



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 09:31 AM GMT

PDB ID : 3INJ
Title : Human Mitochondrial Aldehyde Dehydrogenase complexed with agonist Alda-1
Authors : Perez-Miller, S.; Hurley, T.D.
Deposited on : 2009-08-12
Resolution : 1.69 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
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.7 (RC4), CSD as536be (2015)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20026688
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac : 5.8.0135
CCP4 : 6.5.0
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk26865

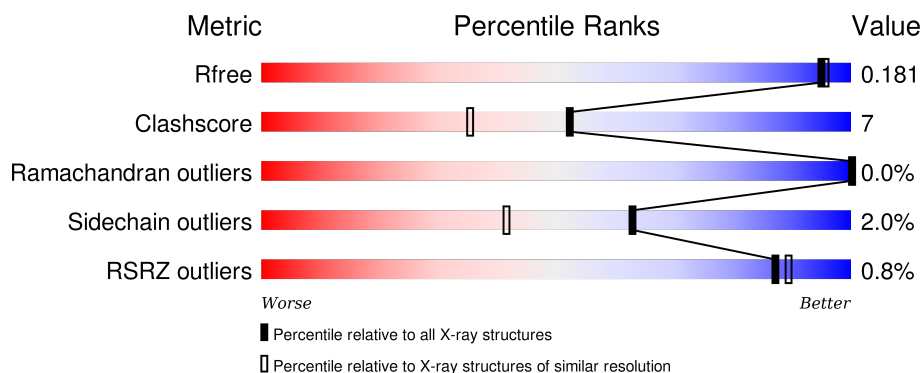
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.69 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.



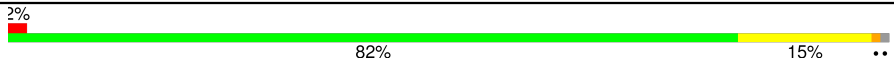


Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	91344	4802 (1.70-1.66)
Clashscore	102246	5317 (1.70-1.66)
Ramachandran outliers	100387	5225 (1.70-1.66)
Sidechain outliers	100360	5224 (1.70-1.66)
RSRZ outliers	91569	4813 (1.70-1.66)

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 on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. 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	500	<div> <div>85%</div> <div>13% ..</div> </div>
1	B	500	<div> <div>%</div> <div>86%</div> <div>12% ..</div> </div>
1	C	500	<div> <div>%</div> <div>82%</div> <div>16% ..</div> </div>
1	D	500	<div> <div>87%</div> <div>11% ..</div> </div>
1	E	500	<div> <div>%</div> <div>84%</div> <div>14% ..</div> </div>

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	F	500	
1	G	500	
1	H	500	

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
3	EDO	A	501	-	-	-	X
3	EDO	A	701	-	-	-	X
3	EDO	A	702	-	-	-	X
3	EDO	B	701	-	-	-	X
3	EDO	B	702	-	-	-	X
3	EDO	C	703	-	-	-	X
3	EDO	D	701	-	-	-	X
3	EDO	D	703	-	-	-	X
3	EDO	E	501	-	-	-	X
3	EDO	E	701	-	-	-	X
3	EDO	F	501	-	-	-	X
3	EDO	F	702	-	-	-	X
3	EDO	G	701	-	-	-	X
3	EDO	H	701	-	-	-	X
4	GAI	B	801	-	-	-	X
4	GAI	C	801	-	-	-	X
4	GAI	D	801	-	-	-	X
4	GAI	G	801	-	-	-	X
4	GAI	G	802	-	-	-	X
5	BXB	A	1001	-	-	-	X
5	BXB	B	1001	-	-	-	X
5	BXB	C	1001	-	-	-	X
5	BXB	D	1001	-	-	-	X
5	BXB	F	1001	-	-	-	X
5	BXB	G	1001	-	-	-	X
5	BXB	H	1001	-	-	-	X

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 34857 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 Aldehyde dehydrogenase, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	494	Total	C	N	O	S	0	5	0
			3820	2433	649	720	18			
1	B	494	Total	C	N	O	S	0	4	0
			3820	2430	651	719	20			
1	C	494	Total	C	N	O	S	0	7	0
			3841	2441	656	725	19			
1	D	494	Total	C	N	O	S	0	4	0
			3815	2429	649	717	20			
1	E	494	Total	C	N	O	S	0	5	0
			3825	2436	651	718	20			
1	F	494	Total	C	N	O	S	0	4	0
			3816	2427	648	721	20			
1	G	494	Total	C	N	O	S	0	5	0
			3825	2433	650	723	19			
1	H	495	Total	C	N	O	S	0	1	0
			3810	2422	650	719	19			

- Molecule 2 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	G	1	Total	Na	0	0
			1	1		
2	D	1	Total	Na	0	0
			1	1		
2	E	1	Total	Na	0	0
			1	1		
2	H	1	Total	Na	0	0
			1	1		
2	B	1	Total	Na	0	0
			1	1		
2	C	1	Total	Na	0	0
			1	1		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	Na	0	0
			1	1		
2	F	1	Total	Na	0	0
			1	1		

- Molecule 3 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: C₂H₆O₂).



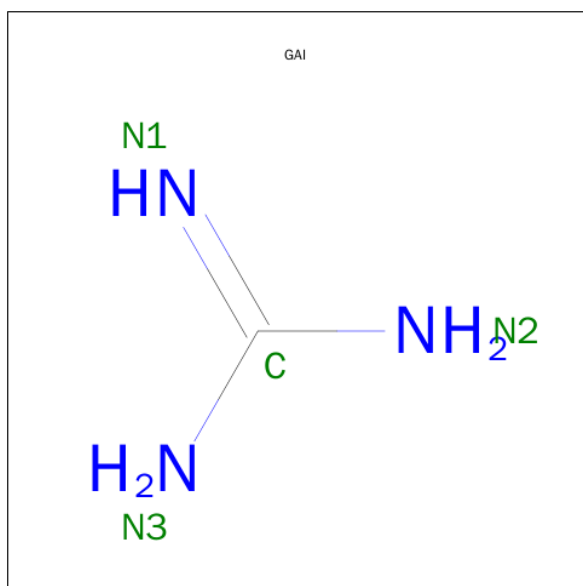
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			4	2	2		
3	A	1	Total	C	O	0	0
			4	2	2		
3	A	1	Total	C	O	0	0
			4	2	2		
3	B	1	Total	C	O	0	0
			4	2	2		
3	B	1	Total	C	O	0	0
			4	2	2		
3	B	1	Total	C	O	0	0
			4	2	2		
3	C	1	Total	C	O	0	0
			4	2	2		
3	D	1	Total	C	O	0	0
			4	2	2		
3	D	1	Total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

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	E	1	Total	C	O	0	0
			4	2	2		
3	E	1	Total	C	O	0	0
			4	2	2		
3	E	1	Total	C	O	0	0
			4	2	2		
3	F	1	Total	C	O	0	0
			4	2	2		
3	F	1	Total	C	O	0	0
			4	2	2		
3	G	1	Total	C	O	0	0
			4	2	2		
3	H	1	Total	C	O	0	0
			4	2	2		

- Molecule 4 is GUANIDINE (three-letter code: GAI) (formula: CH_5N_3).



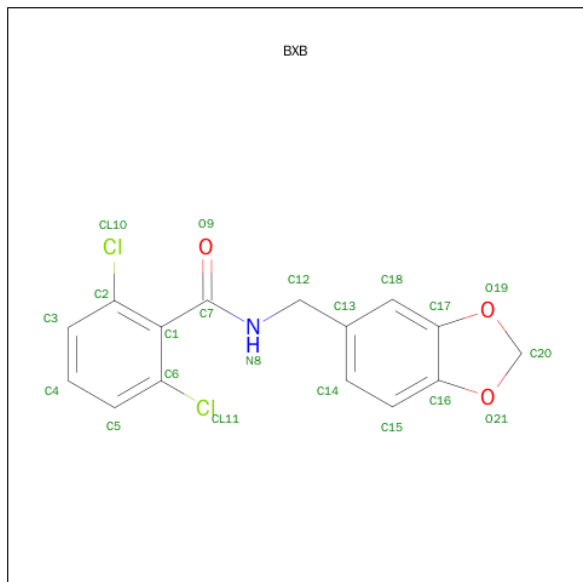
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	C	N	0	0
			4	1	3		
4	B	1	Total	C	N	0	0
			4	1	3		
4	C	1	Total	C	N	0	0
			4	1	3		
4	D	1	Total	C	N	0	0
			4	1	3		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	E	1	Total	C	N	0	0
			4	1	3		
4	F	1	Total	C	N	0	0
			4	1	3		
4	G	1	Total	C	N	0	0
			4	1	3		
4	G	1	Total	C	N	0	0
			4	1	3		
4	H	1	Total	C	N	0	0
			4	1	3		

- Molecule 5 is N-(1,3-BENZODIOXOL-5-YLMETHYL)-2,6-DICHLOROBENZAMIDE (three-letter code: BXB) (formula: C₁₅H₁₁Cl₂NO₃).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
5	A	1	Total	C	Cl	N	O	0	0
			21	15	2	1	3		
5	B	1	Total	C	Cl	N	O	0	0
			21	15	2	1	3		
5	C	1	Total	C	Cl	N	O	0	0
			21	15	2	1	3		
5	D	1	Total	C	Cl	N	O	0	0
			21	15	2	1	3		
5	E	1	Total	C	Cl	N	O	0	0
			21	15	2	1	3		
5	F	1	Total	C	Cl	N	O	0	0
			21	15	2	1	3		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
5	G	1	Total	C	Cl	N	O	0	0
			21	15	2	1	3		
5	H	1	Total	C	Cl	N	O	0	0
			21	15	2	1	3		

