



Full wwPDB X-ray Structure Validation Report ⓘ

Dec 15, 2024 – 08:25 AM EST

PDB ID : 1L2O
Title : SCALLOP MYOSIN S1-ADP-p-PDM IN THE ACTIN-DETACHED CONFORMATION
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 : 4.02b-467
Mogul : 2022.3.0, CSD as543be (2022)
Xtrriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.40

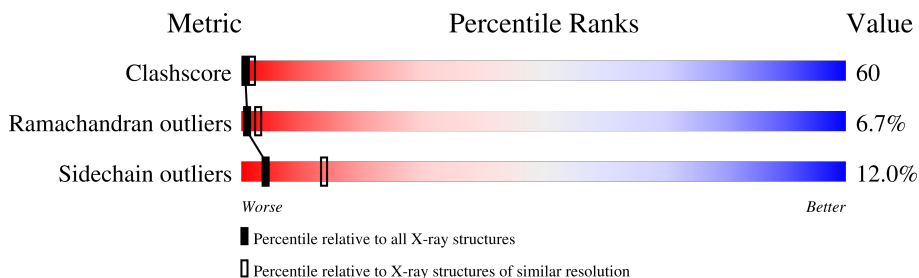
1 Overall quality at a glance

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	180529	4123 (2.80-2.80)
Ramachandran outliers	177936	4071 (2.80-2.80)
Sidechain outliers	177891	4073 (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	
2	B	156	
3	C	156	

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
			Total	C	N	O	S			
1	A	777	6011	3825	1035	1116	35	0	0	0

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

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

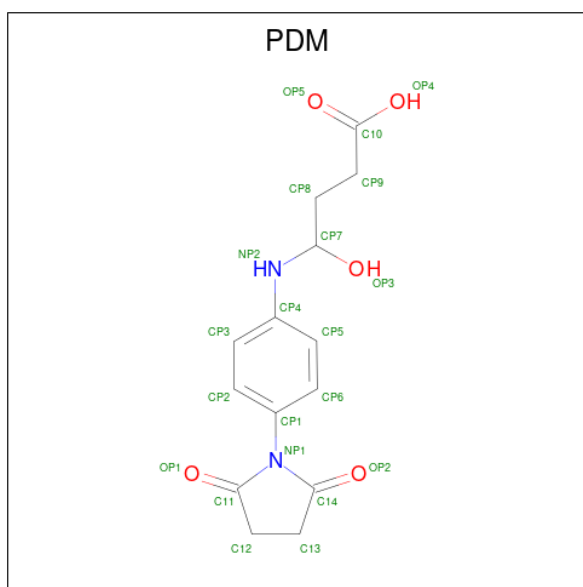
- Molecule 3 is a protein called MYOSIN ESSENTIAL LIGHT CHAIN.

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

- Molecule 4 is MAGNESIUM ION (three-letter code: 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 (three-letter code: PDM) (formula: C₁₄H₁₆N₂O₅).



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

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



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

- Molecule 7 is CALCIUM ION (three-letter code: CA) (formula: Ca).

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

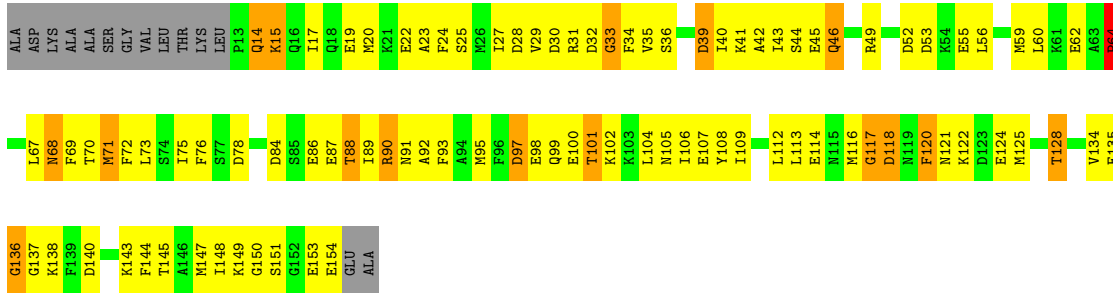
- Molecule 8 is water.

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



- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN

Chain B: 29% 51% 10% 9%



- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN

Chain C: 37% 53% 8%



4 Data and refinement statistics

Xtrriage (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	51.80Å 57.00Å 150.50Å 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.	Xtrriage
Total number of atoms	8339	wwPDB-VP
Average B, all atoms (Å ²)	89.0	wwPDB-VP

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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	0.51	0/6126	0.89	25/8280 (0.3%)
2	B	0.52	0/1089	0.88	4/1464 (0.3%)
3	C	0.49	0/1198	0.72	0/1619
All	All	0.51	0/8413	0.87	29/11363 (0.3%)

There are no bond length outliers.

