Full wwPDB X-ray Structure Validation Report (i)

Nov 26, 2024 – 12:05 PM EST

PDB ID : 9DIQ
Title : Crystal structure of Apo-H5 hemagglutinin from the influenza virus A/37/Texas/2024 (H5N1)
Authors : Lin, T.H.; Zhu, Y.; Wilson, I.A.
Deposited on : 2024-09-05
Resolution : 2.69 Å(reported)

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 2.69 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	Percentile Ranks	Value
Rfree		0.265
Clashscore		8
Ramachandran outliers		0.2%
Sidechain outliers		2.8%
RSRZ outliers		3.1%

Worse   *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	164625	3333 (2.70-2.70)
Clashscore	180529	3684 (2.70-2.70)
Ramachandran outliers	177936	3633 (2.70-2.70)
Sidechain outliers	177891	3633 (2.70-2.70)
RSRZ outliers	164620	3333 (2.70-2.70)

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	325	2% / 77% / 21% / ••
1	C	325	2% / 84% / 15% / •
1	E	325	% / 77% / 21% / ••
1	G	325	2% / 83% / 15% / ••
1	I	325	% / 83% / 16% / •

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Mol	Chain	Length	Quality of chain
1	K	325	2% / 83% / 15%
2	B	176	6% / 67% / 27%
2	D	176	3% / 72% / 22% / 6%
2	F	176	5% / 66% / 28%
2	H	176	5% / 76% / 17% / 5%
2	J	176	6% / 73% / 22% / 5%
2	L	176	8% / 72% / 20% / 5%
3	M	3	67% / 33%
3	O	3	67% / 33%
3	Q	3	67% / 33%
4	N	2	100%
4	P	2	100%

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 23750 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 Hemagglutinin HA1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	I	322	Total	C	N	O	S	0	0	0
			2546	1611	444	476	15			
1	A	323	Total	C	N	O	S	0	0	0
			2553	1616	445	477	15			
1	C	322	Total	C	N	O	S	0	0	0
			2546	1611	444	476	15			
1	E	323	Total	C	N	O	S	0	0	0
			2553	1616	445	477	15			
1	G	322	Total	C	N	O	S	0	0	0
			2546	1611	444	476	15			
1	K	322	Total	C	N	O	S	0	0	0
			2546	1611	444	476	15			

There are 48 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	7	ALA	-	expression tag	UNP A0A6B7HPT9
I	8	ASP	-	expression tag	UNP A0A6B7HPT9
I	9	PRO	-	expression tag	UNP A0A6B7HPT9
I	10	GLY	-	expression tag	UNP A0A6B7HPT9
I	111	MET	LEU	conflict	UNP A0A6B7HPT9
I	122	GLN	LEU	conflict	UNP A0A6B7HPT9
I	199	ILE	THR	conflict	UNP A0A6B7HPT9
I	214	ALA	VAL	conflict	UNP A0A6B7HPT9
A	7	ALA	-	expression tag	UNP A0A6B7HPT9
A	8	ASP	-	expression tag	UNP A0A6B7HPT9
A	9	PRO	-	expression tag	UNP A0A6B7HPT9
A	10	GLY	-	expression tag	UNP A0A6B7HPT9
A	111	MET	LEU	conflict	UNP A0A6B7HPT9
A	122	GLN	LEU	conflict	UNP A0A6B7HPT9
A	199	ILE	THR	conflict	UNP A0A6B7HPT9
A	214	ALA	VAL	conflict	UNP A0A6B7HPT9
C	7	ALA	-	expression tag	UNP A0A6B7HPT9

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Chain	Residue	Modelled	Actual	Comment	Reference
C	8	ASP	-	expression tag	UNP A0A6B7HPT9
C	9	PRO	-	expression tag	UNP A0A6B7HPT9
C	10	GLY	-	expression tag	UNP A0A6B7HPT9
C	111	MET	LEU	conflict	UNP A0A6B7HPT9
C	122	GLN	LEU	conflict	UNP A0A6B7HPT9
C	199	ILE	THR	conflict	UNP A0A6B7HPT9
C	214	ALA	VAL	conflict	UNP A0A6B7HPT9
E	7	ALA	-	expression tag	UNP A0A6B7HPT9
E	8	ASP	-	expression tag	UNP A0A6B7HPT9
E	9	PRO	-	expression tag	UNP A0A6B7HPT9
E	10	GLY	-	expression tag	UNP A0A6B7HPT9
E	111	MET	LEU	conflict	UNP A0A6B7HPT9
E	122	GLN	LEU	conflict	UNP A0A6B7HPT9
E	199	ILE	THR	conflict	UNP A0A6B7HPT9
E	214	ALA	VAL	conflict	UNP A0A6B7HPT9
G	7	ALA	-	expression tag	UNP A0A6B7HPT9
G	8	ASP	-	expression tag	UNP A0A6B7HPT9
G	9	PRO	-	expression tag	UNP A0A6B7HPT9
G	10	GLY	-	expression tag	UNP A0A6B7HPT9
G	111	MET	LEU	conflict	UNP A0A6B7HPT9
G	122	GLN	LEU	conflict	UNP A0A6B7HPT9
G	199	ILE	THR	conflict	UNP A0A6B7HPT9
G	214	ALA	VAL	conflict	UNP A0A6B7HPT9
K	7	ALA	-	expression tag	UNP A0A6B7HPT9
K	8	ASP	-	expression tag	UNP A0A6B7HPT9
K	9	PRO	-	expression tag	UNP A0A6B7HPT9
K	10	GLY	-	expression tag	UNP A0A6B7HPT9
K	111	MET	LEU	conflict	UNP A0A6B7HPT9
K	122	GLN	LEU	conflict	UNP A0A6B7HPT9
K	199	ILE	THR	conflict	UNP A0A6B7HPT9
K	214	ALA	VAL	conflict	UNP A0A6B7HPT9

- Molecule 2 is a protein called Hemagglutinin HA2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	J	167	Total	C	N	O	S	0	0	0
			1367	847	238	274	8			
2	B	170	Total	C	N	O	S	0	0	0
			1385	859	241	277	8			
2	D	166	Total	C	N	O	S	0	0	0
			1363	845	237	273	8			
2	F	170	Total	C	N	O	S	0	0	0
			1383	858	241	276	8			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	H	167	Total	C	N	O	S	0	0	0
			1367	847	238	274	8			
2	L	167	Total	C	N	O	S	0	0	0
			1367	847	238	274	8			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
J	175	SER	-	expression tag	UNP A0A6B7HQ27
J	176	GLY	-	expression tag	UNP A0A6B7HQ27
B	175	SER	-	expression tag	UNP A0A6B7HQ27
B	176	GLY	-	expression tag	UNP A0A6B7HQ27
D	175	SER	-	expression tag	UNP A0A6B7HQ27
D	176	GLY	-	expression tag	UNP A0A6B7HQ27
F	175	SER	-	expression tag	UNP A0A6B7HQ27
F	176	GLY	-	expression tag	UNP A0A6B7HQ27
H	175	SER	-	expression tag	UNP A0A6B7HQ27
H	176	GLY	-	expression tag	UNP A0A6B7HQ27
L	175	SER	-	expression tag	UNP A0A6B7HQ27
L	176	GLY	-	expression tag	UNP A0A6B7HQ27

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

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
3	M	3	Total	C	N	O	0	0	0
			39	22	2	15			
3	O	3	Total	C	N	O	0	0	0
			39	22	2	15			
3	Q	3	Total	C	N	O	0	0	0
			39	22	2	15			

- 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	N	2	Total 28	C 16	N 2	O 10	0	0	0
4	P	2	Total 28	C 16	N 2	O 10	0	0	0

- Molecule 5 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$) (labeled as "Ligand of Interest" by depositor).

