



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 04:17 PM UTC

PDB ID : 3UQ5 / pdb_00003uq5
Title : X-ray structure of a pentameric ligand gated ion channel from *Erwinia chrysanthemi* (ELIC) mutant L240A F247L (L9A F16L) in the presence of 10 mM cysteamine
Authors : Gonzalez-Gutierrez, G.; Lukk, T.; Agarwal, V.; Papke, D.; Nair, S.K.; Grosman, C.
Deposited on : 2011-11-19
Resolution : 4.20 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:

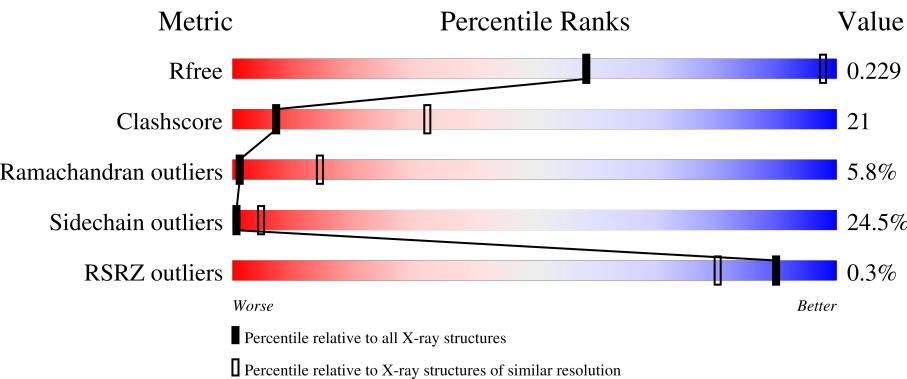
MolProbity	:	4-5-2 with Phenix2.0
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

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 4.20 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}	180053	1004 (4.52-3.88)
Clashscore	190562	1019 (4.50-3.90)
Ramachandran outliers	187476	1020 (4.56-3.84)
Sidechain outliers	187428	1006 (4.56-3.84)
RSRZ outliers	180081	1001 (4.52-3.88)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	324	42%38%14%• 5%
1	B	324	39%40%15%• 5%
1	C	324	% 41%38%14%• 5%
1	D	324	41%39%14%• 5%
1	E	324	41%39%13%• 5%

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Mol	Chain	Length	Quality of chain
1	F	324	42%37%14%5%
1	G	324	41%39%13%5%
1	H	324	42%38%14%5%
1	I	324	%39%39%15%5%
1	J	324	41%38%15%5%

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 24991 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	307	Total	C	N	O	S	0	0	0
			2499	1627	416	450	6			
1	B	307	Total	C	N	O	S	0	0	0
			2499	1627	416	450	6			
1	C	307	Total	C	N	O	S	0	0	0
			2499	1627	416	450	6			
1	D	307	Total	C	N	O	S	0	0	0
			2499	1627	416	450	6			
1	E	307	Total	C	N	O	S	0	0	0
			2499	1627	416	450	6			
1	F	307	Total	C	N	O	S	0	0	0
			2499	1627	416	450	6			
1	G	307	Total	C	N	O	S	0	0	0
			2499	1627	416	450	6			
1	H	307	Total	C	N	O	S	0	0	0
			2499	1627	416	450	6			
1	I	307	Total	C	N	O	S	0	0	0
			2499	1627	416	450	6			
1	J	307	Total	C	N	O	S	0	0	0
			2499	1627	416	450	6			

There are 40 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	GLY	-	expression tag	UNP E0SJQ4
A	0	SER	-	expression tag	UNP E0SJQ4
A	240	ALA	LEU	engineered mutation	UNP E0SJQ4
A	247	LEU	PHE	engineered mutation	UNP E0SJQ4
B	-1	GLY	-	expression tag	UNP E0SJQ4
B	0	SER	-	expression tag	UNP E0SJQ4
B	240	ALA	LEU	engineered mutation	UNP E0SJQ4
B	247	LEU	PHE	engineered mutation	UNP E0SJQ4
C	-1	GLY	-	expression tag	UNP E0SJQ4

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Chain	Residue	Modelled	Actual	Comment	Reference
C	0	SER	-	expression tag	UNP E0SJQ4
C	240	ALA	LEU	engineered mutation	UNP E0SJQ4
C	247	LEU	PHE	engineered mutation	UNP E0SJQ4
D	-1	GLY	-	expression tag	UNP E0SJQ4
D	0	SER	-	expression tag	UNP E0SJQ4
D	240	ALA	LEU	engineered mutation	UNP E0SJQ4
D	247	LEU	PHE	engineered mutation	UNP E0SJQ4
E	-1	GLY	-	expression tag	UNP E0SJQ4
E	0	SER	-	expression tag	UNP E0SJQ4
E	240	ALA	LEU	engineered mutation	UNP E0SJQ4
E	247	LEU	PHE	engineered mutation	UNP E0SJQ4
F	-1	GLY	-	expression tag	UNP E0SJQ4
F	0	SER	-	expression tag	UNP E0SJQ4
F	240	ALA	LEU	engineered mutation	UNP E0SJQ4
F	247	LEU	PHE	engineered mutation	UNP E0SJQ4
G	-1	GLY	-	expression tag	UNP E0SJQ4
G	0	SER	-	expression tag	UNP E0SJQ4
G	240	ALA	LEU	engineered mutation	UNP E0SJQ4
G	247	LEU	PHE	engineered mutation	UNP E0SJQ4
H	-1	GLY	-	expression tag	UNP E0SJQ4
H	0	SER	-	expression tag	UNP E0SJQ4
H	240	ALA	LEU	engineered mutation	UNP E0SJQ4
H	247	LEU	PHE	engineered mutation	UNP E0SJQ4
I	-1	GLY	-	expression tag	UNP E0SJQ4
I	0	SER	-	expression tag	UNP E0SJQ4
I	240	ALA	LEU	engineered mutation	UNP E0SJQ4
I	247	LEU	PHE	engineered mutation	UNP E0SJQ4
J	-1	GLY	-	expression tag	UNP E0SJQ4
J	0	SER	-	expression tag	UNP E0SJQ4
J	240	ALA	LEU	engineered mutation	UNP E0SJQ4
J	247	LEU	PHE	engineered mutation	UNP E0SJQ4

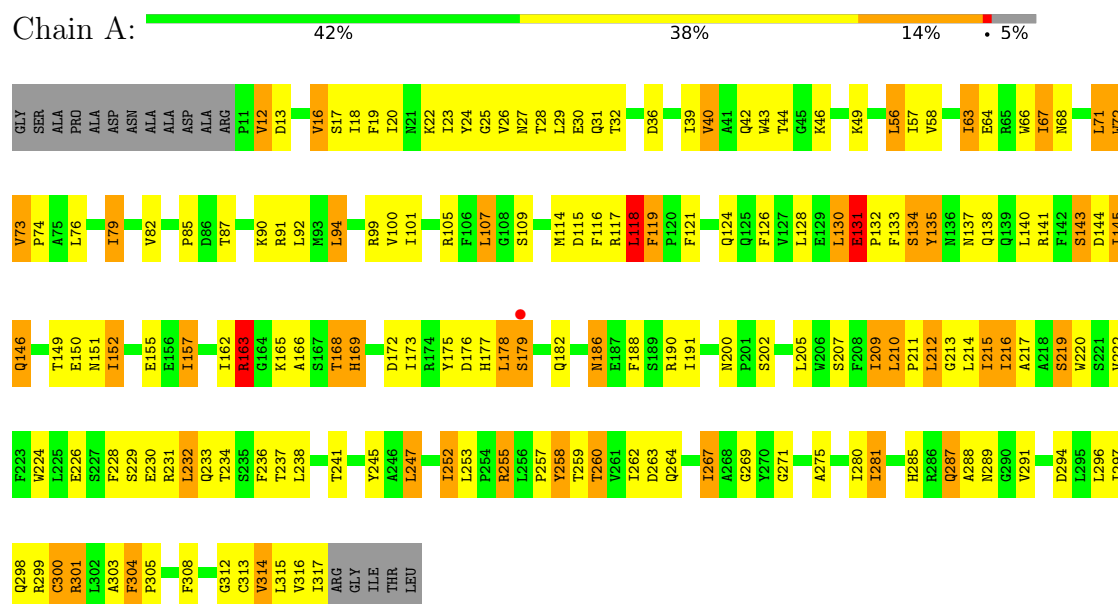
- Molecule 2 is SODIUM ION (CCD ID: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	F	1	Total Na 1 1	0	0

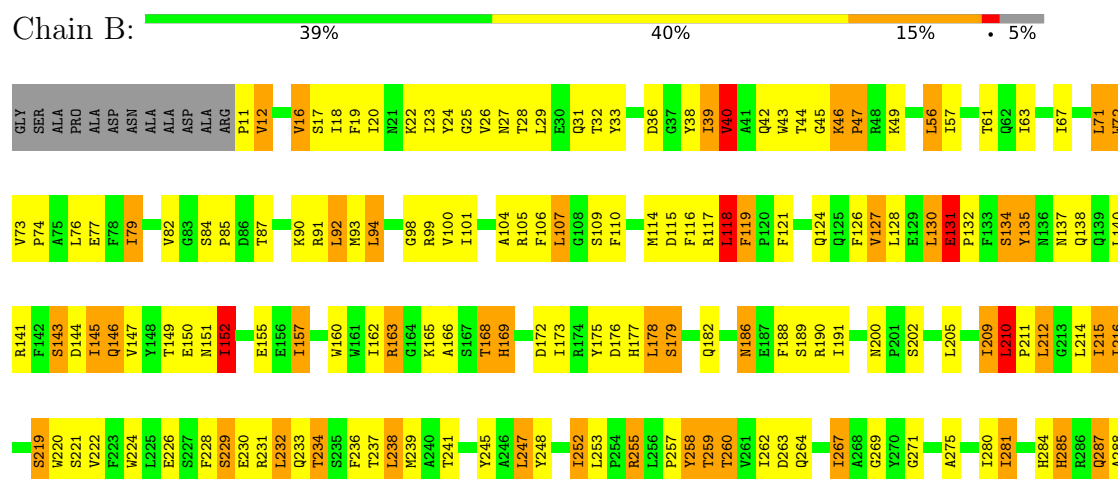
3 Residue-property plots [i](#)

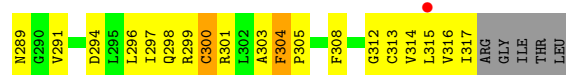
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: Gamma-aminobutyric-acid receptor subunit beta-1

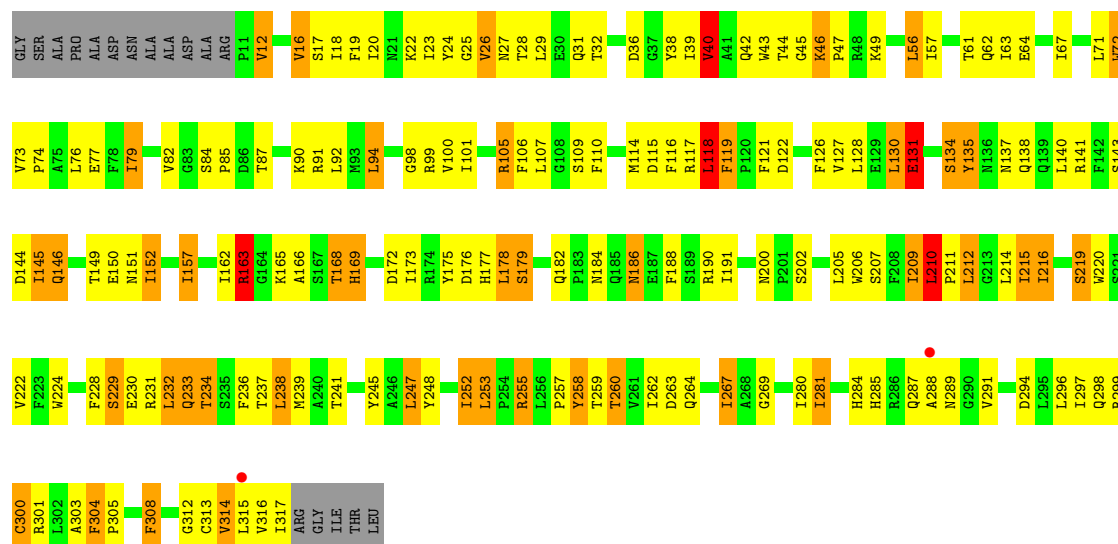


• Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1

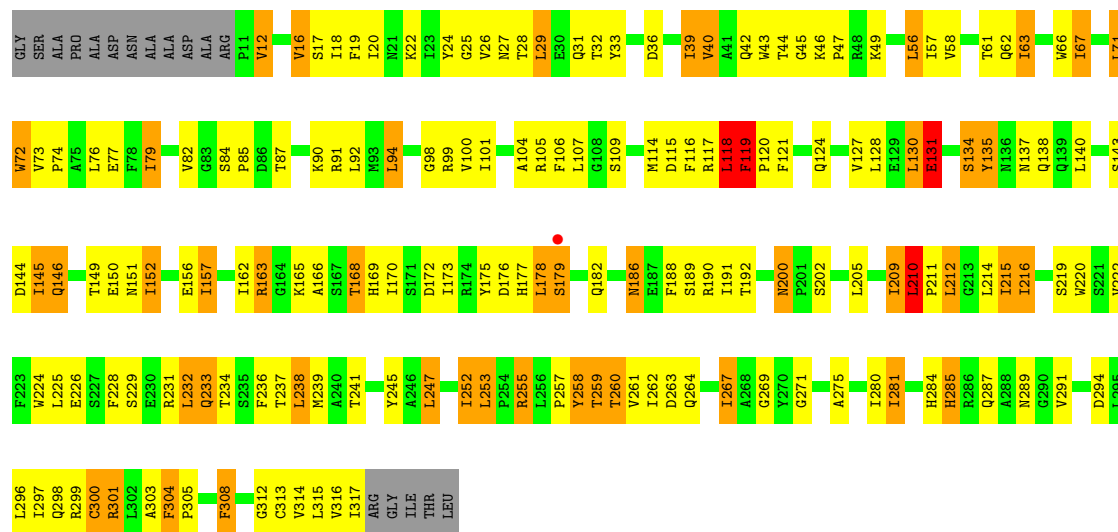




• Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1

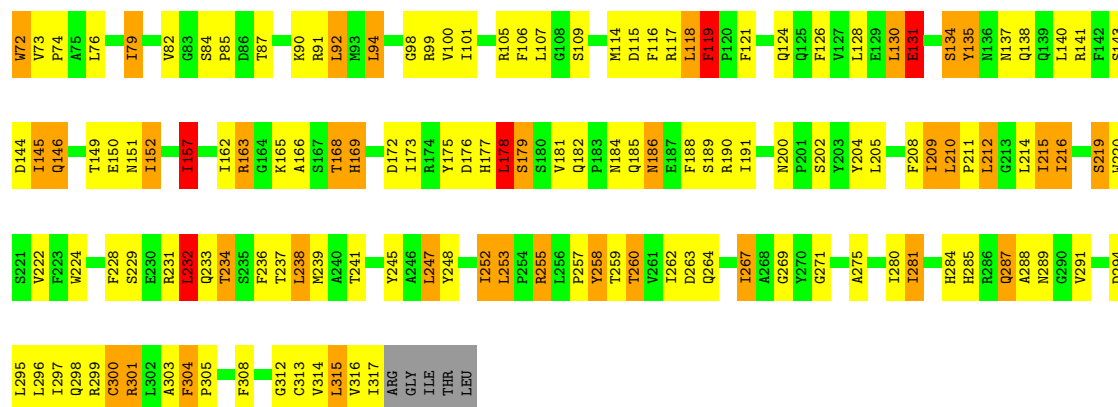


• Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1



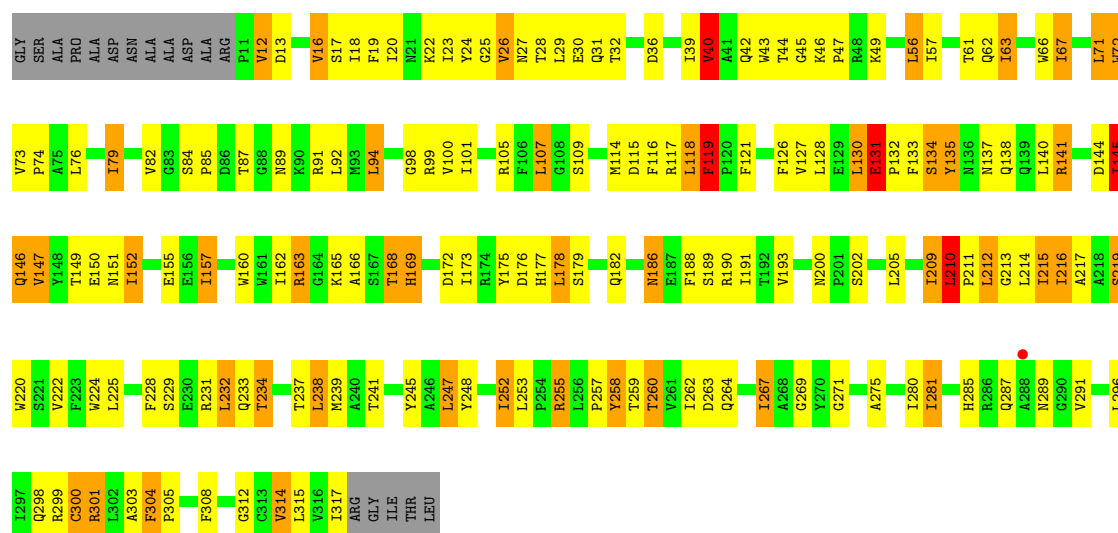
• Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1





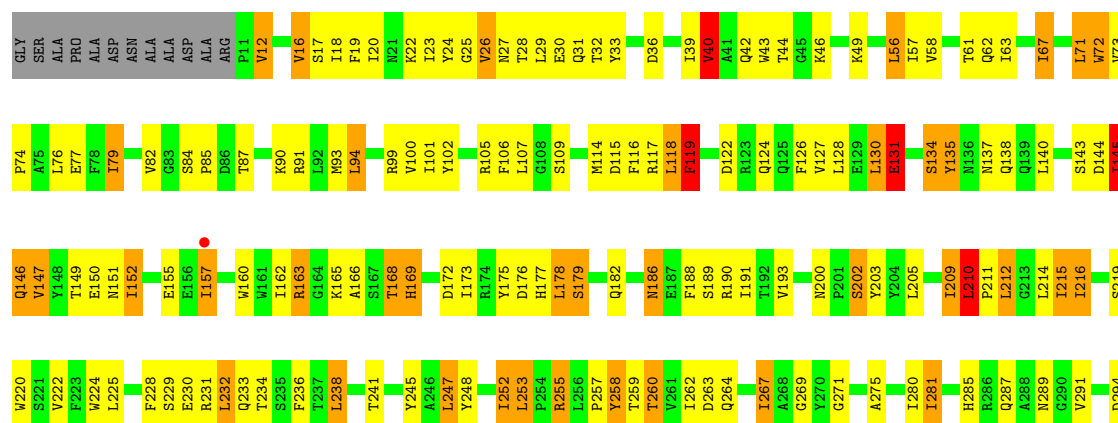
• Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1

