



# Full wwPDB X-ray Structure Validation Report ⓘ

Jan 8, 2019 – 02:47 PM EST

PDB ID : 6MU8  
Title : Crystal Structure of HIV-1 BG505 SOSIP.664 Prefusion Env Trimer Bound to Small Molecule HIV-1 Entry Inhibitor BMS-386150 in Complex with Human Antibodies 3H109L and 35O22 at 3.5 Angstrom  
Authors : Lai, Y.-T.; Kwong, P.D.  
Deposited on : 2018-10-22  
Resolution : 2.99 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](mailto: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.

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

MolProbity : 4.02b-467  
Mogul : 1.7.3 (157068), CSD as539be (2018)  
Xtrriage (Phenix) : 1.13  
EDS : rb-20031633  
Percentile statistics : 20171227.v01 (using entries in the PDB archive December 27th 2017)  
Refmac : 5.8.0158  
CCP4 : 7.0 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : rb-20031633

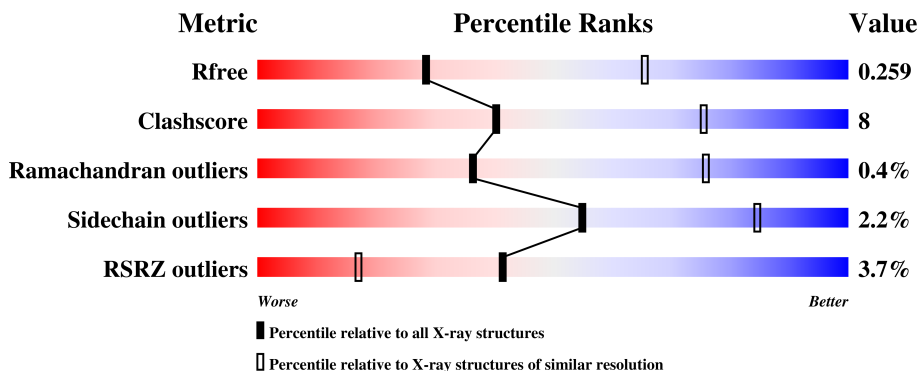
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.99 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))
$R_{free}$	111664	1851 (3.00-3.00)
Clashscore	122126	2167 (3.00-3.00)
Ramachandran outliers	120053	2101 (3.00-3.00)
Sidechain outliers	120020	2104 (3.00-3.00)
RSRZ outliers	108989	1751 (3.00-3.00)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. 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  $\leq 5\%$ . 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	B	153	 3% 73% 14% 13%
2	D	134	 14% 72% 23% 9%
3	E	114	 6% 77% 14% 8%
4	G	481	 2% 70% 21% 9%
5	H	244	 % 75% 16% 7%

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Mol	Chain	Length	Quality of chain
6	L	217	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
7	NAG	B	702	-	-	-	X

## 2 Entry composition [i](#)

There are 11 unique types of molecules in this entry. The entry contains 10171 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 Envelope glycoprotein gp160.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	B	133	1056	673	182	195	6	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	559	PRO	ILE	engineered mutation	UNP Q2N0S6
B	605	CYS	THR	engineered mutation	UNP Q2N0S6

- Molecule 2 is a protein called 35O22 scFv heavy chain portion.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	D	128	994	628	169	192	5	0	0	0

- Molecule 3 is a protein called 35O22 scFv light chain portion.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	E	105	805	506	133	160	6	0	0	0

- Molecule 4 is a protein called Envelope glycoprotein gp160.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	G	439	3461	2177	613	643	28	0	0	0

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	137	ALA	ASN	engineered mutation	UNP Q2N0S6
G	332	ASN	THR	conflict	UNP Q2N0S6

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Chain	Residue	Modelled	Actual	Comment	Reference
G	501	CYS	ALA	conflict	UNP Q2N0S6
G	509	ARG	-	expression tag	UNP Q2N0S6
G	510	ARG	-	expression tag	UNP Q2N0S6
G	511	ARG	-	expression tag	UNP Q2N0S6
G	512	ARG	-	expression tag	UNP Q2N0S6
G	513	ARG	-	expression tag	UNP Q2N0S6

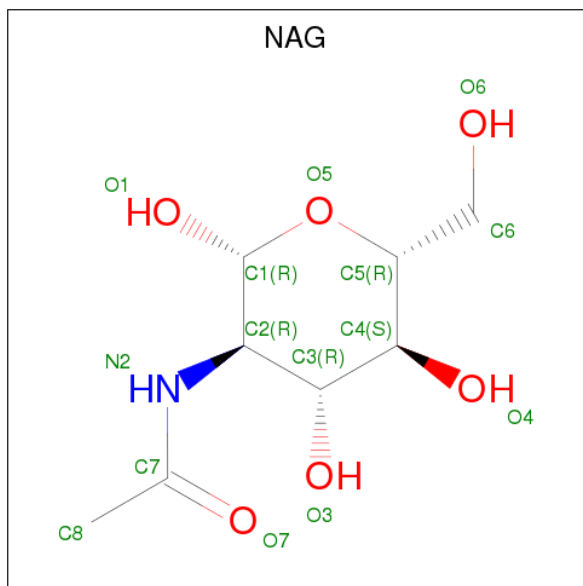
- Molecule 5 is a protein called 3H109L Fab heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	H	226	1715	1093	278	338	6	0	0	0

- Molecule 6 is a protein called 3H109L Fab light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	L	211	1604	1009	276	312	7	0	0	0

- Molecule 7 is N-ACETYL-D-GLUCOSAMINE (three-letter code: NAG) (formula: C<sub>8</sub>H<sub>15</sub>NO<sub>6</sub>).



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

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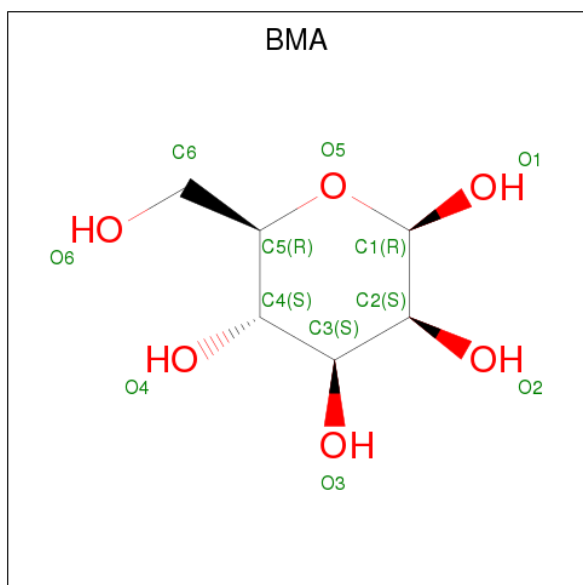
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
7	D	1	Total	C	N	O	0	0
			14	8	1	5		
7	G	1	Total	C	N	O	0	0
			14	8	1	5		
7	G	1	Total	C	N	O	0	0
			14	8	1	5		
7	G	1	Total	C	N	O	0	0
			14	8	1	5		
7	G	1	Total	C	N	O	0	0
			14	8	1	5		
7	G	1	Total	C	N	O	0	0
			14	8	1	5		
7	G	1	Total	C	N	O	0	0
			14	8	1	5		
7	G	1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

