Full wwPDB X-ray Structure Validation Report (i)

Sep 23, 2024 – 12:29 AM EDT

PDB ID	:	7U60
Title	:	Integrin alpha IIB beta3 complex with cRGDfV
Authors	:	Zhu, J.; Lin, F.Y.; Zhu, J.; Springer, T.A.
Deposited on	:	2022-03-03
Resolution	:	2.55 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 (i)) were used in the production of this report:

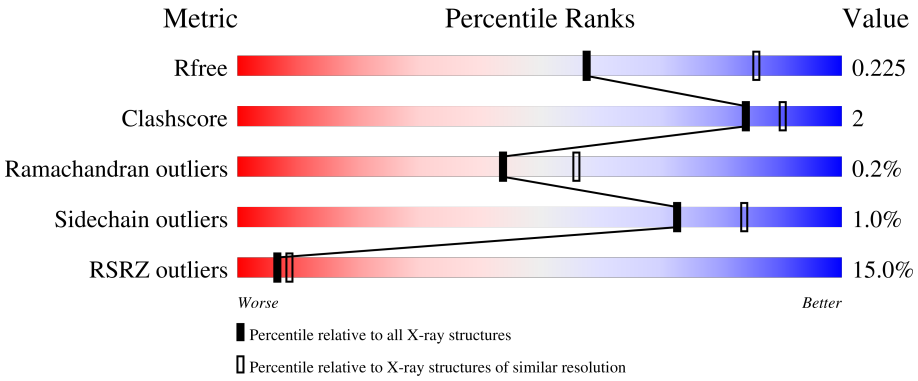
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.20.1
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.002 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.38.3

1 Overall quality at a glance (i)

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

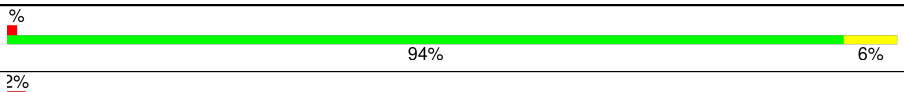
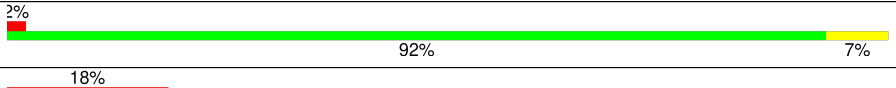
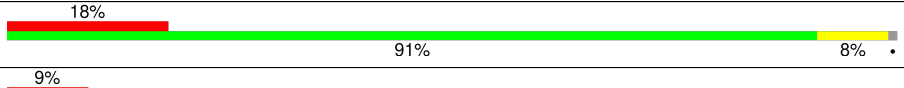
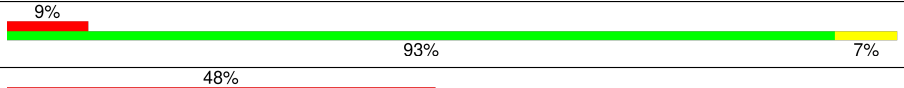
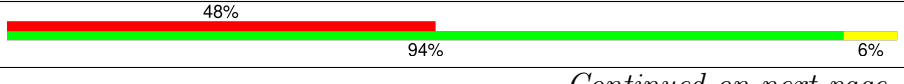
The reported resolution of this entry is 2.55 Å.

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}	164625	1004 (2.54-2.54)
Clashscore	180529	1055 (2.54-2.54)
Ramachandran outliers	177936	1048 (2.54-2.54)
Sidechain outliers	177891	1048 (2.54-2.54)
RSRZ outliers	164620	1004 (2.54-2.54)

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	455	
1	C	455	
2	B	471	
2	D	471	
3	E	216	

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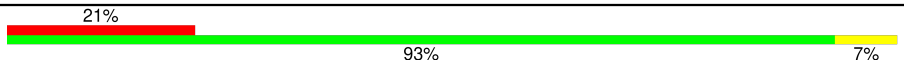
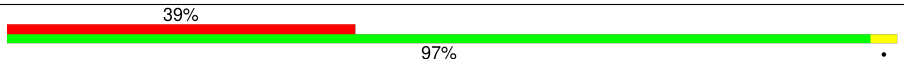
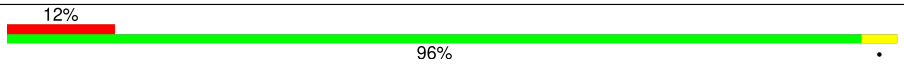
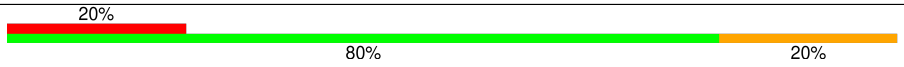
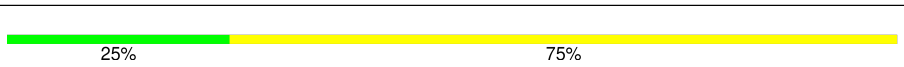
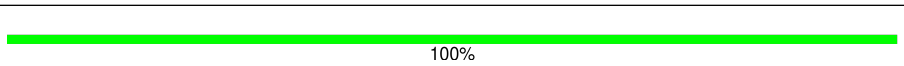
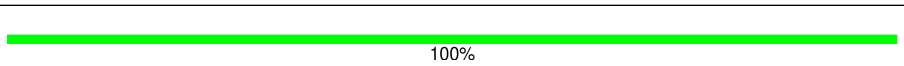
Mol	Chain	Length	Quality of chain
3	H	216	
4	F	214	
4	L	214	
5	M	5	
5	N	5	
6	G	4	
6	J	4	
7	I	2	
7	K	2	

2 Entry composition

There are 13 unique types of molecules in this entry. The entry contains 22350 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 Integrin alpha-IIb.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	455	Total	C	N	O	S	0	6	0
			3521	2240	607	666	8			
1	C	453	Total	C	N	O	S	0	3	0
			3492	2219	603	662	8			

- Molecule 2 is a protein called Integrin beta-3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	464	Total	C	N	O	S	4	5	0
			3613	2252	614	714	33			
2	D	469	Total	C	N	O	S	4	2	0
			3626	2260	618	714	34			

- Molecule 3 is a protein called Fab heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	E	216	Total	C	N	O	S	0	0	0
			1642	1041	266	329	6			
3	H	216	Total	C	N	O	S	0	0	0
			1642	1041	266	329	6			

- Molecule 4 is a protein called Fab light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	F	214	Total	C	N	O	S	0	0	0
			1637	1019	268	341	9			
4	L	214	Total	C	N	O	S	0	0	0
			1637	1019	268	341	9			

- Molecule 5 is a protein called ARG-GLY-ASP-DPN-VAL.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
5	M	5	Total C N O 41 26 8 7	0	0	0
5	N	5	Total C N O 41 26 8 7	0	0	0

- Molecule 6 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-alpha-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
6	G	4	Total C N O 50 28 2 20	0	0	0
6	J	4	Total C N O 50 28 2 20	0	0	0

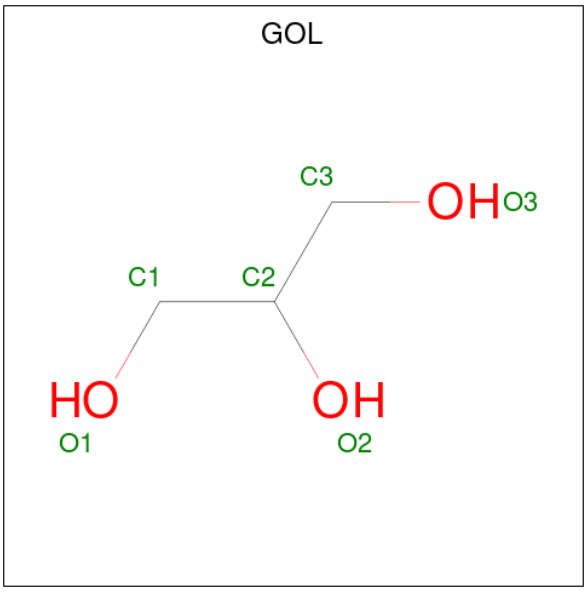
- Molecule 7 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
7	I	2	Total C N O 28 16 2 10	0	0	0
7	K	2	Total C N O 28 16 2 10	0	0	0

- Molecule 8 is CALCIUM ION (three-letter code: CA) (formula: Ca).

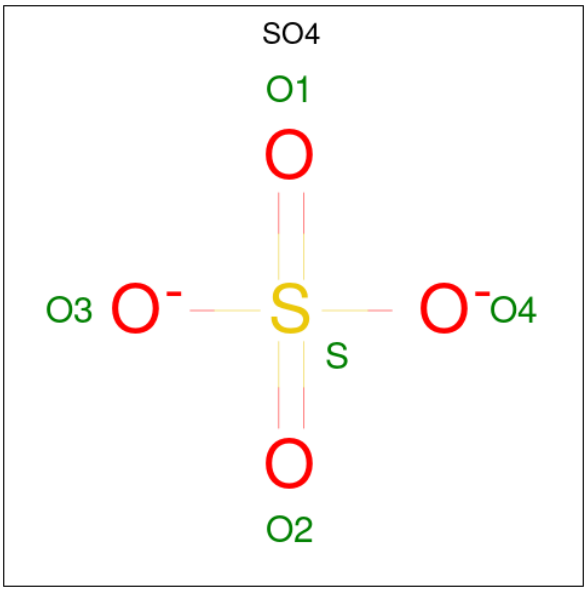
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	4	Total Ca 4 4	0	0
8	C	4	Total Ca 4 4	0	0

- Molecule 9 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	A	1	Total C O 6 3 3	0	0
9	A	1	Total C O 6 3 3	0	0
9	A	1	Total C O 6 3 3	0	0
9	A	1	Total C O 6 3 3	0	0
9	A	1	Total C O 6 3 3	0	0
9	A	1	Total C O 6 3 3	0	0
9	A	1	Total C O 6 3 3	0	0
9	C	1	Total C O 6 3 3	0	0
9	C	1	Total C O 6 3 3	0	0
9	D	1	Total C O 6 3 3	0	0
9	L	1	Total C O 6 3 3	0	0

- Molecule 10 is SULFATE ION (three-letter code: SO4) (formula: O_4S).