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

- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	I	5	Total 5	O 5	0	0
6	A	6	Total 6	O 6	0	0
6	B	1	Total 1	O 1	0	0
6	C	7	Total 7	O 7	0	0
6	D	1	Total 1	O 1	0	0
6	E	7	Total 7	O 7	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	F	2	Total 2	O 2	0	0
6	G	4	Total 4	O 4	0	0
6	H	1	Total 1	O 1	0	0
6	K	5	Total 5	O 5	0	0
6	L	2	Total 2	O 2	0	0

3 Residue-property plots ⓘ

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: Hemagglutinin HA1

Chain I:

- Molecule 1: Hemagglutinin HA1

Chain A:

- Molecule 1: Hemagglutinin HA1

Chain C:

- Molecule 1: Hemagglutinin HA1

Chain E:

• Molecule 1: Hemagglutinin HA1

Chain G:

• Molecule 1: Hemagglutinin HA1

Chain K:

• Molecule 2: Hemagglutinin HA2

Chain J:

• Molecule 2: Hemagglutinin HA2

Chain B:

GLY LEU PHE GLY A5 I6 F9 Y22 G23 Y24 H25 H26 S27 Q30 D37 K38 E39 S40 T41 Q42 K43 A44 I45 N50 I55 I56 D57 Q62 F63 E64 A65 E69 L73 E74 R75 E78 N79 K83 L89 L99 L108 D109 F110 H111 D112 S113

N117 L124 Q125 L126 N129 A130 K131 E132 L133 C137 F138 E139 F140 K143 C144 D145 E150 S151 N154 Y157 D158 Y159 A166 R167 L168 K169 R170 E171 E172 I173 S174 SER GLY

• Molecule 2: Hemagglutinin HA2

Chain D:

3%
72% 22% • 6%

GLY LEU PHE GLY ALA ILE ALA GLY F9 I10 D19 G20 W21 Y22 D37 T41 Q42 K43 A44 I45 V48 T49 N50 K51 V52 N53 S54 K58 E69 D86 L89 A96 V100 E103 Y119 D120 R123 L124 Q125 D128 E132 L133 E139 F140

Y141 H142 K143 C144 C148 M149 E150 R153 N154 G155 A166 R167 L168 E172 I173 S174 SER GLY

• Molecule 2: Hemagglutinin HA2

Chain F:

5%
66% 28% • •

GLY LEU PHE G4 A5 I6 F9 I10 G13 W14 Q15 D19 Y22 G23 Y24 D37 K38 T41 Q42 K43 A44 I45 D46 G47 V48 V52 N53 S54 I55 I56 D57 K58 M59 N60 T61 Q62 L73 K83 W92 N95 A96 E97 L101 M102 E105 R106

D112 K116 N117 L118 Y119 D120 K121 V122 L126 A130 K131 G134 N135 F140 Y141 H142 K143 C144 D145 C148 M149 E150 S151 V152 R153 Y157 D158 Q161 E165 A166 K169 R170 I173 SER SER GLY

• Molecule 2: Hemagglutinin HA2

Chain H:

5%
76% 17% • 5%

GLY LEU PHE GLY ALA ILE ALA G8 F9 Y24 E29 Y34 G47 N50 K51 V52 I55 I56 D57 K58 A65 V66 G67 R68 D86 L89 N95 L99 R106 H111 K121 V122 R123 L124 Q125 L126 R127 E132 L133 G134 C137 F138 E139

C144 D145 N146 E147 C148 M149 N154 E171 E172 I173 S174 SER GLY

• Molecule 2: Hemagglutinin HA2

Chain L:

8%
72% 20% • 5%

GLY LEU PHE GLY ALA ILE ALA G8 F9 I10 M17 G20 W21 Y22 G23 Y24 H25 N28 G31 T41 V48 K51 V52 K58 M59 R68 N72 L73 E85 D86 D90 V91 W92 K116 N117 L118 R123 L124 D128 N129 A130 K131 E132 L133

E139 F140 Y141 H142 K143 C144 D145 N146 E147 C148 M149 E150 R153 Y157 D158 Y159 P160 Q161 Y162 L168 K169 R170 I173 S174 SER GLY

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

Chain M:

67%　　　　　　　33%

NAG1 NAG2 BMA3

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

Chain O:

67%　　　　　　　33%

NAG1 NAG2 BMA3

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

Chain Q:

67%　　　　　　　33%

NAG1 NAG2 BMA3

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

Chain N:

100%

NAG1 NAG2

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

Chain P:

100%

NAG1 NAG2

4　Data and refinement statistics　ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	130.37Å　　72.06Å　　206.86Å 90.00°　　91.66°　　90.00°	Depositor
Resolution (Å)	33.74　–　2.69 33.74　–　2.69	Depositor EDS
% Data completeness (in resolution range)	96.2 (33.74-2.69) 96.3 (33.74-2.69)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.29 (at 2.69Å)	Xtriage
Refinement program	PHENIX (1.20.1_4487: ???)	Depositor
R, R_{free}	0.210　,　0.265 0.209　,　0.265	Depositor DCC
R_{free} test set	5430 reflections (5.07%)	wwPDB-VP
Wilson B-factor (Å²)	65.5	Xtriage
Anisotropy	0.251	Xtriage
Bulk solvent k_{sol}(e/Å³), B_{sol}(Å²)	0.29 , 35.4	EDS
L-test for twinning [2]	$< |L| > = 0.47, < L^2 > = 0.30$	Xtriage
Estimated twinning fraction	0.027 for h,-k,-l	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	23750	wwPDB-VP
Average B, all atoms (Å²)	83.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.19% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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 (i)

5.1 Standard geometry (i)

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

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	0.29	0/2618	0.50	0/3559
1	C	0.28	0/2610	0.51	0/3548
1	E	0.27	0/2618	0.50	0/3559
1	G	0.27	0/2610	0.50	0/3548
1	I	0.27	0/2610	0.50	0/3548
1	K	0.26	0/2610	0.49	0/3548
2	B	0.28	0/1411	0.49	0/1897
2	D	0.27	0/1389	0.50	0/1867
2	F	0.27	0/1409	0.49	0/1894
2	H	0.31	0/1393	0.52	0/1872
2	J	0.27	0/1393	0.49	0/1872
2	L	0.27	0/1393	0.49	0/1872
All	All	0.27	0/24064	0.50	0/32584