All (29) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	151	SER	N-CA-C	8.57	134.13	111.00
1	A	407	THR	N-CA-C	-7.83	89.86	111.00
2	B	150	GLY	N-CA-C	7.39	131.57	113.10
1	A	510	ILE	CB-CA-C	-7.33	96.95	111.60
1	A	695	GLY	O-C-N	7.20	134.22	122.70
1	A	111	LEU	N-CA-C	-6.95	92.23	111.00
1	A	765	GLY	N-CA-C	-6.70	96.36	113.10
2	B	97	ASP	N-CA-C	-6.69	92.94	111.00
1	A	725	PRO	N-CA-C	6.61	129.29	112.10
1	A	539	PHE	CB-CA-C	-6.37	97.67	110.40
1	A	503	GLU	CA-C-N	-6.35	103.50	116.20
2	B	118	ASP	N-CA-C	-6.34	93.88	111.00
1	A	14	ALA	N-CA-C	6.27	127.92	111.00
1	A	7	ASP	N-CA-C	6.12	127.52	111.00
1	A	539	PHE	CB-CG-CD1	-6.10	116.53	120.80
1	A	664	HIS	N-CA-C	-6.02	94.75	111.00
1	A	644	THR	N-CA-C	-5.97	94.88	111.00
1	A	506	ALA	N-CA-C	-5.95	94.93	111.00
1	A	511	ASP	CA-C-N	-5.91	104.19	117.20
1	A	503	GLU	O-C-N	5.87	133.18	123.20
1	A	376	GLY	N-CA-C	-5.63	99.01	113.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	544	ASP	N-CA-C	5.45	125.71	111.00
1	A	510	ILE	C-N-CA	-5.36	108.30	121.70
1	A	512	PHE	N-CA-C	5.32	125.37	111.00
1	A	763	LYS	O-C-N	-5.28	114.25	122.70
1	A	11	GLN	N-CA-C	5.19	125.02	111.00
1	A	17	ARG	N-CA-C	5.17	124.95	111.00
1	A	407	THR	C-N-CA	-5.13	108.89	121.70
1	A	503	GLU	C-N-CA	5.11	133.04	122.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	6011	0	5802	750	0
2	B	1072	0	997	155	0
3	C	1174	0	1061	119	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	19	0
8	B	2	0	0	0	0
8	C	4	0	0	2	0
All	All	8339	0	7882	974	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 60.

