



# Full wwPDB X-ray Structure Validation Report ⓘ

Oct 28, 2024 – 02:50 am GMT

PDB ID : 6FB3  
Title : Teneurin 2 Partial Extracellular Domain  
Authors : Jackson, V.A.; Carrasquero, M.; Lowe, E.D.; Seiradake, E.  
Deposited on : 2017-12-18  
Resolution : 2.38 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](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4.02b-467  
Mogul : 1.8.4, CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 3.0  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
CCP4 : 9.0.003 (Gargrove)  
Density-Fitness : 1.0.11  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.39

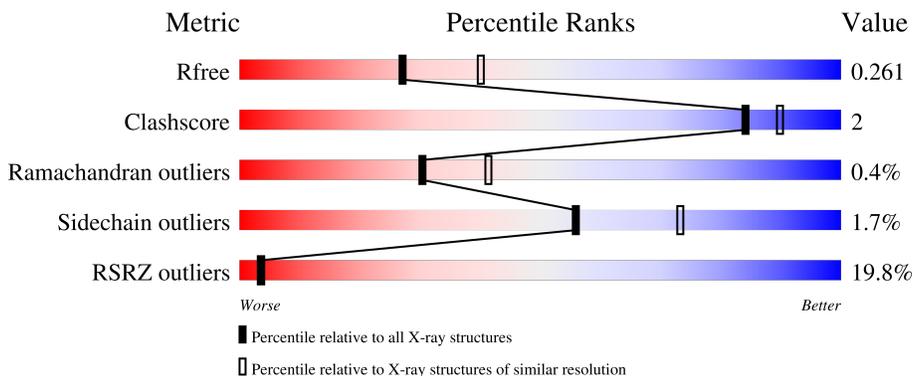
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.38 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))
$R_{free}$	164625	6699 (2.40-2.36)
Clashscore	180529	7414 (2.40-2.36)
Ramachandran outliers	177936	7337 (2.40-2.36)
Sidechain outliers	177891	7338 (2.40-2.36)
RSRZ outliers	164620	6699 (2.40-2.36)

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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1859	
1	B	1859	
1	C	1859	
1	D	1859	
2	E	8	

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Mol	Chain	Length	Quality of chain
2	K	8	25% 75%
2	Q	8	12% 88%
2	W	8	25% 75%
3	F	2	100%
3	G	2	100%
3	H	2	50% 50%
3	I	2	100%
3	J	2	50% 50%
3	L	2	100%
3	M	2	100%
3	N	2	50% 50%
3	O	2	100%
3	P	2	100%
3	R	2	50% 50%
3	S	2	100%
3	T	2	50% 50%
3	U	2	50% 50%
3	V	2	50% 50%
3	X	2	100%
3	Y	2	100%
3	Z	2	50% 50%
3	a	2	100%
3	b	2	100%

## 2 Entry composition i

There are 5 unique types of molecules in this entry. The entry contains 59451 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 Teneurin-2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	1836	14513	9168	2508	2774	63	0	1	0
1	B	1836	14513	9168	2508	2774	63	0	1	0
1	C	1836	14513	9168	2508	2774	63	0	1	0
1	D	1836	14513	9168	2508	2774	63	0	1	0

There are 44 discrepancies between the modelled and reference sequences:

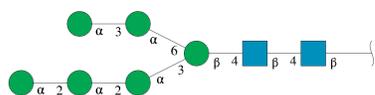
Chain	Residue	Modelled	Actual	Comment	Reference
A	953	THR	-	expression tag	UNP Q9DER5
A	954	GLY	-	expression tag	UNP Q9DER5
A	2803	GLY	-	expression tag	UNP Q9DER5
A	2804	THR	-	expression tag	UNP Q9DER5
A	2805	LYS	-	expression tag	UNP Q9DER5
A	2806	HIS	-	expression tag	UNP Q9DER5
A	2807	HIS	-	expression tag	UNP Q9DER5
A	2808	HIS	-	expression tag	UNP Q9DER5
A	2809	HIS	-	expression tag	UNP Q9DER5
A	2810	HIS	-	expression tag	UNP Q9DER5
A	2811	HIS	-	expression tag	UNP Q9DER5
B	953	THR	-	expression tag	UNP Q9DER5
B	954	GLY	-	expression tag	UNP Q9DER5
B	2803	GLY	-	expression tag	UNP Q9DER5
B	2804	THR	-	expression tag	UNP Q9DER5
B	2805	LYS	-	expression tag	UNP Q9DER5
B	2806	HIS	-	expression tag	UNP Q9DER5
B	2807	HIS	-	expression tag	UNP Q9DER5
B	2808	HIS	-	expression tag	UNP Q9DER5
B	2809	HIS	-	expression tag	UNP Q9DER5
B	2810	HIS	-	expression tag	UNP Q9DER5

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Chain	Residue	Modelled	Actual	Comment	Reference
B	2811	HIS	-	expression tag	UNP Q9DER5
C	953	THR	-	expression tag	UNP Q9DER5
C	954	GLY	-	expression tag	UNP Q9DER5
C	2803	GLY	-	expression tag	UNP Q9DER5
C	2804	THR	-	expression tag	UNP Q9DER5
C	2805	LYS	-	expression tag	UNP Q9DER5
C	2806	HIS	-	expression tag	UNP Q9DER5
C	2807	HIS	-	expression tag	UNP Q9DER5
C	2808	HIS	-	expression tag	UNP Q9DER5
C	2809	HIS	-	expression tag	UNP Q9DER5
C	2810	HIS	-	expression tag	UNP Q9DER5
C	2811	HIS	-	expression tag	UNP Q9DER5
D	953	THR	-	expression tag	UNP Q9DER5
D	954	GLY	-	expression tag	UNP Q9DER5
D	2803	GLY	-	expression tag	UNP Q9DER5
D	2804	THR	-	expression tag	UNP Q9DER5
D	2805	LYS	-	expression tag	UNP Q9DER5
D	2806	HIS	-	expression tag	UNP Q9DER5
D	2807	HIS	-	expression tag	UNP Q9DER5
D	2808	HIS	-	expression tag	UNP Q9DER5
D	2809	HIS	-	expression tag	UNP Q9DER5
D	2810	HIS	-	expression tag	UNP Q9DER5
D	2811	HIS	-	expression tag	UNP Q9DER5

- Molecule 2 is an oligosaccharide called alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-3)-alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
2	E	8	94	52	2	40	0	0	0
2	K	8	94	52	2	40	0	0	0
2	Q	8	94	52	2	40	0	0	0
2	W	8	94	52	2	40	0	0	0

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



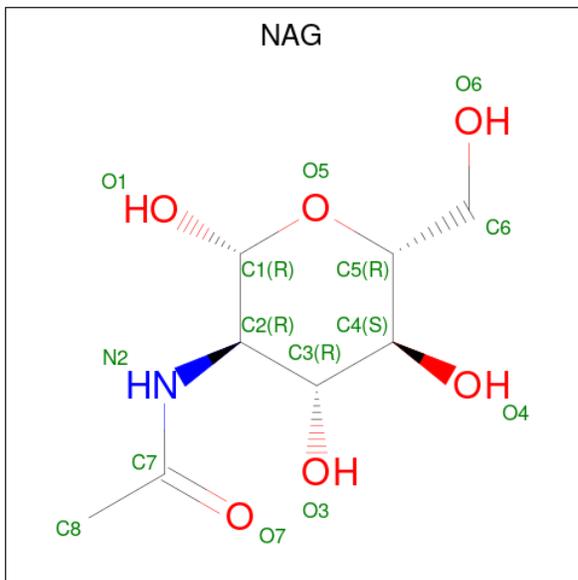
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
3	F	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	G	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	H	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	I	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	J	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	L	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	M	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	N	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	O	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	P	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	R	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	S	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	T	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	U	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	V	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	X	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	Y	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	Z	2	Total	C	N	O	0	0	0
			28	16	2	10			

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
3	a	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	b	2	Total	C	N	O	0	0	0
			28	16	2	10			

- Molecule 4 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula:  $C_8H_{15}NO_6$ ).



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

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

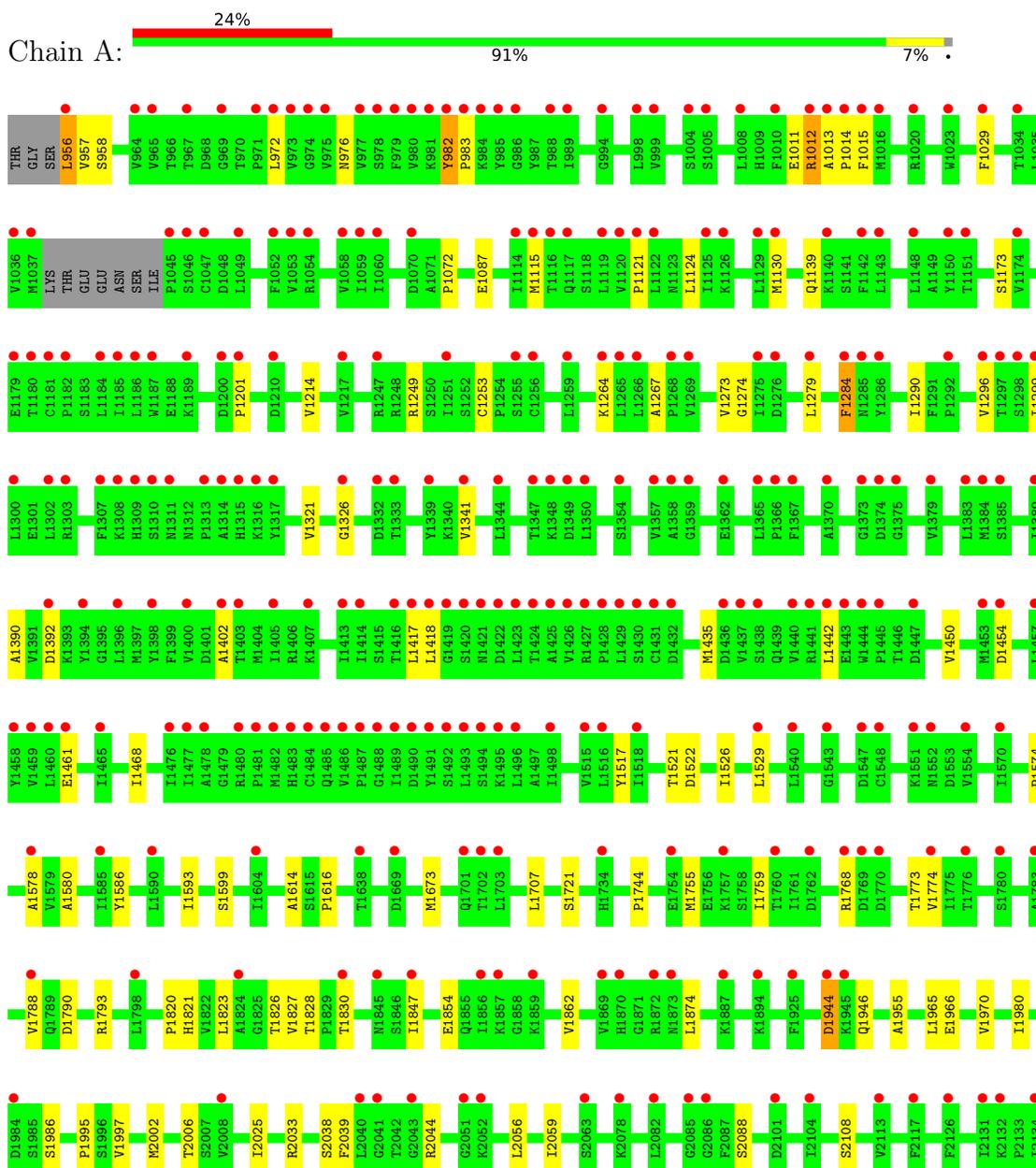
- Molecule 5 is water.

