Full wwPDB X-ray Structure Validation Report (i)

Mar 21, 2016 – 11:39 AM EDT

PDB ID	:	5HEJ
Title	:	Pentameric ligand-gated ion channel ELIC mutant F116A
Authors	:	Bertozzi, C.; Dutzler, R.
Deposited on	:	2016-01-06
Resolution	:	3.50 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
http://wwpdb.org/validation/2016/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The following versions of software and data (see references (1)) were used in the production of this report:

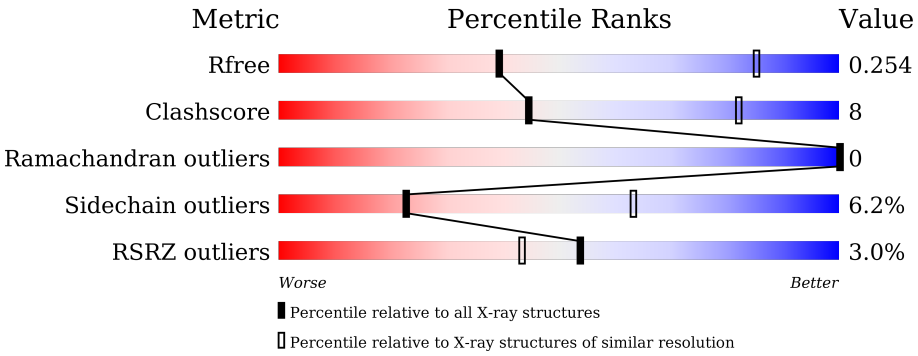
MolProbity	:	4.02b-467
Mogul	:	unknown
Xtriage (Phenix)	:	1.9-1692
EDS	:	rb-20027107
Percentile statistics	:	20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac	:	5.8.0122
CCP4	:	6.5.0
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	rb-20027107

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 3.50 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}	91344	1051 (3.60-3.40)
Clashscore	102246	1157 (3.60-3.40)
Ramachandran outliers	100387	1120 (3.60-3.40)
Sidechain outliers	100360	1121 (3.60-3.40)
RSRZ outliers	91569	1058 (3.60-3.40)

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 on the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria. 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	322	2% 71% 21% • 5%
1	B	322	4% 72% 21% • 5%
1	C	322	3% 71% 21% • 5%
1	D	322	% 70% 23% • 5%
1	E	322	3% 70% 22% • 5%
1	F	322	3% 71% 21% • 5%

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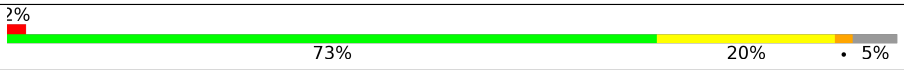
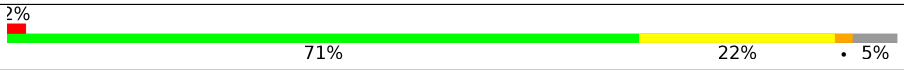
Mol	Chain	Length	Quality of chain
1	G	322	
1	H	322	
1	I	322	
1	J	322	

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 24880 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 Gamma-aminobutyric-acid receptor subunit beta-1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	306	Total	C	N	O	S	0	0	0
			2488	1621	412	449	6			
1	B	306	Total	C	N	O	S	0	0	0
			2488	1621	412	449	6			
1	C	306	Total	C	N	O	S	0	0	0
			2488	1621	412	449	6			
1	D	306	Total	C	N	O	S	0	0	0
			2488	1621	412	449	6			
1	E	306	Total	C	N	O	S	0	0	0
			2488	1621	412	449	6			
1	F	306	Total	C	N	O	S	0	0	0
			2488	1621	412	449	6			
1	G	306	Total	C	N	O	S	0	0	0
			2488	1621	412	449	6			
1	H	306	Total	C	N	O	S	0	0	0
			2488	1621	412	449	6			
1	I	306	Total	C	N	O	S	0	0	0
			2488	1621	412	449	6			
1	J	306	Total	C	N	O	S	0	0	0
			2488	1621	412	449	6			

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	116	ALA	PHE	conflict	UNP E0SJQ4
B	116	ALA	PHE	conflict	UNP E0SJQ4
C	116	ALA	PHE	conflict	UNP E0SJQ4
D	116	ALA	PHE	conflict	UNP E0SJQ4
E	116	ALA	PHE	conflict	UNP E0SJQ4
F	116	ALA	PHE	conflict	UNP E0SJQ4
G	116	ALA	PHE	conflict	UNP E0SJQ4
H	116	ALA	PHE	conflict	UNP E0SJQ4
I	116	ALA	PHE	conflict	UNP E0SJQ4

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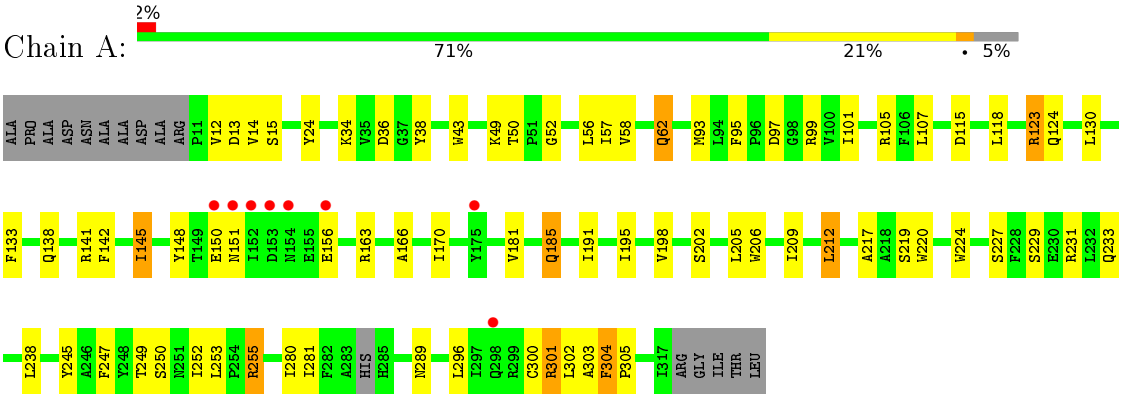
Chain	Residue	Modelled	Actual	Comment	Reference
J	116	ALA	PHE	conflict	UNP E0SJQ4

3 Residue-property plots (i)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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.

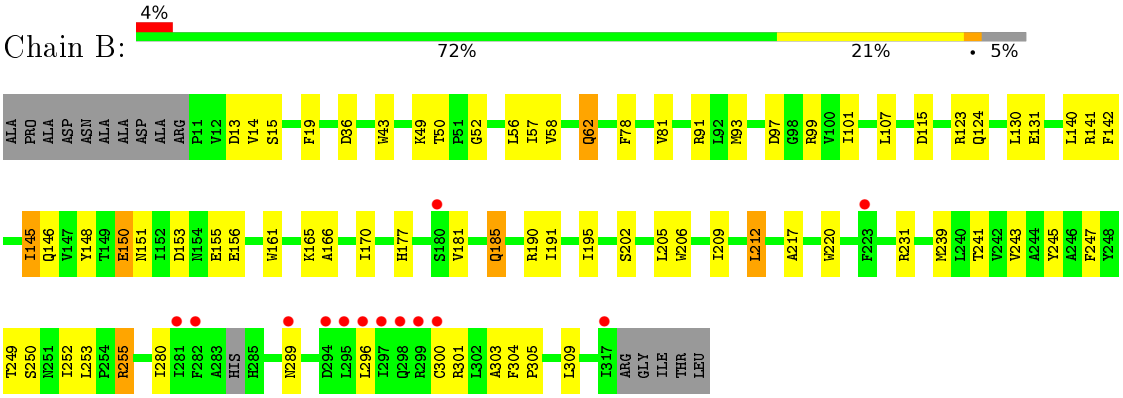
- Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1

Chain A:



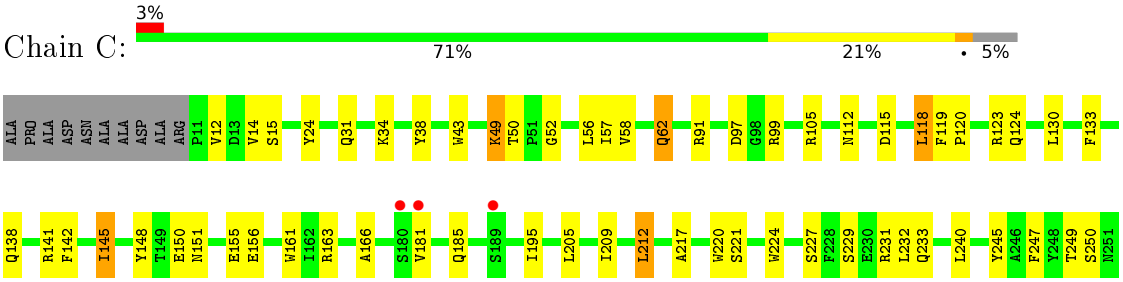
- Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1

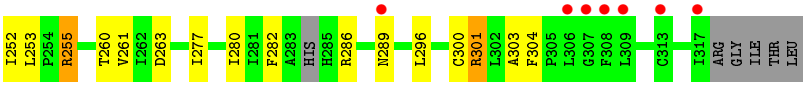
Chain B:



- Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1

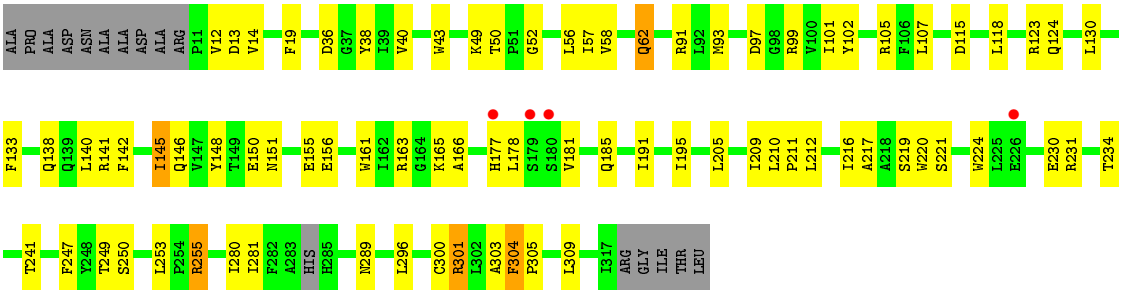
Chain C:





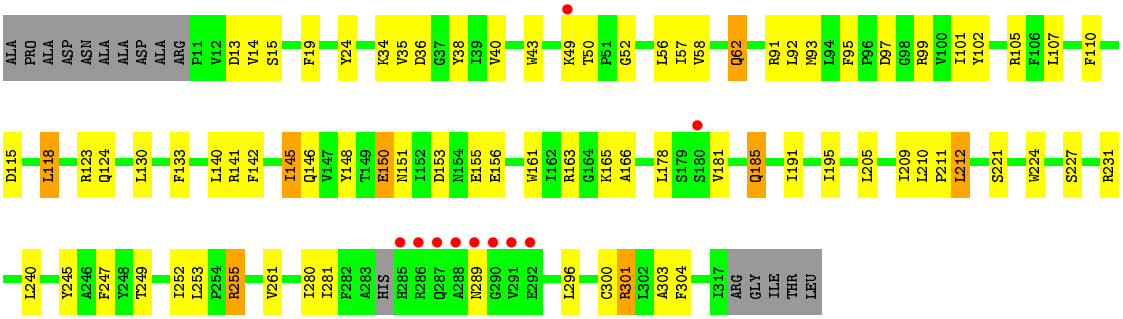
• Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1

Chain D:



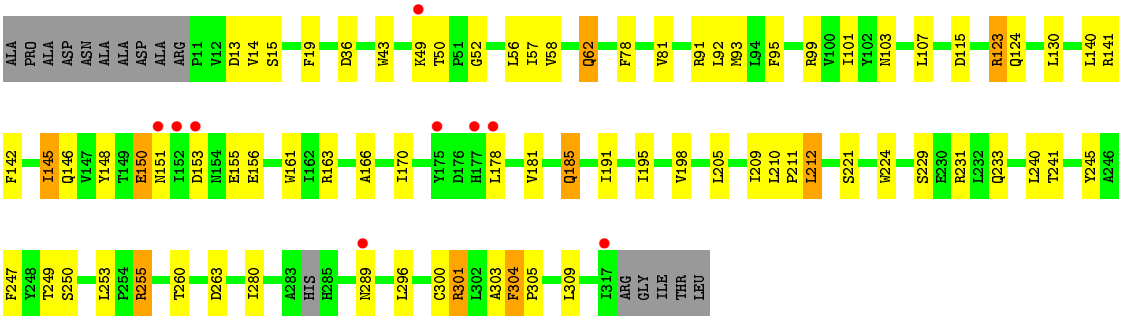
• Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1

Chain E:



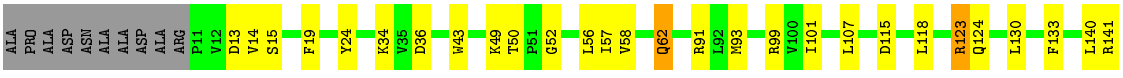
• Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1

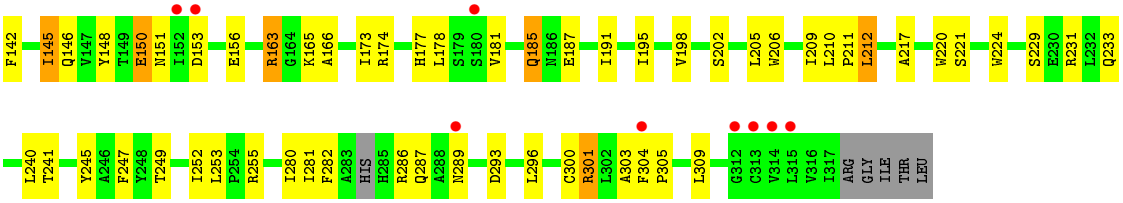
Chain F:

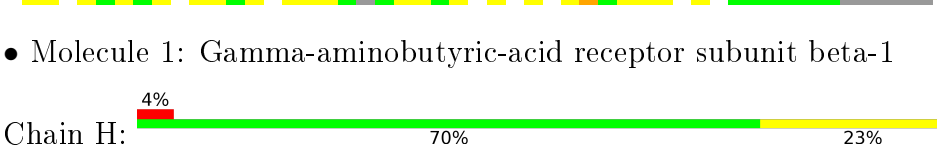


• Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1

Chain G:

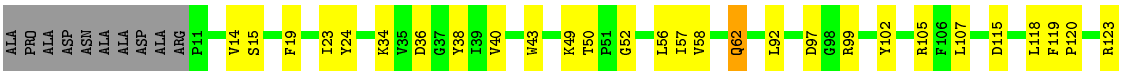


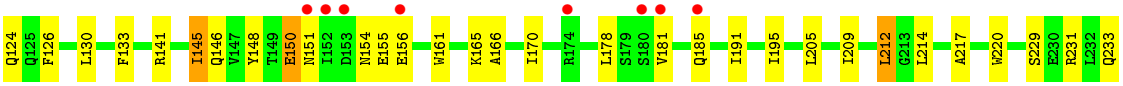


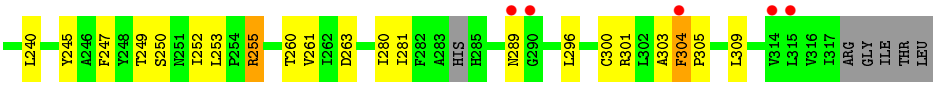


• Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1

Chain H:

