wwPDB X-ray Structure Validation Summary Report ⓘ

Sep 12, 2023 – 10:45 PM EDT

PDB ID	:	4NEN
Title	:	An internal ligand-bound, metastable state of a leukocyte integrin, aXb2
Authors	:	Sen, M.; Yuki, K.; Springer, T.A.
Deposited on	:	2013-10-29
Resolution	:	2.90 Å(reported)

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

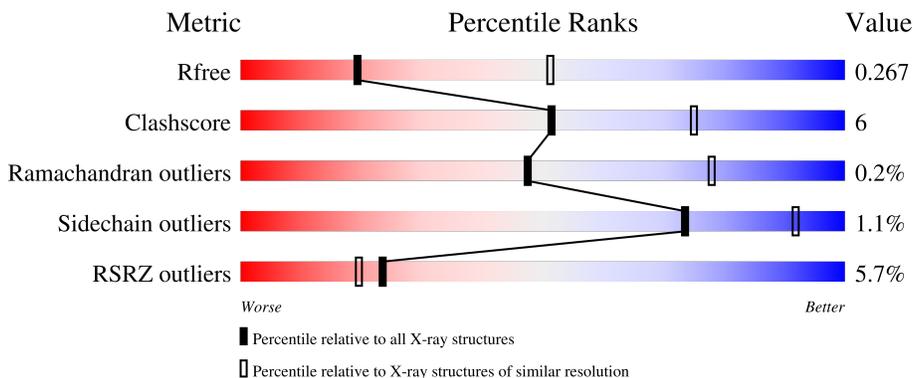|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35.1

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 2.90 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.
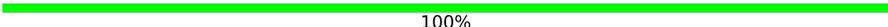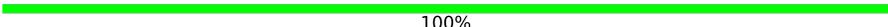
Metric	Percentile Ranks	Value
Rfree		0.267
Clashscore		6
Ramachandran outliers		0.2%
Sidechain outliers		1.1%
RSRZ outliers		5.7%

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$_{free}$	130704	1957 (2.90-2.90)
Clashscore	141614	2172 (2.90-2.90)
Ramachandran outliers	138981	2115 (2.90-2.90)
Sidechain outliers	138945	2117 (2.90-2.90)
RSRZ outliers	127900	1906 (2.90-2.90)

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	1094	4% — 82% / 15% / •
2	B	686	8% — 82% / 14% / •
3	C	2	50% / 50%
3	D	2	50% / 50%
3	F	2	100%

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Mol	Chain	Length	Quality of chain
3	G	2	100%
3	H	2	100%
4	E	6	33% 50% 17%

2 Entry composition ⓘ

There are 8 unique types of molecules in this entry. The entry contains 13731 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 Integrin alpha-X.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1063	Total 8265	C 5239	N 1422	O 1567	S 37	0	4	0

There are 17 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	42	ASP	ASN	engineered mutation	UNP P20702
A	368	ASP	SER	engineered mutation	UNP P20702
A	678	THR	ASN	engineered mutation	UNP P20702
A	885	SER	ASN	engineered mutation	UNP P20702
A	920	CYS	ASN	engineered mutation	UNP P20702
A	1083	PRO	-	expression tag	UNP P20702
A	1084	GLY	-	expression tag	UNP P20702
A	1085	PRO	-	expression tag	UNP P20702
A	1086	ALA	-	expression tag	UNP P20702
A	1087	ALA	-	expression tag	UNP P20702
A	1088	LEU	-	expression tag	UNP P20702
A	1089	GLN	-	expression tag	UNP P20702
A	1090	THR	-	expression tag	UNP P20702
A	1091	LEU	-	expression tag	UNP P20702
A	1092	PHE	-	expression tag	UNP P20702
A	1093	GLN	-	expression tag	UNP P20702
A	1094	GLY	-	expression tag	UNP P20702

- Molecule 2 is a protein called Integrin beta-2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	665	Total 5118	C 3154	N 912	O 987	S 65	0	4	1

There are 15 discrepancies between the modelled and reference sequences:

WORLDWIDE
wwPDB
PROTEIN DATA BANK

Chain	Residue	Modelled	Actual	Comment	Reference
B	190	ASP	ASN	engineered mutation	UNP P05107
B	232	LYS	ASN	engineered mutation	UNP P05107
B	674	CYS	VAL	engineered mutation	UNP P05107
B	675	GLY	-	expression tag	UNP P05107
B	676	GLY	-	expression tag	UNP P05107
B	677	PRO	-	expression tag	UNP P05107
B	678	ALA	-	expression tag	UNP P05107
B	679	ALA	-	expression tag	UNP P05107
B	680	LEU	-	expression tag	UNP P05107
B	681	GLN	-	expression tag	UNP P05107
B	682	THR	-	expression tag	UNP P05107
B	683	LEU	-	expression tag	UNP P05107
B	684	PHE	-	expression tag	UNP P05107
B	685	GLN	-	expression tag	UNP P05107
B	686	GLY	-	expression tag	UNP P05107

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

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
3	C	2	Total 28	C 16	N 2	O 10	0	0	0
3	D	2	Total 28	C 16	N 2	O 10	0	0	0
3	F	2	Total 28	C 16	N 2	O 10	0	0	0
3	G	2	Total 28	C 16	N 2	O 10	0	0	0
3	H	2	Total 28	C 16	N 2	O 10	0	0	0

- Molecule 4 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-alpha-D-mannopyran ose-(1-6)-[alpha-D-mannopyranose-(1-3)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.
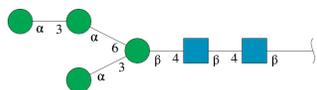
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
4	E	6	Total 72	C 40	N 2	O 30	0	0	0

- Molecule 5 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	3	Total 3	Ca 3	0	0
5	B	2	Total 2	Ca 2	0	0

- Molecule 6 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	1	Total 1	Mg 1	0	0
6	B	1	Total 1	Mg 1	0	0

- Molecule 7 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	1	Total 1	Cl 1	0	0

- Molecule 8 is water.

