Full wwPDB X-ray Structure Validation Report ⓘ

Feb 22, 2021 – 11:08 AM GMT

PDB ID	:	7NEG
Title	:	Crystal structure of the N501Y mutant receptor binding domain of SARS-CoV-2 Spike glycoprotein in complex with COVOX-269 Fab
Authors	:	Zhou, D.; Ren, J.; Stuart, D.
Deposited on	:	2021-02-04
Resolution	:	2.19 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 ⓘ symbol.

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

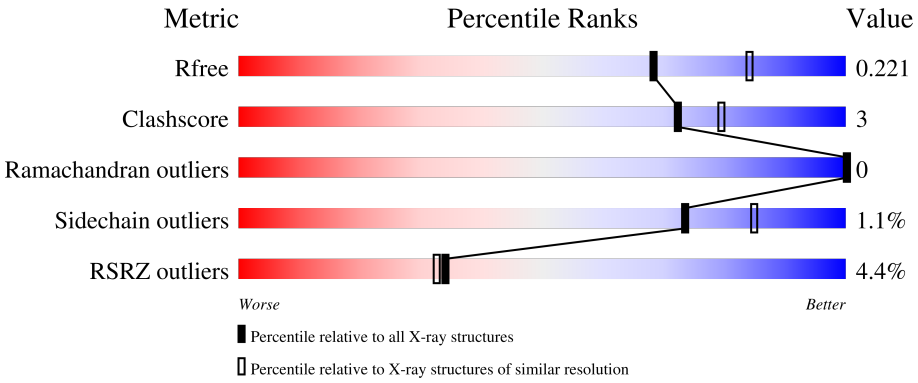
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.17.1.dev1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.17.1.dev1

1 Overall quality at a glance (i)

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

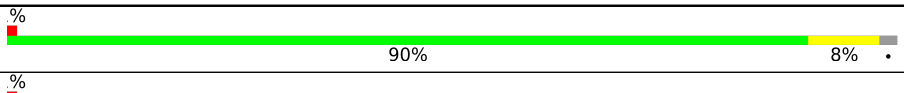
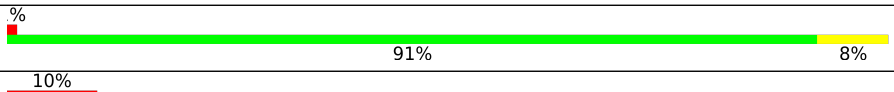
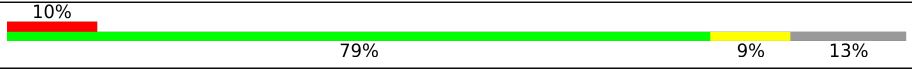
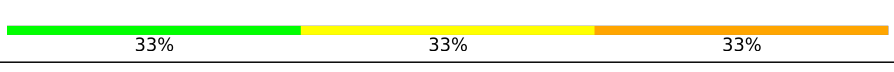
The reported resolution of this entry is 2.19 Å.

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}	130704	4898 (2.20-2.20)
Clashscore	141614	5594 (2.20-2.20)
Ramachandran outliers	138981	5503 (2.20-2.20)
Sidechain outliers	138945	5504 (2.20-2.20)
RSRZ outliers	127900	4800 (2.20-2.20)

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	H	222	
2	L	215	
3	E	210	
4	A	3	

2 Entry composition

There are 7 unique types of molecules in this entry. The entry contains 4945 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 Antibody COVOX-269 Fab heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	H	217	Total	C	N	O	S	0	0	0
			1615	1015	273	320	7			

- Molecule 2 is a protein called Antibody COVOX-269 Fab light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	L	214	Total	C	N	O	S	0	1	0
			1639	1032	272	330	5			

- Molecule 3 is a protein called Surface glycoprotein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	E	183	Total	C	N	O	S	0	1	0
			1474	947	245	275	7			

