WORLDWIDE PDB
PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report ⓘ

Mar 26, 2024 – 10:13 AM EDT

PDB ID	:	1XDJ
Title	:	Crystal Structure of T. maritima Cobalamin-Independent Methionine Synthase complexed with Zn2+ and Homocysteine
Authors	:	Pejchal, R.; Ludwig, M.L.
Deposited on	:	2004-09-06
Resolution	:	2.20 Å(reported)

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

|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.1
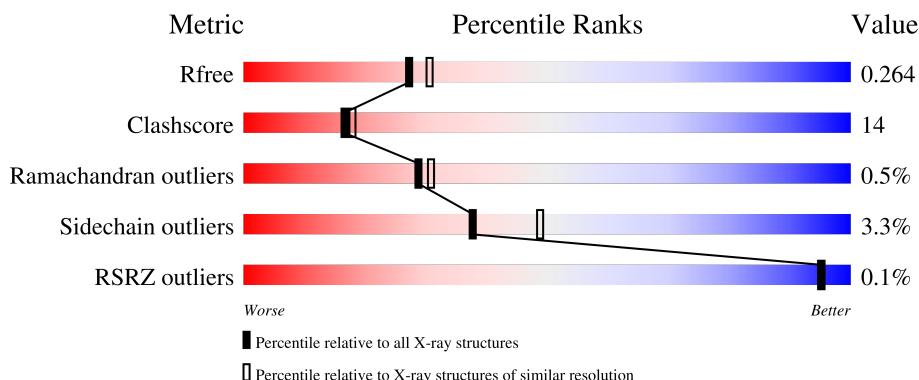
1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION
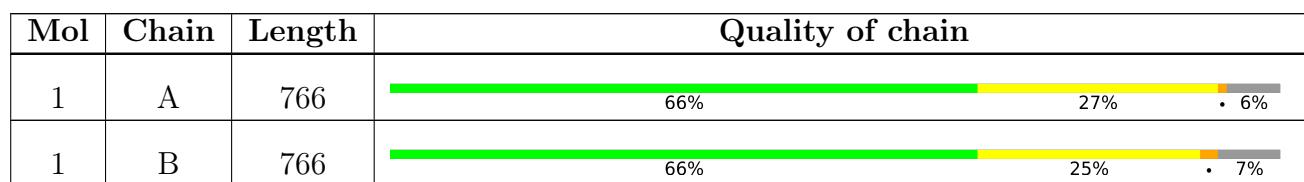
The reported resolution of this entry is 2.20 Å.

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

Metric	Percentile Ranks	Value
Rfree		0.264
Clashscore		14
Ramachandran outliers		0.5%
Sidechain outliers		3.3%
RSRZ outliers		0.1%

Worse ... *Better*

▌ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	4898 (2.20-2.20)
Clashscore	141614	5594 (2.20-2.20)
Ramachandran outliers	138981	5503 (2.20-2.20)
Sidechain outliers	138945	5504 (2.20-2.20)
RSRZ outliers	127900	4800 (2.20-2.20)

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 <=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	766	66% · 27% · 6%
1	B	766	66% · 25% · 7%

2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 11545 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 5-methyltetrahydropteroyltriglutamate--homocysteine methyltransferase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	722	Total 5657	C 3673	N 930	O 1030	S 7	Se 17	0	0	0
1	B	712	Total 5546	C 3604	N 901	O 1017	S 7	Se 17	0	0	0

There are 100 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-31	MET	-	expression tag	UNP Q9X112
A	-30	HIS	-	expression tag	UNP Q9X112
A	-29	HIS	-	expression tag	UNP Q9X112
A	-28	HIS	-	expression tag	UNP Q9X112
A	-27	HIS	-	expression tag	UNP Q9X112
A	-26	HIS	-	expression tag	UNP Q9X112
A	-25	HIS	-	expression tag	UNP Q9X112
A	-24	GLY	-	expression tag	UNP Q9X112
A	-23	LYS	-	expression tag	UNP Q9X112
A	-22	PRO	-	expression tag	UNP Q9X112
A	-21	ILE	-	expression tag	UNP Q9X112
A	-20	PRO	-	expression tag	UNP Q9X112
A	-19	ASN	-	expression tag	UNP Q9X112
A	-18	PRO	-	expression tag	UNP Q9X112
A	-17	LEU	-	expression tag	UNP Q9X112
A	-16	LEU	-	expression tag	UNP Q9X112
A	-15	GLY	-	expression tag	UNP Q9X112
A	-14	LEU	-	expression tag	UNP Q9X112
A	-13	ASP	-	expression tag	UNP Q9X112
A	-12	SER	-	expression tag	UNP Q9X112
A	-11	THR	-	expression tag	UNP Q9X112
A	-10	GLU	-	expression tag	UNP Q9X112
A	-9	ASN	-	expression tag	UNP Q9X112
A	-8	LEU	-	expression tag	UNP Q9X112