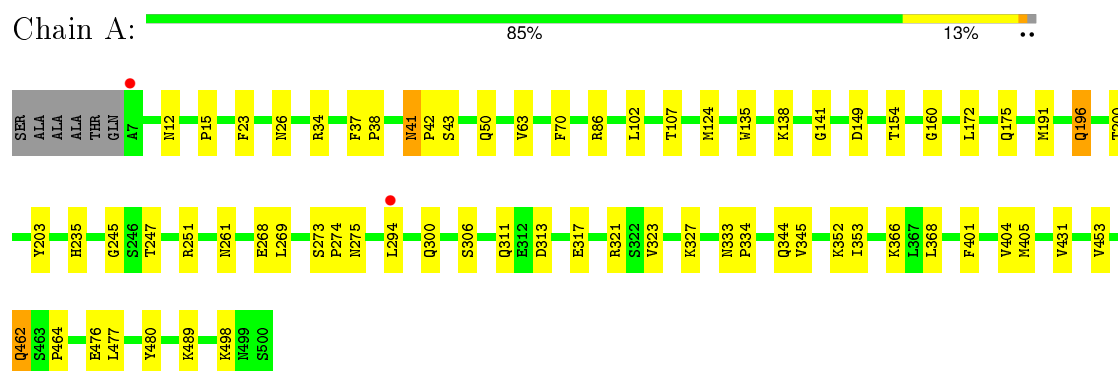
- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	529	Total	O	0	0
			529	529		
6	B	520	Total	O	0	0
			520	520		
6	C	494	Total	O	0	0
			494	494		
6	D	503	Total	O	0	0
			503	503		
6	E	497	Total	O	0	0
			497	497		
6	F	457	Total	O	0	0
			457	457		
6	G	479	Total	O	0	0
			479	479		
6	H	530	Total	O	0	0
			530	530		

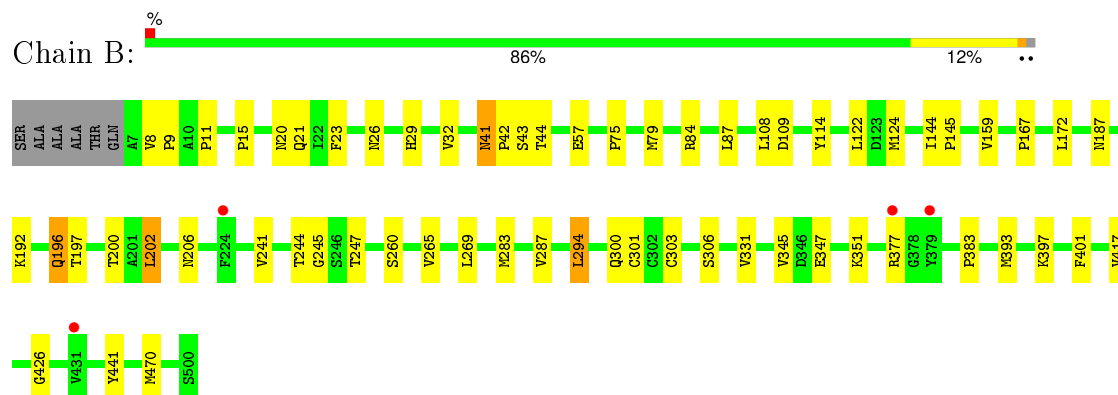
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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.

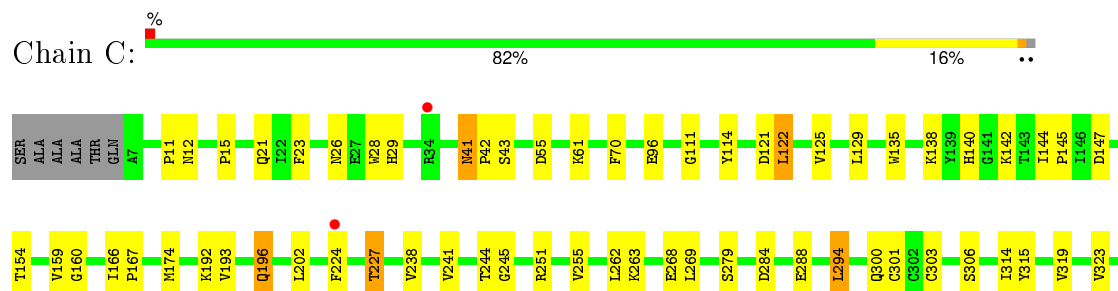
- Molecule 1: Aldehyde dehydrogenase, mitochondrial

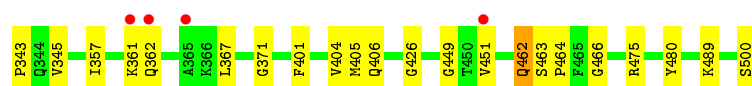


- Molecule 1: Aldehyde dehydrogenase, mitochondrial



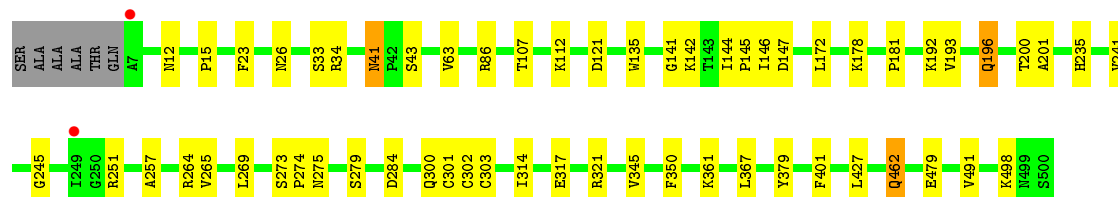
- Molecule 1: Aldehyde dehydrogenase, mitochondrial





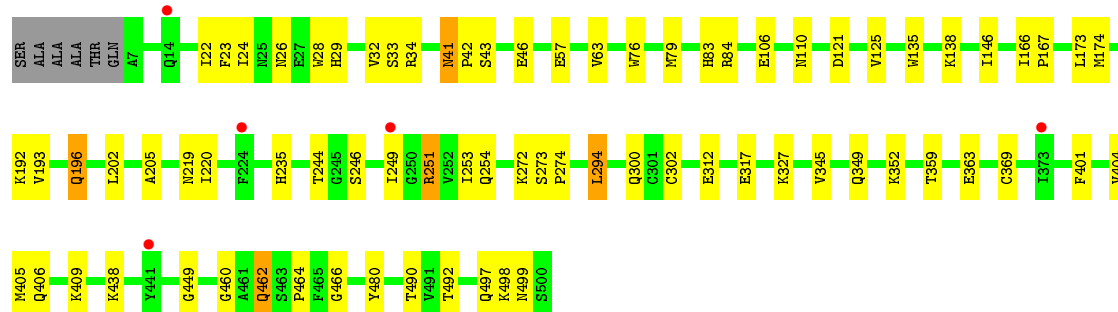
- Molecule 1: Aldehyde dehydrogenase, mitochondrial

Chain D: 87% 11% ..



- Molecule 1: Aldehyde dehydrogenase, mitochondrial

Chain E: 84% 14% ..



- Molecule 1: Aldehyde dehydrogenase, mitochondrial

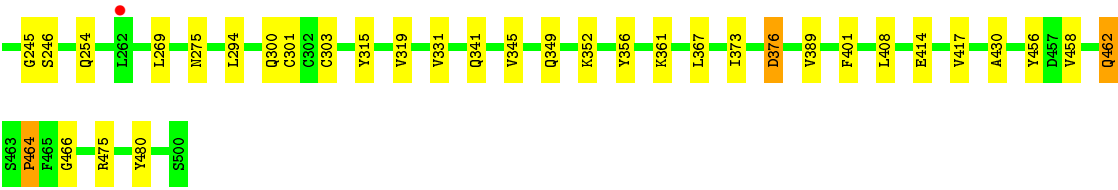
Chain F: 82% 15% ..



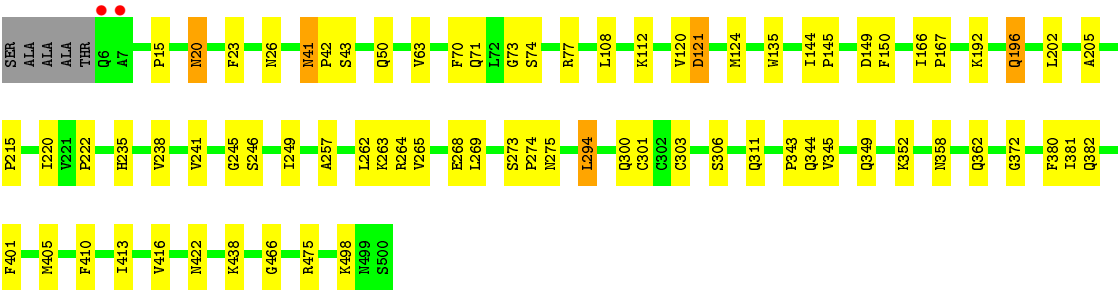
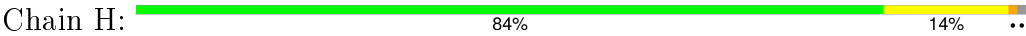
- Molecule 1: Aldehyde dehydrogenase, mitochondrial

Chain G: 86% 12% ..





- Molecule 1: Aldehyde dehydrogenase, mitochondrial



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	101.92Å 176.84Å 102.46Å 90.00° 94.52° 90.00°	Depositor
Resolution (Å)	46.36 – 1.69 46.36 – 1.69	Depositor EDS
% Data completeness (in resolution range)	90.1 (46.36-1.69) 91.8 (46.36-1.69)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.57 (at 1.69Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.4_4)	Depositor
R, R_{free}	0.179 , 0.200 0.179 , 0.181	Depositor DCC
R_{free} test set	18888 reflections (5.30%)	DCC
Wilson B-factor (Å ²)	15.6	Xtriage
Anisotropy	0.630	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 24.1	EDS
Estimated twinning fraction	0.278 for l,-k,h 0.289 for l,-k,h	Xtriage
Reported twinning fraction	0.278 for l,-k,h	Depositor
L-test for twinning ²	$\langle L \rangle = 0.43$, $\langle L^2 \rangle = 0.25$	Xtriage
Outliers	1 of 375479 reflections (0.000%)	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	34857	wwPDB-VP
Average B, all atoms (Å ²)	19.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.11% of the height of the origin peak. No significant pseudotranslation is detected.*

¹ Intensities estimated from amplitudes.