All (974) 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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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:402:LYS:HD2	1:A:409:MET:HE2	1.17	1.15
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:11:GLN:CG	1:A:12:TYR:N	2.16	1.04
1:A:402:LYS:CD	1:A:409:MET:HE2	1.88	1.04
1:A:507:TRP:O	1:A:507:TRP:CE3	2.12	1.03
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: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
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
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
2:B:52:ASP:CG	2:B:53:ASP:H	1.71	0.93
1:A:623:LYS:HG3	1:A:624:ALA:H	1.31	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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:804:GLN:HA	2:B:95:MET:HE3	1.55	0.89
1:A:764:ALA:N	1:A:766:VAL:HG23	1.87	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
1:A:471:SER:OG	1:A:472:PHE:N	2.04	0.86
2:B:73:LEU:HD12	2:B:73:LEU:H	1.40	0.85
1:A:409:MET:SD	1:A:409:MET:C	2.54	0.85
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
2:B:32:ASP:C	2:B:34:PHE:H	1.80	0.84
1:A:88:MET:HE3	1:A:102:ASN:HB3	1.60	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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:112:ILE:HD12	1:A:129:LEU:HD12	1.63	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: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:229:TYR:CD2	1:A:284:ILE:HD13	2.19	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
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:88:MET:CE	1:A:102:ASN:HB3	2.14	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: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
1:A:417:ASN:C	1:A:419:VAL:H	1.89	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:313:ASN:C	1:A:313:ASN:HD22	1.88	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:407:THR:O	1:A:408:GLU:C	2.17	0.75
1:A:693:CYS:HB2	5:A:900:PDM:OP3	1.85	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
1:A:415:ASN:N	1:A:418:GLN:HB2	2.02	0.73
1:A:182:LYS:HB2	1:A:182:LYS:NZ	2.03	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
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:529:ILE:HG12	1:A:530:LEU:HD23	1.68	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: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
2:B:40:ILE:C	2:B:42:ALA:H	1.94	0.71
1:A:48:ILE:HA	1:A:58:VAL:HG12	1.71	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: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:719:ARG:HH21	1:A:771:GLU:CD	1.95	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
2:B:52:ASP:CG	2:B:53:ASP:N	2.44	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:598:ASN:HD22	1:A:644:THR:HG22	1.57	0.69
3:C:33:LEU:C	3:C:33:LEU:HD23	2.13	0.69
1:A:262:ILE:N	1:A:443:ASN:HD21	1.91	0.69
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
1:A:807:GLY:HA3	2:B:95:MET:HE2	1.76	0.68
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:508:GLU:CD	1:A:510:ILE:HG13	2.14	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
2:B:121:ASN:CG	2:B:124:GLU:HB2	2.14	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: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
1:A:508:GLU:CD	1:A:510:ILE:CG1	2.63	0.66
2:B:32:ASP:O	2:B:34:PHE:CD2	2.48	0.66
1:A:230:GLY:C	1:A:231:ASN:HD22	1.98	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
1:A:402:LYS:CG	1:A:409:MET:HE1	2.26	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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
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:530:LEU:C	1:A:650:ARG:HH22	1.99	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
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: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:87:ASP:C	1:A:89:ALA:H	2.01	0.64
1:A:395:LEU:O	8:A:1005:HOH:O	2.15	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
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:361:MET:HE2	1:A:380:ALA:HB1	1.79	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
3:C:73:GLU:HA	3:C:76:MET:CE	2.28	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:286:TYR:OH	1:A:312:ILE:O	2.11	0.62
1:A:313:ASN:C	1:A:313:ASN:ND2	2.51	0.62
1:A:505:ILE:HD11	1:A:756:GLY:H	1.60	0.62
1:A:529:ILE:HG22	1:A:551:LEU:HD13	1.81	0.62
3:C:88:GLU:HA	3:C:91:LYS:HZ3	1.62	0.62
1:A:576:ALA:HB3	1:A:588:PRO:HB2	1.78	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:417:ASN:C	1:A:419:VAL:N	2.50	0.62
1:A:95:ASN:OD1	1:A:95:ASN:C	2.37	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
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
1:A:91:MET:HE2	8:A:1021:HOH:O	2.00	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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:475:LEU:HD23	1:A:589:TYR:CZ	2.36	0.60
1:A:371:GLN:C	1:A:371:GLN:CD	2.60	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:811:ILE:HD11	2:B:92:ALA:C	2.22	0.59
1:A:517:GLN:HA	1:A:520:ILE:HB	1.84	0.59
2:B:52:ASP:H	2:B:55:GLU:HG3	1.67	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:63:ASP:CG	1:A:65:SER:HG	2.06	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:262:ILE:H	1:A:443:ASN:ND2	2.01	0.59
