



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 02:30 AM UTC

PDB ID : 4EGW / pdb_00004egw
Title : The structure of the soluble domain of CorA from *Methanocaldococcus jannaschii*
Authors : Guskov, A.; Nordin, N.; Reynaud, A.; Engman, H.; Lundback, A.-K.; Jong, A.J.O.; Cornvik, T.; Phua, T.; Eshaghi, S.
Deposited on : 2012-04-02
Resolution : 2.50 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

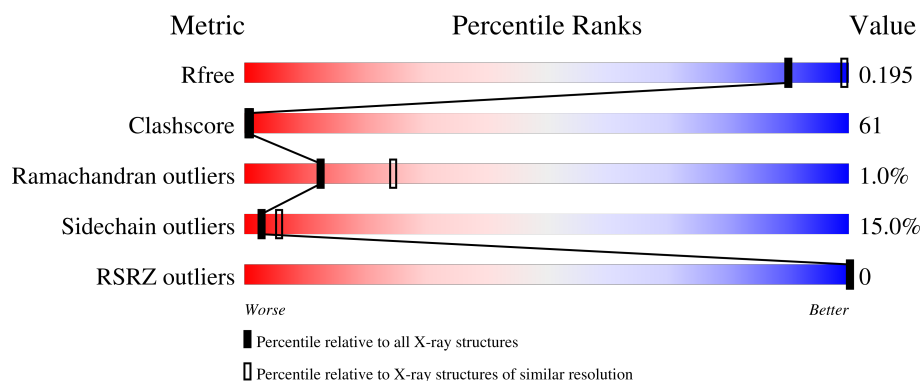
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

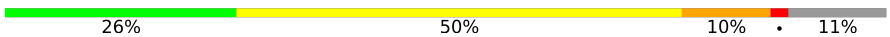
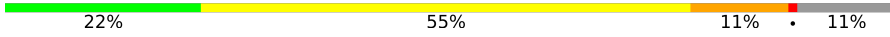
The reported resolution of this entry is 2.50 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	5829 (2.50-2.50)
Clashscore	190562	6492 (2.50-2.50)
Ramachandran outliers	187476	6378 (2.50-2.50)
Sidechain outliers	187428	6380 (2.50-2.50)
RSRZ outliers	180081	5833 (2.50-2.50)

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

Mol	Chain	Length	Quality of chain
1	A	280	
1	B	280	

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
2	HEZ	A	303	-	-	X	-
3	BU1	A	305	-	-	X	-
3	BU1	A	309	-	-	X	-
3	BU1	B	302	-	-	X	-
4	PGO	A	318	-	-	X	-

2 Entry composition [i](#)

There are 6 unique types of molecules in this entry. The entry contains 4433 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 Magnesium transport protein CorA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	250	Total	C	N	O	S	0	1	0
			2071	1339	328	397	7			
1	B	250	Total	C	N	O	S	0	2	0
			2073	1339	329	397	8			

There are 44 discrepancies between the modelled and reference sequences:

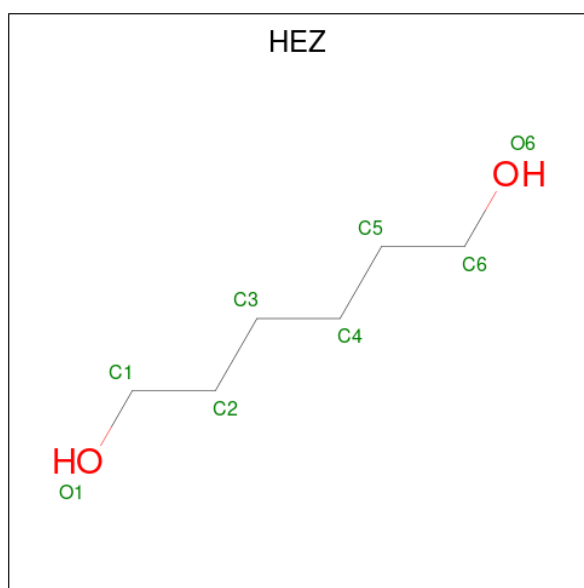
Chain	Residue	Modelled	Actual	Comment	Reference
A	-21	MET	-	expression tag	UNP Q58439
A	-20	HIS	-	expression tag	UNP Q58439
A	-19	HIS	-	expression tag	UNP Q58439
A	-18	HIS	-	expression tag	UNP Q58439
A	-17	HIS	-	expression tag	UNP Q58439
A	-16	HIS	-	expression tag	UNP Q58439
A	-15	HIS	-	expression tag	UNP Q58439
A	-14	SER	-	expression tag	UNP Q58439
A	-13	SER	-	expression tag	UNP Q58439
A	-12	GLY	-	expression tag	UNP Q58439
A	-11	VAL	-	expression tag	UNP Q58439
A	-10	ASP	-	expression tag	UNP Q58439
A	-9	LEU	-	expression tag	UNP Q58439
A	-8	GLY	-	expression tag	UNP Q58439
A	-7	THR	-	expression tag	UNP Q58439
A	-6	GLU	-	expression tag	UNP Q58439
A	-5	ASN	-	expression tag	UNP Q58439
A	-4	LEU	-	expression tag	UNP Q58439
A	-3	TYR	-	expression tag	UNP Q58439
A	-2	PHE	-	expression tag	UNP Q58439
A	-1	GLN	-	expression tag	UNP Q58439
A	0	SER	-	expression tag	UNP Q58439
B	-21	MET	-	expression tag	UNP Q58439
B	-20	HIS	-	expression tag	UNP Q58439
B	-19	HIS	-	expression tag	UNP Q58439

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-18	HIS	-	expression tag	UNP Q58439
B	-17	HIS	-	expression tag	UNP Q58439
B	-16	HIS	-	expression tag	UNP Q58439
B	-15	HIS	-	expression tag	UNP Q58439
B	-14	SER	-	expression tag	UNP Q58439
B	-13	SER	-	expression tag	UNP Q58439
B	-12	GLY	-	expression tag	UNP Q58439
B	-11	VAL	-	expression tag	UNP Q58439
B	-10	ASP	-	expression tag	UNP Q58439
B	-9	LEU	-	expression tag	UNP Q58439
B	-8	GLY	-	expression tag	UNP Q58439
B	-7	THR	-	expression tag	UNP Q58439
B	-6	GLU	-	expression tag	UNP Q58439
B	-5	ASN	-	expression tag	UNP Q58439
B	-4	LEU	-	expression tag	UNP Q58439
B	-3	TYR	-	expression tag	UNP Q58439
B	-2	PHE	-	expression tag	UNP Q58439
B	-1	GLN	-	expression tag	UNP Q58439
B	0	SER	-	expression tag	UNP Q58439

- Molecule 2 is HEXANE-1,6-DIOL (CCD ID: HEZ) (formula: $C_6H_{14}O_2$).



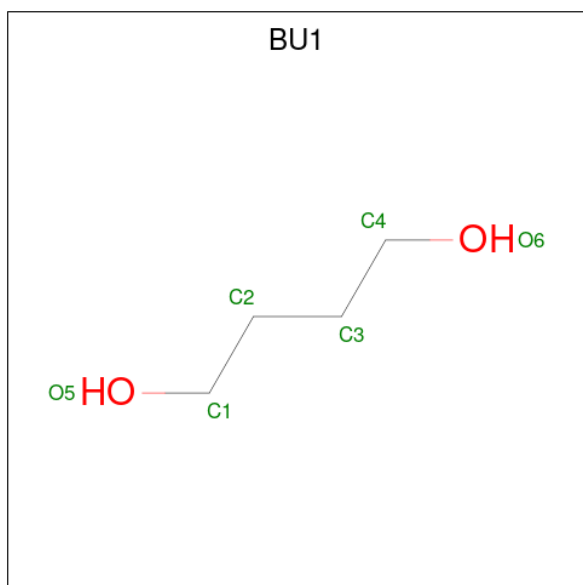
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	O	0	0
			8	6	2		
2	A	1	Total	C	O	0	0
			8	6	2		

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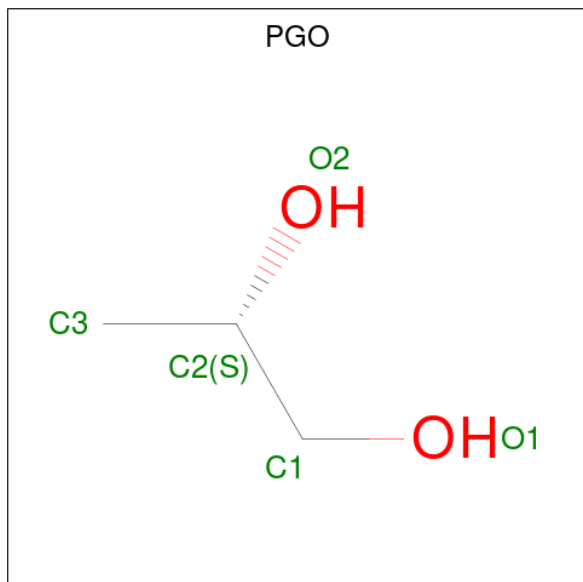
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	O	0	0
			8	6	2		
2	A	1	Total	C	O	0	0
			8	6	2		
2	A	1	Total	C	O	0	0
			8	6	2		
2	A	1	Total	C	O	0	0
			8	6	2		
2	A	1	Total	C	O	0	0
			8	6	2		
2	B	1	Total	C	O	0	0
			8	6	2		
2	B	1	Total	C	O	0	0
			8	6	2		
2	B	1	Total	C	O	0	0
			8	6	2		
2	B	1	Total	C	O	0	0
			8	6	2		

- Molecule 3 is 1,4-BUTANEDIOL (CCD ID: BU1) (formula: $C_4H_{10}O_2$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C O 6 4 2	0	0
3	A	1	Total C O 6 4 2	0	0
3	A	1	Total C O 6 4 2	0	0
3	A	1	Total C O 6 4 2	0	0
3	B	1	Total C O 6 4 2	0	0
3	B	1	Total C O 6 4 2	0	0

- Molecule 4 is S-1,2-PROPANEDIOL (CCD ID: PGO) (formula: $C_3H_8O_2$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C O 5 3 2	0	0
4	A	1	Total C O 5 3 2	0	0
4	A	1	Total C O 5 3 2	0	0
4	A	1	Total C O 5 3 2	0	0
4	A	1	Total C O 5 3 2	0	0
4	A	1	Total C O 5 3 2	0	0

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	B	1	Total	C	O	0	0
			5	3	2		
4	B	1	Total	C	O	0	0
			5	3	2		
4	B	1	Total	C	O	0	0
			5	3	2		
4	B	1	Total	C	O	0	0
			5	3	2		

- Molecule 5 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	2	Total	Mg	0	0
			2	2		
5	B	1	Total	Mg	0	0
			1	1		

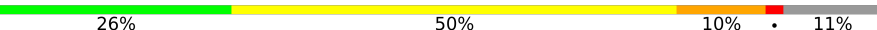
- Molecule 6 is water.