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

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: NA, BXB, EDO, GAI

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	0.31	0/3919	0.48	0/5318
1	B	0.31	0/3916	0.49	0/5311
1	C	0.31	0/3938	0.48	1/5342 (0.0%)
1	D	0.32	0/3911	0.47	0/5305
1	E	0.30	0/3921	0.48	1/5317 (0.0%)
1	F	0.31	0/3912	0.46	0/5307
1	G	0.31	0/3921	0.46	0/5320
1	H	0.32	0/3897	0.47	0/5287
All	All	0.31	0/31335	0.48	2/42507 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	122	LEU	CA-CB-CG	-5.82	101.91	115.30
1	E	294	LEU	CA-CB-CG	-5.03	103.74	115.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3820	0	3785	51	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	3820	0	3778	39	0
1	C	3841	0	3790	61	0
1	D	3815	0	3779	49	0
1	E	3825	0	3791	66	0
1	F	3816	0	3767	57	0
1	G	3825	0	3776	48	0
1	H	3810	0	3758	59	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
2	E	1	0	0	0	0
2	F	1	0	0	0	0
2	G	1	0	0	0	0
2	H	1	0	0	0	0
3	A	12	0	18	0	0
3	B	12	0	18	0	0
3	C	4	0	6	3	0
3	D	8	0	12	5	0
3	E	12	0	18	2	0
3	F	8	0	12	0	0
3	G	4	0	6	0	0
3	H	4	0	6	0	0
4	A	4	0	4	0	0
4	B	4	0	4	0	0
4	C	4	0	4	0	0
4	D	4	0	4	0	0
4	E	4	0	4	0	0
4	F	4	0	4	0	0
4	G	8	0	8	0	0
4	H	4	0	4	0	0
5	A	21	0	11	1	0
5	B	21	0	11	1	0
5	C	21	0	11	1	0
5	D	21	0	11	2	0
5	E	21	0	11	0	0
5	F	21	0	11	0	0
5	G	21	0	11	1	0
5	H	21	0	11	1	0
6	A	529	0	0	2	0
6	B	520	0	0	1	0
6	C	494	0	0	7	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	D	503	0	0	7	0
6	E	497	0	0	8	0
6	F	457	0	0	10	0
6	G	479	0	0	6	0
6	H	530	0	0	8	0
All	All	34857	0	30444	409	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 7.

All (409) 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:C:142:LYS:HG2	3:C:703:EDO:H22	1.45	0.98
1:E:196:GLN:H	1:E:196:GLN:HE21	1.14	0.94
1:E:302:CYS:HB2	3:E:701:EDO:O1	1.69	0.93
1:G:196:GLN:H	1:G:196:GLN:HE21	1.17	0.92
1:D:196:GLN:H	1:D:196:GLN:HE21	1.19	0.91
1:H:196:GLN:HE21	1:H:196:GLN:H	1.21	0.84
1:D:302[A]:CYS:SG	1:D:427:LEU:HD21	2.22	0.79
1:A:196:GLN:H	1:A:196:GLN:HE21	1.25	0.79
1:B:196:GLN:H	1:B:196:GLN:HE21	1.32	0.78
1:C:241:VAL:HG23	1:C:263:LYS:HD3	1.66	0.78
1:C:464:PRO:HG3	1:C:480:TYR:CD1	2.19	0.78
1:E:41:ASN:C	1:E:41:ASN:HD22	1.89	0.76
1:C:361:LYS:HD3	1:C:367:LEU:HD22	1.67	0.75
1:E:497:GLN:HE21	1:E:499:ASN:HD21	1.34	0.74
1:D:241:VAL:CG1	1:D:265:VAL:HG22	2.19	0.73
1:D:141:GLY:O	3:D:703:EDO:H12	1.89	0.73
1:D:302[A]:CYS:SG	3:D:701:EDO:O1	2.47	0.73
1:C:159:VAL:HB	6:C:3901:HOH:O	1.89	0.72
1:C:196:GLN:HE21	1:C:196:GLN:H	1.37	0.72
1:A:464:PRO:HG3	1:A:480:TYR:CD1	2.26	0.71
1:G:464:PRO:HG3	1:G:480:TYR:CD1	2.26	0.71
1:A:196:GLN:H	1:A:196:GLN:NE2	1.89	0.70
1:A:247:THR:HA	1:A:269:LEU:HD13	1.73	0.70
1:E:404:VAL:HG12	1:E:406:GLN:HE22	1.54	0.70
1:G:166:ILE:HD11	1:G:193:VAL:HG12	1.74	0.70
1:E:312:GLU:HB2	1:E:409[B]:LYS:HE2	1.73	0.70
1:A:366:LYS:HG2	1:A:368:LEU:HD21	1.74	0.69
1:B:300:GLN:HE22	1:B:345:VAL:H	1.42	0.68

