



Full wwPDB X-ray Structure Validation Report

Mar 1, 2014 – 12:46 AM GMT

PDB ID : 4EB1
Title : Hyperstable in-frame insertion variant of antithrombin
Authors : Martinez-Martinez, I.; Johnson, D.J.D.; Yamasaki, M.; Corral, J.; Huntington, J.A.
Deposited on : 2012-03-23
Resolution : 2.80 Å(reported)

This is a full wwPDB 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/ValidationPDFNotes.html>

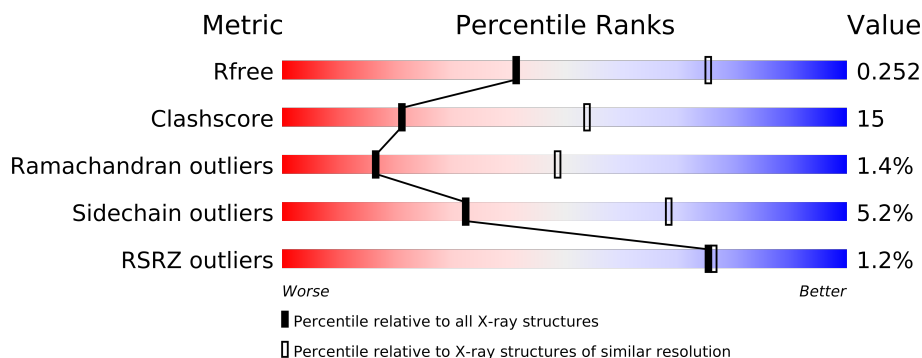
The following versions of software and data (see [references](#)) were used in the production of this report:

MolProbity	:	4.02b-467
Mogul	:	1.15 2013
Xtriage (Phenix)	:	dev-1323
EDS	:	stable22639
Percentile statistics	:	21963
Refmac	:	5.8.0049
CCP4	:	6.3.0 (Settle)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP)	:	stable22683

1 Overall quality at a glance

The reported resolution of this entry is 2.80 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}	66092	1799 (2.80-2.80)
Clashscore	79885	2295 (2.80-2.80)
Ramachandran outliers	78287	2252 (2.80-2.80)
Sidechain outliers	78261	2254 (2.80-2.80)
RSRZ outliers	66119	1802 (2.80-2.80)

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. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density.

Mol	Chain	Length	Quality of chain
1	I	440	
2	L	432	

The following table lists non-polymeric compounds that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Geometry	Electron density
3	NAG	I	804	-	X

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 6205 atoms, of which 0 are hydrogen and 0 are deuterium.

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 Antithrombin-III.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	I	411	Total	C	N	O	S	0	0	0
			3152	2023	518	593	18			

There are 11 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	137	ALA	SER	ENGINEERED MUTATION	UNP P01008
I	209	VAL	-	INSERTION	UNP P01008
I	210	LEU	-	INSERTION	UNP P01008
I	211	VAL	-	INSERTION	UNP P01008
I	212	LEU	-	INSERTION	UNP P01008
I	213	VAL	-	INSERTION	UNP P01008
I	214	ASN	-	INSERTION	UNP P01008
I	215	THR	-	INSERTION	UNP P01008
I	216	ARG	-	INSERTION	UNP P01008
I	217	THR	-	INSERTION	UNP P01008
I	218	SER	-	INSERTION	UNP P01008

- Molecule 2 is a protein called Antithrombin-III.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	L	392	Total	C	N	O	S	0	0	0
			2942	1884	486	554	18			

- Molecule 3 is SUGAR (N-ACETYL-D-GLUCOSAMINE) (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	I	1	Total	C	N	O	0	0
			14	8	1	5		
3	I	1	Total	C	N	O	0	0
			14	8	1	5		

- Molecule 4 is a polymer of unknown type called SUGAR (2-MER).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	I	2	Total	C	N	O	0	0
			28	16	2	10		
4	L	2	Total	C	N	O	0	0
			28	16	2	10		

There are 11 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	137	ALA	SER	ENGINEERED MUTATION	UNP P01008
I	209	VAL	-	INSERTION	UNP P01008
I	210	LEU	-	INSERTION	UNP P01008
I	211	VAL	-	INSERTION	UNP P01008
I	212	LEU	-	INSERTION	UNP P01008
I	213	VAL	-	INSERTION	UNP P01008
I	214	ASN	-	INSERTION	UNP P01008
I	215	THR	-	INSERTION	UNP P01008
I	216	ARG	-	INSERTION	UNP P01008
I	217	THR	-	INSERTION	UNP P01008
I	218	SER	-	INSERTION	UNP P01008

- Molecule 5 is water.

