Full wwPDB X-ray Structure Validation Report ⓘ

Oct 10, 2022 – 04:47 pm BST

PDB ID	:	7ZUP
Title	:	Human PRMT5:MEP50 structure with Fragment (Example 18) and MTA Bound
Authors	:	Ahmad, M.U.; Koelmel, W.; Arkhipova, V.; Lawson, J.D.; Smith, C.R.; Gunn, R.J.
Deposited on	:	2022-05-12
Resolution	:	2.01 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:

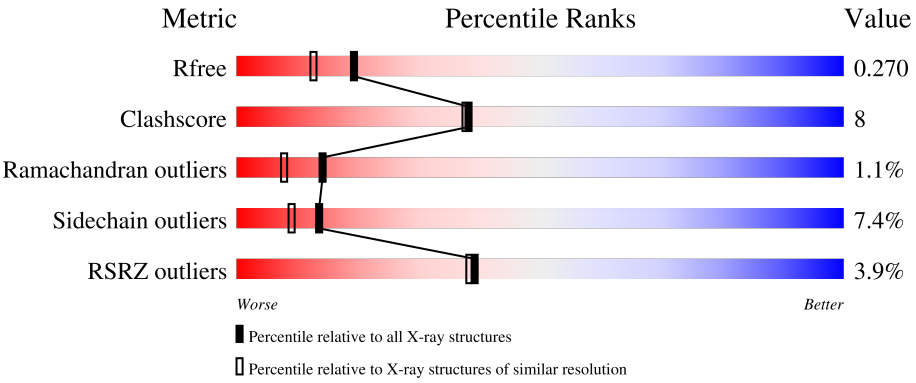
MolProbity	:	4.02b-467
Mogul	:	FAILED
Xtriage (Phenix)	:	1.13
EDS	:	2.31.2
buster-report	:	FAILED
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0267
CCP4	:	7.1.010 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.01 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}	130704	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)
RSRZ outliers	127900	7900 (2.00-2.00)

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	645	2% 77% 16%
2	B	350	6% 66% 21% 11%

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 7691 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 Protein arginine N-methyltransferase 5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	625	Total	C	N	O	S	0	3	0
			5085	3251	873	936	25			

There are 9 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-7	MET	-	initiating methionine	UNP O14744
A	-6	ASP	-	expression tag	UNP O14744
A	-5	TYR	-	expression tag	UNP O14744
A	-4	LYS	-	expression tag	UNP O14744
A	-3	ASP	-	expression tag	UNP O14744
A	-2	ASP	-	expression tag	UNP O14744
A	-1	ASP	-	expression tag	UNP O14744
A	0	ASP	-	expression tag	UNP O14744
A	1	LYS	-	expression tag	UNP O14744

- Molecule 2 is a protein called Methylosome protein 50.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	310	Total	C	N	O	S	0	1	0
			2345	1471	401	458	15			

There are 9 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-7	MET	-	initiating methionine	UNP Q9BQA1
B	-6	HIS	-	expression tag	UNP Q9BQA1
B	-5	HIS	-	expression tag	UNP Q9BQA1
B	-4	HIS	-	expression tag	UNP Q9BQA1
B	-3	HIS	-	expression tag	UNP Q9BQA1
B	-2	HIS	-	expression tag	UNP Q9BQA1
B	-1	HIS	-	expression tag	UNP Q9BQA1