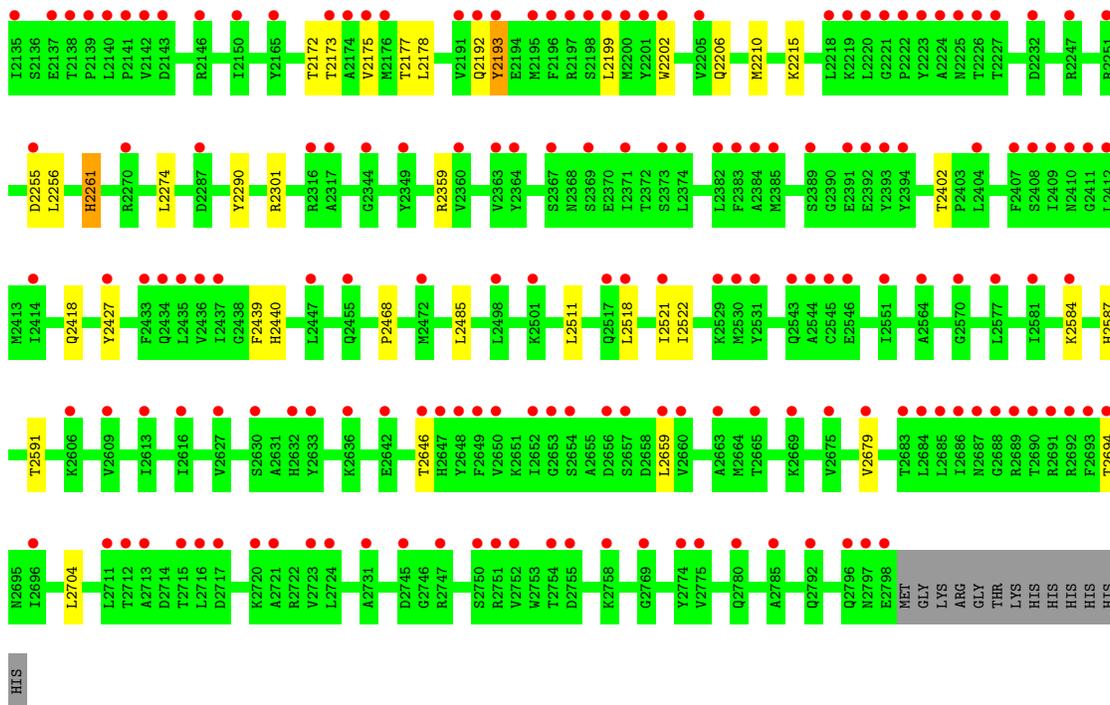
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	17	Total	O	0	0
			17	17		
5	B	29	Total	O	0	0
			29	29		
5	C	105	Total	O	0	0
			105	105		
5	D	32	Total	O	0	0
			32	32		

### 3 Residue-property plots [i](#)

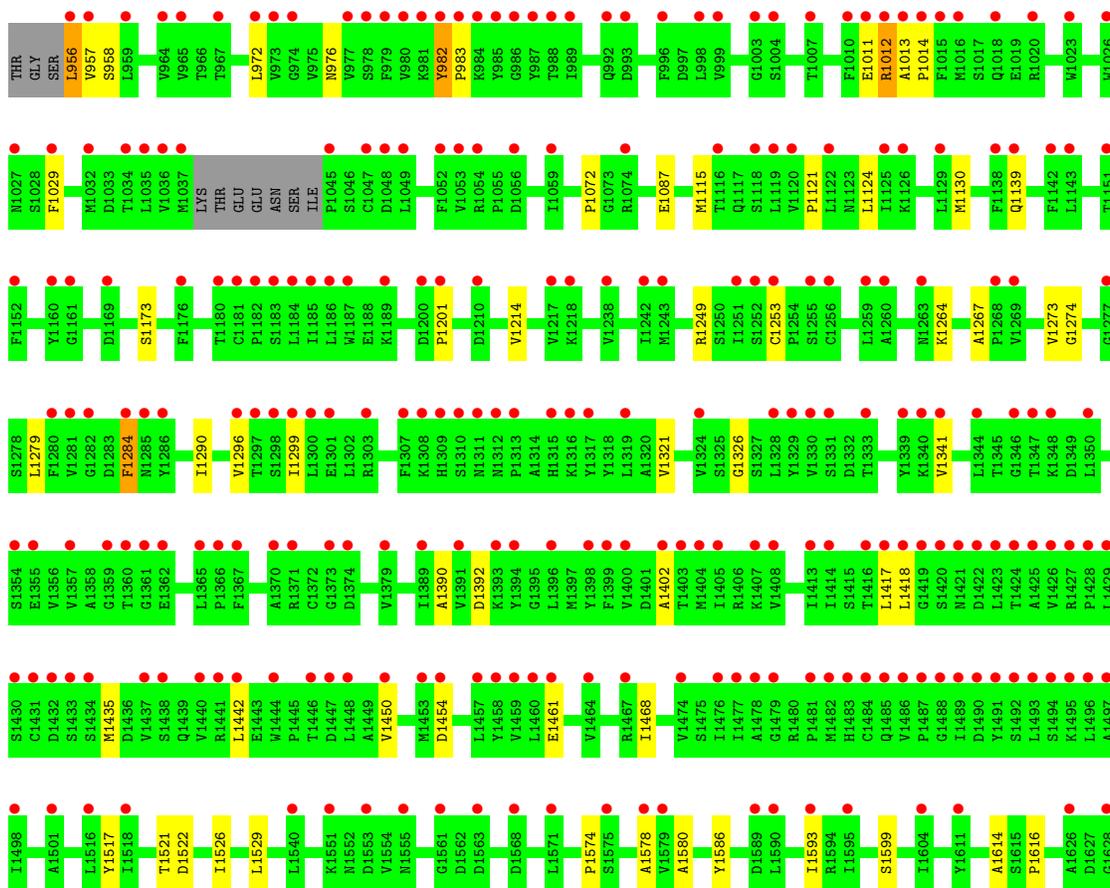
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: Teneurin-2