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:142:LYS:HG2	3:D:703:EDO:H22	1.76	0.67
1:A:41:ASN:ND2	1:A:43:SER:H	1.93	0.67
1:E:41:ASN:HD22	1:E:42:PRO:N	1.93	0.67
1:E:196:GLN:H	1:E:196:GLN:NE2	1.92	0.67
1:E:41:ASN:ND2	1:E:43:SER:H	1.93	0.67
1:H:311:GLN:HG3	6:H:3831:HOH:O	1.93	0.66
1:E:294:LEU:HD22	1:E:405:MET:HB2	1.77	0.66
1:C:284:ASP:O	1:C:288[B]:GLU:HG2	1.95	0.66
1:H:41:ASN:C	1:H:41:ASN:HD22	1.99	0.66
1:A:41:ASN:HD22	1:A:41:ASN:C	1.99	0.66
1:E:254:GLN:HE21	1:F:258:GLY:HA2	1.60	0.66
1:D:41:ASN:HD22	1:D:43:SER:H	1.45	0.65
1:F:41:ASN:C	1:F:41:ASN:HD22	1.99	0.65
1:C:451[B]:VAL:CG1	1:D:491:VAL:HG22	2.27	0.65
1:A:141:GLY:O	3:D:703:EDO:H21	1.97	0.64
1:C:23:PHE:CZ	1:C:26:ASN:HA	2.33	0.64
1:H:300:GLN:HE22	1:H:345:VAL:H	1.47	0.63
1:F:196:GLN:H	1:F:196:GLN:HE21	1.47	0.63
1:B:11:PRO:HG3	1:B:114:TYR:CD2	2.34	0.63
1:A:294[A]:LEU:HD13	1:A:405:MET:HA	1.81	0.63
1:C:166:ILE:HD11	1:C:193:VAL:HG12	1.82	0.62
1:D:41:ASN:HD22	1:D:41:ASN:C	2.03	0.62
1:G:349:GLN:HE22	1:G:352:LYS:NZ	1.97	0.62
1:F:23:PHE:CZ	1:F:26:ASN:HA	2.35	0.62
1:C:268:GLU:HG3	6:C:3434:HOH:O	1.99	0.61
1:H:268:GLU:HB3	6:H:3543:HOH:O	2.00	0.61
1:E:492:THR:HB	6:F:3728:HOH:O	1.99	0.61
1:G:67:ARG:HD2	1:G:237:ASP:OD2	2.00	0.61
1:F:41:ASN:ND2	1:F:43:SER:H	1.99	0.60
1:E:76:TRP:CZ3	1:E:79[A]:MET:HE1	2.36	0.60
1:C:41:ASN:ND2	1:C:43:SER:H	1.99	0.60
1:A:294[A]:LEU:CD1	1:A:405:MET:HA	2.31	0.60
1:H:205:ALA:HB2	1:H:220:ILE:HD12	1.81	0.60
1:C:42:PRO:HB2	1:C:343:PRO:HG2	1.84	0.60
1:F:300:GLN:HE22	1:F:345:VAL:H	1.50	0.60
1:D:462:GLN:H	1:D:462:GLN:NE2	1.99	0.60
1:H:41:ASN:ND2	1:H:43:SER:H	1.99	0.60
1:E:33:SER:O	1:E:34:ARG:HB2	2.02	0.60
1:H:196:GLN:H	1:H:196:GLN:NE2	1.98	0.59
1:G:196:GLN:N	1:G:196:GLN:HE21	1.94	0.59
1:B:241:VAL:CG1	1:B:265:VAL:HG22	2.32	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:357:ILE:HG21	1:C:371:GLY:HA2	1.83	0.59
1:F:246:SER:OG	1:F:249:ILE:HG12	2.02	0.59
1:H:352:LYS:HD2	6:H:2482:HOH:O	2.02	0.59
1:E:302:CYS:HB2	3:E:701:EDO:HO1	1.69	0.58
1:G:352:LYS:HE3	6:G:2006:HOH:O	2.03	0.58
1:G:356:TYR:HD2	6:G:3881:HOH:O	1.84	0.58
1:G:41:ASN:C	1:G:41:ASN:HD22	2.06	0.58
1:G:196:GLN:H	1:G:196:GLN:NE2	1.96	0.58
1:C:61:LYS:HD3	6:C:3047:HOH:O	2.02	0.58
1:A:23:PHE:CZ	1:A:26:ASN:HA	2.39	0.58
1:D:196:GLN:H	1:D:196:GLN:NE2	1.97	0.58
1:D:241:VAL:HG13	1:D:265:VAL:HG22	1.84	0.58
1:D:41:ASN:ND2	1:D:43:SER:H	2.01	0.58
1:A:12:ASN:O	1:A:15:PRO:HD3	2.04	0.58
1:C:244:THR:HG23	1:C:268:GLU:HB3	1.86	0.57
1:G:41:ASN:ND2	1:G:43:SER:H	2.03	0.57
1:C:142:LYS:HG2	3:C:703:EDO:C2	2.29	0.57
6:E:1554:HOH:O	1:F:127:LYS:HE2	2.03	0.57
1:F:311:GLN:HG3	6:F:2237:HOH:O	2.03	0.57
1:B:75:PRO:O	1:B:79[A]:MET:HG3	2.05	0.57
1:D:196:GLN:N	1:D:196:GLN:HE21	1.97	0.57
1:F:44:THR:O	1:F:377:ARG:CZ	2.53	0.56
1:A:135:TRP:CE2	1:C:138:LYS:HD3	2.40	0.56
1:A:462:GLN:NE2	1:A:462:GLN:H	2.03	0.56
1:B:247:THR:HA	1:B:269:LEU:HD13	1.86	0.56
1:D:23:PHE:CZ	1:D:26:ASN:HA	2.40	0.56
1:G:23:PHE:CZ	1:G:26:ASN:HA	2.41	0.56
1:C:96:GLU:HG2	6:C:3793:HOH:O	2.06	0.56
1:E:294:LEU:O	1:E:294:LEU:HG	2.00	0.56
1:A:172:LEU:HD21	1:A:200:THR:HB	1.88	0.56
1:A:41:ASN:HD22	1:A:43:SER:H	1.53	0.56
6:E:1554:HOH:O	1:F:127:LYS:CE	2.54	0.56
1:B:41:ASN:HD22	1:B:41:ASN:C	2.09	0.56
1:E:79[A]:MET:SD	1:E:83:HIS:HD2	2.29	0.55
1:H:238:VAL:O	1:H:263:LYS:HE3	2.05	0.55
1:E:138:LYS:HD3	1:G:135:TRP:CE2	2.40	0.55
1:E:462:GLN:H	1:E:462:GLN:NE2	2.04	0.55
1:H:241:VAL:CG1	1:H:265:VAL:HG22	2.36	0.55
1:H:358:ASN:O	1:H:362:GLN:HG2	2.06	0.55
1:B:41:ASN:ND2	1:B:43:SER:H	2.05	0.55
1:E:352:LYS:HD3	6:E:2616:HOH:O	2.05	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:11:PRO:HG3	1:C:114:TYR:CD2	2.41	0.55
1:F:452:TRP:HA	6:F:3728:HOH:O	2.07	0.55
1:A:196:GLN:HE21	1:A:196:GLN:N	2.01	0.54
1:G:11:PRO:HB3	1:G:114:TYR:CE1	2.41	0.54
1:C:294:LEU:HD13	1:C:405:MET:HA	1.90	0.54
1:H:294:LEU:HD22	1:H:405:MET:HB2	1.88	0.54
1:H:246:SER:OG	1:H:249:ILE:HG12	2.06	0.54
1:H:202:LEU:HD21	1:H:222:PRO:HG3	1.89	0.54
1:E:196:GLN:HE21	1:E:196:GLN:N	1.95	0.54
1:D:41:ASN:HD21	1:D:43:SER:HB2	1.70	0.54
1:C:41:ASN:HD22	1:C:41:ASN:C	2.10	0.54
1:E:41:ASN:C	1:E:41:ASN:ND2	2.59	0.54
1:A:294[B]:LEU:HD22	1:A:405:MET:HA	1.90	0.54
1:G:301[A]:CYS:SG	1:G:303:CYS:SG	3.06	0.54
1:F:321:ARG:HD3	6:F:2134:HOH:O	2.06	0.54
1:E:28:TRP:HZ3	1:E:202:LEU:HD22	1.72	0.53
1:C:21:GLN:HB3	1:C:29:HIS:O	2.08	0.53
1:B:241:VAL:HG12	1:B:265:VAL:HG22	1.90	0.53
1:B:79[A]:MET:HE1	1:B:87:LEU:HD12	1.91	0.53
1:G:254:GLN:OE1	1:H:262:LEU:HD23	2.08	0.53
1:C:301[A]:CYS:SG	5:C:1001:BXB:H15	2.48	0.53
1:G:373:ILE:HG21	6:G:3866:HOH:O	2.08	0.53
1:B:41:ASN:HD22	1:B:43:SER:H	1.56	0.53
1:A:323:VAL:O	1:A:327:LYS:HG3	2.08	0.53
1:G:11:PRO:HG3	1:G:114:TYR:CD2	2.44	0.53
1:H:149:ASP:HA	1:H:498:LYS:HB2	1.89	0.53
1:C:300:GLN:HE22	1:C:345:VAL:H	1.55	0.52
1:G:11:PRO:HG3	1:G:114:TYR:CE2	2.45	0.52
1:H:41:ASN:HD22	1:H:43:SER:H	1.57	0.52
1:H:23:PHE:CZ	1:H:26:ASN:HA	2.43	0.52
1:F:13:GLN:HG2	1:F:335:PHE:CG	2.45	0.52
1:B:124:MET:CE	5:B:1001:BXB:CL11	2.95	0.52
1:A:251:ARG:NH2	1:B:260:SER:O	2.43	0.52
1:B:301[A]:CYS:HG	1:B:303:CYS:HG	1.51	0.52
1:F:320[A]:GLU:HG2	1:F:321:ARG:N	2.24	0.52
1:D:86:ARG:NH2	6:D:3998:HOH:O	2.08	0.52
1:E:300:GLN:HE22	1:E:345:VAL:H	1.58	0.52
1:H:215:PRO:HD2	6:H:534:HOH:O	2.10	0.52
1:G:246:SER:HA	6:G:866:HOH:O	2.09	0.52
1:A:366:LYS:HG2	1:A:368:LEU:CD2	2.40	0.52
1:C:466:GLY:HA3	1:C:475:ARG:HD3	1.91	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:267:LEU:HD12	6:F:2244:HOH:O	2.10	0.51
1:E:294:LEU:HD22	1:E:405:MET:CA	2.41	0.51
1:G:245:GLY:O	1:G:269:LEU:HA	2.10	0.51
1:E:359:THR:O	1:E:363:GLU:HG2	2.11	0.51
1:H:264:ARG:HG2	6:H:3195:HOH:O	2.10	0.51
1:C:449:GLY:HA3	1:C:466:GLY:O	2.11	0.51
1:B:44:THR:HB	1:B:377:ARG:NH2	2.26	0.51
1:H:196:GLN:HE21	1:H:196:GLN:N	1.98	0.51
1:B:84[A]:ARG:HH21	1:C:500:SER:HB3	1.75	0.51
1:C:140:HIS:HB2	3:C:703:EDO:H12	1.93	0.51
1:F:404:VAL:HG12	1:F:406:GLN:HE22	1.75	0.51
1:D:146[B]:ILE:HD13	1:D:147:ASP:N	2.25	0.51
1:E:294:LEU:HD22	1:E:405:MET:CB	2.39	0.51
1:F:462:GLN:NE2	1:F:462:GLN:H	2.08	0.51
1:A:352:LYS:HD2	6:A:3502:HOH:O	2.11	0.51
1:H:112:LYS:NZ	1:H:121:ASP:OD1	2.39	0.50
1:A:294[B]:LEU:HD13	1:A:306:SER:HA	1.94	0.50
1:F:298:GLN:HA	6:F:1486:HOH:O	2.10	0.50
1:C:55:ASP:HB3	6:C:2243:HOH:O	2.12	0.50
1:D:284:ASP:OD1	1:D:321:ARG:NH1	2.44	0.50
1:G:120:VAL:O	1:G:124:MET:HG3	2.12	0.50
1:G:462:GLN:NE2	1:G:462:GLN:H	2.10	0.50
1:D:301[A]:CYS:SG	1:D:303:CYS:SG	3.09	0.49
1:D:301[A]:CYS:SG	5:D:1001:BXB:H15	2.51	0.49
1:A:86:ARG:HD2	6:A:535:HOH:O	2.11	0.49
1:D:63:VAL:HG11	1:D:235:HIS:CE1	2.48	0.49
1:G:462:GLN:HB3	1:H:144:ILE:CG2	2.43	0.49
1:C:241:VAL:HG23	1:C:263:LYS:CD	2.39	0.49
1:H:257:ALA:HB2	6:H:1359:HOH:O	2.12	0.49
1:A:102:LEU:HD21	1:A:203:TYR:HD2	1.77	0.49
1:H:344:GLN:HG3	1:H:381:ILE:HD12	1.94	0.49
1:F:41:ASN:HD22	1:F:43:SER:H	1.60	0.49
1:F:60:ASP:O	1:F:64:LYS:HG3	2.11	0.49
1:C:147:ASP:HB2	6:D:558:HOH:O	2.12	0.49
1:H:301[A]:CYS:SG	1:H:303:CYS:SG	3.09	0.49
1:H:63:VAL:HG11	1:H:235:HIS:CE1	2.47	0.49
1:E:24:ILE:HA	1:E:219:ASN:HD22	1.78	0.49
1:C:41:ASN:HD22	1:C:42:PRO:N	2.11	0.48
1:F:41:ASN:HD22	1:F:42:PRO:N	2.10	0.48
1:A:300:GLN:HE22	1:A:345:VAL:H	1.61	0.48
1:F:452:TRP:CD1	6:F:3728:HOH:O	2.55	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:15:PRO:HD2	1:B:108:LEU:HD22	1.96	0.48
1:D:350:PHE:CD1	1:D:379:TYR:HB3	2.49	0.48
1:D:178:LYS:HG2	6:D:3184:HOH:O	2.14	0.48
1:E:251:ARG:HB3	1:F:258:GLY:O	2.14	0.48
1:G:161:VAL:HA	1:G:188:VAL:HG23	1.94	0.48
1:F:197:THR:N	1:F:198:PRO:HD3	2.29	0.48
1:E:438:LYS:HE2	6:E:2815:HOH:O	2.14	0.48
1:E:29:HIS:CD2	1:E:29:HIS:N	2.82	0.48
1:C:41:ASN:HD22	1:C:43:SER:H	1.60	0.48
1:C:245:GLY:O	1:C:269:LEU:HA	2.14	0.48
1:D:245:GLY:O	1:D:269:LEU:HA	2.14	0.48
1:A:107:THR:HG23	1:A:334:PRO:HB2	1.94	0.48
1:D:172:LEU:HD21	1:D:200:THR:HB	1.95	0.48
1:C:262:LEU:HD21	1:D:251:ARG:HA	1.96	0.48
1:G:361:LYS:HE2	1:G:367:LEU:CD2	2.44	0.48
1:B:283:MET:O	1:B:287:VAL:HG23	2.14	0.48
1:C:121:ASP:O	1:C:125:VAL:HG23	2.13	0.48
1:A:41:ASN:HD22	1:A:42:PRO:N	2.11	0.48
1:A:294[A]:LEU:HD12	1:A:306:SER:HA	1.96	0.47
1:D:300:GLN:HE22	1:D:345:VAL:H	1.62	0.47
1:D:302[A]:CYS:SG	1:D:427:LEU:CD2	2.99	0.47
1:A:247:THR:O	1:A:251:ARG:HG3	2.15	0.47
1:F:319:VAL:O	1:F:323:VAL:HG23	2.13	0.47
1:B:32:VAL:HG11	1:B:57:GLU:OE1	2.13	0.47
1:F:15:PRO:HD2	1:F:108:LEU:HD22	1.96	0.47
1:F:302[A]:CYS:SG	1:F:427:LEU:HD21	2.53	0.47
1:C:224:PHE:HB2	1:C:227:THR:OG1	2.14	0.47
1:H:41:ASN:HD22	1:H:42:PRO:N	2.12	0.47
1:C:11:PRO:HG3	1:C:114:TYR:CE2	2.49	0.47
1:B:167:PRO:HG3	1:B:244:THR:HG22	1.96	0.47
1:G:294:LEU:C	1:G:294:LEU:HD13	2.35	0.47
1:D:107:THR:HG23	1:D:112:LYS:O	2.15	0.47
1:G:300:GLN:HE22	1:G:345:VAL:H	1.63	0.47