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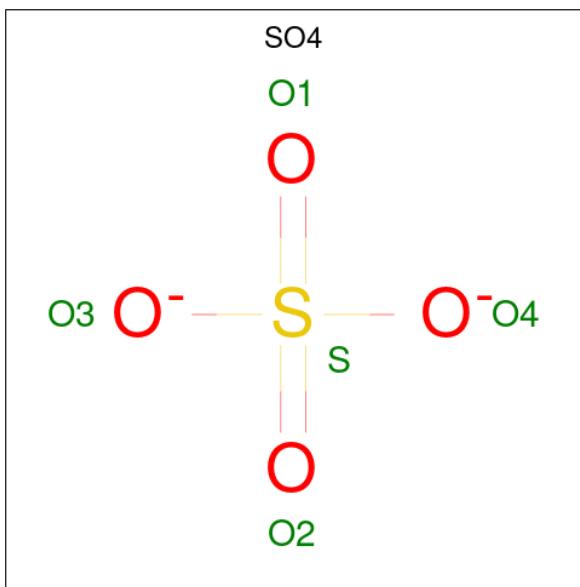
Chain	Residue	Modelled	Actual	Comment	Reference
A	-7	TYR	-	expression tag	UNP Q9X112
A	-6	PHE	-	expression tag	UNP Q9X112
A	-5	GLN	-	expression tag	UNP Q9X112
A	-4	GLY	-	expression tag	UNP Q9X112
A	-3	ILE	-	expression tag	UNP Q9X112
A	-2	ASP	-	expression tag	UNP Q9X112
A	-1	PRO	-	expression tag	UNP Q9X112
A	0	PHE	-	expression tag	UNP Q9X112
A	1	THR	-	expression tag	UNP Q9X112
A	38	MSE	MET	modified residue	UNP Q9X112
A	43	MSE	MET	modified residue	UNP Q9X112
A	45	MSE	MET	modified residue	UNP Q9X112
A	73	MSE	MET	modified residue	UNP Q9X112
A	93	MSE	MET	modified residue	UNP Q9X112
A	102	MSE	MET	modified residue	UNP Q9X112
A	170	MSE	MET	modified residue	UNP Q9X112
A	344	MSE	MET	modified residue	UNP Q9X112
A	421	MSE	MET	modified residue	UNP Q9X112
A	468	MSE	MET	modified residue	UNP Q9X112
A	510	MSE	MET	modified residue	UNP Q9X112
A	529	MSE	MET	modified residue	UNP Q9X112
A	537	MSE	MET	modified residue	UNP Q9X112
A	619	MSE	MET	modified residue	UNP Q9X112
A	682	MSE	MET	modified residue	UNP Q9X112
A	721	MSE	MET	modified residue	UNP Q9X112
A	728	MSE	MET	modified residue	UNP Q9X112
B	-31	MET	-	expression tag	UNP Q9X112
B	-30	HIS	-	expression tag	UNP Q9X112
B	-29	HIS	-	expression tag	UNP Q9X112
B	-28	HIS	-	expression tag	UNP Q9X112
B	-27	HIS	-	expression tag	UNP Q9X112
B	-26	HIS	-	expression tag	UNP Q9X112
B	-25	HIS	-	expression tag	UNP Q9X112
B	-24	GLY	-	expression tag	UNP Q9X112
B	-23	LYS	-	expression tag	UNP Q9X112
B	-22	PRO	-	expression tag	UNP Q9X112
B	-21	ILE	-	expression tag	UNP Q9X112
B	-20	PRO	-	expression tag	UNP Q9X112
B	-19	ASN	-	expression tag	UNP Q9X112
B	-18	PRO	-	expression tag	UNP Q9X112
B	-17	LEU	-	expression tag	UNP Q9X112
B	-16	LEU	-	expression tag	UNP Q9X112

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-15	GLY	-	expression tag	UNP Q9X112
B	-14	LEU	-	expression tag	UNP Q9X112
B	-13	ASP	-	expression tag	UNP Q9X112
B	-12	SER	-	expression tag	UNP Q9X112
B	-11	THR	-	expression tag	UNP Q9X112
B	-10	GLU	-	expression tag	UNP Q9X112
B	-9	ASN	-	expression tag	UNP Q9X112
B	-8	LEU	-	expression tag	UNP Q9X112
B	-7	TYR	-	expression tag	UNP Q9X112
B	-6	PHE	-	expression tag	UNP Q9X112
B	-5	GLN	-	expression tag	UNP Q9X112
B	-4	GLY	-	expression tag	UNP Q9X112
B	-3	ILE	-	expression tag	UNP Q9X112
B	-2	ASP	-	expression tag	UNP Q9X112
B	-1	PRO	-	expression tag	UNP Q9X112
B	0	PHE	-	expression tag	UNP Q9X112
B	1	THR	-	expression tag	UNP Q9X112
B	38	MSE	MET	modified residue	UNP Q9X112
B	43	MSE	MET	modified residue	UNP Q9X112
B	45	MSE	MET	modified residue	UNP Q9X112
B	73	MSE	MET	modified residue	UNP Q9X112
B	93	MSE	MET	modified residue	UNP Q9X112
B	102	MSE	MET	modified residue	UNP Q9X112
B	170	MSE	MET	modified residue	UNP Q9X112
B	344	MSE	MET	modified residue	UNP Q9X112
B	421	MSE	MET	modified residue	UNP Q9X112
B	468	MSE	MET	modified residue	UNP Q9X112
B	510	MSE	MET	modified residue	UNP Q9X112
B	529	MSE	MET	modified residue	UNP Q9X112
B	537	MSE	MET	modified residue	UNP Q9X112
B	619	MSE	MET	modified residue	UNP Q9X112
B	682	MSE	MET	modified residue	UNP Q9X112
B	721	MSE	MET	modified residue	UNP Q9X112
B	728	MSE	MET	modified residue	UNP Q9X112

- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O_4S).
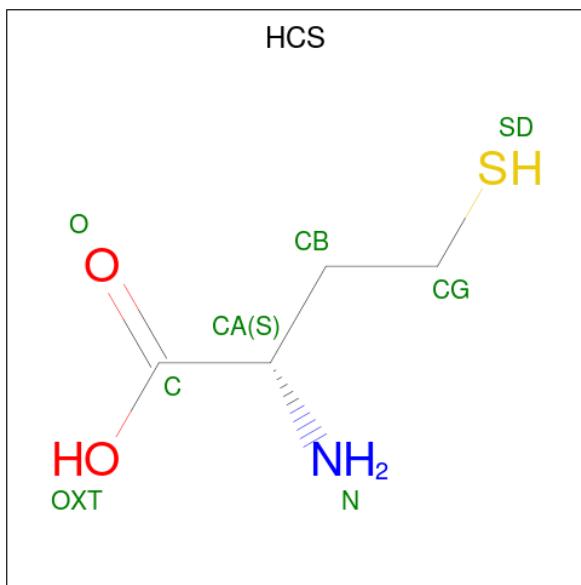
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total 5	O 4	S 1	0	0
2	B	1	Total 5	O 4	S 1	0	0

- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).
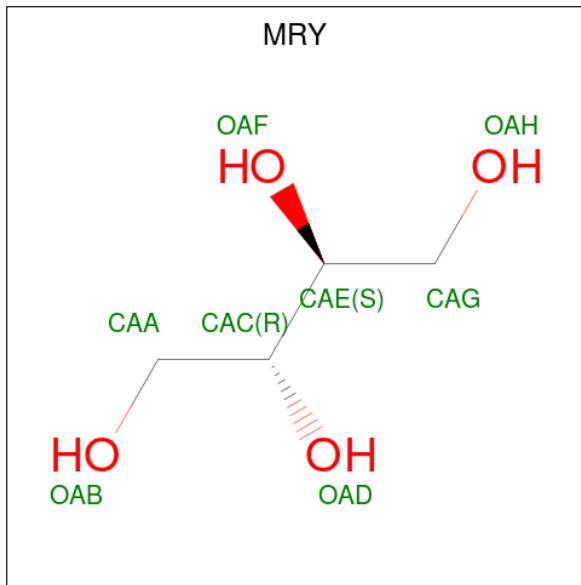
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total 1	Zn 1	0	0
3	B	1	Total 1	Zn 1	0	0

- Molecule 4 is 2-AMINO-4-MERCAPTO-BUTYRIC ACID (three-letter code: HCS) (formula: $C_4H_9NO_2S$).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	A	1	Total 8	C 4	N 1	O 2	S 1	0	0
4	A	1	Total 8	C 4	N 1	O 2	S 1	0	0

- Molecule 5 is MESO-ERYTHRITOL (three-letter code: MRY) (formula: $C_4H_{10}O_4$).