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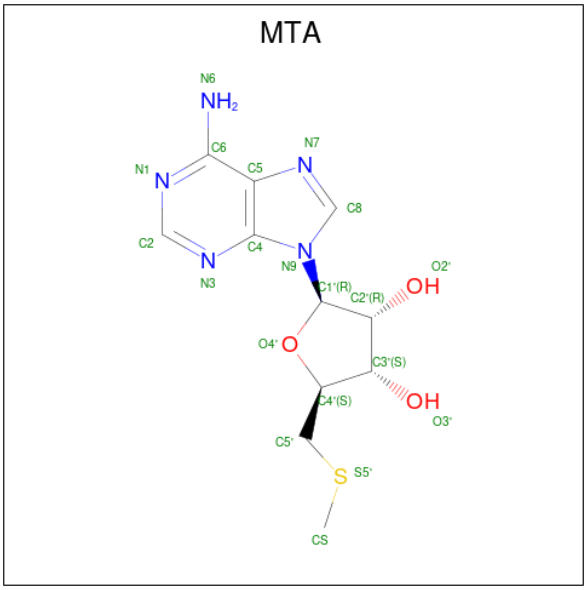
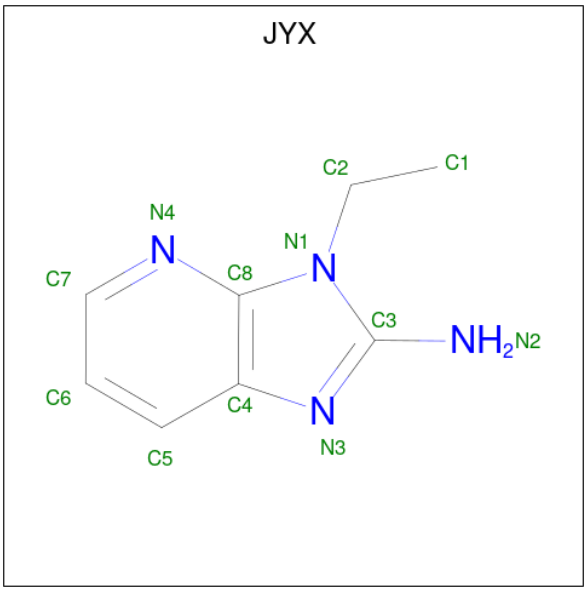
Chain	Residue	Modelled	Actual	Comment	Reference
B	0	HIS	-	expression tag	UNP Q9BQA1
B	1	HIS	-	expression tag	UNP Q9BQA1

- Molecule 3 is 5'-DEOXY-5'-METHYLTHIOADENOSINE (three-letter code: MTA) (formula: $C_{11}H_{15}N_5O_3S$) (labeled as "Ligand of Interest" by depositor).



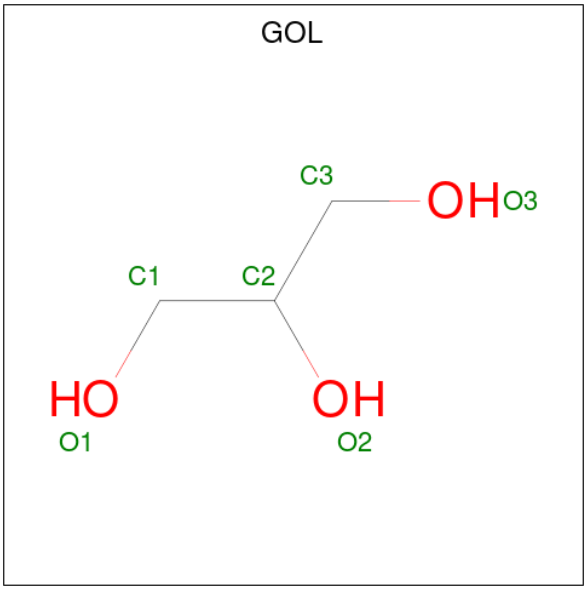
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	S	0	0
			20	11	5	3	1		

- Molecule 4 is 3-ethylimidazo[4,5-b]pyridin-2-amine (three-letter code: JYX) (formula: $C_8H_{10}N_4$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C N 12 8 4	0	0

- Molecule 5 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



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

- Molecule 6 is water.

