Full wwPDB X-ray Structure Validation Report (i)

Oct 10, 2023 – 02:35 AM EDT

PDB ID	:	6X91
Title	:	Crystal structure of MBP-fused human APOBEC1
Authors	:	Wolfe, A.D.; Li, S.-X.; Chen, X.S.
Deposited on	:	2020-06-02
Resolution	:	3.51 Å(reported)

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

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

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

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

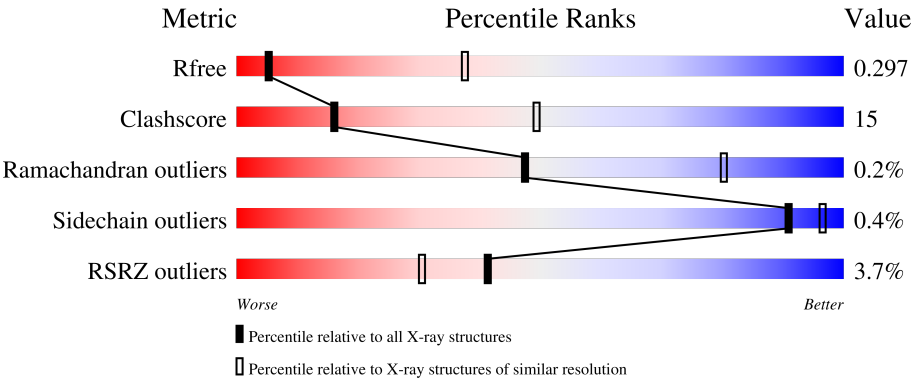
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35.1

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.51 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1161 (3.60-3.44)
Clashscore	141614	1244 (3.60-3.44)
Ramachandran outliers	138981	1206 (3.60-3.44)
Sidechain outliers	138945	1207 (3.60-3.44)
RSRZ outliers	127900	1080 (3.60-3.44)

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	593	2% 71% 29%
1	B	593	2% 68% 32%
1	C	593	2% 71% 28%
1	D	593	9% 64% 30% 6%
1	E	593	3% 70% 29%

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Mol	Chain	Length	Quality of chain
1	F	593	2% 69% 30%
1	G	593	1% 67% 32%
1	H	593	8% 64% 30% 6%
2	I	2	50% 50%
2	J	2	50% 50%
2	K	2	100%
2	L	2	100%
2	M	2	50% 50%
2	N	2	100%
2	O	2	100%
2	P	2	50% 50%
2	Q	2	100%
2	R	2	100%
2	S	2	100%
2	T	2	100%
2	U	2	100%
2	V	2	100%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	GLC	M	1	-	-	X	-
2	GLC	N	2	-	-	X	-

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 37624 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 Maltodextrin-binding protein, C->U-editing enzyme APOBEC-1 chimera.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	592	Total	C	N	O	S	0	0	0
			4725	3042	801	864	18			
1	B	592	Total	C	N	O	S	0	0	0
			4725	3042	801	864	18			
1	C	592	Total	C	N	O	S	0	0	0
			4725	3042	801	864	18			
1	D	557	Total	C	N	O	S	0	0	0
			4452	2865	756	815	16			
1	E	592	Total	C	N	O	S	0	0	0
			4725	3042	801	864	18			
1	F	592	Total	C	N	O	S	0	0	0
			4725	3042	801	864	18			
1	G	592	Total	C	N	O	S	0	0	0
			4725	3042	801	864	18			
1	H	558	Total	C	N	O	S	0	0	0
			4452	2864	756	816	16			

There are 120 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MET	-	initiating methionine	UNP A0A4Z0THX4
A	313	VAL	ALA	engineered mutation	UNP A0A4Z0THX4
A	368	ASN	-	linker	UNP A0A4Z0THX4
A	369	SER	-	linker	UNP A0A4Z0THX4
A	370	SER	-	linker	UNP A0A4Z0THX4
A	371	SER	-	linker	UNP A0A4Z0THX4
A	1046	ALA	MET	engineered mutation	UNP P41238
A	1048	SER	ARG	engineered mutation	UNP P41238
A	1063	ALA	GLU	engineered mutation	UNP P41238
A	1080	THR	MET	engineered mutation	UNP P41238
A	1121	ALA	TRP	conflict	UNP P41238
A	1146	ASP	ALA	engineered mutation	UNP P41238

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1173	ALA	LEU	engineered mutation	UNP P41238
A	1199	ALA	TRP	engineered mutation	UNP P41238
A	1205	ALA	PHE	engineered mutation	UNP P41238
B	1	MET	-	initiating methionine	UNP A0A4Z0THX4
B	313	VAL	ALA	engineered mutation	UNP A0A4Z0THX4
B	368	ASN	-	linker	UNP A0A4Z0THX4
B	369	SER	-	linker	UNP A0A4Z0THX4
B	370	SER	-	linker	UNP A0A4Z0THX4
B	371	SER	-	linker	UNP A0A4Z0THX4
B	1046	ALA	MET	engineered mutation	UNP P41238
B	1048	SER	ARG	engineered mutation	UNP P41238
B	1063	ALA	GLU	engineered mutation	UNP P41238
B	1080	THR	MET	engineered mutation	UNP P41238
B	1121	ALA	TRP	conflict	UNP P41238
B	1146	ASP	ALA	engineered mutation	UNP P41238
B	1173	ALA	LEU	engineered mutation	UNP P41238
B	1199	ALA	TRP	engineered mutation	UNP P41238
B	1205	ALA	PHE	engineered mutation	UNP P41238
C	1	MET	-	initiating methionine	UNP A0A4Z0THX4
C	313	VAL	ALA	engineered mutation	UNP A0A4Z0THX4
C	368	ASN	-	linker	UNP A0A4Z0THX4
C	369	SER	-	linker	UNP A0A4Z0THX4
C	370	SER	-	linker	UNP A0A4Z0THX4
C	371	SER	-	linker	UNP A0A4Z0THX4
C	1046	ALA	MET	engineered mutation	UNP P41238
C	1048	SER	ARG	engineered mutation	UNP P41238
C	1063	ALA	GLU	engineered mutation	UNP P41238
C	1080	THR	MET	engineered mutation	UNP P41238
C	1121	ALA	TRP	conflict	UNP P41238
C	1146	ASP	ALA	engineered mutation	UNP P41238
C	1173	ALA	LEU	engineered mutation	UNP P41238
C	1199	ALA	TRP	engineered mutation	UNP P41238
C	1205	ALA	PHE	engineered mutation	UNP P41238
D	1	MET	-	initiating methionine	UNP A0A4Z0THX4
D	313	VAL	ALA	engineered mutation	UNP A0A4Z0THX4
D	368	ASN	-	linker	UNP A0A4Z0THX4
D	369	SER	-	linker	UNP A0A4Z0THX4
D	370	SER	-	linker	UNP A0A4Z0THX4
D	371	SER	-	linker	UNP A0A4Z0THX4
D	1046	ALA	MET	engineered mutation	UNP P41238
D	1048	SER	ARG	engineered mutation	UNP P41238
D	1063	ALA	GLU	engineered mutation	UNP P41238

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Chain	Residue	Modelled	Actual	Comment	Reference
D	1080	THR	MET	engineered mutation	UNP P41238
D	1121	ALA	TRP	conflict	UNP P41238
D	1146	ASP	ALA	engineered mutation	UNP P41238
D	1173	ALA	LEU	engineered mutation	UNP P41238
D	1199	ALA	TRP	engineered mutation	UNP P41238
D	1205	ALA	PHE	engineered mutation	UNP P41238
E	1	MET	-	initiating methionine	UNP A0A4Z0THX4
E	313	VAL	ALA	engineered mutation	UNP A0A4Z0THX4
E	368	ASN	-	linker	UNP A0A4Z0THX4
E	369	SER	-	linker	UNP A0A4Z0THX4
E	370	SER	-	linker	UNP A0A4Z0THX4
E	371	SER	-	linker	UNP A0A4Z0THX4
E	1046	ALA	MET	engineered mutation	UNP P41238
E	1048	SER	ARG	engineered mutation	UNP P41238
E	1063	ALA	GLU	engineered mutation	UNP P41238
E	1080	THR	MET	engineered mutation	UNP P41238
E	1121	ALA	TRP	conflict	UNP P41238
E	1146	ASP	ALA	engineered mutation	UNP P41238
E	1173	ALA	LEU	engineered mutation	UNP P41238
E	1199	ALA	TRP	engineered mutation	UNP P41238
E	1205	ALA	PHE	engineered mutation	UNP P41238
F	1	MET	-	initiating methionine	UNP A0A4Z0THX4
F	313	VAL	ALA	engineered mutation	UNP A0A4Z0THX4
F	368	ASN	-	linker	UNP A0A4Z0THX4
F	369	SER	-	linker	UNP A0A4Z0THX4
F	370	SER	-	linker	UNP A0A4Z0THX4
F	371	SER	-	linker	UNP A0A4Z0THX4
F	1046	ALA	MET	engineered mutation	UNP P41238
F	1048	SER	ARG	engineered mutation	UNP P41238
F	1063	ALA	GLU	engineered mutation	UNP P41238
F	1080	THR	MET	engineered mutation	UNP P41238
F	1121	ALA	TRP	conflict	UNP P41238
F	1146	ASP	ALA	engineered mutation	UNP P41238
F	1173	ALA	LEU	engineered mutation	UNP P41238
F	1199	ALA	TRP	engineered mutation	UNP P41238
F	1205	ALA	PHE	engineered mutation	UNP P41238
G	1	MET	-	initiating methionine	UNP A0A4Z0THX4
G	313	VAL	ALA	engineered mutation	UNP A0A4Z0THX4
G	368	ASN	-	linker	UNP A0A4Z0THX4
G	369	SER	-	linker	UNP A0A4Z0THX4
G	370	SER	-	linker	UNP A0A4Z0THX4
G	371	SER	-	linker	UNP A0A4Z0THX4

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Chain	Residue	Modelled	Actual	Comment	Reference
G	1046	ALA	MET	engineered mutation	UNP P41238
G	1048	SER	ARG	engineered mutation	UNP P41238
G	1063	ALA	GLU	engineered mutation	UNP P41238
G	1080	THR	MET	engineered mutation	UNP P41238
G	1121	ALA	TRP	conflict	UNP P41238
G	1146	ASP	ALA	engineered mutation	UNP P41238
G	1173	ALA	LEU	engineered mutation	UNP P41238
G	1199	ALA	TRP	engineered mutation	UNP P41238
G	1205	ALA	PHE	engineered mutation	UNP P41238
H	1	MET	-	initiating methionine	UNP A0A4Z0THX4
H	313	VAL	ALA	engineered mutation	UNP A0A4Z0THX4
H	368	ASN	-	linker	UNP A0A4Z0THX4
H	369	SER	-	linker	UNP A0A4Z0THX4
H	370	SER	-	linker	UNP A0A4Z0THX4
H	371	SER	-	linker	UNP A0A4Z0THX4
H	1046	ALA	MET	engineered mutation	UNP P41238
H	1048	SER	ARG	engineered mutation	UNP P41238
H	1063	ALA	GLU	engineered mutation	UNP P41238
H	1080	THR	MET	engineered mutation	UNP P41238
H	1121	ALA	TRP	conflict	UNP P41238
H	1146	ASP	ALA	engineered mutation	UNP P41238
H	1173	ALA	LEU	engineered mutation	UNP P41238
H	1199	ALA	TRP	engineered mutation	UNP P41238
H	1205	ALA	PHE	engineered mutation	UNP P41238

- Molecule 2 is an oligosaccharide called alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose.

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	Trace
2	I	2	Total	C	O	0	0	0
			23	12	11			
2	J	2	Total	C	O	0	0	0
			23	12	11			
2	K	2	Total	C	O	0	0	0
			23	12	11			
2	L	2	Total	C	O	0	0	0
			23	12	11			
2	M	2	Total	C	O	0	0	0
			23	12	11			

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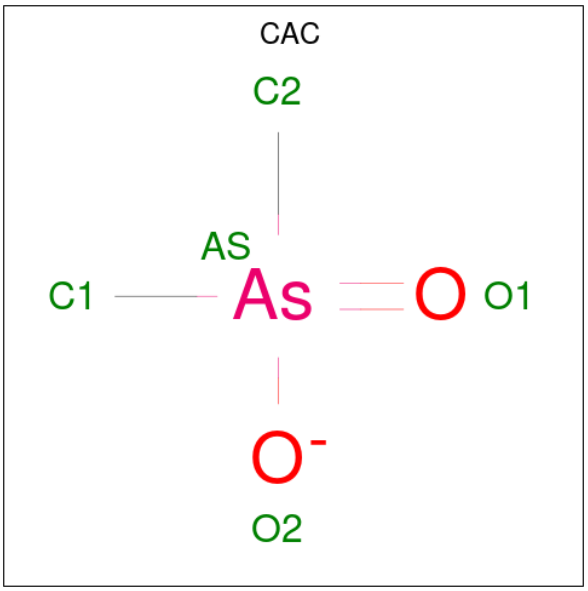
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
2	N	2	Total C O 23 12 11	0	0	0
2	O	2	Total C O 23 12 11	0	0	0
2	P	2	Total C O 23 12 11	0	0	0
2	Q	2	Total C O 23 12 11	0	0	0
2	R	2	Total C O 23 12 11	0	0	0
2	S	2	Total C O 23 12 11	0	0	0
2	T	2	Total C O 23 12 11	0	0	0
2	U	2	Total C O 23 12 11	0	0	0
2	V	2	Total C O 23 12 11	0	0	0

- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total Zn 1 1	0	0
3	B	1	Total Zn 1 1	0	0
3	C	1	Total Zn 1 1	0	0
3	D	1	Total Zn 1 1	0	0
3	E	1	Total Zn 1 1	0	0
3	F	1	Total Zn 1 1	0	0
3	G	1	Total Zn 1 1	0	0
3	H	1	Total Zn 1 1	0	0

- Molecule 4 is CACODYLATE ION (three-letter code: CAC) (formula: $C_2H_6AsO_2$).



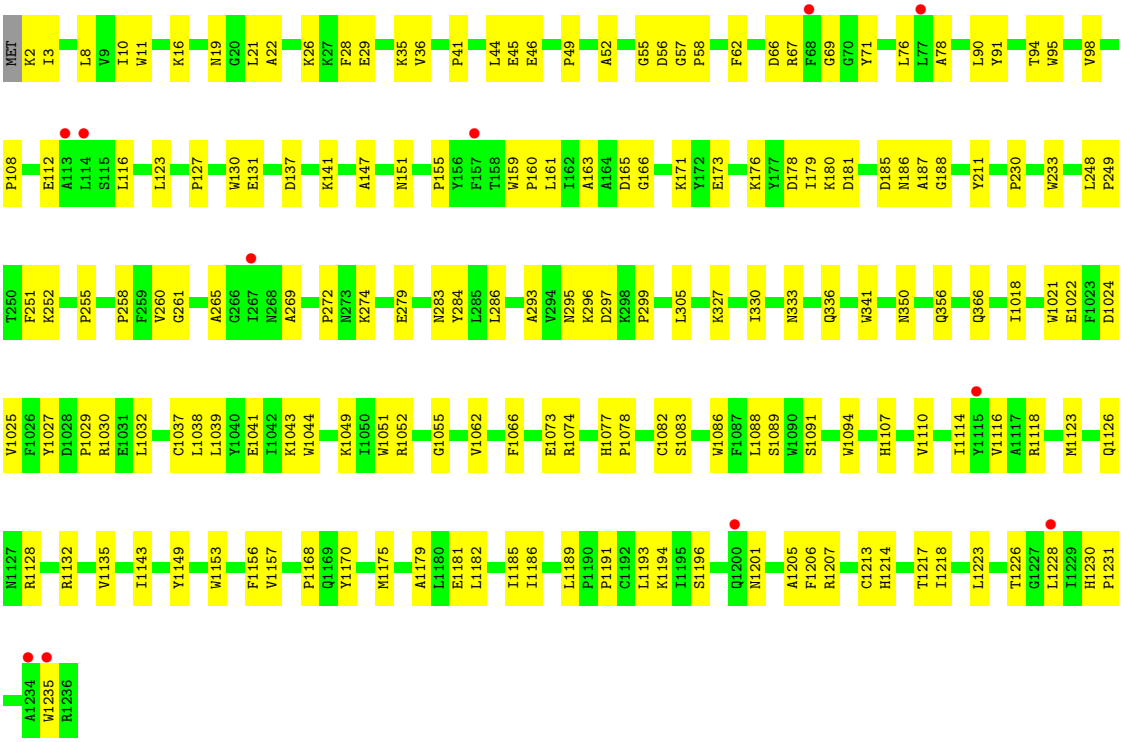
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total	As	C	O	0	0
			5	1	2	2		
4	B	1	Total	As	C	O	0	0
			5	1	2	2		
4	C	1	Total	As	C	O	0	0
			5	1	2	2		
4	D	1	Total	As	C	O	0	0
			5	1	2	2		
4	E	1	Total	As	C	O	0	0
			5	1	2	2		
4	F	1	Total	As	C	O	0	0
			5	1	2	2		
4	G	1	Total	As	C	O	0	0
			5	1	2	2		
4	H	1	Total	As	C	O	0	0
			5	1	2	2		

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.

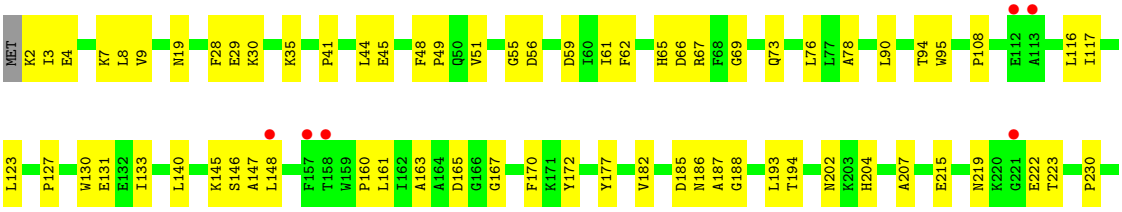
• Molecule 1: Maltodextrin-binding protein, C->U-editing enzyme APOBEC-1 chimera

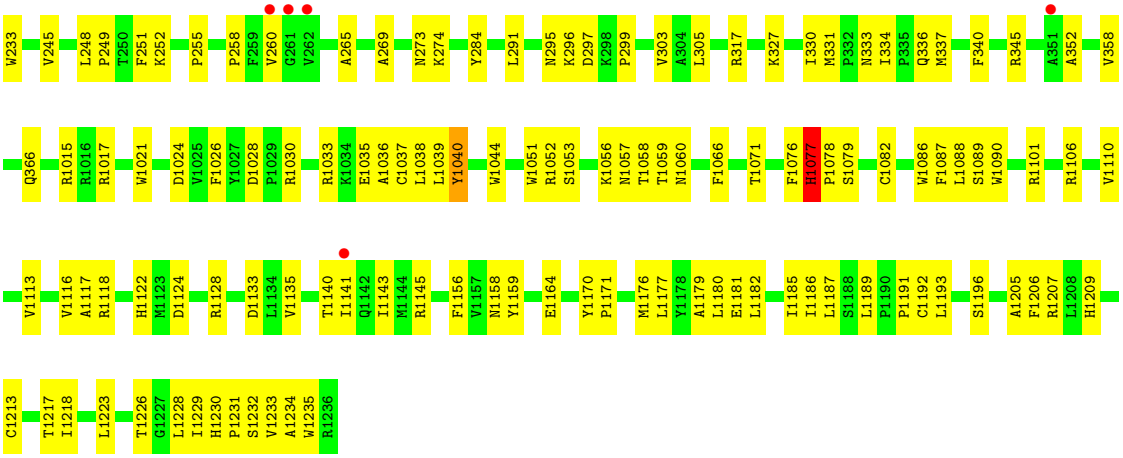
Chain A:



• Molecule 1: Maltodextrin-binding protein, C->U-editing enzyme APOBEC-1 chimera

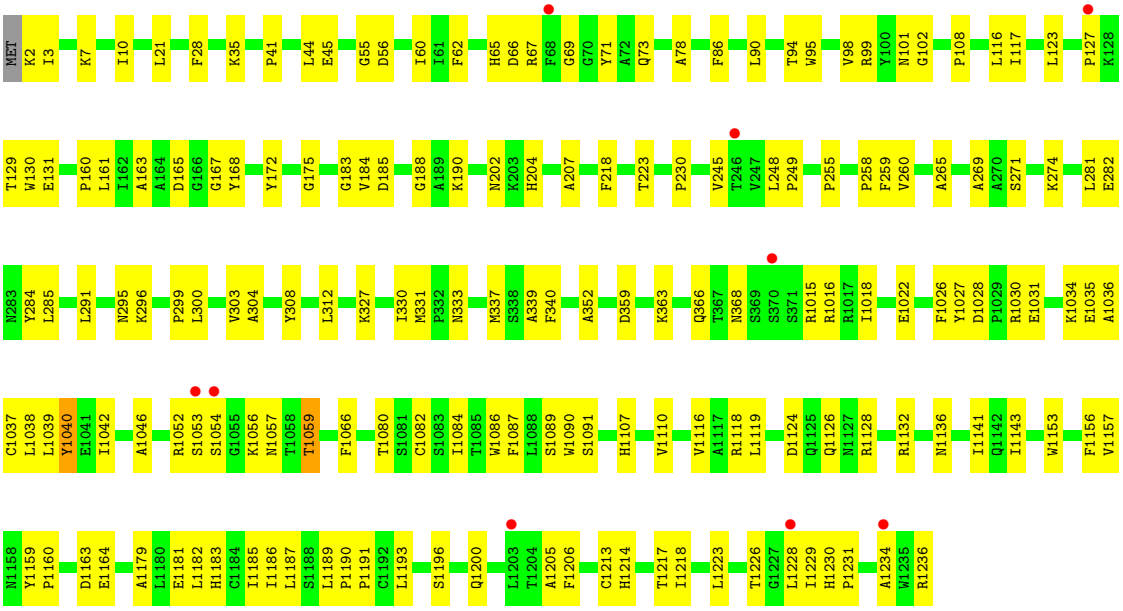
Chain B:





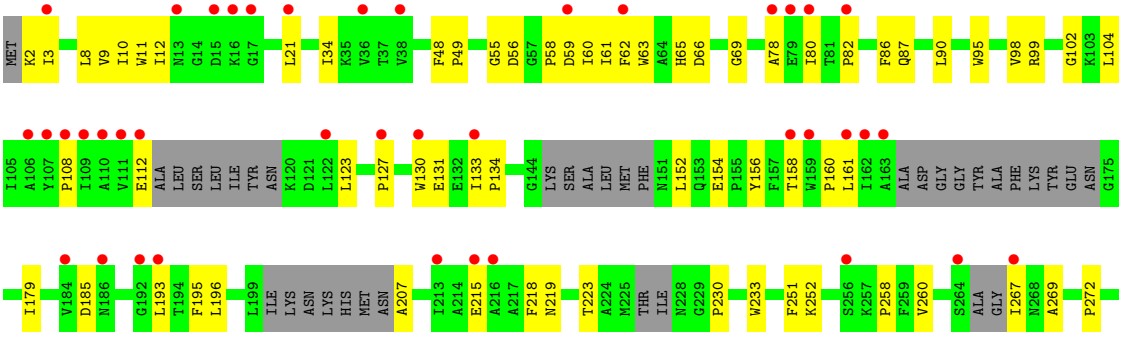
• Molecule 1: Maltodextrin-binding protein, C->U-editing enzyme APOBEC-1 chimera

Chain C:



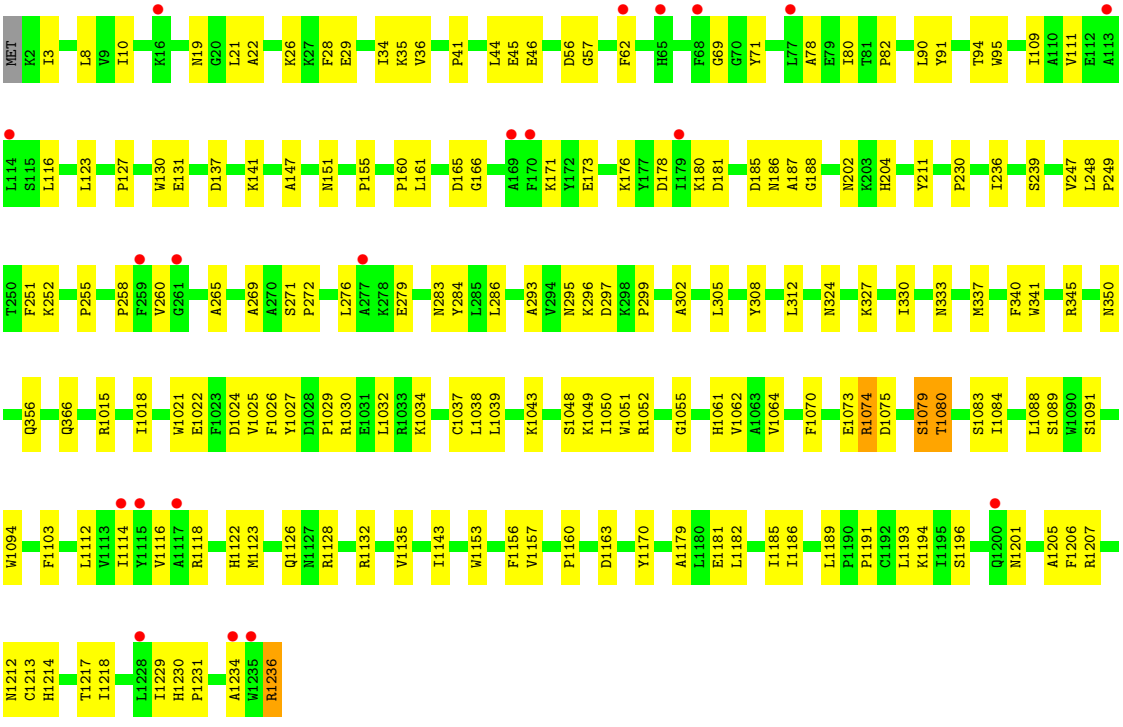
• Molecule 1: Maltodextrin-binding protein, C->U-editing enzyme APOBEC-1 chimera

Chain D:



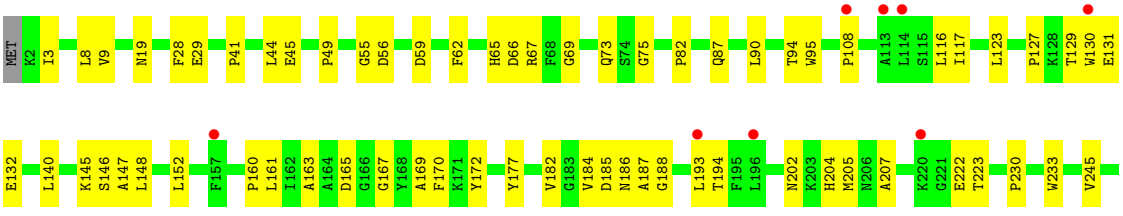
• Molecule 1: Maltodextrin-binding protein, C->U-editing enzyme APOBEC-1 chimera

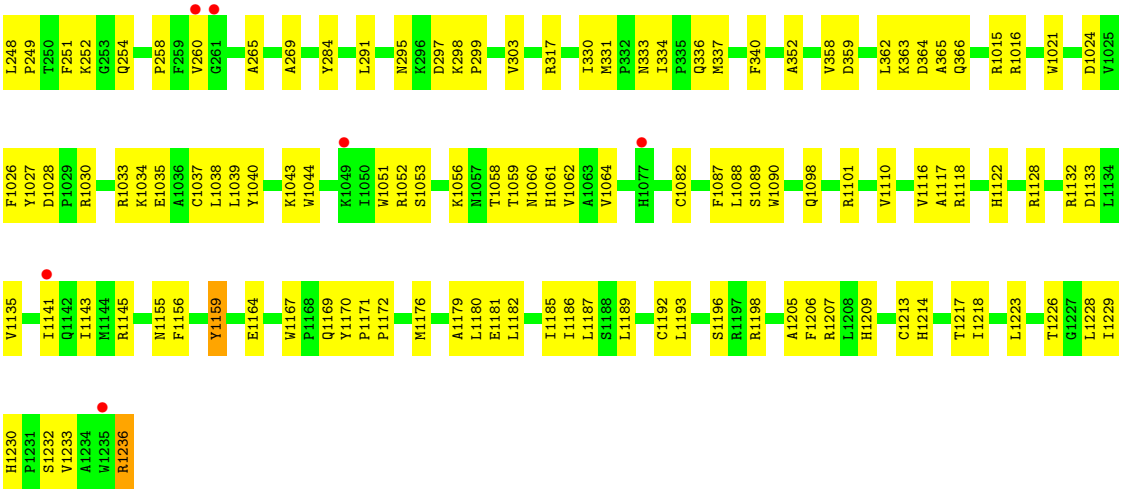
Chain E:



• Molecule 1: Maltodextrin-binding protein, C->U-editing enzyme APOBEC-1 chimera

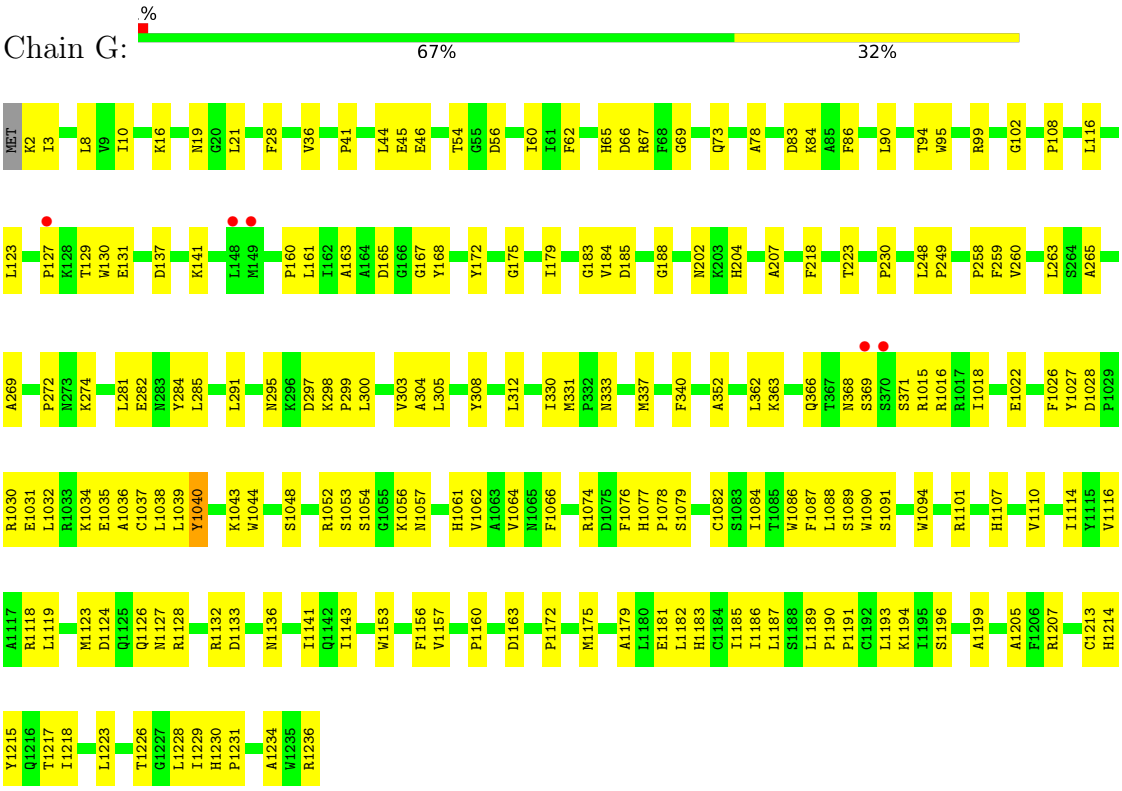
Chain F:





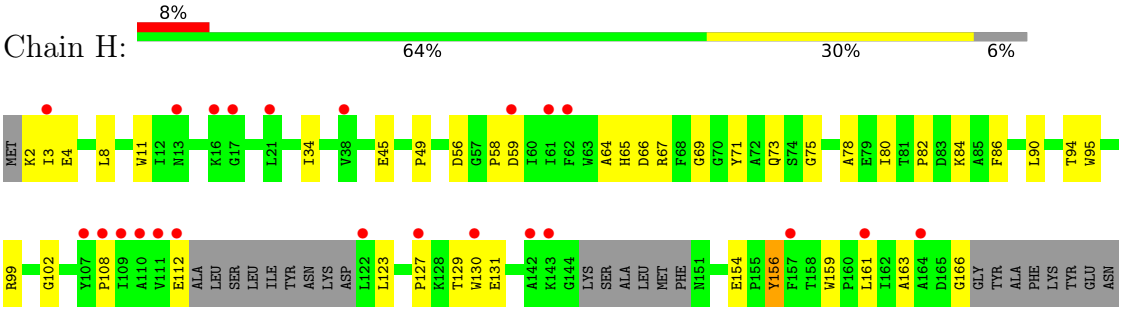
• Molecule 1: Maltodextrin-binding protein, C->U-editing enzyme APOBEC-1 chimera