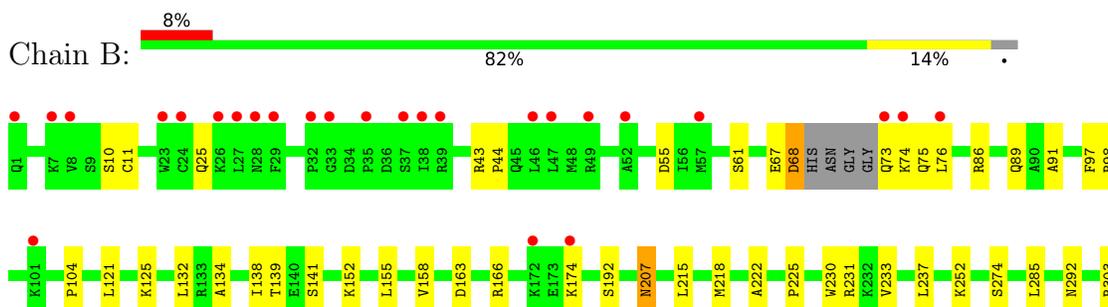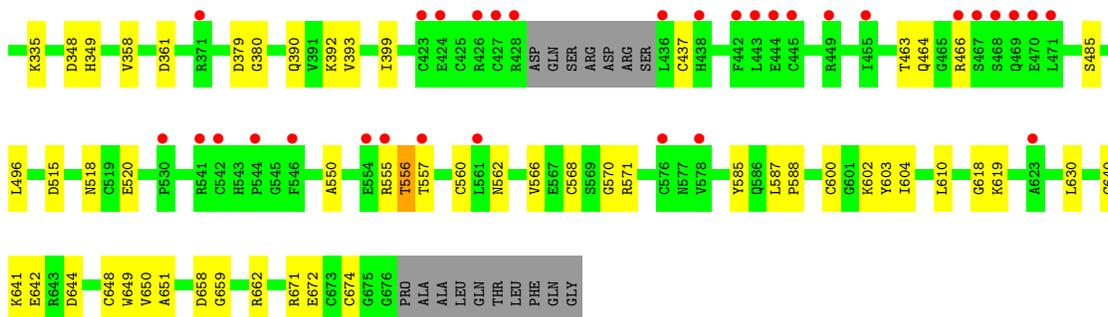| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	A	74	Total 74	O 74	0	0
8	B	54	Total 54	O 54	0	0

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: Integrin alpha-X

Chain A:

- Molecule 2: Integrin beta-2

Chain B:

K335 D348 H349 V358 D361 R371 D379 G380 Q390 V391 K392 V393 I399 C423 E424 C425 R426 C427 R428 ASP GLN SER ARG ASP SER L436 C437 H438 F442 L443 E444 C445 R449 I455 T463 Q464 G465 R466 S467 S468 Q469 E470 L471 S485

L496 D515 N518 C519 E520 P530 R541 C542 H543 P544 G545 F546 A550 E554 R555 T556 T557 C560 L561 N562 V566 E567 C568 S569 G570 R571 C576 N577 V578 Y585 Q586 L587 P588 C600 G601 K602 Y603 I604 L610 G618 K619 A623 L630 C640

K641 E642 R643 D644 C648 W649 V650 A651 D658 G659 R662 R671 E672 C673 C674 G675 G676 PRO ALA ALA LEU GLN THR LEU PHE GLN GLY

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

Chain C:

50%   50%

NAG1 NAG2

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

Chain D:

50%   50%

NAG1 NAG2

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

Chain F:

100%

NAG1 NAG2

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

Chain G:

100%

NAG1 NAG2

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

Chain H:

100%

NAG1 NAG2

• Molecule 4: alpha-D-mannopyranose-(1-3)-alpha-D-mannopyranose-(1-6)-[alpha-D-mannopyran ose-(1-3)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetam ido-2-deoxy-beta-D-glucopyranose

Chain E:

| 33% | 50% | 17% |

NAG1 NAG2 BMA3 MAN4 MAN5 MAN6

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	127.09Å 119.85Å 182.40Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	47.81 – 2.90 47.81 – 2.90	Depositor EDS
% Data completeness (in resolution range)	99.2 (47.81-2.90) 99.3 (47.81-2.90)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.34 (at 2.91Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.8.2_1309)	Depositor
R, R_{free}	0.224 , 0.264 0.228 , 0.267	Depositor DCC
R_{free} test set	3117 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å^2)	69.2	Xtriage
Anisotropy	0.264	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.28 , 52.5	EDS
L-test for twinning[2]	$< |L| > = 0.47, < L^2 > = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	13731	wwPDB-VP
Average B, all atoms (Å^2)	89.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.89% 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 ⓘ