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total 8	C 4	O 4	0	0
5	B	1	Total 8	C 4	O 4	0	0

• Molecule 6 is water.
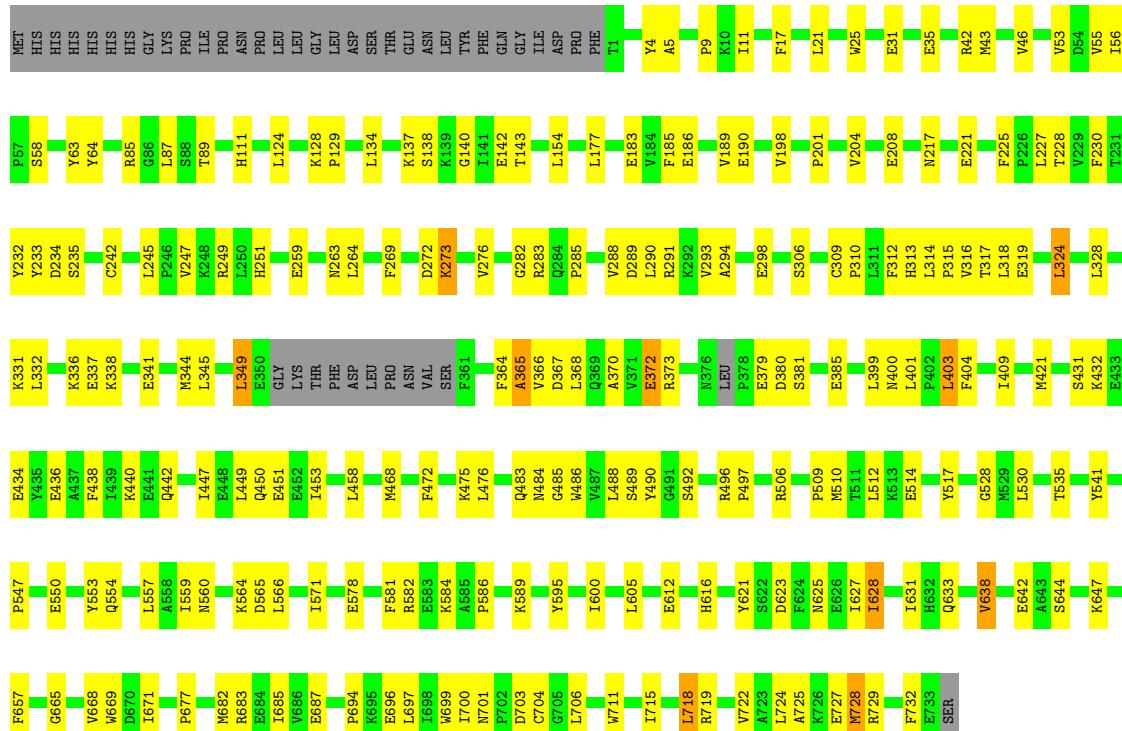
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	147	Total O 147 147	0	0
6	B	151	Total O 151 151	0	0

3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry 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.
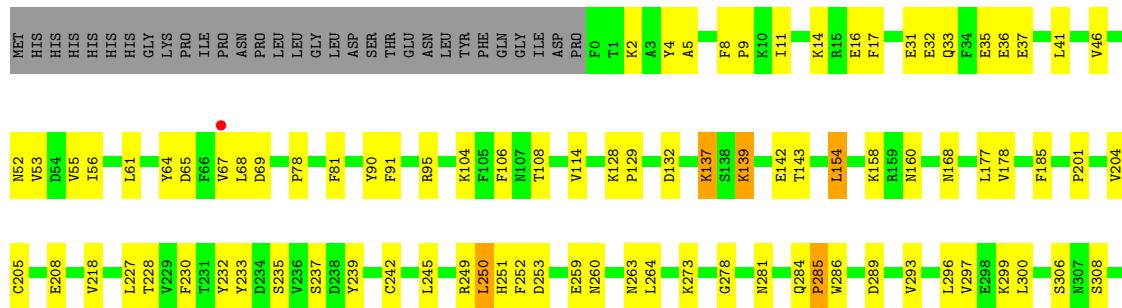
- Molecule 1: 5-methyltetrahydropteroyltriglutamate--homocysteine methyltransferase
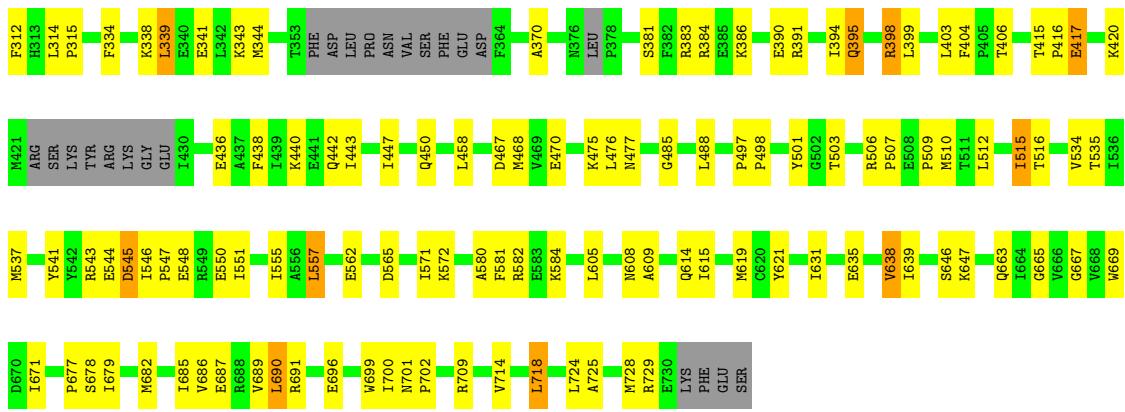
Chain A:

- Molecule 1: 5-methyltetrahydropteroyltriglutamate--homocysteine methyltransferase

Chain B:

F312 H313 L314 P315 F334 K338 L339 E340 E341 L342 K343 M344 T353 PHE ASP LEU PRO ASN VAL SER PHE GLU ASP F364 A370 N376 LEU P378 S381 F382 R383 R384 E385 K386 E390 R391 I394 Q395 R398 L399 L403 F404 P405 T406 T415 P416 E417 K420