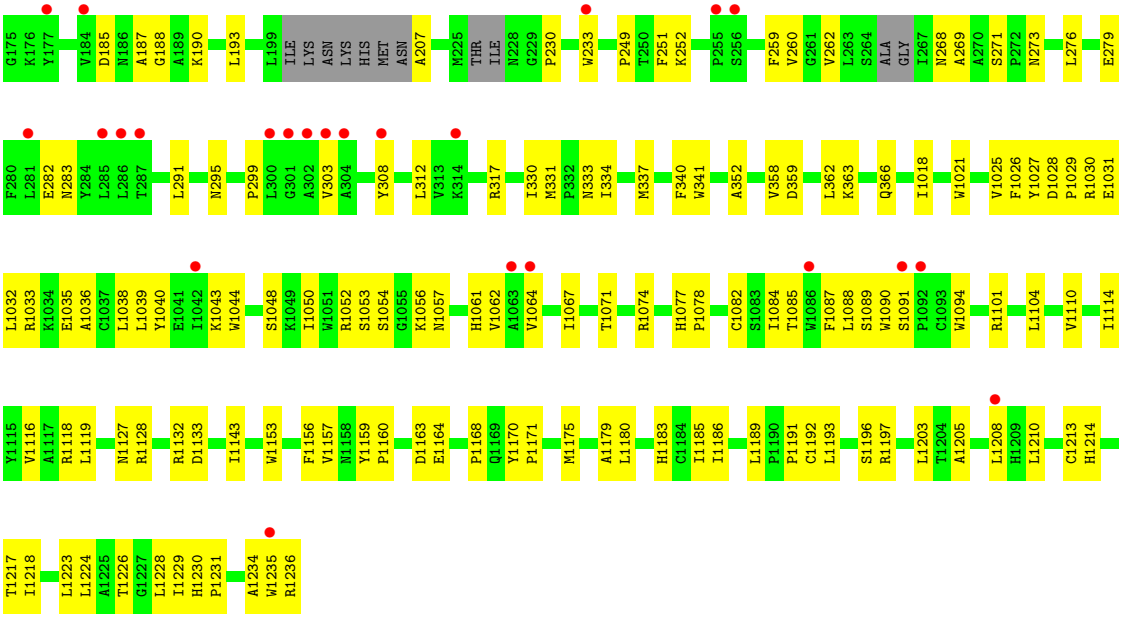
Chain G:



• Molecule 1: Maltodextrin-binding protein, C->U-editing enzyme APOBEC-1 chimera

Chain H:





• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose

Chain I:

• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose

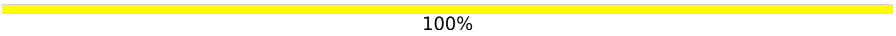
Chain J:

• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose

Chain K:

• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose

Chain L:



• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose

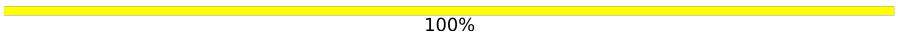
Chain M:

• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose

Chain N:

• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose

Chain O:

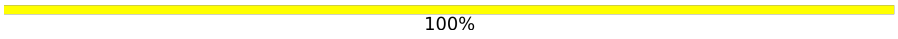


• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose

Chain P:

• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose

Chain Q:



• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose

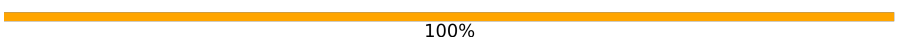
Chain R:

• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose

Chain S:

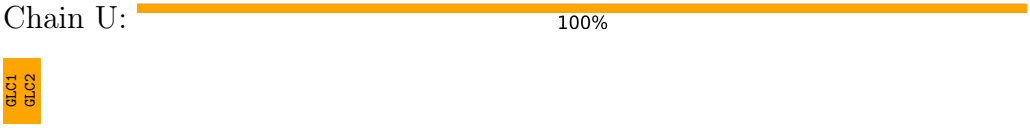
• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose

Chain T:



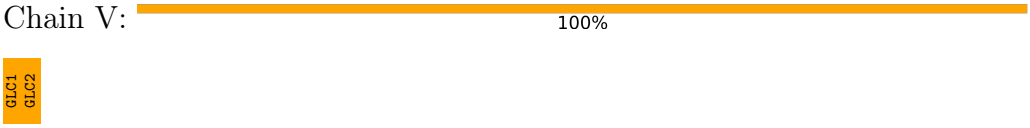
• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose

Chain U:



• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose

Chain V:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α, β, γ	177.72Å 179.21Å 210.50Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.61 – 3.51 49.61 – 3.51	Depositor EDS
% Data completeness (in resolution range)	98.5 (49.61-3.51) 89.9 (49.61-3.51)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	0.83 (at 3.48Å)	Xtriage
Refinement program	PHENIX 1.18_3845	Depositor
R, R_{free}	0.276 , 0.298 0.274 , 0.297	Depositor DCC
R_{free} test set	8334 reflections (9.97%)	wwPDB-VP
Wilson B-factor (Å^2)	84.6	Xtriage
Anisotropy	0.720	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.30 , 71.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.45$, $< L^2 > = 0.27$	Xtriage
Estimated twinning fraction	0.289 for k,h,-l	Xtriage
F_o,F_c correlation	0.85	EDS
Total number of atoms	37624	wwPDB-VP
Average B, all atoms (Å^2)	136.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.85% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: GLC, ZN, CAC

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	0.30	0/4860	0.52	0/6609
1	B	0.30	0/4860	0.53	0/6609
1	C	0.31	0/4860	0.54	0/6609
1	D	0.28	0/4575	0.51	0/6217
1	E	0.29	0/4860	0.51	0/6609
1	F	0.29	0/4860	0.53	0/6609
1	G	0.30	0/4860	0.53	0/6609
1	H	0.28	0/4575	0.51	0/6218
All	All	0.30	0/38310	0.52	0/52089

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	4725	0	4643	146	0
1	B	4725	0	4643	149	0
1	C	4725	0	4643	126	0
1	D	4452	0	4364	133	0
1	E	4725	0	4643	133	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	F	4725	0	4643	149	0
1	G	4725	0	4643	135	0
1	H	4452	0	4359	146	0
2	I	23	0	20	1	0
2	J	23	0	20	1	0
2	K	23	0	20	3	0
2	L	23	0	21	0	0
2	M	23	0	20	9	0
2	N	23	0	20	7	0
2	O	23	0	20	0	0
2	P	23	0	20	1	0
2	Q	23	0	20	0	0
2	R	23	0	20	3	0
2	S	23	0	20	2	0
2	T	23	0	21	2	0
2	U	23	0	20	6	0
2	V	23	0	20	4	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
3	E	1	0	0	0	0
3	F	1	0	0	0	0
3	G	1	0	0	0	0
3	H	1	0	0	0	0
4	A	5	0	0	0	0
4	B	5	0	0	0	0
4	C	5	0	0	0	0
4	D	5	0	0	0	0
4	E	5	0	0	1	0
4	F	5	0	0	0	0
4	G	5	0	0	0	0
4	H	5	0	0	0	0
All	All	37624	0	36863	1082	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 15.