5.1 Standard geometry ⓘ

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

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	0.22	0/8465	0.43	1/11502 (0.0%)
2	B	0.23	0/5223	0.43	0/7049
All	All	0.22	0/13688	0.43	1/18551 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	888	PRO	N-CA-CB	6.18	110.72	103.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	8265	0	8095	99	0
2	B	5118	0	4920	59	0
3	C	28	0	25	1	0
3	D	28	0	25	1	0
3	F	28	0	25	0	0
3	G	28	0	25	0	0
3	H	28	0	25	0	0
4	E	72	0	61	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	A	3	0	0	0	0
5	B	2	0	0	0	0
6	A	1	0	0	0	0
6	B	1	0	0	0	0
7	A	1	0	0	0	0
8	A	74	0	0	3	0
8	B	54	0	0	1	0
All	All	13731	0	13201	150	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 6.

The worst 5 of 150 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:952:PHE:HB2	1:A:1011:PHE:HB2	1.68	0.75
1:A:685:ARG:HH12	1:A:694:GLU:HB2	1.53	0.72
2:B:361:ASP:HB2	2:B:390:GLN:HB3	1.75	0.68
1:A:995:ILE:HG21	1:A:1040:ILE:HG23	1.78	0.66
1:A:12:ARG:HG2	1:A:590:GLN:HG2	1.76	0.66

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	1061/1094 (97%)	1010 (95%)	48 (4%)	3 (0%)	41	71
2	B	663/686 (97%)	621 (94%)	41 (6%)	1 (0%)	47	78
All	All	1724/1780 (97%)	1631 (95%)	89 (5%)	4 (0%)	47	78

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	543	PRO
1	A	175	SER
1	A	528	GLU
2	B	555	ARG

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	909/932 (98%)	899 (99%)	10 (1%)	73	92
2	B	576/590 (98%)	569 (99%)	7 (1%)	71	91
All	All	1485/1522 (98%)	1468 (99%)	17 (1%)	73	92

5 of 17 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	437	CYS
2	B	674	CYS
1	A	837	GLN
1	A	974	ASN
1	A	1031	ASN

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

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 ⓘ

16 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	C	1	1,3	14,14,15	0.45	0	17,19,21	0.44	0
3	NAG	C	2	3	14,14,15	0.27	0	17,19,21	0.53	0
3	NAG	D	1	1,3	14,14,15	0.65	0	17,19,21	0.58	0
3	NAG	D	2	3	14,14,15	0.26	0	17,19,21	0.44	0
4	NAG	E	1	1,4	14,14,15	0.56	0	17,19,21	0.42	0
4	NAG	E	2	4	14,14,15	0.21	0	17,19,21	0.36	0
4	BMA	E	3	4	11,11,12	0.66	0	15,15,17	1.25	2 (13%)
4	MAN	E	4	4	11,11,12	0.94	0	15,15,17	1.23	3 (20%)
4	MAN	E	5	4	11,11,12	0.83	0	15,15,17	0.98	1 (6%)
4	MAN	E	6	4	11,11,12	1.06	1 (9%)	15,15,17	1.04	1 (6%)
3	NAG	F	1	1,3	14,14,15	0.54	0	17,19,21	0.56	0
3	NAG	F	2	3	14,14,15	0.32	0	17,19,21	0.37	0
3	NAG	G	1	3,2	14,14,15	0.50	0	17,19,21	0.40	0
3	NAG	G	2	3	14,14,15	0.31	0	17,19,21	0.39	0
3	NAG	H	1	3,2	14,14,15	0.59	0	17,19,21	0.64	0
3	NAG	H	2	3	14,14,15	0.35	0	17,19,21	0.46	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	C	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	C	2	3	-	1/6/23/26	0/1/1/1
3	NAG	D	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	D	2	3	-	1/6/23/26	0/1/1/1
4	NAG	E	1	1,4	-	0/6/23/26	0/1/1/1
4	NAG	E	2	4	-	2/6/23/26	0/1/1/1
4	BMA	E	3	4	-	1/2/19/22	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	MAN	E	4	4	-	0/2/19/22	0/1/1/1
4	MAN	E	5	4	-	1/2/19/22	0/1/1/1
4	MAN	E	6	4	-	2/2/19/22	0/1/1/1
3	NAG	F	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	F	2	3	-	2/6/23/26	0/1/1/1
3	NAG	G	1	3,2	-	2/6/23/26	0/1/1/1
3	NAG	G	2	3	-	0/6/23/26	0/1/1/1
3	NAG	H	1	3,2	-	0/6/23/26	0/1/1/1
3	NAG	H	2	3	-	0/6/23/26	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	E	6	MAN	C2-C3	2.40	1.56	1.52

The worst 5 of 7 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	E	3	BMA	C1-O5-C5	2.78	115.96	112.19
4	E	3	BMA	O2-C2-C3	-2.54	105.05	110.14
4	E	6	MAN	O2-C2-C3	-2.53	105.07	110.14
4	E	4	MAN	O3-C3-C2	2.49	114.76	109.99
4	E	4	MAN	C1-O5-C5	2.32	115.34	112.19

There are no chirality outliers.