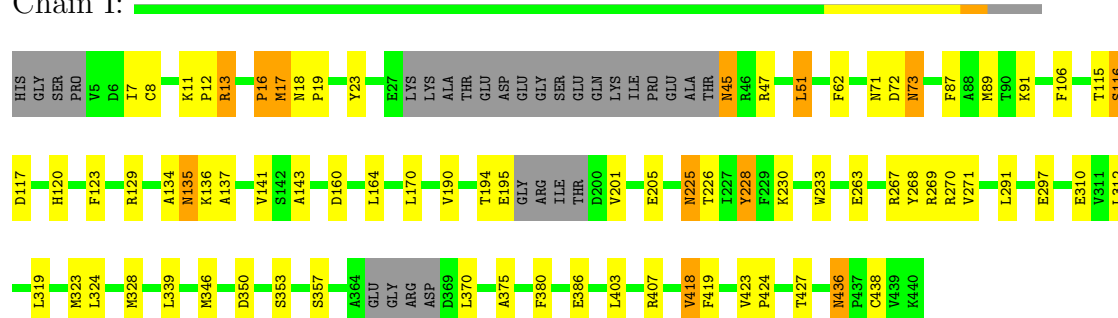
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	I	16	Total 16	O 16	0	0
5	L	11	Total 11	O 11	0	0

3 Residue-property plots

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.

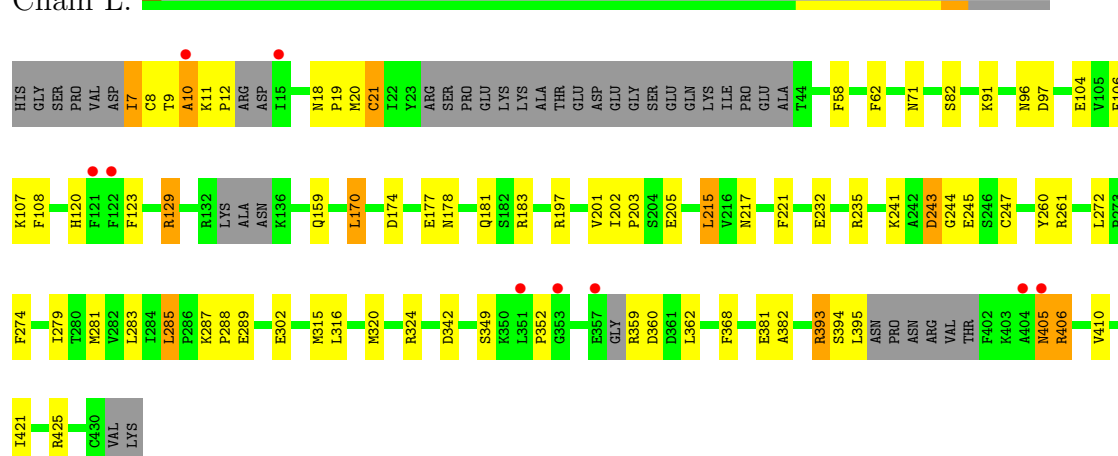
• Molecule 1: Antithrombin-III

Chain I:



• Molecule 2: Antithrombin-III

Chain L:



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	69.75Å 101.75Å 88.81Å 90.00° 105.42° 90.00°	Depositor
Resolution (Å)	61.40 – 2.80 61.40 – 2.80	Depositor EDS
% Data completeness (in resolution range)	95.7 (61.40-2.80) 95.7 (61.40-2.80)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	0.07	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.08 (at 2.81Å)	Xtriage
Refinement program	REFMAC 5.6.0098	Depositor
R, R_{free}	0.198 , 0.255 0.198 , 0.252	Depositor DCC
R_{free} test set	1426 reflections (5.31%)	DCC
Wilson B-factor (Å ²)	75.2	Xtriage
Anisotropy	0.175	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 55.8	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Outliers	0 of 28299 reflections	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	6205	wwPDB-VP
Average B, all atoms (Å ²)	77.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.43% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: NAG

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	I	0.24	0/3215	0.41	0/4362
2	L	0.23	0/2999	0.38	0/4078
All	All	0.24	0/6214	0.40	0/8440

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 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 hydrogens added by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, and the number in parentheses is this value normalized per 1000 atoms of the molecule in the chain. The Symm-Clashes column gives symmetry related clashes, in the same way as for the Clashes column.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	I	3152	0	0	47	1
2	L	2942	0	0	47	0
3	I	28	0	26	1	0
4	I	28	0	25	2	0
4	L	28	0	25	3	0
5	I	16	0	0	0	0
5	L	11	0	0	1	0
All	All	6205	0	76	96	1

Clashscore is defined as the number of clashes calculated for the entry per 1000 atoms (including

hydrogens) of the entry. The overall clashscore for this entry is 15.