M421 ARG SER LYS TYR ARG LYS GLY GLU I430 E436 A437 F438 I439 K440 E441 Q442 I443 I447 Q450 L458 D467 M468 V469 E470 K475 L476 N477 G485 L488 P497 P498 Y501 G502 T503 R506 P507 E508 P509 M510 T511 L512 I515 T516 V534 T535 I536

M537 Y541 Y542 R543 E544 D545 I546 P547 E548 R549 E550 I551 I555 A556 L557 E562 D565 I571 K572 A580 F581 R582 E583 K584 L605 N608 A609 Q614 I615 M619 C620 Y621 I631 E635 V638 I639 S646 K647 Q663 I664 G665 V666 G667 V668 W669

D670 I671 P677 S678 I679 M682 I685 V686 E687 R688 V689 L690 R691 E696 W699 I700 N701 P702 R709 V714 L718 L724 A725 M728 R729 E730 LYS PHE GLU SER

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α, β, γ	167.05Å 159.37Å 65.64Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	19.90 – 2.20 24.96 – 2.20	Depositor EDS
% Data completeness (in resolution range)	92.9 (19.90-2.20) 93.0 (24.96-2.20)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	4.03 (at 2.19Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.227 , 0.268 0.224 , 0.264	Depositor DCC
R_{free} test set	1666 reflections (2.00%)	wwPDB-VP
Wilson B-factor (Å^2)	24.2	Xtriage
Anisotropy	0.156	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 26.4	EDS
L-test for twinning [2]	$< |L| > = 0.44, < L^2 > = 0.27$	Xtriage
Estimated twinning fraction	0.077 for k,h,-l	Xtriage
F_o,F_c correlation	0.91	EDS
Total number of atoms	11545	wwPDB-VP
Average B, all atoms (Å^2)	25.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.96% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ 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: HCS, SO4, ZN, MRY

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	0.37	0/5781	0.60	1/7832 (0.0%)
1	B	0.37	0/5667	0.60	0/7680
All	All	0.37	0/11448	0.60	1/15512 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	528	GLY	N-CA-C	-5.27	99.93	113.10

There are no chirality outliers.

There are no planarity outliers.

5.2   Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5657	0	5416	164	0
1	B	5546	0	5298	153	0
2	A	5	0	0	0	0
2	B	5	0	0	0	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
4	A	16	0	16	0	0
5	A	8	0	10	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	B	8	0	10	1	0
6	A	147	0	0	7	0
6	B	151	0	0	2	0
All	All	11545	0	10750	313	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 14.