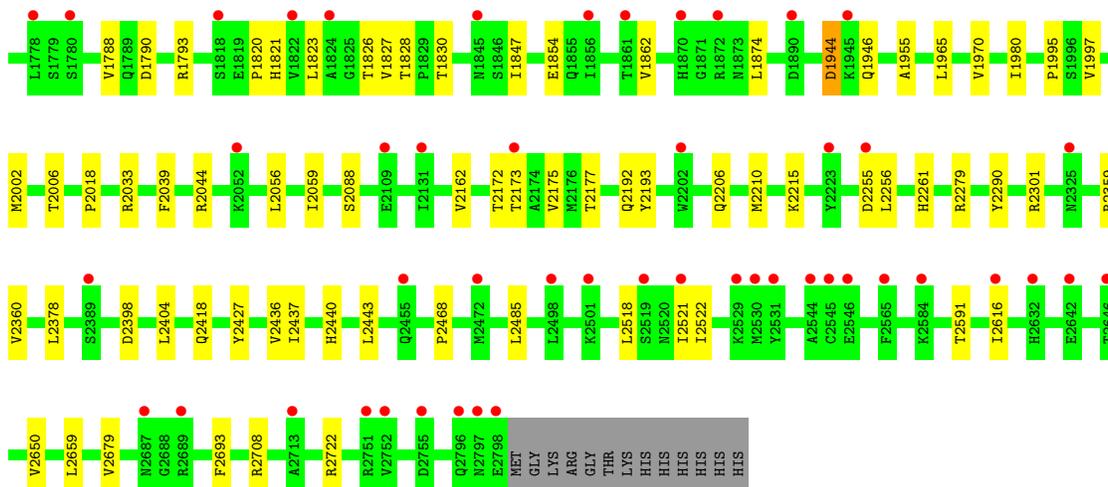




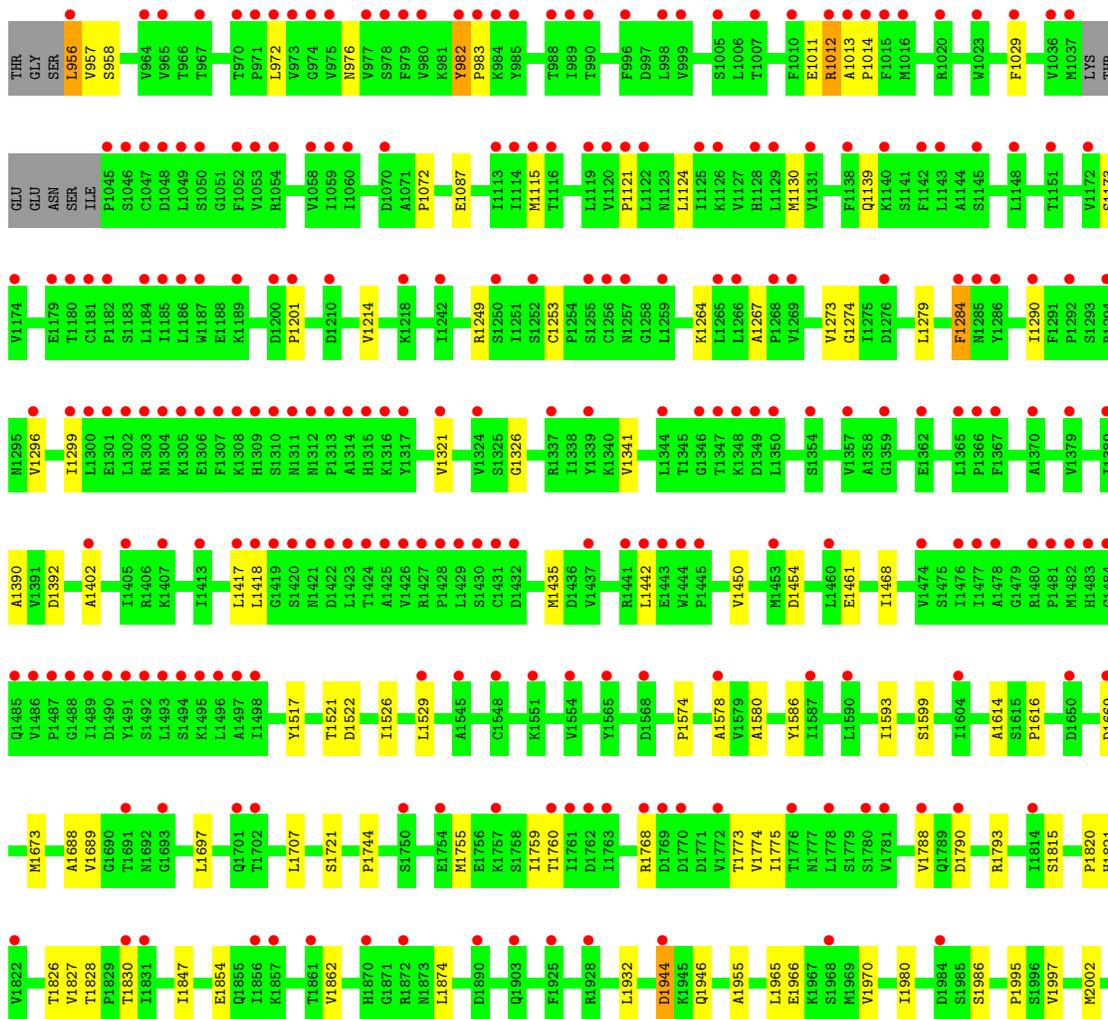
• Molecule 1: Teneurin-2

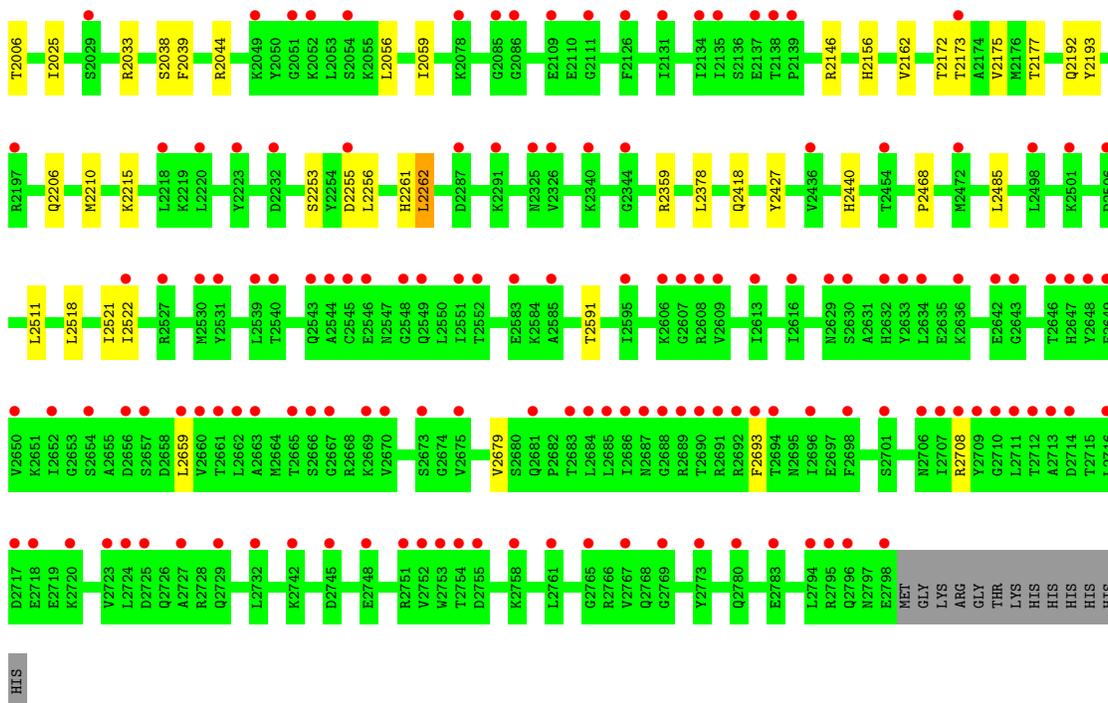






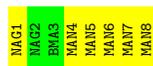
● Molecule 1: Teneurin-2





- Molecule 2: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-3)-alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain E: 25% 75%



- Molecule 2: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-3)-alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain K: 25% 75%



- Molecule 2: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-3)-alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain Q: 12% 88%



- Molecule 2: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-3)-alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain W:  25% 75%

MAG1  
MAG2  
MAN3  
MAN4  
MAN5  
MAN6  
MAN7  
MAN8

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

Chain F:  100%

MAG1  
MAG2

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

Chain G:  100%

MAG1  
MAG2

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

Chain H:  50% 50%

MAG1  
MAG2

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

Chain I:  100%

MAG1  
MAG2

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

Chain J:  50% 50%

MAG1  
MAG2

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

Chain L:  100%

MAG1  
MAG2

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

Chain M:  100%

MAG1  
MAG2

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

Chain N:  50% 50%

MAG1  
MAG2

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

Chain O:  100%

MAG1  
MAG2

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

Chain P:  100%

MAG1  
MAG2

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

Chain R:  50% 50%

MAG1  
MAG2

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

Chain S:  100%

MAG1  
MAG2

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

Chain T:  50% 50%

MAG1  
MAG2

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

Chain U:  50% 50%

MAG1  
MAG2

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

Chain V:  50% 50%

MAG1  
MAG2

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

Chain X:  100%

MAG1  
MAG2

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

Chain Y:  100%

MAG1  
MAG2

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

Chain Z:  50% 50%

MAG1  
MAG2

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

Chain a:  100%

MACE  
MAGE

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

Chain b:

100%MACE  
MAGE

## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	88.56Å 452.56Å 146.36Å 90.00° 95.12° 90.00°	Depositor
Resolution (Å)	89.38 – 2.38 89.38 – 2.38	Depositor EDS
% Data completeness (in resolution range)	94.3 (89.38-2.38) 94.3 (89.38-2.38)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.31 (at 2.37Å)	Xtrriage
Refinement program	BUSTER 2.10.3	Depositor
R, $R_{free}$	0.225 , 0.242 0.242 , 0.261	Depositor DCC
$R_{free}$ test set	21455 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	47.8	Xtrriage
Anisotropy	0.297	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.34 , 59.7	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	59451	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	76.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 45.90 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 1.2374e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

<sup>1</sup>Intensities estimated from amplitudes.

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

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	0.37	0/14827	0.62	0/20108
1	B	0.37	0/14827	0.62	0/20108
1	C	0.37	0/14827	0.62	0/20108
1	D	0.37	0/14827	0.62	0/20108
All	All	0.37	0/59308	0.62	0/80432

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	14513	0	14253	66	0
1	B	14513	0	14253	69	0
1	C	14513	0	14253	63	0
1	D	14513	0	14253	64	0
2	E	94	0	79	0	0
2	K	94	0	79	0	0
2	Q	94	0	79	0	0
2	W	94	0	79	0	0
3	F	28	0	25	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	G	28	0	25	0	0
3	H	28	0	25	0	0
3	I	28	0	25	0	0
3	J	28	0	25	0	0
3	L	28	0	25	0	0
3	M	28	0	25	0	0
3	N	28	0	25	0	0
3	O	28	0	25	0	0
3	P	28	0	25	0	0
3	R	28	0	25	0	0
3	S	28	0	25	0	0
3	T	28	0	25	0	0
3	U	28	0	25	0	0
3	V	28	0	25	0	0
3	X	28	0	25	0	0
3	Y	28	0	25	0	0
3	Z	28	0	25	0	0
3	a	28	0	25	0	0
3	b	28	0	25	0	0
4	A	70	0	65	0	0
4	B	70	0	65	0	0
4	C	70	0	65	0	0
4	D	70	0	65	0	0
5	A	17	0	0	0	0
5	B	29	0	0	0	0
5	C	105	0	0	0	0
5	D	32	0	0	0	0
All	All	59451	0	58088	260	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 2.