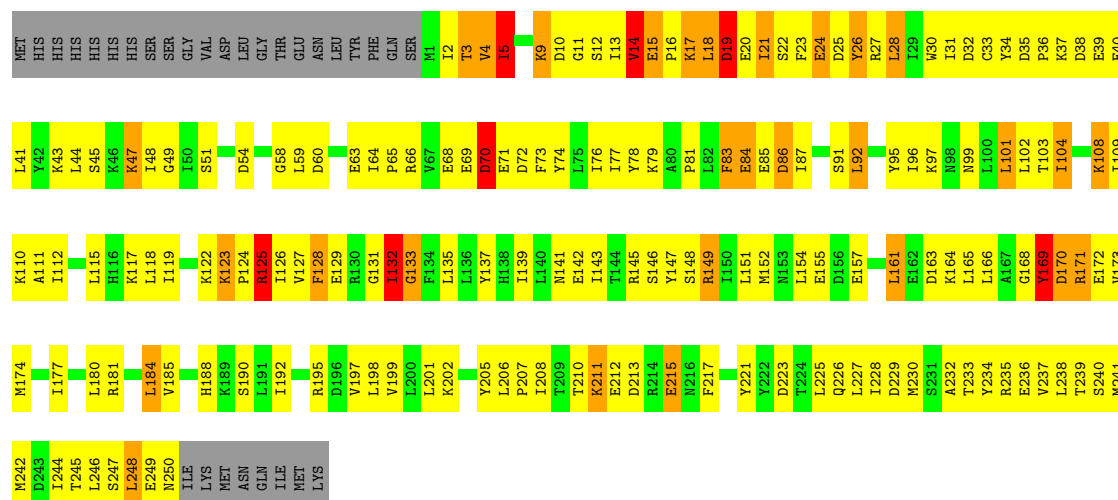
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	49	Total	O	0	0
			49	49		
6	B	47	Total	O	0	0
			47	47		

3 Residue-property plots

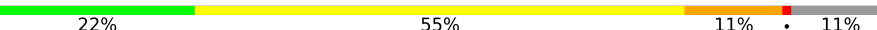
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density.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

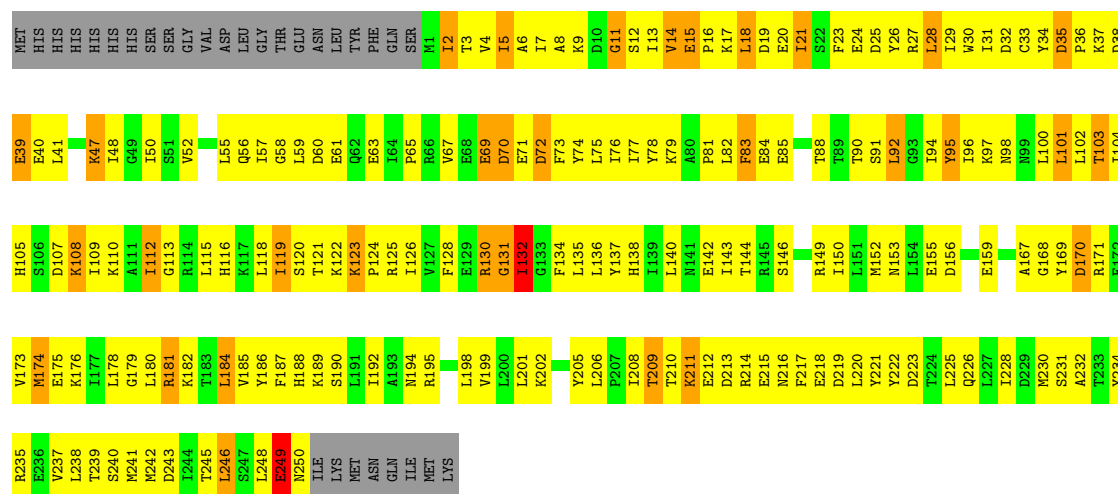
• Molecule 1: Magnesium transport protein CorA

Chain A: 



• Molecule 1: Magnesium transport protein CorA

Chain B: 



4 Data and refinement statistics

Property	Value	Source
Space group	P 61	Depositor
Cell constants a, b, c, α , β , γ	68.29Å 68.29Å 241.94Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	47.69 – 2.50 47.69 – 2.50	Depositor EDS
% Data completeness (in resolution range)	99.9 (47.69-2.50) 99.8 (47.69-2.50)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.31 (at 2.51Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.7.1_743)	Depositor
R, R_{free}	0.153 , 0.195 0.153 , 0.195	Depositor DCC
R_{free} test set	1099 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	51.2	Xtriage
Anisotropy	0.094	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 80.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.45$, $\langle L^2 \rangle = 0.27$	Xtriage
Estimated twinning fraction	0.490 for h,-h-k,-l	Xtriage
Reported twinning fraction	0.500 for k,h,-l	Depositor
Outliers	0 of 21977 reflections	Xtriage
F_o, F_c correlation	0.98	EDS
Total number of atoms	4433	wwPDB-VP
Average B, all atoms (Å ²)	68.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.28% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: HEZ, MG, PGO, BU1

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	0.50	0/2107	1.07	10/2843 (0.4%)
1	B	0.49	0/2111	1.01	9/2847 (0.3%)
All	All	0.50	0/4218	1.04	19/5690 (0.3%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	3
1	B	0	1
All	All	0	4

There are no bond length outliers.

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
1	A	15	GLU	CA-C-N	14.71	138.22	119.84
1	A	15	GLU	C-N-CA	14.71	138.22	119.84
1	B	15	GLU	CA-C-N	9.14	129.27	120.31
1	B	15	GLU	C-N-CA	9.14	129.27	120.31
1	B	35	ASP	CA-C-N	7.58	127.34	119.76
1	B	35	ASP	C-N-CA	7.58	127.34	119.76
1	A	169[A]	TYR	CA-C-O	-7.55	109.71	120.51
1	A	169[B]	TYR	CA-C-O	-7.55	109.71	120.51
1	A	125	ARG	N-CA-C	6.99	118.93	108.31
1	B	131	GLY	N-CA-C	6.83	123.78	112.30
1	A	25	ASP	N-CA-C	-6.13	105.45	113.17
1	A	14	VAL	N-CA-C	5.87	121.55	109.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	133	GLY	N-CA-C	-5.67	99.74	113.18
1	B	125	ARG	N-CA-C	5.56	117.14	111.14
1	B	249	GLU	N-CA-C	5.53	116.64	107.73
1	B	11	GLY	N-CA-C	5.48	119.96	111.08
1	A	17	LYS	N-CA-C	5.41	122.33	110.80
1	B	47	LYS	N-CA-C	5.30	116.75	110.97
1	A	128	PHE	N-CA-C	-5.17	106.81	113.02

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	132	ILE	Peptide
1	A	19	ASP	Peptide
1	A	70	ASP	Peptide
1	B	132	ILE	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2071	0	2131	266	1
1	B	2073	0	2139	272	1
2	A	64	0	112	18	0
2	B	40	0	70	6	0
3	A	24	0	40	12	0
3	B	12	0	20	5	0
4	A	30	0	48	9	0
4	B	20	0	32	1	0
5	A	2	0	0	0	0
5	B	1	0	0	0	0
6	A	49	0	0	12	0
6	B	47	0	0	23	0
All	All	4433	0	4592	549	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 61.