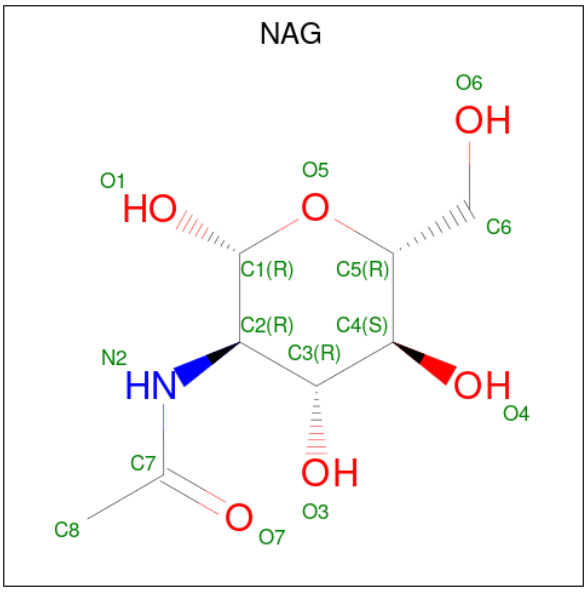


Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
10	A	1	Total O S 5 4 1	0	0
10	A	1	Total O S 5 4 1	0	0
10	A	1	Total O S 5 4 1	0	0
10	A	1	Total O S 5 4 1	0	0
10	B	1	Total O S 5 4 1	0	0
10	C	1	Total O S 5 4 1	0	0
10	C	1	Total O S 5 4 1	0	0
10	L	1	Total O S 5 4 1	0	0

- Molecule 11 is MANGANESE (II) ION (three-letter code: MN) (formula: Mn).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
11	B	3	Total Mn 3 3	0	0
11	D	3	Total Mn 3 3	0	0

- Molecule 12 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



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

- Molecule 13 is water.

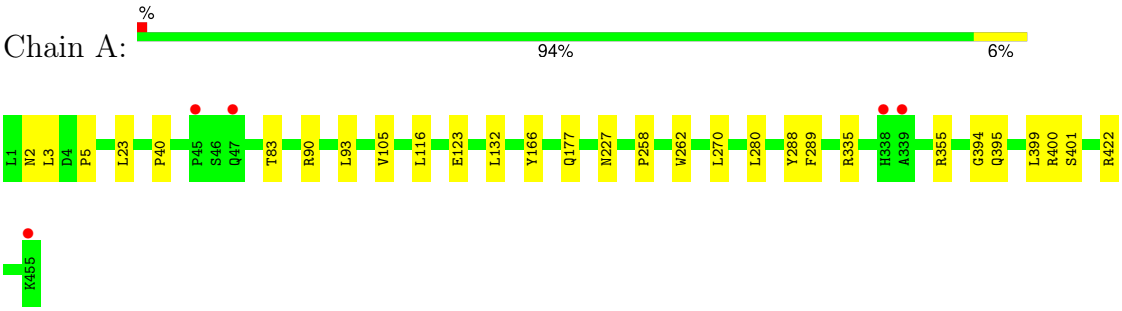
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
13	A	396	Total O 396 396	0	0
13	B	181	Total O 181 181	0	0
13	C	246	Total O 246 246	0	0
13	D	192	Total O 192 192	0	0
13	E	20	Total O 20 20	0	0
13	F	22	Total O 22 22	0	0
13	H	35	Total O 35 35	0	0
13	L	53	Total O 53 53	0	0
13	M	3	Total O 3 3	0	0
13	N	6	Total O 6 6	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.

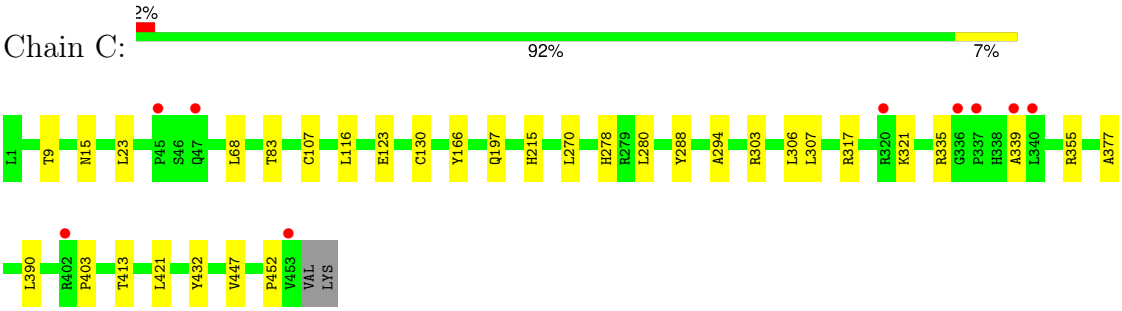
• Molecule 1: Integrin alpha-IIb

Chain A:



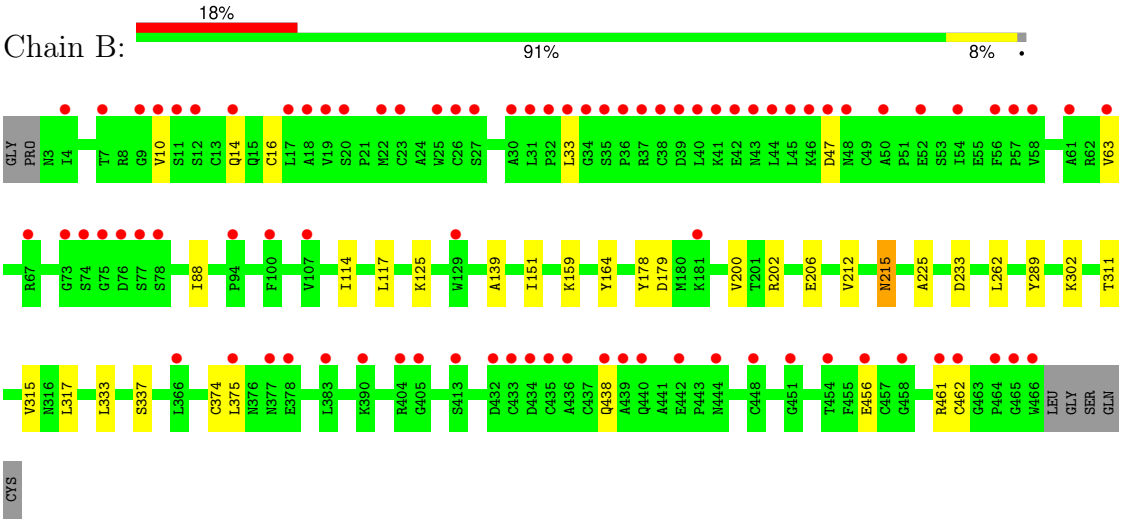
• Molecule 1: Integrin alpha-IIb

Chain C:



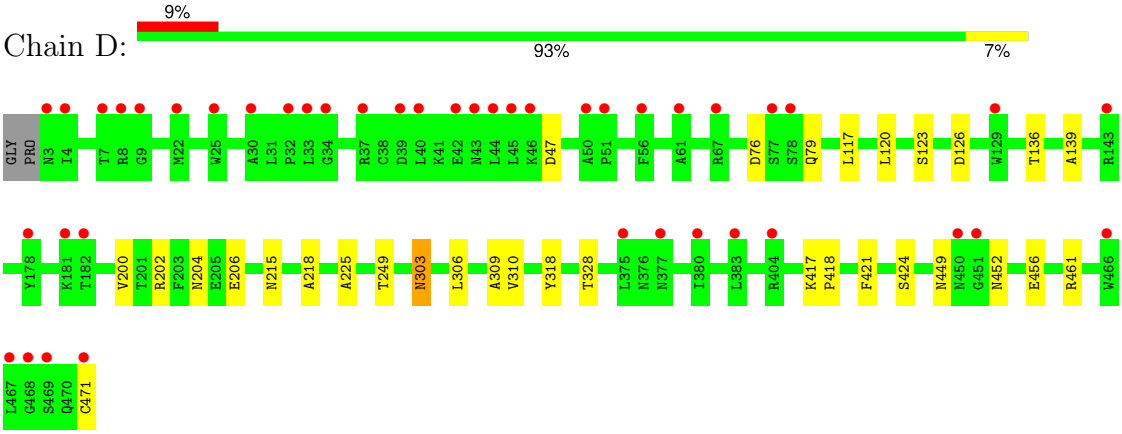
• Molecule 2: Integrin beta-3

Chain B:



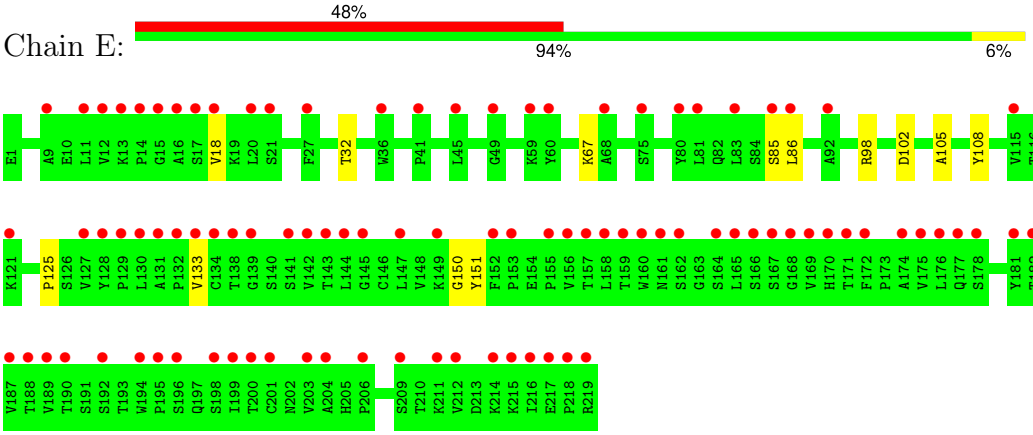
• Molecule 2: Integrin beta-3

Chain D:



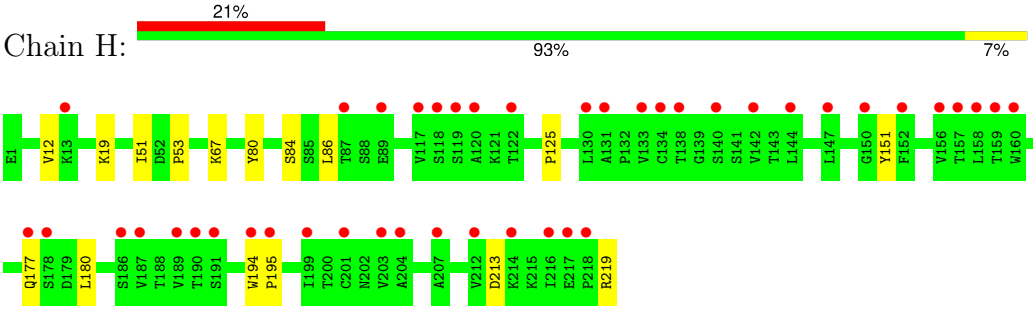
• Molecule 3: Fab heavy chain

Chain E:



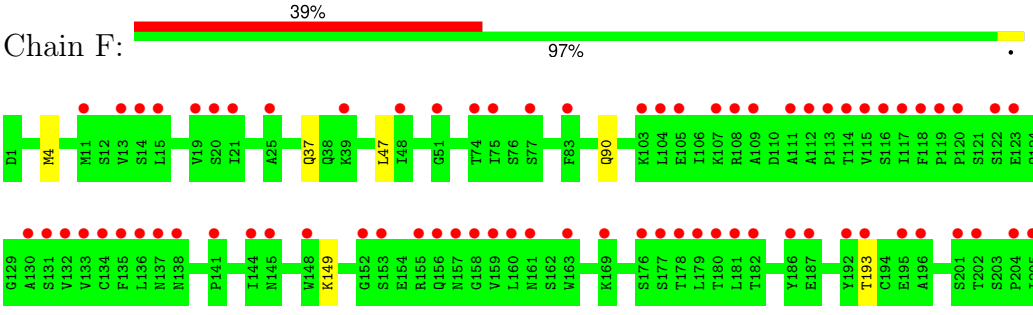
• Molecule 3: Fab heavy chain

Chain H:



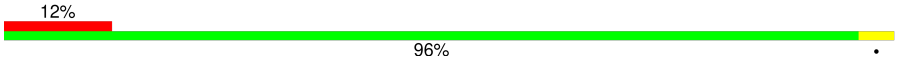
• Molecule 4: Fab light chain

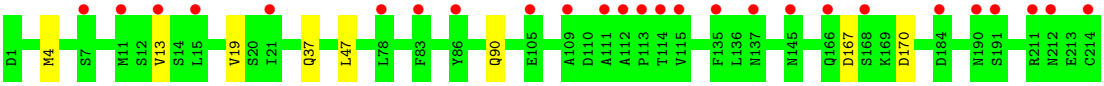
Chain F:



• Molecule 4: Fab light chain

Chain L:





• Molecule 5: ARG-GLY-ASP-DPN-VAL

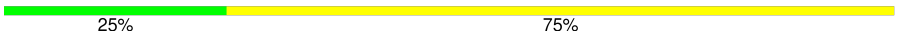
Chain M:

• Molecule 5: ARG-GLY-ASP-DPN-VAL

Chain N:

• Molecule 6: alpha-D-mannopyranose-(1-3)-alpha-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain G:

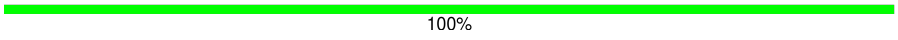


• Molecule 6: alpha-D-mannopyranose-(1-3)-alpha-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain J:

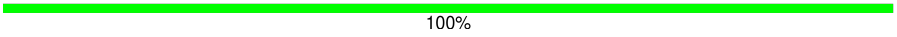
• Molecule 7: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain I:



• Molecule 7: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain K:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α, β, γ	260.89Å 145.77Å 105.16Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	48.60 – 2.55 48.60 – 2.55	Depositor EDS
% Data completeness (in resolution range)	98.8 (48.60-2.55) 98.8 (48.60-2.55)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.32 (at 2.54Å)	Xtriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.188 , 0.225 0.189 , 0.225	Depositor DCC
R_{free} test set	2608 reflections (0.79%)	wwPDB-VP
Wilson B-factor (Å^2)	37.8	Xtriage
Anisotropy	0.000	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 63.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	22350	wwPDB-VP
Average B, all atoms (Å^2)	61.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.29% 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: MAN, CA, NAG, DPN, SO4, MN, GOL

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	0.28	0/3636	0.56	0/4954
1	C	0.27	0/3598	0.55	0/4902
2	B	0.25	0/3692	0.50	0/5006
2	D	0.26	0/3700	0.50	0/5017
3	E	0.24	0/1684	0.48	0/2305
3	H	0.25	0/1684	0.49	0/2305
4	F	0.25	0/1673	0.47	0/2269
4	L	0.25	0/1673	0.50	0/2269
5	M	2.21	2/28 (7.1%)	3.26	2/34 (5.9%)
5	N	2.23	2/28 (7.1%)	3.31	2/34 (5.9%)
All	All	0.28	4/21396 (0.0%)	0.54	4/29095 (0.0%)

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	N	1	ARG	NE-CZ	7.38	1.42	1.33
5	M	1	ARG	NE-CZ	7.09	1.42	1.33
5	N	1	ARG	CZ-NH2	5.91	1.40	1.33
5	M	1	ARG	CZ-NH2	5.59	1.40	1.33

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	N	1	ARG	NE-CZ-NH1	15.43	128.02	120.30
5	M	1	ARG	NE-CZ-NH1	14.99	127.80	120.30
5	N	1	ARG	NE-CZ-NH2	-6.19	117.20	120.30
5	M	1	ARG	NE-CZ-NH2	-5.60	117.50	120.30

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	3521	0	3377	16	0
1	C	3492	0	3333	15	0
2	B	3613	0	3528	18	0
2	D	3626	0	3541	18	0
3	E	1642	0	1600	7	0
3	H	1642	0	1600	9	0
4	F	1637	0	1553	3	0
4	L	1637	0	1553	4	0
5	M	41	0	38	1	0
5	N	41	0	37	2	0
6	G	50	0	43	0	0
6	J	50	0	43	0	0
7	I	28	0	25	0	0
7	K	28	0	25	0	0
8	A	4	0	0	0	0
8	C	4	0	0	0	0
9	A	42	0	56	4	0
9	C	12	0	16	0	0
9	D	6	0	8	1	0
9	L	6	0	8	0	0
10	A	20	0	0	0	0
10	B	5	0	0	0	0
10	C	10	0	0	0	0
10	L	5	0	0	0	0
11	B	3	0	0	0	0
11	D	3	0	0	0	0
12	B	14	0	13	0	0
12	D	14	0	13	0	0
13	A	396	0	0	6	1
13	B	181	0	0	0	0
13	C	246	0	0	3	1
13	D	192	0	0	1	0
13	E	20	0	0	0	0
13	F	22	0	0	0	0
13	H	35	0	0	1	0
13	L	53	0	0	0	0
13	M	3	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
13	N	6	0	0	1	0
All	All	22350	0	20410	90	1

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 2.