5 of 18 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	D	1	NAG	O5-C5-C6-O6
3	G	1	NAG	O5-C5-C6-O6
3	F	1	NAG	O5-C5-C6-O6
4	E	2	NAG	O5-C5-C6-O6
3	F	1	NAG	C4-C5-C6-O6

There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	D	1	NAG	1	0
3	C	1	NAG	1	0

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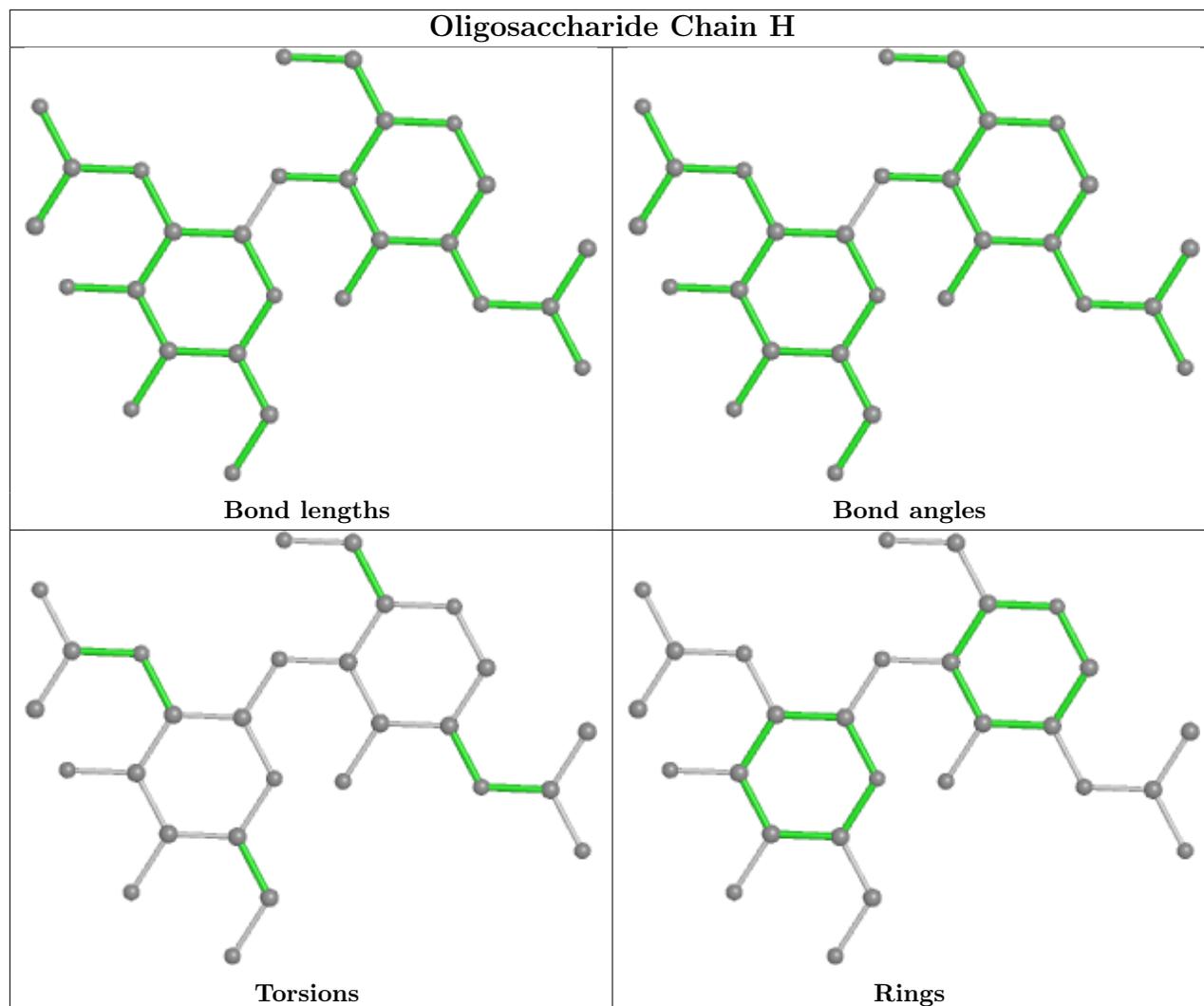| Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	E	6	MAN	1	0

