Full wwPDB X-ray Structure Validation Report (i)

Aug 6, 2023 – 12:50 AM EDT

PDB ID	:	1LQ8
Title	:	Crystal structure of cleaved protein C inhibitor
Authors	:	Huntington, J.A.; Kjellberg, M.; Stenflo, J.
Deposited on	:	2002-05-09
Resolution	:	2.40 Å(reported)

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

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

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

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

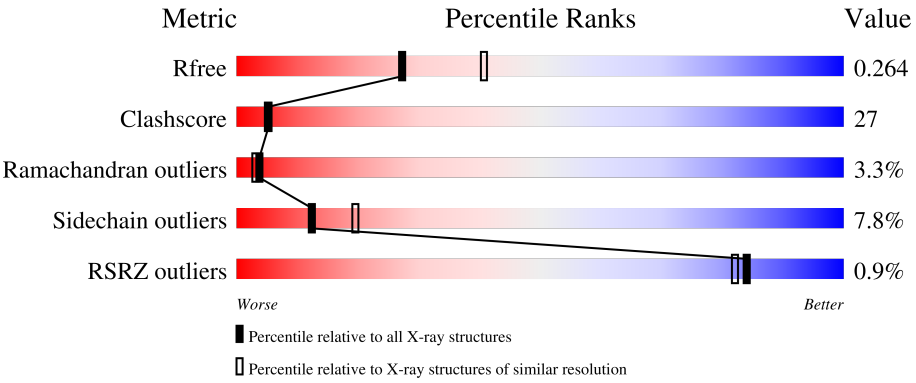
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

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 2.40 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	3907 (2.40-2.40)
Clashscore	141614	4398 (2.40-2.40)
Ramachandran outliers	138981	4318 (2.40-2.40)
Sidechain outliers	138945	4319 (2.40-2.40)
RSRZ outliers	127900	3811 (2.40-2.40)

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	346	57% 31% 7% • 5%
1	C	346	48% 39% 7% 5%
1	E	346	2% 49% 40% 5% • 5%
1	G	346	% 56% 34% • • 5%
2	B	31	3% 48% 39% 6% 6%

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Mol	Chain	Length	Quality of chain
2	D	31	52% 26% 13% 6%
2	F	31	32% 58% 10%
2	H	31	48% 39% 6% 6%
3	I	2	100%
3	M	2	100%
4	J	2	100%
4	K	2	50% 50%
5	L	3	33% 67%

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
3	NAG	I	1	X	-	-	-
3	NAG	M	1	X	-	-	-
4	NAG	J	2	-	-	-	X
4	NAG	K	1	X	-	-	-
5	MAN	L	3	-	-	-	X
7	NAG	C	10	X	-	-	-
7	NAG	C	357	X	-	-	-
7	NAG	G	359	X	-	-	X

2 Entry composition (i)

There are 8 unique types of molecules in this entry. The entry contains 11658 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 plasma serine protease inhibitor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	329	Total	C	N	O	S	23	0	0
			2598	1653	442	491	12			
1	C	328	Total	C	N	O	S	17	0	0
			2587	1647	438	490	12			
1	E	329	Total	C	N	O	S	34	0	0
			2598	1653	442	491	12			
1	G	330	Total	C	N	O	S	18	0	0
			2604	1656	443	493	12			

- Molecule 2 is a protein called plasma serine protease inhibitor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	29	Total	C	N	O	S	0	0	0
			245	160	45	39	1			
2	D	29	Total	C	N	O	S	0	0	0
			245	160	45	39	1			
2	F	28	Total	C	N	O	S	0	0	0
			237	156	43	37	1			
2	H	29	Total	C	N	O	S	0	0	0
			245	160	45	39	1			

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

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

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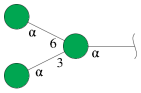
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
3	M	2	Total C N O 28 16 2 10	0	0	0

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

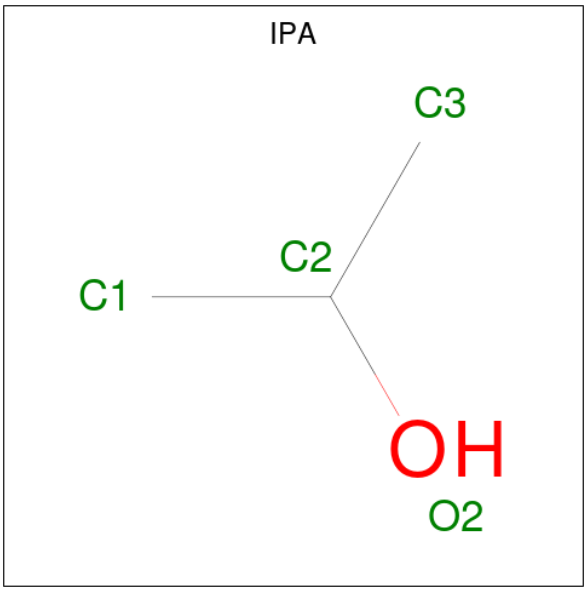
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
4	J	2	Total C N O 28 16 2 10	0	0	0
4	K	2	Total C N O 28 16 2 10	0	0	0

- Molecule 5 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]alpha-D-mannopyranose.



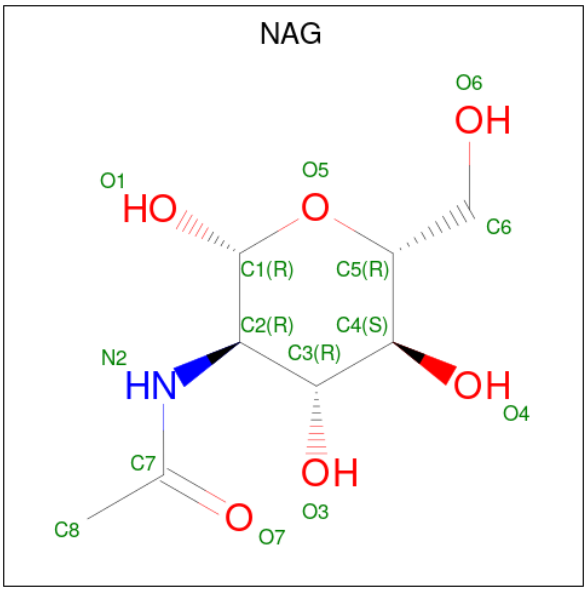
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
5	L	3	Total C O 34 18 16	0	0	0

- Molecule 6 is ISOPROPYL ALCOHOL (three-letter code: IPA) (formula: C_3H_8O).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	1	Total C O 4 3 1	0	0
6	C	1	Total C O 4 3 1	0	0
6	G	1	Total C O 4 3 1	0	0

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



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

- Molecule 8 is water.

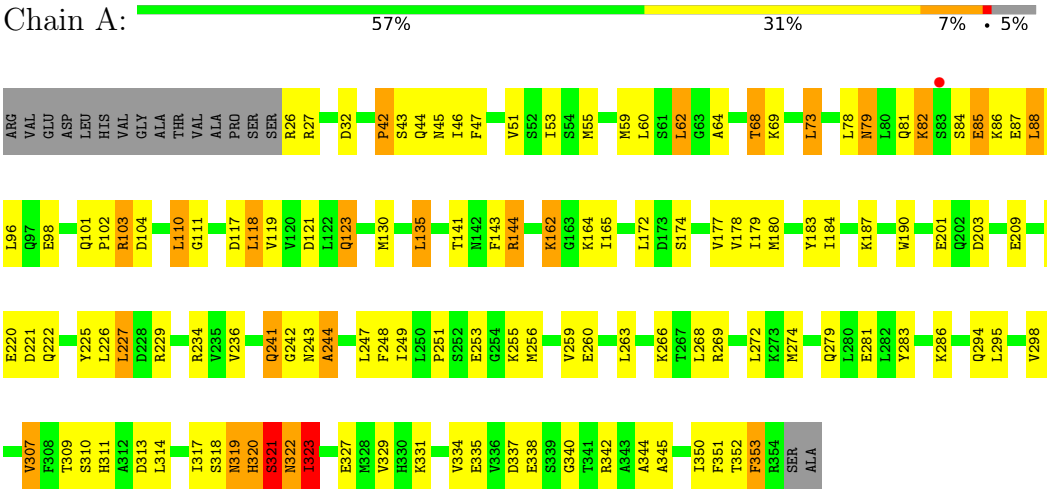
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	28	Total O 28 28	0	0
8	B	4	Total O 4 4	0	0
8	C	18	Total O 18 18	0	0
8	D	10	Total O 10 10	0	0
8	E	15	Total O 15 15	0	0
8	F	1	Total O 1 1	0	0
8	G	21	Total O 21 21	0	0
8	H	2	Total O 2 2	0	0

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.

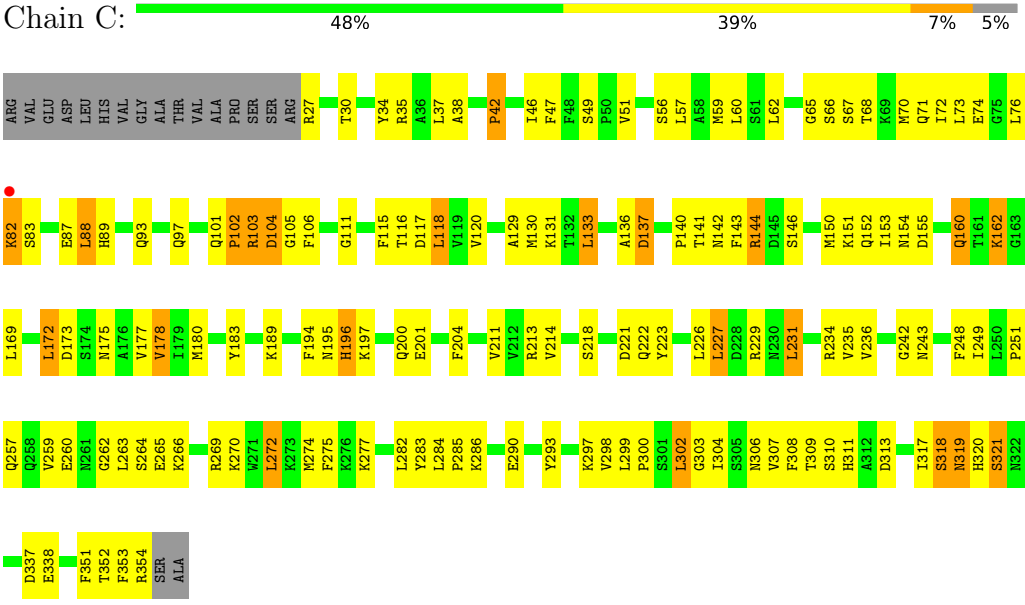
• Molecule 1: plasma serine protease inhibitor

Chain A:

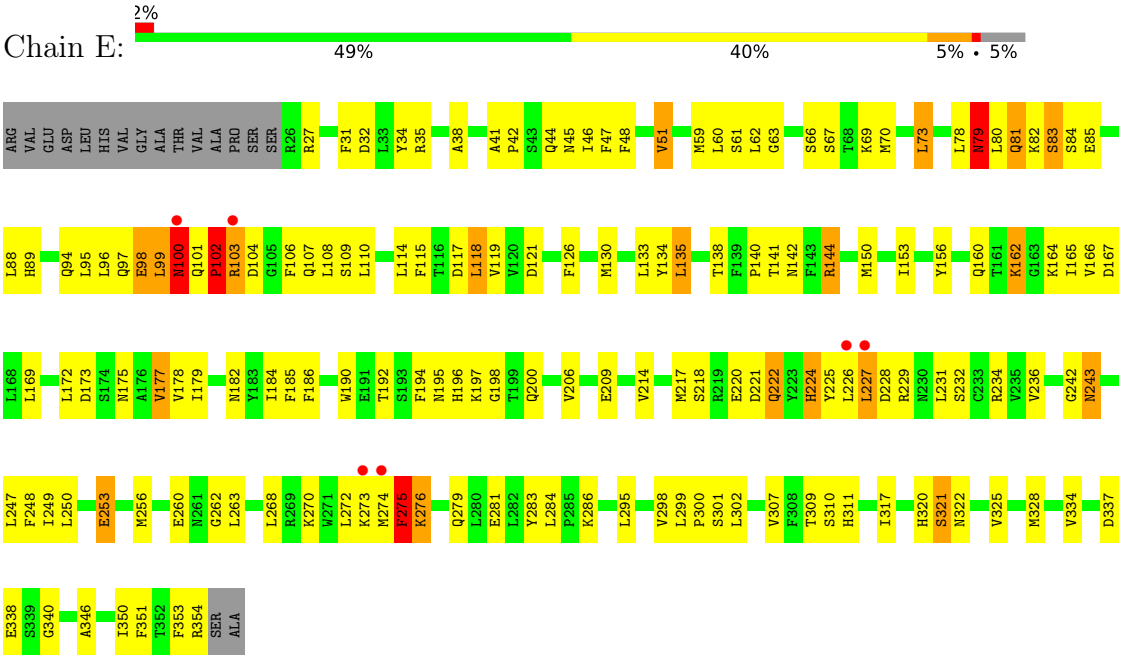


• Molecule 1: plasma serine protease inhibitor

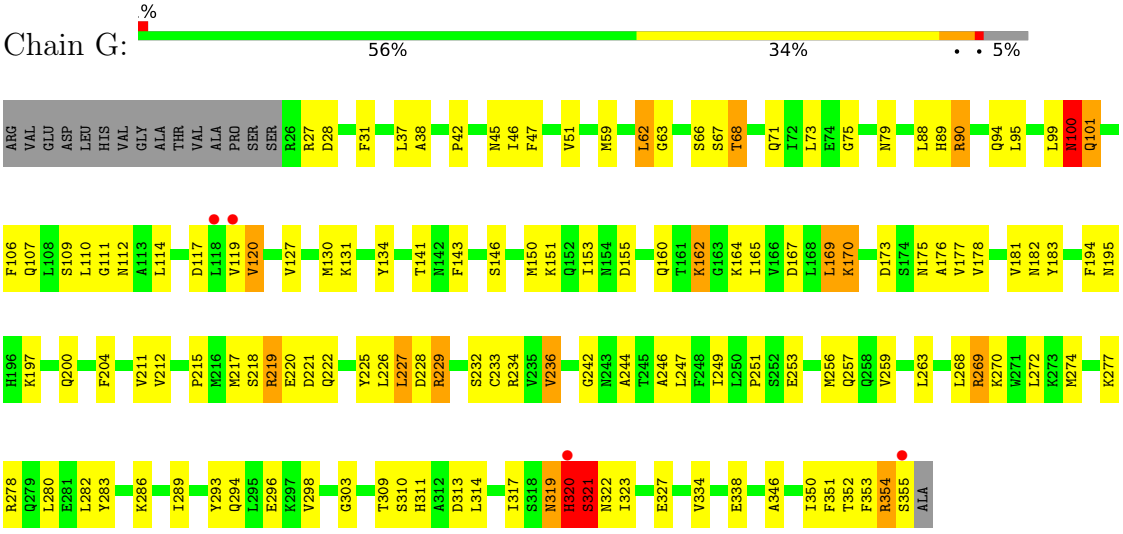
Chain C:



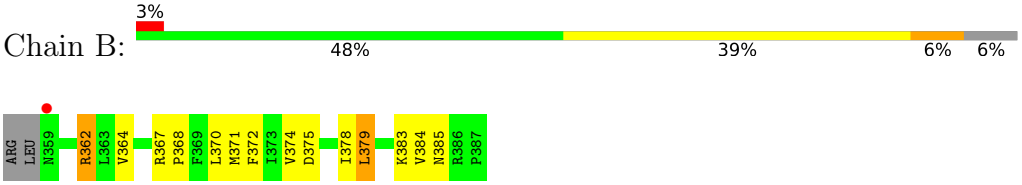
• Molecule 1: plasma serine protease inhibitor



• Molecule 1: plasma serine protease inhibitor



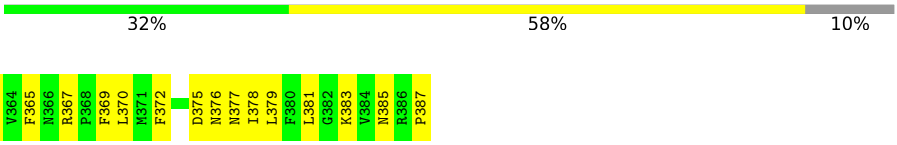
• Molecule 2: plasma serine protease inhibitor



• Molecule 2: plasma serine protease inhibitor

• Molecule 2: plasma serine protease inhibitor

Chain F:

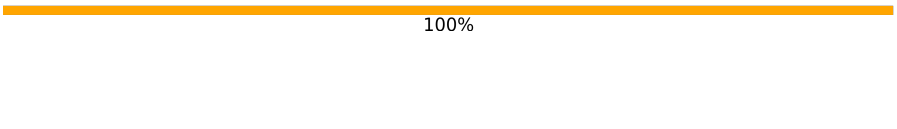


• Molecule 2: plasma serine protease inhibitor

Chain H:

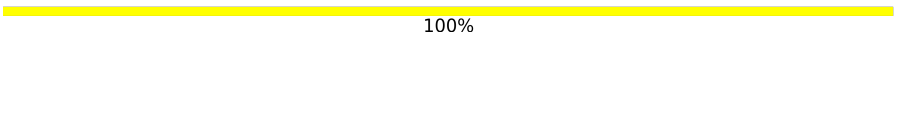
• Molecule 3: 2-acetamido-2-deoxy-alpha-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain I:



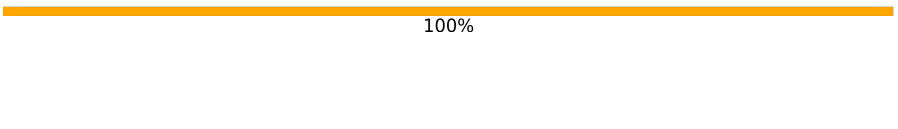
• Molecule 3: 2-acetamido-2-deoxy-alpha-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain M:



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

Chain J:



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

Chain K:

• Molecule 5: alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]alpha-D-mannopyranose

Chain L:

MAN1
MAN2
MAN3

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	55.20Å 244.03Å 66.40Å 90.00° 91.98° 90.00°	Depositor
Resolution (Å)	45.66 – 2.40 44.91 – 2.40	Depositor EDS
% Data completeness (in resolution range)	80.6 (45.66-2.40) 80.7 (44.91-2.40)	Depositor EDS
R_{merge}	0.15	Depositor
R_{sym}	0.11	Depositor
$< I/\sigma(I) >$ [1]	1.72 (at 2.39Å)	Xtriage
Refinement program	CNS 1.0	Depositor
R, R_{free}	0.222 , 0.279 0.213 , 0.264	Depositor DCC
R_{free} test set	1618 reflections (2.94%)	wwPDB-VP
Wilson B-factor (Å^2)	53.9	Xtriage
Anisotropy	0.624	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.30 , 36.4	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.34$	Xtriage
Estimated twinning fraction	0.034 for h,-k,-l	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	11658	wwPDB-VP
Average B, all atoms (Å^2)	64.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.43% 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, MAN, NDG, IPA

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	0.43	0/2646	0.69	1/3570 (0.0%)
1	C	0.42	0/2635	0.68	0/3556
1	E	0.39	0/2646	0.67	1/3570 (0.0%)
1	G	0.39	0/2652	0.68	1/3578 (0.0%)
2	B	0.46	0/250	0.83	0/335
2	D	0.45	0/250	0.83	1/335 (0.3%)
2	F	0.37	0/242	0.77	0/324
2	H	0.46	0/250	0.90	1/335 (0.3%)
All	All	0.41	0/11571	0.69	5/15603 (0.0%)

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	G	321	SER	N-CA-C	-5.50	96.14	111.00
2	D	375	ASP	N-CA-C	-5.24	96.85	111.00
2	H	375	ASP	N-CA-C	-5.11	97.19	111.00
1	A	82	LYS	N-CA-C	-5.05	97.37	111.00
1	E	79	ASN	N-CA-C	5.04	124.62	111.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2598	0	2603	125	0
1	C	2587	0	2588	168	0
1	E	2598	0	2607	160	0
1	G	2604	0	2610	127	0
2	B	245	0	253	16	0
2	D	245	0	253	16	0
2	F	237	0	247	29	0
2	H	245	0	253	18	0
3	I	28	0	24	2	0
3	M	28	0	24	5	0
4	J	28	0	25	6	0
4	K	28	0	25	6	0
5	L	34	0	30	2	0
6	A	4	0	8	2	0
6	C	4	0	8	0	0
6	G	4	0	8	0	0
7	C	28	0	26	4	0
7	G	14	0	13	0	0
8	A	28	0	0	2	0
8	B	4	0	0	0	0
8	C	18	0	0	1	0
8	D	10	0	0	0	0
8	E	15	0	0	4	0
8	F	1	0	0	0	0
8	G	21	0	0	1	0
8	H	2	0	0	0	0
All	All	11658	0	11605	609	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 27.