All (260) 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:1821:HIS:HD2	1:C:1830:THR:HG21	1.41	0.85
1:A:1821:HIS:HD2	1:A:1830:THR:HG21	1.41	0.85
1:B:1821:HIS:HD2	1:B:1830:THR:HG21	1.41	0.83
1:D:1821:HIS:HD2	1:D:1830:THR:HG21	1.42	0.82
1:D:982:TYR:HB3	1:D:983:PRO:HD3	1.65	0.79
1:B:982:TYR:HB3	1:B:983:PRO:HD3	1.65	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:982:TYR:HB3	1:C:983:PRO:HD3	1.64	0.78
1:A:982:TYR:HB3	1:A:983:PRO:HD3	1.65	0.76
1:A:2468:PRO:HB3	1:A:2485:LEU:HB3	1.71	0.72
1:B:982:TYR:HB3	1:B:983:PRO:CD	2.20	0.72
1:C:982:TYR:HB3	1:C:983:PRO:CD	2.20	0.71
1:A:982:TYR:HB3	1:A:983:PRO:CD	2.20	0.71
1:D:1821:HIS:CD2	1:D:1830:THR:HG21	2.25	0.71
1:D:982:TYR:HB3	1:D:983:PRO:CD	2.20	0.71
1:D:2468:PRO:HB3	1:D:2485:LEU:HB3	1.73	0.71
1:B:1821:HIS:CD2	1:B:1830:THR:HG21	2.25	0.70
1:C:1821:HIS:CD2	1:C:1830:THR:HG21	2.25	0.70
1:A:1821:HIS:CD2	1:A:1830:THR:HG21	2.25	0.70
1:B:2468:PRO:HB3	1:B:2485:LEU:HB3	1.74	0.69
1:C:2468:PRO:HB3	1:C:2485:LEU:HB3	1.73	0.68
1:C:1201:PRO:HB3	1:C:1214:VAL:HB	1.78	0.65
1:A:1201:PRO:HB3	1:A:1214:VAL:HB	1.79	0.65
1:A:1130:MET:HB2	1:A:1173:SER:HB2	1.80	0.64
1:B:1130:MET:HB2	1:B:1173:SER:HB2	1.79	0.64
1:B:1201:PRO:HB3	1:B:1214:VAL:HB	1.79	0.63
1:D:1201:PRO:HB3	1:D:1214:VAL:HB	1.79	0.63
1:D:1130:MET:HB2	1:D:1173:SER:HB2	1.80	0.63
1:C:1130:MET:HB2	1:C:1173:SER:HB2	1.80	0.63
1:A:1521:THR:HB	1:A:1574:PRO:HD2	1.81	0.62
1:D:1521:THR:HB	1:D:1574:PRO:HD2	1.81	0.62
1:B:1521:THR:HB	1:B:1574:PRO:HD2	1.81	0.61
1:C:1521:THR:HB	1:C:1574:PRO:HD2	1.81	0.61
1:C:1773:THR:HG23	1:C:1788:VAL:HB	1.82	0.60
1:A:2173:THR:HG22	1:A:2175:VAL:H	1.67	0.60
1:B:2173:THR:HG22	1:B:2175:VAL:H	1.67	0.60
1:C:2173:THR:HG22	1:C:2175:VAL:H	1.66	0.60
1:B:1773:THR:HG23	1:B:1788:VAL:HB	1.83	0.59
1:A:1773:THR:HG23	1:A:1788:VAL:HB	1.84	0.59
1:D:1773:THR:HG23	1:D:1788:VAL:HB	1.84	0.59
1:D:2173:THR:HG22	1:D:2175:VAL:H	1.67	0.58
1:D:1744:PRO:HB2	1:D:2006:THR:HG21	1.87	0.56
1:A:1744:PRO:HB2	1:A:2006:THR:HG21	1.88	0.55
1:B:2142:VAL:HG12	1:D:1669:ASP:OD1	2.06	0.55
1:B:2418:GLN:HB2	1:B:2427:TYR:HB3	1.88	0.55
1:C:2290:TYR:CZ	1:C:2301:ARG:HG3	2.42	0.55
1:A:2418:GLN:HB2	1:A:2427:TYR:HB3	1.90	0.54
1:D:1955:ALA:HB3	1:D:2210:MET:HE3	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1677:LEU:HG	1:B:1687:LEU:HD11	1.89	0.54
1:C:1390:ALA:HB1	1:C:1450:VAL:HG23	1.89	0.54
1:A:1390:ALA:HB1	1:A:1450:VAL:HG23	1.90	0.54
1:C:1955:ALA:HB3	1:C:2210:MET:HE3	1.90	0.54
1:D:2418:GLN:HB2	1:D:2427:TYR:HB3	1.90	0.54
1:B:1390:ALA:HB1	1:B:1450:VAL:HG23	1.90	0.53
1:D:1970:VAL:HG22	1:D:1980:ILE:HG12	1.90	0.53
1:D:1390:ALA:HB1	1:D:1450:VAL:HG23	1.90	0.53
1:B:2290:TYR:CZ	1:B:2301:ARG:HG3	2.44	0.52
1:C:2659:LEU:HD21	1:C:2679:VAL:HG11	1.91	0.52
1:C:2418:GLN:HB2	1:C:2427:TYR:HB3	1.91	0.52
1:D:2025:ILE:HB	1:D:2038:SER:HB2	1.92	0.52
1:B:1955:ALA:HB3	1:B:2210:MET:HE3	1.91	0.52
1:B:2659:LEU:HD21	1:B:2679:VAL:HG11	1.92	0.52
1:C:1854:GLU:HB2	1:C:1862:VAL:HB	1.92	0.52
1:C:1970:VAL:HG22	1:C:1980:ILE:HG12	1.91	0.52
1:A:1854:GLU:HB2	1:A:1862:VAL:HB	1.92	0.52
1:D:1130:MET:HG2	1:D:1139:GLN:HG2	1.92	0.52
1:B:1273:VAL:HG23	1:B:1578:ALA:HB1	1.92	0.52
1:B:972:LEU:HD22	1:B:1012:ARG:HE	1.75	0.52
1:D:1874:LEU:HD13	1:D:2521:ILE:HD12	1.92	0.52
1:A:1955:ALA:HB3	1:A:2210:MET:HE3	1.91	0.51
1:B:1874:LEU:HD13	1:B:2521:ILE:HD12	1.92	0.51
1:A:972:LEU:HD22	1:A:1012:ARG:HE	1.75	0.51
1:B:2014:ILE:HG12	1:B:2025:ILE:HG12	1.92	0.51
1:B:1827:VAL:HG13	1:B:1828:THR:HG23	1.92	0.51
1:B:1854:GLU:HB2	1:B:1862:VAL:HB	1.91	0.51
1:C:972:LEU:HD22	1:C:1012:ARG:HE	1.74	0.51
1:C:1827:VAL:HG13	1:C:1828:THR:HG23	1.92	0.51
1:D:1854:GLU:HB2	1:D:1862:VAL:HB	1.92	0.51
1:D:972:LEU:HD22	1:D:1012:ARG:HE	1.75	0.51
1:C:1874:LEU:HD13	1:C:2521:ILE:HD12	1.92	0.51
1:C:1130:MET:HG2	1:C:1139:GLN:HG2	1.93	0.51
1:D:1273:VAL:HG23	1:D:1578:ALA:HB1	1.92	0.51
1:D:1827:VAL:HG13	1:D:1828:THR:HG23	1.92	0.51
1:A:1273:VAL:HG23	1:A:1578:ALA:HB1	1.92	0.51
1:B:1130:MET:HG2	1:B:1139:GLN:HG2	1.92	0.51
1:C:1290:ILE:HG12	1:C:1296:VAL:HG22	1.93	0.50
1:B:1290:ILE:HG12	1:B:1296:VAL:HG22	1.93	0.50
1:C:1273:VAL:HG23	1:C:1578:ALA:HB1	1.92	0.50
1:A:1522:ASP:HB2	1:A:1526:ILE:HB	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2290:TYR:CZ	1:A:2301:ARG:HG3	2.46	0.50
1:D:1290:ILE:HG12	1:D:1296:VAL:HG22	1.93	0.50
1:A:1290:ILE:HG12	1:A:1296:VAL:HG22	1.93	0.50
1:A:1130:MET:HG2	1:A:1139:GLN:HG2	1.92	0.50
1:A:1827:VAL:HG13	1:A:1828:THR:HG23	1.92	0.50
1:B:1274:GLY:HA2	1:B:1321:VAL:HG11	1.94	0.50
1:C:1522:ASP:HB2	1:C:1526:ILE:HB	1.92	0.50
1:A:1874:LEU:HD13	1:A:2521:ILE:HD12	1.93	0.50
1:A:1299:ILE:HD12	1:A:1341:VAL:HG11	1.94	0.49
1:D:1299:ILE:HD12	1:D:1341:VAL:HG11	1.94	0.49
1:A:2659:LEU:HD21	1:A:2679:VAL:HG11	1.95	0.49
1:B:1522:ASP:HB2	1:B:1526:ILE:HB	1.93	0.49
1:D:1522:ASP:HB2	1:D:1526:ILE:HB	1.92	0.49
1:A:1274:GLY:HA2	1:A:1321:VAL:HG11	1.94	0.49
1:B:1299:ILE:HD12	1:B:1341:VAL:HG11	1.93	0.49
1:D:1274:GLY:HA2	1:D:1321:VAL:HG11	1.95	0.49
1:D:2659:LEU:HD21	1:D:2679:VAL:HG11	1.95	0.49
1:C:1744:PRO:HB2	1:C:2006:THR:HG21	1.94	0.49
1:C:2039:PHE:HB2	1:C:2044:ARG:HB2	1.95	0.48
1:B:1755:MET:HG3	1:B:1759:ILE:HG12	1.95	0.48
1:C:1299:ILE:HD12	1:C:1341:VAL:HG11	1.94	0.48
1:D:1755:MET:HG3	1:D:1759:ILE:HG12	1.95	0.48
1:A:1755:MET:HG3	1:A:1759:ILE:HG12	1.95	0.48
1:B:2039:PHE:HB2	1:B:2044:ARG:HB2	1.94	0.48
1:C:1755:MET:HG3	1:C:1759:ILE:HG12	1.94	0.48
1:C:1279:LEU:HD23	1:C:1290:ILE:HD12	1.96	0.48
1:B:1995:PRO:HB2	1:B:2256:LEU:HB3	1.96	0.48
1:A:2039:PHE:HB2	1:A:2044:ARG:HB2	1.94	0.48
1:D:1279:LEU:HD23	1:D:1290:ILE:HD12	1.96	0.47
1:D:2039:PHE:HB2	1:D:2044:ARG:HB2	1.94	0.47
1:B:1279:LEU:HD23	1:B:1290:ILE:HD12	1.96	0.47
1:A:1279:LEU:HD23	1:A:1290:ILE:HD12	1.96	0.47
1:C:1274:GLY:HA2	1:C:1321:VAL:HG11	1.95	0.47
1:B:2088:SER:HB3	1:B:2108:SER:HB3	1.96	0.47
1:A:1995:PRO:HB2	1:A:2256:LEU:HB3	1.96	0.47
1:B:2261:HIS:HA	1:B:2274:LEU:HB2	1.96	0.47
1:D:1788:VAL:HG22	1:D:1793:ARG:HG2	1.96	0.47
1:A:1442:LEU:HG	1:A:1461:GLU:HG3	1.97	0.47
1:A:1788:VAL:HG22	1:A:1793:ARG:HG2	1.97	0.47
1:C:1788:VAL:HG22	1:C:1793:ARG:HG2	1.96	0.47
1:A:1013:ALA:HB3	1:A:1014:PRO:HD3	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1442:LEU:HG	1:D:1461:GLU:HG3	1.97	0.47
1:D:2518:LEU:HB3	1:D:2522:ILE:HD12	1.96	0.47
1:D:1995:PRO:HB2	1:D:2256:LEU:HB3	1.97	0.46
1:B:2518:LEU:HB3	1:B:2522:ILE:HD12	1.97	0.46
1:D:2172:THR:HG22	1:D:2177:THR:HG22	1.97	0.46
1:C:2518:LEU:HB3	1:C:2522:ILE:HD12	1.97	0.46
1:A:2518:LEU:HB3	1:A:2522:ILE:HD12	1.97	0.46
1:B:1013:ALA:HB3	1:B:1014:PRO:HD3	1.96	0.46
1:B:1788:VAL:HG22	1:B:1793:ARG:HG2	1.97	0.46
1:C:1013:ALA:HB3	1:C:1014:PRO:HD3	1.96	0.46
1:D:1013:ALA:HB3	1:D:1014:PRO:HD3	1.96	0.46
1:C:1442:LEU:HG	1:C:1461:GLU:HG3	1.98	0.46
1:A:2646:THR:HG22	1:A:2704:LEU:HD22	1.97	0.46
1:B:1267:ALA:HB3	1:B:1284:PHE:HB2	1.98	0.46
1:B:2584:LYS:HB3	1:B:2587:HIS:HB2	1.98	0.46
1:A:2402:THR:HG23	1:A:2439:PHE:HA	1.98	0.45
1:B:2172:THR:HG22	1:B:2177:THR:HG22	1.99	0.45
1:C:1995:PRO:HB2	1:C:2256:LEU:HB3	1.98	0.45
1:C:1267:ALA:HB3	1:C:1284:PHE:HB2	1.99	0.45
1:C:956:LEU:HB3	1:C:957:VAL:H	1.63	0.45
1:B:1744:PRO:HB2	1:B:2006:THR:HG21	1.99	0.45
1:D:1267:ALA:HB3	1:D:1284:PHE:HB2	1.98	0.45
1:B:1955:ALA:HB3	1:B:2210:MET:CE	2.46	0.45
1:D:982:TYR:CB	1:D:983:PRO:CD	2.95	0.45
1:B:1442:LEU:HG	1:B:1461:GLU:HG3	1.98	0.45
1:A:1955:ALA:HB3	1:A:2210:MET:CE	2.47	0.44
1:D:1955:ALA:HB3	1:D:2210:MET:CE	2.46	0.44
1:A:2199:LEU:HD21	1:A:2202:TRP:CD1	2.52	0.44
1:A:2261:HIS:HA	1:A:2274:LEU:HB2	1.98	0.44
1:B:1517:TYR:HB3	1:B:1529:LEU:HD11	1.99	0.44
1:D:1820:PRO:HB3	1:D:1826:THR:HA	1.99	0.44
1:A:2056:LEU:HD21	1:A:2059:ILE:HD11	1.99	0.44
1:B:1820:PRO:HB3	1:B:1826:THR:HA	2.00	0.44
1:C:1955:ALA:HB3	1:C:2210:MET:CE	2.46	0.44
1:A:956:LEU:HB3	1:A:957:VAL:H	1.63	0.44
1:A:1267:ALA:HB3	1:A:1284:PHE:HB2	1.98	0.44
1:C:2172:THR:HG22	1:C:2177:THR:HG22	1.99	0.44
1:D:1707:LEU:HB3	1:D:1721:SER:HB2	2.00	0.44
1:A:1820:PRO:HB3	1:A:1826:THR:HA	2.00	0.44
1:B:1970:VAL:HG22	1:B:1980:ILE:HG12	1.99	0.44
1:A:976:ASN:HB3	1:A:1011:GLU:HB2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:982:TYR:CB	1:A:983:PRO:CD	2.94	0.44
1:D:2693:PHE:CD2	1:D:2708:ARG:HG3	2.52	0.44
1:A:1970:VAL:HG22	1:A:1980:ILE:HG12	2.00	0.43
1:B:1614:ALA:HB3	1:B:1828:THR:HG21	1.99	0.43
1:C:1614:ALA:HB3	1:C:1828:THR:HG21	2.00	0.43
1:A:1517:TYR:HB3	1:A:1529:LEU:HD11	2.00	0.43
1:A:2206:GLN:HB2	1:A:2215:LYS:HB3	2.01	0.43
1:C:2056:LEU:HD21	1:C:2059:ILE:HD11	1.99	0.43
1:D:976:ASN:HB3	1:D:1011:GLU:HB2	2.00	0.43
1:D:2056:LEU:HD21	1:D:2059:ILE:HD11	1.99	0.43
1:A:2584:LYS:HB3	1:A:2587:HIS:HB2	2.00	0.43
1:D:1768:ARG:HH22	1:D:2033:ARG:HD2	1.84	0.43
1:C:976:ASN:HB3	1:C:1011:GLU:HB2	2.00	0.43
1:A:2172:THR:HG22	1:A:2177:THR:HG22	2.00	0.43
1:B:1072:PRO:HB2	1:B:1087:GLU:HG2	2.01	0.43
1:C:2693:PHE:CD2	1:C:2708:ARG:HG3	2.54	0.43
1:D:1688:ALA:HB3	1:D:1697:LEU:HB3	2.01	0.43
1:B:2018:PRO:HD2	1:B:2279:ARG:HG2	2.00	0.43
1:C:1517:TYR:HB3	1:C:1529:LEU:HD11	2.00	0.43
1:C:1820:PRO:HB3	1:C:1826:THR:HA	2.00	0.43
1:C:1121:PRO:HG2	1:C:1124:LEU:HB2	2.01	0.42
1:D:1517:TYR:HB3	1:D:1529:LEU:HD11	2.00	0.42
1:C:2206:GLN:HB2	1:C:2215:LYS:HB3	2.01	0.42
1:D:1249:ARG:HB3	1:D:1264:LYS:HB3	2.01	0.42
1:D:2253:SER:HB3	1:D:2262:LEU:HB2	2.02	0.42
1:A:1616:PRO:HG2	1:A:1830:THR:HG22	2.01	0.42
1:B:1249:ARG:HB3	1:B:1264:LYS:HB3	2.01	0.42
1:B:2056:LEU:HD21	1:B:2059:ILE:HD11	2.00	0.42
1:D:1944:ASP:HB3	1:D:1946:GLN:H	1.85	0.42
1:A:1944:ASP:HB3	1:A:1946:GLN:H	1.84	0.42
1:C:1616:PRO:HG2	1:C:1830:THR:HG22	2.02	0.42
1:A:1768:ARG:HH22	1:A:2033:ARG:HD2	1.85	0.42
1:B:1121:PRO:HG2	1:B:1124:LEU:HB2	2.01	0.42
1:B:2076:VAL:HB	1:B:2095:LYS:HD2	2.02	0.42
1:C:1072:PRO:HB2	1:C:1087:GLU:HG2	2.02	0.42
1:A:1249:ARG:HB3	1:A:1264:LYS:HB3	2.01	0.42
1:B:2139:PRO:HD2	1:D:1689:VAL:O	2.19	0.42
1:C:2436:VAL:HG12	1:C:2437:ILE:HD12	2.00	0.42
1:D:1614:ALA:HB3	1:D:1828:THR:HG21	2.01	0.42
1:D:2206:GLN:HB2	1:D:2215:LYS:HB3	2.01	0.42
1:A:1614:ALA:HB3	1:A:1828:THR:HG21	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:956:LEU:HB3	1:B:957:VAL:H	1.62	0.42
1:C:1768:ARG:HH22	1:C:2033:ARG:HD2	1.85	0.42
1:B:2199:LEU:HD21	1:B:2202:TRP:CD1	2.54	0.42
1:D:1121:PRO:HG2	1:D:1124:LEU:HB2	2.01	0.42
1:A:2025:ILE:HB	1:A:2038:SER:HB2	2.01	0.41
1:D:1072:PRO:HB2	1:D:1087:GLU:HG2	2.02	0.41
1:C:1944:ASP:HB3	1:C:1946:GLN:H	1.85	0.41
1:A:1707:LEU:HB3	1:A:1721:SER:HB2	2.02	0.41
1:B:1417:LEU:HD21	1:B:1468:ILE:HG21	2.03	0.41
1:B:1768:ARG:HH22	1:B:2033:ARG:HD2	1.85	0.41
1:B:1580:ALA:HB2	1:B:1586:TYR:CE2	2.55	0.41
1:B:1821:HIS:CE1	1:B:1823:LEU:HB2	2.56	0.41
1:B:2206:GLN:HB2	1:B:2215:LYS:HB3	2.01	0.41
1:A:1580:ALA:HB2	1:A:1586:TYR:CE2	2.55	0.41
1:B:1944:ASP:HB3	1:B:1946:GLN:H	1.86	0.41
1:C:2398:ASP:HB3	1:C:2404:LEU:HD11	2.03	0.41
1:A:1821:HIS:CE1	1:A:1823:LEU:HB2	2.56	0.41
1:B:976:ASN:HB3	1:B:1011:GLU:HB2	2.00	0.41
1:B:2162:VAL:HG11	1:B:2378:LEU:HD11	2.03	0.41
1:C:1249:ARG:HB3	1:C:1264:LYS:HB3	2.02	0.41
1:C:2650:VAL:HG12	1:C:2708:ARG:HB3	2.02	0.41
1:D:956:LEU:HB3	1:D:957:VAL:H	1.63	0.41
1:D:1616:PRO:HG2	1:D:1830:THR:HG22	2.02	0.41
1:D:1760:THR:HG22	1:D:1775:ILE:HG23	2.03	0.41
1:C:1580:ALA:HB2	1:C:1586:TYR:CE2	2.56	0.41
1:C:1821:HIS:CE1	1:C:1823:LEU:HB2	2.55	0.41
1:D:1580:ALA:HB2	1:D:1586:TYR:CE2	2.55	0.41
1:A:1417:LEU:HD21	1:A:1468:ILE:HG21	2.03	0.41
1:A:2511:LEU:HD13	1:A:2518:LEU:HD11	2.03	0.41
1:D:2146:ARG:HB2	1:D:2156:HIS:HB3	2.03	0.41
1:D:2162:VAL:HG11	1:D:2378:LEU:HD11	2.03	0.41
1:A:2178:LEU:HD13	1:A:2193:TYR:CD1	2.56	0.41
1:B:1616:PRO:HG2	1:B:1830:THR:HG22	2.02	0.41
1:D:1417:LEU:HD21	1:D:1468:ILE:HG21	2.03	0.41
1:A:2088:SER:HB3	1:A:2108:SER:HB3	2.03	0.40
1:A:1012:ARG:HD2	1:A:1015:PHE:HD2	1.86	0.40
1:A:1121:PRO:HG2	1:A:1124:LEU:HB2	2.01	0.40
1:C:2162:VAL:HG11	1:C:2378:LEU:HD11	2.03	0.40
1:D:2511:LEU:HD13	1:D:2518:LEU:HD11	2.03	0.40
1:A:1072:PRO:HB2	1:A:1087:GLU:HG2	2.03	0.40
1:C:1012:ARG:HD2	1:C:1015:PHE:HD2	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1417:LEU:HD21	1:C:1468:ILE:HG21	2.02	0.40
1:C:2018:PRO:HD2	1:C:2279:ARG:HG2	2.03	0.40
1:B:982:TYR:CB	1:B:983:PRO:CD	2.94	0.40
1:B:1810:ASN:HA	1:B:2074:THR:HB	2.04	0.40
1:B:2146:ARG:HB2	1:B:2156:HIS:HB3	2.04	0.40
1:B:2192:GLN:HG3	1:B:2199:LEU:HD13	2.03	0.40
1:C:1707:LEU:HD21	1:C:2616:ILE:HG12	2.02	0.40
1:C:2360:VAL:HG21	1:C:2443:LEU:HD21	2.04	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	1833/1859 (99%)	1769 (96%)	57 (3%)	7 (0%)	30	41
1	B	1833/1859 (99%)	1763 (96%)	63 (3%)	7 (0%)	30	41
1	C	1833/1859 (99%)	1768 (96%)	59 (3%)	6 (0%)	37	49
1	D	1833/1859 (99%)	1765 (96%)	61 (3%)	7 (0%)	30	41
All	All	7332/7436 (99%)	7065 (96%)	240 (3%)	27 (0%)	30	41