All (1082) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1034:LYS:HG3	2:M:1:GLC:H1	1.27	1.15
1:B:1077:HIS:HB3	1:B:1078:PRO:HD2	1.38	1.05
1:G:168:TYR:HB2	1:G:183:GLY:HA3	1.46	0.97
1:B:1033:ARG:HD2	2:K:2:GLC:H3	1.46	0.95
1:B:1159:TYR:HE2	1:B:1164:GLU:HG2	1.28	0.94
1:H:1027:TYR:OH	1:H:1170:TYR:HB3	1.66	0.94
1:C:1034:LYS:CE	2:M:1:GLC:H2	2.00	0.91
1:H:86:PHE:CD2	1:H:282:GLU:OE2	2.24	0.91
1:C:168:TYR:HB2	1:C:183:GLY:HA3	1.53	0.90
1:C:1034:LYS:CG	2:M:1:GLC:H1	2.05	0.87
1:G:291:LEU:HD21	1:G:303:VAL:HG11	1.57	0.86
1:H:1168:PRO:HG2	1:H:1170:TYR:CZ	2.10	0.86
1:H:1027:TYR:CZ	1:H:1170:TYR:HB3	2.11	0.85
1:H:1168:PRO:HG2	1:H:1170:TYR:OH	1.75	0.85
1:A:1027:TYR:HD2	1:A:1029:PRO:HD3	1.43	0.84
1:F:82:PRO:HB2	1:F:87:GLN:HB2	1.61	0.83
1:E:123:LEU:HD21	1:E:127:PRO:HD3	1.60	0.82
1:B:1077:HIS:HB3	1:B:1078:PRO:CD	2.10	0.82
1:D:60:ILE:HD11	1:D:277:ALA:HB1	1.61	0.82
1:H:1032:LEU:HD22	1:H:1035:GLU:HB3	1.62	0.82
1:C:291:LEU:HD21	1:C:303:VAL:HG11	1.61	0.81
1:C:1034:LYS:HE3	2:M:1:GLC:H2	1.62	0.81
1:B:1159:TYR:CE2	1:B:1164:GLU:HG2	2.16	0.80
1:E:1027:TYR:HD2	1:E:1029:PRO:HD3	1.48	0.79
1:A:123:LEU:HD21	1:A:127:PRO:HD3	1.65	0.79
1:A:160:PRO:HG3	1:A:258:PRO:HB3	1.64	0.79
1:F:123:LEU:HD21	1:F:127:PRO:HD3	1.66	0.78
1:E:80:ILE:HG13	1:E:82:PRO:HD3	1.66	0.77
1:E:1230:HIS:HA	1:F:1030:ARG:HD3	1.67	0.77
1:H:86:PHE:CE2	1:H:282:GLU:OE2	2.37	0.77
1:F:75:GLY:HA2	1:F:1034:LYS:HD2	1.67	0.77
1:A:1196:SER:HB3	1:A:1205:ALA:HB3	1.67	0.76
1:E:160:PRO:HG3	1:E:258:PRO:HB3	1.66	0.76
1:F:1180:LEU:HD11	1:F:1223:LEU:HD23	1.67	0.75
1:E:1196:SER:HB3	1:E:1205:ALA:HB3	1.69	0.75
1:E:1212:ASN:HD21	1:F:1198:ARG:HH22	1.32	0.75
1:B:123:LEU:HD21	1:B:127:PRO:HD3	1.69	0.75
1:A:3:ILE:HD12	1:A:272:PRO:HD3	1.69	0.74
1:D:1160:PRO:HG2	1:D:1163:ASP:HB2	1.68	0.74
1:B:1101:ARG:NH1	1:B:1133:ASP:OD2	2.21	0.73
1:G:1236:ARG:HD3	1:H:3:ILE:O	1.88	0.73
1:E:1201:ASN:HB2	1:F:1233:VAL:HG11	1.68	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1018:ILE:HG23	1:G:1022:GLU:HG3	1.69	0.73
1:C:184:VAL:O	1:C:366:GLN:NE2	2.22	0.73
1:H:156:TYR:CD2	2:U:1:GLC:H61	2.24	0.73
1:B:1180:LEU:HD11	1:B:1223:LEU:HD23	1.70	0.73
1:C:116:LEU:HD22	1:C:249:PRO:HD3	1.70	0.73
1:C:1046:ALA:HB2	1:C:1080:THR:HG21	1.69	0.73
1:G:116:LEU:HD22	1:G:249:PRO:HD3	1.70	0.72
1:H:1043:LYS:NZ	1:H:1085:THR:OG1	2.23	0.72
1:C:1018:ILE:HG23	1:C:1022:GLU:HG3	1.72	0.72
1:H:1027:TYR:CE1	1:H:1170:TYR:HB3	2.25	0.72
1:H:1036:ALA:HB3	1:H:1057:ASN:HB2	1.72	0.71
1:H:1160:PRO:HG2	1:H:1163:ASP:HB2	1.72	0.71
1:A:1030:ARG:HH21	1:A:1032:LEU:HD22	1.55	0.71
1:H:1226:THR:HG23	1:H:1228:LEU:H	1.54	0.71
2:U:1:GLC:H62	2:U:2:GLC:H5	1.72	0.71
1:E:171:LYS:HB3	1:E:178:ASP:HB3	1.70	0.71
1:H:291:LEU:HD21	1:H:303:VAL:HG11	1.73	0.70
1:D:63:TRP:HZ2	2:N:2:GLC:H2	1.56	0.70
1:H:1168:PRO:CG	1:H:1170:TYR:OH	2.37	0.70
1:A:1201:ASN:HD22	1:B:1233:VAL:HG21	1.55	0.70
1:C:1160:PRO:HG2	1:C:1163:ASP:HB2	1.74	0.70
1:G:54:THR:O	1:H:1236:ARG:NH1	2.24	0.70
1:A:49:PRO:HD3	1:A:71:TYR:OH	1.91	0.70
1:F:1159:TYR:HE2	1:F:1164:GLU:HG2	1.57	0.70
1:G:1236:ARG:NH1	1:H:2:LYS:HB3	2.06	0.70
1:F:1101:ARG:NH1	1:F:1133:ASP:OD2	2.25	0.69
1:B:1077:HIS:CB	1:B:1078:PRO:HD2	2.20	0.69
1:F:1145:ARG:NH1	1:F:1176:MET:SD	2.66	0.69
1:A:1030:ARG:HG3	1:A:1201:ASN:HD21	1.57	0.69
1:H:1074:ARG:HA	1:H:1077:HIS:HB2	1.74	0.69
1:F:260:VAL:HB	1:F:330:ILE:HA	1.75	0.69
1:A:1230:HIS:HA	1:B:1030:ARG:HD3	1.74	0.69
1:H:193:LEU:HD23	1:H:358:VAL:HG13	1.74	0.69
1:B:260:VAL:HB	1:B:330:ILE:HA	1.76	0.68
1:D:123:LEU:HD21	1:D:127:PRO:HD3	1.74	0.68
1:E:3:ILE:HD12	1:E:272:PRO:HD3	1.74	0.68
1:F:291:LEU:HD21	1:F:303:VAL:HG11	1.73	0.68
1:H:123:LEU:HD21	1:H:127:PRO:HD3	1.74	0.68
1:D:260:VAL:HB	1:D:330:ILE:HA	1.74	0.68
1:H:66:ASP:OD1	1:H:67:ARG:N	2.27	0.68
1:C:1026:PHE:HB3	1:C:1037:CYS:SG	2.34	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1026:PHE:HB3	1:G:1037:CYS:SG	2.33	0.68
1:D:1229:ILE:HD13	1:D:1234:ALA:HB2	1.76	0.68
1:H:1033:ARG:N	2:V:1:GLC:O1	2.23	0.68
1:B:1089:SER:O	1:B:1118:ARG:N	2.23	0.67
1:D:1043:LYS:NZ	1:D:1085:THR:OG1	2.28	0.67
1:A:1027:TYR:CD2	1:A:1029:PRO:HD3	2.28	0.67
1:D:1196:SER:HB3	1:D:1205:ALA:HB3	1.75	0.67
1:D:1226:THR:HG23	1:D:1228:LEU:H	1.58	0.67
1:B:170:PHE:HD2	1:B:334:ILE:HD11	1.59	0.67
1:G:41:PRO:HG2	1:G:44:LEU:HB3	1.77	0.67
1:A:1226:THR:HG23	1:A:1228:LEU:H	1.58	0.66
1:C:1226:THR:HG23	1:C:1228:LEU:H	1.61	0.66
1:D:80:ILE:HG22	1:D:82:PRO:HD3	1.78	0.66
1:E:1030:ARG:HG3	1:E:1201:ASN:HD21	1.60	0.66
1:H:1033:ARG:HB2	2:V:1:GLC:H2	1.78	0.66
1:H:1196:SER:HB3	1:H:1205:ALA:HB3	1.77	0.66
1:A:1027:TYR:O	1:A:1118:ARG:NH1	2.27	0.66
1:H:86:PHE:HD2	1:H:282:GLU:OE2	1.77	0.66
1:A:279:GLU:OE1	1:A:283:ASN:ND2	2.29	0.66
1:G:184:VAL:O	1:G:366:GLN:NE2	2.29	0.66
1:C:160:PRO:HG3	1:C:258:PRO:HB3	1.78	0.66
1:H:69:GLY:HA3	1:H:333:ASN:O	1.96	0.66
1:E:1074:ARG:NH1	1:E:1075:ASP:HB2	2.11	0.66
1:A:260:VAL:HG22	1:A:330:ILE:HA	1.78	0.66
1:H:1229:ILE:HD13	1:H:1234:ALA:HB2	1.78	0.66
1:A:171:LYS:HB3	1:A:178:ASP:HB3	1.77	0.65
1:C:116:LEU:HB2	1:C:248:LEU:HD23	1.78	0.65
1:G:123:LEU:HD21	1:G:127:PRO:HD3	1.77	0.65
1:H:66:ASP:OD2	1:H:331:MET:SD	2.53	0.65
1:A:1135:VAL:HG21	1:A:1186:ILE:HD12	1.78	0.65
1:D:1159:TYR:CE2	1:D:1164:GLU:HA	2.31	0.65
1:C:41:PRO:HG2	1:C:44:LEU:HB3	1.78	0.65
1:B:1226:THR:HG23	1:B:1228:LEU:H	1.62	0.65
1:E:260:VAL:HG22	1:E:330:ILE:HA	1.78	0.65
1:E:1030:ARG:HH21	1:E:1032:LEU:HD22	1.62	0.65
1:F:160:PRO:HG3	1:F:258:PRO:HB3	1.77	0.65
1:H:2:LYS:HA	1:H:56:ASP:HB2	1.78	0.65
1:C:56:ASP:HB2	1:D:1236:ARG:HH12	1.62	0.65
1:F:1028:ASP:O	1:F:1118:ARG:NH1	2.30	0.65
2:V:1:GLC:H61	2:V:2:GLC:H5	1.79	0.65
1:F:1089:SER:O	1:F:1118:ARG:N	2.26	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:90:LEU:HB2	1:H:95:TRP:HE1	1.62	0.64
1:G:1226:THR:HG23	1:G:1228:LEU:H	1.60	0.64
1:G:116:LEU:HB2	1:G:248:LEU:HD23	1.80	0.64
1:G:1039:LEU:HB2	1:G:1087:PHE:HB2	1.78	0.64
1:F:1167:TRP:CZ2	1:F:1169:GLN:HG2	2.33	0.64
1:G:73:GLN:HE22	1:G:1056:LYS:HE3	1.62	0.64
1:F:1226:THR:HG23	1:F:1228:LEU:H	1.62	0.64
1:B:1223:LEU:O	1:B:1226:THR:HG22	1.97	0.64
1:G:1116:VAL:HG23	1:G:1143:ILE:HD13	1.80	0.64
1:F:1223:LEU:O	1:F:1226:THR:HG22	1.98	0.64
1:A:55:GLY:HA3	1:B:1235:TRP:CZ3	2.33	0.64
1:C:1018:ILE:HD12	1:C:1039:LEU:HD21	1.79	0.64
1:B:66:ASP:OD1	1:B:67:ARG:N	2.30	0.63
1:C:123:LEU:HD21	1:C:127:PRO:HD3	1.78	0.63
1:B:1028:ASP:O	1:B:1118:ARG:NH1	2.32	0.63
1:D:69:GLY:HA3	1:D:333:ASN:O	1.96	0.63
1:F:1040:TYR:CZ	1:F:1053:SER:HB2	2.34	0.63
1:E:1027:TYR:O	1:E:1118:ARG:NH1	2.32	0.63
1:E:1030:ARG:HG3	1:E:1201:ASN:ND2	2.14	0.63
1:F:65:HIS:NE2	1:F:331:MET:O	2.29	0.63
1:A:255:PRO:HB3	1:A:327:LYS:HE2	1.79	0.63
1:A:1088:LEU:HD21	1:A:1114:ILE:HG23	1.79	0.63
1:B:160:PRO:HG3	1:B:258:PRO:HB3	1.81	0.63
1:C:1200:GLN:NE2	2:M:1:GLC:O2	2.24	0.63
1:D:1089:SER:HB2	1:D:1118:ARG:NH2	2.14	0.63
1:E:279:GLU:OE1	1:E:283:ASN:ND2	2.32	0.63
1:H:66:ASP:HA	1:H:333:ASN:HA	1.81	0.63
1:B:1040:TYR:CE1	1:B:1053:SER:HB2	2.34	0.63
1:C:1116:VAL:HG23	1:C:1143:ILE:HD13	1.81	0.63
1:D:90:LEU:HB2	1:D:95:TRP:NE1	2.14	0.63
1:D:1024:ASP:O	1:D:1030:ARG:NE	2.26	0.63
1:F:117:ILE:HG12	1:F:245:VAL:HG22	1.80	0.63
1:G:1160:PRO:HG2	1:G:1163:ASP:HB2	1.79	0.62
1:C:1040:TYR:CE1	1:C:1053:SER:HB2	2.34	0.62
1:A:90:LEU:HD13	1:A:108:PRO:HG2	1.81	0.62
1:C:94:THR:HB	1:C:108:PRO:HB2	1.81	0.62
1:E:1061:HIS:HD1	4:E:1302:CAC:AS	2.42	0.62
1:F:1128:ARG:HG3	1:F:1132:ARG:NH1	2.14	0.62
1:F:1159:TYR:CE2	1:F:1164:GLU:HG2	2.33	0.62
1:C:1039:LEU:HB2	1:C:1087:PHE:HB2	1.82	0.62
1:A:116:LEU:HD22	1:A:249:PRO:HD3	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1128:ARG:HD3	1:E:1185:ILE:HG23	1.82	0.62
1:A:1223:LEU:O	1:A:1226:THR:HG22	1.99	0.62
1:B:69:GLY:HA3	1:B:333:ASN:O	2.00	0.62
1:E:78:ALA:HB2	1:E:269:ALA:HA	1.82	0.62
1:G:1187:LEU:HD12	1:G:1218:ILE:HD13	1.80	0.62
1:H:3:ILE:HG21	1:H:271:SER:HA	1.82	0.62
1:D:130:TRP:CE2	1:D:131:GLU:HG3	2.35	0.61
1:F:94:THR:HB	1:F:108:PRO:HB3	1.80	0.61
1:B:1028:ASP:OD2	1:B:1030:ARG:HB2	2.00	0.61
1:B:1213:CYS:SG	1:C:1136:ASN:HA	2.40	0.61
1:E:255:PRO:HB3	1:E:327:LYS:HE2	1.82	0.61
1:C:207:ALA:HB1	1:C:352:ALA:HB1	1.83	0.61
1:B:1145:ARG:NH1	1:B:1176:MET:SD	2.73	0.61
1:C:73:GLN:HE22	1:C:1056:LYS:HE3	1.65	0.61
1:C:1223:LEU:O	1:C:1226:THR:HG22	2.00	0.61
1:H:90:LEU:HB2	1:H:95:TRP:NE1	2.16	0.61
1:D:193:LEU:HD23	1:D:358:VAL:HG13	1.82	0.61
1:F:1033:ARG:HD3	2:R:1:GLC:O5	2.01	0.61
1:H:1035:GLU:HG2	1:H:1090:TRP:HE1	1.66	0.61
1:A:1043:LYS:HG2	1:A:1083:SER:OG	2.01	0.60
1:C:1187:LEU:HD12	1:C:1218:ILE:HD13	1.82	0.60
1:E:1038:LEU:HD22	1:E:1062:VAL:HB	1.83	0.60
1:H:1223:LEU:O	1:H:1226:THR:HG22	2.01	0.60
1:A:166:GLY:O	1:A:186:ASN:ND2	2.34	0.60
1:B:1181:GLU:O	1:B:1185:ILE:HG12	2.00	0.60
1:E:1135:VAL:HG21	1:E:1186:ILE:HD12	1.83	0.60
1:F:73:GLN:HG3	1:F:1056:LYS:HD3	1.83	0.60
1:B:117:ILE:HG12	1:B:245:VAL:HG22	1.83	0.60
1:B:291:LEU:HD21	1:B:303:VAL:HG11	1.84	0.60
1:A:1030:ARG:HG3	1:A:1201:ASN:ND2	2.15	0.60
1:C:66:ASP:HB3	1:C:331:MET:HE2	1.83	0.60
1:A:78:ALA:HB2	1:A:269:ALA:HA	1.84	0.60
1:E:1160:PRO:HG2	1:E:1163:ASP:HB2	1.82	0.60
1:F:69:GLY:HA3	1:F:333:ASN:O	2.00	0.60
1:E:116:LEU:HD22	1:E:249:PRO:HD3	1.83	0.60
1:G:1018:ILE:HD12	1:G:1039:LEU:HD21	1.83	0.59
1:H:75:GLY:HA3	1:H:1032:LEU:HD11	1.83	0.59
1:F:145:LYS:HD2	1:F:222:GLU:HA	1.85	0.59
1:G:1196:SER:HB3	1:G:1205:ALA:HB3	1.83	0.59
1:A:1074:ARG:HA	1:A:1077:HIS:CE1	2.37	0.59
1:B:1213:CYS:O	1:B:1217:THR:HG22	2.01	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:156:TYR:HH	2:N:2:GLC:HO2	1.49	0.59
1:C:1159:TYR:HE2	1:C:1164:GLU:OE1	1.86	0.59
1:B:1037:CYS:SG	1:B:1089:SER:OG	2.52	0.59
1:C:1128:ARG:HD3	1:C:1185:ILE:HG23	1.84	0.59
1:F:75:GLY:CA	1:F:1034:LYS:HD2	2.32	0.59
1:F:1213:CYS:O	1:F:1217:THR:HG22	2.03	0.59
1:G:160:PRO:HG3	1:G:258:PRO:HB3	1.85	0.59
1:A:62:PHE:CE1	1:A:265:ALA:HB2	2.38	0.59
1:A:67:ARG:HG2	1:A:67:ARG:HH11	1.68	0.59
1:A:1049:LYS:HE3	1:A:1051:TRP:HE1	1.66	0.59
1:B:73:GLN:HG3	1:B:1056:LYS:HD3	1.84	0.59
1:B:130:TRP:CE2	1:B:249:PRO:HG2	2.38	0.59
1:H:130:TRP:CE2	1:H:249:PRO:HG2	2.38	0.59
1:A:1037:CYS:SG	1:A:1039:LEU:HD23	2.42	0.59
1:B:1230:HIS:HE1	1:B:1232:SER:HB3	1.68	0.59
1:E:1088:LEU:HD21	1:E:1114:ILE:HG23	1.84	0.59
1:D:65:HIS:NE2	1:D:331:MET:O	2.30	0.58
1:F:1128:ARG:CD	1:F:1185:ILE:HD12	2.33	0.58
1:H:1030:ARG:NH2	1:H:1032:LEU:HD12	2.18	0.58
1:D:1187:LEU:HD12	1:D:1218:ILE:HD12	1.83	0.58
1:G:90:LEU:HB2	1:G:95:TRP:NE1	2.19	0.58
1:A:131:GLU:OE1	1:A:131:GLU:N	2.35	0.58
1:F:1181:GLU:O	1:F:1185:ILE:HG12	2.02	0.58
1:B:336:GLN:NE2	1:B:1015:ARG:HH22	2.02	0.58
1:C:45:GLU:O	1:C:71:TYR:OH	2.21	0.58
1:D:63:TRP:CZ2	2:N:2:GLC:H2	2.37	0.58
1:H:1035:GLU:OE2	1:H:1118:ARG:NH2	2.35	0.58
1:A:45:GLU:HB2	1:A:67:ARG:CD	2.33	0.58
1:D:1028:ASP:OD1	1:D:1028:ASP:N	2.36	0.58
1:F:129:THR:OG1	1:F:131:GLU:OE1	2.21	0.58
1:F:1230:HIS:HE1	1:F:1232:SER:HB3	1.68	0.58
1:C:255:PRO:HB3	1:C:327:LYS:HE3	1.86	0.58
1:E:131:GLU:OE1	1:E:131:GLU:N	2.33	0.58
1:H:359:ASP:O	1:H:363:LYS:HG2	2.04	0.58
1:C:1196:SER:HB3	1:C:1205:ALA:HB3	1.84	0.58
1:G:1040:TYR:CE1	1:G:1053:SER:HB2	2.38	0.58
1:B:1026:PHE:HB3	1:B:1037:CYS:HB3	1.85	0.58
1:D:1223:LEU:O	1:D:1226:THR:HG22	2.03	0.58
1:E:1089:SER:HB2	1:E:1118:ARG:NH2	2.18	0.58
1:F:1026:PHE:HB3	1:F:1037:CYS:HB3	1.85	0.58
1:D:1040:TYR:CZ	1:D:1053:SER:HB2	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1128:ARG:HD3	1:G:1185:ILE:HG23	1.86	0.58
1:C:1035:GLU:OE1	1:C:1035:GLU:N	2.35	0.57
1:F:185:ASP:OD2	1:F:363:LYS:HD2	2.04	0.57
1:B:1116:VAL:HG23	1:B:1143:ILE:HD13	1.86	0.57
1:C:1034:LYS:CD	2:M:1:GLC:H2	2.34	0.57
1:F:1028:ASP:OD2	1:F:1030:ARG:HB2	2.04	0.57
1:F:1039:LEU:HG	1:F:1156:PHE:CD2	2.39	0.57
1:F:1043:LYS:O	1:F:1082:CYS:HA	2.04	0.57
1:G:66:ASP:HB3	1:G:331:MET:HE2	1.85	0.57
1:E:45:GLU:O	1:E:71:TYR:OH	2.22	0.57
1:B:116:LEU:HD22	1:B:249:PRO:HD3	1.86	0.57
1:B:146:SER:O	1:B:223:THR:HA	2.04	0.57
1:G:1015:ARG:HG2	1:G:1054:SER:OG	2.03	0.57
1:A:1189:LEU:HD21	1:A:1217:THR:HG21	1.87	0.57
1:B:193:LEU:HD23	1:B:358:VAL:HG13	1.86	0.57
1:H:1043:LYS:HG3	1:H:1050:ILE:HG13	1.85	0.57
1:C:62:PHE:CE1	1:C:265:ALA:HB2	2.40	0.57
1:H:1028:ASP:OD1	1:H:1029:PRO:HD3	2.05	0.57
1:F:1116:VAL:HG23	1:F:1143:ILE:HD13	1.86	0.57
1:G:1223:LEU:O	1:G:1226:THR:HG22	2.04	0.57
1:D:185:ASP:OD2	1:D:366:GLN:HB2	2.04	0.57
1:F:130:TRP:CE2	1:F:249:PRO:HG2	2.40	0.57
1:E:1074:ARG:HH11	1:E:1075:ASP:HB2	1.70	0.57
1:G:137:ASP:O	1:G:141:LYS:HG2	2.05	0.57
1:H:45:GLU:O	1:H:71:TYR:OH	2.23	0.57
1:F:1128:ARG:HD3	1:F:1185:ILE:HG23	1.86	0.56
1:F:1213:CYS:SG	1:G:1136:ASN:HA	2.45	0.56
1:G:1143:ILE:HG13	1:G:1179:ALA:HA	1.87	0.56
1:F:1230:HIS:HB3	1:F:1233:VAL:HG22	1.87	0.56
1:H:1168:PRO:HB2	1:H:1170:TYR:CE1	2.40	0.56
1:D:1183:HIS:HB3	1:D:1218:ILE:HD11	1.88	0.56
1:E:1037:CYS:SG	1:E:1039:LEU:HD23	2.46	0.56
1:F:1039:LEU:HG	1:F:1156:PHE:HD2	1.71	0.56
1:F:1207:ARG:NH1	1:F:1209:HIS:HB2	2.21	0.56
1:A:1128:ARG:HD3	1:A:1185:ILE:HG23	1.87	0.56
1:C:1028:ASP:O	1:C:1118:ARG:NH1	2.37	0.56
1:F:169:ALA:O	1:F:170:PHE:HD1	1.89	0.56
1:A:1181:GLU:HB2	1:A:1193:LEU:HD22	1.88	0.56
1:B:1044:TRP:HZ3	1:B:1051:TRP:CD1	2.24	0.56
1:E:166:GLY:O	1:E:186:ASN:ND2	2.34	0.56
1:G:1028:ASP:O	1:G:1118:ARG:NH1	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1128:ARG:HD3	1:D:1185:ILE:HG23	1.87	0.56
1:B:1039:LEU:HB2	1:B:1087:PHE:HB2	1.88	0.56
1:G:129:THR:OG1	1:G:131:GLU:OE1	2.22	0.56
1:G:1074:ARG:HA	1:G:1077:HIS:NE2	2.21	0.56
1:H:207:ALA:HB1	1:H:352:ALA:HB1	1.86	0.56
1:E:1229:ILE:HD13	1:E:1234:ALA:HB2	1.88	0.56
1:G:69:GLY:HA3	1:G:333:ASN:O	2.05	0.56
1:A:45:GLU:O	1:A:71:TYR:OH	2.23	0.55
1:B:65:HIS:NE2	1:B:331:MET:O	2.33	0.55
1:C:130:TRP:CE2	1:C:249:PRO:HG2	2.41	0.55
1:A:155:PRO:HG2	1:A:341:TRP:HE3	1.71	0.55
1:A:1201:ASN:HB2	1:B:1233:VAL:HG21	1.88	0.55
1:D:207:ALA:HB1	1:D:352:ALA:HB1	1.89	0.55
1:E:1032:LEU:HD21	1:E:1034:LYS:HZ2	1.72	0.55
1:H:1089:SER:HB2	1:H:1118:ARG:NH2	2.21	0.55
1:A:1235:TRP:NE1	1:B:56:ASP:HB3	2.21	0.55
1:B:230:PRO:O	1:B:299:PRO:HG2	2.07	0.55
1:E:90:LEU:HD12	1:E:95:TRP:CZ2	2.42	0.55
1:F:1135:VAL:HG21	1:F:1186:ILE:HD12	1.88	0.55
1:G:1213:CYS:O	1:G:1217:THR:HG22	2.07	0.55
1:E:1015:ARG:NH2	1:E:1022:GLU:OE2	2.37	0.55
1:E:1189:LEU:HD21	1:E:1217:THR:HG21	1.88	0.55
1:G:207:ALA:HB1	1:G:352:ALA:HB1	1.87	0.55
1:G:1031:GLU:HG2	1:G:1090:TRP:HH2	1.71	0.55
1:A:1074:ARG:HA	1:A:1077:HIS:NE2	2.22	0.55
1:F:9:VAL:O	1:F:59:ASP:N	2.39	0.55
1:F:163:ALA:HA	1:F:167:GLY:HA3	1.88	0.55
1:A:1077:HIS:HB2	1:A:1078:PRO:HD2	1.89	0.55
1:A:1128:ARG:HH22	1:A:1191:PRO:HB3	1.71	0.55
1:B:1088:LEU:O	1:B:1116:VAL:HA	2.07	0.55
1:C:260:VAL:HB	1:C:330:ILE:HA	1.88	0.55
1:E:62:PHE:CE1	1:E:265:ALA:HB2	2.42	0.55
1:F:8:LEU:HA	1:F:59:ASP:OD2	2.07	0.55
1:G:60:ILE:HD11	1:G:265:ALA:HB1	1.88	0.55
1:H:334:ILE:HG13	1:H:337:MET:HG2	1.89	0.55
1:C:10:ILE:HG21	1:C:21:LEU:HD21	1.89	0.55
1:F:1052:ARG:HB2	1:F:1156:PHE:CE1	2.42	0.55
1:A:130:TRP:CD2	1:A:161:LEU:HD21	2.43	0.54
1:F:28:PHE:HD1	1:F:284:TYR:CD2	2.25	0.54
1:G:94:THR:HB	1:G:108:PRO:HB3	1.88	0.54
1:G:172:TYR:CZ	1:G:175:GLY:HA2	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:69:GLY:HA3	1:A:333:ASN:O	2.07	0.54
1:G:1044:TRP:CE3	1:G:1079:SER:HB2	2.42	0.54
1:C:185:ASP:OD2	1:C:363:LYS:HD2	2.07	0.54
1:D:1017:ARG:HG2	1:D:1158:ASN:HB2	1.89	0.54
1:F:1189:LEU:HD21	1:F:1217:THR:HG21	1.88	0.54
1:G:65:HIS:NE2	1:G:331:MET:O	2.39	0.54
1:G:1153:TRP:CZ3	1:G:1157:VAL:HG11	2.43	0.54
1:D:292:GLU:HG2	1:D:296:LYS:HE2	1.90	0.54
1:F:230:PRO:O	1:F:299:PRO:HG2	2.08	0.54
1:G:99:ARG:HD3	1:G:102:GLY:HA2	1.89	0.54
1:G:130:TRP:CE2	1:G:249:PRO:HG2	2.43	0.54
1:C:337:MET:O	1:C:340:PHE:HB3	2.08	0.54
1:E:130:TRP:CD2	1:E:161:LEU:HD21	2.43	0.54
1:G:62:PHE:CE1	1:G:265:ALA:HB2	2.43	0.54
1:C:1141:ILE:HG22	1:C:1182:LEU:HD21	1.89	0.54
1:D:1159:TYR:CD2	1:D:1164:GLU:HA	2.43	0.54
1:F:1024:ASP:OD1	1:F:1170:TYR:OH	2.23	0.54
1:F:1052:ARG:HB2	1:F:1156:PHE:CZ	2.43	0.54
1:F:1159:TYR:HD1	1:F:1159:TYR:H	1.55	0.54
1:G:185:ASP:OD2	1:G:363:LYS:HD2	2.08	0.54
1:C:69:GLY:HA3	1:C:333:ASN:O	2.08	0.53
1:D:1082:CYS:SG	1:D:1110:VAL:HG12	2.48	0.53
1:D:1183:HIS:HA	1:D:1186:ILE:HG22	1.89	0.53
1:G:10:ILE:HG21	1:G:21:LEU:HD21	1.88	0.53
1:H:1183:HIS:HA	1:H:1186:ILE:HG22	1.89	0.53
1:B:185:ASP:HB2	1:B:366:GLN:HB2	1.90	0.53
1:B:1035:GLU:HG3	1:B:1090:TRP:CD1	2.44	0.53
1:C:1153:TRP:CZ3	1:C:1157:VAL:HG11	2.44	0.53
1:D:156:TYR:OH	2:N:2:GLC:O2	2.26	0.53
1:D:1036:ALA:HB3	1:D:1057:ASN:HB2	1.90	0.53
1:E:45:GLU:HG2	1:E:46:GLU:HG3	1.90	0.53
1:A:2:LYS:HB2	1:B:1235:TRP:HZ2	1.73	0.53
1:A:95:TRP:HA	1:A:98:VAL:HG22	1.91	0.53
1:C:90:LEU:HB2	1:C:95:TRP:NE1	2.24	0.53
1:G:337:MET:O	1:G:340:PHE:HB3	2.07	0.53
1:A:1044:TRP:CZ3	1:A:1082:CYS:HB3	2.44	0.53
1:B:1038:LEU:HD21	1:B:1040:TYR:HB3	1.89	0.53
1:B:1196:SER:HB3	1:B:1205:ALA:HB3	1.91	0.53
1:A:90:LEU:HD12	1:A:95:TRP:CZ2	2.44	0.53
1:D:87:GLN:HA	1:D:95:TRP:CZ2	2.43	0.53
1:C:1143:ILE:HG13	1:C:1179:ALA:HA	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:1128:ARG:HD3	1:H:1185:ILE:HG23	1.91	0.53
1:D:1027:TYR:HD2	1:D:1030:ARG:HG3	1.74	0.53
1:F:1232:SER:O	1:F:1236:ARG:HG3	2.09	0.53
1:A:45:GLU:HG2	1:A:46:GLU:HG3	1.91	0.53
1:C:1036:ALA:HB3	1:C:1057:ASN:HB2	1.91	0.53
1:F:1128:ARG:HG3	1:F:1132:ARG:HH12	1.73	0.53
1:C:172:TYR:CZ	1:C:175:GLY:HA2	2.44	0.53
1:F:170:PHE:HD2	1:F:334:ILE:HD11	1.74	0.53
1:G:90:LEU:HD12	1:G:95:TRP:CZ2	2.43	0.53
1:A:19:ASN:HB2	1:A:297:ASP:OD2	2.09	0.52
1:E:116:LEU:HB2	1:E:248:LEU:HD23	1.91	0.52
1:F:41:PRO:HG2	1:F:44:LEU:HB3	1.90	0.52
1:F:182:VAL:HB	1:F:366:GLN:OE1	2.09	0.52
1:F:1061:HIS:O	1:F:1064:VAL:HG22	2.09	0.52
1:G:94:THR:HB	1:G:108:PRO:CB	2.38	0.52
1:F:116:LEU:HD22	1:F:249:PRO:HD3	1.91	0.52
1:F:193:LEU:HD23	1:F:358:VAL:HG13	1.90	0.52
1:C:129:THR:OG1	1:C:131:GLU:OE1	2.27	0.52
1:E:1143:ILE:HG13	1:E:1179:ALA:HA	1.92	0.52
1:B:1223:LEU:HB3	1:B:1229:ILE:HG12	1.92	0.52
1:C:295:ASN:OD1	1:C:299:PRO:HA	2.09	0.52
1:D:1189:LEU:HD21	1:D:1217:THR:HG21	1.91	0.52
1:F:116:LEU:HB2	1:F:248:LEU:HD23	1.90	0.52
1:G:1089:SER:O	1:G:1118:ARG:N	2.41	0.52
1:B:345:ARG:NH2	2:J:2:GLC:O6	2.42	0.52
1:C:165:ASP:O	1:C:188:GLY:HA3	2.10	0.52
1:E:1032:LEU:HD21	1:E:1034:LYS:NZ	2.25	0.52
1:F:90:LEU:HB2	1:F:95:TRP:HE1	1.73	0.52
1:A:55:GLY:HA3	1:B:1235:TRP:CH2	2.45	0.52
1:A:137:ASP:HA	1:A:147:ALA:HB2	1.92	0.52
1:B:1052:ARG:HB2	1:B:1156:PHE:CE1	2.44	0.52
1:C:2:LYS:HA	1:C:56:ASP:OD1	2.09	0.52
1:C:90:LEU:HD12	1:C:95:TRP:CZ2	2.45	0.52
1:C:230:PRO:O	1:C:299:PRO:HG2	2.10	0.52
1:G:19:ASN:HB2	1:G:297:ASP:OD2	2.09	0.52
1:G:67:ARG:NH2	2:S:2:GLC:O4	2.43	0.52
1:C:28:PHE:HD1	1:C:284:TYR:CD2	2.28	0.52
1:D:1044:TRP:O	1:D:1048:SER:N	2.40	0.52
1:F:165:ASP:O	1:F:188:GLY:HA3	2.10	0.52
1:F:1230:HIS:CE1	1:F:1232:SER:HB3	2.45	0.52
1:A:1038:LEU:HD22	1:A:1062:VAL:HB	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:145:LYS:HD2	1:B:222:GLU:HA	1.92	0.52
1:H:130:TRP:CE2	1:H:161:LEU:HD21	2.45	0.52
1:G:1015:ARG:HD2	1:G:1054:SER:O	2.11	0.51
1:G:1128:ARG:HG3	1:G:1132:ARG:NH1	2.25	0.51
1:H:1027:TYR:CE1	1:H:1170:TYR:CB	2.92	0.51
1:F:170:PHE:CD2	1:F:334:ILE:HD11	2.45	0.51
1:B:165:ASP:O	1:B:188:GLY:HA3	2.10	0.51
1:B:1189:LEU:HD21	1:B:1217:THR:HG21	1.91	0.51
1:F:1155:ASN:C	1:F:1156:PHE:HD1	2.14	0.51
1:G:1123:MET:SD	1:G:1194:LYS:HG2	2.49	0.51
1:A:10:ILE:HG21	1:A:21:LEU:HD21	1.93	0.51
1:A:29:GLU:OE2	1:A:35:LYS:HG2	2.09	0.51
1:G:90:LEU:HB2	1:G:95:TRP:HE1	1.75	0.51
1:H:1027:TYR:OH	1:H:1171:PRO:HD2	2.10	0.51
1:A:55:GLY:HA3	1:B:1235:TRP:HZ3	1.75	0.51
1:A:116:LEU:HB2	1:A:248:LEU:HD23	1.92	0.51
1:C:1066:PHE:CD2	1:C:1086:TRP:HZ2	2.28	0.51
1:D:1027:TYR:CE2	1:D:1029:PRO:HD2	2.46	0.51
1:D:1089:SER:HB2	1:D:1118:ARG:CZ	2.41	0.51
1:H:129:THR:OG1	1:H:131:GLU:OE1	2.27	0.51
1:H:1028:ASP:OD2	1:H:1175:MET:HG3	2.10	0.51
1:A:1039:LEU:HD12	1:A:1156:PHE:CG	2.46	0.51
1:A:1143:ILE:HG13	1:A:1179:ALA:HA	1.92	0.51
1:B:182:VAL:HB	1:B:366:GLN:OE1	2.11	0.51
1:C:1052:ARG:HB2	1:C:1156:PHE:CE1	2.46	0.51
1:F:364:ASP:OD1	1:F:365:ALA:N	2.43	0.51
1:H:1128:ARG:HG3	1:H:1132:ARG:NH1	2.26	0.51
1:C:1034:LYS:NZ	2:M:1:GLC:H2	2.26	0.51
1:E:1039:LEU:HD12	1:E:1156:PHE:CD1	2.46	0.51
1:F:1181:GLU:HB2	1:F:1193:LEU:HD22	1.93	0.51
1:A:2:LYS:HD3	1:B:1235:TRP:HE1	1.74	0.51
1:A:1037:CYS:HB3	1:A:1088:LEU:HA	1.92	0.51
1:C:1128:ARG:HG3	1:C:1132:ARG:NH1	2.25	0.51
1:E:1027:TYR:CD2	1:E:1029:PRO:HD3	2.38	0.51
1:F:90:LEU:HB2	1:F:95:TRP:NE1	2.25	0.51
1:G:1128:ARG:HD2	1:G:1185:ILE:HA	1.92	0.51
1:B:1181:GLU:OE2	1:B:1185:ILE:HD11	2.10	0.51
1:F:233:TRP:HB3	1:F:317:ARG:NH1	2.25	0.51
1:B:3:ILE:HG12	1:B:55:GLY:O	2.11	0.50
1:E:1194:LYS:HD2	1:E:1207:ARG:HH21	1.76	0.50
1:F:1196:SER:HB3	1:F:1205:ALA:HB3	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:99:ARG:HD3	1:H:102:GLY:HA2	1.94	0.50
1:C:78:ALA:HB2	1:C:269:ALA:HA	1.93	0.50
1:E:1043:LYS:HB3	1:E:1083:SER:OG	2.12	0.50
1:E:1052:ARG:HB2	1:E:1156:PHE:CE1	2.46	0.50
1:G:295:ASN:OD1	1:G:299:PRO:HA	2.10	0.50
1:F:1027:TYR:CE2	1:F:1039:LEU:HD13	2.47	0.50
1:G:3:ILE:HD11	1:H:1236:ARG:HD3	1.93	0.50
1:H:1044:TRP:CZ3	1:H:1082:CYS:HB3	2.47	0.50
1:C:98:VAL:HG21	1:C:108:PRO:HD3	1.93	0.50
1:D:1128:ARG:HG3	1:D:1132:ARG:NH1	2.26	0.50
1:F:186:ASN:OD1	1:F:187:ALA:N	2.44	0.50
1:F:1088:LEU:O	1:F:1116:VAL:HA	2.11	0.50
1:G:230:PRO:O	1:G:299:PRO:HG2	2.12	0.50
1:G:1124:ASP:OD2	1:G:1126:GLN:HB2	2.12	0.50
1:H:279:GLU:OE1	1:H:283:ASN:ND2	2.45	0.50
1:C:271:SER:O	1:C:274:LYS:NZ	2.38	0.50
1:C:1015:ARG:HG2	1:C:1054:SER:OG	2.11	0.50
1:C:1213:CYS:O	1:C:1217:THR:HG22	2.12	0.50
1:E:185:ASP:HB2	1:E:366:GLN:HB2	1.93	0.50
1:F:152:LEU:HD21	1:F:205:MET:HE1	1.94	0.50
1:B:337:MET:O	1:B:340:PHE:HB3	2.12	0.50
1:C:1042:ILE:HG12	1:C:1084:ILE:HG12	1.94	0.50
1:C:1089:SER:O	1:C:1118:ARG:N	2.44	0.50
1:E:165:ASP:O	1:E:188:GLY:HA3	2.12	0.50
1:E:293:ALA:O	1:E:296:LYS:HG2	2.12	0.50
1:A:28:PHE:HD1	1:A:284:TYR:CD2	2.29	0.50
1:E:1193:LEU:HD12	1:E:1206:PHE:HE1	1.77	0.50
1:F:62:PHE:CE1	1:F:265:ALA:HB2	2.46	0.50
1:F:337:MET:O	1:F:340:PHE:HB3	2.11	0.50
1:G:10:ILE:HG12	1:G:60:ILE:CG2	2.42	0.50
1:A:130:TRP:CE2	1:A:161:LEU:HD21	2.47	0.50
1:A:1027:TYR:CE1	1:A:1170:TYR:HD2	2.30	0.50
1:B:186:ASN:OD1	1:B:187:ALA:N	2.44	0.50
1:B:1207:ARG:NH1	1:B:1209:HIS:HB2	2.26	0.50
1:D:1116:VAL:HG23	1:D:1143:ILE:HD13	1.92	0.50
1:E:3:ILE:HD12	1:E:271:SER:HA	1.93	0.50
1:F:207:ALA:HB1	1:F:352:ALA:HB1	1.94	0.50
1:G:3:ILE:HG13	1:G:3:ILE:O	2.12	0.50
1:B:116:LEU:HB2	1:B:248:LEU:HD23	1.93	0.49
1:E:1039:LEU:HD12	1:E:1156:PHE:CG	2.47	0.49
1:G:1038:LEU:O	1:G:1054:SER:HA	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:94:THR:HB	1:H:108:PRO:HB2	1.93	0.49
1:B:172:TYR:HB2	1:B:177:TYR:CE1	2.47	0.49
1:B:1024:ASP:OD1	1:B:1170:TYR:OH	2.28	0.49
1:D:1044:TRP:CH2	1:D:1077:HIS:HB3	2.47	0.49
1:F:1039:LEU:HB2	1:F:1087:PHE:HB2	1.94	0.49
1:G:1044:TRP:CE3	1:G:1082:CYS:HB3	2.47	0.49
1:G:1183:HIS:HA	1:G:1186:ILE:HG22	1.94	0.49
1:A:1044:TRP:CH2	1:A:1077:HIS:CD2	3.00	0.49
1:C:60:ILE:HD11	1:C:265:ALA:HB1	1.95	0.49
1:D:1033:ARG:HE	1:D:1197:ARG:NH1	2.11	0.49
1:E:1038:LEU:HD23	1:E:1055:GLY:HA3	1.92	0.49
1:E:1116:VAL:HG23	1:E:1143:ILE:HD13	1.93	0.49
1:F:140:LEU:HD12	1:F:147:ALA:HB2	1.94	0.49
1:H:251:PHE:CE2	1:H:252:LYS:HE2	2.47	0.49
1:B:1077:HIS:CB	1:B:1078:PRO:CD	2.83	0.49
1:D:1044:TRP:HZ3	1:D:1078:PRO:O	1.95	0.49
1:F:19:ASN:HB2	1:F:297:ASP:OD2	2.11	0.49
1:F:1044:TRP:HZ3	1:F:1051:TRP:CD1	2.30	0.49
1:F:1141:ILE:HG22	1:F:1182:LEU:HD21	1.95	0.49
1:H:78:ALA:HB2	1:H:269:ALA:HA	1.94	0.49
1:H:260:VAL:HB	1:H:330:ILE:HA	1.94	0.49
1:A:1089:SER:HB2	1:A:1118:ARG:NH2	2.27	0.49
1:B:4:GLU:O	1:B:273:ASN:ND2	2.44	0.49
1:B:30:LYS:HE2	1:F:1207:ARG:NH2	2.28	0.49
1:C:94:THR:HB	1:C:108:PRO:CB	2.41	0.49
1:D:2:LYS:HA	1:D:56:ASP:HB2	1.93	0.49
1:E:171:LYS:HE2	1:E:181:ASP:HB3	1.95	0.49
1:E:1181:GLU:HB2	1:E:1193:LEU:HD22	1.95	0.49
1:A:1168:PRO:HB2	1:A:1170:TYR:CZ	2.47	0.49
1:C:94:THR:HG21	1:C:304:ALA:HB2	1.95	0.49
1:D:279:GLU:OE1	1:D:283:ASN:ND2	2.46	0.49
1:D:1089:SER:O	1:D:1118:ARG:N	2.45	0.49
1:E:1201:ASN:HB2	1:F:1233:VAL:HG21	1.95	0.49
1:F:359:ASP:O	1:F:363:LYS:HG2	2.13	0.49
1:H:3:ILE:HG23	1:H:59:ASP:OD1	2.13	0.49
1:H:1039:LEU:HB2	1:H:1087:PHE:HB2	1.94	0.49
1:H:1230:HIS:CG	1:H:1231:PRO:HD2	2.47	0.49
1:A:173:GLU:HB2	1:A:176:LYS:O	2.13	0.49
1:A:293:ALA:O	1:A:296:LYS:HG2	2.13	0.49
1:B:130:TRP:CD2	1:B:161:LEU:HD21	2.48	0.49
1:H:230:PRO:O	1:H:299:PRO:HG2	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:1026:PHE:CD1	1:H:1089:SER:HB3	2.47	0.49
1:A:98:VAL:HG21	1:A:108:PRO:HD3	1.94	0.49
1:D:48:PHE:CD1	1:D:61:ILE:HG21	2.48	0.49
1:A:1088:LEU:HG	1:A:1116:VAL:HG12	1.95	0.49
1:G:1044:TRP:CZ3	1:G:1082:CYS:HB3	2.48	0.49
1:H:1101:ARG:NH1	1:H:1133:ASP:OD2	2.46	0.49
1:B:8:LEU:HA	1:B:59:ASP:OD2	2.13	0.48
1:C:10:ILE:HG12	1:C:60:ILE:CG2	2.43	0.48
1:D:1038:LEU:O	1:D:1054:SER:HA	2.13	0.48
1:F:130:TRP:CD2	1:F:161:LEU:HD21	2.48	0.48
1:H:1116:VAL:HG23	1:H:1143:ILE:HD13	1.94	0.48
1:A:171:LYS:HE2	1:A:181:ASP:HB3	1.95	0.48
1:D:9:VAL:O	1:D:59:ASP:N	2.46	0.48
1:D:1027:TYR:CD2	1:D:1029:PRO:HD2	2.48	0.48
1:E:1018:ILE:HG23	1:E:1022:GLU:HG3	1.95	0.48
1:G:1141:ILE:HG22	1:G:1182:LEU:HD21	1.94	0.48
1:A:1194:LYS:HD2	1:A:1207:ARG:NH2	2.29	0.48
1:B:1017:ARG:HD2	1:B:1158:ASN:ND2	2.28	0.48
1:C:1040:TYR:HE1	1:C:1053:SER:HB2	1.78	0.48
1:D:179:ILE:HD13	1:D:1015:ARG:CZ	2.43	0.48
1:D:1052:ARG:HB2	1:D:1156:PHE:CE1	2.48	0.48
1:G:28:PHE:HD1	1:G:284:TYR:CD2	2.32	0.48
1:G:281:LEU:HD23	1:G:285:LEU:HD13	1.94	0.48
1:B:90:LEU:HB2	1:B:95:TRP:NE1	2.28	0.48
1:E:10:ILE:HG21	1:E:21:LEU:HD21	1.95	0.48
1:E:1088:LEU:HG	1:E:1116:VAL:HG12	1.96	0.48
1:E:1236:ARG:HH12	1:F:55:GLY:C	2.17	0.48
1:F:1182:LEU:O	1:F:1186:ILE:HG12	2.14	0.48
1:H:1026:PHE:HD1	1:H:1089:SER:HB3	1.78	0.48
1:H:1128:ARG:HH22	1:H:1191:PRO:HB3	1.78	0.48
1:H:1168:PRO:CG	1:H:1170:TYR:CZ	2.93	0.48
1:H:1189:LEU:HD21	1:H:1217:THR:HG21	1.96	0.48
1:B:1135:VAL:HG21	1:B:1186:ILE:HD12	1.95	0.48
1:C:1181:GLU:HB2	1:C:1193:LEU:HD22	1.95	0.48
1:G:202:ASN:HB3	1:G:204:HIS:HD2	1.78	0.48
1:A:67:ARG:HH11	1:A:67:ARG:CG	2.25	0.48
1:A:1039:LEU:HD12	1:A:1156:PHE:CD1	2.48	0.48
1:B:1143:ILE:HG13	1:B:1179:ALA:HA	1.94	0.48
1:D:1101:ARG:NH1	1:D:1133:ASP:OD2	2.47	0.48
1:F:185:ASP:HB2	1:F:366:GLN:HB2	1.96	0.48
1:G:1091:SER:HB3	1:G:1119:LEU:HD23	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:207:ALA:HB1	1:B:352:ALA:HB1	1.96	0.48
1:B:1181:GLU:HB2	1:B:1193:LEU:HD22	1.96	0.48
1:C:163:ALA:HA	1:C:167:GLY:HA3	1.96	0.48
1:C:1031:GLU:HG2	1:C:1090:TRP:CH2	2.48	0.48
1:D:87:GLN:O	1:D:95:TRP:NE1	2.47	0.48
1:D:1143:ILE:HG13	1:D:1179:ALA:HA	1.95	0.48
1:G:60:ILE:HD12	1:G:281:LEU:HD11	1.96	0.48
1:G:1052:ARG:HB2	1:G:1156:PHE:CE1	2.48	0.48
1:A:16:LYS:NZ	1:A:112:GLU:OE1	2.41	0.48
1:D:251:PHE:CE2	1:D:252:LYS:HE2	2.49	0.48
1:E:28:PHE:HD1	1:E:284:TYR:CD2	2.32	0.48
1:E:1153:TRP:CZ3	1:E:1157:VAL:HG11	2.49	0.48
1:G:165:ASP:O	1:G:188:GLY:HA3	2.14	0.48
1:H:112:GLU:OE2	2:U:2:GLC:O3	2.25	0.48
1:A:151:ASN:ND2	1:A:211:TYR:HB2	2.29	0.48
1:A:1024:ASP:OD1	1:A:1170:TYR:OH	2.31	0.48
1:C:99:ARG:HD3	1:C:102:GLY:HA2	1.96	0.48
1:D:1213:CYS:O	1:D:1217:THR:HG22	2.13	0.48
1:D:1232:SER:O	1:D:1236:ARG:HG2	2.14	0.48
1:B:45:GLU:HB2	1:B:67:ARG:HD2	1.95	0.48
1:D:1052:ARG:O	1:D:1053:SER:OG	2.29	0.48
1:E:69:GLY:HA3	1:E:333:ASN:O	2.14	0.48
1:E:236:ILE:O	1:E:239:SER:OG	2.25	0.48
1:G:1066:PHE:CD2	1:G:1086:TRP:HZ2	2.32	0.48
1:A:66:ASP:OD2	2:I:2:GLC:O3	2.29	0.47
1:A:1193:LEU:HD12	1:A:1206:PHE:HE1	1.79	0.47
1:C:202:ASN:HB3	1:C:204:HIS:HD2	1.79	0.47
1:E:251:PHE:CE2	1:E:252:LYS:HE2	2.48	0.47
1:G:1016:ARG:HA	1:G:1053:SER:HA	1.95	0.47
1:B:28:PHE:HD1	1:B:284:TYR:CD2	2.31	0.47
1:B:295:ASN:OD1	1:B:299:PRO:HA	2.14	0.47
1:C:1189:LEU:HD21	1:C:1217:THR:HG21	1.95	0.47
1:C:1230:HIS:CD2	1:D:1030:ARG:HG2	2.49	0.47
1:E:155:PRO:HG2	1:E:341:TRP:HE3	1.79	0.47
1:F:1128:ARG:CD	1:F:1185:ILE:HG23	2.43	0.47
1:F:1223:LEU:HB3	1:F:1229:ILE:HG12	1.96	0.47
1:G:1034:LYS:HD2	2:T:2:GLC:O6	2.13	0.47
1:C:130:TRP:CD2	1:C:161:LEU:HD21	2.50	0.47
1:E:1043:LYS:HB2	1:E:1050:ILE:HG22	1.95	0.47
1:D:233:TRP:HB3	1:D:317:ARG:NH1	2.29	0.47
1:E:56:ASP:OD1	1:E:57:GLY:N	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:137:ASP:HA	1:E:147:ALA:HB2	1.95	0.47
1:G:2:LYS:HA	1:G:56:ASP:OD1	2.14	0.47
2:S:1:GLC:HO2	2:S:2:GLC:HO2	1.61	0.47
1:A:56:ASP:OD1	1:A:57:GLY:N	2.48	0.47
1:B:233:TRP:HB3	1:B:317:ARG:NH1	2.29	0.47
1:C:1183:HIS:HA	1:C:1186:ILE:HG22	1.97	0.47
1:C:1236:ARG:HD2	1:D:272:PRO:HG3	1.95	0.47
1:G:1199:ALA:HA	2:T:1:GLC:O2	2.15	0.47
1:H:130:TRP:CD2	1:H:161:LEU:HD21	2.49	0.47
1:H:1027:TYR:CE1	1:H:1170:TYR:CG	3.03	0.47
1:B:140:LEU:HD12	1:B:147:ALA:HB2	1.95	0.47
1:C:259:PHE:HB3	1:C:331:MET:CG	2.44	0.47
1:E:90:LEU:HB2	1:E:95:TRP:NE1	2.29	0.47
1:E:1049:LYS:HE3	1:E:1051:TRP:HE1	1.80	0.47
1:G:260:VAL:HB	1:G:330:ILE:HA	1.97	0.47
1:G:1031:GLU:HG2	1:G:1090:TRP:CH2	2.49	0.47
1:G:1052:ARG:O	1:G:1053:SER:OG	2.29	0.47
1:A:1043:LYS:HG2	1:A:1083:SER:HG	1.78	0.47
1:A:1153:TRP:CZ3	1:A:1157:VAL:HG11	2.49	0.47
1:A:1182:LEU:O	1:A:1186:ILE:HG12	2.15	0.47
1:B:1128:ARG:HD2	1:B:1185:ILE:HG23	1.97	0.47
1:C:1229:ILE:HD13	1:C:1234:ALA:HB2	1.96	0.47
1:D:112:GLU:OE2	2:N:1:GLC:O2	2.30	0.47
1:D:131:GLU:O	1:D:134:PRO:HD2	2.15	0.47
1:E:1037:CYS:HB3	1:E:1088:LEU:HA	1.95	0.47
1:E:1094:TRP:CG	1:E:1126:GLN:HB3	2.49	0.47
1:G:163:ALA:HA	1:G:167:GLY:HA3	1.97	0.47
1:H:1039:LEU:HD23	1:H:1156:PHE:CD2	2.50	0.47
1:F:1143:ILE:HG13	1:F:1179:ALA:HA	1.96	0.47
1:A:1066:PHE:CD2	1:A:1086:TRP:HZ2	2.33	0.47
1:B:163:ALA:HA	1:B:167:GLY:HA3	1.96	0.47
1:D:230:PRO:O	1:D:299:PRO:HG2	2.14	0.47
1:D:341:TRP:CE2	2:N:2:GLC:H61	2.50	0.47
1:E:173:GLU:HB2	1:E:176:LYS:O	2.15	0.47
1:F:1035:GLU:HG3	1:F:1090:TRP:CD1	2.49	0.47
1:H:1089:SER:O	1:H:1118:ARG:N	2.47	0.47
1:A:90:LEU:HD23	1:A:305:LEU:HA	1.97	0.47
1:C:281:LEU:HD23	1:C:285:LEU:HD13	1.96	0.47
1:A:1077:HIS:HB2	1:A:1078:PRO:CD	2.44	0.46
1:D:154:GLU:HB3	1:D:156:TYR:CD2	2.49	0.46
1:E:1021:TRP:O	1:E:1025:VAL:HG23	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:49:PRO:HB2	1:F:1021:TRP:CD2	2.51	0.46
1:F:66:ASP:OD1	1:F:66:ASP:N	2.46	0.46
1:A:1021:TRP:O	1:A:1025:VAL:HG23	2.15	0.46
1:B:94:THR:HB	1:B:108:PRO:HB3	1.96	0.46
1:B:170:PHE:CD2	1:B:334:ILE:HD11	2.45	0.46
1:B:1182:LEU:O	1:B:1186:ILE:HG12	2.15	0.46
1:D:78:ALA:HB2	1:D:269:ALA:HA	1.97	0.46
1:D:99:ARG:HD3	1:D:102:GLY:HA2	1.97	0.46
1:E:230:PRO:O	1:E:299:PRO:HG2	2.14	0.46
1:E:247:VAL:HA	1:E:324:ASN:HD21	1.80	0.46
1:E:1128:ARG:HG3	1:E:1132:ARG:NH1	2.30	0.46
1:F:1181:GLU:OE2	1:F:1185:ILE:HD11	2.14	0.46
1:C:1091:SER:HB3	1:C:1119:LEU:HD23	1.98	0.46
1:D:86:PHE:HZ	1:D:286:LEU:HD12	1.81	0.46
1:D:1180:LEU:HD11	1:D:1223:LEU:HD23	1.97	0.46
1:F:1027:TYR:CZ	1:F:1039:LEU:HD13	2.49	0.46
1:H:1143:ILE:HG13	1:H:1179:ALA:HA	1.96	0.46
1:B:7:LYS:NZ	1:B:35:LYS:HD2	2.30	0.46
1:B:1192:CYS:SG	1:B:1193:LEU:N	2.89	0.46
1:C:56:ASP:CB	1:D:1236:ARG:HH12	2.27	0.46
1:C:308:TYR:CE2	1:C:312:LEU:HD22	2.51	0.46
1:C:1124:ASP:OD2	1:C:1126:GLN:HB2	2.16	0.46
1:G:1035:GLU:N	1:G:1035:GLU:OE1	2.48	0.46
1:B:251:PHE:CE2	1:B:252:LYS:HE2	2.50	0.46
1:C:1128:ARG:CD	1:C:1185:ILE:HG12	2.45	0.46
1:H:90:LEU:HD13	1:H:108:PRO:HG2	1.98	0.46
1:B:274:LYS:NZ	2:K:1:GLC:H2	2.29	0.46
1:F:1027:TYR:CZ	1:F:1037:CYS:HB2	2.51	0.46
1:H:66:ASP:OD1	1:H:67:ARG:HG2	2.15	0.46
1:A:1018:ILE:HG23	1:A:1022:GLU:HG3	1.97	0.46
1:A:1038:LEU:HD23	1:A:1055:GLY:HA3	1.98	0.46
1:A:1207:ARG:NH1	1:F:29:GLU:O	2.49	0.46
1:B:41:PRO:HG2	1:B:44:LEU:HB3	1.98	0.46
1:B:1030:ARG:NH2	1:B:1171:PRO:HG3	2.30	0.46
1:B:1033:ARG:HB2	2:K:2:GLC:O4	2.16	0.46
1:B:1128:ARG:CD	1:B:1185:ILE:HD12	2.45	0.46
1:B:1193:LEU:HD12	1:B:1206:PHE:HE1	1.80	0.46
1:D:156:TYR:CE1	2:N:2:GLC:H5	2.51	0.46
1:D:1094:TRP:H	1:D:1127:ASN:ND2	2.14	0.46
1:E:1194:LYS:HD2	1:E:1207:ARG:NH2	2.29	0.46
1:E:1213:CYS:O	1:E:1217:THR:HG22	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1189:LEU:HD21	1:G:1217:THR:HG21	1.98	0.46
1:E:90:LEU:HB2	1:E:95:TRP:HE1	1.81	0.46
1:E:91:TYR:O	1:E:94:THR:OG1	2.28	0.46
1:F:1098:GLN:OE1	1:F:1101:ARG:NH2	2.49	0.46
1:H:80:ILE:HG22	1:H:82:PRO:HD3	1.98	0.46
1:H:1088:LEU:HD21	1:H:1114:ILE:HG23	1.98	0.46
1:A:1123:MET:SD	1:A:1194:LYS:HG2	2.55	0.46
1:D:1043:LYS:HB2	1:D:1083:SER:HB2	1.97	0.46
1:D:1192:CYS:SG	1:D:1193:LEU:N	2.89	0.46
1:F:45:GLU:HB2	1:F:67:ARG:HD2	1.97	0.46
1:F:90:LEU:HD12	1:F:95:TRP:CZ2	2.50	0.46
1:H:49:PRO:HB2	1:H:1021:TRP:CD2	2.51	0.46
1:A:8:LEU:HB2	1:A:36:VAL:HG22	1.98	0.46
1:A:350:ASN:HB3	1:A:356:GLN:HB2	1.98	0.46
1:A:1128:ARG:HG3	1:A:1132:ARG:NH1	2.31	0.46
1:B:194:THR:HG23	1:B:358:VAL:HG11	1.97	0.46
1:B:202:ASN:HB3	1:B:204:HIS:HD2	1.80	0.46
1:D:1104:LEU:HG	1:D:1110:VAL:HG23	1.98	0.46
1:E:1182:LEU:O	1:E:1186:ILE:HG12	2.16	0.46
1:G:1082:CYS:SG	1:G:1084:ILE:HD11	2.56	0.46
1:A:251:PHE:CE2	1:A:252:LYS:HE2	2.51	0.45
1:D:49:PRO:HB2	1:D:1021:TRP:CD2	2.52	0.45
1:D:337:MET:O	1:D:340:PHE:HB3	2.16	0.45
1:D:1039:LEU:HB2	1:D:1087:PHE:HB2	1.97	0.45
1:H:1036:ALA:HB1	1:H:1062:VAL:HG13	1.97	0.45
1:A:1052:ARG:HB2	1:A:1156:PHE:CE1	2.51	0.45
1:D:10:ILE:HG21	1:D:21:LEU:HD21	1.99	0.45
1:D:218:PHE:HA	1:D:223:THR:HG22	1.98	0.45
1:G:1107:HIS:O	1:G:1110:VAL:HG22	2.16	0.45
1:H:1038:LEU:O	1:H:1054:SER:HA	2.16	0.45
1:B:1082:CYS:SG	1:B:1110:VAL:HG12	2.56	0.45
1:B:1187:LEU:HD12	1:B:1218:ILE:HD12	1.98	0.45
1:C:1230:HIS:CG	1:C:1231:PRO:HD2	2.51	0.45
1:E:1236:ARG:NH1	1:F:3:ILE:HG12	2.31	0.45
1:H:1192:CYS:SG	1:H:1193:LEU:N	2.89	0.45
1:B:9:VAL:O	1:B:59:ASP:N	2.46	0.45
1:B:1124:ASP:O	1:B:1128:ARG:HG2	2.17	0.45
1:E:1079:SER:OG	1:E:1080:THR:N	2.44	0.45
1:B:90:LEU:HB2	1:B:95:TRP:HE1	1.81	0.45
1:B:1076:PHE:HD2	1:B:1079:SER:HA	1.82	0.45
1:E:186:ASN:OD1	1:E:187:ALA:N	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:130:TRP:CE2	1:F:161:LEU:HD21	2.51	0.45
1:H:1044:TRP:O	1:H:1048:SER:N	2.47	0.45
1:E:345:ARG:HH21	2:P:2:GLC:H62	1.82	0.45
1:F:3:ILE:HG13	1:F:3:ILE:O	2.17	0.45
1:G:1128:ARG:CD	1:G:1185:ILE:HG12	2.46	0.45
1:G:1181:GLU:HB2	1:G:1193:LEU:HD22	1.97	0.45
1:H:4:GLU:O	1:H:273:ASN:ND2	2.47	0.45
1:H:337:MET:HE3	1:H:341:TRP:HE1	1.81	0.45
1:A:186:ASN:OD1	1:A:187:ALA:N	2.50	0.45
1:A:1213:CYS:O	1:A:1217:THR:HG22	2.16	0.45
1:C:1038:LEU:O	1:C:1054:SER:HA	2.16	0.45
1:E:202:ASN:HB3	1:E:204:HIS:HD2	1.81	0.45
1:F:1192:CYS:SG	1:F:1193:LEU:N	2.89	0.45
1:A:52:ALA:HB1	1:A:76:LEU:HD22	1.99	0.45
1:A:130:TRP:NE1	1:A:249:PRO:HG2	2.32	0.45
1:D:98:VAL:HG21	1:D:108:PRO:HD3	1.99	0.45
1:D:1018:ILE:HG13	1:D:1157:VAL:HA	1.99	0.45
1:G:130:TRP:CD2	1:G:161:LEU:HD21	2.51	0.45
1:A:159:TRP:NE1	1:A:163:ALA:HB2	2.32	0.45
1:C:1230:HIS:NE2	1:D:1030:ARG:HG2	2.32	0.45
1:F:172:TYR:HB2	1:F:177:TYR:CE1	2.52	0.45
1:A:151:ASN:HD22	1:A:211:TYR:HB2	1.82	0.45
1:B:1230:HIS:CE1	1:B:1232:SER:HB3	2.50	0.45
1:D:34:ILE:HD13	1:D:276:LEU:HD13	1.98	0.45
1:D:1036:ALA:HB1	1:D:1062:VAL:HG13	1.99	0.45
1:E:19:ASN:HB2	1:E:297:ASP:OD2	2.17	0.45
1:E:1214:HIS:HB3	1:E:1218:ILE:HD12	1.99	0.45
1:G:1128:ARG:HH22	1:G:1191:PRO:HB3	1.82	0.45
1:A:165:ASP:O	1:A:188:GLY:HA3	2.17	0.44
1:B:49:PRO:HB2	1:B:1021:TRP:CD2	2.52	0.44
1:B:255:PRO:HB3	1:B:327:LYS:HE3	1.98	0.44
1:C:1027:TYR:OH	1:C:1039:LEU:HG	2.17	0.44
1:D:185:ASP:HB3	1:D:363:LYS:NZ	2.32	0.44
1:E:1030:ARG:NH2	1:E:1032:LEU:HD22	2.31	0.44
1:F:146:SER:O	1:F:223:THR:HA	2.16	0.44
1:H:1104:LEU:HG	1:H:1110:VAL:HG23	1.99	0.44
1:H:1224:LEU:HD13	1:H:1235:TRP:HE1	1.82	0.44
1:B:1036:ALA:HA	1:B:1057:ASN:HB2	1.97	0.44
1:B:1122:HIS:O	1:B:1128:ARG:NE	2.36	0.44
1:D:1028:ASP:CG	1:D:1029:PRO:HD3	2.37	0.44
1:E:29:GLU:OE2	1:E:35:LYS:HG2	2.15	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:295:ASN:OD1	1:F:299:PRO:HA	2.17	0.44
1:G:1182:LEU:HA	1:G:1185:ILE:HD12	1.99	0.44
1:H:269:ALA:HB1	2:V:1:GLC:O6	2.17	0.44
1:H:1214:HIS:O	1:H:1218:ILE:HG22	2.17	0.44
1:A:22:ALA:O	1:A:26:LYS:HG2	2.18	0.44
1:B:215:GLU:HG2	1:B:219:ASN:ND2	2.32	0.44
1:H:337:MET:O	1:H:340:PHE:HB3	2.17	0.44
1:A:179:ILE:HD11	1:A:336:GLN:HG2	1.99	0.44
1:A:180:LYS:NZ	1:A:1073:GLU:OE2	2.30	0.44
1:B:29:GLU:O	1:E:1207:ARG:NH1	2.51	0.44
1:B:90:LEU:HD12	1:B:95:TRP:CZ2	2.52	0.44
1:C:1015:ARG:HD2	1:C:1054:SER:O	2.18	0.44
1:E:111:VAL:HG12	1:E:302:ALA:O	2.17	0.44
1:F:336:GLN:NE2	1:F:1015:ARG:HH22	2.15	0.44
1:G:83:ASP:O	1:G:86:PHE:N	2.49	0.44
1:G:1230:HIS:CG	1:G:1231:PRO:HD2	2.53	0.44
1:A:66:ASP:OD1	1:A:67:ARG:N	2.50	0.44
1:A:1201:ASN:HB2	1:B:1233:VAL:HG11	2.00	0.44
1:B:1089:SER:HA	1:B:1117:ALA:HB3	2.00	0.44
1:D:332:PRO:HD2	1:D:337:MET:HE2	1.99	0.44
1:H:90:LEU:HD12	1:H:95:TRP:CZ2	2.52	0.44
1:H:1040:TYR:CZ	1:H:1053:SER:HB2	2.53	0.44
1:A:41:PRO:HG2	1:A:44:LEU:HB3	1.99	0.44
1:E:130:TRP:CE2	1:E:161:LEU:HD21	2.52	0.44
1:E:137:ASP:O	1:E:141:LYS:HG2	2.17	0.44
1:E:151:ASN:ND2	1:E:211:TYR:HB2	2.32	0.44
1:E:1122:HIS:NE2	1:E:1193:LEU:O	2.41	0.44
1:G:1036:ALA:HB3	1:G:1057:ASN:HB2	1.99	0.44
1:H:3:ILE:HD11	1:H:268:ASN:ND2	2.32	0.44
1:A:1030:ARG:NH2	1:A:1032:LEU:HD22	2.28	0.44
1:B:131:GLU:OE1	1:B:131:GLU:N	2.48	0.44
1:C:117:ILE:HG12	1:C:245:VAL:HG22	1.99	0.44
1:C:1031:GLU:HG2	1:C:1090:TRP:HH2	1.83	0.44
1:D:1039:LEU:HD23	1:D:1156:PHE:CD2	2.53	0.44
1:D:1208:LEU:CD1	1:D:1210:LEU:HD13	2.48	0.44
1:G:1215:TYR:OH	1:H:1203:LEU:O	2.28	0.44
1:H:86:PHE:N	1:H:86:PHE:CD1	2.85	0.44
1:H:1025:VAL:HG13	1:H:1030:ARG:NH1	2.32	0.44
1:A:1025:VAL:O	1:A:1030:ARG:HD3	2.18	0.44
1:B:130:TRP:CE2	1:B:161:LEU:HD21	2.52	0.44
1:D:60:ILE:CD1	1:D:267:ILE:HG12	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1025:VAL:O	1:E:1030:ARG:HD3	2.17	0.44
1:H:1027:TYR:O	1:H:1118:ARG:NH1	2.51	0.44
1:C:1107:HIS:O	1:C:1110:VAL:HG22	2.18	0.44
1:D:1171:PRO:HA	1:D:1172:PRO:HD3	1.85	0.44
1:E:151:ASN:HD22	1:E:211:TYR:HB2	1.83	0.44
1:E:1128:ARG:HH22	1:E:1191:PRO:HB3	1.82	0.44
1:G:45:GLU:HG2	1:G:46:GLU:HG3	2.00	0.44
1:H:1082:CYS:SG	1:H:1110:VAL:HG12	2.58	0.44
1:H:1128:ARG:CD	1:H:1185:ILE:HG12	2.48	0.44
1:B:1071:THR:HG21	1:B:1106:ARG:NH1	2.33	0.43
1:F:163:ALA:HA	1:F:167:GLY:CA	2.48	0.43
1:G:78:ALA:HB2	1:G:269:ALA:HA	1.99	0.43
1:G:1032:LEU:HD22	1:G:1035:GLU:OE2	2.17	0.43
1:G:1190:PRO:HG2	1:G:1214:HIS:CE1	2.52	0.43
1:H:1153:TRP:CZ3	1:H:1157:VAL:HG11	2.53	0.43
1:A:2:LYS:HB2	1:B:1235:TRP:CZ2	2.53	0.43
1:B:130:TRP:NE1	1:B:249:PRO:HG2	2.32	0.43
1:B:1052:ARG:O	1:B:1053:SER:OG	2.33	0.43
1:B:1193:LEU:HA	1:B:1207:ARG:O	2.18	0.43
1:C:1042:ILE:HG23	1:C:1082:CYS:SG	2.58	0.43
1:C:1230:HIS:CD2	1:C:1231:PRO:HD2	2.52	0.43
1:D:3:ILE:HD12	1:D:55:GLY:O	2.17	0.43
1:D:1028:ASP:OD1	1:D:1029:PRO:HD3	2.18	0.43
1:D:1153:TRP:CZ3	1:D:1157:VAL:HG11	2.54	0.43
1:G:308:TYR:CE2	1:G:312:LEU:HD22	2.53	0.43
1:H:1061:HIS:O	1:H:1064:VAL:HG22	2.18	0.43
1:A:11:TRP:CD2	1:A:58:PRO:HG3	2.53	0.43
1:A:1082:CYS:SG	1:A:1110:VAL:HG12	2.58	0.43
1:A:1235:TRP:HZ2	1:B:2:LYS:HD3	1.82	0.43
1:B:230:PRO:HA	1:B:233:TRP:CD2	2.53	0.43
1:B:1141:ILE:HG22	1:B:1182:LEU:HD21	2.00	0.43
1:C:90:LEU:HB2	1:C:95:TRP:HE1	1.83	0.43
1:D:11:TRP:CD1	1:D:58:PRO:HB3	2.53	0.43
1:E:41:PRO:HG2	1:E:44:LEU:HB3	1.99	0.43
1:G:94:THR:HG21	1:G:304:ALA:HB2	2.00	0.43
1:G:1229:ILE:HD13	1:G:1234:ALA:HB2	2.00	0.43
1:H:159:TRP:NE1	1:H:163:ALA:HB2	2.33	0.43
1:H:1091:SER:HB3	1:H:1119:LEU:HD23	1.99	0.43
1:A:1214:HIS:HB3	1:A:1218:ILE:HD12	1.99	0.43
1:E:350:ASN:HB3	1:E:356:GLN:HB2	2.01	0.43
1:E:1230:HIS:CG	1:E:1231:PRO:HD2	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1236:ARG:HG2	1:F:3:ILE:HG13	2.00	0.43
1:G:218:PHE:HA	1:G:223:THR:HG22	2.01	0.43
1:H:73:GLN:CD	1:H:1056:LYS:HD2	2.39	0.43
1:H:1082:CYS:SG	1:H:1084:ILE:HD11	2.59	0.43
1:C:1016:ARG:HA	1:C:1053:SER:HA	2.00	0.43
1:E:1070:PHE:HD2	1:E:1103:PHE:HZ	1.67	0.43
1:F:194:THR:HG23	1:F:358:VAL:HG11	2.00	0.43
1:A:185:ASP:HB2	1:A:366:GLN:HB2	2.01	0.43
1:B:48:PHE:CD1	1:B:61:ILE:HD12	2.53	0.43
1:E:180:LYS:HE2	1:E:1073:GLU:OE2	2.19	0.43
1:F:1058:THR:C	1:F:1060:ASN:H	2.22	0.43
1:G:66:ASP:OD1	1:G:67:ARG:N	2.52	0.43
1:G:179:ILE:O	1:G:369:SER:HB2	2.19	0.43
1:H:295:ASN:OD1	1:H:299:PRO:HA	2.18	0.43
1:B:62:PHE:CE1	1:B:265:ALA:HB2	2.53	0.43
1:B:1229:ILE:HD13	1:B:1234:ALA:HB2	2.01	0.43
1:C:1034:LYS:HD2	2:M:1:GLC:H2	2.01	0.43
1:D:1043:LYS:HG3	1:D:1050:ILE:HG13	2.01	0.43
1:G:16:LYS:HE2	1:G:263:LEU:HD13	2.00	0.43
1:H:65:HIS:HD2	1:H:333:ASN:HB3	1.83	0.43
1:H:1052:ARG:HB2	1:H:1156:PHE:CE1	2.53	0.43
1:A:67:ARG:CG	1:A:67:ARG:NH1	2.82	0.43
1:A:230:PRO:O	1:A:299:PRO:HG2	2.19	0.43
1:A:1230:HIS:CG	1:A:1231:PRO:HD2	2.53	0.43
1:B:130:TRP:CZ3	1:B:148:LEU:HD21	2.53	0.43
1:D:308:TYR:CE2	1:D:312:LEU:HD22	2.53	0.43
1:E:1236:ARG:HH12	1:F:56:ASP:N	2.17	0.43
1:H:94:THR:HB	1:H:108:PRO:CB	2.48	0.43
1:H:1094:TRP:N	1:H:1127:ASN:OD1	2.52	0.43
1:H:1213:CYS:O	1:H:1217:THR:HG22	2.19	0.43
1:C:218:PHE:HA	1:C:223:THR:HG22	2.01	0.43
1:C:1128:ARG:HH22	1:C:1191:PRO:HB3	1.83	0.43
1:D:1026:PHE:CD1	1:D:1089:SER:HB3	2.53	0.43
1:D:1091:SER:HB3	1:D:1119:LEU:HD23	2.00	0.43
1:E:8:LEU:HD12	1:E:36:VAL:HG22	2.00	0.43
1:E:1212:ASN:HD21	1:F:1198:ARG:NH2	2.10	0.43
1:F:1187:LEU:HD22	1:G:1187:LEU:HD22	2.01	0.43
1:F:1214:HIS:O	1:F:1218:ILE:HG22	2.19	0.43
1:G:1172:PRO:HA	1:G:1175:MET:CE	2.49	0.43
1:H:187:ALA:HA	1:H:190:LYS:HZ1	1.83	0.43
1:B:1066:PHE:HD2	1:B:1086:TRP:HZ2	1.67	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:202:ASN:HB3	1:F:204:HIS:HD2	1.83	0.43
1:F:1016:ARG:HD3	1:F:1052:ARG:HG3	2.00	0.43
1:G:130:TRP:NE1	1:G:249:PRO:HG2	2.33	0.43
1:G:1094:TRP:H	1:G:1127:ASN:ND2	2.17	0.43
1:A:1094:TRP:CG	1:A:1126:GLN:HB3	2.54	0.42
1:A:1153:TRP:CE3	1:A:1157:VAL:HG11	2.54	0.42
1:C:3:ILE:HD12	1:C:55:GLY:O	2.18	0.42
1:E:22:ALA:O	1:E:26:LYS:HG2	2.19	0.42
1:F:1090:TRP:HE1	1:F:1118:ARG:HH21	1.66	0.42
1:F:1122:HIS:O	1:F:1128:ARG:NH2	2.49	0.42
1:H:65:HIS:NE2	1:H:331:MET:O	2.40	0.42
1:H:185:ASP:OD2	1:H:366:GLN:HB2	2.19	0.42
1:A:1116:VAL:HG23	1:A:1143:ILE:HD13	2.01	0.42
1:D:90:LEU:HD12	1:D:95:TRP:CZ2	2.55	0.42
1:H:73:GLN:NE2	1:H:1056:LYS:HB3	2.34	0.42
1:A:260:VAL:CG2	1:A:330:ILE:HA	2.46	0.42
1:B:230:PRO:HA	1:B:233:TRP:CE2	2.55	0.42
1:C:339:ALA:C	1:C:368:ASN:HD21	2.21	0.42
1:E:260:VAL:CG2	1:E:330:ILE:HA	2.47	0.42
1:F:130:TRP:NE1	1:F:249:PRO:HG2	2.34	0.42
1:G:1027:TYR:OH	1:G:1039:LEU:HG	2.19	0.42
1:H:166:GLY:N	1:H:188:GLY:HA3	2.33	0.42
1:H:1040:TYR:CE2	1:H:1053:SER:HB2	2.54	0.42
1:H:1159:TYR:CD2	1:H:1164:GLU:HA	2.54	0.42
1:A:155:PRO:HG2	1:A:341:TRP:CE3	2.52	0.42
1:A:230:PRO:HA	1:A:233:TRP:CD2	2.55	0.42
1:B:1058:THR:C	1:B:1060:ASN:H	2.22	0.42
1:B:1058:THR:O	1:B:1060:ASN:N	2.53	0.42
1:C:1190:PRO:HG2	1:C:1214:HIS:CE1	2.55	0.42
1:D:1039:LEU:HD23	1:D:1156:PHE:CG	2.55	0.42
1:D:1066:PHE:CD2	1:D:1086:TRP:HZ2	2.38	0.42
1:E:308:TYR:CE2	1:E:312:LEU:HD22	2.54	0.42
1:E:1043:LYS:HE3	1:E:1048:SER:HA	2.00	0.42
1:G:8:LEU:HB2	1:G:36:VAL:HG22	2.02	0.42
1:D:130:TRP:HD1	1:D:195:PHE:CZ	2.38	0.42
1:E:109:ILE:HD13	1:E:286:LEU:HD21	2.02	0.42
1:F:1058:THR:O	1:F:1060:ASN:N	2.53	0.42
1:F:1089:SER:HA	1:F:1117:ALA:HB3	2.02	0.42
1:F:1187:LEU:HD12	1:F:1218:ILE:HD12	2.01	0.42
1:G:1088:LEU:HD21	1:G:1114:ILE:HG23	2.01	0.42
1:H:185:ASP:OD1	1:H:362:LEU:HB3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:94:THR:HB	1:F:108:PRO:CB	2.45	0.42
1:H:34:ILE:HD13	1:H:276:LEU:HD13	2.01	0.42
1:H:1067:ILE:O	1:H:1071:THR:HG23	2.19	0.42
1:A:91:TYR:O	1:A:94:THR:OG1	2.31	0.42
1:B:1113:VAL:HG23	1:B:1140:THR:HB	2.01	0.42
1:D:160:PRO:HG3	1:D:258:PRO:HA	2.01	0.42
1:F:182:VAL:HG12	1:F:184:VAL:H	1.85	0.42
1:F:362:LEU:HD23	1:F:362:LEU:HA	1.86	0.42
1:F:1033:ARG:HH11	2:R:1:GLC:C1	2.33	0.42
1:C:101:ASN:OD1	1:C:1059:THR:HG23	2.20	0.42
1:D:90:LEU:HB2	1:D:95:TRP:HE1	1.85	0.42
1:E:137:ASP:OD1	1:E:141:LYS:HE2	2.20	0.42
1:H:1044:TRP:CE3	1:H:1078:PRO:HG2	2.55	0.42
2:U:1:GLC:H62	2:U:2:GLC:C5	2.45	0.42
1:A:1107:HIS:O	1:A:1110:VAL:HG22	2.20	0.42
1:D:1194:LYS:HD2	1:D:1207:ARG:HH21	1.85	0.42
1:E:130:TRP:NE1	1:E:249:PRO:HG2	2.35	0.42
1:H:64:ALA:HB2	2:U:2:GLC:O2	2.19	0.42
1:C:66:ASP:OD1	1:C:67:ARG:N	2.53	0.42
1:D:12:ILE:HG13	1:D:62:PHE:HB2	2.02	0.42
1:D:98:VAL:HG23	1:D:104:LEU:HD22	2.00	0.42
1:F:1038:LEU:HB2	1:F:1062:VAL:HG11	2.01	0.42
1:G:1038:LEU:HB2	1:G:1062:VAL:HG21	2.02	0.42
1:H:154:GLU:HB3	1:H:156:TYR:CD2	2.55	0.42
1:A:137:ASP:O	1:A:141:LYS:HG2	2.19	0.41
1:D:1177:LEU:HD13	1:D:1206:PHE:CZ	2.55	0.41
1:E:34:ILE:HD13	1:E:276:LEU:HD13	2.02	0.41
1:F:1167:TRP:CE2	1:F:1169:GLN:HG2	2.55	0.41
1:G:1101:ARG:NH1	1:G:1133:ASP:OD2	2.53	0.41
1:H:156:TYR:CG	2:U:1:GLC:H61	2.53	0.41
1:A:45:GLU:HB2	1:A:67:ARG:HD3	2.02	0.41
1:B:296:LYS:HE3	1:B:296:LYS:HB2	1.86	0.41
1:C:60:ILE:HD12	1:C:281:LEU:HD11	2.03	0.41
1:C:190:LYS:HD2	1:C:359:ASP:OD1	2.20	0.41
1:D:8:LEU:HA	1:D:59:ASP:OD2	2.21	0.41
1:F:130:TRP:CZ3	1:F:148:LEU:HD21	2.55	0.41
1:F:165:ASP:HA	1:F:254:GLN:OE1	2.20	0.41
1:F:1082:CYS:SG	1:F:1110:VAL:HG12	2.60	0.41
1:G:3:ILE:HD12	1:G:272:PRO:HD3	2.02	0.41
1:G:1061:HIS:O	1:G:1064:VAL:HG22	2.20	0.41
1:A:1041:GLU:HB2	1:A:1156:PHE:HZ	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:51:VAL:HB	1:B:56:ASP:O	2.20	0.41
1:C:1159:TYR:CD2	1:C:1164:GLU:HA	2.55	0.41
1:E:8:LEU:HB2	1:E:36:VAL:HG22	2.02	0.41
1:E:295:ASN:OD1	1:E:299:PRO:HA	2.20	0.41
1:F:1171:PRO:HA	1:F:1172:PRO:HD3	1.88	0.41
1:H:11:TRP:CD1	1:H:58:PRO:HB3	2.55	0.41
1:H:1180:LEU:HD11	1:H:1223:LEU:HD23	2.02	0.41
1:A:1027:TYR:CZ	1:A:1170:TYR:HD2	2.39	0.41
1:A:1128:ARG:CD	1:A:1185:ILE:HG12	2.50	0.41
1:C:86:PHE:CE1	1:C:282:GLU:HG3	2.55	0.41
1:C:296:LYS:HE3	1:C:296:LYS:HB2	1.89	0.41
1:E:1084:ILE:HG13	1:E:1112:LEU:HA	2.02	0.41
1:F:1193:LEU:HD12	1:F:1206:PHE:HE1	1.86	0.41
1:H:1208:LEU:CD1	1:H:1210:LEU:HD13	2.51	0.41
1:A:49:PRO:HD3	1:A:71:TYR:CZ	2.55	0.41
1:A:1149:TYR:HE2	1:A:1175:MET:SD	2.44	0.41
1:B:48:PHE:CG	1:B:61:ILE:HD12	2.55	0.41
1:D:12:ILE:HD12	1:D:62:PHE:CD2	2.56	0.41
1:E:1123:MET:SD	1:E:1194:LYS:HG2	2.61	0.41
1:E:1236:ARG:HH12	1:F:56:ASP:CA	2.33	0.41
1:H:233:TRP:HB3	1:H:317:ARG:NH1	2.36	0.41
1:H:1039:LEU:HD23	1:H:1156:PHE:CG	2.55	0.41
1:B:170:PHE:CE1	1:B:182:VAL:HG22	2.56	0.41
1:B:1177:LEU:HD13	1:B:1206:PHE:CZ	2.55	0.41
1:C:65:HIS:NE2	1:C:331:MET:O	2.40	0.41
1:D:1018:ILE:O	1:D:1158:ASN:N	2.44	0.41
1:G:259:PHE:HB3	1:G:331:MET:CG	2.50	0.41
1:A:137:ASP:OD1	1:A:141:LYS:HE2	2.21	0.41
1:B:133:ILE:HG21	1:B:148:LEU:HD23	2.02	0.41
1:B:1026:PHE:CE1	1:B:1036:ALA:HB3	2.56	0.41
1:D:158:THR:O	1:D:161:LEU:HG	2.20	0.41
1:D:1208:LEU:HD11	1:D:1210:LEU:HD13	2.03	0.41
1:F:269:ALA:O	2:R:2:GLC:O2	2.39	0.41
1:C:300:LEU:HD23	1:C:300:LEU:H	1.84	0.41
1:D:1028:ASP:OD2	1:D:1175:MET:HG3	2.20	0.41
1:E:90:LEU:HD23	1:E:305:LEU:HA	2.02	0.41
1:E:1026:PHE:HE1	1:E:1089:SER:HA	1.86	0.41
1:F:251:PHE:CE2	1:F:252:LYS:HE2	2.56	0.41
1:F:297:ASP:O	1:F:298:LYS:HD2	2.21	0.41
1:G:1076:PHE:O	1:G:1078:PRO:HD3	2.21	0.41
1:H:159:TRP:CD1	1:H:259:PHE:CE2	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2:LYS:CE	1:B:1235:TRP:HE1	2.33	0.41
1:A:49:PRO:HB2	1:A:1021:TRP:CE2	2.56	0.41
1:B:78:ALA:HB2	1:B:269:ALA:HA	2.02	0.41
1:B:90:LEU:HD23	1:B:305:LEU:HA	2.03	0.41
1:B:1128:ARG:NH2	1:B:1191:PRO:HB3	2.35	0.41
1:C:1015:ARG:HG2	1:C:1054:SER:HG	1.85	0.41
1:C:1159:TYR:CE2	1:C:1164:GLU:HA	2.56	0.41
1:D:130:TRP:CH2	1:D:252:LYS:HA	2.56	0.41
1:D:1030:ARG:HD3	1:D:1032:LEU:HD11	2.02	0.41
1:E:337:MET:O	1:E:340:PHE:HB3	2.21	0.41
1:E:1061:HIS:O	1:E:1064:VAL:HG22	2.21	0.41
1:E:1181:GLU:O	1:E:1185:ILE:HG13	2.21	0.41
1:F:127:PRO:HB3	1:F:132:GLU:OE2	2.20	0.41
1:G:297:ASP:O	1:G:298:LYS:HD2	2.21	0.41
1:G:362:LEU:HD23	1:G:362:LEU:HA	1.86	0.41
1:G:1043:LYS:HE2	1:G:1048:SER:HA	2.02	0.41
1:G:1181:GLU:O	1:G:1185:ILE:HG13	2.20	0.41
1:H:1159:TYR:CE2	1:H:1164:GLU:HG2	2.56	0.41
1:C:1034:LYS:HE3	2:M:1:GLC:C2	2.41	0.41
1:D:133:ILE:HB	1:D:134:PRO:HD3	2.02	0.41
1:G:368:ASN:HA	1:G:371:SER:HB3	2.02	0.41
1:G:1015:ARG:HG3	1:G:1056:LYS:NZ	2.36	0.41
1:G:1091:SER:HA	1:G:1116:VAL:HG11	2.03	0.41
1:A:1039:LEU:HD13	1:A:1039:LEU:HA	1.98	0.40
1:C:1159:TYR:H	1:C:1159:TYR:HD1	1.70	0.40
1:D:152:LEU:HD22	1:D:196:LEU:HD21	2.02	0.40
1:D:156:TYR:N	1:D:156:TYR:CD1	2.82	0.40
1:D:215:GLU:HG2	1:D:219:ASN:ND2	2.36	0.40
1:G:300:LEU:H	1:G:300:LEU:HD23	1.85	0.40
1:H:1153:TRP:CE3	1:H:1157:VAL:HG11	2.56	0.40
1:B:76:LEU:HD11	1:B:1021:TRP:CZ3	2.57	0.40
1:E:1091:SER:HA	1:E:1116:VAL:HG11	2.03	0.40
1:H:308:TYR:CE2	1:H:312:LEU:HD22	2.55	0.40
1:H:1031:GLU:OE2	1:H:1197:ARG:HD3	2.21	0.40
1:D:66:ASP:OD1	1:D:66:ASP:N	2.54	0.40
1:D:1110:VAL:HG23	1:D:1110:VAL:O	2.22	0.40
1:D:1220:PRO:HB2	1:D:1235:TRP:CD1	2.57	0.40
1:H:8:LEU:HA	1:H:59:ASP:OD2	2.22	0.40
1:H:1027:TYR:CZ	1:H:1170:TYR:CB	2.95	0.40
1:A:286:LEU:HD23	1:A:286:LEU:HA	1.95	0.40
1:A:1091:SER:HA	1:A:1116:VAL:HG11	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:19:ASN:HB2	1:B:297:ASP:OD2	2.22	0.40
1:C:130:TRP:CE2	1:C:161:LEU:HD21	2.57	0.40
1:D:1031:GLU:OE2	1:D:1197:ARG:HD3	2.21	0.40
1:G:86:PHE:CE1	1:G:282:GLU:HG3	2.57	0.40
1:G:1193:LEU:HA	1:G:1207:ARG:O	2.22	0.40
1:H:65:HIS:ND1	1:H:262:VAL:HB	2.37	0.40
1:H:1018:ILE:HG13	1:H:1157:VAL:HA	2.03	0.40
1:A:112:GLU:HG2	1:A:261:GLY:O	2.21	0.40
1:A:295:ASN:OD1	1:A:299:PRO:HA	2.21	0.40
1:C:7:LYS:HE3	1:C:35:LYS:HD2	2.03	0.40
1:C:1193:LEU:HD12	1:C:1206:PHE:HE1	1.85	0.40
1:D:66:ASP:HB3	1:D:331:MET:SD	2.62	0.40
1:E:1024:ASP:OD1	1:E:1170:TYR:OH	2.40	0.40
1:G:90:LEU:HD23	1:G:305:LEU:HA	2.03	0.40
1:G:1026:PHE:CD1	1:G:1035:GLU:HG3	2.56	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	590/593 (100%)	560 (95%)	30 (5%)	0	100	100
1	B	590/593 (100%)	558 (95%)	29 (5%)	3 (0%)	29	67
1	C	590/593 (100%)	563 (95%)	26 (4%)	1 (0%)	47	80
1	D	543/593 (92%)	518 (95%)	25 (5%)	0	100	100
1	E	590/593 (100%)	566 (96%)	22 (4%)	2 (0%)	41	75
1	F	590/593 (100%)	561 (95%)	28 (5%)	1 (0%)	47	80
1	G	590/593 (100%)	560 (95%)	29 (5%)	1 (0%)	47	80
1	H	544/593 (92%)	522 (96%)	21 (4%)	1 (0%)	47	80