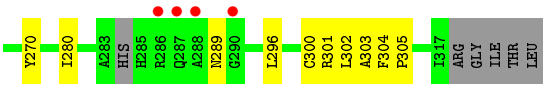






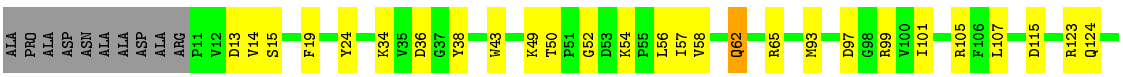
• Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1

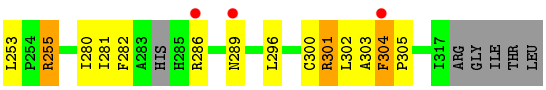
Chain I:



• Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1

Chain J:





4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	105.17Å 266.99Å 111.00Å 90.00° 110.25° 90.00°	Depositor
Resolution (Å)	30.00 – 3.50 49.33 – 3.50	Depositor EDS
% Data completeness (in resolution range)	99.4 (30.00-3.50) 99.3 (49.33-3.50)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.26 (at 3.48Å)	Xtriage
Refinement program	PHENIX (1.10_2155: ???)	Depositor
R, R_{free}	0.213 , 0.255 0.215 , 0.254	Depositor DCC
R_{free} test set	3616 reflections (5.05%)	DCC
Wilson B-factor (Å^2)	110.6	Xtriage
Anisotropy	0.391	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.27 , 68.9	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning[2]	$< \|L\| > = 0.46$, $< L^2 > = 0.29$	Xtriage
Outliers	0 of 71669 reflections	Xtriage
F_o,F_c correlation	0.91	EDS
Total number of atoms	24880	wwPDB-VP
Average B, all atoms (Å^2)	131.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.13% 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, 0.375 respectively for untwinned datasets, and 0.333, 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	0.25	0/2553	0.43	0/3478
1	B	0.25	0/2553	0.43	0/3478
1	C	0.25	0/2553	0.42	0/3478
1	D	0.25	0/2553	0.43	0/3478
1	E	0.25	0/2553	0.43	0/3478
1	F	0.25	0/2553	0.43	0/3478
1	G	0.25	0/2553	0.43	0/3478
1	H	0.25	0/2553	0.43	0/3478
1	I	0.24	0/2553	0.43	0/3478
1	J	0.25	0/2553	0.43	0/3478
All	All	0.25	0/25530	0.43	0/34780

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2488	0	2465	43	0
1	B	2488	0	2465	41	0
1	C	2488	0	2465	43	0
1	D	2488	0	2465	44	0
1	E	2488	0	2465	47	0
1	F	2488	0	2465	45	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	G	2488	0	2465	45	0
1	H	2488	0	2465	42	0
1	I	2488	0	2465	40	0
1	J	2488	0	2465	43	0
All	All	24880	0	24650	390	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 8.

