WORLDWIDE PDB
PROTEIN DATA BANK

wwPDB X-ray Structure Validation Summary Report (i)

Nov 17, 2025 – 03:09 pm GMT

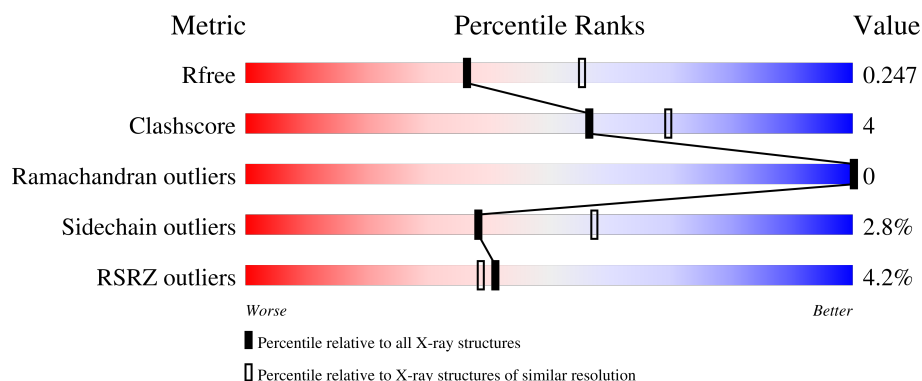|		
PDB ID	:	9HUD / pdb_00009hud
Title	:	Alpha-1-antitrypsin in the cleaved conformation in complex with a conformationally nonselective Fab fragment
Authors	:	Irving, J.A.; Aldobiyan, I.F.
Deposited on	:	2024-12-22
Resolution	:	2.42 Å(reported)

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 2.42 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.
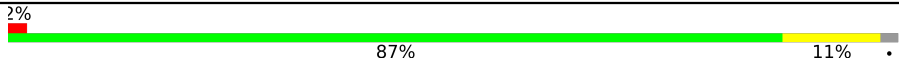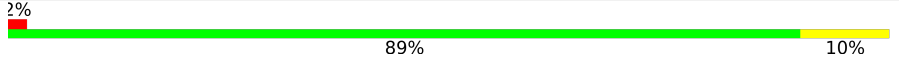
Metric	Percentile Ranks	Value
Rfree		0.247
Clashscore		4
Ramachandran outliers		0
Sidechain outliers		2.8%
RSRZ outliers		4.2%

Worse — *Better*

▌ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution
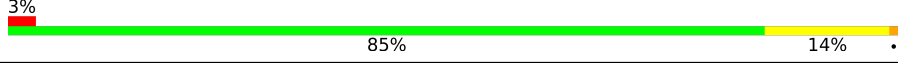
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	5670 (2.44-2.40)
Clashscore	180529	6299 (2.44-2.40)
Ramachandran outliers	177936	6232 (2.44-2.40)
Sidechain outliers	177891	6233 (2.44-2.40)
RSRZ outliers	164620	5670 (2.44-2.40)

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	364	5% / 77% 14% 9%
1	C	364	5% / 82% 10% 9%
2	B	40	5% / 65% 15% 20%
2	D	40	5% / 60% 22% 18%
3	H	218	4% / 86% 13% •

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Mol	Chain	Length	Quality of chain
3	I	218	2% 87% 11%
4	L	214	2% 89% 10%
4	M	214	3% 85% 14%

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
6	GLY	H	302	-	X	-	-
6	GLY	I	301	-	X	-	-

2 Entry composition ⓘ

There are 11 unique types of molecules in this entry. The entry contains 12718 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 Alpha-1-antitrypsin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	332	Total 2516	C 1620	N 404	O 486	S 6	0	2	0
1	C	332	Total 2533	C 1630	N 403	O 493	S 7	0	1	0

There are 22 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-9	MET	-	initiating methionine	UNP P01009
A	-8	ARG	-	expression tag	UNP P01009
A	-7	GLY	-	expression tag	UNP P01009
A	-6	SER	-	expression tag	UNP P01009
A	-5	HIS	-	expression tag	UNP P01009
A	-4	HIS	-	expression tag	UNP P01009
A	-3	HIS	-	expression tag	UNP P01009
A	-2	HIS	-	expression tag	UNP P01009
A	-1	HIS	-	expression tag	UNP P01009
A	0	HIS	-	expression tag	UNP P01009
A	1	THR	-	expression tag	UNP P01009
C	-9	MET	-	initiating methionine	UNP P01009
C	-8	ARG	-	expression tag	UNP P01009
C	-7	GLY	-	expression tag	UNP P01009
C	-6	SER	-	expression tag	UNP P01009
C	-5	HIS	-	expression tag	UNP P01009
C	-4	HIS	-	expression tag	UNP P01009
C	-3	HIS	-	expression tag	UNP P01009
C	-2	HIS	-	expression tag	UNP P01009
C	-1	HIS	-	expression tag	UNP P01009
C	0	HIS	-	expression tag	UNP P01009
C	1	THR	-	expression tag	UNP P01009

- Molecule 2 is a protein called Short peptide from AAT.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	32	Total 244	C 164	N 38	O 40	S 2	0	0	0
2	D	33	Total 255	C 168	N 40	O 45	S 2	0	0	0

- Molecule 3 is a protein called FAB 9C5 heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	H	217	Total 1613	C 1017	N 268	O 321	S 7	0	3	0
3	I	214	Total 1612	C 1016	N 266	O 323	S 7	0	3	0

- Molecule 4 is a protein called FAB 9C5 light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	L	213	Total 1646	C 1030	N 277	O 333	S 6	0	1	0
4	M	213	Total 1643	C 1031	N 277	O 329	S 6	0	1	0

- Molecule 5 is 1,2-ETHANEDIOL (CCD ID: EDO) (formula: $C_2H_6O_2$).

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

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	C	1	Total 4	C 2	O 2	0	0
5	L	1	Total 4	C 2	O 2	0	0
5	I	1	Total 4	C 2	O 2	0	0
5	M	1	Total 4	C 2	O 2	0	0
5	M	1	Total 4	C 2	O 2	0	0

- Molecule 6 is GLYCINE (CCD ID: GLY) (formula: $C_2H_5NO_2$).
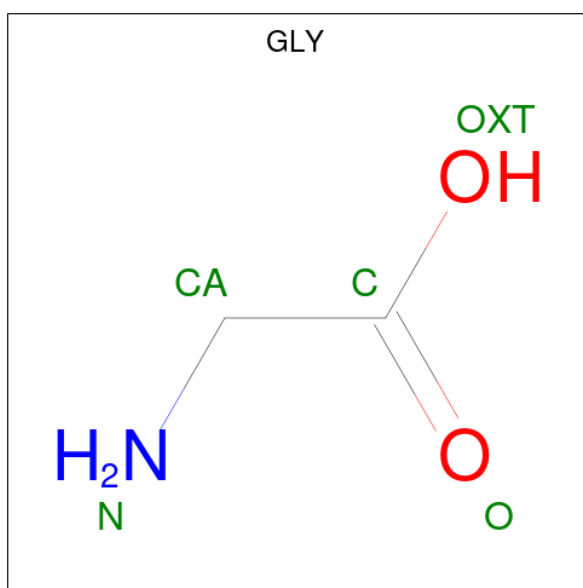
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	H	1	Total 5	C 2	N 1	O 2	0	0
6	H	1	Total 5	C 2	N 1	O 2	0	0
6	I	1	Total 5	C 2	N 1	O 2	0	0

- Molecule 7 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	H	1	Total 1	Cl 1	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	M	1	Total Cl 1 1		0	0

- Molecule 8 is SODIUM ION (CCD ID: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	L	1	Total Na 1 1		0	0
8	M	1	Total Na 1 1		0	0

- Molecule 9 is GLYCEROL (CCD ID: GOL) (formula: $C_3H_8O_3$).
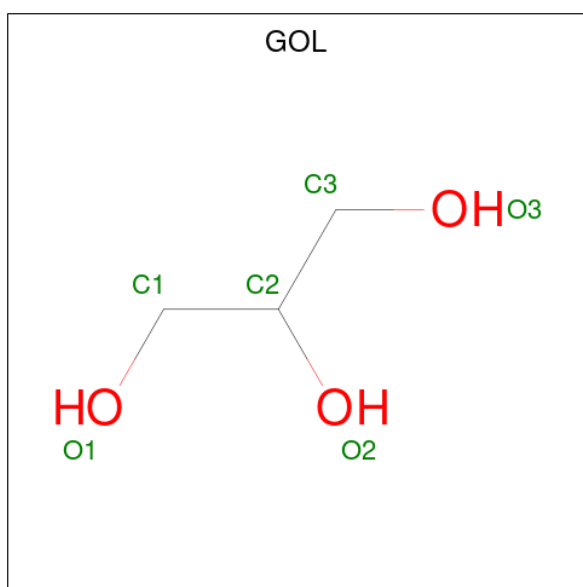
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
9	I	1	Total C O 6 3 3			0	0

- Molecule 10 is LYSINE (CCD ID: LYS) (formula: $C_6H_{15}N_2O_2$).

LYS
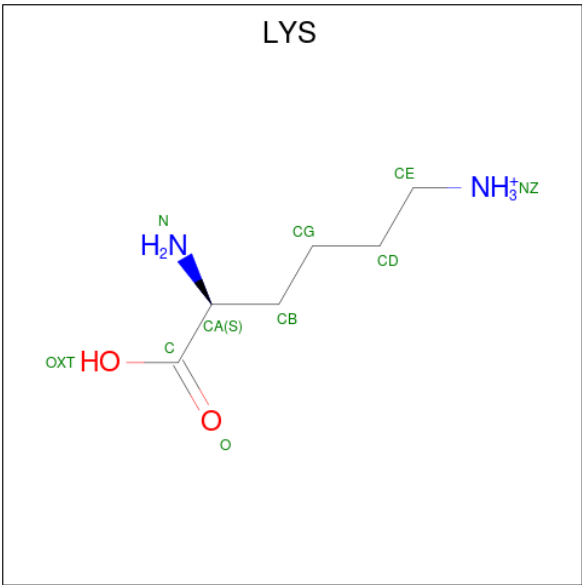
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
10	M	1	Total 10	C 6	N 2	O 2	0	0

- Molecule 11 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
11	A	66	Total 66	O 66	0	0
11	B	8	Total 8	O 8	0	0
11	C	81	Total 81	O 81	0	0
11	D	6	Total 6	O 6	0	0
11	H	102	Total 102	O 102	0	0
11	L	102	Total 103	O 103	0	1
11	I	121	Total 121	O 121	0	0
11	M	110	Total 110	O 110	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: Alpha-1-antitrypsin
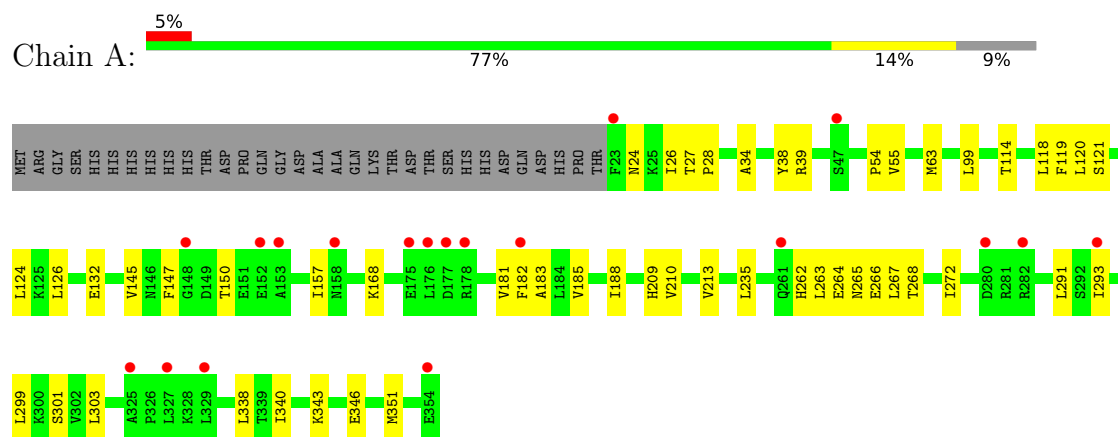
- Molecule 1: Alpha-1-antitrypsin
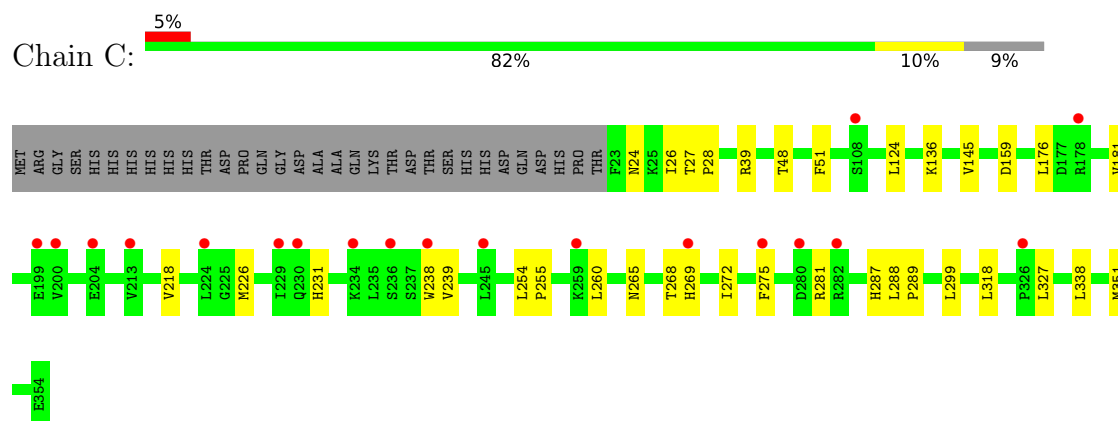
- Molecule 2: Short peptide from AAT

- Molecule 2: Short peptide from AAT

Chain D:

5%

60% 22% 18%

ALA ILE PRO MET SER ILE PRO P362 E363 V364 K365 K368 P369 L373 T379 F384 V388 T392 Q393 K394

• Molecule 3: FAB 9C5 heavy chain

Chain H:

4%

86% 13%

Q1 L11 V12 L20 H35 Q39 R40 P41 E42 Q43 G44 L45 R50 K58 L82 L82C D86 R94 D100 T106 S112 P118 P122 G126 S127 G128 A129 Q130 T131 M134 Y144 F145 P146 T150 L169 L176 T181

A197 K207 R212 D213 CYS

• Molecule 3: FAB 9C5 heavy chain

Chain I:

2%

87% 11%

Q1 Q5 L20 D31 K38 Q39 R40 P41 E42 I48 G49 R50 K58 A88 R94 S98 G103 Q104 G105 T106 V120 G126 S127 G128 ALA GLN THR N132 S133 M134 C139 L176 T181 V182 P183 T186 W187 P188 C194 P211 R212 D213

CYS

• Molecule 4: FAB 9C5 light chain

Chain L:

2%

89% 10%

S1 M4 V13 S14 C23 V29 D32 L46 K55 T77 Q89 Q90 D91 H92 S93 F94 P95 L96 K97 F98 I150 L179 T193 C194 E195 T202 S203 P204 I205 V206 N212 E213 CYS

• Molecule 4: FAB 9C5 light chain

Chain M:

3%

85% 14%

S1 V19 V29 D32 W35 P43 L46 Y49 F73 T77 Q89 Q90 D91 H92 S93 F94 P95 L96 K97 S122 N138 K142 N145 I150 Q156 N157 W163 D170 S171 T172 L179 D184 R188 E195 V206 N212

E213 CYS

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α, β, γ	117.25Å 239.25Å 68.94Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	47.65 – 2.42 47.65 – 2.42	Depositor EDS
% Data completeness (in resolution range)	99.7 (47.65-2.42) 92.0 (47.65-2.42)	Depositor EDS
R_{merge}	0.32	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.50 (at 2.42Å)	Xtriage
Refinement program	PHENIX 1.21.2_5419	Depositor
R, R_{free}	0.211 , 0.247 0.211 , 0.247	Depositor DCC
R_{free} test set	3827 reflections (3.06%)	wwPDB-VP
Wilson B-factor (Å^2)	30.6	Xtriage
Anisotropy	0.202	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 70.1	EDS
L-test for twinning[2]	$< |L| > = 0.49, < L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	12718	wwPDB-VP
Average B, all atoms (Å^2)	50.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.72% 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: EDO, GOL, CL, NA

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	0.12	0/2568	0.28	0/3494
1	C	0.13	0/2583	0.28	0/3510
2	B	0.13	0/251	0.36	0/340
2	D	0.14	0/262	0.42	0/355
3	H	0.15	0/1660	0.35	0/2277
3	I	0.19	0/1658	0.37	0/2270
4	L	0.15	0/1687	0.36	0/2295
4	M	0.15	0/1681	0.36	0/2288
All	All	0.15	0/12350	0.33	0/16829

There are no bond length outliers.

There are no bond angle outliers.

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	2516	0	2391	31	0
1	C	2533	0	2421	21	0
2	B	244	0	244	7	0
2	D	255	0	244	7	0
3	H	1613	0	1553	15	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	I	1612	0	1555	14	0
4	L	1646	0	1562	11	0
4	M	1643	0	1562	17	0
5	C	8	0	12	0	0
5	I	4	0	6	0	0
5	L	4	0	6	0	0
5	M	8	0	12	1	0
6	H	10	0	4	0	0
6	I	5	0	2	0	0
7	H	1	0	0	0	0
7	M	1	0	0	0	0
8	L	1	0	0	0	0
8	M	1	0	0	0	0
9	I	6	0	8	1	0
10	M	10	0	12	0	0
11	A	66	0	0	0	0
11	B	8	0	0	0	0
11	C	81	0	0	0	0
11	D	6	0	0	0	0
11	H	102	0	0	0	0
11	I	121	0	0	0	0
11	L	103	0	0	0	0
11	M	110	0	0	0	0
All	All	12718	0	11594	106	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 4.

The worst 5 of 106 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)
3:I:120:VAL:H	9:I:303:GOL:H32	1.53	0.73
3:I:40:ARG:HG2	3:I:88:ALA:HB2	1.77	0.67
1:C:24:ASN:HB3	1:C:27:THR:HG23	1.77	0.66
3:I:188:PRO:HB3	3:I:211:PRO:HG3	1.80	0.63
1:A:24:ASN:HB3	1:A:27:THR:HG23	1.81	0.62

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	332/364 (91%)	330 (99%)	2 (1%)	0	100	100
1	C	331/364 (91%)	327 (99%)	4 (1%)	0	100	100
2	B	30/40 (75%)	29 (97%)	1 (3%)	0	100	100
2	D	31/40 (78%)	30 (97%)	1 (3%)	0	100	100
3	H	218/218 (100%)	215 (99%)	3 (1%)	0	100	100
3	I	213/218 (98%)	211 (99%)	2 (1%)	0	100	100
4	L	212/214 (99%)	205 (97%)	7 (3%)	0	100	100
4	M	212/214 (99%)	206 (97%)	6 (3%)	0	100	100
All	All	1579/1672 (94%)	1553 (98%)	26 (2%)	0	100	100

There are no Ramachandran outliers to report.

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	257/319 (81%)	252 (98%)	5 (2%)	52	70
1	C	264/319 (83%)	262 (99%)	2 (1%)	79	89
2	B	27/38 (71%)	27 (100%)	0	100	100
2	D	28/38 (74%)	28 (100%)	0	100	100
3	H	179/188 (95%)	170 (95%)	9 (5%)	20	34
3	I	181/188 (96%)	175 (97%)	6 (3%)	33	51

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	L	185/190 (97%)	180 (97%)	5 (3%)	40	58
4	M	183/190 (96%)	174 (95%)	9 (5%)	21	35
All	All	1304/1470 (89%)	1268 (97%)	36 (3%)	38	57

5 of 36 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	M	77	THR
4	M	157	ASN
4	M	89	GLN
4	M	122	SER
3	H	112	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 13 such sidechains are listed below:

Mol	Chain	Res	Type
4	L	38	GLN
4	L	53	ASN
4	M	38	GLN
3	I	5	GLN
3	I	39	GLN

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 oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 15 ligands modelled in this entry, 4 are monoatomic - leaving 11 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	$\#|Z| > 2$
10	LYS	M	503	-	8,9,9	0.76	1 (12%)	9,10,10	1.17	2 (22%)
6	GLY	H	301	-	4,4,4	1.13	1 (25%)	3,4,4	1.65	1 (33%)
5	EDO	M	501	-	3,3,3	0.26	0	2,2,2	0.37	0
5	EDO	M	502	-	3,3,3	0.31	0	2,2,2	0.11	0
5	EDO	C	401	-	3,3,3	0.26	0	2,2,2	0.39	0
5	EDO	L	401	-	3,3,3	0.28	0	2,2,2	0.12	0
5	EDO	I	302	-	3,3,3	0.28	0	2,2,2	0.21	0
5	EDO	C	402	-	3,3,3	0.28	0	2,2,2	0.19	0
6	GLY	I	301	-	4,4,4	1.04	0	3,4,4	1.91	2 (66%)
9	GOL	I	303	-	5,5,5	0.34	0	5,5,5	0.49	0
6	GLY	H	302	-	4,4,4	1.14	1 (25%)	3,4,4	1.79	1 (33%)

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
10	LYS	M	503	-	-	0/9/9/9	-
6	GLY	H	301	-	-	1/2/2/2	-
5	EDO	M	501	-	-	1/1/1/1	-
5	EDO	M	502	-	-	0/1/1/1	-
5	EDO	C	401	-	-	1/1/1/1	-
5	EDO	L	401	-	-	0/1/1/1	-
5	EDO	I	302	-	-	1/1/1/1	-
5	EDO	C	402	-	-	0/1/1/1	-
6	GLY	I	301	-	-	2/2/2/2	-
9	GOL	I	303	-	-	2/4/4/4	-
6	GLY	H	302	-	-	2/2/2/2	-

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	H	302	GLY	OXT-C	-2.16	1.23	1.30
6	H	301	GLY	OXT-C	-2.11	1.23	1.30
10	M	503	LYS	OXT-C	-2.01	1.24	1.30

The worst 5 of 6 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
10	M	503	LYS	OXT-C-O	-2.43	118.57	124.09
10	M	503	LYS	OXT-C-CA	2.36	121.42	113.38
6	H	302	GLY	OXT-C-O	-2.35	117.45	123.30
6	I	301	GLY	OXT-C-CA	2.32	122.68	113.45
6	I	301	GLY	OXT-C-O	-2.27	117.64	123.30

There are no chirality outliers.

5 of 10 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	H	302	GLY	O-C-CA-N
6	I	301	GLY	O-C-CA-N
6	I	301	GLY	OXT-C-CA-N
9	I	303	GOL	O1-C1-C2-C3
6	H	302	GLY	OXT-C-CA-N

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	M	501	EDO	1	0
9	I	303	GOL	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(Å²)	Q<0.9
1	A	332/364 (91%)	0.58	19 (5%)	30	28	35, 63, 95, 122	2 (0%)
1	C	332/364 (91%)	0.43	19 (5%)	30	28	33, 56, 98, 119	1 (0%)
2	B	32/40 (80%)	0.32	2 (6%)	27	25	43, 52, 75, 78	0
2	D	33/40 (82%)	0.56	2 (6%)	28	26	46, 60, 93, 104	0
3	H	217/218 (99%)	-0.19	9 (4%)	42	40	17, 34, 71, 124	3 (1%)
3	I	214/218 (98%)	-0.12	5 (2%)	61	58	15, 36, 62, 117	3 (1%)
4	L	213/214 (99%)	0.00	4 (1%)	66	63	21, 42, 68, 93	1 (0%)
4	M	213/214 (99%)	-0.12	6 (2%)	55	52	14, 39, 60, 94	1 (0%)
All	All	1586/1672 (94%)	0.17	66 (4%)	41	39	14, 47, 90, 124	11 (0%)

The worst 5 of 66 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
4	L	94	PHE	4.8
3	H	213	ASP	4.8
3	H	131	THR	4.3
4	M	94	PHE	4.2
1	C	199	GLU	4.0

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 oligosaccharides 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	EDO	M	502	4/4	0.71	0.24	46,48,51,56	0
6	GLY	I	301	5/5	0.71	0.23	55,55,56,56	0
10	LYS	M	503	10/10	0.82	0.17	65,66,68,68	0
6	GLY	H	302	5/5	0.87	0.15	56,57,57,60	0
5	EDO	L	401	4/4	0.88	0.14	44,44,44,44	0
5	EDO	C	401	4/4	0.89	0.13	45,49,50,54	0
7	CL	H	303	1/1	0.90	0.09	66,66,66,66	0
9	GOL	I	303	6/6	0.90	0.15	29,36,40,46	0
5	EDO	C	402	4/4	0.90	0.11	47,48,50,51	0
5	EDO	I	302	4/4	0.91	0.12	38,39,44,45	0
6	GLY	H	301	5/5	0.92	0.09	44,45,45,45	0
5	EDO	M	501	4/4	0.92	0.12	42,43,43,47	0
8	NA	L	402	1/1	0.93	0.15	45,45,45,45	0
8	NA	M	505	1/1	0.93	0.25	53,53,53,53	0
7	CL	M	504	1/1	0.96	0.07	65,65,65,65	0

6.5 Other polymers ⓘ

There are no such residues in this entry.