All (27) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	982	TYR
1	B	982	TYR
1	C	982	TYR
1	D	982	TYR
1	A	1997	VAL
1	C	1284	PHE
1	C	1997	VAL

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Mol	Chain	Res	Type
1	D	1997	VAL
1	A	1284	PHE
1	B	1284	PHE
1	D	1284	PHE
1	A	1402	ALA
1	A	1790	ASP
1	B	1790	ASP
1	B	1966	GLU
1	B	1997	VAL
1	C	1402	ALA
1	C	1790	ASP
1	D	1402	ALA
1	D	1790	ASP
1	A	1966	GLU
1	B	1402	ALA
1	D	1966	GLU
1	A	1326	GLY
1	B	1326	GLY
1	C	1326	GLY
1	D	1326	GLY

### 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	1601/1620 (99%)	1574 (98%)	27 (2%)	56	73
1	B	1601/1620 (99%)	1573 (98%)	28 (2%)	56	73
1	C	1601/1620 (99%)	1574 (98%)	27 (2%)	56	73
1	D	1601/1620 (99%)	1572 (98%)	29 (2%)	54	72
All	All	6404/6480 (99%)	6293 (98%)	111 (2%)	56	73

All (111) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	956	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	958	SER
1	A	1012	ARG
1	A	1029	PHE
1	A	1115	MET
1	A	1253	CYS
1	A	1392	ASP
1	A	1418	LEU
1	A	1435	MET
1	A	1454	ASP
1	A	1593	ILE
1	A	1599	SER
1	A	1673	MET
1	A	1774	VAL
1	A	1847	ILE
1	A	1944	ASP
1	A	1965	LEU
1	A	1986	SER
1	A	2002	MET
1	A	2192	GLN
1	A	2193	TYR
1	A	2255	ASP
1	A	2261	HIS
1	A	2359	ARG
1	A	2440	HIS
1	A	2591	THR
1	A	2694	THR
1	B	956	LEU
1	B	958	SER
1	B	1012	ARG
1	B	1029	PHE
1	B	1115	MET
1	B	1253	CYS
1	B	1392	ASP
1	B	1418	LEU
1	B	1435	MET
1	B	1454	ASP
1	B	1593	ILE
1	B	1599	SER
1	B	1669	ASP
1	B	1673	MET
1	B	1774	VAL
1	B	1815	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	1847	ILE
1	B	1944	ASP
1	B	1965	LEU
1	B	2002	MET
1	B	2193	TYR
1	B	2255	ASP
1	B	2261	HIS
1	B	2303	SER
1	B	2359	ARG
1	B	2440	HIS
1	B	2591	THR
1	B	2722	ARG
1	C	956	LEU
1	C	958	SER
1	C	1012	ARG
1	C	1029	PHE
1	C	1115	MET
1	C	1253	CYS
1	C	1392	ASP
1	C	1418	LEU
1	C	1435	MET
1	C	1454	ASP
1	C	1593	ILE
1	C	1599	SER
1	C	1673	MET
1	C	1774	VAL
1	C	1847	ILE
1	C	1944	ASP
1	C	1965	LEU
1	C	2002	MET
1	C	2088	SER
1	C	2192	GLN
1	C	2193	TYR
1	C	2255	ASP
1	C	2261	HIS
1	C	2359	ARG
1	C	2440	HIS
1	C	2591	THR
1	C	2722	ARG
1	D	956	LEU
1	D	958	SER
1	D	1012	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	D	1029	PHE
1	D	1115	MET
1	D	1253	CYS
1	D	1392	ASP
1	D	1418	LEU
1	D	1435	MET
1	D	1454	ASP
1	D	1593	ILE
1	D	1599	SER
1	D	1673	MET
1	D	1774	VAL
1	D	1815	SER
1	D	1847	ILE
1	D	1932	LEU
1	D	1944	ASP
1	D	1965	LEU
1	D	1986	SER
1	D	2002	MET
1	D	2192	GLN
1	D	2193	TYR
1	D	2255	ASP
1	D	2261	HIS
1	D	2262	LEU
1	D	2359	ARG
1	D	2440	HIS
1	D	2591	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (18) such sidechains are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	1285	ASN
1	A	1311	ASN
1	A	1892	HIS
1	A	2185	HIS
1	B	1285	ASN
1	B	1311	ASN
1	B	1892	HIS
1	B	2362	HIS
1	C	1311	ASN
1	C	1892	HIS
1	C	2362	HIS
1	D	1285	ASN

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Mol	Chain	Res	Type
1	D	1311	ASN
1	D	1892	HIS
1	D	2185	HIS
1	D	2322	ASN
1	D	2362	HIS
1	D	2587	HIS