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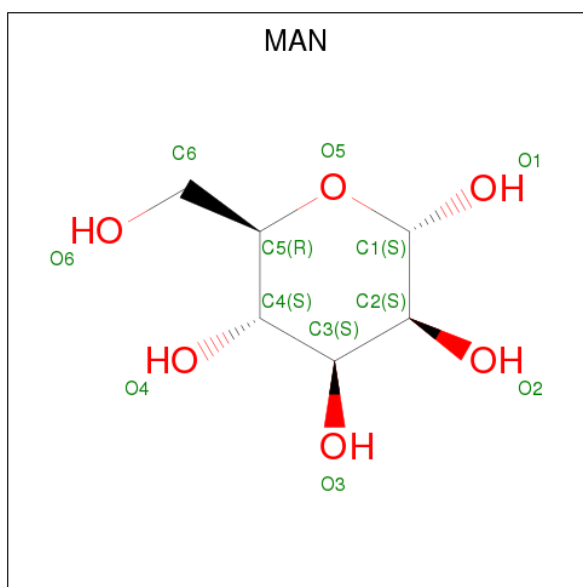
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
7	G	1	Total	C	N	O	0	0
			14	8	1	5		
7	G	1	Total	C	N	O	0	0
			14	8	1	5		

- Molecule 8 is BETA-D-MANNOSE (three-letter code: BMA) (formula: C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
8	G	1	Total	C	O	0	0
			11	6	5		
8	G	1	Total	C	O	0	0
			11	6	5		
8	G	1	Total	C	O	0	0
			11	6	5		
8	G	1	Total	C	O	0	0
			11	6	5		

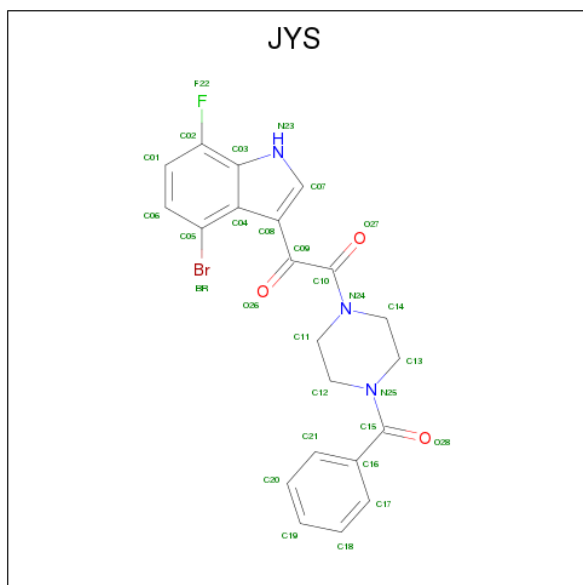
- Molecule 9 is ALPHA-D-MANNOSE (three-letter code: MAN) (formula: C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	G	1	Total C O 11 6 5	0	0
9	G	1	Total C O 11 6 5	0	0
9	G	1	Total C O 11 6 5	0	0
9	G	1	Total C O 11 6 5	0	0
9	G	1	Total C O 11 6 5	0	0
9	G	1	Total C O 11 6 5	0	0
9	G	1	Total C O 11 6 5	0	0
9	G	1	Total C O 11 6 5	0	0
9	G	1	Total C O 11 6 5	0	0
9	G	1	Total C O 11 6 5	0	0

- Molecule 10 is 1-[4-(benzenecarbonyl)piperazin-1-yl]-2-(4-bromo-7-fluoro-1H-indol-3-yl)ethane-1,2-dione (three-letter code: JYS) (formula: C<sub>21</sub>H<sub>17</sub>BrFN<sub>3</sub>O<sub>3</sub>).





Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
			Total	Br	C	F	N			O
10	G	1	29	1	21	1	3	3	0	0

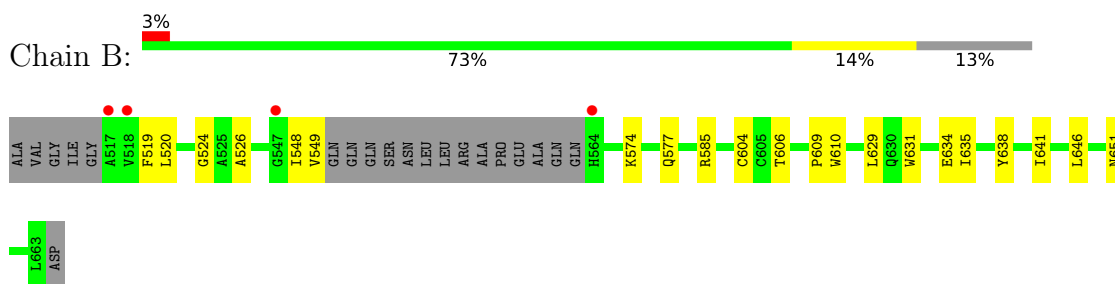
- Molecule 11 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
11	D	1	Total	O	0	0
			1	1		
11	G	1	Total	O	0	0
			1	1		
11	L	1	Total	O	0	0
			1	1		

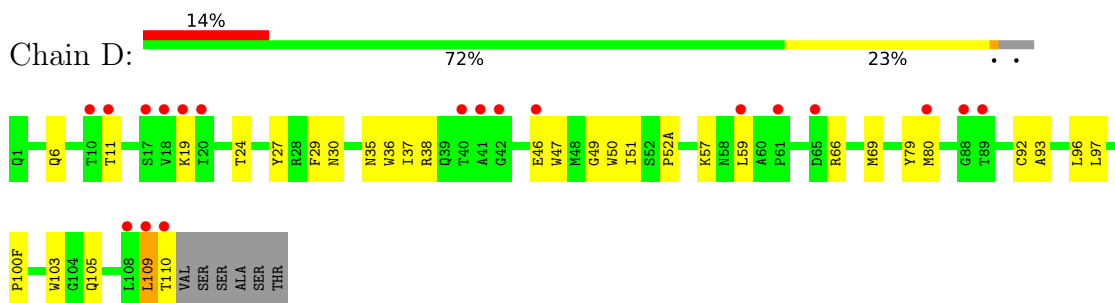
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA 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.