1:D:257:ALA:HB2	6:D:2760:HOH:O	2.15	0.47
1:A:63:VAL:HG11	1:A:235:HIS:CE1	2.50	0.47
1:E:449:GLY:HA3	1:E:466:GLY:O	2.14	0.47
1:B:417:VAL:HG21	1:B:441:TYR:HE2	1.79	0.47
1:F:168:TRP:O	1:F:171:PRO:HD3	2.14	0.47
1:B:196:GLN:N	1:B:196:GLN:HE21	2.07	0.47
1:B:245:GLY:O	1:B:269:LEU:HA	2.15	0.46
1:E:166:ILE:HD11	1:E:193:VAL:HG12	1.97	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:20:ASN:HA	1:B:202:LEU:HD23	1.97	0.46
1:A:245:GLY:O	1:A:269:LEU:HA	2.16	0.46
1:G:63:VAL:HG11	1:G:235:HIS:CE1	2.50	0.46
1:D:273:SER:HA	1:D:274:PRO:HD3	1.76	0.46
1:E:490:THR:OG1	1:F:464:PRO:HG2	2.16	0.46
1:E:312:GLU:CB	1:E:409[B]:LYS:HE2	2.44	0.46
1:D:41:ASN:ND2	1:D:43:SER:HB2	2.31	0.46
1:C:294:LEU:HD22	1:C:405:MET:HB2	1.97	0.46
1:F:411:LYS:HG2	1:F:412:THR:HG23	1.98	0.46
1:B:159:VAL:HG12	1:B:187:ASN:OD1	2.14	0.46
1:F:138:LYS:HD3	1:H:135:TRP:CE2	2.51	0.46
1:E:404:VAL:HG12	1:E:406:GLN:NE2	2.27	0.46
1:E:106:GLU:O	1:E:110:ASN:HB3	2.15	0.46
1:G:123:ASP:O	1:G:127:LYS:HG3	2.16	0.46
1:E:294:LEU:HB3	6:E:2669:HOH:O	2.16	0.46
1:D:178:LYS:O	1:D:181:PRO:HD2	2.16	0.46
1:C:28:TRP:HZ3	1:C:202:LEU:HD22	1.81	0.46
1:G:376[B]:ASP:HA	6:G:3866:HOH:O	2.16	0.45
1:D:193:VAL:HG11	1:D:201:ALA:CB	2.46	0.45
1:E:464:PRO:HG3	1:E:480:TYR:CD1	2.51	0.45
1:B:23:PHE:CZ	1:B:26:ASN:HA	2.51	0.45
1:H:372:GLY:H	1:H:382:GLN:HE21	1.62	0.45
1:G:11:PRO:HB3	1:G:114:TYR:CZ	2.51	0.45
1:B:172:LEU:HD21	1:B:200:THR:HB	1.97	0.45
1:D:33:SER:O	1:D:34:ARG:HB2	2.16	0.45
1:G:67:ARG:HD3	6:G:1589:HOH:O	2.15	0.45
1:F:395:ILE:HD12	1:F:406:GLN:HE21	1.80	0.45
1:H:273:SER:HA	1:H:274:PRO:HD3	1.76	0.45
1:D:135:TRP:CZ2	1:D:479:GLU:HB2	2.51	0.45
1:E:146:ILE:HG13	1:F:460:GLY:HA3	1.97	0.45
1:E:497:GLN:NE2	1:H:73:GLY:HA2	2.31	0.45
1:F:41:ASN:C	1:F:41:ASN:ND2	2.69	0.45
1:E:22:ILE:HG22	1:E:24:ILE:HG13	1.99	0.45
1:D:12:ASN:O	1:D:15:PRO:HD3	2.16	0.45
1:E:205:ALA:HB2	1:E:220:ILE:HD12	1.98	0.45
1:C:462:GLN:HB3	1:D:144:ILE:CG2	2.46	0.45
1:H:301[A]:CYS:SG	5:H:1001:BXB:H15	2.57	0.45
1:F:167:PRO:HD2	1:F:174:MET:HG3	1.98	0.45
1:D:462:GLN:NE2	6:D:558:HOH:O	2.44	0.45
1:F:423:SER:HA	6:F:3246:HOH:O	2.16	0.45
1:C:154:THR:HA	1:C:489:LYS:O	2.17	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:294:LEU:HD12	1:B:306:SER:HA	1.98	0.45
1:E:167:PRO:HG3	1:E:244:THR:HG22	1.98	0.45
1:H:294:LEU:O	1:H:294:LEU:HG	2.17	0.44
1:A:175:GLN:HG3	1:A:191:MET:SD	2.57	0.44
1:C:251:ARG:O	1:C:255:VAL:HG23	2.18	0.44
1:D:144:ILE:HA	1:D:145:PRO:HD3	1.89	0.44
1:E:32:VAL:HG11	1:E:57:GLU:OE2	2.17	0.44
1:G:301[A]:CYS:SG	5:G:1001:BXB:H15	2.58	0.44
1:H:144:ILE:HA	1:H:145:PRO:HD3	1.75	0.44
1:G:361:LYS:HE2	1:G:367:LEU:HD22	1.98	0.44
1:C:315:TYR:O	1:C:319:VAL:HG23	2.18	0.44
1:H:20:ASN:HD22	1:H:20:ASN:N	2.14	0.44
1:A:317:GLU:HG2	1:A:321:ARG:HD2	1.99	0.44
1:H:349:GLN:HE22	1:H:352:LYS:NZ	2.15	0.44
1:A:333:ASN:HA	1:A:334:PRO:HD2	1.84	0.44
1:F:294:LEU:HD23	1:F:306:SER:HA	1.99	0.44
1:G:41:ASN:HD22	1:G:42:PRO:N	2.14	0.44
1:H:43:SER:HA	1:H:343:PRO:HG3	1.99	0.44
1:D:361:LYS:HD3	1:D:367:LEU:HD22	2.00	0.44
1:C:301[A]:CYS:SG	1:C:303:CYS:SG	3.15	0.44
1:F:333:ASN:HA	1:F:334:PRO:HD2	1.85	0.44
1:B:21:GLN:HB3	1:B:29:HIS:O	2.17	0.44
1:H:413:ILE:O	1:H:416:VAL:HG12	2.18	0.44
1:F:107:THR:HG23	1:F:334:PRO:HB2	2.00	0.44
1:G:53:GLU:CD	1:G:224:PHE:CE1	2.91	0.43
1:G:235:HIS:HB3	1:G:238:VAL:HG23	2.00	0.43
1:A:311[A]:GLN:OE1	1:A:313:ASP:HB2	2.18	0.43
1:D:317:GLU:O	1:D:321:ARG:HG3	2.17	0.43
1:G:331:VAL:HG22	1:G:341:GLN:HB3	1.98	0.43
1:A:273:SER:HA	1:A:274:PRO:HD3	1.87	0.43
1:H:245:GLY:O	1:H:269:LEU:HA	2.19	0.43
1:G:430:ALA:HB2	1:G:456:TYR:CD1	2.54	0.43
1:F:280:ASP:O	1:F:434:LYS:HG3	2.18	0.43
1:A:294[B]:LEU:HD22	1:A:405:MET:CA	2.48	0.43
1:B:41:ASN:HD22	1:B:42:PRO:N	2.15	0.43
1:H:466:GLY:HA3	1:H:475:ARG:HD3	2.00	0.43
1:E:23:PHE:CZ	1:E:26:ASN:HA	2.54	0.43
1:A:41:ASN:ND2	1:A:41:ASN:C	2.69	0.43
1:A:124:MET:SD	5:A:1001:BXB:CL11	3.14	0.43
1:G:389:VAL:HB	1:G:408:LEU:HG	2.00	0.43
1:C:463:SER:HA	1:C:464:PRO:HD3	1.85	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:294[A]:LEU:HD11	1:A:404:VAL:O	2.19	0.43
1:H:294:LEU:HD13	1:H:405:MET:HA	2.00	0.43
6:C:1433:HOH:O	1:D:147:ASP:HB2	2.19	0.43
1:E:167:PRO:HD2	1:E:174:MET:HG3	2.00	0.43
1:B:196:GLN:H	1:B:196:GLN:NE2	2.09	0.43
1:E:63:VAL:HG11	1:E:235:HIS:CE1	2.53	0.43
1:D:264:ARG:HG2	6:D:982:HOH:O	2.17	0.43
1:D:86:ARG:HD2	6:D:3998:HOH:O	2.19	0.42
1:H:422:ASN:HB3	6:H:2201:HOH:O	2.18	0.42
1:A:37:PHE:HA	1:A:38:PRO:HD3	1.84	0.42
1:B:347:GLU:HG2	1:B:351:LYS:HE2	2.01	0.42
1:H:50:GLN:HE21	1:H:50:GLN:HB3	1.66	0.42
1:D:279:SER:HA	1:D:314:ILE:HD13	2.01	0.42
1:F:202:LEU:O	1:F:205:ALA:HB3	2.19	0.42
1:A:261:ASN:HA	1:B:470:MET:HE1	2.01	0.42
1:E:327:LYS:HE3	1:E:369:CYS:HB3	2.01	0.42
1:E:251:ARG:HD2	1:F:262:LEU:HG	2.02	0.42
1:F:413:ILE:O	1:F:417:VAL:HG23	2.20	0.42
1:C:279:SER:HA	1:C:314:ILE:HD13	2.01	0.42
1:D:498:LYS:HB3	1:D:498:LYS:HE2	1.80	0.42
1:C:294:LEU:HD12	1:C:306:SER:HA	2.02	0.42
1:E:273:SER:HA	1:E:274:PRO:HD3	1.75	0.42
1:E:497:GLN:HE22	1:H:73:GLY:HA2	1.84	0.42
1:B:144:ILE:HA	1:B:145:PRO:HD3	1.89	0.42
1:E:246:SER:OG	1:E:249:ILE:HG12	2.20	0.42
1:H:343:PRO:HG3	1:H:380:PHE:CZ	2.55	0.42
1:E:28:TRP:CZ3	1:E:202:LEU:HD22	2.54	0.42
1:H:498:LYS:HE2	1:H:498:LYS:HB3	1.88	0.42
1:C:319:VAL:O	1:C:323:VAL:HG23	2.20	0.42
1:G:12:ASN:O	1:G:15:PRO:HD3	2.19	0.42
1:E:125:VAL:HG22	1:E:173:LEU:HA	2.01	0.42
1:H:70:PHE:CD1	1:H:77:ARG:HD3	2.54	0.42
1:F:106:GLU:OE1	1:F:172:LEU:HB2	2.20	0.42
1:F:413:ILE:O	1:F:416:VAL:HG12	2.20	0.42
1:F:214:PRO:HA	1:F:215:PRO:HD3	1.97	0.42
1:H:20:ASN:HD22	1:H:20:ASN:H	1.68	0.42
1:F:112:LYS:HB2	6:F:533:HOH:O	2.19	0.42
1:A:476:GLU:O	1:A:477:LEU:HB2	2.20	0.42
1:B:331:VAL:HG21	1:B:383:PRO:HD3	2.01	0.41
1:C:426:GLY:HA2	6:C:2115:HOH:O	2.20	0.41
1:E:249:ILE:O	1:E:253:ILE:HG12	2.20	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:404:VAL:HG12	1:C:406:GLN:OE1	2.20	0.41
1:G:466:GLY:HA3	1:G:475:ARG:HD3	2.02	0.41
1:F:111:GLY:O	1:F:343:PRO:HD2	2.20	0.41
1:H:294:LEU:HD12	1:H:306:SER:HA	2.02	0.41
1:E:359:THR:HG23	6:E:2364:HOH:O	2.20	0.41
1:C:144:ILE:HA	1:C:145:PRO:HD3	1.91	0.41
1:F:122:LEU:O	1:F:126:LEU:HG	2.20	0.41
1:F:170:PHE:HB2	1:F:174:MET:HG2	2.03	0.41
1:F:192:LYS:HB2	1:F:232:ILE:HD12	2.03	0.41
1:F:22:ILE:HG12	1:F:222:PRO:HD2	2.03	0.41
1:C:129:LEU:HD23	1:C:129:LEU:HA	1.85	0.41
1:E:498:LYS:HD2	1:E:498:LYS:C	2.41	0.41
1:F:352:LYS:HE2	1:F:356:TYR:HE1	1.85	0.41
1:E:79[A]:MET:CE	1:E:84:ARG:HG2	2.50	0.41
1:E:272:LYS:HD2	1:E:272:LYS:HA	1.95	0.41
1:H:15:PRO:HG2	1:H:108:LEU:HD22	2.03	0.41
1:E:294:LEU:HD22	1:E:405:MET:HA	2.02	0.41
1:G:458:VAL:HG21	1:H:150:PHE:CE2	2.56	0.41
1:B:393:MET:O	1:B:397:LYS:HG3	2.20	0.41
1:F:317:GLU:O	1:F:320[B]:GLU:HG3	2.21	0.41
1:A:344:GLN:HG3	1:A:353:ILE:HD12	2.03	0.41
1:B:109:ASP:OD2	1:B:197:THR:HA	2.21	0.41
1:A:431[B]:VAL:HG22	1:A:453:VAL:HG22	2.02	0.41
1:G:44:THR:OG1	1:G:46:GLU:HB2	2.21	0.41
1:C:167:PRO:HD2	1:C:174:MET:HG3	2.03	0.41
1:H:71:GLN:O	1:H:74:SER:HB3	2.21	0.41
1:B:206:ASN:ND2	6:B:3908:HOH:O	2.53	0.41
1:E:135:TRP:CE2	1:G:138:LYS:HD3	2.55	0.41
1:G:414:GLU:O	1:G:417[B]:VAL:HG12	2.21	0.41
1:E:34:ARG:NH2	6:E:1003:HOH:O	2.54	0.41
1:C:238:VAL:O	1:C:263:LYS:HE3	2.21	0.40
1:H:410:PHE:CD1	1:H:416:VAL:HB	2.55	0.40
1:B:8:VAL:HA	1:B:9:PRO:HD3	1.96	0.40
1:A:154:THR:HA	1:A:489:LYS:O	2.21	0.40
3:D:701:EDO:H12	5:D:1001:BXB:C20	2.51	0.40
1:C:111:GLY:O	1:C:343:PRO:HD2	2.21	0.40
1:F:363:GLU:HB2	6:F:2748:HOH:O	2.22	0.40
1:E:349:GLN:NE2	6:E:949:HOH:O	2.51	0.40
1:G:315:TYR:O	1:G:319:VAL:HG23	2.21	0.40
1:H:41:ASN:ND2	1:H:41:ASN:C	2.71	0.40
1:D:41:ASN:ND2	1:D:41:ASN:C	2.74	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:121:ASP:O	1:E:125:VAL:HG23	2.21	0.40
1:A:138:LYS:HD3	1:C:135:TRP:CE2	2.56	0.40
1:E:460:GLY:HA3	1:F:146:ILE:HG13	2.03	0.40
1:A:268:GLU:OE2	1:A:476:GLU:HG3	2.21	0.40
1:H:166:ILE:HA	1:H:167:PRO:HD3	1.87	0.40
1:A:70:PHE:CZ	1:A:160:GLY:HA2	2.56	0.40
1:A:149:ASP:HA	1:A:498:LYS:HB2	2.02	0.40
1:H:438:LYS:HE2	6:H:2581:HOH:O	2.21	0.40
1:C:12:ASN:O	1:C:15:PRO:HD3	2.21	0.40
1:H:120:VAL:O	1:H:124:MET:HG3	2.21	0.40
1:C:70:PHE:CZ	1:C:160:GLY:HA2	2.57	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	497/500 (99%)	481 (97%)	16 (3%)	0	100	100
1	B	496/500 (99%)	482 (97%)	13 (3%)	1 (0%)	52	31
1	C	499/500 (100%)	482 (97%)	17 (3%)	0	100	100
1	D	496/500 (99%)	482 (97%)	14 (3%)	0	100	100
1	E	497/500 (99%)	482 (97%)	15 (3%)	0	100	100
1	F	496/500 (99%)	482 (97%)	14 (3%)	0	100	100
1	G	497/500 (99%)	483 (97%)	14 (3%)	0	100	100
1	H	494/500 (99%)	480 (97%)	14 (3%)	0	100	100
All	All	3972/4000 (99%)	3854 (97%)	117 (3%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	426	GLY

