WORLDWIDE PDB PROTEIN DATA BANK

Full wwPDB NMR Structure Validation Report ⓘ

Nov 17, 2024 – 02:45 PM EST

PDB ID	:	2LVZ
BMRB ID	:	18596
Title	:	Solution structure of a Eosinophil Cationic Protein-trisaccharide heparin mimetic complex
Authors	:	Garcia Mayoral, M.; Canales, A.; Diaz, D.; Lopez Prados, J.; Moussaoui, M.; de Paz, J.; Angulo, J.; Nieto, P.; Jimenez Barbero, J.; Boix, E.; Bruix, M.
Deposited on	:	2012-07-17

This is a Full wwPDB NMR 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/NMRValidationReportHelp
with specific help available everywhere you see the ⓘ 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 ⓘ) were used in the production of this report:

|		
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
wwPDB-RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
wwPDB-ShiftChecker	:	v1.2
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
SOLUTION NMR

The overall completeness of chemical shifts assignment is 77%.

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.
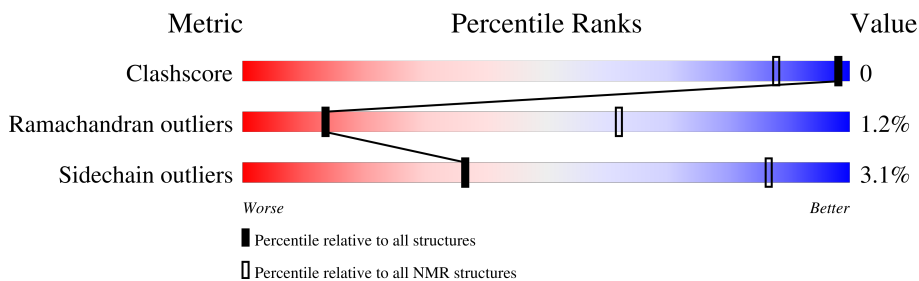
Metric	Whole archive (#Entries)	NMR archive (#Entries)
Clashscore	210492	14027
Ramachandran outliers	207382	12486
Sidechain outliers	206894	12463

The table below summarises the geometric issues observed across the polymeric chains and their fit to the experimental data. The red, orange, yellow and green segments indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria. A cyan segment indicates the fraction of residues that are not part of the well-defined cores, and 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%

Mol	Chain	Length	Quality of chain
1	A	133	77% 22% •
2	B	3	100%

2 Ensemble composition and analysis ⓘ

This entry contains 20 models. Model 13 is the overall representative, medoid model (most similar to other models). The authors have identified model 1 as representative, based on the following criterion: *lowest energy*.

The following residues are included in the computation of the global validation metrics.

Well-defined (core) protein residues			
Well-defined core	Residue range (total)	Backbone RMSD (Å)	Medoid model
1	A:2-A:133 (132)	0.75	13

Ill-defined regions of proteins are excluded from the global statistics.

Ligands and non-protein polymers are included in the analysis.

The models can be grouped into 4 clusters and 6 single-model clusters were found.

Cluster number	Models
1	11, 12, 13, 14, 17, 18
2	5, 6, 8
3	4, 15, 16
4	1, 2
Single-model clusters	3; 7; 9; 10; 19; 20

3 Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 2259 atoms, of which 1107 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Eosinophil cationic protein.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	133	2169	677	1075	224	184	9	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	97	ARG	THR	conflict	UNP P12724

- Molecule 2 is an oligosaccharide called 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyra nose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sul foamino)-alpha-D-glucopyranoside.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
2	B	3	90	21	32	2	30	5	0

4 Residue-property plots ⓘ

4.1 Average score per residue in the NMR ensemble

These plots are provided for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic is the same as shown in the summary in section 1 of this report. The second graphic shows the sequence where residues are colour-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. Stretches of 2 or more consecutive residues without any outliers are shown as green connectors. Residues which are classified as ill-defined in the NMR ensemble, are shown in cyan with an underline colour-coded according to the previous scheme. Residues which were present in the experimental sample, but not modelled in the final structure are shown in grey.

- Molecule 1: Eosinophil cationic protein

- Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e
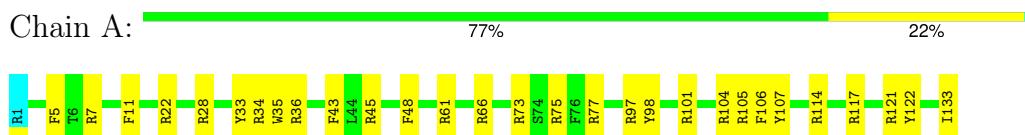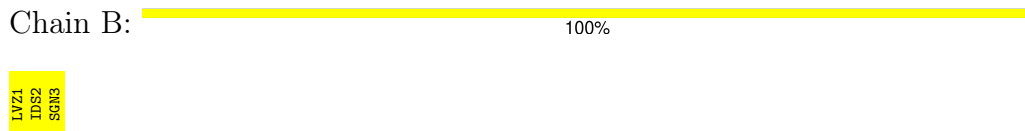

4.2 Scores per residue for each member of the ensemble
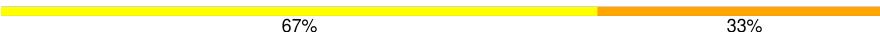
Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

- Molecule 1: Eosinophil cationic protein

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i
dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid
e

Chain B: 67% 33%

LVZ1 IDS2 SGN3

4.2.2 Score per residue for model 2

• Molecule 1: Eosinophil cationic protein

Chain A: 74% 23%

R1 R7 F11 P20 P21 R22 R28 Y33 R34 R45 F48 V54 C55 R61 R66 T67 L68 R75 F76 C83 D84 R97 Y98 A99 D100 R101 R104 R105 F106 Y107 N113 R114 R117 R121 L129 T132 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i
dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid
e

Chain B: 100%

LVZ1 IDS2 SGN3

4.2.3 Score per residue for model 3

• Molecule 1: Eosinophil cationic protein

Chain A: 69% 26%

R1 P2 P3 Q4 F5 T6 R7 W10 F11 R22 M27 R28 A29 I30 Y33 R34 W35 R36 C37 K38 R45 F48 R61 R66 R73 R77 V78 P79 D84 P88 G89 R97 Y98 A99 D100 R101 R104 R105 F106 Y107 R114 D115 P116 R117 D118

R121 Y122 T131 T132 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i
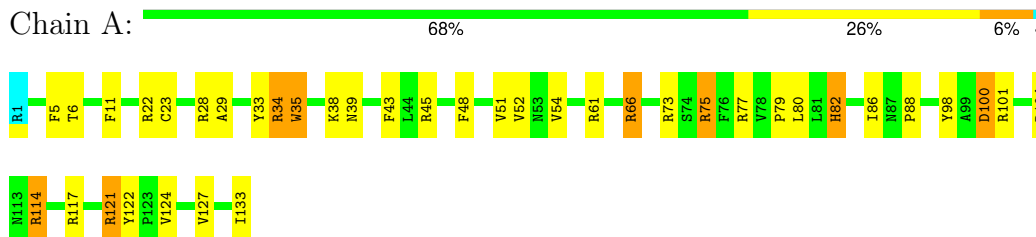dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid
e

Chain B: 67% 33%

LVZ1 IDS2 SGN3

4.2.4 Score per residue for model 4

• Molecule 1: Eosinophil cationic protein

Chain A:

74%   20%   5% •

R1 P2 P3 Q4 F5 T6 R7 L18 N19 P20 P21 R22 A26 M27 R28 Y33 R34 W35 R36 F43 L44 R45 F48 R61 H64 N65 R66 R75 F76 R77 P88 R97 Y98 R101 P102 G103 R104 R105 F106 R114 R117 D118 R121 Y122 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e

Chain B:

100%

LV21 IDS2 SGN3

4.2.5 Score per residue for model 5

• Molecule 1: Eosinophil cationic protein

Chain A:

70%   26%   • •

R1 F5 T6 R7 A8 F11 A12 I13 R22 Y33 R34 W35 F43 L44 R45 V51 V52 S59 I60 R61 R66 R73 S74 R75 F76 R77 S94 R97 Y98 A99 D100 R101 R104 Y107 V108 V109 R114 D115 P116 R117 R121 Y122 P126 V127

H128 L129 T132 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e
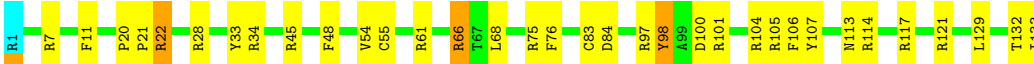
Chain B:

100%

LV21 IDS2 SGN3

4.2.6 Score per residue for model 6

• Molecule 1: Eosinophil cationic protein

Chain A:

72%   25%   • •

R1 P2 P3 R7 W10 F11 L18 R22 Y33 R34 W35 R36 R45 T46 T47 F48 V52 C55 R61 R73 S74 R75 F76 R77 L81 D84 P88 S94 R97 Y98 G103 R104 R105 F106 Y107 V108 V109 R114 R117 P120 R121

Y122 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranoside

Chain B: 100%

LVZ1 IDS2 SGN3

4.2.7 Score per residue for model 7

• Molecule 1: Eosinophil cationic protein

Chain A: 71% 23%

R1 F5 T6 R7 N19 R22 C23 T24 Y33 R34 W35 T42 F43 L44 R45 V52 C55 R61 R66 R73 S74 R75 F76 R77 I86 N87 P88 G89 A90 Q91 N95 C96 R97 Y98 R101 R104 R105 F106 R114 R117 R121 Y122
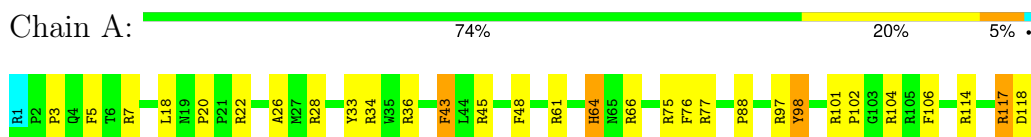
D130 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranoside

Chain B: 100%

LVZ1 IDS2 SGN3

4.2.8 Score per residue for model 8

• Molecule 1: Eosinophil cationic protein

Chain A: 73% 23%

R1 F5 T6 R7 P21 R22 R28 Y33 R34 W35 R36 N41 T42 F43 R61 C62 R66 R73 S74 R75 F76 R77 V78 G89 A90 R97 Y98 A99 D100 R101 P102 R105 F106 Y107 R114 R117 D118 S119 P120 R121 Y122 T132 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranoside
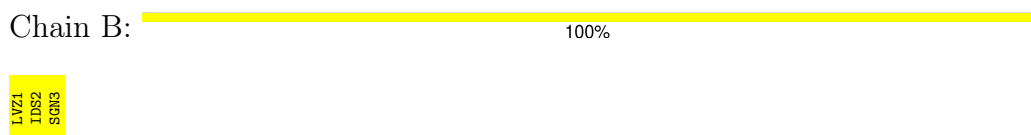
Chain B: 100%

LVZ1 IDS2 SGN3

4.2.9 Score per residue for model 9

• Molecule 1: Eosinophil cationic protein

Chain A:

74% 23%

R1 P2 P3 Q4 F5 T6 R7 W10 F11 Q14 R22 C23 T24 R28 A29 I30 R34 W35 R36 R45 F48 V51 Q58 R61 C62 R66 N70 R73 R77 L80 N92 R97 R101 P102 R105 R114 R117 R121
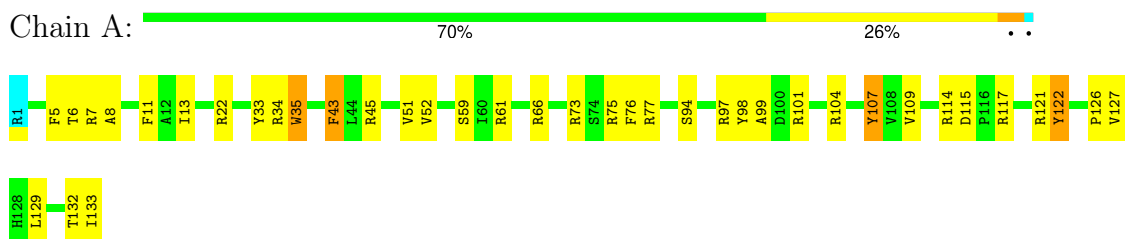
Y122 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e

Chain B:

100%

LVZ1 IDS2 SGN3

4.2.10 Score per residue for model 10

• Molecule 1: Eosinophil cationic protein

Chain A:

66% 28% 5%

R1 P2 P3 Q4 F5 T6 R7 F11 A12 I13 Q14 H15 I16 S17 R22 A26 M27 R28 A29 I30 Y33 R34 W35 R36 T42 R61 N65 R66 N69 N70 C71 R77 V78 P79 L80 D84 L85 I86 G89 R97 Y98 R101 P102 G103 R104 R105 F106

Y107 R114 R117 R121 Y122 P123 V124 V127 D130 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e
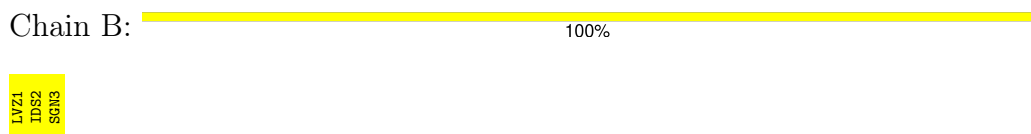
Chain B:

100%
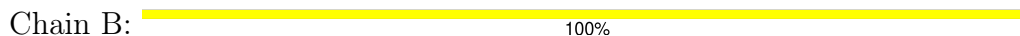
LVZ1 IDS2 SGN3

4.2.11 Score per residue for model 11

• Molecule 1: Eosinophil cationic protein

Chain A:

74%   18%   8%   •

R1 P2 P3 Q4 F5 W10 F11 R22 Y33 R34 F43 L44 R45 V51 V52 S59 I60 R61 R66 T67 R73 S74 R75 F76 R77 V78 N87 R97 Y98 R101 R104 R105 F106 Y107 V108 R114 R117 R121 L129 D130 I133
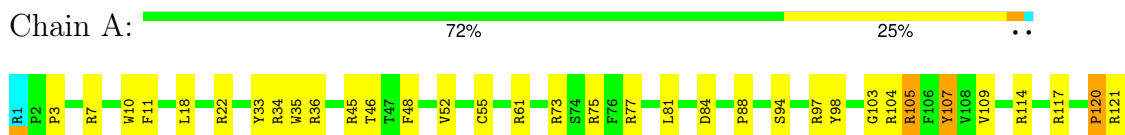
• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e

Chain B:

100%

LV21 IDS2 SGN3

4.2.12 Score per residue for model 12

• Molecule 1: Eosinophil cationic protein

Chain A:

68%   28%   • •

R1 F5 T6 R7 F11 N19 P20 P21 R22 R28 W35 R36 L44 R45 F48 R61 C62 P63 R66 R73 S74 R75 F76 R77 V78 P79 L80 I86 I93 S94 N95 C96 R97 D100 R101 P102 G103 R104 R105 F106 Y107 R114 R117 R121

Y122 V127 D130 T131 T132 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e

Chain B:

100%

LV21 IDS2 SGN3
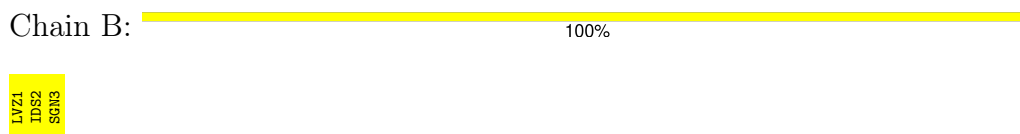
4.2.13 Score per residue for model 13 (medoid)

• Molecule 1: Eosinophil cationic protein

Chain A:

70%   25%   • ••

R1 P2 F5 T6 R7 A8 Q9 W10 R22 R28 Y33 R34 W35 R36 R45 T46 V52 R61 H64 N65 R66 R73 S74 R75 F76 R77 H82 C83 D84 L85 I86 Q91 R97 Y98 R101 R104 R105 F106 Y107 P116 R117 P120 R121 Y122

L129 D130 T131 T132 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e
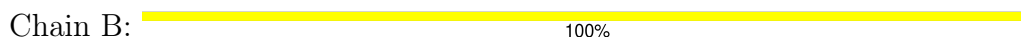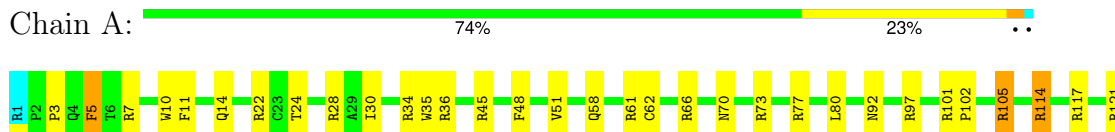
Chain B: 100%

LVZ1 IDS2 SGN3

4.2.14 Score per residue for model 14

• Molecule 1: Eosinophil cationic protein

Chain A: 71% 26%

R1 P2 P3 R7 A8 Q9 W10 F11 L18 N19 P20 P21 R22 R28 A29 I30 R34 W35 R36 T42 F43 L44 R45 V51 Q58 R61 H64 N65 R66 R73 R77 D84 L85 G89 R97 R101 R104 R105 F106 Y107 D112 N113 R114

R121 Y122 D130 T131 T132 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e
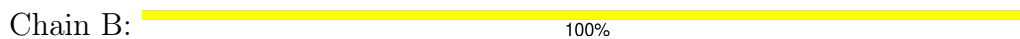
Chain B: 100%

LVZ1 IDS2 SGN3

4.2.15 Score per residue for model 15

• Molecule 1: Eosinophil cationic protein

Chain A: 70% 27%

R1 P2 P3 Q4 R7 A12 S17 T24 R28 A29 I30 R34 W35 R36 C37 K38 F43 L44 R45 T46 V52 R61 R66 C71 H72 R73 S74 R75 F76 R77 A90 R97 R101 R104 R105 F106 Y107 R114 D115 P116 R117 D118 R121
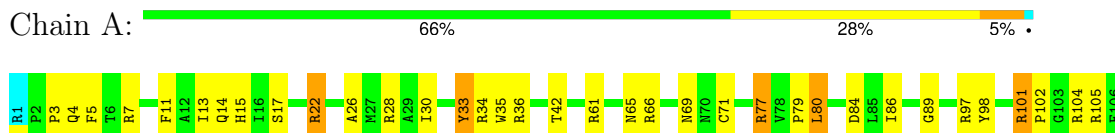
Y122 D130 T131 T132 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e

Chain B: 100%

LVZ1 IDS2 SGN3

4.2.16 Score per residue for model 16

• Molecule 1: Eosinophil cationic protein

Chain A: 74%   25%

R1 F5 T6 R7 W10 F11 R22 C23 T24 I25 R28 A29 I30 Y33 R34 W35 R36 R45 V51 R61 R66 T67 L68 C71 H72 R73 S74 R75 F76 R77 S94 R101 R104 R105 F106 R117 D118 R121 Y122 V125 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e
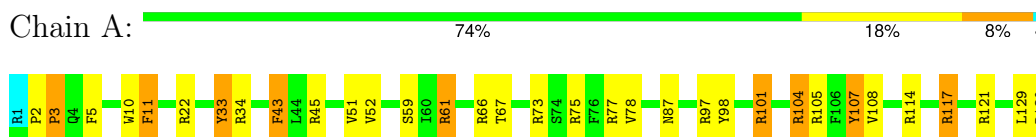
Chain B: 100%