### 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](#)

72 monosaccharides are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	NAG	E	1	2,1	14,14,15	0.42	0	17,19,21	0.69	1 (5%)
2	NAG	E	2	2	14,14,15	0.42	0	17,19,21	0.86	0
2	BMA	E	3	2	11,11,12	0.50	0	15,15,17	0.72	0
2	MAN	E	4	2	11,11,12	0.59	0	15,15,17	0.93	1 (6%)
2	MAN	E	5	2	11,11,12	0.65	0	15,15,17	0.76	1 (6%)
2	MAN	E	6	2	11,11,12	0.61	0	15,15,17	0.91	1 (6%)
2	MAN	E	7	2	11,11,12	0.67	0	15,15,17	1.06	1 (6%)
2	MAN	E	8	2	11,11,12	0.48	0	15,15,17	1.07	2 (13%)
3	NAG	F	1	3,1	14,14,15	0.41	0	17,19,21	0.69	0
3	NAG	F	2	3	14,14,15	0.43	0	17,19,21	0.61	0
3	NAG	G	1	3,1	14,14,15	0.43	0	17,19,21	0.59	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	NAG	G	2	3	14,14,15	0.44	0	17,19,21	0.68	0
3	NAG	H	1	3,1	14,14,15	0.43	0	17,19,21	0.91	2 (11%)
3	NAG	H	2	3	14,14,15	0.43	0	17,19,21	0.62	0
3	NAG	I	1	3,1	14,14,15	0.43	0	17,19,21	0.78	0
3	NAG	I	2	3	14,14,15	0.42	0	17,19,21	0.56	0
3	NAG	J	1	3,1	14,14,15	0.42	0	17,19,21	0.78	0
3	NAG	J	2	3	14,14,15	0.44	0	17,19,21	0.72	1 (5%)
2	NAG	K	1	2,1	14,14,15	0.42	0	17,19,21	0.69	0
2	NAG	K	2	2	14,14,15	0.41	0	17,19,21	0.87	1 (5%)
2	BMA	K	3	2	11,11,12	0.50	0	15,15,17	0.71	0
2	MAN	K	4	2	11,11,12	0.58	0	15,15,17	0.92	1 (6%)
2	MAN	K	5	2	11,11,12	0.63	0	15,15,17	0.76	1 (6%)
2	MAN	K	6	2	11,11,12	0.62	0	15,15,17	0.90	1 (6%)
2	MAN	K	7	2	11,11,12	0.67	0	15,15,17	1.05	1 (6%)
2	MAN	K	8	2	11,11,12	0.55	0	15,15,17	1.02	2 (13%)
3	NAG	L	1	3,1	14,14,15	0.41	0	17,19,21	0.71	0
3	NAG	L	2	3	14,14,15	0.42	0	17,19,21	0.71	0
3	NAG	M	1	3,1	14,14,15	0.43	0	17,19,21	0.58	0
3	NAG	M	2	3	14,14,15	0.42	0	17,19,21	0.65	0
3	NAG	N	1	3,1	14,14,15	0.41	0	17,19,21	0.88	2 (11%)
3	NAG	N	2	3	14,14,15	0.43	0	17,19,21	0.60	0
3	NAG	O	1	3,1	14,14,15	0.43	0	17,19,21	0.81	0
3	NAG	O	2	3	14,14,15	0.43	0	17,19,21	0.56	0
3	NAG	P	1	3,1	14,14,15	0.42	0	17,19,21	0.79	1 (5%)
3	NAG	P	2	3	14,14,15	0.45	0	17,19,21	0.69	1 (5%)
2	NAG	Q	1	2,1	14,14,15	0.42	0	17,19,21	0.72	1 (5%)
2	NAG	Q	2	2	14,14,15	0.42	0	17,19,21	0.85	1 (5%)
2	BMA	Q	3	2	11,11,12	0.48	0	15,15,17	0.71	0
2	MAN	Q	4	2	11,11,12	0.62	0	15,15,17	0.89	1 (6%)
2	MAN	Q	5	2	11,11,12	0.68	0	15,15,17	0.77	1 (6%)
2	MAN	Q	6	2	11,11,12	0.66	0	15,15,17	0.90	1 (6%)
2	MAN	Q	7	2	11,11,12	0.67	0	15,15,17	1.06	1 (6%)
2	MAN	Q	8	2	11,11,12	0.56	0	15,15,17	1.03	2 (13%)
3	NAG	R	1	3,1	14,14,15	0.43	0	17,19,21	0.75	1 (5%)
3	NAG	R	2	3	14,14,15	0.42	0	17,19,21	0.58	0
3	NAG	S	1	3,1	14,14,15	0.41	0	17,19,21	0.58	0
3	NAG	S	2	3	14,14,15	0.42	0	17,19,21	0.64	0
3	NAG	T	1	3,1	14,14,15	0.45	0	17,19,21	0.86	2 (11%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	NAG	T	2	3	14,14,15	0.42	0	17,19,21	0.61	0
3	NAG	U	1	3,1	14,14,15	0.44	0	17,19,21	0.83	1 (5%)
3	NAG	U	2	3	14,14,15	0.43	0	17,19,21	0.58	0
3	NAG	V	1	3,1	14,14,15	0.43	0	17,19,21	0.80	1 (5%)
3	NAG	V	2	3	14,14,15	0.44	0	17,19,21	0.76	0
2	NAG	W	1	2,1	14,14,15	0.41	0	17,19,21	0.71	1 (5%)
2	NAG	W	2	2	14,14,15	0.40	0	17,19,21	0.83	0
2	BMA	W	3	2	11,11,12	0.54	0	15,15,17	0.68	0
2	MAN	W	4	2	11,11,12	0.58	0	15,15,17	0.91	1 (6%)
2	MAN	W	5	2	11,11,12	0.68	0	15,15,17	0.76	1 (6%)
2	MAN	W	6	2	11,11,12	0.62	0	15,15,17	0.86	1 (6%)
2	MAN	W	7	2	11,11,12	0.65	0	15,15,17	1.03	1 (6%)
2	MAN	W	8	2	11,11,12	0.61	0	15,15,17	1.05	2 (13%)
3	NAG	X	1	3,1	14,14,15	0.43	0	17,19,21	0.71	0
3	NAG	X	2	3	14,14,15	0.44	0	17,19,21	0.62	0
3	NAG	Y	1	3,1	14,14,15	0.43	0	17,19,21	0.60	0
3	NAG	Y	2	3	14,14,15	0.43	0	17,19,21	0.64	0
3	NAG	Z	1	3,1	14,14,15	0.45	0	17,19,21	0.86	2 (11%)
3	NAG	Z	2	3	14,14,15	0.42	0	17,19,21	0.58	0
3	NAG	a	1	3,1	14,14,15	0.43	0	17,19,21	0.79	0
3	NAG	a	2	3	14,14,15	0.42	0	17,19,21	0.56	0
3	NAG	b	1	3,1	14,14,15	0.42	0	17,19,21	0.77	0
3	NAG	b	2	3	14,14,15	0.44	0	17,19,21	0.72	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	NAG	E	1	2,1	-	0/6/23/26	0/1/1/1
2	NAG	E	2	2	-	0/6/23/26	0/1/1/1
2	BMA	E	3	2	-	2/2/19/22	0/1/1/1
2	MAN	E	4	2	-	0/2/19/22	0/1/1/1
2	MAN	E	5	2	-	0/2/19/22	0/1/1/1
2	MAN	E	6	2	-	0/2/19/22	0/1/1/1
2	MAN	E	7	2	-	2/2/19/22	0/1/1/1
2	MAN	E	8	2	-	2/2/19/22	0/1/1/1
3	NAG	F	1	3,1	-	2/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	F	2	3	-	2/6/23/26	0/1/1/1
3	NAG	G	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	G	2	3	-	2/6/23/26	0/1/1/1
3	NAG	H	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	H	2	3	-	2/6/23/26	0/1/1/1
3	NAG	I	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	I	2	3	-	3/6/23/26	0/1/1/1
3	NAG	J	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	J	2	3	-	2/6/23/26	0/1/1/1
2	NAG	K	1	2,1	-	0/6/23/26	0/1/1/1
2	NAG	K	2	2	-	0/6/23/26	0/1/1/1
2	BMA	K	3	2	-	2/2/19/22	0/1/1/1
2	MAN	K	4	2	-	0/2/19/22	0/1/1/1
2	MAN	K	5	2	-	0/2/19/22	0/1/1/1
2	MAN	K	6	2	-	0/2/19/22	0/1/1/1
2	MAN	K	7	2	-	2/2/19/22	0/1/1/1
2	MAN	K	8	2	-	2/2/19/22	0/1/1/1
3	NAG	L	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	L	2	3	-	2/6/23/26	0/1/1/1
3	NAG	M	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	M	2	3	-	2/6/23/26	0/1/1/1
3	NAG	N	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	N	2	3	-	2/6/23/26	0/1/1/1
3	NAG	O	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	O	2	3	-	4/6/23/26	0/1/1/1
3	NAG	P	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	P	2	3	-	2/6/23/26	0/1/1/1
2	NAG	Q	1	2,1	-	0/6/23/26	0/1/1/1
2	NAG	Q	2	2	-	0/6/23/26	0/1/1/1
2	BMA	Q	3	2	-	2/2/19/22	0/1/1/1
2	MAN	Q	4	2	-	0/2/19/22	0/1/1/1
2	MAN	Q	5	2	-	0/2/19/22	0/1/1/1
2	MAN	Q	6	2	-	0/2/19/22	0/1/1/1
2	MAN	Q	7	2	-	2/2/19/22	0/1/1/1
2	MAN	Q	8	2	-	2/2/19/22	0/1/1/1
3	NAG	R	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	R	2	3	-	2/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	S	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	S	2	3	-	2/6/23/26	0/1/1/1
3	NAG	T	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	T	2	3	-	2/6/23/26	0/1/1/1
3	NAG	U	1	3,1	-	3/6/23/26	0/1/1/1
3	NAG	U	2	3	-	4/6/23/26	0/1/1/1
3	NAG	V	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	V	2	3	-	2/6/23/26	0/1/1/1
2	NAG	W	1	2,1	-	0/6/23/26	0/1/1/1
2	NAG	W	2	2	-	0/6/23/26	0/1/1/1
2	BMA	W	3	2	-	2/2/19/22	0/1/1/1
2	MAN	W	4	2	-	0/2/19/22	0/1/1/1
2	MAN	W	5	2	-	0/2/19/22	0/1/1/1
2	MAN	W	6	2	-	0/2/19/22	0/1/1/1
2	MAN	W	7	2	-	2/2/19/22	0/1/1/1
2	MAN	W	8	2	-	2/2/19/22	0/1/1/1
3	NAG	X	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	X	2	3	-	2/6/23/26	0/1/1/1
3	NAG	Y	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	Y	2	3	-	2/6/23/26	0/1/1/1
3	NAG	Z	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	Z	2	3	-	2/6/23/26	0/1/1/1
3	NAG	a	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	a	2	3	-	3/6/23/26	0/1/1/1
3	NAG	b	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	b	2	3	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