All (549) 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:174:MET:HG3	1:A:242:MET:HE1	1.29	1.13
1:A:9:LYS:H	1:A:9:LYS:HE2	1.08	1.09
1:A:97:LYS:HZ1	2:A:311:HEZ:H51	1.18	1.08
1:B:211:LYS:HG3	1:B:214:ARG:HH22	1.17	1.04
1:B:23:PHE:HA	1:B:26:TYR:CD1	1.94	1.02
1:B:181:ARG:O	1:B:185:VAL:HG23	1.63	0.98
1:A:21:ILE:HG23	1:A:47:LYS:NZ	1.79	0.96
1:A:235:ARG:HD2	4:A:318:PGO:H33	1.47	0.96
1:A:169[B]:TYR:CG	1:A:170:ASP:N	2.28	0.95
1:B:195:ARG:O	1:B:199:VAL:HG23	1.66	0.95
1:A:85:GLU:OE1	6:A:433:HOH:O	1.83	0.95
1:B:13:ILE:HG21	1:B:27:ARG:HH11	1.32	0.94
1:A:18:LEU:HD22	1:A:19:ASP:H	1.34	0.92
1:B:171:ARG:NH2	6:B:414:HOH:O	1.98	0.90
1:B:122:LYS:HD2	1:B:126:ILE:HD12	1.53	0.90
1:B:12:SER:HB2	1:B:27:ARG:H	1.35	0.90
1:B:13:ILE:CG2	1:B:27:ARG:HH11	1.84	0.89
1:A:27:ARG:HE	1:A:129:GLU:HG2	1.38	0.88
1:B:205:TYR:HE1	1:B:211:LYS:HE2	1.37	0.88
1:B:211:LYS:HG3	1:B:214:ARG:NH2	1.89	0.88
1:B:17:LYS:NZ	1:B:120:SER:OG	2.07	0.87
1:A:71:GLU:HB3	3:A:309:BU1:H32	1.57	0.87
1:A:155:GLU:OE1	6:A:412:HOH:O	1.91	0.87
1:A:125:ARG:HD2	1:A:126:ILE:H	1.40	0.86
1:B:13:ILE:HG13	1:B:14:VAL:HG13	1.58	0.86
1:A:68:GLU:HG2	2:A:303:HEZ:H22	1.58	0.85
1:A:13:ILE:HD12	1:A:125:ARG:HA	1.59	0.85
1:A:97:LYS:NZ	2:A:311:HEZ:H51	1.89	0.85
1:B:122:LYS:NZ	1:B:123:LYS:O	2.10	0.85
1:B:3:THR:HG21	6:B:427:HOH:O	1.76	0.84
1:A:185:VAL:HG22	4:A:318:PGO:H31	1.60	0.83
1:B:38:ASP:OD2	6:B:411:HOH:O	1.95	0.83
1:A:145:ARG:NH2	1:B:152:MET:HE2	1.94	0.83
1:A:181:ARG:O	1:A:185:VAL:HG23	1.78	0.83
1:A:9:LYS:H	1:A:9:LYS:CE	1.88	0.83
2:A:303:HEZ:H21	2:A:306:HEZ:H61	1.59	0.83
1:B:223:ASP:O	1:B:226[A]:GLN:HB2	1.80	0.82
2:A:310:HEZ:O1	1:B:226[A]:GLN:NE2	2.11	0.81
1:B:115:LEU:O	1:B:119:ILE:N	2.10	0.81
1:B:28:LEU:HD22	1:B:132:ILE:HB	1.63	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:205:TYR:HD1	3:B:302:BU1:H21	1.45	0.80
1:B:23:PHE:HA	1:B:26:TYR:HD1	1.41	0.80
1:A:12:SER:O	1:A:26:TYR:HB3	1.82	0.80
1:A:14:VAL:O	1:A:15:GLU:HG3	1.83	0.79
1:A:9:LYS:HE2	1:A:9:LYS:N	1.92	0.79
2:A:303:HEZ:H51	4:A:317:PGO:H12	1.64	0.79
1:B:5:ILE:HG21	1:B:37:LYS:HG2	1.65	0.78
2:B:303:HEZ:H62	2:B:305:HEZ:H12	1.66	0.78
1:A:210:THR:N	1:A:213:ASP:OD2	2.14	0.77
1:B:131:GLY:HA2	1:B:134:PHE:HB3	1.67	0.76
1:B:132:ILE:HG23	1:B:132:ILE:O	1.83	0.76
1:A:13:ILE:HG13	2:A:312:HEZ:H61	1.67	0.76
1:A:197:VAL:O	1:A:201:LEU:HD13	1.85	0.76
1:A:169[A]:TYR:OH	1:A:171:ARG:NH1	2.19	0.76
1:A:155:GLU:OE2	3:A:305:BU1:O6	2.02	0.75
1:B:206:LEU:HB2	1:B:209:THR:HG23	1.66	0.75
1:A:5:ILE:HG13	1:A:40:GLU:CD	2.12	0.74
1:B:37:LYS:HG3	1:B:40:GLU:H	1.50	0.74
1:B:39:GLU:OE2	6:B:411:HOH:O	2.05	0.74
1:A:71:GLU:HG2	4:A:320:PGO:H11	1.70	0.73
1:A:14:VAL:HG21	1:A:124:PRO:HA	1.71	0.73
1:A:60:ASP:HB3	1:A:63:GLU:HG2	1.71	0.72
1:A:235:ARG:O	1:A:239:THR:HG23	1.89	0.72
1:B:21:ILE:H	1:B:47:LYS:NZ	1.88	0.72
1:A:129:GLU:OE2	6:A:417:HOH:O	2.07	0.72
1:B:21:ILE:H	1:B:47:LYS:CE	2.03	0.72
1:A:173:VAL:O	1:A:177:ILE:HG13	1.90	0.72
2:A:310:HEZ:HO1	1:B:226[A]:GLN:HE21	1.38	0.71
1:A:71:GLU:OE1	3:A:309:BU1:O5	2.07	0.71
1:A:108:LYS:HD3	1:A:109:ILE:N	2.04	0.71
1:A:234:TYR:CE1	3:A:305:BU1:H41	2.25	0.71
1:A:71:GLU:CB	3:A:309:BU1:H32	2.21	0.71
1:B:21:ILE:O	1:B:47:LYS:NZ	2.21	0.70
1:B:205:TYR:CD1	3:B:302:BU1:H21	2.27	0.70
1:B:107:ASP:OD1	6:B:403:HOH:O	2.10	0.70
1:B:105:HIS:HE1	1:B:108:LYS:HE3	1.56	0.70
1:A:212:GLU:N	1:A:212:GLU:CD	2.49	0.70
1:B:12:SER:HB2	1:B:26:TYR:HA	1.73	0.70
1:B:31:ILE:O	1:B:102:LEU:HD12	1.91	0.70
2:A:303:HEZ:H52	2:A:303:HEZ:H12	1.74	0.69
1:B:12:SER:HB2	1:B:27:ARG:N	2.06	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:92:LEU:HD13	1:B:94:ILE:HG13	1.74	0.69
1:A:5:ILE:HD12	1:A:5:ILE:C	2.18	0.69
1:A:23:PHE:C	1:A:24:GLU:HG3	2.17	0.69
4:A:315:PGO:O1	4:A:316:PGO:H2	1.92	0.69
1:B:5:ILE:HG23	1:B:37:LYS:H	1.58	0.69
1:A:45:SER:O	1:A:49:GLY:N	2.24	0.69
1:A:96:ILE:HD12	1:A:208:ILE:HD12	1.75	0.69
1:A:237:VAL:O	1:A:241:MET:HG3	1.92	0.69
1:A:240:SER:O	1:A:244:ILE:HG12	1.92	0.69
1:B:176:LYS:O	1:B:176:LYS:HD3	1.93	0.68
1:B:176:LYS:O	1:B:180:LEU:HG	1.93	0.68
1:B:169:TYR:CD1	1:B:169:TYR:O	2.47	0.68
1:B:21:ILE:H	1:B:47:LYS:HE3	1.59	0.68
1:B:110:LYS:HE3	6:B:426:HOH:O	1.93	0.68
1:A:78:TYR:O	1:A:92:LEU:HD12	1.94	0.67
1:B:50:ILE:HG22	1:B:55:LEU:HG	1.77	0.67
1:A:21:ILE:HG23	1:A:47:LYS:HZ1	1.56	0.67
1:A:151:LEU:CD1	1:A:227:LEU:HD22	2.25	0.67
1:A:249:GLU:O	1:A:250:ASN:HB2	1.94	0.67
1:B:108:LYS:HD3	1:B:109:ILE:N	2.10	0.67
1:A:3:THR:HG23	1:A:35:ASP:O	1.95	0.67
1:A:13:ILE:HG22	1:A:14:VAL:HG23	1.75	0.66
1:A:78:TYR:HB3	1:A:92:LEU:HD11	1.77	0.66
1:A:10:ASP:O	1:A:30:TRP:N	2.24	0.66
1:A:125:ARG:HD2	1:A:126:ILE:HG12	1.76	0.66
1:B:52:VAL:O	1:B:56:GLN:N	2.26	0.66
1:A:92:LEU:HD12	1:A:92:LEU:H	1.59	0.66
1:B:92:LEU:O	1:B:92:LEU:HD12	1.96	0.66
1:A:115:LEU:O	1:A:119:ILE:HG12	1.96	0.65
1:A:108:LYS:HD2	6:A:438:HOH:O	1.96	0.65
1:B:65:PRO:O	6:B:416:HOH:O	2.14	0.65
1:B:131:GLY:HA2	1:B:134:PHE:CB	2.26	0.65
1:A:27:ARG:NE	1:A:129:GLU:HG2	2.11	0.65
1:A:31:ILE:O	1:A:102:LEU:HD12	1.96	0.65
1:A:212:GLU:N	1:A:212:GLU:OE2	2.29	0.65
1:A:5:ILE:HD13	1:A:36:PRO:HA	1.77	0.65
1:A:244:ILE:O	1:A:248:LEU:HD22	1.96	0.65
1:B:240:SER:O	1:B:243:ASP:HB2	1.96	0.65
1:A:33:CYS:HB3	1:A:104:ILE:HD12	1.78	0.65
1:A:83:PHE:C	1:A:84:GLU:HG3	2.21	0.64
1:B:69:GLU:HG2	1:B:74:TYR:CZ	2.32	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:60:ASP:HB3	1:B:63:GLU:HG2	1.78	0.64
1:A:125:ARG:CD	1:A:126:ILE:H	2.11	0.64
1:B:69:GLU:HG2	1:B:74:TYR:CE2	2.33	0.64
1:A:148:SER:O	1:A:152:MET:HG3	1.98	0.64
1:A:19:ASP:CG	1:A:19:ASP:O	2.41	0.64
1:A:188:HIS:O	1:A:192:ILE:HG12	1.97	0.64
1:A:13:ILE:CD1	1:A:125:ARG:HA	2.28	0.64
1:B:13:ILE:HA	1:B:14:VAL:HG13	1.79	0.64
2:A:304:HEZ:H11	2:B:308:HEZ:H22	1.80	0.63
1:B:205:TYR:CE1	1:B:211:LYS:HE2	2.27	0.63
1:A:109:ILE:HA	6:A:410:HOH:O	1.97	0.63
2:A:306:HEZ:H32	6:A:441:HOH:O	1.99	0.63
1:A:234:TYR:HE1	3:A:305:BU1:H41	1.61	0.63
1:B:94:ILE:HG21	1:B:136:LEU:HD13	1.80	0.63