LVZ1 IDS2 SGN3

4.2.17 Score per residue for model 17

• Molecule 1: Eosinophil cationic protein

Chain A: 69%   29%

R1 F5 T6 R7 W10 F11 A12 L18 R22 M27 R28 Y33 R34 W35 R36 T42 R45 T46 T47 V51 C55 R61 C62 P63 R73 S74 R75 F76 R77 C83 D84 L85 I86 R97 Y98 R101 R104 R105 F106 Y107 R114 R117

R121 V124 H128 L129 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e
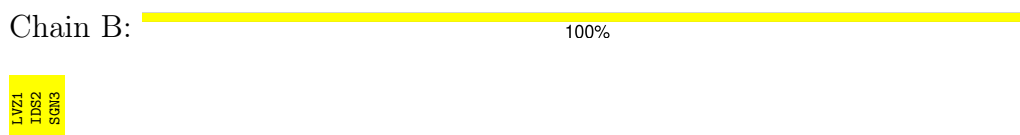
Chain B: 100%

LVZ1 IDS2 SGN3

4.2.18 Score per residue for model 18

• Molecule 1: Eosinophil cationic protein

Chain A:

73%   22%   5% ·
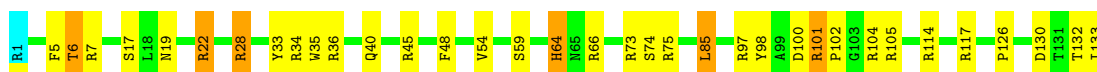
R1 F5 T6 R7 S17 L18 N19 R22 R28 Y33 R34 W35 R36 Q40 R45 F48 V54 S59 H64 N65 R66 R73 S74 R75 L85 R97 Y98 A99 D100 R101 P102 G103 R104 R105 R114 R117 P126 D130 T131 T132 I133
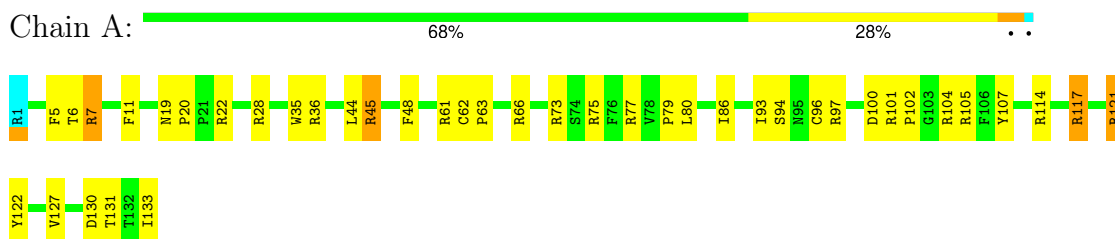
• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e

Chain B:

100%

LVZ1 IDS2 SGN3
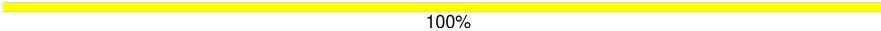
4.2.19   Score per residue for model 19

• Molecule 1: Eosinophil cationic protein

Chain A:

68%   29%   · ·
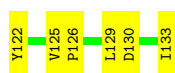
R1 F5 T6 R7 W10 H15 N19 P20 P21 R22 C23 R28 Y33 R34 R45 F48 V52 N53 V54 R61 R75 L80 C83 P88 N95 C96 R97 Y98 A99 D100 R101 R104 R105 F106 Y107 D112 N113 R114 D115 P116 R117 R121
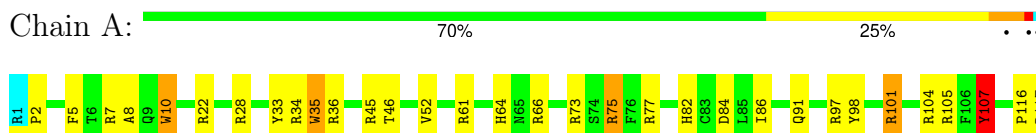
Y122 V125 P126 L129 D130 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e

Chain B:

100%

LVZ1 IDS2 SGN3

4.2.20   Score per residue for model 20

• Molecule 1: Eosinophil cationic protein

Chain A:

72%   20%   7% ·
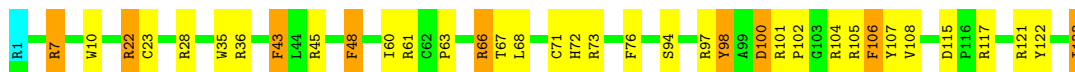
R1 R7 W10 R22 C23 R28 W35 R36 F43 L44 R45 F48 I60 R61 C62 P63 R66 T67 L68 C71 H72 R73 F76 S94 R97 Y98 A99 D100 R101 P102 G103 R104 R105 F106 Y107 V108 D115 P116 R117 R121 Y122 I133

• Molecule 2: 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-i dopyranuronic acid-(1-4)-propan-2-yl 2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranosid e
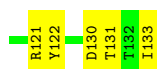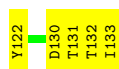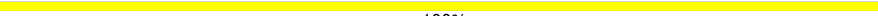
Chain B:

100%

LVZ1
IDS2
SGN3

5 Refinement protocol and experimental data overview ⓘ

The models were refined using the following method: *molecular dynamics.*

Of the 100 calculated structures, 20 were deposited, based on the following criterion: *structures with the lowest energy.*

The following table shows the software used for structure solution, optimisation and refinement.

Software name	Classification	Version
Amber	structure solution	
CYANA	structure solution	
Amber	refinement	

The following table shows chemical shift validation statistics as aggregates over all chemical shift files. Detailed validation can be found in section 7 of this report.

Chemical shift file(s)	working_cs.cif
Number of chemical shift lists	1
Total number of shifts	1481
Number of shifts mapped to atoms	1481
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	77%

6 Model quality ⓘ

6.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: IDS, SGN, LVZ

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 (average) 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	1.56±0.03	5±2/1113 (0.5± 0.2%)	2.17±0.09	42±5/1515 (2.7± 0.3%)
All	All	1.56	107/22260 (0.5%)	2.17	830/30300 (2.7%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	Chirality	Planarity
1	A	0.0±0.0	5.8±2.1
All	All	0	115

All unique bond outliers are listed below. They are sorted according to the Z-score of the worst occurrence in the ensemble.

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)	Models	
								Worst	Total
1	A	23	CYS	CB-SG	-7.98	1.68	1.82	19	1
1	A	63	PRO	N-CD	-7.97	1.36	1.47	12	2
1	A	61	ARG	CZ-NH1	-7.52	1.23	1.33	6	4
1	A	33	TYR	CG-CD1	7.24	1.48	1.39	17	1
1	A	22	ARG	CZ-NH1	-7.21	1.23	1.33	14	1
1	A	97	ARG	CZ-NH2	-7.06	1.23	1.33	7	3
1	A	75	ARG	CZ-NH1	-6.90	1.24	1.33	12	2
1	A	94	SER	CA-CB	6.62	1.62	1.52	12	2
1	A	122	TYR	CD1-CE1	6.55	1.49	1.39	4	1
1	A	62	CYS	CB-SG	-6.49	1.71	1.82	12	1
1	A	33	TYR	CE2-CZ	6.48	1.47	1.38	2	2
1	A	89	GLY	CA-C	6.45	1.62	1.51	8	1
1	A	75	ARG	NE-CZ	-6.41	1.24	1.33	19	1
1	A	7	ARG	CZ-NH2	-6.40	1.24	1.33	13	2

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)	Models	
								Worst	Total
1	A	120	PRO	N-CA	6.32	1.57	1.47	8	1
1	A	59	SER	CB-OG	6.30	1.50	1.42	18	3
1	A	33	TYR	CE1-CZ	6.29	1.46	1.38	17	1
1	A	98	TYR	CG-CD2	6.25	1.47	1.39	5	2
1	A	97	ARG	CD-NE	6.25	1.57	1.46	11	1
1	A	28	ARG	CZ-NH1	-6.13	1.25	1.33	16	3
1	A	116	PRO	N-CD	-6.12	1.39	1.47	3	1
1	A	117	ARG	CZ-NH1	-6.06	1.25	1.33	18	2
1	A	122	TYR	CE1-CZ	6.01	1.46	1.38	6	1
1	A	114	ARG	CZ-NH2	-5.99	1.25	1.33	5	1
1	A	103	GLY	CA-C	5.97	1.61	1.51	6	1
1	A	117	ARG	CZ-NH2	-5.93	1.25	1.33	8	3
1	A	126	PRO	N-CA	-5.91	1.37	1.47	19	1
1	A	48	PHE	CE2-CZ	5.90	1.48	1.37	20	1
1	A	33	TYR	CB-CG	5.89	1.60	1.51	8	1
1	A	66	ARG	CZ-NH1	-5.89	1.25	1.33	20	1
1	A	10	TRP	CD2-CE2	5.85	1.48	1.41	20	1
1	A	33	TYR	CG-CD2	5.84	1.46	1.39	10	1
1	A	55	CYS	CB-SG	-5.83	1.72	1.81	2	1
1	A	34	ARG	CZ-NH1	-5.80	1.25	1.33	10	1
1	A	121	ARG	CZ-NH1	-5.79	1.25	1.33	19	1
1	A	94	SER	CB-OG	5.71	1.49	1.42	5	1
1	A	121	ARG	CZ-NH2	-5.70	1.25	1.33	2	3
1	A	126	PRO	N-CD	-5.70	1.39	1.47	18	2
1	A	122	TYR	CD2-CE2	5.70	1.47	1.39	5	1
1	A	28	ARG	NE-CZ	-5.69	1.25	1.33	3	1
1	A	7	ARG	CZ-NH1	-5.69	1.25	1.33	9	1
1	A	76	PHE	CG-CD2	5.68	1.47	1.38	4	1
1	A	10	TRP	CZ3-CH2	5.67	1.49	1.40	3	1
1	A	61	ARG	CD-NE	5.66	1.56	1.46	12	1
1	A	71	CYS	CB-SG	-5.66	1.72	1.81	15	1
1	A	17	SER	CB-OG	5.63	1.49	1.42	10	2
1	A	34	ARG	CZ-NH2	-5.62	1.25	1.33	8	1
1	A	122	TYR	CG-CD2	5.61	1.46	1.39	10	1
1	A	6	THR	N-CA	5.60	1.57	1.46	17	1
1	A	66	ARG	CZ-NH2	-5.53	1.25	1.33	3	1
1	A	48	PHE	CG-CD1	5.50	1.47	1.38	20	1
1	A	35	TRP	CD2-CE2	5.48	1.48	1.41	13	2
1	A	105	ARG	CZ-NH1	-5.47	1.25	1.33	16	1
1	A	78	VAL	CA-CB	5.46	1.66	1.54	3	1
1	A	17	SER	CA-CB	5.45	1.61	1.52	15	1