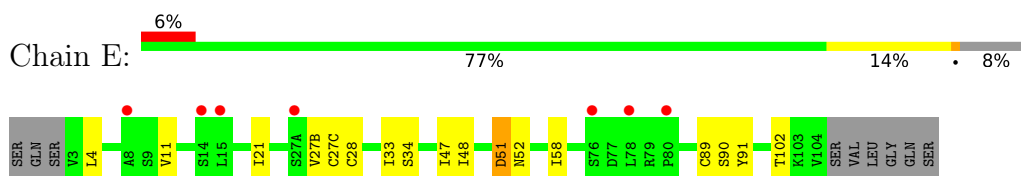
- Molecule 1: Envelope glycoprotein gp160



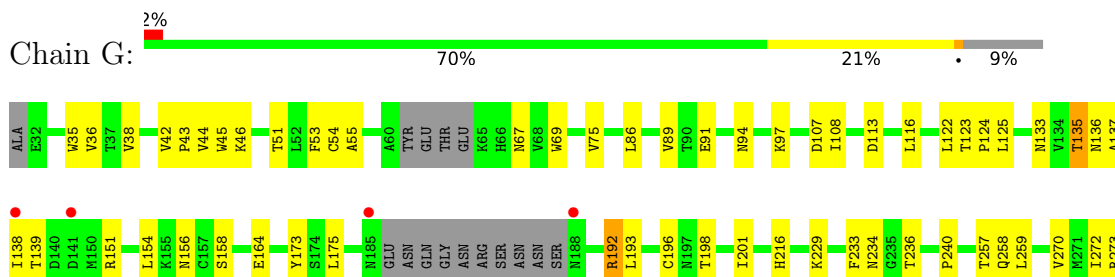
- Molecule 2: 35O22 scFv heavy chain portion

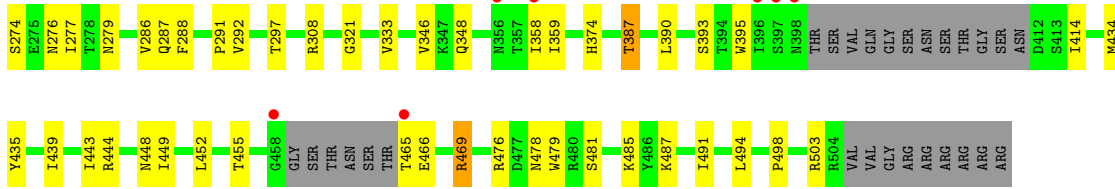


- Molecule 3: 35O22 scFv light chain portion

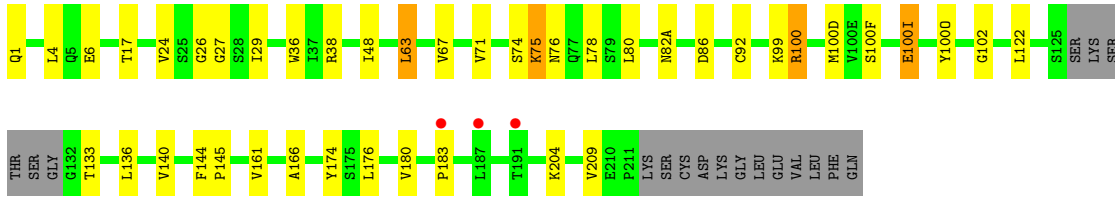
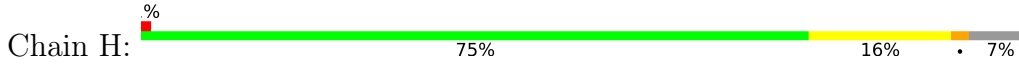


- Molecule 4: Envelope glycoprotein gp160

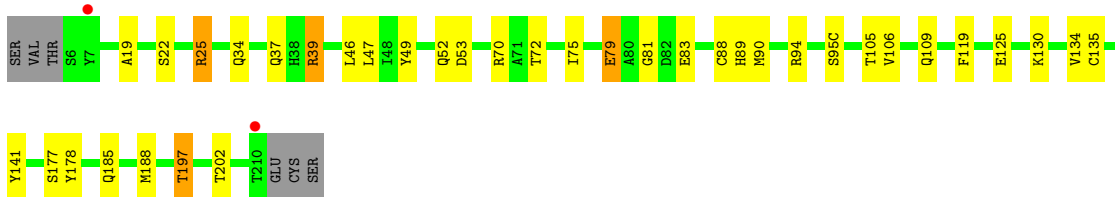
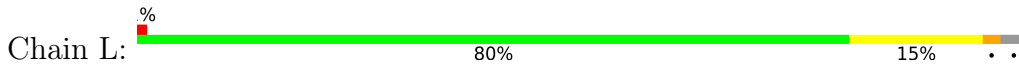




• Molecule 5: 3H109L Fab heavy chain



• Molecule 6: 3H109L Fab light chain



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 63	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	131.41Å 131.41Å 315.47Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	46.15 – 2.99 46.15 – 2.98	Depositor EDS
% Data completeness (in resolution range)	45.4 (46.15-2.99) 44.9 (46.15-2.98)	Depositor EDS
$R_{merge}$	0.08	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.23 (at 3.01Å)	Xtrriage
Refinement program	PHENIX 1.13_2998	Depositor
R, $R_{free}$	0.219 , 0.259 0.219 , 0.259	Depositor DCC
$R_{free}$ test set	1411 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	30.3	Xtrriage
Anisotropy	0.124	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.26 , 25.4	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	0.056 for h,-h-k,-l	Xtrriage
$F_o, F_c$ correlation	0.84	EDS
Total number of atoms	10171	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	55.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.57% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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

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	B	0.23	0/1075	0.39	0/1458
2	D	0.24	0/1021	0.47	0/1390
3	E	0.25	0/829	0.46	0/1133
4	G	0.24	0/3532	0.45	0/4791
5	H	0.24	0/1758	0.47	0/2397
6	L	0.25	0/1647	0.45	0/2247
All	All	0.24	0/9862	0.45	0/13416

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 [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	B	1056	0	1050	16	0
2	D	994	0	952	22	0
3	E	805	0	752	8	0
4	G	3461	0	3409	69	0
5	H	1715	0	1685	26	0
6	L	1604	0	1553	26	0
7	B	28	0	26	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	D	14	0	13	0	0
7	G	308	0	275	6	0
8	G	44	0	36	0	0
9	G	110	0	94	3	0
10	G	29	0	0	2	0
11	D	1	0	0	0	0
11	G	1	0	0	0	0
11	L	1	0	0	0	0
All	All	10171	0	9845	156	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 8.