All (609) 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:C:164:LYS:HA	1:C:164:LYS:HE2	1.33	1.06
4:J:1:NAG:O3	4:J:2:NAG:H2	1.60	1.02
1:G:309:THR:HG22	1:G:311:HIS:H	1.21	1.00
1:G:120:VAL:HG21	1:G:177:VAL:HB	1.44	0.99
1:A:266:LYS:HG3	1:A:269:ARG:HH22	1.25	0.99
1:C:68:THR:HG21	1:C:313:ASP:H	1.28	0.98
1:G:229:ARG:HB2	1:G:229:ARG:HH11	1.25	0.98
1:C:166:VAL:HG23	1:C:167:ASP:H	1.29	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:117:ASP:OD2	1:G:119:VAL:HG22	1.67	0.94
1:C:309:THR:HG22	1:C:311:HIS:H	1.30	0.94
1:G:68:THR:HG21	1:G:313:ASP:H	1.33	0.91
1:C:177:VAL:HG23	1:C:178:VAL:HG12	1.53	0.90
1:G:229:ARG:HH11	1:G:229:ARG:CB	1.89	0.85
1:A:266:LYS:HG3	1:A:269:ARG:NH2	1.91	0.85
1:C:137:ASP:HB3	8:C:907:HOH:O	1.76	0.84
1:A:172:LEU:HD11	1:A:179:ILE:HD11	1.59	0.83
1:C:309:THR:HG22	1:C:311:HIS:N	1.92	0.83
1:C:323:ILE:HD13	1:C:323:ILE:H	1.43	0.83
1:E:164:LYS:HE2	1:E:164:LYS:HA	1.59	0.82
1:G:178:VAL:HG13	1:G:351:PHE:HB2	1.60	0.82
1:C:101:GLN:CB	1:C:102:PRO:HD2	2.08	0.81
1:C:150:MET:HG3	1:C:172:LEU:HG	1.63	0.81
2:D:375:ASP:CG	2:D:376:ASN:H	1.83	0.81
1:G:309:THR:HG22	1:G:311:HIS:N	1.96	0.80
1:C:27:ARG:HH22	1:C:302:LEU:HA	1.46	0.80
1:E:309:THR:HG22	1:E:311:HIS:H	1.47	0.79
1:E:247:LEU:HB2	2:F:372:PHE:HB2	1.63	0.79
1:C:101:GLN:HB2	1:C:102:PRO:HD2	1.62	0.78
1:G:177:VAL:HG23	1:G:178:VAL:HG12	1.67	0.77
1:A:251:PRO:HB3	1:A:259:VAL:HG11	1.66	0.77
1:G:63:GLY:HA3	1:G:317:ILE:HG13	1.65	0.77
1:A:342:ARG:HB2	6:A:901:IPA:H12	1.66	0.77
4:K:1:NAG:O3	4:K:2:NAG:H2	1.86	0.76
1:G:173:ASP:OD2	1:G:175:ASN:HB2	1.86	0.76
2:H:376:ASN:ND2	3:M:2:NDG:HA	1.84	0.76
1:C:297:LYS:HE2	1:C:297:LYS:HA	1.66	0.75
1:C:200:GLN:HE21	1:C:200:GLN:HA	1.50	0.75
1:C:150:MET:HG3	1:C:172:LEU:CG	2.17	0.75
1:C:173:ASP:OD2	1:C:175:ASN:HB2	1.86	0.75
1:E:59:MET:HB3	1:E:130:MET:CE	2.17	0.74
1:A:123:GLN:HA	1:A:123:GLN:HE21	1.50	0.74
1:G:107:GLN:NE2	5:L:2:MAN:O4	2.13	0.74
1:C:79:ASN:HB3	1:C:81:GLN:O	1.88	0.73
1:A:314:LEU:O	1:A:317:ILE:HG12	1.87	0.73
1:A:164:LYS:HA	1:A:164:LYS:HE2	1.70	0.73
1:C:226:LEU:HD21	1:C:274:MET:CE	2.18	0.72
1:C:62:LEU:HD23	1:C:130:MET:HE2	1.71	0.72
1:G:278:ARG:HD3	1:G:280:LEU:HD11	1.71	0.72
1:G:117:ASP:HB2	1:G:143:PHE:HD2	1.54	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:154:ASN:ND2	1:C:167:ASP:HA	2.04	0.71
1:C:150:MET:O	1:C:154:ASN:HB2	1.90	0.71
1:C:236:VAL:HG21	2:D:363:LEU:CD2	2.21	0.71
1:A:103:ARG:HH22	1:A:242:GLY:CA	2.04	0.70
1:A:73:LEU:HG	1:A:78:LEU:HD23	1.74	0.70
1:C:160:GLN:HE21	1:C:160:GLN:HA	1.56	0.70
1:G:68:THR:HG21	1:G:313:ASP:N	2.06	0.70
1:A:162:LYS:HD2	1:A:162:LYS:N	2.07	0.69
1:G:320:HIS:O	1:G:321:SER:HB3	1.92	0.69
1:E:309:THR:HG22	1:E:311:HIS:N	2.05	0.69
1:G:225:TYR:OH	1:G:234:ARG:HD3	1.91	0.69
1:G:354:ARG:O	1:G:355:SER:HB2	1.91	0.69
1:A:103:ARG:HH22	1:A:242:GLY:HA2	1.56	0.69
1:E:226:LEU:HD13	1:E:227:LEU:N	2.08	0.68
1:A:286:LYS:HE2	1:A:338:GLU:OE2	1.94	0.68
1:A:321:SER:O	1:A:322:ASN:HB2	1.93	0.68
2:F:375:ASP:CG	2:F:376:ASN:H	1.97	0.68
1:A:247:LEU:HB2	2:B:372:PHE:HB2	1.76	0.68
1:G:269:ARG:HG2	1:G:269:ARG:HH11	1.59	0.67
1:C:319:ASN:CG	7:C:10:NAG:HN2	1.96	0.67
1:A:319:ASN:C	1:A:321:SER:H	1.98	0.67
1:E:103:ARG:HG2	1:E:104:ASP:N	2.09	0.67
1:C:194:PHE:HB2	1:C:338:GLU:HB3	1.76	0.67
1:C:27:ARG:HD3	1:C:74:GLU:O	1.95	0.67
1:A:317:ILE:HD11	1:A:323:ILE:HG13	1.77	0.66
1:E:59:MET:HB3	1:E:130:MET:HE1	1.77	0.66
1:E:114:LEU:HB2	1:E:138:THR:HG22	1.77	0.66
1:G:99:LEU:O	1:G:101:GLN:N	2.28	0.66
1:E:249:ILE:O	2:F:369:PHE:HB2	1.95	0.66
1:E:178:VAL:HG13	1:E:351:PHE:HB2	1.78	0.66
1:E:273:LYS:HG3	1:E:274:MET:N	2.10	0.65
1:A:121:ASP:OD1	1:C:234:ARG:NH2	2.29	0.65
1:E:162:LYS:HD2	1:E:162:LYS:N	2.11	0.65
1:C:195:ASN:HD21	1:C:197:LYS:HB2	1.62	0.65
1:C:166:VAL:HG23	1:C:167:ASP:N	2.08	0.64
1:A:79:ASN:C	1:A:81:GLN:H	1.99	0.64
1:A:178:VAL:HG13	1:A:351:PHE:HB2	1.78	0.64
1:C:146:SER:HB3	1:C:172:LEU:HD13	1.79	0.64
3:I:1:NAG:C6	3:I:2:NDG:HA	2.09	0.64
1:C:68:THR:HG21	1:C:313:ASP:N	2.08	0.64
2:D:375:ASP:CG	2:D:376:ASN:N	2.51	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:166:VAL:HG23	1:E:167:ASP:H	1.63	0.64
1:G:38:ALA:HA	1:G:46:ILE:CD1	2.28	0.64
1:G:221:ASP:CG	1:G:222:GLN:H	2.01	0.64
1:E:35:ARG:NH2	1:E:263:LEU:O	2.31	0.63
1:E:82:LYS:O	1:E:83:SER:HB3	1.98	0.63
1:C:178:VAL:HG13	1:C:351:PHE:HB2	1.81	0.63
1:G:195:ASN:HD21	1:G:197:LYS:HB2	1.62	0.63
1:A:309:THR:HG22	1:A:310:SER:N	2.13	0.63
1:C:323:ILE:HA	1:C:352:THR:O	1.99	0.63
1:C:81:GLN:O	1:C:82:LYS:HB2	1.98	0.63
1:E:226:LEU:HD21	1:E:274:MET:HB3	1.81	0.63
1:G:119:VAL:HG23	1:G:119:VAL:O	1.99	0.63
1:G:151:LYS:HG2	1:G:155:ASP:OD2	1.98	0.62
1:G:170:LYS:NZ	1:G:170:LYS:HA	2.13	0.62
1:A:144:ARG:HE	1:A:144:ARG:HA	1.63	0.62
1:C:151:LYS:HG2	1:C:155:ASP:OD2	2.00	0.62
1:C:286:LYS:HE2	1:C:338:GLU:OE2	2.00	0.62
1:A:227:LEU:HD22	1:A:229:ARG:HG3	1.80	0.62
1:C:118:LEU:HD21	1:C:142:ASN:HA	1.82	0.62
1:C:106:PHE:CD2	1:C:242:GLY:HA3	2.35	0.62
3:I:1:NAG:H62	3:I:2:NDG:HA	1.64	0.62
1:A:103:ARG:HG2	1:A:104:ASP:H	1.64	0.62
1:E:227:LEU:HD22	1:E:229:ARG:HG2	1.81	0.62
1:C:222:GLN:HG3	1:C:277:LYS:HB3	1.82	0.61
1:C:319:ASN:HB2	7:C:10:NAG:O5	2.00	0.61
1:E:85:GLU:O	1:E:88:LEU:HB3	1.99	0.61
1:E:119:VAL:HG12	1:G:229:ARG:HG3	1.81	0.61
1:E:236:VAL:HG21	2:F:363:LEU:HD23	1.81	0.61
1:G:162:LYS:HD2	1:G:162:LYS:N	2.14	0.61
1:C:66:SER:OG	1:C:67:SER:N	2.34	0.61
1:E:256:MET:SD	2:F:370:LEU:HD11	2.41	0.61
1:C:101:GLN:HB2	1:C:102:PRO:CD	2.31	0.61
1:E:250:LEU:HB2	2:F:365:PHE:CE2	2.35	0.61
1:G:38:ALA:HA	1:G:46:ILE:HD11	1.83	0.61
1:E:118:LEU:HD22	1:E:141:THR:O	2.01	0.61
1:G:309:THR:HG22	1:G:310:SER:N	2.15	0.61
2:H:376:ASN:ND2	3:M:2:NDG:N2	2.49	0.61
1:E:153:ILE:HD12	1:E:179:ILE:HD12	1.83	0.60
1:A:84:SER:O	1:A:86:LYS:N	2.33	0.60
1:C:118:LEU:H	1:C:118:LEU:HD22	1.66	0.60
2:H:376:ASN:HD21	3:M:2:NDG:H3	1.67	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:221:ASP:OD1	1:C:222:GLN:N	2.31	0.60
1:A:203:ASP:OD1	1:A:213:ARG:HD3	2.01	0.60
1:A:309:THR:HG22	1:A:310:SER:H	1.65	0.60
1:E:227:LEU:O	1:E:274:MET:HE3	2.01	0.60
1:A:59:MET:O	1:A:62:LEU:HB2	2.02	0.60
1:E:47:PHE:CZ	1:E:334:VAL:HB	2.37	0.60
1:E:79:ASN:O	1:E:81:GLN:N	2.35	0.60
1:A:317:ILE:HG13	1:A:318:SER:N	2.15	0.60
1:C:103:ARG:O	1:C:104:ASP:HB2	2.02	0.60
1:A:263:LEU:HD11	2:B:370:LEU:HD21	1.84	0.59
1:C:164:LYS:HE2	1:C:164:LYS:CA	2.17	0.59
1:E:108:LEU:HD13	1:E:186:PHE:HD2	1.68	0.59
1:E:268:LEU:O	1:E:272:LEU:HD23	2.03	0.59
1:A:47:PHE:CZ	1:A:334:VAL:HB	2.37	0.59
1:C:59:MET:HB3	1:C:130:MET:HE3	1.85	0.59
1:A:27:ARG:HG3	1:A:32:ASP:OD1	2.03	0.59
1:A:226:LEU:C	1:A:226:LEU:HD13	2.23	0.59
1:E:109:SER:HB2	8:E:369:HOH:O	2.03	0.59
1:G:270:LYS:O	1:G:274:MET:HG2	2.01	0.59
1:C:47:PHE:CZ	1:C:334:VAL:HB	2.38	0.59
1:C:70:MET:HE2	1:C:80:LEU:HD11	1.83	0.59
1:A:130:MET:HA	1:A:130:MET:HE2	1.85	0.58
1:C:169:LEU:N	1:C:169:LEU:HD22	2.19	0.58
1:A:111:GLY:HA3	1:A:183:TYR:CZ	2.39	0.58
1:E:268:LEU:HD22	2:F:378:ILE:HD11	1.85	0.58
1:E:286:LYS:HG3	1:E:337:ASP:HA	1.85	0.58
1:G:354:ARG:O	1:G:354:ARG:HG2	2.04	0.58
1:C:218:SER:HA	1:C:282:LEU:O	2.03	0.58
1:G:229:ARG:HB2	1:G:229:ARG:NH1	2.07	0.58
1:A:268:LEU:O	1:A:272:LEU:HD23	2.03	0.58
1:C:57:LEU:HD22	1:C:72:ILE:HG23	1.85	0.58
1:E:98:GLU:HG3	1:E:98:GLU:O	2.03	0.58
1:C:81:GLN:O	1:C:82:LYS:CB	2.52	0.57
1:C:226:LEU:HD13	1:C:227:LEU:N	2.18	0.57
1:E:234:ARG:HD2	2:F:363:LEU:HD11	1.87	0.57
1:E:221:ASP:CG	1:E:222:GLN:H	2.07	0.57
1:C:194:PHE:HB2	1:C:338:GLU:CB	2.35	0.57
1:E:59:MET:HB3	1:E:130:MET:HE3	1.86	0.57
1:G:221:ASP:CG	1:G:222:GLN:N	2.58	0.57
1:C:260:GLU:OE2	2:D:383:LYS:HE2	2.05	0.57
1:C:266:LYS:HA	1:C:269:ARG:NH1	2.20	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:63:GLY:HA3	1:G:317:ILE:CG1	2.33	0.57
1:G:283:TYR:HE2	2:H:362:ARG:HG2	1.69	0.57
1:C:56:SER:HA	1:C:59:MET:HE3	1.87	0.57
1:C:70:MET:O	1:C:74:GLU:HG3	2.05	0.57
1:C:115:PHE:CD2	1:C:153:ILE:HG12	2.39	0.57
1:A:243:ASN:CG	4:J:1:NAG:HN2	2.09	0.57
1:E:169:LEU:HD22	1:E:169:LEU:N	2.20	0.56
1:G:51:VAL:HG23	2:H:378:ILE:O	2.05	0.56
1:C:353:PHE:HD1	1:C:354:ARG:H	1.53	0.56
1:E:162:LYS:HB2	1:E:185:PHE:CE1	2.39	0.56
1:G:164:LYS:HE2	1:G:164:LYS:HA	1.87	0.56
1:G:170:LYS:HA	1:G:170:LYS:HZ2	1.69	0.56
1:G:236:VAL:CG2	2:H:363:LEU:HD21	2.35	0.56
1:A:94:GLN:HE21	1:A:98:GLU:CG	2.19	0.56
1:A:260:GLU:OE2	2:B:383:LYS:HE2	2.05	0.56
1:G:327:GLU:CG	1:G:350:ILE:HD12	2.36	0.56
2:D:373:ILE:O	2:D:379:LEU:HB2	2.05	0.56
1:E:309:THR:HG22	1:E:310:SER:N	2.21	0.56
1:A:60:LEU:HD21	1:A:307:VAL:HG21	1.87	0.56
1:A:226:LEU:HD21	1:A:274:MET:CE	2.36	0.56
1:C:71:GLN:HB3	1:C:303:GLY:O	2.05	0.56
1:E:119:VAL:HG12	1:E:119:VAL:O	2.06	0.56
1:E:298:VAL:O	1:E:301:SER:HB2	2.04	0.56
1:E:82:LYS:O	1:E:83:SER:CB	2.54	0.56
1:E:66:SER:OG	1:E:67:SER:N	2.38	0.56
1:E:194:PHE:HB2	1:E:338:GLU:CB	2.36	0.56
1:G:66:SER:OG	1:G:67:SER:N	2.38	0.56
1:C:172:LEU:N	1:C:172:LEU:HD12	2.21	0.56
1:A:177:VAL:HG11	1:A:353:PHE:HD1	1.71	0.55
1:E:177:VAL:HG11	1:E:353:PHE:CE2	2.41	0.55
1:A:43:SER:N	1:A:44:GLN:OE1	2.40	0.55
1:C:35:ARG:NH2	1:C:263:LEU:O	2.39	0.55
1:C:78:LEU:HD21	1:C:88:LEU:HD12	1.88	0.55
1:E:228:ASP:OD1	1:E:231:LEU:HB2	2.06	0.55
1:G:353:PHE:O	1:G:354:ARG:CB	2.55	0.55
1:E:51:VAL:CG2	2:F:379:LEU:HA	2.36	0.55
1:E:106:PHE:CD2	1:E:242:GLY:HA3	2.41	0.55
1:G:106:PHE:HE2	1:G:244:ALA:HB3	1.70	0.55
1:C:62:LEU:HD13	1:C:89:HIS:CE1	2.42	0.55
1:E:88:LEU:C	1:E:88:LEU:HD23	2.26	0.55
1:G:195:ASN:ND2	1:G:197:LYS:HB2	2.22	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:51:VAL:HG21	2:F:379:LEU:HA	1.88	0.55
1:G:176:ALA:HA	1:G:352:THR:HG22	1.88	0.55
1:A:286:LYS:HG3	1:A:337:ASP:HA	1.89	0.54
1:C:272:LEU:HD12	1:C:275:PHE:HE1	1.72	0.54
1:E:97:GLN:C	1:E:99:LEU:H	2.10	0.54
1:E:162:LYS:HD3	1:E:185:PHE:CD2	2.42	0.54
1:C:59:MET:HB3	1:C:180:MET:CE	2.37	0.54
1:G:111:GLY:HA3	1:G:183:TYR:CZ	2.43	0.54
1:E:249:ILE:HD12	1:E:249:ILE:N	2.22	0.54
1:A:177:VAL:HG11	1:A:353:PHE:CD1	2.42	0.54
1:A:294:GLN:HE22	1:A:329:VAL:HG22	1.72	0.54
1:C:117:ASP:HB3	1:C:120:VAL:HG13	1.89	0.54
1:E:118:LEU:O	1:G:234:ARG:NH1	2.41	0.54
2:B:362:ARG:HH11	2:B:362:ARG:HG2	1.73	0.54
1:C:38:ALA:HA	1:C:46:ILE:HD11	1.90	0.54
1:C:201:GLU:HB3	1:C:213:ARG:HH11	1.72	0.54
3:M:1:NAG:O3	3:M:2:NDG:O5	2.20	0.54
1:C:131:LYS:HG2	1:C:136:ALA:O	2.08	0.54
1:C:214:VAL:HG11	2:D:387:PRO:HG2	1.90	0.54
1:C:270:LYS:O	1:C:274:MET:HB2	2.08	0.54
1:G:256:MET:O	1:G:259:VAL:HG22	2.08	0.54
1:A:51:VAL:HG21	2:B:379:LEU:HD12	1.90	0.54
1:E:218:SER:HB3	1:E:283:TYR:CE1	2.43	0.54
1:G:45:ASN:OD1	2:H:385:ASN:N	2.40	0.54
1:G:319:ASN:O	1:G:320:HIS:C	2.46	0.54
1:G:354:ARG:O	1:G:355:SER:CB	2.56	0.54
1:A:144:ARG:HA	1:A:144:ARG:NE	2.22	0.54
2:H:375:ASP:HB2	2:H:379:LEU:HD13	1.90	0.53
2:H:376:ASN:HD22	3:M:2:NDG:HA	1.55	0.53
1:C:49:SER:HB2	2:D:380:PHE:CE1	2.43	0.53
1:C:116:THR:O	1:C:140:PRO:HA	2.08	0.53
1:G:90:ARG:NH1	1:G:94:GLN:OE1	2.42	0.53
1:G:229:ARG:HH11	1:G:229:ARG:CG	2.21	0.53
1:G:269:ARG:HH11	1:G:269:ARG:CG	2.21	0.53
4:J:1:NAG:O3	4:J:2:NAG:C2	2.46	0.53
1:A:319:ASN:C	1:A:321:SER:N	2.62	0.53
1:C:37:LEU:HD22	1:C:293:TYR:CD2	2.44	0.53
1:C:70:MET:CE	1:C:80:LEU:HD21	2.39	0.53
1:C:195:ASN:ND2	1:C:197:LYS:HB2	2.24	0.53
1:G:31:PHE:CD1	1:G:263:LEU:HB3	2.44	0.53
1:A:59:MET:HB3	1:A:180:MET:CE	2.39	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:27:ARG:HH22	1:C:302:LEU:CA	2.19	0.53
1:C:200:GLN:HA	1:C:200:GLN:NE2	2.19	0.53
1:C:353:PHE:CD1	1:C:354:ARG:N	2.77	0.53
1:E:97:GLN:O	1:E:99:LEU:N	2.38	0.53
1:E:353:PHE:O	1:E:354:ARG:HB2	2.09	0.53
1:C:236:VAL:HG21	2:D:363:LEU:HD23	1.90	0.53
1:E:62:LEU:HD13	1:E:89:HIS:CE1	2.44	0.53
2:B:375:ASP:HB2	2:B:379:LEU:CD2	2.39	0.52
1:C:165:ILE:O	1:C:165:ILE:HG22	2.08	0.52
1:E:165:ILE:HG22	1:E:165:ILE:O	2.09	0.52
1:C:70:MET:HE1	1:C:80:LEU:HD21	1.91	0.52
1:E:78:LEU:CD1	1:E:88:LEU:HD12	2.39	0.52
1:E:206:VAL:HG12	8:E:371:HOH:O	2.08	0.52
1:A:144:ARG:HD2	8:A:923:HOH:O	2.08	0.52
1:A:130:MET:SD	1:A:180:MET:HE2	2.50	0.52
1:C:150:MET:HG3	1:C:172:LEU:CD2	2.40	0.52
1:A:96:LEU:HB3	1:A:135:LEU:HD22	1.92	0.52
1:C:323:ILE:H	1:C:323:ILE:CD1	2.17	0.52
1:A:62:LEU:HD13	1:A:89:HIS:CE1	2.45	0.52
1:A:249:ILE:HB	2:B:370:LEU:HB2	1.92	0.52
1:E:31:PHE:CD1	1:E:263:LEU:HB3	2.45	0.52
1:E:118:LEU:HB2	8:E:364:HOH:O	2.09	0.52
1:E:190:TRP:CD1	1:E:340:GLY:HA2	2.45	0.52
1:G:100:ASN:O	1:G:101:GLN:O	2.28	0.52
1:C:59:MET:HB3	1:C:180:MET:HE2	1.91	0.52
1:G:309:THR:CG2	1:G:310:SER:N	2.72	0.52
1:A:144:ARG:NH2	1:A:174:SER:O	2.43	0.52
1:A:226:LEU:HD21	1:A:274:MET:SD	2.50	0.52
1:C:117:ASP:HA	1:C:141:THR:O	2.10	0.52
1:C:306:ASN:O	1:C:309:THR:HB	2.10	0.52
1:E:100:ASN:ND2	1:E:108:LEU:O	2.43	0.52
1:G:204:PHE:CE1	2:H:387:PRO:HD3	2.45	0.52
2:B:362:ARG:HG2	2:B:362:ARG:NH1	2.24	0.51
1:E:79:ASN:C	1:E:81:GLN:H	2.13	0.51
1:E:268:LEU:CD2	2:F:378:ILE:HD11	2.41	0.51
1:E:283:TYR:HE2	2:F:362:ARG:HD3	1.74	0.51
1:E:101:GLN:O	1:E:102:PRO:C	2.48	0.51
1:G:178:VAL:CG1	1:G:351:PHE:HB2	2.35	0.51
1:G:63:GLY:O	1:G:314:LEU:HA	2.10	0.51
2:H:375:ASP:HB2	2:H:379:LEU:CD1	2.41	0.51
1:E:309:THR:C	1:E:311:HIS:H	2.13	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:95:LEU:C	1:G:95:LEU:HD23	2.31	0.51
1:G:117:ASP:HA	1:G:141:THR:O	2.10	0.51
1:A:162:LYS:HD2	1:A:162:LYS:H	1.75	0.51
1:A:45:ASN:C	1:A:46:ILE:HD12	2.30	0.51
1:A:243:ASN:CG	4:J:1:NAG:N2	2.64	0.51
1:E:166:VAL:HG23	1:E:167:ASP:N	2.25	0.51
1:G:59:MET:O	1:G:62:LEU:HB2	2.11	0.51
1:G:227:LEU:HD13	1:G:229:ARG:CD	2.41	0.51
1:A:55:MET:O	1:A:59:MET:HG3	2.10	0.51
2:F:375:ASP:CG	2:F:376:ASN:N	2.64	0.51
1:E:321:SER:OG	1:E:322:ASN:N	2.40	0.51
1:G:289:ILE:HD13	2:H:384:VAL:HG22	1.93	0.51
1:C:226:LEU:HD21	1:C:274:MET:HE2	1.92	0.50