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)	Models Worst	Total
1	A	77	ARG	CZ-NH2	-5.43	1.25	1.33	5	1
1	A	102	PRO	N-CD	-5.42	1.40	1.47	8	2
1	A	75	ARG	CZ-NH2	-5.42	1.26	1.33	4	1
1	A	104	ARG	CZ-NH1	-5.34	1.26	1.33	7	1
1	A	22	ARG	CZ-NH2	-5.34	1.26	1.33	9	2
1	A	104	ARG	CZ-NH2	-5.32	1.26	1.33	18	2
1	A	129	LEU	CA-CB	5.32	1.66	1.53	2	1
1	A	36	ARG	CZ-NH2	-5.30	1.26	1.33	6	1
1	A	101	ARG	CZ-NH2	-5.30	1.26	1.33	20	1
1	A	107	TYR	CE2-CZ	5.22	1.45	1.38	20	1
1	A	48	PHE	CE1-CZ	5.21	1.47	1.37	9	1
1	A	98	TYR	CE2-CZ	5.21	1.45	1.38	10	1
1	A	20	PRO	C-N	5.20	1.44	1.34	4	1
1	A	43	PHE	CG-CD2	5.18	1.46	1.38	11	1
1	A	38	LYS	N-CA	5.17	1.56	1.46	15	1
1	A	3	PRO	N-CA	-5.17	1.38	1.47	6	1
1	A	107	TYR	CE1-CZ	5.15	1.45	1.38	11	1
1	A	105	ARG	CZ-NH2	-5.13	1.26	1.33	2	1
1	A	77	ARG	NE-CZ	5.12	1.39	1.33	7	1
1	A	94	SER	N-CA	5.12	1.56	1.46	6	1
1	A	69	ASN	N-CA	5.12	1.56	1.46	10	1
1	A	107	TYR	CB-CG	5.08	1.59	1.51	10	1
1	A	10	TRP	CG-CD2	5.07	1.52	1.43	9	1
1	A	34	ARG	N-CA	5.06	1.56	1.46	6	1
1	A	3	PRO	N-CD	-5.04	1.40	1.47	15	1
1	A	101	ARG	NE-CZ	-5.00	1.26	1.33	3	1

All unique angle outliers are listed below. They are sorted according to the Z-score of the worst occurrence in the ensemble.

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models Worst	Total
1	A	77	ARG	NE-CZ-NH1	24.71	132.65	120.30	5	10
1	A	34	ARG	NE-CZ-NH1	24.68	132.64	120.30	13	10
1	A	105	ARG	NE-CZ-NH1	22.62	131.61	120.30	17	14
1	A	97	ARG	NE-CZ-NH1	21.13	130.86	120.30	2	12
1	A	117	ARG	NE-CZ-NH1	20.34	130.47	120.30	7	13
1	A	28	ARG	NE-CZ-NH1	18.86	129.73	120.30	8	12
1	A	61	ARG	NE-CZ-NH1	18.74	129.67	120.30	3	12
1	A	7	ARG	NE-CZ-NH1	18.40	129.50	120.30	20	15
1	A	75	ARG	NE-CZ-NH1	18.22	129.41	120.30	16	10
1	A	101	ARG	NE-CZ-NH1	17.58	129.09	120.30	4	14

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})	Models Worst	Total
1	A	45	ARG	NE-CZ-NH1	17.26	128.93	120.30	6	12
1	A	22	ARG	NE-CZ-NH1	17.09	128.85	120.30	1	11
1	A	7	ARG	NE-CZ-NH2	-16.80	111.90	120.30	20	9
1	A	101	ARG	NE-CZ-NH2	-16.59	112.01	120.30	5	13
1	A	104	ARG	NE-CZ-NH1	16.26	128.43	120.30	2	9
1	A	114	ARG	NE-CZ-NH2	-15.69	112.45	120.30	4	8
1	A	105	ARG	NE-CZ-NH2	-14.83	112.89	120.30	7	9
1	A	77	ARG	NE-CZ-NH2	14.77	127.69	120.30	9	12
1	A	34	ARG	NE-CZ-NH2	-14.69	112.95	120.30	13	9
1	A	75	ARG	NE-CZ-NH2	-14.54	113.03	120.30	16	7
1	A	107	TYR	CB-CG-CD1	14.42	129.65	121.00	12	6
1	A	117	ARG	NE-CZ-NH2	-14.10	113.25	120.30	1	15
1	A	66	ARG	NE-CZ-NH1	14.10	127.35	120.30	2	11
1	A	45	ARG	NE-CZ-NH2	-13.98	113.31	120.30	13	8
1	A	121	ARG	NE-CZ-NH1	13.82	127.21	120.30	7	12
1	A	114	ARG	NE-CZ-NH1	12.95	126.78	120.30	4	13
1	A	121	ARG	NE-CZ-NH2	12.91	126.75	120.30	13	10
1	A	36	ARG	NE-CZ-NH1	12.84	126.72	120.30	4	8
1	A	107	TYR	CG-CD1-CE1	-12.32	111.44	121.30	19	2
1	A	117	ARG	NH1-CZ-NH2	-12.04	106.16	119.40	7	3
1	A	73	ARG	NE-CZ-NH2	-12.00	114.30	120.30	16	8
1	A	107	TYR	CB-CG-CD2	-11.71	113.97	121.00	12	5
1	A	66	ARG	NE-CZ-NH2	11.61	126.10	120.30	16	8
1	A	73	ARG	NE-CZ-NH1	11.51	126.05	120.30	8	13
1	A	61	ARG	NE-CZ-NH2	-11.36	114.62	120.30	9	11
1	A	77	ARG	NH1-CZ-NH2	-11.20	107.08	119.40	1	4
1	A	98	TYR	CB-CG-CD1	-11.09	114.35	121.00	19	5
1	A	130	ASP	CB-CG-OD1	11.05	128.25	118.30	18	4
1	A	5	PHE	CB-CG-CD2	-10.96	113.13	120.80	11	5
1	A	33	TYR	CB-CG-CD2	-10.95	114.43	121.00	13	5
1	A	11	PHE	CB-CG-CD1	-10.49	113.46	120.80	11	8
1	A	98	TYR	CB-CG-CD2	10.43	127.26	121.00	1	6
1	A	22	ARG	NE-CZ-NH2	10.27	125.44	120.30	11	9
1	A	36	ARG	NE-CZ-NH2	-10.22	115.19	120.30	10	10
1	A	97	ARG	NE-CZ-NH2	-10.10	115.25	120.30	5	9
1	A	5	PHE	CB-CG-CD1	-10.00	113.80	120.80	19	6
1	A	43	PHE	CB-CG-CD2	-9.80	113.94	120.80	4	4
1	A	61	ARG	NH1-CZ-NH2	-9.79	108.63	119.40	6	1
1	A	28	ARG	NE-CZ-NH2	-9.67	115.46	120.30	3	6
1	A	34	ARG	NH1-CZ-NH2	-9.60	108.84	119.40	2	2
1	A	43	PHE	CB-CG-CD1	-9.26	114.31	120.80	15	4

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})	Models Worst	Total
1	A	33	TYR	CB-CG-CD1	-9.22	115.47	121.00	16	5
1	A	5	PHE	CG-CD1-CE1	-9.13	110.76	120.80	19	1
1	A	97	ARG	NH1-CZ-NH2	-9.06	109.44	119.40	2	6
1	A	84	ASP	CB-CG-OD1	9.05	126.44	118.30	10	3
1	A	101	ARG	NH1-CZ-NH2	-8.90	109.61	119.40	11	2
1	A	105	ARG	NH1-CZ-NH2	-8.74	109.78	119.40	19	4
1	A	104	ARG	NE-CZ-NH2	-8.54	116.03	120.30	6	8
1	A	115	ASP	CB-CG-OD2	-8.41	110.73	118.30	5	2
1	A	35	TRP	CE2-CD2-CG	8.38	114.00	107.30	20	2
1	A	48	PHE	CB-CG-CD1	-8.36	114.95	120.80	12	5
1	A	106	PHE	CB-CG-CD1	-8.33	114.97	120.80	19	2
1	A	35	TRP	NE1-CE2-CD2	-8.12	99.18	107.30	20	2
1	A	73	ARG	NH1-CZ-NH2	-8.05	110.54	119.40	1	5
1	A	90	ALA	N-CA-CB	-8.04	98.84	110.10	8	1
1	A	101	ARG	CD-NE-CZ	8.03	134.84	123.60	9	3
1	A	122	TYR	CB-CG-CD2	-8.00	116.20	121.00	14	7
1	A	130	ASP	CB-CG-OD2	8.00	125.50	118.30	12	5
1	A	76	PHE	CB-CG-CD2	-7.98	115.21	120.80	16	2
1	A	115	ASP	CB-CG-OD1	-7.98	111.12	118.30	15	2
1	A	107	TYR	CD1-CG-CD2	7.95	126.64	117.90	19	2
1	A	75	ARG	NH1-CZ-NH2	-7.94	110.66	119.40	15	2
1	A	48	PHE	CB-CG-CD2	-7.93	115.25	120.80	18	4
1	A	66	ARG	NH1-CZ-NH2	-7.83	110.78	119.40	15	5
1	A	75	ARG	CD-NE-CZ	7.83	134.56	123.60	2	3
1	A	10	TRP	NE1-CE2-CD2	-7.80	99.50	107.30	3	2
1	A	22	ARG	CD-NE-CZ	7.75	134.45	123.60	7	4
1	A	11	PHE	CB-CG-CD2	-7.74	115.39	120.80	14	6
1	A	45	ARG	NH1-CZ-NH2	-7.66	110.97	119.40	5	7
1	A	11	PHE	CG-CD1-CE1	-7.63	112.41	120.80	12	1
1	A	46	THR	CA-CB-OG1	7.61	124.98	109.00	6	2
1	A	105	ARG	CD-NE-CZ	7.55	134.18	123.60	2	2
1	A	116	PRO	N-CA-CB	7.53	112.34	103.30	19	1
1	A	28	ARG	NH1-CZ-NH2	-7.47	111.18	119.40	8	2
1	A	76	PHE	CB-CG-CD1	-7.44	115.59	120.80	2	4
1	A	100	ASP	CB-CG-OD2	-7.42	111.62	118.30	8	3
1	A	100	ASP	CB-CG-OD1	-7.41	111.63	118.30	19	4
1	A	97	ARG	CD-NE-CZ	7.36	133.91	123.60	9	2
1	A	46	THR	CA-CB-CG2	7.34	122.68	112.40	17	2
1	A	10	TRP	CB-CG-CD2	7.26	136.04	126.60	16	2
1	A	3	PRO	N-CA-CB	7.25	112.00	103.30	3	2
1	A	117	ARG	CD-NE-CZ	7.13	133.58	123.60	5	4