1:B:105:HIS:CE1	1:B:108:LYS:HE3	2.34	0.62
1:A:71:GLU:HG2	4:A:320:PGO:C1	2.30	0.62
1:B:153:ASN:O	1:B:156:ASP:HB2	1.99	0.62
1:B:19:ASP:C	1:B:21:ILE:HG23	2.24	0.62
1:A:17:LYS:O	1:A:21:ILE:HG22	2.00	0.62
1:B:5:ILE:HD13	1:B:37:LYS:NZ	2.15	0.62
1:A:68:GLU:CG	2:A:303:HEZ:H22	2.30	0.61
1:A:198:LEU:O	1:A:202:LYS:HB3	1.99	0.61
1:B:221:TYR:HE2	1:B:222:TYR:CE1	2.18	0.61
1:B:143:ILE:O	1:B:146:SER:HB2	1.99	0.61
1:B:198:LEU:HD13	1:B:221:TYR:HA	1.83	0.61
1:A:13:ILE:HG23	1:A:125:ARG:H	1.66	0.61
1:A:174:MET:HB2	1:A:245:THR:HG21	1.82	0.61
1:B:113:GLY:HA2	6:B:432:HOH:O	2.00	0.61
1:A:19:ASP:HA	1:A:47:LYS:HE3	1.83	0.60
1:B:13:ILE:HA	1:B:14:VAL:CG1	2.31	0.60
1:B:30:TRP:CD1	1:B:101:LEU:HD12	2.36	0.60
1:B:189:LYS:HG2	6:B:415:HOH:O	2.00	0.60
1:A:9:LYS:HD2	1:A:16:PRO:HA	1.83	0.60
1:B:101:LEU:HD13	1:B:102:LEU:N	2.16	0.60
1:A:3:THR:O	1:A:5:ILE:HG22	2.02	0.60
1:B:52:VAL:HG12	1:B:56:GLN:HG3	1.84	0.60
1:A:96:ILE:HG23	1:A:132:ILE:HD11	1.84	0.60
1:A:111:ALA:HB1	1:A:142:GLU:HB3	1.82	0.60
1:B:69:GLU:OE1	1:B:70:ASP:HB2	2.02	0.60
1:A:118:LEU:HD21	1:A:122:LYS:HD3	1.83	0.59
1:B:121:THR:O	1:B:123:LYS:NZ	2.25	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:170:ASP:HB3	1:B:173:VAL:HG23	1.84	0.59
1:B:171:ARG:NH1	1:B:174:MET:HE1	2.17	0.59
1:A:245:THR:HA	1:A:248:LEU:HD23	1.84	0.59
1:B:130:ARG:O	1:B:130:ARG:HG3	2.03	0.59
1:B:175:GLU:OE1	6:B:444:HOH:O	2.16	0.59
1:B:12:SER:OG	1:B:27:ARG:HG3	2.02	0.59
1:B:205:TYR:HA	6:B:404:HOH:O	2.02	0.59
1:B:226[B]:GLN:HG3	1:B:230:MET:HE3	1.83	0.59
1:A:18:LEU:HD22	1:A:19:ASP:N	2.12	0.59
1:A:206:LEU:HD12	6:A:402:HOH:O	2.02	0.59
1:B:170:ASP:OD1	6:B:437:HOH:O	2.16	0.59
1:A:13:ILE:HD12	1:A:125:ARG:CA	2.31	0.59
1:A:92:LEU:O	1:A:92:LEU:HD13	2.02	0.59
1:B:9:LYS:HE2	1:B:19:ASP:HA	1.83	0.59
1:B:81:PRO:HG2	1:B:146:SER:HB3	1.84	0.59
1:A:164:LYS:HD3	1:A:173:VAL:HG22	1.85	0.59
1:A:211:LYS:O	1:A:215:GLU:HG3	2.02	0.59
1:A:44:LEU:O	1:A:48:ILE:HG12	2.03	0.59
1:A:83:PHE:CD1	1:A:83:PHE:N	2.71	0.58
1:B:7:ILE:HG22	1:B:9:LYS:HE3	1.86	0.58
1:A:232:ALA:O	1:A:236:GLU:HG3	2.02	0.58
1:B:65:PRO:HG3	1:B:79:LYS:HG2	1.85	0.58
1:A:5:ILE:HD13	1:A:36:PRO:CA	2.33	0.58
1:A:192:ILE:HD13	1:A:228:ILE:HD13	1.85	0.58
1:B:23:PHE:HB2	1:B:29:ILE:HG12	1.86	0.58
1:B:23:PHE:HB2	1:B:29:ILE:CD1	2.34	0.57
6:A:412:HOH:O	1:B:110:LYS:NZ	2.37	0.57
1:B:30:TRP:HA	1:B:101:LEU:O	2.04	0.57
1:B:239:THR:O	1:B:242[B]:MET:HB3	2.04	0.57
1:B:137:TYR:CE1	1:B:216:ASN:HB3	2.39	0.57
1:A:60:ASP:HB3	1:A:63:GLU:CG	2.33	0.57
1:A:64:ILE:O	1:A:66:ARG:NH1	2.37	0.57
1:B:13:ILE:HG23	1:B:13:ILE:O	2.04	0.57
1:B:237:VAL:HG12	1:B:241:MET:HE2	1.87	0.57
1:A:21:ILE:HD11	1:A:23:PHE:HE1	1.70	0.57
1:B:249:GLU:O	1:B:250:ASN:HB2	2.04	0.57
1:B:70:ASP:HA	1:B:73:PHE:O	2.04	0.57
1:A:48:ILE:O	1:A:97:LYS:NZ	2.29	0.57
1:B:15:GLU:CD	1:B:124:PRO:HG3	2.30	0.57
1:A:199:VAL:HG13	1:A:202:LYS:HE3	1.85	0.57
1:B:122:LYS:HD2	1:B:126:ILE:CD1	2.28	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:118:LEU:C	1:A:118:LEU:HD23	2.30	0.56
1:A:152:MET:HE3	1:B:149:ARG:HE	1.69	0.56
1:A:27:ARG:CB	1:A:28:LEU:HD23	2.36	0.56
1:B:12:SER:CB	1:B:26:TYR:HA	2.35	0.56
1:B:188:HIS:O	1:B:192:ILE:HG13	2.05	0.56
1:B:221:TYR:CE2	1:B:222:TYR:CE1	2.94	0.56
1:B:12:SER:OG	1:B:13:ILE:N	2.39	0.56
1:A:137:TYR:HB2	1:A:217:PHE:CE1	2.40	0.56
1:A:132:ILE:O	1:A:132:ILE:HG12	2.05	0.56
1:B:211:LYS:CD	1:B:214:ARG:HH12	2.18	0.56
1:A:79:LYS:HE2	1:A:91:SER:OG	2.05	0.56
1:B:5:ILE:HG12	1:B:37:LYS:H	1.70	0.56
1:A:21:ILE:HD11	1:A:23:PHE:CE1	2.40	0.56
1:A:223:ASP:O	1:A:227:LEU:HG	2.05	0.56
1:B:181:ARG:HD2	6:B:409:HOH:O	2.05	0.55
1:B:206:LEU:HB3	1:B:208:ILE:HG12	1.88	0.55
1:B:211:LYS:CG	1:B:214:ARG:HH22	2.05	0.55
1:B:24:GLU:HA	1:B:24:GLU:OE2	2.05	0.55
1:B:75:LEU:C	1:B:76:ILE:HD12	2.31	0.55
6:A:415:HOH:O	1:B:230:MET:HE1	2.07	0.55
1:A:70:ASP:HA	1:A:73:PHE:O	2.06	0.55
1:A:74:TYR:O	1:A:95:TYR:HA	2.07	0.55
1:B:82:LEU:HD22	1:B:90:THR:HB	1.89	0.55
1:B:184:LEU:HD21	1:B:234:TYR:HB2	1.89	0.55
1:A:3:THR:O	1:A:3:THR:HG22	2.06	0.55
1:B:18:LEU:HB2	1:B:21:ILE:CG2	2.37	0.55
1:B:239:THR:HA	1:B:242[B]:MET:HE2	1.87	0.55
1:A:5:ILE:HB	1:A:36:PRO:HA	1.89	0.54
1:A:238:LEU:HD23	1:A:241:MET:HE2	1.89	0.54
1:A:118:LEU:CD2	1:A:119:ILE:HD13	2.37	0.54
2:A:303:HEZ:H51	4:A:317:PGO:C1	2.36	0.54
1:B:130:ARG:NH1	1:B:213:ASP:OD1	2.41	0.54
1:A:71:GLU:HB3	3:A:309:BU1:C3	2.36	0.54
1:A:122:LYS:HG3	6:A:443:HOH:O	2.07	0.54
1:A:126:ILE:HB	1:A:127:VAL:HG12	1.90	0.54
1:B:5:ILE:HG12	1:B:37:LYS:N	2.23	0.54
1:B:11:GLY:N	1:B:16:PRO:HG2	2.23	0.54
1:B:7:ILE:HG22	1:B:9:LYS:CE	2.37	0.54
1:A:163:ASP:O	1:A:166:LEU:HG	2.08	0.54
1:A:27:ARG:O	1:A:99:ASN:HB2	2.07	0.54
1:B:17:LYS:C	1:B:18:LEU:HG	2.25	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:7:ILE:CG2	1:B:9:LYS:HE3	2.38	0.54
1:B:101:LEU:HD13	1:B:101:LEU:C	2.32	0.53
1:B:5:ILE:HA	1:B:36:PRO:HA	1.88	0.53
1:B:11:GLY:CA	1:B:16:PRO:HG3	2.38	0.53
1:A:5:ILE:HG13	1:A:40:GLU:OE2	2.07	0.53
1:B:214:ARG:NH1	3:B:302:BU1:H11	2.24	0.53
3:B:302:BU1:H12	6:B:407:HOH:O	2.08	0.53
1:A:233:THR:O	1:A:236:GLU:HB2	2.09	0.53
1:B:29:ILE:O	1:B:101:LEU:N	2.31	0.53
1:A:30:TRP:CZ2	1:A:112:ILE:HG23	2.43	0.53
1:B:211:LYS:HG3	1:B:214:ARG:HH12	1.73	0.53
1:B:134:PHE:HD2	6:B:436:HOH:O	1.92	0.53
1:A:87:ILE:N	1:A:87:ILE:HD12	2.24	0.53
1:A:96:ILE:HG12	1:A:101:LEU:HD22	1.91	0.52
1:A:170:ASP:HB3	1:A:173:VAL:HG23	1.90	0.52
1:A:83:PHE:CE1	1:A:110:LYS:HB2	2.43	0.52
1:A:5:ILE:HD13	1:A:36:PRO:HB3	1.91	0.52
1:A:92:LEU:HB3	1:A:109:ILE:HD11	1.91	0.52
1:B:222:TYR:HD1	1:B:225:LEU:HD12	1.74	0.52
1:B:96:ILE:HD11	1:B:136:LEU:HD22	1.91	0.52
1:A:226:GLN:O	1:A:229:ASP:HB2	2.09	0.52
1:B:184:LEU:HD21	1:B:234:TYR:CB	2.40	0.52
1:A:11:GLY:O	1:A:14:VAL:N	2.43	0.52
1:B:211:LYS:HA	1:B:214:ARG:NH2	2.24	0.52
1:A:13:ILE:CG2	1:A:14:VAL:HG23	2.40	0.52
1:A:128:PHE:CZ	3:A:319:BU1:H12	2.45	0.52
1:B:4:VAL:HG21	1:B:34:TYR:CD2	2.44	0.52
1:B:5:ILE:HD13	1:B:37:LYS:CE	2.39	0.52
