LEU:HA	1.88	0.43
1:B:743:THR:O	1:B:747:THR:OG1	2.35	0.43
1:A:81:SER:HB2	1:A:91:LEU:HD13	2.01	0.43
1:A:532:ILE:HG12	1:A:539:PHE:CE1	2.53	0.43
1:A:831:SER:O	1:A:835:ILE:HG13	2.19	0.43
1:A:430:VAL:HG12	1:A:497:ALA:HA	2.01	0.42
1:B:679:VAL:HG23	1:B:846:LEU:HD21	2.00	0.42
1:A:79:MET:HB3	1:A:93:VAL:HA	2.01	0.42
1:C:14:SER:O	1:C:18:ILE:HG13	2.19	0.42
1:C:318:ASN:OD1	1:C:318:ASN:N	2.52	0.42
1:A:377:SER:O	1:A:381:THR:HG23	2.19	0.42
1:A:1000:THR:O	1:A:1003:ILE:HG22	2.19	0.42
1:B:612:ASP:HB2	1:B:619:LYS:HD2	2.01	0.42
1:B:675:PHE:CE1	1:B:838:ILE:HG13	2.55	0.42
1:A:253:LEU:N	1:A:262:LEU:O	2.43	0.42
1:A:709:ARG:HA	1:A:709:ARG:HD2	1.79	0.42
1:C:138:LEU:HD11	1:C:305:ALA:HB2	2.00	0.42
1:C:500:LEU:HD12	1:C:500:LEU:HA	1.86	0.42
1:A:370:PRO:HG3	1:A:415:VAL:HG21	2.01	0.42
1:B:37:PRO:HB2	1:B:39:LEU:HD12	2.02	0.42
1:B:555:LYS:HD3	1:B:555:LYS:HA	1.66	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:144:TYR:O	1:C:323:LEU:HD12	2.18	0.42
1:C:477:LEU:HD13	1:C:928:LEU:HD13	2.01	0.42
1:A:305:ALA:O	1:A:309:GLN:HG3	2.20	0.42
1:B:216:TYR:CE1	1:B:239:GLN:HG3	2.54	0.42
1:A:919:ASP:OD2	1:A:997:SER:OG	2.37	0.42
1:B:588:GLU:O	1:B:592:ILE:HG13	2.19	0.42
1:C:350:LEU:HD21	1:C:374:VAL:HG11	2.02	0.42
1:C:532:ILE:HG23	1:C:539:PHE:CG	2.54	0.42
1:C:981:VAL:HG23	1:C:1003:ILE:HG13	2.01	0.42
1:A:220:LYS:HB2	1:A:223:GLU:CG	2.50	0.42
1:A:234:TYR:HD2	1:B:719:PRO:HB2	1.83	0.42
1:B:367:THR:O	1:B:370:PRO:HD2	2.19	0.42
1:B:774:ARG:O	1:B:778:ASP:HB3	2.19	0.42
1:A:468:GLU:HA	1:A:471:ARG:HG2	2.01	0.42
1:A:508:PHE:HB3	1:A:509:LYS:H	1.69	0.42
1:A:928:LEU:HD23	1:A:1002:LEU:HD21	2.02	0.42
1:C:948:ARG:HD3	1:C:955:VAL:HG22	2.01	0.42
1:A:143:MET:HB2	1:A:159:ILE:HD11	2.02	0.42
1:A:360:PHE:CG	1:A:972:MET:HG2	2.55	0.42
1:B:275:GLN:HG3	1:B:276:GLN:H	1.84	0.42
1:B:733:TYR:CD2	1:B:793:ILE:HG12	2.54	0.42
1:C:143:MET:HB3	1:C:143:MET:HE2	1.78	0.42
1:C:977:PHE:CD2	1:C:1006:MET:HG2	2.52	0.42
1:A:412:ILE:HD11	1:A:973:THR:HG22	2.02	0.41
1:B:128:VAL:HG13	1:B:128:VAL:O	2.20	0.41
1:B:948:ARG:HH11	1:B:955:VAL:N	2.17	0.41
1:A:185:SER:HB3	1:A:764:GLN:HB2	2.02	0.41
1:A:223:GLU:CB	1:B:768:ARG:HH12	2.31	0.41
1:A:948:ARG:NH2	1:A:1029:GLU:OE2	2.53	0.41
1:C:509:LYS:HG2	1:C:510:PHE:H	1.84	0.41
1:C:532:ILE:HG12	1:C:539:PHE:CZ	2.56	0.41
1:A:228:GLN:HG3	1:A:229:LYS:N	2.34	0.41
1:A:228:GLN:HG2	1:B:774:ARG:NH2	2.35	0.41
1:A:282:ARG:HA	1:A:286:ASN:O	2.19	0.41
1:B:561:LEU:HG	1:B:562:VAL:HG23	2.02	0.41
1:B:912:TYR:HD2	1:B:913:LEU:HD12	1.84	0.41
1:B:941:VAL:O	1:B:945:MET:HB2	2.20	0.41
1:B:970:ILE:HG21	1:B:1014:ILE:HG21	2.02	0.41
1:C:170:VAL:HG21	1:C:307:LEU:HB3	2.02	0.41
1:C:551:PHE:CZ	1:C:555:LYS:HE3	2.55	0.41
1:B:186:LEU:N	1:B:764:GLN:O	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:434:ALA:O	1:B:438:MET:HG2	2.21	0.41