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})	Models Worst	Total
1	A	35	TRP	CD1-NE1-CE2	7.09	115.38	109.00	20	3
1	A	10	TRP	CD1-NE1-CE2	7.08	115.37	109.00	3	4
1	A	11	PHE	CD1-CG-CD2	7.07	127.49	118.30	12	1
1	A	93	ILE	CA-CB-CG1	7.04	124.37	111.00	12	1
1	A	125	VAL	CG1-CB-CG2	-6.96	99.76	110.90	16	1
1	A	129	LEU	CB-CG-CD2	-6.94	99.20	111.00	19	1
1	A	107	TYR	CD1-CE1-CZ	-6.94	113.56	119.80	3	2
1	A	132	THR	CA-CB-CG2	6.93	122.10	112.40	8	4
1	A	68	LEU	CB-CG-CD2	6.92	122.77	111.00	20	1
1	A	2	PRO	N-CA-CB	6.90	111.58	103.30	13	1
1	A	54	VAL	CG1-CB-CG2	-6.87	99.91	110.90	1	2
1	A	121	ARG	NH1-CZ-NH2	-6.85	111.86	119.40	13	2
1	A	52	VAL	CA-CB-CG1	6.78	121.07	110.90	1	3
1	A	6	THR	CA-CB-CG2	6.75	121.84	112.40	16	3
1	A	45	ARG	CD-NE-CZ	6.73	133.02	123.60	14	2
1	A	61	ARG	CD-NE-CZ	6.71	132.99	123.60	12	2
1	A	51	VAL	CA-CB-CG2	6.71	120.96	110.90	1	4
1	A	127	VAL	CA-CB-CG2	6.70	120.94	110.90	10	3
1	A	63	PRO	N-CA-CB	6.69	111.33	103.30	17	1
1	A	54	VAL	CA-CB-CG1	6.66	120.88	110.90	19	2
1	A	112	ASP	CB-CG-OD1	6.65	124.29	118.30	19	2
1	A	132	THR	OG1-CB-CG2	-6.60	94.81	110.00	18	1
1	A	104	ARG	NH1-CZ-NH2	-6.60	112.14	119.40	11	3
1	A	22	ARG	NH1-CZ-NH2	-6.58	112.16	119.40	1	9
1	A	114	ARG	CD-NE-CZ	6.57	132.79	123.60	17	2
1	A	10	TRP	CG-CD2-CE3	6.55	139.79	133.90	20	2
1	A	79	PRO	O-C-N	-6.53	112.25	122.70	1	2
1	A	84	ASP	CB-CG-OD2	-6.52	112.43	118.30	14	1
1	A	115	ASP	N-CA-CB	-6.52	98.87	110.60	19	1
1	A	118	ASP	CB-CG-OD1	6.45	124.10	118.30	3	3
1	A	122	TYR	CG-CD2-CE2	-6.42	116.16	121.30	12	1
1	A	131	THR	CA-CB-CG2	6.42	121.38	112.40	14	3
1	A	36	ARG	CD-NE-CZ	6.38	132.53	123.60	16	3
1	A	98	TYR	CG-CD2-CE2	-6.37	116.21	121.30	20	3
1	A	106	PHE	CB-CG-CD2	-6.36	116.35	120.80	16	3
1	A	66	ARG	CD-NE-CZ	6.35	132.49	123.60	8	3
1	A	90	ALA	CB-CA-C	6.33	119.60	110.10	7	2
1	A	51	VAL	CG1-CB-CG2	-6.33	100.77	110.90	17	4
1	A	55	CYS	CA-CB-SG	6.30	125.34	114.00	6	2
1	A	84	ASP	N-CA-CB	-6.28	99.30	110.60	13	2
1	A	118	ASP	N-CA-CB	-6.28	99.31	110.60	8	1

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})	Models Worst	Total
1	A	73	ARG	CD-NE-CZ	6.26	132.36	123.60	3	2
1	A	80	LEU	CB-CA-C	6.26	122.09	110.20	12	1
1	A	20	PRO	N-CA-CB	6.22	110.76	103.30	19	2
1	A	88	PRO	N-CA-CB	6.21	110.75	103.30	3	2
1	A	107	TYR	CG-CD2-CE2	-6.17	116.36	121.30	17	3
1	A	33	TYR	CG-CD2-CE2	-6.14	116.39	121.30	10	1
1	A	122	TYR	CG-CD1-CE1	-6.12	116.41	121.30	4	1
1	A	86	ILE	CA-CB-CG1	6.08	122.54	111.00	13	1
1	A	80	LEU	CB-CG-CD1	6.07	121.33	111.00	10	1
1	A	3	PRO	N-CD-CG	6.07	112.30	103.20	11	1
1	A	33	TYR	CG-CD1-CE1	-6.07	116.45	121.30	2	3
1	A	122	TYR	CZ-CE2-CD2	6.04	125.24	119.80	6	4
1	A	133	ILE	CA-CB-CG1	6.04	122.47	111.00	8	4
1	A	33	TYR	N-CA-CB	-5.95	99.90	110.60	17	1
1	A	112	ASP	CB-CG-OD2	5.94	123.64	118.30	1	1
1	A	34	ARG	CD-NE-CZ	5.92	131.89	123.60	11	2
1	A	33	TYR	CZ-CE2-CD2	5.91	125.12	119.80	1	1
1	A	118	ASP	CB-CG-OD2	5.88	123.59	118.30	16	2
1	A	106	PHE	N-CA-CB	-5.84	100.08	110.60	3	1
1	A	39	ASN	N-CA-CB	-5.82	100.12	110.60	1	1
1	A	10	TRP	CB-CG-CD1	-5.81	119.44	127.00	11	2
1	A	8	ALA	CB-CA-C	5.80	118.81	110.10	5	1
1	A	77	ARG	CD-NE-CZ	5.79	131.70	123.60	16	1
1	A	98	TYR	CA-CB-CG	5.79	124.39	113.40	8	1
1	A	91	GLN	O-C-N	-5.78	113.45	122.70	13	1
1	A	124	VAL	CA-CB-CG2	5.76	119.54	110.90	17	1
1	A	125	VAL	CA-CB-CG1	5.75	119.53	110.90	16	1
1	A	44	LEU	CB-CG-CD2	-5.74	101.23	111.00	12	1
1	A	91	GLN	OE1-CD-NE2	-5.72	108.75	121.90	13	1
1	A	85	LEU	CB-CG-CD1	5.72	120.72	111.00	18	2
1	A	35	TRP	CG-CD2-CE3	-5.71	128.76	133.90	12	2
1	A	54	VAL	O-C-N	-5.70	113.58	122.70	18	1
1	A	98	TYR	CG-CD1-CE1	-5.69	116.75	121.30	3	3
1	A	120	PRO	N-CA-C	5.68	126.86	112.10	6	1
1	A	3	PRO	CA-N-CD	-5.67	103.57	111.50	11	1
1	A	25	ILE	CA-CB-CG1	5.66	121.76	111.00	16	1
1	A	120	PRO	C-N-CA	5.64	135.80	121.70	13	1
1	A	122	TYR	CB-CG-CD1	-5.63	117.62	121.00	7	3
1	A	64	HIS	CA-CB-CG	5.62	123.15	113.60	14	2
1	A	26	ALA	N-CA-CB	-5.61	102.25	110.10	10	1
1	A	24	THR	CA-CB-CG2	-5.60	104.55	112.40	7	1