All (156) 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)
4:G:137:ALA:H	4:G:151:ARG:HH21	1.35	0.74
2:D:49:GLY:HA3	2:D:59:LEU:HD23	1.68	0.73
2:D:109:LEU:HD23	2:D:110:THR:HG22	1.73	0.71
5:H:136:LEU:HD13	5:H:209:VAL:HG21	1.72	0.70
4:G:270:VAL:HG23	4:G:348:GLN:HG3	1.76	0.68
6:L:39:ARG:NH1	6:L:81:GLY:O	2.30	0.65
4:G:233:PHE:O	4:G:273:ARG:NH1	2.30	0.65
4:G:274:SER:HB3	4:G:277:ILE:HG12	1.77	0.65
4:G:257:THR:HG22	4:G:258:GLN:HG3	1.79	0.65
4:G:198:THR:HG22	7:G:612:NAG:H82	1.79	0.65
6:L:83:GLU:HG3	6:L:106:VAL:HG23	1.79	0.65
6:L:25:ARG:NH1	6:L:88:CYS:O	2.30	0.64
5:H:38:ARG:NH1	5:H:86:ASP:OD1	2.25	0.63
4:G:135:THR:HG21	6:L:94:ARG:HE	1.63	0.63
4:G:387:THR:HG22	4:G:390:LEU:HD12	1.81	0.62
4:G:292:VAL:HG13	4:G:449:ILE:HB	1.81	0.62
4:G:359:ILE:HG22	4:G:466:GLU:HB2	1.82	0.62
4:G:69:TRP:HZ3	4:G:108:ILE:HG23	1.64	0.61
6:L:46:LEU:HD21	6:L:49:TYR:HB3	1.81	0.61
4:G:113:ASP:OD1	10:G:637:JYS:N23	2.34	0.60
2:D:96:LEU:HG	2:D:97:LEU:HG	1.84	0.60
9:G:627:MAN:H62	5:H:99:LYS:HB3	1.84	0.60
1:B:574:LYS:NZ	4:G:107:ASP:OD2	2.32	0.59
1:B:606:THR:HG21	1:B:646:LEU:HD22	1.84	0.58
7:G:602:NAG:H83	7:G:602:NAG:H3	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:H:24:VAL:HB	5:H:76:ASN:HB3	1.85	0.58
4:G:476:ARG:HA	4:G:479:TRP:CD1	2.40	0.56
2:D:6:GLN:H	2:D:105:GLN:HE22	1.53	0.55
4:G:201:ILE:HD11	4:G:435:TYR:HB2	1.89	0.55
3:E:4:LEU:HD11	3:E:90:SER:HB3	1.89	0.55
10:G:637:JYS:C10	10:G:637:JYS:BR	3.10	0.54
5:H:4:LEU:HD23	5:H:92:CYS:SG	2.48	0.54
1:B:606:THR:HG22	4:G:503:ARG:HH21	1.72	0.54
2:D:47:TRP:CZ2	2:D:49:GLY:HA2	2.43	0.54
4:G:91:GLU:OE1	4:G:487:LYS:NZ	2.40	0.54
4:G:164:GLU:OE2	4:G:308:ARG:NH1	2.39	0.53
6:L:22:SER:HA	6:L:72:THR:HG22	1.90	0.53
6:L:197:THR:HA	6:L:202:THR:HA	1.90	0.53
4:G:346:VAL:HG13	4:G:359:ILE:HD11	1.91	0.53
6:L:70:ARG:HG3	6:L:72:THR:HG23	1.92	0.52
5:H:92:CYS:O	5:H:102:GLY:N	2.42	0.52
4:G:270:VAL:HG12	4:G:288:PHE:HA	1.91	0.52
9:G:628:MAN:O6	5:H:100:ARG:NH2	2.43	0.52
6:L:185:GLN:HA	6:L:188:MET:HG2	1.92	0.51
4:G:138:ILE:HG23	4:G:139:THR:H	1.76	0.51
3:E:34:SER:HB3	3:E:91:TYR:HE2	1.74	0.51
4:G:277:ILE:HG13	7:G:613:NAG:H81	1.92	0.51
4:G:94:ASN:HB3	4:G:97:LYS:HG2	1.92	0.51
6:L:34:GLN:HG3	6:L:49:TYR:HA	1.93	0.50
7:G:622:NAG:H3	7:G:622:NAG:H83	1.93	0.50
5:H:74:SER:OG	5:H:75:LYS:NZ	2.41	0.50
1:B:585:ARG:NH2	4:G:491:ILE:O	2.45	0.50
6:L:83:GLU:HG2	6:L:105:THR:HA	1.92	0.50
6:L:109:GLN:HB2	6:L:141:TYR:CE1	2.47	0.50
4:G:158:SER:HA	4:G:173:TYR:HA	1.92	0.49
6:L:52:GLN:NE2	6:L:53:ASP:OD1	2.45	0.49
2:D:36:TRP:CZ3	2:D:92:CYS:HB3	2.47	0.49
3:E:51:ASP:N	3:E:51:ASP:OD1	2.45	0.49
4:G:259:LEU:HB2	4:G:374:HIS:CE1	2.48	0.49
3:E:47:ILE:HG22	3:E:48:ILE:HG13	1.95	0.49
4:G:358:ILE:HB	4:G:465:THR:HG22	1.95	0.49
5:H:161:VAL:HA	5:H:180:VAL:HG12	1.94	0.49
4:G:42:VAL:HG23	4:G:44:VAL:HG12	1.94	0.48
5:H:29:ILE:HD11	5:H:78:LEU:HB3	1.95	0.48
4:G:439:ILE:HB	4:G:443:ILE:HD11	1.94	0.48
1:B:604:CYS:SG	4:G:38:VAL:HB	2.54	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:G:272:ILE:HG12	4:G:286:VAL:HG12	1.95	0.48
4:G:45:TRP:NE1	4:G:91:GLU:OE2	2.46	0.48
4:G:455:THR:N	4:G:469:ARG:O	2.46	0.48
2:D:11:THR:HB	2:D:110:THR:HA	1.95	0.48
2:D:19:LYS:HD2	2:D:79:TYR:HB3	1.96	0.47
2:D:51:ILE:HG13	2:D:57:LYS:HB3	1.98	0.46
5:H:1:GLN:O	5:H:26:GLY:HA3	2.15	0.46
6:L:109:GLN:HB2	6:L:141:TYR:CZ	2.50	0.46
4:G:286:VAL:HG22	4:G:452:LEU:HB2	1.96	0.46
4:G:67:ASN:HD22	4:G:69:TRP:HD1	1.64	0.46
4:G:86:LEU:HB3	4:G:89:VAL:HG21	1.99	0.46
6:L:119:PHE:HB2	6:L:134:VAL:HG22	1.98	0.46
1:B:631:TRP:CE2	1:B:635:ILE:HG13	2.51	0.45
4:G:94:ASN:HA	4:G:236:THR:HG22	1.98	0.45
1:B:520:LEU:HB3	1:B:524:GLY:HA3	1.97	0.45
4:G:192:ARG:HD2	4:G:193:LEU:O	2.16	0.45