All (90) 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:A:400:ARG:HE	9:A:506:GOL:H12	1.60	0.65
3:H:219:ARG:NH2	13:H:301:HOH:O	2.28	0.65
3:E:67:LYS:NZ	3:E:85:SER:O	2.33	0.61
3:H:125:PRO:HB3	3:H:151:TYR:HB3	1.84	0.60
2:D:471:CYS:SG	13:D:2227:HOH:O	2.57	0.59
2:D:76:ASP:HB3	2:D:79:GLN:HG2	1.85	0.59
1:A:422:ARG:NH2	13:A:608:HOH:O	2.35	0.58
1:A:355:ARG:NH1	13:A:601:HOH:O	2.27	0.58
2:B:233:ASP:OD2	2:B:302:LYS:NZ	2.26	0.56
1:C:68:LEU:O	13:C:601:HOH:O	2.18	0.56
2:B:202:ARG:NH2	2:B:206:GLU:OE2	2.39	0.56
1:A:177:GLN:NE2	13:A:610:HOH:O	2.39	0.55
2:D:202:ARG:NH2	2:D:206:GLU:OE2	2.39	0.55
2:D:126:ASP:OD1	2:D:126:ASP:N	2.40	0.54
4:F:4:MET:HE2	4:F:90:GLN:HB3	1.89	0.54
1:A:90[B]:ARG:NH1	13:A:606:HOH:O	2.41	0.53
4:F:37:GLN:HB2	4:F:47:LEU:HD11	1.90	0.53
2:D:306:LEU:HB3	2:D:328:THR:HG22	1.90	0.52
4:L:4:MET:HE2	4:L:90:GLN:HB3	1.91	0.51
13:A:609:HOH:O	5:M:1:ARG:NH2	2.43	0.51
3:H:213:ASP:OD1	3:H:213:ASP:N	2.41	0.51
1:A:262:TRP:HB3	2:B:317:LEU:HD13	1.94	0.50
4:L:37:GLN:HB2	4:L:47:LEU:HD11	1.93	0.50
2:D:303:ASN:HA	9:D:2005:GOL:H12	1.93	0.49
1:C:9:THR:HB	1:C:447:VAL:HB	1.94	0.49
3:E:98:ARG:HG3	3:E:108:TYR:HB2	1.95	0.49
2:B:456:GLU:OE2	2:B:461:ARG:NH1	2.45	0.49
2:D:249:THR:HG22	2:D:309:ALA:HB3	1.94	0.48
2:D:117:LEU:HD11	2:D:225:ALA:HB1	1.96	0.48
2:B:14:GLN:HB2	2:B:438:GLN:HE22	1.77	0.48
1:A:105:VAL:HG22	1:A:132:LEU:HG	1.96	0.48
2:D:449:ASN:HB2	2:D:452:ASN:HB2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:317:ARG:HB2	1:C:321:LYS:HB2	1.96	0.48
3:H:177:GLN:N	3:H:180:LEU:O	2.39	0.48
4:F:149:LYS:HB2	4:F:193:THR:HB	1.96	0.47
1:C:294:ALA:HB3	1:C:307:LEU:HB2	1.96	0.47
2:B:117:LEU:HD11	2:B:225:ALA:HB1	1.97	0.47
2:B:333:LEU:HD11	2:B:337:SER:HA	1.96	0.47
1:C:83:THR:HB	1:C:116:LEU:HB2	1.97	0.47
2:B:10:VAL:HG21	2:B:16:CYS:HB2	1.96	0.47
2:B:125:LYS:HA	2:B:212:VAL:HG11	1.96	0.47
2:D:218:ALA:HB2	5:N:2:GLY:HA2	1.95	0.47
3:H:19:LYS:HE2	3:H:80:TYR:CD2	2.50	0.47
2:B:63:VAL:HA	2:B:88:ILE:HG22	1.97	0.46
2:B:178[B]:TYR:CG	2:B:179:ASP:N	2.82	0.46
3:H:194:TRP:CG	3:H:195:PRO:HA	2.49	0.46
1:C:413:THR:O	13:C:602:HOH:O	2.20	0.45
2:D:139:ALA:HB2	2:D:200:VAL:HG11	1.98	0.45
2:D:249:THR:HA	2:D:309:ALA:O	2.15	0.45
1:A:335:ARG:NE	13:A:623:HOH:O	2.47	0.45
2:B:114:ILE:HB	2:B:151:ILE:HG22	1.99	0.45
2:B:159:LYS:HE2	2:B:289:TYR:CE1	2.52	0.45
2:D:136:THR:OG1	2:D:204:ASN:ND2	2.47	0.45
1:C:278[A]:HIS:CD2	1:C:339:ALA:HB1	2.52	0.44
2:D:456:GLU:OE2	2:D:461:ARG:NH1	2.51	0.44
1:A:394:GLY:HA2	1:A:399:LEU:HD23	1.99	0.44
3:E:125:PRO:HB3	3:E:151:TYR:HB3	2.00	0.44
2:B:164:TYR:O	2:B:215:ASN:HB2	2.18	0.44
2:B:178[B]:TYR:CZ	2:B:179:ASP:HB3	2.52	0.44
3:H:67:LYS:HE2	3:H:84:SER:O	2.17	0.43
1:C:107:CYS:HA	1:C:130:CYS:HA	2.00	0.43
3:E:18:VAL:HG23	3:E:86:LEU:HD11	2.01	0.43
1:C:377:ALA:HB2	1:C:421:LEU:HD11	2.00	0.43
1:C:390:LEU:HD23	1:C:403:PRO:HG3	2.00	0.43
2:D:310:VAL:HG11	2:D:318:TYR:CD1	2.52	0.43
1:C:303:ARG:CZ	1:C:335:ARG:HG2	2.49	0.42
2:D:418:PRO:HB2	2:D:421:PHE:CD1	2.53	0.42
1:A:401:SER:H	9:A:506:GOL:H2	1.83	0.42
3:H:51:ILE:O	3:H:53:PRO:HD3	2.19	0.42
2:B:311:THR:HA	2:B:333:LEU:O	2.19	0.42
2:B:139:ALA:HB2	2:B:200:VAL:HG11	2.01	0.41
1:C:215:HIS:CE1	3:E:32:THR:HG22	2.55	0.41
3:E:67:LYS:HE2	3:E:67:LYS:HB2	1.90	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L:167:ASP:HB3	4:L:170:ASP:OD1	2.20	0.41
1:A:258:PRO:HA	1:A:289:PHE:O	2.20	0.41
1:C:280:LEU:HD11	1:C:306:LEU:HD23	2.01	0.41
4:L:13:VAL:HG11	4:L:19:VAL:HG11	2.02	0.41
1:A:3:LEU:O	1:A:5:PRO:HD3	2.21	0.41
1:C:355:ARG:NH1	13:C:606:HOH:O	2.37	0.41
3:H:12:VAL:HG21	3:H:86:LEU:HD13	2.03	0.41
2:D:417:LYS:HG3	2:D:424:SER:HB3	2.02	0.41
2:D:120:LEU:HA	2:D:120:LEU:HD23	1.77	0.41
3:E:102:ASP:HB3	3:E:105:ALA:HB2	2.03	0.40
1:A:83:THR:HB	1:A:116:LEU:HB2	2.02	0.40
1:A:227:ASN:HD22	9:A:510:GOL:H31	1.87	0.40
5:N:1:ARG:NH2	13:N:102:HOH:O	2.54	0.40
1:A:40:PRO:HA	1:A:93:LEU:O	2.22	0.40
1:A:2:ASN:HA	9:A:511:GOL:H32	2.03	0.40
1:C:432:TYR:CZ	1:C:452:PRO:HA	2.56	0.40
2:B:311:THR:O	2:B:315:VAL:HG23	2.21	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	Interatomic distance (Å)	Clash overlap (Å)
13:A:831:HOH:O	13:C:814:HOH:O[1_554]	2.10	0.10

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	459/455 (101%)	444 (97%)	14 (3%)	1 (0%)	44	56
1	C	454/455 (100%)	439 (97%)	14 (3%)	1 (0%)	44	56
2	B	467/471 (99%)	447 (96%)	18 (4%)	2 (0%)	30	40

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	D	469/471 (100%)	451 (96%)	18 (4%)	0	100 100
3	E	212/216 (98%)	201 (95%)	9 (4%)	2 (1%)	14 21
3	H	212/216 (98%)	203 (96%)	9 (4%)	0	100 100
4	F	212/214 (99%)	204 (96%)	8 (4%)	0	100 100
4	L	212/214 (99%)	206 (97%)	6 (3%)	0	100 100
5	M	2/5 (40%)	2 (100%)	0	0	100 100
5	N	2/5 (40%)	2 (100%)	0	0	100 100
All	All	2701/2722 (99%)	2599 (96%)	96 (4%)	6 (0%)	44 56

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	E	133	VAL
2	B	33	LEU
2	B	375	LEU
1	A	123	GLU
1	C	123	GLU
3	E	150	GLY

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	369/363 (102%)	363 (98%)	6 (2%)	58 75
1	C	364/363 (100%)	358 (98%)	6 (2%)	58 75
2	B	416/416 (100%)	411 (99%)	5 (1%)	67 80
2	D	417/416 (100%)	412 (99%)	5 (1%)	67 80
3	E	187/187 (100%)	187 (100%)	0	100 100
3	H	187/187 (100%)	187 (100%)	0	100 100
4	F	188/188 (100%)	187 (100%)	1 (0%)	86 93
4	L	188/188 (100%)	188 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
5	M	3/3 (100%)	3 (100%)	0	100 100
5	N	3/3 (100%)	2 (67%)	1 (33%)	0 0
All	All	2322/2314 (100%)	2298 (99%)	24 (1%)	73 84

All (24) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	23	LEU
1	A	166	TYR
1	A	270	LEU
1	A	280	LEU
1	A	288	TYR
1	A	395	GLN
2	B	47	ASP
2	B	215	ASN
2	B	262	LEU
2	B	374	CYS
2	B	462	CYS
1	C	15	ASN
1	C	23	LEU
1	C	166	TYR
1	C	197	GLN
1	C	270	LEU
1	C	288	TYR
2	D	47	ASP
2	D	123[A]	SER
2	D	123[B]	SER
2	D	215	ASN
2	D	303	ASN
4	F	214	CYS
5	N	1	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	333	GLN
2	B	79	GLN
2	B	301	GLN
2	B	428	GLN
2	B	438	GLN

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Mol	Chain	Res	Type
1	C	197	GLN
2	D	82	GLN
2	D	204	ASN
2	D	438	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains

2 non-standard protein/DNA/RNA residues 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	$\#\|Z\| > 2$
5	DPN	M	4	5	10,11,12	0.62	0	8,13,15	0.64	0
5	DPN	N	4	5	10,11,12	0.82	0	8,13,15	0.77	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
5	DPN	M	4	5	-	1/5/6/8	0/1/1/1
5	DPN	N	4	5	-	1/5/6/8	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
5	M	4	DPN	O-C-CA-CB
5	N	4	DPN	C-CA-CB-CG