1:A:518:PHE:CE1	1:A:971:ILE:HG21	2.55	0.41
1:A:787:SER:N	1:A:791:LYS:O	2.33	0.41
1:B:694:VAL:O	1:B:698:VAL:HG23	2.20	0.41
1:B:891:LEU:HD22	1:B:1028:ASN:OD1	2.21	0.41
1:B:981:VAL:HG23	1:B:984:MET:HE2	2.01	0.41
1:C:943:PHE:CD2	1:C:962:ALA:HA	2.56	0.41
1:A:40:THR:HG21	1:A:668:GLY:H	1.85	0.41
1:A:166:GLU:HB3	1:A:315:LEU:HD11	2.02	0.41
1:A:467:GLY:O	1:A:471:ARG:HG2	2.21	0.41
1:A:707:LEU:HD21	1:A:838:ILE:HG12	2.02	0.41
1:A:774:ARG:HH21	1:C:228:GLN:CD	2.23	0.41
1:A:574:ILE:HB	1:A:623:ALA:HB3	2.03	0.41
1:B:736:ASN:HB3	1:B:739:ASP:HB2	2.03	0.41
1:A:169:ARG:HA	1:A:169:ARG:HD2	1.83	0.41
1:A:244:ASN:OD1	1:A:247:GLU:HG3	2.21	0.41
1:A:419:ASP:OD2	1:A:423:HIS:NE2	2.53	0.41
1:A:578:SER:HB2	1:A:718:PHE:CD2	2.56	0.41
1:B:704:ARG:HG3	1:B:706:GLU:OE1	2.20	0.41
1:B:901:PRO:HA	1:B:904:VAL:HG22	2.01	0.41
1:A:46:VAL:HG21	1:A:70:ILE:HD11	2.02	0.41
1:A:66:ILE:HG23	1:A:112:ILE:CD1	2.51	0.41
1:A:243:GLN:NE2	1:A:247:GLU:OE1	2.53	0.41
1:A:374:VAL:HB	1:A:375:PRO:HD3	2.02	0.41
1:A:466:VAL:HG22	1:A:920:ILE:HD11	2.03	0.41
1:B:27:GLY:O	1:B:31:LEU:HG	2.20	0.41
1:B:70:ILE:HD13	1:B:93:VAL:HG21	2.03	0.41
1:B:242:LEU:CD2	1:C:727:ARG:HH21	2.34	0.41
1:B:811:LYS:HB2	1:B:811:LYS:HE3	1.57	0.41
1:C:786:ARG:HA	1:C:792:MET:HA	2.03	0.41
1:A:422:LEU:C	1:A:424:GLU:H	2.25	0.41
1:A:679:VAL:HG11	1:A:694:VAL:HG22	2.02	0.41
1:B:442:SER:O	1:B:445:VAL:HG22	2.20	0.41
1:B:731:LYS:HA	1:B:731:LYS:HD3	1.90	0.41
1:C:365:ARG:NE	1:C:501:ARG:HH12	2.19	0.41
1:A:73:ALA:HA	1:A:111:ARG:NH2	2.36	0.40
1:A:236:ILE:HA	1:B:721:TYR:O	2.21	0.40
1:A:830:THR:OG1	1:A:833:GLN:HB2	2.21	0.40
1:B:500:LEU:HD12	1:B:500:LEU:HA	1.83	0.40
1:B:905:PHE:CZ	1:B:909:LEU:HD22	2.56	0.40
1:C:601:GLY:O	1:C:630:GLN:HG2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:681:ASN:ND2	1:C:849:ASP:OD1	2.51	0.40
1:B:966:ARG:O	1:B:970:ILE:HG13	2.21	0.40
1:C:258:ASP:OD1	1:C:258:ASP:N	2.52	0.40
1:C:726:ASP:HB3	1:C:729:LYS:HB2	2.03	0.40
1:A:1003:ILE:O	1:A:1007:ILE:HD13	2.20	0.40
1:B:184:TYR:HB3	1:B:763:PHE:CE2	2.57	0.40
1:B:186:LEU:HD11	1:B:270:VAL:HG12	2.03	0.40
1:B:451:VAL:HG13	1:B:452:LEU:HD12	2.04	0.40
1:B:831:SER:O	1:B:835:ILE:HG13	2.22	0.40
1:A:112:ILE:HA	1:A:112:ILE:HD13	1.80	0.40
1:B:234:TYR:HD2	1:C:719:PRO:HB2	1.87	0.40
1:C:272:ILE:O	1:C:272:ILE:HG23	2.21	0.40
1:C:694:VAL:HG21	1:C:819:ALA:CB	2.52	0.40
1:C:987:ALA:HB1	1:C:995:ARG:NH2	2.36	0.40
1:A:903:ALA:HB1	1:A:929:LEU:HB3	2.04	0.40
1:C:192:PRO:HA	1:C:195:LEU:HB2	2.04	0.40
1:C:417:ASN:HD21	1:C:440:GLU:HB2	1.87	0.40
1:C:701:ALA:O	1:C:704:ARG:HB2	2.22	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	1031/1040 (99%)	959 (93%)	67 (6%)	5 (0%)	29	65
1	B	1022/1040 (98%)	956 (94%)	62 (6%)	4 (0%)	34	68
1	C	1033/1040 (99%)	956 (92%)	67 (6%)	10 (1%)	15	51
All	All	3086/3120 (99%)	2871 (93%)	196 (6%)	19 (1%)	25	62