5:H:144:PHE:HA	5:H:145:PRO:HA	1.74	0.45
5:H:6:GLU:OE1	5:H:6:GLU:N	2.50	0.45
3:E:47:ILE:HD13	3:E:58:ILE:HD12	1.99	0.45
1:B:548:ILE:HG22	4:G:75:VAL:HG21	1.98	0.45
5:H:71:VAL:HA	5:H:78:LEU:HA	1.99	0.45
4:G:138:ILE:HG22	4:G:151:ARG:HG2	2.00	0.44
4:G:276:ASN:HD22	4:G:279:ASN:HB2	1.82	0.44
5:H:17:THR:HA	5:H:82(A):ASN:HA	1.98	0.44
1:B:609:PRO:HA	4:G:35:TRP:HA	1.98	0.44
4:G:122:LEU:HD13	4:G:125:LEU:HD12	1.99	0.44
4:G:257:THR:O	4:G:259:LEU:N	2.49	0.44
1:B:606:THR:OG1	4:G:36:VAL:O	2.32	0.44
2:D:37:ILE:HG13	2:D:103:TRP:CH2	2.53	0.43
1:B:629:LEU:HD23	4:G:44:VAL:HG23	1.99	0.43
6:L:125:GLU:HG2	6:L:130:LYS:O	2.17	0.43
5:H:100(D):MET:H	5:H:100(I):GLU:HG3	1.83	0.43
5:H:27:GLY:O	5:H:76:ASN:ND2	2.51	0.43
6:L:19:ALA:HB3	6:L:75:ILE:HB	1.99	0.43
2:D:36:TRP:HD1	2:D:69:MET:SD	2.41	0.43
4:G:393:SER:OG	4:G:395:TRP:NE1	2.47	0.43
5:H:36:TRP:CG	5:H:80:LEU:HD22	2.54	0.43
4:G:276:ASN:ND2	4:G:279:ASN:HB2	2.34	0.43
4:G:116:LEU:HD21	4:G:434:MET:HG3	2.01	0.43
4:G:333:VAL:HG13	4:G:414:ILE:HG13	2.00	0.43
2:D:50:TRP:HH2	9:G:605:MAN:H62	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:G:234:ASN:HD21	7:G:613:NAG:C7	2.32	0.43
5:H:36:TRP:NE1	5:H:80:LEU:HB2	2.34	0.43
2:D:38:ARG:HH21	2:D:46:GLU:CD	2.21	0.43
5:H:133:THR:HG22	5:H:183:PRO:HA	2.01	0.43
6:L:134:VAL:HG12	6:L:178:TYR:CD2	2.54	0.43
6:L:34:GLN:HB2	6:L:89:HIS:HB3	2.00	0.43
1:B:577:GLN:HG2	4:G:51:THR:HG21	2.01	0.43
2:D:29:PHE:CE2	2:D:52(A):PRO:HB3	2.54	0.43
4:G:133:ASN:HB2	4:G:136:ASN:HD21	1.84	0.42
3:E:27(C):CYS:HA	3:E:28:CYS:HA	1.75	0.42
4:G:494:LEU:HD23	4:G:494:LEU:HA	1.86	0.42
4:G:55:ALA:HB3	4:G:216:HIS:HB2	2.01	0.42
6:L:37:GLN:HB2	6:L:47:LEU:HD11	2.00	0.42
4:G:123:THR:N	4:G:124:PRO:HD2	2.34	0.42
4:G:358:ILE:HG23	4:G:395:TRP:O	2.20	0.42
5:H:38:ARG:HB3	5:H:48:ILE:HD11	2.02	0.42
6:L:197:THR:HG22	6:L:202:THR:HB	2.02	0.42
2:D:51:ILE:HB	2:D:69:MET:HE3	2.02	0.42
4:G:125:LEU:HA	4:G:125:LEU:HD23	1.88	0.42
4:G:273:ARG:HH21	4:G:287:GLN:NE2	2.18	0.42
2:D:35:ASN:OD1	2:D:50:TRP:HB3	2.20	0.41
4:G:156:ASN:HA	4:G:175:LEU:HD23	2.01	0.41
5:H:63:LEU:HD13	5:H:67:VAL:HG21	2.02	0.41
6:L:90:MET:O	6:L:95(C):SER:OG	2.26	0.41
1:B:638:TYR:HA	1:B:641:ILE:HD13	2.02	0.41
3:E:21:ILE:HG23	3:E:102:THR:HG21	2.02	0.41
4:G:393:SER:HG	4:G:395:TRP:HE1	1.61	0.41
2:D:24:THR:HB	2:D:27:TYR:CE1	2.55	0.41
3:E:33:ILE:HA	3:E:89:CYS:O	2.20	0.41
1:B:549:VAL:HG12	4:G:53:PHE:CE1	2.56	0.41
1:B:610:TRP:CD2	4:G:498:PRO:HB3	2.55	0.41
2:D:6:GLN:H	2:D:105:GLN:NE2	2.17	0.41
5:H:166:ALA:HB1	5:H:174:TYR:HB3	2.01	0.41
4:G:193:LEU:HB2	4:G:196:CYS:SG	2.61	0.41
1:B:526:ALA:HA	4:G:43:PRO:HB2	2.03	0.41
5:H:122:LEU:HB3	6:L:119:PHE:CD1	2.55	0.41
2:D:19:LYS:HA	2:D:80:MET:O	2.20	0.41
6:L:135:CYS:HB3	6:L:177:SER:HB3	2.03	0.41
2:D:57:LYS:HE2	2:D:57:LYS:HB3	1.92	0.41
2:D:30:ASN:HA	2:D:52(A):PRO:HB2	2.02	0.41
5:H:140:VAL:O	5:H:176:LEU:N	2.44	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:614:NAG:H61	7:G:615:NAG:C7	2.50	0.40
6:L:79:GLU:O	6:L:106:VAL:HG21	2.21	0.40
2:D:93:ALA:HB3	2:D:100(F):PRO:HB3	2.04	0.40
4:G:291:PRO:HB2	4:G:448:ASN:HB3	2.04	0.40
4:G:45:TRP:O	4:G:46:LYS:HD2	2.21	0.40
4:G:478:ASN:O	4:G:481:SER:OG	2.29	0.40
4:G:297:THR:HB	4:G:444:ARG:HG3	2.03	0.40
5:H:100(O):TYR:HB3	6:L:34:GLN:HG2	2.03	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	B	129/153 (84%)	120 (93%)	9 (7%)	0	100	100
2	D	126/134 (94%)	108 (86%)	18 (14%)	0	100	100
3	E	103/114 (90%)	88 (85%)	13 (13%)	2 (2%)	9	39
4	G	429/481 (89%)	398 (93%)	28 (6%)	3 (1%)	24	64
5	H	222/244 (91%)	203 (91%)	19 (9%)	0	100	100
6	L	209/217 (96%)	197 (94%)	12 (6%)	0	100	100
All	All	1218/1343 (91%)	1114 (92%)	99 (8%)	5 (0%)	36	76