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	404/402 (100%)	397 (98%)	7 (2%)	68	49
1	B	403/402 (100%)	396 (98%)	7 (2%)	68	49
1	C	406/402 (101%)	397 (98%)	9 (2%)	60	37
1	D	403/402 (100%)	396 (98%)	7 (2%)	68	49
1	E	404/402 (100%)	396 (98%)	8 (2%)	63	41
1	F	403/402 (100%)	392 (97%)	11 (3%)	52	28
1	G	404/402 (100%)	395 (98%)	9 (2%)	60	37
1	H	401/402 (100%)	393 (98%)	8 (2%)	63	41
All	All	3228/3216 (100%)	3162 (98%)	66 (2%)	63	41

All (66) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	34	ARG
1	A	41	ASN
1	A	50	GLN
1	A	196	GLN
1	A	275	ASN
1	A	401	PHE
1	A	462	GLN
1	B	41	ASN
1	B	122	LEU
1	B	192	LYS
1	B	196	GLN
1	B	202	LEU
1	B	294	LEU
1	B	401	PHE
1	C	41	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	C	122	LEU
1	C	192	LYS
1	C	196	GLN
1	C	227	THR
1	C	294	LEU
1	C	362	GLN
1	C	401	PHE
1	C	462	GLN
1	D	41	ASN
1	D	121	ASP
1	D	192	LYS
1	D	196	GLN
1	D	275	ASN
1	D	401	PHE
1	D	462	GLN
1	E	41	ASN
1	E	46	GLU
1	E	192	LYS
1	E	196	GLN
1	E	251	ARG
1	E	317	GLU
1	E	401	PHE
1	E	462	GLN
1	F	20	ASN
1	F	41	ASN
1	F	122	LEU
1	F	192	LYS
1	F	196	GLN
1	F	206	ASN
1	F	236	GLU
1	F	320[A]	GLU
1	F	320[B]	GLU
1	F	401	PHE
1	F	462	GLN
1	G	41	ASN
1	G	192	LYS
1	G	196	GLN
1	G	275	ASN
1	G	376[A]	ASP
1	G	376[B]	ASP
1	G	401	PHE
1	G	462	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	G	464	PRO
1	H	20	ASN
1	H	41	ASN
1	H	121	ASP
1	H	192	LYS
1	H	196	GLN
1	H	275	ASN
1	H	294	LEU
1	H	401	PHE