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	A	2553	0	2503	52	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	2546	0	2497	26	0
1	E	2553	0	2503	44	0
1	G	2546	0	2496	35	0
1	I	2546	0	2496	30	0
1	K	2546	0	2498	33	0
2	B	1385	0	1290	41	0
2	D	1363	0	1268	26	0
2	F	1383	0	1288	45	0
2	H	1367	0	1272	24	0
2	J	1367	0	1272	24	0
2	L	1367	0	1272	35	0
3	M	39	0	34	0	0
3	O	39	0	34	0	0
3	Q	39	0	34	2	0
4	N	28	0	25	0	0
4	P	28	0	25	0	0
5	E	14	0	13	0	0
6	A	6	0	0	0	0
6	B	1	0	0	0	0
6	C	7	0	0	0	0
6	D	1	0	0	0	0
6	E	7	0	0	0	0
6	F	2	0	0	0	0
6	G	4	0	0	0	0
6	H	1	0	0	0	0
6	I	5	0	0	0	0
6	K	5	0	0	0	0
6	L	2	0	0	0	0
All	All	23750	0	22820	364	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 (364) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:150:GLU:OE1	2:D:153:ARG:NH1	2.13	0.80
1:A:114:ARG:HH21	1:A:263:GLY:HA3	1.46	0.79
1:I:123:ILE:HD12	1:I:124:ILE:HG13	1.68	0.75
2:B:30:GLN:NE2	2:B:145:ASP:OD1	2.20	0.74
2:F:15:GLN:N	2:F:15:GLN:OE1	2.21	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:151:SER:HB3	2:B:157:TYR:HA	1.69	0.73
2:F:83:LYS:NZ	2:H:65:ALA:O	2.21	0.71
2:B:75:ARG:NH1	2:B:78:GLU:OE1	2.24	0.71
2:B:131:LYS:HB2	2:B:139:GLU:HB3	1.73	0.71
1:I:216:LYS:O	1:I:220:ARG:NH2	2.24	0.70
1:C:87:ILE:HD12	1:C:113:SER:HA	1.72	0.70
2:F:97:GLU:HB3	2:H:58:LYS:HE3	1.73	0.69
2:D:22:TYR:H	2:D:41:THR:HG22	1.56	0.69
2:D:42:GLN:HA	2:D:45:ILE:HG13	1.74	0.68
2:H:134:GLY:HA2	2:L:124:LEU:HD21	1.75	0.68
1:K:301:THR:OG1	1:K:305:CYS:SG	2.50	0.68
2:F:134:GLY:HA2	2:H:124:LEU:HD21	1.77	0.67
1:G:238:LYS:H	1:G:238:LYS:HD2	1.60	0.67
1:A:106:GLU:N	1:A:106:GLU:OE2	2.28	0.66
1:K:280:LYS:NZ	1:K:289:ASN:OD1	2.29	0.65
1:E:131:GLU:HG3	1:E:133(A):LEU:HG	1.77	0.65
2:B:166:ALA:O	2:B:170:ARG:N	2.30	0.65
2:B:167:ARG:HG2	2:B:170:ARG:HH22	1.62	0.65
1:A:313:LYS:HG3	1:A:315:VAL:HG23	1.79	0.64
2:B:69:GLU:OE2	2:B:69:GLU:N	2.29	0.64
2:B:132:GLU:HG2	2:B:138:PHE:HE2	1.62	0.63
1:A:134:GLY:HA3	1:A:153:TRP:HB3	1.79	0.63
1:K:11:ASP:OD2	2:L:28:ASN:ND2	2.29	0.63
2:J:102:MET:HE3	2:J:106:ARG:HH22	1.63	0.62
1:E:185:SER:HB2	1:E:217:ILE:HG12	1.80	0.62
1:A:14:CYS:HB2	2:B:25:HIS:HB3	1.80	0.62
1:G:134:GLY:HA3	1:G:153:TRP:HB3	1.82	0.62
1:I:131:GLU:HG2	1:I:133(A):LEU:HG	1.82	0.62
1:A:35:THR:HG22	1:A:322:ASN:HB3	1.82	0.61
1:E:26:VAL:HG21	1:E:317:ALA:HB2	1.82	0.61
2:B:166:ALA:HB3	2:B:170:ARG:HH21	1.66	0.61
1:E:283:THR:OG1	1:E:286:GLY:O	2.12	0.61
1:I:20:ASN:OD1	1:I:322:ASN:ND2	2.34	0.61
1:A:79:PHE:O	1:A:81:ARG:N	2.26	0.61
1:G:13:ILE:HG22	2:H:138:PHE:HB2	1.83	0.61
1:E:134:GLY:HA3	1:E:153:TRP:HB3	1.85	0.59
2:H:146:ASN:HA	2:H:149:MET:HB2	1.84	0.59
1:K:14:CYS:HB2	2:L:25:HIS:HB3	1.84	0.59
1:I:39:ALA:HA	1:I:318:THR:HG22	1.85	0.59
3:Q:1:NAG:H62	3:Q:2:NAG:O5	2.03	0.59
2:L:22:TYR:H	2:L:41:THR:HG22	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:17:TYR:HB2	1:E:320:LEU:HD22	1.84	0.58
1:A:78:GLU:HG2	1:A:79:PHE:H	1.67	0.58
2:J:41:THR:O	2:J:45:ILE:HG12	2.03	0.58
1:G:81:ARG:NH1	1:G:118:PHE:O	2.37	0.58
1:G:29:ILE:HG12	2:L:51:LYS:HD2	1.86	0.57
1:A:191:GLN:NE2	1:A:250:ASN:OD1	2.36	0.57
1:G:174:GLU:OE1	1:G:174:GLU:N	2.37	0.57
1:I:26:VAL:HG21	1:I:317:ALA:HB2	1.86	0.57
1:A:26:VAL:HG21	1:A:317:ALA:HB2	1.86	0.57
2:D:51:LYS:NZ	2:D:103:GLU:OE1	2.36	0.57
2:H:51:LYS:O	2:H:55:ILE:HG13	2.04	0.57
1:A:312:ASN:OD1	1:A:312:ASN:N	2.37	0.57
1:C:26:VAL:HG21	1:C:317:ALA:HB2	1.85	0.57
2:F:145:ASP:N	2:F:148:CYS:SG	2.78	0.57
1:K:87:ILE:HG12	1:K:113:SER:HA	1.87	0.57
1:A:87:ILE:HB	1:A:267:ILE:HG12	1.87	0.57
1:C:131:GLU:HG2	1:C:133(A):LEU:HG	1.87	0.56
1:G:123:ILE:HG22	1:G:168:TYR:CZ	2.40	0.56
1:K:206:THR:HG23	1:K:209:LEU:HB3	1.88	0.56
1:I:14:CYS:HB2	2:J:25:HIS:HB3	1.88	0.55
2:F:42:GLN:O	2:F:45:ILE:N	2.39	0.55
2:L:129:ASN:ND2	2:L:157:TYR:OH	2.30	0.55
1:C:134:GLY:HA3	1:C:153:TRP:HB3	1.86	0.55
1:A:216:LYS:O	1:A:220:ARG:NH2	2.40	0.55
1:A:265:SER:OG	1:A:266:THR:N	2.40	0.55
1:C:57:LYS:HG2	1:C:58:PRO:HD2	1.88	0.55
2:L:48:VAL:O	2:L:52:VAL:HG23	2.05	0.55
2:L:145:ASP:N	2:L:145:ASP:OD1	2.40	0.55
1:A:116:ASN:HD22	1:A:262:LYS:HG3	1.70	0.55
1:K:220:ARG:O	1:K:227:ARG:NH1	2.39	0.55
2:J:145:ASP:OD1	2:J:146:ASN:N	2.39	0.55