Chain F: 42% 37% 14% 5%



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

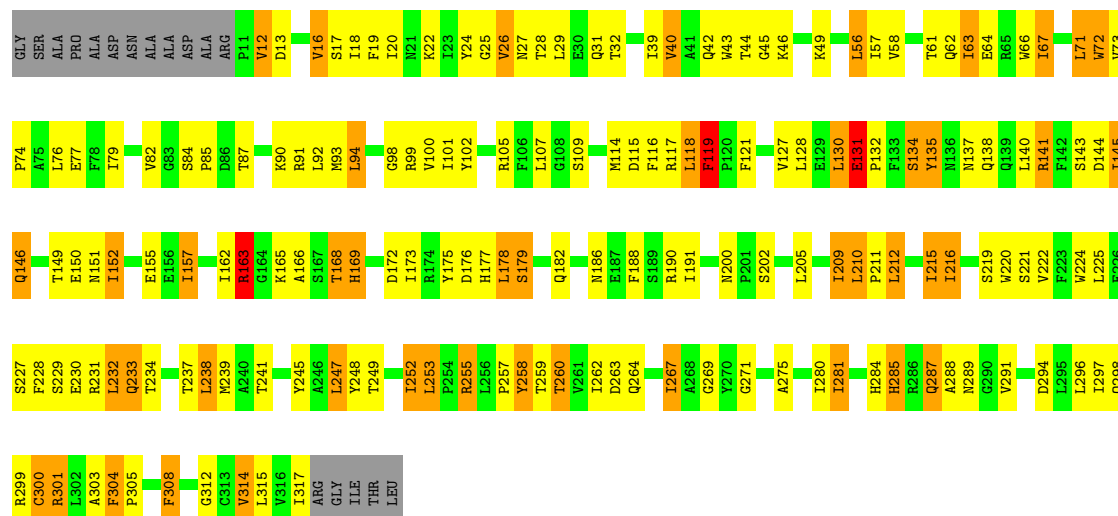
Chain G: 41% 39% 13% 5%





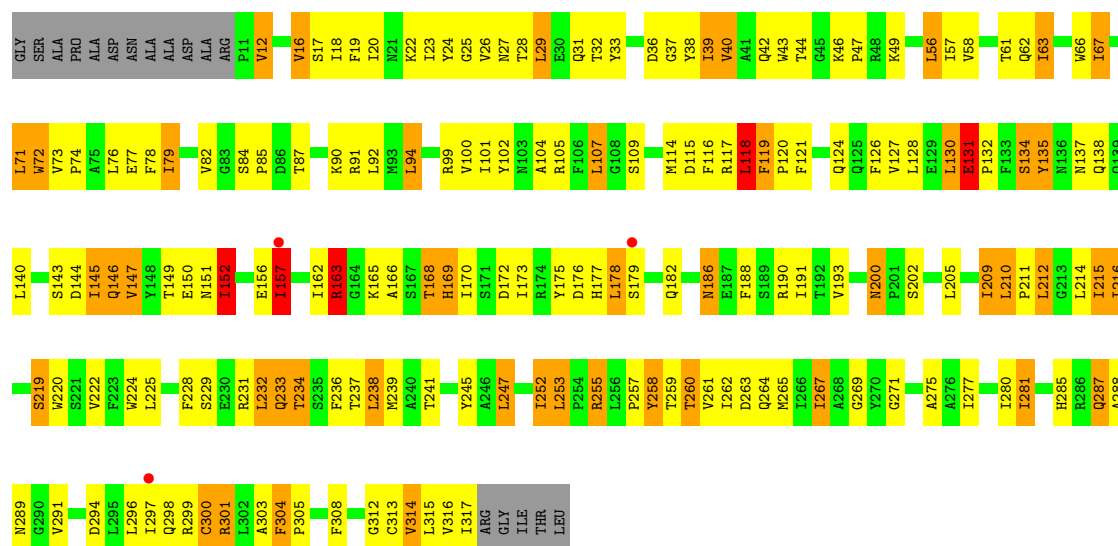
• Molecule 1: Gamma-aminobutyric-acid receptor subunit beta-1

Chain H: 42% 38% 14% • 5%



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

Chain I: 39% 39% 15% • 5%



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

Chain J: 41% 38% 15% • 5%





4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	105.57Å 267.43Å 111.16Å 90.00° 108.64° 90.00°	Depositor
Resolution (Å)	19.99 – 4.20 19.99 – 4.20	Depositor EDS
% Data completeness (in resolution range)	99.8 (19.99-4.20) 98.9 (19.99-4.20)	Depositor EDS
R_{merge}	0.18	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	4.31 (at 4.21Å)	Xtriage
Refinement program	PHENIX dev_897, REFMAC	Depositor
R, R_{free}	0.220 , 0.249 0.200 , 0.229	Depositor DCC
R_{free} test set	2103 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	117.0	Xtriage
Anisotropy	0.170	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.25 , 83.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	24991	wwPDB-VP
Average B, all atoms (Å ²)	152.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.75% 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: NA

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	0.69	0/2566	1.12	15/3498 (0.4%)
1	B	0.75	0/2566	1.17	21/3498 (0.6%)
1	C	0.74	1/2566 (0.0%)	1.14	22/3498 (0.6%)
1	D	0.75	0/2566	1.16	20/3498 (0.6%)
1	E	0.72	0/2566	1.13	20/3498 (0.6%)
1	F	0.73	0/2566	1.14	20/3498 (0.6%)
1	G	0.73	0/2566	1.15	25/3498 (0.7%)
1	H	0.74	0/2566	1.14	17/3498 (0.5%)
1	I	0.76	0/2566	1.18	18/3498 (0.5%)
1	J	0.75	1/2566 (0.0%)	1.15	18/3498 (0.5%)
All	All	0.74	2/25660 (0.0%)	1.15	196/34980 (0.6%)

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	A	0	1
1	B	0	1
1	C	0	1
1	D	0	1
1	E	0	1
1	F	0	1
1	G	0	1
1	H	0	1
1	I	0	1
1	J	0	1
All	All	0	10

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	288	ALA	CA-CB	-6.20	1.44	1.53
1	J	149	THR	CA-CB	5.12	1.61	1.53

All (196) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	I	12	VAL	N-CA-C	10.66	123.26	109.30
1	B	12	VAL	N-CA-C	9.57	122.29	109.37
1	D	12	VAL	N-CA-C	9.12	121.68	109.37
1	I	12	VAL	CB-CA-C	-8.00	99.07	111.71
1	G	238	LEU	N-CA-C	-7.55	104.59	113.88
1	J	237	THR	N-CA-C	-7.55	104.48	112.93
1	I	237	THR	N-CA-C	-7.41	105.12	112.97
1	H	238	LEU	N-CA-C	-7.20	105.03	113.88
1	C	237	THR	N-CA-C	-7.14	104.93	112.93
1	B	12	VAL	CB-CA-C	-7.05	100.09	111.59
1	D	12	VAL	CB-CA-C	-6.90	100.34	111.59
1	E	12	VAL	N-CA-C	6.88	123.66	109.34
1	G	84	SER	N-CA-C	-6.78	102.03	108.13
1	G	12	VAL	CB-CA-C	-6.72	100.27	111.29
1	I	300	CYS	N-CA-C	-6.71	104.67	112.92
1	I	84	SER	N-CA-C	-6.68	102.12	108.13
1	H	84	SER	N-CA-C	-6.64	102.16	108.13
1	C	12	VAL	CB-CA-C	-6.63	100.42	111.29
1	F	84	SER	N-CA-C	-6.48	102.30	108.13
1	G	12	VAL	N-CA-C	6.45	122.75	109.34
1	B	238	LEU	N-CA-C	-6.43	106.07	114.04
1	C	135	TYR	N-CA-C	6.42	118.87	108.41
1	J	12	VAL	CB-CA-C	-6.39	100.81	111.29
1	C	12	VAL	N-CA-C	6.39	122.62	109.34
1	A	237	THR	N-CA-C	-6.38	105.78	112.93
1	B	210	LEU	CA-C-N	-6.38	113.12	119.56
1	B	210	LEU	C-N-CA	-6.38	113.12	119.56
1	H	237	THR	N-CA-C	-6.37	105.80	112.93
1	D	300	CYS	N-CA-C	-6.37	105.38	113.02
1	D	237	THR	N-CA-C	-6.34	106.25	112.97
1	A	12	VAL	CB-CA-C	-6.33	100.90	111.29
1	H	12	VAL	CB-CA-C	-6.32	100.93	111.29
1	F	12	VAL	CB-CA-C	-6.30	100.95	111.29
1	I	238	LEU	N-CA-C	-6.29	106.15	113.88
1	F	131	GLU	CA-C-N	6.27	127.67	119.84
1	F	131	GLU	C-N-CA	6.27	127.67	119.84
1	H	300	CYS	N-CA-C	-6.26	105.23	112.92

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	131	GLU	CA-C-N	6.19	127.58	119.84
1	E	131	GLU	C-N-CA	6.19	127.58	119.84
1	G	131	GLU	CA-C-N	6.19	127.58	119.84
1	G	131	GLU	C-N-CA	6.19	127.58	119.84
1	A	12	VAL	N-CA-C	6.18	122.20	109.34
1	B	40	VAL	N-CA-C	6.16	117.16	108.17
1	G	119	PHE	CA-C-N	-6.15	114.56	120.83
1	G	119	PHE	C-N-CA	-6.15	114.56	120.83
1	I	135	TYR	N-CA-C	6.12	118.38	108.41
1	F	12	VAL	N-CA-C	6.11	122.04	109.34
1	C	131	GLU	CA-C-N	6.10	127.46	119.84
1	C	131	GLU	C-N-CA	6.10	127.46	119.84
1	J	300	CYS	N-CA-C	-6.10	105.42	112.92
1	D	29	LEU	N-CA-C	-6.09	104.33	110.97
1	B	300	CYS	N-CA-C	-6.09	105.43	112.92
1	F	210	LEU	CA-C-N	-6.09	113.41	119.56
1	F	210	LEU	C-N-CA	-6.09	113.41	119.56
1	B	127	VAL	N-CA-C	6.08	116.37	108.35
1	J	238	LEU	N-CA-C	-6.08	106.41	113.88
1	G	300	CYS	N-CA-C	-6.04	105.49	112.92
1	H	131	GLU	CA-C-N	6.04	127.39	119.84
1	H	131	GLU	C-N-CA	6.04	127.39	119.84
1	H	119	PHE	CA-C-N	-6.03	114.68	120.83
1	H	119	PHE	C-N-CA	-6.03	114.68	120.83
1	E	300	CYS	N-CA-C	-6.00	105.53	112.92
1	D	210	LEU	CA-C-N	-6.00	113.44	119.56
1	D	210	LEU	C-N-CA	-6.00	113.44	119.56
1	E	12	VAL	CB-CA-C	-5.98	101.48	111.29
1	H	12	VAL	N-CA-C	5.98	121.78	109.34
1	B	237	THR	N-CA-C	-5.98	106.64	112.97
1	E	237	THR	N-CA-C	-5.97	106.24	112.93
1	C	84	SER	N-CA-C	-5.97	102.76	108.13
1	J	210	LEU	CA-C-N	-5.97	113.53	119.56
1	J	210	LEU	C-N-CA	-5.97	113.53	119.56
1	G	135	TYR	N-CA-C	5.97	118.13	108.34
1	E	238	LEU	N-CA-C	-5.96	106.56	113.88
1	F	46	LYS	CA-C-N	5.93	127.25	119.84
1	F	46	LYS	C-N-CA	5.93	127.25	119.84
1	D	238	LEU	N-CA-C	-5.92	106.59	113.88
1	J	131	GLU	CA-C-N	5.92	127.25	119.84
1	J	131	GLU	C-N-CA	5.92	127.25	119.84
1	I	210	LEU	CA-C-N	-5.92	113.58	119.56

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	I	210	LEU	C-N-CA	-5.92	113.58	119.56
1	G	79	ILE	CB-CA-C	-5.88	104.11	112.22
1	H	135	TYR	N-CA-C	5.88	117.99	108.41
1	B	46	LYS	CA-C-N	5.87	127.18	119.84
1	B	46	LYS	C-N-CA	5.87	127.18	119.84
1	G	40	VAL	N-CA-C	5.84	116.70	108.17
1	B	135	TYR	N-CA-C	5.83	117.92	108.41
1	C	26	VAL	CB-CA-C	-5.83	103.56	111.15
1	F	127	VAL	N-CA-C	5.83	117.08	108.45
1	J	12	VAL	N-CA-C	5.82	121.45	109.34
1	F	300	CYS	N-CA-C	-5.82	105.76	112.92
1	E	46	LYS	CA-C-N	5.79	127.08	119.84
1	E	46	LYS	C-N-CA	5.79	127.08	119.84
1	B	84	SER	N-CA-C	-5.78	102.93	108.13
1	A	131	GLU	CA-C-N	5.78	127.06	119.84
1	A	131	GLU	C-N-CA	5.78	127.06	119.84
1	A	300	CYS	N-CA-C	-5.75	105.84	112.92
1	I	147	VAL	CB-CA-C	-5.74	106.13	112.68
1	B	79	ILE	CB-CA-C	-5.73	104.31	112.22
1	D	46	LYS	CA-C-N	5.63	126.88	119.84
1	D	46	LYS	C-N-CA	5.63	126.88	119.84
1	H	46	LYS	CA-C-N	5.63	126.87	119.84
1	H	46	LYS	C-N-CA	5.63	126.87	119.84
1	G	210	LEU	CA-C-N	-5.61	113.89	119.56
1	G	210	LEU	C-N-CA	-5.61	113.89	119.56
1	J	135	TYR	N-CA-C	5.61	117.84	108.02
1	C	300	CYS	N-CA-C	-5.60	106.04	112.92
1	E	135	TYR	N-CA-C	5.59	117.80	108.02
1	B	131	GLU	CA-C-N	5.58	126.82	119.84
1	B	131	GLU	C-N-CA	5.58	126.82	119.84
1	G	147	VAL	CB-CA-C	-5.57	106.33	112.68
1	A	210	LEU	CA-C-N	-5.54	113.96	119.56
1	A	210	LEU	C-N-CA	-5.54	113.96	119.56
1	D	135	TYR	N-CA-C	5.54	117.44	108.41
1	F	238	LEU	N-CA-C	-5.54	107.07	113.88
1	C	40	VAL	N-CA-C	5.53	116.24	108.17
1	F	237	THR	N-CA-C	-5.53	106.74	112.93
1	A	79	ILE	CB-CA-C	-5.52	104.61	112.22
1	J	46	LYS	CA-C-N	5.52	126.73	119.84
1	J	46	LYS	C-N-CA	5.52	126.73	119.84
1	C	238	LEU	N-CA-C	-5.50	107.11	113.88
1	I	29	LEU	N-CA-C	-5.50	104.97	110.97

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	46	LYS	CA-C-N	5.50	126.71	119.84
1	C	46	LYS	C-N-CA	5.50	126.71	119.84
1	A	135	TYR	N-CA-C	5.49	117.36	108.41
1	I	37	GLY	N-CA-C	5.43	118.18	110.74
1	A	46	LYS	CA-C-N	5.41	126.60	119.84
1	A	46	LYS	C-N-CA	5.41	126.60	119.84
1	E	84	SER	N-CA-C	-5.36	103.31	108.13
1	I	314	VAL	N-CA-C	-5.33	105.55	113.39
1	D	192	THR	CA-C-N	-5.33	116.58	123.19
1	D	192	THR	C-N-CA	-5.33	116.58	123.19
1	F	135	TYR	N-CA-C	5.32	117.33	108.02
1	J	182	GLN	CA-C-N	-5.32	113.19	119.84
1	J	182	GLN	C-N-CA	-5.32	113.19	119.84
1	C	122	ASP	N-CA-C	5.32	117.40	108.73
1	I	131	GLU	CA-C-N	5.32	126.49	119.84
1	I	131	GLU	C-N-CA	5.32	126.49	119.84
1	G	147	VAL	N-CA-C	5.32	114.26	106.55
1	D	79	ILE	CB-CA-C	-5.30	104.90	112.22
1	C	79	ILE	CB-CA-C	-5.30	104.91	112.22
1	C	210	LEU	CA-C-N	-5.30	114.21	119.56
1	C	210	LEU	C-N-CA	-5.30	114.21	119.56
1	A	314	VAL	N-CA-C	-5.30	105.60	113.39
1	J	314	VAL	N-CA-C	-5.29	105.61	113.39
1	G	122	ASP	N-CA-C	5.29	117.35	108.73
1	E	119	PHE	CA-C-N	-5.28	115.44	120.83
1	E	119	PHE	C-N-CA	-5.28	115.44	120.83
1	B	11	PRO	CA-C-N	5.28	127.65	120.63
1	B	11	PRO	C-N-CA	5.28	127.65	120.63
1	F	40	VAL	N-CA-C	5.27	115.86	108.17
1	B	160	TRP	N-CA-C	5.27	117.82	109.50
1	D	131	GLU	CA-C-N	5.26	126.42	119.84
1	D	131	GLU	C-N-CA	5.26	126.42	119.84
1	C	206	TRP	N-CA-C	5.25	117.43	111.02
1	G	143	SER	N-CA-C	5.25	117.08	108.52
1	I	157	ILE	N-CA-C	-5.24	108.18	113.47
1	C	314	VAL	N-CA-C	-5.23	105.71	113.39
1	G	26	VAL	CB-CA-C	-5.22	104.36	111.15
1	J	79	ILE	CB-CA-C	-5.21	105.03	112.22
1	F	119	PHE	CA-C-N	-5.20	115.52	120.83
1	F	119	PHE	C-N-CA	-5.20	115.52	120.83
1	I	79	ILE	CB-CA-C	-5.20	105.04	112.22
1	B	147	VAL	N-CA-C	5.20	114.08	106.55

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	157	ILE	N-CA-C	-5.19	107.77	113.43
1	I	147	VAL	N-CA-C	5.19	114.07	106.55
1	E	295	LEU	N-CA-C	5.18	116.62	111.07
1	F	79	ILE	CB-CA-C	-5.18	105.07	112.22
1	H	26	VAL	CB-CA-C	-5.18	104.41	111.15
1	C	127	VAL	N-CA-C	5.18	116.11	108.45
1	E	79	ILE	CB-CA-C	-5.18	105.08	112.22
1	D	84	SER	N-CA-C	-5.17	103.48	108.13
1	E	40	VAL	N-CA-C	5.16	115.71	108.17
1	G	314	VAL	N-CA-C	-5.15	105.82	113.39
1	C	308	PHE	N-CA-C	-5.14	105.09	112.13
1	H	314	VAL	N-CA-C	-5.13	105.86	113.39
1	E	37	GLY	N-CA-C	5.12	117.76	110.74
1	F	314	VAL	N-CA-C	-5.12	105.87	113.39
1	H	127	VAL	N-CA-C	5.12	115.10	108.35
1	C	105	ARG	N-CA-C	-5.11	102.92	110.48
1	E	124	GLN	N-CA-C	5.09	116.99	108.99
1	G	46	LYS	CA-C-N	5.09	126.21	119.84
1	G	46	LYS	C-N-CA	5.09	126.21	119.84
1	G	160	TRP	N-CA-C	5.09	117.54	109.50
1	H	308	PHE	N-CA-C	-5.08	105.16	112.13
1	F	147	VAL	N-CA-C	5.07	113.90	106.55
1	D	308	PHE	N-CA-C	-5.05	105.21	112.13
1	B	143	SER	N-CA-C	5.05	116.75	108.52
1	A	124	GLN	N-CA-C	5.04	116.72	108.76
1	G	119	PHE	N-CA-C	5.04	120.94	109.81
1	J	308	PHE	N-CA-C	-5.04	105.23	112.13
1	J	37	GLY	N-CA-C	5.03	117.64	110.74
1	G	295	LEU	N-CA-C	5.03	116.45	111.07
1	A	143	SER	N-CA-C	5.02	116.70	108.52
1	D	119	PHE	CA-C-N	-5.01	115.72	120.83
1	D	119	PHE	C-N-CA	-5.01	115.72	120.83
1	E	178	LEU	N-CA-C	5.01	114.98	108.07

There are no chirality outliers.