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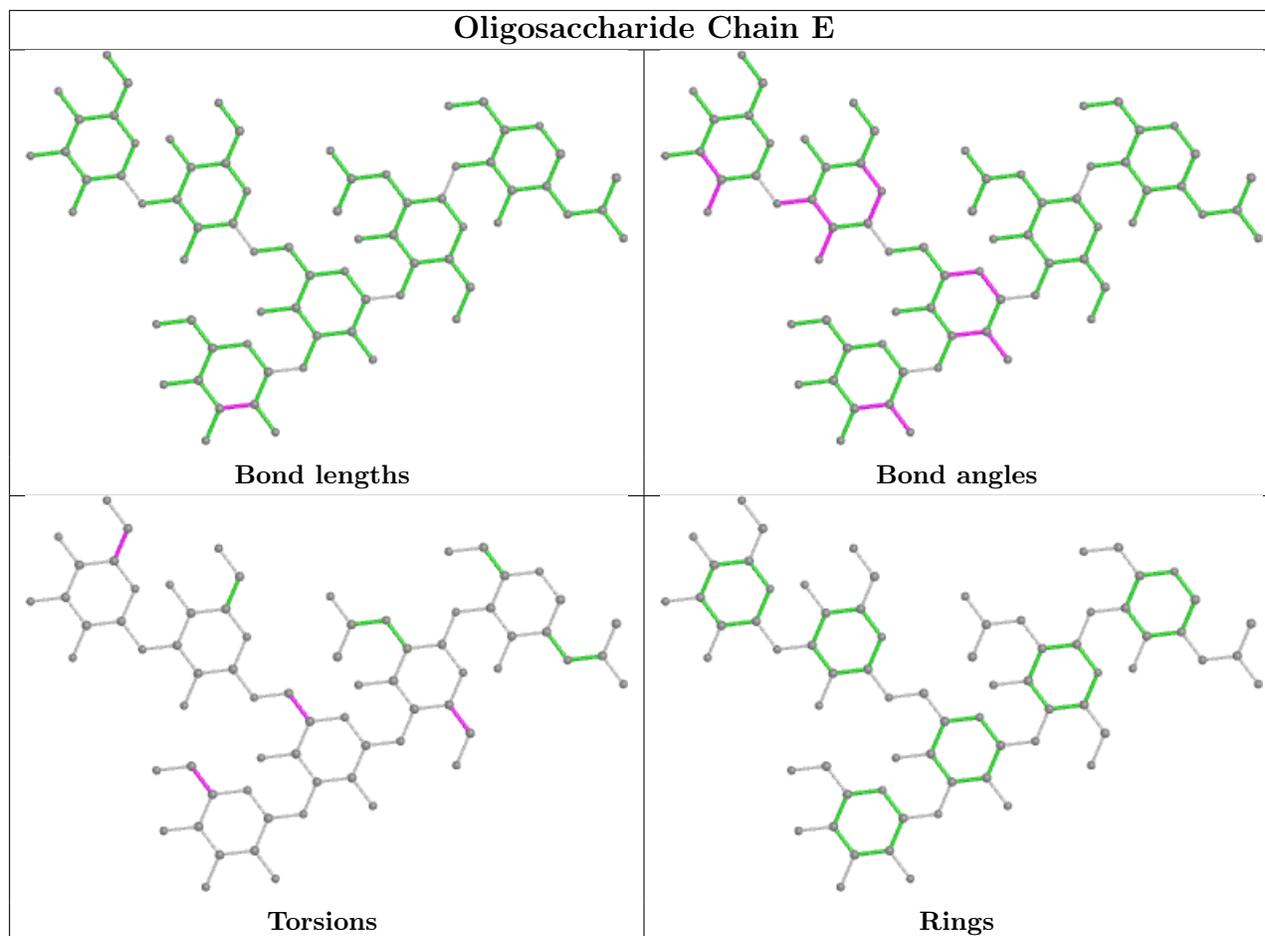

Oligosaccharide Chain C

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain D

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain F

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain G

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain H

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain E

Bond lengths

Bond angles

Torsions

Rings

5.6 Ligand geometry ⓘ

Of 8 ligands modelled in this entry, 8 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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(Å²)	Q<0.9
1	A	1063/1094 (97%)	0.18	41 (3%)	39	35	34, 76, 143, 301	0
2	B	665/686 (96%)	0.44	58 (8%)	10	7	34, 94, 175, 250	1 (0%)
All	All	1728/1780 (97%)	0.28	99 (5%)	23	19	34, 81, 165, 301	1 (0%)

The worst 5 of 99 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	626	SER	15.8
2	B	8	VAL	6.1
2	B	468	SER	6.1
1	A	890	THR	5.5
2	B	38	ILE	5.4

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 ⓘ

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(Å²)	Q<0.9
4	MAN	E	4	11/12	0.65	0.24	141,148,152,154	0
3	NAG	G	2	14/15	0.79	0.18	161,170,177,179	0
4	BMA	E	3	11/12	0.80	0.12	102,114,137,143	0
4	MAN	E	6	11/12	0.80	0.18	157,165,172,173	0
3	NAG	H	2	14/15	0.81	0.33	139,155,167,175	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	NAG	G	1	14/15	0.82	0.14	109,120,133,145	0
3	NAG	C	2	14/15	0.82	0.19	117,134,152,154	0
3	NAG	F	2	14/15	0.83	0.18	141,149,158,159	0
4	MAN	E	5	11/12	0.84	0.24	149,155,160,162	0
3	NAG	H	1	14/15	0.89	0.20	92,105,122,138	0
3	NAG	D	2	14/15	0.89	0.17	69,114,123,127	0
3	NAG	F	1	14/15	0.92	0.16	83,106,111,129	0
3	NAG	C	1	14/15	0.95	0.14	50,81,99,101	0
4	NAG	E	2	14/15	0.95	0.14	66,70,89,94	0
4	NAG	E	1	14/15	0.96	0.17	57,63,70,77	0
3	NAG	D	1	14/15	0.96	0.14	58,77,92,97	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.
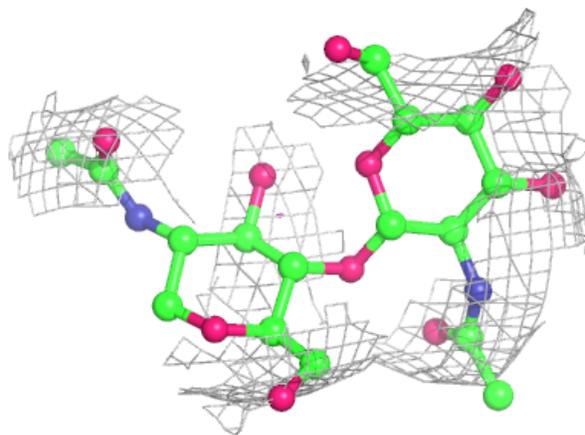