All (390) 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:I:50:THR:OG1	1:I:52:GLY:O	2.00	0.80
1:H:50:THR:OG1	1:H:52:GLY:O	2.02	0.78
1:A:50:THR:OG1	1:A:52:GLY:O	2.00	0.78
1:E:50:THR:OG1	1:E:52:GLY:O	2.02	0.78
1:B:50:THR:OG1	1:B:52:GLY:O	2.02	0.78
1:G:50:THR:OG1	1:G:52:GLY:O	2.02	0.77
1:C:50:THR:OG1	1:C:52:GLY:O	2.03	0.76
1:F:50:THR:OG1	1:F:52:GLY:O	2.04	0.75
1:H:145:ILE:HG13	1:H:166:ALA:HB3	1.69	0.75
1:C:145:ILE:HG13	1:C:166:ALA:HB3	1.70	0.73
1:D:50:THR:OG1	1:D:52:GLY:O	2.07	0.72
1:B:145:ILE:HG13	1:B:166:ALA:HB3	1.72	0.71
1:D:145:ILE:HG13	1:D:166:ALA:HB3	1.71	0.71
1:J:145:ILE:HG13	1:J:166:ALA:HB3	1.73	0.69
1:J:56:LEU:HD12	1:J:57:ILE:H	1.59	0.68
1:F:145:ILE:HG13	1:F:166:ALA:HB3	1.75	0.68
1:G:145:ILE:HG13	1:G:166:ALA:HB3	1.76	0.67
1:I:145:ILE:HG13	1:I:166:ALA:HB3	1.76	0.66
1:I:115:ASP:O	1:I:124:GLN:NE2	2.28	0.66
1:E:36:ASP:HB2	1:E:107:LEU:HD13	1.78	0.66
1:A:145:ILE:HG13	1:A:166:ALA:HB3	1.77	0.66
1:D:148:TYR:HE1	1:D:165:LYS:HZ1	1.44	0.65
1:I:300:CYS:HA	1:I:303:ALA:HB3	1.78	0.65
1:J:50:THR:OG1	1:J:52:GLY:O	2.12	0.65
1:G:300:CYS:HA	1:G:303:ALA:HB3	1.79	0.65
1:B:148:TYR:HE1	1:B:165:LYS:HZ1	1.46	0.64
1:F:300:CYS:HA	1:F:303:ALA:HB3	1.79	0.64
1:A:300:CYS:HA	1:A:303:ALA:HB3	1.79	0.64
1:H:300:CYS:HA	1:H:303:ALA:HB3	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:115:ASP:O	1:D:124:GLN:NE2	2.26	0.62
1:E:300:CYS:HA	1:E:303:ALA:HB3	1.81	0.62
1:J:115:ASP:O	1:J:124:GLN:NE2	2.29	0.62
1:E:145:ILE:HG13	1:E:166:ALA:HB3	1.82	0.62
1:D:99:ARG:NH2	1:E:181:VAL:HG21	2.15	0.62
1:B:300:CYS:HA	1:B:303:ALA:HB3	1.82	0.61
1:G:287:GLN:HG3	1:G:293:ASP:HB2	1.80	0.61
1:D:300:CYS:HA	1:D:303:ALA:HB3	1.82	0.61
1:C:300:CYS:HA	1:C:303:ALA:HB3	1.81	0.61
1:D:56:LEU:HD12	1:D:57:ILE:H	1.65	0.61
1:E:115:ASP:O	1:E:124:GLN:NE2	2.28	0.61
1:C:58:VAL:HG13	1:C:62:GLN:HB3	1.82	0.60
1:E:205:LEU:HD23	1:E:209:ILE:HD12	1.84	0.60
1:J:300:CYS:HA	1:J:303:ALA:HB3	1.82	0.60
1:D:231:ARG:HB3	1:D:280:ILE:HD13	1.84	0.60
1:I:56:LEU:HD12	1:I:57:ILE:H	1.66	0.60
1:J:36:ASP:HB2	1:J:107:LEU:HD13	1.84	0.60
1:F:56:LEU:HD12	1:F:57:ILE:H	1.67	0.59
1:H:205:LEU:HD23	1:H:209:ILE:HD12	1.84	0.59
1:F:231:ARG:HB3	1:F:280:ILE:HD13	1.83	0.59
1:G:115:ASP:O	1:G:124:GLN:NE2	2.33	0.59
1:H:14:VAL:HG22	1:H:43:TRP:HB3	1.85	0.58
1:A:205:LEU:HD23	1:A:209:ILE:HD12	1.84	0.58
1:B:205:LEU:HD23	1:B:209:ILE:HD12	1.83	0.58
1:E:56:LEU:HD12	1:E:57:ILE:H	1.68	0.58
1:C:231:ARG:HB3	1:C:280:ILE:HD13	1.86	0.58
1:G:282:PHE:O	1:G:286:ARG:N	2.35	0.58
1:J:205:LEU:HD23	1:J:209:ILE:HD12	1.86	0.58
1:B:56:LEU:HD12	1:B:57:ILE:H	1.67	0.58
1:H:56:LEU:HD12	1:H:57:ILE:H	1.68	0.58
1:C:56:LEU:HD12	1:C:57:ILE:H	1.69	0.57
1:H:115:ASP:O	1:H:124:GLN:NE2	2.35	0.57
1:D:91:ARG:HB3	1:E:133:PHE:HE2	1.70	0.57
1:F:58:VAL:HG13	1:F:62:GLN:HB3	1.87	0.57
1:A:56:LEU:HD12	1:A:57:ILE:H	1.70	0.57
1:G:56:LEU:HD12	1:G:57:ILE:H	1.68	0.57
1:F:181:VAL:HG21	1:J:99:ARG:NH2	2.20	0.57
1:J:93:MET:HB3	1:J:101:ILE:HB	1.87	0.56
1:A:123:ARG:HB3	1:A:198:VAL:HG22	1.87	0.56
1:A:14:VAL:HG22	1:A:43:TRP:HB3	1.87	0.56
1:A:36:ASP:HB2	1:A:107:LEU:HD13	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:133:PHE:HE2	1:E:91:ARG:HB3	1.70	0.56
1:G:58:VAL:HG13	1:G:62:GLN:HB3	1.88	0.56
1:B:99:ARG:NH2	1:C:181:VAL:HG21	2.21	0.56
1:E:231:ARG:HB3	1:E:280:ILE:HD13	1.87	0.56
1:F:36:ASP:HB2	1:F:107:LEU:HD13	1.87	0.56
1:A:115:ASP:O	1:A:124:GLN:NE2	2.31	0.55
1:D:205:LEU:HD23	1:D:209:ILE:HD12	1.87	0.55
1:E:148:TYR:HE1	1:E:165:LYS:HZ1	1.53	0.55
1:B:115:ASP:O	1:B:124:GLN:NE2	2.33	0.55
1:D:58:VAL:HG13	1:D:62:GLN:HB3	1.87	0.55
1:C:115:ASP:O	1:C:124:GLN:NE2	2.35	0.55
1:I:58:VAL:HG13	1:I:62:GLN:HB3	1.89	0.55
1:A:58:VAL:HG13	1:A:62:GLN:HB3	1.89	0.55
1:F:99:ARG:NH2	1:G:181:VAL:HG21	2.22	0.55
1:B:58:VAL:HG13	1:B:62:GLN:HB3	1.89	0.55
1:I:205:LEU:HD23	1:I:209:ILE:HD12	1.88	0.55
1:F:250:SER:HB3	1:J:252:ILE:HG12	1.89	0.55
1:I:36:ASP:HB2	1:I:107:LEU:HD13	1.89	0.54
1:G:36:ASP:HB2	1:G:107:LEU:HD13	1.88	0.54
1:H:231:ARG:HB3	1:H:280:ILE:HD13	1.89	0.54
1:I:231:ARG:HB3	1:I:280:ILE:HD13	1.89	0.54
1:I:99:ARG:NH2	1:J:181:VAL:HG21	2.23	0.54
1:F:115:ASP:O	1:F:124:GLN:NE2	2.30	0.54
1:A:281:ILE:HD11	1:E:221:SER:HB2	1.89	0.54
1:G:14:VAL:HG22	1:G:43:TRP:HB3	1.88	0.54
1:E:155:GLU:O	1:E:161:TRP:NE1	2.40	0.53
1:G:205:LEU:HD23	1:G:209:ILE:HD12	1.89	0.53
1:G:99:ARG:NH2	1:H:181:VAL:HG21	2.24	0.53
1:D:14:VAL:HG22	1:D:43:TRP:HB3	1.89	0.53
1:H:58:VAL:HG13	1:H:62:GLN:HB3	1.89	0.53
1:C:255:ARG:HD2	1:C:255:ARG:H	1.73	0.53
1:B:14:VAL:HG22	1:B:43:TRP:HB3	1.90	0.53
1:H:249:THR:O	1:H:253:LEU:HB2	2.09	0.53
1:C:166:ALA:HB2	1:C:195:ILE:HG12	1.90	0.53
1:D:140:LEU:HD13	1:D:191:ILE:HG13	1.90	0.53
1:J:231:ARG:HB3	1:J:280:ILE:HD13	1.90	0.53
1:F:170:ILE:HG12	1:F:191:ILE:HG12	1.90	0.53
1:A:231:ARG:HB3	1:A:280:ILE:HD13	1.91	0.52
1:I:140:LEU:HD13	1:I:191:ILE:HG13	1.91	0.52
1:A:93:MET:HB3	1:A:101:ILE:HB	1.90	0.52
1:C:205:LEU:HD23	1:C:209:ILE:HD12	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:250:SER:HB3	1:E:252:ILE:HG12	1.91	0.52
1:B:140:LEU:HD13	1:B:191:ILE:HG13	1.90	0.52
1:B:255:ARG:H	1:B:255:ARG:HD2	1.75	0.52
1:C:14:VAL:HG22	1:C:43:TRP:HB3	1.91	0.52
1:C:252:ILE:HG12	1:D:250:SER:HB3	1.92	0.52
1:J:49:LYS:HG3	1:J:49:LYS:O	2.09	0.52
1:D:249:THR:O	1:D:253:LEU:HB2	2.10	0.52
1:H:99:ARG:NH2	1:I:181:VAL:HG21	2.25	0.51
1:H:166:ALA:HB2	1:H:195:ILE:HG12	1.91	0.51
1:E:15:SER:HB3	1:E:141:ARG:HD3	1.92	0.51
1:J:97:ASP:OD2	1:J:99:ARG:NH1	2.43	0.51
1:E:58:VAL:HG13	1:E:62:GLN:HB3	1.91	0.51
1:F:221:SER:HB2	1:G:281:ILE:HD11	1.93	0.51
1:J:58:VAL:HG13	1:J:62:GLN:HB3	1.91	0.51
1:I:13:ASP:HB3	1:I:141:ARG:HD2	1.93	0.51
1:A:181:VAL:HG21	1:E:99:ARG:NH2	2.26	0.51
1:I:93:MET:HB3	1:I:101:ILE:HB	1.92	0.50
1:B:36:ASP:HB2	1:B:107:LEU:HD13	1.93	0.50
1:E:255:ARG:H	1:E:255:ARG:HD2	1.76	0.50
1:B:241:THR:HA	1:C:240:LEU:HD13	1.94	0.50
1:G:140:LEU:HD13	1:G:191:ILE:HG13	1.93	0.50
1:A:170:ILE:HG12	1:A:191:ILE:HG12	1.93	0.49