1:E:283:THR:HG22	1:E:301:THR:HG22	1.88	0.55
2:F:22:TYR:H	2:F:41:THR:HG22	1.72	0.55
1:A:81:ARG:HG3	1:A:82:VAL:HG13	1.87	0.55
1:G:114:ARG:NH1	1:G:263:GLY:HA3	2.22	0.55
1:A:156:LYS:HD2	1:A:159:ASP:HA	1.89	0.55
1:K:87:ILE:HB	1:K:267:ILE:HG12	1.89	0.55
1:K:109:LYS:HB3	1:K:267:ILE:HD11	1.88	0.54
1:E:63:ASP:N	1:E:63:ASP:OD1	2.41	0.54
2:F:5:ALA:HB1	2:F:10:ILE:HD12	1.90	0.54
1:K:152:VAL:HG22	1:K:154:LEU:HD12	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:52:VAL:O	2:F:56:ILE:HG13	2.08	0.54
2:B:132:GLU:HG2	2:B:138:PHE:CE2	2.43	0.54
1:E:79:PHE:HZ	1:E:119:GLU:HA	1.71	0.54
1:G:90:ARG:O	1:G:269:LYS:NZ	2.40	0.54
1:K:307:LYS:HG2	2:L:92:TRP:NE1	2.22	0.54
1:I:185:SER:HB2	1:I:217:ILE:HG12	1.90	0.54
1:A:17:TYR:HE1	2:B:6:ILE:HA	1.73	0.54
1:A:98:TYR:CD1	1:A:230:MET:HG3	2.42	0.53
1:C:22:SER:OG	1:C:24:GLU:OE1	2.24	0.53
2:L:129:ASN:HB3	2:L:162:TYR:CE2	2.43	0.53
2:B:55:ILE:HG12	2:B:99:LEU:HD21	1.91	0.53
2:F:165:GLU:O	2:F:169:LYS:HG2	2.09	0.53
2:J:145:ASP:H	2:J:148:CYS:HB3	1.73	0.53
2:H:55:ILE:HG21	2:H:99:LEU:HD21	1.89	0.53
2:L:28:ASN:OD1	2:L:31:GLY:N	2.39	0.53
1:E:266:THR:HG22	1:E:302:ILE:HD11	1.90	0.53
2:H:52:VAL:O	2:H:56:ILE:HG13	2.09	0.53
2:J:37:ASP:OD1	2:J:38:LYS:N	2.42	0.53
2:D:123:ARG:NH2	2:D:132:GLU:OE1	2.43	0.52
1:K:202:ILE:HD11	1:K:251:PHE:HA	1.92	0.52
2:B:22:TYR:HH	2:B:111:HIS:HD1	1.58	0.52
2:J:133:LEU:HD21	2:J:139:GLU:HB2	1.92	0.52
2:H:132:GLU:HG2	2:H:138:PHE:CE1	2.45	0.52
1:I:265:SER:OG	1:I:266:THR:N	2.42	0.52
2:B:150:GLU:OE2	2:B:154:ASN:HB2	2.10	0.52
2:B:37:ASP:O	2:B:41:THR:HG23	2.10	0.52
2:B:41:THR:O	2:B:44:ALA:N	2.43	0.51
2:B:167:ARG:HG2	2:B:170:ARG:NH2	2.25	0.51
1:A:114:ARG:NH2	1:A:263:GLY:HA3	2.21	0.51
2:F:6:ILE:HG12	2:F:112:ASP:OD2	2.10	0.51
1:G:220:ARG:O	1:G:227:ARG:NH1	2.40	0.51
2:L:149:MET:O	2:L:153:ARG:N	2.33	0.51
1:I:284:PRO:HD3	1:I:300:LEU:O	2.11	0.51
1:E:73:ASN:ND2	1:E:96:ASP:O	2.42	0.51
1:E:296:ASN:ND2	1:E:311:SER:O	2.44	0.51
1:K:26:VAL:HG21	1:K:317:ALA:HB2	1.92	0.51
1:A:321:ARG:HE	2:B:108:LEU:HD13	1.74	0.51
1:I:134:GLY:HA3	1:I:153:TRP:HB3	1.93	0.51
1:I:137:ALA:O	1:I:140:PRO:HD3	2.11	0.51
2:J:9:PHE:HB2	2:J:10:ILE:HD12	1.93	0.51
2:B:167:ARG:HG2	2:B:170:ARG:HH12	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:20:ASN:OD1	1:A:322:ASN:ND2	2.43	0.50
1:C:216:LYS:O	1:C:220:ARG:NH2	2.43	0.50
1:C:266:THR:OG1	2:D:69:GLU:OE1	2.16	0.50
2:L:9:PHE:CD2	2:L:10:ILE:HG13	2.47	0.50
1:A:296:ASN:ND2	1:A:311:SER:O	2.41	0.50
2:F:83:LYS:NZ	2:H:66:VAL:HA	2.26	0.50
2:J:145:ASP:OD1	2:J:147:GLU:N	2.40	0.50
1:A:121:ILE:HD12	1:A:122:GLN:H	1.76	0.50
2:F:38:LYS:HG2	2:F:38:LYS:O	2.10	0.50
2:F:106:ARG:HH11	2:H:106:ARG:NH1	2.09	0.50
2:L:145:ASP:O	2:L:147:GLU:N	2.44	0.50
1:G:78:GLU:HA	1:G:149:ARG:HH22	1.76	0.50
2:L:129:ASN:HD21	2:L:159:TYR:HD1	1.59	0.50
1:E:307:LYS:HD2	2:F:92:TRP:NE1	2.27	0.49
1:A:165:LYS:HG2	1:A:246:GLU:HG3	1.93	0.49
2:D:133:LEU:HD21	2:D:139:GLU:HB2	1.94	0.49
2:F:150:GLU:OE1	2:F:153:ARG:NH1	2.45	0.49
1:G:293:PRO:HD3	2:H:56:ILE:HG23	1.93	0.49
1:A:115:ILE:HG21	1:A:118:PHE:HB2	1.94	0.49
2:F:60:ASN:ND2	2:L:90:ASP:OD1	2.43	0.49
1:C:11:ASP:OD2	2:D:144:CYS:N	2.36	0.49
1:G:320:LEU:HD23	2:H:111:HIS:HB3	1.95	0.49
1:E:81:ARG:HB3	1:E:83:PRO:HD3	1.95	0.49
2:F:126:LEU:HD23	2:F:157:TYR:CE2	2.48	0.48
1:E:170:ASN:HB2	1:E:237:LEU:HD23	1.94	0.48
2:F:116:LYS:HD2	2:F:116:LYS:O	2.13	0.48
1:I:59:LEU:HD13	1:I:82:VAL:HG21	1.95	0.48
1:A:26:VAL:HG12	1:A:315:VAL:HG12	1.96	0.48
1:K:29:ILE:HG23	1:K:30:MET:HG3	1.94	0.48
1:A:81:ARG:HG3	1:A:82:VAL:H	1.77	0.48
1:A:122:GLN:HB2	1:A:256:TYR:CE2	2.49	0.48
1:C:265:SER:OG	1:C:266:THR:N	2.47	0.48
2:D:120:ASP:O	2:D:124:LEU:HG	2.13	0.48
1:K:10:GLY:N	2:L:139:GLU:OE2	2.47	0.48
2:B:113:SER:O	2:B:117:ASN:ND2	2.47	0.48
1:K:187:ASN:OD1	1:K:187:ASN:N	2.47	0.48
1:K:51:LEU:HD21	1:K:88:VAL:HG11	1.95	0.48
2:J:160:PRO:HA	2:J:163:SER:HB2	1.95	0.47
1:C:123:ILE:HG13	1:C:124:ILE:HG13	1.94	0.47
1:E:70:LEU:HD11	1:E:112:LEU:HD11	1.96	0.47
1:C:90:ARG:HD2	1:C:90:ARG:HA	1.59	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:15:ILE:HG13	2:F:119:TYR:HA	1.97	0.47
1:E:30:MET:HG2	2:H:47:GLY:O	2.13	0.47
1:E:42:ILE:HA	1:E:292:MET:SD	2.54	0.47