1:A:5:ILE:CG1	1:A:40:GLU:CD	2.82	0.51
1:B:59:LEU:HG	1:B:104:ILE:HD11	1.91	0.51
1:B:128:PHE:O	1:B:131:GLY:N	2.43	0.51
1:B:17:LYS:C	1:B:18:LEU:CG	2.83	0.51
1:B:242[A]:MET:HE3	1:B:242[A]:MET:HA	1.92	0.51
1:A:5:ILE:CB	1:A:36:PRO:HA	2.40	0.51
1:B:12:SER:O	1:B:14:VAL:HA	2.10	0.51
1:B:16:PRO:O	1:B:17:LYS:HG3	2.11	0.51
1:B:58:GLY:N	1:B:95:TYR:OH	2.41	0.51
1:B:134:PHE:O	1:B:137:TYR:HB3	2.10	0.51
1:B:72:ASP:O	1:B:97:LYS:HG3	2.11	0.51
1:B:211:LYS:HG3	1:B:214:ARG:CZ	2.40	0.51
1:A:171:ARG:NH1	1:A:171:ARG:HB2	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:15:GLU:CB	1:A:16:PRO:CD	2.89	0.50
1:A:192:ILE:O	1:A:195:ARG:HB3	2.10	0.50
1:A:21:ILE:HG23	1:A:47:LYS:HZ3	1.69	0.50
1:A:81:PRO:HG2	1:A:146:SER:CB	2.41	0.50
1:B:12:SER:CB	1:B:27:ARG:HG3	2.41	0.50
1:A:169[B]:TYR:CD1	1:A:170:ASP:N	2.71	0.50
1:B:92:LEU:O	1:B:92:LEU:CD1	2.59	0.50
1:B:96:ILE:HG23	1:B:132:ILE:HD12	1.92	0.50
1:A:18:LEU:CD2	1:A:47:LYS:HD2	2.41	0.50
1:A:73:PHE:CD1	1:A:73:PHE:C	2.90	0.50
1:B:5:ILE:HG23	1:B:36:PRO:HA	1.93	0.50
1:B:18:LEU:HB2	1:B:21:ILE:HG21	1.94	0.50
1:B:32:ASP:OD1	1:B:112:ILE:HD13	2.12	0.50
1:A:125:ARG:CD	1:A:126:ILE:HG12	2.41	0.50
1:A:226:GLN:HB3	1:A:230:MET:HE3	1.94	0.50
1:B:2:ILE:HD12	1:B:2:ILE:H	1.77	0.50
1:A:72:ASP:OD2	1:A:97:LYS:HE3	2.12	0.49
1:A:118:LEU:O	1:A:122:LYS:N	2.33	0.49
1:A:17:LYS:O	1:A:17:LYS:HG2	2.12	0.49
1:A:185:VAL:HA	4:A:318:PGO:H2	1.93	0.49
1:A:249:GLU:O	1:A:250:ASN:CB	2.60	0.49
1:B:14:VAL:O	1:B:15:GLU:HG2	2.11	0.49
1:B:74:TYR:O	1:B:95:TYR:HA	2.12	0.49
1:B:101:LEU:C	1:B:101:LEU:CD1	2.85	0.49
1:B:101:LEU:HB2	1:B:132:ILE:HD11	1.94	0.49
1:B:14:VAL:C	1:B:15:GLU:HG2	2.38	0.49
1:A:135:LEU:O	1:A:139:ILE:HG13	2.12	0.49
1:B:226[B]:GLN:HG3	1:B:230:MET:CE	2.42	0.49
1:B:238:LEU:HD23	1:B:241:MET:CE	2.43	0.49
1:B:5:ILE:HG22	1:B:40:GLU:OE2	2.13	0.49
1:A:17:LYS:HE2	1:A:20:GLU:HB2	1.93	0.49
1:A:74:TYR:CE2	1:A:207:PRO:HG2	2.47	0.49
1:B:167:ALA:HB1	6:B:437:HOH:O	2.13	0.49
1:B:168:GLY:O	1:B:169:TYR:CD2	2.66	0.49
1:A:128:PHE:CE1	3:A:319:BU1:H12	2.48	0.49
1:A:92:LEU:HD12	1:A:92:LEU:N	2.28	0.49
1:A:117:LYS:HB2	1:A:117:LYS:HE3	1.68	0.49
1:B:140:LEU:HD22	1:B:217:PHE:HE1	1.77	0.48
1:A:20:GLU:O	1:A:21:ILE:HG22	2.13	0.48
1:B:169:TYR:N	1:B:248:LEU:HB3	2.28	0.48
1:A:54:ASP:OD2	3:A:309:BU1:H21	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:126:ILE:HG13	1:A:126:ILE:O	2.14	0.48
1:A:151:LEU:HD13	1:A:227:LEU:HD22	1.95	0.48
1:A:22:SER:O	1:A:26:TYR:CE1	2.66	0.48
1:A:195:ARG:O	1:A:199:VAL:HG23	2.14	0.48
1:A:123:LYS:HB3	1:A:124:PRO:CD	2.43	0.48
1:B:65:PRO:CG	1:B:79:LYS:HG2	2.44	0.48
1:B:69:GLU:CD	1:B:70:ASP:H	2.21	0.48
1:B:6:ALA:C	1:B:7:ILE:HD12	2.39	0.48
2:B:303:HEZ:H41	6:B:438:HOH:O	2.14	0.48
1:A:37:LYS:O	1:A:40:GLU:N	2.47	0.48
1:B:11:GLY:HA3	1:B:26:TYR:HD2	1.79	0.48
1:B:25:ASP:HB2	1:B:26:TYR:CE1	2.48	0.48
1:A:164:LYS:HZ3	1:A:170:ASP:CG	2.22	0.47
1:A:5:ILE:HG21	1:A:37:LYS:HG2	1.95	0.47
1:A:65:PRO:HA	1:A:77:ILE:HB	1.97	0.47
1:A:170:ASP:C	1:A:172:GLU:N	2.71	0.47
1:B:211:LYS:HG3	1:B:214:ARG:NH1	2.28	0.47
1:B:211:LYS:CG	1:B:214:ARG:HH12	2.26	0.47
1:A:143:ILE:O	1:A:146:SER:N	2.47	0.47
1:A:171:ARG:HB2	1:A:171:ARG:HH11	1.80	0.47
1:B:212:GLU:O	1:B:215:GLU:HB2	2.13	0.47
1:A:133:GLY:HA3	1:A:213:ASP:OD2	2.15	0.47
1:A:157:GLU:O	1:A:161:LEU:HB2	2.14	0.47
1:B:95:TYR:N	1:B:95:TYR:CD1	2.82	0.47
1:A:110:LYS:NZ	6:A:407:HOH:O	2.48	0.47
1:B:48:ILE:HG13	1:B:50:ILE:HB	1.96	0.47
1:B:109:ILE:HG22	1:B:112:ILE:H	1.80	0.47
1:B:13:ILE:HB	1:B:27:ARG:HE	1.80	0.47
1:A:5:ILE:HD13	1:A:36:PRO:CB	2.45	0.47
1:A:126:ILE:HA	1:A:127:VAL:HA	1.47	0.47
1:A:131:GLY:O	1:A:132:ILE:HG22	2.15	0.47
1:B:169:TYR:H	1:B:248:LEU:HB3	1.80	0.47
1:A:18:LEU:HD13	1:A:19:ASP:HB3	1.96	0.47
1:A:71:GLU:HB3	3:A:309:BU1:H41	1.96	0.47
1:A:5:ILE:CD1	1:A:36:PRO:HA	2.44	0.47
1:A:83:PHE:CZ	1:A:110:LYS:HB2	2.51	0.47
1:B:7:ILE:HG22	1:B:9:LYS:HD2	1.97	0.47
1:A:212:GLU:HA	1:A:215:GLU:OE1	2.15	0.46
1:B:60:ASP:HB3	1:B:63:GLU:CG	2.45	0.46
1:A:92:LEU:HB3	1:A:109:ILE:CD1	2.46	0.46
1:B:23:PHE:HB2	1:B:29:ILE:CG1	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:71:GLU:HG3	6:B:424:HOH:O	2.14	0.46
1:A:84:GLU:HB2	1:A:86:ASP:O	2.15	0.46
1:A:126:ILE:HB	1:A:127:VAL:CG1	2.45	0.46
1:B:118:LEU:C	1:B:118:LEU:HD23	2.40	0.46
1:B:4:VAL:HG21	1:B:34:TYR:CE2	2.50	0.46
1:A:51:SER:O	1:A:54:ASP:N	2.49	0.46
1:B:140:LEU:HB3	1:B:220:LEU:HD21	1.96	0.46
1:A:5:ILE:CG1	1:A:36:PRO:HA	2.46	0.46
1:A:13:ILE:HG13	2:A:312:HEZ:C6	2.43	0.46
1:A:36:PRO:CG	1:A:59:LEU:HD11	2.46	0.46
1:A:119:ILE:HD12	1:A:122:LYS:HE3	1.98	0.46
1:A:154:LEU:HD12	1:A:180:LEU:HD22	1.98	0.46
1:B:5:ILE:CG2	1:B:37:LYS:H	2.25	0.46
1:B:76:ILE:HD12	1:B:76:ILE:N	2.30	0.46
1:B:218:GLU:HG2	1:B:222:TYR:CE2	2.51	0.46
1:A:70:ASP:OD1	1:A:73:PHE:N	2.49	0.46
1:B:5:ILE:HD13	1:B:37:LYS:HZ1	1.79	0.46
1:B:5:ILE:CG2	1:B:40:GLU:HB2	2.45	0.46
1:B:138:HIS:O	1:B:142:GLU:HG2	2.15	0.46
1:A:28:LEU:HD23	1:A:28:LEU:N	2.30	0.46
1:A:71:GLU:O	1:A:73:PHE:CD2	2.68	0.46
1:A:237:VAL:HG21	3:A:305:BU1:H32	1.98	0.46
1:A:132:ILE:O	1:A:132:ILE:CG1	2.65	0.45
2:A:312:HEZ:H31	6:A:444:HOH:O	2.16	0.45
1:B:5:ILE:HD13	1:B:37:LYS:HE3	1.98	0.45
1:B:21:ILE:N	1:B:47:LYS:NZ	2.60	0.45
1:A:197:VAL:O	1:A:201:LEU:CD1	2.61	0.45
1:B:7:ILE:HA	1:B:32:ASP:O	2.16	0.45
1:B:13:ILE:CG1	1:B:14:VAL:HG13	2.37	0.45
1:B:144:THR:OG1	1:B:220:LEU:HD11	2.16	0.45
1:B:26:TYR:CD1	1:B:26:TYR:N	2.83	0.45
2:B:303:HEZ:H62	2:B:305:HEZ:C1	2.41	0.45
1:A:4:VAL:HG23	1:A:35:ASP:HB3	1.99	0.45
1:A:108:LYS:HD3	1:A:109:ILE:H	1.80	0.45
1:A:5:ILE:HG21	1:A:37:LYS:NZ	2.32	0.45
1:A:72:ASP:CG	1:A:72:ASP:O	2.59	0.45
1:B:13:ILE:HG22	1:B:27:ARG:HH11	1.75	0.45
1:A:18:LEU:HA	1:A:21:ILE:CG2	2.47	0.45
1:B:32:ASP:HA	1:B:103:THR:OG1	2.17	0.45
1:B:79:LYS:HB2	1:B:194:ASN:HD21	1.82	0.45
1:B:202:LYS:HE2	1:B:221:TYR:CG	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:28:LEU:HD11	1:B:131:GLY:HA3	1.99	0.45
1:A:14:VAL:O	1:A:15:GLU:CG	2.62	0.45