All (313) 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:317:THR:HG22	1:A:319:GLU:H	1.26	0.97
1:B:228:THR:HG23	1:B:249:ARG:HG3	1.56	0.87
1:A:557:LEU:HD22	1:A:605:LEU:HD21	1.55	0.85
1:A:512:LEU:HD11	1:A:565:ASP:HB3	1.62	0.82
1:B:512:LEU:HD11	1:B:565:ASP:HB3	1.62	0.81
1:A:251:HIS:HA	1:A:276:VAL:HG13	1.62	0.81
1:B:4:TYR:HB2	1:B:306:SER:HB3	1.65	0.78
1:A:58:SER:HB2	1:A:143:THR:HB	1.65	0.78
1:B:677:PRO:HB2	1:B:682:MSE:HE3	1.63	0.78
1:A:557:LEU:CD2	1:A:605:LEU:HD21	2.14	0.77
1:B:296:LEU:O	1:B:300:LEU:HD13	1.85	0.76
1:B:391:ARG:O	1:B:395:GLN:HG2	1.86	0.75
1:B:619:MSE:HG3	1:B:639:ILE:HD11	1.67	0.75
1:B:450:GLN:HB3	1:B:458:LEU:HD22	1.69	0.75
1:B:399:LEU:HD11	6:B:986:HOH:O	1.87	0.74
1:A:582:ARG:HB3	1:A:621:TYR:CE2	2.24	0.72
1:B:477:ASN:HD21	1:B:507:PRO:HB3	1.55	0.72
1:A:582:ARG:HB3	1:A:621:TYR:CZ	2.25	0.72
1:B:477:ASN:ND2	1:B:507:PRO:HD3	2.05	0.72
1:A:42:ARG:O	1:A:46:VAL:HG22	1.90	0.70
1:A:290:LEU:HD22	1:A:345:LEU:HG	1.73	0.70
1:A:728:MSE:HE2	1:A:732:PHE:HE1	1.57	0.70
1:B:386:LYS:O	1:B:391:ARG:HD3	1.93	0.69
1:A:317:THR:HG23	1:A:337:GLU:OE2	1.93	0.68
1:B:245:LEU:O	1:B:273:LYS:HE3	1.94	0.68
1:B:638:VAL:HB	1:B:663:GLN:HB2	1.74	0.68
1:B:137:LYS:HD3	1:B:142:GLU:OE1	1.95	0.66
1:A:728:MSE:HE3	1:A:728:MSE:HA	1.77	0.66
1:B:686:VAL:O	1:B:690:LEU:HG	1.96	0.66
1:A:201:PRO:O	1:A:204:VAL:HG22	1.96	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:467:ASP:HB3	1:B:470:GLU:HB3	1.78	0.65
1:B:543:ARG:HB3	1:B:545:ASP:OD1	1.97	0.65
1:B:242:CYS:O	1:B:245:LEU:HB2	1.96	0.65
1:B:679:ILE:HG23	1:B:724:LEU:HB2	1.78	0.65
1:B:52:ASN:HA	1:B:343:LYS:HD2	1.78	0.64
1:B:114:VAL:HG11	1:B:158:LYS:HD2	1.79	0.64
1:B:239:TYR:HB2	1:B:263:ASN:HD22	1.63	0.64
1:A:475:LYS:HE2	1:A:510:MSE:O	1.98	0.64
1:B:128:LYS:HB2	1:B:128:LYS:NZ	2.13	0.63
1:B:506:ARG:NH2	1:B:562:GLU:HA	2.12	0.63
1:B:341:GLU:HA	1:B:344:MSE:HE3	1.79	0.63
1:A:4:TYR:HB2	1:A:306:SER:HB3	1.81	0.62
1:B:264:LEU:O	1:B:264:LEU:HD23	1.99	0.62
1:A:468:MSE:HE2	1:A:535:THR:HG21	1.82	0.62
1:A:711:TRP:O	1:A:715:ILE:HG12	1.99	0.62
1:B:250:LEU:HD13	1:B:252:PHE:HE1	1.64	0.62
1:A:668:VAL:HG23	1:A:682:MSE:HE2	1.82	0.62
1:B:546:ILE:HB	1:B:547:PRO:HD2	1.81	0.61
1:B:546:ILE:HD11	1:B:551:ILE:HG12	1.82	0.61
1:A:134:LEU:HA	1:A:137:LYS:HB2	1.82	0.61
1:A:331:LYS:HE2	1:A:364:PHE:CD1	2.36	0.60
1:B:534:VAL:HG13	1:B:584:LYS:HD3	1.83	0.60
1:B:14:LYS:HB2	1:B:16:GLU:OE1	2.02	0.59
1:B:501:TYR:O	1:B:543:ARG:NH1	2.30	0.59
1:A:725:ALA:O	1:A:729:ARG:HG3	2.01	0.59
1:A:512:LEU:HD23	1:A:566:LEU:HD23	1.85	0.59
1:A:550:GLU:O	1:A:554:GLN:HG3	2.01	0.59
1:B:232:TYR:O	1:B:233:TYR:HB2	2.03	0.59
1:B:5:ALA:HB2	1:B:53:VAL:HG11	1.86	0.58
1:B:139:LYS:NZ	1:B:139:LYS:HB2	2.19	0.58
1:A:58:SER:HB2	1:A:143:THR:CB	2.33	0.58
1:B:11:ILE:HA	1:B:17:PHE:HB3	1.85	0.58
1:A:288:VAL:HG22	1:A:289:ASP:N	2.19	0.58
1:A:409:ILE:HG13	1:A:704:CYS:HA	1.86	0.58
1:B:547:PRO:HG2	1:B:550:GLU:HB2	1.84	0.58
1:A:665:GLY:CA	1:A:701:ASN:HD21	2.17	0.57
1:A:85:ARG:H	1:A:89:THR:HG21	1.69	0.57
1:A:506:ARG:O	1:A:506:ARG:HG3	2.03	0.57
1:B:467:ASP:HB3	1:B:470:GLU:CB	2.34	0.57
1:A:438:PHE:O	1:A:442:GLN:HG2	2.03	0.57
1:B:383:ARG:HA	1:B:635:GLU:OE1	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:432:LYS:O	1:A:436:GLU:HB2	2.04	0.57
1:A:63:TYR:HD2	1:A:87:LEU:HD21	1.70	0.57
1:A:186:GLU:O	1:A:190:GLU:HG3	2.04	0.57
1:A:373:ARG:HG3	1:A:373:ARG:HH11	1.70	0.57
1:B:4:TYR:CE1	1:B:55:VAL:HG21	2.39	0.57
1:A:242:CYS:O	1:A:245:LEU:HD13	2.04	0.56
1:A:269:PHE:CE1	1:A:273:LYS:HG3	2.39	0.56
1:B:114:VAL:HG11	1:B:158:LYS:CD	2.34	0.56
1:B:398:ARG:HD3	1:B:572:LYS:HD3	1.87	0.56
1:B:228:THR:OG1	1:B:249:ARG:HD2	2.06	0.56
1:A:185:PHE:O	1:A:189:VAL:HG23	2.06	0.56
1:A:328:LEU:O	1:A:332:LEU:HD23	2.05	0.56
1:A:154:LEU:HD13	1:A:177:LEU:HD22	1.87	0.56
1:A:294:ALA:O	1:A:298:GLU:HG3	2.06	0.56
1:B:178:VAL:CG2	1:B:218:VAL:HG13	2.36	0.56
1:A:264:LEU:HD23	1:A:264:LEU:C	2.26	0.55
1:B:609:ALA:HB3	1:B:615:ILE:HD11	1.87	0.55
1:A:581:PHE:HE2	1:A:631:ILE:HD12	1.70	0.55
1:B:128:LYS:HB2	1:B:128:LYS:HZ2	1.70	0.55
1:B:509:PRO:HB3	1:B:512:LEU:HD12	1.87	0.55
1:A:728:MSE:HE2	1:A:732:PHE:CE1	2.40	0.55
1:B:32:GLU:O	1:B:36:GLU:HG3	2.07	0.55
1:A:647:LYS:NZ	1:B:691:ARG:HD3	2.22	0.55
1:A:449:LEU:O	1:A:453:ILE:HG12	2.07	0.55
1:B:31:GLU:O	1:B:35:GLU:HG2	2.06	0.55
1:A:727:GLU:HG3	6:A:884:HOH:O	2.07	0.54
1:A:21:LEU:HD23	1:A:492:SER:HB3	1.90	0.54
1:A:230:PHE:HA	1:A:251:HIS:HB3	1.89	0.54
1:B:178:VAL:HG22	1:B:218:VAL:HG13	1.89	0.54
1:A:547:PRO:HG2	1:A:550:GLU:HB2	1.89	0.54
1:B:33:GLN:HA	1:B:36:GLU:OE1	2.07	0.54
1:A:694:PRO:HD2	1:A:697:LEU:CD1	2.37	0.54
1:B:403:LEU:HD22	1:B:404:PHE:CD2	2.43	0.54
1:A:627:ILE:HG13	1:A:631:ILE:HD13	1.90	0.53