2:B:31:ARG:C	2:B:33:GLY:H	2.06	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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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:44:SER:C	2:B:46:GLN:H	2.05	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: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:116:MET:O	2:B:117:GLY:C	2.42	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: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:HZ3	1.69	0.57
1:A:269:LYS:HE3	1:A:432:ASP:HB2	1.87	0.57
3:C:15:PHE:CD1	3:C:15:PHE:C	2.78	0.57
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:40:ILE:C	2:B:42:ALA:N	2.55	0.56
3:C:18:PHE:CD2	3:C:36:VAL:HG22	2.39	0.56
1:A:215:LEU:HD12	1:A:215:LEU:O	2.04	0.56
1:A:294:PRO:C	1:A:296:LEU:H	2.08	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:32:ASP:C	2:B:34:PHE:N	2.47	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:325:VAL:HG23	1:A:326:GLU:N	2.21	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
1:A:157:ASP:OD2	1:A:161:GLN:NE2	2.37	0.56
1:A:51:SER:HB2	3:C:105:GLU:OE1	2.05	0.56
1:A:277:SER:O	1:A:278:ALA:HB3	2.06	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
2:B:32:ASP:OD1	2:B:34:PHE:O	2.24	0.55
2:B:75:ILE:HG13	2:B:76:PHE:HD1	1.71	0.55
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: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
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:598:ASN:HB3	1:A:599:LYS:HZ3	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:603:ASN:C	1:A:605:ASN:N	2.60	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:361:MET:HE3	1:A:380:ALA:HA	1.88	0.55
1:A:379:GLU:C	1:A:381:GLU:N	2.59	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:182:LYS:C	1:A:184:GLU:H	2.10	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:466:ILE:HG23	1:A:466:ILE:O	2.07	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
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: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:125:MET:HE3	2:B:125:MET:O	2.08	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:560:ARG:HB3	1:A:561:MET:HE3	1.88	0.54
2:B:44:SER:C	2:B:46:GLN:N	2.61	0.54
1:A:590:SER:O	1:A:594:TRP:NE1	2.40	0.54
1:A:697:LEU:O	1:A:697:LEU:CD2	2.55	0.54
1:A:792:TYR:CD1	1:A:792:TYR:C	2.81	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
3:C:73:GLU:HA	3:C:76:MET:HE2	1.89	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
2:B:145:THR:C	2:B:147:MET:H	2.11	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:394:LEU:HD12	1:A:398:LEU:HD13	1.91	0.53
1:A:815:ILE:C	1:A:817:LYS:H	2.12	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:507:TRP:CE3	1:A:507:TRP:C	2.81	0.53
1:A:529:ILE:HG21	1:A:551:LEU:HD13	1.91	0.53
2:B:135:GLU:O	2:B:136:GLY:C	2.47	0.53
1:A:292:ALA:HB3	1:A:328:PHE:CD2	2.43	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: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:402:LYS:HB2	1:A:409:MET:HE1	1.91	0.53
1:A:814:ASN:CG	2:B:89:ILE:HD11	2.29	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
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:507:TRP:HE3	1:A:507:TRP:C	2.12	0.52
1:A:231:ASN:HD22	1:A:231:ASN:N	2.07	0.52
1:A:537:CYS:CB	1:A:599:LYS:NZ	2.72	0.52
1:A:623:LYS:CG	1:A:624:ALA:H	2.12	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:237:ASN:C	1:A:237:ASN:OD1	2.48	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:547:PHE:C	1:A:549:ASP:H	2.12	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: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:182:LYS:HB2	1:A:182:LYS:HZ2	1.75	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:544:ASP:O	1:A:548:GLN:CB	2.59	0.51
1:A:603:ASN:C	1:A:605:ASN:H	2.12	0.51
3:C:34:GLY:C	3:C:36:VAL:N	2.62	0.51
3:C:135:LEU:HB2	3:C:136:GLU:OE1	2.10	0.51
1:A:218:GLN:O	1:A:219:ILE:C	2.47	0.51
1:A:243:PHE:CD2	1:A:244:GLY:O	2.64	0.51
1:A:181:GLY:O	1:A:184:GLU:HB2	2.11	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
3:C:49:VAL:HG23	3:C:50:PHE:N	2.25	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:284:ILE:O	1:A:285:PHE:C	2.50	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
1:A:343:GLU:CD	1:A:343:GLU:H	2.13	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:818:TRP:CE2	2:B:148:ILE:HA	2.46	0.50
1:A:752:GLU:HG2	1:A:763:LYS:HZ2	1.75	0.50
3:C:34:GLY:C	3:C:36:VAL:H	2.13	0.50
1:A:60:ILE:HG13	1:A:67:ARG:HH21	1.77	0.50
1:A:379:GLU:C	1:A:381:GLU:H	2.14	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:447:ASP:O	1:A:448:THR:C	2.49	0.50
1:A:582:HIS:HB2	1:A:585:GLY:O	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:583:TYR:CG	1:A:584:ALA:N	2.79	0.50
2:B:25:SER:C	2:B:27:ILE:N	2.64	0.50
2:B:29:VAL:C	2:B:31:ARG:N	2.65	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: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: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
1:A:289:CYS:HB3	1:A:305:ASP:H	1.77	0.49
1:A:683:ASP:O	1:A:684:ALA:C	2.50	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:239:ASN:C	1:A:239:ASN:HD22	2.13	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
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:532:ILE:C	1:A:534:GLU:H	2.16	0.49
1:A:712:ILE:HG13	1:A:712:ILE:O	2.11	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