1:D:36:ASP:HB2	1:D:107:LEU:HD13	1.93	0.49
1:B:252:ILE:HG12	1:C:250:SER:HB3	1.93	0.49
1:H:229:SER:O	1:H:233:GLN:HG3	2.12	0.49
1:I:148:TYR:HE1	1:I:165:LYS:HZ1	1.60	0.49
1:G:15:SER:HB3	1:G:141:ARG:HD3	1.93	0.49
1:A:99:ARG:NH2	1:B:181:VAL:HG21	2.28	0.49
1:I:217:ALA:HA	1:I:220:TRP:CE3	2.47	0.49
1:F:205:LEU:HD23	1:F:209:ILE:HD12	1.95	0.49
1:B:13:ASP:HB3	1:B:141:ARG:HD2	1.95	0.49
1:F:212:LEU:HG	1:F:245:TYR:CE1	2.48	0.49
1:H:260:THR:H	1:H:263:ASP:HB2	1.77	0.49
1:H:36:ASP:HB2	1:H:107:LEU:HD13	1.94	0.49
1:B:166:ALA:HB2	1:B:195:ILE:HG12	1.94	0.49
1:C:249:THR:O	1:C:253:LEU:HB2	2.13	0.49
1:F:14:VAL:HG22	1:F:43:TRP:HB3	1.95	0.49
1:C:99:ARG:NH2	1:D:181:VAL:HG21	2.27	0.48
1:B:93:MET:HB3	1:B:101:ILE:HB	1.95	0.48
1:B:91:ARG:HB3	1:C:133:PHE:HE2	1.79	0.48
1:J:15:SER:HB3	1:J:141:ARG:HD3	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:150:GLU:HG3	1:E:153:ASP:HB3	1.95	0.48
1:I:91:ARG:HB3	1:J:133:PHE:HE2	1.79	0.48
1:B:217:ALA:HA	1:B:220:TRP:CE3	2.47	0.48
1:C:97:ASP:OD2	1:C:99:ARG:NH1	2.47	0.48
1:D:93:MET:HB3	1:D:101:ILE:HB	1.96	0.48
1:D:155:GLU:O	1:D:161:TRP:NE1	2.42	0.48
1:G:91:ARG:HB3	1:H:133:PHE:HE2	1.78	0.48
1:J:140:LEU:HD13	1:J:191:ILE:HG13	1.96	0.48
1:B:19:PHE:CE2	1:B:146:GLN:HG3	2.49	0.48
1:E:249:THR:O	1:E:253:LEU:HB2	2.13	0.48
1:A:212:LEU:HG	1:A:245:TYR:CE1	2.49	0.48
1:G:217:ALA:HA	1:G:220:TRP:CE3	2.48	0.48
1:A:252:ILE:HG12	1:B:250:SER:HB3	1.95	0.48
1:H:255:ARG:H	1:H:255:ARG:HD2	1.79	0.48
1:E:24:TYR:CE2	1:E:34:LYS:HD2	2.49	0.47
1:J:150:GLU:HG3	1:J:153:ASP:HB3	1.96	0.47
1:B:249:THR:O	1:B:253:LEU:HB2	2.14	0.47
1:H:15:SER:HB3	1:H:141:ARG:HD3	1.95	0.47
1:F:185:GLN:H	1:F:185:GLN:HG3	1.50	0.47
1:G:178:LEU:HA	1:G:178:LEU:HD12	1.78	0.47
1:I:97:ASP:OD2	1:I:99:ARG:NH1	2.47	0.47
1:E:19:PHE:CE2	1:E:146:GLN:HG3	2.50	0.47
1:H:97:ASP:OD2	1:H:99:ARG:NH1	2.47	0.47
1:C:49:LYS:O	1:C:49:LYS:HG3	2.14	0.47
1:D:166:ALA:HB2	1:D:195:ILE:HG12	1.97	0.47
1:G:212:LEU:HG	1:G:245:TYR:CE1	2.49	0.47
1:G:229:SER:O	1:G:233:GLN:HG3	2.15	0.47
1:E:185:GLN:HG3	1:E:185:GLN:H	1.50	0.47
1:F:141:ARG:HG3	1:F:142:PHE:CD2	2.50	0.47
1:A:229:SER:O	1:A:233:GLN:HG3	2.15	0.47
1:A:166:ALA:HB2	1:A:195:ILE:HG12	1.96	0.47
1:E:212:LEU:HG	1:E:245:TYR:CE1	2.50	0.47
1:G:123:ARG:HB3	1:G:198:VAL:HG22	1.96	0.47
1:I:249:THR:O	1:I:253:LEU:HB2	2.13	0.47
1:B:165:LYS:HG3	1:I:163:ARG:HD2	1.97	0.47
1:I:95:PHE:HB2	1:I:99:ARG:HB2	1.97	0.47
1:B:97:ASP:OD2	1:B:99:ARG:NH1	2.48	0.47
1:J:166:ALA:HB2	1:J:195:ILE:HG12	1.97	0.47
1:G:221:SER:HB2	1:H:281:ILE:HD11	1.96	0.47
1:A:12:VAL:HB	1:A:138:GLN:HG3	1.95	0.46
1:D:255:ARG:HD2	1:D:255:ARG:H	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:93:MET:HB3	1:F:101:ILE:HB	1.97	0.46
1:H:170:ILE:HG12	1:H:191:ILE:HG12	1.96	0.46
1:F:15:SER:HB3	1:F:141:ARG:HD3	1.97	0.46
1:J:249:THR:O	1:J:253:LEU:HB2	2.14	0.46
1:F:140:LEU:HD13	1:F:191:ILE:HG13	1.96	0.46
1:F:78:PHE:HB2	1:F:81:VAL:HB	1.97	0.46
1:G:150:GLU:HG3	1:G:153:ASP:HB3	1.97	0.46
1:A:148:TYR:HE2	1:B:177:HIS:CD2	2.34	0.46
1:C:118:LEU:HA	1:C:261:VAL:HG23	1.98	0.46
1:F:166:ALA:HB2	1:F:195:ILE:HG12	1.98	0.46
1:J:224:TRP:CE2	1:J:301:ARG:HG2	2.51	0.46
1:A:95:PHE:HB2	1:A:99:ARG:HB2	1.96	0.46
1:C:217:ALA:HA	1:C:220:TRP:CE3	2.51	0.46
1:D:221:SER:HA	1:D:224:TRP:HD1	1.81	0.46
1:D:91:ARG:HB3	1:E:133:PHE:CE2	2.49	0.46
1:G:231:ARG:HB3	1:G:280:ILE:HD13	1.97	0.46
1:H:155:GLU:O	1:H:161:TRP:NE1	2.45	0.46
1:A:185:GLN:HG3	1:A:185:GLN:H	1.47	0.46
1:A:202:SER:O	1:A:206:TRP:HD1	1.99	0.46
1:B:155:GLU:O	1:B:161:TRP:NE1	2.38	0.46
1:J:38:TYR:CE2	1:J:105:ARG:HD3	2.51	0.46
1:A:224:TRP:CE2	1:A:301:ARG:HG2	2.51	0.46
1:J:221:SER:HA	1:J:224:TRP:HD1	1.81	0.45
1:C:12:VAL:HB	1:C:138:GLN:HG3	1.98	0.45
1:D:12:VAL:HB	1:D:138:GLN:HG3	1.98	0.45
1:I:19:PHE:CE2	1:I:146:GLN:HG3	2.51	0.45
1:A:255:ARG:HD2	1:A:255:ARG:H	1.81	0.45
1:C:221:SER:HB2	1:D:281:ILE:HD11	1.97	0.45
1:E:178:LEU:HD12	1:E:178:LEU:HA	1.77	0.45
1:F:241:THR:HA	1:G:240:LEU:HD13	1.98	0.45
1:J:178:LEU:HA	1:J:178:LEU:HD12	1.80	0.45
1:A:15:SER:HB3	1:A:141:ARG:HD3	1.99	0.45
1:C:15:SER:HB3	1:C:141:ARG:HD3	1.98	0.45
1:H:118:LEU:HA	1:H:261:VAL:HG23	1.97	0.45
1:B:231:ARG:HB3	1:B:280:ILE:HD13	1.97	0.45
1:C:212:LEU:HG	1:C:245:TYR:CE1	2.51	0.45
1:G:185:GLN:H	1:G:185:GLN:HG3	1.49	0.45
1:H:19:PHE:CE2	1:H:146:GLN:HG3	2.52	0.45
1:C:24:TYR:CE2	1:C:34:LYS:HD2	2.52	0.45
1:J:255:ARG:HD2	1:J:255:ARG:H	1.82	0.45
1:A:97:ASP:OD2	1:A:99:ARG:NH1	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:249:THR:O	1:A:253:LEU:HB2	2.16	0.45
1:G:249:THR:O	1:G:253:LEU:HB2	2.16	0.45
1:H:300:CYS:O	1:H:304:PHE:HB2	2.16	0.45
1:J:225:LEU:HD13	1:J:230:GLU:HB3	1.98	0.45
1:A:24:TYR:CE2	1:A:34:LYS:HD2	2.52	0.45
1:B:185:GLN:H	1:B:185:GLN:HG3	1.49	0.45
1:B:212:LEU:HG	1:B:245:TYR:CE1	2.52	0.45
1:D:163:ARG:HD3	1:D:163:ARG:HA	1.76	0.45
1:F:91:ARG:HB3	1:G:133:PHE:HE2	1.81	0.45
1:B:131:GLU:OE1	1:B:190:ARG:NE	2.39	0.44
1:J:14:VAL:HG22	1:J:43:TRP:HB3	1.99	0.44
1:H:217:ALA:HA	1:H:220:TRP:CE3	2.52	0.44
1:H:24:TYR:CE2	1:H:34:LYS:HD2	2.52	0.44
1:C:229:SER:O	1:C:233:GLN:HG3	2.18	0.44
1:G:163:ARG:HA	1:G:163:ARG:HD3	1.81	0.44
1:I:178:LEU:HD12	1:I:178:LEU:HA	1.77	0.44
1:J:229:SER:O	1:J:233:GLN:HG3	2.16	0.44
1:D:216:ILE:O	1:D:219:SER:OG	2.30	0.44
1:E:95:PHE:HB2	1:E:99:ARG:HB2	2.00	0.44
1:F:300:CYS:O	1:F:304:PHE:HB2	2.18	0.44
1:J:19:PHE:CE2	1:J:146:GLN:HG3	2.53	0.44
1:F:155:GLU:O	1:F:161:TRP:NE1	2.44	0.44
1:G:13:ASP:HB3	1:G:141:ARG:HD2	2.00	0.44
1:G:224:TRP:CE2	1:G:301:ARG:HG2	2.53	0.44
1:G:241:THR:HA	1:H:240:LEU:HD13	1.99	0.44
1:H:23:ILE:HG21	1:H:126:PHE:CD2	2.53	0.44
1:I:155:GLU:O	1:I:161:TRP:NE1	2.44	0.44
1:C:155:GLU:O	1:C:161:TRP:NE1	2.44	0.44
1:F:150:GLU:HG3	1:F:153:ASP:HB3	2.00	0.44
1:F:178:LEU:HD12	1:F:178:LEU:HA	1.80	0.44
1:A:141:ARG:HG3	1:A:142:PHE:CD2	2.53	0.44
1:C:260:THR:H	1:C:263:ASP:HB2	1.82	0.44
1:G:252:ILE:HG12	1:H:250:SER:HB3	2.00	0.44
1:I:166:ALA:HB2	1:I:195:ILE:HG12	2.00	0.44
