



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 02:21 PM GMT

PDB ID : 3WWK
Title : Crystal structure of CLEC-2 in complex with rhodocytin
Authors : Nagae, M.; Morita-Matsumoto, K.; Kato, M.; Kato-Kaneko, M.; Kato, Y.; Yamaguchi, Y.
Deposited on : 2014-06-20
Resolution : 2.98 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 ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.7 (RC4), CSD as536be (2015)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20026688
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac : 5.8.0135
CCP4 : 6.5.0
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk26865

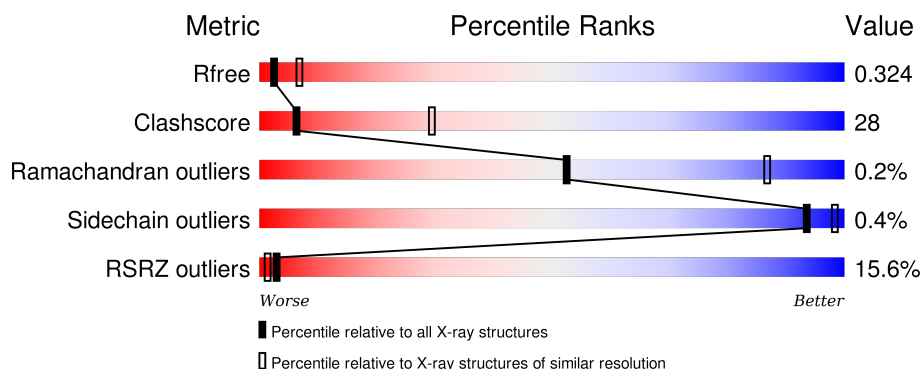
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.98 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	1992 (3.00-2.96)
Clashscore	102246	2349 (3.00-2.96)
Ramachandran outliers	100387	2274 (3.00-2.96)
Sidechain outliers	100360	2277 (3.00-2.96)
RSRZ outliers	91569	2007 (3.00-2.96)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments 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 $\leq 5\%$. 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	C	128	<div> <div>24%</div> <div>74%</div> <div>21%</div> <div>5%</div> </div>
1	F	128	<div> <div>40%</div> <div>69%</div> <div>27%</div> <div>5%</div> </div>
1	I	128	<div> <div>13%</div> <div>73%</div> <div>22%</div> <div>5%</div> </div>
1	L	128	<div> <div>28%</div> <div>46%</div> <div>48%</div> <div>• 5%</div> </div>
2	A	136	<div> <div>11%</div> <div>66%</div> <div>26%</div> <div>• • •</div> </div>

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Mol	Chain	Length	Quality of chain
2	D	136	
2	G	136	
2	J	136	
3	B	146	
3	E	146	
3	H	146	
3	K	146	

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 12453 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 C-type lectin domain family 1 member B.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	C	122	Total	C	N	O	S	0	0	0
			1023	644	180	188	11			
1	I	122	Total	C	N	O	S	0	0	0
			1023	644	180	188	11			
1	L	122	Total	C	N	O	S	0	0	0
			1023	644	180	188	11			
1	F	122	Total	C	N	O	S	0	0	0
			1023	644	180	188	11			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	94	GLY	-	EXPRESSION TAG	UNP Q9P126
C	95	SER	-	EXPRESSION TAG	UNP Q9P126
C	99	SER	CYS	ENGINEERED MUTATION	UNP Q9P126
I	94	GLY	-	EXPRESSION TAG	UNP Q9P126
I	95	SER	-	EXPRESSION TAG	UNP Q9P126
I	99	SER	CYS	ENGINEERED MUTATION	UNP Q9P126
L	94	GLY	-	EXPRESSION TAG	UNP Q9P126
L	95	SER	-	EXPRESSION TAG	UNP Q9P126
L	99	SER	CYS	ENGINEERED MUTATION	UNP Q9P126
F	94	GLY	-	EXPRESSION TAG	UNP Q9P126
F	95	SER	-	EXPRESSION TAG	UNP Q9P126
F	99	SER	CYS	ENGINEERED MUTATION	UNP Q9P126

- Molecule 2 is a protein called Snaclec rhodocytin subunit alpha.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	A	133	Total	C	N	O	S	0	0	0
			1092	688	180	216	8			
2	D	133	Total	C	N	O	S	0	0	0
			1092	688	180	216	8			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	G	133	Total	C	N	O	S	0	0	0
			1092	688	180	216	8			
2	J	127	Total	C	N	O	S	0	0	0
			1045	661	174	202	8			

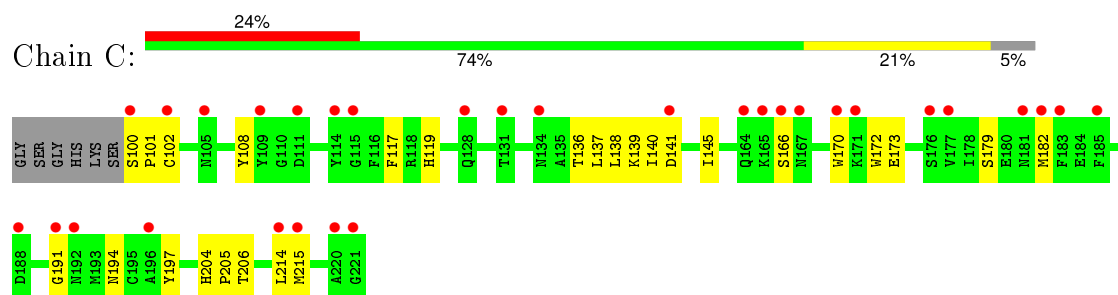
- Molecule 3 is a protein called Snaclec rhodocytin subunit beta.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	B	123	Total	C	N	O	S	0	0	0
			1010	642	177	181	10			
3	E	123	Total	C	N	O	S	0	0	0
			1010	642	177	181	10			
3	H	123	Total	C	N	O	S	0	0	0
			1010	642	177	181	10			
3	K	123	Total	C	N	O	S	0	0	0
			1010	642	177	181	10			

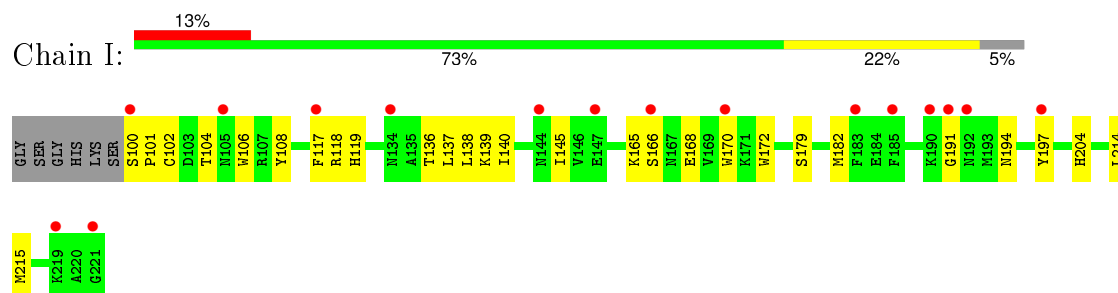
3 Residue-property plots

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.

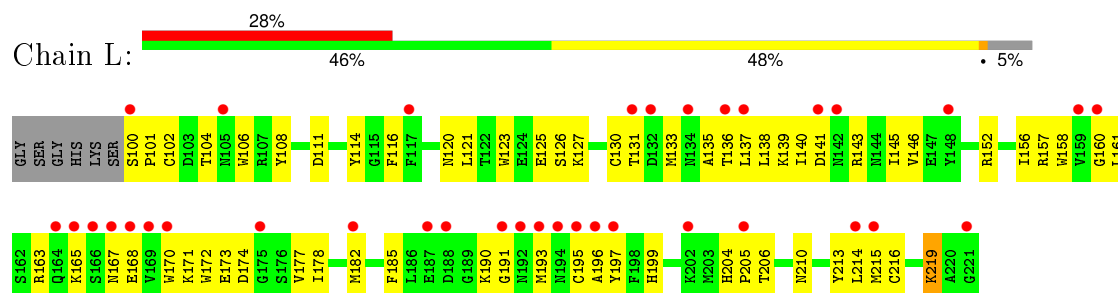
- Molecule 1: C-type lectin domain family 1 member B



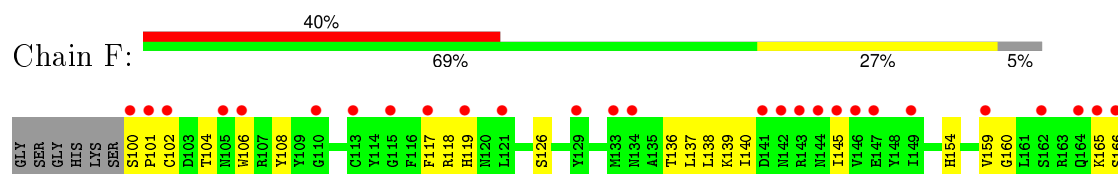
- Molecule 1: C-type lectin domain family 1 member B

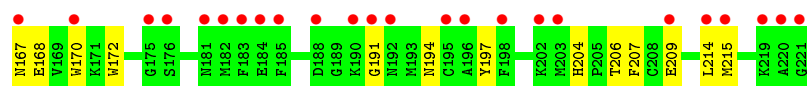


- Molecule 1: C-type lectin domain family 1 member B

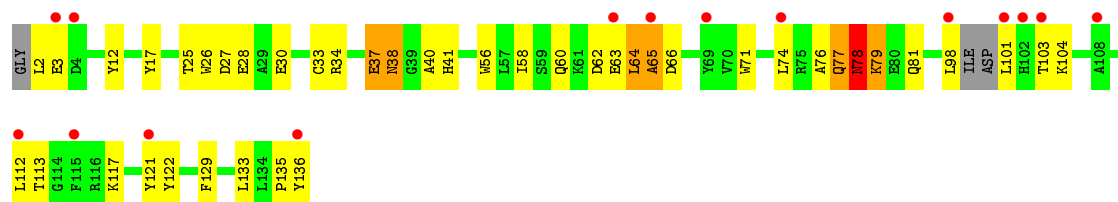


- Molecule 1: C-type lectin domain family 1 member B

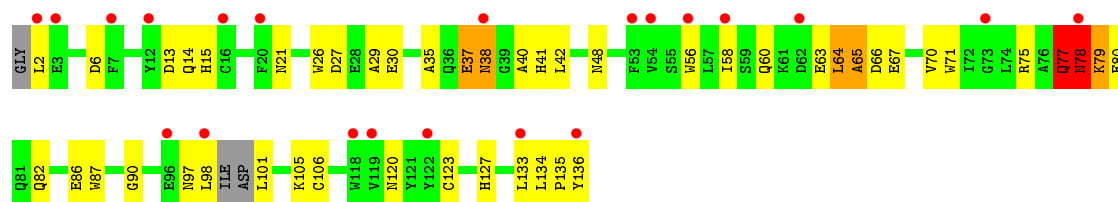




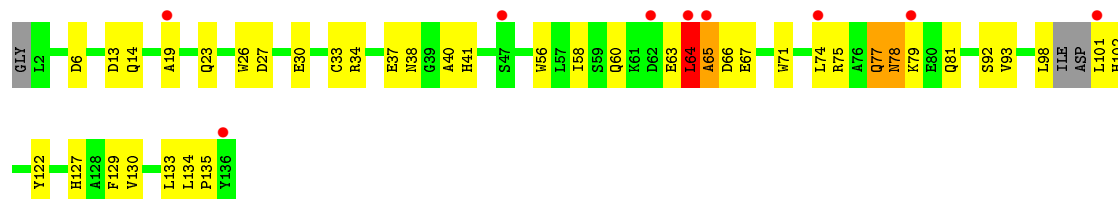
• Molecule 2: Snaclec rhodocytin subunit alpha



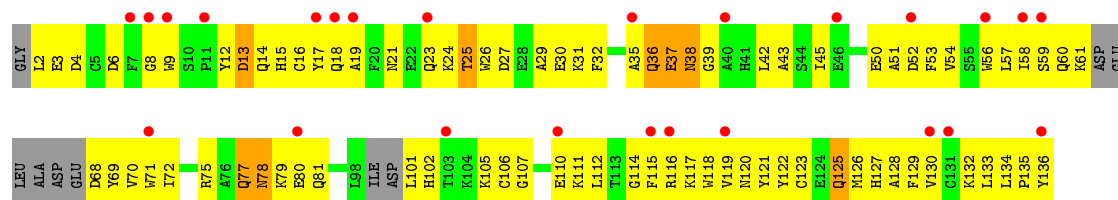
• Molecule 2: Snaclec rhodocytin subunit alpha



• Molecule 2: Snaclec rhodocytin subunit alpha

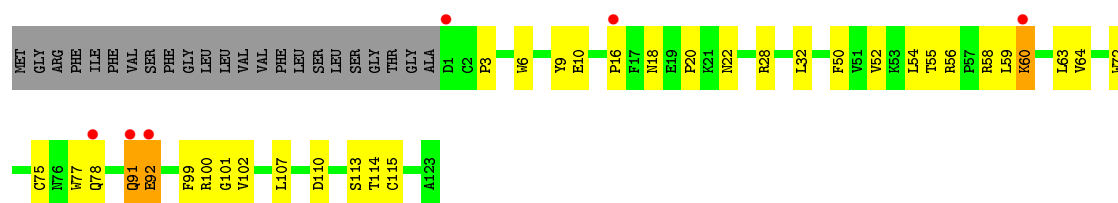


• Molecule 2: Snaclec rhodocytin subunit alpha

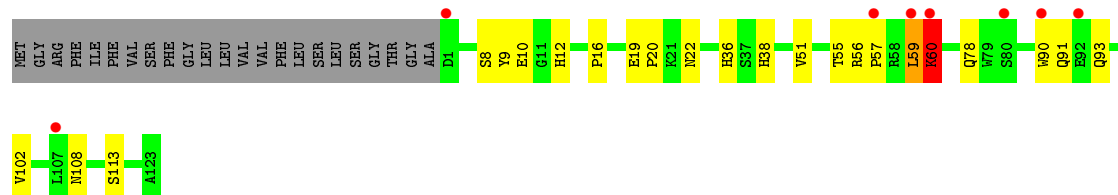


• Molecule 3: Snaclec rhodocytin subunit beta

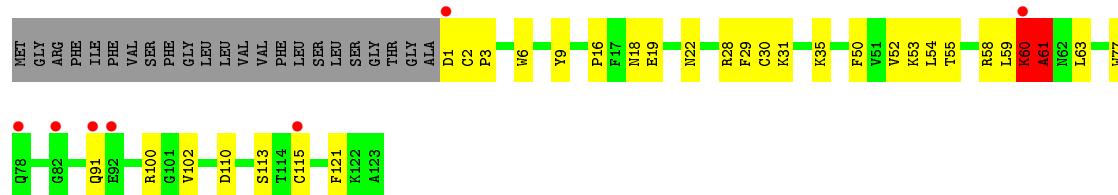




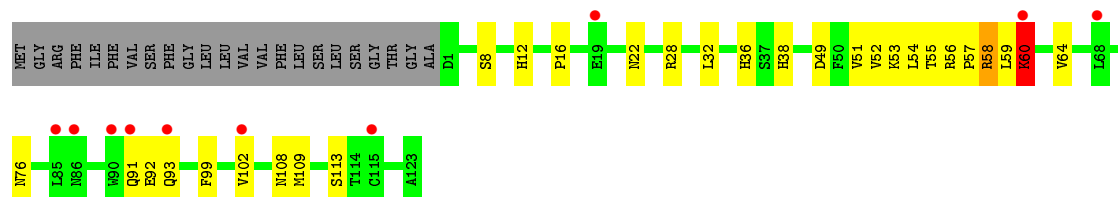
• Molecule 3: Snaclec rhodocytin subunit beta



• Molecule 3: Snaclec rhodocytin subunit beta



• Molecule 3: Snaclec rhodocytin subunit beta



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	130.85Å 117.07Å 152.24Å 90.00° 115.78° 90.00°	Depositor
Resolution (Å)	37.56 – 2.98 37.36 – 2.99	Depositor EDS
% Data completeness (in resolution range)	98.0 (37.56-2.98) 98.3 (37.36-2.99)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.10	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.97 (at 3.01Å)	Xtriage
Refinement program	REFMAC 5.8.0049	Depositor
R, R_{free}	0.282 , 0.325 0.282 , 0.324	Depositor DCC
R_{free} test set	2117 reflections (5.35%)	DCC
Wilson B-factor (Å ²)	50.4	Xtriage
Anisotropy	0.587	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.28 , -2.5	EDS
Estimated twinning fraction	0.649 for H, K, L 0.351 for -H, -K, H+L 0.347 for h,-k,-h-l	Xtriage
Reported twinning fraction	0.649 for H, K, L 0.351 for -H, -K, H+L	Depositor
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Outliers	2 of 41626 reflections (0.005%)	Xtriage
F_o, F_c correlation	0.85	EDS
Total number of atoms	12453	wwPDB-VP
Average B, all atoms (Å ²)	60.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.03% of the height of the origin peak. No significant pseudotranslation is detected.*

¹ Intensities estimated from amplitudes.

² Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ 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	C	0.41	0/1052	0.62	0/1415
1	F	0.41	0/1052	0.61	0/1415
1	I	0.42	0/1052	0.60	0/1415
1	L	0.50	0/1052	0.70	0/1415
2	A	0.50	0/1121	0.82	3/1513 (0.2%)
2	D	0.51	0/1121	0.93	6/1513 (0.4%)
2	G	0.46	0/1121	0.78	4/1513 (0.3%)
2	J	0.51	0/1073	0.86	3/1446 (0.2%)
3	B	0.54	0/1045	0.76	2/1416 (0.1%)
3	E	0.49	0/1045	0.72	2/1416 (0.1%)
3	H	0.52	0/1045	0.83	7/1416 (0.5%)
3	K	0.52	0/1045	0.76	3/1416 (0.2%)
All	All	0.49	0/12824	0.76	30/17309 (0.2%)

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
2	A	0	6
2	D	0	6
2	G	0	5
2	J	0	4
3	B	0	2
3	E	0	2
3	H	0	3
3	K	0	2
All	All	0	30

There are no bond length outliers.

All (30) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	78	ASN	N-CA-CB	-11.67	89.60	110.60
3	H	60	LYS	CA-C-N	-10.08	95.02	117.20
3	E	60	LYS	N-CA-C	9.43	136.46	111.00
2	D	78	ASN	N-CA-C	-8.62	87.72	111.00
3	K	60	LYS	N-CA-C	8.55	134.08	111.00
3	K	58	ARG	N-CA-C	8.22	133.19	111.00
2	A	79	LYS	N-CA-C	8.08	132.82	111.00
3	H	61	ALA	N-CA-C	7.77	131.97	111.00
2	A	38	ASN	N-CA-C	-7.51	90.72	111.00
2	D	79	LYS	N-CA-C	7.30	130.70	111.00
3	K	58	ARG	CB-CA-C	-7.07	96.26	110.40
2	J	38	ASN	N-CA-C	-6.93	92.28	111.00
2	G	38	ASN	N-CA-C	-6.87	92.44	111.00
2	D	77	GLN	N-CA-C	6.69	129.05	111.00
3	E	60	LYS	CB-CA-C	-6.69	97.03	110.40
2	J	39	GLY	N-CA-C	-6.54	96.76	113.10
2	D	38	ASN	C-N-CA	-6.32	109.02	122.30
2	D	78	ASN	CB-CA-C	5.99	122.37	110.40
3	H	60	LYS	CB-CA-C	-5.72	98.97	110.40
2	G	135	PRO	C-N-CA	5.69	135.92	121.70
2	D	38	ASN	N-CA-C	-5.67	95.70	111.00
2	G	64	LEU	C-N-CA	-5.59	107.72	121.70
2	J	25	THR	CB-CA-C	-5.59	96.51	111.60
3	H	60	LYS	N-CA-C	5.57	126.03	111.00
2	G	64	LEU	N-CA-C	-5.46	96.25	111.00
3	H	18	ASN	N-CA-C	5.37	125.49	111.00
3	B	60	LYS	CA-C-N	-5.31	105.51	117.20
3	B	92	GLU	N-CA-C	5.25	125.17	111.00
3	H	19	GLU	CB-CA-C	-5.11	100.19	110.40
3	H	60	LYS	C-N-CA	5.11	134.47	121.70

There are no chirality outliers.

All (30) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	A	37	GLU	Peptide
2	A	64	LEU	Peptide
2	A	65	ALA	Peptide
2	A	77	GLN	Mainchain,Peptide
2	A	78	ASN	Peptide
3	B	60	LYS	Peptide
3	B	91	GLN	Peptide
2	D	37	GLU	Peptide

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Mol	Chain	Res	Type	Group
2	D	64	LEU	Peptide
2	D	65	ALA	Peptide
2	D	77	GLN	Peptide
2	D	78	ASN	Mainchain,Peptide
3	E	59	LEU	Peptide
3	E	60	LYS	Peptide
2	G	37	GLU	Peptide
2	G	64	LEU	Peptide
2	G	65	ALA	Peptide
2	G	77	GLN	Peptide
2	G	78	ASN	Peptide
3	H	60	LYS	Mainchain,Peptide
3	H	91	GLN	Peptide
2	J	36	GLN	Peptide
2	J	37	GLU	Peptide
2	J	77	GLN	Peptide
2	J	78	ASN	Peptide
3	K	58	ARG	Mainchain
3	K	60	LYS	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	1023	0	947	24	0
1	F	1023	0	947	37	0
1	I	1023	0	947	19	0
1	L	1023	0	947	127	0
2	A	1092	0	984	68	0
2	D	1092	0	984	67	1
2	G	1092	0	984	42	0
2	J	1045	0	947	181	1
3	B	1010	0	932	40	0
3	E	1010	0	930	28	0
3	H	1010	0	932	29	0
3	K	1010	0	932	32	0
All	All	12453	0	11413	664	1

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 28.

All (664) 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)
2:J:45:ILE:HD11	2:J:51:ALA:CB	1.57	1.34
2:G:78:ASN:OD1	2:G:79:LYS:HA	1.30	1.28
1:L:196:ALA:HA	1:L:204:HIS:O	1.08	1.25
1:L:130:CYS:HB3	1:L:136:THR:N	1.49	1.25
2:J:45:ILE:CD1	2:J:51:ALA:HB2	1.70	1.22
2:J:17:TYR:CE1	2:J:132:LYS:HD2	1.75	1.20
3:K:16:PRO:HB2	3:K:59:LEU:CD1	1.70	1.20
2:J:18:GLN:O	2:J:130:VAL:HG13	1.40	1.20
2:J:78:ASN:OD1	2:J:79:LYS:HA	1.42	1.20
1:L:196:ALA:CA	1:L:204:HIS:O	1.90	1.19
2:G:78:ASN:OD1	2:G:79:LYS:CA	1.91	1.18
1:L:130:CYS:HB3	1:L:135:ALA:C	1.62	1.18
1:L:130:CYS:O	1:L:135:ALA:HB3	1.43	1.17
2:J:26:TRP:CD1	2:J:71:TRP:CE3	2.33	1.16
1:L:195:CYS:O	1:L:206:THR:N	1.80	1.13
2:J:110:GLU:HG3	2:J:119:VAL:HG21	1.20	1.13
1:L:130:CYS:CA	1:L:135:ALA:HB3	1.79	1.13
1:L:130:CYS:C	1:L:135:ALA:HB3	1.69	1.13
2:J:112:LEU:HG	2:J:112:LEU:O	1.48	1.13
2:J:45:ILE:HG21	2:J:118:TRP:CZ2	1.83	1.12
3:B:20:PRO:HB2	3:B:114:THR:HG22	1.26	1.12
2:A:38:ASN:ND2	2:A:136:TYR:HB3	1.64	1.12
2:D:78:ASN:HD22	2:D:79:LYS:HA	1.12	1.12
2:J:15:HIS:CD2	2:J:134:LEU:HD12	1.86	1.11
2:J:68:ASP:O	2:J:111:LYS:HB2	1.51	1.11
1:C:139:LYS:HE3	1:C:141:ASP:OD2	1.50	1.10
1:L:130:CYS:O	1:L:135:ALA:CB	1.98	1.10
2:J:26:TRP:HD1	2:J:71:TRP:CE3	1.69	1.08
2:G:78:ASN:OD1	2:G:79:LYS:C	1.91	1.08
1:L:130:CYS:O	1:L:135:ALA:N	1.86	1.08
2:J:6:ASP:O	2:J:9:TRP:O	1.73	1.06
2:J:45:ILE:CG2	2:J:118:TRP:HZ2	1.68	1.06
2:D:78:ASN:ND2	2:D:79:LYS:HA	1.68	1.06
2:J:45:ILE:O	2:J:45:ILE:CG2	1.95	1.05
1:F:137:LEU:CD2	1:F:214:LEU:HD11	1.86	1.05
2:J:45:ILE:HG21	2:J:118:TRP:HZ2	0.93	1.04
1:L:170:TRP:CH2	1:L:205:PRO:HB3	1.90	1.04

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:126:MET:O	2:J:127:HIS:CD2	2.11	1.04
2:J:110:GLU:CG	2:J:119:VAL:HG21	1.87	1.03
2:J:78:ASN:OD1	2:J:79:LYS:CA	2.07	1.03
2:A:81:GLN:HG3	2:A:98:LEU:HD12	1.03	1.02
1:F:138:LEU:HD13	1:F:215:MET:HG3	1.37	1.02
2:D:56:TRP:O	2:D:60:GLN:HG2	1.60	1.02
3:K:16:PRO:HB2	3:K:59:LEU:HD13	1.39	1.01
2:A:38:ASN:HD22	2:A:136:TYR:HB3	1.20	1.01
1:L:130:CYS:O	1:L:135:ALA:CA	2.07	1.01
3:K:60:LYS:HG2	3:K:60:LYS:O	1.58	1.01
1:L:130:CYS:HA	1:L:135:ALA:HB3	1.37	1.00
2:J:68:ASP:HA	2:J:111:LYS:CG	1.92	1.00
1:L:130:CYS:CA	1:L:135:ALA:CB	2.40	1.00
3:E:91:GLN:HG3	3:E:93:GLN:NE2	1.77	0.99
2:J:17:TYR:HE1	2:J:132:LYS:HD2	0.86	0.99
1:L:126:SER:HB3	1:L:137:LEU:HD21	1.41	0.99
2:J:17:TYR:HE1	2:J:132:LYS:CD	1.76	0.99
1:L:156:ILE:O	1:L:157:ARG:HG2	1.63	0.98
2:J:45:ILE:HG23	2:J:45:ILE:O	1.18	0.98
3:K:16:PRO:HB2	3:K:59:LEU:HD11	1.43	0.98
1:L:126:SER:HB3	1:L:214:LEU:CD1	1.95	0.97
1:F:137:LEU:HD23	1:F:214:LEU:HD11	1.46	0.97
1:L:126:SER:CB	1:L:214:LEU:HD12	1.94	0.97
2:D:78:ASN:HD22	2:D:79:LYS:CA	1.77	0.97
3:H:60:LYS:HG3	3:H:60:LYS:O	1.64	0.97
2:J:12:TYR:CD2	2:J:12:TYR:O	2.18	0.96
2:A:81:GLN:HG3	2:A:98:LEU:CD1	1.96	0.96
2:A:81:GLN:CG	2:A:98:LEU:HD12	1.95	0.96
2:J:126:MET:O	2:J:127:HIS:HD2	1.45	0.95
1:L:167:ASN:ND2	1:L:191:GLY:O	1.99	0.95
2:D:78:ASN:ND2	2:D:79:LYS:CA	2.28	0.95
1:L:130:CYS:HA	1:L:135:ALA:CB	1.96	0.95
2:A:58:ILE:HG23	2:A:64:LEU:HD22	1.49	0.94
1:L:130:CYS:CB	1:L:135:ALA:C	2.36	0.94
1:L:130:CYS:C	1:L:135:ALA:CB	2.35	0.93
1:L:131:THR:N	1:L:135:ALA:O	2.01	0.93
2:J:23:GLN:HA	2:J:127:HIS:O	1.67	0.93
2:J:15:HIS:HB2	2:J:17:TYR:CZ	2.03	0.93
3:B:20:PRO:HB2	3:B:114:THR:CG2	1.97	0.93
2:J:53:PHE:CD2	2:J:53:PHE:O	2.21	0.93
3:E:16:PRO:HB2	3:E:59:LEU:HD13	1.49	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:126:SER:CB	1:L:214:LEU:CD1	2.48	0.90
2:A:78:ASN:ND2	2:A:79:LYS:HA	1.86	0.90
2:D:26:TRP:CE3	2:D:27:ASP:OD1	2.23	0.90
2:D:15:HIS:CD2	2:D:134:LEU:HB3	2.07	0.90
2:J:15:HIS:CD2	2:J:134:LEU:CD1	2.54	0.90
1:C:136:THR:HG23	1:C:173:GLU:HG2	1.52	0.90
2:J:71:TRP:CZ3	2:J:106:CYS:HB2	2.08	0.89
1:L:126:SER:CB	1:L:137:LEU:HD21	2.01	0.89
1:L:126:SER:OG	1:L:214:LEU:HD12	1.73	0.88
2:J:26:TRP:HD1	2:J:71:TRP:CD2	1.91	0.88
3:E:56:ARG:O	3:E:60:LYS:HB3	1.73	0.88
2:J:58:ILE:HD13	2:J:70:VAL:HG21	1.56	0.88
2:J:78:ASN:OD1	2:J:79:LYS:C	2.11	0.88
2:J:68:ASP:HA	2:J:111:LYS:HG3	1.55	0.88
2:J:56:TRP:O	2:J:57:LEU:HD12	1.74	0.88
3:H:28:ARG:O	3:H:31:LYS:N	2.07	0.87
1:L:130:CYS:C	1:L:135:ALA:CA	2.43	0.87
3:B:55:THR:HG21	3:B:101:GLY:HA2	1.56	0.87
3:B:52:VAL:O	3:B:56:ARG:HG3	1.75	0.86
3:K:52:VAL:O	3:K:56:ARG:HG3	1.73	0.86
2:G:78:ASN:CG	2:G:79:LYS:HA	1.96	0.85
3:B:20:PRO:HA	3:B:115:CYS:O	1.75	0.85
2:J:45:ILE:HD11	2:J:51:ALA:HB2	0.86	0.85
1:F:100:SER:HB2	1:F:101:PRO:HD3	1.59	0.84
2:J:14:GLN:O	2:J:135:PRO:HD2	1.76	0.84
2:J:26:TRP:NE1	2:J:72:ILE:O	2.10	0.83
2:A:81:GLN:HG2	2:A:98:LEU:HB2	1.60	0.83
2:D:40:ALA:HB2	2:D:133:LEU:HB2	1.60	0.83
1:L:130:CYS:CB	1:L:136:THR:N	2.37	0.83
1:L:170:TRP:HH2	1:L:205:PRO:HB3	1.39	0.83
1:F:126:SER:HB3	1:F:214:LEU:HD13	1.60	0.83
2:J:12:TYR:O	2:J:17:TYR:HE2	1.61	0.83
3:K:16:PRO:HD3	3:K:54:LEU:HD21	1.61	0.83
2:J:15:HIS:NE2	2:J:134:LEU:CD1	2.42	0.82
2:J:56:TRP:CD2	2:J:56:TRP:O	2.32	0.82
2:A:78:ASN:HD22	2:A:79:LYS:HA	1.43	0.82
3:K:16:PRO:CB	3:K:59:LEU:HD13	2.08	0.82
1:L:170:TRP:CZ2	1:L:205:PRO:HB3	2.13	0.82
2:J:15:HIS:NE2	2:J:134:LEU:HD13	1.94	0.82
1:L:100:SER:HB2	1:L:101:PRO:HD3	1.61	0.82
2:J:2:LEU:HD23	2:J:4:ASP:H	1.45	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:100:SER:HB2	1:F:101:PRO:CD	2.10	0.81
2:J:110:GLU:HG3	2:J:119:VAL:CG2	2.08	0.81
1:L:100:SER:HB2	1:L:101:PRO:CD	2.10	0.81
1:L:170:TRP:CH2	1:L:205:PRO:CB	2.64	0.81
1:L:195:CYS:O	1:L:205:PRO:HA	1.80	0.81
3:B:20:PRO:CB	3:B:114:THR:HG22	2.09	0.80
1:C:100:SER:OG	1:C:101:PRO:CD	2.30	0.80
1:C:197:TYR:CE2	1:C:206:THR:HG21	2.17	0.80
1:L:156:ILE:CG2	1:L:157:ARG:N	2.44	0.80
1:L:156:ILE:HG22	1:L:157:ARG:N	1.97	0.80
2:G:98:LEU:O	2:G:101:LEU:HD12	1.82	0.79
3:H:28:ARG:O	3:H:29:PHE:C	2.20	0.79
2:J:53:PHE:CG	2:J:53:PHE:O	2.35	0.79
1:L:138:LEU:HD13	1:L:215:MET:HG3	1.65	0.79
2:D:21:ASN:ND2	2:D:63:GLU:HG2	1.97	0.79
3:E:16:PRO:HB2	3:E:59:LEU:CD1	2.12	0.79
1:L:190:LYS:H	1:L:193:MET:HE2	1.49	0.78
2:D:71:TRP:CD1	2:D:127:HIS:HB2	2.17	0.78
2:G:58:ILE:HG23	2:G:64:LEU:HD22	1.64	0.78
3:E:56:ARG:HB3	3:E:57:PRO:HD3	1.66	0.78
1:L:158:TRP:HZ3	1:L:195:CYS:HB3	1.46	0.78
2:J:19:ALA:HB1	2:J:58:ILE:HG12	1.64	0.78
2:D:71:TRP:HZ3	2:D:106:CYS:CB	1.97	0.78
1:F:137:LEU:CD2	1:F:214:LEU:CD1	2.61	0.77
2:D:26:TRP:CZ3	2:D:27:ASP:OD1	2.37	0.77
2:J:116:ARG:HB3	2:J:116:ARG:NH1	2.00	0.77
2:J:68:ASP:O	2:J:111:LYS:CB	2.33	0.76
1:I:100:SER:OG	1:I:101:PRO:CD	2.34	0.76
1:L:126:SER:HB3	1:L:214:LEU:HD11	1.65	0.76
1:L:196:ALA:CB	1:L:204:HIS:O	2.33	0.75
2:J:18:GLN:O	2:J:130:VAL:CG1	2.29	0.75
2:J:112:LEU:O	2:J:112:LEU:CG	2.31	0.75
2:J:56:TRP:O	2:J:56:TRP:CE3	2.40	0.75
2:G:133:LEU:HG	2:G:134:LEU:O	1.86	0.75
1:I:166:SER:HB3	1:I:191:GLY:O	1.86	0.75
2:J:23:GLN:HG2	2:J:127:HIS:HA	1.69	0.75
1:L:130:CYS:C	1:L:135:ALA:C	2.46	0.75
2:J:15:HIS:HE2	2:J:134:LEU:HD13	1.48	0.75
2:A:38:ASN:HD21	2:A:136:TYR:C	1.91	0.75
2:J:12:TYR:HB3	2:J:17:TYR:CD2	2.22	0.74
1:L:141:ASP:HA	1:L:182:MET:HG3	1.67	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:38:ASN:ND2	2:D:136:TYR:O	2.19	0.74
1:C:100:SER:OG	1:C:101:PRO:HD3	1.86	0.73
2:J:52:ASP:OD1	2:J:116:ARG:NH2	2.21	0.73
2:J:45:ILE:CG2	2:J:118:TRP:CZ2	2.54	0.73
2:A:117:LYS:HD3	3:B:91:GLN:NE2	2.03	0.73
2:J:2:LEU:CD2	2:J:4:ASP:H	2.01	0.73
2:J:110:GLU:CD	2:J:119:VAL:HG21	2.08	0.73
1:F:159:VAL:HG22	1:F:160:GLY:H	1.52	0.73
2:A:58:ILE:HG23	2:A:64:LEU:CD2	2.19	0.73
2:D:26:TRP:HE3	2:D:27:ASP:OD1	1.68	0.72
2:A:79:LYS:HD2	2:A:79:LYS:O	1.88	0.72
2:A:66:ASP:OD1	2:A:66:ASP:O	2.08	0.72
1:F:166:SER:HB3	1:F:191:GLY:O	1.89	0.72
2:J:68:ASP:C	2:J:111:LYS:HB2	2.10	0.72
2:J:68:ASP:HA	2:J:111:LYS:CB	2.18	0.72
1:L:156:ILE:O	1:L:157:ARG:CG	2.37	0.71
2:A:113:THR:CG2	2:A:117:LYS:HB2	2.19	0.71
2:A:38:ASN:ND2	2:A:136:TYR:OXT	2.23	0.71
1:L:126:SER:HB3	1:L:214:LEU:HD12	1.60	0.71
2:D:58:ILE:HG23	2:D:64:LEU:HD22	1.72	0.71
2:J:35:ALA:O	2:J:37:GLU:OE1	2.09	0.71
3:B:55:THR:CG2	3:B:101:GLY:HA2	2.21	0.71
2:G:75:ARG:HD3	2:G:77:GLN:HE22	1.54	0.71
2:G:98:LEU:O	2:G:101:LEU:CD1	2.38	0.70
2:J:125:GLN:HA	2:J:125:GLN:HE21	1.57	0.70
1:I:100:SER:OG	1:I:101:PRO:HD3	1.92	0.69
2:J:68:ASP:HA	2:J:111:LYS:HB2	1.74	0.69
2:J:106:CYS:N	2:J:123:CYS:SG	2.65	0.69
3:H:52:VAL:HA	3:H:55:THR:OG1	1.92	0.69
2:J:26:TRP:CD1	2:J:71:TRP:HE3	2.09	0.69
1:L:139:LYS:NZ	1:L:174:ASP:OD2	2.25	0.69
2:A:81:GLN:CG	2:A:98:LEU:HB2	2.23	0.68
2:A:2:LEU:O	2:A:3:GLU:HG2	1.92	0.68
1:L:138:LEU:CD1	1:L:215:MET:HG3	2.22	0.68
1:C:139:LYS:CE	1:C:141:ASP:OD2	2.38	0.68
2:A:78:ASN:ND2	2:A:79:LYS:HD2	2.09	0.68
1:L:156:ILE:C	1:L:157:ARG:CG	2.62	0.68
1:L:158:TRP:CZ3	1:L:195:CYS:HB3	2.29	0.67
3:H:63:LEU:C	3:H:115:CYS:SG	2.73	0.67
1:L:130:CYS:C	1:L:135:ALA:O	2.33	0.67
1:L:193:MET:HB3	1:L:206:THR:HA	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:116:ARG:HB3	2:J:116:ARG:HH11	1.57	0.67
2:A:113:THR:HG21	2:A:117:LYS:HB2	1.75	0.67
1:L:195:CYS:HB2	1:L:206:THR:O	1.94	0.67
2:D:71:TRP:CH2	2:D:123:CYS:HA	2.28	0.67
2:J:30:GLU:OE1	2:J:42:LEU:HD12	1.95	0.67
2:J:45:ILE:CD1	2:J:51:ALA:CB	2.47	0.67
2:A:56:TRP:O	2:A:60:GLN:HG2	1.94	0.67
1:I:118:ARG:NH2	2:G:6:ASP:OD1	2.26	0.67
2:A:30:GLU:OE1	2:A:41:HIS:HD2	1.78	0.66
2:J:17:TYR:CE1	2:J:132:LYS:CD	2.63	0.66
1:L:163:ARG:HD2	1:L:168:GLU:O	1.94	0.66
2:G:30:GLU:OE1	2:G:41:HIS:HD2	1.79	0.66
2:A:25:THR:HG23	2:A:28:GLU:H	1.61	0.66
2:D:71:TRP:HZ3	2:D:106:CYS:HB3	1.59	0.66
2:A:135:PRO:O	2:A:136:TYR:HB2	1.95	0.66
3:K:16:PRO:CB	3:K:59:LEU:CD1	2.59	0.65
1:L:140:ILE:O	1:L:172:TRP:CZ2	2.49	0.65
2:A:78:ASN:CB	2:A:79:LYS:HA	2.26	0.65
1:L:163:ARG:CD	1:L:168:GLU:O	2.45	0.65
2:D:71:TRP:HZ3	2:D:106:CYS:HB2	1.60	0.65
2:J:12:TYR:O	2:J:17:TYR:CE2	2.47	0.65
2:J:2:LEU:HD23	2:J:3:GLU:N	2.11	0.65
1:L:195:CYS:N	1:L:206:THR:O	2.27	0.65
3:H:63:LEU:C	3:H:115:CYS:HG	2.00	0.65
1:L:143:ARG:HG2	1:L:185:PHE:CE2	2.31	0.65
2:J:71:TRP:HZ3	2:J:106:CYS:HB2	1.62	0.64
2:J:68:ASP:CA	2:J:111:LYS:HB2	2.28	0.64
2:J:12:TYR:HB3	2:J:17:TYR:HD2	1.63	0.64
2:J:16:CYS:N	2:J:133:LEU:O	2.31	0.64
1:C:197:TYR:HE2	1:C:206:THR:HG21	1.60	0.64
1:L:127:LYS:HZ1	1:L:173:GLU:CD	2.01	0.64
3:H:63:LEU:O	3:H:115:CYS:SG	2.53	0.64
1:C:166:SER:HB3	1:C:191:GLY:O	1.98	0.64
2:J:45:ILE:CG1	2:J:51:ALA:HB2	2.27	0.64
2:J:80:GLU:O	2:J:105:LYS:NZ	2.18	0.64
2:J:12:TYR:HD2	2:J:12:TYR:O	1.77	0.63
2:J:45:ILE:HD11	2:J:51:ALA:HB1	1.72	0.63
1:L:138:LEU:HD13	1:L:215:MET:CG	2.27	0.63
1:L:126:SER:CB	1:L:214:LEU:HD11	2.23	0.63
2:G:30:GLU:O	2:G:34:ARG:HG2	1.98	0.63
1:F:159:VAL:HG22	1:F:160:GLY:N	2.13	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:56:TRP:O	2:J:56:TRP:CG	2.49	0.63
1:L:143:ARG:HG2	1:L:185:PHE:CZ	2.34	0.63
1:C:141:ASP:OD1	1:C:172:TRP:NE1	2.32	0.62
3:H:16:PRO:HG2	3:H:58:ARG:HD3	1.82	0.62
2:J:32:PHE:CE1	2:J:36:GLN:HG3	2.33	0.62
1:L:195:CYS:O	1:L:205:PRO:CA	2.47	0.62
2:D:21:ASN:HD22	2:D:63:GLU:HG2	1.63	0.62
2:G:75:ARG:HD3	2:G:77:GLN:NE2	2.13	0.61
2:J:125:GLN:CA	2:J:125:GLN:HE21	2.13	0.61
2:A:33:CYS:O	2:A:40:ALA:HB3	2.00	0.61
1:L:140:ILE:HG23	1:L:145:ILE:HG23	1.83	0.61
2:A:38:ASN:ND2	2:A:136:TYR:CB	2.53	0.61
2:J:68:ASP:CA	2:J:111:LYS:HG3	2.27	0.61
2:J:53:PHE:CD2	2:J:53:PHE:C	2.74	0.61
2:A:63:GLU:O	2:A:65:ALA:HB2	2.01	0.61
2:J:68:ASP:HA	2:J:111:LYS:CD	2.30	0.61
2:D:78:ASN:ND2	2:D:79:LYS:CB	2.63	0.61
2:D:71:TRP:CZ3	2:D:106:CYS:CB	2.84	0.61
2:G:67:GLU:OE2	2:G:127:HIS:HD2	1.84	0.60
1:C:140:ILE:HG23	1:C:145:ILE:HG23	1.82	0.60
3:B:16:PRO:HG2	3:B:58:ARG:HD3	1.82	0.60
2:J:26:TRP:CD1	2:J:71:TRP:CD2	2.78	0.60
2:J:58:ILE:HD11	2:J:70:VAL:HG11	1.84	0.60
1:C:100:SER:OG	1:C:101:PRO:HD2	2.02	0.60
2:A:117:LYS:HD3	3:B:91:GLN:HE21	1.64	0.60
1:L:190:LYS:H	1:L:193:MET:CE	2.14	0.60
2:A:78:ASN:HD22	2:A:79:LYS:CA	2.15	0.60
2:A:77:GLN:HG3	3:B:78:GLN:HE21	1.66	0.60
3:H:16:PRO:HB2	3:H:59:LEU:HD13	1.83	0.60
2:D:65:ALA:H	2:D:67:GLU:N	2.00	0.60
3:B:9:TYR:CZ	3:B:10:GLU:HG2	2.37	0.60
3:E:91:GLN:CG	3:E:93:GLN:NE2	2.61	0.60
2:A:78:ASN:ND2	2:A:79:LYS:CD	2.65	0.59
2:D:134:LEU:HD12	2:D:134:LEU:O	2.03	0.59
2:D:26:TRP:HD1	2:D:71:TRP:CE3	2.21	0.59
3:K:56:ARG:HB2	3:K:57:PRO:HD3	1.84	0.59
2:J:69:TYR:CE2	2:J:121:TYR:CZ	2.91	0.59
2:D:71:TRP:CZ3	2:D:106:CYS:HB3	2.38	0.59
1:F:206:THR:HG22	1:F:207:PHE:N	2.17	0.59
2:D:13:ASP:O	2:D:13:ASP:OD1	2.19	0.59
3:H:16:PRO:HD3	3:H:54:LEU:HD21	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:15:HIS:HB2	2:J:17:TYR:OH	2.00	0.59
1:I:100:SER:OG	1:I:101:PRO:HD2	2.03	0.59
2:D:58:ILE:CG2	2:D:64:LEU:HD22	2.32	0.59
2:G:56:TRP:O	2:G:60:GLN:HG2	2.03	0.59
3:B:16:PRO:HB2	3:B:59:LEU:HD13	1.84	0.59
2:J:125:GLN:HA	2:J:125:GLN:NE2	2.18	0.58
2:A:78:ASN:ND2	2:A:79:LYS:CA	2.64	0.58
2:A:78:ASN:N	2:A:78:ASN:OD1	2.30	0.58
2:A:25:THR:HG22	2:A:28:GLU:CG	2.33	0.58
1:F:138:LEU:HD22	1:F:215:MET:SD	2.43	0.58
3:B:16:PRO:HB2	3:B:59:LEU:CD1	2.33	0.58
1:I:140:ILE:HG23	1:I:145:ILE:HG23	1.84	0.58
2:A:25:THR:HG22	2:A:28:GLU:CD	2.23	0.58
2:J:12:TYR:HB3	2:J:17:TYR:CE2	2.39	0.58
2:J:26:TRP:HE3	2:J:27:ASP:OD1	1.87	0.57
3:B:63:LEU:O	3:B:115:CYS:HB2	2.04	0.57
1:F:138:LEU:O	1:F:159:VAL:HG22	2.04	0.57
2:D:78:ASN:HD22	2:D:79:LYS:C	2.07	0.57
1:F:140:ILE:HG23	1:F:145:ILE:HG23	1.85	0.57
2:J:12:TYR:C	2:J:12:TYR:CD2	2.75	0.57
1:C:136:THR:HG22	1:C:137:LEU:O	2.04	0.57
1:I:138:LEU:HD13	1:I:215:MET:HG3	1.85	0.57
2:D:78:ASN:CB	2:D:79:LYS:HA	2.34	0.57
1:F:166:SER:HA	1:F:194:ASN:OD1	2.05	0.57
2:J:58:ILE:CD1	2:J:70:VAL:HG11	2.35	0.57
2:D:64:LEU:HD21	2:D:70:VAL:HG21	1.85	0.57
2:J:12:TYR:HD2	2:J:17:TYR:HE2	1.52	0.56
2:J:23:GLN:HA	2:J:127:HIS:C	2.25	0.56
2:D:97:ASN:C	2:D:98:LEU:HD12	2.25	0.56
2:D:6:ASP:OD1	1:F:118:ARG:NH2	2.38	0.56
1:C:138:LEU:HD13	1:C:215:MET:HG3	1.86	0.56
1:L:130:CYS:HA	1:L:135:ALA:HB1	1.86	0.56
1:L:123:TRP:HZ2	1:L:160:GLY:O	1.88	0.56
2:J:19:ALA:CB	2:J:58:ILE:HG12	2.34	0.56
3:B:63:LEU:HD11	3:B:107:LEU:HD12	1.86	0.56
2:J:68:ASP:O	2:J:111:LYS:N	2.38	0.56
1:F:136:THR:HG22	1:F:137:LEU:O	2.05	0.56
1:L:165:LYS:HB2	1:L:168:GLU:HG3	1.87	0.56
2:J:54:VAL:HG12	2:J:54:VAL:O	2.03	0.56
1:L:156:ILE:CG2	1:L:157:ARG:H	2.19	0.56
2:J:75:ARG:HG3	2:J:106:CYS:SG	2.45	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:40:ALA:HB2	2:D:133:LEU:HD13	1.86	0.56
3:K:28:ARG:HG2	3:K:32:LEU:HD13	1.86	0.56
2:D:120:ASN:H	3:E:90:TRP:HZ3	1.54	0.56
3:K:60:LYS:O	3:K:60:LYS:CG	2.39	0.56
2:A:78:ASN:HD21	2:A:79:LYS:CD	2.19	0.56
2:D:71:TRP:CZ3	2:D:106:CYS:HB2	2.41	0.55
2:J:25:THR:HG22	2:J:27:ASP:H	1.72	0.55
2:G:79:LYS:O	2:G:79:LYS:HG3	2.06	0.55
2:A:98:LEU:HD22	2:A:101:LEU:HD22	1.89	0.55
1:L:170:TRP:HH2	1:L:205:PRO:CB	2.10	0.55
2:J:71:TRP:CE3	2:J:107:GLY:O	2.59	0.55
2:J:81:GLN:HA	2:J:105:LYS:NZ	2.22	0.55
2:D:86:GLU:OE2	2:D:90:GLY:HA2	2.06	0.55
1:F:209:GLU:O	1:F:209:GLU:HG3	2.06	0.55
2:A:25:THR:HG22	2:A:28:GLU:OE1	2.07	0.55
2:D:77:GLN:CG	3:E:78:GLN:HG3	2.37	0.55
2:J:21:ASN:HB3	2:J:61:LYS:HD2	1.89	0.55
1:L:126:SER:HB2	1:L:137:LEU:HD21	1.87	0.55
1:L:126:SER:CA	1:L:214:LEU:HD11	2.37	0.55
2:G:122:TYR:HE2	3:K:102:VAL:HG21	1.70	0.55
1:L:120:ASN:O	1:L:121:LEU:HD23	2.06	0.55
2:A:78:ASN:CG	2:A:79:LYS:HA	2.26	0.54
2:G:63:GLU:O	2:G:65:ALA:HB2	2.06	0.54
3:B:100:ARG:NH2	3:E:108:ASN:OD1	2.40	0.54
2:J:4:ASP:OD1	1:L:157:ARG:NH2	2.38	0.54
1:F:100:SER:CB	1:F:101:PRO:CD	2.83	0.54
3:H:35:LYS:HG2	3:H:121:PHE:CE1	2.41	0.54
2:J:19:ALA:HA	2:J:130:VAL:HG22	1.88	0.54
2:G:122:TYR:CE2	3:K:102:VAL:HG21	2.43	0.54
1:I:102:CYS:SG	1:I:108:TYR:HB2	2.48	0.54
2:J:2:LEU:HD21	2:J:4:ASP:HB2	1.89	0.54
2:J:27:ASP:O	2:J:31:LYS:HG3	2.08	0.54
2:J:119:VAL:HG12	2:J:120:ASN:O	2.08	0.54
3:E:91:GLN:HG3	3:E:93:GLN:HE22	1.71	0.54
2:J:30:GLU:HB2	2:J:42:LEU:HD12	1.90	0.54
2:J:58:ILE:O	2:J:58:ILE:HG22	2.08	0.53
3:H:60:LYS:O	3:H:60:LYS:CG	2.46	0.53
2:J:30:GLU:HA	2:J:42:LEU:HG	1.90	0.53
2:D:66:ASP:OD1	2:D:66:ASP:O	2.26	0.53
1:L:121:LEU:O	1:L:158:TRP:NE1	2.41	0.53
1:L:170:TRP:CZ2	1:L:205:PRO:CB	2.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:158:TRP:HZ2	1:L:210:ASN:O	1.91	0.53
2:D:78:ASN:CG	2:D:79:LYS:HA	2.26	0.53
2:D:80:GLU:HG2	2:D:82:GLN:O	2.09	0.53
2:J:2:LEU:HD23	2:J:4:ASP:N	2.19	0.53
3:H:61:ALA:O	3:K:109:MET:HE2	2.08	0.53
2:G:26:TRP:HE3	2:G:27:ASP:OD1	1.91	0.53
2:J:78:ASN:OD1	2:J:79:LYS:O	2.26	0.53
3:E:56:ARG:O	3:E:60:LYS:CB	2.52	0.53
2:A:113:THR:O	2:A:113:THR:HG22	2.09	0.53
3:B:91:GLN:OE1	3:B:92:GLU:HB2	2.08	0.53
1:F:102:CYS:SG	1:F:108:TYR:HB2	2.49	0.53
2:J:78:ASN:CG	2:J:79:LYS:HA	2.25	0.53
2:D:78:ASN:CB	2:D:105:LYS:HE3	2.38	0.53
3:H:28:ARG:O	3:H:30:CYS:N	2.41	0.53
1:L:127:LYS:NZ	1:L:173:GLU:OE2	2.40	0.53
3:B:64:VAL:HG11	3:B:99:PHE:CZ	2.43	0.53
2:J:68:ASP:HA	2:J:111:LYS:HD2	1.90	0.53
2:A:103:THR:HG1	3:B:72:TRP:HH2	1.55	0.53
1:L:195:CYS:O	1:L:205:PRO:C	2.46	0.52
2:A:2:LEU:O	2:A:3:GLU:CG	2.56	0.52
1:L:156:ILE:HG23	1:L:197:TYR:HB2	1.91	0.52
2:J:71:TRP:HE3	2:J:107:GLY:O	1.91	0.52
1:L:100:SER:CB	1:L:101:PRO:CD	2.83	0.52
2:A:37:GLU:HB2	2:A:38:ASN:O	2.10	0.52
3:E:60:LYS:O	3:E:60:LYS:HG3	2.08	0.52
2:G:23:GLN:HG2	2:G:127:HIS:HA	1.91	0.52
3:E:60:LYS:O	3:E:60:LYS:CG	2.54	0.52
2:J:16:CYS:HB2	2:J:133:LEU:HB3	1.90	0.52
1:L:102:CYS:SG	1:L:108:TYR:HB2	2.50	0.52
3:K:16:PRO:CB	3:K:59:LEU:HD11	2.30	0.52
1:L:139:LYS:HA	1:L:172:TRP:CE3	2.45	0.52
3:E:22:ASN:HA	3:E:113:SER:O	2.10	0.52
3:E:9:TYR:CZ	3:E:10:GLU:HG2	2.44	0.52
1:L:126:SER:HB3	1:L:137:LEU:CD2	2.29	0.52
1:L:130:CYS:CB	1:L:135:ALA:CB	2.87	0.52
2:G:26:TRP:CE3	2:G:27:ASP:OD1	2.63	0.52
1:L:123:TRP:CZ2	1:L:160:GLY:O	2.64	0.51
3:H:22:ASN:HA	3:H:113:SER:O	2.10	0.51
2:J:119:VAL:HG13	3:K:93:GLN:HE22	1.75	0.51
2:G:14:GLN:O	2:G:134:LEU:CD2	2.59	0.51
3:K:93:GLN:O	3:K:93:GLN:HG3	2.09	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:79:LYS:O	2:A:79:LYS:CD	2.58	0.51
3:H:61:ALA:HB2	3:H:102:VAL:HG13	1.91	0.51
1:C:102:CYS:SG	1:C:108:TYR:HB2	2.50	0.51
3:K:51:VAL:O	3:K:55:THR:HG23	2.10	0.51
2:J:26:TRP:CE3	2:J:27:ASP:OD1	2.63	0.51
2:D:29:ALA:HB1	2:D:42:LEU:HD21	1.91	0.51
1:L:136:THR:HG22	1:L:137:LEU:O	2.11	0.51
2:D:78:ASN:HB2	2:D:105:LYS:HE3	1.91	0.51
2:A:30:GLU:OE1	2:A:41:HIS:CD2	2.63	0.51
3:B:22:ASN:HA	3:B:113:SER:O	2.11	0.51
1:L:127:LYS:NZ	1:L:173:GLU:OE1	2.43	0.51
3:B:28:ARG:HE	3:B:32:LEU:HD11	1.75	0.51
3:K:22:ASN:HA	3:K:113:SER:O	2.11	0.51
2:J:3:GLU:HG3	1:L:116:PHE:CD2	2.46	0.51
1:F:214:LEU:HG	1:F:215:MET:N	2.25	0.51
1:L:111:ASP:OD2	1:L:219:LYS:HE3	2.11	0.51
1:L:177:VAL:HG12	1:L:178:ILE:O	2.11	0.50
1:L:130:CYS:CA	1:L:135:ALA:HB1	2.36	0.50
2:J:24:LYS:HD3	2:J:29:ALA:HA	1.93	0.50
2:J:77:GLN:O	3:K:76:ASN:HB2	2.12	0.50
3:H:35:LYS:HG2	3:H:121:PHE:CZ	2.46	0.50
2:A:98:LEU:HA	2:A:101:LEU:HD13	1.93	0.50
1:C:197:TYR:CE1	1:C:204:HIS:HB2	2.46	0.50
2:D:64:LEU:N	2:D:65:ALA:HA	2.26	0.50
2:J:12:TYR:HD2	2:J:17:TYR:CE2	2.30	0.50
2:A:78:ASN:HD21	2:A:79:LYS:HD2	1.77	0.50
1:F:138:LEU:O	1:F:159:VAL:CG2	2.59	0.50
2:J:114:GLY:O	2:J:115:PHE:HB2	2.12	0.50
2:J:54:VAL:CG1	2:J:54:VAL:O	2.60	0.49
2:J:15:HIS:NE2	2:J:134:LEU:HD12	2.12	0.49
3:H:61:ALA:HB2	3:H:102:VAL:CG1	2.42	0.49
1:F:197:TYR:CE1	1:F:204:HIS:HB2	2.47	0.49
2:J:8:GLY:O	2:J:18:GLN:CD	2.51	0.49
2:J:50:GLU:OE1	2:J:132:LYS:NZ	2.44	0.49
1:L:135:ALA:HB1	1:L:216:CYS:HB3	1.94	0.49
2:J:81:GLN:HA	2:J:105:LYS:HZ2	1.77	0.49
2:D:135:PRO:O	2:D:136:TYR:HB3	2.13	0.49
2:J:117:LYS:HD2	3:K:91:GLN:HE21	1.78	0.49
1:F:159:VAL:CG2	1:F:160:GLY:H	2.24	0.49
2:J:37:GLU:N	2:J:37:GLU:OE1	2.46	0.49
2:A:40:ALA:HB2	2:A:133:LEU:HD13	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:110:ASP:OD1	3:H:110:ASP:C	2.51	0.49
2:J:81:GLN:OE1	2:J:101:LEU:HD22	2.13	0.48
1:I:179:SER:OG	1:I:182:MET:HG2	2.13	0.48
1:L:156:ILE:HG23	1:L:157:ARG:H	1.78	0.48
2:J:71:TRP:CZ2	2:J:122:TYR:O	2.66	0.48
1:I:197:TYR:CE1	1:I:204:HIS:HB2	2.48	0.48
1:I:165:LYS:HB2	1:I:168:GLU:HG3	1.95	0.48
2:J:129:PHE:CD1	2:J:129:PHE:N	2.81	0.48
2:J:32:PHE:O	2:J:36:GLN:HG2	2.13	0.48
1:L:123:TRP:CD1	1:L:137:LEU:HD13	2.48	0.48
2:J:25:THR:HG22	2:J:26:TRP:N	2.28	0.48
2:G:30:GLU:OE1	2:G:41:HIS:CD2	2.63	0.48
3:E:56:ARG:NH1	3:E:102:VAL:O	2.47	0.48
2:A:74:LEU:HD11	3:B:77:TRP:HB3	1.96	0.48
2:D:71:TRP:NE1	2:D:127:HIS:HB2	2.27	0.48
2:D:63:GLU:HG3	2:D:63:GLU:O	2.14	0.48
2:J:30:GLU:HB2	2:J:42:LEU:CD1	2.44	0.48
1:C:179:SER:OG	1:C:182:MET:HG2	2.14	0.48
2:A:26:TRP:HE3	2:A:27:ASP:OD1	1.97	0.48
2:A:79:LYS:O	2:A:79:LYS:CG	2.62	0.48
3:B:55:THR:CG2	3:B:101:GLY:CA	2.90	0.48
3:B:9:TYR:HB2	3:B:50:PHE:CZ	2.49	0.48
1:L:130:CYS:HB3	1:L:135:ALA:CB	2.44	0.47
1:L:130:CYS:CB	1:L:135:ALA:HB1	2.43	0.47
2:G:33:CYS:O	2:G:40:ALA:HB3	2.14	0.47
3:H:9:TYR:HB2	3:H:50:PHE:CZ	2.48	0.47
2:A:78:ASN:HD22	2:A:79:LYS:C	2.16	0.47
2:D:38:ASN:HB2	2:D:133:LEU:HD11	1.96	0.47
3:B:110:ASP:OD1	3:B:110:ASP:C	2.52	0.47
3:E:19:GLU:CD	3:E:20:PRO:HD2	2.35	0.47
3:B:20:PRO:C	3:B:114:THR:HG23	2.34	0.47
1:C:166:SER:HA	1:C:194:ASN:OD1	2.15	0.47
3:H:50:PHE:O	3:H:53:LYS:HB3	2.14	0.47
2:J:38:ASN:HB2	2:J:133:LEU:HD11	1.97	0.47
2:A:30:GLU:O	2:A:34:ARG:HG2	2.15	0.47
2:J:30:GLU:OE1	2:J:42:LEU:HB2	2.15	0.46
2:J:45:ILE:HG22	2:J:118:TRP:CZ2	2.48	0.46
3:B:54:LEU:HD12	3:B:58:ARG:NH1	2.30	0.46
2:D:26:TRP:HZ3	2:D:27:ASP:OD1	1.95	0.46
2:A:65:ALA:O	2:A:66:ASP:HB3	2.15	0.46
1:F:170:TRP:CZ3	1:F:194:ASN:O	2.68	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:9:TYR:CE2	3:B:10:GLU:HG2	2.50	0.46
2:J:2:LEU:HD21	2:J:4:ASP:CB	2.46	0.46
2:J:15:HIS:CB	2:J:17:TYR:CZ	2.89	0.46
3:K:49:ASP:O	3:K:53:LYS:HG3	2.16	0.46
2:D:78:ASN:ND2	2:D:79:LYS:HB2	2.31	0.46
1:C:100:SER:CB	1:C:101:PRO:CD	2.94	0.46
1:F:206:THR:HG22	1:F:207:PHE:H	1.78	0.46
2:J:2:LEU:HA	1:L:152:ARG:O	2.16	0.45
1:L:193:MET:HB3	1:L:206:THR:CA	2.46	0.45
2:J:12:TYR:CD2	2:J:17:TYR:HE2	2.32	0.45
1:I:170:TRP:CZ3	1:I:194:ASN:O	2.69	0.45
3:B:9:TYR:CE1	3:B:10:GLU:HG2	2.50	0.45
2:G:65:ALA:O	2:G:66:ASP:HB2	2.16	0.45
2:A:66:ASP:CG	2:A:66:ASP:O	2.54	0.45
1:L:190:LYS:N	1:L:193:MET:HE2	2.26	0.45
2:J:8:GLY:O	2:J:18:GLN:NE2	2.49	0.45
2:G:14:GLN:O	2:G:134:LEU:HD23	2.16	0.45
1:C:170:TRP:CZ3	1:C:194:ASN:O	2.69	0.45
1:I:100:SER:CB	1:I:101:PRO:CD	2.95	0.45
2:G:81:GLN:CD	2:G:101:LEU:HD11	2.37	0.45
2:D:77:GLN:HG3	3:E:78:GLN:HG3	1.99	0.45
2:J:102:HIS:O	2:J:102:HIS:ND1	2.50	0.45
2:G:79:LYS:O	2:G:79:LYS:CG	2.64	0.45
3:K:36:HIS:NE2	3:K:38:HIS:NE2	2.62	0.45
1:L:139:LYS:HE3	1:L:172:TRP:CD1	2.51	0.45
2:D:77:GLN:HG2	3:E:78:GLN:HG3	1.99	0.45
3:E:9:TYR:CE2	3:E:10:GLU:HG2	2.52	0.45
2:D:2:LEU:HD21	1:F:154:HIS:CE1	2.52	0.45
1:L:156:ILE:C	1:L:157:ARG:HG3	2.36	0.45
2:J:12:TYR:CE2	2:J:13:ASP:HB3	2.52	0.45
1:L:214:LEU:HD23	1:L:215:MET:N	2.32	0.44
2:D:13:ASP:O	2:D:14:GLN:HB2	2.18	0.44
2:A:71:TRP:HB2	2:A:129:PHE:HB3	1.99	0.44
2:A:66:ASP:OD1	2:A:66:ASP:C	2.56	0.44
2:G:19:ALA:HB2	2:G:130:VAL:HG22	1.99	0.44
1:L:126:SER:CA	1:L:214:LEU:CD1	2.93	0.44
2:A:78:ASN:HD21	2:A:79:LYS:HD3	1.82	0.44
2:J:21:ASN:HB3	2:J:61:LYS:HB2	1.99	0.44
1:C:214:LEU:HD12	1:C:214:LEU:C	2.38	0.44
3:K:92:GLU:HG3	3:K:92:GLU:O	2.18	0.44
3:E:36:HIS:NE2	3:E:38:HIS:CE1	2.85	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:12:TYR:HB3	2:A:17:TYR:CE2	2.53	0.44
1:L:123:TRP:O	1:L:137:LEU:HD11	2.17	0.44
1:L:204:HIS:HA	1:L:205:PRO:HD3	1.67	0.44
2:J:135:PRO:O	2:J:136:TYR:HB2	2.16	0.44
1:L:157:ARG:HA	1:L:213:TYR:O	2.17	0.44
3:K:59:LEU:HD23	3:K:64:VAL:HG22	1.99	0.44
2:J:71:TRP:HZ3	2:J:106:CYS:CB	2.28	0.44
1:F:206:THR:CG2	1:F:207:PHE:N	2.80	0.44
1:F:139:LYS:HA	1:F:172:TRP:CE3	2.53	0.44
2:J:71:TRP:CH2	2:J:123:CYS:HA	2.53	0.44
3:H:61:ALA:O	3:K:109:MET:CE	2.66	0.44
1:F:166:SER:O	1:F:167:ASN:OD1	2.35	0.44
1:L:121:LEU:HB3	1:L:125:GLU:CB	2.48	0.44
1:F:137:LEU:HD21	1:F:214:LEU:HD11	1.89	0.44
2:G:134:LEU:HA	2:G:134:LEU:HD23	1.68	0.44
2:G:93:VAL:HG13	2:G:93:VAL:O	2.17	0.44
1:F:165:LYS:HB2	1:F:168:GLU:HG3	1.99	0.44
2:D:71:TRP:HH2	2:D:123:CYS:HA	1.79	0.44
3:B:18:ASN:OD1	3:B:18:ASN:O	2.35	0.44
2:G:102:HIS:O	2:G:102:HIS:CG	2.69	0.44
1:L:121:LEU:HB2	1:L:126:SER:OG	2.18	0.43
2:A:58:ILE:CG2	2:A:64:LEU:HD22	2.33	0.43
2:D:38:ASN:HD21	2:D:136:TYR:C	2.16	0.43
1:L:141:ASP:CA	1:L:182:MET:HG3	2.45	0.43
1:L:130:CYS:CA	1:L:135:ALA:C	2.85	0.43
2:J:15:HIS:HA	2:J:135:PRO:CD	2.48	0.43
3:H:60:LYS:HA	3:H:61:ALA:HA	1.70	0.43
2:A:121:TYR:CE1	3:E:56:ARG:HD3	2.53	0.43
2:J:37:GLU:HG2	2:J:37:GLU:O	2.18	0.43
2:J:30:GLU:OE1	2:J:42:LEU:CD1	2.65	0.43
2:D:86:GLU:HG2	2:D:87:TRP:O	2.19	0.43
1:I:117:PHE:HB3	1:I:119:HIS:HD2	1.83	0.43
2:J:2:LEU:HD21	2:J:4:ASP:CG	2.39	0.43
2:J:15:HIS:HB2	2:J:17:TYR:CE1	2.50	0.43
2:D:40:ALA:CB	2:D:133:LEU:HB2	2.38	0.43
1:I:166:SER:HA	1:I:194:ASN:OD1	2.18	0.43
2:G:102:HIS:O	2:G:102:HIS:CD2	2.71	0.43
3:B:28:ARG:HH22	2:G:92:SER:HB3	1.84	0.43
2:A:104:LYS:HG3	2:A:122:TYR:CE1	2.53	0.43
3:E:51:VAL:O	3:E:55:THR:HG23	2.19	0.43
3:E:8:SER:HA	3:E:12:HIS:O	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:57:LEU:C	2:J:59:SER:H	2.22	0.43
2:G:13:ASP:O	2:G:14:GLN:HB2	2.18	0.43
2:J:32:PHE:CD1	2:J:32:PHE:C	2.91	0.43
2:J:70:VAL:CG1	2:J:130:VAL:HG23	2.49	0.43
2:D:75:ARG:HG3	2:D:105:LYS:O	2.19	0.43
2:A:62:ASP:C	2:A:64:LEU:H	2.22	0.43
2:J:15:HIS:CB	2:J:17:TYR:CE1	3.02	0.43
3:K:8:SER:HA	3:K:12:HIS:O	2.18	0.43
2:J:71:TRP:HZ3	2:J:106:CYS:C	2.22	0.43
2:G:78:ASN:H	2:G:79:LYS:HA	1.83	0.42
1:L:130:CYS:HB3	1:L:135:ALA:CA	2.44	0.42
2:J:58:ILE:C	2:J:60:GLN:H	2.22	0.42
2:G:81:GLN:OE1	2:G:101:LEU:HD11	2.19	0.42
2:A:76:ALA:HB1	3:B:75:CYS:HB3	2.01	0.42
1:I:139:LYS:HA	1:I:172:TRP:CE3	2.53	0.42
2:J:26:TRP:HD1	2:J:71:TRP:CG	2.36	0.42
2:A:26:TRP:CE3	2:A:27:ASP:OD1	2.71	0.42
2:D:30:GLU:OE2	2:D:41:HIS:CD2	2.71	0.42
2:J:71:TRP:CH2	2:J:122:TYR:O	2.72	0.42
1:F:137:LEU:HD21	1:F:214:LEU:CD1	2.47	0.42
3:H:100:ARG:C	3:H:102:VAL:H	2.22	0.42
2:A:112:LEU:HD22	3:E:57:PRO:HB2	2.01	0.42
2:J:30:GLU:OE1	2:J:42:LEU:CG	2.67	0.42
1:I:136:THR:HG22	1:I:137:LEU:O	2.19	0.42
1:L:121:LEU:HB3	1:L:125:GLU:HB3	2.01	0.42
1:L:143:ARG:O	1:L:146:VAL:HB	2.20	0.42
1:F:104:THR:O	1:F:106:TRP:HD1	2.02	0.42
1:C:117:PHE:HB3	1:C:119:HIS:HD2	1.83	0.42
1:L:130:CYS:CB	1:L:136:THR:CA	2.98	0.42
2:D:64:LEU:HD23	2:D:64:LEU:O	2.20	0.42
2:D:120:ASN:N	3:E:90:TRP:HZ3	2.17	0.42
2:J:18:GLN:C	2:J:130:VAL:HG13	2.28	0.42
2:J:17:TYR:O	2:J:18:GLN:HB2	2.19	0.42
3:B:16:PRO:HG2	3:B:58:ARG:CD	2.49	0.42
2:G:71:TRP:HB2	2:G:129:PHE:HB3	2.00	0.42
3:K:108:ASN:H	3:K:108:ASN:ND2	2.18	0.42
3:B:16:PRO:HG3	3:B:58:ARG:HD2	2.01	0.42
3:B:9:TYR:CZ	3:B:10:GLU:CG	3.03	0.42
1:L:130:CYS:HB3	1:L:135:ALA:HB1	2.00	0.42
2:G:67:GLU:OE2	2:G:127:HIS:CD2	2.68	0.42
1:L:116:PHE:HD1	1:L:215:MET:HB3	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:19:ALA:CB	2:J:130:VAL:HG22	2.50	0.42
3:K:64:VAL:HG11	3:K:99:PHE:CZ	2.55	0.42
2:J:68:ASP:O	2:J:111:LYS:CA	2.67	0.42
1:F:159:VAL:CG2	1:F:160:GLY:N	2.82	0.42
3:E:91:GLN:CG	3:E:93:GLN:HE22	2.29	0.42
3:K:56:ARG:O	3:K:57:PRO:C	2.58	0.42
1:C:205:PRO:O	1:C:206:THR:HG23	2.19	0.42
1:I:104:THR:O	1:I:106:TRP:HD1	2.03	0.42
1:L:156:ILE:HG12	1:L:199:HIS:HB2	2.02	0.41
1:L:116:PHE:CD1	1:L:215:MET:HB3	2.55	0.41
1:C:139:LYS:HA	1:C:172:TRP:CE3	2.55	0.41
1:C:141:ASP:OD1	1:C:172:TRP:CE2	2.73	0.41
3:B:100:ARG:C	3:B:102:VAL:H	2.23	0.41
1:F:117:PHE:HB3	1:F:119:HIS:HD2	1.85	0.41
2:J:78:ASN:H	2:J:79:LYS:HA	1.84	0.41
3:K:108:ASN:H	3:K:108:ASN:HD22	1.68	0.41
1:L:170:TRP:CZ2	1:L:205:PRO:CG	3.04	0.41
2:J:71:TRP:CZ3	2:J:106:CYS:CB	2.91	0.41
2:D:26:TRP:CD1	2:D:71:TRP:CE3	3.05	0.41
2:D:35:ALA:C	2:D:37:GLU:H	2.23	0.41
2:G:74:LEU:HD11	3:H:77:TRP:HB3	2.02	0.41
2:J:70:VAL:HA	2:J:128:ALA:O	2.20	0.41
1:L:127:LYS:NZ	1:L:173:GLU:CD	2.71	0.41
2:D:30:GLU:OE2	2:D:41:HIS:HD2	2.03	0.41
2:J:15:HIS:HA	2:J:135:PRO:HD2	2.03	0.41
2:A:25:THR:CG2	2:A:28:GLU:HG3	2.51	0.41
2:J:53:PHE:HE2	2:J:57:LEU:HD21	1.86	0.41
3:H:3:PRO:HG2	3:H:6:TRP:CD1	2.55	0.41
1:L:156:ILE:CG2	1:L:197:TYR:HB2	2.51	0.41
2:J:24:LYS:N	2:J:127:HIS:O	2.53	0.41
3:H:100:ARG:NH2	3:H:102:VAL:HG21	2.36	0.41
3:E:9:TYR:CE2	3:E:10:GLU:CG	3.03	0.41
2:J:117:LYS:HD3	3:K:91:GLN:HA	2.02	0.41
1:L:106:TRP:HZ2	1:L:133:MET:HE3	1.86	0.41
3:B:3:PRO:HG2	3:B:6:TRP:CD1	2.56	0.41
2:J:56:TRP:C	2:J:57:LEU:HD12	2.41	0.41
2:G:58:ILE:CG2	2:G:64:LEU:HD22	2.45	0.41
1:L:114:TYR:OH	1:L:145:ILE:HD13	2.20	0.41
1:L:126:SER:HA	1:L:214:LEU:CD1	2.51	0.40
2:J:14:GLN:O	2:J:135:PRO:CD	2.59	0.40
1:F:206:THR:CG2	1:F:207:PHE:H	2.34	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:9:TRP:CZ3	2:J:133:LEU:N	2.89	0.40
2:D:26:TRP:HD1	2:D:71:TRP:HE3	1.67	0.40
1:L:104:THR:O	1:L:106:TRP:HD1	2.04	0.40
1:L:161:LEU:HD12	1:L:171:LYS:C	2.41	0.40
1:L:126:SER:HA	1:L:214:LEU:HD11	2.03	0.40
3:B:20:PRO:C	3:B:114:THR:CG2	2.89	0.40
3:H:1:ASP:CG	3:H:2:CYS:N	2.75	0.40
2:J:43:ALA:HB3	2:J:72:ILE:HG22	2.04	0.40
2:D:78:ASN:HB3	2:D:105:LYS:HE3	2.02	0.40
3:H:28:ARG:HA	3:H:31:LYS:HB2	2.04	0.40
1:I:214:LEU:HD12	1:I:214:LEU:C	2.42	0.40
3:B:9:TYR:CE2	3:B:10:GLU:CG	3.05	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:48:ASN:ND2	2:J:52:ASP:OD2[3_545]	2.16	0.04

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	C	120/128 (94%)	117 (98%)	3 (2%)	0	100	100
1	F	120/128 (94%)	117 (98%)	3 (2%)	0	100	100
1	I	120/128 (94%)	118 (98%)	2 (2%)	0	100	100
1	L	120/128 (94%)	115 (96%)	5 (4%)	0	100	100
2	A	129/136 (95%)	114 (88%)	15 (12%)	0	100	100
2	D	129/136 (95%)	113 (88%)	15 (12%)	1 (1%)	24	65
2	G	129/136 (95%)	117 (91%)	12 (9%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	J	121/136 (89%)	103 (85%)	17 (14%)	1 (1%)	24	65
3	B	121/146 (83%)	113 (93%)	8 (7%)	0	100	100
3	E	121/146 (83%)	112 (93%)	9 (7%)	0	100	100
3	H	121/146 (83%)	113 (93%)	7 (6%)	1 (1%)	24	65
3	K	121/146 (83%)	112 (93%)	9 (7%)	0	100	100
All	All	1472/1640 (90%)	1364 (93%)	105 (7%)	3 (0%)	52	87

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	H	61	ALA
2	D	78	ASN
2	J	13	ASP

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	C	110/114 (96%)	110 (100%)	0	100	100
1	F	110/114 (96%)	110 (100%)	0	100	100
1	I	110/114 (96%)	110 (100%)	0	100	100
1	L	110/114 (96%)	109 (99%)	1 (1%)	84	95
2	A	116/118 (98%)	115 (99%)	1 (1%)	84	95
2	D	116/118 (98%)	114 (98%)	2 (2%)	68	90
2	G	116/118 (98%)	115 (99%)	1 (1%)	84	95
2	J	111/118 (94%)	110 (99%)	1 (1%)	84	95
3	B	109/127 (86%)	109 (100%)	0	100	100
3	E	109/127 (86%)	109 (100%)	0	100	100
3	H	109/127 (86%)	109 (100%)	0	100	100
3	K	109/127 (86%)	109 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	1335/1436 (93%)	1329 (100%)	6 (0%)	93 98

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	A	78	ASN
2	D	78	ASN
2	D	101	LEU
2	G	64	LEU
2	J	125	GLN
1	L	219	LYS

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (37) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	119	HIS
1	C	200	ASN
2	A	18	GLN
2	A	38	ASN
2	A	41	HIS
2	A	78	ASN
3	B	78	GLN
3	B	91	GLN
3	B	103	HIS
2	D	18	GLN
2	D	36	GLN
2	D	41	HIS
2	D	78	ASN
3	E	38	HIS
3	E	76	ASN
3	E	93	GLN
1	I	119	HIS
1	I	200	ASN
2	G	18	GLN
2	G	23	GLN
2	G	41	HIS
2	G	77	GLN
2	G	120	ASN
2	G	127	HIS
3	H	70	ASN
3	H	76	ASN

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Mol	Chain	Res	Type
3	H	103	HIS
2	J	125	GLN
2	J	127	HIS
3	K	70	ASN
3	K	91	GLN
3	K	93	GLN
3	K	108	ASN
1	L	200	ASN
1	L	204	HIS
1	F	119	HIS
1	F	200	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, 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	C	122/128 (95%)	1.42	31 (25%)	1 1	65, 78, 92, 96	8 (6%)
1	F	122/128 (95%)	2.00	51 (41%)	0 0	76, 87, 103, 108	8 (6%)
1	I	122/128 (95%)	0.93	16 (13%)	5 2	53, 63, 81, 87	8 (6%)
1	L	122/128 (95%)	1.65	36 (29%)	1 0	64, 71, 84, 93	8 (6%)
2	A	133/136 (97%)	0.92	15 (11%)	7 3	41, 53, 63, 69	0
2	D	133/136 (97%)	1.06	21 (15%)	3 1	46, 70, 80, 86	0
2	G	133/136 (97%)	0.83	9 (6%)	20 10	39, 50, 59, 63	0
2	J	127/136 (93%)	1.34	25 (19%)	1 1	44, 72, 82, 102	0
3	B	123/146 (84%)	0.66	6 (4%)	33 18	36, 44, 57, 61	0
3	E	123/146 (84%)	0.70	8 (6%)	22 11	37, 47, 67, 72	0
3	H	123/146 (84%)	0.76	7 (5%)	27 14	35, 42, 56, 61	0
3	K	123/146 (84%)	0.80	10 (8%)	15 7	37, 45, 64, 67	0
All	All	1506/1640 (91%)	1.09	235 (15%)	3 1	35, 59, 89, 108	32 (2%)

All (235) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	221	GLY	9.8
1	L	221	GLY	8.6
1	C	191	GLY	7.6
1	F	143	ARG	7.3
1	C	105	ASN	6.7
2	J	58	ILE	6.7
1	F	191	GLY	6.6
1	L	100	SER	6.5
2	A	136	TYR	6.1
1	F	220	ALA	6.1
1	C	192	ASN	6.0

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Mol	Chain	Res	Type	RSRZ
1	F	105	ASN	6.0
1	C	221	GLY	5.4
2	J	59	SER	5.3
1	F	164	GLN	5.2
1	F	175	GLY	5.1
2	J	136	TYR	5.1
1	L	168	GLU	5.1
1	F	219	LYS	5.0
1	I	191	GLY	5.0
1	L	175	GLY	4.8
2	J	8	GLY	4.8
1	F	214	LEU	4.8
1	C	134	ASN	4.7
2	J	110	GLU	4.7
1	F	166	SER	4.7
1	I	166	SER	4.5
1	L	182	MET	4.5
2	J	7	PHE	4.4
1	F	188	ASP	4.4
1	L	105	ASN	4.3
3	K	91	GLN	4.2
1	F	113	CYS	4.2
2	D	122	TYR	4.2
1	L	192	ASN	4.1
3	B	60	LYS	4.1
1	I	105	ASN	4.0
1	L	164	GLN	4.0
2	J	18	GLN	4.0
3	H	92	GLU	4.0
2	J	35	ALA	3.9
1	F	185	PHE	3.9
2	D	133	LEU	3.9
1	F	183	PHE	3.9
1	F	144	ASN	3.9
1	I	183	PHE	3.9
1	F	115	GLY	3.8
1	C	183	PHE	3.8
3	B	92	GLU	3.8
2	D	119	VAL	3.7
1	L	166	SER	3.7
2	D	136	TYR	3.7
2	J	56	TRP	3.7

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Mol	Chain	Res	Type	RSRZ
2	J	11	PRO	3.5
2	D	96	GLU	3.5
2	J	9	TRP	3.4
1	F	101	PRO	3.4
1	L	188	ASP	3.3
1	L	134	ASN	3.3
2	J	130	VAL	3.3
1	I	221	GLY	3.3
2	A	98	LEU	3.3
1	L	165	LYS	3.3
1	L	137	LEU	3.2
1	F	203	MET	3.2
1	L	132	ASP	3.2
1	C	182	MET	3.2
1	C	131	THR	3.1
1	F	165	LYS	3.1
1	F	147	GLU	3.1
1	F	149	ILE	3.1
1	F	196	ALA	3.1
2	G	136	TYR	3.1
1	C	170	TRP	3.1
1	F	159	VAL	3.0
3	B	1	ASP	3.0
2	A	65	ALA	3.0
2	J	119	VAL	3.0
2	D	12	TYR	3.0
1	L	141	ASP	2.9
1	L	167	ASN	2.9
1	L	195	CYS	2.9
2	G	79	LYS	2.9
3	K	85	LEU	2.9
2	A	108	ALA	2.9
1	F	215	MET	2.9
1	L	117	PHE	2.9
2	D	20	PHE	2.9
2	J	40	ALA	2.9
1	C	115	GLY	2.9
1	L	142	ASN	2.8
2	J	103	THR	2.8
1	F	202	LYS	2.8
1	C	215	MET	2.8
1	F	170	TRP	2.8

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Mol	Chain	Res	Type	RSRZ
1	L	136	THR	2.8
1	C	141	ASP	2.8
2	D	62	ASP	2.8
2	A	101	LEU	2.8
2	D	54	VAL	2.8
1	F	209	GLU	2.7
3	E	59	LEU	2.7
1	F	198	PHE	2.7
3	E	80	SER	2.7
2	J	23	GLN	2.7
2	A	103	THR	2.7
1	I	192	ASN	2.7
2	A	121	TYR	2.7
1	C	196	ALA	2.7
1	L	193	MET	2.7
2	D	98	LEU	2.7
1	F	106	TRP	2.7
1	F	100	SER	2.6
1	F	176	SER	2.6
1	C	171	LYS	2.6
3	K	86	ASN	2.6
2	J	116	ARG	2.6
1	C	164	GLN	2.6
2	D	78	ASN	2.6
3	H	1	ASP	2.6
1	C	176	SER	2.6
1	C	188	ASP	2.6
2	G	65	ALA	2.6
3	K	93	GLN	2.6
1	L	194	ASN	2.6
2	D	3	GLU	2.5
3	B	78	GLN	2.5
1	C	111	ASP	2.5
1	L	215	MET	2.5
1	F	167	ASN	2.5
3	K	90	TRP	2.5
1	F	145	ILE	2.5
3	K	102	VAL	2.5
1	F	190	LYS	2.5
2	J	52	ASP	2.5
1	F	146	VAL	2.5
2	G	74	LEU	2.5

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Mol	Chain	Res	Type	RSRZ
3	H	115	CYS	2.5
2	D	73	GLY	2.5
2	D	38	ASN	2.5
1	C	165	LYS	2.5
3	H	91	GLN	2.5
1	I	147	GLU	2.5
2	A	115	PHE	2.5
2	D	7	PHE	2.5
1	L	205	PRO	2.5
3	E	60	LYS	2.5
1	L	196	ALA	2.5
1	L	214	LEU	2.5
1	F	142	ASN	2.4
3	E	90	TRP	2.4
1	C	167	ASN	2.4
2	G	64	LEU	2.4
3	K	68	LEU	2.4
1	C	114	TYR	2.4
1	C	181	ASN	2.4
1	L	170	TRP	2.4
2	J	17	TYR	2.4
3	E	57	PRO	2.3
2	D	118	TRP	2.3
1	L	131	THR	2.3
1	F	121	LEU	2.3
1	I	185	PHE	2.3
1	L	169	VAL	2.3
1	F	181	ASN	2.3
2	J	46	GLU	2.3
2	D	16	CYS	2.3
1	C	128	GLN	2.3
1	F	133	MET	2.3
2	J	71	TRP	2.3
1	F	184	GLU	2.3
1	F	119	HIS	2.3
2	A	102	HIS	2.3
2	J	115	PHE	2.3
1	I	219	LYS	2.3
1	F	162	SER	2.3
1	F	182	MET	2.3
1	L	191	GLY	2.3
2	J	19	ALA	2.2

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Mol	Chain	Res	Type	RSRZ
1	I	197	TYR	2.2
1	F	134	ASN	2.2
2	A	69	TYR	2.2
3	H	82	GLY	2.2
2	A	4	ASP	2.2
3	K	60	LYS	2.2
2	G	62	ASP	2.2
1	F	192	ASN	2.2
3	E	92	GLU	2.2
1	C	214	LEU	2.2
1	I	144	ASN	2.2
1	F	129	TYR	2.2
1	C	185	PHE	2.2
2	D	53	PHE	2.2
2	D	58	ILE	2.2
1	L	197	TYR	2.2
1	C	109	TYR	2.1
3	E	1	ASP	2.1
1	L	187	GLU	2.1
2	A	63	GLU	2.1
1	C	100	SER	2.1
1	I	117	PHE	2.1
1	I	134	ASN	2.1
2	J	131	CYS	2.1
1	I	100	SER	2.1
3	B	91	GLN	2.1
3	H	60	LYS	2.1
1	C	102	CYS	2.1
1	C	166	SER	2.1
1	F	195	CYS	2.1
3	H	78	GLN	2.1
1	L	148	TYR	2.1
1	L	160	GLY	2.1
1	F	141	ASP	2.1
2	D	56	TRP	2.1
3	K	115	CYS	2.1
2	G	19	ALA	2.1
2	G	47	SER	2.1
1	I	170	TRP	2.1
2	G	101	LEU	2.1
1	F	110	GLY	2.1
1	L	202	LYS	2.1

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Mol	Chain	Res	Type	RSRZ
2	J	80	GLU	2.1
3	K	19	GLU	2.1
1	C	177	VAL	2.1
3	B	16	PRO	2.1
1	F	117	PHE	2.0
1	I	190	LYS	2.0
1	F	102	CYS	2.0
1	L	159	VAL	2.0
2	A	74	LEU	2.0
3	E	107	LEU	2.0
1	C	220	ALA	2.0
2	A	112	LEU	2.0
2	A	3	GLU	2.0
2	D	2	LEU	2.0

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

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

6.3 Carbohydrates ⓘ

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.