1:E:216:LYS:O	1:E:220:ARG:NH2	2.46	0.47
1:C:120:LYS:HB2	1:C:258:TYR:CE1	2.49	0.47
1:E:43:LEU:HB2	1:E:314:LEU:HD12	1.96	0.47
2:B:79:ASN:O	2:B:83:LYS:HG3	2.15	0.47
2:B:62:GLN:NE2	2:D:86:ASP:HB3	2.29	0.47
1:G:45:LYS:HE2	1:G:313:LYS:HE3	1.96	0.47
1:C:174:GLU:OE1	1:C:259:LYS:HE3	2.14	0.47
1:E:301:THR:HB	1:E:305:CYS:SG	2.55	0.47
2:F:19:ASP:OD1	2:F:19:ASP:N	2.42	0.47
2:F:158:ASP:OD2	2:F:161:GLN:HG3	2.15	0.47
1:E:37:THR:HG1	1:E:38:HIS:CE1	2.25	0.47
2:F:62:GLN:NE2	2:L:86:ASP:HB3	2.29	0.47
2:F:131:LYS:NZ	2:H:127:ARG:HH12	2.12	0.47
1:C:110:HIS:O	1:C:113:SER:OG	2.28	0.46
2:B:133:LEU:HD21	2:B:139:GLU:HB2	1.97	0.46
1:G:183:HIS:HB2	1:G:230:MET:HE2	1.97	0.46
1:I:16:GLY:HA2	2:J:10:ILE:HG21	1.96	0.46
1:E:307:LYS:HD2	2:F:92:TRP:CE2	2.51	0.46
2:F:106:ARG:HE	2:F:106:ARG:HB3	1.59	0.46
2:H:121:LYS:HE2	2:H:122:VAL:CG1	2.45	0.46
1:E:122:GLN:NE2	1:E:255:GLU:OE2	2.48	0.46
1:G:262:LYS:HA	1:G:262:LYS:HD3	1.74	0.46
2:L:68:ARG:NH2	2:L:85:GLU:OE2	2.48	0.46
1:A:63:ASP:OD1	1:A:63:ASP:N	2.47	0.46
1:C:41:ASP:OD1	1:C:313:LYS:HD3	2.16	0.46
1:K:189:GLU:OE2	1:K:189:GLU:N	2.49	0.46
2:L:17:MET:HG3	2:L:17:MET:O	2.15	0.46
2:D:37:ASP:O	2:D:41:THR:HG23	2.16	0.46
1:G:44:GLU:OE2	1:G:290:SER:HB2	2.16	0.46
2:H:133:LEU:HD12	2:H:137:CYS:HB3	1.98	0.46
1:K:313:LYS:O	1:K:314:LEU:HD23	2.16	0.46
2:L:72:ASN:OD1	2:L:72:ASN:N	2.48	0.46
2:B:39:GLU:O	2:B:43:LYS:HG2	2.16	0.45
2:F:5:ALA:HA	2:F:9:PHE:HB3	1.99	0.45
1:I:70:LEU:HD11	1:I:112:LEU:HD11	1.98	0.45
2:J:53:ASN:HA	2:J:56:ILE:HD12	1.97	0.45
1:C:116:ASN:HD22	1:C:262:LYS:HE2	1.81	0.45
1:E:164:ILE:O	1:E:246:GLU:HA	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:44:ALA:O	2:F:48:VAL:HG22	2.16	0.45
1:K:280:LYS:H	1:K:280:LYS:HD2	1.81	0.45
1:A:14:CYS:HA	2:B:137:CYS:HA	1.97	0.45
1:G:26:VAL:HG11	1:G:317:ALA:HB2	1.98	0.45
2:F:73:LEU:HD23	2:F:73:LEU:HA	1.85	0.45
1:K:242:ALA:HB3	3:Q:1:NAG:H82	1.99	0.45
2:D:49:THR:HA	2:D:52:VAL:HG12	1.99	0.45
1:E:78:GLU:OE1	1:E:78:GLU:N	2.48	0.45
1:E:87:ILE:HB	1:E:267:ILE:HG12	1.99	0.45
1:E:295:HIS:HB3	1:E:306:PRO:HG2	1.99	0.45
1:K:265:SER:OG	1:K:266:THR:N	2.49	0.45
1:G:81:ARG:NE	1:G:119:GLU:HG3	2.31	0.45
1:K:320:LEU:HD11	2:L:21:TRP:HB3	1.99	0.45
1:E:29:ILE:HD12	2:F:101:LEU:HD23	1.99	0.45
1:G:73:ASN:OD1	1:G:75:MET:N	2.44	0.45
1:G:170:ASN:OD1	1:G:172:ASN:ND2	2.50	0.45
1:K:222:GLN:HG3	1:K:227:ARG:HG3	1.98	0.45
1:E:255:GLU:HG2	1:E:256:TYR:CD2	2.52	0.45
2:L:141:TYR:HB3	2:L:169:LYS:HB3	1.98	0.45
1:I:164:ILE:O	1:I:246:GLU:HA	2.16	0.45
2:J:126:LEU:HD11	2:J:130:ALA:H	1.82	0.45
1:E:82:VAL:O	1:E:83(A):GLU:N	2.50	0.45
2:F:148:CYS:O	2:F:152:VAL:HG23	2.18	0.44
1:I:24:GLU:OE2	1:I:39:ALA:HB3	2.17	0.44
1:A:53:ASP:OD2	1:A:57:LYS:HA	2.18	0.44
1:A:83(A):GLU:HB2	1:A:116:ASN:O	2.17	0.44
1:C:314:LEU:HD12	2:D:100:VAL:HG21	1.98	0.44
1:A:51:LEU:HD13	1:A:272:VAL:CG2	2.47	0.44
2:J:131:LYS:HG2	2:J:141:TYR:HD2	1.82	0.44
1:C:156:LYS:NZ	1:C:159:ASP:OD1	2.36	0.44
1:G:105:TYR:CZ	1:G:109:LYS:HD2	2.52	0.44
1:C:310:LYS:HB2	2:D:89:LEU:HD11	1.98	0.44
1:G:176:LEU:HD12	1:G:176:LEU:HA	1.85	0.44
1:G:313:LYS:HD3	1:G:313:LYS:HA	1.75	0.44
1:I:155:ILE:HD12	1:I:194:LEU:HD22	2.00	0.44
1:G:108:LEU:HD13	1:G:234:TRP:CD2	2.53	0.44
2:L:73:LEU:HD23	2:L:73:LEU:HA	1.84	0.44
1:I:38:HIS:HB2	1:I:318:THR:HG23	2.00	0.44
1:A:320:LEU:HD21	2:B:22:TYR:HE1	1.82	0.44
2:D:44:ALA:O	2:D:48:VAL:HG22	2.17	0.44
2:H:121:LYS:CE	2:H:122:VAL:HG12	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:144:CYS:SG	2:H:148:CYS:HB3	2.58	0.44
1:I:122:GLN:NE2	1:I:125:PRO:HB3	2.33	0.44
1:A:175:ASP:OD1	1:A:239:PRO:HD3	2.18	0.44
1:E:48:ASN:ND2	1:E:52:CYS:SG	2.86	0.44
1:E:182:ILE:HB	1:E:202:ILE:HD12	2.00	0.44
1:G:43:LEU:HD22	1:G:45:LYS:HG3	1.99	0.44
2:L:131:LYS:HD2	2:L:133:LEU:HD23	2.00	0.44
2:J:58:LYS:HD3	2:J:58:LYS:HA	1.69	0.43
2:B:109:ASP:HA	2:B:112:ASP:HB2	1.99	0.43
2:D:141:TYR:HB3	2:D:166:ALA:HA	2.00	0.43
1:A:49:GLY:O	1:A:50:LYS:HD3	2.17	0.43
1:C:164:ILE:O	1:C:246:GLU:HA	2.18	0.43
1:A:222:GLN:HG3	1:A:227:ARG:HG3	1.99	0.43
2:B:126:LEU:HD13	2:B:140:PHE:CE1	2.53	0.43
2:D:142:HIS:HD1	2:D:143:LYS:C	2.21	0.43
1:I:29:ILE:HG12	2:D:51:LYS:HG3	2.01	0.43
1:I:182:ILE:HB	1:I:202:ILE:HD12	2.00	0.43