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})	Models Worst	Total
1	A	81	LEU	CB-CA-C	5.59	120.83	110.20	6	1
1	A	5	PHE	CD1-CE1-CZ	-5.59	113.39	120.10	16	2
1	A	46	THR	OG1-CB-CG2	-5.56	97.20	110.00	15	1
1	A	94	SER	CB-CA-C	-5.56	99.54	110.10	16	1
1	A	42	THR	CA-CB-CG2	5.56	120.18	112.40	14	4
1	A	102	PRO	N-CA-CB	5.55	109.97	103.30	20	2
1	A	6	THR	CA-CB-OG1	5.54	120.64	109.00	1	1
1	A	7	ARG	CA-CB-CG	5.54	125.58	113.40	14	2
1	A	47	THR	CA-CB-OG1	5.54	120.63	109.00	17	1
1	A	78	VAL	CG1-CB-CG2	-5.52	102.06	110.90	8	1
1	A	62	CYS	CA-CB-SG	5.52	123.93	114.00	8	2
1	A	58	GLN	O-C-N	-5.51	113.88	122.70	9	1
1	A	106	PHE	CA-CB-CG	5.50	127.10	113.90	2	1
1	A	18	LEU	CB-CG-CD1	5.50	120.34	111.00	6	1
1	A	27	MET	O-C-N	-5.49	113.92	122.70	17	1
1	A	109	VAL	CG1-CB-CG2	-5.48	102.13	110.90	6	2
1	A	36	ARG	NH1-CZ-NH2	-5.48	113.38	119.40	15	1
1	A	52	VAL	CG1-CB-CG2	-5.47	102.14	110.90	7	3
1	A	45	ARG	N-CA-CB	5.47	120.44	110.60	1	1
1	A	5	PHE	CG-CD2-CE2	-5.46	114.80	120.80	1	1
1	A	15	HIS	N-CA-C	5.46	125.73	111.00	19	1
1	A	28	ARG	CD-NE-CZ	5.45	131.23	123.60	17	2
1	A	7	ARG	NH1-CZ-NH2	-5.45	113.41	119.40	12	2
1	A	104	ARG	O-C-N	5.44	131.41	122.70	10	1
1	A	43	PHE	CZ-CE2-CD2	-5.44	113.58	120.10	5	1
1	A	77	ARG	CB-CA-C	-5.43	99.53	110.40	14	1
1	A	122	TYR	CD1-CG-CD2	5.42	123.86	117.90	19	1
1	A	43	PHE	N-CA-CB	-5.42	100.85	110.60	20	1
1	A	21	PRO	N-CD-CG	5.41	111.31	103.20	19	2
1	A	17	SER	O-C-N	5.41	131.35	122.70	18	1
1	A	10	TRP	CE2-CD2-CG	5.40	111.62	107.30	3	2
1	A	104	ARG	CD-NE-CZ	5.39	131.15	123.60	6	1
1	A	113	ASN	N-CA-CB	-5.37	100.93	110.60	2	1
1	A	10	TRP	CB-CA-C	5.37	121.15	110.40	6	1
1	A	65	ASN	N-CA-CB	-5.36	100.95	110.60	14	2
1	A	79	PRO	N-CD-CG	5.33	111.19	103.20	12	1
1	A	8	ALA	N-CA-CB	-5.30	102.69	110.10	13	1
1	A	10	TRP	CE2-CD2-CE3	-5.30	112.34	118.70	20	1
1	A	71	CYS	CB-CA-C	5.27	120.93	110.40	10	1
1	A	7	ARG	CD-NE-CZ	5.26	130.97	123.60	7	1
1	A	64	HIS	O-C-N	-5.24	114.32	122.70	4	1

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})	Models Worst	Total
1	A	98	TYR	CD1-CG-CD2	5.24	123.66	117.90	20	1
1	A	98	TYR	CD1-CE1-CZ	5.23	124.51	119.80	3	1
1	A	40	GLN	CA-CB-CG	5.23	124.91	113.40	18	1
1	A	74	SER	CA-CB-OG	5.23	125.31	111.20	18	1
1	A	4	GLN	CB-CA-C	5.19	120.78	110.40	15	1
1	A	35	TRP	CE2-CD2-CE3	-5.18	112.48	118.70	20	1
1	A	52	VAL	CA-CB-CG2	-5.18	103.13	110.90	15	1
1	A	82	HIS	CB-CA-C	5.18	120.75	110.40	1	2
1	A	12	ALA	CB-CA-C	5.18	117.86	110.10	17	1
1	A	48	PHE	CG-CD1-CE1	-5.17	115.11	120.80	6	1
1	A	71	CYS	CA-C-N	-5.17	105.82	117.20	10	1
1	A	18	LEU	CB-CG-CD2	-5.17	102.21	111.00	17	1
1	A	89	GLY	CA-C-O	-5.16	111.31	120.60	10	1
1	A	114	ARG	NH1-CZ-NH2	-5.16	113.73	119.40	8	2
1	A	122	TYR	CD1-CE1-CZ	-5.14	115.17	119.80	19	1
1	A	92	ASN	N-CA-CB	-5.13	101.36	110.60	9	1
1	A	9	GLN	CB-CA-C	-5.11	100.19	110.40	14	1
1	A	61	ARG	C-N-CA	5.10	134.46	121.70	13	1
1	A	35	TRP	CG-CD1-NE1	5.09	115.19	110.10	16	1
1	A	33	TYR	CD1-CG-CD2	5.08	123.49	117.90	19	1
1	A	52	VAL	O-C-N	-5.08	114.57	122.70	13	1
1	A	80	LEU	CB-CG-CD2	-5.08	102.37	111.00	10	1
1	A	116	PRO	CA-N-CD	-5.08	104.39	111.50	19	1
1	A	22	ARG	CB-CG-CD	5.07	124.79	111.60	5	1
1	A	42	THR	OG1-CB-CG2	-5.07	98.34	110.00	14	1
1	A	83	CYS	N-CA-CB	-5.07	101.48	110.60	2	1
1	A	80	LEU	C-N-CA	5.06	134.34	121.70	12	1
1	A	117	ARG	N-CA-CB	-5.05	101.51	110.60	20	1
1	A	20	PRO	N-CD-CG	5.05	110.77	103.20	12	1
1	A	19	ASN	CA-CB-CG	5.03	124.47	113.40	7	1
1	A	95	ASN	N-CA-CB	-5.03	101.55	110.60	19	1
1	A	106	PHE	O-C-N	-5.02	114.67	122.70	4	1
1	A	116	PRO	CA-C-N	5.02	128.24	117.20	15	1
1	A	71	CYS	C-N-CA	5.02	134.25	121.70	16	1
1	A	96	CYS	CB-CA-C	5.01	120.43	110.40	12	1
1	A	131	THR	OG1-CB-CG2	-5.01	98.48	110.00	3	1
1	A	13	ILE	CA-CB-CG2	5.00	120.91	110.90	5	1

There are no chirality outliers.

All unique planar outliers are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Group	Models (Total)
1	A	107	TYR	Sidechain	9
1	A	5	PHE	Sidechain,Peptide	8
1	A	22	ARG	Sidechain	5
1	A	11	PHE	Sidechain	4
1	A	34	ARG	Sidechain,Mainchain	4
1	A	66	ARG	Sidechain	4
1	A	75	ARG	Sidechain	4
1	A	106	PHE	Sidechain	4
1	A	114	ARG	Sidechain,Peptide	4
1	A	33	TYR	Sidechain	4
1	A	45	ARG	Sidechain	4
1	A	121	ARG	Sidechain	4
1	A	117	ARG	Sidechain	4
1	A	104	ARG	Sidechain	4
1	A	122	TYR	Sidechain,Mainchain	4
1	A	28	ARG	Sidechain	3
1	A	105	ARG	Sidechain	3
1	A	43	PHE	Mainchain,Sidechain	3
1	A	36	ARG	Sidechain,Mainchain	3
1	A	98	TYR	Sidechain	2
1	A	18	LEU	Peptide,Mainchain	2
1	A	64	HIS	Peptide	2
1	A	14	GLN	Mainchain,Peptide	2
1	A	7	ARG	Sidechain	2
1	A	97	ARG	Sidechain	2
1	A	83	CYS	Peptide	2
1	A	29	ALA	Mainchain	1
1	A	82	HIS	Sidechain	1
1	A	99	ALA	Peptide	1
1	A	76	PHE	Sidechain	1
1	A	91	GLN	Mainchain	1
1	A	73	ARG	Sidechain	1
1	A	70	ASN	Sidechain	1
1	A	13	ILE	Mainchain	1
1	A	77	ARG	Sidechain	1
1	A	101	ARG	Sidechain	1
1	A	2	PRO	Peptide	1
1	A	78	VAL	Peptide	1
1	A	87	ASN	Sidechain	1
1	A	6	THR	Peptide	1
1	A	129	LEU	Peptide	1
1	A	61	ARG	Sidechain	1
1	A	21	PRO	Peptide	1

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Mol	Chain	Res	Type	Group	Models (Total)
1	A	48	PHE	Sidechain	1

6.2 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 each 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 averaged over the ensemble.

Mol	Chain	Non-H	H(model)	H(added)	Clashes
1	A	1083	1060	1055	1±1
2	B	58	32	12	0±0
All	All	22820	21840	21347	13

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 0.

All unique clashes are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models Worst	Total
1:A:107:TYR:HB3	1:A:132:THR:HG22	0.53	1.79	13	1
1:A:80:LEU:HD12	1:A:80:LEU:C	0.51	2.25	19	1
1:A:128:HIS:CD2	1:A:129:LEU:H	0.47	2.28	17	1
1:A:60:ILE:HG13	1:A:71:CYS:SG	0.46	2.49	20	1
1:A:23:CYS:SG	1:A:100:ASP:HA	0.44	2.52	1	2
1:A:38:LYS:HE2	2:B:3:SGN:N2	0.43	2.29	1	1
1:A:108:VAL:O	1:A:129:LEU:HD12	0.42	2.14	11	1
1:A:26:ALA:HB1	1:A:43:PHE:CZ	0.42	2.49	4	1
1:A:38:LYS:HE2	2:B:3:SGN:H3	0.42	1.91	3	1
1:A:41:ASN:ND2	1:A:43:PHE:CE1	0.41	2.89	8	1
1:A:27:MET:HG3	1:A:98:TYR:CD1	0.41	2.51	3	1
1:A:72:HIS:O	1:A:108:VAL:HG13	0.40	2.16	20	1

6.3 Torsion angles ⓘ

6.3.1 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 PDB entries followed by that with respect to all NMR entries. 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	131/133 (98%)	113±4 (87±3%)	16±3 (12±3%)	2±1 (1±1%)	14	62
All	All	2620/2660 (98%)	2267 (87%)	322 (12%)	31 (1%)	14	62