All (10) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	137	ASN	Peptide
1	B	137	ASN	Peptide
1	C	137	ASN	Peptide
1	D	137	ASN	Peptide

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Mol	Chain	Res	Type	Group
1	E	137	ASN	Peptide
1	F	137	ASN	Peptide
1	G	137	ASN	Peptide
1	H	137	ASN	Peptide
1	I	137	ASN	Peptide
1	J	137	ASN	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	2499	0	2474	109	0
1	B	2499	0	2474	124	0
1	C	2499	0	2474	114	0
1	D	2499	0	2474	118	0
1	E	2499	0	2474	106	0
1	F	2499	0	2474	106	0
1	G	2499	0	2473	112	0
1	H	2499	0	2473	111	0
1	I	2499	0	2473	126	0
1	J	2499	0	2474	115	0
2	F	1	0	0	0	0
All	All	24991	0	24737	1027	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 21.

All (1027) 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:J:62:GLN:HE21	1:J:62:GLN:HA	1.10	1.10
1:D:140:LEU:HD22	1:D:191:ILE:HD11	1.52	0.91
1:B:224:TRP:HE1	1:B:301:ARG:HB3	1.38	0.89
1:H:224:TRP:HE1	1:H:301:ARG:HB3	1.38	0.89
1:C:224:TRP:HE1	1:C:301:ARG:HB3	1.38	0.87
1:G:140:LEU:HD13	1:G:191:ILE:HG13	1.54	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:140:LEU:HD13	1:B:191:ILE:HG13	1.56	0.86
1:G:140:LEU:HD22	1:G:191:ILE:HD11	1.57	0.86
1:B:140:LEU:HD22	1:B:191:ILE:HD11	1.56	0.86
1:F:224:TRP:HE1	1:F:301:ARG:HB3	1.40	0.85
1:G:224:TRP:HE1	1:G:301:ARG:HB3	1.42	0.85
1:E:224:TRP:HE1	1:E:301:ARG:HB3	1.40	0.85
1:A:140:LEU:HD22	1:A:191:ILE:HD11	1.59	0.85
1:A:224:TRP:HE1	1:A:301:ARG:HB3	1.40	0.85
1:J:224:TRP:HE1	1:J:301:ARG:HB3	1.38	0.85
1:H:140:LEU:HD13	1:H:191:ILE:HG13	1.58	0.84
1:D:216:ILE:HD11	1:D:269:GLY:HA2	1.60	0.84
1:I:224:TRP:HE1	1:I:301:ARG:HB3	1.43	0.83
1:C:140:LEU:HD13	1:C:191:ILE:HG13	1.58	0.83
1:D:140:LEU:HD13	1:D:191:ILE:HG13	1.58	0.83
1:I:140:LEU:HD22	1:I:191:ILE:HD11	1.61	0.83
1:D:224:TRP:HE1	1:D:301:ARG:HB3	1.43	0.82
1:I:140:LEU:HD13	1:I:191:ILE:HG13	1.61	0.82
1:G:260:THR:H	1:G:263:ASP:HB2	1.46	0.81
1:B:216:ILE:HD11	1:B:269:GLY:HA2	1.63	0.80
1:E:260:THR:H	1:E:263:ASP:HB2	1.47	0.80
1:E:216:ILE:HD11	1:E:269:GLY:HA2	1.63	0.79
1:C:157:ILE:HD11	1:D:115:ASP:HA	1.66	0.78
1:H:157:ILE:HD11	1:I:115:ASP:HA	1.66	0.78
1:A:216:ILE:HD11	1:A:269:GLY:HA2	1.66	0.78
1:I:260:THR:H	1:I:263:ASP:HB2	1.49	0.78
1:C:216:ILE:HD11	1:C:269:GLY:HA2	1.66	0.78
1:F:260:THR:H	1:F:263:ASP:HB2	1.48	0.78
1:H:44:THR:HG23	1:H:99:ARG:HB3	1.66	0.78
1:G:216:ILE:HD11	1:G:269:GLY:HA2	1.65	0.77
1:H:140:LEU:HD22	1:H:191:ILE:HD11	1.64	0.77
1:F:216:ILE:HD11	1:F:269:GLY:HA2	1.64	0.77
1:F:140:LEU:HD13	1:F:191:ILE:HG13	1.67	0.77
1:H:224:TRP:NE1	1:H:301:ARG:HB3	1.99	0.77
1:A:140:LEU:HD13	1:A:191:ILE:HG13	1.65	0.77
1:B:224:TRP:NE1	1:B:301:ARG:HB3	2.00	0.77
1:D:260:THR:H	1:D:263:ASP:HB2	1.50	0.77
1:B:169:HIS:ND1	1:I:168:THR:HB	1.99	0.76
1:A:157:ILE:HD11	1:B:115:ASP:HA	1.67	0.76
1:C:224:TRP:HE3	1:D:281:ILE:HG13	1.50	0.76
1:J:44:THR:HG23	1:J:99:ARG:HB3	1.67	0.76
1:J:260:THR:H	1:J:263:ASP:HB2	1.49	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:216:ILE:HD11	1:I:269:GLY:HA2	1.68	0.76
1:C:224:TRP:NE1	1:C:301:ARG:HB3	2.00	0.76
1:J:216:ILE:HD11	1:J:269:GLY:HA2	1.66	0.76
1:G:308:PHE:O	1:G:312:GLY:N	2.19	0.76
1:G:44:THR:HG23	1:G:99:ARG:HB3	1.67	0.76
1:E:224:TRP:NE1	1:E:301:ARG:HB3	2.02	0.75
1:A:224:TRP:NE1	1:A:301:ARG:HB3	2.01	0.75
1:F:44:THR:HG23	1:F:99:ARG:HB3	1.68	0.75
1:J:62:GLN:HA	1:J:62:GLN:NE2	1.91	0.75
1:D:44:THR:HG23	1:D:99:ARG:HB3	1.68	0.74
1:D:308:PHE:O	1:D:312:GLY:N	2.21	0.74
1:E:308:PHE:O	1:E:312:GLY:N	2.21	0.74
1:A:308:PHE:O	1:A:312:GLY:N	2.21	0.74
1:J:140:LEU:HD22	1:J:191:ILE:HD11	1.68	0.73
1:C:140:LEU:HD22	1:C:191:ILE:HD11	1.70	0.73
1:D:224:TRP:NE1	1:D:301:ARG:HB3	2.03	0.73
1:H:308:PHE:O	1:H:312:GLY:N	2.20	0.73
1:A:44:THR:HG23	1:A:99:ARG:HB3	1.71	0.73
1:E:140:LEU:HD13	1:E:191:ILE:HG13	1.69	0.73
1:G:224:TRP:HE3	1:H:281:ILE:HG13	1.52	0.73
1:H:216:ILE:HD11	1:H:269:GLY:HA2	1.69	0.73
1:F:308:PHE:O	1:F:312:GLY:N	2.19	0.73
1:G:157:ILE:HD11	1:H:115:ASP:HA	1.71	0.73
1:J:224:TRP:NE1	1:J:301:ARG:HB3	2.03	0.73
1:B:260:THR:H	1:B:263:ASP:HB2	1.53	0.73
1:B:308:PHE:O	1:B:312:GLY:N	2.21	0.73
1:J:140:LEU:HD13	1:J:191:ILE:HG13	1.71	0.73
1:B:157:ILE:HD11	1:C:115:ASP:HA	1.70	0.72
1:C:308:PHE:O	1:C:312:GLY:N	2.21	0.72
1:I:44:THR:HG23	1:I:99:ARG:HB3	1.71	0.72
1:F:224:TRP:NE1	1:F:301:ARG:HB3	2.02	0.72
1:F:157:ILE:HD11	1:G:115:ASP:HA	1.71	0.72
1:I:308:PHE:O	1:I:312:GLY:N	2.21	0.72
1:C:260:THR:H	1:C:263:ASP:HB2	1.52	0.72
1:I:224:TRP:NE1	1:I:301:ARG:HB3	2.04	0.72
1:J:308:PHE:O	1:J:312:GLY:N	2.20	0.72
1:E:31:GLN:HG2	1:E:114:MET:HB2	1.70	0.72
1:G:224:TRP:NE1	1:G:301:ARG:HB3	2.03	0.71
1:H:260:THR:H	1:H:263:ASP:HB2	1.53	0.71
1:E:44:THR:HG23	1:E:99:ARG:HB3	1.72	0.71
1:E:140:LEU:HD22	1:E:191:ILE:HD11	1.73	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:140:LEU:HD22	1:F:191:ILE:HD11	1.72	0.71
1:C:91:ARG:HD2	1:D:134:SER:HB3	1.73	0.70
1:G:247:LEU:HD12	1:H:247:LEU:HD11	1.72	0.70
1:A:260:THR:H	1:A:263:ASP:HB2	1.55	0.70
1:C:44:THR:HG23	1:C:99:ARG:HB3	1.73	0.70
1:B:44:THR:HG23	1:B:99:ARG:HB3	1.72	0.70
1:B:31:GLN:HG2	1:B:114:MET:HB2	1.73	0.70
1:J:173:ILE:HD13	1:J:190:ARG:HB3	1.74	0.70
1:F:173:ILE:HD13	1:F:190:ARG:HB3	1.75	0.69
1:B:91:ARG:HD2	1:C:134:SER:HB3	1.74	0.68
1:H:224:TRP:HE3	1:I:281:ILE:HG13	1.57	0.68
1:A:314:VAL:HG13	1:A:317:ILE:HD12	1.75	0.68
1:C:173:ILE:HD13	1:C:190:ARG:HB3	1.76	0.68
1:D:314:VAL:HG13	1:D:317:ILE:HD12	1.76	0.68
1:F:115:ASP:HA	1:J:157:ILE:HD11	1.75	0.68
1:E:173:ILE:HD13	1:E:190:ARG:HB3	1.76	0.67
1:J:314:VAL:HG13	1:J:317:ILE:HD12	1.75	0.67
1:I:31:GLN:HG2	1:I:114:MET:HB2	1.77	0.67
1:A:179:SER:O	1:A:182:GLN:NE2	2.28	0.67
1:H:31:GLN:HG2	1:H:114:MET:HB2	1.76	0.67
1:A:173:ILE:HD13	1:A:190:ARG:HB3	1.77	0.66
1:E:22:LYS:HE3	1:E:24:TYR:HD1	1.61	0.66
1:C:79:ILE:HD11	1:C:131:GLU:HB3	1.77	0.66
1:F:56:LEU:HD22	1:F:57:ILE:H	1.60	0.66
1:F:281:ILE:HG13	1:J:224:TRP:HE3	1.60	0.66
1:H:314:VAL:HG13	1:H:317:ILE:HD12	1.77	0.66
1:A:215:ILE:HG12	1:B:239:MET:HE3	1.78	0.66
1:G:56:LEU:HD22	1:G:57:ILE:H	1.59	0.66
1:D:157:ILE:HD11	1:E:115:ASP:HA	1.76	0.66
1:C:314:VAL:HG13	1:C:317:ILE:HD12	1.78	0.66
1:B:314:VAL:HG13	1:B:317:ILE:HD12	1.77	0.66
1:J:31:GLN:HG2	1:J:114:MET:HB2	1.79	0.66
1:B:173:ILE:HD13	1:B:190:ARG:HB3	1.78	0.65
1:J:42:GLN:HB2	1:J:101:ILE:HG12	1.78	0.65
1:A:91:ARG:HD2	1:B:134:SER:HB3	1.78	0.65
1:D:215:ILE:HG12	1:E:239:MET:HE3	1.79	0.65
1:G:314:VAL:HG13	1:G:317:ILE:HD12	1.78	0.65
1:A:247:LEU:HD11	1:E:247:LEU:HD12	1.79	0.65
1:G:91:ARG:HD2	1:H:134:SER:HB3	1.77	0.65
1:E:44:THR:HA	1:E:99:ARG:HA	1.79	0.65
1:I:314:VAL:HG13	1:I:317:ILE:HD12	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:16:VAL:HG11	1:J:191:ILE:HD13	1.79	0.65
1:C:247:LEU:HD12	1:D:247:LEU:HD11	1.79	0.65
1:D:173:ILE:HD13	1:D:190:ARG:HB3	1.79	0.65
1:G:173:ILE:HD13	1:G:190:ARG:HB3	1.78	0.65
1:F:314:VAL:HG13	1:F:317:ILE:HD12	1.78	0.64
1:A:27:ASN:HB3	1:A:32:THR:HB	1.80	0.64
1:G:27:ASN:HB3	1:G:32:THR:HB	1.80	0.64
1:B:79:ILE:HD11	1:B:131:GLU:HB3	1.78	0.64
1:E:314:VAL:HG13	1:E:317:ILE:HD12	1.78	0.64
1:F:91:ARG:HD2	1:G:134:SER:HB3	1.80	0.64
1:I:157:ILE:HD11	1:J:115:ASP:HA	1.79	0.64
1:I:219:SER:HA	1:I:238:LEU:HD21	1.78	0.64
1:C:179:SER:O	1:C:182:GLN:NE2	2.31	0.64
1:I:79:ILE:HD11	1:I:131:GLU:HB3	1.80	0.63
1:A:231:ARG:HB3	1:A:280:ILE:HD13	1.79	0.63
1:C:231:ARG:HB3	1:C:280:ILE:HD13	1.81	0.63
1:C:212:LEU:HD23	1:C:245:TYR:CE2	2.34	0.63
1:D:175:TYR:CE1	1:D:188:PHE:HD1	2.17	0.63
1:B:224:TRP:HE3	1:C:281:ILE:HG13	1.63	0.63
1:F:179:SER:O	1:F:182:GLN:NE2	2.32	0.63
1:J:179:SER:O	1:J:182:GLN:NE2	2.31	0.63
1:E:19:PHE:CE1	1:E:146:GLN:HG3	2.34	0.63
1:C:17:SER:HB2	1:C:40:VAL:HG23	1.81	0.63
1:H:173:ILE:HD13	1:H:190:ARG:HB3	1.79	0.63
1:I:91:ARG:HD2	1:J:134:SER:HB3	1.81	0.63
1:I:173:ILE:HD13	1:I:190:ARG:HB3	1.81	0.62
1:E:219:SER:HA	1:E:238:LEU:HD21	1.81	0.62
1:E:231:ARG:HB3	1:E:280:ILE:HD13	1.80	0.62
1:B:116:PHE:HB2	1:B:258:TYR:HE1	1.64	0.62
1:F:224:TRP:HE3	1:G:281:ILE:HG13	1.64	0.62
1:I:56:LEU:HD22	1:I:57:ILE:H	1.63	0.62
1:J:56:LEU:HD22	1:J:57:ILE:H	1.65	0.62
1:F:175:TYR:CE1	1:F:188:PHE:HD1	2.17	0.62
1:H:91:ARG:HD2	1:I:134:SER:HB3	1.80	0.62
1:J:79:ILE:HD11	1:J:131:GLU:HB3	1.81	0.62
1:J:231:ARG:HB3	1:J:280:ILE:HD13	1.80	0.62
1:E:22:LYS:HE3	1:E:24:TYR:CD1	2.35	0.62
1:G:22:LYS:HE3	1:G:24:TYR:HD1	1.64	0.62
1:C:31:GLN:HG2	1:C:114:MET:HB2	1.82	0.62
1:C:56:LEU:HD22	1:C:57:ILE:H	1.65	0.62
1:C:16:VAL:HG11	1:C:191:ILE:HD13	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:179:SER:O	1:G:182:GLN:NE2	2.32	0.61
1:A:134:SER:HB3	1:E:91:ARG:HD2	1.82	0.61
1:B:27:ASN:HB3	1:B:32:THR:HB	1.82	0.61
1:C:219:SER:HA	1:C:238:LEU:HD21	1.81	0.61
1:C:252:ILE:HD13	1:D:255:ARG:HG3	1.81	0.61
1:H:231:ARG:HB3	1:H:280:ILE:HD13	1.83	0.61
1:I:44:THR:HA	1:I:99:ARG:HA	1.83	0.61
1:J:219:SER:HA	1:J:238:LEU:HD21	1.83	0.61
1:A:31:GLN:HG2	1:A:114:MET:HB2	1.82	0.61
1:B:19:PHE:CE1	1:B:146:GLN:HG3	2.36	0.61
1:J:22:LYS:HE3	1:J:24:TYR:HD1	1.64	0.61
1:B:231:ARG:HB3	1:B:280:ILE:HD13	1.83	0.61
1:E:16:VAL:HG11	1:E:191:ILE:HD13	1.83	0.61
1:G:116:PHE:HB2	1:G:258:TYR:HE1	1.66	0.61
1:D:31:GLN:HG2	1:D:114:MET:HB2	1.81	0.61
1:A:115:ASP:HA	1:E:157:ILE:HD11	1.83	0.61
1:D:264:GLN:HA	1:D:267:ILE:HG13	1.82	0.61
1:A:219:SER:HA	1:A:238:LEU:HD21	1.84	0.60
1:B:42:GLN:HB2	1:B:101:ILE:HG12	1.82	0.60
1:E:76:LEU:HB3	1:E:130:LEU:HD21	1.83	0.60
1:F:31:GLN:HG2	1:F:114:MET:HB2	1.82	0.60
1:A:56:LEU:HD22	1:A:57:ILE:H	1.66	0.60
1:F:16:VAL:HG11	1:F:191:ILE:HD13	1.83	0.60
1:A:116:PHE:HB2	1:A:258:TYR:HE1	1.66	0.60
1:C:42:GLN:HB2	1:C:101:ILE:HG12	1.84	0.60
1:A:72:TRP:CZ2	1:A:74:PRO:HG3	2.37	0.60
1:A:247:LEU:HD12	1:B:247:LEU:HD11	1.84	0.60
1:C:175:TYR:CE1	1:C:188:PHE:HD1	2.19	0.60
1:D:17:SER:HB2	1:D:40:VAL:HG23	1.84	0.60
1:D:247:LEU:HD12	1:E:247:LEU:HD11	1.83	0.60
1:G:79:ILE:HD11	1:G:131:GLU:HB3	1.83	0.60
1:H:17:SER:HB2	1:H:40:VAL:HG23	1.82	0.60
1:H:42:GLN:HB2	1:H:101:ILE:HG12	1.84	0.60
1:I:264:GLN:HA	1:I:267:ILE:HG13	1.83	0.60
1:G:231:ARG:HB3	1:G:280:ILE:HD13	1.83	0.60
1:I:42:GLN:HB2	1:I:101:ILE:HG12	1.84	0.60
1:D:219:SER:HA	1:D:238:LEU:HD21	1.83	0.60
1:F:134:SER:HB3	1:J:91:ARG:HD2	1.84	0.60
1:J:116:PHE:HB2	1:J:258:TYR:HE1	1.66	0.60
1:B:179:SER:O	1:B:182:GLN:NE2	2.34	0.59
1:B:169:HIS:HD1	1:I:168:THR:HB	1.67	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:27:ASN:HB3	1:D:32:THR:HB	1.83	0.59
1:F:42:GLN:HB2	1:F:101:ILE:HG12	1.83	0.59
1:I:179:SER:O	1:I:182:GLN:NE2	2.35	0.59
1:E:179:SER:O	1:E:182:GLN:NE2	2.35	0.59
1:F:27:ASN:HB3	1:F:32:THR:HB	1.85	0.59
1:A:16:VAL:HG11	1:A:191:ILE:HD13	1.85	0.59
1:A:76:LEU:HB3	1:A:130:LEU:HD21	1.85	0.59
1:C:44:THR:HA	1:C:99:ARG:HA	1.83	0.59
1:D:56:LEU:HD22	1:D:57:ILE:H	1.68	0.59
1:H:19:PHE:CE1	1:H:146:GLN:HG3	2.38	0.59
1:I:116:PHE:HB2	1:I:258:TYR:HE1	1.67	0.59
1:G:42:GLN:HB2	1:G:101:ILE:HG12	1.84	0.59
1:A:175:TYR:CE1	1:A:188:PHE:HD1	2.20	0.59
1:B:22:LYS:HE3	1:B:24:TYR:HD1	1.67	0.59
1:F:231:ARG:HB3	1:F:280:ILE:HD13	1.83	0.59
1:H:175:TYR:CE1	1:H:188:PHE:HD1	2.21	0.59
1:D:91:ARG:HD2	1:E:134:SER:HB3	1.83	0.59
1:D:131:GLU:OE2	1:D:175:TYR:OH	2.20	0.59
1:D:179:SER:O	1:D:182:GLN:NE2	2.35	0.59
1:E:27:ASN:HB3	1:E:32:THR:HB	1.84	0.59
1:D:116:PHE:HB2	1:D:258:TYR:HE1	1.67	0.58
1:H:72:TRP:CZ2	1:H:74:PRO:HG3	2.38	0.58
1:E:212:LEU:HD23	1:E:245:TYR:CE2	2.37	0.58
1:I:22:LYS:HE3	1:I:24:TYR:HD1	1.67	0.58
1:A:264:GLN:HA	1:A:267:ILE:HG13	1.84	0.58
1:G:31:GLN:HG2	1:G:114:MET:HB2	1.86	0.58
1:A:281:ILE:HG13	1:E:224:TRP:HE3	1.68	0.58
1:B:175:TYR:CE1	1:B:188:PHE:HD1	2.21	0.58
1:D:231:ARG:HB3	1:D:280:ILE:HD13	1.86	0.58
1:H:79:ILE:HD11	1:H:131:GLU:HB3	1.84	0.58
1:A:226:GLU:OE2	1:B:284:HIS:NE2	2.36	0.58
1:F:17:SER:HB2	1:F:40:VAL:HG23	1.85	0.58
1:H:44:THR:HA	1:H:99:ARG:HA	1.85	0.58
1:G:264:GLN:HA	1:G:267:ILE:HG13	1.86	0.58
1:H:94:LEU:HB3	1:H:100:VAL:HG22	1.84	0.58
1:I:72:TRP:CZ2	1:I:74:PRO:HG3	2.38	0.58
1:C:205:LEU:HD23	1:C:209:ILE:HG13	1.86	0.57
1:F:19:PHE:CE1	1:F:146:GLN:HG3	2.39	0.57
1:G:168:THR:O	1:G:169:HIS:HB2	2.04	0.57
1:H:16:VAL:HG11	1:H:191:ILE:HD13	1.86	0.57
1:C:116:PHE:HB2	1:C:258:TYR:HE1	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:205:LEU:HD23	1:A:209:ILE:HG13	1.86	0.57
1:H:116:PHE:HB2	1:H:258:TYR:HE1	1.69	0.57
1:B:22:LYS:HE3	1:B:24:TYR:CD1	2.40	0.57
1:C:264:GLN:HA	1:C:267:ILE:HG13	1.87	0.57
1:F:79:ILE:HD11	1:F:131:GLU:HB3	1.86	0.57
1:I:71:LEU:HD22	1:I:72:TRP:O	2.04	0.57
1:E:175:TYR:CE1	1:E:188:PHE:HD1	2.23	0.57
1:D:79:ILE:HD11	1:D:131:GLU:HB3	1.85	0.57
1:G:22:LYS:HE3	1:G:24:TYR:CD1	2.40	0.57
1:F:116:PHE:HB2	1:F:258:TYR:HE1	1.68	0.57
1:I:17:SER:HB2	1:I:40:VAL:HG23	1.86	0.57
1:J:264:GLN:HA	1:J:267:ILE:HG13	1.87	0.57
1:H:264:GLN:HA	1:H:267:ILE:HG13	1.86	0.57
1:D:72:TRP:CZ2	1:D:74:PRO:HG3	2.40	0.57
1:J:22:LYS:HE3	1:J:24:TYR:CD1	2.39	0.56
1:J:62:GLN:HE21	1:J:62:GLN:CA	1.98	0.56
1:J:175:TYR:CE1	1:J:188:PHE:HD1	2.23	0.56
1:F:76:LEU:HB3	1:F:130:LEU:HD21	1.87	0.56
1:J:44:THR:HA	1:J:99:ARG:HA	1.87	0.56
1:A:44:THR:HA	1:A:99:ARG:HA	1.87	0.56
1:B:219:SER:HA	1:B:238:LEU:HD21	1.86	0.56
1:C:94:LEU:HB3	1:C:100:VAL:HG22	1.86	0.56
1:F:22:LYS:HE3	1:F:24:TYR:HD1	1.68	0.56
1:F:28:THR:HA	1:F:116:PHE:HE1	1.70	0.56
1:F:219:SER:HA	1:F:238:LEU:HD21	1.86	0.56
1:H:27:ASN:HB3	1:H:32:THR:HB	1.86	0.56
1:D:42:GLN:HB2	1:D:101:ILE:HG12	1.86	0.56
1:I:94:LEU:HB3	1:I:100:VAL:HG22	1.86	0.56
1:D:212:LEU:HD23	1:D:245:TYR:CE2	2.40	0.56
1:G:224:TRP:CE3	1:H:281:ILE:HG13	2.36	0.56
1:H:179:SER:O	1:H:182:GLN:NE2	2.38	0.56
1:H:219:SER:HA	1:H:238:LEU:HD21	1.86	0.56
1:B:252:ILE:HD13	1:C:255:ARG:HG3	1.88	0.56
1:A:212:LEU:HD23	1:A:245:TYR:CE2	2.41	0.56
1:E:264:GLN:HA	1:E:267:ILE:HG13	1.88	0.56
1:I:27:ASN:HB3	1:I:32:THR:HB	1.88	0.56
1:I:175:TYR:CE1	1:I:188:PHE:HD1	2.24	0.56
1:B:94:LEU:HB3	1:B:100:VAL:HG22	1.88	0.56
1:E:116:PHE:HB2	1:E:258:TYR:HE1	1.71	0.56
1:F:44:THR:HA	1:F:99:ARG:HA	1.88	0.56
1:G:175:TYR:CE1	1:G:188:PHE:HD1	2.24	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:16:VAL:HG11	1:I:191:ILE:HD13	1.87	0.56
1:A:19:PHE:CE1	1:A:146:GLN:HG3	2.41	0.55
1:D:298:GLN:HG3	1:D:299:ARG:HG3	1.88	0.55
1:F:72:TRP:CZ2	1:F:74:PRO:HG3	2.40	0.55
1:H:22:LYS:HE3	1:H:24:TYR:HD1	1.71	0.55
1:A:22:LYS:HE3	1:A:24:TYR:HD1	1.72	0.55
1:D:19:PHE:CE1	1:D:146:GLN:HG3	2.41	0.55
1:E:178:LEU:HD11	1:E:182:GLN:HG2	1.89	0.55
1:F:67:ILE:HG22	1:J:62:GLN:OE1	2.06	0.55
1:I:22:LYS:HE3	1:I:24:TYR:CD1	2.40	0.55
1:H:115:ASP:OD2	1:H:117:ARG:NE	2.38	0.55
1:B:264:GLN:HA	1:B:267:ILE:HG13	1.88	0.55
1:C:22:LYS:HE3	1:C:24:TYR:HD1	1.70	0.55
1:E:42:GLN:HB2	1:E:101:ILE:HG12	1.88	0.55
1:B:16:VAL:HG11	1:B:191:ILE:HD13	1.87	0.55
1:I:212:LEU:HD23	1:I:245:TYR:CE2	2.42	0.55
1:E:79:ILE:HD11	1:E:131:GLU:HB3	1.88	0.55
1:G:72:TRP:CZ2	1:G:74:PRO:HG3	2.41	0.55
1:C:19:PHE:CE1	1:C:146:GLN:HG3	2.41	0.55
1:H:252:ILE:HD13	1:I:255:ARG:HG3	1.89	0.55
1:I:72:TRP:HZ3	1:I:135:TYR:CZ	2.25	0.55
1:J:27:ASN:HB3	1:J:32:THR:HB	1.87	0.55
1:H:212:LEU:HD23	1:H:245:TYR:CE2	2.42	0.55
1:B:17:SER:HB2	1:B:40:VAL:HG23	1.88	0.54
1:B:215:ILE:HG12	1:C:239:MET:HE3	1.89	0.54
1:C:27:ASN:HB3	1:C:32:THR:HB	1.87	0.54
1:D:72:TRP:HZ3	1:D:135:TYR:CZ	2.25	0.54
1:B:76:LEU:HB3	1:B:130:LEU:HD21	1.89	0.54
1:I:115:ASP:OD2	1:I:117:ARG:NE	2.38	0.54
1:J:19:PHE:CE1	1:J:146:GLN:HG3	2.42	0.54
1:J:298:GLN:HG3	1:J:299:ARG:HG3	1.89	0.54
1:D:94:LEU:HB3	1:D:100:VAL:HG22	1.89	0.54
1:I:19:PHE:CE1	1:I:146:GLN:HG3	2.42	0.54
1:B:72:TRP:CZ2	1:B:74:PRO:HG3	2.42	0.54
1:C:224:TRP:CE3	1:D:281:ILE:HG13	2.35	0.54
1:A:247:LEU:HD23	1:E:248:TYR:HB2	1.89	0.54
1:C:115:ASP:OD2	1:C:117:ARG:NE	2.38	0.54
1:E:28:THR:HA	1:E:116:PHE:HE1	1.73	0.54
1:G:16:VAL:HG11	1:G:191:ILE:HD13	1.90	0.54
1:F:247:LEU:HD11	1:J:247:LEU:HD12	1.89	0.54