Electron density around Chain C:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
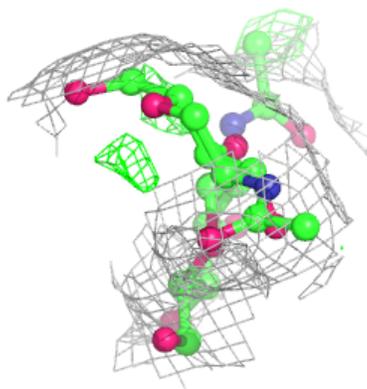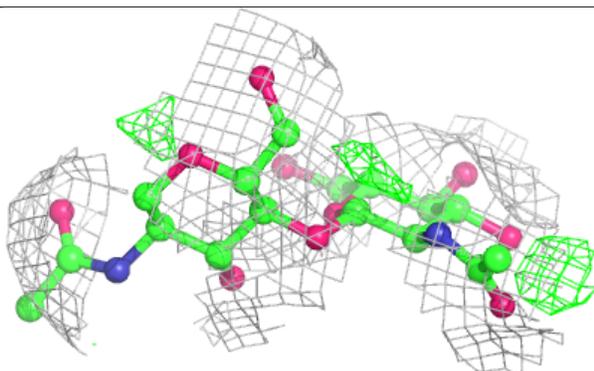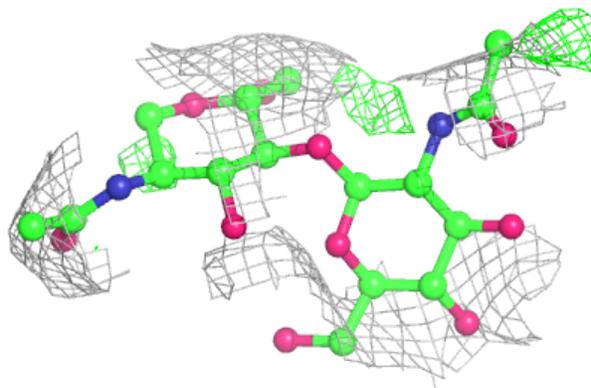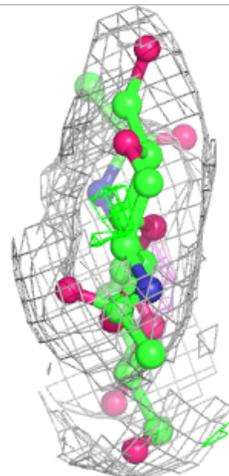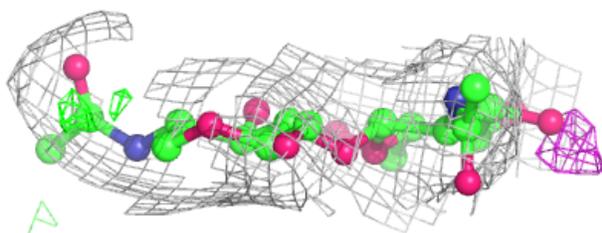and green (positive)
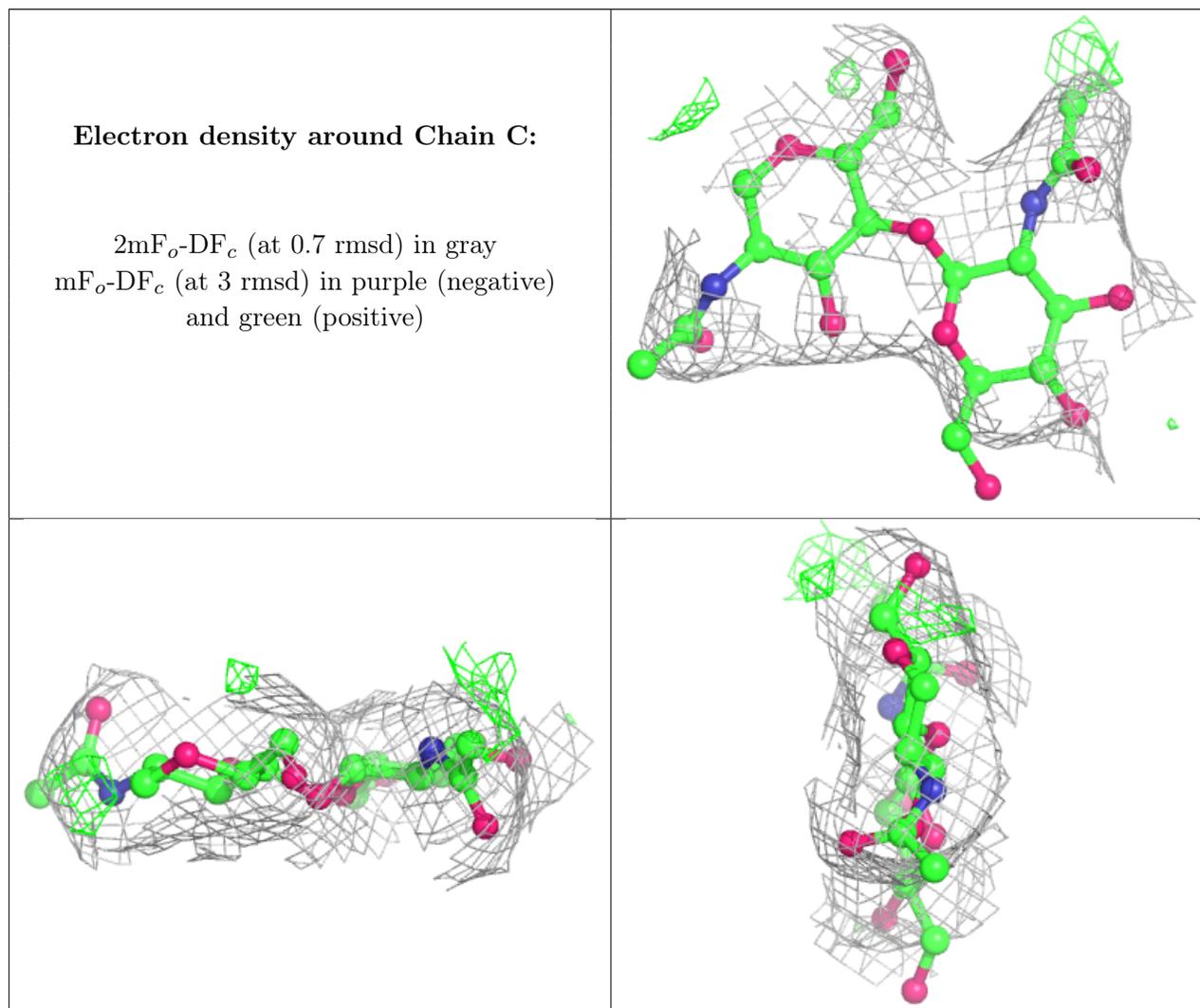
Electron density around Chain D:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