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
All	All	4627/4744 (98%)	4408 (95%)	210 (4%)	9 (0%)	47 80

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	1077	HIS
1	E	1080	THR
1	B	1059	THR
1	F	1059	THR
1	G	84	LYS
1	E	1079	SER
1	H	84	LYS
1	C	1059	THR
1	B	1231	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	500/501 (100%)	499 (100%)	1 (0%)	93 98
1	B	500/501 (100%)	498 (100%)	2 (0%)	91 96
1	C	500/501 (100%)	498 (100%)	2 (0%)	91 96
1	D	473/501 (94%)	471 (100%)	2 (0%)	91 96
1	E	500/501 (100%)	498 (100%)	2 (0%)	91 96
1	F	500/501 (100%)	498 (100%)	2 (0%)	91 96
1	G	500/501 (100%)	497 (99%)	3 (1%)	86 94
1	H	472/501 (94%)	471 (100%)	1 (0%)	93 98
All	All	3945/4008 (98%)	3930 (100%)	15 (0%)	91 96

All (15) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	274	LYS

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Mol	Chain	Res	Type
1	B	1040	TYR
1	B	1077	HIS
1	C	1030	ARG
1	C	1040	TYR
1	D	366	GLN
1	D	1028	ASP
1	E	1074	ARG
1	E	1236	ARG
1	F	1159	TYR
1	F	1236	ARG
1	G	274	LYS
1	G	1030	ARG
1	G	1040	TYR
1	H	156	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1077	HIS
1	C	73	GLN
1	D	1127	ASN
1	E	1212	ASN
1	G	73	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