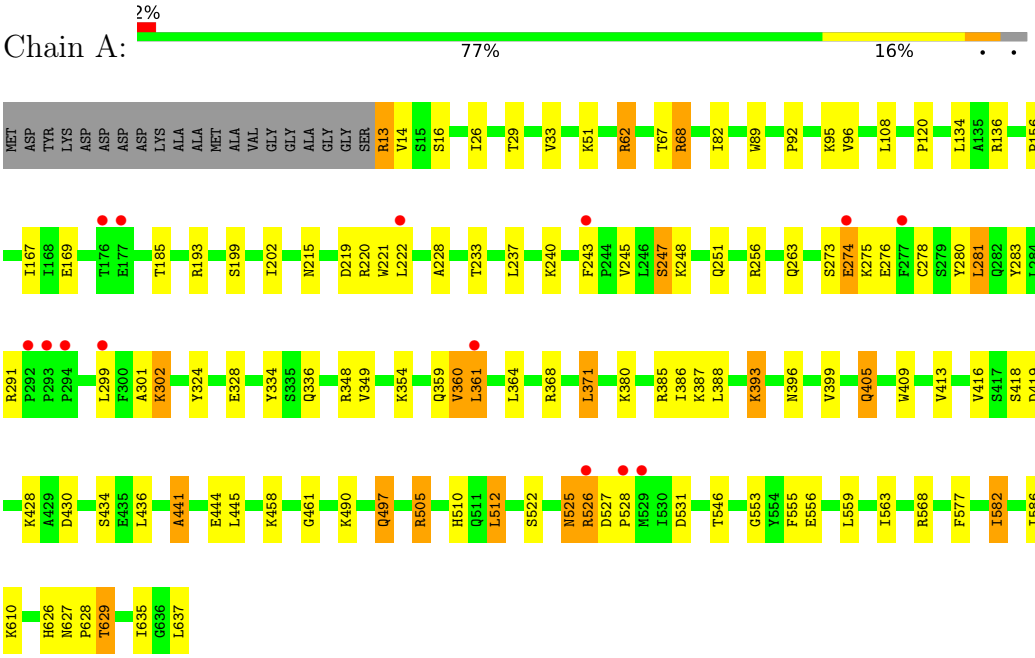
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	182	Total O 182 182	0	0
6	B	35	Total O 35 35	0	0

3 Residue-property plots (i)

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.

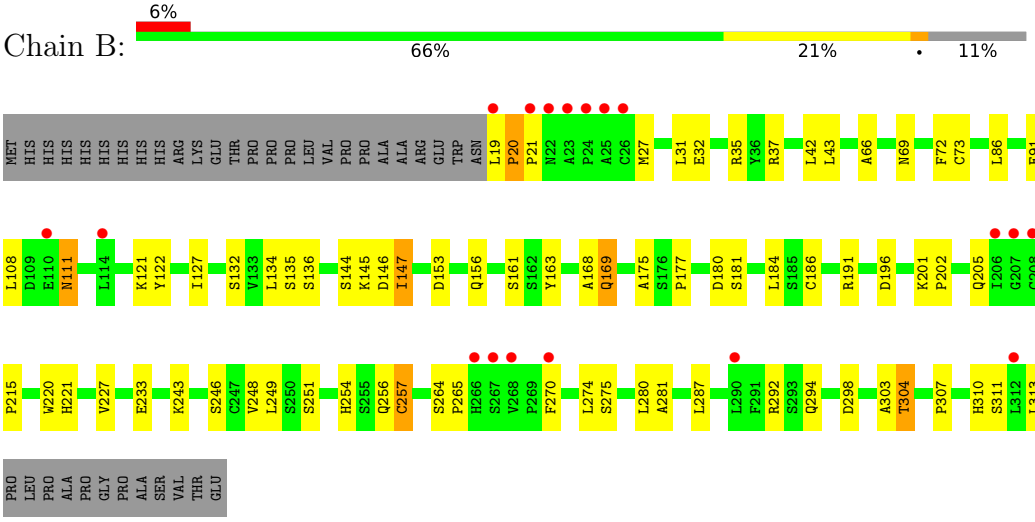
• Molecule 1: Protein arginine N-methyltransferase 5

Chain A:



• Molecule 2: Methylosome protein 50

Chain B:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, α, β, γ	104.28Å 138.65Å 178.87Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	109.59 – 2.01 109.59 – 2.01	Depositor EDS
% Data completeness (in resolution range)	46.2 (109.59-2.01) 46.2 (109.59-2.01)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.07 (at 2.02Å)	Xtriage
Refinement program	REFMAC 5.8.0238	Depositor
R, R_{free}	0.219 , 0.271 0.223 , 0.270	Depositor DCC
R_{free} test set	1957 reflections (4.93%)	wwPDB-VP
Wilson B-factor (Å^2)	33.0	Xtriage
Anisotropy	0.120	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	(Not available) , (Not available)	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	7691	wwPDB-VP
Average B, all atoms (Å^2)	33.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.23% of the height of the origin peak. No significant pseudotranslation is detected.*

[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: MTA, JYX, GOL

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	0.65	0/5227	0.84	3/7111 (0.0%)
2	B	0.72	0/2402	0.83	0/3283
All	All	0.67	0/7629	0.84	3/10394 (0.0%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	607	ASN	CB-CA-C	-5.88	98.65	110.40
1	A	497	GLN	CB-CA-C	-5.55	99.30	110.40
1	A	62	ARG	NE-CZ-NH1	-5.31	117.64	120.30

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	5085	0	4970	78	0
2	B	2345	0	2260	37	0
3	A	20	0	15	0	0
4	A	12	0	0	1	0
5	A	6	0	8	0	0
5	B	6	0	8	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	A	182	0	0	3	0
6	B	35	0	0	3	0
All	All	7691	0	7261	112	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 8.