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

12 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	G	1	6,2	14,14,15	0.30	0	17,19,21	0.68	1 (5%)
6	NAG	G	2	6	14,14,15	0.19	0	17,19,21	0.52	0
6	MAN	G	3	6	11,11,12	0.78	0	15,15,17	1.01	2 (13%)
6	MAN	G	4	6	11,11,12	0.67	0	15,15,17	1.11	2 (13%)
7	NAG	I	1	2,7	14,14,15	0.32	0	17,19,21	0.36	0
7	NAG	I	2	7	14,14,15	0.21	0	17,19,21	0.36	0
6	NAG	J	1	6,2	14,14,15	0.44	0	17,19,21	0.49	0
6	NAG	J	2	6	14,14,15	0.25	0	17,19,21	0.54	0
6	MAN	J	3	6	11,11,12	0.88	0	15,15,17	0.85	1 (6%)
6	MAN	J	4	6	11,11,12	0.87	0	15,15,17	0.92	1 (6%)
7	NAG	K	1	2,7	14,14,15	0.37	0	17,19,21	0.42	0
7	NAG	K	2	7	14,14,15	0.26	0	17,19,21	0.47	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	G	1	6,2	-	1/6/23/26	0/1/1/1
6	NAG	G	2	6	-	0/6/23/26	0/1/1/1
6	MAN	G	3	6	-	0/2/19/22	1/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	MAN	G	4	6	-	0/2/19/22	0/1/1/1
7	NAG	I	1	2,7	-	0/6/23/26	0/1/1/1
7	NAG	I	2	7	-	1/6/23/26	0/1/1/1
6	NAG	J	1	6,2	-	0/6/23/26	0/1/1/1
6	NAG	J	2	6	-	0/6/23/26	0/1/1/1
6	MAN	J	3	6	-	2/2/19/22	1/1/1/1
6	MAN	J	4	6	-	0/2/19/22	0/1/1/1
7	NAG	K	1	2,7	-	0/6/23/26	0/1/1/1
7	NAG	K	2	7	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	G	4	MAN	C1-O5-C5	3.12	116.36	112.19
6	G	3	MAN	C1-O5-C5	2.76	115.88	112.19
6	G	4	MAN	O2-C2-C3	-2.26	105.46	110.15
6	G	3	MAN	O2-C2-C3	-2.24	105.52	110.15
6	G	1	NAG	C1-O5-C5	2.14	115.05	112.19
6	J	4	MAN	O2-C2-C3	-2.08	105.85	110.15
6	J	3	MAN	C1-O5-C5	2.03	114.90	112.19

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	J	3	MAN	O5-C5-C6-O6
6	J	3	MAN	C4-C5-C6-O6
7	I	2	NAG	O5-C5-C6-O6
6	G	1	NAG	C1-C2-N2-C7

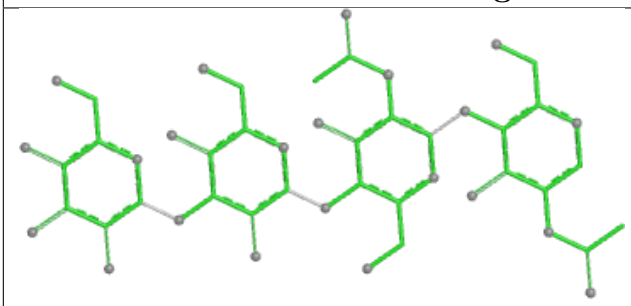
All (2) ring outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	G	3	MAN	C1-C2-C3-C4-C5-O5
6	J	3	MAN	C1-C2-C3-C4-C5-O5

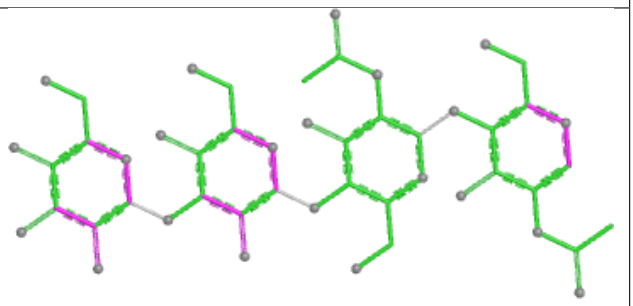
No monomer is involved in short contacts.