2:J:126:LEU:HD11	2:J:130:ALA:HB3	2.01	0.43
1:A:131:GLU:OE2	1:A:133:SER:OG	2.37	0.43
1:A:303:GLY:HA2	2:B:63:PHE:CE2	2.54	0.43
2:L:149:MET:CE	2:L:149:MET:H	2.32	0.43
1:A:266:THR:HG22	2:B:65:ALA:HB1	2.00	0.43
2:D:149:MET:O	2:D:153:ARG:HG3	2.18	0.43
1:E:202:ILE:HD11	1:E:251:PHE:HA	2.00	0.43
2:F:24:TYR:OH	2:F:37:ASP:OD2	2.31	0.43
2:L:133:LEU:HD21	2:L:139:GLU:HB2	2.01	0.43
2:L:142:HIS:CG	2:L:162:TYR:CE1	3.06	0.43
1:I:177:LEU:HB3	1:I:258:TYR:HB2	2.00	0.43
2:J:126:LEU:HD11	2:J:130:ALA:N	2.33	0.43
2:F:102:MET:O	2:F:106:ARG:HG2	2.19	0.43
1:G:284:PRO:HG2	1:G:298:HIS:CE1	2.54	0.43
2:D:125:GLN:HE22	2:D:155:GLY:HA2	1.84	0.43
2:D:144:CYS:SG	2:D:148:CYS:HB3	2.59	0.43
1:A:105:TYR:CZ	1:A:109:LYS:HD2	2.54	0.42
1:A:191:GLN:HE22	1:A:250:ASN:CG	2.21	0.42
1:E:173:ARG:N	1:E:173:ARG:HD2	2.34	0.42
2:F:135:ASN:OD1	2:F:135:ASN:N	2.51	0.42
1:K:17:TYR:HB3	2:L:22:TYR:HE1	1.84	0.42
2:J:102:MET:O	2:J:106:ARG:HG3	2.18	0.42
1:E:15:ILE:HD11	2:F:122:VAL:HG21	2.01	0.42
1:G:284:PRO:HD3	1:G:300:LEU:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:164:GLU:O	2:J:168:LEU:HG	2.18	0.42
2:B:41:THR:OG1	2:B:42:GLN:N	2.53	0.42
2:L:159:TYR:HB3	2:L:160:PRO:HD3	2.00	0.42
2:J:102:MET:HB3	2:J:106:ARG:NH1	2.34	0.42
1:A:320:LEU:HD23	2:B:111:HIS:HB3	2.01	0.42
1:K:59:LEU:HD21	1:K:61:LEU:HD21	2.01	0.42
2:B:167:ARG:NH2	2:D:174:SER:HA	2.34	0.42
1:C:27:ASP:OD1	1:C:32:LYS:HA	2.19	0.42
1:I:26:VAL:HG11	1:I:317:ALA:HB2	2.00	0.42
1:A:78:GLU:HG2	1:A:79:PHE:N	2.34	0.42
1:E:13:ILE:HD12	1:E:13:ILE:HA	1.84	0.42
1:A:12:GLN:HA	2:B:138:PHE:O	2.19	0.42
1:C:51:LEU:HA	1:C:282:GLN:NE2	2.35	0.42
1:K:37:THR:OG1	1:K:38:HIS:N	2.53	0.42
2:L:58:LYS:HA	2:L:58:LYS:HD3	1.80	0.42
1:E:66:VAL:HG23	1:E:89:GLU:OE2	2.20	0.42
2:F:37:ASP:OD2	2:F:118:LEU:HD21	2.20	0.42
1:C:183:HIS:HB2	1:C:230:MET:HE2	2.02	0.42
1:A:81:ARG:HG3	1:A:82:VAL:N	2.35	0.42
2:D:168:LEU:O	2:D:172:GLU:HB2	2.19	0.42
1:G:104:ASP:HB2	1:G:234:TRP:HE1	1.84	0.42
2:B:73:LEU:HD23	2:B:73:LEU:HA	1.81	0.41
2:F:95:ASN:HD21	2:H:95:ASN:HD21	1.68	0.41
2:J:59:MET:HE2	2:J:60:ASN:O	2.20	0.41
1:E:135:VAL:CG1	1:E:145:PRO:HB2	2.50	0.41
2:F:143:LYS:HD3	2:F:143:LYS:HA	1.90	0.41
1:E:97:CYS:HB2	1:E:138:ALA:O	2.20	0.41
2:F:118:LEU:HA	2:F:118:LEU:HD23	1.70	0.41
1:I:108:LEU:HD13	1:I:234:TRP:CD2	2.55	0.41
1:G:70:LEU:HD12	1:G:70:LEU:HA	1.86	0.41
1:A:44:GLU:HG3	1:A:290:SER:CB	2.51	0.41
1:A:82:VAL:HG23	1:A:84:TRP:HE3	1.85	0.41
1:E:123:ILE:HG13	1:E:124:ILE:HG13	2.02	0.41
1:K:180:TRP:HZ3	1:K:235:THR:HG22	1.86	0.41
2:J:45:ILE:O	2:J:49:THR:OG1	2.24	0.41
1:G:54:LEU:HG	1:G:55:ASN:ND2	2.35	0.41
1:G:81:ARG:NH1	1:G:83:PRO:HA	2.34	0.41
2:L:116:LYS:NZ	2:L:123:ARG:HH22	2.19	0.41
2:F:166:ALA:O	2:F:170:ARG:HG3	2.21	0.41
1:G:66:VAL:HG21	1:G:109:LYS:HG2	2.01	0.41
1:E:30:MET:HB2	2:F:105:GLU:OE1	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:280:LYS:HE3	1:G:280:LYS:HB3	1.59	0.41
1:A:176:LEU:HD12	1:A:176:LEU:HA	1.90	0.41
2:B:41:THR:O	2:B:45:ILE:HD12	2.20	0.41
2:F:131:LYS:NZ	2:H:127:ARG:HH22	2.18	0.41
2:F:131:LYS:HB2	2:F:131:LYS:HE2	1.85	0.41
1:K:17:TYR:HB3	2:L:22:TYR:CE1	2.55	0.41
1:I:24:GLU:HG2	1:I:39:ALA:HB3	2.01	0.41
1:A:44:GLU:OE2	1:A:45:LYS:N	2.54	0.41
2:B:43:LYS:HG2	2:B:43:LYS:H	1.61	0.41
2:F:24:TYR:CE1	2:F:153:ARG:HB2	2.56	0.41
1:K:124:ILE:HD13	1:K:166:ILE:HD13	2.03	0.41
1:K:284:PRO:HD3	1:K:300:LEU:O	2.21	0.41
1:I:320:LEU:HD11	2:J:21:TRP:CG	2.56	0.40
1:I:175:ASP:OD1	1:I:239:PRO:HD3	2.20	0.40
2:J:62:GLN:NE2	2:B:89:LEU:HD22	2.35	0.40
2:D:96:ALA:O	2:D:100:VAL:HG23	2.20	0.40
1:E:49:GLY:O	1:E:50:LYS:HD3	2.22	0.40
1:I:26:VAL:HG12	1:I:315:VAL:HG12	2.03	0.40
1:K:59:LEU:HD23	1:K:87:ILE:HD12	2.02	0.40
2:B:170:ARG:HD2	2:B:171:GLU:OE2	2.22	0.40
2:D:54:SER:O	2:D:58:LYS:HB2	2.21	0.40
2:H:145:ASP:O	2:H:149:MET:N	2.46	0.40
2:L:149:MET:SD	2:L:150:GLU:N	2.95	0.40
1:I:38:HIS:H	1:I:319:GLY:HA3	1.86	0.40
1:A:13:ILE:HD11	2:B:24:TYR:HB3	2.03	0.40
1:C:15:ILE:HG13	2:D:119:TYR:HA	2.03	0.40
1:C:42:ILE:HA	1:C:292:MET:SD	2.62	0.40
2:F:54:SER:O	2:F:58:LYS:HB2	2.21	0.40
1:G:42:ILE:H	1:G:42:ILE:HG13	1.71	0.40
2:H:133:LEU:HD21	2:H:139:GLU:HB2	2.02	0.40
1:K:14:CYS:SG	2:L:25:HIS:ND1	2.78	0.40