All 21 unique Ramachandran outliers are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
1	A	86	ILE	3
1	A	24	THR	3
1	A	102	PRO	3
1	A	88	PRO	2
1	A	89	GLY	2
1	A	3	PRO	2
1	A	85	LEU	2
1	A	121	ARG	1
1	A	127	VAL	1
1	A	20	PRO	1
1	A	120	PRO	1
1	A	55	CYS	1
1	A	95	ASN	1
1	A	96	CYS	1
1	A	4	GLN	1
1	A	15	HIS	1
1	A	79	PRO	1
1	A	58	GLN	1
1	A	12	ALA	1
1	A	68	LEU	1
1	A	66	ARG	1

6.3.2   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 PDB entries followed by that with respect to all NMR entries. 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	121/122 (99%)	117±2 (97±1%)	4±2 (3±1%)	37	86
All	All	2420/2440 (99%)	2344 (97%)	76 (3%)	37	86

All 28 unique residues with a non-rotameric sidechain are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
1	A	133	ILE	20
1	A	35	TRP	9
1	A	30	ILE	6
1	A	101	ARG	5
1	A	80	LEU	3
1	A	122	TYR	3
1	A	19	ASN	3
1	A	86	ILE	2
1	A	124	VAL	2
1	A	100	ASP	2
1	A	88	PRO	2
1	A	3	PRO	2
1	A	67	THR	2
1	A	68	LEU	1
1	A	43	PHE	1
1	A	129	LEU	1
1	A	76	PHE	1
1	A	21	PRO	1
1	A	130	ASP	1
1	A	61	ARG	1
1	A	10	TRP	1
1	A	116	PRO	1
1	A	114	ARG	1
1	A	121	ARG	1
1	A	6	THR	1
1	A	64	HIS	1
1	A	125	VAL	1
1	A	98	TYR	1

6.3.3   RNA ⓘ

There are no RNA molecules in this entry.

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

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

6.5   Carbohydrates ⓘ

3 monosaccharides are modelled in this entry.

In the following table, the Counts columns list the number of bonds for which Mogul statistics could be retrieved, the number of bonds that are observed in the model and the number of bonds 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 is the number of standard deviations the observed value is removed from the expected value. A bond length with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the average root-mean-square of all Z scores of the bond lengths.

Mol	Type	Chain	Res	Link	Bond lengths		
					Counts	RMSZ	#Z>2
2	LVZ	B	1	2	23,23,23	1.89±0.30	6±1 (25±5%)
2	IDS	B	2	2	16,16,17	1.89±0.34	4±1 (25±9%)
2	SGN	B	3	2	19,19,20	1.90±0.45	5±2 (25±8%)

In the following table, the Counts columns list the number of angles for which Mogul statistics could be retrieved, the number of angles that are observed in the model and the number of 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 angle is the number of standard deviations the observed value is removed from the expected value. A bond angle with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the average root-mean-square of all Z scores of the bond angles.

Mol	Type	Chain	Res	Link	Bond angles		
					Counts	RMSZ	#Z>2
2	LVZ	B	1	2	28,35,35	1.88±0.28	6±2 (22±7%)
2	IDS	B	2	2	16,24,26	1.69±0.37	3±1 (20±9%)
2	SGN	B	3	2	23,29,31	2.05±0.33	7±2 (28±7%)

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
2	LVZ	B	1	2	-	0±0,15,35,35	0±0,1,1,1
2	IDS	B	2	2	-	0±0,9,26,29	0±0,1,1,1
2	SGN	B	3	2	-	0±0,11,28,31	0±0,1,1,1

All unique bond outliers are listed below. They are sorted according to the Z-score of the worst occurrence in the ensemble.

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)	Models	
								Worst	Total
2	B	3	SGN	S1-N2	8.36	1.70	1.59	1	17

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)	Models Worst	Total
2	B	1	LVZ	S19-N9	8.16	1.69	1.59	3	12
2	B	3	SGN	O1S-S1	7.12	1.50	1.42	4	7
2	B	2	IDS	O5-C1	6.76	1.55	1.43	8	12
2	B	2	IDS	C1-C2	6.43	1.62	1.51	10	9
2	B	1	LVZ	O5-C5	6.08	1.59	1.44	20	9
2	B	1	LVZ	O3S-S19	5.74	1.48	1.42	6	14
2	B	2	IDS	O5-C5	5.45	1.54	1.43	15	16
2	B	3	SGN	O2S-S1	5.21	1.48	1.42	17	13
2	B	1	LVZ	O2S-S19	4.72	1.47	1.42	9	10
2	B	1	LVZ	O5-C1	4.67	1.53	1.41	13	9
2	B	3	SGN	O5-C5	4.62	1.52	1.43	6	9
2	B	1	LVZ	C2-N9	4.58	1.53	1.47	12	11
2	B	2	IDS	C4-C5	4.55	1.60	1.53	18	11
2	B	2	IDS	C5-C6	4.55	1.62	1.53	20	5
2	B	1	LVZ	O1-C1	4.46	1.54	1.41	15	9
2	B	1	LVZ	O4-C4	4.44	1.53	1.43	20	11
2	B	2	IDS	O4-C4	4.39	1.53	1.43	16	7
2	B	1	LVZ	C1-C2	4.15	1.59	1.53	6	7
2	B	3	SGN	C2-N2	4.11	1.54	1.47	1	8
2	B	2	IDS	C4-C3	4.06	1.62	1.52	1	1
2	B	2	IDS	O2-C2	3.99	1.53	1.47	10	2
2	B	3	SGN	C1-C2	3.85	1.57	1.52	8	6
2	B	1	LVZ	C3-C2	3.68	1.46	1.53	15	7
2	B	3	SGN	O5-C1	3.54	1.49	1.43	4	14
2	B	2	IDS	O6B-C6	3.49	1.19	1.30	16	8
2	B	2	IDS	C3-C2	3.43	1.60	1.53	20	5
2	B	2	IDS	O2-S	3.42	1.47	1.57	2	2
2	B	1	LVZ	C6-C5	3.13	1.61	1.51	8	2
2	B	3	SGN	C4-C5	3.08	1.59	1.53	16	7
2	B	1	LVZ	C4-C5	3.08	1.59	1.53	15	5
2	B	3	SGN	O4-C4	3.07	1.50	1.43	9	5
2	B	3	SGN	O6-S2	2.91	1.64	1.56	10	2
2	B	2	IDS	O6A-C6	2.80	1.30	1.22	5	1
2	B	2	IDS	O3-C3	2.68	1.36	1.43	15	1
2	B	3	SGN	C6-C5	2.62	1.59	1.51	12	5
2	B	3	SGN	O3-C3	2.47	1.49	1.43	1	2
2	B	1	LVZ	O3-C3	2.43	1.49	1.43	8	1
2	B	1	LVZ	O6-S29	2.40	1.50	1.56	4	4
2	B	1	LVZ	C4-C3	2.38	1.58	1.52	5	3
2	B	1	LVZ	C3A-C1A	2.16	1.61	1.49	1	1
2	B	1	LVZ	C2A-C1A	2.13	1.60	1.49	4	1

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)	Models	
								Worst	Total
2	B	3	SGN	C3-C2	2.01	1.56	1.52	14	1

All unique angle outliers are listed below. They are sorted according to the Z-score of the worst occurrence in the ensemble.

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})	Models	
								Worst	Total
2	B	3	SGN	C1-O5-C5	8.98	124.22	112.19	10	16
2	B	1	LVZ	O3S-S19-N9	7.85	95.75	108.88	4	14
2	B	2	IDS	O2-C2-C3	7.49	117.42	106.95	10	9
2	B	2	IDS	C4-C3-C2	6.52	122.06	110.23	10	12
2	B	1	LVZ	O2S-S19-O3S	6.45	106.01	120.36	6	20
2	B	3	SGN	C3-C4-C5	6.01	121.13	110.23	20	8
2	B	3	SGN	C3-C2-N2	5.89	118.06	110.32	15	10
2	B	1	LVZ	O6-C6-C5	5.71	117.75	107.57	17	8
2	B	3	SGN	O5-C1-C2	5.70	102.47	111.29	10	1
2	B	3	SGN	O1S-S1-O2S	5.51	108.10	120.36	15	18
2	B	1	LVZ	C4-C3-C2	5.47	118.37	110.40	15	8
2	B	1	LVZ	O1-C1-C2	5.38	116.81	108.07	18	7
2	B	3	SGN	C1-C2-N2	5.13	118.34	110.22	6	9
2	B	1	LVZ	O2S-S19-N9	4.96	117.18	108.88	8	7
2	B	1	LVZ	C3-C4-C5	4.92	101.31	110.23	14	7
2	B	1	LVZ	C1-C2-N9	4.69	118.70	110.91	19	10
2	B	3	SGN	O6-C6-C5	4.67	115.89	107.57	1	7
2	B	3	SGN	O1S-S1-N2	4.64	101.12	108.88	17	10
2	B	2	IDS	C3-C4-C5	4.57	117.17	109.30	15	10
2	B	1	LVZ	O5-C5-C6	4.46	115.55	106.69	19	8
2	B	1	LVZ	C6-C5-C4	4.38	121.26	112.07	17	4
2	B	2	IDS	O5-C5-C6	4.13	121.34	106.59	3	11
2	B	3	SGN	O3-C3-C2	3.91	101.28	109.40	6	8
2	B	1	LVZ	O3-C3-C2	3.82	101.97	109.58	12	4
2	B	3	SGN	C4-C3-C2	3.75	105.52	111.02	3	5
2	B	1	LVZ	O5-C1-C2	3.65	103.70	110.59	18	3
2	B	3	SGN	O2S-S1-N2	3.52	114.77	108.88	8	5
2	B	3	SGN	O4-C4-C3	3.49	102.15	110.38	3	9
2	B	3	SGN	O4-C4-C5	3.38	117.66	109.32	11	3
2	B	2	IDS	O3S-S-O1S	3.38	120.38	108.56	13	1
2	B	3	SGN	O5-C5-C4	3.33	102.72	110.83	12	2
2	B	1	LVZ	O5-C5-C4	3.33	103.70	109.70	7	7
2	B	2	IDS	O3-C3-C2	3.31	101.17	109.32	19	7
2	B	1	LVZ	O4-C4-C3	3.26	102.70	110.38	11	8
2	B	2	IDS	O4-C4-C5	3.19	117.03	109.76	20	1