1:E:214:VAL:HG11	2:F:387:PRO:HG2	1.93	0.50
1:E:110:LEU:CD1	1:E:184:ILE:HB	2.41	0.50
1:G:322:ASN:HB2	1:G:355:SER:HA	1.91	0.50
1:A:68:THR:HG21	1:A:313:ASP:H	1.75	0.50
1:A:79:ASN:C	1:A:81:GLN:N	2.64	0.50
1:A:164:LYS:HA	1:A:164:LYS:CE	2.40	0.50
1:A:101:GLN:H	1:A:101:GLN:CD	2.14	0.50
1:C:299:LEU:N	1:C:300:PRO:HD2	2.25	0.50
1:G:165:ILE:N	1:G:165:ILE:HD12	2.27	0.50
1:A:283:TYR:HB2	2:B:364:VAL:HA	1.92	0.50
1:C:116:THR:O	1:C:141:THR:N	2.41	0.50
1:G:268:LEU:O	1:G:272:LEU:HD23	2.11	0.50
1:A:59:MET:HB3	1:A:180:MET:HE2	1.92	0.50
1:E:295:LEU:HB2	1:E:328:MET:O	2.12	0.50
1:C:283:TYR:HE2	2:D:362:ARG:HG2	1.75	0.50
1:G:310:SER:HB2	1:G:355:SER:HB2	1.94	0.50
1:A:225:TYR:CG	1:A:226:LEU:N	2.80	0.50
1:E:196:HIS:C	1:E:198:GLY:H	2.15	0.50
1:A:143:PHE:CE1	1:A:172:LEU:HD21	2.47	0.50
1:E:338:GLU:CD	1:E:338:GLU:H	2.14	0.50
1:A:253:GLU:CD	1:A:253:GLU:H	2.13	0.49
1:E:103:ARG:HG2	1:E:104:ASP:H	1.76	0.49
1:C:162:LYS:HD2	1:C:162:LYS:N	2.26	0.49
1:C:243:ASN:OD1	4:K:1:NAG:N2	2.46	0.49
1:G:114:LEU:HD11	1:G:130:MET:HG3	1.94	0.49
1:E:286:LYS:HE2	1:E:338:GLU:OE2	2.12	0.49
1:E:325:VAL:HA	1:E:350:ILE:O	2.12	0.49
1:G:167:ASP:HB3	1:G:170:LYS:HZ1	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:272:LEU:HD12	1:C:275:PHE:CE1	2.47	0.49
1:A:302:LEU:N	1:A:302:LEU:HD23	2.28	0.49
1:A:331:LYS:O	1:A:345:ALA:HA	2.13	0.49
1:C:120:VAL:HG11	1:C:177:VAL:HB	1.94	0.49
1:E:60:LEU:HD21	1:E:307:VAL:HG21	1.93	0.49
4:J:1:NAG:O3	4:J:2:NAG:C7	2.60	0.49
1:A:225:TYR:OH	1:A:234:ARG:HD3	2.12	0.49
1:C:320:HIS:O	1:C:321:SER:CB	2.59	0.49
1:G:251:PRO:HB3	1:G:259:VAL:HG11	1.95	0.49
2:F:361:GLN:HG2	2:F:362:ARG:N	2.27	0.49
1:E:99:LEU:HD23	1:E:99:LEU:HA	1.61	0.48
1:G:153:ILE:HG21	1:G:169:LEU:HD21	1.95	0.48
1:G:218:SER:HA	1:G:282:LEU:O	2.13	0.48
1:G:227:LEU:HD13	1:G:229:ARG:HD2	1.95	0.48
1:G:286:LYS:HE2	1:G:338:GLU:OE2	2.13	0.48
1:G:220:GLU:O	1:G:221:ASP:HB2	2.11	0.48
1:A:248:PHE:CE2	2:B:371:MET:HG3	2.48	0.48
1:A:299:LEU:N	1:A:300:PRO:HD2	2.28	0.48
1:C:111:GLY:HA3	1:C:183:TYR:CZ	2.48	0.48
1:C:309:THR:C	1:C:311:HIS:H	2.15	0.48
1:E:59:MET:CB	1:E:130:MET:HE1	2.44	0.48
1:E:67:SER:O	1:E:70:MET:HB3	2.13	0.48
1:E:249:ILE:HB	2:F:370:LEU:HB2	1.94	0.48
1:A:51:VAL:HG23	2:B:378:ILE:O	2.14	0.48
1:E:34:TYR:OH	2:F:383:LYS:HE3	2.14	0.48
1:E:273:LYS:CG	1:E:274:MET:N	2.76	0.48
1:E:96:LEU:HB3	1:E:135:LEU:HD22	1.94	0.48
1:E:279:GLN:HG3	2:F:360:SER:CB	2.43	0.48
1:G:67:SER:O	1:G:71:GLN:HG3	2.13	0.48
1:G:278:ARG:HD3	1:G:280:LEU:CD1	2.42	0.48
1:C:101:GLN:CB	1:C:102:PRO:CD	2.87	0.48
1:E:45:ASN:OD1	2:F:385:ASN:N	2.45	0.48
1:G:120:VAL:CG2	1:G:177:VAL:HB	2.31	0.48
1:E:41:ALA:HB1	1:E:44:GLN:HG3	1.94	0.48
1:E:248:PHE:CZ	1:E:284:LEU:HD21	2.49	0.48
1:A:190:TRP:CD1	1:A:340:GLY:HA2	2.49	0.47
1:G:236:VAL:HG22	2:H:363:LEU:HD21	1.96	0.47
1:G:194:PHE:HB2	1:G:338:GLU:CB	2.44	0.47
1:A:322:ASN:ND2	1:A:353:PHE:O	2.46	0.47
1:C:221:ASP:HB3	1:C:223:TYR:CE2	2.48	0.47
1:E:38:ALA:HA	1:E:46:ILE:HD11	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:126:PHE:CE1	1:E:130:MET:HE2	2.49	0.47
1:A:144:ARG:CD	8:A:923:HOH:O	2.63	0.47
1:E:107:GLN:HE22	1:E:162:LYS:NZ	2.11	0.47
1:G:27:ARG:HD3	1:G:75:GLY:HA2	1.96	0.47
4:J:1:NAG:HO3	4:J:2:NAG:H2	1.72	0.47
1:C:253:GLU:CD	1:C:253:GLU:H	2.16	0.47
1:G:222:GLN:HG3	1:G:277:LYS:HB3	1.96	0.47
1:A:68:THR:CG2	1:A:313:ASP:HB3	2.45	0.47
1:A:69:LYS:O	1:A:73:LEU:HD22	2.14	0.47
2:B:367:ARG:O	2:B:368:PRO:C	2.53	0.47
1:C:196:HIS:HB3	1:C:338:GLU:HG3	1.97	0.47
1:C:263:LEU:O	1:C:264:SER:HB3	2.14	0.47
1:E:96:LEU:CD1	1:E:134:TYR:HA	2.45	0.47
1:E:107:GLN:HE22	1:E:162:LYS:HZ2	1.63	0.47
2:F:375:ASP:HB2	2:F:379:LEU:HD22	1.96	0.47
1:G:178:VAL:O	1:G:351:PHE:HD1	1.98	0.47
1:A:117:ASP:HA	1:A:141:THR:O	2.15	0.47
1:C:34:TYR:OH	2:D:383:LYS:HE3	2.14	0.47
1:C:117:ASP:HB3	1:C:120:VAL:CG1	2.44	0.47
1:G:47:PHE:CZ	1:G:334:VAL:HB	2.49	0.47
1:A:26:ARG:NH2	1:A:26:ARG:HG3	2.30	0.47
1:A:249:ILE:HD12	1:A:249:ILE:N	2.30	0.47
1:A:68:THR:HG21	1:A:313:ASP:N	2.30	0.46
1:A:101:GLN:CD	1:A:101:GLN:N	2.69	0.46
1:G:71:GLN:HB3	1:G:303:GLY:O	2.15	0.46
1:E:273:LYS:C	1:E:275:PHE:H	2.18	0.46
1:C:103:ARG:O	1:E:94:GLN:NE2	2.48	0.46
1:C:256:MET:O	1:C:259:VAL:HG22	2.15	0.46
1:E:32:ASP:HB3	1:E:302:LEU:HD22	1.97	0.46
1:A:178:VAL:CG1	1:A:351:PHE:HB2	2.43	0.46
1:E:196:HIS:CE1	1:E:197:LYS:HG3	2.50	0.46
1:A:172:LEU:CD1	1:A:179:ILE:HD11	2.38	0.46
1:E:156:TYR:O	1:E:160:GLN:HG2	2.16	0.46
1:C:68:THR:HG22	1:C:306:ASN:HB3	1.98	0.46
1:G:62:LEU:HD13	1:G:89:HIS:CE1	2.50	0.46
1:A:45:ASN:OD1	2:B:385:ASN:N	2.40	0.46
1:A:309:THR:HG21	1:A:311:HIS:HD2	1.81	0.46
1:C:302:LEU:HD23	1:C:302:LEU:N	2.31	0.46
1:E:164:LYS:HA	1:E:164:LYS:CE	2.38	0.46
1:C:251:PRO:HB3	1:C:259:VAL:HG11	1.97	0.46
1:E:225:TYR:CG	1:E:226:LEU:N	2.83	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:37:LEU:HD22	1:G:293:TYR:CD2	2.51	0.46
1:A:135:LEU:CD1	1:A:135:LEU:N	2.79	0.46
1:E:299:LEU:N	1:E:300:PRO:HD2	2.30	0.46
1:G:215:PRO:HG2	1:G:286:LYS:HB3	1.97	0.46
1:C:59:MET:O	1:C:62:LEU:HB2	2.17	0.45
1:A:220:GLU:HG2	1:A:279:GLN:NE2	2.31	0.45
1:C:118:LEU:CD2	1:C:142:ASN:HA	2.45	0.45
1:A:78:LEU:HD22	1:A:88:LEU:HD12	1.98	0.45
1:C:226:LEU:HD21	1:C:274:MET:HE1	1.95	0.45
1:C:317:ILE:O	1:C:318:SER:HB3	2.16	0.45
1:E:118:LEU:CD1	1:E:140:PRO:HB2	2.46	0.45
1:E:250:LEU:HD11	2:F:367:ARG:NH1	2.32	0.45
1:G:153:ILE:CG2	1:G:169:LEU:HD21	2.47	0.45
1:G:353:PHE:O	1:G:354:ARG:HB3	2.16	0.45
1:C:144:ARG:HA	1:C:144:ARG:HH21	1.81	0.45
1:C:297:LYS:HA	1:C:297:LYS:CE	2.42	0.45
1:G:89:HIS:ND1	1:G:134:TYR:OH	2.33	0.45
1:E:309:THR:CG2	1:E:310:SER:N	2.79	0.45
1:C:231:LEU:HD11	1:C:262:GLY:HA3	1.98	0.45
1:E:281:GLU:OE2	2:F:362:ARG:HG2	2.17	0.45
1:C:319:ASN:OD1	1:C:320:HIS:N	2.50	0.45
1:E:150:MET:HG3	1:E:172:LEU:HB2	1.98	0.45
1:E:279:GLN:HG3	2:F:360:SER:HB2	1.99	0.45
1:C:93:GLN:O	1:C:97:GLN:HG3	2.17	0.45
1:C:290:GLU:HB2	1:C:333:VAL:HG12	1.99	0.45
1:E:96:LEU:HD12	1:E:134:TYR:HA	1.97	0.45
1:E:108:LEU:HD21	2:F:379:LEU:HD21	1.98	0.45
1:E:153:ILE:CD1	1:E:179:ILE:HD12	2.44	0.45
1:E:270:LYS:HA	1:E:273:LYS:HE2	1.98	0.45
1:G:28:ASP:OD1	1:G:31:PHE:HD2	2.00	0.45
1:E:270:LYS:HD2	1:E:270:LYS:O	2.16	0.45
1:A:209:GLU:HA	1:A:209:GLU:OE2	2.17	0.45
1:A:323:ILE:HA	1:A:352:THR:O	2.17	0.45
1:C:323:ILE:HD13	1:C:323:ILE:N	2.21	0.45
1:G:109:SER:C	1:G:110:LEU:HD12	2.37	0.45
2:H:373:ILE:HD12	2:H:380:PHE:HB2	1.99	0.45
1:C:204:PHE:CE1	2:D:387:PRO:HD3	2.52	0.44
1:E:320:HIS:HD2	1:E:321:SER:N	2.15	0.44
1:C:218:SER:HB3	1:C:283:TYR:CD1	2.52	0.44
1:C:226:LEU:HD13	1:C:226:LEU:C	2.38	0.44
1:C:324:GLN:O	1:C:351:PHE:HA	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:48:PHE:CZ	2:F:381:LEU:HD23	2.53	0.44
1:E:119:VAL:CG1	1:G:229:ARG:HG3	2.46	0.44
1:C:304:ILE:O	1:C:308:PHE:HE2	2.00	0.44
1:G:127:VAL:HG12	1:G:131:LYS:HE3	1.99	0.44
1:G:164:LYS:HA	1:G:164:LYS:CE	2.47	0.44
1:G:249:ILE:N	1:G:249:ILE:HD12	2.32	0.44
1:E:79:ASN:C	1:E:81:GLN:N	2.70	0.44
1:E:220:GLU:HA	1:E:281:GLU:HA	1.99	0.44
1:G:160:GLN:HB3	1:G:183:TYR:CD1	2.52	0.44
1:G:269:ARG:CG	1:G:269:ARG:NH1	2.80	0.44
1:A:165:ILE:O	1:A:165:ILE:HG22	2.16	0.44
2:B:368:PRO:HA	2:B:384:VAL:O	2.17	0.44
1:C:227:LEU:HG	1:C:234:ARG:NH2	2.32	0.44
1:G:178:VAL:HG13	1:G:351:PHE:CB	2.40	0.44
1:G:219:ARG:NH2	8:G:922:HOH:O	2.49	0.44
1:E:81:GLN:O	4:K:2:NAG:H62	2.18	0.44
1:E:164:LYS:C	1:E:165:ILE:HD12	2.38	0.44
1:E:283:TYR:CE2	2:F:362:ARG:HD3	2.52	0.44
4:K:1:NAG:O7	4:K:1:NAG:H3	2.17	0.44
1:C:38:ALA:HA	1:C:46:ILE:CD1	2.47	0.44
1:C:141:THR:HG23	1:C:152:GLN:OE1	2.18	0.44
1:C:243:ASN:OD1	4:K:1:NAG:C7	2.66	0.44
1:G:233:CYS:HB3	1:G:259:VAL:HG11	2.00	0.44
1:E:100:ASN:O	1:E:101:GLN:C	2.56	0.44
1:E:243:ASN:HD22	1:E:243:ASN:HA	1.60	0.44
1:A:27:ARG:NH1	1:A:302:LEU:O	2.51	0.43
1:A:101:GLN:O	1:A:103:ARG:N	2.50	0.43
1:C:150:MET:HG3	1:C:172:LEU:HD21	1.98	0.43
1:C:248:PHE:CZ	1:C:284:LEU:HD21	2.53	0.43
1:E:218:SER:HB3	1:E:283:TYR:CD1	2.53	0.43
1:G:294:GLN:HB3	1:G:296:GLU:OE1	2.18	0.43
1:C:151:LYS:O	1:C:155:ASP:OD2	2.35	0.43
1:C:286:LYS:HG3	1:C:337:ASP:HA	1.99	0.43
1:C:319:ASN:CG	7:C:10:NAG:N2	2.67	0.43
1:E:118:LEU:CD2	1:E:142:ASN:HA	2.49	0.43
1:A:184:ILE:O	1:A:344:ALA:HA	2.18	0.43
1:C:236:VAL:CG2	2:D:363:LEU:CD2	2.94	0.43
1:E:110:LEU:HD12	1:E:184:ILE:HB	2.00	0.43
1:G:236:VAL:HG21	2:H:363:LEU:HD21	1.99	0.43
1:A:215:PRO:HG2	1:A:286:LYS:HB3	2.01	0.43
1:C:60:LEU:HD21	1:C:307:VAL:HG21	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:115:PHE:CD2	1:E:153:ILE:HG12	2.54	0.43
1:A:110:LEU:HD13	1:A:183:TYR:O	2.18	0.43
1:C:169:LEU:HD22	1:C:169:LEU:H	1.84	0.43
1:A:143:PHE:HE1	1:A:172:LEU:HD21	1.83	0.43
1:A:323:ILE:HD13	1:A:323:ILE:O	2.19	0.43
1:C:265:GLU:O	1:C:269:ARG:HG3	2.19	0.43
1:E:95:LEU:HD13	2:F:377:ASN:ND2	2.33	0.43
1:A:26:ARG:O	1:A:26:ARG:HG2	2.19	0.43
1:A:64:ALA:C	1:A:69:LYS:HB2	2.38	0.43
1:C:321:SER:OG	1:C:353:PHE:HE2	2.01	0.43
1:G:112:ASN:HA	1:G:181:VAL:O	2.19	0.43
2:H:375:ASP:HB3	2:H:377:ASN:H	1.83	0.43
1:A:110:LEU:HD22	1:A:184:ILE:HG13	2.00	0.43
1:C:68:THR:CG2	1:C:313:ASP:H	2.13	0.43
1:C:249:ILE:HD12	1:C:249:ILE:N	2.34	0.43
2:F:370:LEU:HD12	2:F:370:LEU:N	2.33	0.43
1:G:130:MET:HE2	1:G:130:MET:HA	2.00	0.43
1:A:123:GLN:HE21	1:A:123:GLN:CA	2.20	0.42
1:A:221:ASP:CG	1:A:222:GLN:H	2.22	0.42
1:E:108:LEU:O	1:E:108:LEU:HG	2.19	0.42
1:E:217:MET:HB2	1:E:284:LEU:O	2.19	0.42
4:K:1:NAG:O3	4:K:2:NAG:C7	2.67	0.42
1:A:118:LEU:O	1:C:234:ARG:NH1	2.52	0.42
1:C:283:TYR:CE2	2:D:362:ARG:HG2	2.52	0.42
1:C:338:GLU:CD	1:C:338:GLU:H	2.22	0.42
1:E:63:GLY:HA3	1:E:317:ILE:HG13	2.01	0.42
1:E:97:GLN:C	1:E:99:LEU:N	2.73	0.42
1:G:119:VAL:O	1:G:120:VAL:HG23	2.19	0.42
1:G:217:MET:O	1:G:283:TYR:HA	2.18	0.42
1:A:327:GLU:CG	1:A:350:ILE:HD12	2.49	0.42
1:E:182:ASN:O	1:E:346:ALA:HA	2.19	0.42
1:G:162:LYS:HD2	1:G:162:LYS:H	1.81	0.42
1:A:226:LEU:HD13	1:A:227:LEU:N	2.33	0.42
1:C:76:LEU:HD13	1:C:88:LEU:HD11	2.01	0.42
1:E:320:HIS:CE1	1:E:353:PHE:HZ	2.37	0.42
1:G:323:ILE:HA	1:G:352:THR:O	2.18	0.42
1:G:327:GLU:HG3	1:G:350:ILE:HD12	2.01	0.42
1:G:117:ASP:HB2	1:G:143:PHE:CD2	2.44	0.42
2:D:359:ASN:O	2:D:360:SER:HB3	2.19	0.42
1:E:27:ARG:NH2	1:E:302:LEU:HA	2.35	0.42
1:E:144:ARG:HH11	1:E:144:ARG:HB2	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:69:LYS:HG2	1:E:73:LEU:HD22	2.01	0.42
1:E:209:GLU:HB2	8:E:362:HOH:O	2.19	0.42
1:A:94:GLN:HE21	1:A:98:GLU:CD	2.22	0.42
1:A:255:LYS:O	1:A:256:MET:C	2.58	0.42
1:C:201:GLU:HA	1:C:201:GLU:OE1	2.20	0.42
1:C:259:VAL:HG23	1:C:260:GLU:N	2.35	0.42
1:G:167:ASP:O	1:G:170:LYS:HE2	2.19	0.42
1:A:26:ARG:HG3	1:A:26:ARG:HH21	1.84	0.42
1:C:117:ASP:HB2	1:C:143:PHE:HD2	1.85	0.42
1:G:278:ARG:O	1:G:280:LEU:HD13	2.20	0.42
1:A:244:ALA:HA	2:B:374:VAL:O	2.19	0.42
1:A:53:ILE:HD13	1:A:295:LEU:HD11	2.01	0.41
1:C:313:ASP:C	1:C:313:ASP:OD1	2.57	0.41
1:G:226:LEU:HD13	1:G:226:LEU:C	2.40	0.41
1:G:246:ALA:HA	2:H:372:PHE:O	2.20	0.41
1:C:78:LEU:CD2	1:C:88:LEU:HD12	2.49	0.41
1:C:129:ALA:O	1:C:133:LEU:HB2	2.20	0.41
1:C:214:VAL:HG11	2:D:387:PRO:CG	2.50	0.41
1:E:133:LEU:H	1:E:133:LEU:HD22	1.84	0.41
1:G:112:ASN:OD1	1:G:182:ASN:ND2	2.50	0.41
1:C:309:THR:CG2	1:C:311:HIS:HB3	2.51	0.41
1:G:150:MET:SD	1:G:170:LYS:O	2.78	0.41
1:C:235:VAL:HG22	1:C:249:ILE:HG13	2.01	0.41
7:C:10:NAG:H83	7:C:10:NAG:H3	2.02	0.41
1:E:221:ASP:CG	1:E:222:GLN:N	2.71	0.41
1:A:220:GLU:HA	1:A:281:GLU:HA	2.03	0.41
1:C:116:THR:CG2	1:C:120:VAL:HG21	2.51	0.41
1:C:255:LYS:HD3	1:C:255:LYS:HA	1.87	0.41
1:C:284:LEU:HD12	1:C:285:PRO:HD2	2.01	0.41
1:E:228:ASP:OD2	1:E:228:ASP:C	2.59	0.41
1:A:144:ARG:NE	1:A:144:ARG:CA	2.83	0.41
1:E:165:ILE:HD12	1:E:165:ILE:N	2.36	0.41
1:E:196:HIS:C	1:E:198:GLY:N	2.74	0.41
2:F:360:SER:OG	2:F:361:GLN:N	2.52	0.41
1:A:94:GLN:HE21	1:A:98:GLU:HG3	1.84	0.41
1:A:241:GLN:HE21	1:A:241:GLN:HB3	1.55	0.41
1:A:103:ARG:CG	1:A:104:ASP:H	2.31	0.41
1:A:335:GLU:HB2	1:A:342:ARG:HB3	2.03	0.41
1:C:105:GLY:HA2	1:C:189:LYS:HG3	2.03	0.41
1:C:218:SER:HB3	1:C:283:TYR:CE1	2.56	0.41
1:E:107:GLN:NE2	1:E:162:LYS:NZ	2.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:150:MET:CE	1:E:172:LEU:H	2.33	0.41
1:E:175:ASN:HB3	1:E:353:PHE:HB2	2.03	0.41
1:E:194:PHE:HB2	1:E:338:GLU:HB3	2.03	0.41
1:E:224:HIS:HA	1:E:276:LYS:O	2.21	0.41
1:G:106:PHE:CD2	1:G:242:GLY:HA3	2.56	0.41
1:G:228:ASP:OD2	1:G:228:ASP:C	2.59	0.41
1:G:247:LEU:HB2	2:H:372:PHE:HB2	2.03	0.41
5:L:1:MAN:H3	5:L:2:MAN:H2	1.21	0.41
2:B:375:ASP:HB2	2:B:379:LEU:HD22	2.02	0.41
1:C:130:MET:SD	1:C:180:MET:CE	3.09	0.41
1:C:309:THR:HG22	1:C:310:SER:N	2.34	0.41
1:E:162:LYS:HD3	1:E:185:PHE:CE2	2.56	0.41
1:G:211:VAL:HG22	1:G:212:VAL:H	1.86	0.41
1:C:65:GLY:O	1:C:66:SER:HB3	2.21	0.40
1:E:273:LYS:HG3	1:E:274:MET:H	1.86	0.40
1:G:182:ASN:O	1:G:346:ALA:HA	2.21	0.40
1:E:61:SER:C	1:E:63:GLY:N	2.72	0.40
1:E:142:ASN:OD1	1:E:144:ARG:HB2	2.22	0.40
1:E:309:THR:C	1:E:311:HIS:N	2.75	0.40
1:A:229:ARG:HG2	1:A:229:ARG:HH21	1.87	0.40
1:C:62:LEU:HD12	1:C:62:LEU:HA	1.91	0.40
1:A:84:SER:O	1:A:85:GLU:C	2.60	0.40
1:A:187:LYS:HE3	6:A:901:IPA:H13	2.03	0.40
1:C:283:TYR:HB2	2:D:364:VAL:HB	2.03	0.40
1:E:117:ASP:HA	1:E:141:THR:O	2.21	0.40
1:E:121:ASP:OD1	1:G:234:ARG:NH2	2.55	0.40
1:E:260:GLU:C	1:E:262:GLY:H	2.23	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	327/346 (94%)	296 (90%)	20 (6%)	11 (3%)	3 3
1	C	326/346 (94%)	297 (91%)	19 (6%)	10 (3%)	4 3
1	E	327/346 (94%)	282 (86%)	30 (9%)	15 (5%)	2 1
1	G	328/346 (95%)	295 (90%)	24 (7%)	9 (3%)	5 5
2	B	27/31 (87%)	23 (85%)	4 (15%)	0	100 100
2	D	27/31 (87%)	25 (93%)	1 (4%)	1 (4%)	3 2
2	F	26/31 (84%)	23 (88%)	3 (12%)	0	100 100
2	H	27/31 (87%)	24 (89%)	2 (7%)	1 (4%)	3 2
All	All	1415/1508 (94%)	1265 (89%)	103 (7%)	47 (3%)	4 3