1:A:124:PRO:C	1:A:125:ARG:HG3	2.42	0.45
1:B:71:GLU:OE2	2:B:305:HEZ:H61	2.17	0.45
1:A:13:ILE:CD1	1:A:27:ARG:HH12	2.30	0.44
1:A:81:PRO:HG2	1:A:146:SER:HB2	1.99	0.44
1:A:58:GLY:HA3	1:A:104:ILE:CG2	2.48	0.44
1:B:100:LEU:HD12	1:B:101:LEU:N	2.32	0.44
1:B:198:LEU:HD11	1:B:220:LEU:HG	2.00	0.44
1:B:223:ASP:O	1:B:226[B]:GLN:HB3	2.17	0.44
1:A:118:LEU:HD23	1:A:119:ILE:N	2.32	0.44
1:B:211:LYS:O	1:B:215:GLU:HG3	2.17	0.44
1:B:15:GLU:N	1:B:16:PRO:HD3	2.33	0.44
1:B:98:ASN:N	6:B:435:HOH:O	2.50	0.44
1:A:151:LEU:HD12	1:A:227:LEU:HD22	1.97	0.44
1:A:241:MET:O	1:A:244:ILE:HB	2.17	0.44
1:B:135:LEU:O	1:B:136:LEU:C	2.60	0.44
1:A:27:ARG:HB2	1:A:28:LEU:HD23	1.99	0.44
1:B:249:GLU:OE1	1:B:249:GLU:HA	2.17	0.44
1:A:13:ILE:CG1	2:A:312:HEZ:H61	2.44	0.44
1:A:15:GLU:CB	1:A:16:PRO:HD2	2.48	0.44
1:A:21:ILE:HG12	1:A:47:LYS:HZ3	1.82	0.44
1:A:58:GLY:HA3	1:A:104:ILE:HG23	2.00	0.44
1:A:78:TYR:OH	1:A:198:LEU:HD11	2.18	0.44
1:B:155:GLU:HB2	1:B:234:TYR:CZ	2.53	0.44
1:A:226:GLN:O	1:A:230:MET:HG3	2.18	0.44
1:B:13:ILE:CG2	1:B:27:ARG:NH1	2.68	0.44
1:B:65:PRO:HA	1:B:77:ILE:HB	1.99	0.44
1:A:78:TYR:HB3	1:A:92:LEU:CD1	2.47	0.43
1:A:230:MET:HB3	1:A:234:TYR:CZ	2.52	0.43
1:B:41:LEU:HD12	1:B:41:LEU:O	2.17	0.43
1:B:59:LEU:HG	1:B:104:ILE:CD1	2.47	0.43
1:B:83:PHE:CD1	1:B:83:PHE:N	2.85	0.43
1:A:13:ILE:CG2	1:A:125:ARG:H	2.31	0.43
1:A:64:ILE:HG22	1:A:65:PRO:O	2.19	0.43
1:A:180:LEU:O	1:A:184:LEU:HD22	2.17	0.43
1:A:213:ASP:O	1:A:217:PHE:CD2	2.71	0.43
1:B:9:LYS:CD	1:B:9:LYS:N	2.81	0.43
1:A:18:LEU:HD13	1:A:19:ASP:N	2.32	0.43
1:A:170:ASP:HB3	1:A:173:VAL:CG2	2.47	0.43
2:A:303:HEZ:H52	2:A:303:HEZ:C1	2.46	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:79:LYS:CB	1:B:190:SER:HB3	2.49	0.43
1:A:137:TYR:O	1:A:141:ASN:N	2.39	0.43
1:B:23:PHE:HB2	1:B:29:ILE:HD11	2.00	0.43
1:B:28:LEU:C	1:B:29:ILE:HD12	2.43	0.43
1:B:242[A]:MET:HE2	1:B:246:LEU:HD13	2.01	0.43
1:A:213:ASP:HB3	1:A:217:PHE:CE2	2.54	0.43
1:B:5:ILE:HG23	1:B:37:LYS:N	2.31	0.43
1:B:65:PRO:HA	1:B:77:ILE:O	2.19	0.43
1:B:192:ILE:HG12	1:B:228:ILE:HD13	2.00	0.43
1:A:12:SER:HA	1:A:13:ILE:HA	1.71	0.43
1:A:15:GLU:HA	1:A:16:PRO:HD3	1.64	0.43
1:B:110:LYS:HE3	6:B:425:HOH:O	2.18	0.43
1:B:123:LYS:HB3	1:B:124:PRO:CD	2.49	0.43
1:B:189:LYS:HE2	6:B:415:HOH:O	2.18	0.43
1:A:154:LEU:HD13	1:A:184:LEU:HD13	1.99	0.43
1:B:123:LYS:HB3	1:B:124:PRO:HD2	2.01	0.43
1:A:18:LEU:HD22	1:A:47:LYS:HD2	2.02	0.42
1:A:118:LEU:HD22	1:A:119:ILE:HD13	2.01	0.42
1:B:82:LEU:O	1:B:88:THR:N	2.46	0.42
1:B:94:ILE:HG21	1:B:136:LEU:CD1	2.47	0.42
1:A:127:VAL:O	1:A:127:VAL:HG23	2.18	0.42
1:B:15:GLU:OE2	1:B:124:PRO:HG3	2.19	0.42
1:B:230:MET:O	1:B:231:SER:C	2.62	0.42
1:A:5:ILE:HA	1:A:34:TYR:O	2.19	0.42
1:A:13:ILE:HD12	1:A:125:ARG:CB	2.50	0.42
1:A:76:ILE:N	1:A:76:ILE:HD12	2.33	0.42
1:B:11:GLY:C	1:B:16:PRO:HG3	2.45	0.42
1:B:57:ILE:O	1:B:63:GLU:HG3	2.20	0.42
1:B:21:ILE:H	1:B:47:LYS:HZ2	1.66	0.42
1:B:84:GLU:O	1:B:85:GLU:C	2.61	0.42
1:B:122:LYS:HD2	1:B:126:ILE:CG1	2.48	0.42
1:B:7:ILE:HG13	1:B:33:CYS:HA	2.01	0.42
1:B:32:ASP:CB	1:B:116:HIS:NE2	2.82	0.42
1:B:61:GLU:HA	1:B:91:SER:HB2	2.01	0.42
1:B:216:ASN:O	1:B:219:ASP:HB2	2.19	0.42
1:A:165:LEU:C	1:A:168:GLY:H	2.27	0.42
1:B:7:ILE:HG22	1:B:9:LYS:CD	2.50	0.42
1:B:30:TRP:HZ2	1:B:112:ILE:HG12	1.84	0.42
1:B:96:ILE:HG23	1:B:132:ILE:CD1	2.49	0.42
1:B:221:TYR:CZ	1:B:225:LEU:HD11	2.54	0.42
1:A:18:LEU:HD13	1:A:18:LEU:C	2.45	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:108:LYS:HE2	1:A:109:ILE:H	1.85	0.42
1:A:199:VAL:O	1:A:202:LYS:HG2	2.19	0.42
1:A:215:GLU:HG3	1:A:215:GLU:H	1.60	0.42
1:B:169:TYR:CD1	1:B:169:TYR:C	2.97	0.42
1:B:169:TYR:O	1:B:169:TYR:HD1	2.00	0.42
1:A:30:TRP:HE1	1:A:103:THR:HG23	1.85	0.41
1:A:34:TYR:CD1	1:A:34:TYR:C	2.98	0.41
1:A:212:GLU:HA	1:A:215:GLU:CD	2.45	0.41
1:B:226[B]:GLN:OE1	1:B:230:MET:HE3	2.21	0.41
1:A:15:GLU:HB3	1:A:16:PRO:HD2	2.01	0.41
1:A:233:THR:HA	1:A:236:GLU:CD	2.45	0.41
1:B:11:GLY:N	1:B:16:PRO:CG	2.83	0.41
1:B:67:VAL:HA	1:B:75:LEU:O	2.20	0.41
1:A:221:TYR:CZ	1:A:225:LEU:HD11	2.55	0.41
1:B:34:TYR:O	1:B:35:ASP:C	2.63	0.41
1:B:202:LYS:HE2	1:B:221:TYR:CD2	2.55	0.41
1:A:92:LEU:O	1:A:92:LEU:CD1	2.68	0.41
1:A:163:ASP:O	1:A:166:LEU:N	2.42	0.41
1:A:184:LEU:HD23	1:A:238:LEU:HD12	2.02	0.41
1:B:75:LEU:HD22	1:B:95:TYR:CE2	2.55	0.41
1:A:169[B]:TYR:CD2	1:A:170:ASP:N	2.77	0.41
1:A:235:ARG:O	1:A:236:GLU:C	2.63	0.41
1:B:78:TYR:CZ	1:B:194:ASN:HB3	2.56	0.41
1:B:184:LEU:CD2	1:B:238:LEU:HD12	2.51	0.41
1:A:32:ASP:CG	1:A:112:ILE:HG21	2.46	0.41
1:A:147:TYR:OH	1:A:190:SER:HB3	2.20	0.41
1:B:48:ILE:HG13	1:B:50:ILE:H	1.86	0.41
1:A:49:GLY:O	2:A:311:HEZ:H32	2.20	0.41
1:B:182:LYS:NZ	1:B:186:TYR:HE1	2.18	0.41
1:B:195:ARG:NH1	6:B:406:HOH:O	2.52	0.41
1:A:119:ILE:CD1	1:A:122:LYS:HE3	2.51	0.41
1:B:13:ILE:CA	1:B:14:VAL:HG13	2.47	0.41
1:B:28:LEU:CD1	1:B:131:GLY:HA3	2.51	0.41
1:B:55:LEU:HD23	1:B:55:LEU:HA	1.94	0.41
1:B:59:LEU:HD22	6:B:442:HOH:O	2.20	0.41
1:B:73:PHE:CD1	1:B:73:PHE:C	2.98	0.41
1:A:74:TYR:HE2	1:A:207:PRO:HG2	1.86	0.41
1:A:170:ASP:O	1:A:173:VAL:N	2.54	0.41
1:A:199:VAL:HA	1:A:202:LYS:HG2	2.03	0.41
1:A:235:ARG:HB2	4:A:318:PGO:H11	2.02	0.41
1:B:178:LEU:O	1:B:179:GLY:C	2.64	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:38:ASP:HA	1:A:41:LEU:HB3	2.03	0.40
1:B:13:ILE:HA	1:B:14:VAL:HA	1.76	0.40
1:B:15:GLU:N	1:B:16:PRO:CD	2.84	0.40
1:B:150:ILE:HD13	1:B:187:PHE:HZ	1.86	0.40
1:A:19:ASP:O	1:A:20:GLU:HG2	2.21	0.40
1:A:19:ASP:OD1	1:A:43:LYS:HE2	2.20	0.40
1:B:118:LEU:O	1:B:122:LYS:N	2.54	0.40
1:A:152:MET:HE2	4:B:304:PGO:H33	2.02	0.40
1:B:15:GLU:OE1	1:B:124:PRO:HG3	2.21	0.40
1:B:32:ASP:HB3	1:B:116:HIS:NE2	2.37	0.40
2:B:309:HEZ:H41	3:B:312:BU1:H41	2.01	0.40
1:A:123:LYS:N	1:A:123:LYS:HE3	2.36	0.40
1:A:149:ARG:HG2	1:B:149:ARG:HG2	2.02	0.40
1:A:154:LEU:HD13	1:A:184:LEU:CD1	2.51	0.40
1:A:172:GLU:H	1:A:172:GLU:HG3	1.65	0.40
1:B:8:ALA:HB3	1:B:32:ASP:HB3	2.04	0.40
1:B:232:ALA:O	1:B:235:ARG:HB2	2.21	0.40