All (112) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:35:ARG:HA	2:B:304:THR:HG21	1.66	0.77
2:B:135:SER:HB3	2:B:177:PRO:O	1.88	0.73
1:A:219:ASP:O	1:A:222:LEU:HG	1.89	0.73
1:A:324:TYR:CB	1:A:368:ARG:HD2	2.20	0.71
1:A:276:GLU:HB3	1:A:278:CYS:SG	2.32	0.70
2:B:153:ASP:OD2	2:B:156:GLN:HB2	1.92	0.69
1:A:421:ARG:HH12	1:A:637:LEU:C	1.97	0.68
1:A:607:ASN:HB2	1:A:609:LYS:H	1.61	0.64
1:A:405:GLN:NE2	1:A:413:VAL:O	2.29	0.64
1:A:16:SER:OG	1:A:281:LEU:HD21	1.98	0.63
1:A:96:VAL:HG21	2:B:233:GLU:HG3	1.81	0.62
1:A:348:ARG:HE	1:A:359:GLN:HE22	1.50	0.60
1:A:430:ASP:OD1	1:A:458:LYS:NZ	2.32	0.60
2:B:27:MET:HE3	2:B:31:LEU:HD21	1.84	0.59
1:A:336:GLN:NE2	1:A:563:ILE:HG23	2.17	0.59
1:A:228:ALA:HA	1:A:263:GLN:O	2.03	0.59
1:A:248:LYS:HA	1:A:251:GLN:HE21	1.67	0.59
2:B:221:HIS:HB2	2:B:227:VAL:HG23	1.85	0.59
1:A:222:LEU:HD12	1:A:510:HIS:CD2	2.38	0.58
1:A:416:VAL:HG21	1:A:423:TRP:CZ2	2.38	0.58
1:A:243:PHE:CD1	1:A:275:LYS:HE2	2.39	0.58
1:A:324:TYR:HB2	1:A:368:ARG:HD2	1.85	0.57
1:A:62:ARG:HD3	2:B:298:ASP:OD2	2.05	0.57
1:A:29:THR:O	1:A:33:VAL:HG13	2.05	0.57
2:B:303:ALA:HB1	2:B:313:LEU:HD11	1.85	0.56
2:B:145:LYS:HA	2:B:169:GLN:HB3	1.89	0.55
2:B:233:GLU:HA	2:B:257:CYS:HB2	1.88	0.55
1:A:273:SER:C	1:A:275:LYS:H	2.11	0.54
1:A:51:LYS:O	1:A:62:ARG:NH1	2.33	0.54
2:B:66:ALA:HB1	2:B:72:PHE:HB3	1.89	0.54
1:A:92:PRO:HG2	1:A:134:LEU:HD12	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:281:ALA:HB2	2:B:292:ARG:NH1	2.23	0.54
1:A:324:TYR:HB3	1:A:368:ARG:HD2	1.90	0.54
1:A:444:GLU:O	1:A:445:LEU:HB2	2.08	0.53
1:A:328:GLU:OE2	1:A:368:ARG:HD3	2.08	0.53
1:A:441:ALA:HB2	1:A:555:PHE:HB2	1.90	0.53
1:A:67:THR:OG1	1:A:68:ARG:N	2.42	0.53
1:A:334:TYR:HE1	1:A:371:LEU:HD13	1.72	0.53
2:B:37:ARG:O	2:B:307:PRO:HG3	2.09	0.53
2:B:102:ALA:HB2	2:B:122:TYR:CD1	2.43	0.52
2:B:265:PRO:HB2	2:B:310:HIS:CE1	2.45	0.52
2:B:201:LYS:O	6:B:501:HOH:O	2.19	0.52
2:B:102:ALA:HA	2:B:121:LYS:O	2.10	0.52
2:B:181:SER:O	2:B:196:ASP:HA	2.10	0.52
2:B:191:ARG:HG2	2:B:205:GLN:NE2	2.24	0.52
1:A:283:TYR:O	1:A:286:TYR:HB3	2.10	0.51
1:A:434:SER:HB2	1:A:436:LEU:HG	1.93	0.51
1:A:245:VAL:HG12	1:A:283:TYR:CE1	2.45	0.51
1:A:361:LEU:O	1:A:388:LEU:HA	2.11	0.51
1:A:419:ASP:OD1	1:A:421:ARG:HD3	2.12	0.50
2:B:32:GLU:OE1	6:B:502:HOH:O	2.19	0.50
2:B:144:SER:HB3	2:B:146:ASP:OD1	2.12	0.50
1:A:386:ILE:HG13	1:A:386:ILE:O	2.11	0.50
2:B:35:ARG:HA	2:B:304:THR:CG2	2.41	0.49
1:A:290:ASN:HD22	1:A:290:ASN:N	2.11	0.49
1:A:512:LEU:HG	1:A:546:THR:HG21	1.93	0.49
1:A:556:GLU:OE2	1:A:568:ARG:HD3	2.12	0.49
1:A:607:ASN:HD22	1:A:610:LYS:HG2	1.78	0.48