All (47) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	85	GLU
1	A	321	SER
1	A	322	ASN
1	A	323	ILE
1	C	42	PRO
1	C	102	PRO
1	C	104	ASP
1	C	166	VAL
1	C	321	SER
1	E	42	PRO
1	E	80	LEU
1	E	83	SER
1	E	84	SER
1	E	102	PRO
1	E	253	GLU
1	E	276	LYS
1	E	321	SER
1	G	100	ASN
1	G	101	GLN
1	G	320	HIS
1	G	321	SER
1	G	354	ARG
2	H	360	SER
1	A	42	PRO
1	A	82	LYS
1	A	103	ARG
1	C	82	LYS

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Mol	Chain	Res	Type
1	E	98	GLU
1	E	103	ARG
1	E	224	HIS
1	A	102	PRO
1	C	318	SER
1	C	319	ASN
1	E	173	ASP
1	C	103	ARG
1	C	196	HIS
1	E	275	PHE
1	A	244	ALA
1	A	320	HIS
2	D	360	SER
1	E	100	ASN
1	E	232	SER
1	G	79	ASN
1	G	146	SER
1	G	232	SER
1	G	120	VAL
1	A	307	VAL

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	288/301 (96%)	263 (91%)	25 (9%)	10 15
1	C	287/301 (95%)	262 (91%)	25 (9%)	10 15
1	E	288/301 (96%)	268 (93%)	20 (7%)	15 25
1	G	289/301 (96%)	268 (93%)	21 (7%)	14 22
2	B	28/30 (93%)	26 (93%)	2 (7%)	14 23
2	D	28/30 (93%)	23 (82%)	5 (18%)	2 2
2	F	27/30 (90%)	27 (100%)	0	100 100
2	H	28/30 (93%)	27 (96%)	1 (4%)	35 54

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	1263/1324 (95%)	1164 (92%)	99 (8%)	12 19

All (99) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	42	PRO
1	A	62	LEU
1	A	68	THR
1	A	73	LEU
1	A	79	ASN
1	A	87	GLU
1	A	88	LEU
1	A	110	LEU
1	A	118	LEU
1	A	119	VAL
1	A	123	GLN
1	A	135	LEU
1	A	144	ARG
1	A	162	LYS
1	A	201	GLU
1	A	227	LEU
1	A	236	VAL
1	A	241	GLN
1	A	298	VAL
1	A	302	LEU
1	A	319	ASN
1	A	320	HIS
1	A	321	SER
1	A	323	ILE
1	A	353	PHE
2	B	362	ARG
2	B	379	LEU
1	C	30	THR
1	C	42	PRO
1	C	51	VAL
1	C	73	LEU
1	C	79	ASN
1	C	83	SER
1	C	87	GLU
1	C	88	LEU
1	C	118	LEU
1	C	133	LEU