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

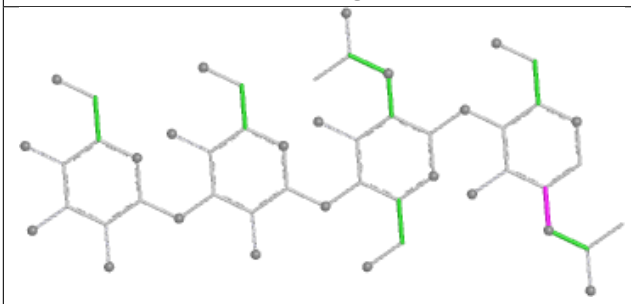
Oligosaccharide Chain G



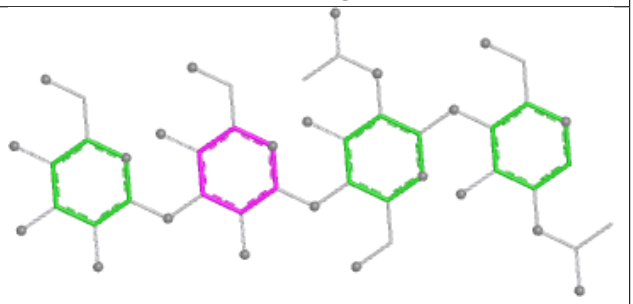
Bond lengths



Bond angles

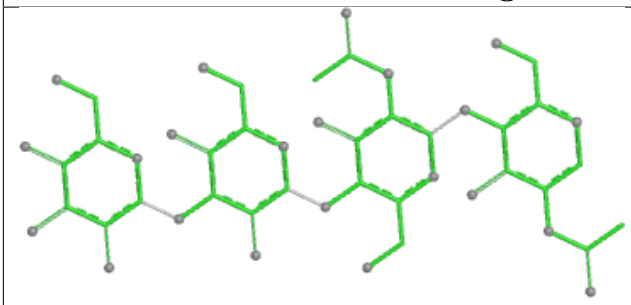


Torsions

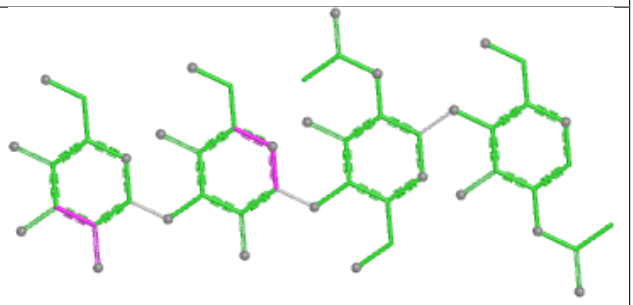


Rings

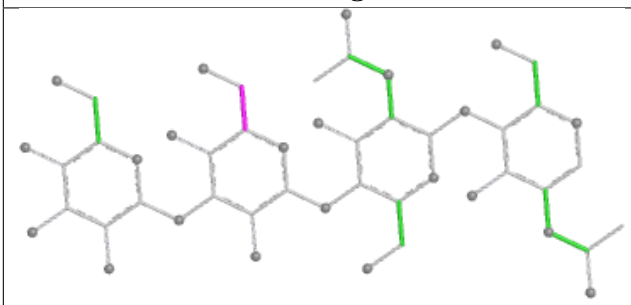
Oligosaccharide Chain J



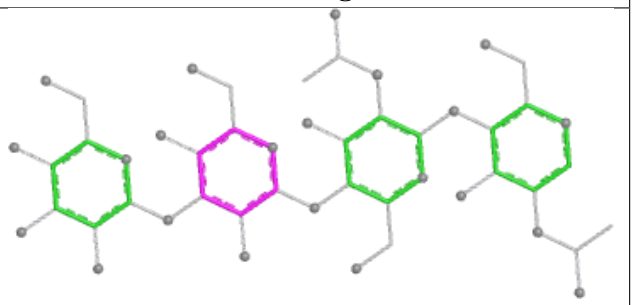
Bond lengths



Bond angles

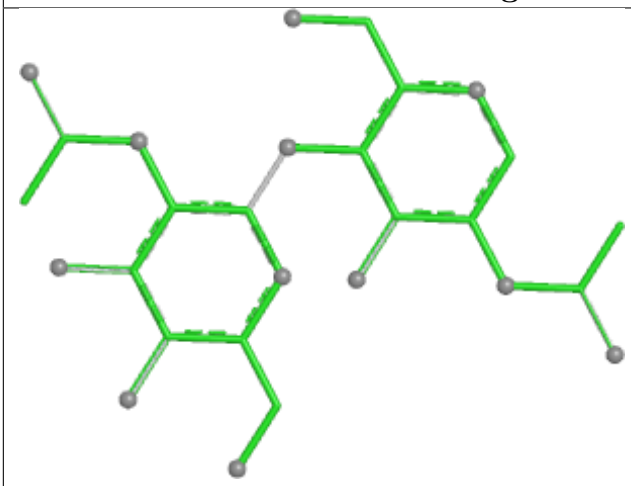


Torsions

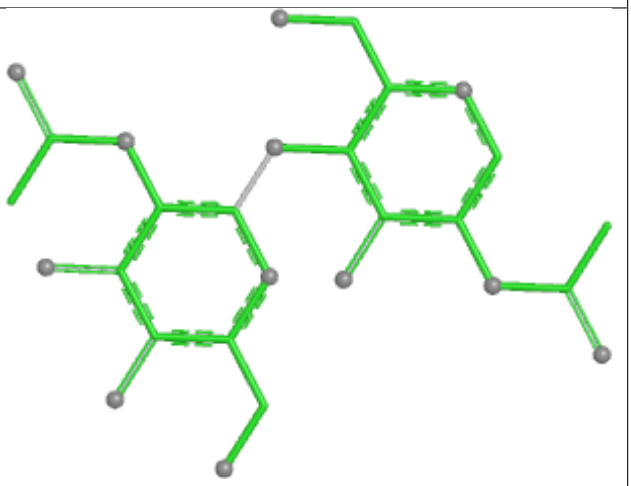


Rings

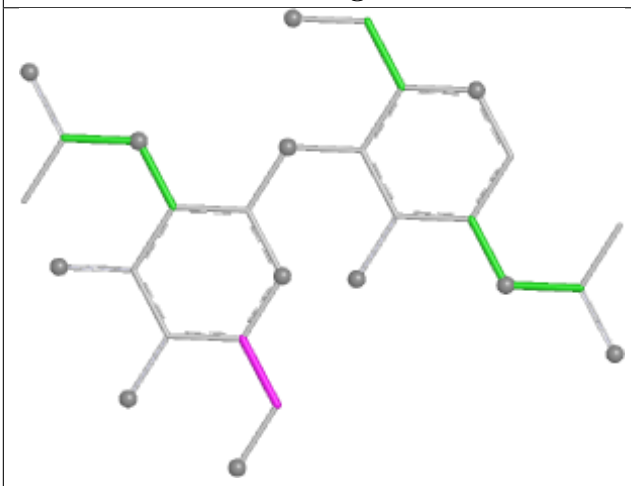
Oligosaccharide Chain I



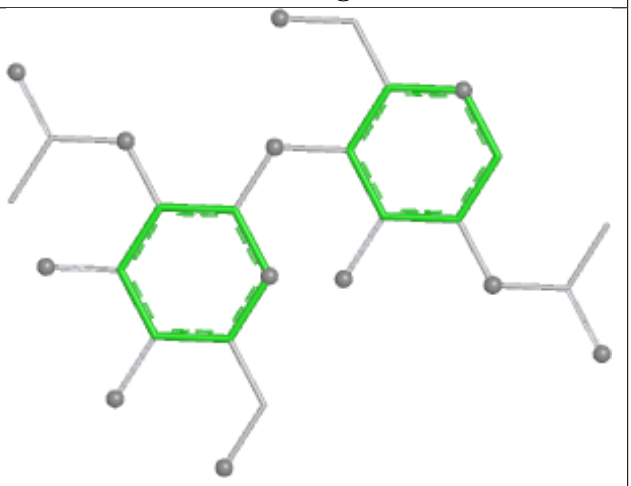
Bond lengths



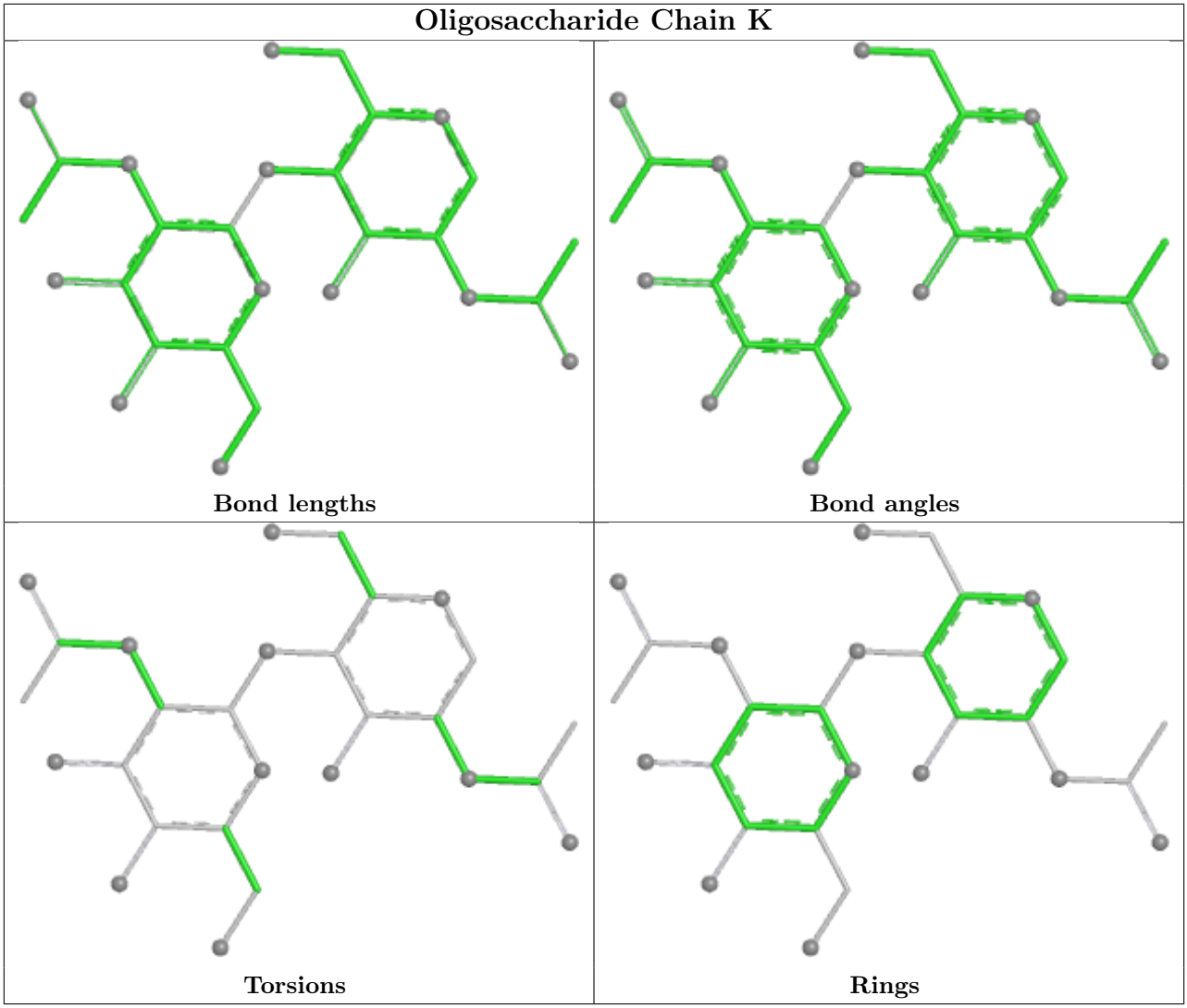
Bond angles



Torsions



Rings



5.6 Ligand geometry (i)

Of 35 ligands modelled in this entry, 14 are monoatomic - leaving 21 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	$\#\|Z\| > 2$
9	GOL	D	2005	-	5,5,5	1.00	0	5,5,5	0.94	0
9	GOL	C	505	-	5,5,5	0.94	0	5,5,5	1.04	0
12	NAG	B	2004	2	14,14,15	0.39	0	17,19,21	0.56	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
9	GOL	L	301	-	5,5,5	0.92	0	5,5,5	1.07	0
10	SO4	L	302	-	4,4,4	0.24	0	6,6,6	0.09	0
9	GOL	A	510	-	5,5,5	0.89	0	5,5,5	1.10	0
10	SO4	C	507	-	4,4,4	0.24	0	6,6,6	0.07	0
12	NAG	D	2004	2	14,14,15	0.41	0	17,19,21	0.51	0
10	SO4	A	514	-	4,4,4	0.23	0	6,6,6	0.09	0
10	SO4	C	508	-	4,4,4	0.24	0	6,6,6	0.08	0
10	SO4	A	513	-	4,4,4	0.24	0	6,6,6	0.07	0
9	GOL	A	508	-	5,5,5	0.92	0	5,5,5	1.05	0
10	SO4	A	512	-	4,4,4	0.24	0	6,6,6	0.07	0
9	GOL	A	509	-	5,5,5	0.92	0	5,5,5	1.12	0
9	GOL	A	507	-	5,5,5	0.89	0	5,5,5	1.13	1 (20%)
9	GOL	A	506	-	5,5,5	0.97	0	5,5,5	1.07	0
10	SO4	A	515	-	4,4,4	0.24	0	6,6,6	0.07	0
9	GOL	C	506	-	5,5,5	0.91	0	5,5,5	1.09	0
9	GOL	A	505	-	5,5,5	0.88	0	5,5,5	1.09	0
10	SO4	B	2005	-	4,4,4	0.24	0	6,6,6	0.08	0
9	GOL	A	511	-	5,5,5	0.94	0	5,5,5	1.05	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
9	GOL	D	2005	-	-	2/4/4/4	-
9	GOL	A	509	-	-	2/4/4/4	-
9	GOL	A	507	-	-	3/4/4/4	-
9	GOL	C	505	-	-	3/4/4/4	-
9	GOL	A	508	-	-	0/4/4/4	-
9	GOL	A	506	-	-	0/4/4/4	-
12	NAG	B	2004	2	-	0/6/23/26	0/1/1/1
12	NAG	D	2004	2	-	0/6/23/26	0/1/1/1
9	GOL	L	301	-	-	2/4/4/4	-
9	GOL	C	506	-	-	2/4/4/4	-
9	GOL	A	510	-	-	2/4/4/4	-
9	GOL	A	505	-	-	2/4/4/4	-
9	GOL	A	511	-	-	2/4/4/4	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
9	A	507	GOL	C3-C2-C1	-2.08	104.19	111.80

There are no chirality outliers.