1:H:212:LEU:HG	1:H:245:TYR:CE1	2.52	0.44
1:A:163:ARG:HA	1:A:163:ARG:HD3	1.81	0.43
1:D:178:LEU:HD12	1:D:178:LEU:HA	1.78	0.43
1:C:91:ARG:HB3	1:D:133:PHE:HE2	1.82	0.43
1:D:141:ARG:HG3	1:D:142:PHE:CD2	2.53	0.43
1:J:141:ARG:HG3	1:J:142:PHE:CD2	2.53	0.43
1:C:282:PHE:CZ	1:C:286:ARG:HG3	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:140:LEU:HD13	1:E:191:ILE:HG13	2.00	0.43
1:F:229:SER:O	1:F:233:GLN:HG3	2.18	0.43
1:H:148:TYR:HE1	1:H:165:LYS:HZ1	1.66	0.43
1:I:123:ARG:HB3	1:I:198:VAL:HG22	1.99	0.43
1:J:302:LEU:C	1:J:305:PRO:HD2	2.39	0.43
1:C:141:ARG:HG3	1:C:142:PHE:CD2	2.53	0.43
1:F:260:THR:H	1:F:263:ASP:HB2	1.81	0.43
1:J:13:ASP:HB3	1:J:141:ARG:HD2	2.00	0.43
1:D:305:PRO:O	1:D:309:LEU:HG	2.19	0.43
1:E:163:ARG:HA	1:E:163:ARG:HD3	1.82	0.43
1:I:141:ARG:HG3	1:I:142:PHE:CD2	2.53	0.43
1:B:170:ILE:HG12	1:B:191:ILE:HG12	2.00	0.43
1:F:249:THR:O	1:F:253:LEU:HB2	2.18	0.43
1:C:282:PHE:O	1:C:286:ARG:N	2.50	0.43
1:G:141:ARG:HG3	1:G:142:PHE:CD2	2.54	0.43
1:I:212:LEU:HG	1:I:245:TYR:CE1	2.53	0.43
1:I:221:SER:HB2	1:J:281:ILE:HD11	2.01	0.43
1:E:93:MET:HB3	1:E:101:ILE:HB	2.00	0.43
1:C:224:TRP:CE2	1:C:301:ARG:HG2	2.53	0.43
1:D:13:ASP:HB3	1:D:141:ARG:HD2	2.00	0.43
1:E:141:ARG:HG3	1:E:142:PHE:CD2	2.54	0.43
1:F:92:LEU:HD23	1:F:92:LEU:HA	1.89	0.43
1:B:141:ARG:HG3	1:B:142:PHE:CD2	2.54	0.42
1:F:163:ARG:HA	1:F:163:ARG:HD3	1.82	0.42
1:H:38:TYR:CE2	1:H:105:ARG:HD3	2.54	0.42
1:I:255:ARG:H	1:I:255:ARG:HD2	1.84	0.42
1:H:214:LEU:HD23	1:I:270:TYR:HB3	2.02	0.42
1:J:24:TYR:CE2	1:J:34:LYS:HD2	2.54	0.42
1:E:224:TRP:CE2	1:E:301:ARG:HG2	2.54	0.42
1:F:19:PHE:CE2	1:F:146:GLN:HG3	2.54	0.42
1:A:219:SER:HA	1:A:238:LEU:HD13	2.01	0.42
1:G:148:TYR:HE1	1:G:165:LYS:HZ1	1.67	0.42
1:I:232:LEU:HA	1:I:232:LEU:HD12	1.88	0.42
1:A:38:TYR:CE2	1:A:105:ARG:HD3	2.54	0.42
1:E:13:ASP:HB3	1:E:141:ARG:HD2	2.02	0.42
1:I:118:LEU:O	1:I:122:ASP:N	2.53	0.42
1:J:163:ARG:HD3	1:J:163:ARG:HA	1.82	0.42
1:J:300:CYS:O	1:J:304:PHE:HB2	2.19	0.42
1:C:148:TYR:HE2	1:D:177:HIS:CD2	2.37	0.42
1:H:92:LEU:HA	1:H:92:LEU:HD23	1.91	0.42
1:H:252:ILE:HG12	1:I:250:SER:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:305:PRO:O	1:B:309:LEU:HG	2.19	0.42
1:D:217:ALA:HA	1:D:220:TRP:CE3	2.54	0.42
1:D:224:TRP:CE2	1:D:301:ARG:HG2	2.54	0.42
1:F:148:TYR:HE2	1:G:177:HIS:CD2	2.38	0.42
1:D:19:PHE:CE2	1:D:146:GLN:HG3	2.55	0.42
1:D:300:CYS:O	1:D:304:PHE:HB2	2.19	0.42
1:E:166:ALA:HB2	1:E:195:ILE:HG12	2.01	0.42
1:B:91:ARG:HB3	1:C:133:PHE:CE2	2.55	0.42
1:H:178:LEU:HA	1:H:178:LEU:HD12	1.81	0.42
1:F:240:LEU:HD13	1:J:241:THR:HA	2.01	0.42
1:A:13:ASP:HB3	1:A:141:ARG:HD2	2.02	0.42
1:C:232:LEU:HD11	1:C:277:ILE:HG23	2.02	0.42
1:H:40:VAL:HA	1:H:102:TYR:O	2.20	0.42
1:J:282:PHE:CZ	1:J:286:ARG:HG3	2.55	0.42
1:E:97:ASP:OD2	1:E:99:ARG:NH1	2.53	0.41
1:F:305:PRO:O	1:F:309:LEU:HG	2.19	0.41
1:G:305:PRO:O	1:G:309:LEU:HG	2.20	0.41
1:B:15:SER:HB3	1:B:141:ARG:HD3	2.01	0.41
1:D:40:VAL:HA	1:D:102:TYR:O	2.20	0.41
1:D:97:ASP:OD2	1:D:99:ARG:NH1	2.53	0.41
1:E:35:VAL:HB	1:E:110:PHE:CE1	2.55	0.41
1:B:150:GLU:HG3	1:B:153:ASP:HB3	2.01	0.41
1:E:38:TYR:CE2	1:E:105:ARG:HD3	2.56	0.41
1:F:221:SER:HA	1:F:224:TRP:HD1	1.85	0.41
1:F:95:PHE:HB2	1:F:99:ARG:HB2	2.01	0.41
1:D:38:TYR:CE2	1:D:105:ARG:HD3	2.56	0.41
1:A:133:PHE:CE2	1:E:91:ARG:HB3	2.52	0.41
1:F:123:ARG:HB3	1:F:198:VAL:HG22	2.03	0.41
1:F:255:ARG:H	1:F:255:ARG:HD2	1.86	0.41
1:G:202:SER:O	1:G:206:TRP:HD1	2.03	0.41
1:J:54:LYS:H	1:J:54:LYS:HG2	1.63	0.41
1:A:300:CYS:O	1:A:304:PHE:HB2	2.20	0.41
1:H:150:GLU:HG3	1:H:154:ASN:H	1.86	0.41
1:B:202:SER:O	1:B:206:TRP:HD1	2.04	0.41
1:D:230:GLU:O	1:D:234:THR:OG1	2.34	0.41
1:F:13:ASP:HB3	1:F:141:ARG:HD2	2.01	0.41
1:G:93:MET:HB3	1:G:101:ILE:HB	2.03	0.41
1:I:163:ARG:HD3	1:I:163:ARG:HA	1.90	0.41
1:J:62:GLN:NE2	1:J:65:ARG:HE	2.18	0.41
1:A:227:SER:O	1:A:231:ARG:HG3	2.21	0.41
1:C:31:GLN:HB3	1:C:112:ASN:O	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:118:LEU:HA	1:E:261:VAL:HG23	2.03	0.41
1:C:38:TYR:CE2	1:C:105:ARG:HD3	2.55	0.41
1:E:210:LEU:HB3	1:E:211:PRO:HD3	2.03	0.41
1:F:224:TRP:CE2	1:F:301:ARG:HG2	2.55	0.41
1:C:163:ARG:HD3	1:C:163:ARG:HA	1.86	0.41
1:F:210:LEU:HB3	1:F:211:PRO:HD3	2.03	0.41
1:G:24:TYR:CE2	1:G:34:LYS:HD2	2.55	0.41
1:I:15:SER:HB3	1:I:141:ARG:HD3	2.03	0.41
1:E:227:SER:O	1:E:231:ARG:HG3	2.21	0.41
1:G:173:ILE:O	1:G:187:GLU:HA	2.21	0.41
1:I:92:LEU:HA	1:I:92:LEU:HD23	1.92	0.41
1:J:232:LEU:HD12	1:J:232:LEU:HA	1.93	0.41
1:A:217:ALA:HA	1:A:220:TRP:CE3	2.56	0.40
1:G:210:LEU:HB3	1:G:211:PRO:HD3	2.04	0.40
1:J:210:LEU:HB3	1:J:211:PRO:HD3	2.03	0.40
1:B:239:MET:O	1:B:243:VAL:HG23	2.21	0.40
1:C:227:SER:O	1:C:231:ARG:HG3	2.21	0.40
1:D:241:THR:HA	1:E:240:LEU:HD13	2.02	0.40
1:B:78:PHE:HB2	1:B:81:VAL:HB	2.03	0.40
1:C:119:PHE:HB3	1:C:120:PRO:HD3	2.04	0.40
1:E:14:VAL:HG22	1:E:43:TRP:HB3	2.03	0.40
1:G:19:PHE:CE2	1:G:146:GLN:HG3	2.56	0.40
1:G:166:ALA:HB2	1:G:195:ILE:HG12	2.03	0.40
1:I:185:GLN:H	1:I:185:GLN:HG3	1.49	0.40
1:A:302:LEU:C	1:A:305:PRO:HD2	2.41	0.40
1:D:210:LEU:HB3	1:D:211:PRO:HD3	2.03	0.40
1:D:221:SER:HB2	1:E:281:ILE:HD11	2.03	0.40
1:E:40:VAL:HA	1:E:102:TYR:O	2.21	0.40
1:E:92:LEU:HD23	1:E:92:LEU:HA	1.94	0.40
1:H:119:PHE:HB3	1:H:120:PRO:HD3	2.04	0.40
1:H:305:PRO:O	1:H:309:LEU:HG	2.21	0.40
1:I:202:SER:O	1:I:206:TRP:HD1	2.04	0.40
1:I:302:LEU:C	1:I:305:PRO:HD2	2.42	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	302/322 (94%)	283 (94%)	19 (6%)	0	100	100
1	B	302/322 (94%)	284 (94%)	18 (6%)	0	100	100
1	C	302/322 (94%)	283 (94%)	19 (6%)	0	100	100
1	D	302/322 (94%)	281 (93%)	21 (7%)	0	100	100
1	E	302/322 (94%)	284 (94%)	18 (6%)	0	100	100
1	F	302/322 (94%)	284 (94%)	18 (6%)	0	100	100
1	G	302/322 (94%)	283 (94%)	19 (6%)	0	100	100
1	H	302/322 (94%)	283 (94%)	19 (6%)	0	100	100
1	I	302/322 (94%)	283 (94%)	19 (6%)	0	100	100
1	J	302/322 (94%)	283 (94%)	19 (6%)	0	100	100
All	All	3020/3220 (94%)	2831 (94%)	189 (6%)	0	100	100