1:B:178:LEU:HD11	1:B:182:GLN:HG2	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:247:LEU:HD12	1:C:247:LEU:HD11	1.89	0.54
1:G:44:THR:HA	1:G:99:ARG:HA	1.89	0.54
1:I:205:LEU:HD23	1:I:209:ILE:HG13	1.89	0.54
1:A:23:ILE:HG21	1:A:126:PHE:CD1	2.42	0.54
1:A:178:LEU:HD11	1:A:182:GLN:HG2	1.90	0.54
1:B:168:THR:O	1:B:169:HIS:HB2	2.06	0.54
1:B:298:GLN:HG3	1:B:299:ARG:HG3	1.89	0.54
1:C:22:LYS:HE3	1:C:24:TYR:CD1	2.43	0.54
1:E:56:LEU:HD22	1:E:57:ILE:H	1.71	0.54
1:B:131:GLU:OE2	1:B:175:TYR:OH	2.23	0.54
1:C:304:PHE:HD1	1:C:305:PRO:HD3	1.72	0.54
1:D:76:LEU:HB3	1:D:130:LEU:HD21	1.90	0.54
1:I:231:ARG:HB3	1:I:280:ILE:HD13	1.90	0.54
1:A:17:SER:HB2	1:A:40:VAL:HG23	1.90	0.53
1:D:44:THR:HA	1:D:99:ARG:HA	1.90	0.53
1:D:226:GLU:OE2	1:E:284:HIS:NE2	2.41	0.53
1:E:215:ILE:HG21	1:E:241:THR:HG21	1.90	0.53
1:I:298:GLN:HG3	1:I:299:ARG:HG3	1.89	0.53
1:B:304:PHE:HD1	1:B:305:PRO:HD3	1.74	0.53
1:D:28:THR:HA	1:D:116:PHE:HE1	1.74	0.53
1:G:252:ILE:HD13	1:H:255:ARG:HG3	1.90	0.53
1:H:22:LYS:HE3	1:H:24:TYR:CD1	2.43	0.53
1:H:178:LEU:HD11	1:H:182:GLN:HG2	1.90	0.53
1:I:131:GLU:OE2	1:I:175:TYR:OH	2.26	0.53
1:I:165:LYS:HD3	1:I:166:ALA:H	1.73	0.53
1:C:28:THR:HA	1:C:116:PHE:HE1	1.74	0.53
1:G:17:SER:HB2	1:G:40:VAL:HG23	1.90	0.53
1:F:22:LYS:HE3	1:F:24:TYR:CD1	2.44	0.53
1:G:298:GLN:HG3	1:G:299:ARG:HG3	1.91	0.53
1:D:205:LEU:HD23	1:D:209:ILE:HG13	1.91	0.53
1:G:219:SER:HA	1:G:238:LEU:HD21	1.90	0.53
1:J:28:THR:HA	1:J:116:PHE:HE1	1.72	0.53
1:A:304:PHE:HD1	1:A:305:PRO:HD3	1.74	0.53
1:E:17:SER:HB2	1:E:40:VAL:HG23	1.91	0.53
1:D:16:VAL:HG11	1:D:191:ILE:HD13	1.90	0.53
1:F:61:THR:HG22	1:F:62:GLN:HE21	1.74	0.53
1:F:205:LEU:HD23	1:F:209:ILE:HG13	1.89	0.53
1:J:17:SER:HB2	1:J:40:VAL:HG23	1.91	0.53
1:B:71:LEU:HD22	1:B:72:TRP:O	2.09	0.53
1:J:119:PHE:HB2	1:J:260:THR:HB	1.91	0.53
1:E:298:GLN:HG3	1:E:299:ARG:HG3	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:28:THR:HA	1:I:116:PHE:HE1	1.73	0.53
1:J:178:LEU:HD11	1:J:182:GLN:HG2	1.92	0.52
1:B:205:LEU:HD23	1:B:209:ILE:HG13	1.91	0.52
1:C:215:ILE:HG12	1:D:239:MET:HE3	1.90	0.52
1:F:212:LEU:HD23	1:F:245:TYR:CE2	2.45	0.52
1:F:252:ILE:HD13	1:G:255:ARG:HG3	1.90	0.52
1:F:281:ILE:HG13	1:J:224:TRP:CE3	2.44	0.52
1:H:28:THR:HA	1:H:116:PHE:HE1	1.74	0.52
1:A:42:GLN:HB2	1:A:101:ILE:HG12	1.91	0.52
1:F:239:MET:HE3	1:J:215:ILE:HG12	1.91	0.52
1:G:165:LYS:HD3	1:G:166:ALA:H	1.74	0.52
1:H:56:LEU:HD22	1:H:57:ILE:H	1.74	0.52
1:I:304:PHE:HD1	1:I:305:PRO:HD3	1.75	0.52
1:C:178:LEU:HD11	1:C:182:GLN:HG2	1.91	0.52
1:F:94:LEU:HB3	1:F:100:VAL:HG22	1.92	0.52
1:G:178:LEU:HD11	1:G:182:GLN:HG2	1.91	0.52
1:B:212:LEU:HD23	1:B:245:TYR:CE2	2.44	0.52
1:E:205:LEU:HD23	1:E:209:ILE:HG13	1.91	0.52
1:F:264:GLN:HA	1:F:267:ILE:HG13	1.92	0.52
1:H:76:LEU:HB3	1:H:130:LEU:HD21	1.91	0.52
1:A:22:LYS:HE3	1:A:24:TYR:CD1	2.45	0.52
1:G:212:LEU:HD23	1:G:245:TYR:CE2	2.44	0.52
1:E:115:ASP:OD2	1:E:117:ARG:NE	2.39	0.52
1:I:211:PRO:O	1:I:215:ILE:HG13	2.10	0.52
1:A:79:ILE:HD11	1:A:131:GLU:HB3	1.92	0.52
1:F:105:ARG:HD3	1:G:77:GLU:OE2	2.10	0.52
1:H:298:GLN:HG3	1:H:299:ARG:HG3	1.92	0.52
1:G:19:PHE:CE1	1:G:146:GLN:HG3	2.45	0.51
1:G:28:THR:HA	1:G:116:PHE:HE1	1.75	0.51
1:G:76:LEU:HB3	1:G:130:LEU:HD21	1.92	0.51
1:I:178:LEU:HD11	1:I:182:GLN:HG2	1.91	0.51
1:J:260:THR:N	1:J:263:ASP:HB2	2.23	0.51
1:D:117:ARG:O	1:D:119:PHE:N	2.43	0.51
1:D:178:LEU:HD11	1:D:182:GLN:HG2	1.92	0.51
1:E:72:TRP:HZ3	1:E:135:TYR:CZ	2.28	0.51
1:F:178:LEU:HD11	1:F:182:GLN:HG2	1.92	0.51
1:F:298:GLN:HG3	1:F:299:ARG:HG3	1.92	0.51
1:B:165:LYS:HD3	1:B:166:ALA:H	1.74	0.51
1:C:232:LEU:HD21	1:C:281:ILE:HD13	1.91	0.51
1:G:140:LEU:HD13	1:G:191:ILE:CG1	2.33	0.51
1:H:63:ILE:O	1:H:67:ILE:HD12	2.09	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:133:PHE:HE2	1:J:91:ARG:HB2	1.76	0.51
1:H:224:TRP:CE3	1:I:281:ILE:HG13	2.42	0.51
1:B:152:ILE:HD11	1:I:152:ILE:HD12	1.92	0.51
1:D:140:LEU:HD12	1:D:189:SER:O	2.10	0.51
1:C:105:ARG:HD3	1:D:77:GLU:OE2	2.11	0.51
1:I:157:ILE:HD13	1:J:258:TYR:CE2	2.46	0.51
1:J:36:ASP:HB2	1:J:107:LEU:HD12	1.93	0.51
1:B:44:THR:HA	1:B:99:ARG:HA	1.93	0.51
1:C:298:GLN:HG3	1:C:299:ARG:HG3	1.91	0.51
1:E:211:PRO:O	1:E:215:ILE:HG13	2.11	0.51
1:H:247:LEU:HD12	1:I:247:LEU:HD11	1.91	0.51
1:D:299:ARG:HA	1:D:301:ARG:HG3	1.92	0.51
1:G:71:LEU:HD22	1:G:72:TRP:O	2.11	0.51
1:F:247:LEU:HD12	1:G:247:LEU:HD11	1.92	0.51
1:B:56:LEU:HD22	1:B:57:ILE:H	1.76	0.50
1:F:211:PRO:O	1:F:215:ILE:HG13	2.11	0.50
1:I:260:THR:N	1:I:263:ASP:HB2	2.23	0.50
1:J:116:PHE:HB2	1:J:258:TYR:CE1	2.46	0.50
1:J:211:PRO:O	1:J:215:ILE:HG13	2.11	0.50
1:A:36:ASP:HB2	1:A:107:LEU:HD12	1.93	0.50
1:A:298:GLN:HG3	1:A:299:ARG:HG3	1.93	0.50
1:G:248:TYR:HB2	1:H:247:LEU:HD23	1.93	0.50
1:J:76:LEU:HB3	1:J:130:LEU:HD21	1.92	0.50
1:G:230:GLU:HB3	1:H:233:GLN:NE2	2.25	0.50
1:D:232:LEU:HD13	1:D:236:PHE:HE1	1.77	0.50
1:B:140:LEU:HD13	1:B:191:ILE:CG1	2.37	0.50
1:C:72:TRP:HZ3	1:C:135:TYR:CZ	2.29	0.50
1:C:72:TRP:CZ2	1:C:74:PRO:HG3	2.47	0.50
1:H:205:LEU:HD23	1:H:209:ILE:HG13	1.94	0.50
1:A:71:LEU:HD22	1:A:72:TRP:O	2.11	0.50
1:G:211:PRO:O	1:G:215:ILE:HG13	2.12	0.50
1:I:299:ARG:HA	1:I:301:ARG:HG3	1.93	0.50
1:J:131:GLU:OE2	1:J:175:TYR:OH	2.28	0.50
1:J:304:PHE:HD1	1:J:305:PRO:HD3	1.77	0.50
1:A:94:LEU:HB3	1:A:100:VAL:HG22	1.94	0.49
1:E:168:THR:O	1:E:169:HIS:HB2	2.12	0.49
1:F:258:TYR:CE2	1:J:157:ILE:HD13	2.47	0.49
1:I:76:LEU:HB3	1:I:130:LEU:HD21	1.94	0.49
1:F:304:PHE:HD1	1:F:305:PRO:HD3	1.77	0.49
1:J:23:ILE:HG21	1:J:126:PHE:CD1	2.47	0.49
1:B:119:PHE:HB2	1:B:260:THR:HB	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:56:LEU:HD22	1:G:57:ILE:N	2.24	0.49
1:G:260:THR:H	1:G:263:ASP:CB	2.22	0.49
1:I:247:LEU:HD12	1:J:247:LEU:HD11	1.94	0.49
1:J:71:LEU:HD22	1:J:72:TRP:O	2.12	0.49
1:A:115:ASP:OD2	1:A:117:ARG:NE	2.38	0.49
1:B:28:THR:HA	1:B:116:PHE:HE1	1.77	0.49
1:D:66:TRP:O	1:D:71:LEU:HB2	2.12	0.49
1:F:168:THR:O	1:F:169:HIS:HB2	2.11	0.49
1:B:72:TRP:HZ3	1:B:135:TYR:CZ	2.30	0.49
1:E:71:LEU:HD22	1:E:72:TRP:O	2.13	0.49
1:G:232:LEU:HD13	1:G:236:PHE:HE1	1.76	0.49
1:A:165:LYS:HD3	1:A:166:ALA:H	1.77	0.49
1:C:76:LEU:HB3	1:C:130:LEU:HD21	1.93	0.49
1:D:165:LYS:HD3	1:D:166:ALA:H	1.76	0.49
1:E:304:PHE:HD1	1:E:305:PRO:HD3	1.76	0.49
1:F:56:LEU:HD22	1:F:57:ILE:N	2.25	0.49
1:H:131:GLU:OE2	1:H:175:TYR:OH	2.28	0.49
1:H:304:PHE:HD1	1:H:305:PRO:HD3	1.76	0.49
1:A:64:GLU:HG3	1:E:61:THR:HG21	1.95	0.49
1:B:248:TYR:HB2	1:C:247:LEU:HD23	1.94	0.49
1:F:72:TRP:HZ3	1:F:135:TYR:CZ	2.30	0.49
1:G:23:ILE:HG21	1:G:126:PHE:CD1	2.47	0.49
1:I:56:LEU:HD22	1:I:57:ILE:N	2.27	0.49
1:J:212:LEU:HD23	1:J:245:TYR:CE2	2.47	0.49
1:A:258:TYR:CE2	1:E:157:ILE:HD13	2.48	0.49
1:C:228:PHE:HE1	1:C:281:ILE:HD12	1.78	0.49
1:F:247:LEU:HD22	1:F:247:LEU:HA	1.56	0.49
1:D:115:ASP:OD2	1:D:117:ARG:NE	2.40	0.48
1:D:211:PRO:O	1:D:215:ILE:HG13	2.12	0.48
1:G:94:LEU:HB3	1:G:100:VAL:HG22	1.95	0.48
1:A:224:TRP:HE3	1:B:281:ILE:HG13	1.78	0.48
1:B:116:PHE:HB2	1:B:258:TYR:CE1	2.46	0.48
1:G:205:LEU:HD23	1:G:205:LEU:HA	1.60	0.48
1:E:172:ASP:C	1:E:173:ILE:HD12	2.38	0.48
1:F:299:ARG:HA	1:F:301:ARG:HG3	1.96	0.48
1:J:299:ARG:HA	1:J:301:ARG:HG3	1.96	0.48
1:F:71:LEU:HD22	1:F:72:TRP:O	2.13	0.48
1:G:72:TRP:HZ3	1:G:135:TYR:CZ	2.31	0.48
1:H:172:ASP:C	1:H:173:ILE:HD12	2.38	0.48
1:I:228:PHE:HE1	1:I:281:ILE:HD12	1.78	0.48
1:D:247:LEU:HD22	1:D:247:LEU:HA	1.57	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:232:LEU:HD21	1:D:281:ILE:HD13	1.96	0.48
1:D:260:THR:N	1:D:263:ASP:HB2	2.24	0.48
1:G:117:ARG:O	1:G:119:PHE:N	2.46	0.48
1:I:224:TRP:HE3	1:J:281:ILE:HG13	1.77	0.48
1:J:94:LEU:HB3	1:J:100:VAL:HG22	1.95	0.48
1:G:205:LEU:HD23	1:G:209:ILE:HG13	1.95	0.48
1:I:205:LEU:HD23	1:I:205:LEU:HA	1.56	0.48
1:J:72:TRP:HZ3	1:J:135:TYR:CZ	2.32	0.48
1:C:56:LEU:HD22	1:C:57:ILE:N	2.28	0.48
1:F:248:TYR:HB2	1:G:247:LEU:HD23	1.96	0.48
1:A:252:ILE:HD13	1:B:255:ARG:HG3	1.95	0.48
1:F:89:ASN:H	1:F:105:ARG:HB3	1.79	0.48
1:C:230:GLU:HB3	1:D:233:GLN:NE2	2.29	0.48
1:G:225:LEU:HD23	1:G:225:LEU:HA	1.75	0.48
1:I:247:LEU:HD22	1:I:247:LEU:HA	1.61	0.48
1:F:165:LYS:HD3	1:F:166:ALA:H	1.79	0.47
1:F:220:TRP:C	1:F:222:VAL:H	2.22	0.47
1:G:215:ILE:HG21	1:G:241:THR:HG21	1.96	0.47
1:H:249:THR:HG23	1:H:253:LEU:HD22	1.96	0.47
1:B:105:ARG:HG3	1:B:106:PHE:N	2.29	0.47
1:H:225:LEU:HD23	1:H:225:LEU:HA	1.77	0.47
1:B:211:PRO:O	1:B:215:ILE:HG13	2.13	0.47
1:B:226:GLU:OE2	1:C:284:HIS:NE2	2.47	0.47
1:E:72:TRP:CZ2	1:E:74:PRO:HG3	2.50	0.47
1:G:299:ARG:HA	1:G:301:ARG:HG3	1.96	0.47
1:H:220:TRP:C	1:H:222:VAL:H	2.22	0.47
1:H:252:ILE:HG22	1:H:253:LEU:HD13	1.97	0.47
1:J:300:CYS:HB2	1:J:303:ALA:HB3	1.96	0.47
1:A:232:LEU:HD13	1:A:236:PHE:HE1	1.79	0.47
1:D:252:ILE:HD13	1:E:255:ARG:HG3	1.97	0.47
1:E:260:THR:N	1:E:263:ASP:HB2	2.23	0.47
1:F:232:LEU:HD21	1:F:281:ILE:HD13	1.96	0.47
1:G:215:ILE:HG23	1:H:239:MET:HG2	1.96	0.47
1:I:58:VAL:HG12	1:I:63:ILE:CD1	2.45	0.47
1:A:72:TRP:HZ3	1:A:135:TYR:CZ	2.33	0.47
1:A:255:ARG:HG3	1:E:252:ILE:HD13	1.96	0.47
1:C:168:THR:O	1:C:169:HIS:HB2	2.14	0.47
1:E:143:SER:HB3	1:E:168:THR:HG21	1.96	0.47
1:G:115:ASP:OD2	1:G:117:ARG:NE	2.39	0.47
1:H:105:ARG:HD3	1:I:77:GLU:OE2	2.14	0.47
1:H:116:PHE:HB2	1:H:258:TYR:CE1	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:143:SER:HB2	1:I:170:ILE:HD11	1.96	0.47
1:E:165:LYS:HD3	1:E:166:ALA:H	1.80	0.47
1:F:215:ILE:HG21	1:F:241:THR:HG21	1.96	0.47
1:G:260:THR:N	1:G:263:ASP:HB2	2.23	0.47
1:H:66:TRP:O	1:H:71:LEU:HB2	2.14	0.47
1:J:205:LEU:HD23	1:J:209:ILE:HG13	1.95	0.47
1:A:119:PHE:HB2	1:A:260:THR:HB	1.96	0.47
1:B:230:GLU:OE1	1:C:229:SER:OG	2.33	0.47
1:C:23:ILE:HG21	1:C:126:PHE:CD1	2.49	0.47
1:C:210:LEU:HD23	1:C:211:PRO:N	2.29	0.47
1:D:116:PHE:HB2	1:D:258:TYR:CE1	2.49	0.47
1:E:119:PHE:HB2	1:E:260:THR:HB	1.96	0.47
1:F:228:PHE:HE1	1:F:281:ILE:HD12	1.79	0.47
1:H:92:LEU:HD23	1:H:92:LEU:HA	1.59	0.47
1:I:140:LEU:HD13	1:I:191:ILE:CG1	2.39	0.47
1:I:232:LEU:HD13	1:I:236:PHE:HE1	1.79	0.47
1:J:33:TYR:OH	1:J:127:VAL:N	2.43	0.47
1:J:215:ILE:HG21	1:J:241:THR:HG21	1.96	0.47
1:J:220:TRP:C	1:J:222:VAL:H	2.23	0.47
1:J:271:GLY:O	1:J:275:ALA:N	2.48	0.47
1:B:61:THR:HG21	1:C:64:GLU:HG3	1.97	0.47
1:B:92:LEU:HD23	1:B:92:LEU:HA	1.60	0.47
1:D:304:PHE:HD1	1:D:305:PRO:HD3	1.79	0.47
1:G:172:ASP:C	1:G:173:ILE:HD12	2.40	0.47
1:G:304:PHE:HD1	1:G:305:PRO:HD3	1.79	0.47
1:H:140:LEU:HD13	1:H:191:ILE:CG1	2.36	0.47
1:J:56:LEU:HD22	1:J:57:ILE:N	2.29	0.47
1:J:168:THR:O	1:J:169:HIS:HB2	2.14	0.47
1:B:172:ASP:C	1:B:173:ILE:HD12	2.40	0.47
1:B:232:LEU:HD21	1:B:281:ILE:HD13	1.96	0.47
1:F:117:ARG:O	1:F:119:PHE:N	2.48	0.47
1:I:260:THR:HG23	1:I:263:ASP:OD2	2.15	0.47
1:D:22:LYS:HE3	1:D:24:TYR:CD1	2.50	0.47
1:H:168:THR:O	1:H:169:HIS:HB2	2.14	0.47
1:I:238:LEU:HD12	1:I:238:LEU:HA	1.84	0.47
1:A:27:ASN:ND2	1:A:30:GLU:HB2	2.30	0.46
1:C:232:LEU:HD13	1:C:236:PHE:HE1	1.80	0.46
1:E:23:ILE:HG21	1:E:126:PHE:CD1	2.50	0.46
1:F:36:ASP:HB2	1:F:107:LEU:HD12	1.98	0.46
1:D:63:ILE:O	1:D:67:ILE:HD12	2.15	0.46
1:D:124:GLN:OE1	1:D:124:GLN:HA	2.14	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:225:LEU:HD23	1:D:225:LEU:HA	1.74	0.46
1:B:294:ASP:HB3	1:B:297:ILE:HB	1.97	0.46
1:D:72:TRP:CZ3	1:D:135:TYR:CZ	3.04	0.46
1:H:71:LEU:HD22	1:H:72:TRP:O	2.16	0.46
1:H:143:SER:HB3	1:H:168:THR:HG21	1.96	0.46
1:I:23:ILE:HG21	1:I:126:PHE:CD1	2.51	0.46
1:E:140:LEU:HD12	1:E:189:SER:O	2.15	0.46
1:I:63:ILE:O	1:I:67:ILE:HD12	2.15	0.46
1:I:72:TRP:CZ3	1:I:135:TYR:CZ	3.04	0.46
1:C:165:LYS:HD3	1:C:166:ALA:H	1.81	0.46
1:C:211:PRO:O	1:C:215:ILE:HG13	2.15	0.46
1:D:131:GLU:OE1	1:D:190:ARG:NE	2.45	0.46
1:D:210:LEU:HD23	1:D:211:PRO:N	2.30	0.46
1:D:264:GLN:O	1:D:267:ILE:N	2.48	0.46
1:H:119:PHE:HB2	1:H:260:THR:HB	1.96	0.46
1:H:248:TYR:HB2	1:I:247:LEU:HD23	1.96	0.46
1:I:92:LEU:HD23	1:I:92:LEU:HA	1.67	0.46
1:I:215:ILE:HG21	1:I:241:THR:HG21	1.97	0.46
1:A:105:ARG:HD3	1:B:77:GLU:OE2	2.16	0.46
1:A:299:ARG:HA	1:A:301:ARG:HG3	1.97	0.46
1:D:36:ASP:HB2	1:D:107:LEU:HD12	1.96	0.46
1:F:205:LEU:HD23	1:F:205:LEU:HA	1.60	0.46
1:J:225:LEU:HD23	1:J:225:LEU:HA	1.69	0.46
1:A:300:CYS:HB2	1:A:303:ALA:HB3	1.97	0.46
1:B:140:LEU:HD12	1:B:189:SER:O	2.15	0.46
1:C:247:LEU:HD22	1:C:247:LEU:HA	1.53	0.46
1:B:117:ARG:O	1:B:119:PHE:N	2.49	0.46
1:D:140:LEU:HD13	1:D:191:ILE:CG1	2.38	0.46
1:F:116:PHE:HB2	1:F:258:TYR:CE1	2.50	0.46
1:F:140:LEU:HD12	1:F:189:SER:O	2.14	0.46
1:G:247:LEU:CD1	1:H:247:LEU:HD11	2.43	0.46
1:J:205:LEU:HD23	1:J:205:LEU:HA	1.57	0.46
1:A:28:THR:HA	1:A:116:PHE:HE1	1.79	0.46
1:A:211:PRO:O	1:A:215:ILE:HG13	2.15	0.46
1:D:228:PHE:HE1	1:D:281:ILE:HD12	1.81	0.46
1:I:220:TRP:C	1:I:222:VAL:H	2.24	0.46
1:J:124:GLN:OE1	1:J:124:GLN:HA	2.15	0.46
1:J:163:ARG:HA	1:J:163:ARG:HD3	1.85	0.46
1:D:61:THR:HG22	1:D:62:GLN:HE21	1.81	0.45
1:E:205:LEU:HD23	1:E:205:LEU:HA	1.68	0.45
1:E:215:ILE:HG21	1:E:241:THR:CG2	2.45	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:210:LEU:HD23	1:F:211:PRO:N	2.31	0.45
1:G:264:GLN:O	1:G:267:ILE:N	2.49	0.45
1:I:116:PHE:HB2	1:I:258:TYR:CE1	2.49	0.45
1:B:300:CYS:HB2	1:B:303:ALA:HB3	1.98	0.45
1:I:178:LEU:HD23	1:I:186:ASN:HB3	1.97	0.45
1:I:232:LEU:HD21	1:I:281:ILE:HD13	1.97	0.45
1:J:66:TRP:O	1:J:71:LEU:HB2	2.17	0.45
1:D:220:TRP:C	1:D:222:VAL:H	2.24	0.45
1:E:299:ARG:HA	1:E:301:ARG:HG3	1.98	0.45
1:F:260:THR:N	1:F:263:ASP:HB2	2.25	0.45
1:H:232:LEU:HD21	1:H:281:ILE:HD13	1.98	0.45
1:J:232:LEU:HD13	1:J:236:PHE:HE1	1.80	0.45
1:F:45:GLY:O	1:F:98:GLY:HA3	2.17	0.45
1:F:63:ILE:O	1:F:67:ILE:HD12	2.17	0.45
1:G:228:PHE:HE1	1:G:281:ILE:HD12	1.82	0.45
1:J:131:GLU:HA	1:J:132:PRO:HD2	1.71	0.45
1:A:116:PHE:HB2	1:A:258:TYR:CE1	2.48	0.45
1:A:168:THR:O	1:A:169:HIS:HB2	2.17	0.45
1:B:118:LEU:H	1:B:118:LEU:HG	1.37	0.45
1:E:228:PHE:HE1	1:E:281:ILE:HD12	1.81	0.45
1:E:232:LEU:HD21	1:E:281:ILE:HD13	1.97	0.45
1:F:27:ASN:ND2	1:F:30:GLU:HB2	2.31	0.45
1:F:119:PHE:HB2	1:F:260:THR:HB	1.99	0.45
1:G:33:TYR:OH	1:G:127:VAL:N	2.43	0.45
1:I:36:ASP:HB2	1:I:107:LEU:HD12	1.99	0.45
1:I:91:ARG:HB2	1:J:133:PHE:HE2	1.81	0.45
1:J:165:LYS:HD3	1:J:166:ALA:H	1.81	0.45
1:A:92:LEU:HD23	1:A:92:LEU:HA	1.61	0.45
1:B:57:ILE:HG12	1:B:93:MET:HG3	1.98	0.45
1:B:232:LEU:HD13	1:B:236:PHE:HE1	1.81	0.45
1:C:119:PHE:C	1:C:121:PHE:H	2.24	0.45
1:C:119:PHE:HB2	1:C:260:THR:HB	1.97	0.45
1:D:33:TYR:OH	1:D:127:VAL:N	2.46	0.45
1:E:94:LEU:HB3	1:E:100:VAL:HG22	1.99	0.45
1:E:178:LEU:HD23	1:E:186:ASN:HB3	1.99	0.45
1:F:178:LEU:HD23	1:F:186:ASN:HB3	1.97	0.45
1:H:57:ILE:CG1	1:H:93:MET:HG3	2.47	0.45
1:J:45:GLY:O	1:J:98:GLY:HA3	2.16	0.45
1:B:220:TRP:C	1:B:222:VAL:H	2.25	0.45
1:D:45:GLY:O	1:D:98:GLY:HA3	2.17	0.45
1:D:119:PHE:HB2	1:D:260:THR:HB	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:205:LEU:HD23	1:D:205:LEU:HA	1.67	0.45
1:D:224:TRP:HE3	1:E:281:ILE:HG13	1.82	0.45
1:D:247:LEU:CD1	1:E:247:LEU:HD11	2.47	0.45
1:G:140:LEU:HD12	1:G:189:SER:O	2.17	0.45
1:H:215:ILE:HG21	1:H:241:THR:HG21	1.98	0.45
1:H:228:PHE:HE1	1:H:281:ILE:HD12	1.82	0.45
1:J:228:PHE:HE1	1:J:281:ILE:HD12	1.82	0.45
1:C:143:SER:HB3	1:C:168:THR:HG21	1.99	0.45
1:D:300:CYS:HB2	1:D:303:ALA:HB3	1.99	0.45
1:E:222:VAL:HG23	1:E:234:THR:HG22	1.97	0.45
1:E:224:TRP:HA	1:E:301:ARG:NH1	2.32	0.45
1:G:58:VAL:HG12	1:G:63:ILE:CD1	2.47	0.45
1:J:260:THR:HG23	1:J:263:ASP:OD2	2.17	0.45
1:A:56:LEU:HD22	1:A:57:ILE:N	2.32	0.44
1:B:119:PHE:C	1:B:121:PHE:H	2.24	0.44
1:H:72:TRP:HZ3	1:H:135:TYR:CZ	2.35	0.44
1:I:236:PHE:C	1:I:238:LEU:H	2.25	0.44
1:J:232:LEU:HD21	1:J:281:ILE:HD13	1.99	0.44
1:J:247:LEU:HA	1:J:247:LEU:HD22	1.60	0.44
1:B:23:ILE:HG21	1:B:126:PHE:CD1	2.51	0.44
1:C:46:LYS:HA	1:C:47:PRO:HD3	1.90	0.44
1:G:72:TRP:CE2	1:G:74:PRO:HG3	2.53	0.44
1:H:215:ILE:HG12	1:I:239:MET:HE3	1.98	0.44