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

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:205:TYR:OH	1:B:60:ASP:OD1[6_545]	2.19	0.01

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	249/280 (89%)	231 (93%)	13 (5%)	5 (2%)	6	10
1	B	250/280 (89%)	240 (96%)	9 (4%)	1 (0%)	30	49
All	All	499/560 (89%)	471 (94%)	22 (4%)	6 (1%)	12	20

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	169[A]	TYR
1	A	169[B]	TYR
1	B	132	ILE
1	A	5	ILE
1	A	14	VAL
1	A	132	ILE

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	235/262 (90%)	199 (85%)	36 (15%)	3	5
1	B	236/262 (90%)	202 (86%)	34 (14%)	3	6
All	All	471/524 (90%)	401 (85%)	70 (15%)	3	6

All (70) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	ILE
1	A	3	THR
1	A	4	VAL
1	A	5	ILE
1	A	9	LYS
1	A	14	VAL
1	A	18	LEU
1	A	19	ASP
1	A	21	ILE
1	A	24	GLU
1	A	26	TYR
1	A	28	LEU
1	A	39	GLU
1	A	47	LYS
1	A	69	GLU
1	A	70	ASP
1	A	83	PHE

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Mol	Chain	Res	Type
1	A	84	GLU
1	A	86	ASP
1	A	92	LEU
1	A	101	LEU
1	A	104	ILE
1	A	108	LYS
1	A	123	LYS
1	A	125	ARG
1	A	132	ILE
1	A	149	ARG
1	A	161	LEU
1	A	170	ASP
1	A	171	ARG
1	A	184	LEU
1	A	211	LYS
1	A	215	GLU
1	A	246	LEU
1	A	247	SER
1	A	248	LEU
1	B	2	ILE
1	B	5	ILE
1	B	14	VAL
1	B	18	LEU
1	B	20	GLU
1	B	21	ILE
1	B	28	LEU
1	B	39	GLU
1	B	69	GLU
1	B	70	ASP
1	B	72	ASP
1	B	83	PHE
1	B	92	LEU
1	B	95	TYR
1	B	101	LEU
1	B	103	THR
1	B	108	LYS
1	B	112	ILE
1	B	119	ILE
1	B	123	LYS
1	B	130	ARG
1	B	132	ILE
1	B	159	GLU

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Mol	Chain	Res	Type
1	B	170	ASP
1	B	174	MET
1	B	181	ARG
1	B	184	LEU
1	B	201	LEU
1	B	209	THR
1	B	210	THR
1	B	211	LYS
1	B	245	THR
1	B	246	LEU
1	B	249	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	226	GLN
1	A	250	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 32 ligands modelled in this entry, 3 are monoatomic - leaving 29 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	$\# Z > 2$
2	HEZ	A	304	-	7,7,7	0.53	0	6,6,6	0.65	0
4	PGO	A	307	-	4,4,4	0.84	0	4,4,4	0.70	0
2	HEZ	A	311	-	7,7,7	0.47	0	6,6,6	0.82	0
4	PGO	A	318	-	4,4,4	0.81	0	4,4,4	0.68	0
2	HEZ	A	301	-	7,7,7	0.46	0	6,6,6	0.80	0
2	HEZ	B	303	-	7,7,7	0.50	0	6,6,6	0.70	0
3	BU1	A	308	-	5,5,5	0.51	0	4,4,4	0.87	0
2	HEZ	B	308	-	7,7,7	0.48	0	6,6,6	0.74	0
4	PGO	A	315	-	4,4,4	0.83	0	4,4,4	0.73	0
4	PGO	B	304	-	4,4,4	0.85	0	4,4,4	0.65	0
4	PGO	B	306	-	4,4,4	0.84	0	4,4,4	0.58	0
2	HEZ	B	305	-	7,7,7	0.50	0	6,6,6	0.69	0
2	HEZ	B	309	-	7,7,7	0.53	0	6,6,6	0.63	0
2	HEZ	B	301	-	7,7,7	0.55	0	6,6,6	0.61	0
2	HEZ	A	306	-	7,7,7	0.48	0	6,6,6	0.77	0
4	PGO	B	310	-	4,4,4	0.85	0	4,4,4	0.66	0
2	HEZ	A	303	-	7,7,7	0.54	0	6,6,6	0.67	0
3	BU1	A	309	-	5,5,5	0.54	0	4,4,4	0.68	0
3	BU1	B	312	-	5,5,5	0.48	0	4,4,4	0.91	0
2	HEZ	A	312	-	7,7,7	0.52	0	6,6,6	0.75	0
2	HEZ	A	310	-	7,7,7	0.45	0	6,6,6	0.77	0
2	HEZ	A	302	-	7,7,7	0.45	0	6,6,6	0.85	0
3	BU1	B	302	-	5,5,5	0.56	0	4,4,4	0.66	0
3	BU1	A	319	-	5,5,5	0.52	0	4,4,4	0.79	0
3	BU1	A	305	-	5,5,5	0.51	0	4,4,4	0.76	0
4	PGO	A	317	-	4,4,4	0.87	0	4,4,4	0.80	0
4	PGO	A	316	-	4,4,4	0.85	0	4,4,4	0.60	0
4	PGO	A	320	-	4,4,4	0.93	0	4,4,4	0.85	0
4	PGO	B	311	-	4,4,4	0.81	0	4,4,4	0.68	0