28 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	GLC	I	1	2	12,12,12	1.17	1 (8%)	17,17,17	0.78	0
2	GLC	I	2	2	11,11,12	1.84	3 (27%)	15,15,17	1.46	2 (13%)
2	GLC	J	1	2	12,12,12	1.12	1 (8%)	17,17,17	0.94	0
2	GLC	J	2	2	11,11,12	1.51	2 (18%)	15,15,17	1.73	3 (20%)
2	GLC	K	1	2	12,12,12	1.25	1 (8%)	17,17,17	1.77	6 (35%)
2	GLC	K	2	2	11,11,12	1.49	1 (9%)	15,15,17	1.84	4 (26%)
2	GLC	L	1	2	12,12,12	1.04	1 (8%)	17,17,17	1.49	3 (17%)
2	GLC	L	2	2	11,11,12	1.66	3 (27%)	15,15,17	0.70	0
2	GLC	M	1	2	12,12,12	1.11	1 (8%)	17,17,17	1.12	1 (5%)
2	GLC	M	2	2	11,11,12	1.57	2 (18%)	15,15,17	1.14	1 (6%)
2	GLC	N	1	2	12,12,12	1.18	1 (8%)	17,17,17	1.75	3 (17%)
2	GLC	N	2	2	11,11,12	1.65	3 (27%)	15,15,17	1.10	1 (6%)
2	GLC	O	1	2	12,12,12	1.05	1 (8%)	17,17,17	1.40	3 (17%)
2	GLC	O	2	2	11,11,12	1.67	3 (27%)	15,15,17	1.79	2 (13%)
2	GLC	P	1	2	12,12,12	1.12	1 (8%)	17,17,17	0.99	1 (5%)
2	GLC	P	2	2	11,11,12	1.72	3 (27%)	15,15,17	0.95	0
2	GLC	Q	1	2	12,12,12	1.29	1 (8%)	17,17,17	1.08	1 (5%)
2	GLC	Q	2	2	11,11,12	1.62	3 (27%)	15,15,17	1.27	2 (13%)
2	GLC	R	1	2	12,12,12	1.06	1 (8%)	17,17,17	1.34	2 (11%)
2	GLC	R	2	2	11,11,12	1.79	3 (27%)	15,15,17	1.75	4 (26%)
2	GLC	S	1	2	12,12,12	1.19	1 (8%)	17,17,17	0.84	0
2	GLC	S	2	2	11,11,12	1.75	3 (27%)	15,15,17	1.28	1 (6%)
2	GLC	T	1	2	12,12,12	1.17	1 (8%)	17,17,17	1.18	3 (17%)
2	GLC	T	2	2	11,11,12	1.55	3 (27%)	15,15,17	1.03	1 (6%)
2	GLC	U	1	2	12,12,12	0.96	1 (8%)	17,17,17	2.87	8 (47%)
2	GLC	U	2	2	11,11,12	1.80	3 (27%)	15,15,17	2.07	5 (33%)
2	GLC	V	1	2	12,12,12	1.12	1 (8%)	17,17,17	0.82	0
2	GLC	V	2	2	11,11,12	1.82	3 (27%)	15,15,17	1.77	3 (20%)

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	GLC	I	1	2	-	2/2/22/22	0/1/1/1
2	GLC	I	2	2	-	2/2/19/22	0/1/1/1
2	GLC	J	1	2	-	0/2/22/22	0/1/1/1
2	GLC	J	2	2	-	1/2/19/22	0/1/1/1
2	GLC	K	1	2	-	2/2/22/22	0/1/1/1
2	GLC	K	2	2	-	1/2/19/22	0/1/1/1
2	GLC	L	1	2	-	0/2/22/22	0/1/1/1
2	GLC	L	2	2	-	1/2/19/22	0/1/1/1
2	GLC	M	1	2	-	0/2/22/22	0/1/1/1
2	GLC	M	2	2	-	1/2/19/22	0/1/1/1
2	GLC	N	1	2	-	2/2/22/22	0/1/1/1
2	GLC	N	2	2	-	2/2/19/22	0/1/1/1
2	GLC	O	1	2	-	0/2/22/22	0/1/1/1
2	GLC	O	2	2	-	0/2/19/22	0/1/1/1
2	GLC	P	1	2	-	0/2/22/22	0/1/1/1
2	GLC	P	2	2	-	0/2/19/22	0/1/1/1
2	GLC	Q	1	2	-	0/2/22/22	0/1/1/1
2	GLC	Q	2	2	-	0/2/19/22	0/1/1/1
2	GLC	R	1	2	-	2/2/22/22	0/1/1/1
2	GLC	R	2	2	-	2/2/19/22	0/1/1/1
2	GLC	S	1	2	-	1/2/22/22	0/1/1/1
2	GLC	S	2	2	-	1/2/19/22	0/1/1/1
2	GLC	T	1	2	-	2/2/22/22	0/1/1/1
2	GLC	T	2	2	-	2/2/19/22	0/1/1/1
2	GLC	U	1	2	-	2/2/22/22	0/1/1/1
2	GLC	U	2	2	-	2/2/19/22	0/1/1/1
2	GLC	V	1	2	-	0/2/22/22	0/1/1/1
2	GLC	V	2	2	-	1/2/19/22	0/1/1/1

All (52) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	V	2	GLC	O5-C1	4.49	1.50	1.43
2	R	2	GLC	O5-C1	4.19	1.50	1.43
2	U	2	GLC	O5-C1	4.13	1.50	1.43
2	S	2	GLC	O5-C1	4.09	1.50	1.43
2	O	2	GLC	O5-C1	3.97	1.50	1.43
2	I	2	GLC	O5-C1	3.94	1.50	1.43
2	L	2	GLC	O5-C1	3.87	1.49	1.43
2	P	2	GLC	O5-C1	3.86	1.49	1.43
2	Q	2	GLC	O5-C1	3.81	1.49	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	N	2	GLC	O5-C1	3.78	1.49	1.43
2	M	2	GLC	O5-C1	3.69	1.49	1.43
2	J	2	GLC	O5-C1	3.61	1.49	1.43
2	K	2	GLC	O5-C1	3.59	1.49	1.43
2	T	2	GLC	O5-C1	3.59	1.49	1.43
2	Q	1	GLC	O5-C1	3.26	1.51	1.42
2	I	2	GLC	C2-C3	-3.19	1.47	1.52
2	N	1	GLC	O5-C1	3.16	1.50	1.42
2	K	1	GLC	O5-C1	3.14	1.50	1.42
2	T	1	GLC	O5-C1	3.12	1.50	1.42
2	I	1	GLC	O5-C1	3.04	1.50	1.42
2	S	1	GLC	O5-C1	2.98	1.50	1.42
2	M	1	GLC	O5-C1	2.95	1.50	1.42
2	J	1	GLC	O5-C1	2.89	1.50	1.42
2	V	1	GLC	O5-C1	2.81	1.49	1.42
2	P	1	GLC	O5-C1	2.81	1.49	1.42
2	U	2	GLC	C2-C3	-2.80	1.48	1.52
2	R	1	GLC	O5-C1	2.79	1.49	1.42
2	S	2	GLC	O5-C5	2.78	1.49	1.43
2	I	2	GLC	O5-C5	2.75	1.49	1.43
2	O	1	GLC	O5-C1	2.74	1.49	1.42
2	L	1	GLC	O5-C1	2.70	1.49	1.42
2	R	2	GLC	O5-C5	2.67	1.48	1.43
2	P	2	GLC	C2-C3	-2.67	1.48	1.52
2	R	2	GLC	C2-C3	-2.55	1.48	1.52
2	P	2	GLC	O5-C5	2.54	1.48	1.43
2	N	2	GLC	C2-C3	-2.49	1.48	1.52
2	L	2	GLC	O5-C5	2.48	1.48	1.43
2	V	2	GLC	O5-C5	2.47	1.48	1.43
2	V	2	GLC	C2-C3	-2.45	1.48	1.52
2	U	1	GLC	O5-C1	2.43	1.49	1.42
2	M	2	GLC	C2-C3	-2.41	1.49	1.52
2	U	2	GLC	O5-C5	2.41	1.48	1.43
2	Q	2	GLC	O5-C5	2.40	1.48	1.43
2	L	2	GLC	C2-C3	-2.36	1.49	1.52
2	S	2	GLC	C2-C3	-2.32	1.49	1.52
2	N	2	GLC	O5-C5	2.32	1.48	1.43
2	O	2	GLC	C2-C3	-2.30	1.49	1.52
2	O	2	GLC	O5-C5	2.16	1.47	1.43
2	Q	2	GLC	C2-C3	-2.15	1.49	1.52
2	T	2	GLC	O5-C5	2.14	1.47	1.43
2	T	2	GLC	C2-C3	-2.10	1.49	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	J	2	GLC	O5-C5	2.00	1.47	1.43

All (60) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	U	1	GLC	O5-C5-C4	-6.60	97.70	109.69
2	O	2	GLC	C1-C2-C3	5.75	116.73	109.67
2	U	1	GLC	O4-C4-C5	-5.12	96.59	109.30
2	U	1	GLC	C4-C3-C2	4.91	119.39	110.82
2	U	2	GLC	O2-C2-C1	-4.70	99.53	109.15
2	J	2	GLC	C1-C2-C3	4.42	115.10	109.67
2	K	2	GLC	C1-C2-C3	4.25	114.89	109.67
2	V	2	GLC	C1-O5-C5	3.97	117.56	112.19
2	N	1	GLC	C1-C2-C3	3.92	118.45	110.31
2	N	1	GLC	O5-C1-C2	3.74	116.95	110.28
2	L	1	GLC	C4-C3-C2	3.68	117.24	110.82
2	V	2	GLC	C1-C2-C3	3.63	114.13	109.67
2	R	2	GLC	C1-O5-C5	3.62	117.09	112.19
2	S	2	GLC	C1-O5-C5	3.49	116.93	112.19
2	I	2	GLC	C1-C2-C3	-3.42	105.47	109.67
2	U	1	GLC	O2-C2-C1	-3.40	101.28	109.16
2	U	2	GLC	C1-C2-C3	3.29	113.71	109.67
2	U	2	GLC	O2-C2-C3	-3.28	103.57	110.14
2	K	2	GLC	C2-C3-C4	3.21	116.45	110.89
2	K	1	GLC	C3-C4-C5	3.19	115.92	110.24
2	U	1	GLC	C1-O5-C5	-3.06	107.89	113.66
2	J	2	GLC	C1-O5-C5	-3.02	108.10	112.19
2	R	2	GLC	C3-C4-C5	2.97	115.54	110.24
2	K	2	GLC	C1-O5-C5	-2.94	108.20	112.19
2	K	1	GLC	O5-C1-C2	2.93	115.51	110.28
2	R	1	GLC	C4-C3-C2	2.93	115.93	110.82
2	R	2	GLC	O5-C5-C6	2.84	111.66	107.20
2	O	1	GLC	C1-O5-C5	-2.78	108.42	113.66
2	K	1	GLC	C4-C3-C2	2.77	115.66	110.82
2	T	2	GLC	C1-O5-C5	-2.76	108.45	112.19
2	N	1	GLC	O4-C4-C3	2.76	116.73	110.35
2	O	1	GLC	C4-C3-C2	2.75	115.63	110.82
2	O	1	GLC	C1-C2-C3	2.69	115.89	110.31
2	U	2	GLC	O5-C1-C2	2.68	114.91	110.77
2	Q	2	GLC	C1-C2-C3	2.68	112.96	109.67
2	O	2	GLC	O5-C1-C2	2.68	114.90	110.77
2	U	1	GLC	C1-C2-C3	2.62	115.76	110.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	K	1	GLC	O5-C5-C4	2.61	114.44	109.69
2	Q	1	GLC	O5-C5-C4	2.52	114.27	109.69
2	V	2	GLC	O5-C1-C2	2.51	114.65	110.77
2	N	2	GLC	C1-C2-C3	2.51	112.75	109.67
2	J	2	GLC	O5-C5-C6	2.42	111.00	107.20
2	U	1	GLC	O5-C5-C6	2.40	112.41	106.44
2	K	2	GLC	O5-C5-C6	2.34	110.87	107.20
2	L	1	GLC	C1-O5-C5	-2.32	109.28	113.66
2	L	1	GLC	C1-C2-C3	2.32	115.12	110.31
2	R	2	GLC	O5-C1-C2	2.29	114.31	110.77
2	U	2	GLC	C1-O5-C5	2.27	115.27	112.19
2	T	1	GLC	C4-C3-C2	2.23	114.72	110.82
2	K	1	GLC	C1-C2-C3	2.23	114.94	110.31
2	Q	2	GLC	O5-C5-C6	2.21	110.67	107.20
2	T	1	GLC	O5-C1-C2	2.20	114.22	110.28
2	P	1	GLC	O5-C5-C4	2.18	113.65	109.69
2	K	1	GLC	O5-C5-C6	2.18	111.85	106.44
2	I	2	GLC	C6-C5-C4	-2.17	107.91	113.00
2	U	1	GLC	O3-C3-C2	-2.17	105.34	110.35
2	M	2	GLC	C1-C2-C3	2.15	112.31	109.67
2	R	1	GLC	C3-C4-C5	2.06	113.91	110.24
2	T	1	GLC	C3-C4-C5	2.04	113.88	110.24
2	M	1	GLC	C4-C3-C2	2.02	114.35	110.82

There are no chirality outliers.

All (29) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	I	2	GLC	C4-C5-C6-O6
2	T	2	GLC	C4-C5-C6-O6
2	U	2	GLC	O5-C5-C6-O6
2	I	2	GLC	O5-C5-C6-O6
2	T	1	GLC	C4-C5-C6-O6
2	N	2	GLC	C4-C5-C6-O6
2	U	2	GLC	C4-C5-C6-O6
2	N	1	GLC	O5-C5-C6-O6
2	T	2	GLC	O5-C5-C6-O6
2	T	1	GLC	O5-C5-C6-O6
2	U	1	GLC	O5-C5-C6-O6
2	K	1	GLC	O5-C5-C6-O6
2	N	2	GLC	O5-C5-C6-O6
2	N	1	GLC	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
2	U	1	GLC	C4-C5-C6-O6
2	R	1	GLC	O5-C5-C6-O6
2	I	1	GLC	C4-C5-C6-O6
2	R	2	GLC	C4-C5-C6-O6
2	J	2	GLC	O5-C5-C6-O6
2	M	2	GLC	O5-C5-C6-O6
2	K	2	GLC	O5-C5-C6-O6
2	S	2	GLC	O5-C5-C6-O6
2	K	1	GLC	C4-C5-C6-O6
2	I	1	GLC	O5-C5-C6-O6
2	V	2	GLC	O5-C5-C6-O6
2	L	2	GLC	O5-C5-C6-O6
2	S	1	GLC	O5-C5-C6-O6
2	R	2	GLC	O5-C5-C6-O6
2	R	1	GLC	C4-C5-C6-O6

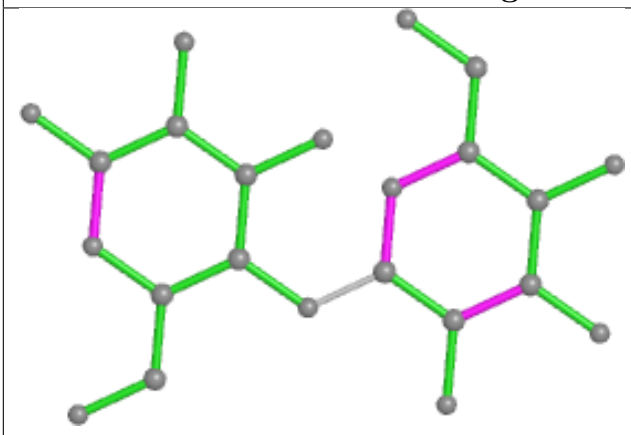
There are no ring outliers.

18 monomers are involved in 39 short contacts:

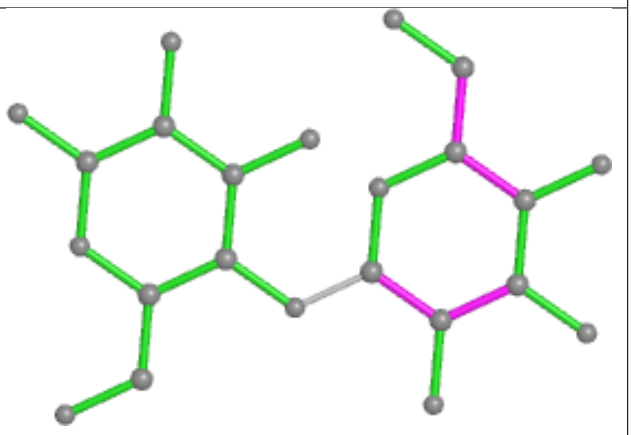
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	M	1	GLC	9	0
2	P	2	GLC	1	0
2	V	1	GLC	4	0
2	J	2	GLC	1	0
2	R	1	GLC	2	0
2	K	1	GLC	1	0
2	T	1	GLC	1	0
2	U	1	GLC	4	0
2	T	2	GLC	1	0
2	S	1	GLC	1	0
2	U	2	GLC	4	0
2	V	2	GLC	1	0
2	N	1	GLC	1	0
2	R	2	GLC	1	0
2	N	2	GLC	6	0
2	I	2	GLC	1	0
2	K	2	GLC	2	0
2	S	2	GLC	2	0

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

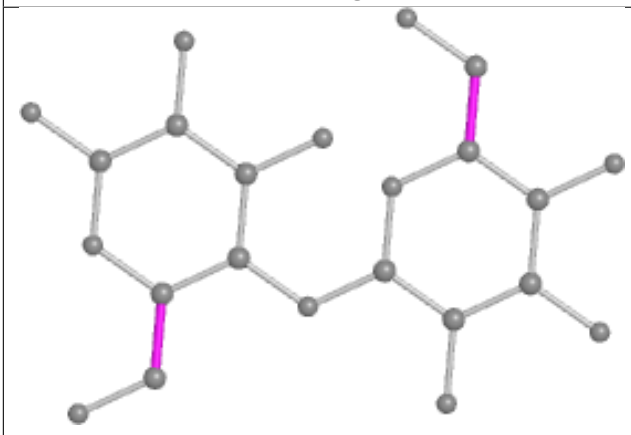
Oligosaccharide Chain I



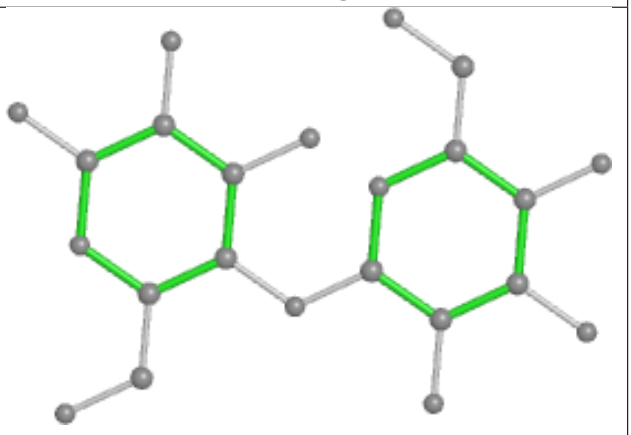
Bond lengths



Bond angles

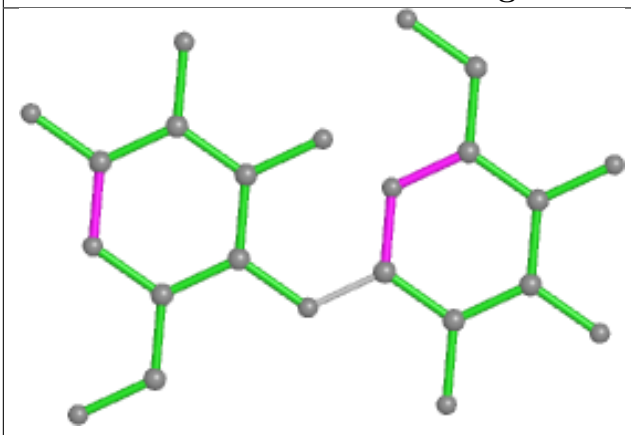


Torsions

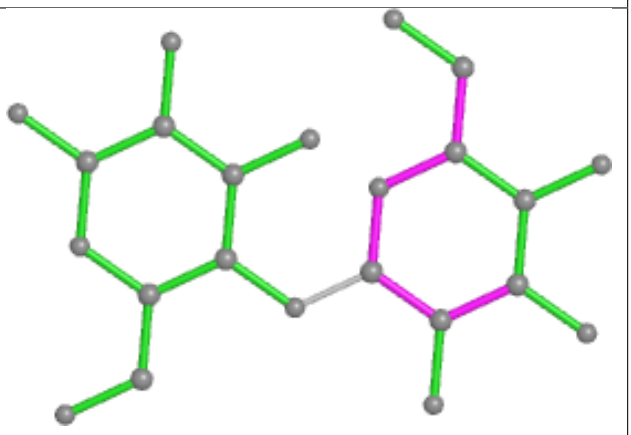


Rings

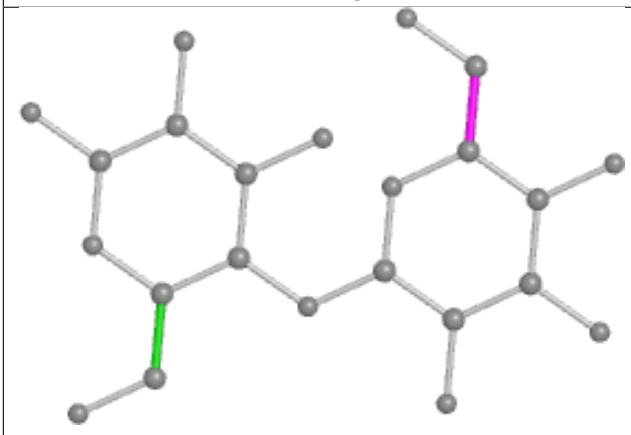
Oligosaccharide Chain J



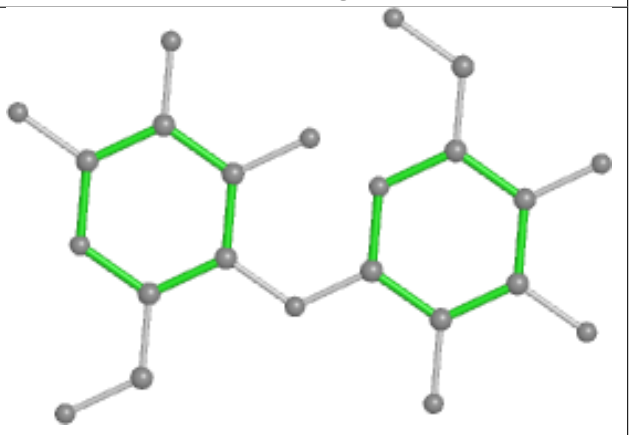
Bond lengths



Bond angles

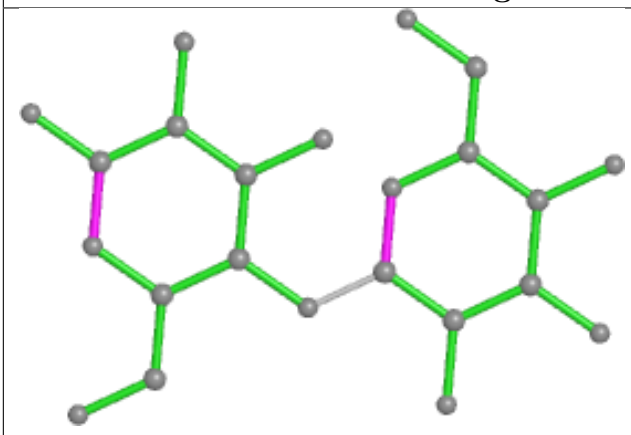


Torsions

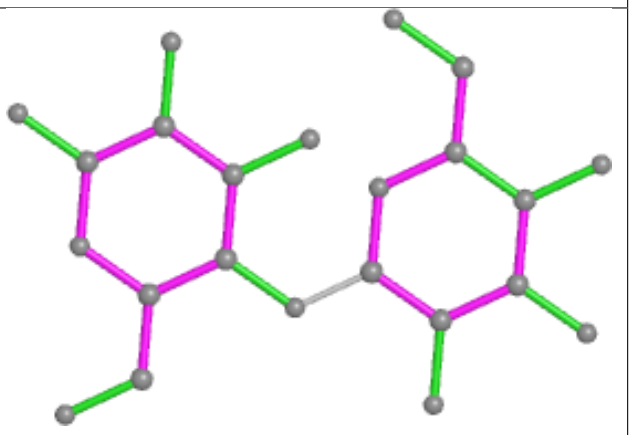


Rings

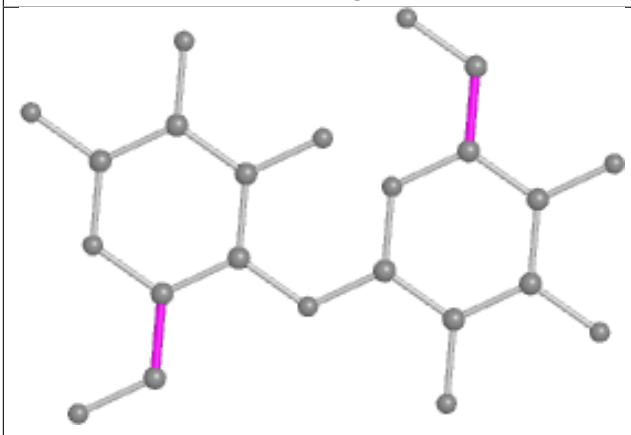
Oligosaccharide Chain K



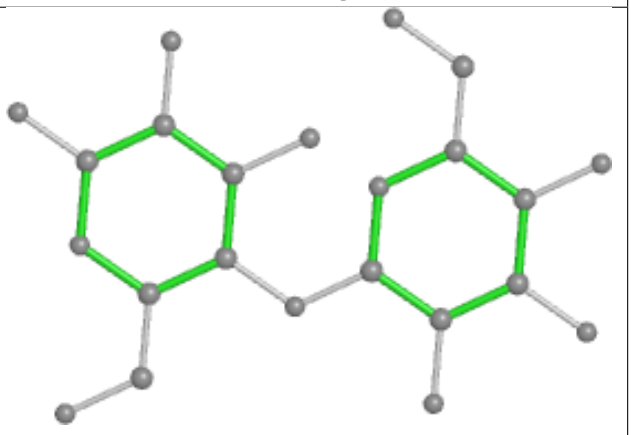
Bond lengths



Bond angles

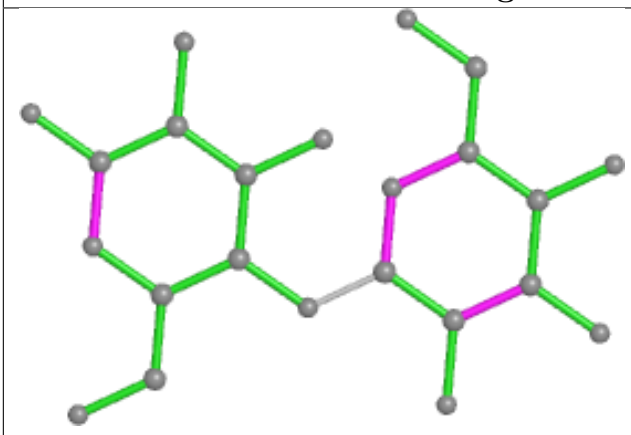


Torsions

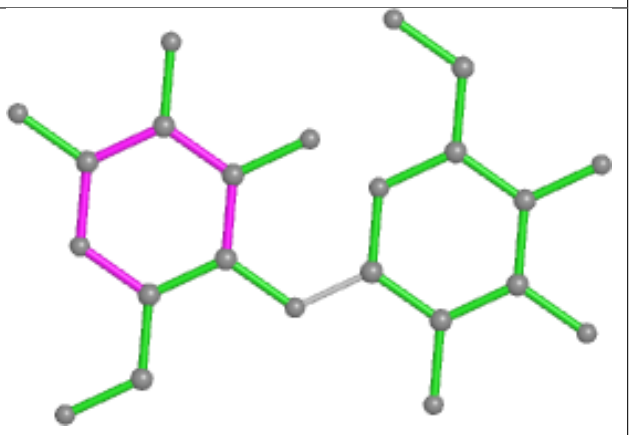


Rings

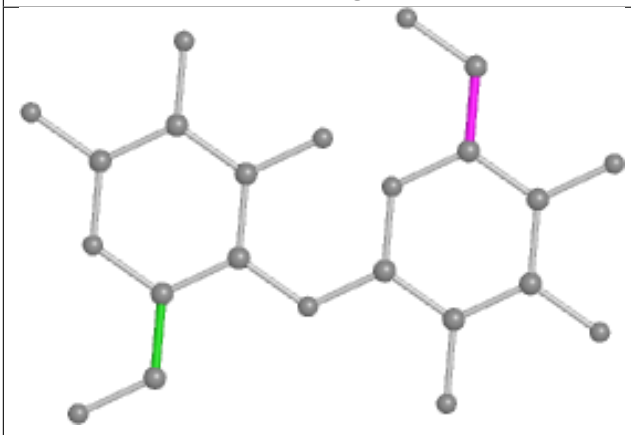
Oligosaccharide Chain L



Bond lengths



Bond angles



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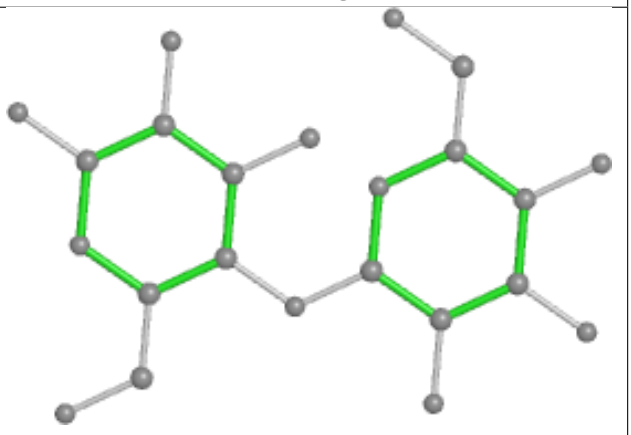
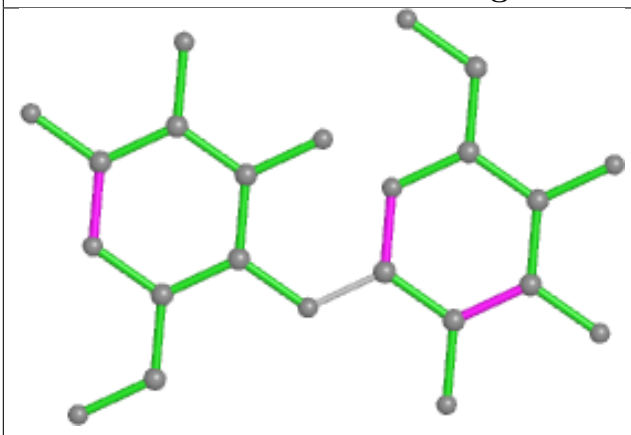
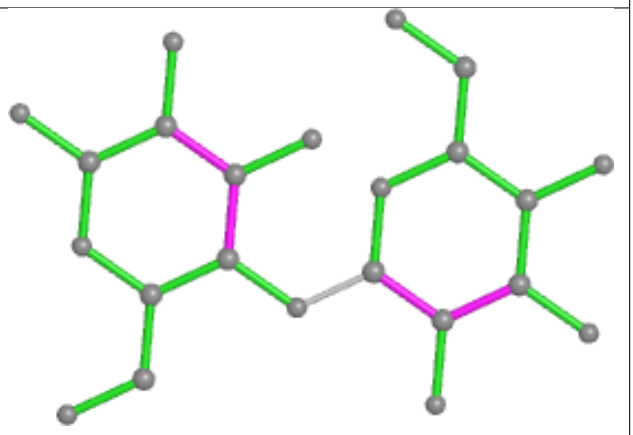


Rings

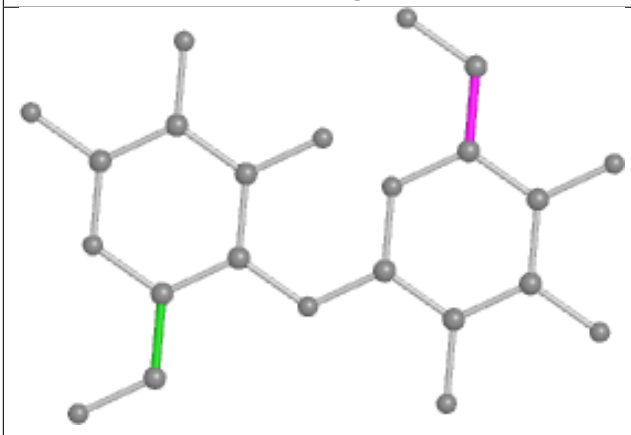
Oligosaccharide Chain M



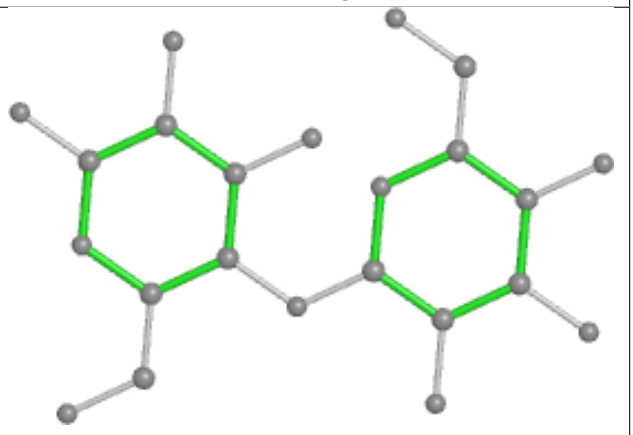
Bond lengths



Bond angles

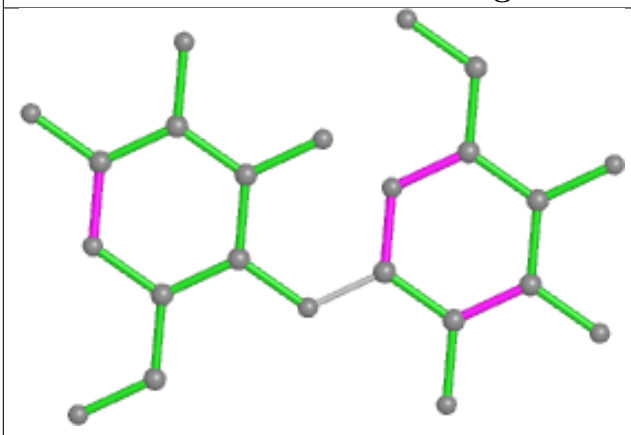


Torsions

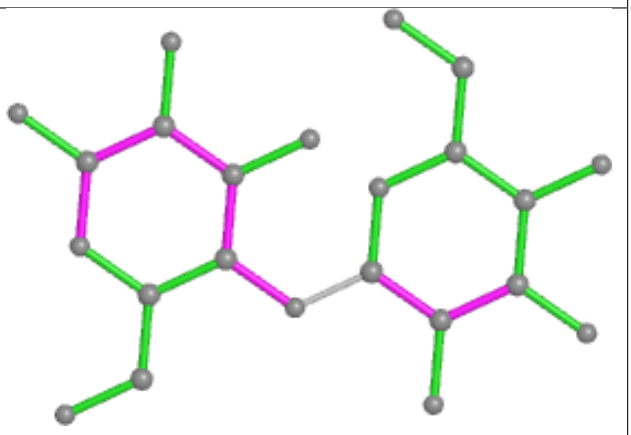


Rings

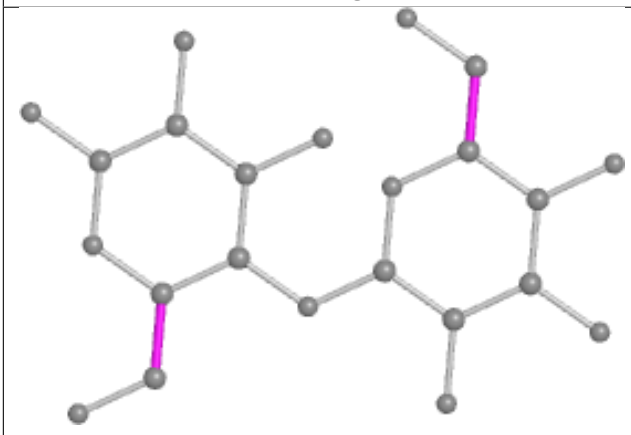
Oligosaccharide Chain N



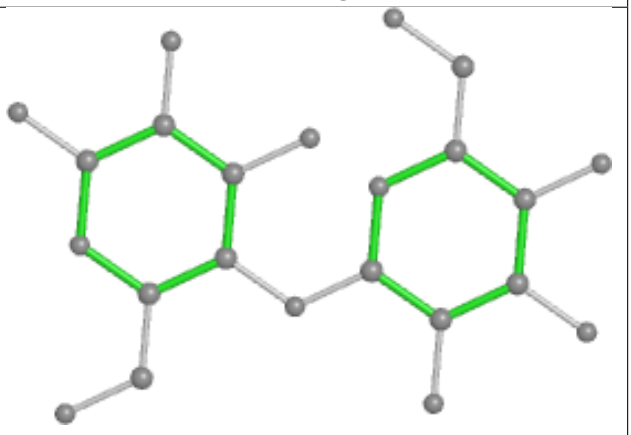
Bond lengths



Bond angles

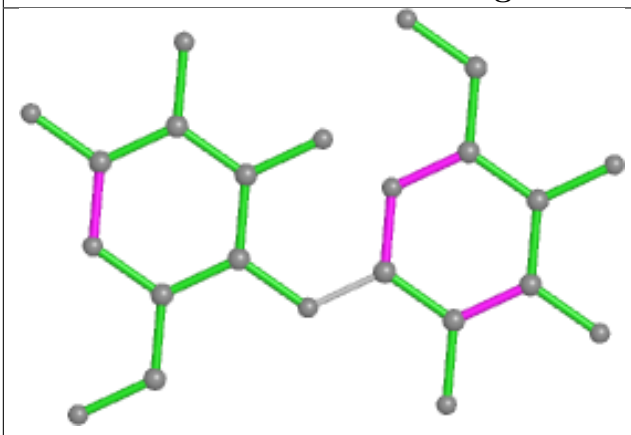


Torsions

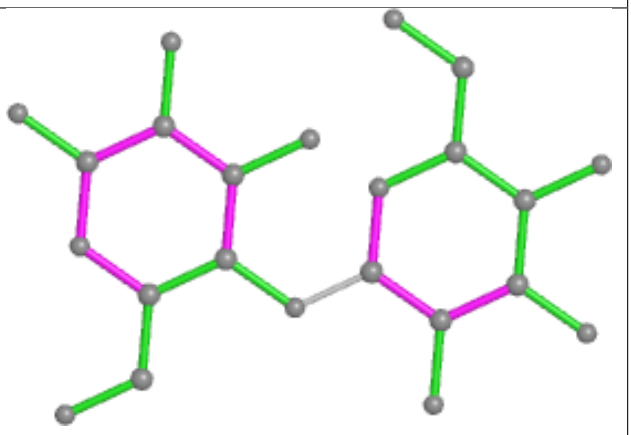


Rings

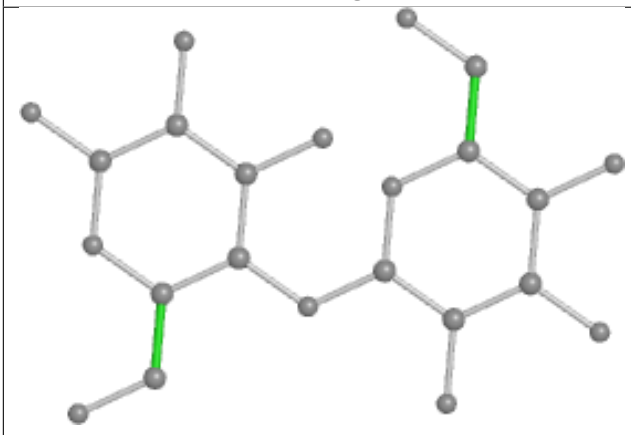
Oligosaccharide Chain O



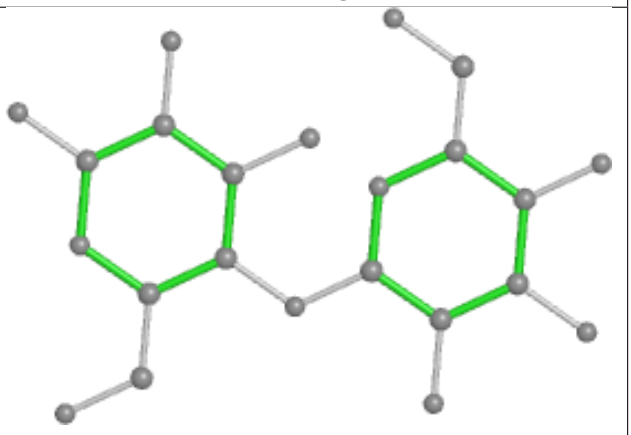
Bond lengths



Bond angles

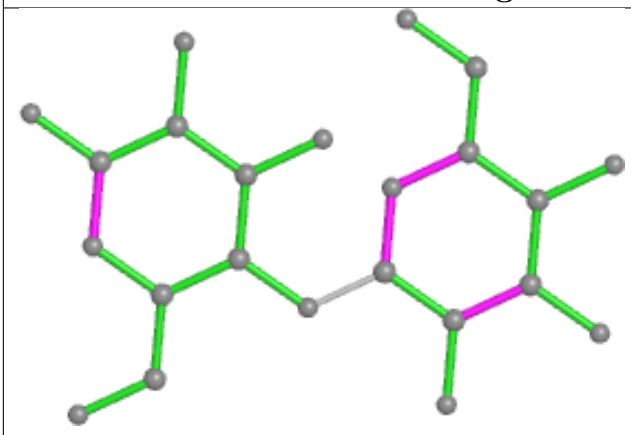


Torsions

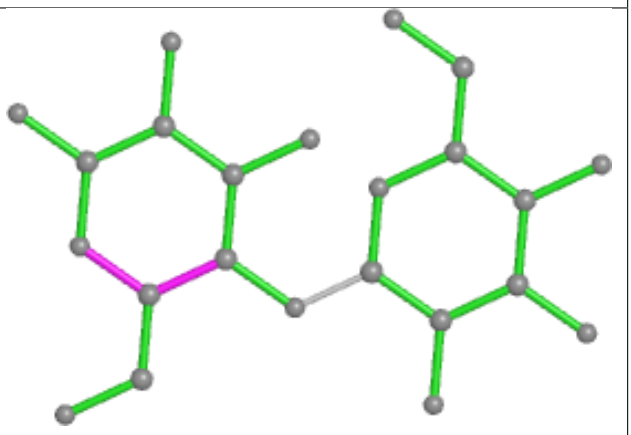


Rings

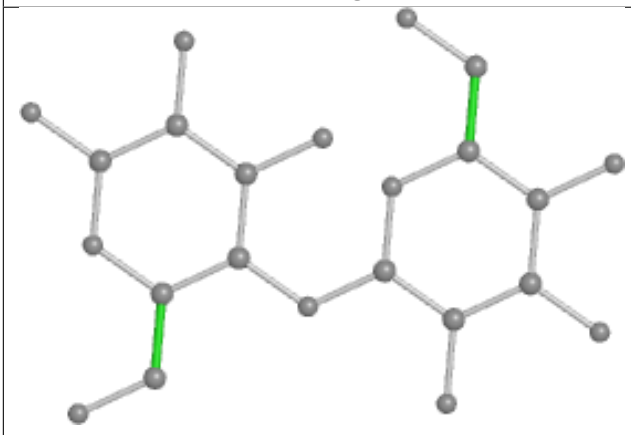
Oligosaccharide Chain P



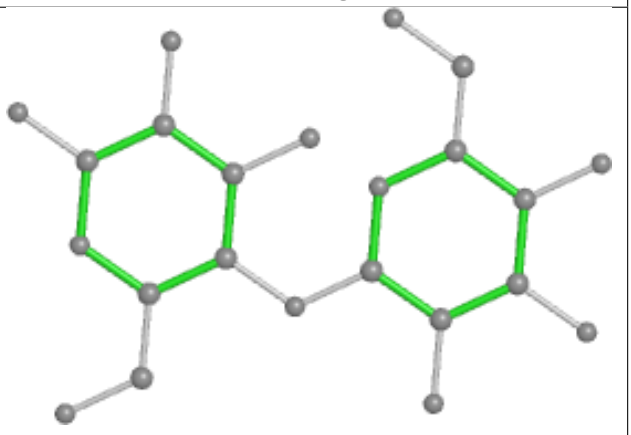
Bond lengths



Bond angles

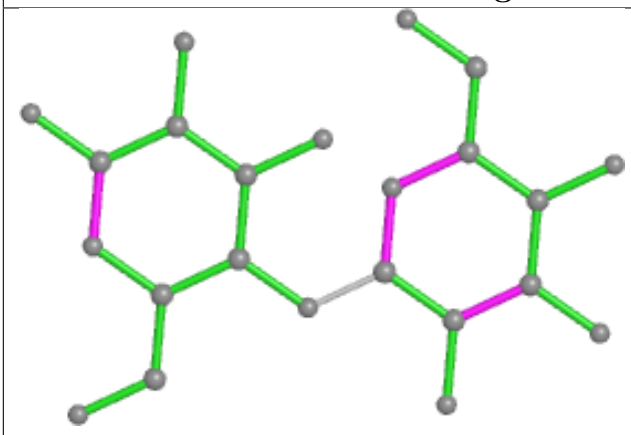


Torsions

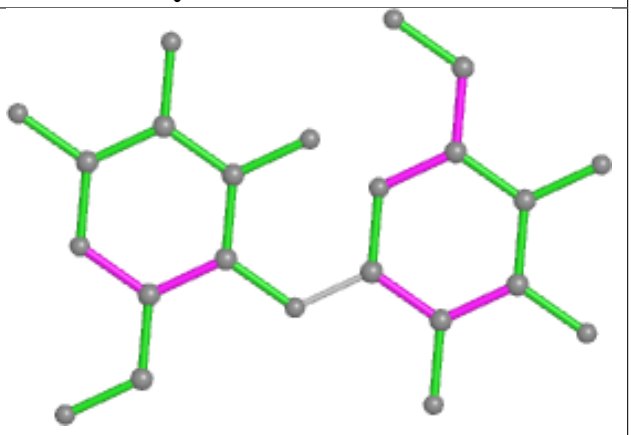


Rings

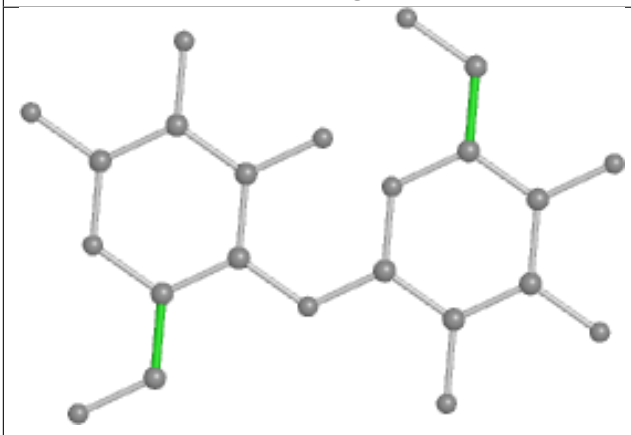
Oligosaccharide Chain Q



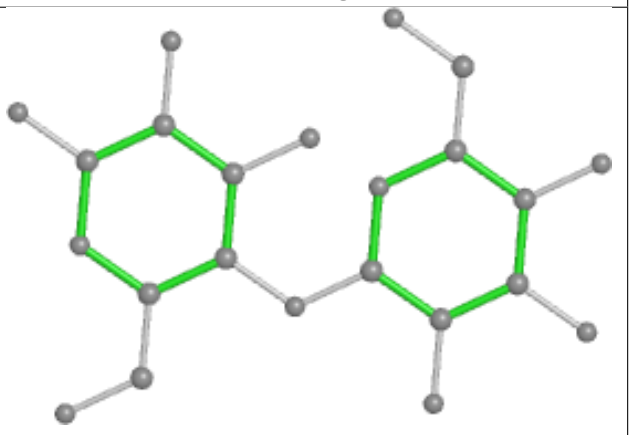
Bond lengths



Bond angles

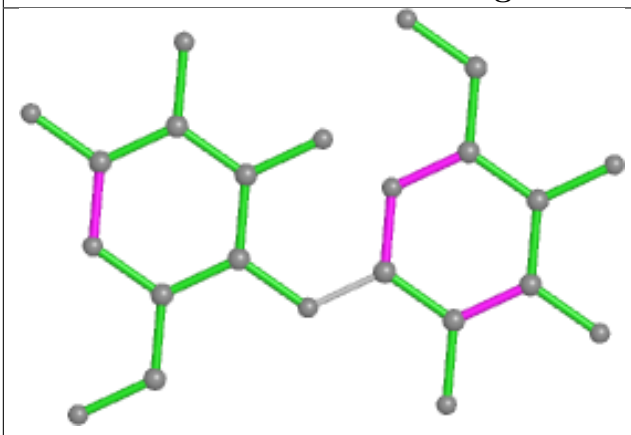


Torsions

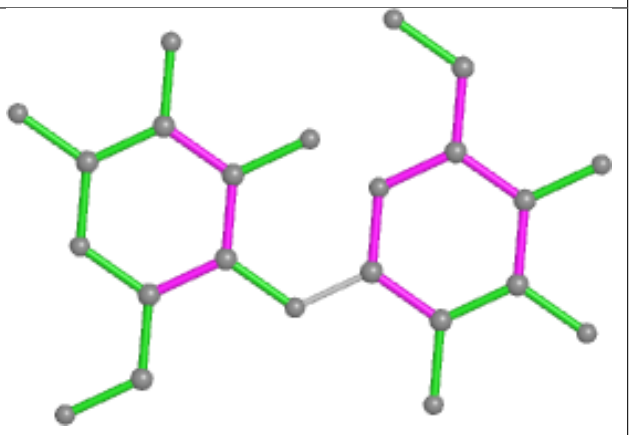


Rings

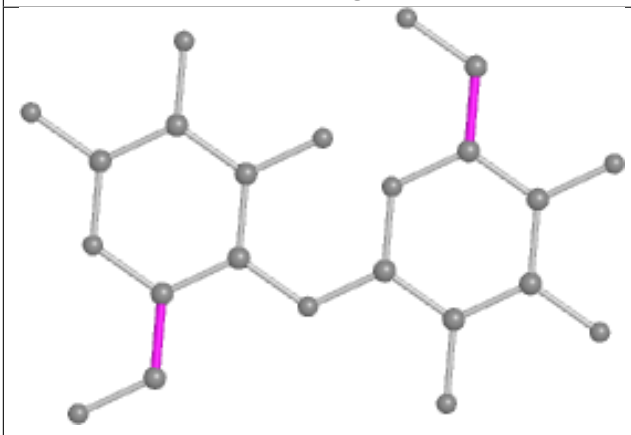
Oligosaccharide Chain R



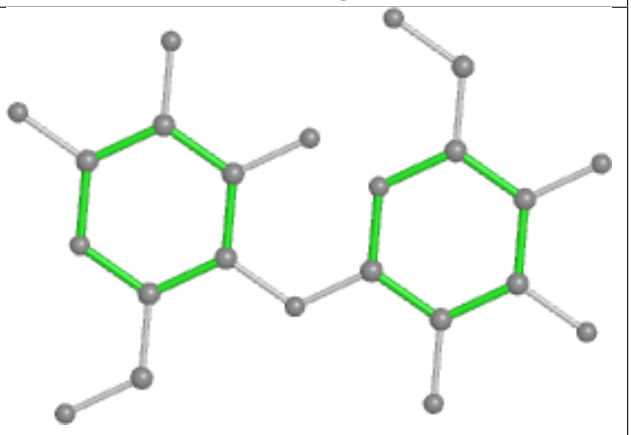
Bond lengths



Bond angles

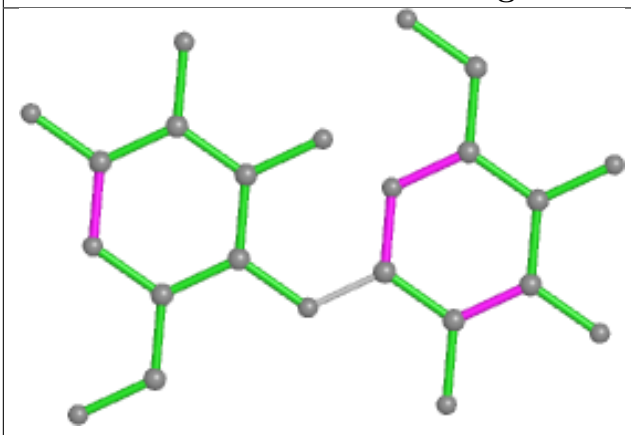


Torsions

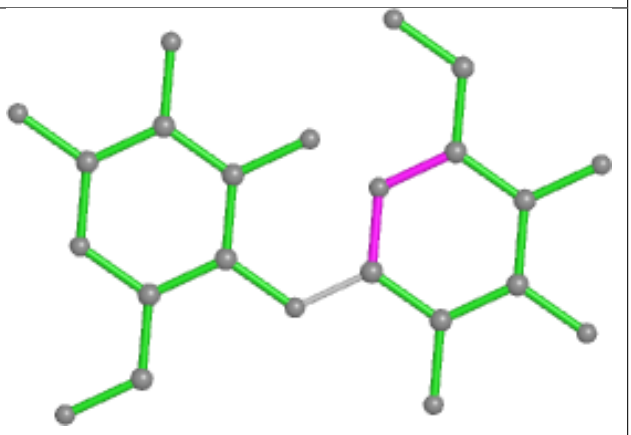


Rings

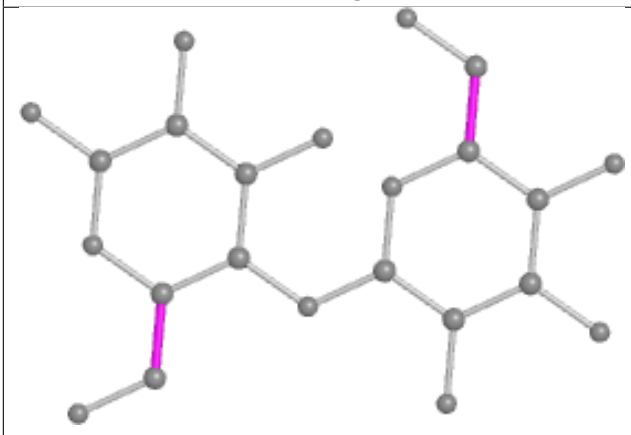
Oligosaccharide Chain S



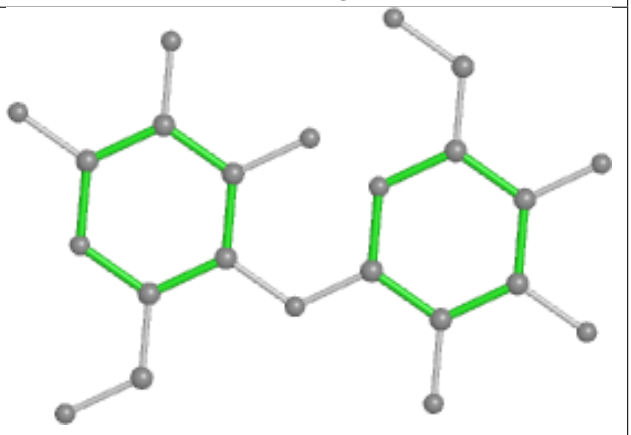
Bond lengths



Bond angles

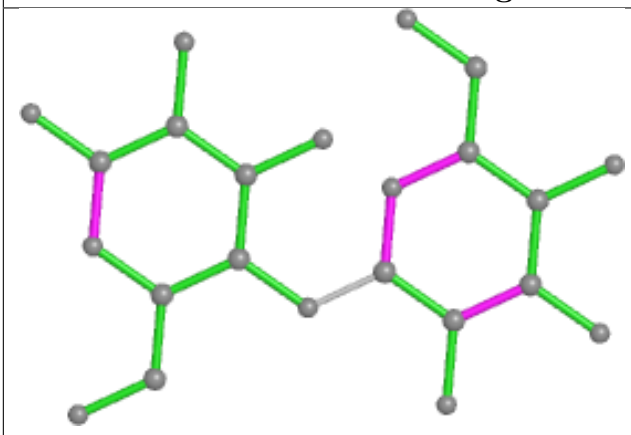


Torsions

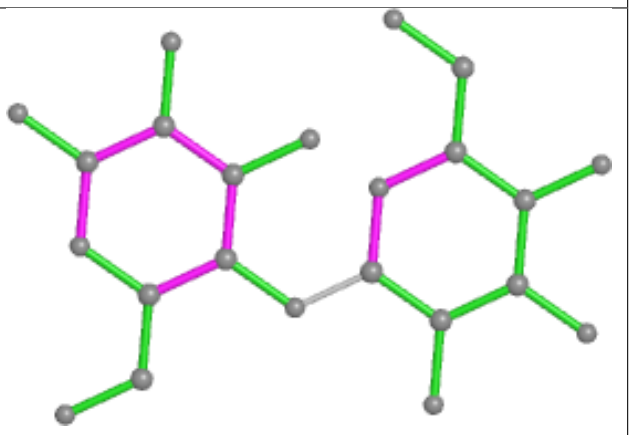


Rings

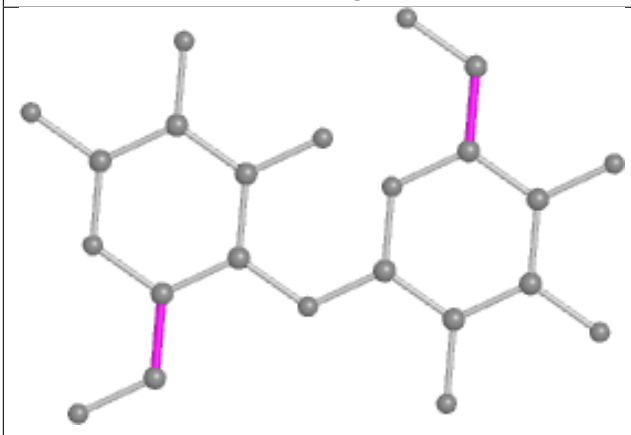
Oligosaccharide Chain T



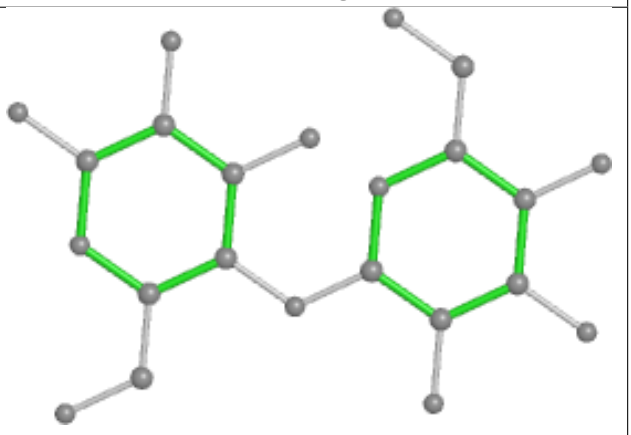
Bond lengths



Bond angles

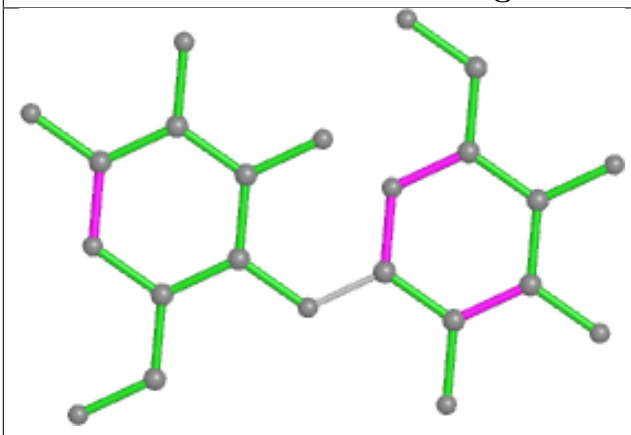


Torsions

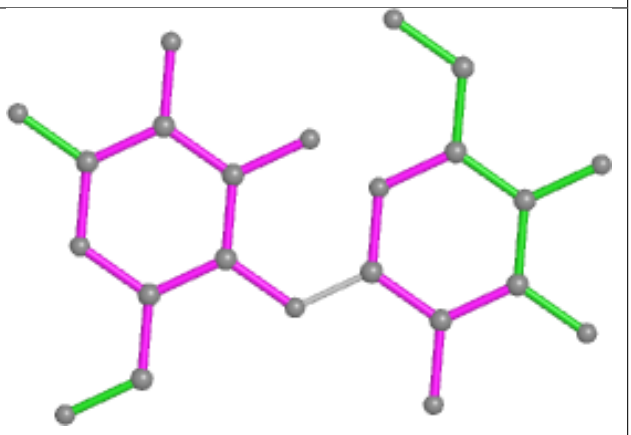


Rings

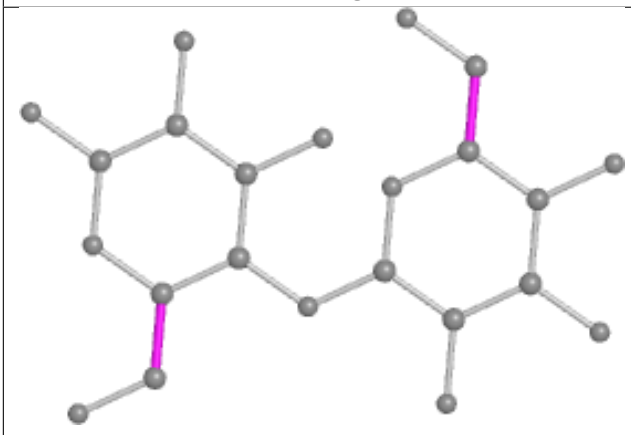
Oligosaccharide Chain U



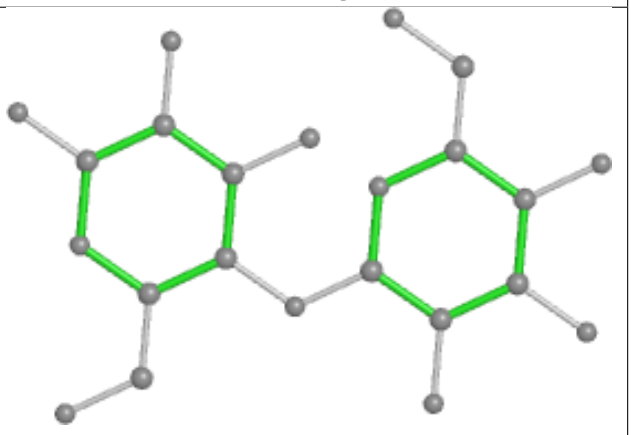
Bond lengths



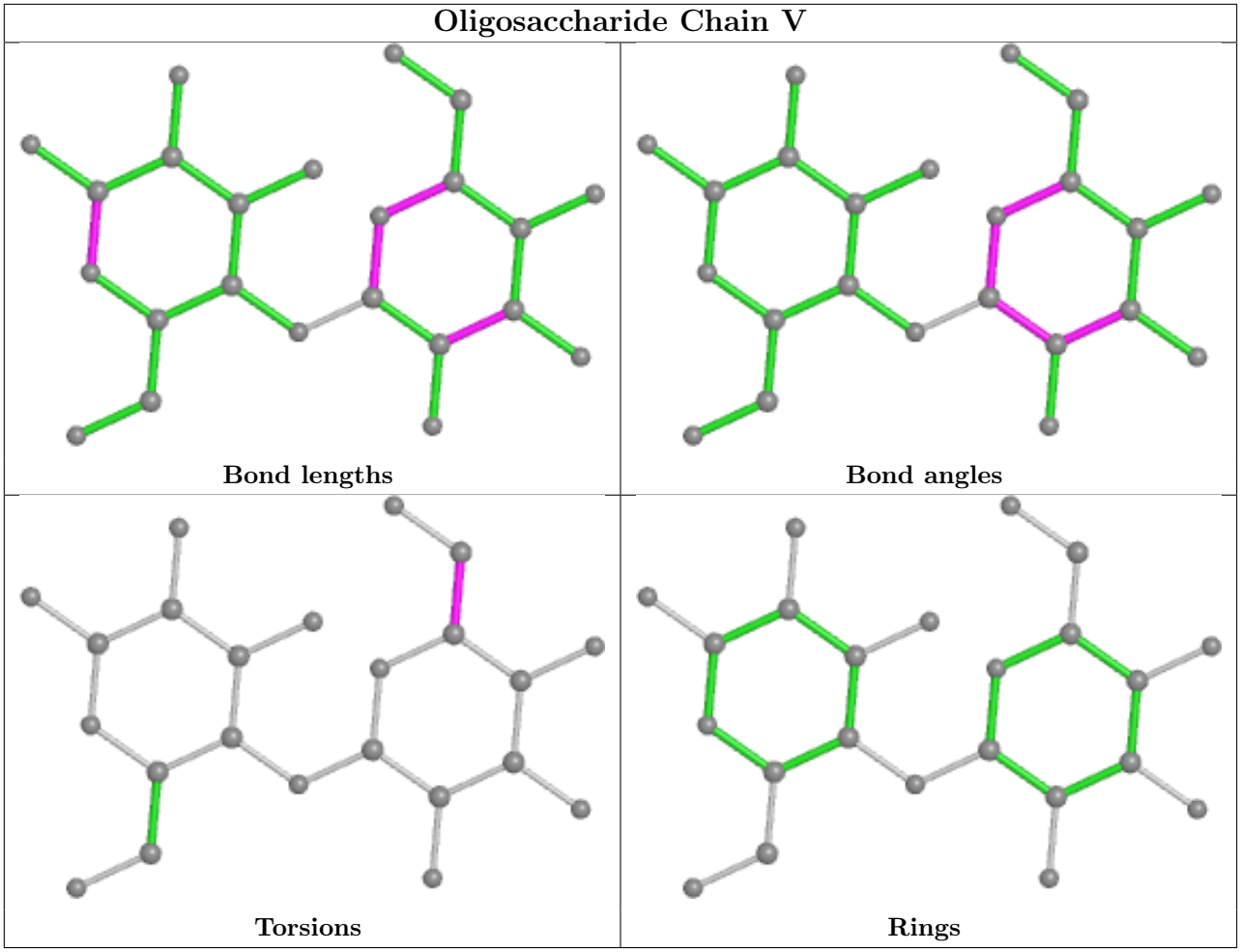
Bond angles



Torsions



Rings



5.6 Ligand geometry (i)

Of 16 ligands modelled in this entry, 8 are monoatomic - leaving 8 for Mogul analysis.

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	$\#\|Z\| > 2$
4	CAC	F	1302	3	0,4,4	-	-	0,6,6	-	-
4	CAC	A	1302	3	0,4,4	-	-	0,6,6	-	-
4	CAC	H	1302	3	0,4,4	-	-	0,6,6	-	-
4	CAC	D	1302	3	0,4,4	-	-	0,6,6	-	-
4	CAC	C	1302	3	0,4,4	-	-	0,6,6	-	-
4	CAC	B	1302	3	0,4,4	-	-	0,6,6	-	-

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	CAC	G	1302	3	0,4,4	-	-	0,6,6	-	-
4	CAC	E	1302	3	0,4,4	-	-	0,6,6	-	-

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.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	E	1302	CAC	1	0

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
1	A	592/593 (99%)	-0.05	11 (1%) 66 53	76, 119, 160, 218	0
1	B	592/593 (99%)	-0.12	11 (1%) 66 53	59, 123, 189, 221	0
1	C	592/593 (99%)	-0.13	9 (1%) 73 61	63, 103, 154, 188	0
1	D	557/593 (93%)	0.35	55 (9%) 7 6	81, 199, 253, 274	0
1	E	592/593 (99%)	0.06	20 (3%) 45 34	87, 125, 168, 242	0
1	F	592/593 (99%)	-0.11	14 (2%) 59 45	62, 119, 182, 220	0
1	G	592/593 (99%)	-0.14	5 (0%) 86 75	64, 104, 151, 184	0
1	H	558/593 (94%)	0.28	47 (8%) 11 9	81, 198, 258, 279	0
All	All	4667/4744 (98%)	0.01	172 (3%) 41 30	59, 125, 234, 279	0

All (172) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	109	ILE	8.2
1	H	301	GLY	7.4
1	D	302	ALA	7.2
1	H	302	ALA	6.9
1	D	110	ALA	6.7
1	H	286	LEU	6.5
1	D	127	PRO	6.0
1	H	111	VAL	6.0
1	D	21	LEU	5.7
1	D	193	LEU	5.7
1	D	301	GLY	5.7
1	H	112	GLU	5.6
1	D	111	VAL	5.4
1	H	285	LEU	5.3
1	D	300	LEU	5.3
1	D	108	PRO	5.2

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Mol	Chain	Res	Type	RSRZ
1	D	133	ILE	5.2
1	H	161	LEU	5.1
1	D	107	TYR	5.1
1	H	303	VAL	4.9
1	D	16	LYS	4.8
1	H	127	PRO	4.8
1	D	161	LEU	4.8
1	D	17	GLY	4.8
1	H	287	THR	4.7
1	D	159	TRP	4.6
1	E	1235	TRP	4.6
1	D	184	VAL	4.6
1	H	1092	PRO	4.5
1	D	256	SER	4.3
1	H	1063	ALA	4.2
1	H	109	ILE	4.1
1	D	1086	TRP	4.1
1	H	300	LEU	4.1
1	B	260	VAL	4.0
1	B	261	GLY	4.0
1	H	304	ALA	3.9
1	D	303	VAL	3.9
1	E	170	PHE	3.8
1	E	113	ALA	3.8
1	B	351	ALA	3.6
1	H	110	ALA	3.6
1	D	162	ILE	3.6
1	B	113	ALA	3.5
1	F	1077	HIS	3.5
1	G	370	SER	3.4
1	H	1086	TRP	3.4
1	D	215	GLU	3.3
1	D	289	GLU	3.3
1	D	80	ILE	3.3
1	G	127	PRO	3.1
1	A	77	LEU	3.1
1	H	38	VAL	3.1
1	C	246	THR	3.1
1	E	77	LEU	3.1
1	H	256	SER	3.1
1	F	193	LEU	3.1
1	D	267	ILE	3.1

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Mol	Chain	Res	Type	RSRZ
1	H	16	LYS	3.1
1	H	21	LEU	3.0
1	A	113	ALA	3.0
1	D	1063	ALA	3.0
1	E	1234	ALA	3.0
1	C	1053	SER	3.0
1	H	1064	VAL	3.0
1	H	122	LEU	3.0
1	A	1200	GLN	3.0
1	E	1117	ALA	2.9
1	H	130	TRP	2.9
1	H	184	VAL	2.9
1	C	370	SER	2.9
1	H	13	ASN	2.9
1	E	114	LEU	2.9
1	D	216	ALA	2.8
1	E	277	ALA	2.8
1	G	148	LEU	2.8
1	E	179	ILE	2.8
1	H	255	PRO	2.8
1	E	1115	TYR	2.8
1	F	220	LYS	2.8
1	C	68	PHE	2.7
1	D	304	ALA	2.7
1	D	36	VAL	2.7
1	D	1079	SER	2.7
1	H	1091	SER	2.7
1	F	114	LEU	2.7
1	D	1235	TRP	2.7
1	D	3	ILE	2.7
1	A	1234	ALA	2.6
1	D	122	LEU	2.6
1	H	17	GLY	2.6
1	F	1049	LYS	2.6
1	D	1042	ILE	2.6
1	D	1070	PHE	2.6
1	D	62	PHE	2.5
1	A	1235	TRP	2.5
1	E	1200	GLN	2.5
1	D	13	ASN	2.5
1	F	260	VAL	2.5
1	H	143	LYS	2.5

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Mol	Chain	Res	Type	RSRZ
1	C	1054	SER	2.5
1	E	261	GLY	2.5
1	B	262	VAL	2.5
1	A	1228	LEU	2.5
1	F	113	ALA	2.5
1	H	1042	ILE	2.5
1	D	264	SER	2.5
1	D	1092	PRO	2.4
1	D	130	TRP	2.4
1	E	68	PHE	2.4
1	A	114	LEU	2.4
1	G	149	MET	2.4
1	D	15	ASP	2.4
1	D	192	GLY	2.4
1	F	196	LEU	2.4
1	D	38	VAL	2.4
1	H	61	ILE	2.4
1	H	59	ASP	2.4
1	H	157	PHE	2.4
1	F	1141	ILE	2.3
1	D	106	ALA	2.3
1	H	107	TYR	2.3
1	H	177	TYR	2.3
1	E	169	ALA	2.3
1	D	213	ILE	2.3
1	E	259	PHE	2.3
1	F	130	TRP	2.3
1	H	62	PHE	2.3
1	E	62	PHE	2.3
1	C	1228	LEU	2.3
1	F	108	PRO	2.3
1	H	314	LYS	2.3
1	C	1203	LEU	2.3
1	B	158	THR	2.3
1	D	1228	LEU	2.3
1	E	1114	ILE	2.3
1	F	157	PHE	2.2
1	H	142	ALA	2.2
1	B	221	GLY	2.2
1	D	79	GLU	2.2
1	H	281	LEU	2.2
1	C	127	PRO	2.2

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Mol	Chain	Res	Type	RSRZ
1	D	186	ASN	2.2
1	H	164	ALA	2.1
1	D	163	ALA	2.1
1	H	108	PRO	2.1
1	D	112	GLU	2.1
1	H	1235	TRP	2.1
1	E	1228	LEU	2.1
1	A	267	ILE	2.1
1	G	369	SER	2.1
1	B	157	PHE	2.1
1	H	3	ILE	2.1
1	B	148	LEU	2.1
1	H	233	TRP	2.1
1	A	68	PHE	2.1
1	D	59	ASP	2.1
1	H	308	TYR	2.1
1	A	157	PHE	2.1
1	B	1141	ILE	2.1
1	D	82	PRO	2.1
1	E	16	LYS	2.1
1	D	78	ALA	2.1
1	H	1208	LEU	2.1
1	B	112	GLU	2.0
1	F	261	GLY	2.0
1	F	1235	TRP	2.0
1	E	65	HIS	2.0
1	C	1234	ALA	2.0
1	A	1115	TYR	2.0
1	D	276	LEU	2.0
1	D	158	THR	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)

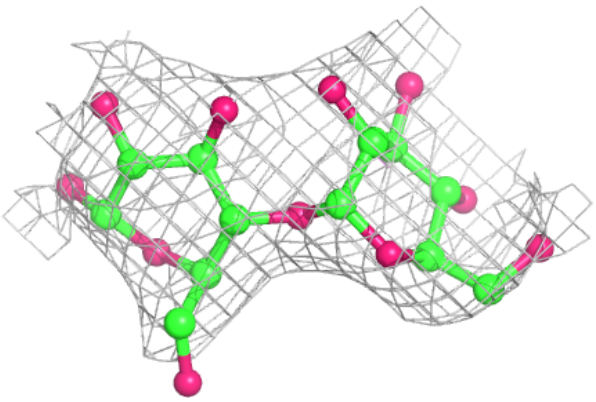
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

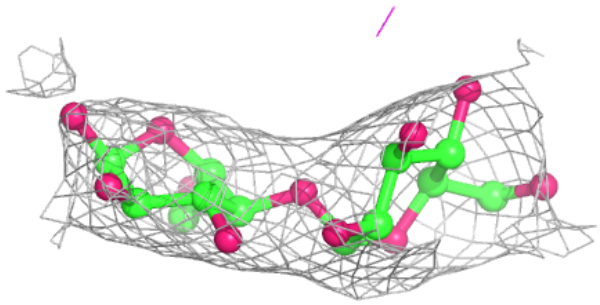
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	GLC	U	2	11/12	0.74	0.28	127,200,236,238	0
2	GLC	V	1	12/12	0.80	0.33	152,182,244,295	0
2	GLC	O	2	11/12	0.81	0.21	114,155,184,199	0
2	GLC	R	2	11/12	0.81	0.35	118,152,169,170	0
2	GLC	U	1	12/12	0.83	0.13	182,227,236,236	0
2	GLC	N	2	11/12	0.86	0.22	180,215,239,257	0
2	GLC	P	2	11/12	0.87	0.44	110,135,146,165	0
2	GLC	V	2	11/12	0.87	0.22	158,173,189,193	0
2	GLC	N	1	12/12	0.88	0.23	167,214,228,229	0
2	GLC	O	1	12/12	0.89	0.26	153,173,206,207	0
2	GLC	T	1	12/12	0.89	0.21	84,121,139,143	0
2	GLC	J	2	11/12	0.90	0.18	75,136,149,149	0
2	GLC	T	2	11/12	0.90	0.23	79,123,149,154	0
2	GLC	M	2	11/12	0.90	0.27	82,109,137,147	0
2	GLC	J	1	12/12	0.91	0.35	93,123,142,146	0
2	GLC	K	1	12/12	0.92	0.23	118,135,151,164	0
2	GLC	K	2	11/12	0.92	0.20	45,117,133,137	0
2	GLC	I	2	11/12	0.92	0.31	114,129,134,138	0
2	GLC	M	1	12/12	0.93	0.21	88,118,132,133	0
2	GLC	R	1	12/12	0.93	0.16	82,110,129,144	0
2	GLC	P	1	12/12	0.93	0.40	84,115,138,146	0
2	GLC	I	1	12/12	0.94	0.39	87,113,141,141	0
2	GLC	L	2	11/12	0.94	0.19	63,104,120,123	0
2	GLC	S	1	12/12	0.94	0.19	70,141,153,161	0
2	GLC	Q	2	11/12	0.95	0.24	65,123,145,157	0
2	GLC	Q	1	12/12	0.95	0.41	115,137,160,163	0
2	GLC	L	1	12/12	0.96	0.20	65,104,112,121	0
2	GLC	S	2	11/12	0.96	0.16	40,97,126,138	0

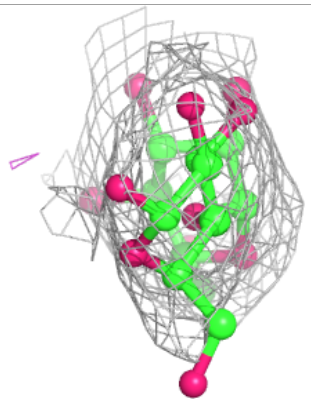
The following is a graphical depiction of the model fit to experimental electron density for oligosaccharide. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around Chain I:

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

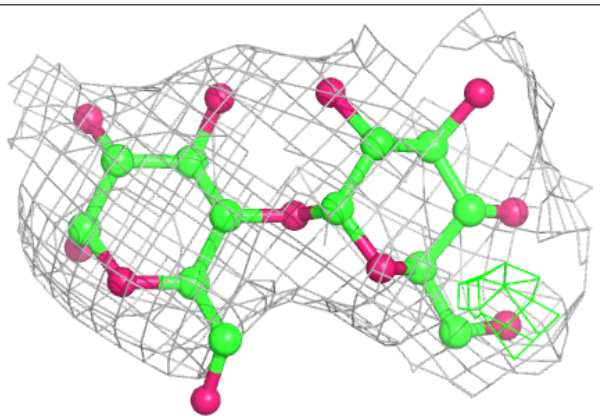


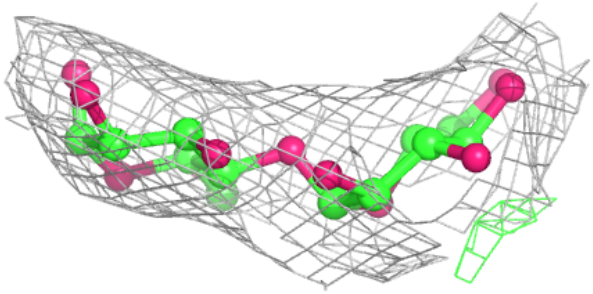


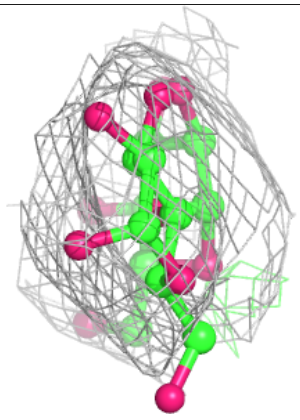


Electron density around Chain J:

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

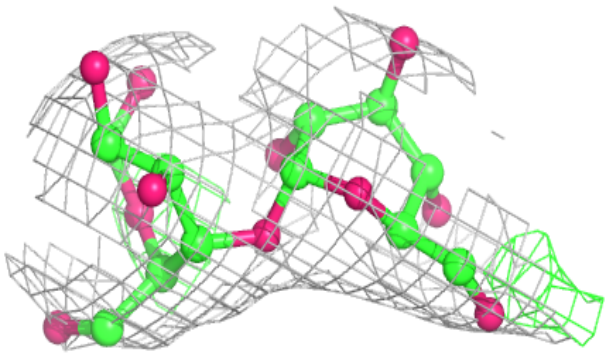


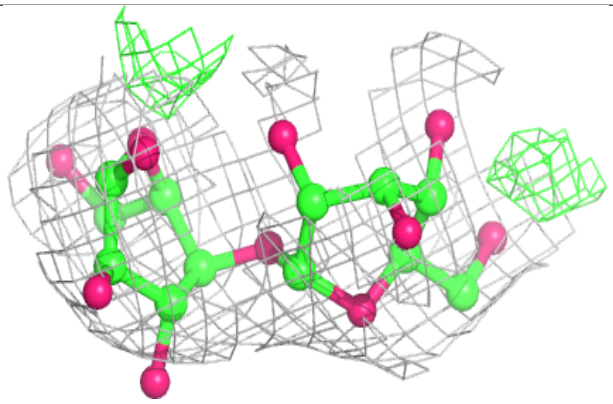


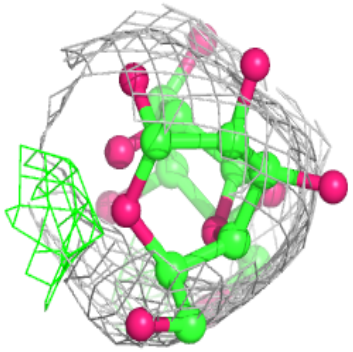


Electron density around Chain K:

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

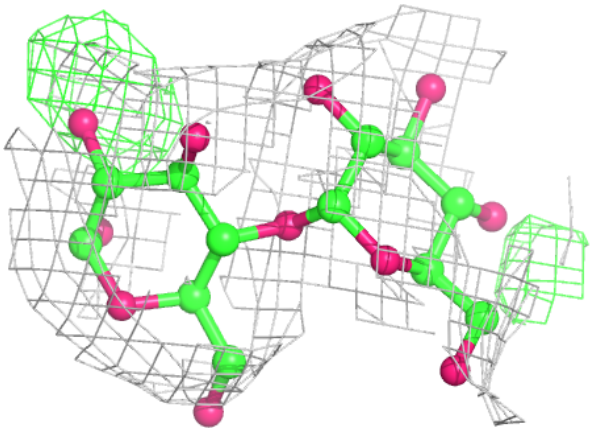


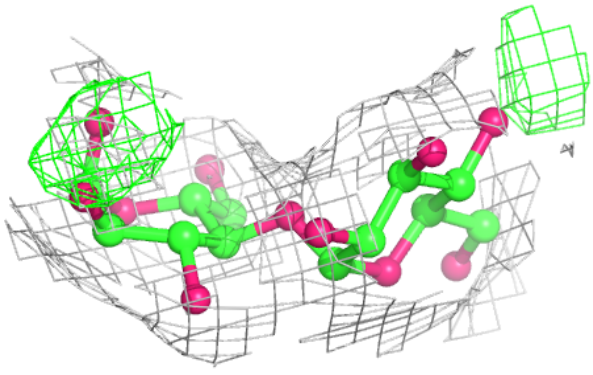




Electron density around Chain L:

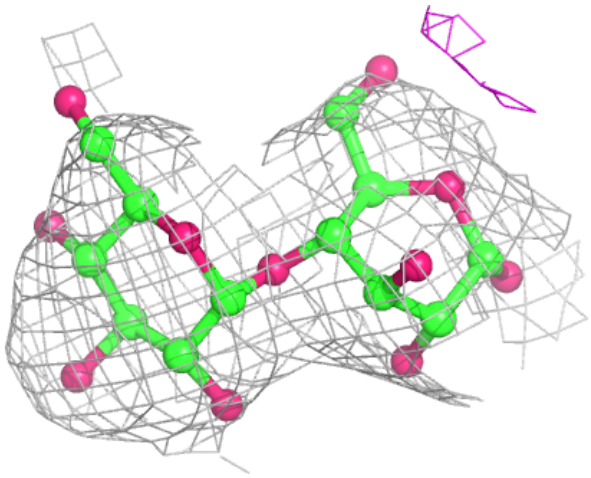
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

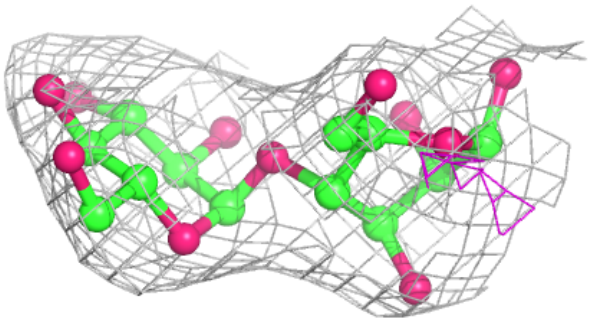


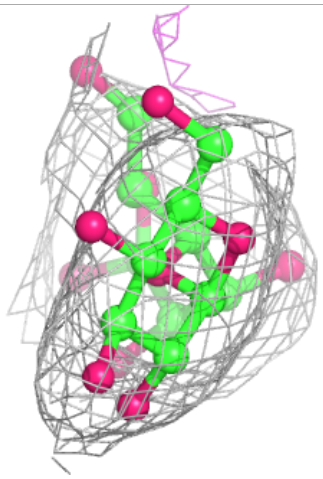


Electron density around Chain M:

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

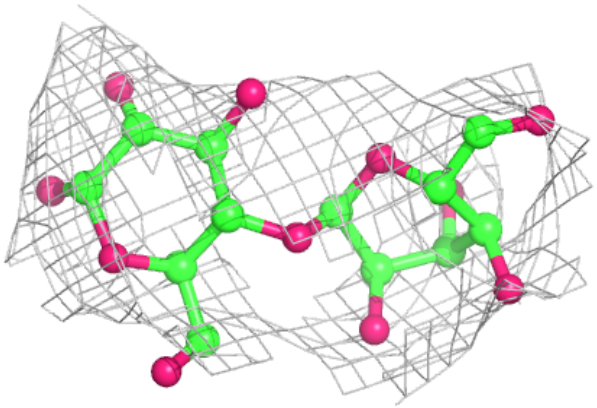


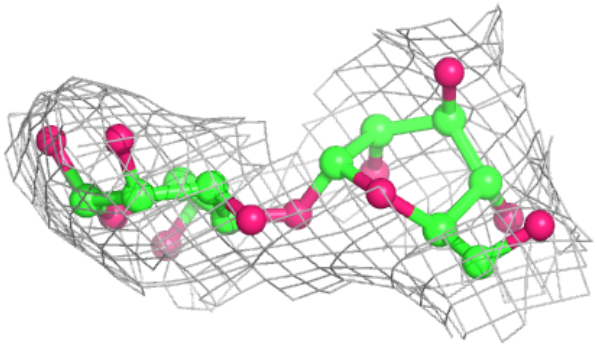


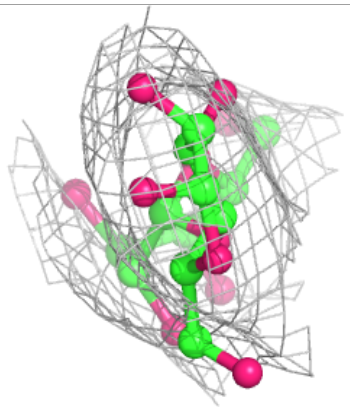


Electron density around Chain N:

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

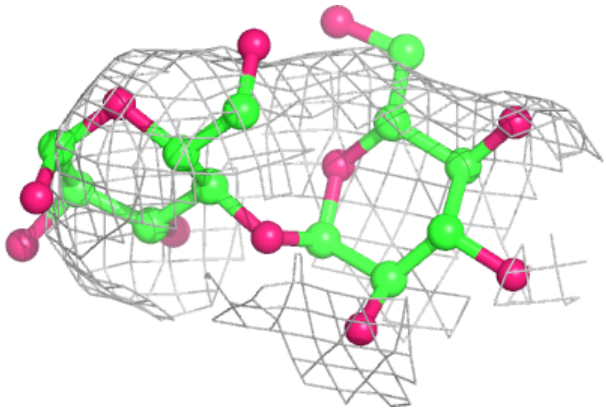


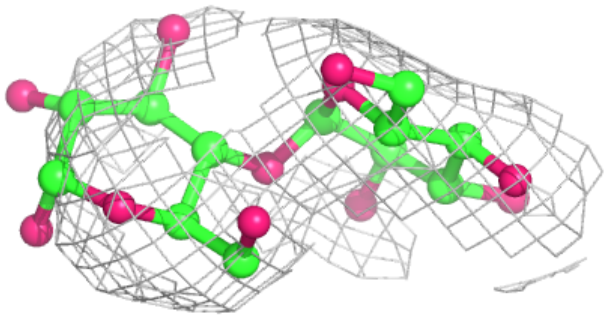


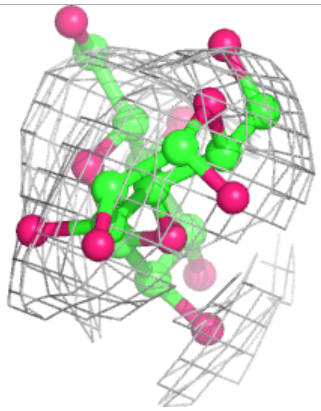


Electron density around Chain O:

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

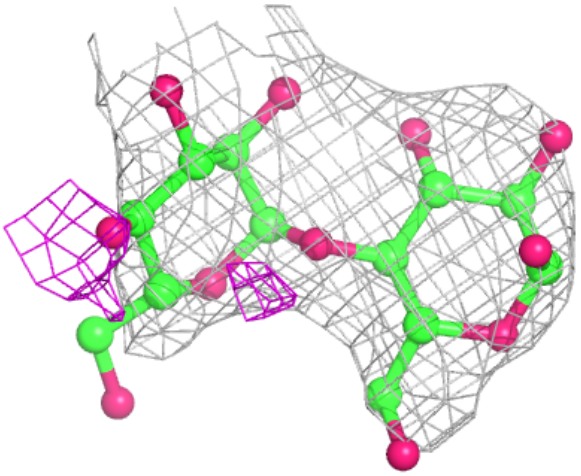


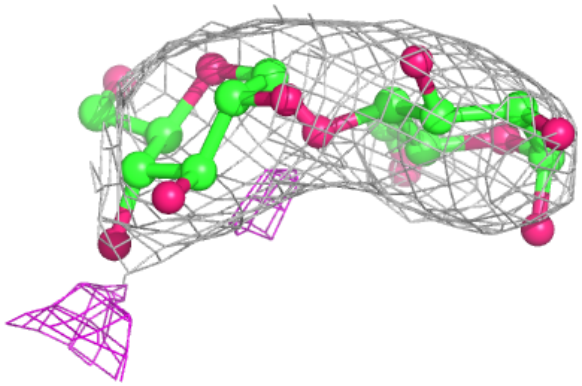


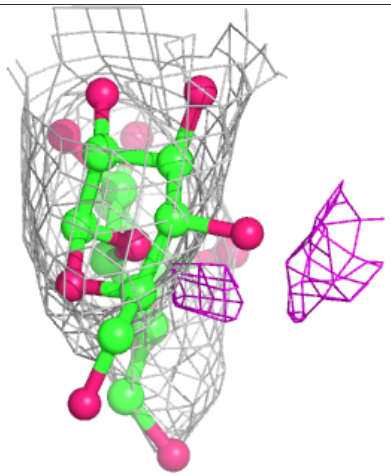


Electron density around Chain P:

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

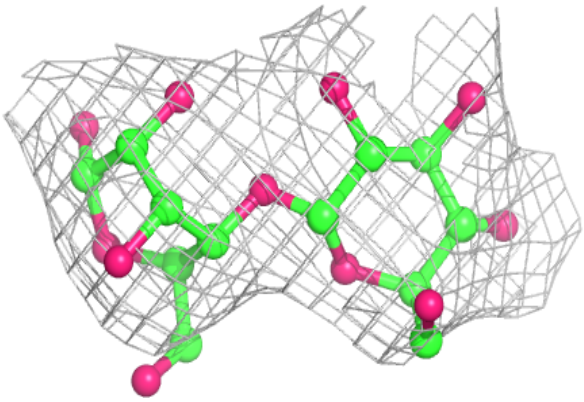


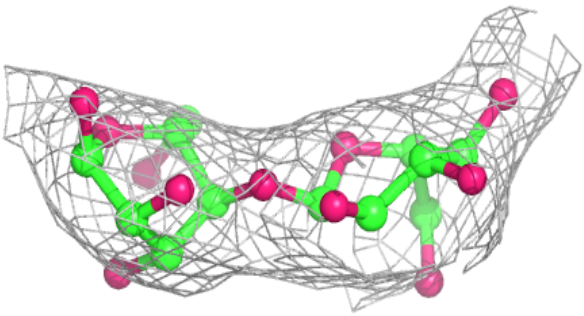


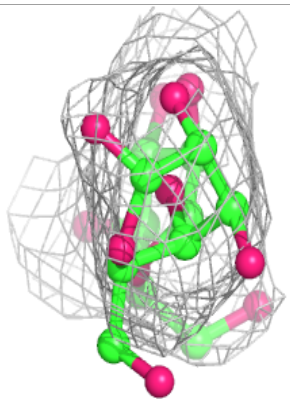


Electron density around Chain Q:

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

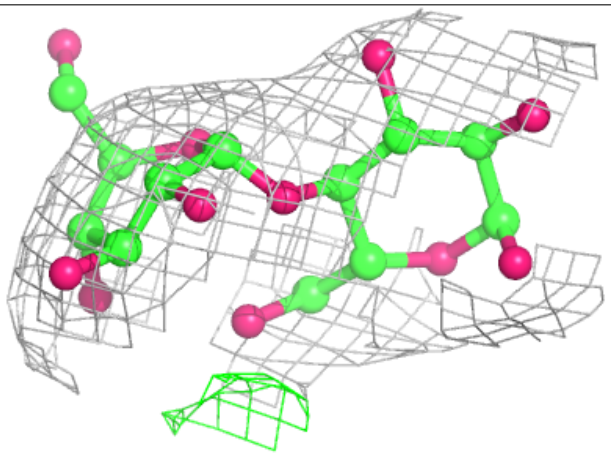


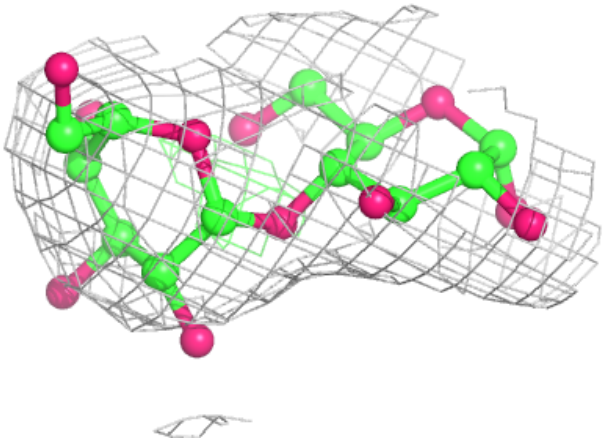


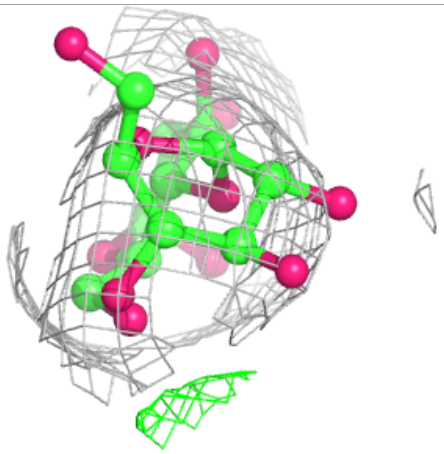


Electron density around Chain R:

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

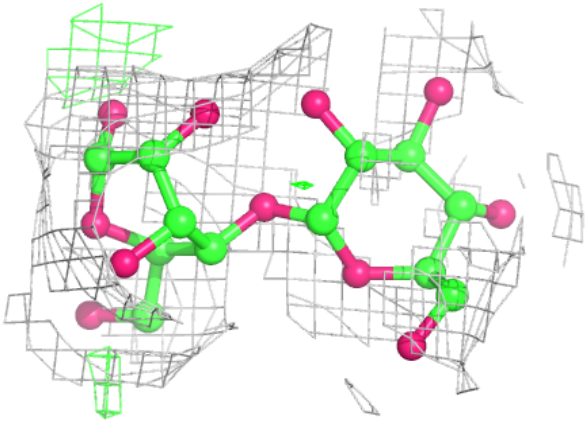


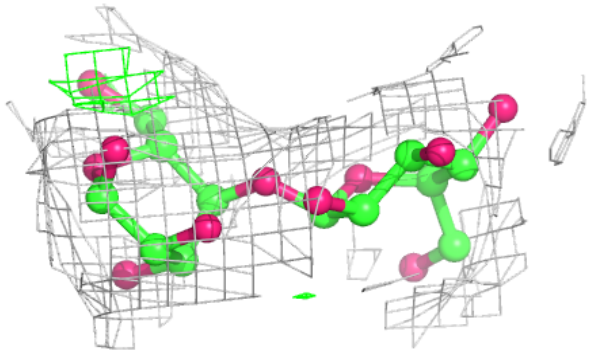


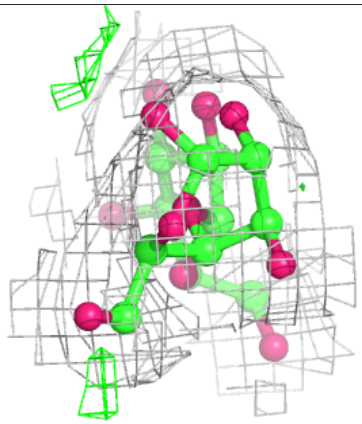


Electron density around Chain S:

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

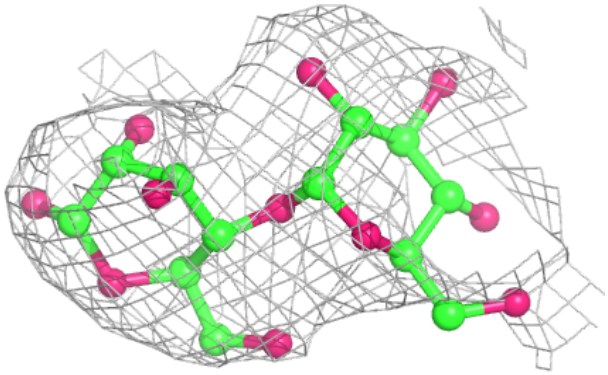


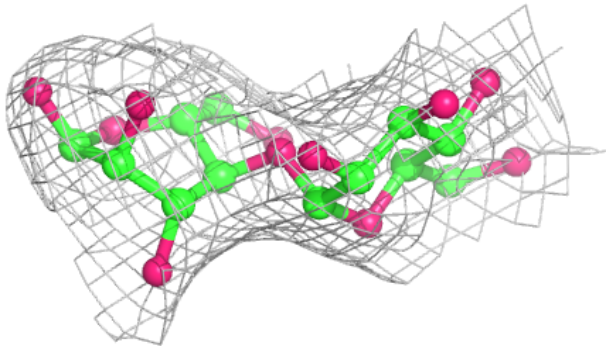


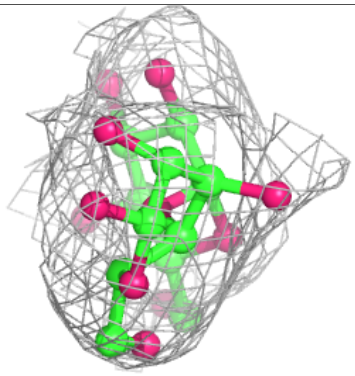


Electron density around Chain T:

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

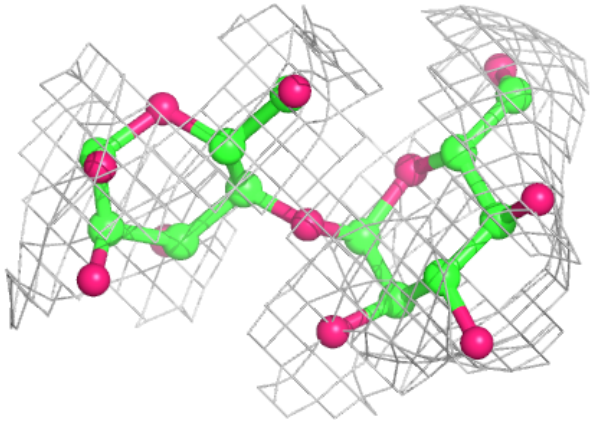


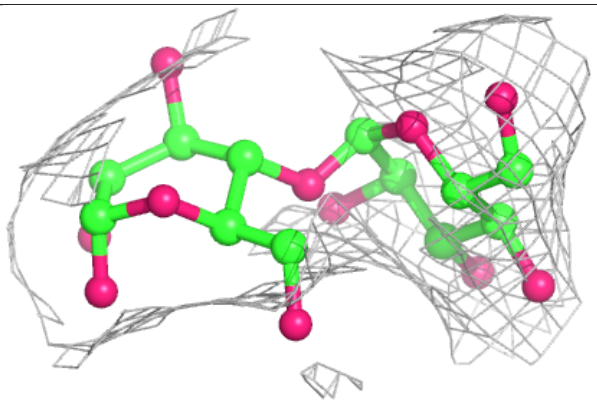


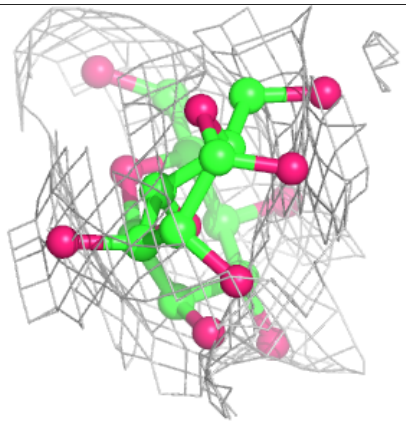


Electron density around Chain U:

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

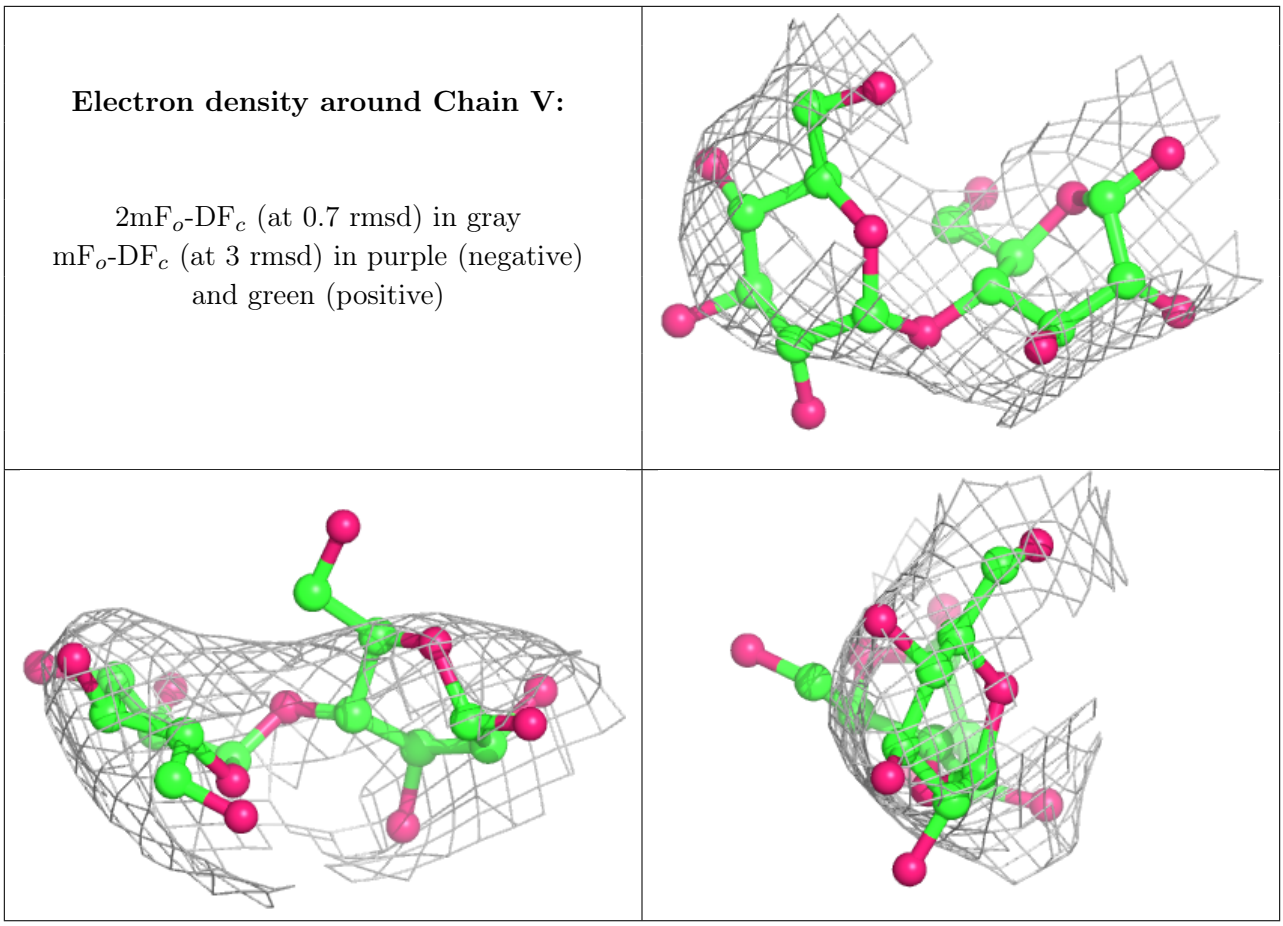






Electron density around Chain V:

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



6.4 Ligands

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	ZN	H	1301	1/1	0.85	0.12	186,186,186,186	0
3	ZN	E	1301	1/1	0.89	0.20	155,155,155,155	0
3	ZN	A	1301	1/1	0.93	0.19	129,129,129,129	0
4	CAC	H	1302	5/5	0.94	0.34	154,186,196,230	0
3	ZN	F	1301	1/1	0.95	0.12	158,158,158,158	0
3	ZN	C	1301	1/1	0.98	0.18	124,124,124,124	0
4	CAC	D	1302	5/5	0.98	0.20	172,175,187,188	0
3	ZN	D	1301	1/1	0.98	0.12	209,209,209,209	0
4	CAC	A	1302	5/5	0.99	0.18	120,121,132,145	0
4	CAC	B	1302	5/5	0.99	0.14	91,113,122,137	0
4	CAC	C	1302	5/5	0.99	0.22	76,98,106,110	0
3	ZN	G	1301	1/1	0.99	0.20	123,123,123,123	0

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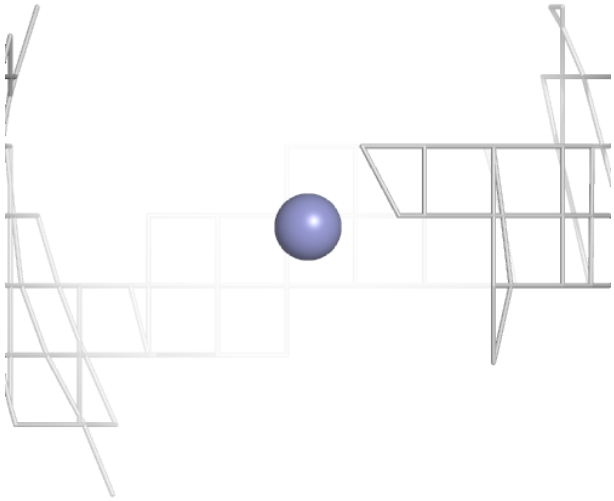
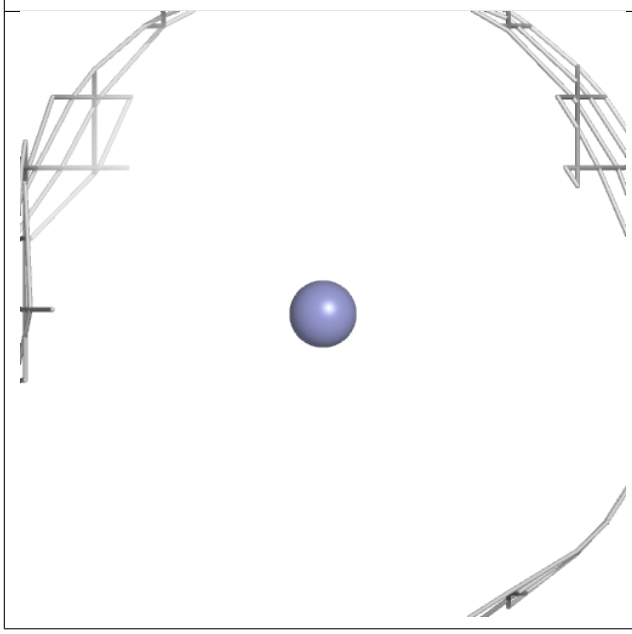
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	CAC	E	1302	5/5	0.99	0.16	113,120,133,134	0
4	CAC	F	1302	5/5	0.99	0.18	94,99,120,137	0
4	CAC	G	1302	5/5	0.99	0.23	78,92,107,138	0
3	ZN	B	1301	1/1	0.99	0.10	157,157,157,157	0

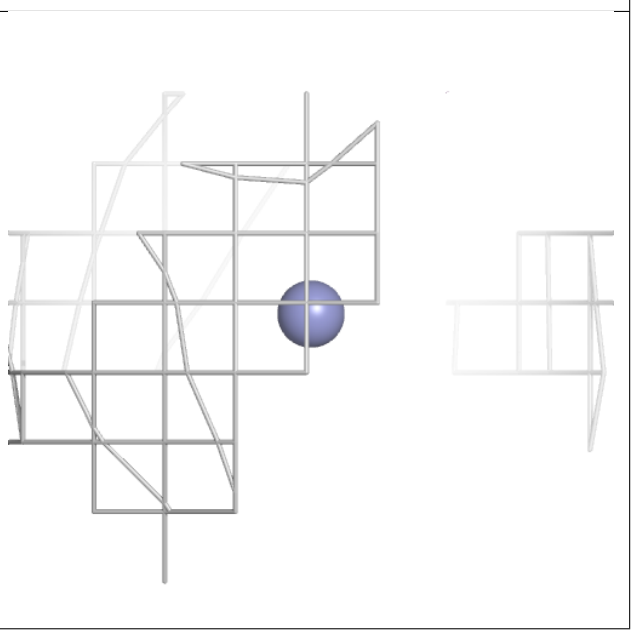
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around ZN H 1301:

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

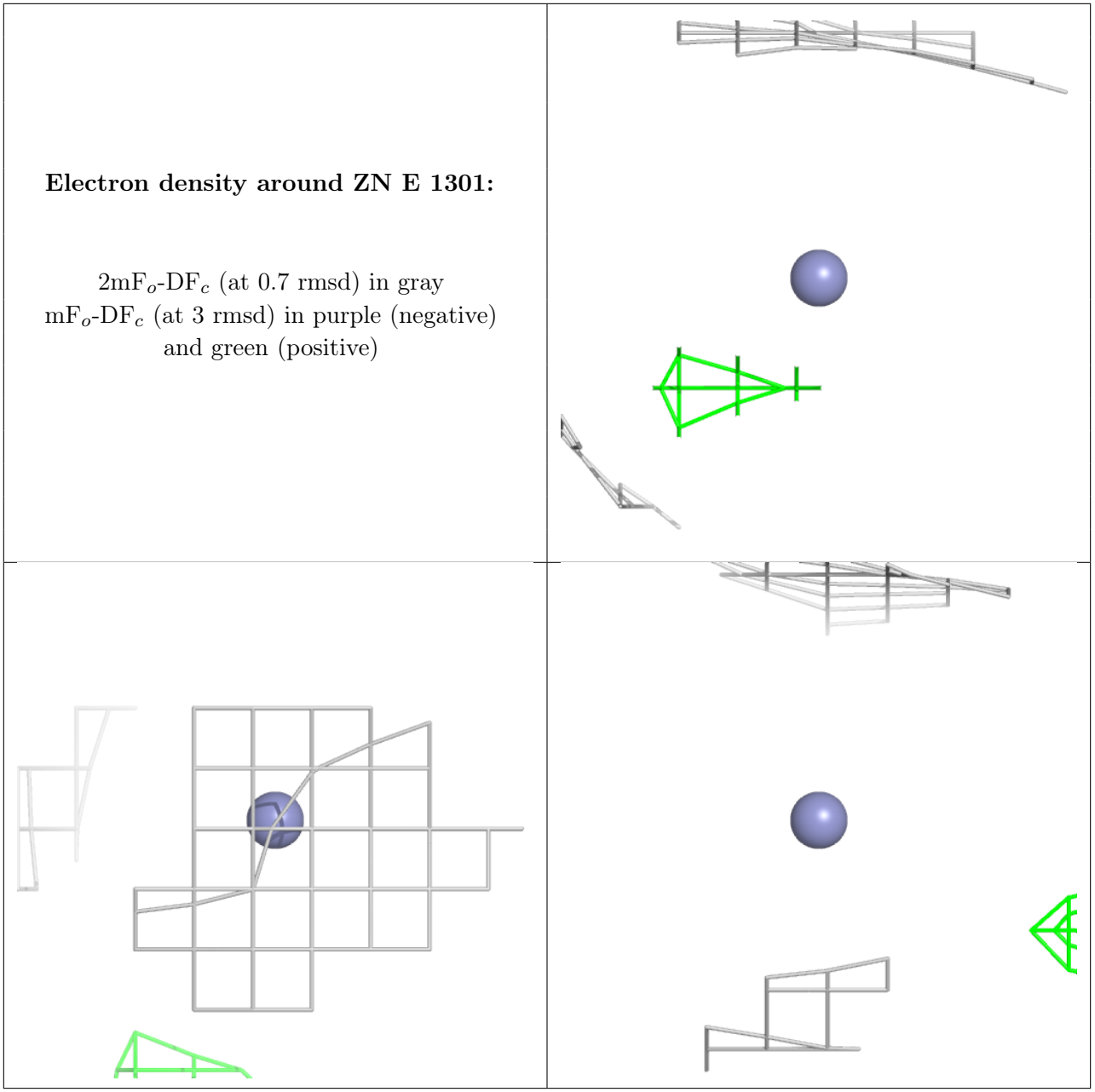






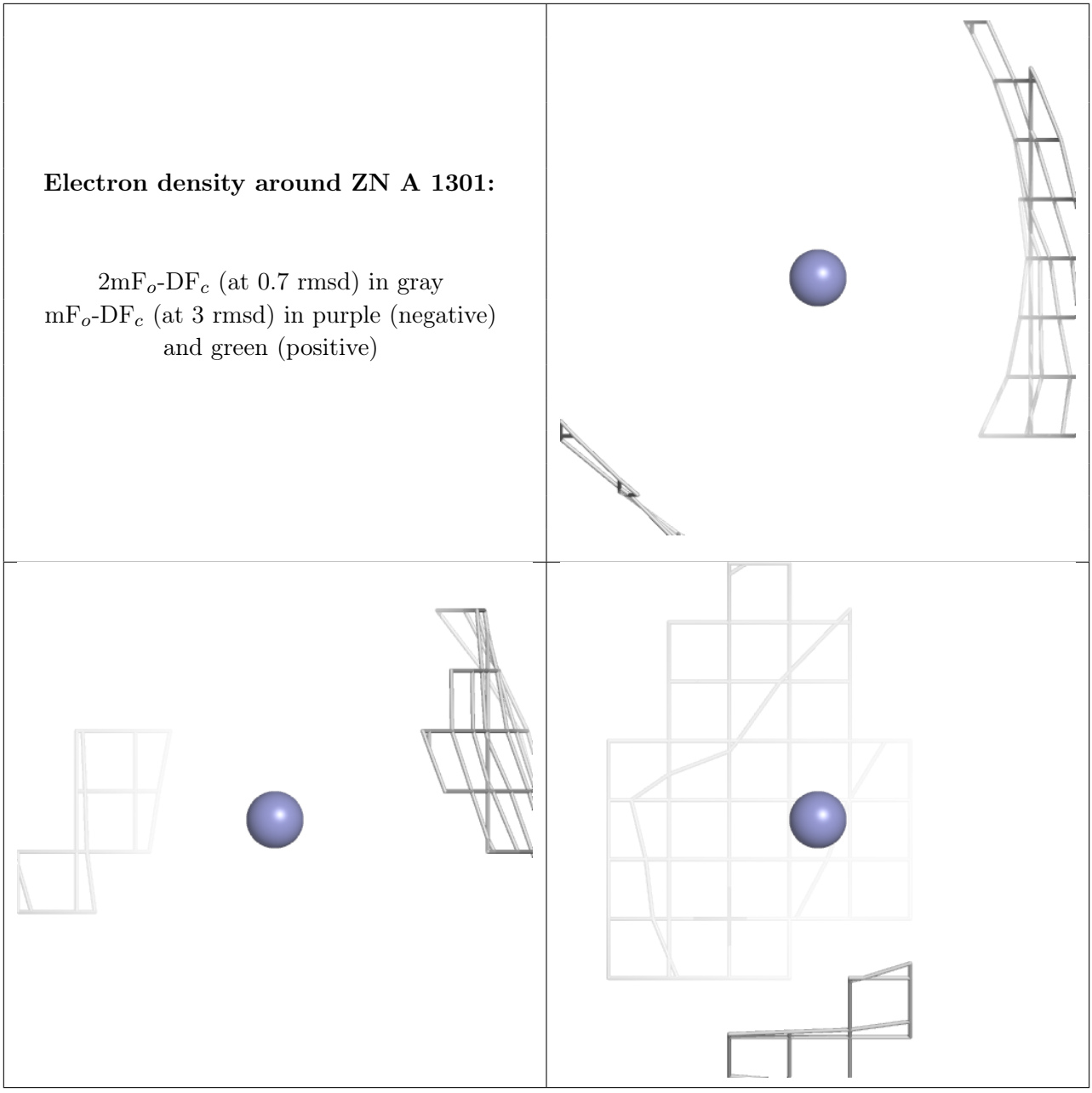
Electron density around ZN E 1301:

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



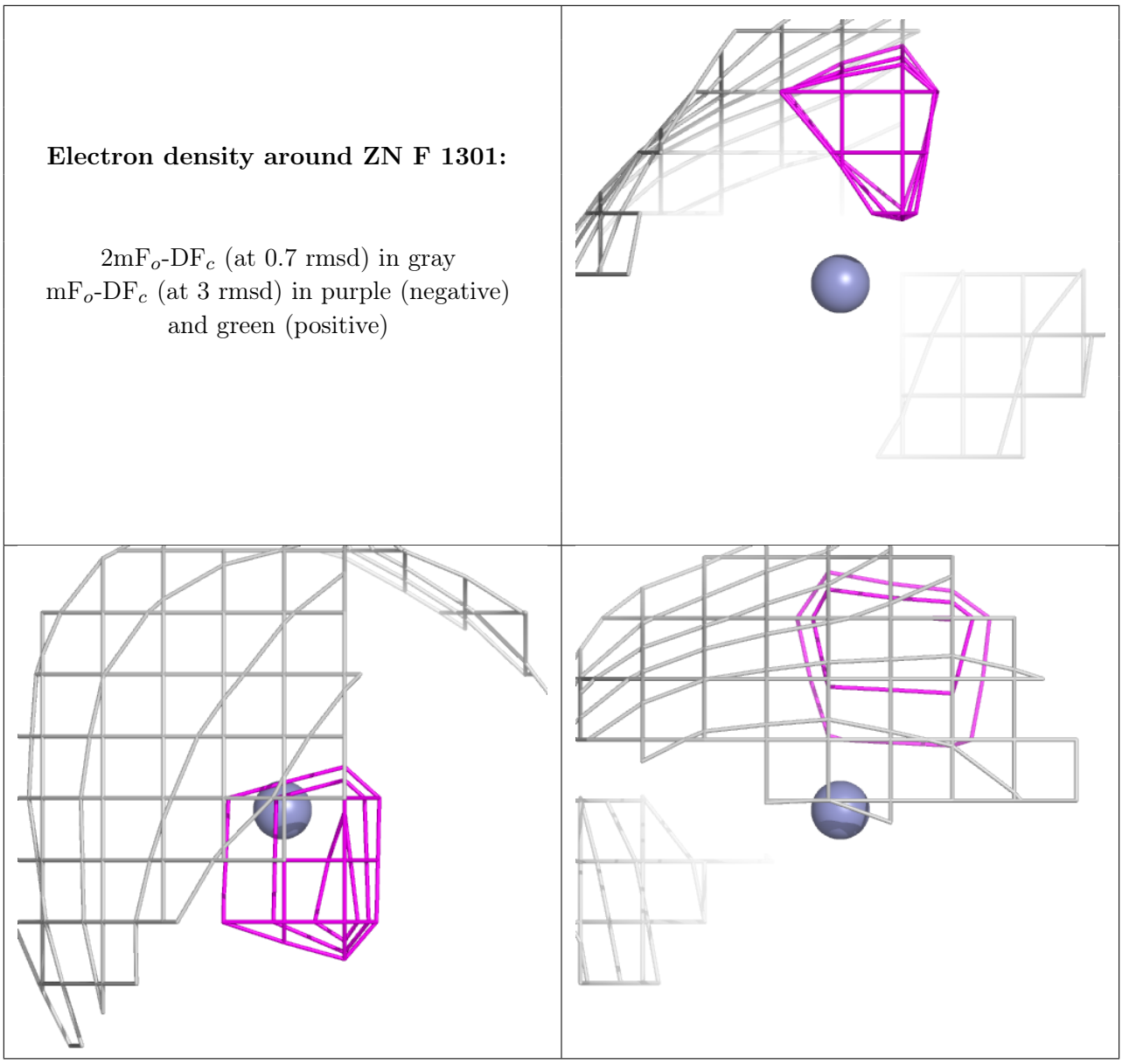
Electron density around ZN A 1301:

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



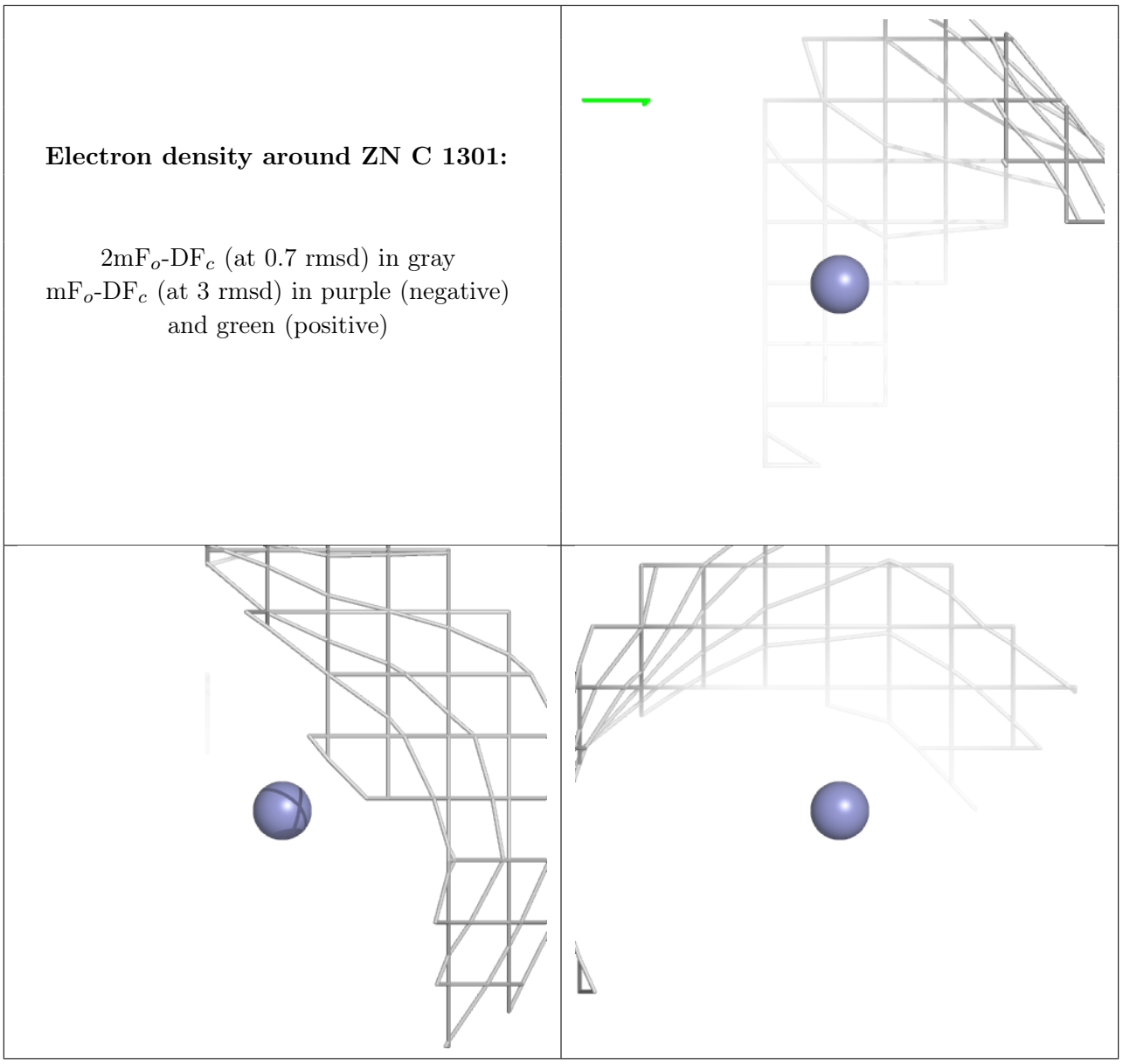
Electron density around ZN F 1301:

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



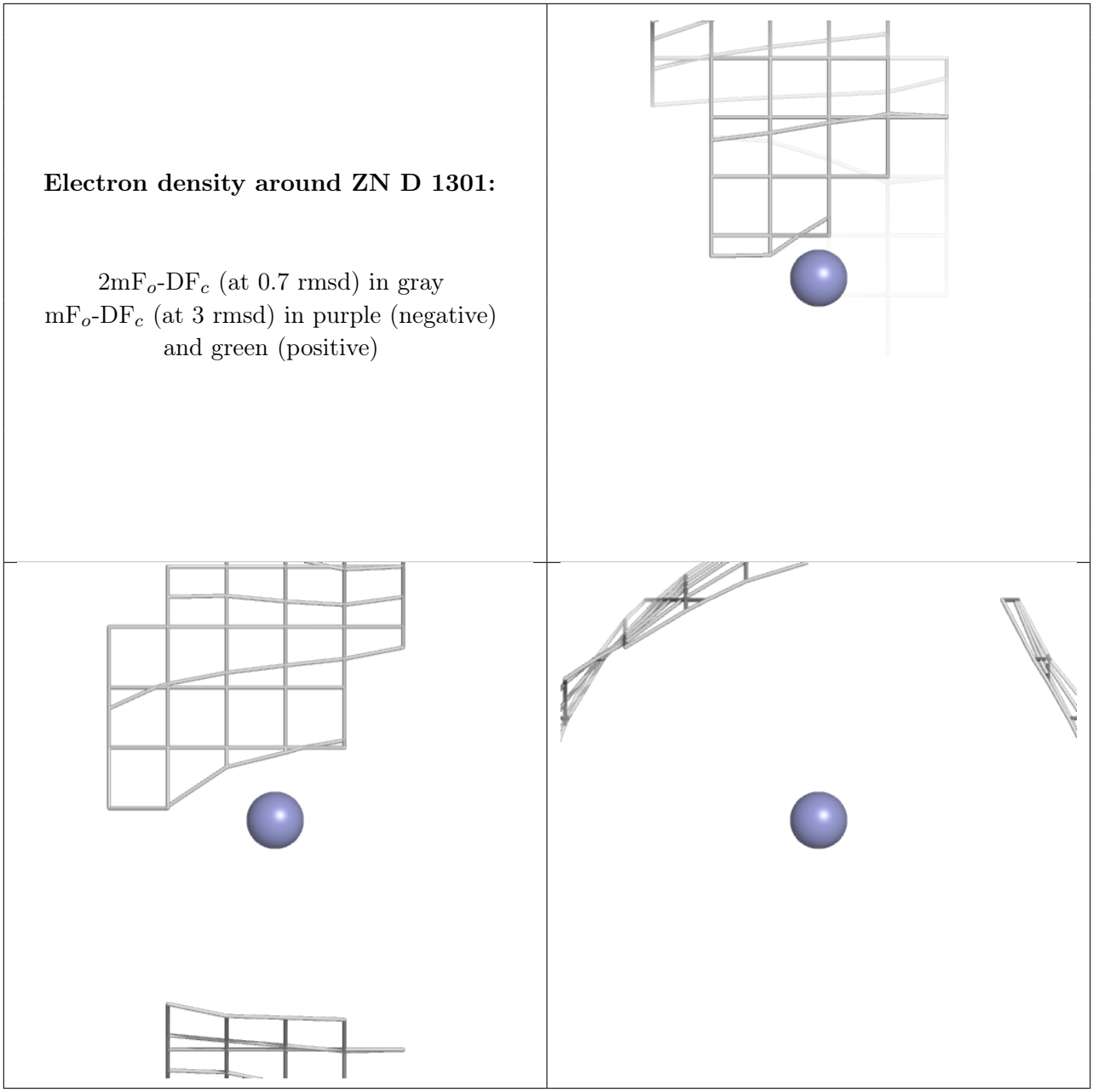
Electron density around ZN C 1301:

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



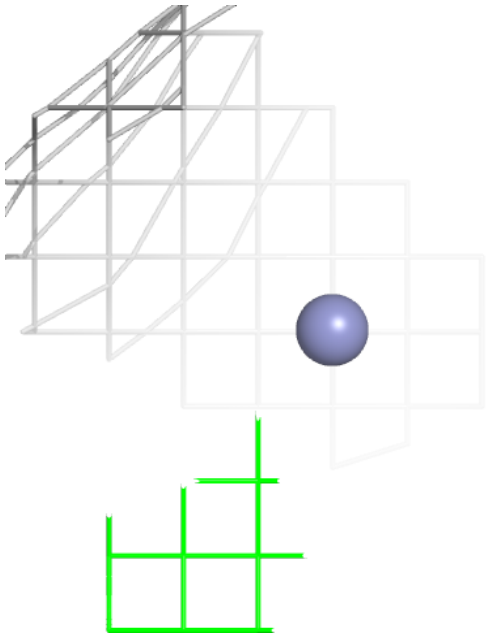
Electron density around ZN D 1301:

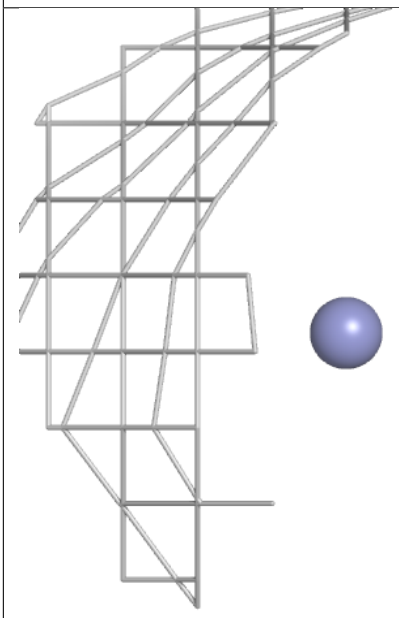
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

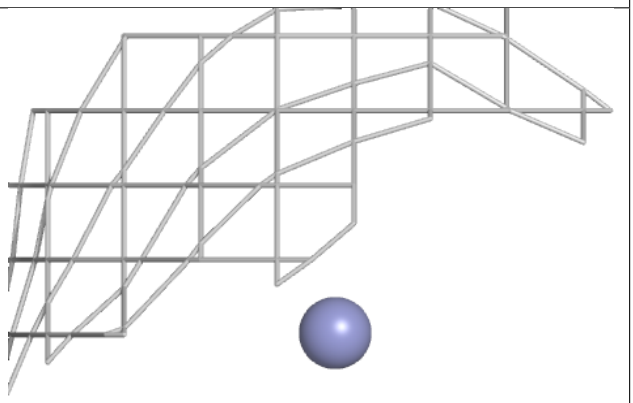


Electron density around ZN G 1301:

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

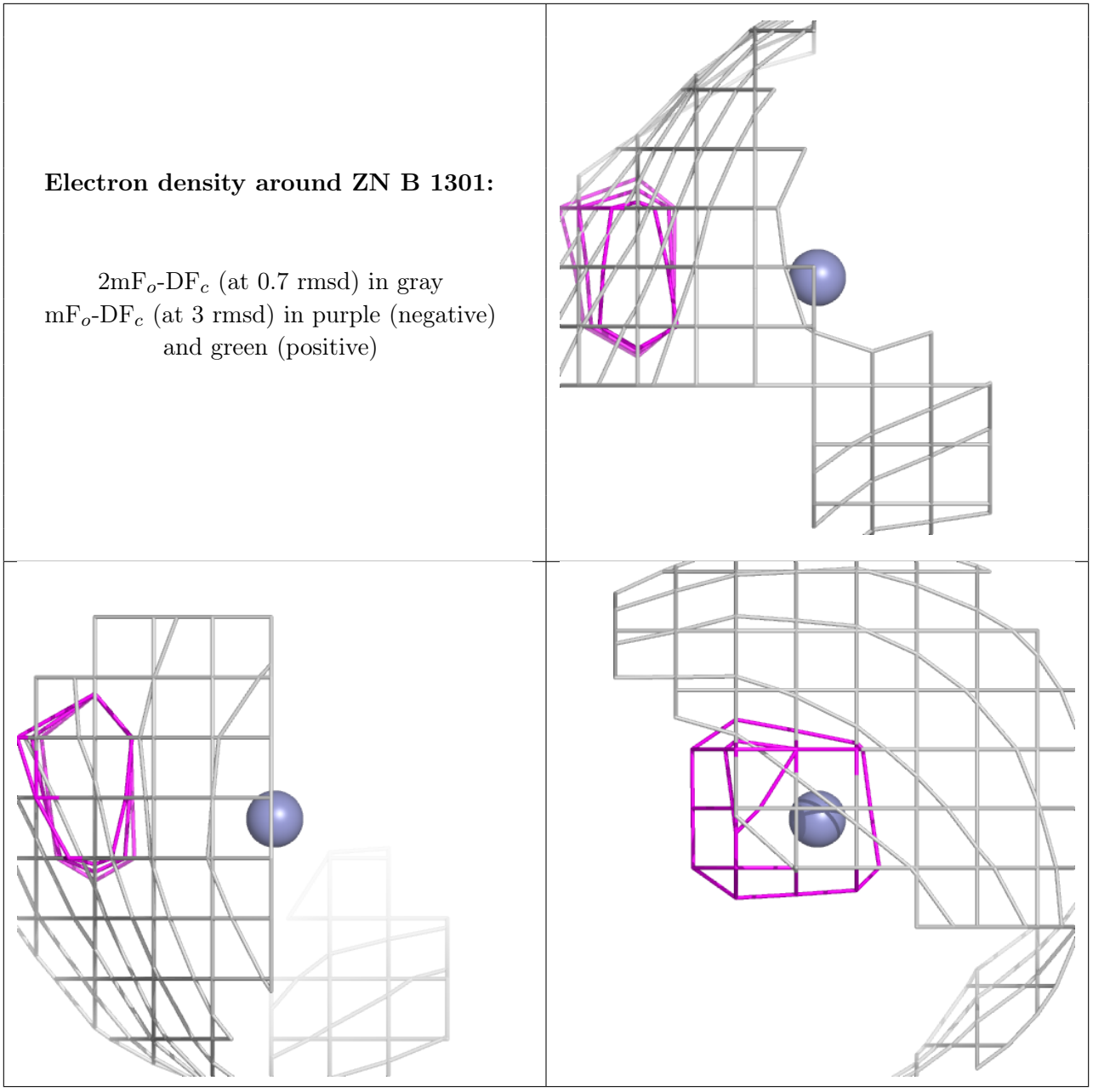






Electron density around ZN B 1301:

$2mF_o$-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 (i)

There are no such residues in this entry.