1:I:252:ILE:HG22	1:I:253:LEU:HD13	1.99	0.44
1:A:72:TRP:CE2	1:A:74:PRO:HG3	2.53	0.44
1:E:260:THR:H	1:E:263:ASP:CB	2.24	0.44
1:F:300:CYS:HB2	1:F:303:ALA:HB3	2.00	0.44
1:J:252:ILE:HG22	1:J:253:LEU:HD13	1.99	0.44
1:A:281:ILE:HG13	1:E:224:TRP:CE3	2.50	0.44
1:B:299:ARG:HA	1:B:301:ARG:HG3	1.99	0.44
1:C:215:ILE:HG21	1:C:241:THR:HG21	1.98	0.44
1:E:92:LEU:HD23	1:E:92:LEU:HA	1.71	0.44
1:J:39:ILE:HG22	1:J:104:ALA:HB3	1.99	0.44
1:A:287:GLN:HB2	1:A:288:ALA:H	1.66	0.44
1:C:72:TRP:CZ3	1:C:135:TYR:CZ	3.06	0.44
1:G:61:THR:HG22	1:G:62:GLN:HE21	1.82	0.44
1:G:116:PHE:HB2	1:G:258:TYR:CE1	2.48	0.44
1:G:232:LEU:HD21	1:G:281:ILE:HD13	1.99	0.44
1:H:165:LYS:HD3	1:H:166:ALA:H	1.82	0.44
1:J:232:LEU:O	1:J:234:THR:N	2.51	0.44
1:A:131:GLU:HA	1:A:132:PRO:HD2	1.78	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:205:LEU:HD23	1:B:205:LEU:HA	1.58	0.44
1:D:22:LYS:HE3	1:D:24:TYR:HD1	1.83	0.44
1:E:119:PHE:C	1:E:121:PHE:H	2.26	0.44
1:F:157:ILE:HD13	1:G:258:TYR:CE2	2.52	0.44
1:G:163:ARG:HA	1:G:163:ARG:HD3	1.83	0.44
1:G:300:CYS:HB2	1:G:303:ALA:HB3	2.00	0.44
1:I:232:LEU:O	1:I:234:THR:N	2.50	0.44
1:J:172:ASP:C	1:J:173:ILE:HD12	2.43	0.44
1:B:234:THR:OG1	1:C:233:GLN:HG2	2.18	0.44
1:F:23:ILE:HG21	1:F:126:PHE:CD1	2.53	0.44
1:G:105:ARG:HG3	1:G:106:PHE:N	2.32	0.44
1:G:178:LEU:HD23	1:G:186:ASN:HB3	1.99	0.44
1:J:117:ARG:O	1:J:119:PHE:N	2.50	0.44
1:A:140:LEU:HD13	1:A:191:ILE:CG1	2.43	0.44
1:E:131:GLU:OE1	1:E:190:ARG:NE	2.45	0.44
1:G:105:ARG:HD3	1:H:77:GLU:OE2	2.17	0.44
1:G:215:ILE:HG12	1:H:239:MET:HE3	1.99	0.44
1:H:260:THR:HG23	1:H:263:ASP:OD2	2.18	0.44
1:B:210:LEU:HD23	1:B:211:PRO:N	2.32	0.44
1:F:239:MET:HG2	1:J:215:ILE:HG23	2.00	0.44
1:G:215:ILE:HG21	1:G:241:THR:CG2	2.48	0.44
1:I:119:PHE:HB2	1:I:260:THR:HB	1.99	0.44
1:I:119:PHE:C	1:I:121:PHE:H	2.25	0.44
1:I:215:ILE:HG12	1:J:239:MET:HE3	2.00	0.44
1:C:178:LEU:HD23	1:C:186:ASN:HB3	2.00	0.43
1:C:299:ARG:HA	1:C:301:ARG:HG3	1.99	0.43
1:D:24:TYR:OH	1:D:107:LEU:HD11	2.18	0.43
1:D:118:LEU:H	1:D:118:LEU:HG	1.39	0.43
1:J:143:SER:HB3	1:J:168:THR:HG21	2.00	0.43
1:A:63:ILE:O	1:A:67:ILE:HD12	2.18	0.43
1:A:205:LEU:HD23	1:A:205:LEU:HA	1.59	0.43
1:D:92:LEU:HA	1:D:92:LEU:HD23	1.67	0.43
1:D:253:LEU:HD12	1:D:253:LEU:HA	1.78	0.43
1:F:24:TYR:OH	1:F:107:LEU:HD11	2.17	0.43
1:G:220:TRP:C	1:G:222:VAL:H	2.25	0.43
1:H:211:PRO:O	1:H:215:ILE:HG13	2.18	0.43
1:H:260:THR:N	1:H:263:ASP:HB2	2.28	0.43
1:I:61:THR:HG22	1:I:62:GLN:HE21	1.82	0.43
1:A:58:VAL:HG12	1:A:63:ILE:CD1	2.49	0.43
1:A:118:LEU:H	1:A:118:LEU:HG	1.36	0.43
1:D:71:LEU:HD22	1:D:72:TRP:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:119:PHE:C	1:D:121:PHE:H	2.25	0.43
1:B:39:ILE:HG22	1:B:104:ALA:HB3	2.00	0.43
1:B:224:TRP:CE3	1:C:281:ILE:HG13	2.48	0.43
1:C:118:LEU:H	1:C:118:LEU:HG	1.38	0.43
1:E:204:TYR:O	1:E:208:PHE:HB3	2.18	0.43
1:F:271:GLY:O	1:F:275:ALA:N	2.52	0.43
1:B:215:ILE:HG21	1:B:241:THR:HG21	1.99	0.43
1:B:238:LEU:HD13	1:C:236:PHE:HD2	1.83	0.43
1:C:116:PHE:HB2	1:C:258:TYR:CE1	2.50	0.43
1:C:260:THR:HG23	1:C:263:ASP:OD2	2.17	0.43
1:C:294:ASP:HB3	1:C:297:ILE:HB	2.01	0.43
1:C:313:CYS:O	1:C:316:VAL:HG22	2.18	0.43
1:F:92:LEU:HD23	1:F:92:LEU:HA	1.59	0.43
1:F:119:PHE:C	1:F:121:PHE:H	2.27	0.43
1:G:36:ASP:HB2	1:G:107:LEU:HD12	2.00	0.43
1:H:300:CYS:HB2	1:H:303:ALA:HB3	2.00	0.43
1:J:115:ASP:OD2	1:J:117:ARG:NE	2.46	0.43
1:A:207:SER:HB2	1:B:259:THR:HG22	2.00	0.43
1:C:248:TYR:HB2	1:D:247:LEU:HD23	2.00	0.43
1:D:56:LEU:HD22	1:D:57:ILE:N	2.32	0.43
1:I:156:GLU:HA	1:I:200:ASN:HD21	1.82	0.43
1:I:313:CYS:O	1:I:316:VAL:HG22	2.18	0.43
1:J:216:ILE:O	1:J:219:SER:HB3	2.18	0.43
1:A:66:TRP:O	1:A:71:LEU:HB2	2.19	0.43
1:E:178:LEU:HD13	1:E:182:GLN:HE21	1.83	0.43
1:F:260:THR:O	1:F:264:GLN:HG3	2.18	0.43
1:G:210:LEU:HD23	1:G:211:PRO:N	2.34	0.43
1:G:313:CYS:O	1:G:316:VAL:HG22	2.19	0.43
1:H:45:GLY:O	1:H:98:GLY:HA3	2.19	0.43
1:H:253:LEU:HD12	1:H:253:LEU:HA	1.77	0.43
1:I:72:TRP:CE2	1:I:74:PRO:HG3	2.54	0.43
1:I:225:LEU:HD23	1:I:225:LEU:HA	1.74	0.43
1:A:215:ILE:HG21	1:A:241:THR:HG21	2.00	0.43
1:B:228:PHE:HA	1:B:231:ARG:HH11	1.84	0.43
1:C:220:TRP:C	1:C:222:VAL:H	2.27	0.43
1:F:225:LEU:HA	1:F:225:LEU:HD23	1.73	0.43
1:G:131:GLU:OE2	1:G:175:TYR:OH	2.31	0.43
1:H:131:GLU:HA	1:H:132:PRO:HD2	1.72	0.43
1:A:178:LEU:HD23	1:A:186:ASN:HB3	1.99	0.43
1:A:228:PHE:HA	1:A:231:ARG:HH11	1.84	0.43
1:C:222:VAL:HG23	1:C:234:THR:HG22	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:178:LEU:HD23	1:D:186:ASN:HB3	2.01	0.43
1:E:220:TRP:C	1:E:222:VAL:H	2.27	0.43
1:H:227:SER:HB3	1:H:230:GLU:HG3	2.01	0.43
1:I:287:GLN:HB2	1:I:288:ALA:H	1.67	0.43
1:B:264:GLN:O	1:B:267:ILE:N	2.52	0.43
1:B:271:GLY:O	1:B:275:ALA:N	2.50	0.43
1:G:314:VAL:HA	1:G:317:ILE:HG13	2.00	0.43
1:H:58:VAL:HG12	1:H:63:ILE:CD1	2.48	0.43
1:H:230:GLU:HB3	1:I:233:GLN:NE2	2.34	0.43
1:A:314:VAL:HA	1:A:317:ILE:HG13	2.00	0.42
1:C:205:LEU:HD23	1:C:205:LEU:HA	1.62	0.42
1:C:224:TRP:HA	1:C:301:ARG:NH1	2.34	0.42
1:C:253:LEU:HD12	1:C:253:LEU:HA	1.84	0.42
1:D:156:GLU:HA	1:D:200:ASN:HD21	1.84	0.42
1:G:58:VAL:HG12	1:G:63:ILE:HD12	2.01	0.42
1:H:238:LEU:HD12	1:H:238:LEU:HA	1.78	0.42
1:J:314:VAL:HA	1:J:317:ILE:HG13	2.01	0.42
1:A:232:LEU:HD21	1:A:281:ILE:HD13	2.01	0.42
1:A:313:CYS:O	1:A:316:VAL:HG22	2.19	0.42
1:B:27:ASN:OD1	1:B:28:THR:N	2.51	0.42
1:B:178:LEU:HD23	1:B:186:ASN:HB3	2.01	0.42
1:C:140:LEU:HD13	1:C:191:ILE:CG1	2.38	0.42
1:C:163:ARG:HA	1:C:163:ARG:HD3	1.79	0.42
1:C:300:CYS:HB2	1:C:303:ALA:HB3	2.00	0.42
1:G:27:ASN:ND2	1:G:30:GLU:HB2	2.34	0.42
1:G:72:TRP:CZ3	1:G:135:TYR:CZ	3.07	0.42
1:H:117:ARG:O	1:H:119:PHE:N	2.52	0.42
1:H:210:LEU:HD23	1:H:211:PRO:N	2.35	0.42
1:J:72:TRP:CZ2	1:J:74:PRO:HG3	2.53	0.42
1:A:119:PHE:C	1:A:121:PHE:H	2.26	0.42
1:A:247:LEU:HD22	1:A:247:LEU:HA	1.50	0.42
1:C:117:ARG:O	1:C:119:PHE:N	2.52	0.42
1:C:260:THR:O	1:C:264:GLN:HG3	2.19	0.42
1:D:215:ILE:HG21	1:D:241:THR:HG21	2.01	0.42
1:E:24:TYR:C	1:E:24:TYR:CD2	2.97	0.42
1:F:172:ASP:C	1:F:173:ILE:HD12	2.44	0.42
1:H:61:THR:HG22	1:H:62:GLN:HE21	1.83	0.42
1:H:205:LEU:HD23	1:H:205:LEU:HA	1.63	0.42
1:I:172:ASP:C	1:I:173:ILE:HD12	2.44	0.42
1:A:24:TYR:OH	1:A:107:LEU:HD11	2.19	0.42
1:D:172:ASP:C	1:D:173:ILE:HD12	2.44	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:284:HIS:HD2	1:D:285:HIS:CE1	2.37	0.42
1:E:61:THR:HG22	1:E:62:GLN:HE21	1.84	0.42
1:H:299:ARG:HA	1:H:301:ARG:HG3	2.00	0.42
1:I:66:TRP:O	1:I:71:LEU:HB2	2.19	0.42
1:I:300:CYS:HB2	1:I:303:ALA:HB3	2.00	0.42
1:A:117:ARG:O	1:A:119:PHE:N	2.52	0.42
1:A:247:LEU:HD11	1:E:247:LEU:CD1	2.48	0.42
1:B:46:LYS:HA	1:B:47:PRO:HD3	1.90	0.42
1:D:143:SER:HB3	1:D:168:THR:HG21	2.02	0.42
1:E:294:ASP:HB3	1:E:297:ILE:HB	2.01	0.42
1:A:143:SER:HB3	1:A:168:THR:HG21	2.01	0.42
1:A:228:PHE:HE1	1:A:281:ILE:HD12	1.85	0.42
1:G:119:PHE:HB2	1:G:260:THR:HB	2.02	0.42
1:I:124:GLN:OE1	1:I:124:GLN:HA	2.18	0.42
1:I:163:ARG:HA	1:I:163:ARG:HD3	1.80	0.42
1:B:224:TRP:CD1	1:B:301:ARG:HB3	2.54	0.42
1:D:236:PHE:C	1:D:238:LEU:H	2.28	0.42
1:E:252:ILE:HG22	1:E:253:LEU:HD13	2.00	0.42
1:E:271:GLY:O	1:E:275:ALA:N	2.52	0.42
1:I:117:ARG:O	1:I:119:PHE:N	2.52	0.42
1:I:314:VAL:HA	1:I:317:ILE:HG13	2.02	0.42
1:J:236:PHE:C	1:J:238:LEU:H	2.28	0.42
1:B:36:ASP:HB2	1:B:107:LEU:HD12	2.00	0.42
1:B:131:GLU:HA	1:B:132:PRO:HD2	1.77	0.42
1:D:313:CYS:O	1:D:316:VAL:HG22	2.20	0.42
1:E:36:ASP:HB2	1:E:107:LEU:HD12	2.00	0.42
1:E:116:PHE:HB2	1:E:258:TYR:CE1	2.52	0.42
1:G:202:SER:O	1:G:203:TYR:C	2.63	0.42
1:G:260:THR:O	1:G:264:GLN:HG3	2.20	0.42
1:H:157:ILE:HD13	1:I:258:TYR:CE2	2.54	0.42
1:I:39:ILE:HG22	1:I:104:ALA:HB3	2.01	0.42
1:I:168:THR:O	1:I:169:HIS:HB2	2.19	0.42
1:B:313:CYS:O	1:B:316:VAL:HG22	2.20	0.42
1:C:32:THR:HA	1:C:110:PHE:O	2.19	0.42
1:C:45:GLY:O	1:C:98:GLY:HA3	2.19	0.42
1:C:105:ARG:HG3	1:C:106:PHE:N	2.34	0.42
1:C:232:LEU:O	1:C:234:THR:N	2.53	0.42
1:E:45:GLY:O	1:E:98:GLY:HA3	2.19	0.42
1:F:145:ILE:HG21	1:F:193:VAL:HG11	2.01	0.42
1:F:213:GLY:O	1:F:217:ALA:N	2.48	0.42
1:F:224:TRP:HA	1:F:301:ARG:NH1	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:63:ILE:O	1:G:67:ILE:HD12	2.20	0.42
1:G:294:ASP:HB3	1:G:297:ILE:HB	2.00	0.42
1:H:178:LEU:HD13	1:H:182:GLN:HE21	1.85	0.42
1:H:224:TRP:CD1	1:H:301:ARG:HB3	2.54	0.42
1:I:143:SER:HB3	1:I:168:THR:HG21	2.00	0.42
1:B:260:THR:O	1:B:264:GLN:HG3	2.20	0.42
1:C:172:ASP:C	1:C:173:ILE:HD12	2.45	0.42
1:D:284:HIS:HD2	1:D:285:HIS:ND1	2.17	0.42
1:D:294:ASP:HB3	1:D:297:ILE:HB	2.02	0.42
1:E:131:GLU:OE2	1:E:175:TYR:OH	2.30	0.42
1:E:216:ILE:HD13	1:E:216:ILE:HA	1.94	0.42
1:F:66:TRP:O	1:F:71:LEU:HB2	2.20	0.42
1:H:216:ILE:O	1:H:219:SER:HB3	2.20	0.42
1:I:62:GLN:NE2	1:I:62:GLN:HA	2.35	0.42
1:I:264:GLN:O	1:I:267:ILE:N	2.53	0.42
1:A:133:PHE:HE2	1:E:91:ARG:HB2	1.84	0.41
1:A:294:ASP:HB3	1:A:297:ILE:HB	2.01	0.41
1:B:57:ILE:CG1	1:B:93:MET:HG3	2.50	0.41
1:B:61:THR:HG21	1:C:64:GLU:CG	2.50	0.41
1:B:105:ARG:HD3	1:C:77:GLU:OE2	2.20	0.41
1:D:238:LEU:HD12	1:D:238:LEU:HA	1.88	0.41
1:F:232:LEU:O	1:F:234:THR:N	2.54	0.41
1:I:147:VAL:HB	1:I:165:LYS:NZ	2.35	0.41
1:J:63:ILE:O	1:J:67:ILE:HD12	2.20	0.41
1:J:89:ASN:H	1:J:105:ARG:HB3	1.85	0.41
1:A:213:GLY:O	1:A:217:ALA:N	2.49	0.41
1:A:271:GLY:O	1:A:275:ALA:N	2.53	0.41
1:B:115:ASP:OD2	1:B:117:ARG:NE	2.48	0.41
1:C:215:ILE:HG23	1:D:239:MET:HG2	2.03	0.41
1:D:105:ARG:HG3	1:D:106:PHE:N	2.34	0.41
1:F:216:ILE:O	1:F:219:SER:HB3	2.20	0.41
1:G:147:VAL:HB	1:G:165:LYS:NZ	2.35	0.41
1:H:287:GLN:HB2	1:H:288:ALA:H	1.67	0.41
1:I:120:PRO:HD3	1:I:261:VAL:HB	2.01	0.41
1:J:46:LYS:HA	1:J:47:PRO:HD3	1.84	0.41
1:B:33:TYR:OH	1:B:127:VAL:N	2.46	0.41
1:B:230:GLU:HB3	1:C:233:GLN:NE2	2.35	0.41
1:C:38:TYR:HD2	1:C:105:ARG:HA	1.86	0.41
1:E:63:ILE:O	1:E:67:ILE:HD12	2.20	0.41
1:I:131:GLU:HA	1:I:132:PRO:HD2	1.75	0.41
1:I:145:ILE:HG21	1:I:193:VAL:HG11	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:24:TYR:CD2	1:A:24:TYR:C	2.98	0.41
1:B:287:GLN:HB2	1:B:288:ALA:H	1.61	0.41
1:D:58:VAL:O	1:D:63:ILE:HD11	2.20	0.41
1:D:72:TRP:CZ3	1:D:135:TYR:CE1	3.08	0.41
1:E:210:LEU:HD23	1:E:211:PRO:N	2.35	0.41
1:H:163:ARG:HA	1:H:163:ARG:HD3	1.81	0.41
1:J:145:ILE:HG21	1:J:193:VAL:HG11	2.02	0.41
1:B:45:GLY:O	1:B:98:GLY:HA3	2.20	0.41
1:B:72:TRP:CE2	1:B:74:PRO:HG3	2.56	0.41
1:B:72:TRP:CZ3	1:B:135:TYR:CZ	3.09	0.41
1:C:207:SER:HB2	1:D:259:THR:HG22	2.02	0.41
1:D:120:PRO:HD3	1:D:261:VAL:HB	2.02	0.41
1:H:294:ASP:HB3	1:H:297:ILE:HB	2.01	0.41
1:I:38:TYR:HD2	1:I:105:ARG:HA	1.86	0.41
1:I:46:LYS:HA	1:I:47:PRO:HD3	1.80	0.41
1:J:58:VAL:HG12	1:J:63:ILE:HD12	2.02	0.41
1:A:230:GLU:OE1	1:B:229:SER:OG	2.38	0.41
1:A:260:THR:O	1:A:264:GLN:HG3	2.20	0.41
1:B:238:LEU:HD12	1:B:238:LEU:HA	1.76	0.41
1:D:271:GLY:O	1:D:275:ALA:N	2.54	0.41
1:F:72:TRP:CE2	1:F:74:PRO:HG3	2.56	0.41
1:G:247:LEU:HD22	1:G:247:LEU:HA	1.60	0.41
1:H:119:PHE:C	1:H:121:PHE:H	2.27	0.41
1:C:92:LEU:HD23	1:C:92:LEU:HA	1.67	0.41
1:D:72:TRP:CE2	1:D:74:PRO:HG3	2.56	0.41
1:D:238:LEU:HD13	1:E:236:PHE:CD2	2.55	0.41
1:D:314:VAL:HA	1:D:317:ILE:HG13	2.02	0.41
1:H:40:VAL:HA	1:H:102:TYR:O	2.20	0.41
1:H:271:GLY:O	1:H:275:ALA:N	2.52	0.41
1:I:118:LEU:H	1:I:118:LEU:HG	1.42	0.41
1:J:57:ILE:CG1	1:J:93:MET:HG3	2.50	0.41
1:A:220:TRP:C	1:A:222:VAL:H	2.28	0.41
1:A:264:GLN:O	1:A:267:ILE:N	2.54	0.41
1:B:124:GLN:OE1	1:B:124:GLN:HA	2.19	0.41
1:B:284:HIS:HD2	1:B:285:HIS:ND1	2.19	0.41
1:C:19:PHE:N	1:C:19:PHE:CD1	2.89	0.41
1:C:314:VAL:HA	1:C:317:ILE:HG13	2.02	0.41
1:D:216:ILE:HD13	1:D:216:ILE:HA	1.93	0.41
1:E:260:THR:HG23	1:E:263:ASP:OD2	2.21	0.41
1:E:313:CYS:O	1:E:316:VAL:HG22	2.21	0.41
1:F:247:LEU:HD23	1:J:248:TYR:HB2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:40:VAL:HA	1:I:102:TYR:O	2.20	0.41
1:I:228:PHE:HA	1:I:231:ARG:HH11	1.86	0.41
1:A:13:ASP:HB3	1:A:141:ARG:HE	1.85	0.41
1:A:73:VAL:HA	1:A:74:PRO:HD3	1.95	0.41
1:A:131:GLU:OE2	1:A:175:TYR:OH	2.32	0.41
1:B:260:THR:HG23	1:B:263:ASP:OD2	2.21	0.41
1:C:119:PHE:O	1:C:121:PHE:N	2.54	0.41
1:E:300:CYS:HB2	1:E:303:ALA:HB3	2.03	0.41
1:E:312:GLY:HA2	1:E:315:LEU:HB2	2.03	0.41
1:F:26:VAL:HG21	1:F:160:TRP:HZ2	1.85	0.41
1:F:36:ASP:OD1	1:F:105:ARG:NH2	2.53	0.41
1:F:147:VAL:HB	1:F:165:LYS:NZ	2.36	0.41
1:F:255:ARG:HG3	1:J:252:ILE:HD13	2.03	0.41
1:G:57:ILE:CG1	1:G:93:MET:HG3	2.51	0.41
1:G:253:LEU:HD12	1:G:253:LEU:HA	1.84	0.41
1:H:228:PHE:HA	1:H:231:ARG:HH11	1.86	0.41
1:H:284:HIS:HD2	1:H:285:HIS:CE1	2.39	0.41
1:H:314:VAL:HA	1:H:317:ILE:HG13	2.03	0.41
1:J:105:ARG:HG3	1:J:106:PHE:N	2.35	0.41
1:J:182:GLN:O	1:J:184:ASN:N	2.54	0.41
1:J:210:LEU:HD23	1:J:211:PRO:N	2.35	0.41
1:J:313:CYS:O	1:J:316:VAL:HG22	2.21	0.41
1:A:238:LEU:HD12	1:A:238:LEU:HA	1.88	0.41
1:A:260:THR:HG23	1:A:263:ASP:OD2	2.21	0.41
1:B:38:TYR:HD2	1:B:105:ARG:HA	1.86	0.41
1:C:228:PHE:HA	1:C:231:ARG:HH11	1.86	0.41
1:D:228:PHE:HA	1:D:231:ARG:HH11	1.86	0.41
1:E:105:ARG:HG3	1:E:106:PHE:N	2.36	0.41
1:F:131:GLU:HA	1:F:132:PRO:HD2	1.79	0.41
1:H:247:LEU:HD22	1:H:247:LEU:HA	1.67	0.41
1:I:105:ARG:HD3	1:J:77:GLU:OE2	2.21	0.41
1:J:178:LEU:HD23	1:J:186:ASN:HB3	2.02	0.41
1:C:36:ASP:OD1	1:C:105:ARG:NH2	2.54	0.40
1:C:224:TRP:CD1	1:C:301:ARG:HB3	2.55	0.40
1:F:13:ASP:HB3	1:F:141:ARG:HE	1.86	0.40
1:F:140:LEU:HD13	1:F:191:ILE:CG1	2.46	0.40
1:G:145:ILE:HG21	1:G:193:VAL:HG11	2.02	0.40
1:I:212:LEU:HD11	1:I:265:MET:O	2.21	0.40
1:I:216:ILE:O	1:I:219:SER:HB3	2.21	0.40
1:I:253:LEU:HA	1:I:253:LEU:HD12	1.80	0.40
1:J:58:VAL:HG12	1:J:63:ILE:CD1	2.50	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:143:SER:HB2	1:J:170:ILE:HD11	2.03	0.40
1:J:228:PHE:HA	1:J:231:ARG:HH11	1.84	0.40
1:A:163:ARG:HA	1:A:163:ARG:HD3	1.82	0.40
1:D:260:THR:HG23	1:D:263:ASP:OD2	2.20	0.40
1:E:287:GLN:HB2	1:E:288:ALA:H	1.66	0.40
1:G:61:THR:HG21	1:H:64:GLU:HG3	2.03	0.40
1:G:216:ILE:HD13	1:G:216:ILE:HA	1.95	0.40
1:I:271:GLY:O	1:I:275:ALA:N	2.53	0.40
1:I:294:ASP:HB3	1:I:297:ILE:HB	2.03	0.40
1:B:224:TRP:HA	1:B:301:ARG:NH1	2.36	0.40
1:B:228:PHE:HE1	1:B:281:ILE:HD12	1.86	0.40
1:C:61:THR:HG22	1:C:62:GLN:HE21	1.87	0.40
1:D:143:SER:HB2	1:D:170:ILE:HD11	2.02	0.40
1:E:184:ASN:O	1:E:185:GLN:HG3	2.22	0.40
1:G:271:GLY:O	1:G:275:ALA:N	2.54	0.40
1:I:33:TYR:OH	1:I:127:VAL:N	2.50	0.40
1:A:68:ASN:ND2	1:E:65:ARG:HD2	2.36	0.40
1:A:172:ASP:C	1:A:173:ILE:HD12	2.45	0.40
1:B:119:PHE:C	1:B:121:PHE:N	2.80	0.40
1:B:260:THR:N	1:B:263:ASP:HB2	2.28	0.40
1:C:182:GLN:O	1:C:184:ASN:N	2.54	0.40
1:D:39:ILE:HG22	1:D:104:ALA:HB3	2.03	0.40
1:E:56:LEU:HD22	1:E:57:ILE:N	2.36	0.40
1:G:116:PHE:HE2	1:G:124:GLN:HE21	1.69	0.40
1:H:13:ASP:HB3	1:H:141:ARG:HE	1.85	0.40
1:J:140:LEU:HD12	1:J:189:SER:O	2.22	0.40
1:B:24:TYR:CD2	1:B:24:TYR:C	2.99	0.40
1:B:32:THR:HA	1:B:110:PHE:O	2.21	0.40
1:B:56:LEU:HD22	1:B:57:ILE:N	2.37	0.40
1:B:143:SER:HB3	1:B:168:THR:HG21	2.04	0.40
1:E:117:ARG:O	1:E:119:PHE:N	2.55	0.40
1:F:72:TRP:CZ3	1:F:135:TYR:CE1	3.09	0.40
1:F:260:THR:HG23	1:F:263:ASP:OD2	2.21	0.40
1:G:40:VAL:HA	1:G:102:TYR:O	2.22	0.40
1:I:77:GLU:HG2	1:I:78:PHE:N	2.37	0.40
1:I:178:LEU:HD13	1:I:182:GLN:HE21	1.87	0.40
1:J:215:ILE:HG21	1:J:241:THR:CG2	2.52	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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	305/324 (94%)	235 (77%)	53 (17%)	17 (6%)	1	15
1	B	305/324 (94%)	230 (75%)	56 (18%)	19 (6%)	1	13
1	C	305/324 (94%)	233 (76%)	56 (18%)	16 (5%)	1	16
1	D	305/324 (94%)	233 (76%)	55 (18%)	17 (6%)	1	15
1	E	305/324 (94%)	235 (77%)	50 (16%)	20 (7%)	1	12
1	F	305/324 (94%)	235 (77%)	51 (17%)	19 (6%)	1	13
1	G	305/324 (94%)	232 (76%)	57 (19%)	16 (5%)	1	16
1	H	305/324 (94%)	234 (77%)	52 (17%)	19 (6%)	1	13
1	I	305/324 (94%)	235 (77%)	55 (18%)	15 (5%)	1	16
1	J	305/324 (94%)	232 (76%)	55 (18%)	18 (6%)	1	14
All	All	3050/3240 (94%)	2334 (76%)	540 (18%)	176 (6%)	1	14