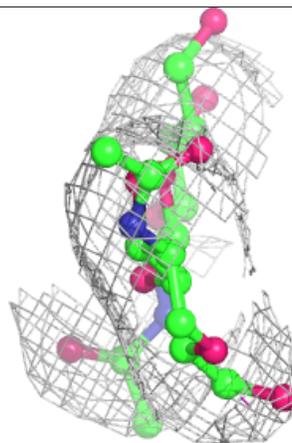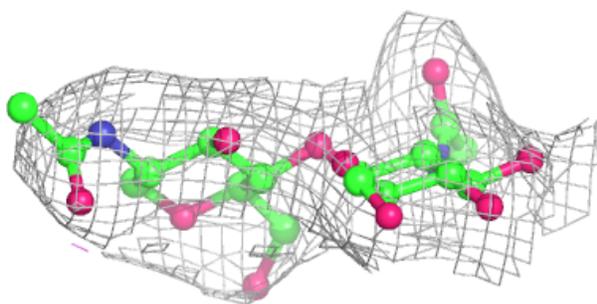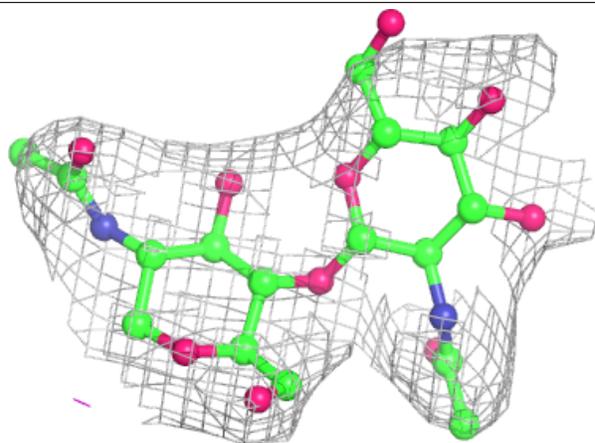
Electron density around Chain F:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
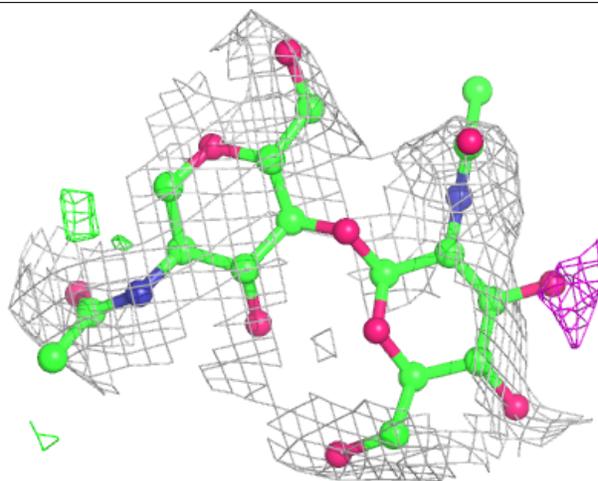and green (positive)
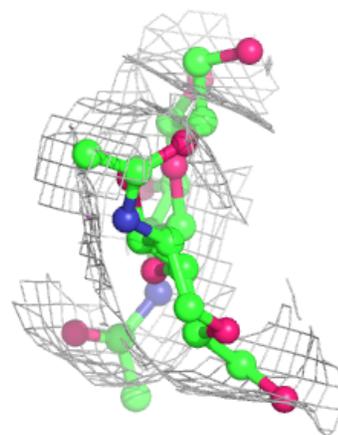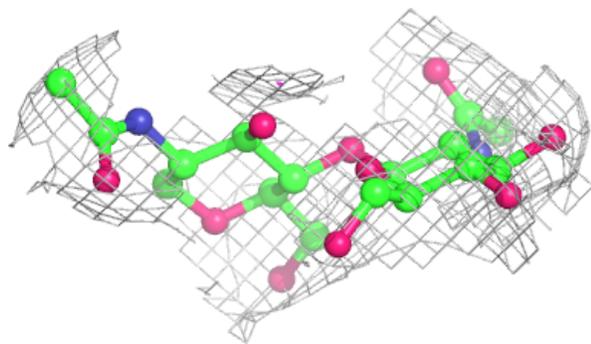
Electron density around Chain G:

$2mF_o$-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 H:

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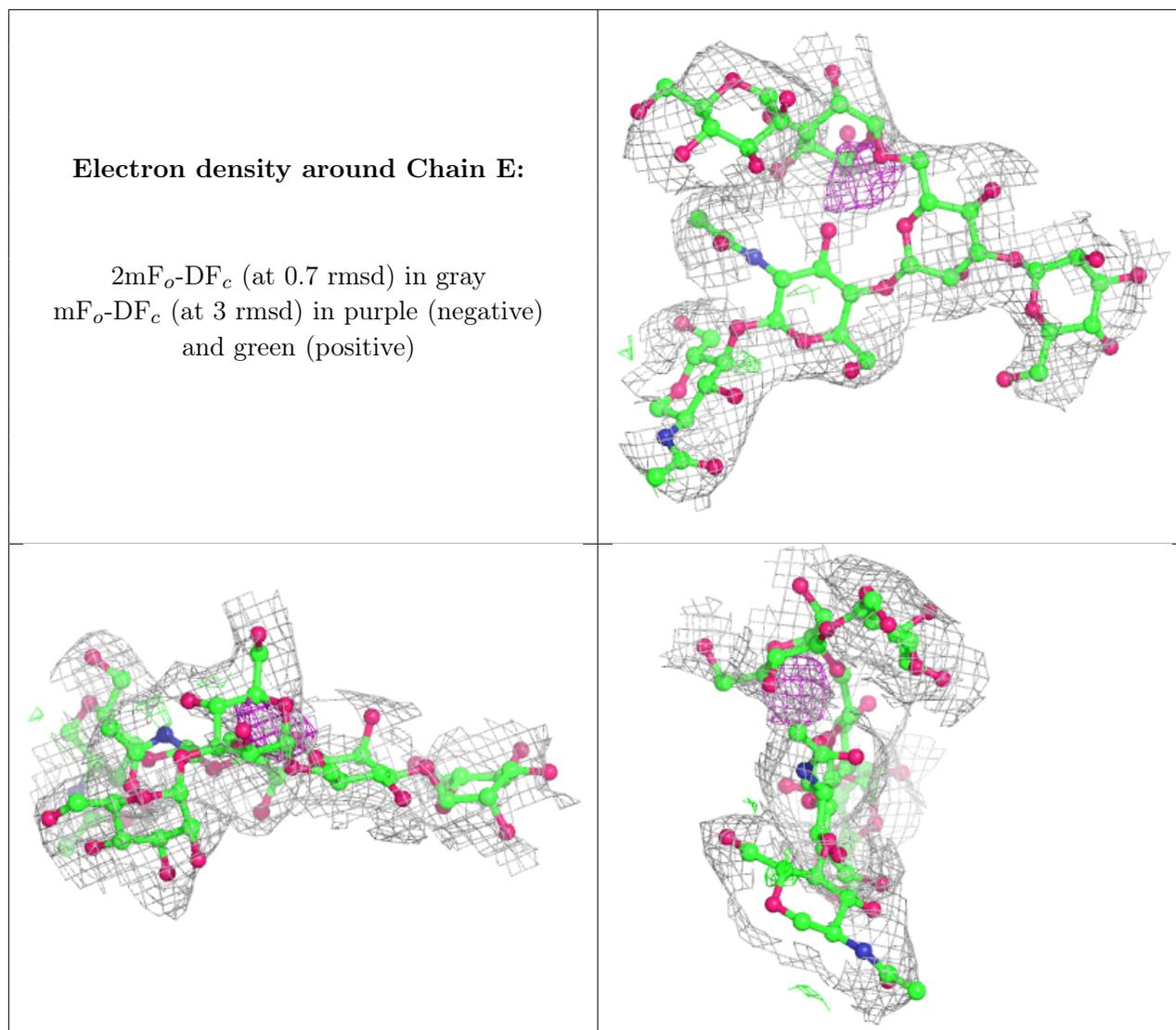and green (positive)

Electron density around Chain E:

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

6.4 Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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	CA	A	1115	1/1	0.80	0.13	131,131,131,131	0
5	CA	B	706	1/1	0.88	0.16	92,92,92,92	0
5	CA	B	705	1/1	0.96	0.19	44,44,44,44	0
5	CA	A	1113	1/1	0.96	0.15	54,54,54,54	0
6	MG	A	1116	1/1	0.96	0.09	72,72,72,72	0
5	CA	A	1114	1/1	0.97	0.13	65,65,65,65	0
6	MG	B	707	1/1	0.97	0.20	59,59,59,59	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
7	CL	A	1117	1/1	0.97	0.08	85,85,85,85	0

6.5   Other polymers ⓘ

There are no such residues in this entry.