2:B:104:LEU:O	2:B:105:ASN:C	2.50	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
1:A:598:ASN:HD22	1:A:598:ASN:C	2.16	0.49
1:A:156:ALA:O	1:A:159:ALA:HB3	2.12	0.49
1:A:737:THR:O	1:A:740:GLU:HB3	2.12	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:485:GLN:O	1:A:489:ASN:ND2	2.46	0.49
1:A:174:ILE:HD12	1:A:174:ILE:H	1.76	0.49
1:A:357:HIS:C	1:A:359:GLY:N	2.60	0.49
1:A:464:PHE:HB2	1:A:583:TYR:OH	2.13	0.49
1:A:537:CYS:CB	1:A:599:LYS:HZ2	2.25	0.49
1:A:537:CYS:HB3	1:A:599:LYS:NZ	2.28	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:343:GLU:O	1:A:344:GLU:C	2.51	0.48
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: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: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
1:A:577:HIS:N	1:A:589:TYR:O	2.45	0.48
3:C:91:LYS:HB2	3:C:91:LYS:NZ	2.28	0.48
1:A:88:MET:HE3	1:A:102:ASN:CB	2.38	0.48
1:A:300:MET:HB3	1:A:353:ALA:HB2	1.95	0.48
1:A:347:SER:O	1:A:348:MET:C	2.52	0.48
1:A:402:LYS:CB	1:A:409:MET:HE1	2.43	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
5:A:900:PDM:HP82	5:A:900:PDM:HP3	1.95	0.48
3:C:12:LYS:HG3	3:C:65:PHE:CZ	2.49	0.48
3:C:2:LYS:HG2	3:C:3:LEU:N	2.29	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:392:GLY:O	1:A:393:ASP:C	2.52	0.48
1:A:475:LEU:HD23	1:A:589:TYR:CE2	2.47	0.48
1:A:485:GLN:HG3	1:A:583:TYR:CD1	2.49	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
1:A:765:GLY:O	1:A:766:VAL:C	2.52	0.47
2:B:44:SER:O	2:B:46:GLN:N	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:157:ASP:C	1:A:159:ALA:N	2.68	0.47
1:A:752:GLU:OE1	1:A:766:VAL:CG1	2.61	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:745:GLY:C	1:A:747:GLN:H	2.18	0.47
1:A:402:LYS:CE	1:A:409:MET:HE2	2.43	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:767:LEU:O	1:A:770:LEU:HB2	2.15	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
1:A:87:ASP:C	1:A:89:ALA:N	2.64	0.47
1:A:141:ARG:O	1:A:143:LYS:N	2.48	0.47
1:A:239:ASN:ND2	1:A:239:ASN:C	2.66	0.47
1:A:297:ASN:CG	1:A:304:PRO:HG3	2.35	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
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
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:528:GLY:C	1:A:530:LEU:H	2.18	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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:242:ARG:HA	1:A:242:ARG:HD3	1.45	0.46
1:A:355:ILE:O	1:A:356:LEU:C	2.53	0.46
2:B:64:PRO:HD2	2:B:71:MET:SD	2.55	0.46
3:C:6:ASP:C	3:C:9:ASP:H	2.17	0.46
1:A:160:TYR:HA	1:A:456:ILE:HD11	1.96	0.46
3:C:125:ILE:O	3:C:129:THR:OG1	2.31	0.46
1:A:5:PHE:CD1	1:A:5:PHE:C	2.87	0.46
1:A:137:ILE:HG23	1:A:192:TYR:HE1	1.78	0.46
1:A:192:TYR:C	1:A:194:ALA:H	2.19	0.46
2:B:24:PHE:O	2:B:27:ILE:HB	2.14	0.46
3:C:72:TYR:C	3:C:74:GLY:N	2.67	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
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
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:234:THR:O	1:A:235:THR:C	2.54	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
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:153:PHE:CD1	1:A:192:TYR:CD1	3.04	0.46
1:A:197:ALA:O	1:A:198:CYS:C	2.53	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	1.97	0.46
1:A:323:ASP:OD2	1:A:325:VAL:HG22	2.16	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:116:MET:HE2	3:C:21:TRP:O	2.15	0.46
2:B:148:ILE:CG2	2:B:149:LYS:N	2.79	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:521:ASP:C	1:A:523:ILE:H	2.20	0.46
2:B:36:SER:OG	2:B:39:ASP:HB2	2.16	0.46
2:B:70:THR:O	2:B:72:PHE:N	2.49	0.46
2:B:145:THR:C	2:B:147:MET:N	2.69	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:60:ILE:HB	1:A:63:ASP:OD1	2.16	0.45
1:A:192:TYR:C	1:A:194:ALA:N	2.69	0.45
1:A:252:GLY:C	1:A:254:THR:H	2.19	0.45
1:A:394:LEU:C	1:A:396:LYS:N	2.66	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
1:A:807:GLY:CA	2:B:95:MET:CE	2.93	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
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
1:A:325:VAL:CG2	1:A:326:GLU:N	2.79	0.45
1:A:500:TYR:O	1:A:505:ILE:C	2.53	0.45
1:A:528:GLY:C	1:A:530:LEU:N	2.70	0.45
1:A:709:SER:C	1:A:710:ARG:HD2	2.36	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: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:88:MET:HE1	1:A:102:ASN:HB3	1.95	0.45
1:A:790:ARG:HH12	3:C:117:LEU:HD23	1.80	0.45
2:B:36:SER:CA	2:B:39:ASP:HB2	2.47	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: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
3:C:74:GLY:C	3:C:76:MET:H	2.21	0.45
1:A:357:HIS:O	1:A:358:MET:C	2.55	0.44
1:A:393:ASP:C	1:A:609:LEU:HD11	2.37	0.44
1:A:751:ALA:C	1:A:754:ARG:HH12	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:116:MET:HE2	3:C:21:TRP:HE3	1.82	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:508:GLU:CD	1:A:510:ILE:HG12	2.38	0.44
1:A:532:ILE:C	1:A:534:GLU:N	2.70	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
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:811:ILE:HD13	2:B:93:PHE:CD1	2.52	0.44
3:C:84:ALA:O	3:C:85:ASP:C	2.55	0.44
1:A:151:HIS:O	1:A:152:LEU:C	2.54	0.44
1:A:182:LYS:HB2	6:A:999:ADP:O1B	2.17	0.44
1:A:400:LYS:HG3	1:A:411:THR:CG2	2.47	0.44
1:A:423:VAL:O	1:A:424:GLY:C	2.55	0.44