There are no Ramachandran outliers to report.

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	272/283 (96%)	255 (94%)	17 (6%)	22	63
1	B	272/283 (96%)	256 (94%)	16 (6%)	24	65
1	C	272/283 (96%)	255 (94%)	17 (6%)	22	63
1	D	272/283 (96%)	255 (94%)	17 (6%)	22	63

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	E	272/283 (96%)	255 (94%)	17 (6%)	22 63
1	F	272/283 (96%)	255 (94%)	17 (6%)	22 63
1	G	272/283 (96%)	253 (93%)	19 (7%)	19 59
1	H	272/283 (96%)	256 (94%)	16 (6%)	24 65
1	I	272/283 (96%)	255 (94%)	17 (6%)	22 63
1	J	272/283 (96%)	257 (94%)	15 (6%)	27 67
All	All	2720/2830 (96%)	2552 (94%)	168 (6%)	23 63

All (168) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	49	LYS
1	A	62	GLN
1	A	118	LEU
1	A	123	ARG
1	A	130	LEU
1	A	145	ILE
1	A	150	GLU
1	A	151	ASN
1	A	156	GLU
1	A	185	GLN
1	A	212	LEU
1	A	247	PHE
1	A	255	ARG
1	A	289	ASN
1	A	296	LEU
1	A	301	ARG
1	A	304	PHE
1	B	49	LYS
1	B	62	GLN
1	B	123	ARG
1	B	130	LEU
1	B	145	ILE
1	B	150	GLU
1	B	151	ASN
1	B	156	GLU
1	B	185	GLN
1	B	212	LEU
1	B	247	PHE
1	B	255	ARG