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	E	52	ASN
3	E	11	VAL
4	G	321	GLY
4	G	135	THR
4	G	240	PRO

### 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	B	114/129 (88%)	111 (97%)	3 (3%)	49	81
2	D	107/112 (96%)	105 (98%)	2 (2%)	60	87
3	E	92/100 (92%)	90 (98%)	2 (2%)	55	84
4	G	391/427 (92%)	384 (98%)	7 (2%)	62	87
5	H	196/212 (92%)	190 (97%)	6 (3%)	43	78
6	L	175/181 (97%)	171 (98%)	4 (2%)	53	84
All	All	1075/1161 (93%)	1051 (98%)	24 (2%)	55	84

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

Mol	Chain	Res	Type
1	B	519	PHE
1	B	634	GLU
1	B	651	ASN
2	D	66	ARG
2	D	109	LEU
3	E	27(B)	VAL
3	E	51	ASP
4	G	54	CYS
4	G	154	LEU
4	G	192	ARG
4	G	229	LYS
4	G	387	THR
4	G	469	ARG
4	G	485	LYS
5	H	63	LEU
5	H	75	LYS
5	H	100	ARG
5	H	100(F)	SER
5	H	100(I)	GLU
5	H	204	LYS
6	L	25	ARG
6	L	39	ARG

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Mol	Chain	Res	Type
6	L	79	GLU
6	L	197	THR

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
4	G	287	GLN

### 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](#)

There are no carbohydrates in this entry.

### 5.6 Ligand geometry [i](#)

40 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	701	1	14,14,15	0.33	0	17,19,21	0.57	0
7	NAG	B	702	1	14,14,15	0.23	0	17,19,21	0.51	0
7	NAG	D	201	2	14,14,15	0.34	0	17,19,21	0.56	0
7	NAG	G	601	4,7	14,14,15	0.26	0	17,19,21	0.47	0
7	NAG	G	602	8,7	14,14,15	0.41	0	17,19,21	1.26	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
8	BMA	G	603	9,7	11,11,12	0.71	0	15,15,17	0.73	0
9	MAN	G	604	8	11,11,12	0.62	0	15,15,17	1.06	2 (13%)
9	MAN	G	605	9,8	11,11,12	1.34	2 (18%)	15,15,17	1.99	4 (26%)
9	MAN	G	606	9	11,11,12	1.59	2 (18%)	15,15,17	2.24	4 (26%)
7	NAG	G	607	4	14,14,15	0.20	0	17,19,21	0.60	0
7	NAG	G	608	4,7	14,14,15	0.31	0	17,19,21	0.47	0
7	NAG	G	609	8,7	14,14,15	0.24	0	17,19,21	0.47	0
8	BMA	G	610	7	11,11,12	0.60	0	15,15,17	0.75	0
7	NAG	G	611	4	14,14,15	0.38	0	17,19,21	0.53	0
7	NAG	G	612	4	14,14,15	0.22	0	17,19,21	0.57	0
7	NAG	G	613	4	14,14,15	0.31	0	17,19,21	0.49	0
7	NAG	G	614	4,7	14,14,15	0.25	0	17,19,21	0.59	0
7	NAG	G	615	8,7	14,14,15	0.24	0	17,19,21	0.57	0
8	BMA	G	616	7	11,11,12	0.66	0	15,15,17	0.77	0
7	NAG	G	617	4	14,14,15	0.29	0	17,19,21	0.48	0
7	NAG	G	618	4,7	14,14,15	0.32	0	17,19,21	0.45	0
7	NAG	G	619	7	14,14,15	0.25	0	17,19,21	0.42	0
7	NAG	G	620	4,7	14,14,15	0.23	0	17,19,21	0.48	0
7	NAG	G	621	7	14,14,15	0.23	0	17,19,21	0.51	0
7	NAG	G	622	4,7	14,14,15	0.39	0	17,19,21	1.39	2 (11%)
7	NAG	G	623	8,7	14,14,15	0.21	0	17,19,21	0.48	0
8	BMA	G	624	9,7	11,11,12	1.08	1 (9%)	15,15,17	1.00	0
9	MAN	G	625	9,8	11,11,12	0.78	0	15,15,17	1.01	1 (6%)
9	MAN	G	626	9	11,11,12	0.66	0	15,15,17	1.09	1 (6%)
9	MAN	G	627	9	11,11,12	0.67	0	15,15,17	1.36	2 (13%)
9	MAN	G	628	9,8	11,11,12	0.70	1 (9%)	15,15,17	1.32	2 (13%)
9	MAN	G	629	9	11,11,12	0.68	0	15,15,17	0.97	2 (13%)
9	MAN	G	630	9	11,11,12	0.73	0	15,15,17	0.88	1 (6%)
9	MAN	G	631	9	11,11,12	1.05	0	15,15,17	1.14	1 (6%)
7	NAG	G	632	4	14,14,15	0.29	0	17,19,21	0.52	0
7	NAG	G	633	4	14,14,15	0.24	0	17,19,21	0.53	0
7	NAG	G	634	4	14,14,15	0.23	0	17,19,21	0.63	1 (5%)
7	NAG	G	635	4,7	14,14,15	2.22	2 (14%)	17,19,21	1.74	4 (23%)
7	NAG	G	636	7	14,14,15	0.47	0	17,19,21	0.45	0
10	JYS	G	637	-	30,32,32	5.75	16 (53%)	39,46,46	1.61	7 (17%)