1:A:713:TYR:OH	1:A:756:GLY:O	2.36	0.44
1:A:827:TRP:O	1:A:828:LYS:C	2.55	0.44
2:B:87:GLU:O	2:B:91:ASN:HB2	2.17	0.44
1:A:243:PHE:CD1	1:A:243:PHE:N	2.86	0.44
1:A:324:ASP:O	1:A:325:VAL:C	2.55	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
3:C:82:THR:O	3:C:83:PHE:C	2.56	0.44
1:A:341:THR:HB	1:A:343:GLU:HG2	2.00	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:326:GLU:C	1:A:328:PHE:N	2.70	0.44
1:A:483:ARG:HG3	1:A:483:ARG:HH11	1.83	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:811:ILE:O	1:A:811:ILE:CG2	2.64	0.44
1:A:120:CYS:SG	1:A:155:VAL:HG21	2.58	0.44
1:A:163:MET:CE	1:A:251:PHE:HB2	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:721:SER:C	1:A:723:LEU:N	2.71	0.44
1:A:815:ILE:HD11	2:B:144:PHE:CE2	2.53	0.44
1:A:197:ALA:C	1:A:198:CYS:O	2.56	0.43
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
3:C:42:ILE:CG2	3:C:43:ASN:N	2.77	0.43
3:C:34:GLY:O	3:C:37:CYS:N	2.40	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:HE3	1:A:403:VAL:C	2.39	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:753:TYR:C	1:A:754:ARG:HH11	2.18	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:C	1:A:523:ILE:N	2.71	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:801:LEU:CD1	3:C:21:TRP:NE1	2.80	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: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
1:A:418:GLN:O	1:A:422:SER:OG	2.35	0.43
1:A:476:CYS:O	1:A:477:ILE:C	2.57	0.43
2:B:19:GLU:O	2:B:20:MET:C	2.56	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:833:VAL:O	1:A:833:VAL:CG1	2.67	0.43
2:B:109:ILE:HD11	2:B:113:LEU:HG	2.00	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: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:414:GLN:CB	1:A:418:GLN:HB3	2.49	0.42
1:A:502:LYS:C	1:A:504:GLY:H	2.21	0.42
1:A:681:LEU:CD1	1:A:682:VAL:N	2.80	0.42
2:B:60:LEU:C	2:B:62:GLU:H	2.22	0.42
3:C:43:ASN:N	3:C:44:PRO:CD	2.81	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: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:60:LEU:C	2:B:62:GLU:N	2.73	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:829:LEU:O	1:A:830:TYR:C	2.57	0.42
2:B:135:GLU:HG3	2:B:136:GLY:N	2.34	0.42
3:C:133:GLU:HA	3:C:139:VAL:HG12	2.01	0.42
1:A:283:HIS:O	1:A:284:ILE:C	2.58	0.42
1:A:306:SER:C	1:A:308:LEU:H	2.21	0.42
1:A:312:ILE:CD1	1:A:356:LEU:HD11	2.47	0.42
1:A:777:ARG:O	1:A:778:LEU:C	2.57	0.42
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:345:LYS:CG	1:A:349:PHE:HE2	2.32	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:A:7:ASP:OD1	1:A:7:ASP:N	2.51	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:474:GLN:CD	1:A:474:GLN:N	2.73	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:807:GLY:N	2:B:95:MET:HE1	2.33	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
1:A:693:CYS:SG	5:A:900:PDM:HP3	2.59	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:547:PHE:C	1:A:549:ASP:N	2.73	0.42
1:A:577:HIS:CG	1:A:591:ILE:CD1	3.03	0.42
1:A:594:TRP:O	1:A:595:LEU:C	2.58	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: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:282:TYR:O	1:A:283:HIS:C	2.58	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
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:131:LEU:HD13	3:C:144:PHE:HB2	2.02	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:687:VAL:O	1:A:688:LEU:C	2.58	0.41
1:A:786:GLN:OE1	3:C:115:GLU:O	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:60:ILE:O	1:A:64:SER:N	2.53	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
3:C:120:GLU:O	3:C:121:ASP:C	2.58	0.41
1:A:29:ASP:C	1:A:31:LYS:H	2.24	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:266:LEU:CD1	1:A:476:CYS:HB3	2.51	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:90:ASN:O	1:A:91:MET:C	2.57	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:447:ASP:O	1:A:447:ASP:CG	2.59	0.41
1:A:562:PHE:O	1:A:563:THR:HG23	2.21	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:474:GLN:CD	1:A:474:GLN:H	2.23	0.41
1:A:479:TYR:OH	1:A:524:GLU:HB3	2.20	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
3:C:33:LEU:HA	3:C:68:PHE:HZ	1.85	0.41
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: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:427:ALA:O	1:A:428:LYS:C	2.58	0.41
1:A:507:TRP:O	1:A:507:TRP:CD2	2.70	0.41
1:A:542:ALA:C	1:A:595:LEU:HD13	2.41	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
2:B:25:SER:C	2:B:27:ILE:H	2.22	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:9:ASP:HA	3:C:12:LYS:HB2	2.03	0.41
1:A:434:MET:O	1:A:435:PHE:C	2.59	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: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: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: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: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:713:TYR:CD2	1:A:736:LYS:HG2	2.57	0.40
2:B:31:ARG:C	2:B:33:GLY:N	2.73	0.40
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:381:GLU:O	1:A:384:ALA:HB3	2.21	0.40
2:B:23:ALA:O	2:B:24:PHE:C	2.59	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
3:C:72:TYR:O	3:C:73:GLU:C	2.59	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
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

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Mol	Chain	Res	Type
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
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%)	547 (88%)	74 (12%)	4	14
2	B	109/133 (82%)	96 (88%)	13 (12%)	4	14
3	C	119/132 (90%)	104 (87%)	15 (13%)	3	12
All	All	849/993 (86%)	747 (88%)	102 (12%)	4	14

All (102) 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
1	A	124	ASN
1	A	126	TYR
1	A	127	ARG
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	184	GLU
1	A	185	ASN
1	A	211	LYS
1	A	217	ASP
1	A	220	ILE
1	A	231	ASN
1	A	236	ARG
1	A	239	ASN
1	A	313	ASN
1	A	316	CYS
1	A	319	VAL
1	A	328	PHE

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Mol	Chain	Res	Type
1	A	332	ASP
1	A	333	GLU
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	449	LYS
1	A	471	SER
1	A	495	LEU
1	A	502	LYS
1	A	507	TRP
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	563	THR
1	A	578	PHE
1	A	591	ILE
1	A	592	THR
1	A	595	LEU
1	A	598	ASN
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	763	LYS
1	A	766	VAL
1	A	769	ASN
1	A	772	GLU

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Mol	Chain	Res	Type
1	A	784	MET
1	A	788	HIS
1	A	792	TYR
1	A	801	LEU
1	A	817	LYS
1	A	823	ASN
2	B	14	GLN
2	B	15	LYS
2	B	39	ASP
2	B	46	GLN
2	B	49	ARG
2	B	64	PRO
2	B	68	ASN
2	B	88	THR
2	B	90	ARG
2	B	98	GLU
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	120	GLU
3	C	121	ASP
3	C	124	GLU
3	C	141	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (35) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	33	ASN
1	A	49	GLN
1	A	124	ASN
1	A	170	GLN

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Mol	Chain	Res	Type
1	A	185	ASN
1	A	221	GLN
1	A	231	ASN
1	A	239	ASN
1	A	287	GLN
1	A	313	ASN
1	A	321	ASN
1	A	346	GLN
1	A	415	ASN
1	A	421	ASN
1	A	443	ASN
1	A	453	ASN
1	A	486	GLN
1	A	489	ASN
1	A	497	GLN
1	A	553	GLN
1	A	554	ASN
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

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
6	ADP	A	999	4	24,29,29	1.60	7 (29%)	29,45,45	1.30	5 (17%)
5	PDM	A	900	1	21,22,22	2.98	9 (42%)	29,30,30	1.85	8 (27%)

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
6	ADP	A	999	4	-	2/12/32/32	0/3/3/3
5	PDM	A	900	1	1/1/5/6	9/13/26/26	0/2/2/2

All (16) 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
6	A	999	ADP	C4-N3	4.15	1.41	1.35
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	O4'-C1'	3.37	1.45	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	999	ADP	C8-N7	-2.72	1.29	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 (13) 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
6	A	999	ADP	C4-C5-N7	2.46	111.94	109.34
6	A	999	ADP	C4'-O4'-C1'	2.40	112.12	109.92
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

