Full wwPDB X-ray Structure Validation Report (i)

Mar 8, 2026 – 09:28 PM UTC

PDB ID	:	6OEL / pdb_00006oel
Title	:	Engineered Fab bound to IL-4 receptor
Authors	:	Jude, K.M.; Moraga, I.; Spangler, J.B.; Garcia, K.C.
Deposited on	:	2019-03-27
Resolution	:	3.10 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references (1)) were used in the production of this report:

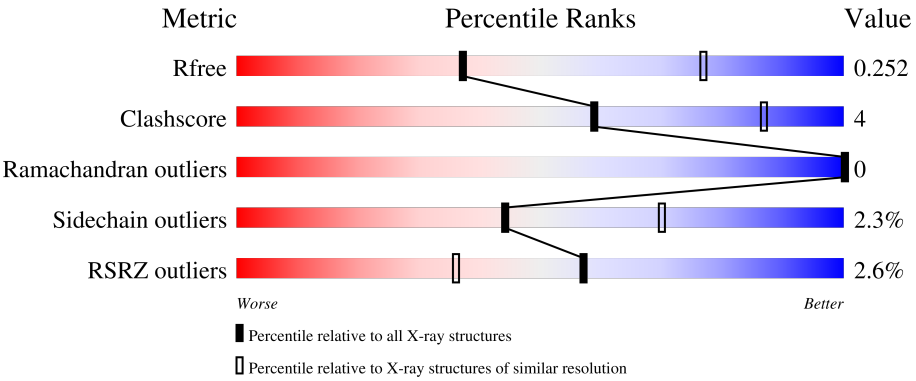
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.10 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}	180053	1456 (3.10-3.10)
Clashscore	190562	1539 (3.10-3.10)
Ramachandran outliers	187476	1467 (3.10-3.10)
Sidechain outliers	187428	1467 (3.10-3.10)
RSRZ outliers	180081	1456 (3.10-3.10)

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	129	3% 88% 9%
2	B	202	2% 82% 16%
3	C	189	5% 69% 14% 15%
4	H	229	2% 85% 12%
5	L	224	87% 8% 5%

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Mol	Chain	Length	Quality of chain
6	D	2	100%

2 Entry composition (i)

There are 9 unique types of molecules in this entry. The entry contains 7209 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 engineered Interleukin-4, RGA variant.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	127	Total	C	N	O	S	0	0	0
			988	621	180	180	7			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	117	ARG	LYS	engineered mutation	UNP P05112
A	118	VAL	THR	engineered mutation	UNP P05112
A	121	GLN	ARG	engineered mutation	UNP P05112
A	122	SER	GLU	engineered mutation	UNP P05112
A	124	TRP	TYR	engineered mutation	UNP P05112
A	125	PHE	SER	engineered mutation	UNP P05112
A	128	GLY	SER	engineered mutation	UNP P05112
A	129	ALA	SER	engineered mutation	UNP P05112

- Molecule 2 is a protein called Interleukin-4 receptor subunit alpha.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	199	Total	C	N	O	S	0	0	0
			1581	1009	263	299	10			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-2	ALA	-	expression tag	UNP P24394
B	-1	ASP	-	expression tag	UNP P24394
B	0	PRO	-	expression tag	UNP P24394
B	1	PHE	-	expression tag	UNP P24394

- Molecule 3 is a protein called Cytokine receptor common subunit gamma.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	160	Total	C	N	O	S	0	0	0
			1285	824	227	226	8			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	53	GLN	ASN	engineered mutation	UNP P31785

- Molecule 4 is a protein called engineered Fab heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	H	223	Total	C	N	O	S	0	0	0
			1643	1031	278	328	6			