All (43) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	7	MAN	C1-O5-C5	3.32	116.69	112.19
2	K	7	MAN	C1-O5-C5	3.29	116.65	112.19
2	Q	7	MAN	C1-O5-C5	3.24	116.58	112.19
2	W	7	MAN	C1-O5-C5	3.20	116.53	112.19
2	K	4	MAN	C1-O5-C5	2.90	116.12	112.19
2	W	8	MAN	C1-C2-C3	2.90	113.23	109.67
2	E	4	MAN	C1-O5-C5	2.90	116.11	112.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	W	4	MAN	C1-O5-C5	2.86	116.06	112.19
2	E	8	MAN	C1-C2-C3	2.83	113.15	109.67
2	Q	4	MAN	C1-O5-C5	2.82	116.01	112.19
2	Q	8	MAN	C1-C2-C3	2.81	113.11	109.67
2	Q	5	MAN	C1-O5-C5	2.76	115.93	112.19
2	E	6	MAN	C1-O5-C5	2.74	115.91	112.19
2	K	5	MAN	C1-O5-C5	2.74	115.90	112.19
2	K	8	MAN	C1-C2-C3	2.71	112.99	109.67
2	E	5	MAN	C1-O5-C5	2.68	115.82	112.19
2	K	6	MAN	C1-O5-C5	2.66	115.80	112.19
2	Q	6	MAN	C1-O5-C5	2.64	115.77	112.19
2	W	5	MAN	C1-O5-C5	2.62	115.74	112.19
2	W	6	MAN	C1-O5-C5	2.62	115.74	112.19
3	H	1	NAG	C4-C3-C2	2.24	114.30	111.02
3	H	1	NAG	C2-N2-C7	2.23	126.08	122.90
3	N	1	NAG	C4-C3-C2	2.22	114.28	111.02
3	Z	1	NAG	C2-N2-C7	2.21	126.05	122.90
3	J	2	NAG	C2-N2-C7	2.18	126.01	122.90
2	E	8	MAN	C1-O5-C5	2.17	115.14	112.19
2	K	8	MAN	C1-O5-C5	2.16	115.12	112.19
2	W	8	MAN	C1-O5-C5	2.15	115.11	112.19
3	T	1	NAG	C4-C3-C2	2.12	114.12	111.02
2	Q	8	MAN	C1-O5-C5	2.12	115.06	112.19
3	U	1	NAG	C2-N2-C7	2.10	125.90	122.90
3	P	1	NAG	C2-N2-C7	2.08	125.86	122.90
3	R	1	NAG	C2-N2-C7	2.07	125.85	122.90
3	P	2	NAG	C2-N2-C7	2.06	125.83	122.90
3	T	1	NAG	C2-N2-C7	2.06	125.83	122.90
2	W	1	NAG	C1-O5-C5	2.05	114.98	112.19
3	N	1	NAG	C2-N2-C7	2.05	125.83	122.90
3	Z	1	NAG	C4-C3-C2	2.05	114.02	111.02
2	Q	1	NAG	C1-O5-C5	2.03	114.95	112.19
2	Q	2	NAG	C2-N2-C7	2.01	125.77	122.90
2	E	1	NAG	C1-O5-C5	2.01	114.91	112.19
2	K	2	NAG	O5-C1-C2	2.01	114.45	111.29
3	V	1	NAG	C1-O5-C5	2.00	114.91	112.19

There are no chirality outliers.

All (95) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	G	1	NAG	C8-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
3	G	1	NAG	O7-C7-N2-C2
3	H	2	NAG	C8-C7-N2-C2
3	H	2	NAG	O7-C7-N2-C2
3	M	1	NAG	C8-C7-N2-C2
3	M	1	NAG	O7-C7-N2-C2
3	N	2	NAG	C8-C7-N2-C2
3	N	2	NAG	O7-C7-N2-C2
3	S	1	NAG	C8-C7-N2-C2
3	S	1	NAG	O7-C7-N2-C2
3	T	2	NAG	C8-C7-N2-C2
3	T	2	NAG	O7-C7-N2-C2
3	Y	1	NAG	C8-C7-N2-C2
3	Y	1	NAG	O7-C7-N2-C2
3	Z	2	NAG	C8-C7-N2-C2
3	Z	2	NAG	O7-C7-N2-C2
2	K	3	BMA	C4-C5-C6-O6
2	Q	3	BMA	C4-C5-C6-O6
2	W	3	BMA	C4-C5-C6-O6
2	E	3	BMA	C4-C5-C6-O6
3	I	2	NAG	C8-C7-N2-C2
3	O	2	NAG	C8-C7-N2-C2
3	U	2	NAG	C8-C7-N2-C2
3	a	2	NAG	C8-C7-N2-C2
3	F	2	NAG	O5-C5-C6-O6
2	W	8	MAN	C4-C5-C6-O6
2	E	8	MAN	C4-C5-C6-O6
3	R	2	NAG	O5-C5-C6-O6
3	X	2	NAG	O5-C5-C6-O6
2	K	8	MAN	C4-C5-C6-O6
2	Q	8	MAN	C4-C5-C6-O6
2	E	8	MAN	O5-C5-C6-O6
2	K	3	BMA	O5-C5-C6-O6
2	Q	3	BMA	O5-C5-C6-O6
2	W	8	MAN	O5-C5-C6-O6
3	I	2	NAG	O7-C7-N2-C2
3	O	2	NAG	O7-C7-N2-C2
3	U	2	NAG	O7-C7-N2-C2
3	a	2	NAG	O7-C7-N2-C2
2	K	8	MAN	O5-C5-C6-O6
2	Q	8	MAN	O5-C5-C6-O6
3	L	2	NAG	O5-C5-C6-O6
2	W	3	BMA	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
2	E	3	BMA	O5-C5-C6-O6
2	W	7	MAN	C4-C5-C6-O6
2	E	7	MAN	C4-C5-C6-O6
2	K	7	MAN	C4-C5-C6-O6
2	Q	7	MAN	C4-C5-C6-O6
3	S	2	NAG	C8-C7-N2-C2
3	G	2	NAG	C8-C7-N2-C2
3	G	2	NAG	O7-C7-N2-C2
3	M	2	NAG	C8-C7-N2-C2
3	S	2	NAG	O7-C7-N2-C2
3	Y	2	NAG	C8-C7-N2-C2
2	W	7	MAN	O5-C5-C6-O6
3	R	2	NAG	C4-C5-C6-O6
3	M	2	NAG	O7-C7-N2-C2
3	F	2	NAG	C4-C5-C6-O6
3	Y	2	NAG	O7-C7-N2-C2
2	K	7	MAN	O5-C5-C6-O6
2	Q	7	MAN	O5-C5-C6-O6
2	E	7	MAN	O5-C5-C6-O6
3	X	2	NAG	C4-C5-C6-O6
3	J	2	NAG	C4-C5-C6-O6
3	P	2	NAG	C4-C5-C6-O6
3	V	2	NAG	C4-C5-C6-O6
3	P	2	NAG	O5-C5-C6-O6
3	L	2	NAG	C4-C5-C6-O6
3	b	2	NAG	C4-C5-C6-O6
3	J	2	NAG	O5-C5-C6-O6
3	V	2	NAG	O5-C5-C6-O6
3	b	2	NAG	O5-C5-C6-O6
3	F	1	NAG	C8-C7-N2-C2
3	L	1	NAG	C8-C7-N2-C2
3	R	1	NAG	C8-C7-N2-C2
3	X	1	NAG	C8-C7-N2-C2
3	F	1	NAG	O7-C7-N2-C2
3	L	1	NAG	O7-C7-N2-C2
3	X	1	NAG	O7-C7-N2-C2
3	O	2	NAG	C4-C5-C6-O6
3	R	1	NAG	O7-C7-N2-C2
3	U	2	NAG	C4-C5-C6-O6
3	a	1	NAG	C8-C7-N2-C2
3	O	1	NAG	C8-C7-N2-C2
3	U	1	NAG	C8-C7-N2-C2

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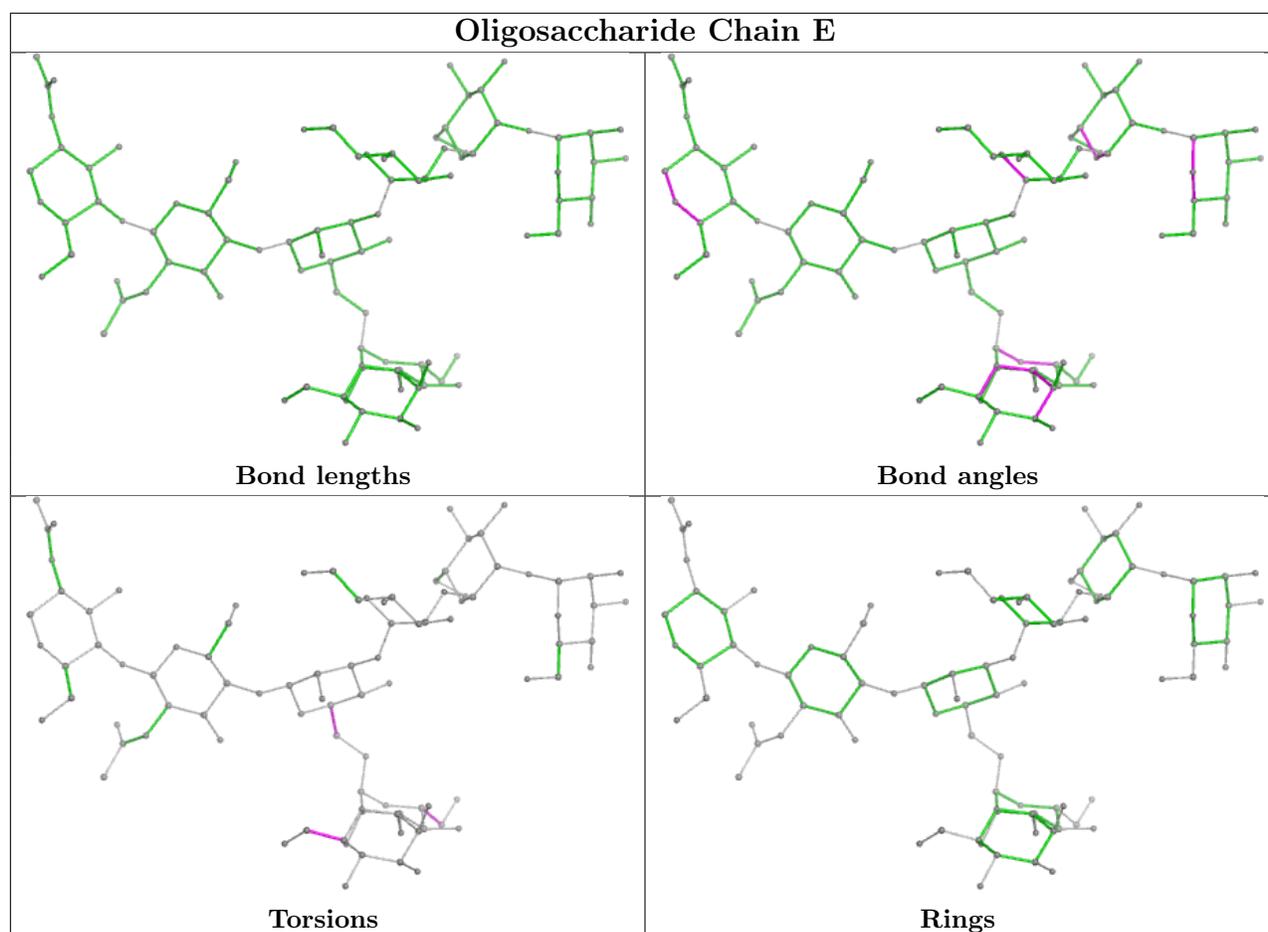
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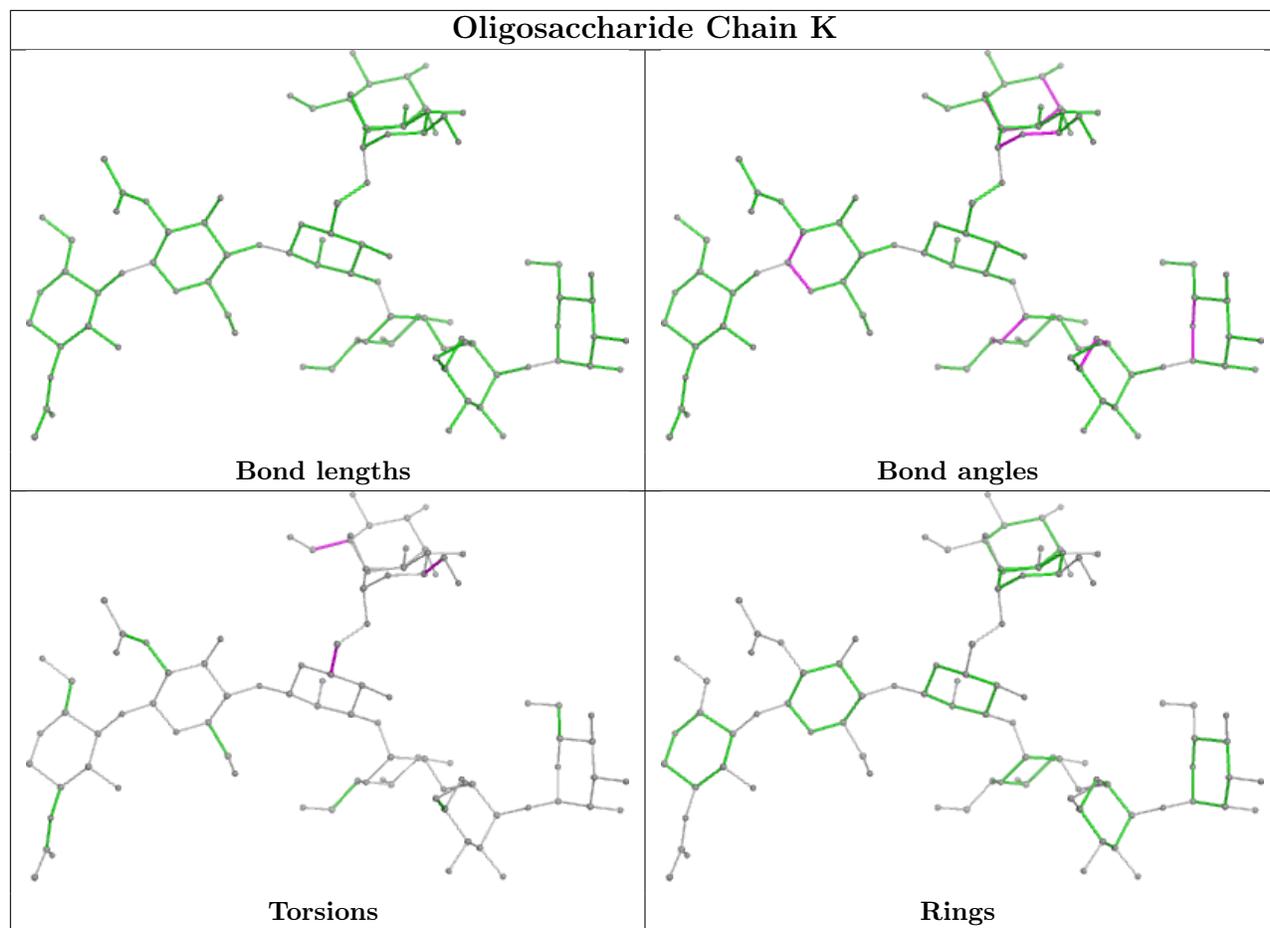
Mol	Chain	Res	Type	Atoms
3	a	2	NAG	C4-C5-C6-O6
3	I	2	NAG	C4-C5-C6-O6
3	I	1	NAG	C8-C7-N2-C2
3	U	1	NAG	O7-C7-N2-C2
3	O	2	NAG	O5-C5-C6-O6
3	a	1	NAG	O7-C7-N2-C2
3	U	2	NAG	O5-C5-C6-O6
3	O	1	NAG	O7-C7-N2-C2
3	U	1	NAG	C4-C5-C6-O6
3	I	1	NAG	C4-C5-C6-O6