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	701	1	-	0/6/23/26	0/1/1/1
7	NAG	B	702	1	-	0/6/23/26	0/1/1/1
7	NAG	D	201	2	-	0/6/23/26	0/1/1/1
7	NAG	G	601	4,7	-	0/6/23/26	0/1/1/1
7	NAG	G	602	8,7	-	0/6/23/26	0/1/1/1
8	BMA	G	603	9,7	-	0/2/19/22	0/1/1/1
9	MAN	G	604	8	-	0/2/19/22	0/1/1/1
9	MAN	G	605	9,8	-	0/2/19/22	0/1/1/1
9	MAN	G	606	9	-	0/2/19/22	0/1/1/1
7	NAG	G	607	4	-	0/6/23/26	0/1/1/1
7	NAG	G	608	4,7	-	0/6/23/26	0/1/1/1
7	NAG	G	609	8,7	-	0/6/23/26	0/1/1/1
8	BMA	G	610	7	-	0/2/19/22	0/1/1/1
7	NAG	G	611	4	-	0/6/23/26	0/1/1/1
7	NAG	G	612	4	-	0/6/23/26	0/1/1/1
7	NAG	G	613	4	-	0/6/23/26	0/1/1/1
7	NAG	G	614	4,7	-	0/6/23/26	0/1/1/1
7	NAG	G	615	8,7	-	0/6/23/26	0/1/1/1
8	BMA	G	616	7	-	0/2/19/22	0/1/1/1
7	NAG	G	617	4	-	0/6/23/26	0/1/1/1
7	NAG	G	618	4,7	-	0/6/23/26	0/1/1/1
7	NAG	G	619	7	-	0/6/23/26	0/1/1/1
7	NAG	G	620	4,7	-	0/6/23/26	0/1/1/1
7	NAG	G	621	7	-	0/6/23/26	0/1/1/1
7	NAG	G	622	4,7	-	0/6/23/26	0/1/1/1
7	NAG	G	623	8,7	-	0/6/23/26	0/1/1/1
8	BMA	G	624	9,7	-	0/2/19/22	0/1/1/1
9	MAN	G	625	9,8	-	0/2/19/22	0/1/1/1
9	MAN	G	626	9	-	0/2/19/22	0/1/1/1
9	MAN	G	627	9	-	0/2/19/22	0/1/1/1
9	MAN	G	628	9,8	-	0/2/19/22	0/1/1/1
9	MAN	G	629	9	-	0/2/19/22	0/1/1/1
9	MAN	G	630	9	-	0/2/19/22	0/1/1/1
9	MAN	G	631	9	-	0/2/19/22	0/1/1/1
7	NAG	G	632	4	-	0/6/23/26	0/1/1/1
7	NAG	G	633	4	-	0/6/23/26	0/1/1/1
7	NAG	G	634	4	-	0/6/23/26	0/1/1/1
7	NAG	G	635	4,7	-	0/6/23/26	0/1/1/1
7	NAG	G	636	7	-	0/6/23/26	0/1/1/1
10	JYS	G	637	-	-	0/16/30/30	0/4/4/4

All (24) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	G	624	BMA	O5-C1	-2.41	1.39	1.43
10	G	637	JYS	C08-C04	-2.24	1.38	1.42
9	G	628	MAN	C1-C2	2.05	1.57	1.52
10	G	637	JYS	C08-C09	2.36	1.53	1.49
9	G	605	MAN	C2-C3	2.45	1.56	1.52
10	G	637	JYS	C16-C15	2.98	1.54	1.50
9	G	606	MAN	O5-C1	3.06	1.48	1.43
7	G	635	NAG	C1-C2	3.11	1.56	1.52
9	G	605	MAN	C1-C2	3.55	1.60	1.52
9	G	606	MAN	C1-C2	3.96	1.61	1.52
10	G	637	JYS	C15-N25	5.50	1.47	1.34
10	G	637	JYS	C06-C01	5.63	1.48	1.38
10	G	637	JYS	C19-C20	6.13	1.52	1.38
10	G	637	JYS	C18-C19	6.33	1.53	1.38
10	G	637	JYS	C06-C05	6.58	1.51	1.36
10	G	637	JYS	C20-C21	6.99	1.52	1.38
10	G	637	JYS	C10-N24	7.21	1.46	1.34
10	G	637	JYS	C18-C17	7.29	1.53	1.38
7	G	635	NAG	O5-C1	7.66	1.56	1.43
10	G	637	JYS	C17-C16	7.85	1.53	1.39
10	G	637	JYS	C05-C04	8.10	1.59	1.43
10	G	637	JYS	C21-C16	8.15	1.53	1.39
10	G	637	JYS	C01-C02	11.77	1.50	1.36
10	G	637	JYS	C02-C03	16.89	1.57	1.42

All (35) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
10	G	637	JYS	C01-C02-C03	-4.93	120.43	123.08
7	G	635	NAG	O4-C4-C3	-2.61	104.25	110.34
9	G	631	MAN	O2-C2-C3	-2.46	105.39	110.19
9	G	604	MAN	O2-C2-C3	-2.40	105.50	110.19
9	G	627	MAN	O2-C2-C3	-2.40	105.51	110.19
9	G	628	MAN	O2-C2-C3	-2.33	105.64	110.19
9	G	630	MAN	O2-C2-C3	-2.28	105.75	110.19
9	G	605	MAN	O2-C2-C3	-2.28	105.75	110.19
9	G	606	MAN	O2-C2-C3	-2.26	105.77	110.19
10	G	637	JYS	O27-C10-N24	-2.19	119.15	122.67
9	G	625	MAN	O2-C2-C3	-2.14	106.01	110.19
9	G	629	MAN	O2-C2-C3	-2.12	106.05	110.19
10	G	637	JYS	C12-C11-N24	2.02	114.94	110.44
9	G	629	MAN	C1-O5-C5	2.04	115.00	112.19
7	G	634	NAG	C1-O5-C5	2.06	115.02	112.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	G	622	NAG	C1-C2-N2	2.44	114.65	110.49
7	G	635	NAG	C4-C3-C2	2.44	114.59	111.02
7	G	635	NAG	C2-N2-C7	2.54	126.65	122.94
9	G	604	MAN	C1-O5-C5	2.72	115.92	112.19
10	G	637	JYS	C11-C12-N25	2.73	116.54	110.44
10	G	637	JYS	C08-C09-C10	2.76	122.68	118.67
9	G	626	MAN	C1-O5-C5	2.81	116.05	112.19
10	G	637	JYS	C09-C10-N24	2.98	121.52	118.52
9	G	605	MAN	O5-C1-C2	3.00	115.45	110.78
9	G	606	MAN	C1-C2-C3	3.29	113.82	109.66
9	G	606	MAN	O5-C1-C2	3.29	115.91	110.78
9	G	605	MAN	C1-O5-C5	3.41	116.89	112.19
9	G	628	MAN	C1-O5-C5	3.68	117.25	112.19
7	G	602	NAG	C2-N2-C7	4.19	129.05	122.94
9	G	627	MAN	C1-O5-C5	4.27	118.07	112.19
7	G	622	NAG	C2-N2-C7	4.34	129.28	122.94
10	G	637	JYS	F22-C02-C03	4.47	119.32	117.42
9	G	605	MAN	C1-C2-C3	5.09	116.09	109.66
7	G	635	NAG	C1-O5-C5	5.19	119.33	112.19
9	G	606	MAN	C1-O5-C5	6.52	121.16	112.19