All (96) close contacts within the same asymmetric unit are listed below.

Atom-1	Atom-2	Distance(Å)	Clash(Å)
2:L:241:LYS:NZ	2:L:247:CYS:SG	2.21	1.14
2:L:20:MET:CE	2:L:352:PRO:CG	2.35	1.04
1:I:89:MET:CE	1:I:225:ASN:OD1	2.16	0.93
1:I:91:LYS:CE	1:I:120:HIS:NE2	2.35	0.90
2:L:20:MET:O	2:L:21:CYS:SG	2.32	0.87
1:I:19:PRO:O	4:I:803:NAG:H81	1.74	0.87
1:I:91:LYS:NZ	1:I:120:HIS:NE2	2.23	0.85
2:L:96:ASN:OD1	2:L:97:ASP:N	2.10	0.84
2:L:129:ARG:NH1	2:L:129:ARG:CG	2.42	0.83
1:I:17:MET:O	1:I:19:PRO:CD	2.27	0.83
1:I:13:ARG:CG	1:I:13:ARG:NH1	2.42	0.82
2:L:178:ASN:ND2	2:L:181:GLN:OE1	2.13	0.81
2:L:91:LYS:CE	2:L:120:HIS:NE2	2.46	0.79
4:L:502:NAG:O7	4:L:502:NAG:H3	1.85	0.74
2:L:9:THR:O	2:L:10:ALA:CB	2.38	0.71
1:I:134:ALA:O	1:I:135:ASN:CB	2.40	0.70
1:I:436:ASN:ND2	1:I:436:ASN:C	2.46	0.69
1:I:91:LYS:NZ	1:I:120:HIS:CD2	2.61	0.68
1:I:291:LEU:CD1	1:I:328:MET:CE	2.72	0.68
2:L:203:PRO:CG	2:L:368:PHE:CE1	2.77	0.66
2:L:205:GLU:O	2:L:393:ARG:CD	2.43	0.66
1:I:141:VAL:CG2	1:I:228:TYR:CE1	2.78	0.66
1:I:323:MET:CE	1:I:403:LEU:CD1	2.75	0.65
1:I:7:ILE:CG2	1:I:164:LEU:CD1	2.78	0.62
2:L:91:LYS:NZ	2:L:120:HIS:NE2	2.49	0.61
1:I:71:ASN:OD1	1:I:73:ASN:ND2	2.35	0.60
2:L:20:MET:CE	2:L:352:PRO:CB	2.80	0.59
1:I:194:THR:O	1:I:195:GLU:C	2.41	0.58
2:L:243:ASP:OD1	2:L:245:GLU:N	2.36	0.57
2:L:405:ASN:O	2:L:406:ARG:C	2.44	0.56
2:L:183:ARG:NH1	2:L:202:ILE:O	2.38	0.56
2:L:96:ASN:CG	2:L:97:ASP:N	2.55	0.55
2:L:215:LEU:N	2:L:215:LEU:CD1	2.70	0.55
2:L:19:PRO:O	4:L:502:NAG:H81	2.06	0.54
1:I:136:LYS:O	1:I:137:ALA:CB	2.54	0.54
1:I:436:ASN:ND2	1:I:438:CYS:N	2.56	0.54
2:L:174:ASP:OD2	2:L:177:GLU:CB	2.55	0.54
2:L:243:ASP:C	2:L:243:ASP:OD1	2.45	0.54
1:I:115:THR:O	1:I:116:SER:C	2.46	0.53
1:I:16:PRO:O	1:I:17:MET:CB	2.56	0.53

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
2:L:91:LYS:CE	2:L:120:HIS:CE1	2.91	0.53
2:L:283:LEU:CD1	2:L:320:MET:CE	2.88	0.52
2:L:104:GLU:O	2:L:107:LYS:N	2.43	0.52
1:I:19:PRO:O	4:I:803:NAG:C8	2.54	0.52
1:I:201:VAL:O	1:I:230:LYS:CE	2.58	0.51
2:L:287:LYS:O	2:L:289:GLU:N	2.43	0.51
1:I:228:TYR:CD2	1:I:228:TYR:C	2.84	0.51
2:L:260:TYR:CD2	2:L:261:ARG:N	2.80	0.50
2:L:97:ASP:CB	2:L:342:ASP:OD2	2.59	0.50
2:L:106:PHE:CB	2:L:108:PHE:CE2	2.95	0.49
1:I:339:LEU:N	1:I:375:ALA:O	2.45	0.48
2:L:260:TYR:CG	2:L:261:ARG:N	2.82	0.48
1:I:267:ARG:NH2	1:I:319:LEU:O	2.45	0.48
2:L:349:SER:OG	2:L:362:LEU:O	2.32	0.48
1:I:45:ASN:ND2	1:I:45:ASN:C	2.66	0.47
1:I:62:PHE:CD1	1:I:346:MET:CE	2.96	0.47
2:L:241:LYS:CE	2:L:247:CYS:SG	3.02	0.47
1:I:357:SER:OG	1:I:370:LEU:O	2.33	0.47
2:L:359:ARG:O	2:L:360:ASP:CB	2.62	0.47
1:I:23:TYR:CD2	1:I:23:TYR:C	2.88	0.46
1:I:268:TYR:CG	1:I:269:ARG:N	2.84	0.46
3:I:801:NAG:O7	3:I:801:NAG:H3	2.17	0.45
2:L:232:GLU:O	2:L:235:ARG:NH1	2.49	0.45
2:L:274:PHE:CD2	2:L:279:ILE:O	2.70	0.45
2:L:243:ASP:OD1	2:L:244:GLY:N	2.51	0.44
2:L:285:LEU:N	2:L:285:LEU:CD2	2.79	0.44
1:I:419:PHE:CD1	1:I:419:PHE:N	2.86	0.44
1:I:205:GLU:CG	1:I:380:PHE:CE2	3.01	0.43
2:L:82:SER:OG	2:L:217:ASN:ND2	2.52	0.43
1:I:268:TYR:CD2	1:I:269:ARG:N	2.86	0.43
1:I:350:ASP:O	1:I:353:SER:N	2.52	0.43
2:L:170:LEU:C	2:L:170:LEU:CD2	2.87	0.43
2:L:221:PHE:N	2:L:382:ALA:O	2.51	0.43
1:I:51:LEU:CD2	1:I:51:LEU:O	2.66	0.43
1:I:71:ASN:OD1	1:I:72:ASP:N	2.52	0.42
2:L:18:ASN:C	4:L:502:NAG:H83	2.40	0.42
2:L:7:ILE:O	2:L:8:CYS:C	2.56	0.42
1:I:190:VAL:O	1:I:194:THR:N	2.52	0.42
2:L:71:ASN:O	2:L:425:ARG:NH1	2.53	0.42
1:I:233:TRP:N	1:I:386:GLU:O	2.52	0.42
1:I:194:THR:CB	1:I:205:GLU:OE1	2.68	0.42
1:I:418:VAL:CG2	1:I:418:VAL:O	2.68	0.42

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:I:11:LYS:CB	1:I:12:PRO:CD	2.98	0.41
2:L:58:PHE:O	2:L:62:PHE:N	2.54	0.41
2:L:394:SER:O	2:L:395:LEU:CB	2.67	0.41
2:L:272:LEU:N	2:L:281:MET:O	2.54	0.41
1:I:263:GLU:OE2	1:I:403:LEU:CD1	2.69	0.41
1:I:7:ILE:CG1	1:I:8:CYS:N	2.84	0.40
1:I:87:PHE:CG	1:I:106:PHE:CZ	3.09	0.40
1:I:263:GLU:OE2	1:I:407:ARG:NE	2.54	0.40
1:I:115:THR:OG1	1:I:117:ASP:OD1	2.40	0.40
1:I:143:ALA:CB	1:I:226:THR:OG1	2.69	0.40
2:L:197:ARG:NH2	2:L:381:GLU:OE1	2.53	0.40
1:I:423:VAL:O	1:I:424:PRO:C	2.60	0.40
2:L:11:LYS:CB	2:L:12:PRO:CD	2.99	0.40
2:L:159:GLN:NE2	5:L:605:HOH:O	2.54	0.40

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

Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:I:160:ASP:OD1	1:I:270:ARG:NH1[2.756]	2.13	0.07

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	I	403/440 (92%)	368 (91%)	29 (7%)	6 (2%)	15	46
2	L	380/432 (88%)	343 (90%)	32 (8%)	5 (1%)	18	51
All	All	783/872 (90%)	711 (91%)	61 (8%)	11 (1%)	16	49

All (11) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	I	18	ASN
1	I	135	ASN

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Mol	Chain	Res	Type
2	L	10	ALA
1	I	17	MET
1	I	116	SER
2	L	21	CYS
1	I	16	PRO
2	L	406	ARG
2	L	288	PRO
2	L	421	ILE
1	I	271	VAL

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	I	327/390 (84%)	310 (95%)	17 (5%)	32	68
2	L	292/383 (76%)	277 (95%)	15 (5%)	33	69
All	All	619/773 (80%)	587 (95%)	32 (5%)	32	68

All (32) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	I	13	ARG
1	I	45	ASN
1	I	47	ARG
1	I	51	LEU
1	I	73	ASN
1	I	123	PHE
1	I	129	ARG
1	I	170	LEU
1	I	225	ASN
1	I	228	TYR
1	I	297	GLU
1	I	310	GLU
1	I	312	LEU
1	I	324	LEU
1	I	418	VAL
1	I	427	THR

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Mol	Chain	Res	Type
1	I	436	ASN
2	L	7	ILE
2	L	123	PHE
2	L	129	ARG
2	L	170	LEU
2	L	201	VAL
2	L	215	LEU
2	L	243	ASP
2	L	285	LEU
2	L	302	GLU
2	L	315	MET
2	L	316	LEU
2	L	324	ARG
2	L	393	ARG
2	L	405	ASN
2	L	410	VAL

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA ⓘ

There are no RNA chains 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 ⓘ

4 carbohydrates are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	NAG	I	802	1,4	12,14,15	0.74	1 (8%)	15,19,21	1.16	2 (13%)
4	NAG	I	803	4	12,14,15	0.71	1 (8%)	15,19,21	0.94	1 (6%)
4	NAG	L	501	2,4	12,14,15	0.72	1 (8%)	15,19,21	0.93	1 (6%)
4	NAG	L	502	4	12,14,15	0.71	1 (8%)	15,19,21	0.83	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	I	802	1,4	-	0/6/23/26	0/1/1/1
4	NAG	I	803	4	-	0/6/23/26	0/1/1/1
4	NAG	L	501	2,4	-	0/6/23/26	0/1/1/1
4	NAG	L	502	4	-	0/6/23/26	0/1/1/1

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	L	501	NAG	O5-C5	-2.19	1.41	1.45
4	I	802	NAG	O5-C5	-2.18	1.41	1.45
4	L	502	NAG	O5-C5	-2.15	1.41	1.45
4	I	803	NAG	O5-C5	-2.11	1.41	1.45

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	I	802	NAG	O5-C5-C6	2.66	109.77	106.98
4	I	803	NAG	O5-C5-C6	2.65	109.77	106.98
4	L	501	NAG	O5-C5-C6	2.31	109.40	106.98
4	I	802	NAG	C3-C4-C5	2.07	113.90	110.20

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

5.6 Ligand geometry ⓘ

2 ligands are modelled in this entry.

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	$\# Z > 2$
3	NAG	I	801	1	12,14,15	0.68	1 (8%)	15,19,21	0.84	1 (6%)
3	NAG	I	804	1	12,14,15	0.72	1 (8%)	15,19,21	0.94	1 (6%)

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
3	NAG	I	801	1	-	0/6/23/26	0/1/1/1
3	NAG	I	804	1	-	0/6/23/26	0/1/1/1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	I	804	NAG	O5-C5	-2.16	1.41	1.45
3	I	801	NAG	O5-C5	-2.05	1.41	1.45

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	I	801	NAG	O5-C5-C6	2.42	109.53	106.98
3	I	804	NAG	O5-C5-C6	2.39	109.49	106.98

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	I	411/440 (93%)	-0.23	0 100 100	44, 64, 107, 138	0
2	L	392/432 (90%)	-0.20	9 (2%) 57 58	52, 81, 127, 178	0
All	All	803/872 (92%)	-0.22	9 (1%) 75 78	44, 72, 119, 178	0

All (9) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	L	404	ALA	3.6
2	L	10	ALA	3.0
2	L	357	GLU	2.6
2	L	351	LEU	2.6
2	L	15	ILE	2.6
2	L	122	PHE	2.3
2	L	121	PHE	2.2
2	L	353	GLY	2.1
2	L	405	ASN	2.1

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 ⓘ

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	RSR	LLDF	B-factors(\AA^2)	Q<0.9
4	NAG	L	502	14/15	0.58	6.08	163,176,197,202	0
4	NAG	I	803	14/15	0.22	4.31	126,152,190,193	0
4	NAG	L	501	14/15	0.38	2.31	84,111,159,178	0
4	NAG	I	802	14/15	0.12	-1.16	78,102,117,139	0

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. 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	RSR	LLDF	B-factors(\AA^2)	Q<0.9
3	NAG	I	804	14/15	0.18	7.80	144,155,169,173	0
3	NAG	I	801	14/15	0.20	1.56	125,142,161,164	0

6.5 Other polymers

There are no such residues in this entry.