



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 1, 2026 – 04:51 AM UTC

PDB ID : 2ONC / pdb_00002onc
Title : Crystal structure of human DPP-4
Authors : Feng, J.; Zhang, Z.; Wallace, M.B.; Stafford, J.A.; Kaldor, S.W.; Kassel, D.B.; Navre, M.; Shi, L.; Skene, R.J.; Asakawa, T.; Takeuchi, K.; Xu, R.; Webb, D.R.; Gwaltney, S.L.
Deposited on : 2007-01-23
Resolution : 2.55 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ 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	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

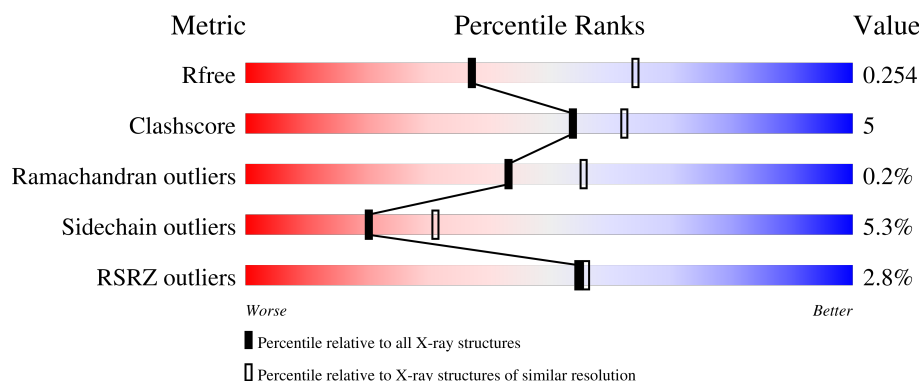
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

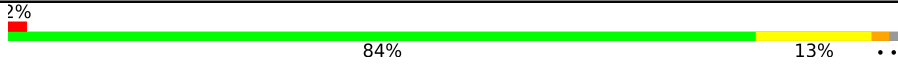
The reported resolution of this entry is 2.55 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



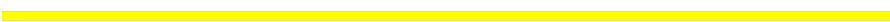
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	1091 (2.54-2.54)
Clashscore	190562	1120 (2.54-2.54)
Ramachandran outliers	187476	1106 (2.54-2.54)
Sidechain outliers	187428	1106 (2.54-2.54)
RSRZ outliers	180081	1091 (2.54-2.54)

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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	731	
1	B	731	
1	C	731	
1	D	731	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
2	E	2	 50%50%
2	F	2	 50%50%
2	G	2	 50%50%
2	H	2	 100%
2	I	2	 100%

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 25016 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.

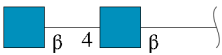
- Molecule 1 is a protein called Dipeptidyl peptidase 4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	724	Total	C	N	O	S	0	1	0
			5925	3807	973	1119	26			
1	B	728	Total	C	N	O	S	0	1	0
			5958	3826	981	1125	26			
1	C	723	Total	C	N	O	S	0	1	0
			5918	3802	972	1118	26			
1	D	722	Total	C	N	O	S	0	0	0
			5907	3795	969	1117	26			

There are 20 discrepancies between the modelled and reference sequences:

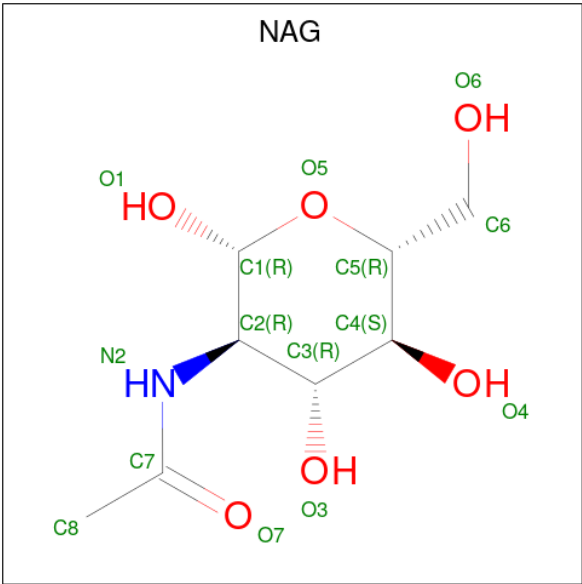
Chain	Residue	Modelled	Actual	Comment	Reference
A	36	HIS	-	expression tag	UNP P27487
A	37	HIS	-	expression tag	UNP P27487
A	38	ALA	-	expression tag	UNP P27487
A	39	SER	-	expression tag	UNP P27487
A	40	ALA	-	expression tag	UNP P27487
B	36	HIS	-	expression tag	UNP P27487
B	37	HIS	-	expression tag	UNP P27487
B	38	ALA	-	expression tag	UNP P27487
B	39	SER	-	expression tag	UNP P27487
B	40	ALA	-	expression tag	UNP P27487
C	36	HIS	-	expression tag	UNP P27487
C	37	HIS	-	expression tag	UNP P27487
C	38	ALA	-	expression tag	UNP P27487
C	39	SER	-	expression tag	UNP P27487
C	40	ALA	-	expression tag	UNP P27487
D	36	HIS	-	expression tag	UNP P27487
D	37	HIS	-	expression tag	UNP P27487
D	38	ALA	-	expression tag	UNP P27487
D	39	SER	-	expression tag	UNP P27487
D	40	ALA	-	expression tag	UNP P27487

- Molecule 2 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
2	E	2	Total	C	N	O	0	0	0
			28	16	2	10			
2	F	2	Total	C	N	O	0	0	0
			28	16	2	10			
2	G	2	Total	C	N	O	0	0	0
			28	16	2	10			
2	H	2	Total	C	N	O	0	0	0
			28	16	2	10			
2	I	2	Total	C	N	O	0	0	0
			28	16	2	10			

- Molecule 3 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: C₈H₁₅NO₆).



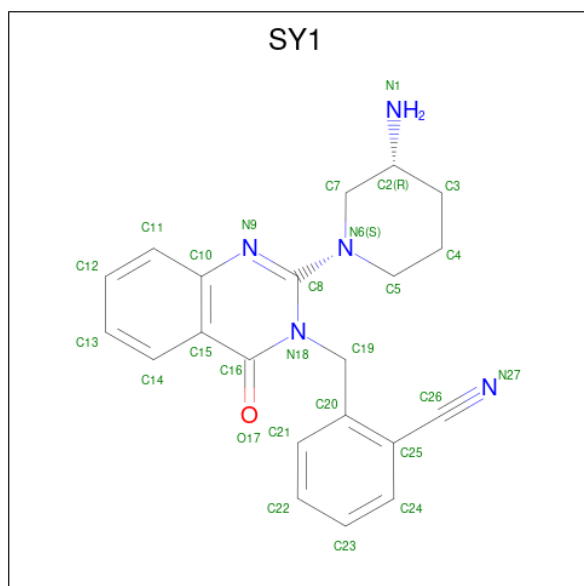
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	N	O	0	0
			14	8	1	5		
3	A	1	Total	C	N	O	0	0
			14	8	1	5		
3	A	1	Total	C	N	O	0	0
			14	8	1	5		

Continued on next page...

Continued from previous page...

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

- Molecule 4 is 2-({2-[(3R)-3-AMINOPIPERIDIN-1-YL]-4-OXOQUINAZOLIN-3(4H)-YL}M ETHYL)BENZONITRILE (CCD ID: SY1) (formula: C₂₁H₂₁N₅O).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total	C	N	O	0	0
			27	21	5	1		
4	A	1	Total	C	N	O	0	0
			27	21	5	1		
4	B	1	Total	C	N	O	0	0
			27	21	5	1		
4	B	1	Total	C	N	O	0	0
			27	21	5	1		
4	C	1	Total	C	N	O	0	0
			27	21	5	1		
4	C	1	Total	C	N	O	0	0
			27	21	5	1		
4	D	1	Total	C	N	O	0	0
			27	21	5	1		
4	D	1	Total	C	N	O	0	0
			27	21	5	1		

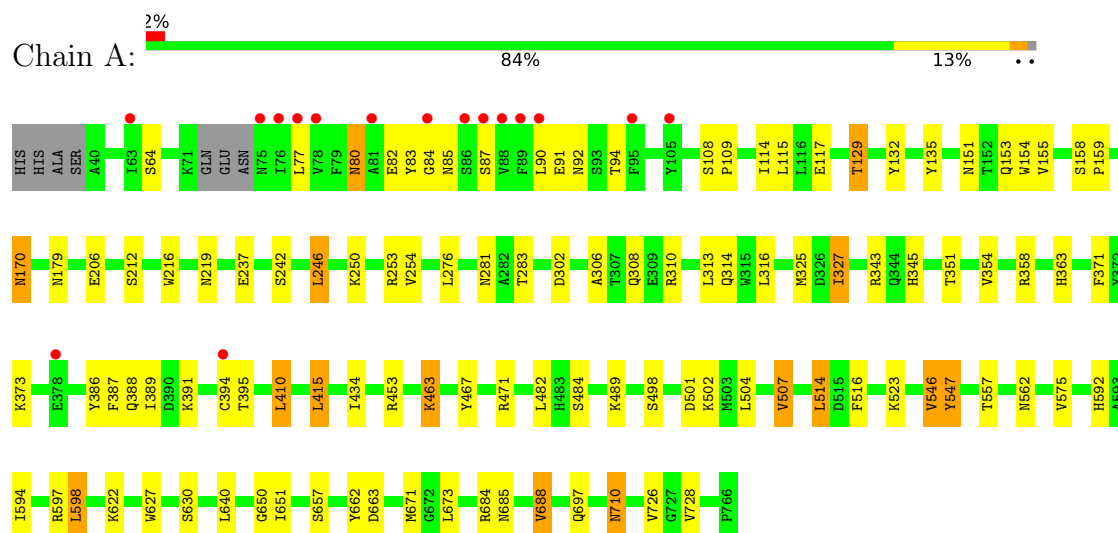
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	227	Total	O	0	0
			227	227		
5	B	213	Total	O	0	0
			213	213		
5	C	219	Total	O	0	0
			219	219		
5	D	97	Total	O	0	0
			97	97		

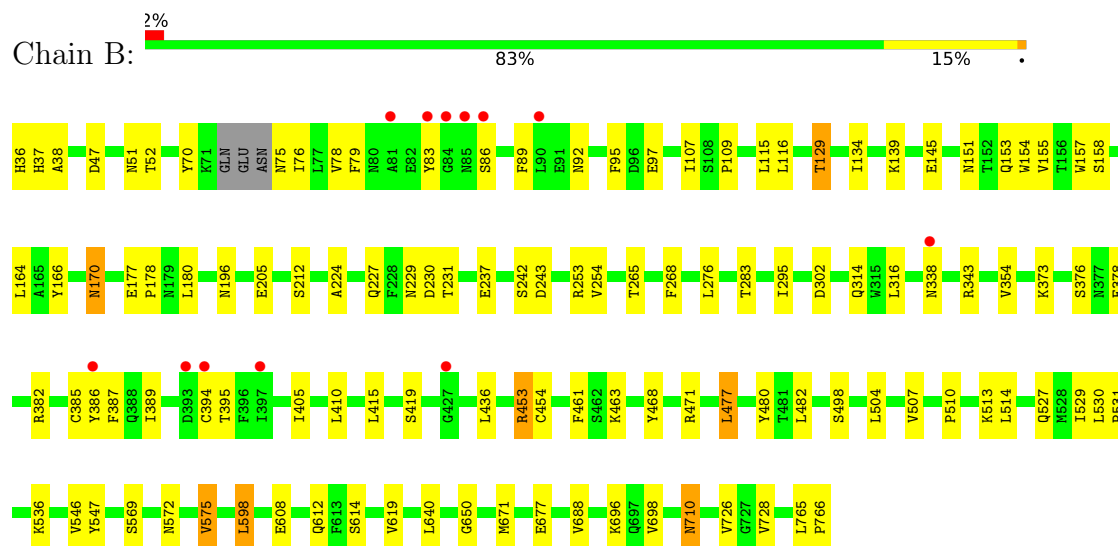
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

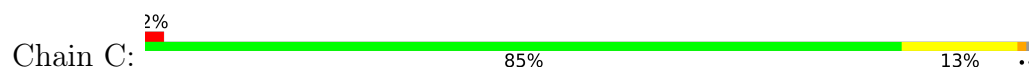
• Molecule 1: Dipeptidyl peptidase 4

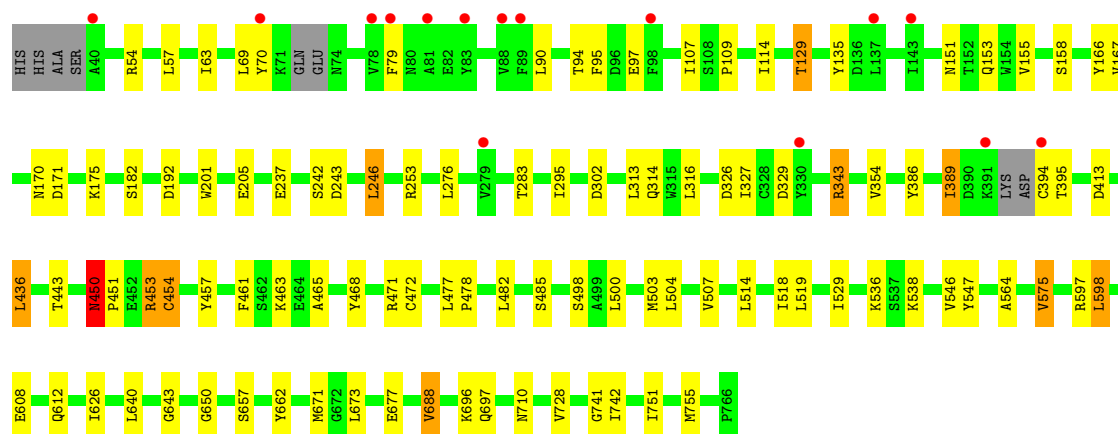


• Molecule 1: Dipeptidyl peptidase 4

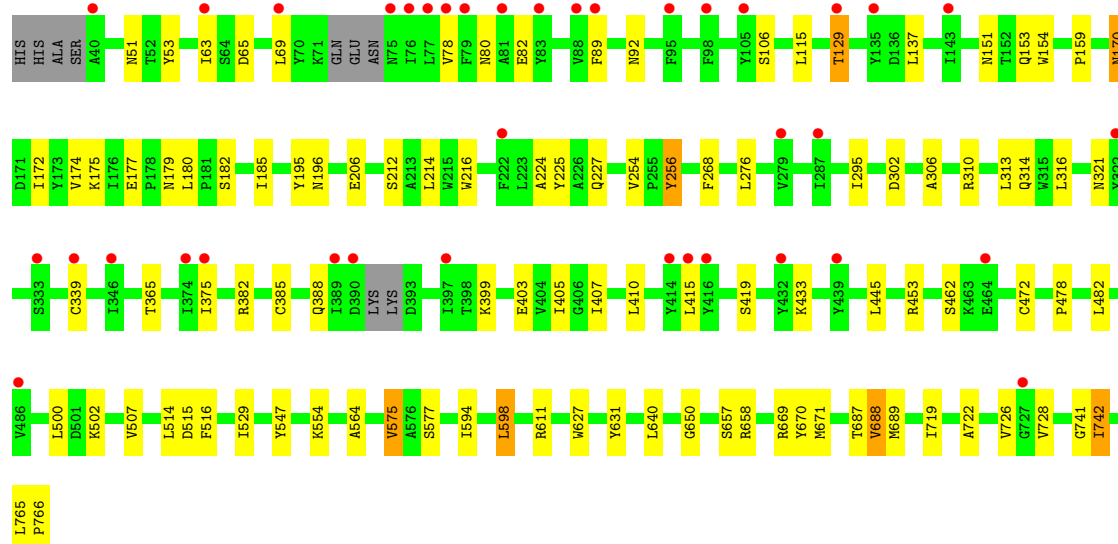
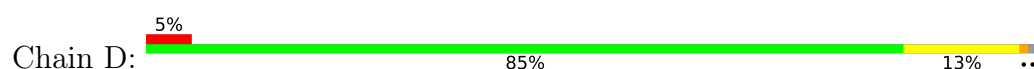


• Molecule 1: Dipeptidyl peptidase 4





• Molecule 1: Dipeptidyl peptidase 4



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



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



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

Chain G:  50% 50%

MAG1
MAG2

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

Chain H:  100%

MAG1
MAG2

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

Chain I:  100%

MAG1
MAG2

4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	122.36Å 123.70Å 145.36Å 90.00° 114.89° 90.00°	Depositor
Resolution (Å)	50.00 – 2.55 50.00 – 2.55	Depositor EDS
% Data completeness (in resolution range)	92.8 (50.00-2.55) 92.8 (50.00-2.55)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.61 (at 2.54Å)	Xtriage
Refinement program	REFMAC	Depositor
R, R_{free}	0.195 , 0.254 0.195 , 0.254	Depositor DCC
R_{free} test set	5942 reflections (4.66%)	wwPDB-VP
Wilson B-factor (Å ²)	46.8	Xtriage
Anisotropy	0.526	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 46.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	0.012 for h,-k,-h-l	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	25016	wwPDB-VP
Average B, all atoms (Å ²)	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.26% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: SY1, 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	0.52	0/6096	0.80	5/8291 (0.1%)
1	B	0.50	0/6135	0.79	4/8344 (0.0%)
1	C	0.51	0/6092	0.80	4/8285 (0.0%)
1	D	0.48	0/6077	0.79	0/8266
All	All	0.50	0/24400	0.80	13/33186 (0.0%)

There are no bond length outliers.

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	450	ASN	CA-C-N	6.93	126.90	119.28
1	C	450	ASN	C-N-CA	6.93	126.90	119.28
1	A	546	VAL	N-CA-C	6.30	117.55	108.48
1	B	546	VAL	N-CA-C	5.73	116.99	108.46
1	A	562	ASN	N-CA-C	5.54	115.34	108.19
1	A	108	SER	CA-C-N	5.46	125.54	119.32
1	A	108	SER	C-N-CA	5.46	125.54	119.32
1	C	454	CYS	N-CA-C	5.44	117.70	108.02
1	B	454	CYS	N-CA-C	5.19	117.26	108.02
1	A	630	SER	CB-CA-C	-5.13	110.25	117.23
1	C	546	VAL	N-CA-C	5.13	115.87	108.48
1	B	530	LEU	CA-C-N	5.10	123.39	119.66
1	B	530	LEU	C-N-CA	5.10	123.39	119.66

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	5925	0	5639	55	0
1	B	5958	0	5670	59	0
1	C	5918	0	5635	49	0
1	D	5907	0	5621	47	0
2	E	28	0	25	1	0
2	F	28	0	25	0	0
2	G	28	0	25	0	0
2	H	28	0	25	0	0
2	I	28	0	25	0	0
3	A	56	0	52	0	0
3	B	56	0	52	0	0
3	C	56	0	52	0	0
3	D	28	0	26	0	0
4	A	54	0	42	6	0
4	B	54	0	42	6	0
4	C	54	0	42	7	0
4	D	54	0	42	5	0
5	A	227	0	0	5	0
5	B	213	0	0	5	0
5	C	219	0	0	0	0
5	D	97	0	0	2	0
All	All	25016	0	23040	230	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 5.

All (230) 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:B:153:GLN:HE22	1:B:170:ASN:H	1.07	1.00
1:C:153:GLN:HE22	1:C:170:ASN:H	1.13	0.95
1:A:325:MET:HE1	1:A:371:PHE:CZ	2.03	0.92
1:A:153:GLN:HE22	1:A:170:ASN:H	1.20	0.89
4:B:800:SY1:H52	4:B:800:SY1:H191	1.57	0.87
1:D:153:GLN:HE22	1:D:170:ASN:H	1.25	0.81

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:433:LYS:HD2	1:D:445:LEU:HD21	1.64	0.80
4:A:800:SY1:H191	4:A:800:SY1:H52	1.63	0.80
1:C:386:TYR:O	1:C:394:CYS:HB2	1.81	0.80
1:C:63:ILE:HD11	1:C:69:LEU:HG	1.64	0.77
1:A:281:ASN:HD21	2:E:1:NAG:C1	1.99	0.76
1:C:564:ALA:HB1	1:C:575:VAL:HG11	1.69	0.74
1:C:90:LEU:HD21	1:C:95:PHE:HE2	1.53	0.74
1:D:321:ASN:ND2	5:D:829:HOH:O	2.21	0.73
1:B:153:GLN:NE2	1:B:170:ASN:H	1.85	0.72
4:C:800:SY1:H191	4:C:800:SY1:H52	1.72	0.72
4:D:800:SY1:H191	4:D:800:SY1:H52	1.72	0.70
1:C:327:ILE:HD13	1:C:389:ILE:HG13	1.73	0.70
1:C:129:THR:HG23	1:C:151:ASN:HA	1.74	0.69
1:B:696:LYS:HG3	1:B:728:VAL:HG22	1.76	0.67
1:B:78:VAL:HG23	1:B:89:PHE:HB2	1.77	0.67
1:A:640:LEU:HD11	1:A:650:GLY:HA3	1.78	0.66
1:A:129:THR:HG23	1:A:151:ASN:HA	1.76	0.66
1:B:153:GLN:HE22	1:B:170:ASN:N	1.88	0.66
1:B:70:TYR:HB3	1:B:79:PHE:HE1	1.62	0.64
1:B:38:ALA:HB2	5:B:906:HOH:O	1.97	0.63
1:B:640:LEU:HD11	1:B:650:GLY:HA3	1.81	0.63
1:C:529:ILE:HB	1:C:575:VAL:HG13	1.82	0.62
1:B:70:TYR:HB3	1:B:79:PHE:CE1	2.35	0.62
1:A:302:ASP:HB3	1:A:314:GLN:HB2	1.82	0.61
1:B:115:LEU:HD21	1:B:155:VAL:HG21	1.82	0.61
4:B:800:SY1:H52	4:B:800:SY1:C19	2.29	0.61
1:C:696:LYS:HG3	1:C:728:VAL:HG22	1.83	0.61
1:A:325:MET:HE3	1:A:327:ILE:HD11	1.82	0.61
1:C:657:SER:HA	1:C:688:VAL:HG13	1.83	0.61
1:A:685:ASN:ND2	5:A:974:HOH:O	2.33	0.60
1:C:640:LEU:HD11	1:C:650:GLY:HA3	1.83	0.60
1:A:598:LEU:HD22	1:A:671:MET:HG2	1.83	0.60
1:D:302:ASP:HB3	1:D:314:GLN:HB2	1.83	0.60
1:A:710:ASN:HD22	1:A:710:ASN:C	2.09	0.60
1:A:91:GLU:HB2	1:A:94:THR:HG23	1.84	0.60
1:B:109:PRO:HG2	1:B:158:SER:O	2.02	0.59
4:D:800:SY1:H191	4:D:800:SY1:H72	1.83	0.59
4:D:800:SY1:H52	4:D:800:SY1:C19	2.33	0.59
1:B:97:GLU:HG3	5:B:880:HOH:O	2.01	0.59
1:D:214:LEU:HD23	1:D:225:TYR:HB3	1.84	0.59
1:A:170:ASN:N	1:A:170:ASN:HD22	2.01	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:382:ARG:H	1:D:403:GLU:HG2	1.68	0.58
1:A:684:ARG:HD3	5:A:989:HOH:O	2.03	0.58
1:B:237:GLU:HG2	1:B:253:ARG:HB3	1.85	0.58
1:A:471:ARG:HD2	5:A:902:HOH:O	2.04	0.58
1:B:36:HIS:N	5:B:905:HOH:O	2.36	0.58
4:C:800:SY1:H191	4:C:800:SY1:H72	1.86	0.58
1:B:510:PRO:HD3	1:B:569:SER:HB2	1.86	0.58
1:D:63:ILE:HD11	1:D:69:LEU:HG	1.86	0.57
1:D:78:VAL:HG23	1:D:89:PHE:HB2	1.85	0.57
1:D:472:CYS:O	1:D:478:PRO:HA	2.03	0.57
1:B:710:ASN:C	1:B:710:ASN:HD22	2.13	0.57
1:C:237:GLU:HG2	1:C:253:ARG:HG2	1.87	0.57
1:A:80:ASN:HD22	1:A:82:GLU:H	1.51	0.56
4:C:800:SY1:H52	4:C:800:SY1:C19	2.35	0.56
1:C:153:GLN:NE2	1:C:170:ASN:H	1.92	0.56
1:D:129:THR:HG23	1:D:151:ASN:HA	1.87	0.56
1:C:598:LEU:HD22	1:C:671:MET:HG2	1.87	0.56
1:B:129:THR:HG23	1:B:151:ASN:HA	1.88	0.56
1:D:529:ILE:HB	1:D:575:VAL:HG13	1.89	0.55
1:D:611:ARG:HD3	5:D:852:HOH:O	2.07	0.55
1:A:726:VAL:HG23	1:A:728:VAL:HG23	1.90	0.54
1:D:224:ALA:HB1	1:D:268:PHE:CZ	2.43	0.53
1:B:614:SER:HA	1:B:619:VAL:HB	1.90	0.53
1:C:70:TYR:HB3	1:C:79:PHE:CE1	2.43	0.53
1:C:472:CYS:O	1:C:478:PRO:HA	2.08	0.53
1:A:387:PHE:CD1	1:A:394:CYS:HB3	2.44	0.53
1:B:205:GLU:OE1	4:B:800:SY1:N1	2.42	0.53
1:C:155:VAL:HG12	1:C:166:TYR:HB3	1.91	0.53
1:B:385:CYS:HB3	1:B:387:PHE:CE2	2.43	0.53
1:C:453:ARG:HG3	1:C:454:CYS:SG	2.49	0.53
1:C:242:SER:HB3	1:C:246:LEU:HD12	1.91	0.52
4:A:800:SY1:H52	4:A:800:SY1:C19	2.37	0.52
4:B:800:SY1:H191	4:B:800:SY1:C5	2.35	0.52
1:A:115:LEU:HD21	1:A:155:VAL:HG21	1.92	0.51
1:D:726:VAL:HG23	1:D:728:VAL:HG23	1.92	0.51
1:B:598:LEU:HB2	1:B:671:MET:SD	2.50	0.51
1:C:153:GLN:HE22	1:C:170:ASN:N	1.94	0.51
1:C:175:LYS:HG2	1:C:182:SER:HB3	1.92	0.51
1:B:129:THR:HG22	5:B:904:HOH:O	2.09	0.51
1:C:329:ASP:OD2	1:C:343:ARG:NH1	2.44	0.51
1:A:662:TYR:HE1	1:A:710:ASN:ND2	2.09	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:801:SY1:C5	4:A:801:SY1:H192	2.41	0.51
1:B:529:ILE:HB	1:B:575:VAL:HG13	1.92	0.51
1:C:205:GLU:OE1	4:C:800:SY1:N1	2.44	0.51
1:D:159:PRO:HD3	1:D:216:TRP:CB	2.41	0.51
1:D:657:SER:HB3	1:D:719:ILE:HD11	1.93	0.50
1:A:80:ASN:HB3	1:A:84:GLY:H	1.77	0.50
1:D:172:ILE:HG22	1:D:185:ILE:HD13	1.94	0.50
1:A:114:ILE:HG23	1:A:135:TYR:HB3	1.93	0.50
1:A:516:PHE:CD1	1:A:523:LYS:HG2	2.46	0.50
1:D:410:LEU:HD13	1:D:415:LEU:HD23	1.92	0.50
1:A:657:SER:HA	1:A:688:VAL:HG13	1.93	0.50
1:B:471:ARG:HG3	1:B:480:TYR:CE1	2.47	0.50
1:D:741:GLY:O	1:D:742:ILE:C	2.55	0.50
1:B:36:HIS:CG	1:B:37:HIS:H	2.30	0.49
1:D:554:LYS:HB3	1:D:577:SER:HB3	1.94	0.49
1:A:351:THR:OG1	1:A:592:HIS:HD2	1.96	0.49
1:A:386:TYR:O	1:A:394:CYS:HB2	2.12	0.49
1:B:196:ASN:OD1	1:B:227:GLN:HG3	2.11	0.49
1:D:657:SER:HA	1:D:688:VAL:HG13	1.94	0.48
1:D:658:ARG:NH2	1:D:687:THR:HG21	2.28	0.48
1:A:206:GLU:OE2	1:A:663:ASP:OD2	2.31	0.48
1:D:689:MET:HG3	1:D:722:ALA:HB2	1.94	0.48
1:D:640:LEU:HD11	1:D:650:GLY:HA3	1.94	0.48
1:C:657:SER:HA	1:C:688:VAL:CG1	2.44	0.48
1:D:564:ALA:HB1	1:D:575:VAL:HG11	1.94	0.48
1:C:457:TYR:HA	1:C:471:ARG:O	2.13	0.48
1:A:306:ALA:HB3	1:A:310:ARG:HG2	1.95	0.47
4:A:800:SY1:H191	4:A:800:SY1:C5	2.39	0.47
1:A:415:LEU:HB3	1:A:434:ILE:HG23	1.96	0.47
1:B:405:ILE:HG12	1:B:419:SER:HA	1.96	0.47
1:D:175:LYS:CG	1:D:182:SER:HB3	2.44	0.47
1:A:109:PRO:HG2	1:A:158:SER:O	2.15	0.47
1:A:657:SER:HA	1:A:688:VAL:CG1	2.45	0.47
1:A:662:TYR:CE1	1:A:710:ASN:ND2	2.83	0.47
1:A:547:TYR:CD1	1:A:547:TYR:C	2.93	0.46
1:D:407:ILE:HG23	1:D:415:LEU:HD21	1.97	0.46
1:C:643:GLY:HA2	1:C:697:GLN:HE22	1.80	0.46
1:B:302:ASP:HB3	1:B:314:GLN:HB2	1.97	0.46
1:B:513:LYS:O	1:B:527:GLN:HA	2.15	0.46
1:B:726:VAL:HG23	1:B:728:VAL:HG23	1.97	0.46
1:B:76:ILE:HG22	1:B:89:PHE:HB3	1.98	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:157:TRP:CE3	1:B:164:LEU:HD13	2.51	0.46
1:C:343:ARG:CD	1:C:389:ILE:HG23	2.46	0.46
1:D:170:ASN:O	1:D:196:ASN:HB2	2.16	0.46
4:C:800:SY1:N27	4:C:800:SY1:H71	2.31	0.46
1:D:405:ILE:HG12	1:D:419:SER:HA	1.98	0.46
1:C:500:LEU:HA	1:C:503:MET:HE3	1.97	0.45
4:B:800:SY1:H71	4:B:800:SY1:N27	2.31	0.45
1:A:129:THR:HG21	1:A:151:ASN:HD22	1.82	0.45
1:A:154:TRP:CE2	1:A:212:SER:HB2	2.51	0.45
1:B:338:ASN:HB2	5:B:977:HOH:O	2.16	0.45
1:B:154:TRP:CE2	1:B:212:SER:HB2	2.52	0.45
1:B:230:ASP:O	1:B:231:THR:C	2.60	0.45
1:B:453:ARG:NH2	1:B:477:LEU:O	2.49	0.45
4:C:800:SY1:H191	4:C:800:SY1:C5	2.45	0.45
1:B:229:ASN:HB3	1:B:265:THR:OG1	2.16	0.45
1:C:343:ARG:HD2	1:C:389:ILE:HG23	1.99	0.45
1:D:598:LEU:HG	1:D:631:TYR:OH	2.17	0.45
1:B:170:ASN:N	1:B:170:ASN:HD22	2.14	0.45
1:D:195:TYR:O	1:D:227:GLN:HA	2.17	0.45
1:D:177:GLU:HB2	1:D:180:LEU:HG	1.99	0.44
1:D:268:PHE:CD2	1:D:313:LEU:HD21	2.53	0.44
1:B:95:PHE:CE1	1:B:116:LEU:HD11	2.52	0.44
1:B:531:PRO:HB3	1:B:572:ASN:HD22	1.83	0.44
1:A:391:LYS:HE2	1:A:391:LYS:HB3	1.80	0.44
1:B:177:GLU:HB2	1:B:180:LEU:HD12	2.00	0.44
1:C:465:ALA:O	1:C:485:SER:OG	2.35	0.44
1:B:461:PHE:CD2	1:B:468:TYR:HB3	2.53	0.44
1:B:640:LEU:HB3	1:B:698:VAL:HG21	1.99	0.44
1:A:117:GLU:HB2	1:A:132:TYR:CE2	2.52	0.44
1:D:598:LEU:HD22	1:D:671:MET:HG2	1.98	0.44
1:B:155:VAL:HG12	1:B:166:TYR:HB3	1.98	0.44
1:C:109:PRO:HG2	1:C:158:SER:O	2.18	0.44
1:D:53:TYR:HB3	1:D:500:LEU:HD11	1.99	0.44
1:A:80:ASN:ND2	1:A:82:GLU:H	2.15	0.43
1:A:504:LEU:HA	1:A:507:VAL:CG1	2.47	0.43
1:B:677:GLU:CD	1:B:677:GLU:H	2.26	0.43
1:C:608:GLU:O	1:C:612:GLN:HG2	2.18	0.43
1:A:498:SER:HA	1:A:501:ASP:HB3	2.01	0.43
1:A:516:PHE:CE1	1:A:523:LYS:HG2	2.52	0.43
1:B:47:ASP:HA	1:B:52:THR:OG1	2.18	0.43
1:D:175:LYS:HG3	1:D:182:SER:HB3	2.00	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:64:SER:HA	1:A:463:LYS:NZ	2.33	0.43
1:A:358:ARG:HD3	5:A:881:HOH:O	2.19	0.43
1:C:114:ILE:HG23	1:C:135:TYR:HB3	2.01	0.43
1:A:467:TYR:HD2	1:A:484:SER:HA	1.84	0.43
1:B:134:ILE:HD13	1:B:178:PRO:HB3	2.01	0.43
1:B:608:GLU:O	1:B:612:GLN:HG2	2.18	0.43
1:B:224:ALA:HB1	1:B:268:PHE:CZ	2.54	0.42
1:B:387:PHE:CD1	1:B:394:CYS:HB3	2.54	0.42
1:B:765:LEU:HA	1:B:766:PRO:HD3	1.90	0.42
4:A:801:SY1:H192	4:A:801:SY1:H51	2.01	0.42
1:A:242:SER:HB3	1:A:246:LEU:HD12	2.02	0.42
1:B:376:SER:HA	1:B:382:ARG:HA	2.01	0.42
4:B:800:SY1:C19	4:B:800:SY1:C5	2.96	0.42
1:C:302:ASP:HB3	1:C:314:GLN:HB2	2.00	0.42
1:C:461:PHE:CD2	1:C:468:TYR:HB3	2.54	0.42
1:D:206:GLU:OE1	4:D:800:SY1:N1	2.52	0.42
1:D:306:ALA:HB3	1:D:310:ARG:HG2	2.02	0.42
1:D:174:VAL:HG23	1:D:185:ILE:HD11	2.00	0.42
1:A:325:MET:HE2	1:A:345:HIS:HB2	2.02	0.42
1:A:627:TRP:HB2	1:A:651:ILE:HB	2.02	0.42
1:C:518:ILE:O	1:C:519:LEU:HD12	2.19	0.42
1:A:325:MET:HE1	1:A:371:PHE:HZ	1.75	0.42
1:D:106:SER:HB3	1:D:115:LEU:HB3	2.00	0.42
1:D:669:ARG:HD2	1:D:670:TYR:CZ	2.55	0.42
1:D:154:TRP:CE2	1:D:212:SER:HB2	2.54	0.42
1:D:765:LEU:HA	1:D:766:PRO:HD3	1.94	0.42
1:B:386:TYR:O	1:B:394:CYS:HB2	2.20	0.41
1:C:167:VAL:HA	1:C:171:ASP:O	2.20	0.41
1:B:115:LEU:HD21	1:B:155:VAL:CG2	2.47	0.41
1:C:192:ASP:CG	4:C:801:SY1:HN12	2.28	0.41
1:D:515:ASP:OD2	1:D:516:PHE:N	2.50	0.41
4:A:800:SY1:C19	4:A:800:SY1:C5	2.98	0.41
1:C:564:ALA:HB1	1:C:575:VAL:CG1	2.46	0.41
1:B:78:VAL:O	1:B:86:SER:HB2	2.20	0.41
1:A:363:HIS:HB3	1:A:410:LEU:HD22	2.02	0.41
1:A:697:GLN:NE2	5:A:951:HOH:O	2.53	0.41
1:C:107:ILE:HD13	1:C:114:ILE:HB	2.01	0.41
1:A:237:GLU:HG2	1:A:253:ARG:HG2	2.02	0.41
1:C:710:ASN:C	1:C:710:ASN:HD22	2.29	0.41
1:A:159:PRO:HD3	1:A:216:TRP:HB3	2.03	0.41
1:A:514:LEU:HD12	1:A:557:THR:HG22	2.03	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:242:SER:OG	1:B:243:ASP:N	2.54	0.41
1:C:90:LEU:HD21	1:C:95:PHE:CE2	2.43	0.41
1:C:201:TRP:CZ2	1:C:710:ASN:HA	2.56	0.41
1:C:413:ASP:O	1:C:436:LEU:HB2	2.20	0.41
1:C:626:ILE:O	1:C:650:GLY:HA2	2.21	0.41
4:D:800:SY1:C19	4:D:800:SY1:C5	2.99	0.41
1:C:741:GLY:O	1:C:742:ILE:C	2.64	0.41
1:D:65:ASP:HA	1:D:462:SER:HB2	2.03	0.41
1:D:80:ASN:HD21	1:D:82:GLU:HB2	1.86	0.41
1:A:343:ARG:HD3	1:A:389:ILE:CG2	2.51	0.40
1:C:751:ILE:HG12	1:C:755:MET:HE2	2.03	0.40
1:A:219:ASN:HB3	1:A:308:GLN:NE2	2.37	0.40
1:C:450:ASN:HA	1:C:451:PRO:HD2	1.77	0.40
1:A:598:LEU:HB2	1:A:671:MET:SD	2.62	0.40
1:C:662:TYR:OH	1:C:710:ASN:ND2	2.51	0.40
1:D:256:TYR:CD2	1:D:256:TYR:C	2.99	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	720/731 (98%)	681 (95%)	37 (5%)	2 (0%)	36	45
1	B	725/731 (99%)	686 (95%)	37 (5%)	2 (0%)	36	45
1	C	718/731 (98%)	678 (94%)	39 (5%)	1 (0%)	48	61
1	D	716/731 (98%)	671 (94%)	44 (6%)	1 (0%)	48	61
All	All	2879/2924 (98%)	2716 (94%)	157 (6%)	6 (0%)	43	56

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	85	ASN
1	A	87	SER
1	B	463	LYS
1	B	83	TYR
1	C	536	LYS
1	D	742	ILE

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	648/654 (99%)	609 (94%)	39 (6%)	17	26
1	B	652/654 (100%)	617 (95%)	35 (5%)	20	30
1	C	648/654 (99%)	612 (94%)	36 (6%)	19	29
1	D	646/654 (99%)	618 (96%)	28 (4%)	26	39
All	All	2594/2616 (99%)	2456 (95%)	138 (5%)	20	31

All (138) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	77	LEU
1	A	80	ASN
1	A	83	TYR
1	A	90	LEU
1	A	92	ASN
1	A	129	THR
1	A	170	ASN
1	A	179	ASN
1	A	246	LEU
1	A	250	LYS
1	A	254	VAL
1	A	276	LEU
1	A	283	THR
1	A	313	LEU
1	A	316	LEU
1	A	327	ILE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	354	VAL
1	A	373	LYS
1	A	388	GLN
1	A	395	THR
1	A	410	LEU
1	A	415	LEU
1	A	453	ARG
1	A	463	LYS
1	A	482	LEU
1	A	489	LYS
1	A	502	LYS
1	A	507	VAL
1	A	514	LEU
1	A	546	VAL
1	A	547	TYR
1	A	575	VAL
1	A	594	ILE
1	A	597	ARG
1	A	598	LEU
1	A	622	LYS
1	A	673	LEU
1	A	688	VAL
1	A	710	ASN
1	B	51	ASN
1	B	75	ASN
1	B	92	ASN
1	B	107	ILE
1	B	129	THR
1	B	139	LYS
1	B	145	GLU
1	B	170	ASN
1	B	254	VAL
1	B	276	LEU
1	B	283	THR
1	B	295	ILE
1	B	316	LEU
1	B	343	ARG
1	B	354	VAL
1	B	373	LYS
1	B	378	GLU
1	B	389	ILE
1	B	395	THR

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	410	LEU
1	B	415	LEU
1	B	436	LEU
1	B	453	ARG
1	B	477	LEU
1	B	482	LEU
1	B	498	SER
1	B	504	LEU
1	B	507	VAL
1	B	514	LEU
1	B	536	LYS
1	B	547	TYR
1	B	575	VAL
1	B	598	LEU
1	B	688	VAL
1	B	710	ASN
1	C	54	ARG
1	C	57	LEU
1	C	94	THR
1	C	97	GLU
1	C	129	THR
1	C	243	ASP
1	C	246	LEU
1	C	276	LEU
1	C	283	THR
1	C	295	ILE
1	C	313	LEU
1	C	316	LEU
1	C	326	ASP
1	C	343	ARG
1	C	354	VAL
1	C	389	ILE
1	C	395	THR
1	C	436	LEU
1	C	443	THR
1	C	450	ASN
1	C	453	ARG
1	C	463	LYS
1	C	477	LEU
1	C	482	LEU
1	C	498	SER
1	C	504	LEU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	C	507	VAL
1	C	514	LEU
1	C	538	LYS
1	C	547	TYR
1	C	575	VAL
1	C	597	ARG
1	C	598	LEU
1	C	673	LEU
1	C	677	GLU
1	C	688	VAL
1	D	51	ASN
1	D	92	ASN
1	D	129	THR
1	D	137	LEU
1	D	170	ASN
1	D	179	ASN
1	D	254	VAL
1	D	256	TYR
1	D	276	LEU
1	D	295	ILE
1	D	316	LEU
1	D	339	CYS
1	D	365	THR
1	D	375	ILE
1	D	385	CYS
1	D	388	GLN
1	D	399	LYS
1	D	453	ARG
1	D	482	LEU
1	D	502	LYS
1	D	507	VAL
1	D	514	LEU
1	D	547	TYR
1	D	575	VAL
1	D	594	ILE
1	D	598	LEU
1	D	627	TRP
1	D	688	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (66) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	80	ASN
1	A	92	ASN
1	A	123	GLN
1	A	141	GLN
1	A	151	ASN
1	A	153	GLN
1	A	169	ASN
1	A	170	ASN
1	A	179	ASN
1	A	281	ASN
1	A	338	ASN
1	A	344	GLN
1	A	533	HIS
1	A	586	GLN
1	A	592	HIS
1	A	595	ASN
1	A	606	GLN
1	A	710	ASN
1	B	141	GLN
1	B	153	GLN
1	B	169	ASN
1	B	170	ASN
1	B	227	GLN
1	B	338	ASN
1	B	344	GLN
1	B	383	HIS
1	B	506	ASN
1	B	533	HIS
1	B	572	ASN
1	B	592	HIS
1	B	606	GLN
1	B	685	ASN
1	B	697	GLN
1	B	710	ASN
1	C	80	ASN
1	C	112	GLN
1	C	153	GLN
1	C	169	ASN
1	C	170	ASN
1	C	338	ASN
1	C	344	GLN
1	C	450	ASN
1	C	572	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	C	606	GLN
1	C	685	ASN
1	C	694	ASN
1	C	697	GLN
1	C	710	ASN
1	C	731	GLN
1	D	80	ASN
1	D	92	ASN
1	D	153	GLN
1	D	169	ASN
1	D	170	ASN
1	D	179	ASN
1	D	344	GLN
1	D	383	HIS
1	D	388	GLN
1	D	430	ASN
1	D	487	ASN
1	D	505	GLN
1	D	506	ASN
1	D	572	ASN
1	D	592	HIS
1	D	710	ASN
1	D	731	GLN

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 ⓘ

10 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	$\# Z > 2$
2	NAG	E	1	2	14,14,15	0.63	0	17,19,21	1.64	3 (17%)
2	NAG	E	2	2	14,14,15	0.51	0	17,19,21	0.92	1 (5%)
2	NAG	F	1	1,2	14,14,15	0.65	0	17,19,21	0.78	0
2	NAG	F	2	2	14,14,15	0.47	0	17,19,21	1.05	1 (5%)
2	NAG	G	1	1,2	14,14,15	0.51	0	17,19,21	0.69	0
2	NAG	G	2	2	14,14,15	0.56	0	17,19,21	0.94	1 (5%)
2	NAG	H	1	1,2	14,14,15	0.56	0	17,19,21	1.53	3 (17%)
2	NAG	H	2	2	14,14,15	0.49	0	17,19,21	0.81	1 (5%)
2	NAG	I	1	1,2	14,14,15	0.45	0	17,19,21	1.03	2 (11%)
2	NAG	I	2	2	14,14,15	0.51	0	17,19,21	1.08	1 (5%)

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	NAG	E	1	2	-	4/6/23/26	0/1/1/1
2	NAG	E	2	2	-	1/6/23/26	0/1/1/1
2	NAG	F	1	1,2	-	2/6/23/26	0/1/1/1
2	NAG	F	2	2	-	1/6/23/26	0/1/1/1
2	NAG	G	1	1,2	-	2/6/23/26	0/1/1/1
2	NAG	G	2	2	-	0/6/23/26	0/1/1/1
2	NAG	H	1	1,2	-	2/6/23/26	0/1/1/1
2	NAG	H	2	2	-	2/6/23/26	0/1/1/1
2	NAG	I	1	1,2	-	2/6/23/26	0/1/1/1
2	NAG	I	2	2	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	1	NAG	O5-C1-C2	-3.66	105.64	111.29
2	E	1	NAG	C3-C4-C5	3.52	116.62	110.23
2	E	1	NAG	C4-C3-C2	3.36	115.95	111.02
2	F	2	NAG	C1-O5-C5	3.28	116.58	112.19

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	1	NAG	C2-N2-C7	-3.24	118.56	122.90
2	I	2	NAG	C1-O5-C5	3.19	116.47	112.19
2	H	1	NAG	C1-O5-C5	2.76	115.89	112.19
2	I	1	NAG	C1-O5-C5	2.50	115.54	112.19
2	G	2	NAG	C4-C3-C2	2.50	114.67	111.02
2	I	1	NAG	O5-C1-C2	-2.29	107.74	111.29
2	E	2	NAG	C4-C3-C2	2.21	114.26	111.02
2	H	2	NAG	C1-O5-C5	2.12	115.03	112.19
2	H	1	NAG	O5-C1-C2	-2.05	108.12	111.29

There are no chirality outliers.

All (16) torsion outliers are listed below:

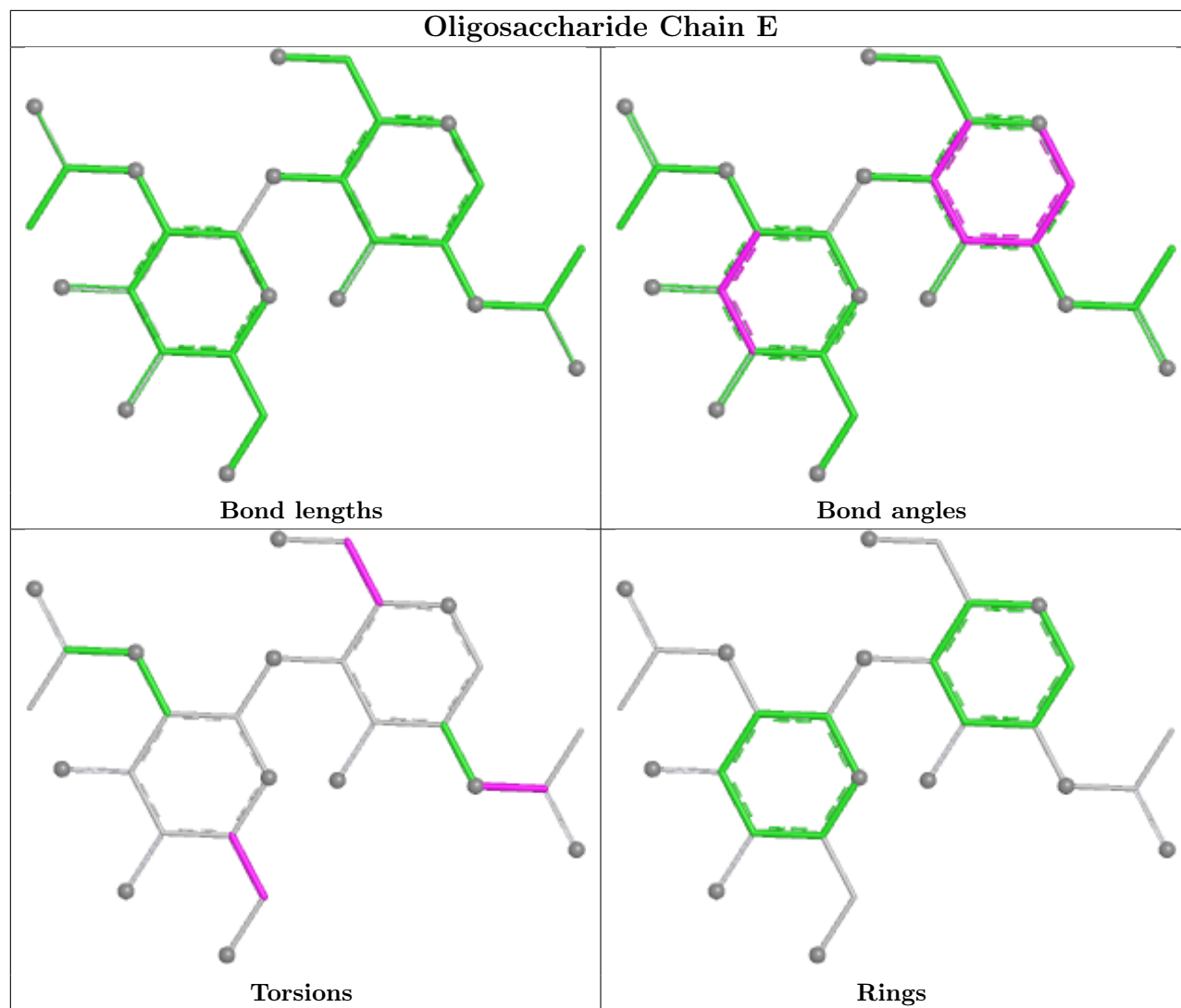
Mol	Chain	Res	Type	Atoms
2	E	1	NAG	C8-C7-N2-C2
2	E	1	NAG	O7-C7-N2-C2
2	F	1	NAG	C8-C7-N2-C2
2	F	1	NAG	O7-C7-N2-C2
2	G	1	NAG	C8-C7-N2-C2
2	G	1	NAG	O7-C7-N2-C2
2	H	2	NAG	C8-C7-N2-C2
2	H	2	NAG	O7-C7-N2-C2
2	E	1	NAG	C4-C5-C6-O6
2	E	2	NAG	O5-C5-C6-O6
2	I	1	NAG	C8-C7-N2-C2
2	H	1	NAG	C4-C5-C6-O6
2	I	1	NAG	O7-C7-N2-C2
2	E	1	NAG	O5-C5-C6-O6
2	H	1	NAG	O5-C5-C6-O6
2	F	2	NAG	C4-C5-C6-O6

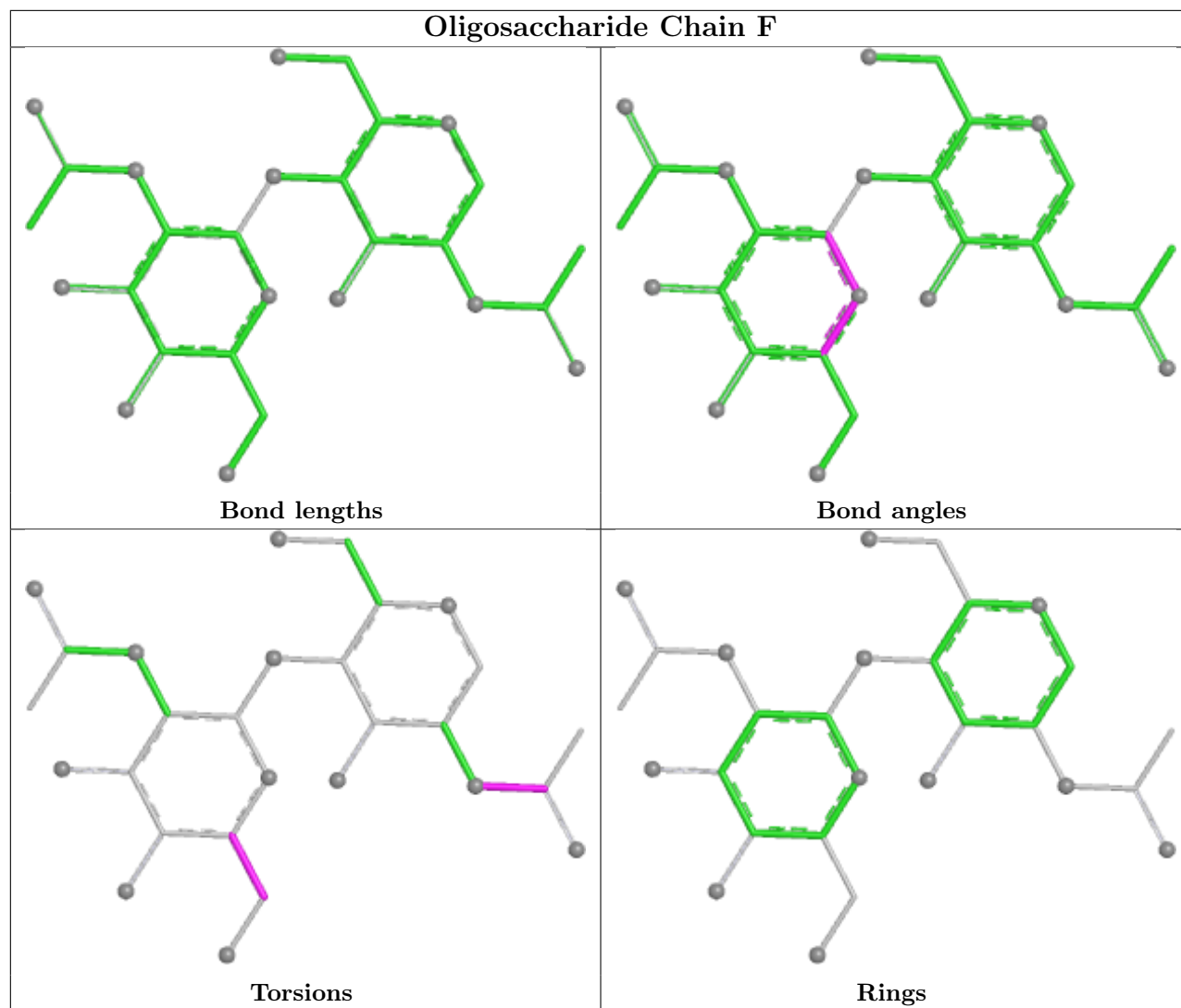
There are no ring outliers.

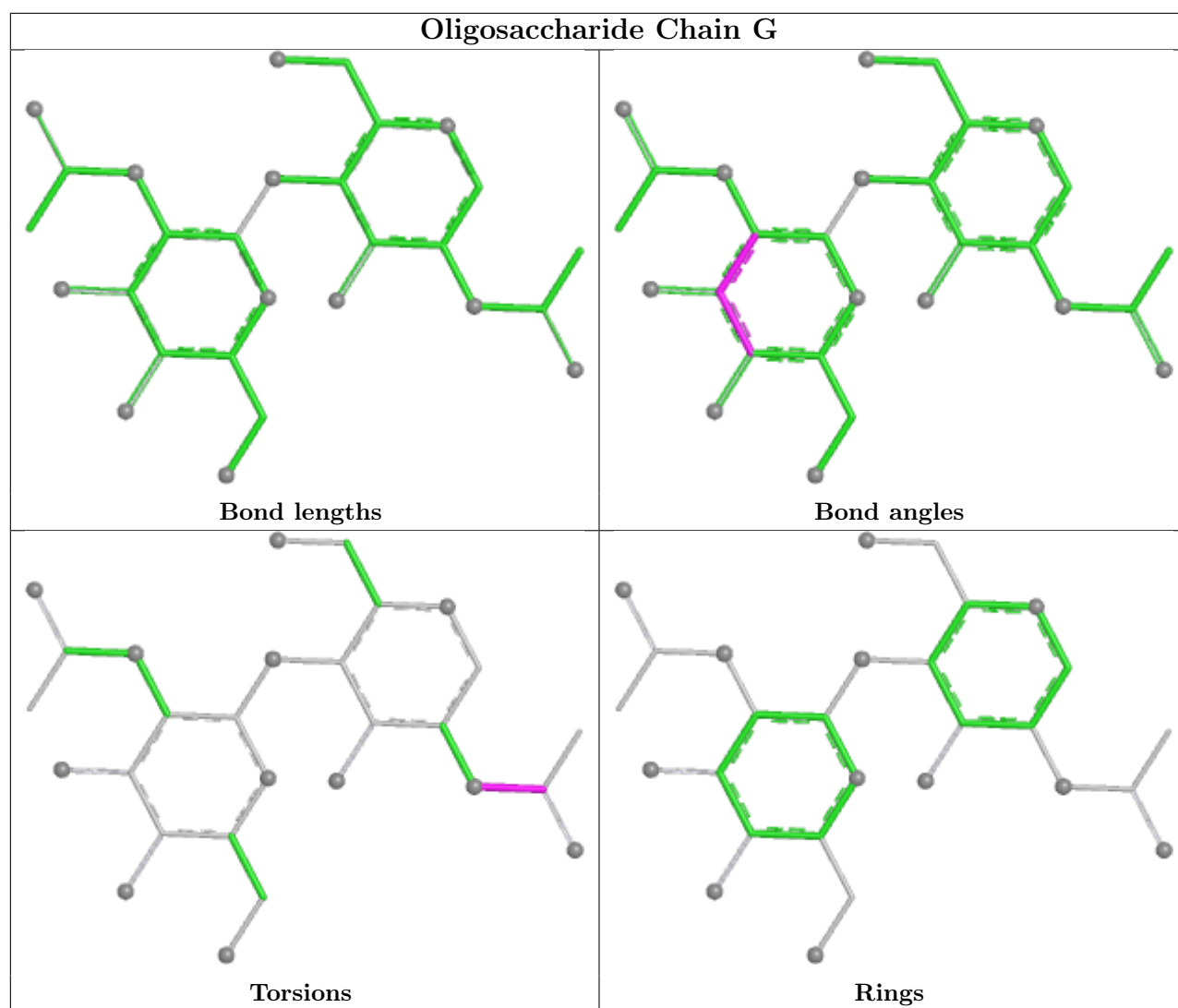
1 monomer is involved in 1 short contact:

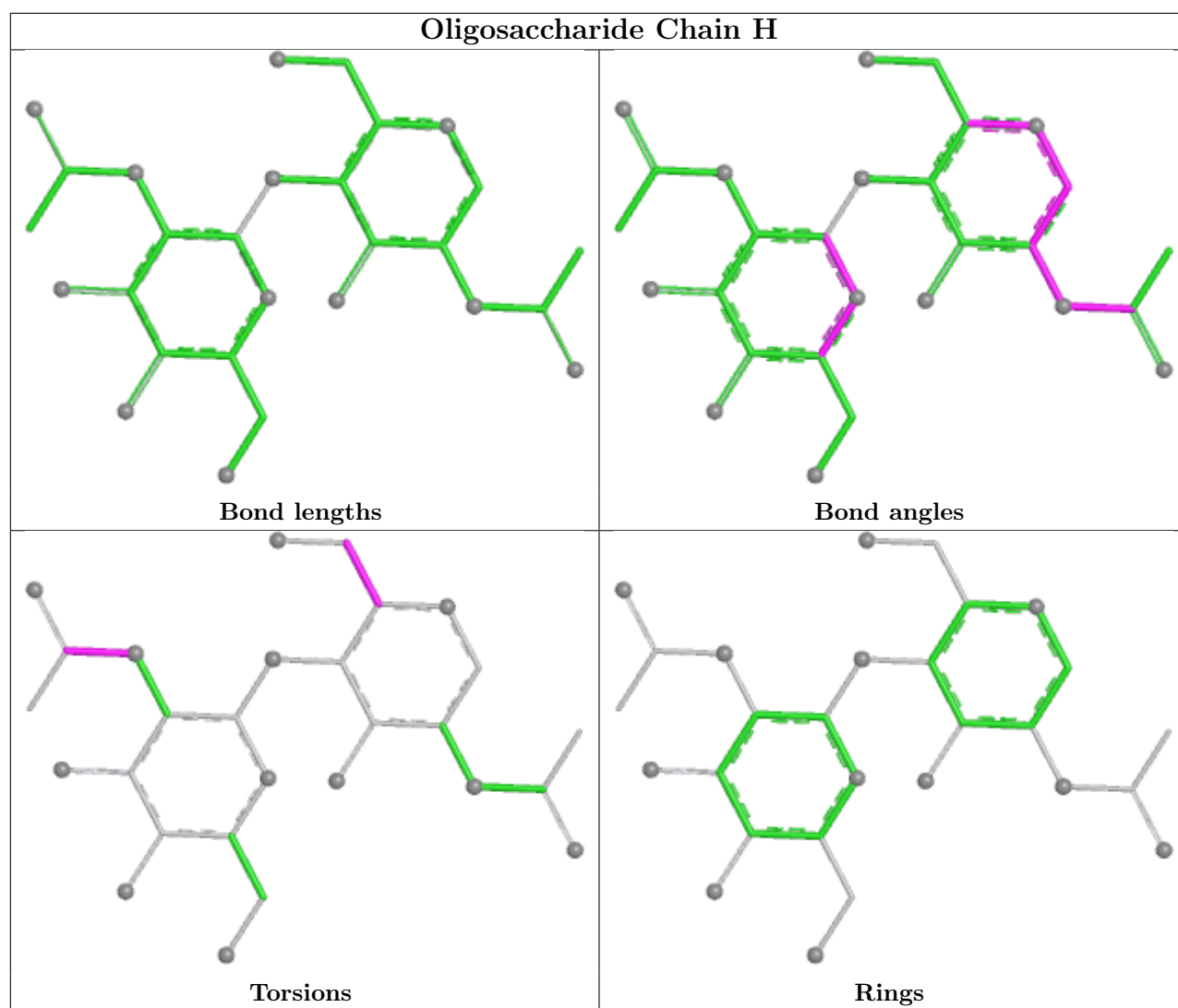
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	E	1	NAG	1	0

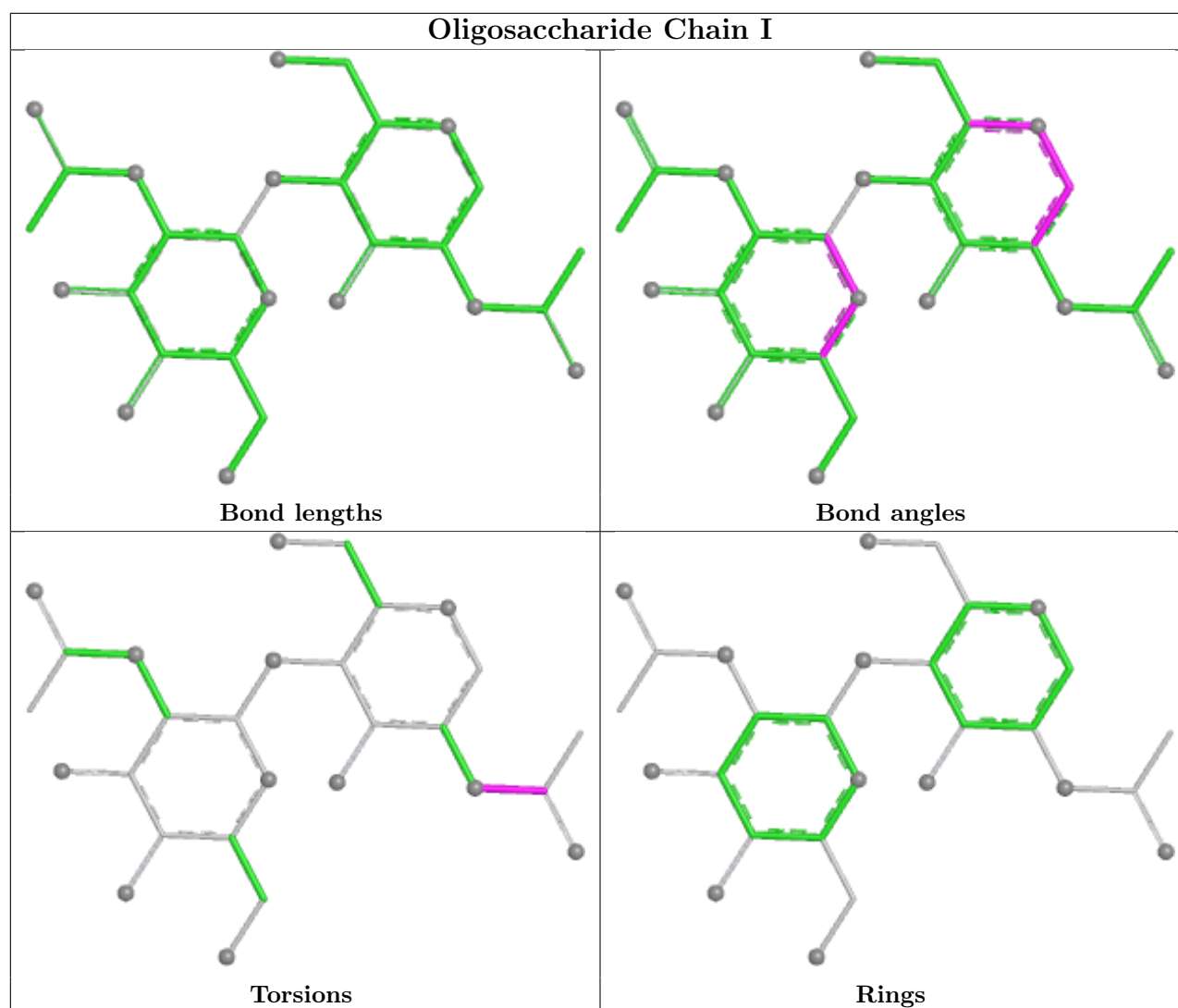
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.











5.6 Ligand geometry [i](#)

22 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
3	NAG	C	802	1	14,14,15	0.63	0	17,19,21	0.93	0
3	NAG	D	805	1	14,14,15	0.52	0	17,19,21	0.96	1 (5%)
3	NAG	D	802	1	14,14,15	0.64	0	17,19,21	1.02	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	NAG	B	803	1	14,14,15	0.60	0	17,19,21	1.11	1 (5%)
3	NAG	A	803	1	14,14,15	0.62	0	17,19,21	1.01	1 (5%)
3	NAG	B	804	1	14,14,15	0.53	0	17,19,21	0.91	1 (5%)
3	NAG	B	802	1	14,14,15	0.63	0	17,19,21	0.99	0
4	SY1	D	801	-	29,30,30	2.45	5 (17%)	36,42,42	2.16	10 (27%)
4	SY1	A	800	-	29,30,30	2.44	5 (17%)	36,42,42	2.03	10 (27%)
4	SY1	B	801	-	29,30,30	2.47	4 (13%)	36,42,42	1.47	8 (22%)
4	SY1	B	800	-	29,30,30	2.40	4 (13%)	36,42,42	1.95	11 (30%)
4	SY1	D	800	-	29,30,30	2.47	3 (10%)	36,42,42	1.74	8 (22%)
3	NAG	B	807	1	14,14,15	0.51	0	17,19,21	1.05	1 (5%)
3	NAG	A	802	1	14,14,15	0.62	0	17,19,21	1.05	2 (11%)
3	NAG	A	804	1	14,14,15	0.54	0	17,19,21	0.90	1 (5%)
3	NAG	C	807	1	14,14,15	0.62	0	17,19,21	1.22	1 (5%)
4	SY1	C	801	-	29,30,30	2.65	4 (13%)	36,42,42	2.48	11 (30%)
4	SY1	C	800	-	29,30,30	2.42	3 (10%)	36,42,42	1.97	12 (33%)
3	NAG	A	807	1	14,14,15	0.60	0	17,19,21	1.10	1 (5%)
4	SY1	A	801	-	29,30,30	2.48	3 (10%)	36,42,42	1.96	12 (33%)
3	NAG	C	806	1	14,14,15	0.62	0	17,19,21	0.94	1 (5%)
3	NAG	C	803	1	14,14,15	0.51	0	17,19,21	1.03	1 (5%)

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	802	1	-	0/6/23/26	0/1/1/1
3	NAG	D	805	1	-	4/6/23/26	0/1/1/1
3	NAG	D	802	1	-	0/6/23/26	0/1/1/1
3	NAG	B	803	1	-	1/6/23/26	0/1/1/1
3	NAG	A	803	1	-	1/6/23/26	0/1/1/1
3	NAG	B	804	1	-	0/6/23/26	0/1/1/1
3	NAG	B	802	1	-	2/6/23/26	0/1/1/1
4	SY1	D	801	-	-	0/10/20/20	0/4/4/4
4	SY1	A	800	-	-	3/10/20/20	0/4/4/4
4	SY1	B	801	-	-	3/10/20/20	0/4/4/4
4	SY1	B	800	-	-	3/10/20/20	0/4/4/4

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	SY1	D	800	-	-	2/10/20/20	0/4/4/4
3	NAG	B	807	1	-	4/6/23/26	0/1/1/1
3	NAG	A	802	1	-	2/6/23/26	0/1/1/1
3	NAG	A	804	1	-	2/6/23/26	0/1/1/1
3	NAG	C	807	1	-	2/6/23/26	0/1/1/1
4	SY1	C	801	-	-	4/10/20/20	0/4/4/4
4	SY1	C	800	-	-	1/10/20/20	0/4/4/4
3	NAG	A	807	1	-	0/6/23/26	0/1/1/1
4	SY1	A	801	-	-	1/10/20/20	0/4/4/4
3	NAG	C	806	1	-	0/6/23/26	0/1/1/1
3	NAG	C	803	1	-	2/6/23/26	0/1/1/1

All (31) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	C	800	SY1	C25-C26	-10.96	1.28	1.44
4	B	801	SY1	C25-C26	-10.74	1.28	1.44
4	D	800	SY1	C25-C26	-10.71	1.29	1.44
4	A	800	SY1	C25-C26	-10.65	1.29	1.44
4	B	800	SY1	C25-C26	-10.46	1.29	1.44
4	A	801	SY1	C25-C26	-10.35	1.29	1.44
4	D	801	SY1	C25-C26	-10.00	1.30	1.44
4	C	801	SY1	C25-C26	-9.91	1.30	1.44
4	A	801	SY1	C8-N9	6.68	1.37	1.29
4	C	801	SY1	C26-N27	6.59	1.29	1.14
4	C	801	SY1	C8-N9	6.39	1.37	1.29
4	D	801	SY1	C8-N9	6.29	1.36	1.29
4	D	800	SY1	C8-N9	6.26	1.36	1.29
4	B	801	SY1	C8-N9	5.93	1.36	1.29
4	A	800	SY1	C8-N9	5.64	1.36	1.29
4	B	800	SY1	C8-N9	5.54	1.36	1.29
4	C	800	SY1	C8-N9	5.46	1.36	1.29
4	D	801	SY1	C26-N27	3.44	1.22	1.14
4	A	801	SY1	C16-N18	-2.71	1.34	1.40
4	B	800	SY1	C10-N9	-2.46	1.34	1.39
4	D	801	SY1	C16-N18	-2.44	1.34	1.40
4	D	800	SY1	C10-N9	-2.37	1.35	1.39
4	B	801	SY1	C16-N18	-2.23	1.35	1.40
4	A	800	SY1	C10-N9	-2.21	1.35	1.39
4	C	801	SY1	C16-N18	-2.21	1.35	1.40
4	A	800	SY1	C16-N18	-2.17	1.35	1.40

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	C	800	SY1	C10-N9	-2.14	1.35	1.39
4	B	800	SY1	O17-C16	2.13	1.26	1.22
4	D	801	SY1	C10-N9	-2.12	1.35	1.39
4	B	801	SY1	C10-N9	-2.06	1.35	1.39
4	A	800	SY1	C8-N6	2.04	1.43	1.37

All (95) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	C	801	SY1	C25-C26-N27	-11.46	159.03	177.90
4	D	801	SY1	C25-C26-N27	-8.44	164.00	177.90
4	A	801	SY1	C25-C26-N27	-5.83	168.30	177.90
4	A	800	SY1	C19-N18-C8	4.74	124.11	117.95
4	A	800	SY1	N6-C8-N9	-4.69	110.73	118.96
4	B	800	SY1	N6-C8-N9	-4.50	111.06	118.96
4	B	800	SY1	C19-N18-C8	4.29	123.52	117.95
4	A	801	SY1	C20-C25-C26	4.28	124.14	120.16
4	C	800	SY1	C10-N9-C8	4.13	123.84	115.93
4	A	800	SY1	C10-N9-C8	4.04	123.66	115.93
4	C	800	SY1	N6-C8-N9	-4.03	111.89	118.96
4	C	800	SY1	C15-C10-N9	-3.97	118.42	122.41
3	C	807	NAG	C4-C3-C2	3.90	116.74	111.02
4	D	801	SY1	C20-C25-C26	3.90	123.79	120.16
4	B	800	SY1	C15-C10-N9	-3.81	118.59	122.41
4	B	800	SY1	C10-N9-C8	3.81	123.21	115.93
3	B	803	NAG	C1-O5-C5	3.80	117.28	112.19
4	D	800	SY1	N6-C8-N9	-3.80	112.29	118.96
4	D	800	SY1	C10-N9-C8	3.72	123.04	115.93
3	A	807	NAG	C1-O5-C5	3.70	117.14	112.19
4	A	800	SY1	C15-C10-N9	-3.69	118.71	122.41
4	C	800	SY1	C19-N18-C8	3.62	122.65	117.95
4	A	800	SY1	C3-C2-N1	-3.61	100.45	111.17
4	A	800	SY1	C15-C16-N18	3.52	120.42	115.26
4	C	801	SY1	C20-C25-C26	3.47	123.39	120.16
4	D	800	SY1	C15-C10-N9	-3.42	118.97	122.41
3	A	803	NAG	C1-O5-C5	3.20	116.47	112.19
4	D	800	SY1	C19-N18-C8	3.17	122.08	117.95
4	D	801	SY1	C15-C10-N9	-3.15	119.25	122.41
4	C	801	SY1	C10-N9-C8	3.11	121.88	115.93
4	C	800	SY1	C15-C16-N18	3.05	119.73	115.26
4	C	801	SY1	C15-C10-N9	-3.04	119.36	122.41
3	D	802	NAG	C1-O5-C5	3.03	116.25	112.19

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	C	800	SY1	C20-C25-C26	3.00	122.96	120.16
4	A	801	SY1	C19-C20-C25	2.98	125.06	120.91
4	D	801	SY1	C10-N9-C8	2.98	121.63	115.93
3	B	807	NAG	C1-O5-C5	2.92	116.11	112.19
4	C	800	SY1	C3-C2-N1	-2.92	102.47	111.17
4	B	800	SY1	C19-C20-C25	2.89	124.92	120.91
4	B	801	SY1	C15-C10-N9	-2.80	119.60	122.41
4	D	801	SY1	C20-C19-N18	-2.77	109.79	113.14
4	B	800	SY1	C20-C25-C26	2.77	122.74	120.16
4	B	801	SY1	C10-N9-C8	2.77	121.22	115.93
3	D	805	NAG	C1-O5-C5	2.76	115.89	112.19
4	B	800	SY1	C15-C16-N18	2.73	119.27	115.26
4	C	801	SY1	C15-C16-N18	2.70	119.22	115.26
3	C	803	NAG	C1-O5-C5	2.70	115.81	112.19
4	D	800	SY1	C15-C16-N18	2.69	119.20	115.26
4	A	801	SY1	C10-N9-C8	2.69	121.08	115.93
4	A	801	SY1	C15-C16-N18	2.68	119.19	115.26
4	B	800	SY1	C3-C2-N1	-2.67	103.23	111.17
4	D	801	SY1	C15-C16-N18	2.65	119.14	115.26
4	B	801	SY1	C20-C25-C26	2.64	122.61	120.16
4	A	801	SY1	C15-C10-N9	-2.63	119.77	122.41
4	C	800	SY1	C5-N6-C8	-2.60	109.64	119.07
4	D	800	SY1	C5-N6-C8	-2.56	109.80	119.07
4	A	801	SY1	N6-C8-N9	2.56	123.45	118.96
4	B	800	SY1	C5-N6-C8	-2.55	109.82	119.07
4	D	801	SY1	C19-C20-C25	2.53	124.43	120.91
4	A	800	SY1	C20-C19-N18	2.48	116.13	113.14
4	D	800	SY1	C3-C2-N1	-2.47	103.82	111.17
4	A	801	SY1	C20-C19-N18	-2.46	110.17	113.14
4	C	801	SY1	C5-N6-C8	-2.45	110.18	119.07
4	A	801	SY1	C10-C15-C16	-2.43	117.38	119.54
3	A	802	NAG	C4-C3-C2	2.43	114.58	111.02
4	D	800	SY1	C7-N6-C8	-2.42	110.24	118.99
4	D	801	SY1	C5-N6-C8	-2.41	110.32	119.07
4	A	801	SY1	C5-N6-C8	-2.39	110.41	119.07
4	D	801	SY1	C7-N6-C8	-2.38	110.38	118.99
3	A	802	NAG	C1-O5-C5	2.38	115.37	112.19
3	B	804	NAG	C1-O5-C5	2.37	115.36	112.19
4	B	800	SY1	C7-N6-C8	-2.37	110.44	118.99
4	A	800	SY1	C5-N6-C8	-2.36	110.52	119.07
3	A	804	NAG	C1-O5-C5	2.32	115.30	112.19
4	B	801	SY1	C5-N6-C8	-2.32	110.67	119.07

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	800	SY1	C10-C15-C16	-2.31	117.49	119.54
4	B	801	SY1	C7-N6-C8	-2.31	110.67	118.99
4	C	801	SY1	C7-N6-C8	-2.30	110.70	118.99
3	C	806	NAG	C1-O5-C5	2.28	115.24	112.19
4	C	801	SY1	C19-C20-C25	2.27	124.06	120.91
4	A	800	SY1	C7-N6-C8	-2.26	110.84	118.99
4	B	800	SY1	C11-C10-C15	2.25	121.36	119.14
4	B	801	SY1	C15-C16-N18	2.25	118.56	115.26
4	C	800	SY1	C19-C20-C25	2.25	124.04	120.91
4	A	801	SY1	C7-N6-C8	-2.25	110.87	118.99
4	C	800	SY1	C7-N6-C8	-2.25	110.88	118.99
4	A	801	SY1	C24-C25-C26	-2.16	115.63	119.36
4	C	801	SY1	C10-C15-C16	-2.15	117.63	119.54
4	B	801	SY1	C19-C20-C25	2.10	123.83	120.91
4	C	801	SY1	C11-C10-N9	2.09	121.27	118.61
4	C	800	SY1	C10-C15-C16	-2.06	117.71	119.54
4	B	801	SY1	C5-N6-C7	-2.05	109.12	113.07
4	C	800	SY1	O17-C16-C15	-2.03	117.88	123.11
4	D	801	SY1	C10-C15-C16	-2.03	117.74	119.54
4	C	801	SY1	C5-N6-C7	-2.00	109.20	113.07

There are no chirality outliers.

All (37) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	802	NAG	C8-C7-N2-C2
3	B	802	NAG	O7-C7-N2-C2
3	B	807	NAG	C8-C7-N2-C2
3	B	807	NAG	O7-C7-N2-C2
3	D	805	NAG	C8-C7-N2-C2
3	D	805	NAG	O7-C7-N2-C2
4	C	801	SY1	N9-C8-N6-C5
3	C	803	NAG	C8-C7-N2-C2
3	C	803	NAG	O7-C7-N2-C2
4	A	800	SY1	C20-C19-N18-C16
4	D	800	SY1	C20-C19-N18-C16
3	C	807	NAG	C8-C7-N2-C2
3	D	805	NAG	O5-C5-C6-O6
3	B	807	NAG	C4-C5-C6-O6
3	D	805	NAG	C4-C5-C6-O6
3	C	807	NAG	O7-C7-N2-C2
3	B	807	NAG	O5-C5-C6-O6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
4	C	800	SY1	C20-C19-N18-C16
3	A	804	NAG	C8-C7-N2-C2
3	A	804	NAG	O7-C7-N2-C2
4	B	800	SY1	C20-C19-N18-C16
3	A	802	NAG	O5-C5-C6-O6
3	B	803	NAG	C4-C5-C6-O6
4	C	801	SY1	N18-C8-N6-C5
4	C	801	SY1	N9-C8-N6-C7
4	A	800	SY1	C20-C25-C26-N27
4	B	800	SY1	N18-C19-C20-C25
4	A	801	SY1	N18-C19-C20-C25
3	A	802	NAG	C1-C2-N2-C7
4	B	801	SY1	N18-C19-C20-C25
4	B	801	SY1	C20-C19-N18-C16
3	A	803	NAG	C4-C5-C6-O6
4	A	800	SY1	C20-C19-N18-C8
4	B	800	SY1	C20-C19-N18-C8
4	B	801	SY1	N18-C8-N6-C5
4	C	801	SY1	N18-C8-N6-C7
4	D	800	SY1	C20-C19-N18-C8

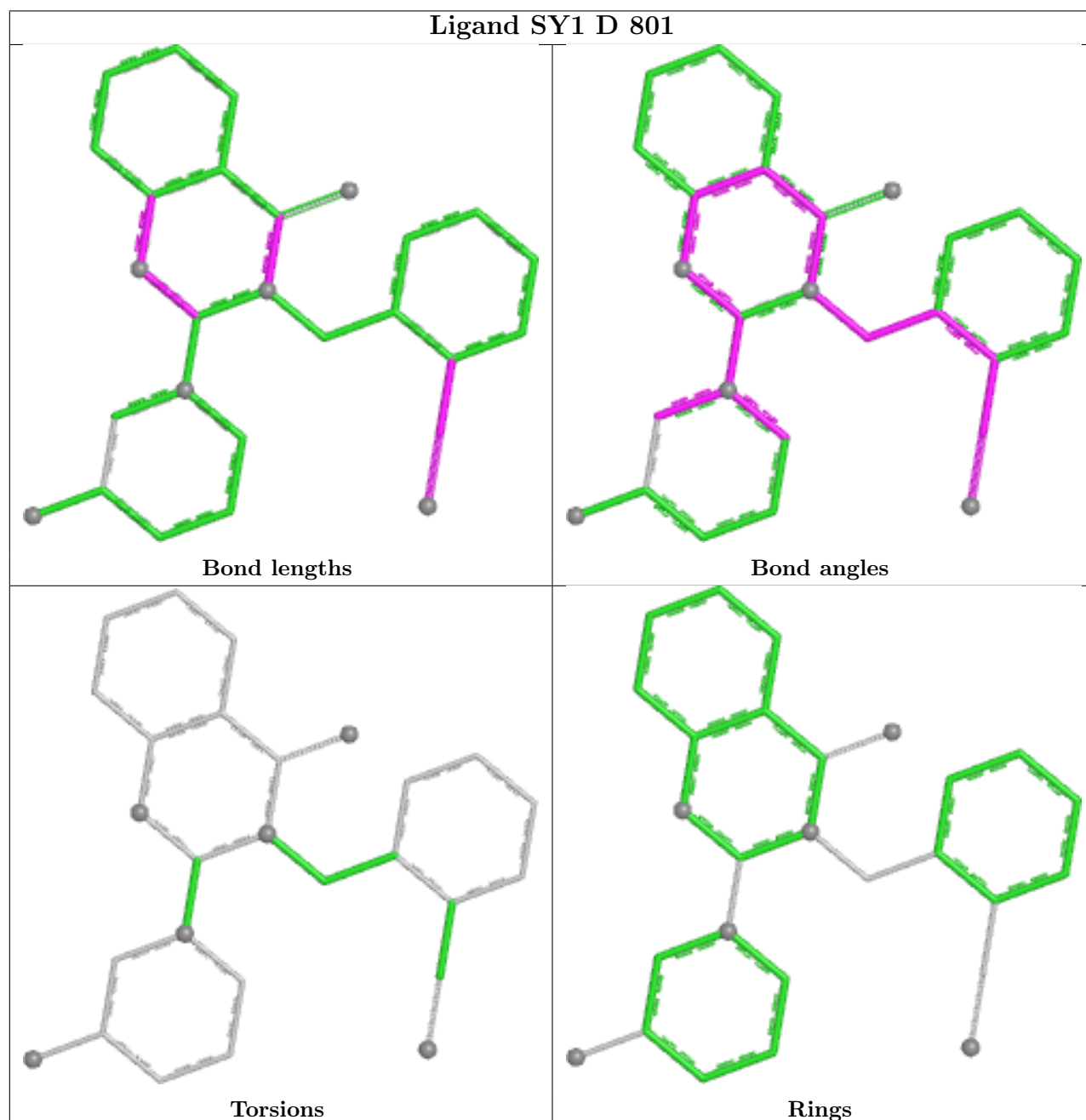
There are no ring outliers.

6 monomers are involved in 24 short contacts:

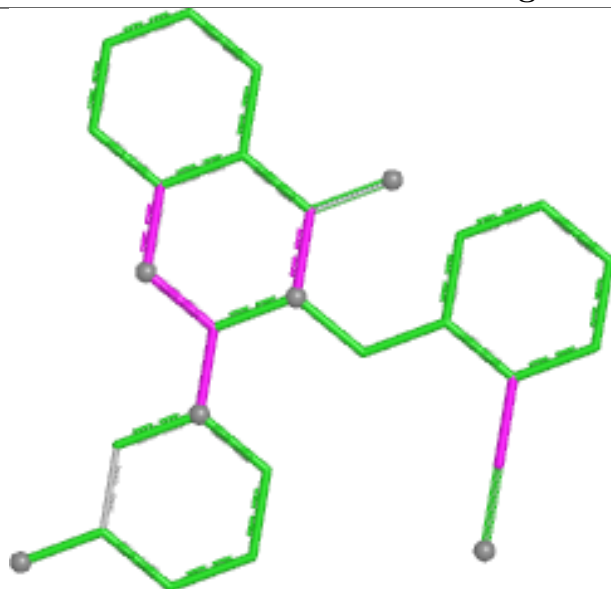
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	800	SY1	4	0
4	B	800	SY1	6	0
4	D	800	SY1	5	0
4	C	801	SY1	1	0
4	C	800	SY1	6	0
4	A	801	SY1	2	0

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

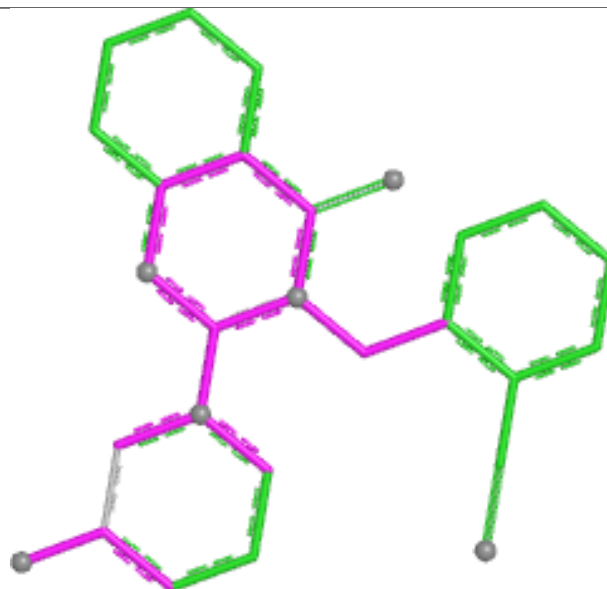
The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



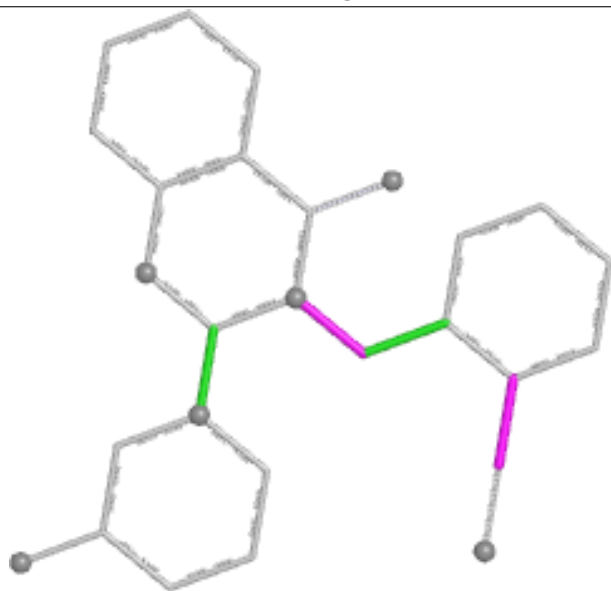
Ligand SY1 A 800



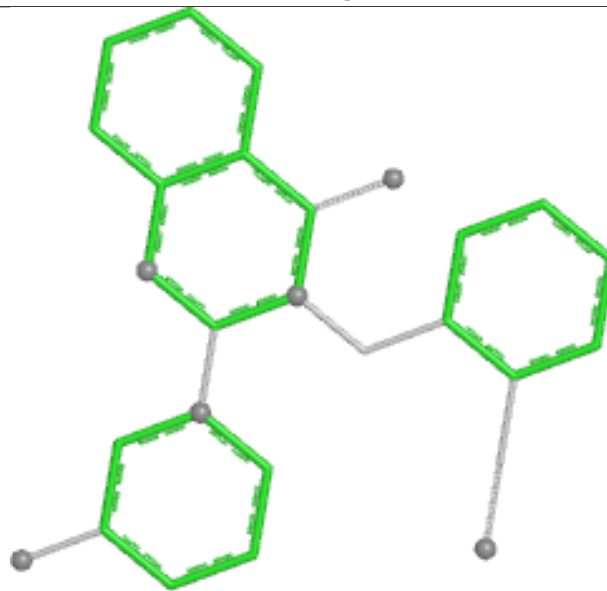
Bond lengths



Bond angles

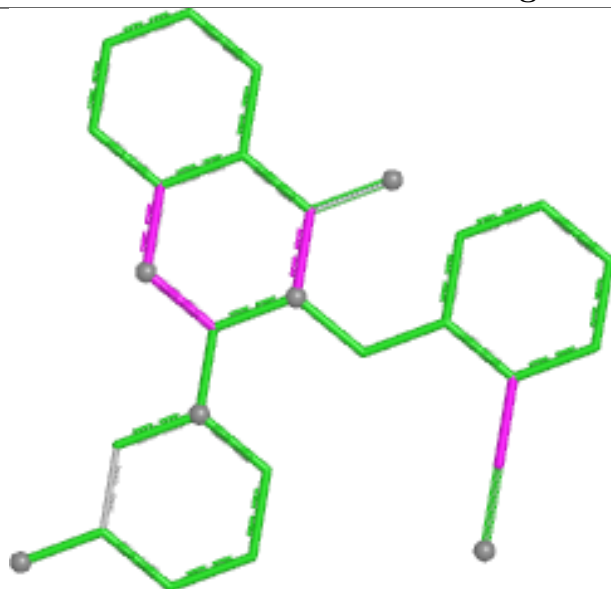


Torsions

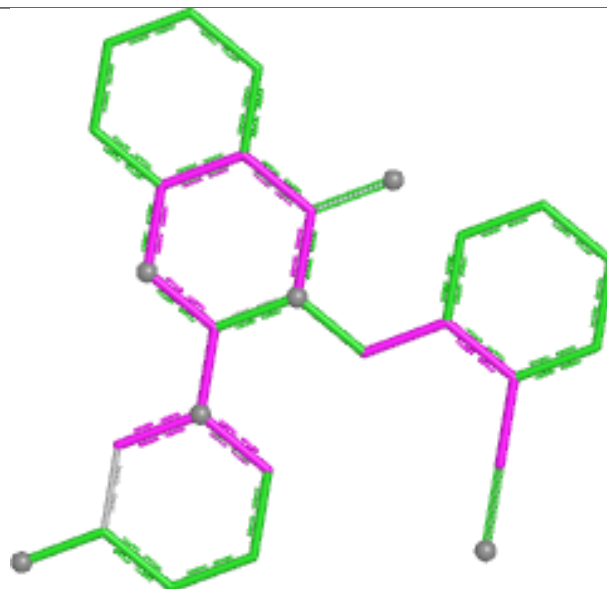


Rings

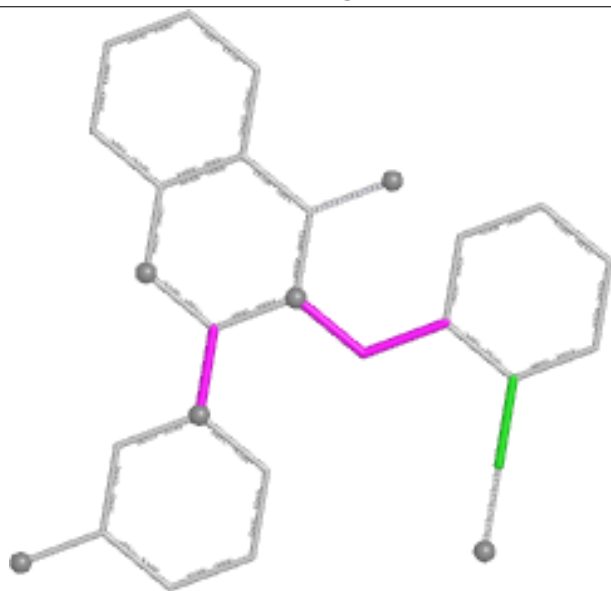
Ligand SY1 B 801



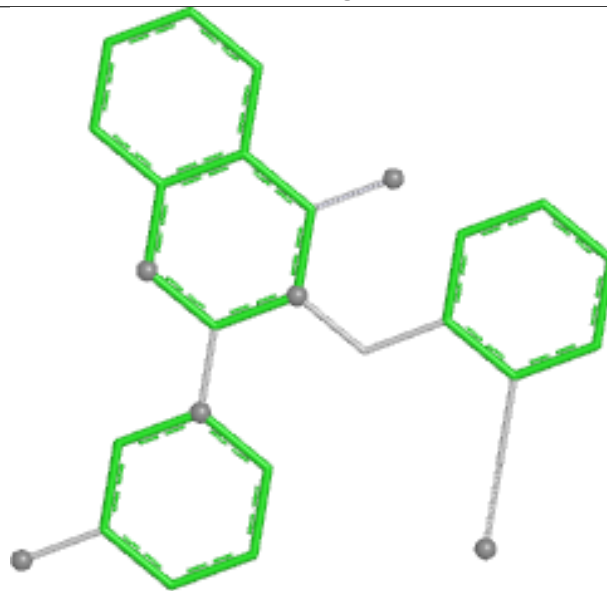
Bond lengths



Bond angles

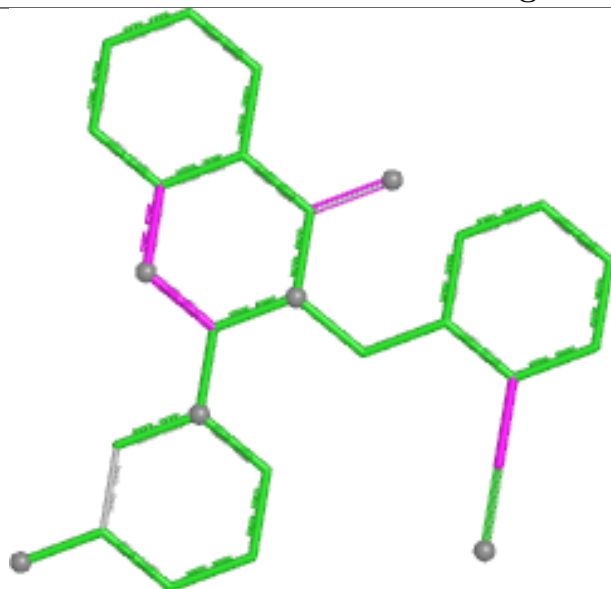


Torsions

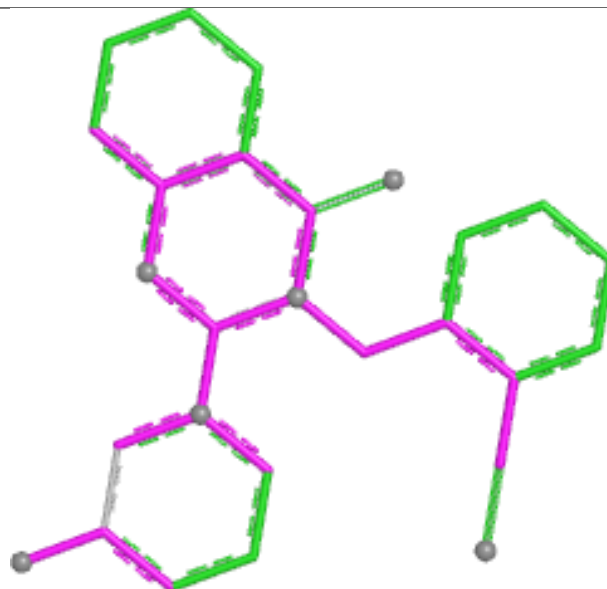


Rings

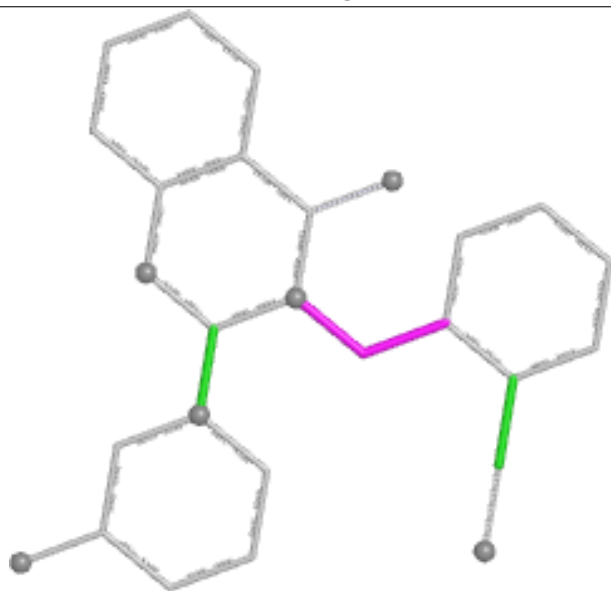
Ligand SY1 B 800



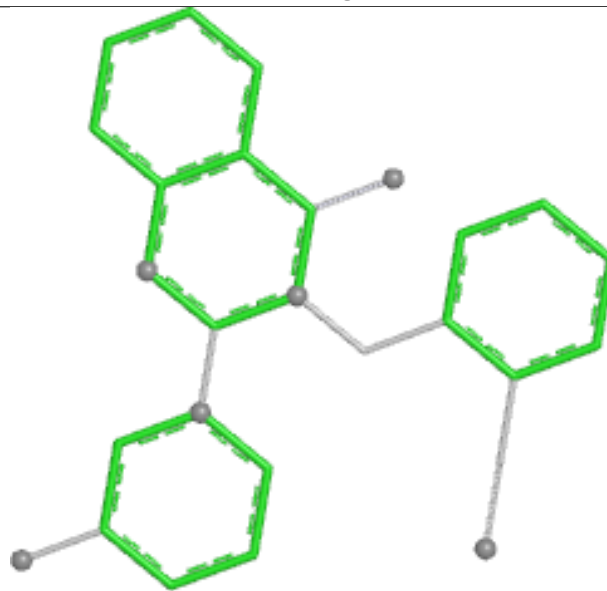
Bond lengths



Bond angles

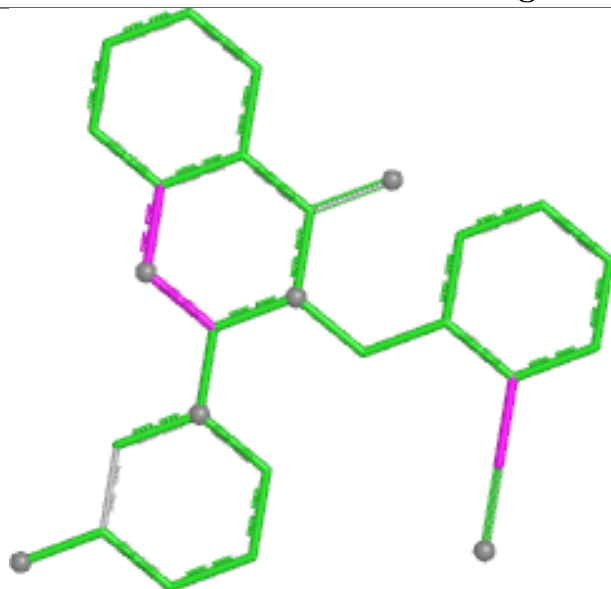


Torsions

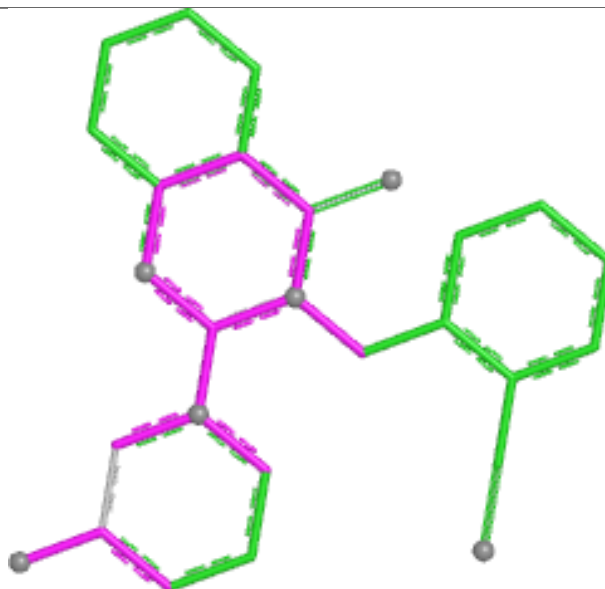


Rings

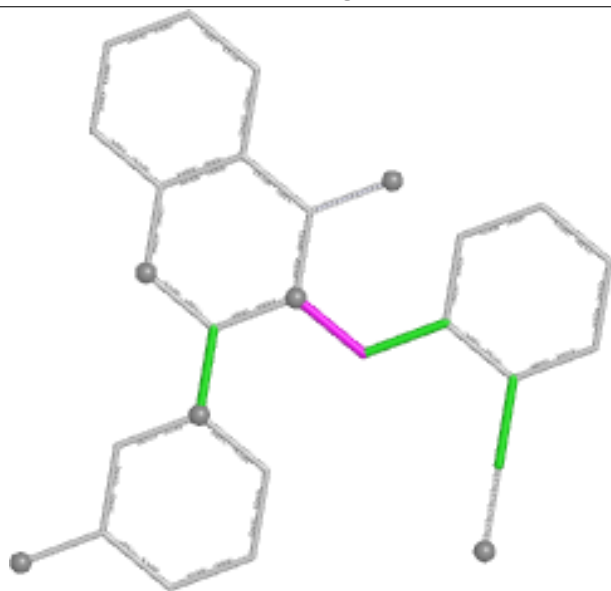
Ligand SY1 D 800



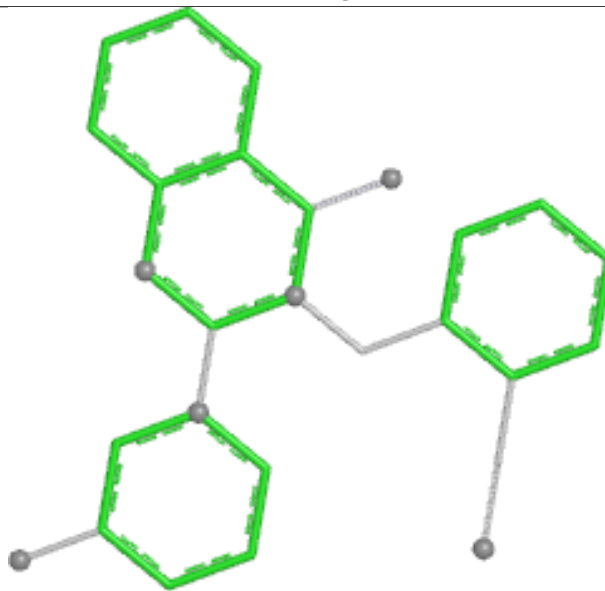
Bond lengths



Bond angles

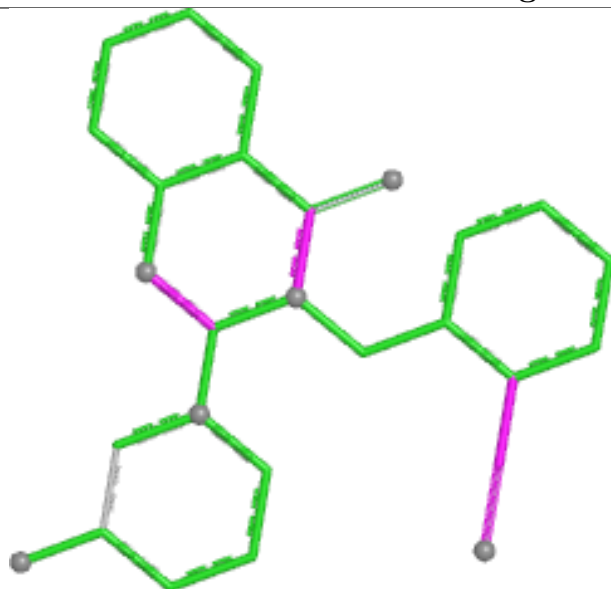


Torsions

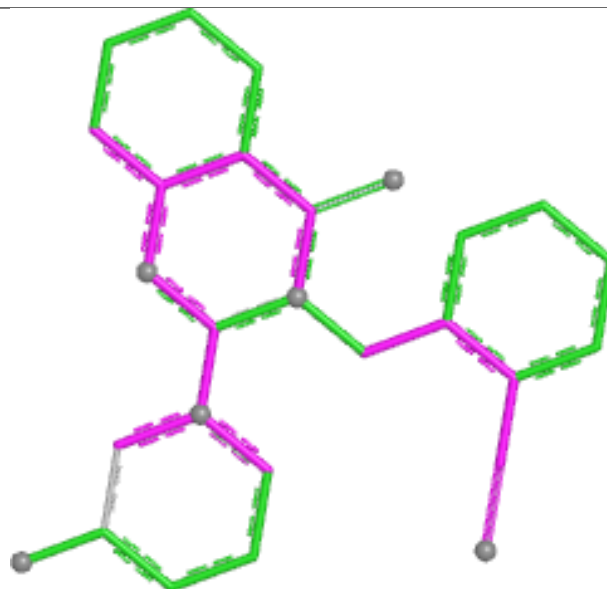


Rings

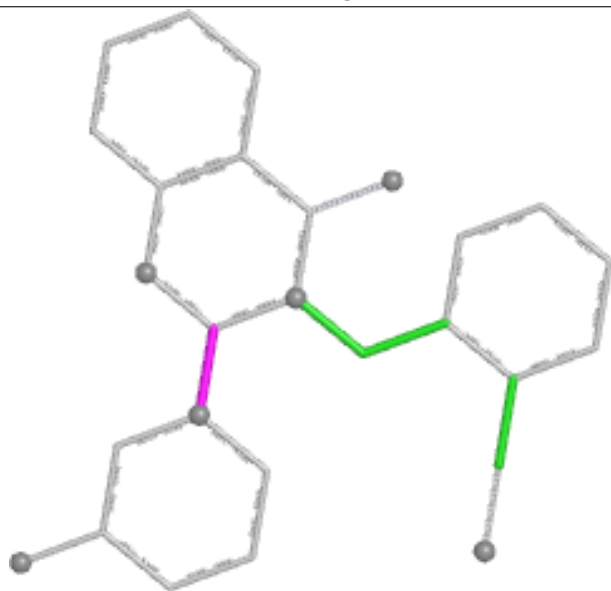
Ligand SY1 C 801



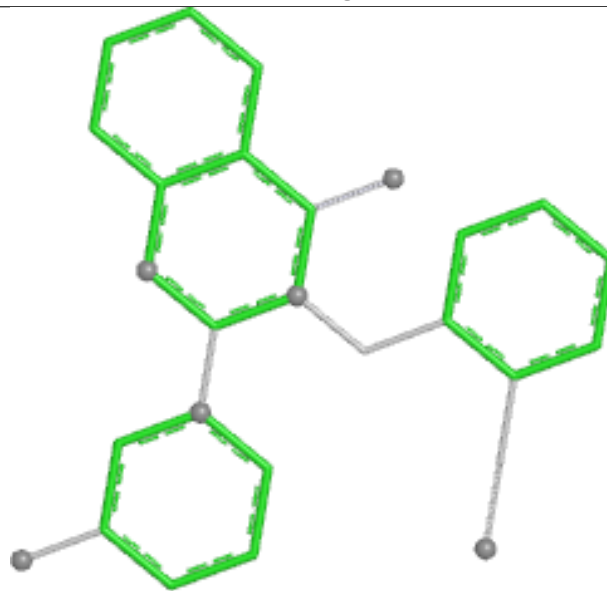
Bond lengths



Bond angles

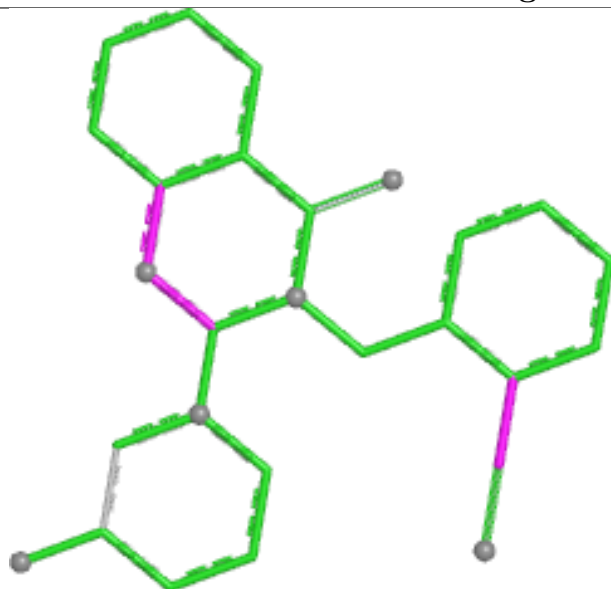


Torsions

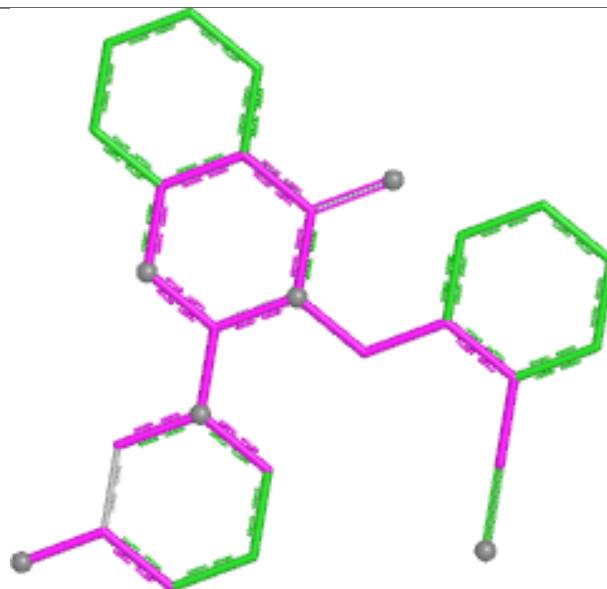


Rings

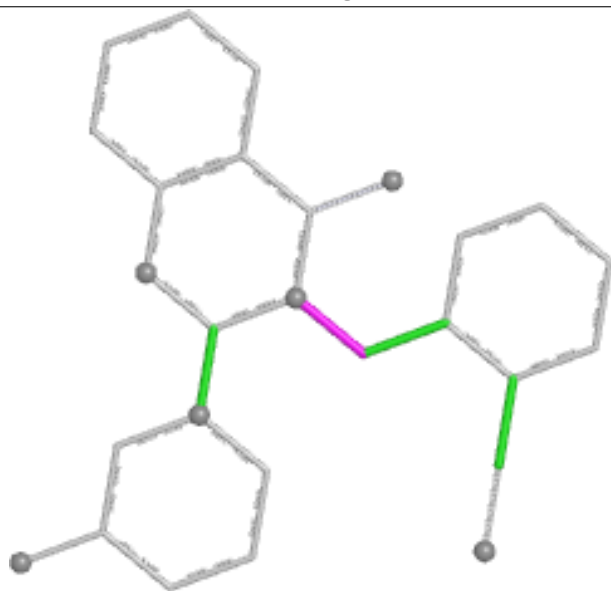
Ligand SY1 C 800



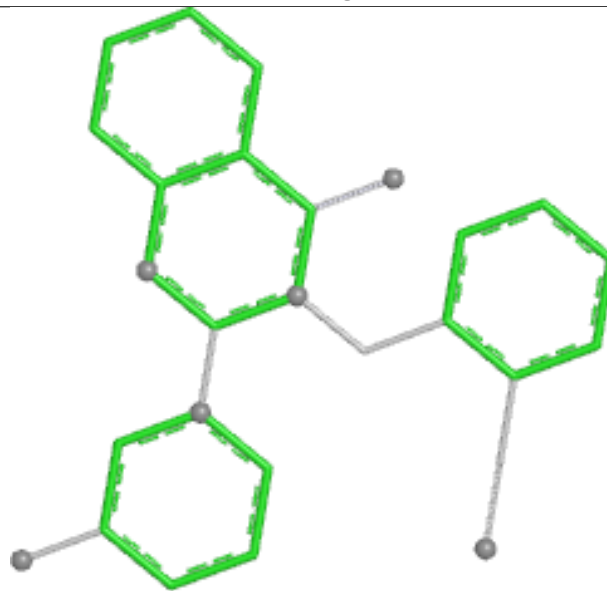
Bond lengths



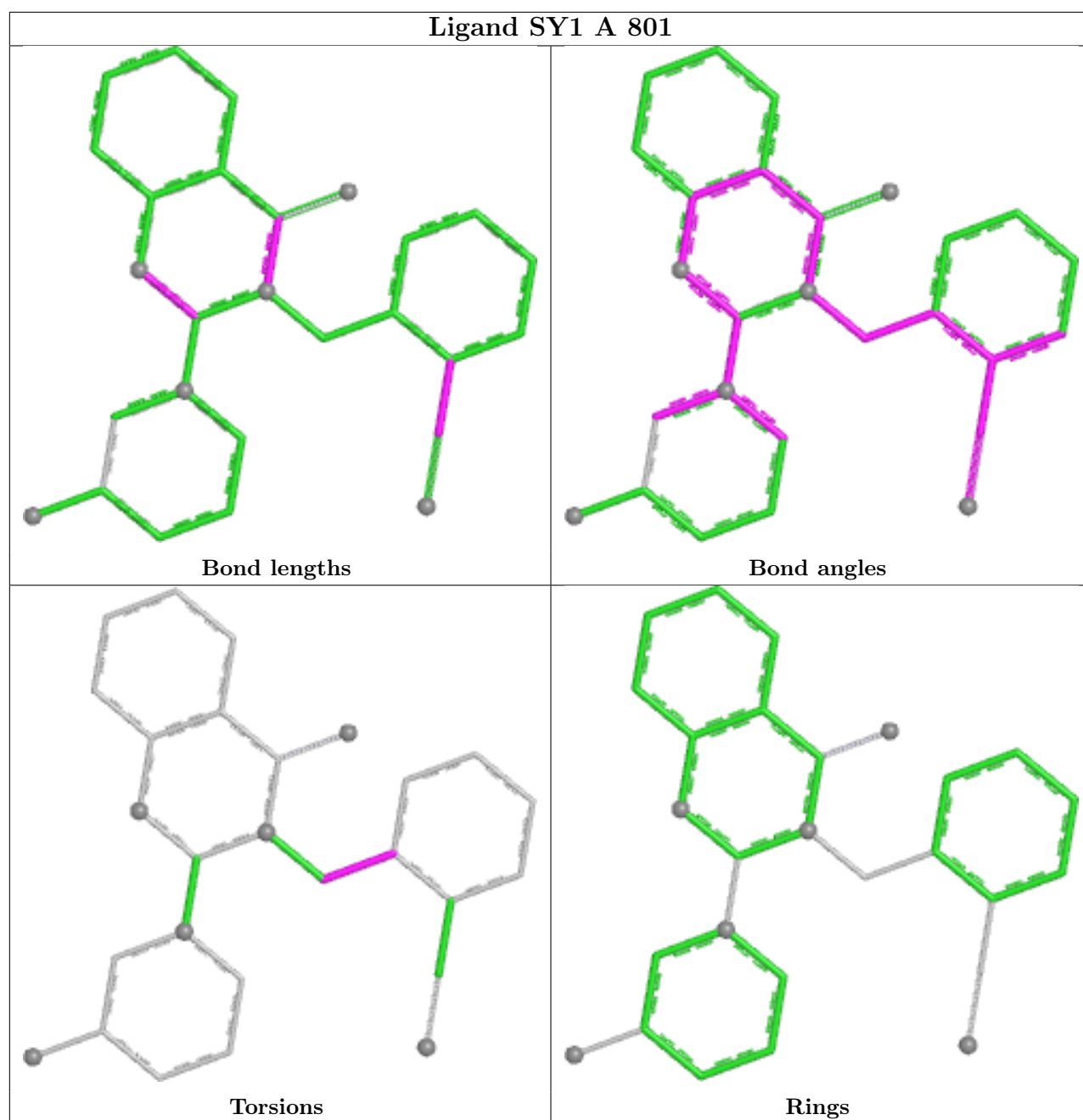
Bond angles



Torsions



Rings



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	724/731 (99%)	-0.06	16 (2%) 62 63	28, 45, 76, 113	1 (0%)
1	B	728/731 (99%)	0.22	12 (1%) 70 71	32, 49, 74, 102	1 (0%)
1	C	723/731 (98%)	0.15	15 (2%) 63 64	31, 49, 77, 94	1 (0%)
1	D	722/731 (98%)	0.63	38 (5%) 32 31	35, 62, 91, 133	0
All	All	2897/2924 (99%)	0.23	81 (2%) 55 56	28, 51, 83, 133	3 (0%)

All (81) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	394	CYS	4.3
1	D	40	ALA	4.2
1	D	83	TYR	4.1
1	D	75	ASN	3.6
1	C	394	CYS	3.5
1	B	394	CYS	3.5
1	C	78	VAL	3.5
1	C	137	LEU	3.5
1	D	78	VAL	3.4
1	D	81	ALA	3.4
1	C	391	LYS	3.2
1	B	81	ALA	3.2
1	A	84	GLY	3.1
1	D	76	ILE	3.0
1	D	77	LEU	3.0
1	C	89	PHE	3.0
1	A	88	VAL	3.0
1	D	63	ILE	2.9
1	C	88	VAL	2.8
1	D	322	TYR	2.8
1	A	63	ILE	2.8

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	D	105	TYR	2.8
1	A	86	SER	2.7
1	D	88	VAL	2.7
1	D	287	ILE	2.6
1	B	85	ASN	2.6
1	D	135	TYR	2.6
1	C	143	ILE	2.6
1	D	375	ILE	2.6
1	A	78	VAL	2.5
1	A	87	SER	2.5
1	D	333	SER	2.5
1	B	84	GLY	2.5
1	D	432	TYR	2.5
1	C	330	TYR	2.5
1	B	338	ASN	2.5
1	D	486	VAL	2.5
1	D	464	GLU	2.4
1	A	75	ASN	2.4
1	C	40	ALA	2.4
1	D	416	TYR	2.4
1	B	393	ASP	2.3
1	C	83	TYR	2.3
1	C	98	PHE	2.3
1	D	89	PHE	2.3
1	C	279	VAL	2.3
1	D	390	ASP	2.3
1	A	77	LEU	2.3
1	C	70	TYR	2.3
1	B	397	ILE	2.2
1	D	415	LEU	2.2
1	A	95	PHE	2.2
1	C	79	PHE	2.2
1	A	105	TYR	2.2
1	B	83	TYR	2.2
1	A	90	LEU	2.2
1	D	346	ILE	2.2
1	D	389	ILE	2.2
1	C	81	ALA	2.2
1	A	89	PHE	2.2
1	A	76	ILE	2.2
1	D	143	ILE	2.2
1	D	397	ILE	2.2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	D	95	PHE	2.2
1	D	414	TYR	2.1
1	D	339	CYS	2.1
1	D	79	PHE	2.1
1	B	90	LEU	2.1
1	D	69	LEU	2.1
1	A	378	GLU	2.1
1	D	222	PHE	2.1
1	D	279	VAL	2.1
1	B	427	GLY	2.1
1	B	386	TYR	2.1
1	A	81	ALA	2.1
1	D	727	GLY	2.1
1	B	86	SER	2.1
1	D	129	THR	2.0
1	D	439	TYR	2.0
1	D	98	PHE	2.0
1	D	374	ILE	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

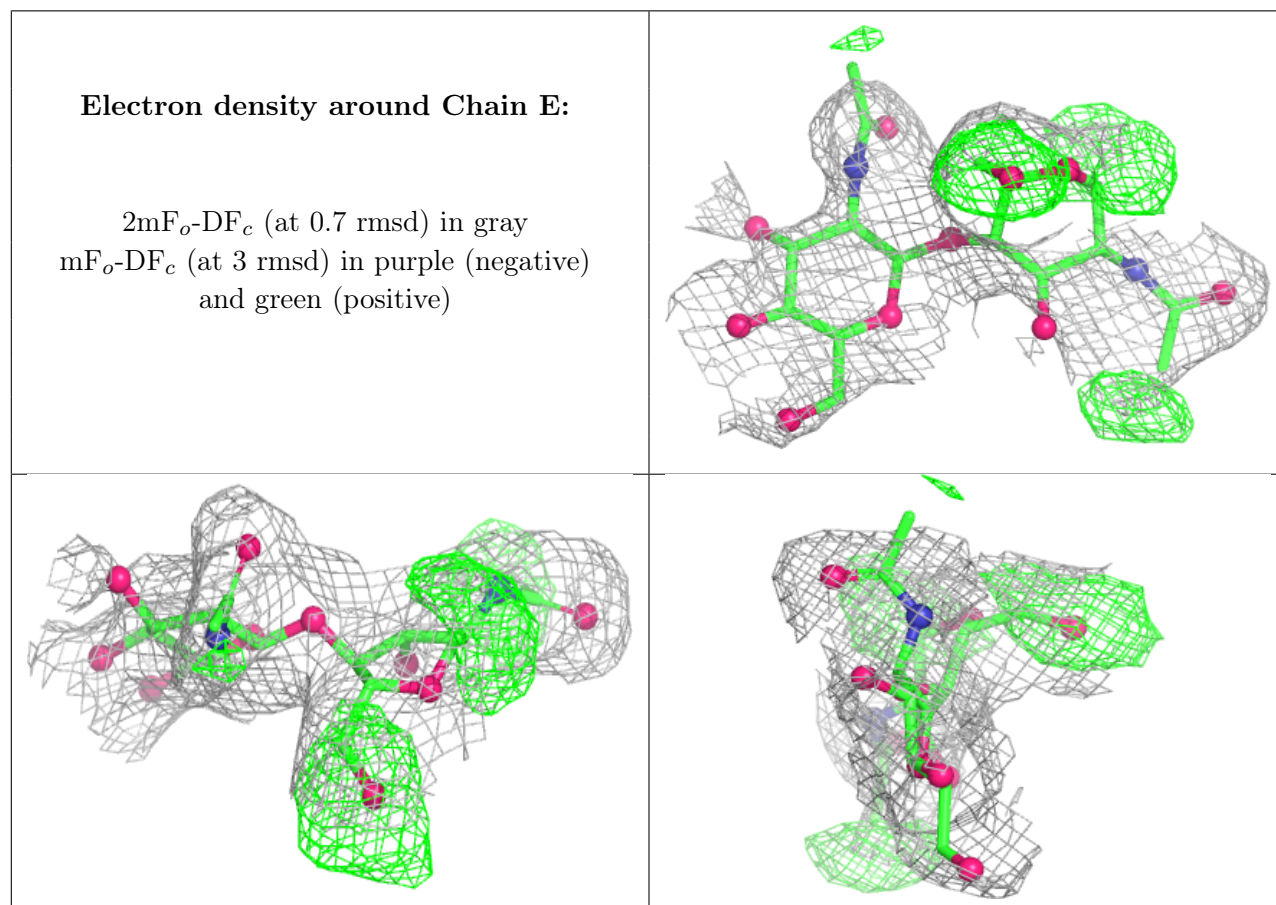
There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates [i](#)

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.

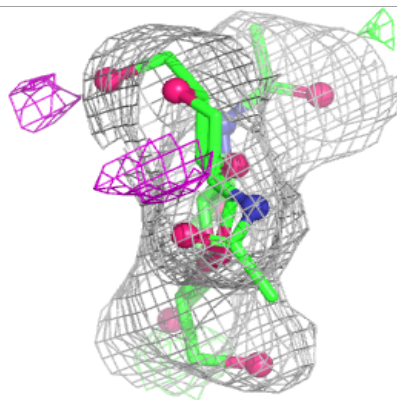
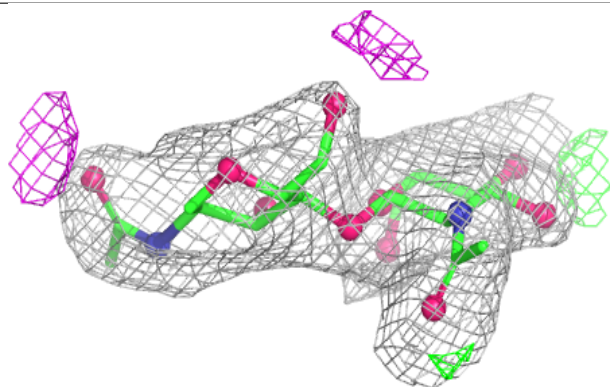
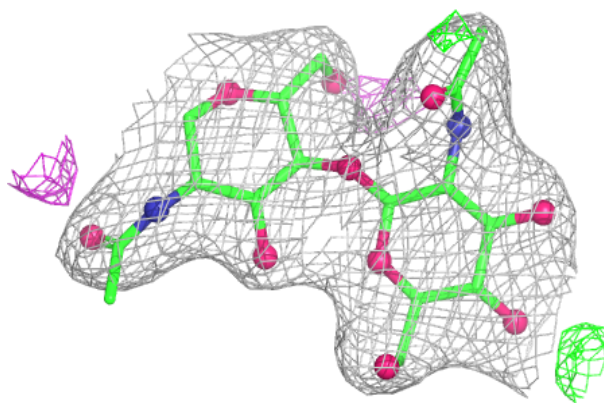
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
2	NAG	E	1	14/15	0.56	0.20	97,99,101,101	0
2	NAG	I	2	14/15	0.72	0.12	74,75,76,76	0
2	NAG	G	2	14/15	0.73	0.13	80,82,83,83	0
2	NAG	E	2	14/15	0.74	0.15	101,102,103,103	0
2	NAG	H	2	14/15	0.75	0.12	74,77,80,80	0
2	NAG	F	2	14/15	0.82	0.10	67,68,69,69	0
2	NAG	H	1	14/15	0.82	0.11	62,65,68,72	0
2	NAG	I	1	14/15	0.84	0.11	67,69,70,72	0
2	NAG	G	1	14/15	0.87	0.11	68,70,73,77	0
2	NAG	F	1	14/15	0.87	0.10	57,61,63,65	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.



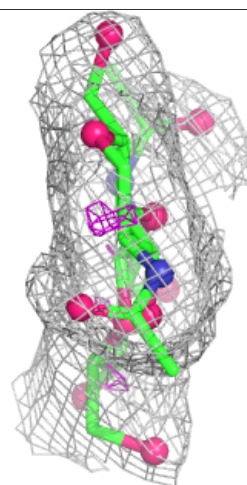
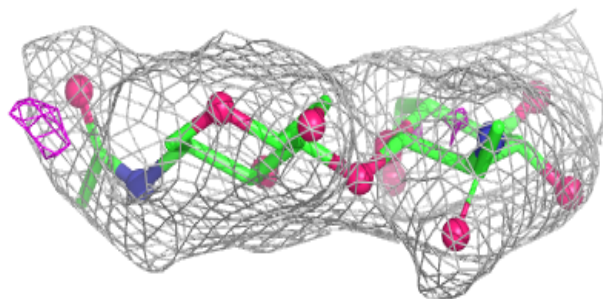
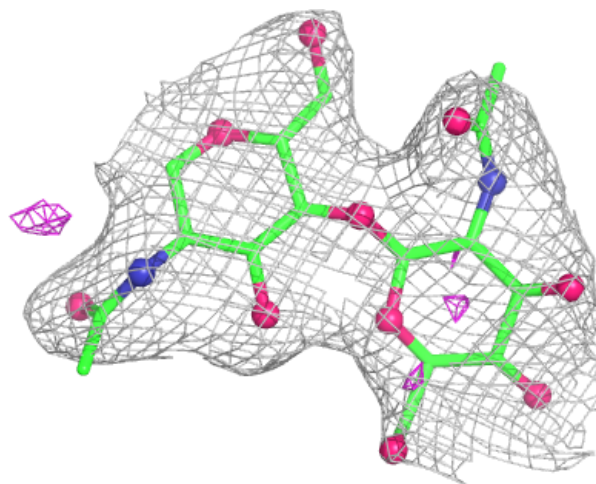
Electron density around Chain F:

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



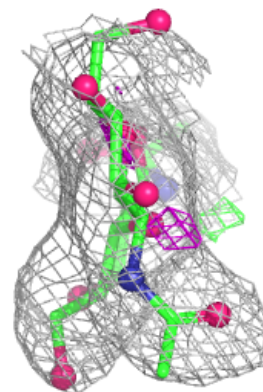
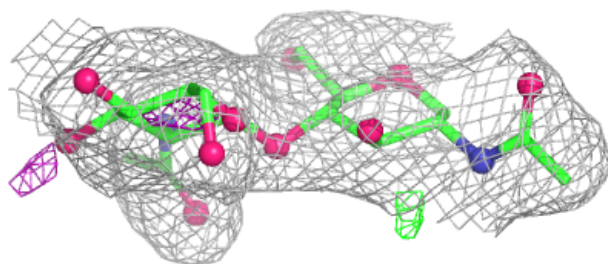
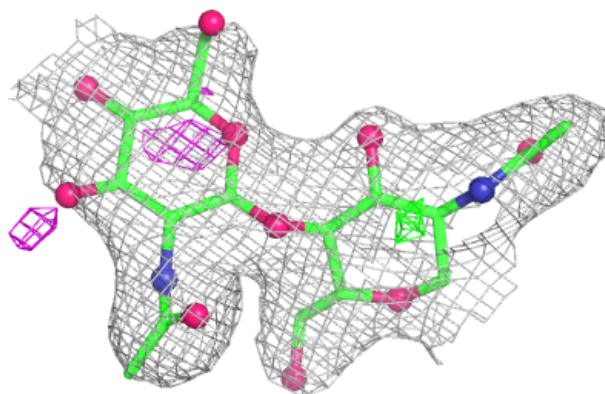
Electron density around Chain G:

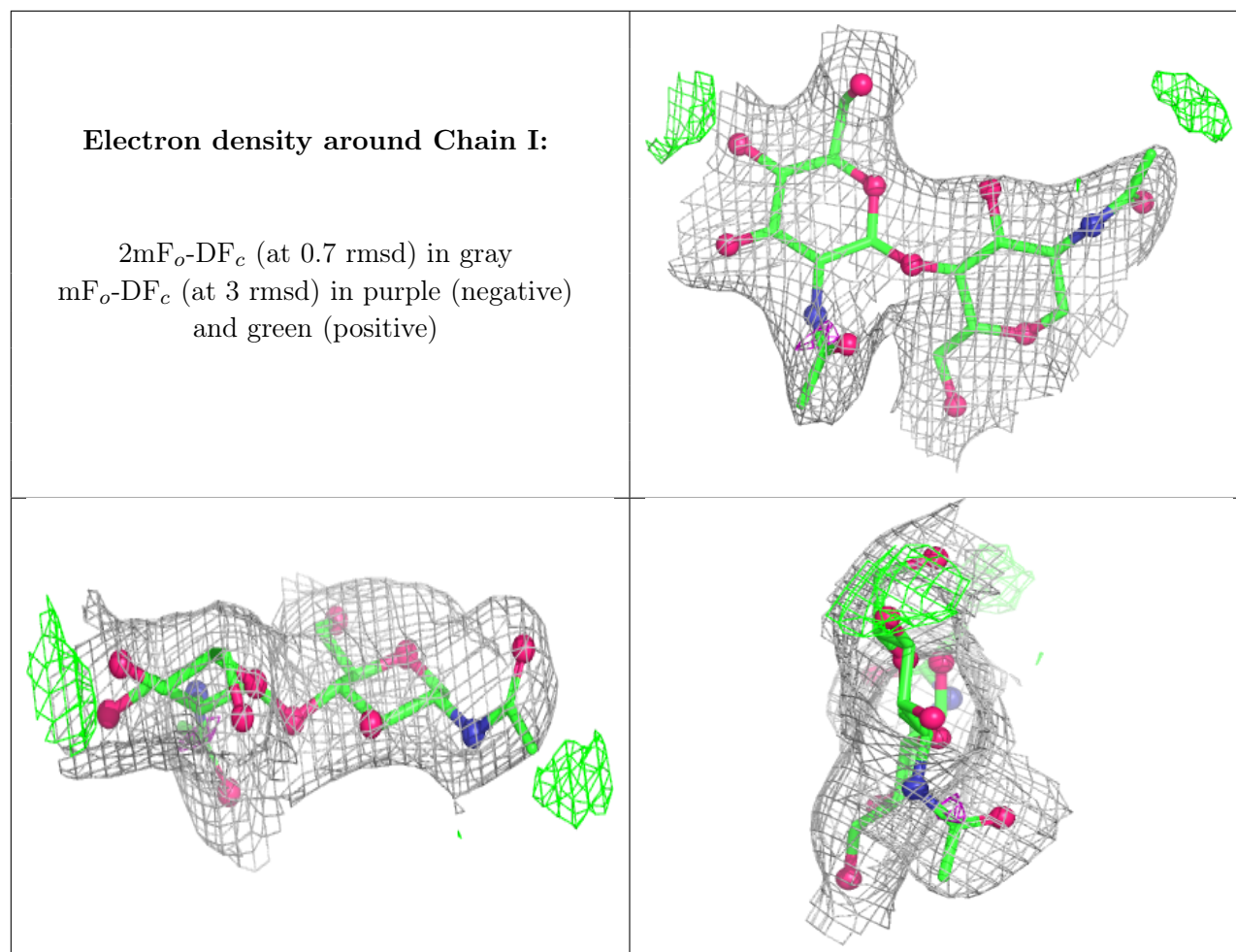
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



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)





6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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	NAG	A	802	14/15	0.50	0.18	105,105,106,106	0
3	NAG	B	802	14/15	0.54	0.16	98,100,100,100	0
3	NAG	C	803	14/15	0.61	0.14	69,71,74,75	0
3	NAG	C	806	14/15	0.63	0.16	82,84,86,86	0
3	NAG	D	802	14/15	0.65	0.15	78,80,81,81	0
3	NAG	A	803	14/15	0.70	0.14	72,75,77,78	0
3	NAG	C	807	14/15	0.70	0.15	70,74,75,76	0
3	NAG	A	804	14/15	0.70	0.12	70,72,76,77	0
3	NAG	B	804	14/15	0.72	0.13	72,74,76,77	0
3	NAG	B	807	14/15	0.72	0.13	75,77,78,79	0
3	NAG	D	805	14/15	0.73	0.13	80,81,82,83	0

Continued on next page...

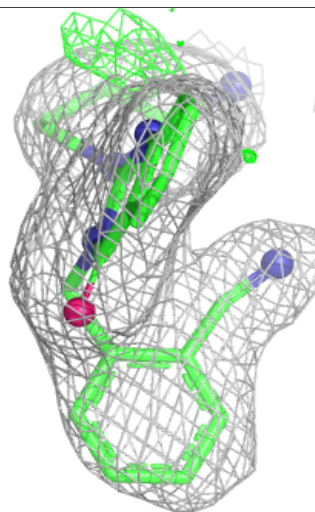
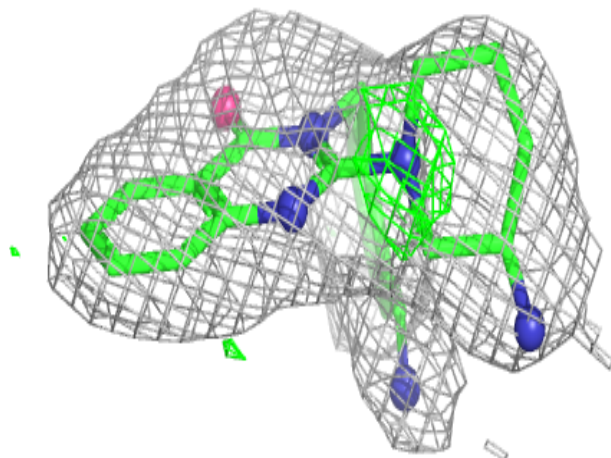
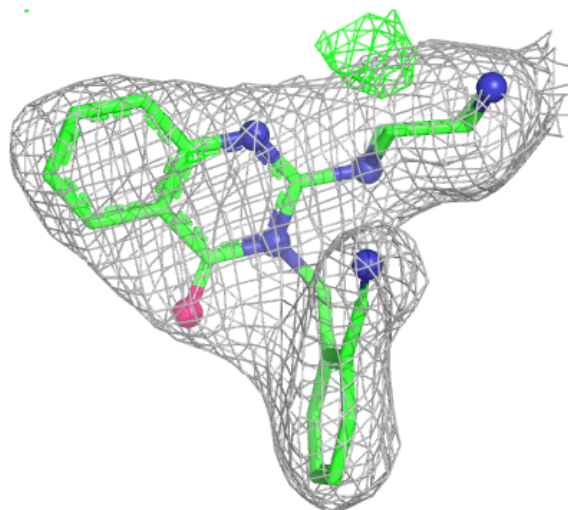
Continued from previous page...

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
3	NAG	A	807	14/15	0.76	0.14	60,64,66,66	0
3	NAG	C	802	14/15	0.78	0.12	72,73,74,75	0
3	NAG	B	803	14/15	0.83	0.10	62,64,66,67	0
4	SY1	C	801	27/27	0.89	0.13	62,63,64,64	0
4	SY1	A	801	27/27	0.91	0.10	47,50,53,53	0
4	SY1	D	801	27/27	0.91	0.10	56,58,62,65	0
4	SY1	B	801	27/27	0.92	0.10	48,49,51,52	0
4	SY1	D	800	27/27	0.94	0.08	43,46,47,47	0
4	SY1	B	800	27/27	0.94	0.09	38,40,44,45	0
4	SY1	C	800	27/27	0.95	0.08	33,37,41,41	0
4	SY1	A	800	27/27	0.95	0.08	36,41,42,43	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.

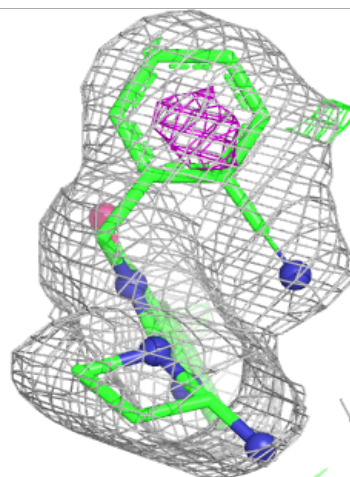
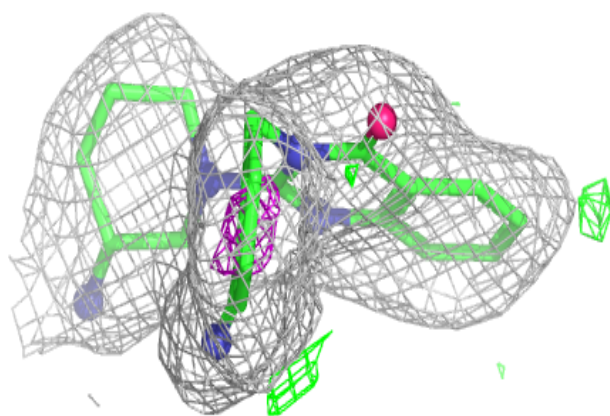
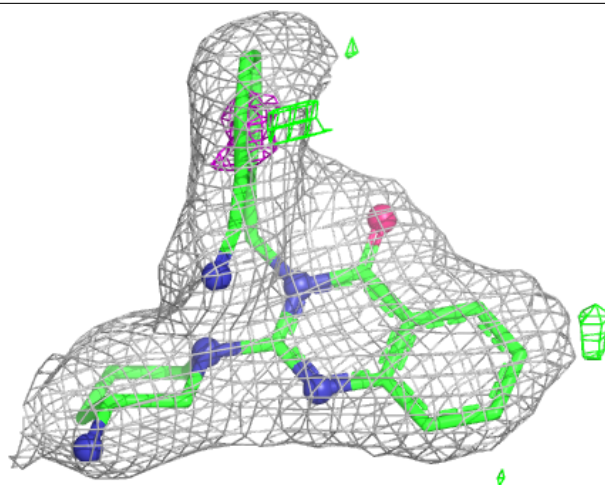
Electron density around SY1 C 801:

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



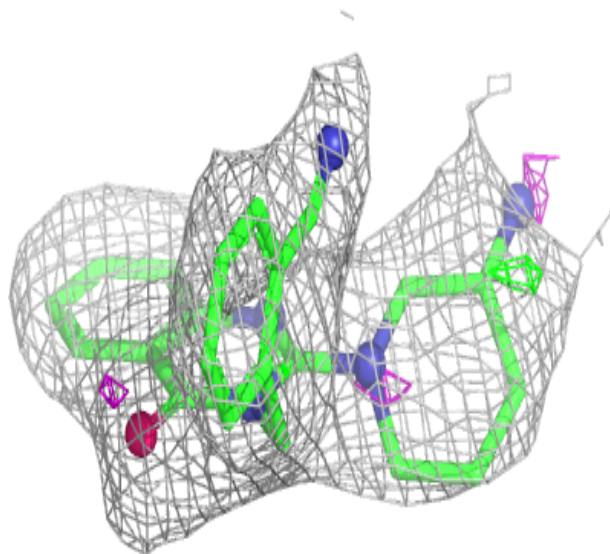
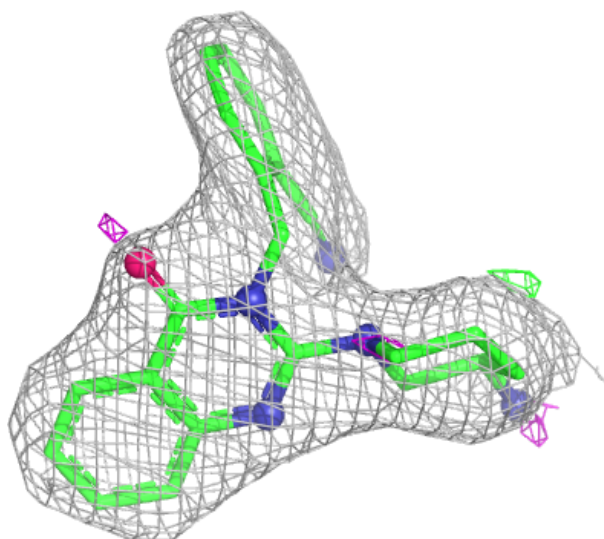
Electron density around SY1 A 801:

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



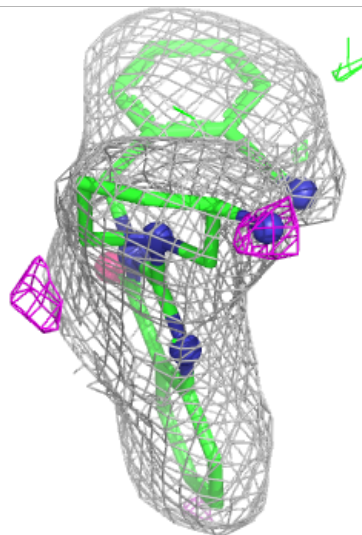
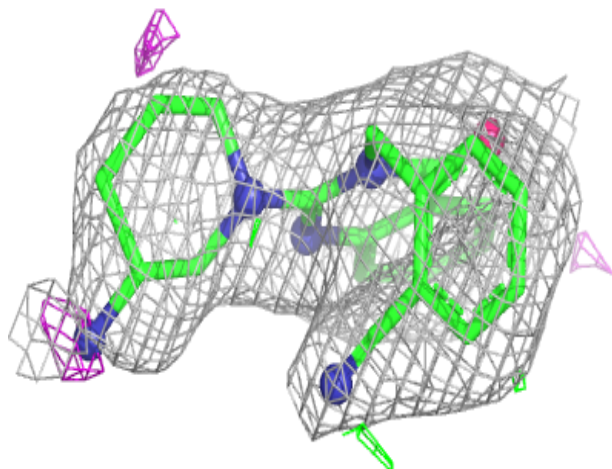
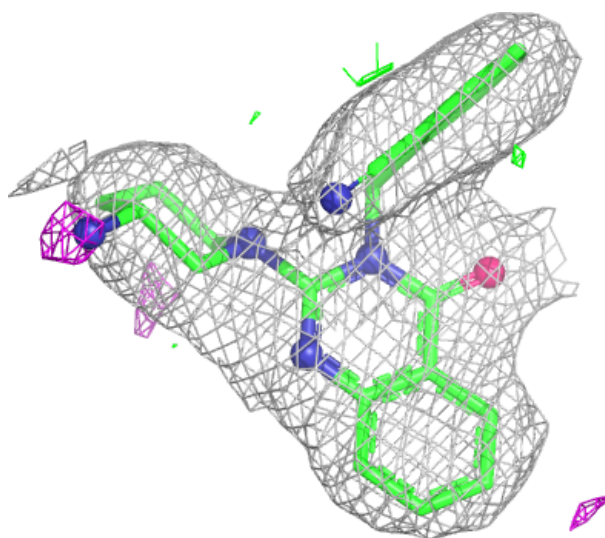
Electron density around SY1 D 801:

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



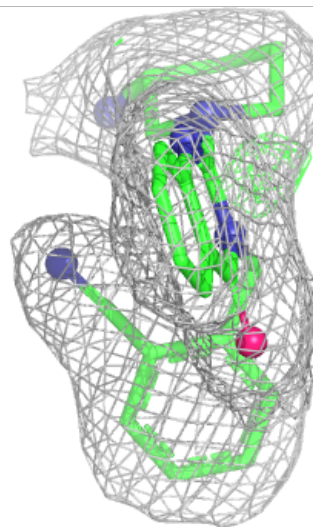
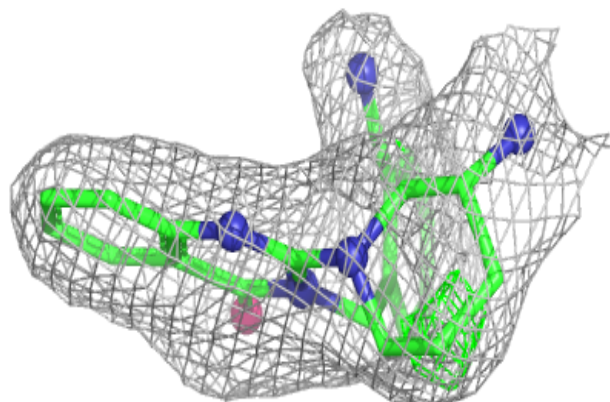
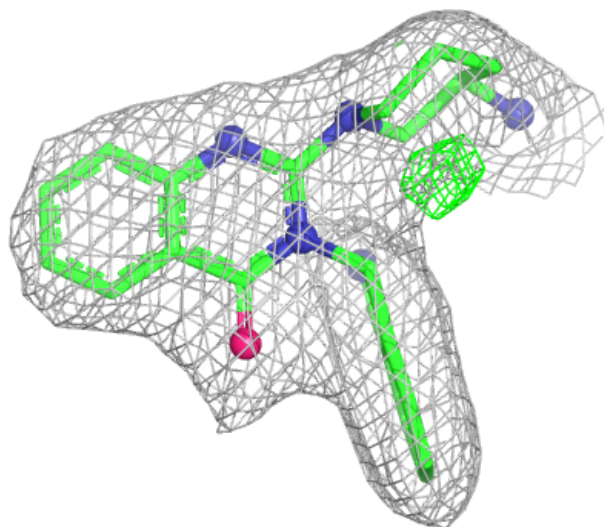
Electron density around SY1 B 801:

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



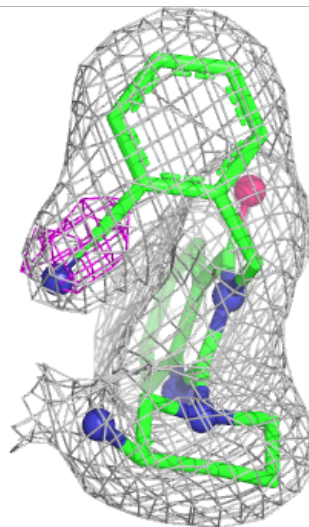
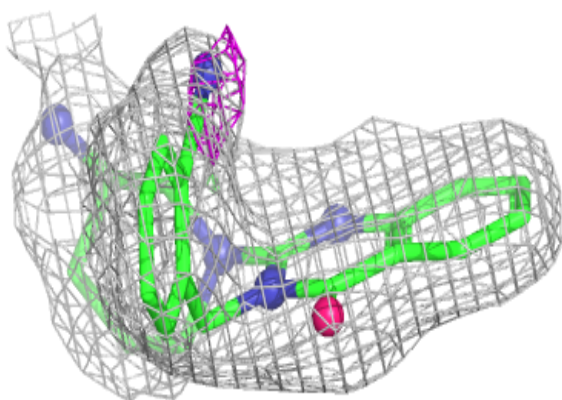
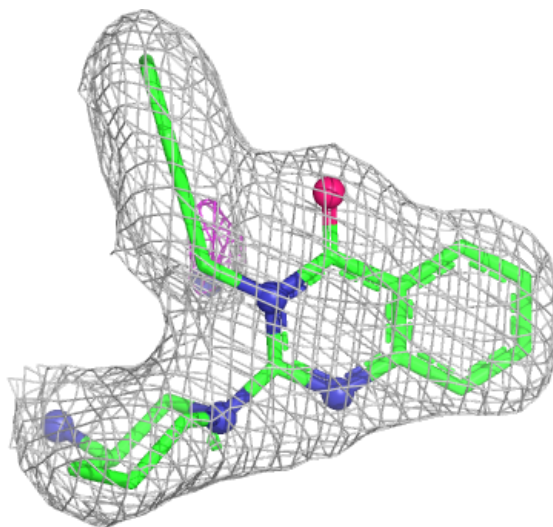
Electron density around SY1 D 800:

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



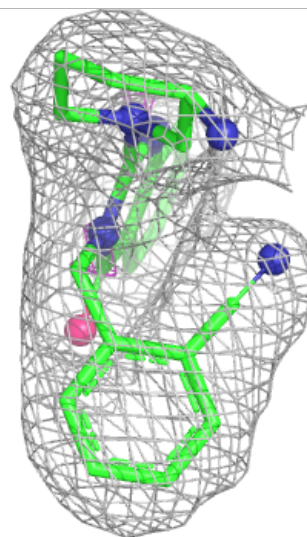
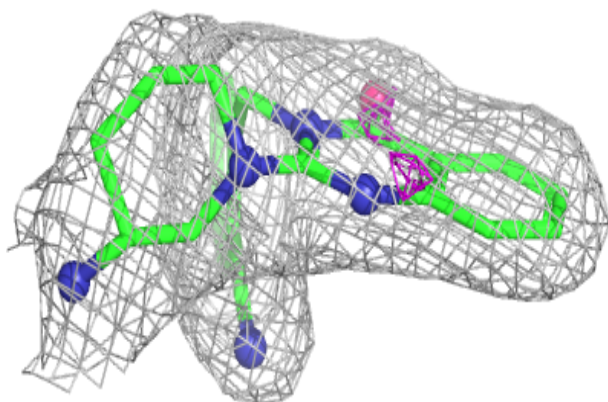
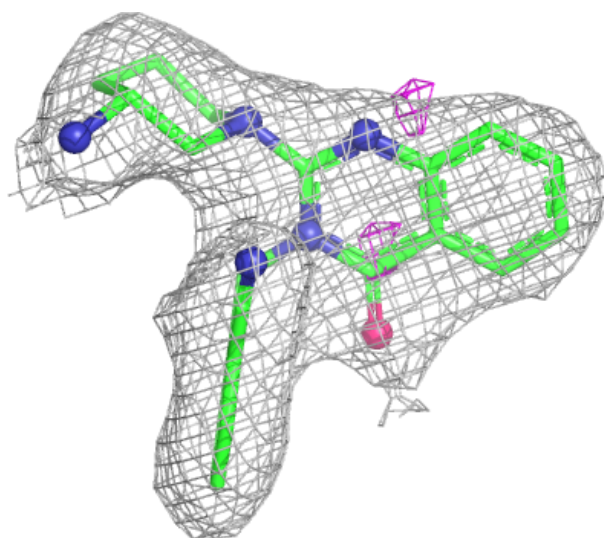
Electron density around SY1 B 800:

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



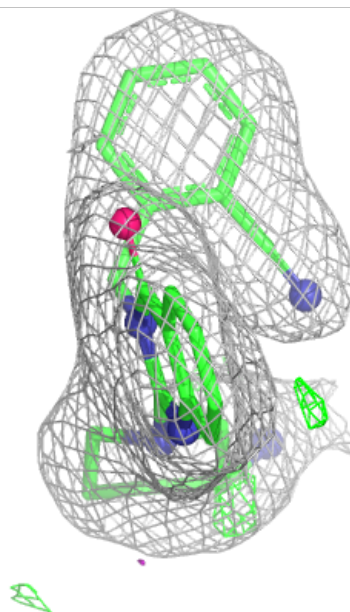
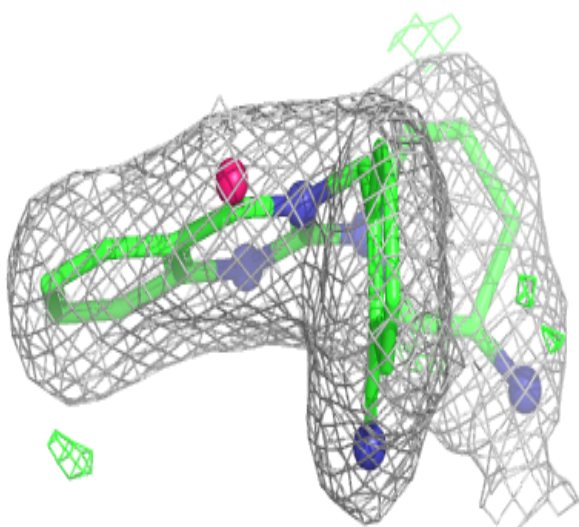
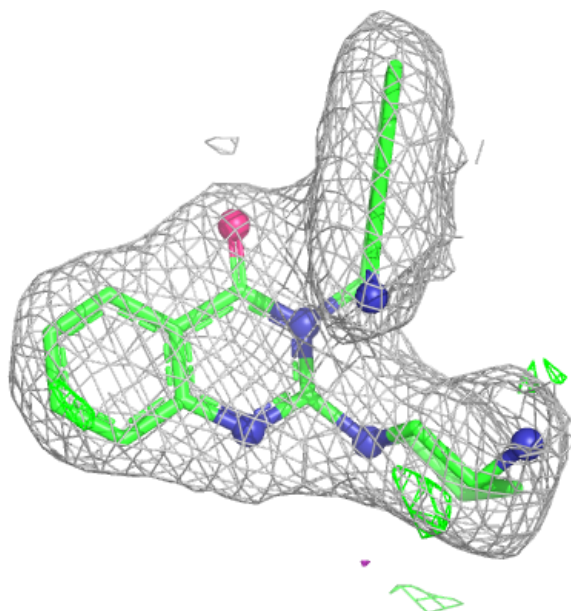
Electron density around SY1 C 800:

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



Electron density around SY1 A 800:

$2mF_o-DF_c$ (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.