All (176) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	151	ASN
1	A	169	HIS
1	A	202	SER
1	B	119	PHE
1	B	151	ASN
1	B	169	HIS
1	B	202	SER
1	C	151	ASN
1	C	169	HIS
1	C	202	SER
1	D	118	LEU
1	D	151	ASN
1	D	169	HIS
1	D	200	ASN

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Mol	Chain	Res	Type
1	D	202	SER
1	E	151	ASN
1	E	169	HIS
1	E	202	SER
1	F	118	LEU
1	F	151	ASN
1	F	169	HIS
1	F	202	SER
1	G	151	ASN
1	G	169	HIS
1	G	202	SER
1	H	151	ASN
1	H	169	HIS
1	H	202	SER
1	I	118	LEU
1	I	151	ASN
1	I	169	HIS
1	I	202	SER
1	J	151	ASN
1	J	169	HIS
1	J	202	SER
1	A	25	GLY
1	A	118	LEU
1	A	176	ASP
1	A	289	ASN
1	B	25	GLY
1	B	118	LEU
1	B	176	ASP
1	B	289	ASN
1	C	25	GLY
1	C	118	LEU
1	C	119	PHE
1	C	176	ASP
1	C	289	ASN
1	D	25	GLY
1	D	119	PHE
1	D	176	ASP
1	D	289	ASN
1	E	25	GLY
1	E	118	LEU
1	E	176	ASP
1	E	289	ASN