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Mol	Chain	Res	Type
1	C	137	ASP
1	C	144	ARG
1	C	160	GLN
1	C	162	LYS
1	C	172	LEU
1	C	178	VAL
1	C	211	VAL
1	C	227	LEU
1	C	229	ARG
1	C	231	LEU
1	C	257	GLN
1	C	272	LEU
1	C	298	VAL
1	C	302	LEU
1	C	323	ILE
2	D	362	ARG
2	D	364	VAL
2	D	370	LEU
2	D	375	ASP
2	D	379	LEU
1	E	51	VAL
1	E	73	LEU
1	E	79	ASN
1	E	81	GLN
1	E	99	LEU
1	E	100	ASN
1	E	102	PRO
1	E	118	LEU
1	E	135	LEU
1	E	144	ARG
1	E	162	LYS
1	E	177	VAL
1	E	192	THR
1	E	195	ASN
1	E	200	GLN
1	E	222	GLN
1	E	227	LEU
1	E	243	ASN
1	E	253	GLU
1	E	275	PHE
1	G	42	PRO
1	G	62	LEU

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Mol	Chain	Res	Type
1	G	68	THR
1	G	73	LEU
1	G	88	LEU
1	G	90	ARG
1	G	100	ASN
1	G	162	LYS
1	G	169	LEU
1	G	170	LYS
1	G	200	GLN
1	G	219	ARG
1	G	227	LEU
1	G	229	ARG
1	G	236	VAL
1	G	253	GLU
1	G	257	GLN
1	G	269	ARG
1	G	298	VAL
1	G	319	ASN
1	G	320	HIS
2	H	379	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (47) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	97	GLN
1	A	123	GLN
1	A	196	HIS
1	A	200	GLN
1	A	222	GLN
1	A	224	HIS
1	A	241	GLN
1	A	279	GLN
1	A	294	GLN
1	A	311	HIS
1	A	319	ASN
1	C	107	GLN
1	C	160	GLN
1	C	195	ASN
1	C	196	HIS
1	C	200	GLN
1	C	222	GLN
1	C	241	GLN

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Mol	Chain	Res	Type
1	C	279	GLN
2	D	359	ASN
2	D	376	ASN
1	E	97	GLN
1	E	100	ASN
1	E	107	GLN
1	E	195	ASN
1	E	200	GLN
1	E	222	GLN
1	E	243	ASN
1	E	261	ASN
1	E	279	GLN
1	E	294	GLN
1	E	320	HIS
2	F	361	GLN
2	F	366	ASN
2	F	376	ASN
2	F	377	ASN
1	G	81	GLN
1	G	107	GLN
1	G	195	ASN
1	G	200	GLN
1	G	222	GLN
1	G	224	HIS
1	G	257	GLN
1	G	261	ASN
1	G	320	HIS
1	G	324	GLN
2	H	376	ASN

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)

11 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	$\#\|Z\| > 2$
3	NAG	I	1	3,1	14,14,15	0.69	0	17,19,21	0.83	1 (5%)
3	NDG	I	2	3	14,14,15	1.25	1 (7%)	17,19,21	0.90	2 (11%)
4	NAG	J	1	1,4	14,14,15	0.97	1 (7%)	17,19,21	1.01	1 (5%)
4	NAG	J	2	4	14,14,15	0.90	1 (7%)	17,19,21	0.79	0
4	NAG	K	1	1,4	14,14,15	0.66	0	17,19,21	0.69	0
4	NAG	K	2	4	14,14,15	0.74	1 (7%)	17,19,21	0.61	0
5	MAN	L	1	5	12,12,12	0.71	0	17,17,17	1.13	1 (5%)
5	MAN	L	2	5	11,11,12	0.61	0	15,15,17	0.83	1 (6%)
5	MAN	L	3	5	11,11,12	0.67	0	15,15,17	0.85	1 (6%)
3	NAG	M	1	3,1	14,14,15	0.95	0	17,19,21	0.76	0
3	NDG	M	2	3	14,14,15	0.85	0	17,19,21	0.60	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
3	NAG	I	1	3,1	1/1/5/7	0/6/23/26	0/1/1/1
3	NDG	I	2	3	-	2/6/23/26	0/1/1/1
4	NAG	J	1	1,4	-	5/6/23/26	0/1/1/1
4	NAG	J	2	4	-	3/6/23/26	0/1/1/1
4	NAG	K	1	1,4	1/1/5/7	3/6/23/26	0/1/1/1
4	NAG	K	2	4	-	3/6/23/26	0/1/1/1
5	MAN	L	1	5	-	0/2/22/22	0/1/1/1
5	MAN	L	2	5	-	2/2/19/22	1/1/1/1
5	MAN	L	3	5	-	2/2/19/22	1/1/1/1
3	NAG	M	1	3,1	1/1/5/7	3/6/23/26	0/1/1/1
3	NDG	M	2	3	-	1/6/23/26	0/1/1/1

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	I	2	NDG	C1-C2	3.45	1.57	1.52
4	J	2	NAG	C1-C2	2.72	1.56	1.52
4	K	2	NAG	C1-C2	2.14	1.55	1.52
4	J	1	NAG	C3-C2	2.02	1.56	1.52

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	L	1	MAN	C3-C4-C5	-3.43	104.12	110.24
5	L	3	MAN	C1-O5-C5	2.80	115.99	112.19
5	L	2	MAN	C1-O5-C5	2.70	115.86	112.19
3	I	2	NDG	C1-O5-C5	2.15	115.11	112.19
3	I	2	NDG	C4-C3-C2	-2.10	107.94	111.02
3	I	1	NAG	C3-C4-C5	-2.03	106.62	110.24
4	J	1	NAG	C1-C2-N2	-2.02	107.04	110.49

All (3) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
3	I	1	NAG	C1
3	M	1	NAG	C1
4	K	1	NAG	C1

All (24) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	I	2	NDG	C8-C7-N2-C2
3	I	2	NDG	O7-C7-N2-C2
3	M	1	NAG	C3-C2-N2-C7
3	M	1	NAG	C8-C7-N2-C2
3	M	1	NAG	O7-C7-N2-C2
4	J	1	NAG	C3-C2-N2-C7
4	J	1	NAG	C8-C7-N2-C2
4	J	1	NAG	O7-C7-N2-C2
4	J	2	NAG	C8-C7-N2-C2
4	J	2	NAG	O7-C7-N2-C2
4	K	1	NAG	C3-C2-N2-C7
4	K	1	NAG	C8-C7-N2-C2
4	K	1	NAG	O7-C7-N2-C2
4	K	2	NAG	C8-C7-N2-C2
4	K	2	NAG	O7-C7-N2-C2
5	L	3	MAN	C4-C5-C6-O6
5	L	3	MAN	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
4	J	2	NAG	O5-C5-C6-O6
5	L	2	MAN	C4-C5-C6-O6
4	K	2	NAG	O5-C5-C6-O6
4	J	1	NAG	O5-C5-C6-O6
4	J	1	NAG	C4-C5-C6-O6
5	L	2	MAN	O5-C5-C6-O6
3	M	2	NDG	C8-C7-N2-C2

All (2) ring outliers are listed below:

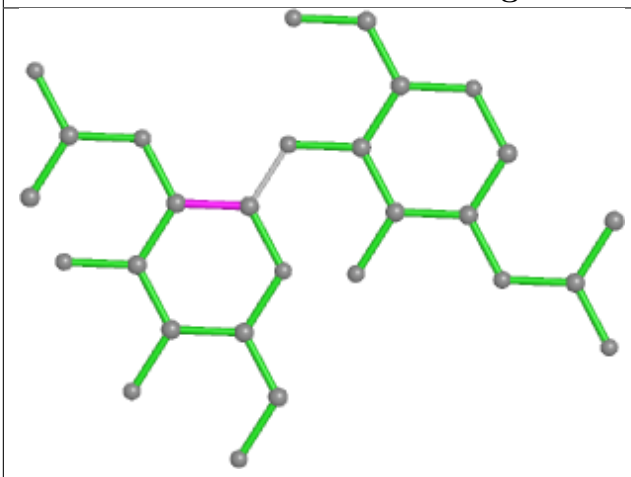
Mol	Chain	Res	Type	Atoms
5	L	3	MAN	C1-C2-C3-C4-C5-O5
5	L	2	MAN	C1-C2-C3-C4-C5-O5

10 monomers are involved in 21 short contacts:

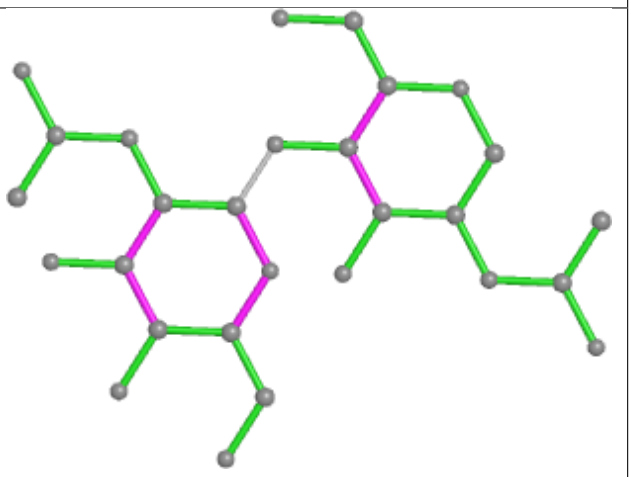
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	M	2	NDG	5	0
4	J	2	NAG	4	0
3	M	1	NAG	1	0
4	K	1	NAG	5	0
3	I	2	NDG	2	0
5	L	2	MAN	2	0
4	J	1	NAG	6	0
4	K	2	NAG	3	0
3	I	1	NAG	2	0
5	L	1	MAN	1	0

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

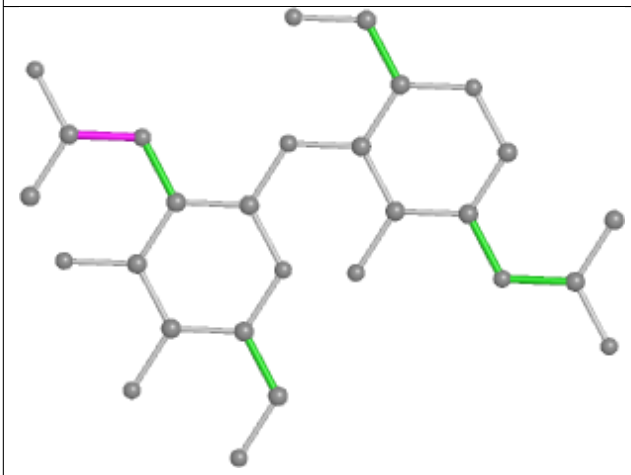
Oligosaccharide Chain I



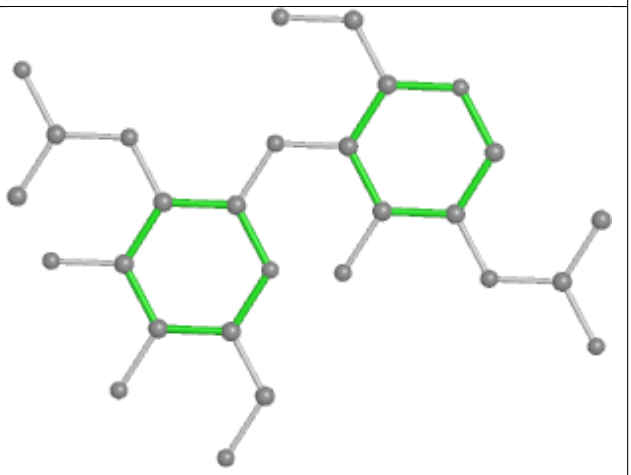
Bond lengths



Bond angles

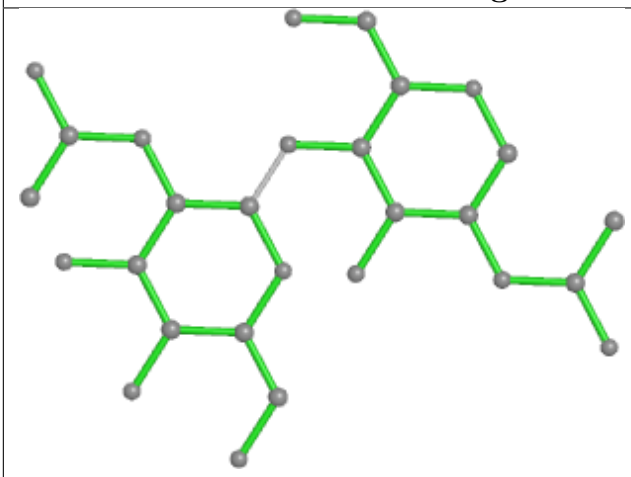


Torsions

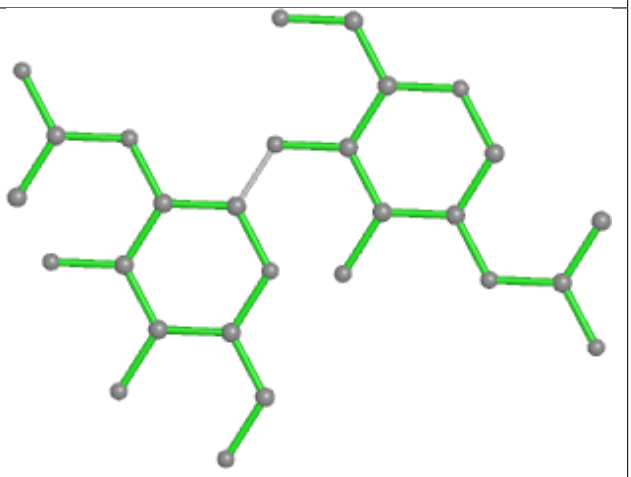


Rings

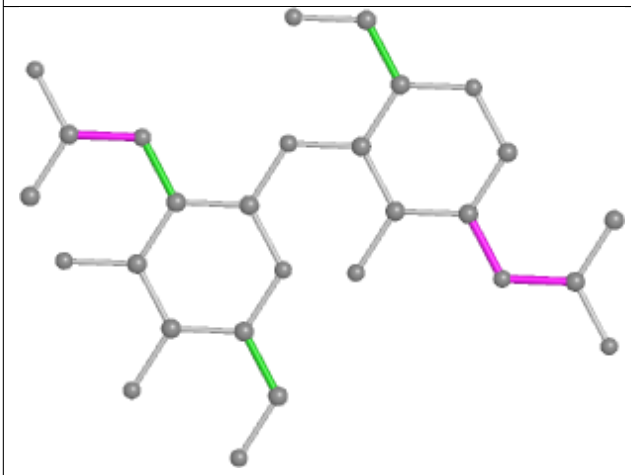
Oligosaccharide Chain M



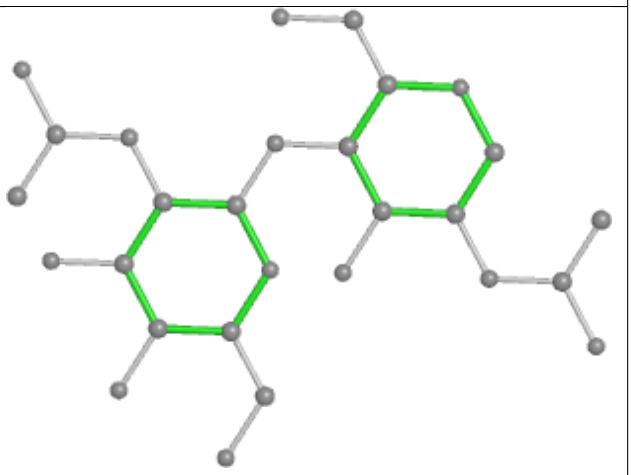
Bond lengths



Bond angles

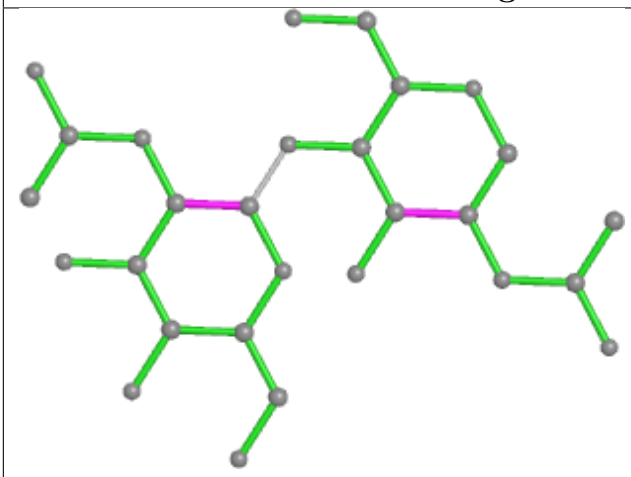


Torsions

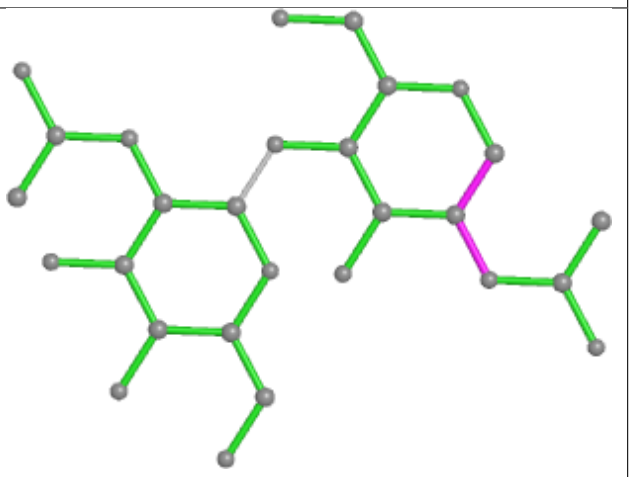


Rings

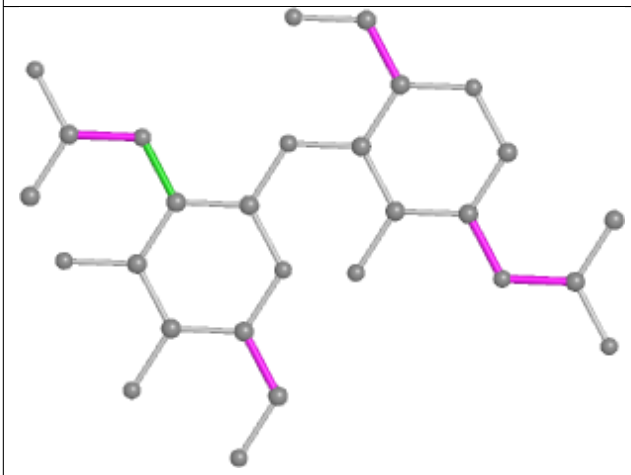
Oligosaccharide Chain J



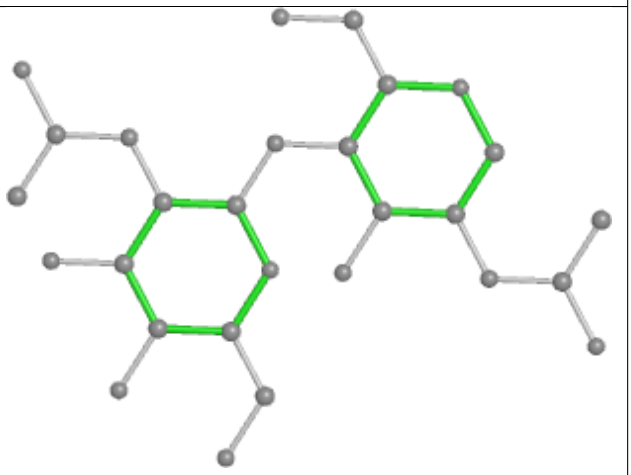
Bond lengths



Bond angles

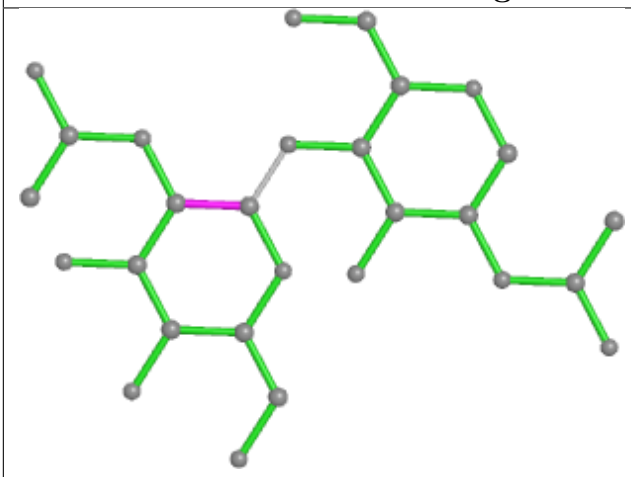


Torsions

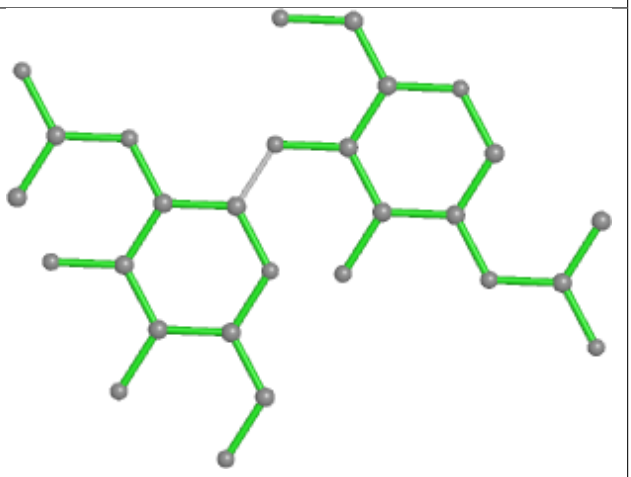


Rings

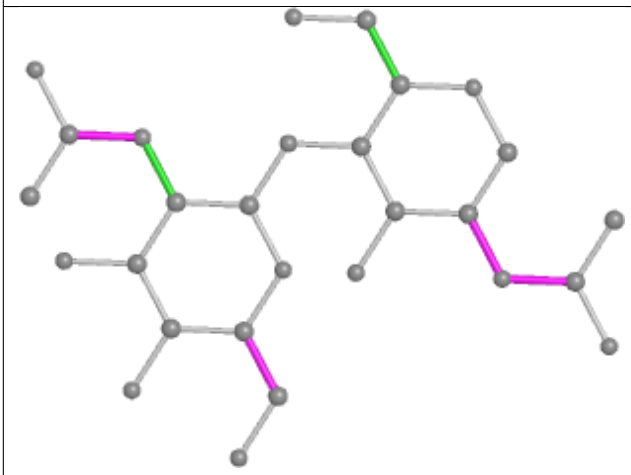
Oligosaccharide Chain K



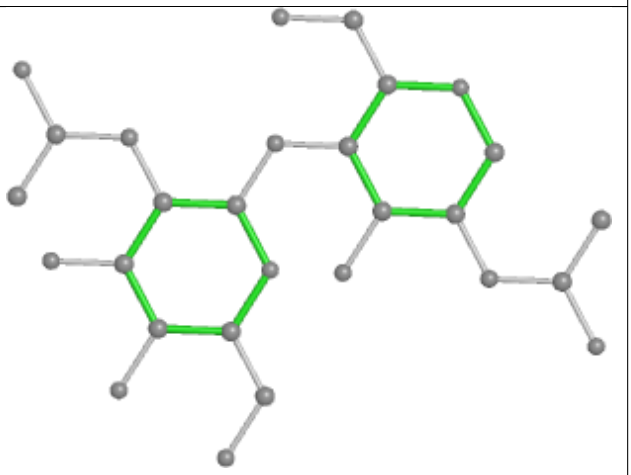
Bond lengths



Bond angles

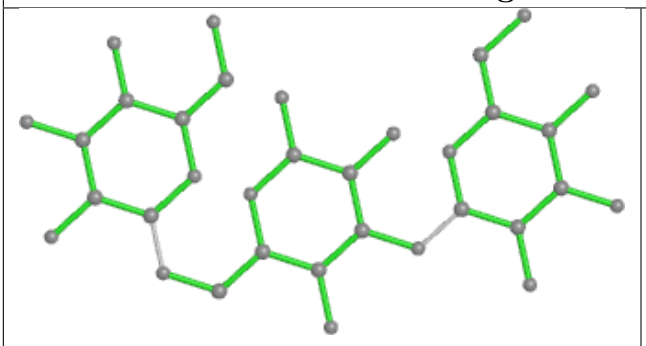


Torsions

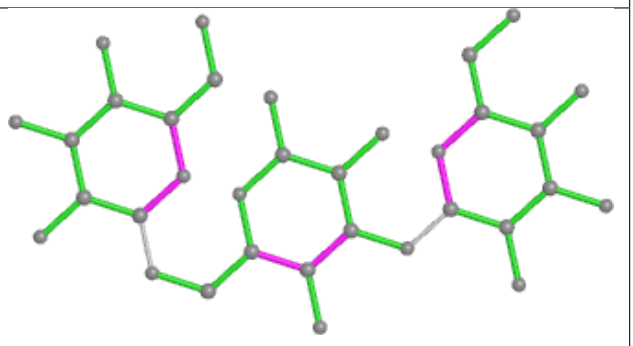


Rings

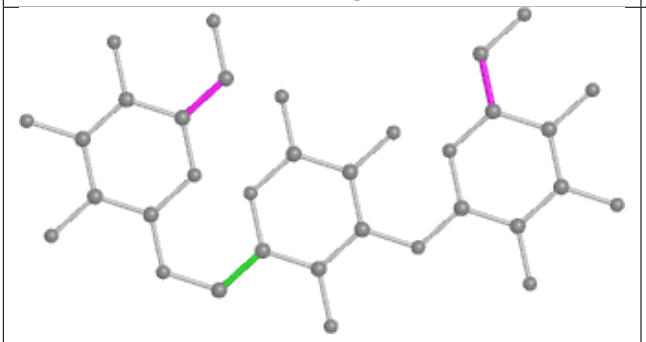
Oligosaccharide Chain L



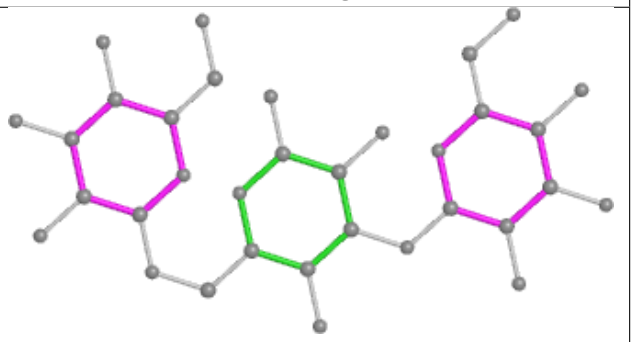
Bond lengths



Bond angles



Torsions



Rings

5.6 Ligand geometry (i)

6 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
6	IPA	C	902	-	3,3,3	0.39	0	3,3,3	0.42	0
7	NAG	G	359	1	14,14,15	0.77	0	17,19,21	0.76	1 (5%)
6	IPA	G	903	-	3,3,3	0.37	0	3,3,3	0.39	0
7	NAG	C	357	1	14,14,15	0.86	1 (7%)	17,19,21	0.69	0
6	IPA	A	901	-	3,3,3	0.45	0	3,3,3	0.43	0
7	NAG	C	10	1	14,14,15	0.77	0	17,19,21	0.57	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns.

'-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
7	NAG	G	359	1	1/1/5/7	4/6/23/26	0/1/1/1
7	NAG	C	357	1	1/1/5/7	4/6/23/26	0/1/1/1
7	NAG	C	10	1	1/1/5/7	5/6/23/26	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	C	357	NAG	C1-C2	2.13	1.55	1.52

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	G	359	NAG	C2-N2-C7	-2.13	119.86	122.90

All (3) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
7	C	10	NAG	C1
7	C	357	NAG	C1
7	G	359	NAG	C1

All (13) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	C	10	NAG	C3-C2-N2-C7
7	C	10	NAG	C8-C7-N2-C2
7	C	10	NAG	O7-C7-N2-C2
7	C	357	NAG	C8-C7-N2-C2
7	C	357	NAG	O7-C7-N2-C2
7	G	359	NAG	C8-C7-N2-C2
7	G	359	NAG	O7-C7-N2-C2
7	G	359	NAG	C4-C5-C6-O6
7	C	10	NAG	O5-C5-C6-O6
7	G	359	NAG	O5-C5-C6-O6
7	C	10	NAG	C4-C5-C6-O6
7	C	357	NAG	C4-C5-C6-O6
7	C	357	NAG	O5-C5-C6-O6

There are no ring outliers.

2 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	901	IPA	2	0
7	C	10	NAG	4	0

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	329/346 (95%)	-0.24	1 (0%)	94	93	43, 57, 87, 105	6 (1%)
1	C	328/346 (94%)	-0.19	1 (0%)	94	93	42, 61, 86, 104	4 (1%)
1	E	329/346 (95%)	-0.03	6 (1%)	68	66	42, 66, 99, 118	9 (2%)
1	G	330/346 (95%)	-0.20	4 (1%)	79	77	40, 61, 85, 106	6 (1%)
2	B	29/31 (93%)	-0.15	1 (3%)	45	44	41, 50, 81, 92	0
2	D	29/31 (93%)	-0.36	0	100	100	41, 49, 70, 89	0
2	F	28/31 (90%)	0.11	0	100	100	55, 65, 105, 107	0
2	H	29/31 (93%)	-0.15	0	100	100	44, 52, 74, 83	0
All	All	1431/1508 (94%)	-0.16	13 (0%)	84	82	40, 61, 92, 118	25 (1%)

All (13) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	G	320	HIS	3.3
1	E	103	ARG	3.2
1	E	226	LEU	3.0
1	E	274	MET	2.9
1	C	82	LYS	2.8
1	E	273	LYS	2.7
1	A	83	SER	2.7
1	G	355	SER	2.5
1	G	118	LEU	2.5
2	B	359	ASN	2.3
1	E	100	ASN	2.3
1	G	119	VAL	2.3
1	E	227	LEU	2.3

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)

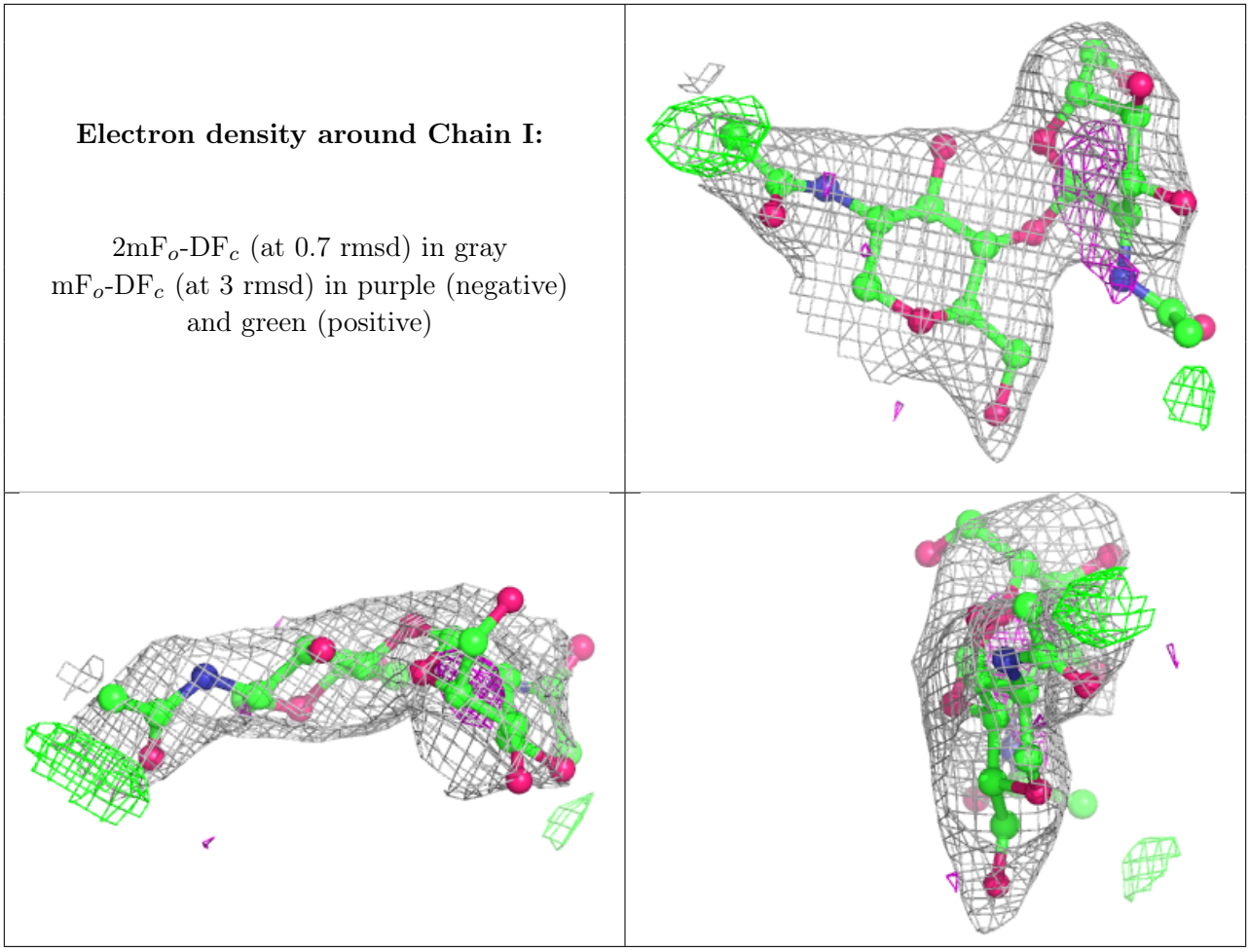
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' 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	J	2	14/15	0.48	0.49	125,128,129,129	0
4	NAG	J	1	14/15	0.54	0.26	109,114,117,122	0
5	MAN	L	1	12/12	0.61	0.29	151,154,155,155	0
5	MAN	L	3	11/12	0.61	0.43	152,153,153,153	0
5	MAN	L	2	11/12	0.70	0.21	144,146,147,148	0
3	NDG	I	2	14/15	0.73	0.33	109,111,113,113	0
3	NAG	M	1	14/15	0.81	0.17	87,92,95,100	0
3	NDG	M	2	14/15	0.81	0.44	104,107,107,108	0
4	NAG	K	2	14/15	0.81	0.23	117,119,120,120	0
3	NAG	I	1	14/15	0.83	0.19	92,95,98,104	0
4	NAG	K	1	14/15	0.87	0.17	100,105,108,114	0

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

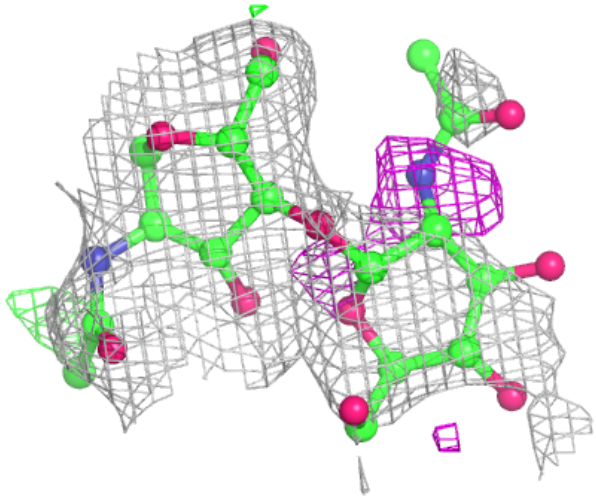
Electron density around Chain I:

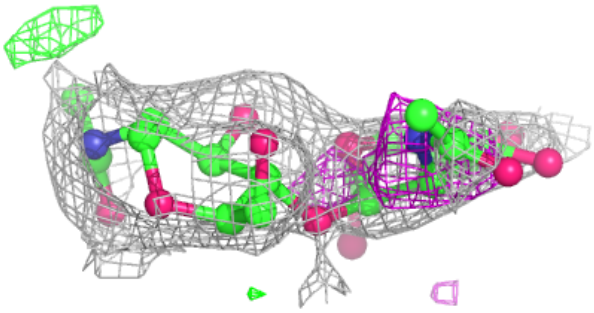
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

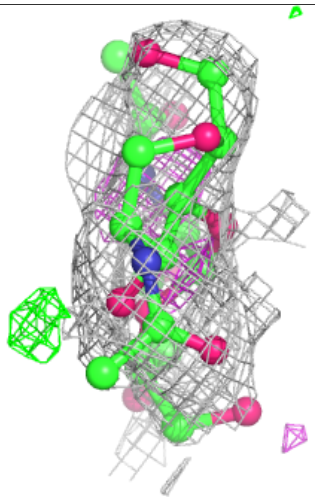


Electron density around Chain M:

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

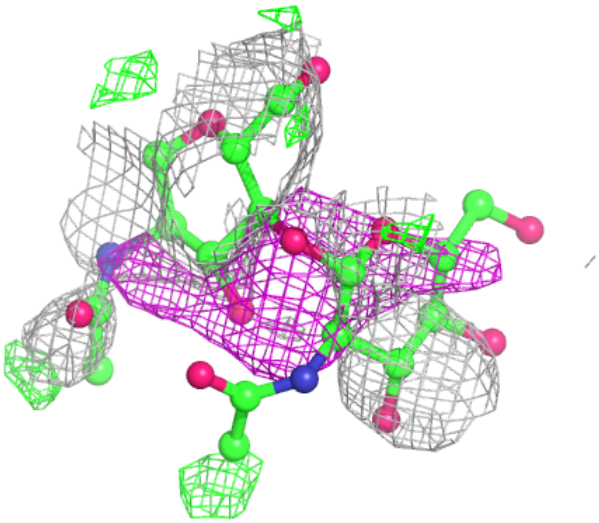


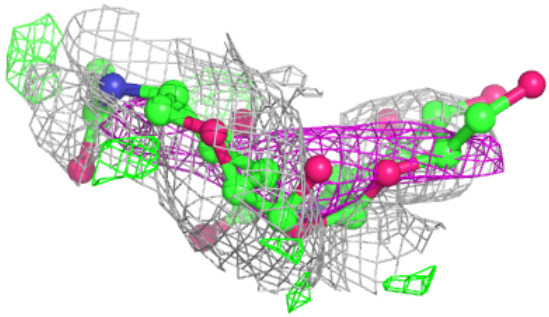


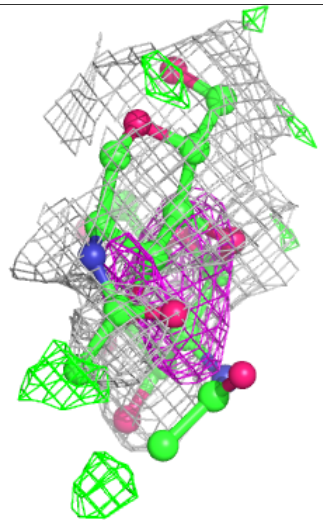


Electron density around Chain J:

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

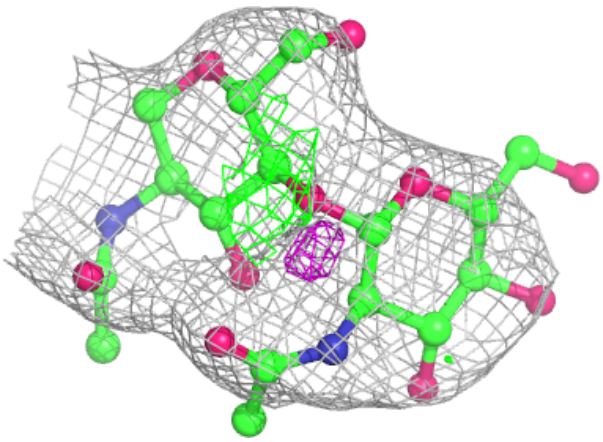


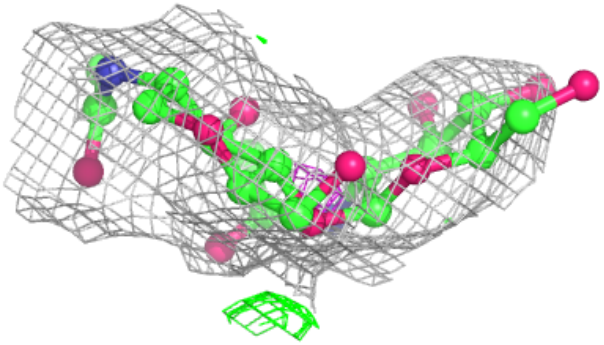


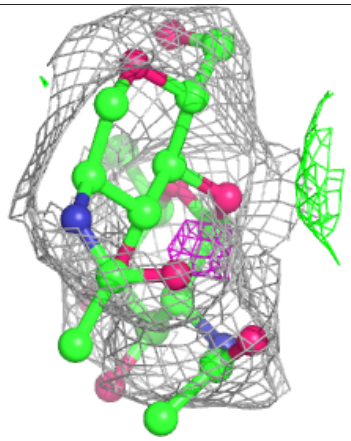


Electron density around Chain K:

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

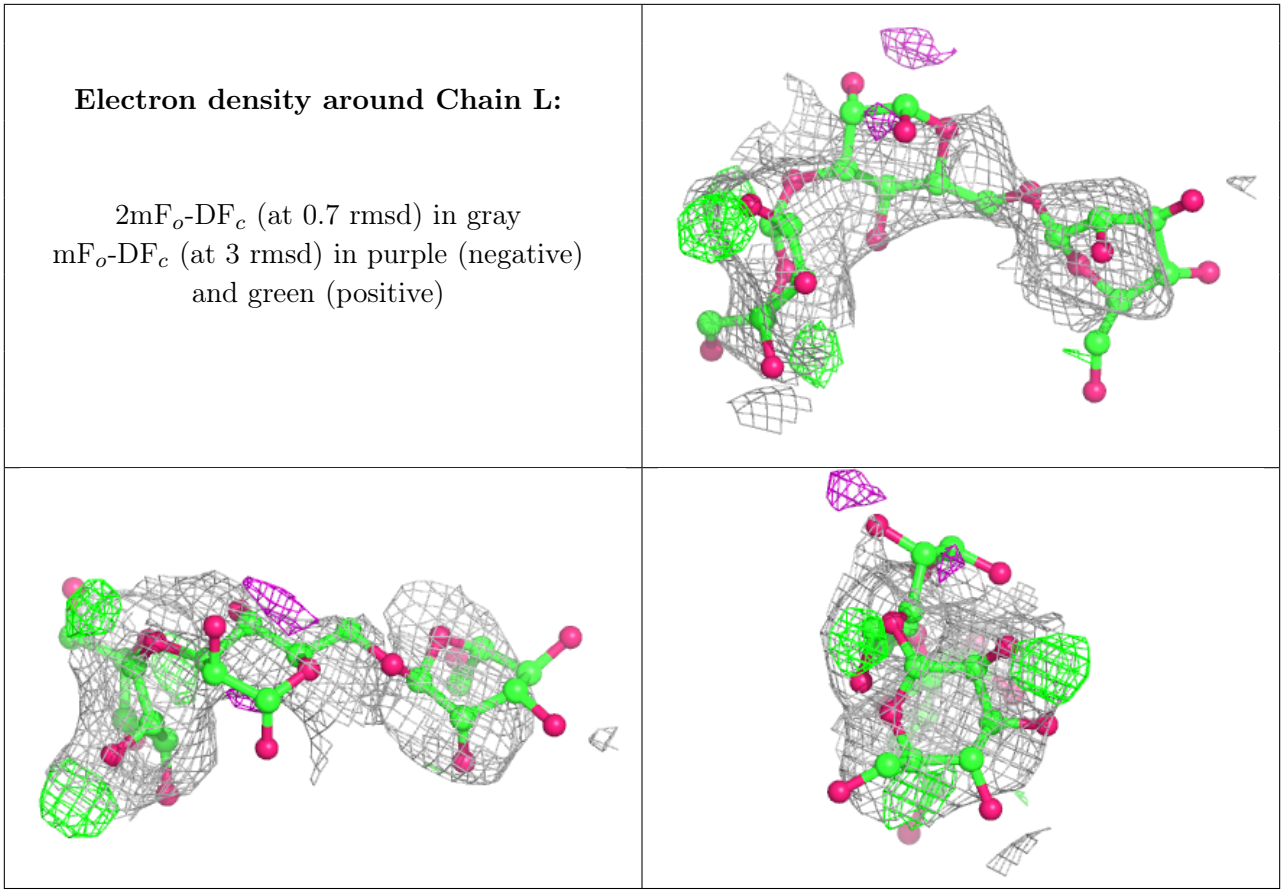






Electron density around Chain L:

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



6.4 Ligands

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
7	NAG	C	357	14/15	0.66	0.29	100,105,107,107	0
7	NAG	C	10	14/15	0.74	0.25	114,116,117,117	0
7	NAG	G	359	14/15	0.78	0.48	100,103,108,108	0
6	IPA	C	902	4/4	0.87	0.33	98,99,99,99	0
6	IPA	G	903	4/4	0.96	0.20	79,79,79,80	0
6	IPA	A	901	4/4	0.97	0.18	63,64,64,65	0

6.5 Other polymers

There are no such residues in this entry.