1:A:458:LYS:O	1:A:461:GLY:N	2.43	0.48
2:B:35:ARG:NH1	2:B:86:LEU:O	2.46	0.48
1:A:334:TYR:CE1	1:A:371:LEU:HD13	2.48	0.47
1:A:158:VAL:HG11	1:A:163:LEU:HD13	1.96	0.47
1:A:627:ASN:N	1:A:628:PRO:CD	2.78	0.47
1:A:396:ASN:O	1:A:399:VAL:HB	2.15	0.47
1:A:222:LEU:HD12	1:A:510:HIS:CG	2.51	0.46
1:A:185:THR:HG23	1:A:221:TRP:HZ2	1.80	0.46
1:A:364:LEU:HB3	1:A:420:MET:CE	2.44	0.46
1:A:82:ILE:O	1:A:120:PRO:HD2	2.15	0.46
1:A:199:SER:HB3	1:A:202:ILE:HD12	1.98	0.46
1:A:301:ALA:HB1	1:A:505:ARG:HG3	1.98	0.45
1:A:243:PHE:CD1	1:A:275:LYS:CE	3.00	0.45
1:A:444:GLU:OE2	4:A:702:JYX:N3	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:26:ILE:HG22	6:B:517:HOH:O	2.17	0.44
1:A:302:LYS:HA	1:A:302:LYS:HD2	1.77	0.44
2:B:69:ASN:OD1	2:B:69:ASN:C	2.56	0.44
2:B:280:LEU:O	2:B:292:ARG:HA	2.17	0.44
1:A:247:SER:O	1:A:251:GLN:HG3	2.18	0.44
2:B:161:SER:HB3	2:B:163:TYR:CZ	2.52	0.44
1:A:531:ASP:C	1:A:531:ASP:OD1	2.55	0.44
2:B:86:LEU:HD12	2:B:86:LEU:HA	1.75	0.44
1:A:215[B]:ASN:O	1:A:215[B]:ASN:ND2	2.51	0.44
1:A:607:ASN:ND2	1:A:610:LYS:HG2	2.33	0.43
1:A:586:ILE:HA	1:A:626:HIS:NE2	2.33	0.43
1:A:609:LYS:O	1:A:637:LEU:HB2	2.18	0.43
1:A:553:GLY:HA3	1:A:582:ILE:HG22	2.00	0.43
1:A:371:LEU:HB2	6:A:811:HOH:O	2.19	0.43
1:A:156:PRO:O	1:A:185:THR:HG21	2.18	0.43
1:A:405:GLN:HA	1:A:409:TRP:HB2	2.00	0.43
1:A:628:PRO:O	1:A:629:THR:HB	2.17	0.43
2:B:20:PRO:HB3	2:B:21:PRO:HD2	2.01	0.43
1:A:51:LYS:HG2	1:A:89:TRP:CD2	2.53	0.43
1:A:393:LYS:HD3	6:A:898:HOH:O	2.19	0.43
2:B:264:SER:OG	2:B:270:PHE:N	2.46	0.43
1:A:526:ARG:HA	6:A:966:HOH:O	2.19	0.43
1:A:233:THR:HG22	1:A:280:TYR:CZ	2.54	0.42
1:A:348:ARG:HE	1:A:359:GLN:NE2	2.15	0.42
1:A:360:VAL:HG11	1:A:428:LYS:O	2.20	0.42
1:A:525:ASN:C	1:A:525:ASN:HD22	2.23	0.42
2:B:254:HIS:CG	2:B:275:SER:HB2	2.55	0.41
2:B:184:LEU:HG	2:B:220:TRP:CZ2	2.55	0.41
1:A:167:ILE:HB	2:B:202:PRO:HD2	2.01	0.41
1:A:409:TRP:HB3	1:A:413:VAL:HG23	2.02	0.41
1:A:445:LEU:HD13	1:A:635:ILE:HG21	2.02	0.41
1:A:629:THR:O	1:A:629:THR:CG2	2.69	0.41
2:B:111:ASN:OD1	2:B:111:ASN:N	2.46	0.41
1:A:13:ARG:HB2	1:A:14:VAL:H	1.70	0.41
2:B:42:LEU:HD12	2:B:43:LEU:N	2.36	0.40
2:B:134:LEU:HD23	2:B:175:ALA:HB1	2.03	0.40
1:A:215[B]:ASN:ND2	1:A:215[B]:ASN:C	2.75	0.40
2:B:147:ILE:HG23	2:B:168:ALA:O	2.22	0.40
2:B:186:CYS:HB2	2:B:215:PRO:HG2	2.04	0.40
1:A:371:LEU:HD12	1:A:371:LEU:HA	1.84	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	626/645 (97%)	579 (92%)	43 (7%)	4 (1%)	25 19
2	B	309/350 (88%)	292 (94%)	11 (4%)	6 (2%)	8 3
All	All	935/995 (94%)	871 (93%)	54 (6%)	10 (1%)	14 8