There are no symmetry-related clashes.

5.3　Torsion angles　ⓘ

5.3.1　Protein backbone　ⓘ

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	321/325 (99%)	306 (95%)	13 (4%)	2 (1%)	22	45
1	C	320/325 (98%)	311 (97%)	9 (3%)	0	100	100
1	E	321/325 (99%)	305 (95%)	15 (5%)	1 (0%)	37	61
1	G	320/325 (98%)	313 (98%)	7 (2%)	0	100	100
1	I	320/325 (98%)	306 (96%)	14 (4%)	0	100	100
1	K	320/325 (98%)	310 (97%)	10 (3%)	0	100	100
2	B	168/176 (96%)	161 (96%)	6 (4%)	1 (1%)	22	45
2	D	164/176 (93%)	161 (98%)	3 (2%)	0	100	100
2	F	168/176 (96%)	160 (95%)	8 (5%)	0	100	100
2	H	165/176 (94%)	160 (97%)	5 (3%)	0	100	100
2	J	165/176 (94%)	156 (94%)	9 (6%)	0	100	100
2	L	165/176 (94%)	152 (92%)	12 (7%)	1 (1%)	22	45
All	All	2917/3006 (97%)	2801 (96%)	111 (4%)	5 (0%)	44	68

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	81	ARG
2	L	159	TYR
1	A	81	ARG
2	B	143	LYS
1	A	77	ASP

5.3.2 Protein sidechains ⓘ

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	286/287 (100%)	279 (98%)	7 (2%)	44	73
1	C	285/287 (99%)	279 (98%)	6 (2%)	48	76

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles		
1	E	286/287 (100%)	280 (98%)	6 (2%)		48	76
1	G	285/287 (99%)	281 (99%)	4 (1%)		62	84
1	I	285/287 (99%)	282 (99%)	3 (1%)		70	87
1	K	285/287 (99%)	276 (97%)	9 (3%)		34	63
2	B	147/150 (98%)	139 (95%)	8 (5%)		18	42
2	D	146/150 (97%)	144 (99%)	2 (1%)		62	84
2	F	146/150 (97%)	139 (95%)	7 (5%)		21	48
2	H	146/150 (97%)	137 (94%)	9 (6%)		15	36
2	J	146/150 (97%)	138 (94%)	8 (6%)		18	41
2	L	146/150 (97%)	142 (97%)	4 (3%)		40	69
All	All	2589/2622 (99%)	2516 (97%)	73 (3%)		38	68

All (73) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	I	96	ASP
1	I	173	ARG
1	I	313	LYS
2	J	15	GLN
2	J	105	GLU
2	J	112	ASP
2	J	116	LYS
2	J	123	ARG
2	J	127	ARG
2	J	144	CYS
2	J	162	TYR
1	A	17	TYR
1	A	44	GLU
1	A	75	MET
1	A	203	SER
1	A	264	ASP
1	A	277	CYS
1	A	320	LEU
2	B	27	SER
2	B	40	SER
2	B	43	LYS
2	B	50	ASN
2	B	57	ASP

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Mol	Chain	Res	Type
2	B	109	ASP
2	B	112	ASP
2	B	113	SER
1	C	18	HIS
1	C	64	CYS
1	C	120	LYS
1	C	179	LEU
1	C	212	ARG
1	C	264	ASP
2	D	19	ASP
2	D	144	CYS
1	E	38	HIS
1	E	75	MET
1	E	89	GLU
1	E	273	GLU
1	E	277	CYS
1	E	320	LEU
2	F	24	TYR
2	F	38	LYS
2	F	46	ASP
2	F	120	ASP
2	F	131	LYS
2	F	135	ASN
2	F	153	ARG
1	G	62	LYS
1	G	75	MET
1	G	172	ASN
1	G	238	LYS
2	H	24	TYR
2	H	50	ASN
2	H	68	ARG
2	H	86	ASP
2	H	89	LEU
2	H	121	LYS
2	H	127	ARG
2	H	149	MET
2	H	154	ASN
1	K	64	CYS
1	K	89	GLU
1	K	114	ARG
1	K	189	GLU
1	K	196	LYS

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Mol	Chain	Res	Type
1	K	264	ASP
1	K	269	LYS
1	K	280	LYS
1	K	320	LEU
2	L	59	MET
2	L	123	ARG
2	L	142	HIS
2	L	149	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
1	I	25	GLN
1	I	122	GLN
2	J	129	ASN
1	A	116	ASN
2	B	117	ASN
1	C	21	ASN
1	C	116	ASN
2	D	154	ASN
2	F	95	ASN
1	G	122	GLN
2	H	95	ASN
1	K	282	GLN
2	L	129	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

13 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	M	1	3,1	14,14,15	0.26	0	17,19,21	0.52	0
3	NAG	M	2	3	14,14,15	0.22	0	17,19,21	0.46	0
3	BMA	M	3	3	11,11,12	0.52	0	15,15,17	0.89	1 (6%)
4	NAG	N	1	4,1	14,14,15	0.26	0	17,19,21	0.53	0
4	NAG	N	2	4	14,14,15	0.27	0	17,19,21	0.41	0
3	NAG	O	1	3,1	14,14,15	0.33	0	17,19,21	0.48	0
3	NAG	O	2	3	14,14,15	0.21	0	17,19,21	0.45	0
3	BMA	O	3	3	11,11,12	0.60	0	15,15,17	0.89	1 (6%)
4	NAG	P	1	4,1	14,14,15	0.25	0	17,19,21	0.51	0
4	NAG	P	2	4	14,14,15	0.29	0	17,19,21	0.44	0
3	NAG	Q	1	3,1	14,14,15	1.04	1 (7%)	17,19,21	1.05	2 (11%)
3	NAG	Q	2	3	14,14,15	0.49	0	17,19,21	0.62	0
3	BMA	Q	3	3	11,11,12	0.58	0	15,15,17	0.89	1 (6%)

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	M	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	M	2	3	-	4/6/23/26	0/1/1/1
3	BMA	M	3	3	-	0/2/19/22	0/1/1/1
4	NAG	N	1	4,1	-	4/6/23/26	0/1/1/1
4	NAG	N	2	4	-	2/6/23/26	0/1/1/1
3	NAG	O	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	O	2	3	-	2/6/23/26	0/1/1/1
3	BMA	O	3	3	-	0/2/19/22	0/1/1/1
4	NAG	P	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	P	2	4	-	2/6/23/26	0/1/1/1
3	NAG	Q	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	Q	2	3	-	1/6/23/26	0/1/1/1
3	BMA	Q	3	3	-	2/2/19/22	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	Q	1	NAG	O5-C1	-3.69	1.37	1.43

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	M	3	BMA	C1-O5-C5	2.28	115.24	112.19
3	Q	1	NAG	C3-C4-C5	2.24	114.30	110.23
3	O	3	BMA	C1-O5-C5	2.23	115.18	112.19
3	Q	3	BMA	C1-O5-C5	2.18	115.11	112.19
3	Q	1	NAG	O4-C4-C3	-2.15	105.31	110.38

There are no chirality outliers.