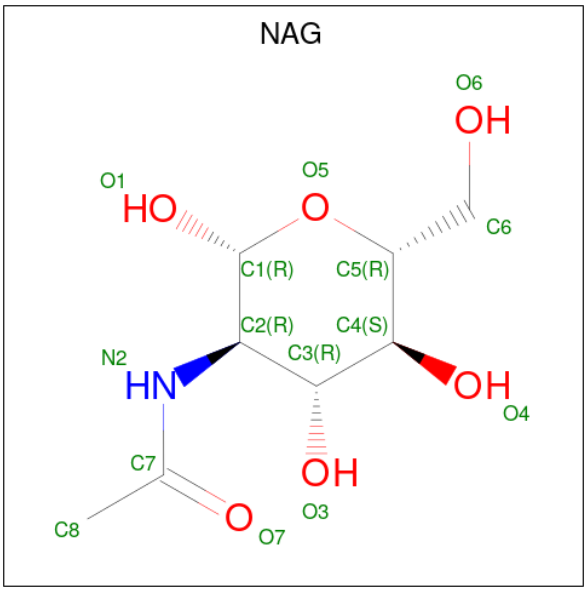
- Molecule 5 is a protein called engineered Fab light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	L	213	Total	C	N	O	S	0	0	0
			1594	999	266	325	4			

- Molecule 6 is an oligosaccharide called alpha-L-fucopyranose-(1-6)-2-acetamido-2-deoxy-beta-D-glucopyranose.

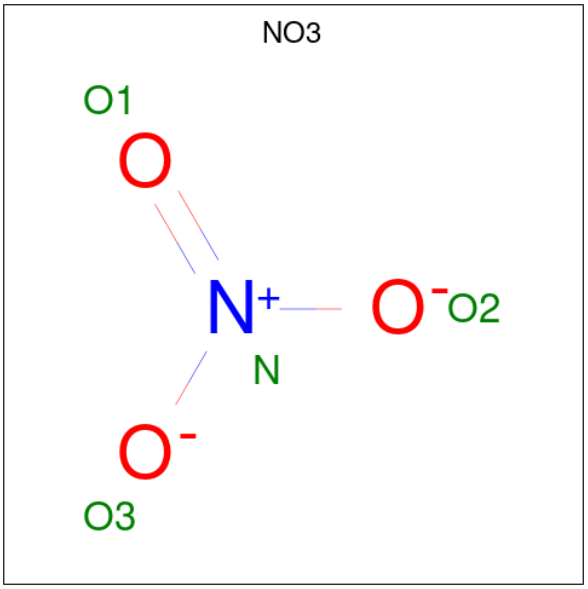
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
6	D	2	Total	C	N	O	0	0	0
			24	14	1	9			

- Molecule 7 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	B	1	Total C N O 14 8 1 5	0	0
7	B	1	Total C N O 14 8 1 5	0	0
7	B	1	Total C N O 14 8 1 5	0	0
7	B	1	Total C N O 14 8 1 5	0	0
7	C	1	Total C N O 14 8 1 5	0	0

- Molecule 8 is NITRATE ION (CCD ID: NO3) (formula: NO_3).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	H	1	Total N O 4 1 3	0	0

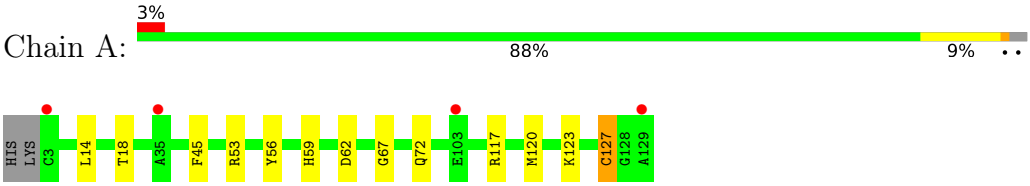
- Molecule 9 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	B	6	Total O 6 6	0	0
9	C	1	Total O 1 1	0	0
9	H	9	Total O 9 9	0	0
9	L	4	Total O 4 4	0	0