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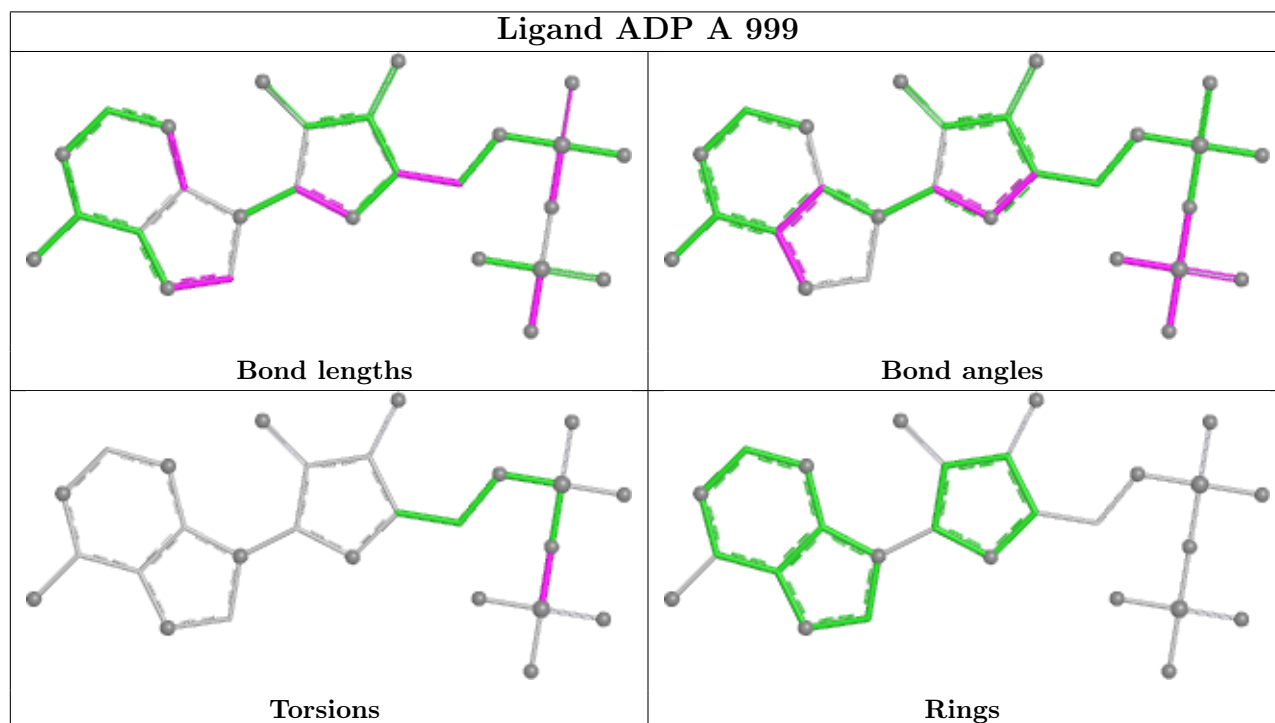
Mol	Chain	Res	Type	Atoms
6	A	999	ADP	PA-O3A-PB-O3B

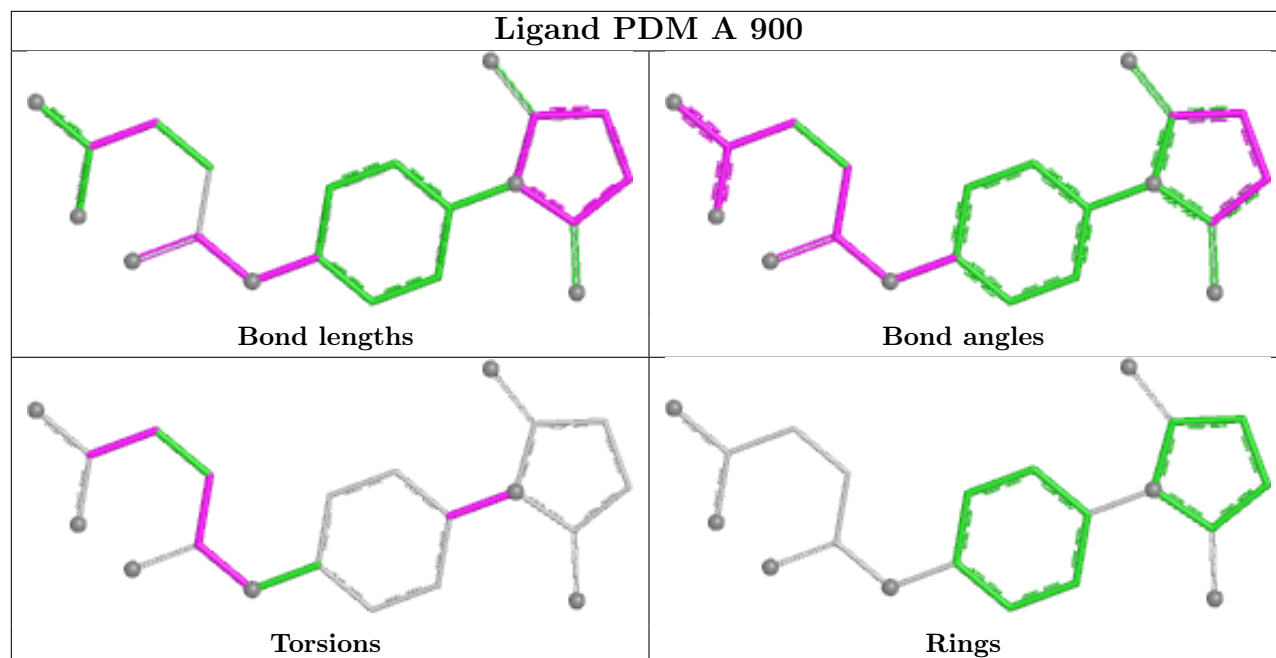
There are no ring outliers.

2 monomers are involved in 18 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	999	ADP	3	0
5	A	900	PDM	15	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 [i](#)

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.