1:A:506:ARG:NH1	1:A:565:ASP:OD2	2.40	0.53
1:B:515:ILE:HD12	1:B:571:ILE:HD12	1.89	0.53
1:A:403:LEU:HD13	1:A:404:PHE:CD2	2.43	0.53
1:A:628:ILE:HD12	1:A:657:PHE:CD2	2.43	0.53
1:B:250:LEU:HD13	1:B:252:PHE:CE1	2.42	0.53
1:B:678:SER:O	1:B:682:MSE:HG3	2.09	0.53
1:A:671:ILE:HD12	1:A:671:ILE:C	2.28	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:694:PRO:HD2	1:A:697:LEU:HD12	1.90	0.52
1:B:671:ILE:C	1:B:671:ILE:HD12	2.30	0.52
1:A:696:GLU:H	1:A:696:GLU:CD	2.12	0.52
1:B:395:GLN:OE1	1:B:614:GLN:HG3	2.08	0.52
1:B:724:LEU:O	1:B:728:MSE:HG2	2.08	0.52
1:A:450:GLN:HB3	1:A:458:LEU:HD22	1.92	0.52
1:B:293:VAL:O	1:B:297:VAL:HG23	2.09	0.52
1:A:232:TYR:O	1:A:233:TYR:HB2	2.10	0.52
1:B:264:LEU:HD23	1:B:264:LEU:C	2.30	0.52
1:A:228:THR:HG23	1:A:249:ARG:HB3	1.92	0.52
1:A:4:TYR:CE1	1:A:55:VAL:HG21	2.46	0.51
1:A:317:THR:HG22	1:A:319:GLU:N	2.09	0.51
1:A:315:PRO:HB3	1:A:485:GLY:HA2	1.92	0.51
1:A:669:TRP:CD1	1:A:677:PRO:HG2	2.46	0.51
1:A:683:ARG:HD2	1:A:687:GLU:OE1	2.10	0.51
1:B:154:LEU:HD13	1:B:177:LEU:HD22	1.91	0.51
1:A:616:HIS:CG	1:A:638:VAL:HG22	2.46	0.51
1:B:415:THR:HB	1:B:416:PRO:HD2	1.91	0.51
1:A:251:HIS:CA	1:A:276:VAL:HG13	2.36	0.51
1:B:314:LEU:HA	1:B:541:TYR:OH	2.11	0.51
6:A:958:HOH:O	1:B:160:ASN:HB3	2.09	0.51
1:A:368:LEU:O	1:A:372:GLU:HB2	2.11	0.51
1:B:128:LYS:N	1:B:129:PRO:CD	2.74	0.51
1:A:5:ALA:HB2	1:A:53:VAL:HG11	1.93	0.51
1:B:37:GLU:O	1:B:41:LEU:HD22	2.11	0.50
1:B:403:LEU:HD22	1:B:404:PHE:CE2	2.46	0.50
1:A:399:LEU:HB3	1:A:401:LEU:HG	1.94	0.50
1:A:530:LEU:HD13	1:A:559:ILE:HG23	1.93	0.50
1:A:732:PHE:CD1	1:A:732:PHE:N	2.80	0.50
1:A:198:VAL:HG21	1:A:227:LEU:HG	1.94	0.50
1:A:584:LYS:HB3	1:A:595:TYR:OH	2.12	0.50
1:B:384:ARG:CZ	1:B:615:ILE:HD12	2.42	0.50
1:B:235:SER:CB	1:B:259:GLU:HB2	2.42	0.50
1:A:21:LEU:HG	1:A:25:TRP:CZ2	2.47	0.50
1:A:328:LEU:CD1	1:A:332:LEU:HD21	2.42	0.50
1:A:85:ARG:H	1:A:89:THR:CG2	2.24	0.49
1:B:403:LEU:HD23	1:B:404:PHE:H	1.77	0.49
1:B:106:PHE:CD2	5:B:1054:MRY:HAG2	2.48	0.49
1:B:2:LYS:HE2	1:B:55:VAL:CG2	2.42	0.49
1:A:137:LYS:HD3	1:A:142:GLU:OE2	2.13	0.49
1:A:208:GLU:HA	1:B:208:GLU:HA	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:453:ILE:HD13	1:A:719:ARG:NH1	2.28	0.48
1:B:696:GLU:CD	1:B:696:GLU:H	2.16	0.48
1:A:586:PRO:HD3	1:A:595:TYR:CG	2.48	0.48
1:B:725:ALA:O	1:B:729:ARG:HG2	2.14	0.48
1:A:447:ILE:O	1:A:451:GLU:HG3	2.12	0.48
1:A:506:ARG:NH2	1:A:509:PRO:HA	2.28	0.48
1:A:9:PRO:HB2	1:A:316:VAL:HG22	1.96	0.48
1:B:403:LEU:HD23	1:B:404:PHE:N	2.29	0.48
1:B:537:MSE:HG3	1:B:555:ILE:HD12	1.96	0.48
1:B:201:PRO:O	1:B:204:VAL:HG22	2.14	0.48
1:B:284:GLN:HG3	1:B:286:TRP:CD1	2.49	0.48
1:A:373:ARG:HG3	1:A:373:ARG:NH1	2.29	0.47
1:B:8:PHE:CD2	1:B:9:PRO:HD2	2.49	0.47
1:B:56:ILE:HG22	1:B:143:THR:HG22	1.94	0.47
1:B:235:SER:HB3	1:B:259:GLU:HB2	1.96	0.47
1:B:582:ARG:N	1:B:621:TYR:OH	2.29	0.47
1:A:700:ILE:HD13	1:A:724:LEU:HD12	1.97	0.47
1:B:537:MSE:HE1	1:B:548:GLU:CG	2.44	0.47
1:B:232:TYR:O	1:B:233:TYR:CB	2.62	0.47
1:B:535:THR:HA	1:B:580:ALA:HB3	1.97	0.47
1:A:235:SER:CB	1:A:259:GLU:HB2	2.45	0.47
1:B:436:GLU:O	1:B:440:LYS:HG3	2.14	0.47
1:A:324:LEU:HB2	6:A:828:HOH:O	2.14	0.46
1:A:293:VAL:HG11	1:A:345:LEU:HD11	1.95	0.46
1:A:582:ARG:HD3	1:A:627:ILE:HG21	1.97	0.46
1:A:627:ILE:HD12	1:A:631:ILE:HD11	1.96	0.46
1:B:438:PHE:O	1:B:442:GLN:HG2	2.15	0.46
1:B:714:VAL:O	1:B:718:LEU:HB2	2.15	0.46
1:A:506:ARG:NH2	1:A:565:ASP:OD2	2.46	0.46
1:A:138:SER:C	1:A:140:GLY:H	2.18	0.46
1:A:264:LEU:HD23	1:A:264:LEU:O	2.16	0.46
1:B:398:ARG:NH1	1:B:572:LYS:NZ	2.64	0.46
1:A:242:CYS:HA	1:A:245:LEU:HD13	1.97	0.46
1:B:104:LYS:HG2	1:B:108:THR:O	2.15	0.46
1:A:669:TRP:HZ3	1:A:718:LEU:HD13	1.80	0.46
1:B:285:PRO:HD3	1:B:541:TYR:CD1	2.49	0.46
1:B:547:PRO:HG2	1:B:550:GLU:CB	2.45	0.46
1:A:367:ASP:O	1:A:370:ALA:N	2.48	0.46
1:A:644:SER:HA	1:A:685:ILE:HD13	1.98	0.46
1:A:328:LEU:HG	1:A:332:LEU:HD21	1.98	0.45
1:A:399:LEU:HD21	6:A:831:HOH:O	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:472:PHE:O	1:A:476:LEU:HD23	2.16	0.45
1:A:642:GLU:HG2	1:A:703:ASP:O	2.15	0.45
1:A:732:PHE:H	1:A:732:PHE:HD1	1.65	0.45
1:B:61:LEU:HG	1:B:61:LEU:O	2.17	0.45
1:B:381:SER:O	1:B:608:ASN:ND2	2.44	0.45
1:A:364:PHE:O	1:A:366:VAL:HG13	2.17	0.45
1:A:514:GLU:HG3	6:A:842:HOH:O	2.16	0.45
1:A:600:ILE:HD13	1:A:633:GLN:HB2	1.99	0.45
1:B:235:SER:HA	1:B:260:ASN:OD1	2.17	0.45
1:B:315:PRO:HB2	1:B:334:PHE:CD2	2.52	0.45
1:B:467:ASP:OD1	1:B:468:MSE:N	2.50	0.45
1:A:571:ILE:HD12	1:A:571:ILE:N	2.32	0.44
1:A:578:GLU:OE2	1:A:578:GLU:HA	2.17	0.44
1:A:282:GLY:O	1:A:313:HIS:HB2	2.17	0.44
1:A:409:ILE:HG13	1:A:704:CYS:CA	2.47	0.44
1:A:453:ILE:HD11	1:A:715:ILE:HG23	1.99	0.44
1:A:623:ASP:OD1	1:A:625:ASN:ND2	2.51	0.44