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})	Models Worst	Total
2	B	3	SGN	O3-C3-C4	3.08	103.11	110.38	18	4
2	B	2	IDS	O3-C3-C4	3.07	103.14	110.38	8	3
2	B	1	LVZ	O3-C3-C4	3.05	103.18	110.38	15	4
2	B	1	LVZ	C1-O5-C5	2.97	119.51	113.72	8	1
2	B	3	SGN	O6S-S2-O6	2.96	113.17	106.37	19	3
2	B	3	SGN	O5-C5-C6	2.95	101.21	107.59	6	6
2	B	2	IDS	O6B-C6-C5	2.94	124.24	113.64	13	3
2	B	3	SGN	O6S-S2-O5S	2.92	118.77	108.56	11	3
2	B	2	IDS	O6B-C6-O6A	2.86	117.60	124.08	9	4
2	B	1	LVZ	O6-S29-O4S	2.73	98.57	106.92	9	1
2	B	2	IDS	O4-C4-C3	2.40	116.04	110.38	1	1
2	B	2	IDS	O3S-S-O2	2.37	111.81	106.37	8	1
2	B	2	IDS	O5-C1-C2	2.30	104.85	109.51	11	1
2	B	1	LVZ	C1-C2-C3	2.23	116.34	110.19	19	2
2	B	3	SGN	C6-C5-C4	2.19	107.47	112.07	11	3
2	B	1	LVZ	O4-C4-C5	2.16	104.00	109.32	11	2
2	B	1	LVZ	O5S-S29-O6S	2.13	116.02	108.56	16	1
2	B	2	IDS	O3S-S-O2S	2.10	115.91	108.56	6	1
2	B	2	IDS	O6A-C6-C5	2.10	113.24	120.81	11	1
2	B	3	SGN	O6S-S2-O4S	2.09	115.87	108.56	10	1
2	B	1	LVZ	O5S-S29-O4S	2.09	115.86	108.56	5	1

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

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 B

Bond lengths

Bond angles

Torsions

Rings
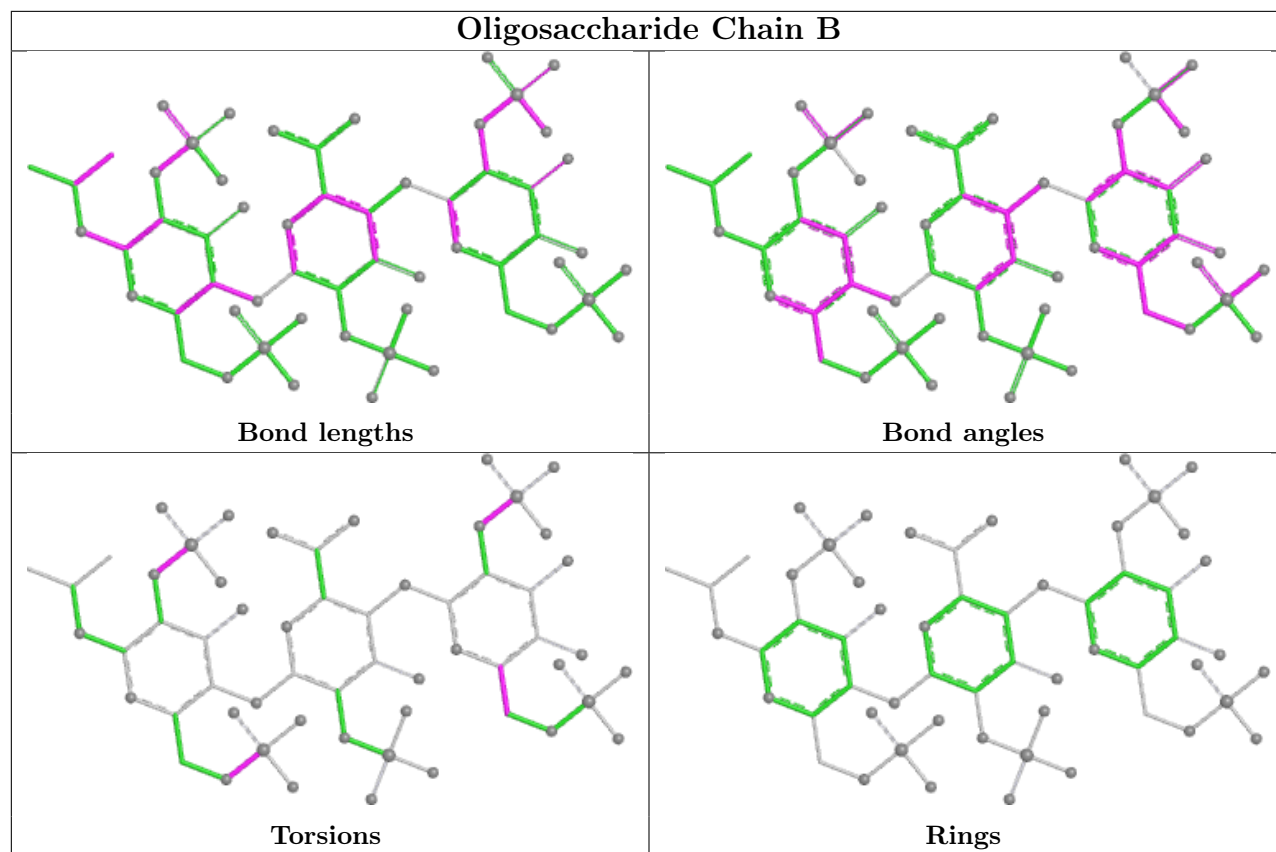
6.6 Ligand geometry ⓘ

There are no ligands in this entry.

6.7 Other polymers ⓘ

There are no such molecules in this entry.

6.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

7 Chemical shift validation ⓘ

The completeness of assignment taking into account all chemical shift lists is 77% for the well-defined parts and 77% for the entire structure.

7.1 Chemical shift list 1

File name: working_cs.cif

Chemical shift list name: *assigned_chem_shift_list_1*

7.1.1 Bookkeeping ⓘ

The following table shows the results of parsing the chemical shift list and reports the number of nuclei with statistically unusual chemical shifts.

Total number of shifts	1481
Number of shifts mapped to atoms	1481
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Number of shift outliers (ShiftChecker)	8

7.1.2 Chemical shift referencing ⓘ

The following table shows the suggested chemical shift referencing corrections.

Nucleus	# values	Correction ± precision, *ppm*	Suggested action
$^{13}C_\alpha$	129	-0.00 ± 0.15	None needed (< 0.5 ppm)
$^{13}C_\beta$	129	-0.09 ± 0.10	None needed (< 0.5 ppm)
$^{13}C'$	0	—	None (insufficient data)
^{15}N	120	1.10 ± 0.53	Should be applied

7.1.3 Completeness of resonance assignments ⓘ

The following table shows the completeness of the chemical shift assignments for the well-defined regions of the structure. The overall completeness is 77%, i.e. 1470 atoms were assigned a chemical shift out of a possible 1898. 0 out of 16 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^1H	^{13}C	^{15}N
Backbone	503/639 (79%)	255/255 (100%)	128/264 (48%)	120/120 (100%)
Sidechain	888/1099 (81%)	599/707 (85%)	263/316 (83%)	26/76 (34%)

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	Total	**¹H**	**¹³C**	**¹⁵N**
Aromatic	79/160 (49%)	62/78 (79%)	15/70 (21%)	2/12 (17%)
Overall	1470/1898 (77%)	916/1040 (88%)	406/650 (62%)	148/208 (71%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 77%, i.e. 1480 atoms were assigned a chemical shift out of a possible 1921. 0 out of 16 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	**¹H**	**¹³C**	**¹⁵N**
Backbone	505/644 (78%)	256/257 (100%)	129/266 (48%)	120/121 (99%)
Sidechain	896/1117 (80%)	604/718 (84%)	266/320 (83%)	26/79 (33%)
Aromatic	79/160 (49%)	62/78 (79%)	15/70 (21%)	2/12 (17%)
Overall	1480/1921 (77%)	922/1053 (88%)	410/656 (62%)	148/212 (70%)

7.1.4   Statistically unusual chemical shifts ⓘ

The following table lists the statistically unusual chemical shifts. These are statistical measures, and large deviations from the mean do not necessarily imply incorrect assignments. Molecules containing paramagnetic centres or hemes are expected to give rise to anomalous chemical shifts.

List Id	**Chain**	**Res**	**Type**	**Atom**	**Shift, *ppm***	**Expected range, *ppm***	**Z-score**
1	A	117	ARG	H	0.30	5.25 − 11.22	-13.3
1	A	12	ALA	CB	38.40	10.19 − 27.75	11.1
1	A	14	GLN	HG3	0.58	0.91 − 3.68	-6.2
1	A	126	PRO	HB3	0.07	0.25 − 3.76	-5.5
1	A	14	GLN	HB2	0.68	0.80 − 3.29	-5.5
1	A	74	SER	HB3	2.44	2.49 − 5.20	-5.2
1	A	27	MET	HB3	0.28	0.33 − 3.66	-5.2
1	A	77	ARG	HG3	0.15	0.15 − 2.94	-5.0

7.1.5   Random Coil Index (RCI) plots ⓘ

The image below reports *random coil index* values for the protein chains in the structure. The height of each bar gives a probability of a given residue to be disordered, as predicted from the available chemical shifts and the amino acid sequence. A value above 0.2 is an indication of significant predicted disorder. The colour of the bar shows whether the residue is in the well-defined core (black) or in the ill-defined residue ranges (cyan), as described in section 2 on ensemble composition.If well-defined core and ill-defined regions are not identified then it is shown as gray bars.

Random coil index (RCI) for chain A: