



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 4, 2026 – 11:11 PM UTC

PDB ID : 1L2O / pdb_00001l2o
Title : SCALLOP MYOSIN S1-ADP-p-PDM IN THE ACTIN-DETACHED CON-
FORMATION
Authors : Himmel, M.; Gourinath, S.; Reshetnikova, L.; Shen, Y.; Szent-Gyorgyi, G.;
Cohen, C.
Deposited on : 2002-02-22
Resolution : 2.80 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
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

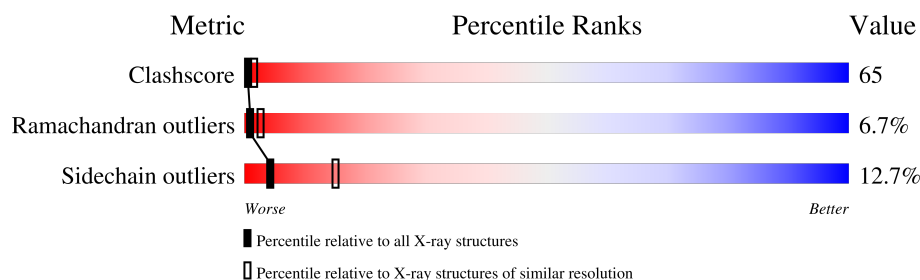
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.80 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))
Clashscore	190562	4276 (2.80-2.80)
Ramachandran outliers	187476	4196 (2.80-2.80)
Sidechain outliers	187428	4198 (2.80-2.80)

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 $\leq 5\%$.

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	835	24% 52% 16% • 7%
2	B	156	27% 49% 13% • 9%
3	C	156	31% 53% 13% ••

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
5	PDM	A	900	X	-	X	-

2 Entry composition [i](#)

There are 8 unique types of molecules in this entry. The entry contains 8339 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 MYOSIN HEAVY CHAIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	777	Total	C	N	O	S	0	0	0
			6011	3825	1035	1116	35			

- Molecule 2 is a protein called MYOSIN REGULATORY LIGHT CHAIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	142	Total	C	N	O	S	0	0	0
			1072	678	169	218	7			

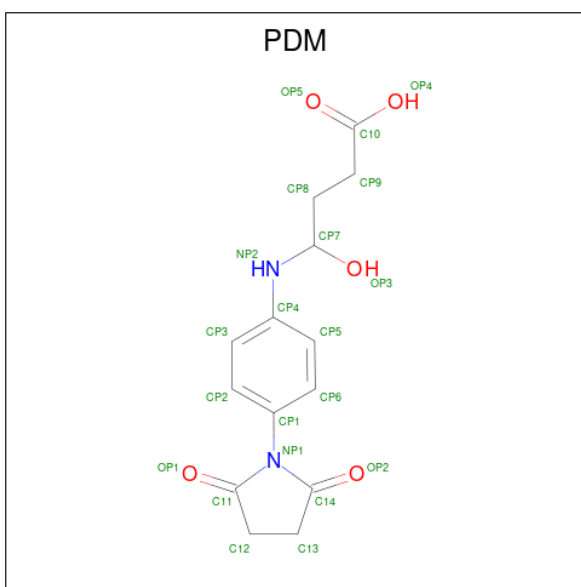
- Molecule 3 is a protein called MYOSIN ESSENTIAL LIGHT CHAIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	153	Total	C	N	O	S	0	0	0
			1174	744	183	240	7			

- Molecule 4 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	Mg	0	0
			1	1		
4	B	1	Total	Mg	0	0
			1	1		

- Molecule 5 is 4-[4-(2,5-DIOXO-PYRROLIDIN-1-YL)-PHENYLAMINO]-4-HYDROXY-BU TYRIC ACID (CCD ID: PDM) (formula: C₁₄H₁₆N₂O₅).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total	C	N	O	0	0
			21	14	2	5		

- Molecule 6 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
6	A	1	Total	C	N	O	P	0	0
			27	10	5	10	2		

- Molecule 7 is CALCIUM ION (CCD ID: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	C	1	Total 1	Ca 1	0	0

- Molecule 8 is water.

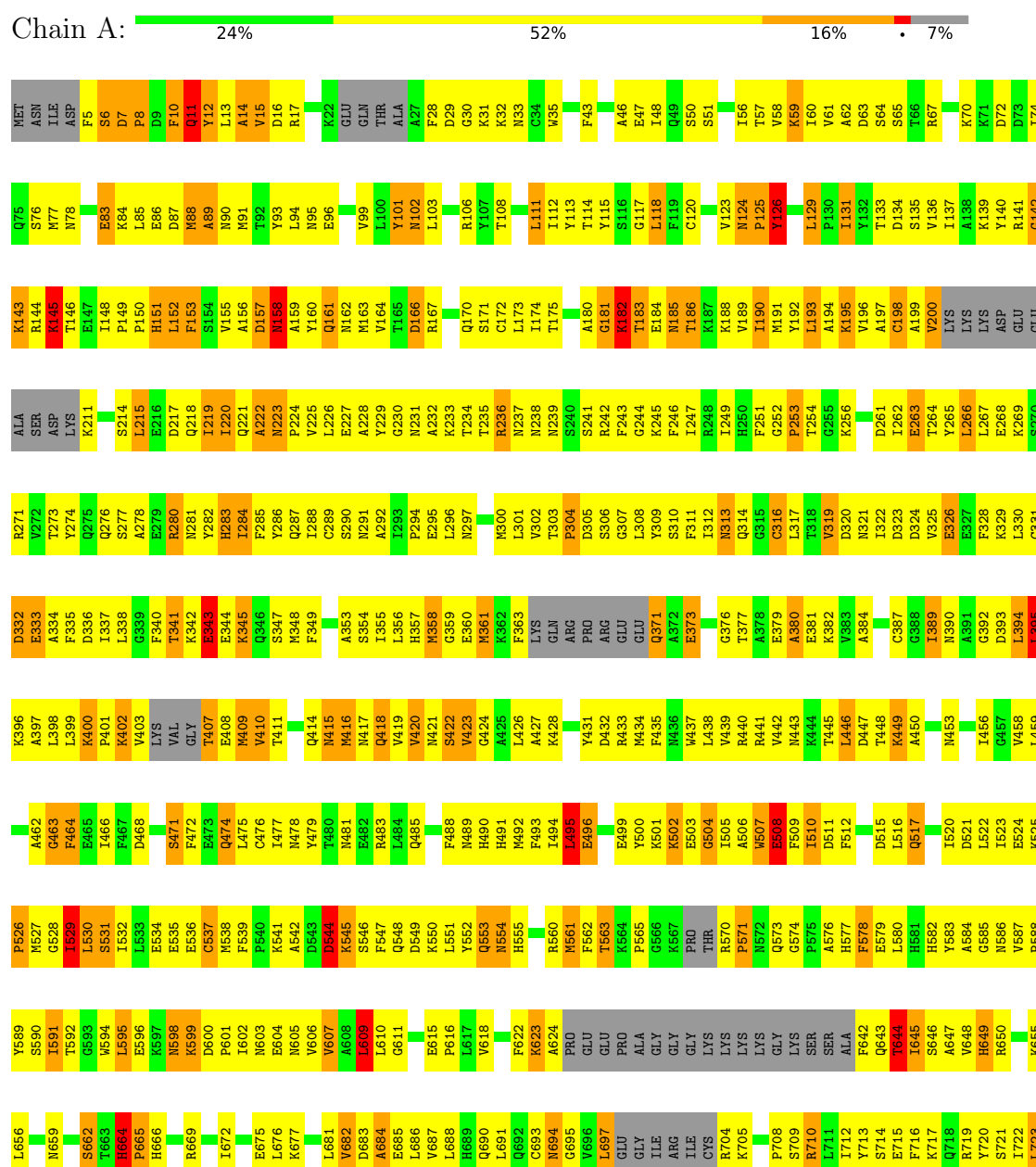
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	A	25	Total 25	O 25	0	0
8	B	2	Total 2	O 2	0	0
8	C	4	Total 4	O 4	0	0

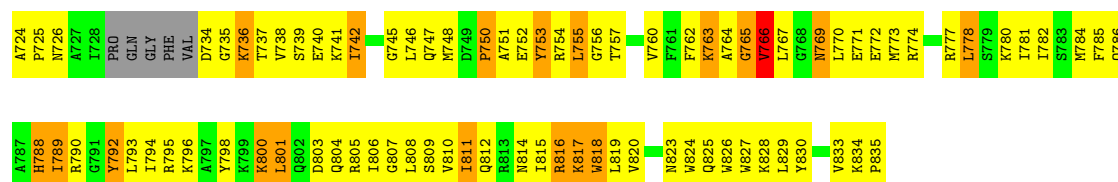
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

Note EDS was not executed.

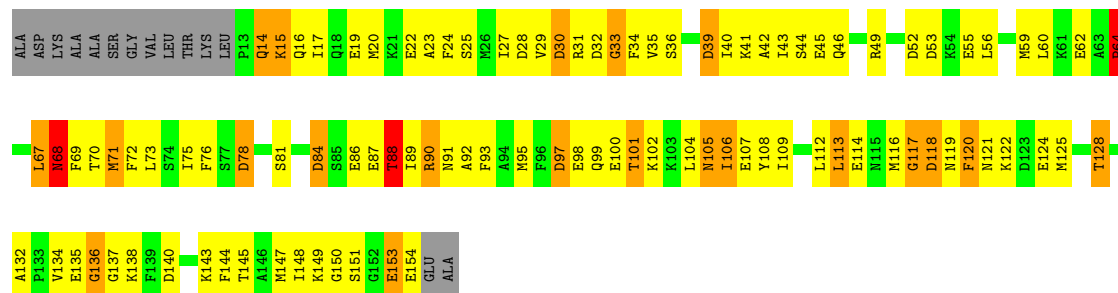
• Molecule 1: MYOSIN HEAVY CHAIN





• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN

Chain B: 27% 49% 13% 9%



• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN

Chain C: 31% 53% 13%



4 Data and refinement statistics

Xtriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	51.80 Å 57.00 Å 150.50 Å 95.60° 96.30° 101.50°	Depositor
Resolution (Å)	54.16 – 2.80	Depositor
% Data completeness (in resolution range)	72.0 (54.16-2.80)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	0.04	Depositor
Refinement program	CNS 0.9	Depositor
R, R_{free}	0.280 , 0.327	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	8339	wwPDB-VP
Average B, all atoms (Å ²)	89.0	wwPDB-VP

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: CA, PDM, MG, ADP

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	0.63	1/6126 (0.0%)	1.35	107/8280 (1.3%)
2	B	0.63	0/1089	1.40	20/1464 (1.4%)
3	C	0.54	0/1198	1.06	8/1619 (0.5%)
All	All	0.62	1/8413 (0.0%)	1.32	135/11363 (1.2%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	158	ASN	CA-CB	-6.60	1.42	1.53

All (135) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	151	SER	N-CA-C	16.13	134.13	110.10
1	A	647	ALA	N-CA-C	-11.77	98.92	113.28
1	A	512	PHE	N-CA-C	11.50	125.37	110.53
2	B	16	GLN	N-CA-C	-11.49	99.39	113.41
1	A	111	LEU	N-CA-C	-11.37	92.23	110.20
1	A	766	VAL	N-CA-C	-10.73	99.09	110.36
1	A	17	ARG	N-CA-C	10.73	124.95	112.72
1	A	644	THR	N-CA-C	-10.46	94.88	109.95
1	A	600	ASP	CA-C-N	10.23	132.63	119.84
1	A	600	ASP	C-N-CA	10.23	132.63	119.84
2	B	97	ASP	N-CA-C	-10.07	92.94	108.96
1	A	499	GLU	N-CA-C	-10.05	101.52	113.88
1	A	7	ASP	CA-C-N	-9.87	107.50	119.84
1	A	7	ASP	C-N-CA	-9.87	107.50	119.84
1	A	126	TYR	N-CA-C	-9.85	100.57	112.58
1	A	545	LYS	N-CA-C	-9.85	101.37	113.97
1	A	12	TYR	N-CA-C	-9.38	99.49	112.25

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	376	GLY	N-CA-C	-9.32	99.01	112.81
3	C	21	TRP	N-CA-C	9.31	124.05	112.87
1	A	276	GLN	N-CA-C	-9.17	97.58	110.50
1	A	506	ALA	N-CA-C	-9.04	94.93	109.76
1	A	509	PHE	N-CA-C	-8.88	98.59	111.30
1	A	695	GLY	O-C-N	8.86	134.22	122.70
1	A	195	LYS	N-CA-C	-8.85	102.26	113.23
1	A	510	ILE	CB-CA-C	-8.82	96.95	111.51
1	A	377	THR	N-CA-C	-8.76	101.19	114.16
2	B	118	ASP	N-CA-C	-8.38	93.88	108.20
1	A	503	GLU	O-C-N	8.30	133.18	121.97
3	C	7	GLU	N-CA-C	-8.27	102.22	111.07
1	A	736	LYS	N-CA-C	8.17	122.51	112.54
1	A	725	PRO	N-CA-C	8.17	129.29	112.47
1	A	14	ALA	N-CA-C	8.04	127.92	110.80
1	A	266	LEU	N-CA-C	8.02	122.10	111.28
1	A	7	ASP	N-CA-C	8.01	127.52	109.81
3	C	22	ASP	N-CA-C	-7.99	103.02	114.12
1	A	757	THR	N-CA-C	7.97	122.26	112.54
1	A	539	PHE	CB-CA-C	-7.90	97.67	109.60
1	A	531	SER	N-CA-C	-7.89	104.13	114.31
2	B	150	GLY	N-CA-C	7.76	131.57	113.18
1	A	538	MET	N-CA-C	-7.67	101.00	112.04
1	A	158	ASN	CA-CB-CG	-7.61	104.99	112.60
1	A	800	LYS	N-CA-C	-7.57	103.04	111.82
1	A	407	THR	N-CA-C	-7.55	89.86	111.00
1	A	490	HIS	N-CA-C	-7.53	103.02	111.07
1	A	342	LYS	N-CA-C	-7.47	102.82	112.23
2	B	153	GLU	N-CA-C	7.46	120.50	109.24
1	A	10	PHE	N-CA-C	-7.44	104.20	113.28
2	B	150	GLY	CA-C-N	7.44	131.31	120.82
2	B	150	GLY	C-N-CA	7.44	131.31	120.82
1	A	541	LYS	N-CA-C	-7.20	103.11	112.68
1	A	6	SER	N-CA-C	-7.14	99.22	109.29
1	A	765	GLY	N-CA-C	-7.10	96.36	113.18
1	A	544	ASP	N-CA-C	7.00	125.71	110.80
1	A	806	ILE	N-CA-C	-6.99	103.38	111.00
1	A	789	ILE	N-CA-C	-6.96	103.99	110.53
1	A	510	ILE	CA-C-N	-6.93	108.30	121.54
1	A	510	ILE	C-N-CA	-6.93	108.30	121.54
1	A	190	ILE	N-CA-C	-6.84	104.19	110.82
1	A	812	GLN	N-CA-C	-6.80	100.69	111.02

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	196	VAL	O-C-N	6.78	129.62	122.17
3	C	116	ARG	N-CA-C	6.73	118.69	110.41
1	A	11	GLN	N-CA-C	6.67	125.02	110.80
1	A	358	MET	N-CA-C	-6.63	103.27	111.75
1	A	407	THR	CA-C-N	-6.63	108.89	121.54
1	A	407	THR	C-N-CA	-6.63	108.89	121.54
1	A	143	LYS	N-CA-C	6.55	120.56	110.20
1	A	410	VAL	N-CA-C	6.52	122.90	109.34
1	A	646	SER	N-CA-C	6.45	123.09	114.12
2	B	81	SER	N-CA-C	6.41	119.08	111.33
1	A	664	HIS	N-CA-C	-6.39	94.75	108.93
2	B	113	LEU	N-CA-C	6.39	118.24	111.28
2	B	67	LEU	N-CA-C	6.36	120.56	110.70
1	A	503	GLU	N-CA-C	-6.36	102.02	111.81
1	A	546	SER	N-CA-C	-6.32	104.67	112.38
3	C	19	ASP	N-CA-C	-6.25	103.78	111.40
1	A	574	GLY	CA-C-N	6.23	126.44	119.90
1	A	574	GLY	C-N-CA	6.23	126.44	119.90
1	A	537	CYS	N-CA-C	-6.21	105.39	114.39
1	A	609	LEU	N-CA-C	-6.17	104.56	111.28
1	A	539	PHE	CA-C-N	6.13	127.50	119.84
1	A	539	PHE	C-N-CA	6.13	127.50	119.84
1	A	763	LYS	O-C-N	-6.06	114.25	122.19
1	A	196	VAL	N-CA-C	6.05	120.50	113.42
1	A	402	LYS	N-CA-C	5.96	118.47	109.41
1	A	503	GLU	CA-C-N	5.93	133.04	121.41
1	A	503	GLU	C-N-CA	5.93	133.04	121.41
1	A	755	LEU	N-CA-C	5.92	117.51	109.11
2	B	132	ALA	CA-C-N	5.89	127.20	119.84
2	B	132	ALA	C-N-CA	5.89	127.20	119.84
1	A	535	GLU	N-CA-C	-5.87	106.29	113.50
1	A	510	ILE	N-CA-C	-5.75	101.28	109.51
1	A	796	LYS	N-CA-C	-5.74	104.71	110.97
1	A	664	HIS	CA-C-N	5.72	126.04	119.92
1	A	664	HIS	C-N-CA	5.72	126.04	119.92
1	A	186	THR	N-CA-C	-5.72	104.66	111.69
1	A	763	LYS	CA-C-N	-5.70	110.65	121.54
1	A	763	LYS	C-N-CA	-5.70	110.65	121.54
1	A	682	VAL	N-CA-C	5.66	116.14	107.77
1	A	496	GLU	N-CA-C	-5.65	104.81	110.97
2	B	119	ASN	N-CA-C	5.60	118.93	110.64
1	A	517	GLN	N-CA-C	-5.59	105.18	112.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	30	ASP	N-CA-C	-5.58	105.57	112.38
3	C	115	GLU	N-CA-C	-5.58	100.72	109.25
2	B	84	ASP	N-CA-C	-5.55	103.37	110.53
1	A	649	HIS	N-CA-C	-5.55	104.73	112.45
1	A	662	SER	N-CA-C	-5.55	105.72	112.88
2	B	68	ASN	N-CA-C	-5.49	103.65	110.41
1	A	423	VAL	N-CA-C	-5.48	105.50	110.82
1	A	809	SER	N-CA-C	-5.46	107.16	113.88
3	C	118	SER	N-CA-C	-5.44	102.95	110.35
1	A	96	GLU	N-CA-C	5.41	117.93	111.71
2	B	105	ASN	N-CA-C	-5.40	102.30	110.24
1	A	131	ILE	N-CA-C	5.40	117.39	111.77
1	A	196	VAL	CB-CA-C	-5.37	105.02	110.88
1	A	750	PRO	N-CA-C	5.36	123.52	112.47
1	A	89	ALA	N-CA-C	-5.32	106.29	112.89
1	A	311	PHE	N-CA-C	5.31	117.98	111.82
3	C	11	LEU	N-CA-C	-5.30	105.17	111.69
2	B	106	ILE	N-CA-C	5.27	120.31	109.34
1	A	511	ASP	CA-C-O	5.27	128.04	120.51
1	A	463	GLY	N-CA-C	5.21	118.89	111.12
1	A	16	ASP	N-CA-C	5.20	118.80	111.52
1	A	495	LEU	N-CA-C	-5.20	106.19	112.54
1	A	753	TYR	N-CA-C	5.18	116.16	108.60
1	A	474	GLN	N-CA-C	5.17	116.92	111.28
2	B	88	THR	N-CA-C	-5.13	106.12	112.38
1	A	422	SER	N-CA-C	-5.13	105.77	112.23
1	A	28	PHE	N-CA-C	5.11	117.77	109.24
1	A	390	ASN	N-CA-C	5.08	118.08	109.76
1	A	508	GLU	N-CA-C	5.05	121.56	110.80
1	A	400	LYS	CA-C-N	5.04	126.14	119.84
1	A	400	LYS	C-N-CA	5.04	126.14	119.84
1	A	665	PRO	N-CA-C	5.03	119.13	111.34
1	A	811	ILE	CA-C-N	-5.01	116.48	122.44
1	A	811	ILE	C-N-CA	-5.01	116.48	122.44

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen

atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	6011	0	5802	805	0
2	B	1072	0	997	165	0
3	C	1174	0	1061	135	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
5	A	21	0	10	15	0
6	A	27	0	12	3	0
7	C	1	0	0	0	0
8	A	25	0	0	18	0
8	B	2	0	0	0	0
8	C	4	0	0	2	0
All	All	8339	0	7882	1052	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 65.

All (1052) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:705:LYS:CG	5:A:900:PDM:H122	1.28	1.60
1:A:134:ASP:OD1	1:A:195:LYS:HE3	1.16	1.27
1:A:705:LYS:CD	5:A:900:PDM:H122	1.59	1.23
1:A:705:LYS:HG2	5:A:900:PDM:C12	1.67	1.22
1:A:402:LYS:CD	1:A:409:MET:HE2	1.72	1.18
1:A:46:ALA:HA	1:A:61:VAL:HG23	1.22	1.18
1:A:11:GLN:CG	1:A:12:TYR:H	1.57	1.17
1:A:402:LYS:HG2	1:A:403:VAL:N	1.57	1.16
1:A:833:VAL:O	1:A:835:PRO:HD3	1.44	1.16
1:A:88:MET:HE3	1:A:102:ASN:HB3	1.30	1.14
1:A:15:VAL:HG22	1:A:86:GLU:OE2	1.48	1.12
1:A:112:ILE:HD13	1:A:125:PRO:HG3	1.29	1.12
1:A:134:ASP:OD1	1:A:195:LYS:CE	1.99	1.10
1:A:508:GLU:OE1	1:A:508:GLU:HA	1.46	1.08
1:A:764:ALA:H	1:A:766:VAL:HG23	1.13	1.07
1:A:11:GLN:HG2	1:A:12:TYR:H	1.15	1.06
1:A:11:GLN:HG3	1:A:12:TYR:N	1.71	1.06
1:A:402:LYS:CG	1:A:403:VAL:N	2.16	1.06
3:C:6:ASP:HA	3:C:9:ASP:HB2	1.39	1.04
1:A:507:TRP:O	1:A:507:TRP:CE3	2.12	1.03

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:68:ASN:HD22	2:B:68:ASN:N	1.53	1.03
1:A:402:LYS:HD2	1:A:409:MET:CE	1.88	1.03
1:A:11:GLN:CG	1:A:12:TYR:N	2.16	1.02
3:C:73:GLU:HA	3:C:76:MET:HE2	1.40	1.02
1:A:529:ILE:HG22	1:A:551:LEU:HD22	1.42	1.01
1:A:764:ALA:H	1:A:766:VAL:CG2	1.73	1.00
1:A:500:TYR:O	1:A:505:ILE:O	1.80	1.00
1:A:801:LEU:HD12	3:C:17:LEU:HD21	1.41	1.00
1:A:705:LYS:CG	5:A:900:PDM:C12	2.25	1.00
1:A:576:ALA:CB	1:A:588:PRO:HB2	1.91	0.99
1:A:402:LYS:HD2	1:A:409:MET:HE2	1.04	0.99
2:B:68:ASN:H	2:B:68:ASN:ND2	1.53	0.98
1:A:373:GLU:HG3	1:A:399:LEU:HD22	1.45	0.98
2:B:52:ASP:CG	2:B:53:ASP:H	1.71	0.98
1:A:95:ASN:O	1:A:99:VAL:HG23	1.64	0.97
1:A:185:ASN:HD22	1:A:185:ASN:H	0.99	0.95
1:A:115:TYR:HE2	1:A:145:LYS:HE2	1.29	0.95
2:B:145:THR:HA	2:B:148:ILE:HG22	1.49	0.95
1:A:505:ILE:HD13	1:A:754:ARG:CB	1.96	0.94
1:A:225:VAL:HG23	1:A:226:LEU:H	1.32	0.94
1:A:523:ILE:O	1:A:530:LEU:HG	1.68	0.94
1:A:115:TYR:CE1	1:A:150:PRO:HA	2.03	0.94
1:A:800:LYS:O	1:A:804:GLN:HG3	1.68	0.93
1:A:623:LYS:HG3	1:A:624:ALA:H	1.31	0.92
1:A:466:ILE:HD12	1:A:587:VAL:HG22	1.49	0.92
3:C:29:ASP:OD1	3:C:58:MET:HG3	1.70	0.92
1:A:46:ALA:CA	1:A:61:VAL:HG23	1.99	0.91
1:A:309:TYR:CD2	1:A:356:LEU:HB3	2.06	0.91
3:C:107:ARG:HD2	8:C:505:HOH:O	1.68	0.90
1:A:409:MET:SD	1:A:409:MET:C	2.54	0.90
1:A:415:ASN:H	1:A:418:GLN:HB2	1.36	0.90
2:B:14:GLN:HE21	2:B:14:GLN:HA	1.34	0.90
1:A:115:TYR:HE1	1:A:150:PRO:HA	1.36	0.89
1:A:764:ALA:N	1:A:766:VAL:HG23	1.87	0.89
2:B:32:ASP:C	2:B:34:PHE:H	1.80	0.89
1:A:505:ILE:HD13	1:A:754:ARG:HB2	1.55	0.88
1:A:185:ASN:H	1:A:185:ASN:ND2	1.72	0.87
1:A:681:LEU:HD12	1:A:682:VAL:H	1.40	0.86
3:C:42:ILE:HG22	3:C:44:PRO:HD3	1.58	0.86
1:A:15:VAL:HG23	1:A:149:PRO:HB3	1.57	0.86
2:B:73:LEU:HD12	2:B:73:LEU:H	1.40	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:402:LYS:HG3	1:A:409:MET:SD	2.17	0.85
1:A:297:ASN:OD1	1:A:304:PRO:HG3	1.75	0.84
1:A:705:LYS:HG2	5:A:900:PDM:H122	0.84	0.84
1:A:505:ILE:HD11	1:A:756:GLY:N	1.93	0.84
1:A:193:LEU:HD21	1:A:456:ILE:HD12	1.60	0.84
1:A:578:PHE:HE2	1:A:580:LEU:HG	1.41	0.83
1:A:115:TYR:CE2	1:A:145:LYS:HE2	2.13	0.83
1:A:185:ASN:O	1:A:189:VAL:HG23	1.79	0.82
1:A:285:PHE:HB3	1:A:312:ILE:HG21	1.61	0.82
1:A:112:ILE:HD11	1:A:129:LEU:HD11	1.61	0.82
1:A:580:LEU:O	1:A:586:ASN:HA	1.78	0.82
2:B:143:LYS:HE2	2:B:143:LYS:HA	1.61	0.82
1:A:163:MET:HE1	1:A:251:PHE:HB2	1.61	0.82
1:A:595:LEU:O	1:A:599:LYS:HE2	1.79	0.82
2:B:52:ASP:HB3	2:B:55:GLU:HG3	1.60	0.82
2:B:135:GLU:O	2:B:137:GLY:N	2.13	0.82
1:A:373:GLU:HG3	1:A:399:LEU:CD2	2.09	0.82
1:A:833:VAL:O	1:A:835:PRO:CD	2.28	0.81
1:A:710:ARG:N	1:A:710:ARG:HD2	1.95	0.81
1:A:157:ASP:OD1	1:A:192:TYR:OH	1.97	0.80
1:A:402:LYS:CD	1:A:409:MET:CE	2.53	0.80
1:A:697:LEU:HD23	1:A:704:ARG:HD3	1.64	0.80
1:A:417:ASN:C	1:A:419:VAL:H	1.89	0.80
1:A:407:THR:O	1:A:408:GLU:C	2.17	0.80
1:A:112:ILE:HD12	1:A:129:LEU:HD12	1.63	0.79
1:A:313:ASN:C	1:A:313:ASN:HD22	1.88	0.79
1:A:578:PHE:CE2	1:A:580:LEU:HG	2.16	0.79
2:B:32:ASP:O	2:B:34:PHE:N	2.15	0.79
3:C:42:ILE:HG22	3:C:43:ASN:H	1.46	0.79
1:A:112:ILE:HG23	1:A:123:VAL:O	1.82	0.79
1:A:529:ILE:HG22	1:A:551:LEU:CD2	2.12	0.79
1:A:395:LEU:HD13	1:A:395:LEU:O	1.82	0.79
1:A:471:SER:OG	1:A:472:PHE:N	2.04	0.79
1:A:86:GLU:HG2	1:A:106:ARG:HH12	1.46	0.79
1:A:602:ILE:HD11	1:A:607:VAL:HG22	1.65	0.79
1:A:8:PRO:HG2	1:A:139:LYS:HE2	1.64	0.78
1:A:361:MET:HE2	1:A:380:ALA:HB1	1.66	0.78
1:A:229:TYR:CD2	1:A:284:ILE:HD13	2.19	0.78
1:A:537:CYS:CB	1:A:599:LYS:HZ2	1.97	0.78
1:A:521:ASP:HB3	1:A:525:LYS:HD3	1.66	0.77
1:A:547:PHE:CE1	1:A:551:LEU:HD21	2.19	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:508:GLU:OE1	1:A:508:GLU:CA	2.29	0.77
1:A:548:GLN:CB	1:A:591:ILE:HD13	2.14	0.77
1:A:777:ARG:NH1	1:A:780:LYS:HD3	2.00	0.77
3:C:69:LEU:HB3	3:C:70:PRO:HD3	1.67	0.77
1:A:507:TRP:O	1:A:507:TRP:HE3	1.68	0.76
1:A:225:VAL:HG23	1:A:226:LEU:N	1.99	0.76
1:A:185:ASN:HD22	1:A:185:ASN:N	1.80	0.76
1:A:8:PRO:CG	1:A:139:LYS:HE2	2.15	0.76
1:A:545:LYS:O	1:A:549:ASP:HB2	1.86	0.76
1:A:88:MET:CE	1:A:102:ASN:HB3	2.14	0.76
1:A:697:LEU:O	1:A:697:LEU:HD22	1.86	0.76
1:A:705:LYS:HB2	8:A:1012:HOH:O	1.85	0.76
2:B:40:ILE:C	2:B:42:ALA:H	1.94	0.76
1:A:373:GLU:CG	1:A:399:LEU:HD22	2.15	0.75
1:A:284:ILE:HD11	1:A:431:TYR:OH	1.86	0.75
1:A:319:VAL:HG23	1:A:322:ILE:HB	1.68	0.75
1:A:724:ALA:HB3	1:A:742:ILE:HG23	1.66	0.75
1:A:693:CYS:HB2	5:A:900:PDM:OP3	1.85	0.75
1:A:719:ARG:HH21	1:A:771:GLU:CD	1.95	0.75
1:A:124:ASN:HB2	1:A:180:ALA:O	1.87	0.74
1:A:402:LYS:CG	1:A:403:VAL:H	2.00	0.74
2:B:120:PHE:HB3	2:B:125:MET:HG2	1.67	0.74
3:C:32:LYS:O	3:C:36:VAL:HG23	1.85	0.74
1:A:286:TYR:HE2	1:A:317:LEU:HA	1.51	0.74
1:A:417:ASN:HA	1:A:420:VAL:HG22	1.68	0.74
3:C:33:LEU:C	3:C:33:LEU:HD23	2.13	0.74
1:A:415:ASN:N	1:A:418:GLN:HB2	2.02	0.73
1:A:78:ASN:ND2	1:A:91:MET:HE2	2.03	0.73
1:A:182:LYS:HB2	1:A:182:LYS:NZ	2.03	0.73
1:A:401:PRO:HA	1:A:605:ASN:OD1	1.88	0.73
1:A:402:LYS:CG	1:A:409:MET:CE	2.66	0.73
1:A:723:LEU:HD22	1:A:746:LEU:HD11	1.70	0.73
1:A:284:ILE:HG13	1:A:285:PHE:H	1.53	0.73
1:A:807:GLY:HA3	2:B:95:MET:HE2	1.69	0.73
2:B:145:THR:HA	2:B:148:ILE:CG2	2.18	0.73
1:A:505:ILE:HD13	1:A:754:ARG:HB3	1.68	0.73
2:B:36:SER:H	2:B:39:ASP:HB2	1.54	0.73
1:A:199:ALA:O	1:A:200:VAL:HG23	1.89	0.73
3:C:42:ILE:CG2	3:C:44:PRO:HD3	2.18	0.72
1:A:466:ILE:HG13	1:A:587:VAL:HG13	1.71	0.72
1:A:681:LEU:HD12	1:A:682:VAL:N	2.04	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:752:GLU:OE1	1:A:766:VAL:HG13	1.89	0.72
1:A:833:VAL:HG21	2:B:27:ILE:HD11	1.71	0.72
1:A:508:GLU:CD	1:A:510:ILE:HG13	2.14	0.72
1:A:529:ILE:HG12	1:A:530:LEU:HD23	1.68	0.72
2:B:121:ASN:CG	2:B:124:GLU:HB2	2.14	0.72
1:A:78:ASN:HD22	1:A:91:MET:HE2	1.53	0.72
1:A:112:ILE:CD1	1:A:129:LEU:CD1	2.68	0.72
2:B:140:ASP:OD2	2:B:143:LYS:HG2	1.90	0.72
2:B:145:THR:CA	2:B:148:ILE:HG22	2.20	0.72
1:A:112:ILE:HG22	1:A:112:ILE:O	1.87	0.72
1:A:537:CYS:HB3	1:A:599:LYS:HZ2	1.55	0.72
1:A:152:LEU:HD21	1:A:188:LYS:HB2	1.72	0.71
1:A:112:ILE:CD1	1:A:129:LEU:HD11	2.20	0.71
1:A:623:LYS:HG3	1:A:624:ALA:N	2.04	0.71
1:A:48:ILE:HA	1:A:58:VAL:HG12	1.71	0.71
1:A:508:GLU:CD	1:A:510:ILE:CG1	2.63	0.71
1:A:87:ASP:HA	1:A:115:TYR:O	1.91	0.71
1:A:402:LYS:HG3	1:A:409:MET:CE	2.20	0.71
1:A:112:ILE:HD12	1:A:129:LEU:CD1	2.20	0.71
1:A:88:MET:HE3	1:A:102:ASN:CB	2.17	0.70
1:A:230:GLY:C	1:A:231:ASN:HD22	1.98	0.70
1:A:713:TYR:CE1	1:A:760:VAL:HG22	2.25	0.70
2:B:35:VAL:HB	2:B:67:LEU:HD13	1.71	0.70
1:A:500:TYR:O	1:A:505:ILE:N	2.24	0.70
1:A:818:TRP:NE1	2:B:148:ILE:HA	2.06	0.70
2:B:32:ASP:O	2:B:34:PHE:HD2	1.74	0.70
2:B:69:PHE:O	2:B:72:PHE:HB3	1.91	0.70
1:A:115:TYR:HE1	1:A:150:PRO:CA	2.03	0.70
1:A:576:ALA:HB1	1:A:588:PRO:HB2	1.71	0.70
1:A:222:ALA:HB2	1:A:338:LEU:HD11	1.74	0.70
1:A:530:LEU:C	1:A:650:ARG:HH22	1.99	0.70
1:A:765:GLY:O	1:A:769:ASN:N	2.21	0.70
3:C:6:ASP:CA	3:C:9:ASP:HB2	2.20	0.70
3:C:42:ILE:HG22	3:C:43:ASN:N	2.07	0.70
2:B:36:SER:N	2:B:39:ASP:HB2	2.06	0.69
1:A:280:ARG:HG2	1:A:316:CYS:O	1.92	0.69
2:B:69:PHE:CE2	2:B:73:LEU:HD11	2.27	0.69
1:A:87:ASP:C	1:A:89:ALA:H	2.01	0.69
1:A:598:ASN:HD22	1:A:644:THR:HG22	1.57	0.69
1:A:262:ILE:N	1:A:443:ASN:HD21	1.91	0.69
1:A:371:GLN:C	1:A:371:GLN:CD	2.60	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:23:ALA:O	2:B:27:ILE:HD13	1.93	0.69
1:A:409:MET:SD	1:A:409:MET:O	2.51	0.69
1:A:417:ASN:HA	1:A:420:VAL:CG2	2.22	0.69
2:B:106:ILE:HG23	2:B:107:GLU:N	2.09	0.68
1:A:389:ILE:HD12	1:A:389:ILE:H	1.57	0.68
1:A:789:ILE:HG23	3:C:125:ILE:HG12	1.76	0.68
1:A:228:ALA:HB1	1:A:284:ILE:HG23	1.76	0.68
1:A:529:ILE:CG2	1:A:551:LEU:HD13	2.24	0.68
1:A:112:ILE:CG2	1:A:123:VAL:O	2.43	0.67
1:A:284:ILE:HA	1:A:287:GLN:HG2	1.76	0.67
1:A:705:LYS:HA	8:A:1010:HOH:O	1.94	0.67
3:C:46:ASN:HB3	3:C:50:PHE:CE1	2.29	0.67
1:A:15:VAL:CG2	1:A:149:PRO:HB3	2.23	0.67
1:A:135:SER:O	1:A:139:LYS:HG3	1.94	0.67
1:A:170:GLN:HA	1:A:170:GLN:HE21	1.60	0.67
1:A:224:PRO:O	1:A:228:ALA:HB2	1.93	0.67
1:A:643:GLN:HA	1:A:648:VAL:HG23	1.77	0.67
1:A:313:ASN:C	1:A:313:ASN:ND2	2.51	0.67
1:A:95:ASN:OD1	1:A:95:ASN:C	2.37	0.67
1:A:361:MET:HE2	1:A:380:ALA:CB	2.25	0.67
3:C:100:PHE:CE1	3:C:140:LYS:HG2	2.30	0.67
1:A:94:LEU:O	1:A:94:LEU:HG	1.94	0.66
1:A:417:ASN:C	1:A:419:VAL:N	2.50	0.66
1:A:811:ILE:HG22	1:A:811:ILE:O	1.95	0.66
2:B:17:ILE:HD12	2:B:73:LEU:HD23	1.74	0.66
2:B:32:ASP:O	2:B:34:PHE:CD2	2.48	0.66
1:A:300:MET:O	1:A:301:LEU:HB2	1.93	0.66
1:A:807:GLY:HA3	2:B:95:MET:CE	2.25	0.66
2:B:121:ASN:OD1	2:B:124:GLU:HB2	1.94	0.66
1:A:13:LEU:CB	1:A:131:ILE:HG22	2.25	0.66
1:A:160:TYR:O	1:A:164:VAL:HG23	1.95	0.66
1:A:341:THR:OG1	1:A:343:GLU:HG2	1.96	0.66
1:A:752:GLU:HG2	1:A:763:LYS:NZ	2.10	0.66
2:B:14:GLN:O	2:B:17:ILE:HG12	1.95	0.66
3:C:118:SER:HB3	3:C:120:GLU:HG2	1.76	0.66
1:A:808:LEU:HG	1:A:808:LEU:O	1.94	0.66
1:A:300:MET:HB3	1:A:353:ALA:CB	2.26	0.65
1:A:803:ASP:O	2:B:95:MET:HE1	1.97	0.65
1:A:85:LEU:HG	1:A:86:GLU:H	1.61	0.65
1:A:537:CYS:HB2	1:A:599:LYS:HE3	1.79	0.65
1:A:602:ILE:CD1	1:A:607:VAL:HG22	2.27	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:280:ARG:HB2	8:A:1018:HOH:O	1.96	0.65
1:A:811:ILE:HD11	2:B:93:PHE:N	2.12	0.65
1:A:565:PRO:HD3	1:A:577:HIS:O	1.97	0.65
1:A:126:TYR:CE1	1:A:677:LYS:HA	2.32	0.65
1:A:398:LEU:O	1:A:419:VAL:HG22	1.97	0.65
1:A:777:ARG:HH12	1:A:780:LYS:HD3	1.60	0.65
1:A:790:ARG:NH1	3:C:117:LEU:HD23	2.12	0.65
2:B:44:SER:C	2:B:46:GLN:H	2.05	0.65
1:A:85:LEU:HG	1:A:86:GLU:N	2.12	0.64
1:A:170:GLN:HE22	1:A:664:HIS:CD2	2.14	0.64
2:B:52:ASP:CG	2:B:53:ASP:N	2.44	0.64
2:B:136:GLY:O	2:B:138:LYS:HD2	1.97	0.64
1:A:87:ASP:O	1:A:89:ALA:N	2.31	0.64
1:A:223:ASN:O	1:A:227:GLU:HB2	1.98	0.64
2:B:69:PHE:O	2:B:73:LEU:HD12	1.96	0.64
1:A:15:VAL:HG23	1:A:149:PRO:CB	2.26	0.64
1:A:811:ILE:HD11	2:B:92:ALA:C	2.22	0.64
1:A:395:LEU:O	8:A:1005:HOH:O	2.15	0.64
3:C:91:LYS:HZ3	3:C:91:LYS:HB2	1.62	0.64
3:C:46:ASN:O	3:C:49:VAL:HG22	1.98	0.64
3:C:82:THR:HG23	3:C:85:ASP:OD2	1.98	0.64
2:B:31:ARG:C	2:B:33:GLY:H	2.06	0.64
1:A:280:ARG:CB	8:A:1018:HOH:O	2.45	0.64
1:A:801:LEU:HD12	3:C:17:LEU:CD2	2.21	0.64
1:A:220:ILE:HG22	1:A:221:GLN:N	2.13	0.64
1:A:253:PRO:HG3	1:A:453:ASN:ND2	2.13	0.63
1:A:265:TYR:OH	1:A:656:LEU:HD13	1.98	0.63
1:A:185:ASN:ND2	1:A:185:ASN:N	2.41	0.63
2:B:124:GLU:O	2:B:128:THR:HG22	1.98	0.63
1:A:752:GLU:HG2	1:A:763:LYS:HZ2	1.64	0.63
1:A:183:THR:O	1:A:183:THR:HG22	1.98	0.63
1:A:251:PHE:HA	1:A:256:LYS:O	1.99	0.63
1:A:291:ASN:HB2	1:A:304:PRO:HB3	1.80	0.63
1:A:463:GLY:HA2	1:A:481:ASN:OD1	1.98	0.63
2:B:148:ILE:HG23	2:B:149:LYS:N	2.14	0.63
1:A:705:LYS:HG2	5:A:900:PDM:C11	2.27	0.63
1:A:115:TYR:CE1	1:A:150:PRO:CA	2.80	0.62
1:A:286:TYR:OH	1:A:312:ILE:O	2.11	0.62
1:A:505:ILE:HD11	1:A:756:GLY:H	1.60	0.62
2:B:40:ILE:C	2:B:42:ALA:N	2.55	0.62
1:A:529:ILE:HG22	1:A:551:LEU:HD13	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:576:ALA:HB3	1:A:588:PRO:HB2	1.78	0.62
2:B:116:MET:O	2:B:117:GLY:C	2.42	0.62
1:A:241:SER:HB3	8:A:1019:HOH:O	1.97	0.62
1:A:162:ASN:O	1:A:166:ASP:HB2	1.99	0.62
1:A:225:VAL:CG2	1:A:226:LEU:H	2.10	0.62
1:A:323:ASP:OD1	1:A:326:GLU:HB2	2.00	0.62
1:A:137:ILE:HG23	1:A:192:TYR:CE1	2.35	0.62
1:A:170:GLN:HA	1:A:170:GLN:NE2	2.15	0.62
1:A:186:THR:HG23	1:A:458:VAL:CG1	2.29	0.62
1:A:416:MET:O	1:A:420:VAL:HG22	1.99	0.62
1:A:227:GLU:HG2	1:A:231:ASN:OD1	1.99	0.62
1:A:643:GLN:HA	1:A:648:VAL:CG2	2.30	0.62
2:B:153:GLU:O	2:B:154:GLU:HB2	2.00	0.62
1:A:818:TRP:CG	2:B:148:ILE:HG13	2.35	0.62
1:A:125:PRO:O	1:A:126:TYR:HB2	1.98	0.62
1:A:245:LYS:O	1:A:459:LEU:HD12	2.00	0.62
1:A:402:LYS:HG3	1:A:403:VAL:H	1.63	0.62
1:A:570:ARG:N	1:A:571:PRO:HD2	2.14	0.62
3:C:15:PHE:CD1	3:C:15:PHE:C	2.78	0.62
1:A:181:GLY:O	1:A:185:ASN:ND2	2.33	0.61
2:B:52:ASP:O	2:B:56:LEU:HG	1.99	0.61
3:C:46:ASN:HB3	3:C:50:PHE:HE1	1.64	0.61
5:A:900:PDM:OP1	5:A:900:PDM:HP6	2.00	0.61
1:A:198:CYS:SG	1:A:199:ALA:N	2.74	0.61
1:A:191:MET:HA	1:A:220:ILE:HD11	1.82	0.61
1:A:697:LEU:O	1:A:704:ARG:HD3	2.00	0.61
1:A:505:ILE:HG21	1:A:754:ARG:CB	2.30	0.61
1:A:262:ILE:HG22	1:A:263:GLU:N	2.16	0.61
1:A:294:PRO:C	1:A:296:LEU:H	2.08	0.61
3:C:66:GLU:N	3:C:66:GLU:OE1	2.34	0.61
1:A:340:PHE:CZ	1:A:441:ARG:HG2	2.35	0.61
1:A:414:GLN:OE1	1:A:418:GLN:HB3	1.99	0.61
1:A:537:CYS:HB2	1:A:599:LYS:CE	2.30	0.61
1:A:59:LYS:HA	1:A:65:SER:O	2.00	0.60
1:A:242:ARG:O	8:A:1003:HOH:O	2.15	0.60
1:A:713:TYR:HB2	1:A:736:LYS:HG2	1.83	0.60
1:A:193:LEU:HD21	1:A:456:ILE:CD1	2.31	0.60
1:A:691:LEU:HA	1:A:694:ASN:HD21	1.66	0.60
3:C:67:GLU:O	3:C:70:PRO:HD2	2.02	0.60
1:A:598:ASN:ND2	1:A:644:THR:HG22	2.15	0.60
2:B:40:ILE:O	2:B:42:ALA:N	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:113:LEU:O	2:B:120:PHE:HB2	2.02	0.60
3:C:5:GLN:O	3:C:8:ILE:HB	2.02	0.60
1:A:312:ILE:HD13	1:A:356:LEU:HD11	1.83	0.60
2:B:29:VAL:HG23	2:B:30:ASP:H	1.67	0.60
1:A:152:LEU:HD11	1:A:189:VAL:CG2	2.31	0.60
1:A:505:ILE:HG22	1:A:507:TRP:HB2	1.83	0.60
1:A:752:GLU:HG2	1:A:763:LYS:CE	2.31	0.60
1:A:807:GLY:CA	2:B:95:MET:HE2	2.32	0.60
1:A:475:LEU:HD23	1:A:589:TYR:CZ	2.36	0.60
3:C:90:PHE:HB3	3:C:141:TYR:CD1	2.37	0.60
3:C:140:LYS:HE3	3:C:143:ASP:OD2	2.02	0.60
3:C:95:ARG:NH2	8:C:503:HOH:O	2.29	0.60
1:A:50:SER:OG	1:A:57:THR:HB	2.02	0.59
1:A:615:GLU:OE2	1:A:616:PRO:HD2	2.02	0.59
1:A:517:GLN:HA	1:A:520:ILE:HB	1.84	0.59
1:A:603:ASN:C	1:A:605:ASN:N	2.60	0.59
2:B:52:ASP:H	2:B:55:GLU:HG3	1.67	0.59
1:A:379:GLU:C	1:A:381:GLU:N	2.59	0.59
1:A:274:TYR:HA	1:A:314:GLN:NE2	2.18	0.59
1:A:399:LEU:N	8:A:1005:HOH:O	2.35	0.59
1:A:501:LYS:O	1:A:504:GLY:HA2	2.03	0.59
1:A:281:ASN:O	8:A:1018:HOH:O	2.17	0.59
3:C:122:VAL:O	3:C:126:ILE:HG13	2.03	0.59
1:A:182:LYS:C	1:A:184:GLU:H	2.10	0.59
1:A:262:ILE:H	1:A:443:ASN:ND2	2.01	0.59
1:A:683:ASP:HB3	1:A:686:LEU:HB3	1.85	0.59
1:A:419:VAL:O	1:A:423:VAL:HG23	2.02	0.59
1:A:704:ARG:HB2	8:A:1011:HOH:O	2.02	0.59
1:A:228:ALA:O	1:A:284:ILE:HG12	2.03	0.59
1:A:174:ILE:N	1:A:174:ILE:HD12	2.18	0.58
1:A:223:ASN:HB2	1:A:224:PRO:HD3	1.83	0.58
1:A:274:TYR:HA	1:A:314:GLN:HE22	1.68	0.58
1:A:598:ASN:HB3	1:A:599:LYS:HE2	1.83	0.58
1:A:529:ILE:HG12	1:A:530:LEU:CD2	2.33	0.58
1:A:792:TYR:CD1	1:A:792:TYR:C	2.81	0.58
1:A:804:GLN:HA	2:B:95:MET:HE3	1.86	0.58
1:A:242:ARG:HE	1:A:271:ARG:HH21	1.49	0.58
1:A:598:ASN:HB3	1:A:599:LYS:CE	2.33	0.58
1:A:789:ILE:HG23	3:C:125:ILE:CG1	2.33	0.58
2:B:86:GLU:O	2:B:90:ARG:HB3	2.03	0.58
1:A:182:LYS:NZ	6:A:999:ADP:O1B	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:417:ASN:O	1:A:419:VAL:N	2.36	0.58
2:B:72:PHE:O	2:B:75:ILE:HG12	2.03	0.58
2:B:145:THR:C	2:B:147:MET:H	2.11	0.58
1:A:63:ASP:CG	1:A:65:SER:HG	2.12	0.58
1:A:547:PHE:C	1:A:549:ASP:H	2.12	0.58
2:B:32:ASP:C	2:B:34:PHE:N	2.47	0.58
2:B:116:MET:HE2	3:C:21:TRP:HE3	1.68	0.58
1:A:815:ILE:C	1:A:817:LYS:H	2.12	0.58
3:C:136:GLU:OE1	3:C:136:GLU:N	2.36	0.58
1:A:47:GLU:O	1:A:58:VAL:HB	2.03	0.58
1:A:137:ILE:HD12	1:A:195:LYS:HD2	1.85	0.58
1:A:284:ILE:O	1:A:287:GLN:N	2.36	0.58
1:A:507:TRP:CE3	1:A:507:TRP:C	2.81	0.58
1:A:523:ILE:O	1:A:530:LEU:CG	2.47	0.58
1:A:814:ASN:ND2	2:B:89:ILE:HD11	2.19	0.58
2:B:17:ILE:HG23	2:B:73:LEU:HD21	1.85	0.58
2:B:135:GLU:O	2:B:136:GLY:C	2.47	0.58
1:A:752:GLU:HG2	1:A:763:LYS:HE3	1.85	0.57
1:A:710:ARG:HA	1:A:760:VAL:O	2.03	0.57
1:A:750:PRO:HA	1:A:753:TYR:CE1	2.39	0.57
2:B:52:ASP:CB	2:B:55:GLU:HG3	2.34	0.57
1:A:221:GLN:O	1:A:224:PRO:HD2	2.04	0.57
1:A:493:PHE:O	1:A:496:GLU:HB3	2.05	0.57
1:A:737:THR:HA	1:A:740:GLU:HB3	1.85	0.57
1:A:805:ARG:HG3	3:C:20:PHE:CZ	2.39	0.57
1:A:35:TRP:HE1	1:A:77:MET:HA	1.70	0.57
1:A:403:VAL:HG12	1:A:403:VAL:O	2.05	0.57
1:A:615:GLU:HG2	1:A:618:VAL:HG23	1.87	0.57
2:B:69:PHE:CZ	2:B:73:LEU:HD11	2.39	0.57
1:A:241:SER:CB	8:A:1019:HOH:O	2.52	0.57
1:A:284:ILE:O	1:A:287:GLN:HG2	2.03	0.57
1:A:442:VAL:O	1:A:445:THR:HG22	2.04	0.57
1:A:705:LYS:CD	5:A:900:PDM:C12	2.15	0.57
1:A:814:ASN:CG	2:B:89:ILE:HD11	2.29	0.57
1:A:152:LEU:CD2	1:A:188:LYS:HB2	2.34	0.57
5:A:900:PDM:HP2	5:A:900:PDM:OP2	2.02	0.57
2:B:14:GLN:HE21	2:B:14:GLN:CA	2.10	0.57
1:A:89:ALA:HB2	1:A:117:GLY:CA	2.35	0.57
1:A:182:LYS:HB2	1:A:182:LYS:HZ2	1.69	0.57
1:A:269:LYS:HE3	1:A:432:ASP:HB2	1.87	0.57
1:A:507:TRP:HE3	1:A:507:TRP:C	2.12	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:10:PHE:CZ	1:A:148:ILE:HD11	2.40	0.57
1:A:190:ILE:HD12	1:A:249:ILE:HD11	1.87	0.57
2:B:69:PHE:CD2	2:B:73:LEU:HD11	2.39	0.57
3:C:131:LEU:HD13	3:C:144:PHE:CD1	2.40	0.57
3:C:18:PHE:CD2	3:C:36:VAL:HG22	2.39	0.56
1:A:237:ASN:C	1:A:237:ASN:OD1	2.48	0.56
2:B:44:SER:C	2:B:46:GLN:N	2.61	0.56
1:A:215:LEU:HD12	1:A:215:LEU:O	2.04	0.56
1:A:415:ASN:ND2	1:A:418:GLN:H	2.03	0.56
1:A:527:MET:O	1:A:555:HIS:CE1	2.58	0.56
1:A:530:LEU:CD2	1:A:530:LEU:N	2.68	0.56
1:A:676:LEU:O	1:A:677:LYS:HB2	2.04	0.56
1:A:697:LEU:CD2	1:A:704:ARG:HD3	2.35	0.56
1:A:29:ASP:H	1:A:33:ASN:ND2	2.02	0.56
1:A:85:LEU:HD21	1:A:90:ASN:HB2	1.87	0.56
1:A:148:ILE:HG13	1:A:149:PRO:HD2	1.87	0.56
1:A:197:ALA:O	1:A:198:CYS:O	2.24	0.56
2:B:24:PHE:CE1	2:B:35:VAL:HG23	2.41	0.56
1:A:285:PHE:CB	1:A:312:ILE:HG21	2.32	0.56
2:B:52:ASP:HB3	2:B:55:GLU:CG	2.32	0.56
1:A:14:ALA:HB1	1:A:149:PRO:HB2	1.86	0.56
1:A:85:LEU:O	1:A:106:ARG:NH1	2.38	0.56
1:A:262:ILE:N	1:A:443:ASN:ND2	2.53	0.56
1:A:331:CYS:O	1:A:334:ALA:HB3	2.06	0.56
1:A:402:LYS:HG2	1:A:403:VAL:CA	2.35	0.56
3:C:34:GLY:C	3:C:36:VAL:H	2.13	0.56
1:A:157:ASP:OD2	1:A:161:GLN:NE2	2.37	0.56
1:A:603:ASN:C	1:A:605:ASN:H	2.12	0.56
1:A:51:SER:HB2	3:C:105:GLU:OE1	2.05	0.56
1:A:218:GLN:O	1:A:219:ILE:C	2.47	0.56
1:A:280:ARG:NH2	1:A:283:HIS:ND1	2.54	0.56
1:A:414:GLN:HB3	1:A:418:GLN:HB3	1.86	0.56
1:A:112:ILE:HD11	1:A:129:LEU:CD1	2.32	0.56
1:A:421:ASN:HD22	1:A:421:ASN:N	2.03	0.56
3:C:3:LEU:HD21	3:C:76:MET:SD	2.46	0.55
3:C:34:GLY:C	3:C:36:VAL:N	2.62	0.55
1:A:284:ILE:O	1:A:285:PHE:C	2.50	0.55
2:B:32:ASP:OD1	2:B:34:PHE:O	2.24	0.55
1:A:325:VAL:HG23	1:A:326:GLU:N	2.21	0.55
1:A:343:GLU:CD	1:A:343:GLU:H	2.13	0.55
2:B:75:ILE:HG13	2:B:76:PHE:HD1	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:90:ARG:HH11	2:B:90:ARG:HG2	1.71	0.55
3:C:105:GLU:O	3:C:108:HIS:HB3	2.06	0.55
1:A:133:THR:OG1	1:A:136:VAL:HG23	2.06	0.55
1:A:277:SER:O	1:A:278:ALA:HB3	2.06	0.55
1:A:750:PRO:HA	1:A:753:TYR:HE1	1.71	0.55
3:C:4:SER:O	3:C:8:ILE:HG13	2.07	0.55
3:C:73:GLU:CA	3:C:76:MET:HE2	2.26	0.55
1:A:721:SER:HA	1:A:742:ILE:HD13	1.88	0.55
1:A:8:PRO:HG3	1:A:139:LYS:HE2	1.87	0.55
1:A:379:GLU:C	1:A:381:GLU:H	2.14	0.55
1:A:447:ASP:O	1:A:448:THR:C	2.49	0.55
1:A:602:ILE:HD11	1:A:607:VAL:CG2	2.34	0.55
1:A:710:ARG:N	1:A:710:ARG:CD	2.67	0.55
1:A:781:ILE:HA	1:A:784:MET:HG3	1.89	0.55
1:A:32:LYS:O	1:A:47:GLU:HA	2.07	0.54
1:A:253:PRO:HG3	1:A:453:ASN:HD22	1.72	0.54
1:A:400:LYS:N	1:A:401:PRO:HD3	2.21	0.54
2:B:78:ASP:N	2:B:78:ASP:OD2	2.38	0.54
3:C:111:THR:CG2	3:C:122:VAL:HG21	2.37	0.54
1:A:6:SER:O	1:A:7:ASP:HB3	2.06	0.54
1:A:529:ILE:HD13	1:A:529:ILE:H	1.72	0.54
1:A:150:PRO:O	1:A:151:HIS:HB2	2.07	0.54
1:A:683:ASP:O	1:A:684:ALA:C	2.50	0.54
2:B:14:GLN:HG3	2:B:15:LYS:HD2	1.90	0.54
1:A:186:THR:HG23	1:A:458:VAL:HG11	1.90	0.54
1:A:532:ILE:C	1:A:534:GLU:H	2.16	0.54
1:A:792:TYR:HE1	3:C:128:LEU:HD13	1.72	0.54
2:B:101:THR:O	2:B:102:LYS:HB2	2.07	0.54
3:C:91:LYS:HZ3	3:C:91:LYS:CB	2.20	0.54
1:A:157:ASP:O	1:A:159:ALA:N	2.40	0.54
1:A:309:TYR:HD2	1:A:356:LEU:HB3	1.65	0.54
1:A:833:VAL:HG21	2:B:27:ILE:CD1	2.37	0.54
1:A:239:ASN:C	1:A:239:ASN:HD22	2.13	0.54
1:A:287:GLN:HB2	1:A:328:PHE:HB2	1.88	0.54
2:B:73:LEU:HD12	2:B:73:LEU:N	2.18	0.54
2:B:104:LEU:O	2:B:105:ASN:C	2.50	0.54
1:A:345:LYS:HG3	1:A:349:PHE:HE2	1.73	0.54
1:A:387:CYS:HB2	1:A:389:ILE:HD11	1.89	0.54
1:A:529:ILE:CG2	1:A:551:LEU:HD22	2.27	0.54
1:A:598:ASN:HD22	1:A:598:ASN:C	2.16	0.54
1:A:590:SER:O	1:A:594:TRP:NE1	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:697:LEU:O	1:A:697:LEU:CD2	2.55	0.54
2:B:25:SER:C	2:B:27:ILE:N	2.64	0.54
1:A:816:ARG:HH21	2:B:120:PHE:HD1	1.54	0.53
1:A:823:ASN:O	1:A:823:ASN:ND2	2.40	0.53
1:A:341:THR:CB	1:A:343:GLU:HG2	2.38	0.53
1:A:598:ASN:ND2	1:A:644:THR:CG2	2.72	0.53
1:A:152:LEU:HD11	1:A:189:VAL:HG22	1.91	0.53
1:A:343:GLU:O	1:A:344:GLU:C	2.51	0.53
1:A:357:HIS:C	1:A:359:GLY:N	2.60	0.53
1:A:394:LEU:HD12	1:A:398:LEU:HD13	1.91	0.53
1:A:186:THR:HG23	1:A:458:VAL:HG12	1.91	0.53
1:A:507:TRP:CZ3	1:A:754:ARG:NH2	2.77	0.53
2:B:143:LYS:HE2	2:B:143:LYS:CA	2.35	0.53
1:A:280:ARG:NH2	1:A:283:HIS:HA	2.24	0.53
1:A:529:ILE:HG21	1:A:551:LEU:HD13	1.91	0.53
1:A:292:ALA:HB3	1:A:328:PHE:CD2	2.43	0.53
1:A:347:SER:O	1:A:348:MET:C	2.52	0.53
1:A:603:ASN:HB2	1:A:606:VAL:HG23	1.89	0.53
2:B:71:MET:O	2:B:75:ILE:HG23	2.09	0.53
3:C:120:GLU:O	3:C:123:ASP:N	2.42	0.53
1:A:101:TYR:O	1:A:103:LEU:N	2.42	0.53
1:A:722:ILE:HD11	1:A:781:ILE:HD12	1.90	0.53
2:B:36:SER:H	2:B:39:ASP:CB	2.22	0.53
3:C:34:GLY:O	3:C:36:VAL:N	2.42	0.53
1:A:402:LYS:CE	1:A:409:MET:HE2	2.37	0.53
1:A:466:ILE:HG23	1:A:466:ILE:O	2.07	0.53
1:A:713:TYR:CE2	1:A:756:GLY:O	2.62	0.53
1:A:218:GLN:HG2	1:A:337:ILE:O	2.10	0.53
1:A:290:SER:O	1:A:291:ASN:HB3	2.10	0.52
1:A:693:CYS:CB	5:A:900:PDM:OP3	2.56	0.52
1:A:190:ILE:HG23	1:A:249:ILE:HD11	1.91	0.52
1:A:306:SER:O	1:A:308:LEU:N	2.36	0.52
1:A:392:GLY:O	1:A:393:ASP:C	2.52	0.52
2:B:68:ASN:HD22	2:B:68:ASN:H	0.73	0.52
1:A:236:ARG:CZ	1:A:672:ILE:HD13	2.40	0.52
1:A:765:GLY:O	1:A:766:VAL:C	2.52	0.52
1:A:157:ASP:C	1:A:159:ALA:N	2.68	0.52
2:B:125:MET:HE3	2:B:125:MET:O	2.09	0.52
3:C:6:ASP:C	3:C:9:ASP:H	2.17	0.52
1:A:231:ASN:HD22	1:A:231:ASN:N	2.07	0.52
1:A:623:LYS:CG	1:A:624:ALA:H	2.12	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:745:GLY:C	1:A:747:GLN:H	2.18	0.52
2:B:17:ILE:HG23	2:B:73:LEU:CD2	2.39	0.52
2:B:106:ILE:HG23	2:B:107:GLU:H	1.71	0.52
1:A:113:TYR:CE1	1:A:152:LEU:HB2	2.45	0.52
1:A:170:GLN:HE22	1:A:664:HIS:CG	2.28	0.52
1:A:468:ASP:HB3	1:A:573:GLN:HA	1.92	0.52
1:A:833:VAL:HG11	2:B:27:ILE:CD1	2.40	0.52
1:A:603:ASN:O	1:A:605:ASN:N	2.43	0.52
1:A:816:ARG:NH2	2:B:120:PHE:HA	2.25	0.52
3:C:42:ILE:HG22	3:C:44:PRO:CD	2.37	0.52
1:A:798:TYR:OH	3:C:14:VAL:HG22	2.09	0.52
2:B:148:ILE:HG23	2:B:149:LYS:H	1.75	0.52
1:A:87:ASP:C	1:A:89:ALA:N	2.64	0.52
1:A:297:ASN:CG	1:A:304:PRO:HG3	2.35	0.52
1:A:420:VAL:HG23	1:A:421:ASN:H	1.74	0.52
1:A:529:ILE:HG22	1:A:551:LEU:CD1	2.40	0.52
1:A:528:GLY:C	1:A:530:LEU:H	2.18	0.51
1:A:182:LYS:HB2	1:A:182:LYS:HZ3	1.75	0.51
1:A:239:ASN:C	1:A:239:ASN:ND2	2.66	0.51
1:A:300:MET:SD	1:A:349:PHE:HB3	2.50	0.51
1:A:310:SER:HA	1:A:313:ASN:HD21	1.75	0.51
1:A:810:VAL:HG11	2:B:88:THR:O	2.11	0.51
1:A:355:ILE:O	1:A:356:LEU:C	2.53	0.51
1:A:748:MET:HE3	1:A:762:PHE:HE2	1.75	0.51
1:A:5:PHE:CD1	1:A:5:PHE:C	2.87	0.51
1:A:537:CYS:CB	1:A:599:LYS:NZ	2.72	0.51
1:A:544:ASP:O	1:A:548:GLN:CB	2.59	0.51
3:C:135:LEU:HB2	3:C:136:GLU:OE1	2.10	0.51
1:A:192:TYR:C	1:A:194:ALA:H	2.19	0.51
1:A:243:PHE:CD2	1:A:244:GLY:O	2.64	0.51
3:C:72:TYR:C	3:C:74:GLY:N	2.67	0.51
1:A:181:GLY:O	1:A:184:GLU:HB2	2.11	0.51
1:A:234:THR:O	1:A:235:THR:C	2.54	0.51
1:A:713:TYR:OH	1:A:755:LEU:HB3	2.11	0.51
1:A:801:LEU:CD1	3:C:21:TRP:HE1	2.24	0.51
2:B:64:PRO:HD2	2:B:71:MET:CE	2.40	0.51
3:C:12:LYS:HA	3:C:65:PHE:CE1	2.46	0.51
1:A:182:LYS:O	1:A:184:GLU:N	2.39	0.51
1:A:225:VAL:CG2	1:A:226:LEU:N	2.70	0.51
1:A:379:GLU:O	1:A:382:LYS:N	2.44	0.51
1:A:397:ALA:HB1	1:A:605:ASN:OD1	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:197:ALA:O	1:A:198:CYS:C	2.53	0.51
1:A:788:HIS:CE1	3:C:149:MET:HG2	2.46	0.50
1:A:818:TRP:CD1	2:B:148:ILE:O	2.64	0.50
1:A:338:LEU:HD12	1:A:445:THR:HG21	1.92	0.50
1:A:751:ALA:C	1:A:754:ARG:HH12	2.18	0.50
1:A:818:TRP:CE2	2:B:148:ILE:HA	2.46	0.50
1:A:60:ILE:HG13	1:A:67:ARG:HH21	1.77	0.50
1:A:192:TYR:C	1:A:194:ALA:N	2.69	0.50
1:A:252:GLY:C	1:A:254:THR:H	2.19	0.50
1:A:734:ASP:O	1:A:736:LYS:N	2.45	0.50
1:A:825:GLN:OE1	1:A:825:GLN:HA	2.11	0.50
2:B:109:ILE:HA	2:B:112:LEU:HB2	1.92	0.50
1:A:183:THR:HG21	1:A:241:SER:OG	2.12	0.50
1:A:560:ARG:HB3	1:A:561:MET:HE3	1.94	0.50
1:A:582:HIS:HB2	1:A:585:GLY:O	2.11	0.50
1:A:583:TYR:CG	1:A:584:ALA:N	2.79	0.50
1:A:86:GLU:HB3	1:A:150:PRO:CG	2.42	0.50
1:A:379:GLU:O	1:A:381:GLU:N	2.44	0.50
1:A:500:TYR:O	1:A:505:ILE:C	2.53	0.50
1:A:528:GLY:O	1:A:530:LEU:N	2.45	0.50
1:A:708:PRO:CB	1:A:762:PHE:O	2.58	0.50
1:A:709:SER:C	1:A:710:ARG:HD2	2.36	0.50
1:A:521:ASP:C	1:A:523:ILE:H	2.20	0.50
1:A:35:TRP:NE1	1:A:77:MET:HA	2.26	0.50
1:A:231:ASN:HB3	1:A:239:ASN:ND2	2.27	0.50
1:A:505:ILE:HG21	1:A:754:ARG:HB3	1.94	0.50
1:A:325:VAL:O	1:A:329:LYS:HG3	2.12	0.50
3:C:49:VAL:HG23	3:C:50:PHE:N	2.25	0.50
1:A:289:CYS:HB3	1:A:305:ASP:H	1.77	0.49
2:B:135:GLU:HG3	2:B:136:GLY:H	1.77	0.49
1:A:10:PHE:HZ	1:A:148:ILE:HD11	1.77	0.49
1:A:43:PHE:HB2	8:A:1002:HOH:O	2.12	0.49
1:A:284:ILE:HG13	1:A:285:PHE:N	2.26	0.49
1:A:801:LEU:HD13	3:C:21:TRP:HE1	1.77	0.49
3:C:111:THR:O	3:C:116:ARG:HD2	2.11	0.49
1:A:811:ILE:HD13	2:B:93:PHE:CG	2.47	0.49
2:B:29:VAL:C	2:B:31:ARG:N	2.65	0.49
3:C:131:LEU:HD21	3:C:139:VAL:HG21	1.94	0.49
1:A:137:ILE:CD1	1:A:195:LYS:HD2	2.41	0.49
1:A:712:ILE:HG13	1:A:712:ILE:O	2.11	0.49
3:C:74:GLY:C	3:C:76:MET:H	2.21	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:357:HIS:O	1:A:358:MET:C	2.55	0.49
1:A:485:GLN:HG3	1:A:583:TYR:CE1	2.48	0.49
1:A:192:TYR:O	1:A:194:ALA:N	2.45	0.49
1:A:268:GLU:HB3	1:A:282:TYR:OH	2.13	0.49
1:A:393:ASP:C	1:A:609:LEU:HD11	2.37	0.49
3:C:6:ASP:O	3:C:9:ASP:HB2	2.13	0.49
3:C:42:ILE:CG2	3:C:43:ASN:H	2.22	0.49
3:C:65:PHE:O	3:C:68:PHE:N	2.45	0.49
3:C:84:ALA:O	3:C:85:ASP:C	2.55	0.49
1:A:151:HIS:O	1:A:152:LEU:C	2.54	0.49
1:A:156:ALA:O	1:A:159:ALA:HB3	2.12	0.49
1:A:423:VAL:O	1:A:424:GLY:C	2.55	0.49
1:A:737:THR:O	1:A:740:GLU:HB3	2.12	0.49
1:A:827:TRP:O	1:A:828:LYS:C	2.55	0.49
3:C:69:LEU:HB3	3:C:70:PRO:CD	2.42	0.49
3:C:118:SER:HB2	3:C:121:ASP:OD2	2.12	0.49
1:A:15:VAL:HG23	1:A:149:PRO:CG	2.42	0.49
1:A:115:TYR:CD1	1:A:150:PRO:HG3	2.48	0.49
1:A:246:PHE:CD1	1:A:656:LEU:HD11	2.48	0.49
1:A:262:ILE:HG22	1:A:263:GLU:H	1.78	0.49
1:A:324:ASP:O	1:A:325:VAL:C	2.55	0.49
1:A:485:GLN:O	1:A:489:ASN:ND2	2.46	0.49
3:C:82:THR:O	3:C:83:PHE:C	2.56	0.49
1:A:174:ILE:HD12	1:A:174:ILE:H	1.76	0.49
1:A:394:LEU:C	1:A:396:LYS:N	2.66	0.49
1:A:464:PHE:HB2	1:A:583:TYR:OH	2.13	0.49
1:A:713:TYR:HB3	1:A:736:LYS:HA	1.94	0.49
1:A:738:VAL:O	1:A:742:ILE:HG13	2.13	0.49
1:A:389:ILE:HD12	1:A:389:ILE:N	2.24	0.48
3:C:48:ASP:O	3:C:51:ALA:HB3	2.13	0.48
1:A:407:THR:O	1:A:408:GLU:O	2.30	0.48
1:A:682:VAL:HG13	1:A:687:VAL:HG21	1.95	0.48
2:B:121:ASN:ND2	2:B:124:GLU:HB2	2.28	0.48
3:C:6:ASP:N	3:C:6:ASP:OD1	2.47	0.48
1:A:243:PHE:HD2	1:A:244:GLY:O	1.95	0.48
2:B:20:MET:N	2:B:20:MET:HE2	2.28	0.48
2:B:90:ARG:HG2	2:B:90:ARG:NH1	2.28	0.48
2:B:106:ILE:CG2	2:B:107:GLU:N	2.76	0.48
1:A:197:ALA:C	1:A:198:CYS:O	2.56	0.48
1:A:303:THR:O	1:A:305:ASP:N	2.47	0.48
1:A:402:LYS:HG3	1:A:403:VAL:N	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:577:HIS:N	1:A:589:TYR:O	2.45	0.48
1:A:300:MET:HB3	1:A:353:ALA:HB2	1.95	0.48
2:B:28:ASP:OD1	2:B:34:PHE:O	2.32	0.48
2:B:35:VAL:HB	2:B:67:LEU:HB3	1.95	0.48
2:B:99:GLN:O	2:B:100:GLU:HB2	2.13	0.48
1:A:402:LYS:HE3	1:A:403:VAL:C	2.39	0.48
5:A:900:PDM:HP82	5:A:900:PDM:HP3	1.95	0.48
1:A:508:GLU:CD	1:A:510:ILE:HG12	2.38	0.48
1:A:753:TYR:C	1:A:754:ARG:HH11	2.18	0.48
3:C:12:LYS:HG3	3:C:65:PHE:CZ	2.49	0.48
1:A:521:ASP:C	1:A:523:ILE:N	2.71	0.48
2:B:145:THR:C	2:B:147:MET:N	2.69	0.48
3:C:91:LYS:HB2	3:C:91:LYS:NZ	2.28	0.48
1:A:56:ILE:HD12	1:A:74:ILE:HD12	1.96	0.48
1:A:280:ARG:NE	8:A:1018:HOH:O	2.29	0.48
1:A:475:LEU:HD23	1:A:589:TYR:CE2	2.47	0.48
1:A:476:CYS:O	1:A:477:ILE:C	2.57	0.48
1:A:485:GLN:HG3	1:A:583:TYR:CD1	2.49	0.48
2:B:19:GLU:O	2:B:20:MET:C	2.56	0.48
3:C:73:GLU:HA	3:C:76:MET:CE	2.28	0.48
1:A:360:GLU:HA	1:A:360:GLU:OE1	2.13	0.47
1:A:423:VAL:O	1:A:426:LEU:HB3	2.14	0.47
2:B:44:SER:O	2:B:46:GLN:N	2.47	0.47
1:A:532:ILE:C	1:A:534:GLU:N	2.70	0.47
1:A:752:GLU:OE1	1:A:766:VAL:CG1	2.61	0.47
1:A:537:CYS:HB3	1:A:599:LYS:NZ	2.28	0.47
1:A:753:TYR:O	1:A:754:ARG:NH1	2.38	0.47
1:A:824:TRP:CE2	1:A:826:TRP:HB2	2.49	0.47
2:B:19:GLU:O	2:B:22:GLU:N	2.47	0.47
1:A:83:GLU:OE1	1:A:84:LYS:HG3	2.14	0.47
1:A:326:GLU:C	1:A:328:PHE:N	2.70	0.47
1:A:547:PHE:C	1:A:549:ASP:N	2.73	0.47
1:A:553:GLN:O	1:A:553:GLN:NE2	2.48	0.47
1:A:340:PHE:HA	1:A:441:ARG:NH2	2.29	0.47
1:A:599:LYS:HD3	1:A:644:THR:CG2	2.44	0.47
1:A:721:SER:C	1:A:723:LEU:N	2.71	0.47
1:A:767:LEU:O	1:A:770:LEU:HB2	2.15	0.47
2:B:60:LEU:C	2:B:62:GLU:H	2.22	0.47
3:C:2:LYS:HG2	3:C:3:LEU:N	2.29	0.47
3:C:108:HIS:O	3:C:112:ALA:N	2.48	0.47
1:A:76:SER:HB3	1:A:93:TYR:CE2	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:141:ARG:O	1:A:143:LYS:N	2.48	0.47
1:A:345:LYS:O	1:A:348:MET:HB2	2.15	0.47
1:A:395:LEU:O	1:A:395:LEU:CD1	2.59	0.47
1:A:829:LEU:O	1:A:830:TYR:C	2.57	0.47
2:B:14:GLN:CG	2:B:15:LYS:HD2	2.45	0.47
2:B:35:VAL:HB	2:B:67:LEU:CD1	2.42	0.47
2:B:60:LEU:C	2:B:62:GLU:N	2.73	0.47
1:A:306:SER:C	1:A:308:LEU:H	2.21	0.47
1:A:320:ASP:O	1:A:321:ASN:HB2	2.15	0.47
1:A:445:THR:HG23	1:A:446:LEU:HG	1.96	0.47
1:A:777:ARG:O	1:A:778:LEU:C	2.57	0.47
2:B:97:ASP:OD1	2:B:101:THR:HG23	2.15	0.47
1:A:163:MET:SD	1:A:251:PHE:CD1	3.08	0.47
1:A:491:HIS:CD2	1:A:665:PRO:HG3	2.50	0.47
3:C:55:THR:HG23	3:C:57:LYS:H	1.80	0.47
3:C:74:GLY:O	3:C:76:MET:N	2.48	0.47
1:A:115:TYR:O	1:A:117:GLY:N	2.48	0.47
1:A:284:ILE:HA	1:A:287:GLN:CG	2.43	0.47
1:A:577:HIS:CD2	1:A:590:SER:HA	2.50	0.47
1:A:580:LEU:HD23	1:A:580:LEU:HA	1.72	0.47
1:A:596:GLU:HG3	1:A:601:PRO:HG3	1.97	0.47
1:A:697:LEU:HD23	1:A:704:ARG:CD	2.38	0.47
1:A:724:ALA:CB	1:A:742:ILE:HG23	2.39	0.47
1:A:781:ILE:HG21	3:C:89:ALA:HB2	1.97	0.47
1:A:805:ARG:HG3	3:C:20:PHE:CE1	2.50	0.47
2:B:25:SER:C	2:B:27:ILE:H	2.22	0.47
2:B:89:ILE:HG21	2:B:145:THR:HG23	1.97	0.47
2:B:138:LYS:HD2	2:B:138:LYS:H	1.80	0.47
1:A:242:ARG:HA	1:A:242:ARG:HD3	1.45	0.46
2:B:64:PRO:HD2	2:B:71:MET:SD	2.55	0.46
1:A:160:TYR:HA	1:A:456:ILE:HD11	1.96	0.46
1:A:474:GLN:N	1:A:474:GLN:CD	2.73	0.46
1:A:594:TRP:O	1:A:595:LEU:C	2.58	0.46
3:C:125:ILE:O	3:C:129:THR:OG1	2.31	0.46
1:A:137:ILE:HG23	1:A:192:TYR:HE1	1.78	0.46
1:A:282:TYR:O	1:A:283:HIS:C	2.58	0.46
1:A:283:HIS:O	1:A:284:ILE:C	2.58	0.46
1:A:294:PRO:C	1:A:296:LEU:N	2.73	0.46
2:B:24:PHE:O	2:B:27:ILE:HB	2.14	0.46
3:C:72:TYR:O	3:C:76:MET:HG3	2.16	0.46
1:A:118:LEU:HD22	1:A:495:LEU:HD13	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:280:ARG:HD2	1:A:286:TYR:CE2	2.50	0.46
1:A:577:HIS:HD2	1:A:590:SER:HA	1.80	0.46
1:A:659:ASN:O	1:A:662:SER:OG	2.30	0.46
1:A:687:VAL:O	1:A:688:LEU:C	2.58	0.46
3:C:24:ARG:NH1	3:C:24:ARG:HB2	2.30	0.46
1:A:140:TYR:CE2	1:A:151:HIS:HB3	2.51	0.46
1:A:528:GLY:C	1:A:530:LEU:N	2.70	0.46
1:A:598:ASN:HB3	1:A:599:LYS:NZ	2.30	0.46
1:A:833:VAL:O	1:A:833:VAL:HG12	2.15	0.46
3:C:120:GLU:O	3:C:121:ASP:C	2.58	0.46
1:A:29:ASP:C	1:A:31:LYS:H	2.24	0.46
1:A:134:ASP:OD1	1:A:195:LYS:CD	2.61	0.46
1:A:551:LEU:O	1:A:554:ASN:N	2.41	0.46
1:A:607:VAL:O	1:A:611:GLY:N	2.32	0.46
1:A:90:ASN:O	1:A:91:MET:C	2.57	0.46
1:A:153:PHE:CD1	1:A:192:TYR:CD1	3.04	0.46
3:C:4:SER:OG	3:C:7:GLU:HB2	2.16	0.46
1:A:287:GLN:O	1:A:290:SER:CB	2.64	0.46
1:A:300:MET:HE3	1:A:302:VAL:HG21	1.96	0.46
1:A:323:ASP:OD2	1:A:325:VAL:HG22	2.16	0.46
1:A:447:ASP:O	1:A:447:ASP:CG	2.59	0.46
1:A:464:PHE:N	1:A:481:ASN:OD1	2.48	0.46
1:A:595:LEU:HD23	1:A:599:LYS:HE3	1.98	0.46
2:B:148:ILE:CG2	2:B:149:LYS:N	2.79	0.46
1:A:474:GLN:CD	1:A:474:GLN:H	2.23	0.46
1:A:782:ILE:O	1:A:786:GLN:HG3	2.16	0.46
2:B:69:PHE:O	2:B:72:PHE:CB	2.61	0.46
1:A:87:ASP:OD1	1:A:89:ALA:HB3	2.16	0.46
1:A:399:LEU:HD23	1:A:419:VAL:HG21	1.98	0.46
1:A:697:LEU:C	1:A:704:ARG:HD3	2.40	0.46
2:B:36:SER:OG	2:B:39:ASP:HB2	2.16	0.46
2:B:70:THR:C	2:B:72:PHE:N	2.74	0.46
2:B:70:THR:O	2:B:72:PHE:N	2.49	0.46
1:A:60:ILE:HB	1:A:63:ASP:OD1	2.16	0.45
1:A:394:LEU:O	1:A:396:LYS:N	2.49	0.45
1:A:769:ASN:O	1:A:773:MET:HG3	2.15	0.45
2:B:145:THR:O	2:B:148:ILE:HG22	2.16	0.45
1:A:148:ILE:HG13	1:A:149:PRO:CD	2.45	0.45
1:A:542:ALA:C	1:A:595:LEU:HD13	2.41	0.45
3:C:49:VAL:O	3:C:52:VAL:HG23	2.16	0.45
3:C:126:ILE:HG23	3:C:131:LEU:HB3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:325:VAL:CG2	1:A:326:GLU:N	2.79	0.45
1:A:434:MET:O	1:A:435:PHE:C	2.59	0.45
2:B:39:ASP:O	2:B:43:ILE:HG22	2.17	0.45
3:C:131:LEU:CD1	3:C:144:PHE:HB2	2.46	0.45
1:A:190:ILE:HD11	1:A:247:ILE:CG2	2.46	0.45
1:A:363:PHE:CE1	1:A:419:VAL:HG11	2.51	0.45
1:A:578:PHE:CD2	1:A:579:GLU:N	2.85	0.45
1:A:790:ARG:CZ	3:C:117:LEU:HD23	2.46	0.45
1:A:246:PHE:HD1	1:A:459:LEU:HB2	1.81	0.45
1:A:227:GLU:O	1:A:231:ASN:HB2	2.17	0.45
1:A:233:LYS:HA	1:A:238:ASN:O	2.17	0.45
1:A:427:ALA:O	1:A:428:LYS:C	2.58	0.45
1:A:547:PHE:CZ	1:A:551:LEU:HD21	2.52	0.45
1:A:85:LEU:HG	1:A:87:ASP:H	1.81	0.45
1:A:111:LEU:HA	8:A:1020:HOH:O	2.17	0.45
1:A:171:SER:O	1:A:666:HIS:N	2.49	0.45
2:B:106:ILE:HB	2:B:137:GLY:O	2.16	0.45
1:A:502:LYS:C	1:A:504:GLY:H	2.21	0.45
1:A:790:ARG:HH12	3:C:117:LEU:HD23	1.80	0.45
2:B:23:ALA:O	2:B:24:PHE:C	2.59	0.45
2:B:36:SER:CA	2:B:39:ASP:HB2	2.47	0.45
3:C:72:TYR:O	3:C:73:GLU:C	2.59	0.45
1:A:5:PHE:CD1	1:A:5:PHE:O	2.70	0.45
1:A:170:GLN:NE2	1:A:664:HIS:CD2	2.84	0.45
1:A:280:ARG:HB3	8:A:1018:HOH:O	2.11	0.45
1:A:478:ASN:O	1:A:479:TYR:C	2.59	0.45
3:C:14:VAL:O	3:C:15:PHE:C	2.60	0.45
1:A:72:ASP:C	1:A:74:ILE:H	2.25	0.45
1:A:402:LYS:CG	1:A:409:MET:HE1	2.46	0.45
1:A:618:VAL:O	1:A:622:PHE:HD2	2.00	0.45
1:A:805:ARG:HD3	3:C:17:LEU:HD12	1.99	0.45
2:B:145:THR:C	2:B:148:ILE:HG22	2.42	0.45
1:A:685:GLU:O	1:A:686:LEU:C	2.60	0.44
3:C:118:SER:CB	3:C:120:GLU:HG2	2.47	0.44
1:A:142:GLY:HA2	1:A:161:GLN:NE2	2.32	0.44
1:A:229:TYR:CD2	1:A:284:ILE:CD1	2.97	0.44
1:A:550:LYS:O	1:A:554:ASN:HB2	2.18	0.44
1:A:737:THR:HA	1:A:740:GLU:CB	2.47	0.44
2:B:114:GLU:HA	2:B:120:PHE:HB2	2.00	0.44
3:C:33:LEU:HD23	3:C:34:GLY:N	2.32	0.44
1:A:11:GLN:HG2	1:A:12:TYR:N	1.97	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:118:LEU:HD12	1:A:118:LEU:H	1.83	0.44
1:A:273:THR:O	1:A:314:GLN:NE2	2.42	0.44
1:A:284:ILE:CA	1:A:287:GLN:HG2	2.46	0.44
1:A:488:PHE:CZ	1:A:492:MET:HE2	2.53	0.44
1:A:811:ILE:HD13	2:B:93:PHE:CD1	2.52	0.44
2:B:64:PRO:HD2	2:B:71:MET:HE1	1.98	0.44
1:A:182:LYS:HB2	6:A:999:ADP:O1B	2.17	0.44
1:A:394:LEU:C	1:A:396:LYS:H	2.25	0.44
1:A:400:LYS:HG3	1:A:411:THR:CG2	2.47	0.44
1:A:713:TYR:OH	1:A:756:GLY:O	2.36	0.44
2:B:87:GLU:O	2:B:91:ASN:HB2	2.17	0.44
1:A:157:ASP:O	1:A:158:ASN:C	2.60	0.44
1:A:243:PHE:CD1	1:A:243:PHE:N	2.86	0.44
1:A:434:MET:O	1:A:437:TRP:N	2.50	0.44
1:A:615:GLU:OE2	1:A:616:PRO:CD	2.65	0.44
3:C:33:LEU:HD12	3:C:63:LEU:CD1	2.47	0.44
1:A:341:THR:HB	1:A:343:GLU:HG2	2.00	0.44
1:A:449:LYS:O	1:A:450:ALA:C	2.61	0.44
1:A:610:LEU:O	1:A:611:GLY:C	2.61	0.44
1:A:113:TYR:C	1:A:114:THR:OG1	2.61	0.44
1:A:175:THR:HA	1:A:182:LYS:HD3	2.00	0.44
1:A:214:SER:OG	1:A:217:ASP:HB2	2.18	0.44
1:A:483:ARG:HG3	1:A:483:ARG:HH11	1.83	0.44
1:A:741:LYS:O	1:A:742:ILE:C	2.60	0.44
1:A:102:ASN:O	1:A:106:ARG:HG3	2.17	0.44
1:A:151:HIS:CE1	1:A:153:PHE:CD2	3.06	0.44
1:A:722:ILE:HG12	1:A:722:ILE:O	2.16	0.44
1:A:785:PHE:HB2	3:C:86:TYR:CD1	2.53	0.44
1:A:792:TYR:C	1:A:792:TYR:HD1	2.25	0.44
1:A:811:ILE:O	1:A:811:ILE:CG2	2.64	0.44
1:A:70:LYS:C	1:A:72:ASP:H	2.25	0.44
1:A:120:CYS:SG	1:A:155:VAL:HG21	2.58	0.44
1:A:215:LEU:HD12	1:A:219:ILE:HG13	2.00	0.44
1:A:355:ILE:HG23	1:A:427:ALA:HB1	2.00	0.44
1:A:419:VAL:O	1:A:422:SER:HB2	2.17	0.44
1:A:708:PRO:HB2	1:A:762:PHE:O	2.18	0.44
1:A:815:ILE:HD11	2:B:144:PHE:CE2	2.53	0.44
1:A:267:LEU:HD22	1:A:435:PHE:CG	2.53	0.43
1:A:340:PHE:CE1	1:A:441:ARG:HG2	2.53	0.43
1:A:645:ILE:O	1:A:645:ILE:HG23	2.18	0.43
1:A:789:ILE:CD1	3:C:110:LEU:HD22	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:42:ILE:CG2	3:C:43:ASN:N	2.77	0.43
1:A:529:ILE:C	1:A:530:LEU:HD22	2.43	0.43
1:A:817:LYS:C	1:A:819:LEU:N	2.75	0.43
3:C:34:GLY:O	3:C:37:CYS:N	2.40	0.43
1:A:296:LEU:O	1:A:297:ASN:C	2.61	0.43
1:A:328:PHE:O	1:A:331:CYS:HB3	2.19	0.43
1:A:393:ASP:CB	1:A:609:LEU:HD11	2.48	0.43
1:A:402:LYS:HB2	1:A:409:MET:HE1	1.99	0.43
1:A:721:SER:C	1:A:723:LEU:H	2.25	0.43
1:A:804:GLN:HA	2:B:95:MET:CE	2.48	0.43
3:C:88:GLU:HA	3:C:91:LYS:NZ	2.32	0.43
1:A:8:PRO:HG2	1:A:139:LYS:CE	2.43	0.43
1:A:221:GLN:HG2	1:A:334:ALA:HA	2.01	0.43
1:A:309:TYR:CG	1:A:356:LEU:HD12	2.53	0.43
1:A:704:ARG:HD2	1:A:704:ARG:HA	1.63	0.43
1:A:807:GLY:CA	2:B:95:MET:CE	2.93	0.43
3:C:6:ASP:C	3:C:9:ASP:HB2	2.42	0.43
3:C:73:GLU:HG3	3:C:74:GLY:N	2.32	0.43
3:C:131:LEU:HD13	3:C:144:PHE:HD1	1.83	0.43
1:A:243:PHE:CE2	1:A:264:THR:HG22	2.53	0.43
1:A:521:ASP:O	1:A:525:LYS:HG2	2.18	0.43
1:A:530:LEU:N	1:A:530:LEU:HD22	2.32	0.43
1:A:551:LEU:O	1:A:552:TYR:C	2.61	0.43
1:A:801:LEU:CD1	3:C:21:TRP:NE1	2.80	0.43
3:C:65:PHE:O	3:C:66:GLU:C	2.62	0.43
1:A:516:LEU:O	1:A:520:ILE:HG12	2.18	0.43
1:A:526:PRO:O	1:A:531:SER:CB	2.67	0.43
1:A:527:MET:O	1:A:555:HIS:HE1	2.01	0.43
1:A:536:GLU:CB	8:A:1007:HOH:O	2.67	0.43
1:A:578:PHE:CD2	1:A:578:PHE:C	2.97	0.43
1:A:603:ASN:O	1:A:606:VAL:N	2.51	0.43
1:A:686:LEU:O	1:A:690:GLN:HG3	2.18	0.43
1:A:804:GLN:O	1:A:807:GLY:N	2.52	0.43
2:B:20:MET:HE2	2:B:20:MET:CA	2.49	0.43
1:A:577:HIS:HD2	1:A:591:ILE:H	1.67	0.43
1:A:712:ILE:HD12	1:A:714:SER:HB3	2.00	0.43
1:A:713:TYR:CB	1:A:736:LYS:HG2	2.46	0.43
1:A:816:ARG:NH2	2:B:118:ASP:O	2.51	0.43
1:A:824:TRP:CD2	1:A:826:TRP:HB2	2.54	0.43
1:A:545:LYS:C	1:A:547:PHE:N	2.77	0.43
1:A:833:VAL:O	1:A:833:VAL:CG1	2.67	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:109:ILE:HD11	2:B:113:LEU:HG	2.00	0.43
2:B:116:MET:HE2	3:C:21:TRP:CE3	2.51	0.43
3:C:17:LEU:O	3:C:20:PHE:HB3	2.19	0.43
1:A:198:CYS:SG	1:A:200:VAL:N	2.92	0.43
1:A:415:ASN:HD22	1:A:418:GLN:HB2	1.82	0.43
1:A:649:HIS:O	1:A:650:ARG:C	2.62	0.43
1:A:815:ILE:C	1:A:817:LYS:N	2.77	0.43
1:A:262:ILE:CG2	1:A:263:GLU:N	2.82	0.42
1:A:401:PRO:HB3	1:A:605:ASN:CB	2.48	0.42
1:A:705:LYS:HD2	5:A:900:PDM:C12	2.04	0.42
1:A:824:TRP:O	1:A:825:GLN:C	2.62	0.42
2:B:28:ASP:CG	2:B:31:ARG:HA	2.43	0.42
1:A:414:GLN:CB	1:A:418:GLN:HB3	2.49	0.42
1:A:463:GLY:C	1:A:481:ASN:OD1	2.62	0.42
1:A:681:LEU:CD1	1:A:682:VAL:N	2.80	0.42
3:C:43:ASN:N	3:C:44:PRO:CD	2.81	0.42
3:C:88:GLU:HA	3:C:91:LYS:HZ3	1.83	0.42
1:A:175:THR:OG1	1:A:669:ARG:NH1	2.52	0.42
1:A:287:GLN:HA	1:A:290:SER:HB3	2.00	0.42
1:A:554:ASN:HD22	1:A:554:ASN:HA	1.56	0.42
1:A:713:TYR:HE1	1:A:755:LEU:HD22	1.84	0.42
1:A:767:LEU:HD12	1:A:770:LEU:HD12	1.99	0.42
1:A:811:ILE:HG21	2:B:93:PHE:CE1	2.53	0.42
3:C:15:PHE:C	3:C:17:LEU:H	2.27	0.42
3:C:122:VAL:HA	3:C:125:ILE:HG22	2.00	0.42
1:A:113:TYR:CZ	1:A:152:LEU:HB2	2.54	0.42
1:A:485:GLN:HG3	1:A:583:TYR:CZ	2.54	0.42
1:A:697:LEU:HD23	1:A:704:ARG:HG2	2.01	0.42
1:A:801:LEU:HD13	3:C:21:TRP:NE1	2.34	0.42
1:A:811:ILE:CG2	2:B:93:PHE:CZ	3.03	0.42
2:B:69:PHE:O	2:B:70:THR:C	2.63	0.42
1:A:70:LYS:C	1:A:72:ASP:N	2.75	0.42
1:A:115:TYR:CE1	1:A:150:PRO:HG3	2.53	0.42
1:A:280:ARG:HD2	1:A:286:TYR:CD2	2.55	0.42
1:A:354:SER:O	1:A:355:ILE:C	2.60	0.42
1:A:784:MET:HE3	3:C:81:GLY:HA2	2.00	0.42
1:A:819:LEU:O	1:A:820:VAL:C	2.62	0.42
2:B:135:GLU:HG3	2:B:136:GLY:N	2.34	0.42
3:C:33:LEU:C	3:C:33:LEU:CD2	2.85	0.42
3:C:133:GLU:HA	3:C:139:VAL:HG12	2.01	0.42
1:A:312:ILE:CD1	1:A:356:LEU:HD11	2.47	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:28:ASP:OD2	2:B:31:ARG:HA	2.19	0.42
1:A:115:TYR:CE2	1:A:145:LYS:CE	2.94	0.42
1:A:335:PHE:O	1:A:336:ASP:C	2.62	0.42
1:A:345:LYS:CG	1:A:349:PHE:HE2	2.32	0.42
1:A:354:SER:OG	1:A:355:ILE:N	2.52	0.42
1:A:357:HIS:CE1	1:A:382:LYS:HD3	2.55	0.42
1:A:475:LEU:CD2	1:A:589:TYR:CZ	3.02	0.42
1:A:537:CYS:HA	1:A:595:LEU:HD21	2.02	0.42
3:C:99:GLY:C	3:C:141:TYR:HE2	2.27	0.42
1:A:7:ASP:OD1	1:A:7:ASP:N	2.51	0.42
1:A:11:GLN:C	1:A:13:LEU:H	2.27	0.42
1:A:190:ILE:HD11	1:A:247:ILE:HG21	2.02	0.42
1:A:394:LEU:N	1:A:609:LEU:HD11	2.35	0.42
1:A:531:SER:N	1:A:650:ARG:HH22	2.18	0.42
1:A:675:GLU:O	1:A:677:LYS:HG3	2.20	0.42
1:A:716:PHE:HD2	1:A:739:SER:CB	2.32	0.42
1:A:777:ARG:O	1:A:780:LYS:N	2.49	0.42
1:A:811:ILE:HG21	2:B:93:PHE:CZ	2.55	0.42
2:B:55:GLU:O	2:B:59:MET:HG3	2.19	0.42
3:C:6:ASP:O	3:C:10:ASP:N	2.49	0.42
3:C:38:ARG:C	3:C:40:LEU:H	2.27	0.42
3:C:68:PHE:O	3:C:69:LEU:C	2.63	0.42
1:A:151:HIS:ND1	1:A:151:HIS:C	2.77	0.42
1:A:693:CYS:SG	5:A:900:PDM:HP3	2.59	0.42
1:A:793:LEU:C	1:A:795:ARG:N	2.78	0.42
1:A:816:ARG:HG3	2:B:120:PHE:CE1	2.55	0.42
2:B:25:SER:O	2:B:27:ILE:N	2.52	0.42
1:A:46:ALA:HA	1:A:61:VAL:H	1.84	0.42
1:A:112:ILE:O	1:A:112:ILE:CG2	2.58	0.42
1:A:163:MET:SD	1:A:251:PHE:HD1	2.43	0.42
1:A:432:ASP:O	1:A:433:ARG:C	2.63	0.42
1:A:552:TYR:C	1:A:554:ASN:H	2.28	0.42
1:A:577:HIS:CG	1:A:591:ILE:CD1	3.03	0.42
1:A:763:LYS:H	1:A:766:VAL:HG21	1.85	0.42
2:B:134:VAL:HG13	2:B:138:LYS:O	2.19	0.42
2:B:135:GLU:O	2:B:138:LYS:N	2.53	0.42
1:A:101:TYR:C	1:A:103:LEU:N	2.77	0.41
1:A:124:ASN:OD1	1:A:126:TYR:CG	2.73	0.41
1:A:126:TYR:CZ	1:A:677:LYS:HG2	2.54	0.41
1:A:309:TYR:CD1	1:A:309:TYR:N	2.88	0.41
1:A:583:TYR:CD1	1:A:584:ALA:N	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:712:ILE:HG13	1:A:715:GLU:H	1.85	0.41
3:C:64:PRO:HB2	3:C:66:GLU:OE1	2.20	0.41
3:C:91:LYS:C	3:C:93:PHE:H	2.28	0.41
3:C:131:LEU:HD13	3:C:144:PHE:HB2	2.02	0.41
1:A:163:MET:HE1	1:A:251:PHE:CB	2.40	0.41
1:A:232:ALA:HB2	1:A:282:TYR:HA	2.02	0.41
1:A:353:ALA:HA	1:A:356:LEU:HD23	2.01	0.41
1:A:577:HIS:CG	1:A:591:ILE:HD11	2.55	0.41
1:A:717:LYS:C	1:A:719:ARG:H	2.28	0.41
1:A:786:GLN:OE1	3:C:115:GLU:O	2.38	0.41
3:C:95:ARG:O	3:C:96:GLU:C	2.64	0.41
1:A:60:ILE:O	1:A:64:SER:N	2.53	0.41
1:A:72:ASP:C	1:A:74:ILE:N	2.78	0.41
1:A:125:PRO:HD2	6:A:999:ADP:C5	2.56	0.41
1:A:198:CYS:SG	1:A:200:VAL:O	2.78	0.41
1:A:552:TYR:C	1:A:554:ASN:N	2.78	0.41
1:A:494:ILE:HD13	1:A:494:ILE:HA	1.91	0.41
1:A:530:LEU:O	1:A:650:ARG:NH1	2.46	0.41
1:A:764:ALA:N	1:A:766:VAL:CG2	2.56	0.41
2:B:73:LEU:H	2:B:73:LEU:CD1	2.21	0.41
1:A:48:ILE:HG23	1:A:56:ILE:HG23	2.02	0.41
1:A:157:ASP:O	1:A:160:TYR:N	2.53	0.41
1:A:191:MET:SD	1:A:191:MET:C	3.04	0.41
1:A:266:LEU:CD1	1:A:476:CYS:HB3	2.51	0.41
1:A:332:ASP:O	1:A:333:GLU:C	2.63	0.41
1:A:488:PHE:CE1	1:A:492:MET:HG3	2.56	0.41
1:A:63:ASP:OD1	1:A:65:SER:OG	2.39	0.41
1:A:115:TYR:CE1	1:A:150:PRO:CB	3.03	0.41
1:A:266:LEU:HD13	1:A:476:CYS:HB3	2.02	0.41
1:A:562:PHE:O	1:A:563:THR:HG23	2.21	0.41
3:C:99:GLY:C	3:C:141:TYR:CE2	2.98	0.41
1:A:237:ASN:OD1	1:A:239:ASN:N	2.51	0.41
1:A:357:HIS:O	1:A:360:GLU:N	2.53	0.41
1:A:398:LEU:HD12	1:A:606:VAL:HG21	2.02	0.41
1:A:479:TYR:OH	1:A:524:GLU:HB3	2.20	0.41
1:A:549:ASP:O	1:A:550:LYS:C	2.63	0.41
1:A:704:ARG:HB3	8:A:1013:HOH:O	2.19	0.41
1:A:777:ARG:HD2	1:A:777:ARG:HA	1.79	0.41
2:B:87:GLU:C	2:B:89:ILE:N	2.77	0.41
3:C:33:LEU:HA	3:C:68:PHE:HZ	1.85	0.41
1:A:83:GLU:O	1:A:84:LYS:C	2.63	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:522:LEU:CD2	1:A:580:LEU:HD21	2.50	0.41
1:A:591:ILE:H	1:A:591:ILE:HG13	1.48	0.41
1:A:183:THR:O	1:A:183:THR:CG2	2.67	0.41
1:A:261:ASP:O	1:A:261:ASP:OD1	2.39	0.41
1:A:326:GLU:C	1:A:328:PHE:H	2.29	0.41
1:A:326:GLU:OE1	1:A:330:LEU:HD11	2.21	0.41
1:A:334:ALA:O	1:A:338:LEU:HD23	2.21	0.41
1:A:507:TRP:O	1:A:507:TRP:CD2	2.70	0.41
1:A:579:GLU:OE1	1:A:586:ASN:HB3	2.21	0.41
1:A:603:ASN:CB	1:A:606:VAL:HG23	2.50	0.41
1:A:606:VAL:O	1:A:607:VAL:C	2.64	0.41
2:B:52:ASP:OD2	2:B:53:ASP:N	2.47	0.41
2:B:106:ILE:CG2	2:B:107:GLU:H	2.33	0.41
3:C:9:ASP:HA	3:C:12:LYS:HB2	2.03	0.41
3:C:32:LYS:O	3:C:33:LEU:C	2.62	0.41
1:A:439:VAL:O	1:A:440:ARG:C	2.64	0.41
1:A:542:ALA:N	8:A:1006:HOH:O	2.52	0.41
1:A:591:ILE:HA	1:A:594:TRP:CD1	2.56	0.41
1:A:794:ILE:HD13	1:A:794:ILE:HA	1.90	0.41
2:B:125:MET:O	2:B:128:THR:HG23	2.21	0.41
3:C:101:ILE:O	3:C:102:SER:O	2.38	0.41
1:A:784:MET:SD	3:C:79:GLU:OE1	2.79	0.40
2:B:36:SER:C	2:B:39:ASP:H	2.28	0.40
2:B:153:GLU:O	2:B:154:GLU:CB	2.68	0.40
3:C:46:ASN:HA	3:C:49:VAL:HG22	2.03	0.40
3:C:146:LYS:O	3:C:150:ALA:HB2	2.21	0.40
1:A:14:ALA:C	1:A:111:LEU:HD22	2.46	0.40
1:A:281:ASN:O	1:A:282:TYR:C	2.64	0.40
1:A:463:GLY:CA	1:A:481:ASN:OD1	2.68	0.40
2:B:117:GLY:HA2	3:C:20:PHE:CE1	2.56	0.40
1:A:153:PHE:C	1:A:155:VAL:N	2.80	0.40
1:A:716:PHE:HD2	1:A:739:SER:OG	2.04	0.40
1:A:716:PHE:CE1	1:A:720:TYR:HD2	2.39	0.40
1:A:720:TYR:CD1	1:A:774:ARG:HD2	2.55	0.40
2:B:108:TYR:CZ	2:B:112:LEU:HD11	2.56	0.40
1:A:60:ILE:HG13	1:A:67:ARG:NH2	2.36	0.40
1:A:184:GLU:C	1:A:186:THR:N	2.78	0.40
1:A:439:VAL:O	1:A:442:VAL:N	2.54	0.40
1:A:583:TYR:HD1	5:A:900:PDM:OP2	2.04	0.40
1:A:655:LYS:O	1:A:656:LEU:C	2.63	0.40
1:A:713:TYR:CD2	1:A:736:LYS:HG2	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:84:ASP:HB3	2:B:88:THR:HB	2.04	0.40
1:A:124:ASN:HA	1:A:125:PRO:HD3	1.75	0.40
1:A:172:CYS:O	1:A:174:ILE:HD12	2.22	0.40
1:A:184:GLU:C	1:A:186:THR:H	2.29	0.40
1:A:381:GLU:O	1:A:384:ALA:HB3	2.21	0.40
2:B:70:THR:HG22	2:B:71:MET:N	2.37	0.40
3:C:24:ARG:NH1	3:C:24:ARG:CB	2.85	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	759/835 (91%)	552 (73%)	150 (20%)	57 (8%)	1	2
2	B	140/156 (90%)	105 (75%)	27 (19%)	8 (6%)	1	4
3	C	151/156 (97%)	119 (79%)	27 (18%)	5 (3%)	3	11
All	All	1050/1147 (92%)	776 (74%)	204 (19%)	70 (7%)	1	3

All (70) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	11	GLN
1	A	88	MET
1	A	834	LYS
2	B	136	GLY
3	C	102	SER
1	A	8	PRO
1	A	30	GLY
1	A	102	ASN
1	A	142	GLY
1	A	158	ASN

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Mol	Chain	Res	Type
1	A	182	LYS
1	A	183	THR
1	A	193	LEU
1	A	198	CYS
1	A	284	ILE
1	A	307	GLY
1	A	343	GLU
1	A	418	GLN
1	A	504	GLY
1	A	508	GLU
1	A	571	PRO
1	A	604	GLU
1	A	623	LYS
1	A	684	ALA
1	A	735	GLY
1	A	742	ILE
2	B	33	GLY
2	B	41	LYS
2	B	71	MET
2	B	122	LYS
3	C	35	ASP
3	C	75	LEU
1	A	101	TYR
1	A	145	LYS
1	A	151	HIS
1	A	181	GLY
1	A	295	GLU
1	A	304	PRO
1	A	345	LYS
1	A	380	ALA
1	A	462	ALA
1	A	529	ILE
1	A	544	ASP
1	A	816	ARG
3	C	120	GLU
1	A	118	LEU
1	A	152	LEU
1	A	167	ARG
1	A	283	HIS
1	A	394	LEU
1	A	395	LEU
1	A	607	VAL

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Mol	Chain	Res	Type
1	A	818	TRP
2	B	45	GLU
1	A	62	ALA
1	A	253	PRO
1	A	361	MET
2	B	64	PRO
1	A	153	PHE
1	A	222	ALA
1	A	223	ASN
1	A	416	MET
1	A	464	PHE
2	B	117	GLY
1	A	526	PRO
1	A	15	VAL
1	A	219	ILE
1	A	410	VAL
3	C	53	GLY
1	A	125	PRO

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	621/728 (85%)	543 (87%)	78 (13%)	4	15
2	B	109/133 (82%)	96 (88%)	13 (12%)	5	17
3	C	119/132 (90%)	102 (86%)	17 (14%)	3	11
All	All	849/993 (86%)	741 (87%)	108 (13%)	4	15

All (108) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	11	GLN
1	A	59	LYS
1	A	83	GLU
1	A	108	THR

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Mol	Chain	Res	Type
1	A	124	ASN
1	A	126	TYR
1	A	129	LEU
1	A	144	ARG
1	A	145	LYS
1	A	146	THR
1	A	157	ASP
1	A	161	GLN
1	A	166	ASP
1	A	173	LEU
1	A	182	LYS
1	A	185	ASN
1	A	200	VAL
1	A	211	LYS
1	A	215	LEU
1	A	220	ILE
1	A	236	ARG
1	A	263	GLU
1	A	280	ARG
1	A	288	ILE
1	A	313	ASN
1	A	316	CYS
1	A	319	VAL
1	A	326	GLU
1	A	332	ASP
1	A	333	GLU
1	A	341	THR
1	A	343	GLU
1	A	371	GLN
1	A	373	GLU
1	A	389	ILE
1	A	395	LEU
1	A	409	MET
1	A	415	ASN
1	A	420	VAL
1	A	438	LEU
1	A	446	LEU
1	A	449	LYS
1	A	471	SER
1	A	495	LEU
1	A	502	LYS
1	A	507	TRP

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Mol	Chain	Res	Type
1	A	508	GLU
1	A	515	ASP
1	A	529	ILE
1	A	530	LEU
1	A	553	GLN
1	A	554	ASN
1	A	561	MET
1	A	563	THR
1	A	578	PHE
1	A	591	ILE
1	A	592	THR
1	A	595	LEU
1	A	598	ASN
1	A	599	LYS
1	A	609	LEU
1	A	642	PHE
1	A	644	THR
1	A	645	ILE
1	A	664	HIS
1	A	694	ASN
1	A	697	LEU
1	A	710	ARG
1	A	723	LEU
1	A	726	ASN
1	A	766	VAL
1	A	769	ASN
1	A	772	GLU
1	A	778	LEU
1	A	788	HIS
1	A	792	TYR
1	A	801	LEU
1	A	817	LYS
2	B	14	GLN
2	B	15	LYS
2	B	39	ASP
2	B	49	ARG
2	B	64	PRO
2	B	68	ASN
2	B	78	ASP
2	B	88	THR
2	B	90	ARG
2	B	98	GLU

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Mol	Chain	Res	Type
2	B	101	THR
2	B	120	PHE
2	B	128	THR
3	C	5	GLN
3	C	6	ASP
3	C	9	ASP
3	C	22	ASP
3	C	35	ASP
3	C	52	VAL
3	C	55	THR
3	C	58	MET
3	C	68	PHE
3	C	73	GLU
3	C	82	THR
3	C	91	LYS
3	C	120	GLU
3	C	121	ASP
3	C	124	GLU
3	C	140	LYS
3	C	141	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (33) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	33	ASN
1	A	49	GLN
1	A	124	ASN
1	A	158	ASN
1	A	170	GLN
1	A	185	ASN
1	A	221	GLN
1	A	231	ASN
1	A	239	ASN
1	A	313	ASN
1	A	415	ASN
1	A	421	ASN
1	A	443	ASN
1	A	453	ASN
1	A	486	GLN
1	A	497	GLN
1	A	553	GLN
1	A	554	ASN

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Mol	Chain	Res	Type
1	A	555	HIS
1	A	577	HIS
1	A	598	ASN
1	A	659	ASN
1	A	664	HIS
1	A	666	HIS
1	A	674	ASN
1	A	694	ASN
1	A	769	ASN
1	A	814	ASN
2	B	14	GLN
2	B	68	ASN
2	B	91	ASN
3	C	5	GLN
3	C	138	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 5 ligands modelled in this entry, 3 are monoatomic - leaving 2 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	PDM	A	900	1	21,22,22	2.98	9 (42%)	29,30,30	1.85	8 (27%)
6	ADP	A	999	4	28,29,29	1.33	5 (17%)	43,45,45	1.07	3 (6%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	PDM	A	900	1	1/1/5/6	9/13/26/26	0/2/2/2
6	ADP	A	999	4	-	2/16/32/32	0/3/3/3

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	900	PDM	CP7-NP2	-6.62	1.34	1.43
5	A	900	PDM	OP3-CP7	-5.60	1.24	1.40
5	A	900	PDM	CP4-NP2	4.89	1.48	1.39
5	A	900	PDM	C13-C12	-4.51	1.41	1.52
5	A	900	PDM	C12-C11	-3.81	1.40	1.51
5	A	900	PDM	C13-C14	-3.79	1.40	1.51
5	A	900	PDM	C14-NP1	-3.68	1.35	1.40
5	A	900	PDM	C11-NP1	-3.67	1.35	1.40
6	A	999	ADP	C4-N3	3.65	1.41	1.34
6	A	999	ADP	PB-O2B	-2.46	1.45	1.54
5	A	900	PDM	CP9-C10	2.46	1.56	1.50
6	A	999	ADP	PA-O3A	2.14	1.61	1.59
6	A	999	ADP	C5'-C4'	-2.06	1.45	1.51
6	A	999	ADP	PA-O2A	-2.04	1.45	1.55

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	A	900	PDM	CP4-NP2-CP7	4.35	129.50	123.19
5	A	900	PDM	OP4-C10-CP9	3.84	126.14	114.00
5	A	900	PDM	OP5-C10-CP9	-3.43	112.22	123.09
5	A	900	PDM	OP4-C10-OP5	-3.27	114.92	123.33
5	A	900	PDM	CP8-CP7-NP2	3.26	114.53	110.30
6	A	999	ADP	O3B-PB-O3A	2.86	114.23	104.64
5	A	900	PDM	OP3-CP7-CP8	2.81	115.86	109.17
6	A	999	ADP	O3A-PB-O1B	-2.77	96.45	111.04

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	A	999	ADP	O2B-PB-O3A	2.11	111.70	104.64
5	A	900	PDM	C13-C12-C11	2.06	107.36	105.24
5	A	900	PDM	C12-C13-C14	2.05	107.35	105.24

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
5	A	900	PDM	CP7

All (11) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	900	PDM	NP2-CP7-CP8-CP9
5	A	900	PDM	OP3-CP7-CP8-CP9
6	A	999	ADP	PA-O3A-PB-O2B
5	A	900	PDM	CP2-CP1-NP1-C11
5	A	900	PDM	CP2-CP1-NP1-C14
5	A	900	PDM	CP6-CP1-NP1-C14
5	A	900	PDM	CP6-CP1-NP1-C11
5	A	900	PDM	CP8-CP7-NP2-CP4
5	A	900	PDM	OP4-C10-CP9-CP8
5	A	900	PDM	OP5-C10-CP9-CP8
6	A	999	ADP	PA-O3A-PB-O3B

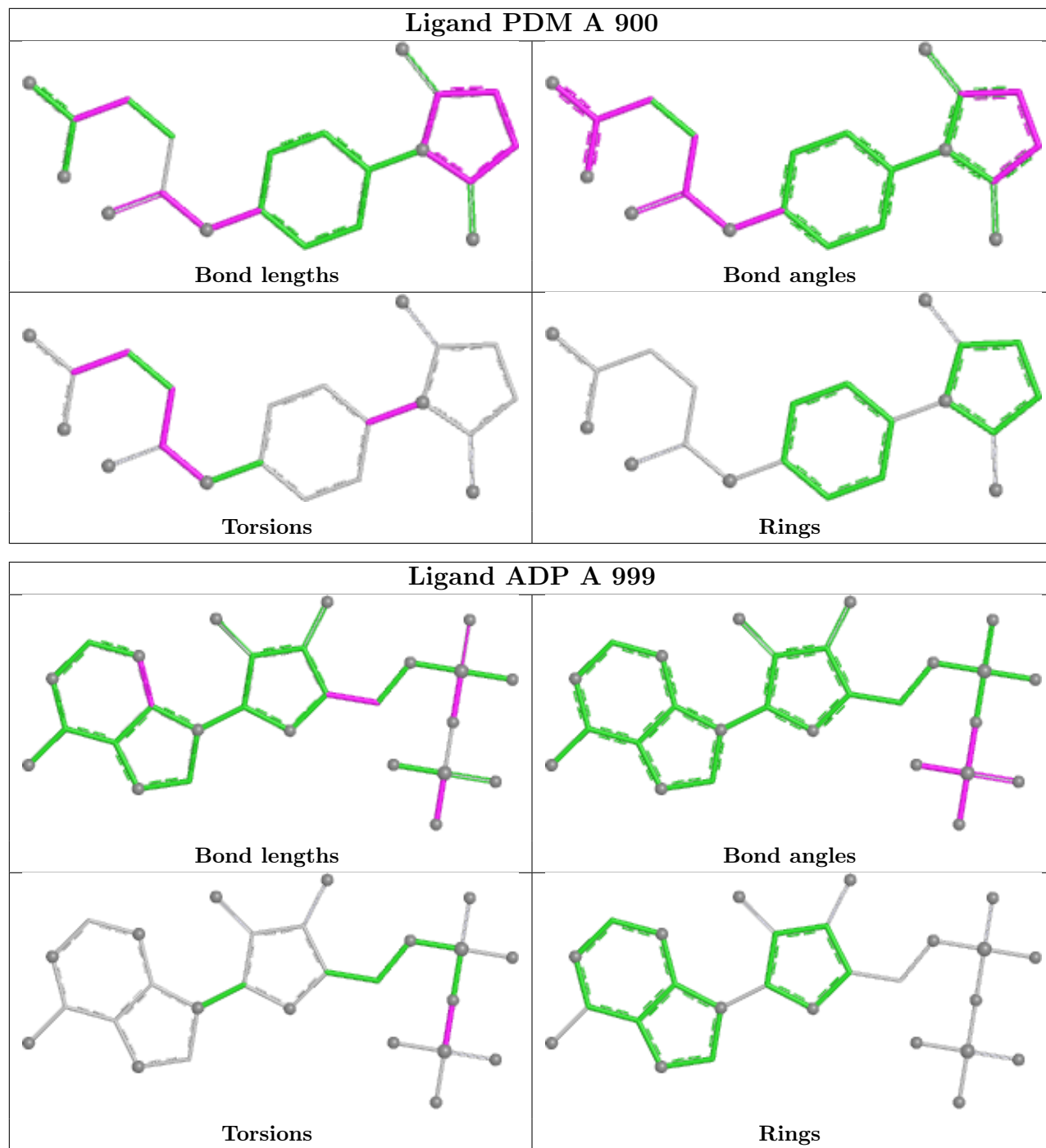
There are no ring outliers.

2 monomers are involved in 18 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	900	PDM	15	0
6	A	999	ADP	3	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient

equivalents in the CSD to analyse the geometry.



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.