All (20) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
9	A	505	GOL	O1-C1-C2-O2
9	A	505	GOL	O1-C1-C2-C3
9	A	507	GOL	O1-C1-C2-C3
9	A	509	GOL	O1-C1-C2-C3
9	A	510	GOL	O1-C1-C2-C3
9	C	506	GOL	O1-C1-C2-C3
9	D	2005	GOL	O1-C1-C2-C3
9	L	301	GOL	O1-C1-C2-O2
9	L	301	GOL	O1-C1-C2-C3
9	A	511	GOL	O1-C1-C2-C3
9	C	505	GOL	O1-C1-C2-C3
9	A	507	GOL	O1-C1-C2-O2
9	A	509	GOL	O1-C1-C2-O2
9	A	510	GOL	O1-C1-C2-O2
9	C	505	GOL	O1-C1-C2-O2
9	C	506	GOL	O1-C1-C2-O2
9	D	2005	GOL	O1-C1-C2-O2
9	C	505	GOL	C1-C2-C3-O3
9	A	511	GOL	O1-C1-C2-O2
9	A	507	GOL	O2-C2-C3-O3

There are no ring outliers.

4 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
9	D	2005	GOL	1	0
9	A	510	GOL	1	0
9	A	506	GOL	2	0
9	A	511	GOL	1	0

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
3	E	1
3	H	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	E	134:CYS	C	138:THR	N	8.32
1	H	134:CYS	C	138:THR	N	6.44

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	455/455 (100%)	-0.41	5 (1%) 77 80	14, 27, 50, 110	6 (1%)
1	C	453/455 (99%)	0.19	9 (1%) 64 69	21, 42, 70, 111	3 (0%)
2	B	464/471 (98%)	0.79	84 (18%) 4 5	18, 57, 133, 175	7 (1%)
2	D	469/471 (99%)	0.60	43 (9%) 16 19	23, 52, 107, 139	4 (0%)
3	E	216/216 (100%)	2.17	103 (47%) 0 0	50, 105, 166, 186	0
3	H	216/216 (100%)	1.21	46 (21%) 3 4	31, 77, 128, 146	0
4	F	214/214 (100%)	1.93	84 (39%) 1 1	53, 100, 163, 226	0
4	L	214/214 (100%)	0.99	26 (12%) 10 12	36, 64, 90, 143	0
5	M	4/5 (80%)	1.61	1 (25%) 2 3	48, 49, 57, 79	0
5	N	4/5 (80%)	4.32	4 (100%) 0 0	90, 95, 97, 104	0
All	All	2709/2722 (99%)	0.71	405 (14%) 6 8	14, 53, 135, 226	20 (0%)

All (405) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	E	165	LEU	6.2
3	E	199	ILE	5.8
4	F	205	ILE	5.5
5	N	3	ASP	5.4
3	E	144	LEU	5.2
4	F	115	VAL	5.1
2	B	36	PRO	4.9
4	F	181	LEU	4.9
3	E	131	ALA	4.9
5	N	5	VAL	4.9
3	E	130	LEU	4.8
3	E	194	TRP	4.8
3	E	160	TRP	4.8

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Mol	Chain	Res	Type	RSRZ
2	B	33	LEU	4.5
4	F	117	ILE	4.5
3	E	168	GLY	4.4
4	F	135	PHE	4.4
3	E	164	SER	4.4
3	E	18	VAL	4.3
3	E	216	ILE	4.3
3	E	166	SER	4.2
4	F	126	THR	4.2
2	B	27	SER	4.2
3	E	188	THR	4.2
3	E	117	VAL	4.2
3	E	189	VAL	4.2
4	F	136	LEU	4.1
3	H	189	VAL	4.1
2	B	4	ILE	4.1
4	F	177	SER	4.0
3	E	132	PRO	4.0
3	E	138	THR	4.0
3	E	177	GLN	4.0
2	B	25	TRP	4.0
3	E	195	PRO	4.0
2	B	434	ASP	4.0
3	E	142	VAL	4.0
4	F	125	LEU	3.9
3	E	128	TYR	3.9
2	B	74	SER	3.9
4	F	206	VAL	3.8
3	E	183	LEU	3.8
3	E	203	VAL	3.8
2	B	458	GLY	3.8
3	E	200	THR	3.8
5	M	5	VAL	3.8
4	F	160	LEU	3.8
2	D	469	SER	3.8
3	E	187	VAL	3.7
4	F	196	ALA	3.7
2	B	433	CYS	3.7
2	D	471	CYS	3.7
4	F	134	CYS	3.7
3	E	219	ARG	3.7
4	L	212	ASN	3.7

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Mol	Chain	Res	Type	RSRZ
3	E	212	VAL	3.7
2	B	37	ARG	3.7
4	F	116	SER	3.7
3	E	145	GLY	3.7
4	F	133	VAL	3.7
2	B	461	ARG	3.7
3	E	134	CYS	3.6
3	E	158	LEU	3.6
3	H	195	PRO	3.6
2	B	451	GLY	3.6
4	F	113	PRO	3.6
2	B	404	ARG	3.6
2	B	129	TRP	3.6
2	B	466	TRP	3.5
1	A	45	PRO	3.5
4	F	118	PHE	3.5
3	E	11	LEU	3.5
5	N	1	ARG	3.5
4	F	131	SER	3.5
5	N	2	GLY	3.5
2	B	26	CYS	3.5
3	E	176	LEU	3.5
2	B	465	GLY	3.5
2	B	10	VAL	3.5
4	F	182	THR	3.5
3	E	174	ALA	3.4
2	B	45	LEU	3.4
2	D	181	LYS	3.4
2	B	17	LEU	3.4
3	H	168	GLY	3.4
3	E	169	VAL	3.4
3	H	142	VAL	3.4
4	F	159	VAL	3.4
3	E	198	SER	3.4
3	E	81	LEU	3.4
4	F	119	PRO	3.4
2	B	11	SER	3.3
3	E	120	ALA	3.3
3	E	196	SER	3.3
2	B	75	GLY	3.3
2	B	63	VAL	3.3
4	F	114	THR	3.3

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Mol	Chain	Res	Type	RSRZ
2	B	41	LYS	3.3
4	F	130	ALA	3.3
3	E	16	ALA	3.2
4	L	105	GLU	3.2
3	E	13	LYS	3.2
2	B	405	GLY	3.2
2	B	462	CYS	3.2
3	E	156	VAL	3.2
4	F	132	VAL	3.2
4	F	186	TYR	3.2
3	H	194	TRP	3.2
3	H	177	GLN	3.2
3	E	201	CYS	3.2
2	B	31	LEU	3.1
2	D	4	ILE	3.1
2	D	44	LEU	3.1
3	E	86	LEU	3.1
3	E	175	VAL	3.1
3	E	218	PRO	3.1
2	B	44	LEU	3.1
3	E	147	LEU	3.1
4	F	144	ILE	3.1
3	E	190	THR	3.1
3	E	119	SER	3.1
3	E	167	SER	3.1
2	B	383	LEU	3.1
2	D	77	SER	3.1
3	E	184	SER	3.1
2	B	40	LEU	3.1
2	B	375	LEU	3.1
2	B	52	GLU	3.1
3	H	134	CYS	3.1
3	E	157	THR	3.1
2	B	78	SER	3.1
3	E	127	VAL	3.0
3	E	133	VAL	3.0
3	H	131	ALA	3.0
3	E	186	SER	3.0
2	B	19	VAL	3.0
4	F	207	LYS	3.0
2	B	50	ALA	3.0
4	F	202	THR	3.0

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Mol	Chain	Res	Type	RSRZ
2	D	178	TYR	3.0
3	H	119	SER	3.0
4	F	179	LEU	3.0
2	D	8	ARG	3.0
2	D	30	ALA	3.0
4	F	112	ALA	3.0
3	E	182	THR	3.0
4	F	180	THR	3.0
4	F	104	LEU	3.0
4	F	204	PRO	3.0
3	E	143	THR	3.0
3	H	167	SER	2.9
3	E	153	PRO	2.9
2	D	129[A]	TRP	2.9
3	E	217	GLU	2.9
3	H	187	VAL	2.9
2	B	61	ALA	2.9
2	D	46	LYS	2.9
3	H	199	ILE	2.9
2	B	456	GLU	2.9
3	H	204	ALA	2.9
3	H	160	TRP	2.9
3	H	207	ALA	2.9
3	E	161	ASN	2.9
4	F	107	LYS	2.9
3	E	139	GLY	2.8
4	F	158	GLY	2.8
2	B	56	PHE	2.8
4	L	191	SER	2.8
2	B	107	VAL	2.8
3	H	190	THR	2.8
2	B	22	MET	2.8
2	B	34	GLY	2.8
2	B	440	GLN	2.8
2	B	57	PRO	2.8
3	H	218	PRO	2.8
4	F	83	PHE	2.8
4	F	105	GLU	2.8
3	E	12	VAL	2.8
3	H	212	VAL	2.8
2	B	76	ASP	2.8
2	B	43	ASN	2.8

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Mol	Chain	Res	Type	RSRZ
2	D	377	ASN	2.8
4	F	148	TRP	2.8
2	D	404	ARG	2.8
1	C	336	GLY	2.8
3	E	129	PRO	2.8
3	H	118	SER	2.8
2	B	436	ALA	2.8
2	D	50	ALA	2.8
3	H	130	LEU	2.7
2	B	464	PRO	2.7
4	F	120	PRO	2.7
4	F	209	PHE	2.7
4	F	214	CYS	2.7
2	D	40	LEU	2.7
3	E	20	LEU	2.7
3	H	157	THR	2.7
2	B	94	PRO	2.7
2	B	67	ARG	2.7
2	B	439	ALA	2.7
1	C	339	ALA	2.7
2	B	38	CYS	2.7
3	H	201	CYS	2.7
4	L	190	ASN	2.7
2	B	438	GLN	2.7
2	D	467	LEU	2.6
3	H	165	LEU	2.6
1	A	339	ALA	2.6
3	E	60	TYR	2.6
3	E	181	TYR	2.6
2	D	42	GLU	2.6
2	B	77	SER	2.6
2	D	22	MET	2.6
3	E	192	SER	2.6
4	L	109	ALA	2.6
3	H	214	LYS	2.6
2	B	448	CYS	2.6
2	B	377	ASN	2.6
4	F	157	ASN	2.6
4	F	161	ASN	2.6
2	B	73	GLY	2.6
1	C	320	ARG	2.6
4	F	155	ARG	2.6