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

10 monomers are involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	G	602	NAG	1	0
9	G	605	MAN	1	0
7	G	612	NAG	1	0
7	G	613	NAG	2	0
7	G	614	NAG	1	0
7	G	615	NAG	1	0
7	G	622	NAG	1	0
9	G	627	MAN	1	0
9	G	628	MAN	1	0
10	G	637	JYS	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<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	B	133/153 (86%)	-0.19	4 (3%) 50 22	17, 47, 90, 121	0
2	D	128/134 (95%)	0.78	19 (14%) 2 1	46, 91, 133, 146	0
3	E	105/114 (92%)	0.48	7 (6%) 18 5	44, 80, 113, 127	0
4	G	439/481 (91%)	-0.38	11 (2%) 57 29	8, 35, 96, 145	0
5	H	226/244 (92%)	-0.20	3 (1%) 77 51	15, 56, 89, 121	0
6	L	211/217 (97%)	-0.49	2 (0%) 84 62	14, 39, 65, 116	0
All	All	1242/1343 (92%)	-0.15	46 (3%) 41 17	8, 49, 113, 146	0

All (46) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	517	ALA	7.2
4	G	188	ASN	7.2
2	D	18	VAL	6.5
2	D	65	ASP	5.4
4	G	141	ASP	5.0
2	D	89	THR	4.5
2	D	108	LEU	4.4
2	D	40	THR	4.1
1	B	518	VAL	4.1
4	G	398	ASN	3.9
1	B	564	HIS	3.8
6	L	7	TYR	3.6
2	D	110	THR	3.6
2	D	42	GLY	3.6
2	D	20	ILE	3.6
3	E	76	SER	3.5
2	D	10	THR	3.5
2	D	19	LYS	3.4
2	D	61	PRO	3.3

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Mol	Chain	Res	Type	RSRZ
4	G	397	SER	3.2
2	D	109	LEU	3.2
4	G	458	GLY	3.1
3	E	80	PRO	3.1
5	H	187	LEU	3.0
2	D	11	THR	2.9
4	G	138	ILE	2.8
6	L	210	THR	2.8
3	E	15	LEU	2.8
3	E	8	ALA	2.7
2	D	17	SER	2.6
4	G	396	ILE	2.6
4	G	358	ILE	2.5
2	D	59	LEU	2.4
3	E	14	SER	2.3
4	G	185	ASN	2.3
5	H	183	PRO	2.3
2	D	88	GLY	2.3
4	G	465	THR	2.2
3	E	27(A)	SER	2.2
2	D	80	MET	2.2
2	D	41	ALA	2.0
5	H	191	THR	2.0
3	E	78	LEU	2.0
1	B	547	GLY	2.0
2	D	46	GLU	2.0
4	G	356	ASN	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](#)

There are no carbohydrates in this entry.

## 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<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
7	NAG	B	702	14/15	0.77	0.46	103,124,132,141	0
8	BMA	G	610	11/12	0.80	0.34	83,115,135,144	0
7	NAG	G	607	14/15	0.82	0.34	84,118,130,132	0
7	NAG	B	701	14/15	0.85	0.45	78,110,121,122	0
7	NAG	G	619	14/15	0.86	0.29	64,89,110,112	0
9	MAN	G	606	11/12	0.88	0.28	77,102,109,118	0
7	NAG	G	609	14/15	0.88	0.24	83,98,117,125	0
9	MAN	G	605	11/12	0.89	0.24	78,100,109,109	0
9	MAN	G	631	11/12	0.89	0.20	62,71,76,100	0
7	NAG	D	201	14/15	0.89	0.34	79,100,116,121	0
7	NAG	G	636	14/15	0.90	0.28	85,120,146,151	0
7	NAG	G	633	14/15	0.91	0.22	45,64,79,84	0
7	NAG	G	613	14/15	0.91	0.24	55,84,94,96	0
8	BMA	G	616	11/12	0.91	0.25	79,98,104,104	0
7	NAG	G	621	14/15	0.91	0.32	73,88,102,110	0
7	NAG	G	612	14/15	0.92	0.18	43,58,76,77	0
7	NAG	G	617	14/15	0.92	0.34	55,85,103,107	0
9	MAN	G	627	11/12	0.93	0.32	70,91,101,120	0
7	NAG	G	632	14/15	0.93	0.28	62,88,94,98	0
7	NAG	G	615	14/15	0.94	0.12	54,64,79,90	0
7	NAG	G	618	14/15	0.94	0.14	35,48,82,83	0
7	NAG	G	622	14/15	0.94	0.15	39,58,70,72	0
7	NAG	G	611	14/15	0.94	0.17	54,70,81,90	0
9	MAN	G	630	11/12	0.94	0.17	40,46,68,77	0
7	NAG	G	635	14/15	0.95	0.18	63,85,110,116	0
9	MAN	G	626	11/12	0.95	0.14	38,51,62,89	0
9	MAN	G	604	11/12	0.95	0.12	40,47,65,73	0
7	NAG	G	634	14/15	0.96	0.15	43,51,59,65	0
8	BMA	G	624	11/12	0.96	0.10	28,41,47,55	0
7	NAG	G	608	14/15	0.96	0.12	41,58,76,91	0
7	NAG	G	602	14/15	0.97	0.12	38,51,59,64	0
10	JYS	G	637	29/29	0.97	0.16	11,32,42,56	0
9	MAN	G	625	11/12	0.97	0.13	33,57,66,67	0
7	NAG	G	623	14/15	0.97	0.14	34,46,58,67	0
7	NAG	G	614	14/15	0.97	0.13	13,25,40,49	0
7	NAG	G	620	14/15	0.97	0.14	19,43,57,71	0
7	NAG	G	601	14/15	0.97	0.14	22,40,59,61	0
9	MAN	G	628	11/12	0.98	0.14	22,37,50,68	0
8	BMA	G	603	11/12	0.98	0.13	41,54,60,78	0
9	MAN	G	629	11/12	0.99	0.12	23,37,49,51	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.