All (19) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	507	PRO
1	C	394	LEU
1	B	150	MET
1	B	276	GLN
1	C	37	PRO
1	C	267	VAL
1	A	774	ARG
1	C	297	SER
1	A	507	PRO
1	C	149	SER
1	C	277	TYR
1	B	114	ALA
1	C	225	PRO
1	A	375	PRO
1	C	180	GLY
1	C	232	TYR
1	C	272	ILE
1	A	37	PRO
1	A	298	GLY

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	868/875 (99%)	844 (97%)	24 (3%)	43	73
1	B	861/875 (98%)	829 (96%)	32 (4%)	34	66
1	C	870/875 (99%)	849 (98%)	21 (2%)	49	76
All	All	2599/2625 (99%)	2522 (97%)	77 (3%)	41	71

All (77) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1	MET
1	A	50	TYR
1	A	64	SER
1	A	109	ASN

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Mol	Chain	Res	Type
1	A	110	ASN
1	A	131	ARG
1	A	169	ARG
1	A	175	ASP
1	A	186	LEU
1	A	187	ARG
1	A	229	LYS
1	A	243	GLN
1	A	277	TYR
1	A	280	GLN
1	A	333	LYS
1	A	502	ARG
1	A	538	ARG
1	A	559	ASN
1	A	633	LYS
1	A	654	ARG
1	A	677	MET
1	A	692	LYS
1	A	894	LEU
1	A	948	ARG
1	B	39	LEU
1	B	50	TYR
1	B	103	GLN
1	B	109	ASN
1	B	125	LYS
1	B	161	LEU
1	B	177	ASN
1	B	184	TYR
1	B	187	ARG
1	B	241	ARG
1	B	266	ASP
1	B	287	ASP
1	B	321	LYS
1	B	502	ARG
1	B	531	TYR
1	B	546	MET
1	B	559	ASN
1	B	604	ASP
1	B	631	ASP
1	B	635	ARG
1	B	653	ASP
1	B	669	LEU

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Mol	Chain	Res	Type
1	B	739	ASP
1	B	768	ARG
1	B	773	PHE
1	B	774	ARG
1	B	789	ASP
1	B	791	LYS
1	B	792	MET
1	B	846	LEU
1	B	935	LYS
1	B	950	LYS
1	C	9	ARG
1	C	50	TYR
1	C	74	ASP
1	C	169	ARG
1	C	193	ASP
1	C	228	GLN
1	C	257	ASN
1	C	321	LYS
1	C	350	LEU
1	C	649	LYS
1	C	655	ASN
1	C	669	LEU
1	C	711	ARG
1	C	727	ARG
1	C	732	HIS
1	C	773	PHE
1	C	777	GLN
1	C	792	MET
1	C	846	LEU
1	C	1031	LEU
1	C	1032	ASP

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

Mol	Chain	Res	Type
1	A	239	GLN
1	A	243	GLN
1	B	923	GLN
1	C	775	ASN
1	C	777	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 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, 95^{th} 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	A	1033/1040 (99%)	-0.16	12 (1%)	79	68	17, 41, 87, 160	0
1	B	1026/1040 (98%)	-0.23	4 (0%)	92	89	13, 39, 78, 139	0
1	C	1035/1040 (99%)	-0.32	10 (0%)	82	73	9, 30, 72, 126	0
All	All	3094/3120 (99%)	-0.24	26 (0%)	86	78	9, 38, 80, 160	0

All (26) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	183	ASN	6.0
1	A	225	PRO	5.4
1	A	277	TYR	4.5
1	C	229	LYS	4.3
1	C	228	GLN	3.9
1	A	184	TYR	3.8
1	C	230	SER	3.6
1	B	278	SER	3.5
1	A	182	ARG	3.4
1	C	183	ASN	3.3
1	A	227	THR	3.2
1	B	505	GLY	3.1
1	A	772	ASP	3.1
1	C	759	LEU	2.8
1	A	278	SER	2.8
1	A	505	GLY	2.4
1	A	503	ASN	2.4
1	A	224	GLU	2.4
1	B	772	ASP	2.2
1	C	226	VAL	2.2
1	A	226	VAL	2.2
1	C	225	PRO	2.1
1	C	227	THR	2.1

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Mol	Chain	Res	Type	RSRZ
1	C	182	ARG	2.1
1	C	181	ASN	2.1
1	B	773	PHE	2.0

6.2 Non-standard residues in protein, DNA, RNA chains (i)

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)

There are no ligands in this entry.

6.5 Other polymers (i)

There are no such residues in this entry.