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Mol	Chain	Res	Type
1	F	25	GLY
1	F	119	PHE
1	F	176	ASP
1	F	233	GLN
1	F	289	ASN
1	G	25	GLY
1	G	118	LEU
1	G	119	PHE
1	G	176	ASP
1	G	289	ASN
1	H	25	GLY
1	H	118	LEU
1	H	176	ASP
1	H	289	ASN
1	I	25	GLY
1	I	176	ASP
1	I	200	ASN
1	I	289	ASN
1	J	25	GLY
1	J	118	LEU
1	J	119	PHE
1	J	176	ASP
1	J	289	ASN
1	A	85	PRO
1	A	119	PHE
1	A	233	GLN
1	B	85	PRO
1	B	233	GLN
1	C	233	GLN
1	D	233	GLN
1	E	85	PRO
1	E	119	PHE
1	E	200	ASN
1	E	233	GLN
1	G	233	GLN
1	H	119	PHE
1	H	233	GLN
1	I	85	PRO
1	I	233	GLN
1	J	85	PRO
1	J	233	GLN
1	A	163	ARG

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Mol	Chain	Res	Type
1	A	301	ARG
1	C	85	PRO
1	C	141	ARG
1	C	163	ARG
1	D	85	PRO
1	D	301	ARG
1	E	141	ARG
1	E	163	ARG
1	F	85	PRO
1	F	163	ARG
1	F	200	ASN
1	F	301	ARG
1	G	85	PRO
1	H	85	PRO
1	H	141	ARG
1	H	163	ARG
1	H	301	ARG
1	I	119	PHE
1	I	301	ARG
1	J	163	ARG
1	J	200	ASN
1	J	301	ARG
1	A	155	GLU
1	A	200	ASN
1	A	257	PRO
1	B	141	ARG
1	B	155	GLU
1	B	200	ASN
1	B	257	PRO
1	C	257	PRO
1	D	163	ARG
1	D	257	PRO
1	E	232	LEU
1	F	141	ARG
1	F	155	GLU
1	G	155	GLU
1	G	200	ASN
1	G	257	PRO
1	G	301	ARG
1	H	200	ASN
1	I	163	ARG
1	J	218	ALA

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Mol	Chain	Res	Type
1	J	221	SER
1	J	257	PRO
1	A	152	ILE
1	B	152	ILE
1	B	163	ARG
1	B	221	SER
1	C	200	ASN
1	D	47	PRO
1	E	47	PRO
1	E	152	ILE
1	E	257	PRO
1	E	301	ARG
1	F	257	PRO
1	G	145	ILE
1	H	152	ILE
1	H	155	GLU
1	H	221	SER
1	H	257	PRO
1	I	152	ILE
1	C	152	ILE
1	D	152	ILE
1	G	152	ILE
1	J	152	ILE
1	B	145	ILE
1	C	145	ILE
1	F	152	ILE
1	A	145	ILE
1	D	145	ILE
1	E	145	ILE
1	H	145	ILE
1	B	47	PRO
1	E	181	VAL
1	F	47	PRO
1	F	145	ILE
1	I	257	PRO
1	J	145	ILE

5.3.2 Protein sidechains ⓘ

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	274/284 (96%)	206 (75%)	68 (25%)	1	4
1	B	274/284 (96%)	205 (75%)	69 (25%)	0	4
1	C	274/284 (96%)	206 (75%)	68 (25%)	1	4
1	D	274/284 (96%)	208 (76%)	66 (24%)	1	5
1	E	274/284 (96%)	206 (75%)	68 (25%)	1	4
1	F	274/284 (96%)	208 (76%)	66 (24%)	1	5
1	G	274/284 (96%)	209 (76%)	65 (24%)	1	5
1	H	274/284 (96%)	208 (76%)	66 (24%)	1	5
1	I	274/284 (96%)	206 (75%)	68 (25%)	1	4
1	J	274/284 (96%)	206 (75%)	68 (25%)	1	4
All	All	2740/2840 (96%)	2068 (76%)	672 (24%)	1	5

All (672) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	12	VAL
1	A	16	VAL
1	A	18	ILE
1	A	20	ILE
1	A	26	VAL
1	A	29	LEU
1	A	39	ILE
1	A	40	VAL
1	A	43	TRP
1	A	49	LYS
1	A	56	LEU
1	A	63	ILE
1	A	67	ILE
1	A	71	LEU
1	A	72	TRP
1	A	73	VAL
1	A	82	VAL
1	A	87	THR
1	A	90	LYS
1	A	94	LEU
1	A	107	LEU
1	A	109	SER

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Mol	Chain	Res	Type
1	A	118	LEU
1	A	128	LEU
1	A	130	LEU
1	A	131	GLU
1	A	134	SER
1	A	138	GLN
1	A	144	ASP
1	A	145	ILE
1	A	146	GLN
1	A	149	THR
1	A	150	GLU
1	A	152	ILE
1	A	157	ILE
1	A	162	ILE
1	A	163	ARG
1	A	168	THR
1	A	177	HIS
1	A	178	LEU
1	A	179	SER
1	A	186	ASN
1	A	209	ILE
1	A	210	LEU
1	A	212	LEU
1	A	214	LEU
1	A	215	ILE
1	A	216	ILE
1	A	219	SER
1	A	229	SER
1	A	232	LEU
1	A	234	THR
1	A	247	LEU
1	A	252	ILE
1	A	253	LEU
1	A	255	ARG
1	A	258	TYR
1	A	259	THR
1	A	260	THR
1	A	262	ILE
1	A	267	ILE
1	A	281	ILE
1	A	285	HIS
1	A	287	GLN

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Mol	Chain	Res	Type
1	A	291	VAL
1	A	296	LEU
1	A	304	PHE
1	A	315	LEU
1	B	12	VAL
1	B	16	VAL
1	B	18	ILE
1	B	20	ILE
1	B	26	VAL
1	B	29	LEU
1	B	39	ILE
1	B	40	VAL
1	B	43	TRP
1	B	49	LYS
1	B	56	LEU
1	B	63	ILE
1	B	67	ILE
1	B	71	LEU
1	B	72	TRP
1	B	73	VAL
1	B	82	VAL
1	B	87	THR
1	B	90	LYS
1	B	92	LEU
1	B	94	LEU
1	B	107	LEU
1	B	109	SER
1	B	118	LEU
1	B	128	LEU
1	B	130	LEU
1	B	131	GLU
1	B	134	SER
1	B	138	GLN
1	B	144	ASP
1	B	145	ILE
1	B	146	GLN
1	B	149	THR
1	B	150	GLU
1	B	152	ILE
1	B	157	ILE
1	B	162	ILE
1	B	163	ARG

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Mol	Chain	Res	Type
1	B	168	THR
1	B	177	HIS
1	B	178	LEU
1	B	179	SER
1	B	186	ASN
1	B	209	ILE
1	B	210	LEU
1	B	212	LEU
1	B	214	LEU
1	B	215	ILE
1	B	216	ILE
1	B	219	SER
1	B	229	SER
1	B	232	LEU
1	B	234	THR
1	B	247	LEU
1	B	252	ILE
1	B	253	LEU
1	B	255	ARG
1	B	258	TYR
1	B	259	THR
1	B	260	THR
1	B	262	ILE
1	B	267	ILE
1	B	281	ILE
1	B	285	HIS
1	B	287	GLN
1	B	291	VAL
1	B	296	LEU
1	B	304	PHE
1	B	315	LEU
1	C	12	VAL
1	C	16	VAL
1	C	18	ILE
1	C	20	ILE
1	C	26	VAL
1	C	29	LEU
1	C	39	ILE
1	C	40	VAL
1	C	43	TRP
1	C	49	LYS
1	C	56	LEU

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Mol	Chain	Res	Type
1	C	63	ILE
1	C	67	ILE
1	C	71	LEU
1	C	72	TRP
1	C	73	VAL
1	C	82	VAL
1	C	87	THR
1	C	90	LYS
1	C	94	LEU
1	C	107	LEU
1	C	109	SER
1	C	118	LEU
1	C	128	LEU
1	C	130	LEU
1	C	131	GLU
1	C	134	SER
1	C	138	GLN
1	C	144	ASP
1	C	145	ILE
1	C	146	GLN
1	C	149	THR
1	C	150	GLU
1	C	152	ILE
1	C	157	ILE
1	C	162	ILE
1	C	163	ARG
1	C	168	THR
1	C	177	HIS
1	C	178	LEU
1	C	179	SER
1	C	186	ASN
1	C	209	ILE
1	C	210	LEU
1	C	212	LEU
1	C	214	LEU
1	C	215	ILE
1	C	216	ILE
1	C	219	SER
1	C	229	SER
1	C	232	LEU
1	C	234	THR
1	C	247	LEU

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Mol	Chain	Res	Type
1	C	252	ILE
1	C	253	LEU
1	C	255	ARG
1	C	258	TYR
1	C	259	THR
1	C	260	THR
1	C	262	ILE
1	C	267	ILE
1	C	281	ILE
1	C	285	HIS
1	C	287	GLN
1	C	291	VAL
1	C	296	LEU
1	C	304	PHE
1	C	315	LEU
1	D	12	VAL
1	D	16	VAL
1	D	18	ILE
1	D	20	ILE
1	D	26	VAL
1	D	29	LEU
1	D	39	ILE
1	D	40	VAL
1	D	43	TRP
1	D	49	LYS
1	D	56	LEU
1	D	63	ILE
1	D	67	ILE
1	D	71	LEU
1	D	72	TRP
1	D	73	VAL
1	D	82	VAL
1	D	87	THR
1	D	90	LYS
1	D	94	LEU
1	D	109	SER
1	D	118	LEU
1	D	128	LEU
1	D	130	LEU
1	D	131	GLU
1	D	134	SER
1	D	138	GLN

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Mol	Chain	Res	Type
1	D	144	ASP
1	D	145	ILE
1	D	146	GLN
1	D	149	THR
1	D	150	GLU
1	D	152	ILE
1	D	157	ILE
1	D	162	ILE
1	D	163	ARG
1	D	168	THR
1	D	177	HIS
1	D	178	LEU
1	D	179	SER
1	D	186	ASN
1	D	209	ILE
1	D	210	LEU
1	D	212	LEU
1	D	214	LEU
1	D	215	ILE
1	D	216	ILE
1	D	229	SER
1	D	232	LEU
1	D	234	THR
1	D	247	LEU
1	D	252	ILE
1	D	253	LEU
1	D	255	ARG
1	D	258	TYR
1	D	259	THR
1	D	260	THR
1	D	262	ILE
1	D	267	ILE
1	D	281	ILE
1	D	285	HIS
1	D	287	GLN
1	D	291	VAL
1	D	296	LEU
1	D	304	PHE
1	D	315	LEU
1	E	12	VAL
1	E	16	VAL
1	E	18	ILE

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Mol	Chain	Res	Type
1	E	20	ILE
1	E	26	VAL
1	E	29	LEU
1	E	39	ILE
1	E	40	VAL
1	E	43	TRP
1	E	49	LYS
1	E	56	LEU
1	E	63	ILE
1	E	67	ILE
1	E	71	LEU
1	E	72	TRP
1	E	73	VAL
1	E	82	VAL
1	E	87	THR
1	E	90	LYS
1	E	92	LEU
1	E	94	LEU
1	E	109	SER
1	E	118	LEU
1	E	128	LEU
1	E	130	LEU
1	E	131	GLU
1	E	134	SER
1	E	138	GLN
1	E	144	ASP
1	E	145	ILE
1	E	146	GLN
1	E	149	THR
1	E	150	GLU
1	E	152	ILE
1	E	157	ILE
1	E	162	ILE
1	E	163	ARG
1	E	168	THR
1	E	177	HIS
1	E	178	LEU
1	E	179	SER
1	E	186	ASN
1	E	209	ILE
1	E	210	LEU
1	E	212	LEU

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Mol	Chain	Res	Type
1	E	214	LEU
1	E	215	ILE
1	E	216	ILE
1	E	219	SER
1	E	229	SER
1	E	232	LEU
1	E	234	THR
1	E	247	LEU
1	E	252	ILE
1	E	253	LEU
1	E	255	ARG
1	E	258	TYR
1	E	259	THR
1	E	260	THR
1	E	262	ILE
1	E	267	ILE
1	E	281	ILE
1	E	285	HIS
1	E	287	GLN
1	E	291	VAL
1	E	296	LEU
1	E	304	PHE
1	E	315	LEU
1	F	12	VAL
1	F	16	VAL
1	F	18	ILE
1	F	20	ILE
1	F	26	VAL
1	F	29	LEU
1	F	39	ILE
1	F	40	VAL
1	F	43	TRP
1	F	49	LYS
1	F	56	LEU
1	F	63	ILE
1	F	67	ILE
1	F	71	LEU
1	F	72	TRP
1	F	73	VAL
1	F	82	VAL
1	F	87	THR
1	F	94	LEU

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Mol	Chain	Res	Type
1	F	107	LEU
1	F	109	SER
1	F	118	LEU
1	F	128	LEU
1	F	130	LEU
1	F	131	GLU
1	F	134	SER
1	F	138	GLN
1	F	144	ASP
1	F	145	ILE
1	F	146	GLN
1	F	149	THR
1	F	150	GLU
1	F	152	ILE
1	F	157	ILE
1	F	162	ILE
1	F	163	ARG
1	F	168	THR
1	F	177	HIS
1	F	178	LEU
1	F	186	ASN
1	F	209	ILE
1	F	210	LEU
1	F	212	LEU
1	F	214	LEU
1	F	215	ILE
1	F	216	ILE
1	F	219	SER
1	F	229	SER
1	F	232	LEU
1	F	234	THR
1	F	247	LEU
1	F	252	ILE
1	F	253	LEU
1	F	255	ARG
1	F	258	TYR
1	F	259	THR
1	F	260	THR
1	F	262	ILE
1	F	267	ILE
1	F	281	ILE
1	F	285	HIS

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Mol	Chain	Res	Type
1	F	287	GLN
1	F	291	VAL
1	F	296	LEU
1	F	304	PHE
1	F	315	LEU
1	G	12	VAL
1	G	16	VAL
1	G	18	ILE
1	G	20	ILE
1	G	26	VAL
1	G	29	LEU
1	G	39	ILE
1	G	40	VAL
1	G	43	TRP
1	G	49	LYS
1	G	56	LEU
1	G	67	ILE
1	G	71	LEU
1	G	72	TRP
1	G	73	VAL
1	G	82	VAL
1	G	87	THR
1	G	90	LYS
1	G	94	LEU
1	G	109	SER
1	G	118	LEU
1	G	128	LEU
1	G	130	LEU
1	G	131	GLU
1	G	134	SER
1	G	138	GLN
1	G	144	ASP
1	G	145	ILE
1	G	146	GLN
1	G	149	THR
1	G	150	GLU
1	G	152	ILE
1	G	157	ILE
1	G	162	ILE
1	G	163	ARG
1	G	168	THR
1	G	177	HIS

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Mol	Chain	Res	Type
1	G	178	LEU
1	G	179	SER
1	G	186	ASN
1	G	209	ILE
1	G	210	LEU
1	G	212	LEU
1	G	214	LEU
1	G	215	ILE
1	G	216	ILE
1	G	229	SER
1	G	232	LEU
1	G	234	THR
1	G	247	LEU
1	G	252	ILE
1	G	253	LEU
1	G	255	ARG
1	G	258	TYR
1	G	259	THR
1	G	260	THR
1	G	262	ILE
1	G	267	ILE
1	G	281	ILE
1	G	285	HIS
1	G	287	GLN
1	G	291	VAL
1	G	296	LEU
1	G	304	PHE
1	G	315	LEU
1	H	12	VAL
1	H	16	VAL
1	H	18	ILE
1	H	20	ILE
1	H	26	VAL
1	H	29	LEU
1	H	39	ILE
1	H	40	VAL
1	H	43	TRP
1	H	49	LYS
1	H	56	LEU
1	H	63	ILE
1	H	67	ILE
1	H	71	LEU

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Mol	Chain	Res	Type
1	H	72	TRP
1	H	73	VAL
1	H	82	VAL
1	H	87	THR
1	H	90	LYS
1	H	94	LEU
1	H	107	LEU
1	H	109	SER
1	H	118	LEU
1	H	128	LEU
1	H	130	LEU
1	H	131	GLU
1	H	134	SER
1	H	138	GLN
1	H	144	ASP
1	H	145	ILE
1	H	146	GLN
1	H	149	THR
1	H	150	GLU
1	H	152	ILE
1	H	157	ILE
1	H	162	ILE
1	H	163	ARG
1	H	168	THR
1	H	177	HIS
1	H	178	LEU
1	H	179	SER
1	H	186	ASN
1	H	209	ILE
1	H	210	LEU
1	H	212	LEU
1	H	215	ILE
1	H	216	ILE
1	H	229	SER
1	H	232	LEU
1	H	234	THR
1	H	247	LEU
1	H	252	ILE
1	H	253	LEU
1	H	255	ARG
1	H	258	TYR
1	H	259	THR

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Mol	Chain	Res	Type
1	H	260	THR
1	H	262	ILE
1	H	267	ILE
1	H	281	ILE
1	H	285	HIS
1	H	287	GLN
1	H	291	VAL
1	H	296	LEU
1	H	304	PHE
1	H	315	LEU
1	I	12	VAL
1	I	16	VAL
1	I	18	ILE
1	I	20	ILE
1	I	26	VAL
1	I	29	LEU
1	I	39	ILE
1	I	40	VAL
1	I	43	TRP
1	I	49	LYS
1	I	56	LEU
1	I	63	ILE
1	I	67	ILE
1	I	71	LEU
1	I	72	TRP
1	I	73	VAL
1	I	82	VAL
1	I	87	THR
1	I	90	LYS
1	I	94	LEU
1	I	107	LEU
1	I	109	SER
1	I	118	LEU
1	I	128	LEU
1	I	130	LEU
1	I	131	GLU
1	I	134	SER
1	I	138	GLN
1	I	144	ASP
1	I	145	ILE
1	I	146	GLN
1	I	149	THR

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Mol	Chain	Res	Type
1	I	150	GLU
1	I	152	ILE
1	I	157	ILE
1	I	162	ILE
1	I	163	ARG
1	I	168	THR
1	I	177	HIS
1	I	178	LEU
1	I	186	ASN
1	I	209	ILE
1	I	210	LEU
1	I	212	LEU
1	I	214	LEU
1	I	215	ILE
1	I	216	ILE
1	I	219	SER
1	I	229	SER
1	I	232	LEU
1	I	234	THR
1	I	247	LEU
1	I	252	ILE
1	I	253	LEU
1	I	255	ARG
1	I	258	TYR
1	I	259	THR
1	I	260	THR
1	I	262	ILE
1	I	267	ILE
1	I	277	ILE
1	I	281	ILE
1	I	285	HIS
1	I	287	GLN
1	I	291	VAL
1	I	296	LEU
1	I	304	PHE
1	I	315	LEU
1	J	12	VAL
1	J	16	VAL
1	J	18	ILE
1	J	20	ILE
1	J	26	VAL
1	J	29	LEU

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Mol	Chain	Res	Type
1	J	39	ILE
1	J	40	VAL
1	J	43	TRP
1	J	49	LYS
1	J	56	LEU
1	J	62	GLN
1	J	63	ILE
1	J	67	ILE
1	J	71	LEU
1	J	72	TRP
1	J	73	VAL
1	J	82	VAL
1	J	87	THR
1	J	90	LYS
1	J	94	LEU
1	J	109	SER
1	J	118	LEU
1	J	124	GLN
1	J	128	LEU
1	J	130	LEU
1	J	131	GLU
1	J	134	SER
1	J	138	GLN
1	J	144	ASP
1	J	145	ILE
1	J	146	GLN
1	J	149	THR
1	J	150	GLU
1	J	152	ILE
1	J	157	ILE
1	J	162	ILE
1	J	163	ARG
1	J	168	THR
1	J	177	HIS
1	J	178	LEU
1	J	186	ASN
1	J	209	ILE
1	J	210	LEU
1	J	212	LEU
1	J	214	LEU
1	J	215	ILE
1	J	216	ILE

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Mol	Chain	Res	Type
1	J	219	SER
1	J	229	SER
1	J	232	LEU
1	J	234	THR
1	J	247	LEU
1	J	252	ILE
1	J	253	LEU
1	J	255	ARG
1	J	258	TYR
1	J	259	THR
1	J	260	THR
1	J	262	ILE
1	J	267	ILE
1	J	281	ILE
1	J	285	HIS
1	J	287	GLN
1	J	291	VAL
1	J	296	LEU
1	J	304	PHE
1	J	315	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (41) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	31	GLN
1	A	62	GLN
1	A	136	ASN
1	A	251	ASN
1	A	264	GLN
1	A	284	HIS
1	B	62	GLN
1	B	103	ASN
1	B	264	GLN
1	B	284	HIS
1	C	62	GLN
1	C	251	ASN
1	C	284	HIS
1	D	62	GLN
1	D	200	ASN
1	D	264	GLN
1	D	284	HIS
1	E	62	GLN

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Mol	Chain	Res	Type
1	E	251	ASN
1	E	264	GLN
1	E	284	HIS
1	F	31	GLN
1	F	62	GLN
1	F	68	ASN
1	F	136	ASN
1	F	264	GLN
1	F	284	HIS
1	G	62	GLN
1	G	264	GLN
1	G	284	HIS
1	H	62	GLN
1	H	136	ASN
1	H	284	HIS
1	I	62	GLN
1	I	200	ASN
1	I	284	HIS
1	J	62	GLN
1	J	68	ASN
1	J	251	ASN
1	J	264	GLN
1	J	284	HIS

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 oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 1 ligands modelled in this entry, 1 is monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	307/324 (94%)	-0.39	1 (0%) 90 80	83, 137, 287, 353	0
1	B	307/324 (94%)	-0.33	1 (0%) 90 80	80, 134, 284, 357	0
1	C	307/324 (94%)	-0.37	2 (0%) 84 70	80, 135, 285, 355	0
1	D	307/324 (94%)	-0.29	1 (0%) 90 80	79, 135, 285, 354	0
1	E	307/324 (94%)	-0.35	0 100 100	79, 138, 287, 356	0
1	F	307/324 (94%)	-0.37	1 (0%) 90 80	81, 137, 284, 360	0
1	G	307/324 (94%)	-0.39	1 (0%) 90 80	81, 135, 281, 354	0
1	H	307/324 (94%)	-0.37	0 100 100	82, 136, 286, 357	0
1	I	307/324 (94%)	-0.30	3 (0%) 79 63	80, 135, 286, 351	0
1	J	307/324 (94%)	-0.38	0 100 100	81, 136, 282, 356	0
All	All	3070/3240 (94%)	-0.35	10 (0%) 90 80	79, 136, 287, 360	0

All (10) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	179	SER	4.5
1	B	315	LEU	4.2
1	A	179	SER	4.0
1	I	157	ILE	3.0
1	I	297	ILE	2.4
1	F	288	ALA	2.3
1	C	315	LEU	2.3
1	G	157	ILE	2.1
1	I	179	SER	2.1
1	C	288	ALA	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 oligosaccharides in this entry.

6.4 Ligands [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	NA	F	323	1/1	0.99	0.17	50,50,50,50	0

6.5 Other polymers [i](#)

There are no such residues in this entry.