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
2	HEZ	A	304	-	-	2/5/5/5	-
4	PGO	A	307	-	-	2/2/2/2	-
2	HEZ	A	311	-	-	1/5/5/5	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	PGO	A	318	-	-	2/2/2/2	-
2	HEZ	A	301	-	-	3/5/5/5	-
2	HEZ	B	303	-	-	3/5/5/5	-
3	BU1	A	308	-	-	1/3/3/3	-
2	HEZ	B	308	-	-	5/5/5/5	-
4	PGO	A	315	-	-	2/2/2/2	-
4	PGO	B	304	-	-	2/2/2/2	-
4	PGO	B	306	-	-	2/2/2/2	-
2	HEZ	B	305	-	-	3/5/5/5	-
2	HEZ	B	309	-	-	1/5/5/5	-
2	HEZ	B	301	-	-	3/5/5/5	-
2	HEZ	A	306	-	-	4/5/5/5	-
4	PGO	B	310	-	-	2/2/2/2	-
2	HEZ	A	303	-	-	1/5/5/5	-
3	BU1	A	309	-	-	1/3/3/3	-
3	BU1	B	312	-	-	1/3/3/3	-
2	HEZ	A	312	-	-	3/5/5/5	-
2	HEZ	A	310	-	-	3/5/5/5	-
2	HEZ	A	302	-	-	3/5/5/5	-
3	BU1	B	302	-	-	1/3/3/3	-
3	BU1	A	319	-	-	1/3/3/3	-
3	BU1	A	305	-	-	1/3/3/3	-
4	PGO	A	317	-	-	0/2/2/2	-
4	PGO	A	316	-	-	1/2/2/2	-
4	PGO	A	320	-	-	2/2/2/2	-
4	PGO	B	311	-	-	2/2/2/2	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (58) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	307	PGO	O1-C1-C2-C3
4	A	315	PGO	O1-C1-C2-O2
4	A	318	PGO	O1-C1-C2-C3
4	A	318	PGO	O1-C1-C2-O2

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Mol	Chain	Res	Type	Atoms
4	A	320	PGO	O1-C1-C2-C3
4	A	320	PGO	O1-C1-C2-O2
4	B	304	PGO	O1-C1-C2-C3
4	B	304	PGO	O1-C1-C2-O2
4	B	306	PGO	O1-C1-C2-O2
4	B	311	PGO	O1-C1-C2-C3
4	B	311	PGO	O1-C1-C2-O2
2	A	306	HEZ	C2-C3-C4-C5
3	B	302	BU1	C2-C3-C4-O6
2	A	304	HEZ	C3-C4-C5-C6
2	A	306	HEZ	C3-C4-C5-C6
2	A	312	HEZ	C3-C4-C5-C6
2	B	301	HEZ	C2-C3-C4-C5
2	B	305	HEZ	C2-C3-C4-C5
3	A	305	BU1	C2-C3-C4-O6
3	A	308	BU1	C2-C3-C4-O6
3	A	319	BU1	C2-C3-C4-O6
2	A	301	HEZ	C2-C3-C4-C5
2	A	310	HEZ	C1-C2-C3-C4
2	B	305	HEZ	C1-C2-C3-C4
2	A	304	HEZ	C1-C2-C3-C4
2	B	301	HEZ	C1-C2-C3-C4
2	A	301	HEZ	O1-C1-C2-C3
2	A	312	HEZ	C4-C5-C6-O6
2	B	303	HEZ	O1-C1-C2-C3
2	B	309	HEZ	C3-C4-C5-C6
2	A	312	HEZ	C2-C3-C4-C5
2	B	303	HEZ	C4-C5-C6-O6
4	B	310	PGO	O1-C1-C2-O2
2	A	310	HEZ	C4-C5-C6-O6
2	B	305	HEZ	O1-C1-C2-C3
3	A	309	BU1	C2-C3-C4-O6
2	B	308	HEZ	C3-C4-C5-C6
2	A	302	HEZ	C1-C2-C3-C4
2	A	302	HEZ	C3-C4-C5-C6
2	A	306	HEZ	C4-C5-C6-O6
2	B	308	HEZ	O1-C1-C2-C3
2	A	310	HEZ	C2-C3-C4-C5
4	A	315	PGO	O1-C1-C2-C3
4	B	306	PGO	O1-C1-C2-C3
4	B	310	PGO	O1-C1-C2-C3
2	B	303	HEZ	C2-C3-C4-C5

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Mol	Chain	Res	Type	Atoms
2	B	308	HEZ	C1-C2-C3-C4
2	B	308	HEZ	C4-C5-C6-O6
2	B	308	HEZ	C2-C3-C4-C5
4	A	307	PGO	O1-C1-C2-O2
2	A	306	HEZ	C1-C2-C3-C4
2	B	301	HEZ	C4-C5-C6-O6
4	A	316	PGO	O1-C1-C2-C3
3	B	312	BU1	O5-C1-C2-C3
2	A	311	HEZ	C4-C5-C6-O6
2	A	301	HEZ	C3-C4-C5-C6
2	A	303	HEZ	C4-C5-C6-O6
2	A	302	HEZ	O1-C1-C2-C3

There are no ring outliers.

21 monomers are involved in 47 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	304	HEZ	1	0
2	A	311	HEZ	3	0
4	A	318	PGO	4	0
2	B	303	HEZ	3	0
2	B	308	HEZ	1	0
4	A	315	PGO	1	0
4	B	304	PGO	1	0
2	B	305	HEZ	3	0
2	B	309	HEZ	1	0
2	A	306	HEZ	2	0
2	A	303	HEZ	7	0
3	A	309	BU1	6	0
3	B	312	BU1	1	0
2	A	312	HEZ	4	0
2	A	310	HEZ	2	0
3	B	302	BU1	4	0
3	A	319	BU1	2	0
3	A	305	BU1	4	0
4	A	317	PGO	2	0
4	A	316	PGO	1	0
4	A	320	PGO	2	0

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	250/280 (89%)	-1.37	0 100 100	33, 61, 109, 144	1 (0%)
1	B	250/280 (89%)	-1.32	0 100 100	29, 64, 107, 151	2 (0%)
All	All	500/560 (89%)	-1.34	0 100 100	29, 63, 109, 151	3 (0%)

There are no RSRZ outliers to report.

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
2	HEZ	A	304	8/8	0.97	0.05	62,79,81,83	0
2	HEZ	B	301	8/8	0.97	0.05	68,74,82,86	0
4	PGO	B	310	5/5	0.97	0.06	98,99,99,100	0
2	HEZ	A	311	8/8	0.98	0.06	71,74,77,77	0
2	HEZ	A	303	8/8	0.98	0.04	49,54,69,70	0
2	HEZ	B	305	8/8	0.98	0.04	68,81,83,84	0
2	HEZ	B	308	8/8	0.98	0.05	83,85,88,90	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	HEZ	B	309	8/8	0.98	0.06	80,83,86,86	0
3	BU1	A	309	6/6	0.98	0.04	75,83,84,84	0
4	PGO	A	307	5/5	0.98	0.04	67,67,69,72	0
4	PGO	A	320	5/5	0.98	0.05	75,76,77,77	0
4	PGO	B	306	5/5	0.98	0.06	75,77,81,85	0
2	HEZ	A	302	8/8	0.98	0.05	66,68,72,74	0
4	PGO	B	311	5/5	0.98	0.07	73,73,76,79	0
2	HEZ	A	306	8/8	0.99	0.03	64,67,70,71	0
3	BU1	A	319	6/6	0.99	0.04	78,83,87,89	0
3	BU1	B	302	6/6	0.99	0.05	58,65,70,71	0
3	BU1	B	312	6/6	0.99	0.05	74,79,82,83	0
2	HEZ	B	303	8/8	0.99	0.04	63,72,74,75	0
4	PGO	A	315	5/5	0.99	0.04	87,90,94,96	0
4	PGO	A	316	5/5	0.99	0.05	85,87,91,93	0
4	PGO	A	317	5/5	0.99	0.05	76,76,80,84	0
4	PGO	A	318	5/5	0.99	0.05	75,75,85,91	0
2	HEZ	A	310	8/8	0.99	0.03	42,58,63,64	0
4	PGO	B	304	5/5	0.99	0.06	57,63,70,77	0
2	HEZ	A	301	8/8	0.99	0.05	61,73,74,75	0
2	HEZ	A	312	8/8	0.99	0.03	48,56,70,73	0
3	BU1	A	308	6/6	0.99	0.07	68,69,72,72	0
5	MG	A	313	1/1	0.99	0.03	60,60,60,60	0
5	MG	A	314	1/1	0.99	0.05	63,63,63,63	0
5	MG	B	307	1/1	0.99	0.04	61,61,61,61	0
3	BU1	A	305	6/6	1.00	0.03	61,62,65,68	0

6.5 Other polymers [i](#)

There are no such residues in this entry.