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	147	ILE
1	A	274	GLU
2	B	20	PRO
2	B	243	LYS
2	B	248	VAL
1	A	441	ALA
1	A	527	ASP
2	B	127	ILE
2	B	209	SER
1	A	528	PRO

5.3.2 Protein sidechains (i)

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	561/570 (98%)	518 (92%)	43 (8%)	13 8
2	B	264/298 (89%)	245 (93%)	19 (7%)	14 9
All	All	825/868 (95%)	763 (92%)	62 (8%)	13 9

All (62) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	13	ARG
1	A	68	ARG
1	A	95	LYS
1	A	108	LEU
1	A	136	ARG
1	A	163	LEU
1	A	169[A]	GLU
1	A	169[B]	GLU
1	A	193	ARG
1	A	220	ARG
1	A	237	LEU
1	A	240	LYS
1	A	247	SER
1	A	256	ARG
1	A	274	GLU
1	A	281	LEU
1	A	285	GLU
1	A	290	ASN
1	A	291	ARG
1	A	299	LEU
1	A	302	LYS
1	A	349	VAL
1	A	354	LYS
1	A	360	VAL
1	A	361	LEU
1	A	371	LEU
1	A	380	LYS
1	A	385	ARG
1	A	387	LYS
1	A	393	LYS
1	A	405	GLN
1	A	418	SER
1	A	490	LYS
1	A	497	GLN
1	A	505	ARG
1	A	512	LEU
1	A	522	SER
1	A	525	ASN
1	A	526	ARG
1	A	559	LEU
1	A	577	PHE
1	A	582	ILE

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Mol	Chain	Res	Type
1	A	629	THR
2	B	19	LEU
2	B	73	CYS
2	B	91	GLU
2	B	108	LEU
2	B	111	ASN
2	B	132	SER
2	B	136	SER
2	B	169	GLN
2	B	180	ASP
2	B	246	SER
2	B	249	LEU
2	B	251	SER
2	B	256	GLN
2	B	257	CYS
2	B	274	LEU
2	B	287	LEU
2	B	294	GLN
2	B	304	THR
2	B	311	SER

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	289	GLN
1	A	290	ASN
1	A	336	GLN
1	A	359	GLN
1	A	525	ASN
1	A	607	ASN
2	B	169	GLN
2	B	310	HIS

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

Mogul failed to run properly - this section is therefore empty.

5.5 Carbohydrates (i)

Mogul failed to run properly - this section is therefore empty.

5.6 Ligand geometry (i)

Mogul failed to run properly - this section is therefore empty.

5.7 Other polymers (i)

Mogul failed to run properly - this section is therefore empty.

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

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, 95^{th} 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	625/645 (96%)	0.26	14 (2%)	62 60	17, 26, 59, 90	0
2	B	310/350 (88%)	0.49	22 (7%)	16 15	23, 38, 63, 102	0
All	All	935/995 (93%)	0.34	36 (3%)	39 38	17, 30, 60, 102	0

All (36) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	209	SER	5.3
2	B	210	ALA	5.3
1	A	274	GLU	5.1
2	B	19	LEU	4.9
2	B	21	PRO	4.8
2	B	268	VAL	4.8
1	A	529	MET	4.4
2	B	26	CYS	4.3
1	A	177	GLU	4.2
1	A	277	PHE	3.8
1	A	176	THR	3.7
2	B	24	PRO	3.5
2	B	211	PRO	3.4
1	A	299	LEU	3.3
2	B	25	ALA	3.2
2	B	110	GLU	3.1
2	B	208	CYS	3.1
2	B	206	ILE	3.1
2	B	22	ASN	2.9
2	B	23	ALA	2.8
1	A	243	PHE	2.8
1	A	293	PRO	2.8
2	B	270	PHE	2.6
2	B	267	SER	2.6

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Mol	Chain	Res	Type	RSRZ
1	A	222	LEU	2.5
1	A	528	PRO	2.5
1	A	526	ARG	2.5
2	B	312	LEU	2.4
2	B	266	HIS	2.4
2	B	107	GLU	2.4
2	B	290	LEU	2.4
2	B	207	GLY	2.3
1	A	292	PRO	2.2
1	A	294	PRO	2.2
2	B	114	LEU	2.1
1	A	361	LEU	2.1

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 monosaccharides 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, 95^{th} 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	GOL	A	703	6/6	0.91	0.19	45,46,48,50	0
5	GOL	B	401	6/6	0.91	0.24	65,67,68,69	0
3	MTA	A	701	20/20	0.97	0.15	18,20,21,21	0
4	JYX	A	702	12/12	0.97	0.13	17,18,18,18	0

6.5 Other polymers (i)

There are no such residues in this entry.