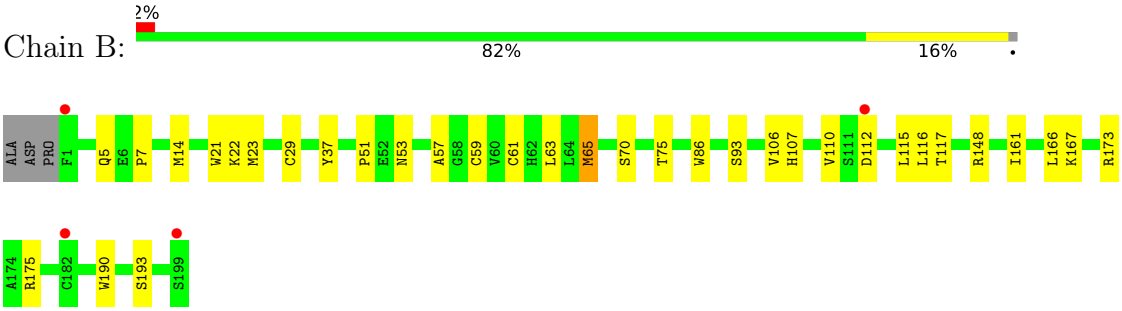
3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

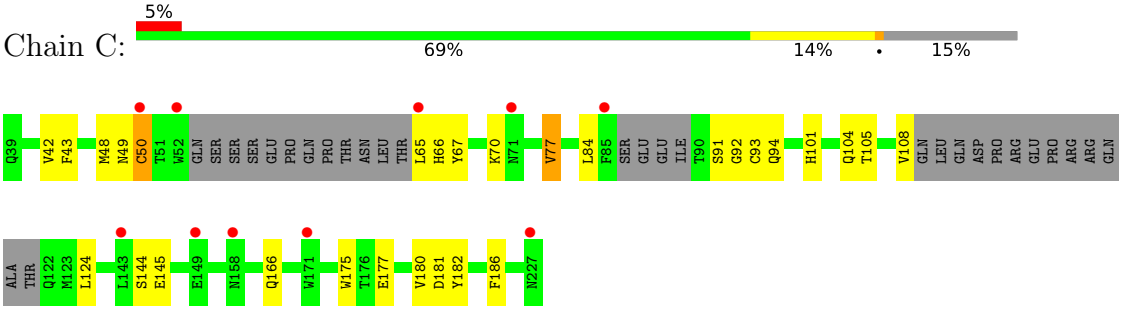
• Molecule 1: engineered Interleukin-4, RGA variant



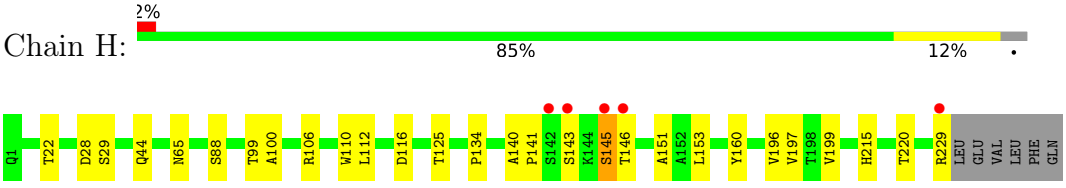
• Molecule 2: Interleukin-4 receptor subunit alpha



• Molecule 3: Cytokine receptor common subunit gamma

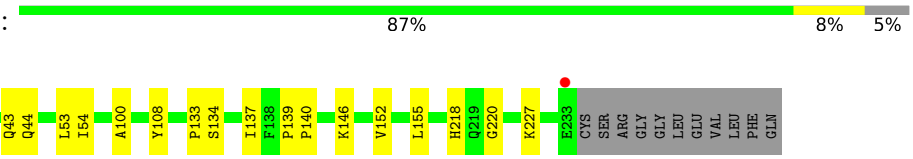


• Molecule 4: engineered Fab heavy chain



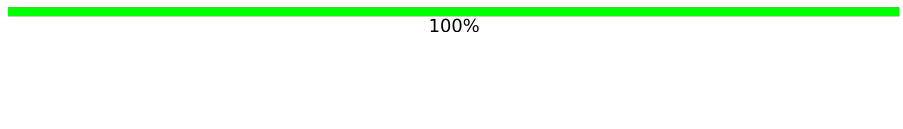
• Molecule 5: engineered Fab light chain

Chain L:



• Molecule 6: alpha-L-fucopyranose-(1-6)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain D:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	F 41 3 2	Depositor
Cell constants a, b, c, α, β, γ	328.10Å 328.10Å 328.10Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	63.14 – 3.10 63.14 – 3.10	Depositor EDS
% Data completeness (in resolution range)	95.1 (63.14-3.10) 88.3 (63.14-3.10)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.28	Depositor
$< I/\sigma(I) >$ [1]	1.12 (at 3.13Å)	Xtriage
Refinement program	PHENIX 1.15.2_3472	Depositor
R, R_{free}	0.199 , 0.256 0.197 , 0.252	Depositor DCC
R_{free} test set	1328 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	62.6	Xtriage
Anisotropy	0.000	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 61.1	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	0.92	EDS
Total number of atoms	7209	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 1.73% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: NAG, FUC, NO3

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	0/1004	0.30	0/1360
2	B	0.13	0/1631	0.30	0/2240
3	C	0.12	0/1328	0.29	0/1814
4	H	0.15	0/1685	0.39	0/2313
5	L	0.14	0/1631	0.34	0/2228
All	All	0.13	0/7279	0.33	0/9955

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	988	0	959	7	0
2	B	1581	0	1482	18	0
3	C	1285	0	1119	15	0
4	H	1643	0	1563	14	0
5	L	1594	0	1506	10	0
6	D	24	0	22	0	0
7	B	56	0	52	0	0
7	C	14	0	13	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	H	4	0	0	0	0
9	B	6	0	0	0	0
9	C	1	0	0	0	0
9	H	9	0	0	0	0
9	L	4	0	0	0	0
All	All	7209	0	6716	61	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.

All (61) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:29:CYS:HB3	2:B:51:PRO:HB2	1.69	0.74
4:H:145:SER:OG	4:H:146:THR:N	2.22	0.70
3:C:66:HIS:HB2	3:C:77:VAL:HG12	1.77	0.65
1:A:59:HIS:HA	1:A:62:ASP:HB2	1.82	0.62
5:L:140:PRO:HD3	5:L:152:VAL:HG22	1.84	0.60
3:C:43:PHE:HE2	3:C:49:ASN:HB2	1.67	0.58
1:A:67:GLY:HA3	1:A:72:GLN:HB3	1.88	0.56
3:C:166:GLN:HG3	3:C:177:GLU:HB3	1.87	0.55
2:B:107:HIS:HB2	2:B:115:LEU:HB3	1.89	0.54
3:C:84:LEU:O	3:C:91:SER:N	2.40	0.54
4:H:110:TRP:CE2	4:H:112:LEU:HD22	2.43	0.54
4:H:22:THR:HG22	4:H:88:SER:HB3	1.90	0.53
4:H:106:ARG:NH1	4:H:116:ASP:OD2	2.41	0.53
2:B:161:ILE:HD11	2:B:166:LEU:HD11	1.90	0.53
2:B:173:ARG:HH21	2:B:193:SER:HB2	1.73	0.53
3:C:101:HIS:HB3	3:C:104:GLN:HG3	1.90	0.52
1:A:18:THR:OG1	1:A:117:ARG:NH1	2.43	0.52
3:C:180:VAL:HG21	3:C:186:PHE:HB2	1.92	0.52
5:L:133:PRO:HD3	5:L:218:HIS:CD2	2.46	0.51
2:B:70:SER:HA	2:B:93:SER:HB3	1.93	0.51
2:B:63:LEU:HB3	2:B:65:MET:HE3	1.93	0.51
2:B:7:PRO:HD2	2:B:86:TRP:CE2	2.46	0.50
2:B:110:VAL:HG12	2:B:112:ASP:H	1.77	0.50
2:B:167:LYS:NZ	5:L:108:TYR:O	2.37	0.50
3:C:93:CYS:SG	3:C:94:GLN:N	2.84	0.50
2:B:21:TRP:CD1	2:B:23:MET:HE3	2.46	0.50
3:C:70:LYS:HD3	3:C:105:THR:HG21	1.94	0.49
2:B:23:MET:N	2:B:57:ALA:O	2.44	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:H:134:PRO:HD2	4:H:220:THR:HG21	1.95	0.49
4:H:99:THR:HG23	4:H:125:THR:HA	1.95	0.48
3:C:67:TYR:HB3	3:C:108:VAL:HG12	1.96	0.48
3:C:65:LEU:HG	3:C:66:HIS:H	1.78	0.47
3:C:144:SER:OG	3:C:145:GLU:N	2.48	0.47
4:H:215:HIS:HB3	4:H:220:THR:HB	1.96	0.47
4:H:151:ALA:N	4:H:199:VAL:O	2.45	0.46
1:A:45:PHE:CE1	1:A:120:MET:HE1	2.51	0.46
2:B:37:TYR:HA	2:B:75:THR:O	2.16	0.46
4:H:44:GLN:O	4:H:100:ALA:HB1	2.16	0.46
2:B:5:GLN:HG2	2:B:22:LYS:HB2	1.97	0.46
1:A:53:ARG:HA	1:A:56:TYR:CE2	2.51	0.45
2:B:107:HIS:NE2	2:B:117:THR:OG1	2.46	0.45
4:H:141:PRO:HD2	4:H:229:ARG:H	1.81	0.44
3:C:42:VAL:HG22	3:C:48:MET:HG2	2.00	0.44
5:L:43:GLN:HB2	5:L:53:LEU:HD11	2.00	0.43
4:H:134:PRO:HB3	4:H:160:TYR:HB3	2.00	0.43
5:L:218:HIS:CD2	5:L:220:GLY:H	2.37	0.43
3:C:50:CYS:O	3:C:92:GLY:HA3	2.18	0.42
4:H:28:ASP:OD1	4:H:29:SER:N	2.46	0.42
2:B:175:ARG:HD2	2:B:190:TRP:HB3	2.00	0.42
4:H:140:ALA:HB3	5:L:139:PRO:HD2	2.00	0.42
2:B:21:TRP:CE2	2:B:59:CYS:HB2	2.54	0.42
2:B:23:MET:HA	2:B:23:MET:HE2	2.02	0.42
3:C:166:GLN:HG2	3:C:175:TRP:HB3	2.01	0.42
4:H:196:VAL:HG11	5:L:155:LEU:HD22	2.01	0.42
5:L:137:ILE:HG22	5:L:227:LYS:HG2	2.02	0.41
3:C:181:ASP:OD1	3:C:182:TYR:N	2.53	0.41
1:A:14:LEU:HD13	1:A:117:ARG:HA	2.03	0.41
5:L:146:LYS:HB3	5:L:146:LYS:HE2	1.89	0.41
1:A:123:LYS:O	1:A:127:CYS:HB2	2.20	0.40
2:B:106:VAL:HG22	2:B:116:LEU:HD21	2.03	0.40
5:L:44:GLN:O	5:L:100:ALA:HB1	2.22	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	125/129 (97%)	121 (97%)	4 (3%)	0	100	100
2	B	197/202 (98%)	187 (95%)	10 (5%)	0	100	100
3	C	152/189 (80%)	141 (93%)	11 (7%)	0	100	100
4	H	221/229 (96%)	209 (95%)	12 (5%)	0	100	100
5	L	211/224 (94%)	203 (96%)	8 (4%)	0	100	100
All	All	906/973 (93%)	861 (95%)	45 (5%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	104/116 (90%)	103 (99%)	1 (1%)	68	79
2	B	175/181 (97%)	170 (97%)	5 (3%)	37	66
3	C	132/182 (72%)	129 (98%)	3 (2%)	44	70
4	H	185/200 (92%)	180 (97%)	5 (3%)	39	67
5	L	176/195 (90%)	172 (98%)	4 (2%)	44	70
All	All	772/874 (88%)	754 (98%)	18 (2%)	44	70

All (18) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	127	CYS
2	B	14	MET
2	B	53	ASN
2	B	61	CYS
2	B	65	MET
2	B	148	ARG
3	C	50	CYS
3	C	77	VAL
3	C	124	LEU
4	H	65	ASN
4	H	143	SER
4	H	145	SER
4	H	153	LEU
4	H	197	VAL
5	L	4	VAL
5	L	39	LEU
5	L	54	ILE
5	L	134	SER

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

Mol	Chain	Res	Type
1	A	15	ASN
1	A	58	HIS
1	A	121	GLN
3	C	66	HIS
3	C	104	GLN
4	H	186	GLN
5	L	180	GLN
5	L	218	HIS

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

2 monosaccharides 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	$\#\|Z\| > 2$
6	NAG	D	1	2,6	14,14,15	0.32	0	17,19,21	0.53	0
6	FUC	D	2	6	10,10,11	0.74	0	14,14,16	0.69	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
6	NAG	D	1	2,6	-	2/6/23/26	0/1/1/1
6	FUC	D	2	6	-	-	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

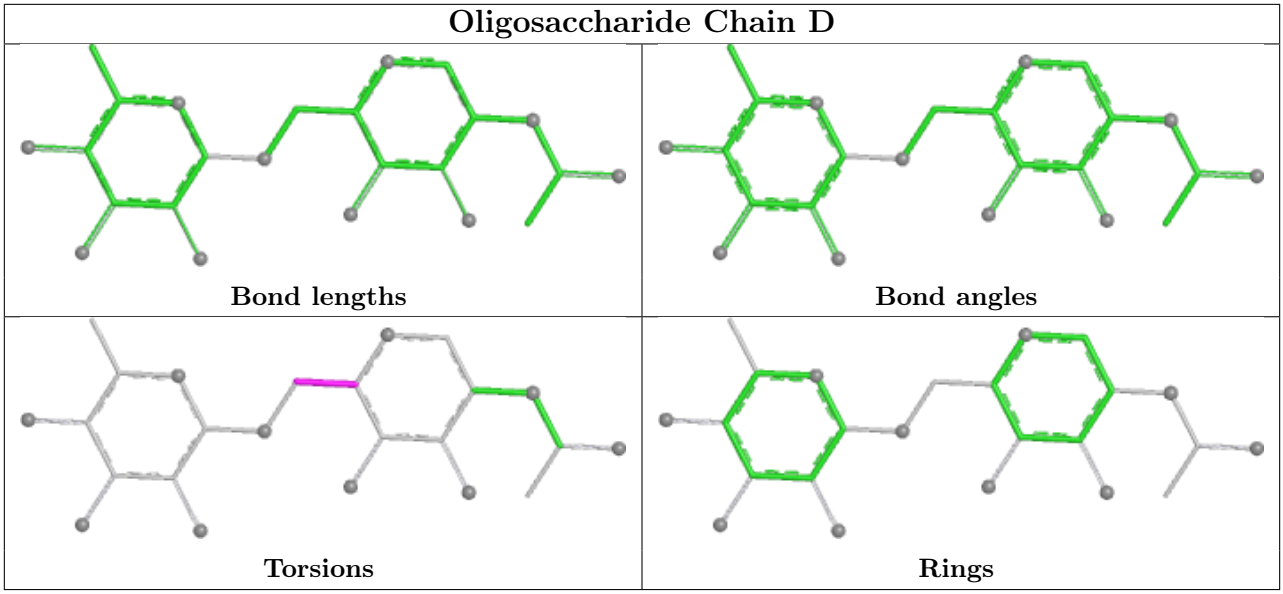
All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	D	1	NAG	O5-C5-C6-O6
6	D	1	NAG	C4-C5-C6-O6

There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.



5.6 Ligand geometry (i)

6 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	$\#\|Z\| > 2$
7	NAG	B	201	2	14,14,15	0.39	0	17,19,21	0.52	0
7	NAG	B	204	2	14,14,15	0.30	0	17,19,21	0.42	0
8	NO3	H	301	-	1,3,3	0.52	0	0,3,3	-	-
7	NAG	B	206	2	14,14,15	0.23	0	17,19,21	0.40	0
7	NAG	B	205	2	14,14,15	0.33	0	17,19,21	0.49	0
7	NAG	C	301	3	14,14,15	0.31	0	17,19,21	0.50	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
7	NAG	B	201	2	-	2/6/23/26	0/1/1/1
7	NAG	B	204	2	-	2/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
7	NAG	B	206	2	-	0/6/23/26	0/1/1/1
7	NAG	B	205	2	-	0/6/23/26	0/1/1/1
7	NAG	C	301	3	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	B	204	NAG	O5-C5-C6-O6
7	B	204	NAG	C4-C5-C6-O6
7	B	201	NAG	O5-C5-C6-O6
7	B	201	NAG	C4-C5-C6-O6
7	C	301	NAG	O5-C5-C6-O6
7	C	301	NAG	C4-C5-C6-O6

There are no ring outliers.

No monomer is involved in short contacts.

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, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	127/129 (98%)	0.19	4 (3%)	51	30	49, 81, 128, 181	0
2	B	199/202 (98%)	-0.17	4 (2%)	65	44	33, 61, 103, 128	0
3	C	160/189 (84%)	0.50	10 (6%)	26	14	52, 109, 167, 191	0
4	H	223/229 (97%)	-0.24	5 (2%)	62	41	26, 54, 123, 168	0
5	L	213/224 (95%)	-0.17	1 (0%)	87	73	31, 63, 126, 147	0
All	All	922/973 (94%)	-0.02	24 (2%)	57	36	26, 71, 140, 191	0

All (24) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	35	ALA	4.1
2	B	182	CYS	3.9
4	H	143	SER	3.5
3	C	52	TRP	3.4
5	L	233	GLU	3.3
2	B	112	ASP	3.3
1	A	103	GLU	3.2
3	C	158	ASN	3.1
3	C	171	TRP	3.0
3	C	85	PHE	3.0
1	A	129	ALA	2.8
3	C	50	CYS	2.8
4	H	146	THR	2.8
2	B	199	SER	2.6
3	C	65	LEU	2.6
4	H	142	SER	2.6
4	H	229	ARG	2.4
3	C	149	GLU	2.4
3	C	143	LEU	2.2
3	C	71	ASN	2.2

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Mol	Chain	Res	Type	RSRZ
4	H	145	SER	2.1
3	C	227	ASN	2.1
2	B	1	PHE	2.1
1	A	3	CYS	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)

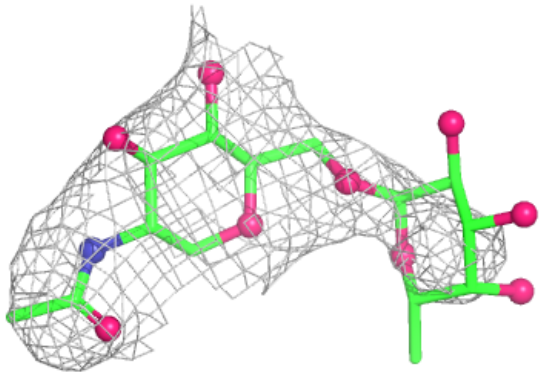
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

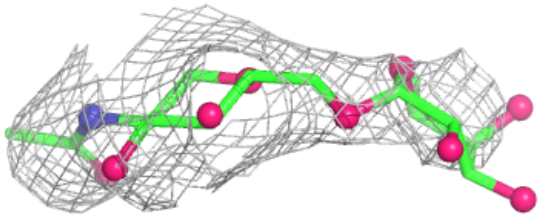
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
6	NAG	D	1	14/15	-	-	63,82,113,131	0
6	FUC	D	2	10/11	-	-	148,159,162,163	0

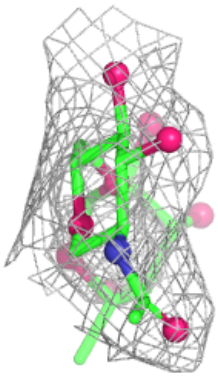
The following is a graphical depiction of the model fit to experimental electron density for oligosaccharide. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around Chain D:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)







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, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
7	NAG	B	206	14/15	0.47	0.15	100,120,124,128	0
7	NAG	B	201	14/15	0.68	0.17	108,123,132,134	0
7	NAG	B	205	14/15	0.72	0.14	85,98,116,125	0
7	NAG	C	301	14/15	0.77	0.13	88,110,114,116	0
7	NAG	B	204	14/15	0.80	0.15	81,95,103,107	0
8	NO3	H	301	4/4	0.83	0.24	116,116,119,121	0

6.5 Other polymers

There are no such residues in this entry.