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (76) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	13	GLN
1	A	26	ASN
1	A	41	ASN
1	A	50	GLN
1	A	175	GLN
1	A	196	GLN
1	A	275	ASN
1	A	462	GLN
1	B	26	ASN
1	B	41	ASN
1	B	50	GLN
1	B	175	GLN
1	B	196	GLN
1	B	300	GLN
1	C	26	ASN
1	C	41	ASN
1	C	50	GLN
1	C	164	GLN
1	C	196	GLN
1	C	275	ASN
1	C	358	ASN
1	C	462	GLN
1	D	13	GLN
1	D	26	ASN
1	D	41	ASN
1	D	175	GLN
1	D	196	GLN
1	D	275	ASN
1	D	349	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	D	358	ASN
1	D	462	GLN
1	E	14	GLN
1	E	25	ASN
1	E	26	ASN
1	E	41	ASN
1	E	175	GLN
1	E	196	GLN
1	E	219	ASN
1	E	254	GLN
1	E	275	ASN
1	E	390	GLN
1	E	406	GLN
1	E	462	GLN
1	E	497	GLN
1	F	20	ASN
1	F	26	ASN
1	F	41	ASN
1	F	50	GLN
1	F	175	GLN
1	F	196	GLN
1	F	275	ASN
1	F	300	GLN
1	F	406	GLN
1	F	462	GLN
1	G	13	GLN
1	G	26	ASN
1	G	41	ASN
1	G	175	GLN
1	G	196	GLN
1	G	275	ASN
1	G	300	GLN
1	G	349	GLN
1	G	447	GLN
1	G	462	GLN
1	H	13	GLN
1	H	20	ASN
1	H	26	ASN
1	H	41	ASN
1	H	50	GLN
1	H	175	GLN
1	H	196	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	H	275	ASN
1	H	289	GLN
1	H	349	GLN
1	H	358	ASN
1	H	382	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 41 ligands modelled in this entry, 8 are monoatomic - leaving 33 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
5	BXB	A	1001	-	23,23,23	1.90	5 (21%)	32,32,32	1.43	4 (12%)
3	EDO	A	501	-	3,3,3	0.42	0	2,2,2	0.33	0
3	EDO	A	701	-	3,3,3	0.44	0	2,2,2	0.43	0
3	EDO	A	702	-	3,3,3	0.39	0	2,2,2	0.62	0
4	GAI	A	801	-	0,3,3	0.00	-	0,3,3	0.00	-
5	BXB	B	1001	-	23,23,23	1.91	5 (21%)	32,32,32	1.68	5 (15%)
3	EDO	B	501	-	3,3,3	0.42	0	2,2,2	0.51	0
3	EDO	B	701	-	3,3,3	0.45	0	2,2,2	0.32	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	EDO	B	702	-	3,3,3	0.44	0	2,2,2	0.38	0
4	GAI	B	801	-	0,3,3	0.00	-	0,3,3	0.00	-
5	BXB	C	1001	-	23,23,23	1.93	5 (21%)	32,32,32	1.35	4 (12%)
3	EDO	C	703	-	3,3,3	0.45	0	2,2,2	0.33	0
4	GAI	C	801	-	0,3,3	0.00	-	0,3,3	0.00	-
5	BXB	D	1001	-	23,23,23	2.02	5 (21%)	32,32,32	1.48	8 (25%)
3	EDO	D	701	-	3,3,3	0.43	0	2,2,2	0.41	0
3	EDO	D	703	-	3,3,3	0.46	0	2,2,2	0.20	0
4	GAI	D	801	-	0,3,3	0.00	-	0,3,3	0.00	-
5	BXB	E	1001	-	23,23,23	2.02	5 (21%)	32,32,32	1.58	7 (21%)
3	EDO	E	501	-	3,3,3	0.35	0	2,2,2	0.46	0
3	EDO	E	701	-	3,3,3	0.40	0	2,2,2	0.41	0
3	EDO	E	702	-	3,3,3	0.37	0	2,2,2	0.72	0
4	GAI	E	801	-	0,3,3	0.00	-	0,3,3	0.00	-
5	BXB	F	1001	-	23,23,23	1.93	5 (21%)	32,32,32	1.47	7 (21%)
3	EDO	F	501	-	3,3,3	0.48	0	2,2,2	0.34	0
3	EDO	F	702	-	3,3,3	0.40	0	2,2,2	0.43	0
4	GAI	F	801	-	0,3,3	0.00	-	0,3,3	0.00	-
5	BXB	G	1001	-	23,23,23	1.94	5 (21%)	32,32,32	1.46	8 (25%)
3	EDO	G	701	-	3,3,3	0.37	0	2,2,2	0.60	0
4	GAI	G	801	-	0,3,3	0.00	-	0,3,3	0.00	-
4	GAI	G	802	-	0,3,3	0.00	-	0,3,3	0.00	-
5	BXB	H	1001	-	23,23,23	1.99	5 (21%)	32,32,32	1.35	3 (9%)
3	EDO	H	701	-	3,3,3	0.38	0	2,2,2	0.49	0
4	GAI	H	801	-	0,3,3	0.00	-	0,3,3	0.00	-

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	BXB	A	1001	-	-	0/9/15/15	0/3/3/3
3	EDO	A	501	-	-	0/1/1/1	0/0/0/0
3	EDO	A	701	-	-	0/1/1/1	0/0/0/0
3	EDO	A	702	-	-	0/1/1/1	0/0/0/0
4	GAI	A	801	-	-	0/0/0/0	0/0/0/0
5	BXB	B	1001	-	-	0/9/15/15	0/3/3/3
3	EDO	B	501	-	-	0/1/1/1	0/0/0/0
3	EDO	B	701	-	-	0/1/1/1	0/0/0/0
3	EDO	B	702	-	-	0/1/1/1	0/0/0/0

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	GAI	B	801	-	-	0/0/0/0	0/0/0/0
5	BXB	C	1001	-	-	0/9/15/15	0/3/3/3
3	EDO	C	703	-	-	0/1/1/1	0/0/0/0
4	GAI	C	801	-	-	0/0/0/0	0/0/0/0
5	BXB	D	1001	-	-	0/9/15/15	0/3/3/3
3	EDO	D	701	-	-	0/1/1/1	0/0/0/0
3	EDO	D	703	-	-	0/1/1/1	0/0/0/0
4	GAI	D	801	-	-	0/0/0/0	0/0/0/0
5	BXB	E	1001	-	-	0/9/15/15	0/3/3/3
3	EDO	E	501	-	-	0/1/1/1	0/0/0/0
3	EDO	E	701	-	-	0/1/1/1	0/0/0/0
3	EDO	E	702	-	-	0/1/1/1	0/0/0/0
4	GAI	E	801	-	-	0/0/0/0	0/0/0/0
5	BXB	F	1001	-	-	0/9/15/15	0/3/3/3
3	EDO	F	501	-	-	0/1/1/1	0/0/0/0
3	EDO	F	702	-	-	0/1/1/1	0/0/0/0
4	GAI	F	801	-	-	0/0/0/0	0/0/0/0
5	BXB	G	1001	-	-	0/9/15/15	0/3/3/3
3	EDO	G	701	-	-	0/1/1/1	0/0/0/0
4	GAI	G	801	-	-	0/0/0/0	0/0/0/0
4	GAI	G	802	-	-	0/0/0/0	0/0/0/0
5	BXB	H	1001	-	-	0/9/15/15	0/3/3/3
3	EDO	H	701	-	-	0/1/1/1	0/0/0/0
4	GAI	H	801	-	-	0/0/0/0	0/0/0/0

All (40) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	C	1001	BXB	C2-CL10	2.09	1.78	1.73
5	A	1001	BXB	C2-CL10	2.12	1.78	1.73
5	B	1001	BXB	C2-CL10	2.19	1.79	1.73
5	F	1001	BXB	C6-CL11	2.23	1.79	1.73
5	E	1001	BXB	C17-C16	2.29	1.45	1.39
5	C	1001	BXB	C17-C16	2.30	1.45	1.39
5	G	1001	BXB	C6-CL11	2.30	1.79	1.73
5	E	1001	BXB	C6-CL11	2.36	1.79	1.73
5	B	1001	BXB	C6-CL11	2.38	1.79	1.73
5	F	1001	BXB	C17-C16	2.39	1.45	1.39
5	G	1001	BXB	C17-C16	2.39	1.45	1.39
5	H	1001	BXB	C17-C16	2.40	1.46	1.39
5	E	1001	BXB	C2-CL10	2.42	1.79	1.73
5	H	1001	BXB	C6-CL11	2.42	1.79	1.73

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	1001	BXB	C17-C16	2.42	1.46	1.39
5	G	1001	BXB	C2-CL10	2.45	1.79	1.73
5	B	1001	BXB	C17-C16	2.46	1.46	1.39
5	F	1001	BXB	C2-CL10	2.50	1.79	1.73
5	C	1001	BXB	C6-CL11	2.51	1.79	1.73
5	D	1001	BXB	C6-CL11	2.52	1.79	1.73
5	D	1001	BXB	C17-C16	2.56	1.46	1.39
5	A	1001	BXB	C6-CL11	2.58	1.79	1.73
5	H	1001	BXB	C2-CL10	2.67	1.80	1.73
5	D	1001	BXB	C2-CL10	3.04	1.81	1.73
5	B	1001	BXB	C1-C6	4.99	1.47	1.39
5	A	1001	BXB	C1-C2	5.32	1.47	1.39
5	F	1001	BXB	C1-C6	5.38	1.48	1.39
5	A	1001	BXB	C1-C6	5.41	1.48	1.39
5	G	1001	BXB	C1-C6	5.51	1.48	1.39
5	C	1001	BXB	C1-C2	5.55	1.48	1.39
5	D	1001	BXB	C1-C6	5.66	1.48	1.39
5	F	1001	BXB	C1-C2	5.67	1.48	1.39
5	E	1001	BXB	C1-C6	5.68	1.48	1.39
5	D	1001	BXB	C1-C2	5.69	1.48	1.39
5	G	1001	BXB	C1-C2	5.70	1.48	1.39
5	C	1001	BXB	C1-C6	5.72	1.48	1.39
5	H	1001	BXB	C1-C2	5.76	1.48	1.39
5	H	1001	BXB	C1-C6	5.80	1.48	1.39
5	B	1001	BXB	C1-C2	5.96	1.48	1.39
5	E	1001	BXB	C1-C2	6.03	1.49	1.39