1:B:535:THR:HA	1:B:580:ALA:CB	2.47	0.44
1:A:124:LEU:HD22	1:A:183:GLU:HG2	1.99	0.44
1:B:557:LEU:CD2	1:B:605:LEU:HD11	2.47	0.44
1:B:14:LYS:HE3	6:B:898:HOH:O	2.17	0.44
1:B:582:ARG:HG2	1:B:582:ARG:HH21	1.82	0.44
1:A:647:LYS:HA	1:A:685:ILE:HG12	2.00	0.44
1:A:665:GLY:HA3	1:A:701:ASN:HD21	1.82	0.44
1:B:65:ASP:OD1	1:B:67:VAL:HB	2.18	0.44
1:A:288:VAL:CG2	1:A:289:ASP:N	2.81	0.44
1:A:484:ASN:HB3	6:A:792:HOH:O	2.18	0.44
1:B:239:TYR:HB2	1:B:263:ASN:ND2	2.32	0.44
1:B:281:ASN:HA	1:B:308:SER:OG	2.17	0.44
1:B:557:LEU:HD23	1:B:605:LEU:HD11	1.98	0.44
1:A:337:GLU:O	1:A:341:GLU:HG3	2.17	0.43
1:B:185:PHE:CD1	1:B:227:LEU:HD21	2.53	0.43
1:A:43:MSE:HA	1:A:46:VAL:CG2	2.48	0.43
1:A:251:HIS:HA	1:A:276:VAL:CG1	2.41	0.43
1:B:139:LYS:HB2	1:B:139:LYS:HZ3	1.82	0.43
1:B:390:GLU:O	1:B:394:ILE:HG12	2.19	0.43
1:A:63:TYR:CD2	1:A:87:LEU:HD21	2.51	0.43
1:A:111:HIS:HB2	1:A:490:TYR:HB3	2.00	0.43
1:B:230:PHE:HA	1:B:251:HIS:HB3	2.00	0.43
1:B:417:GLU:OE2	1:B:438:PHE:CE1	2.71	0.43
1:B:443:ILE:O	1:B:447:ILE:HG12	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:646:SER:O	1:B:647:LYS:HB2	2.19	0.43
1:B:381:SER:C	1:B:608:ASN:HD22	2.19	0.43
1:A:483:GLN:O	1:A:496:ARG:NH1	2.46	0.43
1:B:91:PHE:O	1:B:95:ARG:HG2	2.19	0.43
1:B:296:LEU:HD12	1:B:299:LYS:HE2	2.01	0.43
1:A:668:VAL:CG2	1:A:682:MSE:HE2	2.49	0.43
1:B:537:MSE:HG3	1:B:555:ILE:CD1	2.49	0.43
1:A:11:ILE:HA	1:A:17:PHE:HB3	2.00	0.42
1:A:379:GLU:C	1:A:381:SER:H	2.22	0.42
1:B:315:PRO:HD3	1:B:541:TYR:OH	2.19	0.42
1:A:56:ILE:HG22	1:A:143:THR:HG22	2.00	0.42
1:A:338:LYS:HD3	1:A:338:LYS:HA	1.83	0.42
1:A:560:ASN:HD21	1:A:564:LYS:HE2	1.83	0.42
1:B:205:CYS:O	1:B:237:SER:HB3	2.19	0.42
1:B:370:ALA:HB3	1:B:503:THR:HG21	2.01	0.42
1:A:233:TYR:O	1:A:234:ASP:HB2	2.20	0.42
1:A:368:LEU:HD12	1:A:368:LEU:N	2.35	0.42
1:A:497:PRO:HG2	1:A:541:TYR:CE2	2.54	0.42
1:A:719:ARG:HG2	1:A:719:ARG:HH11	1.84	0.42
1:B:11:ILE:HA	1:B:17:PHE:CB	2.50	0.42
1:B:68:LEU:HG	1:B:90:TYR:CE2	2.55	0.42
1:B:334:PHE:O	1:B:338:LYS:HG2	2.19	0.42
1:B:669:TRP:HB2	1:B:682:MSE:HE2	2.02	0.42
1:A:317:THR:CG2	1:A:336:LYS:HE2	2.48	0.42
1:A:724:LEU:C	1:A:724:LEU:HD13	2.40	0.42
1:B:78:PRO:HB2	1:B:81:PHE:CE1	2.54	0.42
1:B:185:PHE:CE1	1:B:227:LEU:HD21	2.53	0.42
1:B:315:PRO:HB3	1:B:485:GLY:HA2	2.01	0.42
1:A:486:TRP:CD2	1:A:496:ARG:HG3	2.54	0.42
1:A:647:LYS:HZ3	1:B:691:ARG:HD3	1.85	0.42
1:A:317:THR:HG22	1:A:318:LEU:N	2.34	0.42
1:A:341:GLU:HA	1:A:344:MSE:HE3	2.02	0.42
1:A:665:GLY:HA2	1:A:699:TRP:HB2	2.01	0.42
1:B:137:LYS:C	1:B:139:LYS:H	2.23	0.42
1:B:685:ILE:O	1:B:689:VAL:HG13	2.20	0.42
1:A:310:PRO:HB3	1:A:312:PHE:CE1	2.55	0.42
1:B:467:ASP:OD1	1:B:467:ASP:C	2.58	0.42
1:B:581:PHE:HB3	1:B:621:TYR:OH	2.19	0.42
1:A:31:GLU:O	1:A:35:GLU:HG2	2.20	0.41
1:A:247:VAL:HA	6:A:943:HOH:O	2.19	0.41
1:A:364:PHE:O	1:A:365:ALA:C	2.57	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:128:LYS:N	1:A:129:PRO:CD	2.83	0.41
1:A:283:ARG:HG2	1:A:309:CYS:SG	2.60	0.41
1:A:489:SER:O	1:A:490:TYR:HB3	2.20	0.41
1:B:475:LYS:HD2	1:B:510:MSE:HB3	2.01	0.41
1:B:515:ILE:CG2	1:B:516:THR:N	2.83	0.41
1:A:289:ASP:C	1:A:291:ARG:H	2.23	0.41
1:B:286:TRP:HD1	1:B:544:GLU:OE2	2.04	0.41
1:A:225:PHE:HB2	1:A:227:LEU:HD13	2.03	0.41
1:B:406:THR:HA	1:B:700:ILE:O	2.20	0.41
1:B:581:PHE:CE2	1:B:631:ILE:HD13	2.55	0.41
1:B:582:ARG:HG2	1:B:582:ARG:NH2	2.36	0.41
1:A:293:VAL:CG1	1:A:345:LEU:HD11	2.51	0.41
1:A:431:SER:OG	1:A:434:GLU:HG3	2.21	0.41
1:A:453:ILE:HG22	1:A:722:VAL:HG21	2.02	0.41
1:B:69:ASP:HB3	1:B:128:LYS:NZ	2.36	0.41
1:B:253:ASP:C	1:B:253:ASP:OD1	2.59	0.41
1:A:217:ASN:O	1:A:221:GLU:HG3	2.21	0.41
1:A:399:LEU:O	1:A:400:ASN:HB2	2.20	0.41
1:A:450:GLN:CB	1:A:458:LEU:HD22	2.49	0.41
1:B:537:MSE:HE1	1:B:548:GLU:HG2	2.03	0.41
1:A:514:GLU:CD	1:A:514:GLU:H	2.24	0.41
1:B:701:ASN:HB2	1:B:702:PRO:CD	2.51	0.41
1:A:56:ILE:HD12	1:A:56:ILE:N	2.35	0.41
1:A:345:LEU:O	1:A:349:LEU:HB2	2.21	0.41
1:B:245:LEU:HD12	1:B:245:LEU:HA	1.94	0.41
1:B:515:ILE:HD12	1:B:571:ILE:CD1	2.51	0.41
1:A:553:TYR:O	1:A:557:LEU:HD23	2.20	0.41
1:B:665:GLY:HA2	1:B:699:TRP:HB2	2.03	0.41
1:A:683:ARG:HD2	1:A:687:GLU:CD	2.42	0.40
1:B:278:GLY:HA2	1:B:306:SER:O	2.21	0.40
1:B:339:LEU:HD12	1:B:339:LEU:HA	1.93	0.40
1:B:497:PRO:HA	1:B:498:PRO:HD3	1.94	0.40
1:B:667:GLY:HA2	1:B:701:ASN:O	2.21	0.40
1:A:440:LYS:HG2	1:A:517:TYR:CD2	2.57	0.40
1:A:314:LEU:HA	1:A:541:TYR:OH	2.20	0.40
1:A:589:LYS:O	1:B:168:ASN:HB3	2.21	0.40
1:B:534:VAL:CG1	1:B:584:LYS:HD3	2.49	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	716/766 (94%)	673 (94%)	39 (5%)	4 (1%)	25	26
1	B	704/766 (92%)	667 (95%)	34 (5%)	3 (0%)	34	37
All	All	1420/1532 (93%)	1340 (94%)	73 (5%)	7 (0%)	29	31