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Mol	Chain	Res	Type	RSRZ
2	D	45	LEU	2.6
3	E	83	LEU	2.6
3	H	117	VAL	2.6
3	E	121	LYS	2.6
2	B	435	CYS	2.6
3	H	217	GLU	2.6
4	F	137	ASN	2.6
4	L	137	ASN	2.6
3	E	68	ALA	2.6
2	B	32	PRO	2.6
3	H	216	ILE	2.6
4	L	21	ILE	2.6
4	L	145	ASN	2.6
3	H	133	VAL	2.5
4	L	111	ALA	2.5
3	E	14	PRO	2.5
2	B	47	ASP	2.5
2	D	7	THR	2.5
4	F	193	THR	2.5
3	E	49	GLY	2.5
3	E	215	LYS	2.5
2	D	33	LEU	2.5
1	C	453	VAL	2.5
2	B	18	ALA	2.5
4	F	208	SER	2.5
4	F	48	ILE	2.5
3	E	159	THR	2.5
3	H	152	PHE	2.5
2	B	58	VAL	2.5
4	F	19	VAL	2.5
1	C	337	PRO	2.5
2	B	30	ALA	2.5
4	F	14	SER	2.5
4	L	15	LEU	2.5
4	F	13	VAL	2.5
3	E	204	ALA	2.5
2	D	78	SER	2.5
3	E	185	SER	2.5
4	F	11	MET	2.5
2	D	468	GLY	2.5
4	L	184	ASP	2.5
3	H	203	VAL	2.4

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Mol	Chain	Res	Type	RSRZ
4	F	122	SER	2.4
4	L	7	SER	2.4
3	H	13	LYS	2.4
2	D	375	LEU	2.4
3	E	9	ALA	2.4
3	H	120	ALA	2.4
2	B	48	ASN	2.4
3	H	144	LEU	2.4
4	F	192	TYR	2.4
3	E	115	VAL	2.4
2	B	46	LYS	2.4
2	D	143	ARG	2.4
3	E	178	SER	2.4
4	F	176	SER	2.4
2	D	25	TRP	2.4
2	D	9	GLY	2.4
2	D	182	THR	2.4
3	E	15	GLY	2.4
3	H	159	THR	2.4
4	F	145	ASN	2.4
3	E	80	TYR	2.4
2	B	23	CYS	2.4
4	L	168	SER	2.4
2	B	9	GLY	2.4
2	D	466	TRP	2.4
4	F	128	GLY	2.4
4	F	163	TRP	2.4
4	F	15	LEU	2.3
2	D	56	PHE	2.3
3	E	41	PRO	2.3
4	F	141	PRO	2.3
2	B	7	THR	2.3
2	D	3	ASN	2.3
3	E	59	LYS	2.3
4	F	25	ALA	2.3
4	F	20	SER	2.3
1	C	340	LEU	2.3
3	E	45	LEU	2.3
3	E	171	THR	2.3
3	H	147	LEU	2.3
3	E	172	PHE	2.3
2	D	43	ASN	2.3

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Mol	Chain	Res	Type	RSRZ
2	D	450	ASN	2.3
4	F	169	LYS	2.3
2	B	378	GLU	2.3
2	B	12	SER	2.3
2	B	413	SER	2.3
3	E	21	SER	2.3
3	H	140	SER	2.3
4	F	201	SER	2.3
2	B	181	LYS	2.3
3	E	214	LYS	2.3
2	D	37	ARG	2.3
2	D	32	PRO	2.3
2	D	51	PRO	2.3
4	F	123	GLU	2.3
1	A	47	GLN	2.3
2	D	61	ALA	2.3
2	D	383	LEU	2.2
4	F	152	GLY	2.2
3	E	141	SER	2.2
3	H	186	SER	2.2
4	L	83	PHE	2.2
1	C	45	PRO	2.2
4	L	166	GLN	2.2
2	B	390	LYS	2.2
2	B	454	THR	2.2
4	L	211	ARG	2.2
2	B	39	ASP	2.2
3	E	36	TRP	2.2
4	F	138	ASN	2.2
4	L	86	TYR	2.2
4	L	112	ALA	2.2
2	B	20	SER	2.2
3	H	87	THR	2.2
3	H	138	THR	2.2
4	L	135	PHE	2.2
2	D	39	ASP	2.2
3	E	155	PRO	2.2
4	F	195	GLU	2.2
4	L	115	VAL	2.2
3	E	211	LYS	2.2
4	F	111	ALA	2.2
4	F	51	GLY	2.2

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Mol	Chain	Res	Type	RSRZ
2	D	67	ARG	2.2
3	E	17	SER	2.2
3	E	27	PHE	2.2
3	E	75	SER	2.2
3	E	118	SER	2.2
4	F	77	SER	2.2
1	C	47	GLN	2.2
2	B	444	ASN	2.2
2	B	54	ILE	2.2
4	F	39	LYS	2.2
4	F	103	LYS	2.2
4	L	13	VAL	2.2
3	E	92	ALA	2.2
2	B	442	GLU	2.1
4	F	156	GLN	2.1
2	B	366	LEU	2.1
4	F	109	ALA	2.1
3	H	150	GLY	2.1
3	H	122	THR	2.1
3	E	85	SER	2.1
3	E	206	PRO	2.1
4	F	210	ASN	2.1
4	F	21	ILE	2.1
2	D	34	GLY	2.1
4	F	178	THR	2.1
4	L	114	THR	2.1
2	B	100	PHE	2.1
2	B	35	SER	2.1
3	E	162	SER	2.1
3	H	89	GLU	2.1
4	F	213	GLU	2.1
1	A	455	LYS	2.1
2	B	432	ASP	2.1
4	L	11	MET	2.1
3	H	158	LEU	2.1
3	E	152	PHE	2.1
4	F	74	THR	2.1
4	L	113	PRO	2.1
2	B	42	GLU	2.1
4	F	187	GLU	2.1
3	E	209	SER	2.1
2	D	380	ILE	2.1

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Mol	Chain	Res	Type	RSRZ
3	H	156	VAL	2.0
4	L	78	LEU	2.0
1	C	402	ARG	2.0
2	D	451	GLY	2.0
2	B	14	GLN	2.0
3	H	178	SER	2.0
1	A	338	HIS	2.0
4	F	75	ILE	2.0
4	L	214	CYS	2.0
3	E	149	LYS	2.0
3	E	170	HIS	2.0
3	H	191	SER	2.0
4	F	153	SER	2.0
4	F	108	ARG	2.0

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

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	DPN	N	4	11/12	0.65	0.30	105,108,112,112	0
5	DPN	M	4	11/12	0.78	0.18	61,65,71,77	0

6.3 Carbohydrates (i)

SUGAR-RSR INFOmissingINFO

6.4 Ligands (i)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
9	GOL	C	506	6/6	0.53	0.20	99,100,104,107	0
12	NAG	B	2004	14/15	0.54	0.18	80,92,102,104	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
12	NAG	D	2004	14/15	0.69	0.17	73,82,87,88	0
9	GOL	C	505	6/6	0.75	0.20	73,79,84,85	0
10	SO4	C	507	5/5	0.77	0.14	117,121,122,125	0
10	SO4	B	2005	5/5	0.80	0.23	149,150,151,151	0
10	SO4	L	302	5/5	0.81	0.14	115,115,115,118	0
11	MN	B	2002	1/1	0.81	0.15	159,159,159,159	0
10	SO4	A	512	5/5	0.81	0.24	133,135,136,138	0
10	SO4	C	508	5/5	0.81	0.16	115,117,117,122	0
9	GOL	L	301	6/6	0.82	0.17	111,112,113,113	0
11	MN	D	2002	1/1	0.85	0.18	94,94,94,94	0
9	GOL	A	506	6/6	0.86	0.15	52,56,65,69	0
10	SO4	A	513	5/5	0.87	0.16	90,101,105,108	0
9	GOL	A	509	6/6	0.87	0.19	57,73,76,77	0
9	GOL	D	2005	6/6	0.87	0.23	78,90,97,99	0
10	SO4	A	514	5/5	0.88	0.15	104,105,106,106	0
10	SO4	A	515	5/5	0.88	0.23	172,172,174,174	0
9	GOL	A	508	6/6	0.89	0.19	41,51,60,64	0
9	GOL	A	510	6/6	0.89	0.13	44,63,70,75	0
9	GOL	A	507	6/6	0.90	0.16	45,54,79,86	0
9	GOL	A	511	6/6	0.90	0.19	70,73,76,82	0
8	CA	A	502	1/1	0.91	0.06	26,26,26,26	0
8	CA	A	501	1/1	0.92	0.08	32,32,32,32	0
8	CA	C	502	1/1	0.93	0.09	46,46,46,46	0
8	CA	C	501	1/1	0.93	0.08	63,63,63,63	0
11	MN	D	2001	1/1	0.93	0.07	46,46,46,46	0
11	MN	B	2001	1/1	0.94	0.27	87,87,87,87	0
8	CA	C	504	1/1	0.94	0.06	48,48,48,48	0
9	GOL	A	505	6/6	0.95	0.09	29,34,49,60	0
11	MN	D	2003	1/1	0.95	0.06	43,43,43,43	0
8	CA	A	504	1/1	0.97	0.06	20,20,20,20	0
11	MN	B	2003	1/1	0.98	0.09	26,26,26,26	0
8	CA	A	503	1/1	0.98	0.02	22,22,22,22	0
8	CA	C	503	1/1	0.98	0.04	40,40,40,40	0

6.5 Other polymers (i)

There are no such residues in this entry.