All (46) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	B	1001	BXB	C6-C1-C7	-3.79	118.03	121.16
5	E	1001	BXB	C17-C18-C13	-2.87	116.03	120.15
5	D	1001	BXB	C17-C18-C13	-2.64	116.36	120.15
5	A	1001	BXB	C17-C18-C13	-2.59	116.43	120.15
5	F	1001	BXB	C17-C18-C13	-2.58	116.44	120.15
5	F	1001	BXB	C13-C12-N8	-2.55	107.05	112.88
5	H	1001	BXB	C17-C18-C13	-2.48	116.58	120.15
5	E	1001	BXB	C6-C1-C7	-2.44	119.14	121.16
5	D	1001	BXB	C3-C2-C1	-2.30	118.76	121.81
5	G	1001	BXB	C17-C18-C13	-2.29	116.85	120.15
5	E	1001	BXB	C13-C12-N8	-2.25	107.75	112.88
5	G	1001	BXB	C3-C2-C1	-2.19	118.89	121.81

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	A	1001	BXB	C5-C6-C1	-2.18	118.92	121.81
5	B	1001	BXB	C17-C18-C13	-2.17	117.03	120.15
5	G	1001	BXB	C6-C1-C7	-2.16	119.37	121.16
5	C	1001	BXB	C17-C18-C13	-2.06	117.19	120.15
5	F	1001	BXB	C3-C2-C1	-2.05	119.09	121.81
5	E	1001	BXB	C3-C2-C1	-2.02	119.12	121.81
5	D	1001	BXB	C5-C6-C1	-2.01	119.14	121.81
5	D	1001	BXB	C14-C15-C16	-2.00	116.16	120.03
5	G	1001	BXB	O19-C17-C18	2.00	130.75	127.88
5	G	1001	BXB	C20-O19-C17	2.02	108.26	105.35
5	G	1001	BXB	C14-C13-C18	2.03	121.54	118.55
5	F	1001	BXB	C20-O21-C16	2.03	108.28	105.35
5	F	1001	BXB	O19-C17-C18	2.04	130.81	127.88
5	C	1001	BXB	O19-C17-C18	2.04	130.81	127.88
5	D	1001	BXB	C20-O21-C16	2.07	108.33	105.35
5	F	1001	BXB	C14-C13-C18	2.08	121.63	118.55
5	D	1001	BXB	C14-C13-C18	2.09	121.64	118.55
5	B	1001	BXB	O19-C17-C18	2.11	130.91	127.88
5	A	1001	BXB	C20-O19-C17	2.12	108.40	105.35
5	F	1001	BXB	C20-O19-C17	2.13	108.41	105.35
5	H	1001	BXB	C20-O19-C17	2.13	108.41	105.35
5	A	1001	BXB	C1-C7-N8	2.17	119.72	115.45
5	D	1001	BXB	C20-O19-C17	2.17	108.48	105.35
5	E	1001	BXB	C20-O19-C17	2.21	108.53	105.35
5	C	1001	BXB	C20-O21-C16	2.21	108.53	105.35
5	C	1001	BXB	C20-O19-C17	2.25	108.58	105.35
5	H	1001	BXB	C14-C13-C18	2.27	121.91	118.55
5	E	1001	BXB	C14-C13-C18	2.27	121.91	118.55
5	D	1001	BXB	C1-C7-N8	2.30	119.96	115.45
5	G	1001	BXB	C1-C7-N8	2.31	119.98	115.45
5	B	1001	BXB	C20-O19-C17	2.35	108.73	105.35
5	E	1001	BXB	C1-C7-N8	2.37	120.12	115.45
5	G	1001	BXB	C2-C1-C7	3.02	123.65	121.16
5	B	1001	BXB	C2-C1-C7	4.41	124.80	121.16

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

10 monomers are involved in 16 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	1001	BXB	1	0
5	B	1001	BXB	1	0
5	C	1001	BXB	1	0
3	C	703	EDO	3	0
5	D	1001	BXB	2	0
3	D	701	EDO	2	0
3	D	703	EDO	3	0
3	E	701	EDO	2	0
5	G	1001	BXB	1	0
5	H	1001	BXB	1	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

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	494/500 (98%)	0.10	2 (0%) 93 94	11, 17, 26, 32	0
1	B	494/500 (98%)	0.15	4 (0%) 87 89	11, 18, 28, 36	0
1	C	494/500 (98%)	0.20	6 (1%) 81 84	11, 19, 28, 37	0
1	D	494/500 (98%)	0.04	2 (0%) 93 94	11, 16, 24, 33	0
1	E	494/500 (98%)	0.21	5 (1%) 84 87	12, 19, 28, 38	0
1	F	494/500 (98%)	0.33	9 (1%) 71 75	13, 21, 30, 41	0
1	G	494/500 (98%)	0.10	2 (0%) 93 94	13, 18, 28, 35	0
1	H	495/500 (99%)	0.11	2 (0%) 93 94	12, 17, 25, 40	0
All	All	3953/4000 (98%)	0.15	32 (0%) 87 89	11, 18, 28, 41	0

All (32) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	7	ALA	3.9
1	C	451[A]	VAL	3.8
1	H	7	ALA	3.6
1	E	14	GLN	3.5
1	A	7	ALA	3.4
1	F	224	PHE	3.4
1	B	224	PHE	3.3
1	F	16	GLU	3.0
1	C	362	GLN	2.9
1	F	18	PHE	2.9
1	C	224	PHE	2.8
1	F	249	ILE	2.7
1	F	373	ILE	2.7
1	G	224	PHE	2.6
1	F	377	ARG	2.6
1	B	379	TYR	2.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	C	365	ALA	2.5
1	E	249	ILE	2.4
1	H	6	GLN	2.4
1	C	361	LYS	2.3
1	E	441	TYR	2.3
1	E	373	ILE	2.3
1	E	224	PHE	2.3
1	F	376	ASP	2.3
1	C	34	ARG	2.2
1	F	379	TYR	2.2
1	B	431	VAL	2.2
1	F	375	ALA	2.2
1	G	262	LEU	2.2
1	D	249	ILE	2.2
1	A	294[A]	LEU	2.1
1	B	377	ARG	2.0

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 carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. 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	LLDF	B-factors(Å ²)	Q<0.9
3	EDO	D	703	4/4	0.81	0.23	12.52	14,15,17,18	0
4	GAI	G	801	4/4	0.89	0.20	10.52	17,20,20,21	0
3	EDO	C	703	4/4	0.81	0.21	9.66	15,16,17,19	0
3	EDO	B	702	4/4	0.88	0.18	9.38	15,16,16,17	0
3	EDO	D	701	4/4	0.82	0.23	8.64	34,34,35,35	0

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(\AA^2)	Q<0.9
4	GAI	G	802	4/4	0.65	0.26	7.08	22,22,23,23	0
3	EDO	F	501	4/4	0.97	0.14	6.73	17,18,18,19	0
3	EDO	E	701	4/4	0.64	0.22	6.05	34,35,36,39	0
3	EDO	B	701	4/4	0.68	0.23	5.67	31,31,32,32	0
4	GAI	C	801	4/4	0.81	0.17	4.88	17,19,20,20	0
3	EDO	H	701	4/4	0.80	0.18	4.46	31,31,32,33	0
3	EDO	A	501	4/4	0.89	0.15	4.08	14,15,17,17	0
5	BXB	F	1001	21/21	0.88	0.17	3.85	22,23,26,33	0
5	BXB	B	1001	21/21	0.88	0.16	3.60	18,19,21,27	0
4	GAI	B	801	4/4	0.86	0.15	3.51	14,15,17,18	0
3	EDO	A	701	4/4	0.78	0.16	3.50	33,34,34,35	0
5	BXB	H	1001	21/21	0.91	0.14	3.44	19,21,23,33	0
5	BXB	D	1001	21/21	0.88	0.14	3.40	16,19,23,34	0
3	EDO	A	702	4/4	0.93	0.12	3.27	15,15,17,17	0
5	BXB	C	1001	21/21	0.84	0.14	3.11	19,20,22,33	0
3	EDO	E	501	4/4	0.88	0.13	3.09	17,18,19,21	0
4	GAI	D	801	4/4	0.92	0.12	2.87	16,16,18,19	0
3	EDO	G	701	4/4	0.84	0.15	2.87	31,31,32,32	0
5	BXB	G	1001	21/21	0.87	0.14	2.49	18,20,22,33	0
5	BXB	A	1001	21/21	0.89	0.12	2.45	17,18,21,34	0
3	EDO	F	702	4/4	0.90	0.12	2.21	18,18,18,20	0
5	BXB	E	1001	21/21	0.87	0.13	1.62	18,20,23,32	0
4	GAI	H	801	4/4	0.91	0.11	0.92	16,17,18,18	0
3	EDO	B	501	4/4	0.93	0.10	0.71	16,16,16,17	0
4	GAI	E	801	4/4	0.92	0.11	0.58	18,19,20,20	0
4	GAI	F	801	4/4	0.90	0.10	0.48	18,20,21,21	0
4	GAI	A	801	4/4	0.95	0.09	-0.10	14,17,17,18	0
3	EDO	E	702	4/4	0.97	0.08	-0.80	17,18,18,19	0
2	NA	F	601	1/1	0.97	0.09	-1.36	21,21,21,21	0
2	NA	E	601	1/1	0.96	0.07	-2.78	19,19,19,19	0
2	NA	C	601	1/1	0.97	0.06	-2.97	21,21,21,21	0
2	NA	B	601	1/1	0.96	0.07	-3.03	21,21,21,21	0
2	NA	H	601	1/1	0.99	0.05	-3.60	15,15,15,15	0
2	NA	G	601	1/1	0.99	0.04	-4.37	21,21,21,21	0
2	NA	A	601	1/1	0.99	0.05	-5.90	17,17,17,17	0
2	NA	D	601	1/1	1.00	0.02	-6.72	17,17,17,17	0

6.5 Other polymers ⓘ

There are no such residues in this entry.