All (21) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	M	2	NAG	O5-C5-C6-O6
3	M	2	NAG	C4-C5-C6-O6
4	N	1	NAG	O5-C5-C6-O6
3	M	2	NAG	C8-C7-N2-C2
3	M	2	NAG	O7-C7-N2-C2
3	O	2	NAG	C8-C7-N2-C2
3	O	2	NAG	O7-C7-N2-C2
4	N	1	NAG	C8-C7-N2-C2
4	N	1	NAG	O7-C7-N2-C2
4	P	1	NAG	C8-C7-N2-C2
4	P	1	NAG	O7-C7-N2-C2
4	P	2	NAG	O5-C5-C6-O6
4	P	2	NAG	C4-C5-C6-O6
3	O	1	NAG	C4-C5-C6-O6
3	O	1	NAG	O5-C5-C6-O6
4	N	1	NAG	C4-C5-C6-O6
3	Q	2	NAG	C3-C2-N2-C7
4	N	2	NAG	C4-C5-C6-O6
3	Q	3	BMA	O5-C5-C6-O6
4	N	2	NAG	O5-C5-C6-O6
3	Q	3	BMA	C4-C5-C6-O6

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	Q	2	NAG	1	0
3	Q	1	NAG	2	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 M

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain O

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain Q

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain N

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain P

5.6 Ligand geometry (i)

1 ligand is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
5	NAG	E	401	1	14,14,15	0.25	0	17,19,21	0.54	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral

centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	NAG	E	401	1	-	4/6/23/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	E	401	NAG	C8-C7-N2-C2
5	E	401	NAG	O7-C7-N2-C2
5	E	401	NAG	O5-C5-C6-O6
5	E	401	NAG	C4-C5-C6-O6

There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand NAG E 401

Bond lengths

Bond angles

Torsions

Rings

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, 95th 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	323/325 (99%)	-0.11	7 (2%)	62	61	48, 65, 101, 142	0
1	C	322/325 (99%)	-0.23	5 (1%)	70	70	45, 66, 101, 126	0
1	E	323/325 (99%)	-0.19	4 (1%)	76	76	43, 64, 98, 146	0
1	G	322/325 (99%)	0.07	8 (2%)	58	57	50, 77, 118, 148	0
1	I	322/325 (99%)	-0.18	3 (0%)	81	80	43, 65, 107, 140	0
1	K	322/325 (99%)	-0.08	5 (1%)	70	70	49, 70, 115, 163	0
2	B	170/176 (96%)	0.34	11 (6%)	26	24	49, 99, 153, 172	0
2	D	166/176 (94%)	0.22	6 (3%)	46	45	48, 100, 138, 171	0
2	F	170/176 (96%)	0.30	9 (5%)	33	31	59, 93, 135, 210	0
2	H	167/176 (94%)	0.28	8 (4%)	36	35	52, 114, 149, 181	0
2	J	167/176 (94%)	0.32	11 (6%)	26	24	54, 108, 167, 208	0
2	L	167/176 (94%)	0.53	14 (8%)	18	17	57, 122, 174, 193	0
All	All	2941/3006 (97%)	0.03	91 (3%)	51	49	43, 76, 140, 210	0

All (91) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	L	22	TYR	6.4
2	L	174	SER	4.9
2	B	168	LEU	4.4
2	L	24	TYR	4.3
2	F	140	PHE	4.2
2	L	140	PHE	4.2
2	F	141	TYR	4.2
1	C	320	LEU	4.1
2	D	20	GLY	3.9
2	J	173	ILE	3.9
2	L	168	LEU	3.6

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Full wwPDB X-ray Structure Validation Report

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Mol	Chain	Res	Type	RSRZ
1	G	151	VAL	3.6
2	F	130	ALA	3.6
1	C	321	ARG	3.6
2	J	149	MET	3.5
2	B	6	ILE	3.5
2	B	159	TYR	3.5
2	J	132	GLU	3.4
2	L	173	ILE	3.2
2	F	142	HIS	3.2
1	I	317	ALA	3.2
2	B	174	SER	3.2
2	F	173	ILE	3.1
1	G	253	ALA	3.0
2	J	124	LEU	2.9
1	A	9	PRO	2.9
2	H	9	PHE	2.9
2	F	6	ILE	2.9
2	B	129	ASN	2.9
1	A	165	LYS	2.8
2	L	128	ASP	2.8
2	J	9	PHE	2.8
2	F	4	GLY	2.8
2	L	143	LYS	2.8
2	J	161	GLN	2.7
2	D	10	ILE	2.7
2	F	13	GLY	2.7
2	L	20	GLY	2.7
2	H	171	GLU	2.7
1	G	10	GLY	2.7
2	H	24	TYR	2.6
2	D	174	SER	2.6
2	D	128	ASP	2.6
1	G	152	VAL	2.6
2	J	168	LEU	2.5
2	B	124	LEU	2.5
1	I	36	VAL	2.5
2	B	130	ALA	2.5
2	F	148	CYS	2.5
2	L	170	ARG	2.5
2	H	126	LEU	2.5
2	B	9	PHE	2.5
2	J	169	LYS	2.5

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Mol	Chain	Res	Type	RSRZ
2	H	29	GLU	2.4
1	G	154	LEU	2.4
1	G	319	GLY	2.4
1	G	19	ALA	2.4
2	B	173	ILE	2.4
2	H	34	TYR	2.4
1	K	320	LEU	2.4
1	C	324	PRO	2.4
1	A	18	HIS	2.4
1	K	18	HIS	2.3
1	A	14	CYS	2.3
1	K	36	VAL	2.3
1	C	160	ALA	2.3
2	D	22	TYR	2.2
1	A	41	ASP	2.2
1	K	242	ALA	2.2
2	L	162	TYR	2.2
2	H	173	ILE	2.2
1	E	317	ALA	2.2
1	A	97	CYS	2.2
1	E	80	ILE	2.2
2	L	118	LEU	2.2
1	C	18	HIS	2.1
2	B	144	CYS	2.1
2	H	134	GLY	2.1
2	L	21	TRP	2.1
1	G	324	PRO	2.1
2	J	165	GLU	2.1
2	D	19	ASP	2.1
1	E	9	PRO	2.1
2	L	159	TYR	2.1
2	J	10	ILE	2.0
2	B	5	ALA	2.0
2	J	172	GLU	2.0
1	A	277	CYS	2.0
1	I	318	THR	2.0
1	K	23	THR	2.0
1	E	104	ASP	2.0

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

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, 95th 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
3	BMA	O	3	11/12	0.41	0.13	108,122,131,132	0
3	BMA	Q	3	11/12	0.49	0.12	115,134,147,147	0
3	BMA	M	3	11/12	0.52	0.11	104,125,141,143	0
4	NAG	P	2	14/15	0.63	0.11	95,108,119,130	0
4	NAG	N	2	14/15	0.64	0.11	98,116,126,128	0
3	NAG	Q	2	14/15	0.70	0.13	97,119,127,129	0
3	NAG	O	2	14/15	0.72	0.12	95,114,123,136	0
4	NAG	N	1	14/15	0.80	0.10	59,87,119,121	0
3	NAG	M	2	14/15	0.82	0.09	102,121,134,147	0
4	NAG	P	1	14/15	0.83	0.07	70,89,99,104	0
3	NAG	Q	1	14/15	0.88	0.16	76,88,103,124	0
3	NAG	M	1	14/15	0.91	0.09	64,78,92,109	0
3	NAG	O	1	14/15	0.92	0.12	62,76,88,92	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 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 O:

$2mF_o$-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 Q:

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

Electron density around Chain N:

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

Electron density around Chain P:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (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, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	NAG	E	401	14/15	0.83	0.12	69,80,106,111	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around NAG E 401:

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

6.5   Other polymers ⓘ

There are no such residues in this entry.