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	365	ALA
1	B	289	ASP
1	B	420	LYS
1	A	64	TYR
1	A	380	ASP
1	B	64	TYR
1	A	385	GLU

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	576/670 (86%)	560 (97%)	16 (3%)	43	56
1	B	565/670 (84%)	543 (96%)	22 (4%)	32	41
All	All	1141/1340 (85%)	1103 (97%)	38 (3%)	38	49

All (38) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	263	ASN
1	A	272	ASP
1	A	273	LYS
1	A	285	PRO
1	A	324	LEU
1	A	349	LEU
1	A	372	GLU
1	A	403	LEU
1	A	421	MSE
1	A	488	LEU
1	A	612	GLU
1	A	628	ILE
1	A	638	VAL
1	A	706	LEU
1	A	718	LEU
1	A	728	MSE
1	B	46	VAL
1	B	132	ASP
1	B	137	LYS
1	B	139	LYS
1	B	154	LEU
1	B	250	LEU
1	B	285	PRO
1	B	312	PHE
1	B	339	LEU
1	B	395	GLN
1	B	398	ARG
1	B	417	GLU
1	B	476	LEU
1	B	488	LEU
1	B	515	ILE
1	B	545	ASP
1	B	557	LEU
1	B	638	VAL
1	B	687	GLU
1	B	690	LEU
1	B	709	ARG
1	B	718	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	111	HIS

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Mol	Chain	Res	Type
1	A	263	ASN
1	A	560	ASN
1	A	601	ASN
1	A	701	ASN
1	B	111	HIS
1	B	263	ASN
1	B	477	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 8 ligands modelled in this entry, 2 are monoatomic - leaving 6 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	$\#|Z| > 2$
4	HCS	A	1050	-	6,7,7	0.91	0	7,8,8	0.93	0
5	MRY	A	1053	-	7,7,7	0.29	0	8,8,8	0.40	0
5	MRY	B	1054	-	7,7,7	0.30	0	8,8,8	0.44	0
2	SO4	A	1048	-	4,4,4	0.29	0	6,6,6	0.12	0
4	HCS	A	1049	-	6,7,7	0.93	0	7,8,8	0.84	0
2	SO4	B	1047	-	4,4,4	0.17	0	6,6,6	0.18	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
5	MRY	B	1054	-	-	0/8/8/8	-
5	MRY	A	1053	-	-	0/8/8/8	-
4	HCS	A	1049	-	-	0/7/7/7	-
4	HCS	A	1050	-	-	0/7/7/7	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	B	1054	MRY	1	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 ⓘ

6.1 Protein, DNA and RNA chains ⓘ

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	705/766 (92%)	-0.51	0	100	100	9, 25, 42, 58	0
1	B	695/766 (90%)	-0.54	1 (0%)	95	95	7, 25, 39, 56	0
All	All	1400/1532 (91%)	-0.52	1 (0%)	95	95	7, 25, 41, 58	0

All (1) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	67	VAL	2.8

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

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

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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
5	MRY	B	1054	8/8	0.95	0.20	27,33,36,39	0
5	MRY	A	1053	8/8	0.96	0.14	25,26,27,28	0
4	HCS	A	1049	8/8	0.97	0.09	11,15,21,25	0
4	HCS	A	1050	8/8	0.97	0.10	15,21,25,28	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	SO4	A	1048	5/5	0.99	0.08	24,26,30,30	0
2	SO4	B	1047	5/5	0.99	0.09	25,26,27,29	0
3	ZN	A	1051	1/1	0.99	0.08	27,27,27,27	0
3	ZN	B	1052	1/1	0.99	0.07	30,30,30,30	0

6.5 Other polymers ⓘ

There are no such residues in this entry.