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Mol	Chain	Res	Type
1	B	289	ASN
1	B	296	LEU
1	B	301	ARG
1	B	304	PHE
1	C	49	LYS
1	C	62	GLN
1	C	118	LEU
1	C	123	ARG
1	C	130	LEU
1	C	145	ILE
1	C	150	GLU
1	C	151	ASN
1	C	156	GLU
1	C	185	GLN
1	C	212	LEU
1	C	247	PHE
1	C	255	ARG
1	C	289	ASN
1	C	296	LEU
1	C	301	ARG
1	C	304	PHE
1	D	49	LYS
1	D	62	GLN
1	D	118	LEU
1	D	123	ARG
1	D	130	LEU
1	D	145	ILE
1	D	150	GLU
1	D	151	ASN
1	D	156	GLU
1	D	185	GLN
1	D	212	LEU
1	D	247	PHE
1	D	255	ARG
1	D	289	ASN
1	D	296	LEU
1	D	301	ARG
1	D	304	PHE
1	E	49	LYS
1	E	62	GLN
1	E	118	LEU
1	E	123	ARG

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Mol	Chain	Res	Type
1	E	130	LEU
1	E	145	ILE
1	E	150	GLU
1	E	151	ASN
1	E	156	GLU
1	E	185	GLN
1	E	212	LEU
1	E	247	PHE
1	E	255	ARG
1	E	289	ASN
1	E	296	LEU
1	E	301	ARG
1	E	304	PHE
1	F	49	LYS
1	F	62	GLN
1	F	103	ASN
1	F	123	ARG
1	F	130	LEU
1	F	145	ILE
1	F	150	GLU
1	F	151	ASN
1	F	156	GLU
1	F	185	GLN
1	F	212	LEU
1	F	247	PHE
1	F	255	ARG
1	F	289	ASN
1	F	296	LEU
1	F	301	ARG
1	F	304	PHE
1	G	49	LYS
1	G	62	GLN
1	G	118	LEU
1	G	123	ARG
1	G	130	LEU
1	G	145	ILE
1	G	150	GLU
1	G	151	ASN
1	G	156	GLU
1	G	163	ARG
1	G	174	ARG
1	G	185	GLN

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Mol	Chain	Res	Type
1	G	212	LEU
1	G	247	PHE
1	G	255	ARG
1	G	289	ASN
1	G	296	LEU
1	G	301	ARG
1	G	304	PHE
1	H	49	LYS
1	H	62	GLN
1	H	123	ARG
1	H	130	LEU
1	H	145	ILE
1	H	150	GLU
1	H	151	ASN
1	H	156	GLU
1	H	185	GLN
1	H	212	LEU
1	H	247	PHE
1	H	255	ARG
1	H	289	ASN
1	H	296	LEU
1	H	301	ARG
1	H	304	PHE
1	I	49	LYS
1	I	62	GLN
1	I	118	LEU
1	I	123	ARG
1	I	130	LEU
1	I	145	ILE
1	I	150	GLU
1	I	151	ASN
1	I	156	GLU
1	I	185	GLN
1	I	212	LEU
1	I	247	PHE
1	I	255	ARG
1	I	289	ASN
1	I	296	LEU
1	I	301	ARG
1	I	304	PHE
1	J	62	GLN
1	J	123	ARG

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Mol	Chain	Res	Type
1	J	130	LEU
1	J	145	ILE
1	J	150	GLU
1	J	151	ASN
1	J	156	GLU
1	J	185	GLN
1	J	212	LEU
1	J	247	PHE
1	J	255	ARG
1	J	289	ASN
1	J	296	LEU
1	J	301	ARG
1	J	304	PHE

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	F	103	ASN

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 carbohydrates 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	306/322 (95%)	-0.23	8 (2%)	59	49	74, 124, 203, 305	0
1	B	306/322 (95%)	-0.04	13 (4%)	40	31	62, 114, 229, 306	0
1	C	306/322 (95%)	-0.24	10 (3%)	50	41	66, 115, 226, 296	0
1	D	306/322 (95%)	-0.30	4 (1%)	79	70	66, 114, 212, 291	0
1	E	306/322 (95%)	-0.22	10 (3%)	50	41	78, 121, 214, 332	0
1	F	306/322 (95%)	-0.25	9 (2%)	55	45	68, 127, 207, 312	0
1	G	306/322 (95%)	-0.14	9 (2%)	55	45	69, 115, 232, 307	0
1	H	306/322 (95%)	-0.03	13 (4%)	40	31	72, 118, 221, 302	0
1	I	306/322 (95%)	-0.29	8 (2%)	59	49	63, 115, 209, 316	0
1	J	306/322 (95%)	-0.21	8 (2%)	59	49	78, 124, 243, 305	0
All	All	3060/3220 (95%)	-0.19	92 (3%)	54	43	62, 119, 222, 332	0

All (92) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	289	ASN	11.6
1	A	153	ASP	11.5
1	H	289	ASN	8.8
1	A	152	ILE	7.6
1	H	180	SER	6.8
1	E	290	GLY	6.3
1	E	180	SER	6.1
1	C	289	ASN	6.1
1	H	152	ILE	5.9
1	D	180	SER	5.3
1	E	287	GLN	5.2
1	B	299	ARG	5.2
1	G	314	VAL	4.9

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Mol	Chain	Res	Type	RSRZ
1	B	180	SER	4.8
1	C	307	GLY	4.8
1	H	151	ASN	4.6
1	A	154	ASN	4.6
1	C	306	LEU	4.5
1	I	180	SER	4.4
1	B	298	GLN	4.3
1	H	181	VAL	4.2
1	E	291	VAL	4.2
1	I	286	ARG	4.1
1	C	180	SER	4.1
1	B	294	ASP	4.1
1	H	153	ASP	4.1
1	J	180	SER	4.0
1	E	288	ALA	3.8
1	A	151	ASN	3.8
1	I	287	GLN	3.8
1	F	317	ILE	3.7
1	G	152	ILE	3.5
1	G	180	SER	3.5
1	J	152	ILE	3.4
1	F	152	ILE	3.4
1	G	315	LEU	3.3
1	J	153	ASP	3.3
1	J	289	ASN	3.2
1	J	304	PHE	3.2
1	C	308	PHE	3.1
1	F	289	ASN	3.1
1	G	153	ASP	3.1
1	B	297	ILE	3.1
1	B	289	ASN	3.0
1	H	290	GLY	3.0
1	B	300	CYS	2.9
1	H	304	PHE	2.9
1	H	315	LEU	2.9
1	H	314	VAL	2.8
1	C	181	VAL	2.8
1	I	153	ASP	2.8
1	F	178	LEU	2.7
1	G	312	GLY	2.7
1	F	177	HIS	2.7
1	E	286	ARG	2.6

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Mol	Chain	Res	Type	RSRZ
1	G	313	CYS	2.6
1	I	290	GLY	2.5
1	I	179	SER	2.5
1	C	313	CYS	2.5
1	G	304	PHE	2.5
1	B	223	PHE	2.4
1	A	175	TYR	2.4
1	G	289	ASN	2.4
1	I	177	HIS	2.4
1	E	292	GLU	2.4
1	H	156	GLU	2.4
1	H	174	ARG	2.3
1	B	296	LEU	2.3
1	E	285	HIS	2.3
1	H	185	GLN	2.3
1	B	282	PHE	2.3
1	I	288	ALA	2.2
1	D	179	SER	2.2
1	A	150	GLU	2.2
1	C	317	ILE	2.2
1	A	156	GLU	2.2
1	D	226	GLU	2.2
1	F	49	LYS	2.2
1	B	317	ILE	2.2
1	D	177	HIS	2.2
1	J	286	ARG	2.1
1	B	295	LEU	2.1
1	J	174	ARG	2.1
1	F	153	ASP	2.1
1	F	175	TYR	2.1
1	F	151	ASN	2.1
1	A	298	GLN	2.1
1	C	309	LEU	2.1
1	E	49	LYS	2.1
1	C	189	SER	2.1
1	B	281	ILE	2.1
1	J	181	VAL	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

There are no carbohydrates in this entry.

6.4 Ligands

There are no ligands in this entry.

6.5 Other polymers

There are no such residues in this entry.