There are 15 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	319	MET	-	initiating methionine	UNP A0A7D5QNT3
E	320	GLY	-	expression tag	UNP A0A7D5QNT3
E	321	CYS	-	expression tag	UNP A0A7D5QNT3
E	322	VAL	-	expression tag	UNP A0A7D5QNT3
E	323	ALA	-	expression tag	UNP A0A7D5QNT3
E	324	GLU	-	expression tag	UNP A0A7D5QNT3
E	325	THR	-	expression tag	UNP A0A7D5QNT3
E	326	GLY	-	expression tag	UNP A0A7D5QNT3
E	327	HIS	-	expression tag	UNP A0A7D5QNT3
E	328	HIS	-	expression tag	UNP A0A7D5QNT3
E	329	HIS	-	expression tag	UNP A0A7D5QNT3
E	330	HIS	-	expression tag	UNP A0A7D5QNT3
E	331	HIS	-	expression tag	UNP A0A7D5QNT3
E	332	HIS	-	expression tag	UNP A0A7D5QNT3

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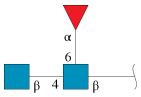
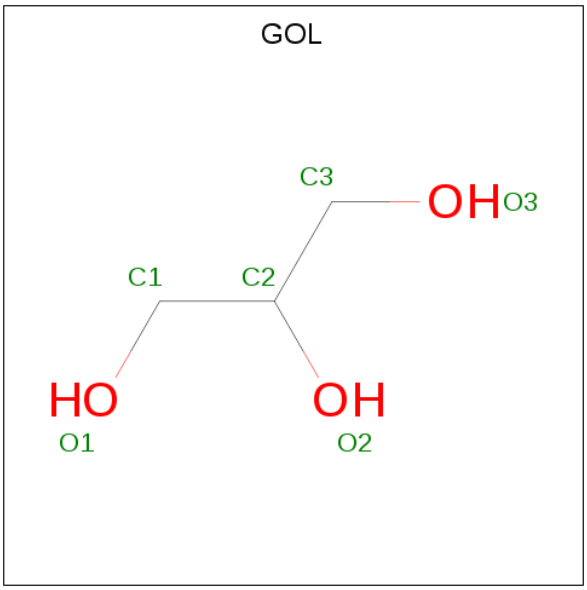
Chain	Residue	Modelled	Actual	Comment	Reference
E	527	LYS	PRO	conflict	UNP A0A7D5QNT3

- Molecule 4 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose.



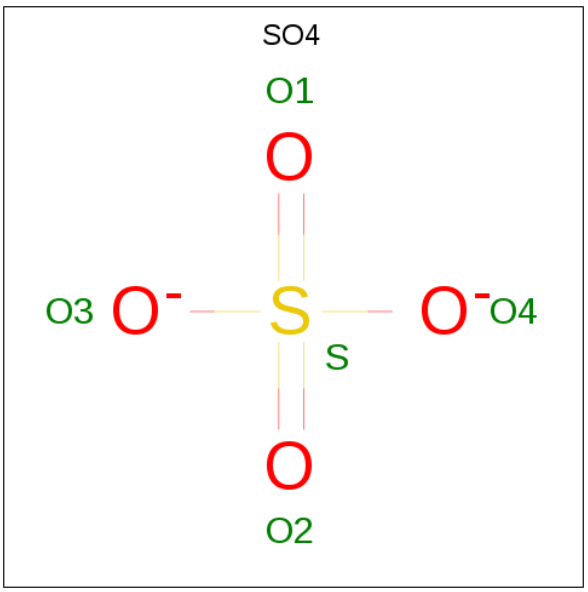
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
4	A	3	Total C N O 38 22 2 14	0	0	0

- Molecule 5 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	H	1	Total C O 6 3 3	0	0
5	L	1	Total C O 6 3 3	0	0
5	L	1	Total C O 6 3 3	0	0
5	L	1	Total C O 6 3 3	0	0
5	E	1	Total C O 6 3 3	0	0

- Molecule 6 is SULFATE ION (three-letter code: SO4) (formula: O_4S).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	H	1	Total O S 5 4 1	0	0
6	L	1	Total O S 5 4 1	0	0
6	E	1	Total O S 5 4 1	0	0

- Molecule 7 is water.

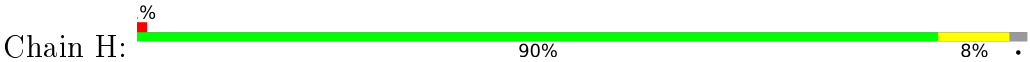
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	H	66	Total O 66 66	0	0
7	L	40	Total O 40 40	0	0
7	E	28	Total O 28 28	0	0

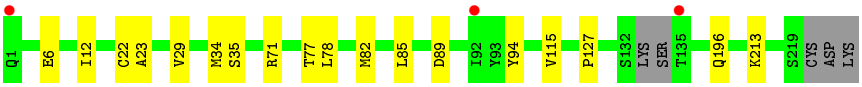
3 Residue-property plots (i)

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: Antibody COVOX-269 Fab heavy chain

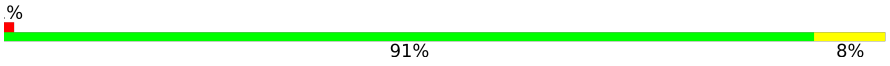
Chain H:

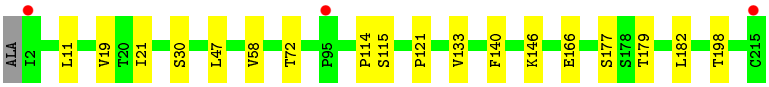




- Molecule 2: Antibody COVOX-269 Fab light chain

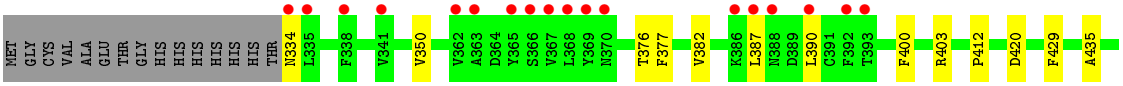
Chain L:

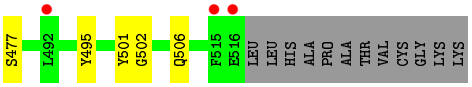




- Molecule 3: Surface glycoprotein

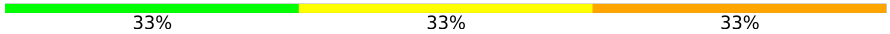
Chain E:





- Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose

Chain A:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	195.10Å 84.95Å 57.94Å 90.00° 100.63° 90.00°	Depositor
Resolution (Å)	56.94 – 2.19 95.87 – 2.19	Depositor EDS
% Data completeness (in resolution range)	90.5 (56.94-2.19) 90.6 (95.87-2.19)	Depositor EDS
R_{merge}	0.18	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	0.99 (at 2.18Å)	Xtriage
Refinement program	PHENIX 1.19_4092	Depositor
R, R_{free}	0.195 , 0.223 0.196 , 0.221	Depositor DCC
R_{free} test set	2138 reflections (4.92%)	wwPDB-VP
Wilson B-factor (Å^2)	54.9	Xtriage
Anisotropy	0.343	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 46.0	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	0.96	EDS
Total number of atoms	4945	wwPDB-VP
Average B, all atoms (Å^2)	68.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.66% 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, GOL, FUC, SO4

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	H	0.31	0/1650	0.56	0/2243
2	L	0.31	0/1679	0.54	0/2282
3	E	0.31	0/1519	0.51	0/2064
All	All	0.31	0/4848	0.54	0/6589

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	H	1615	0	1586	12	0
2	L	1639	0	1601	10	0
3	E	1474	0	1393	10	0
4	A	38	0	34	1	0
5	E	6	0	8	0	0
5	H	6	0	8	2	0
5	L	18	0	24	0	0
6	E	5	0	0	0	0
6	H	5	0	0	0	0
6	L	5	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	E	28	0	0	1	0
7	H	66	0	0	3	0
7	L	40	0	0	1	0
All	All	4945	0	4654	32	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 3.

All (32) 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:H:196:GLN:O	7:H:601:HOH:O	2.01	0.76
1:H:89:ASP:OD1	7:H:602:HOH:O	2.05	0.75
3:E:420:ASP:OD2	7:E:701:HOH:O	2.09	0.71
1:H:71:ARG:O	7:H:603:HOH:O	2.10	0.70
1:H:82:MET:HE2	1:H:85:LEU:HD21	1.77	0.65
3:E:382:VAL:HG11	3:E:387:LEU:HD13	1.82	0.61
3:E:387:LEU:HD12	3:E:390:LEU:HD12	1.81	0.60
1:H:6:GLU:OE2	1:H:94:TYR:HA	2.03	0.58
3:E:412:PRO:HG3	3:E:429:PHE:HB3	1.88	0.56
1:H:23:ALA:HA	1:H:77:THR:HG22	1.87	0.56
1:H:22:CYS:HB3	1:H:78:LEU:HB3	1.92	0.51
2:L:30:SER:HB2	3:E:501:TYR:CE1	2.46	0.51
5:H:501:GOL:H11	2:L:177:SER:OG	2.11	0.49
2:L:114:PRO:HB3	2:L:140:PHE:HB3	1.94	0.49
2:L:166:GLU:OE1	7:L:401:HOH:O	2.20	0.48
5:H:501:GOL:H12	2:L:179:THR:OG1	2.13	0.48
1:H:127:PRO:HD3	1:H:213:LYS:HE2	1.95	0.48
2:L:146:LYS:HB3	2:L:198:THR:OG1	2.17	0.45
2:L:47:LEU:HA	2:L:58:VAL:HG21	1.99	0.44
3:E:502:GLY:O	3:E:506:GLN:HG3	2.18	0.44
2:L:21:ILE:O	2:L:72:THR:HA	2.18	0.44
3:E:350:VAL:HA	3:E:400:PHE:HB2	2.00	0.43
3:E:403:ARG:HG3	3:E:495:TYR:CE1	2.54	0.43
3:E:376:THR:HB	3:E:435:ALA:HB3	2.01	0.43
2:L:121:PRO:HD3	2:L:133:VAL:HG22	1.99	0.43
1:H:29:VAL:HG13	1:H:34:MET:HG3	2.00	0.42
1:H:85:LEU:HA	1:H:85:LEU:HD23	1.85	0.42
2:L:11:LEU:HD21	2:L:19:VAL:HG13	2.01	0.42
3:E:403:ARG:HG3	3:E:495:TYR:CD1	2.55	0.42
1:H:12:ILE:O	1:H:115:VAL:HA	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:22:CYS:N	1:H:78:LEU:O	2.52	0.40
4:A:1:NAG:H61	4:A:2:NAG:N2	2.37	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	H	213/222 (96%)	209 (98%)	4 (2%)	0	100	100
2	L	213/215 (99%)	203 (95%)	10 (5%)	0	100	100
3	E	182/210 (87%)	174 (96%)	8 (4%)	0	100	100
All	All	608/647 (94%)	586 (96%)	22 (4%)	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	H	182/187 (97%)	181 (100%)	1 (0%)	88	94
2	L	187/186 (100%)	185 (99%)	2 (1%)	73	85
3	E	160/180 (89%)	157 (98%)	3 (2%)	57	71
All	All	529/553 (96%)	523 (99%)	6 (1%)	73	85

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	H	35	SER
2	L	115	SER
2	L	182	LEU
3	E	334	ASN
3	E	377	PHE
3	E	477	SER

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

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)

3 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	$\#\|Z\| > 2$
4	NAG	A	1	3,4	14,14,15	0.36	0	17,19,21	0.65	1 (5%)
4	NAG	A	2	4	14,14,15	0.44	0	17,19,21	0.48	0
4	FUC	A	3	4	10,10,11	1.03	0	14,14,16	0.81	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	A	1	3,4	-	2/6/23/26	0/1/1/1
4	NAG	A	2	4	-	0/6/23/26	0/1/1/1
4	FUC	A	3	4	-	-	0/1/1/1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	A	1	NAG	C1-O5-C5	2.15	115.11	112.19

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	1	NAG	O5-C5-C6-O6
4	A	1	NAG	C4-C5-C6-O6

There are no ring outliers.

2 monomers are involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	2	NAG	1	0
4	A	1	NAG	1	0

5.6 Ligand geometry (i)

8 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	$\#\|Z\| > 2$
6	SO4	L	304	-	4,4,4	0.14	0	6,6,6	0.23	0
6	SO4	E	602	-	4,4,4	0.14	0	6,6,6	0.08	0
5	GOL	L	303	-	5,5,5	1.08	0	5,5,5	0.84	0
5	GOL	L	302	-	5,5,5	0.99	0	5,5,5	1.10	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
5	GOL	L	301	-	5,5,5	0.98	0	5,5,5	1.00	0
5	GOL	H	501	-	5,5,5	1.07	1 (20%)	5,5,5	1.03	0
6	SO4	H	502	-	4,4,4	0.18	0	6,6,6	0.84	0
5	GOL	E	601	-	5,5,5	0.96	0	5,5,5	0.90	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	GOL	L	303	-	-	0/4/4/4	-
5	GOL	L	302	-	-	2/4/4/4	-
5	GOL	L	301	-	-	2/4/4/4	-
5	GOL	H	501	-	-	2/4/4/4	-
5	GOL	E	601	-	-	2/4/4/4	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	H	501	GOL	O2-C2	-2.09	1.37	1.43

There are no bond angle outliers.

There are no chirality outliers.

All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	L	302	GOL	C1-C2-C3-O3
5	L	302	GOL	O2-C2-C3-O3
5	H	501	GOL	O1-C1-C2-C3
5	L	301	GOL	O1-C1-C2-C3
5	E	601	GOL	O1-C1-C2-C3
5	E	601	GOL	O1-C1-C2-O2
5	L	301	GOL	O1-C1-C2-O2
5	H	501	GOL	O1-C1-C2-O2

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	H	501	GOL	2	0

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	H	217/222 (97%)	0.58	3 (1%) 75 73	48, 61, 81, 125	0
2	L	214/215 (99%)	0.63	3 (1%) 75 73	49, 63, 85, 117	0
3	E	183/210 (87%)	0.88	21 (11%) 4 4	51, 68, 125, 145	0
All	All	614/647 (94%)	0.69	27 (4%) 34 32	48, 64, 109, 145	0

All (27) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	E	335	LEU	9.5
3	E	370	ASN	4.9
3	E	390	LEU	4.6
3	E	387	LEU	4.0
3	E	365	TYR	3.5
3	E	334	ASN	3.4
1	H	135	THR	3.1
3	E	392	PHE	2.9
2	L	2	ILE	2.9
2	L	215	CYS	2.9
3	E	362	VAL	2.8
3	E	366	SER	2.8
3	E	368	LEU	2.8
3	E	341	VAL	2.8
3	E	369	TYR	2.7
3	E	338	PHE	2.6
1	H	1	GLN	2.6
2	L	95	PRO	2.6
3	E	516	GLU	2.5
3	E	367	VAL	2.5
3	E	388	ASN	2.3
3	E	393	THR	2.2
3	E	363	ALA	2.2

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Mol	Chain	Res	Type	RSRZ
3	E	492	LEU	2.1
3	E	386	LYS	2.0
3	E	515	PHE	2.0
1	H	92	ILE	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
4	NAG	A	2	14/15	0.77	0.25	105,128,136,138	0
4	FUC	A	3	10/11	0.82	0.16	111,121,124,126	0
4	NAG	A	1	14/15	0.87	0.23	99,115,127,129	0

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
6	SO4	L	304	5/5	0.79	0.19	124,128,145,146	0
5	GOL	E	601	6/6	0.82	0.24	69,75,80,83	0
5	GOL	L	303	6/6	0.85	0.18	75,78,80,91	0
5	GOL	L	301	6/6	0.87	0.20	70,80,80,82	0
6	SO4	H	502	5/5	0.90	0.17	86,95,119,129	0
5	GOL	H	501	6/6	0.90	0.26	54,59,64,65	0
5	GOL	L	302	6/6	0.93	0.21	60,69,76,79	0
6	SO4	E	602	5/5	0.96	0.15	86,92,102,107	0

6.5 Other polymers (i)

There are no such residues in this entry.