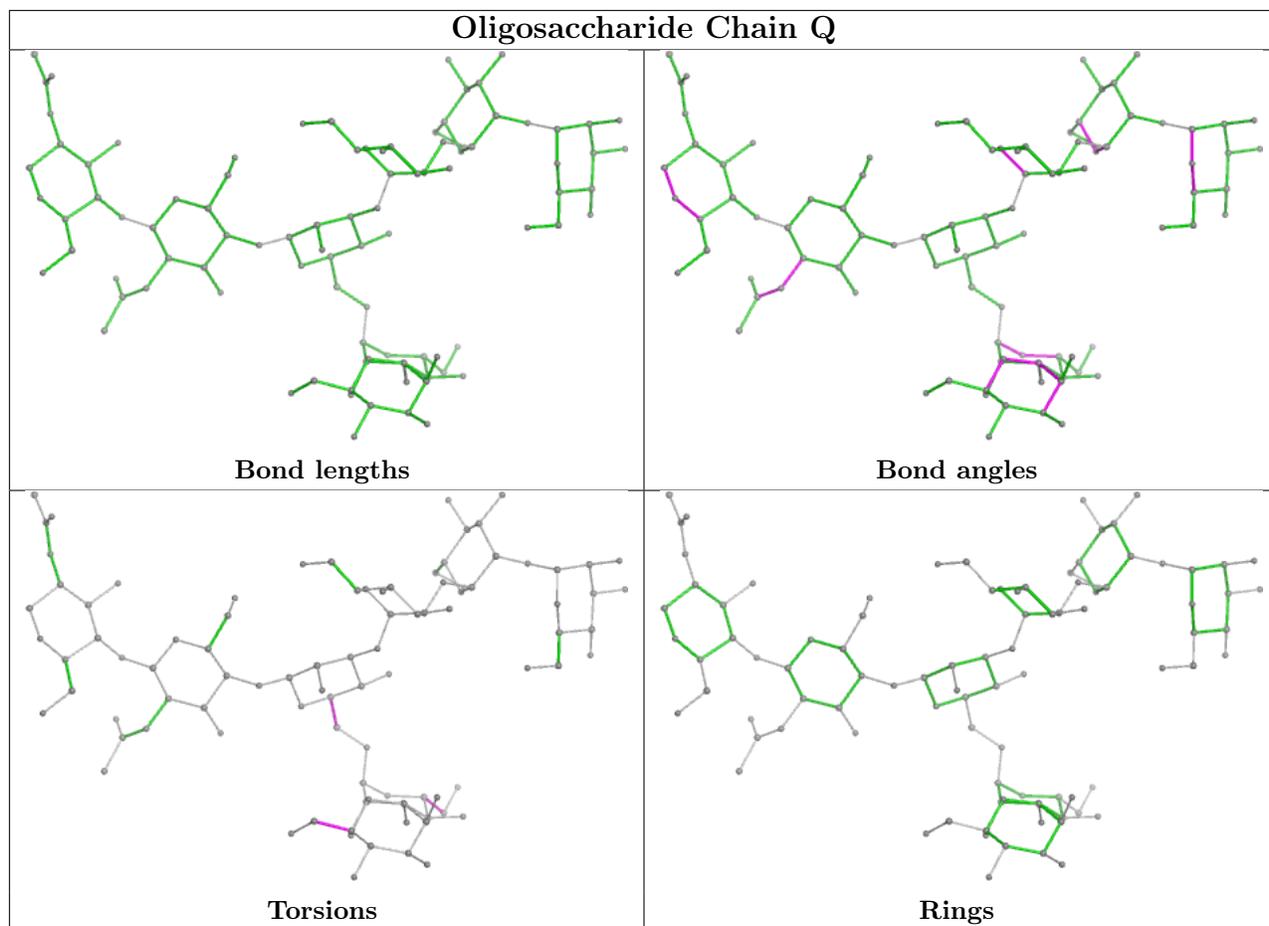
There are no ring outliers.

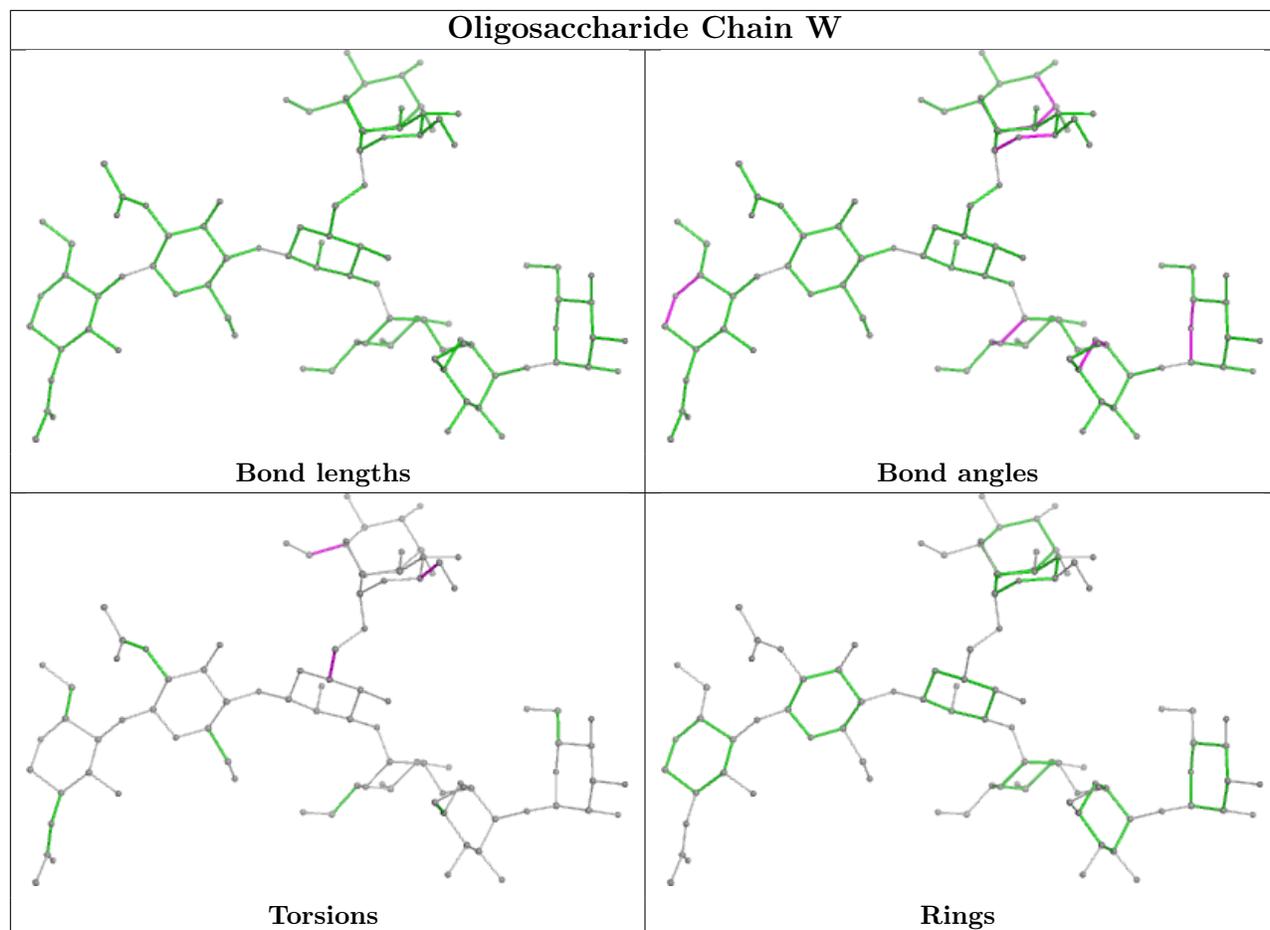
No monomer is involved in short contacts.

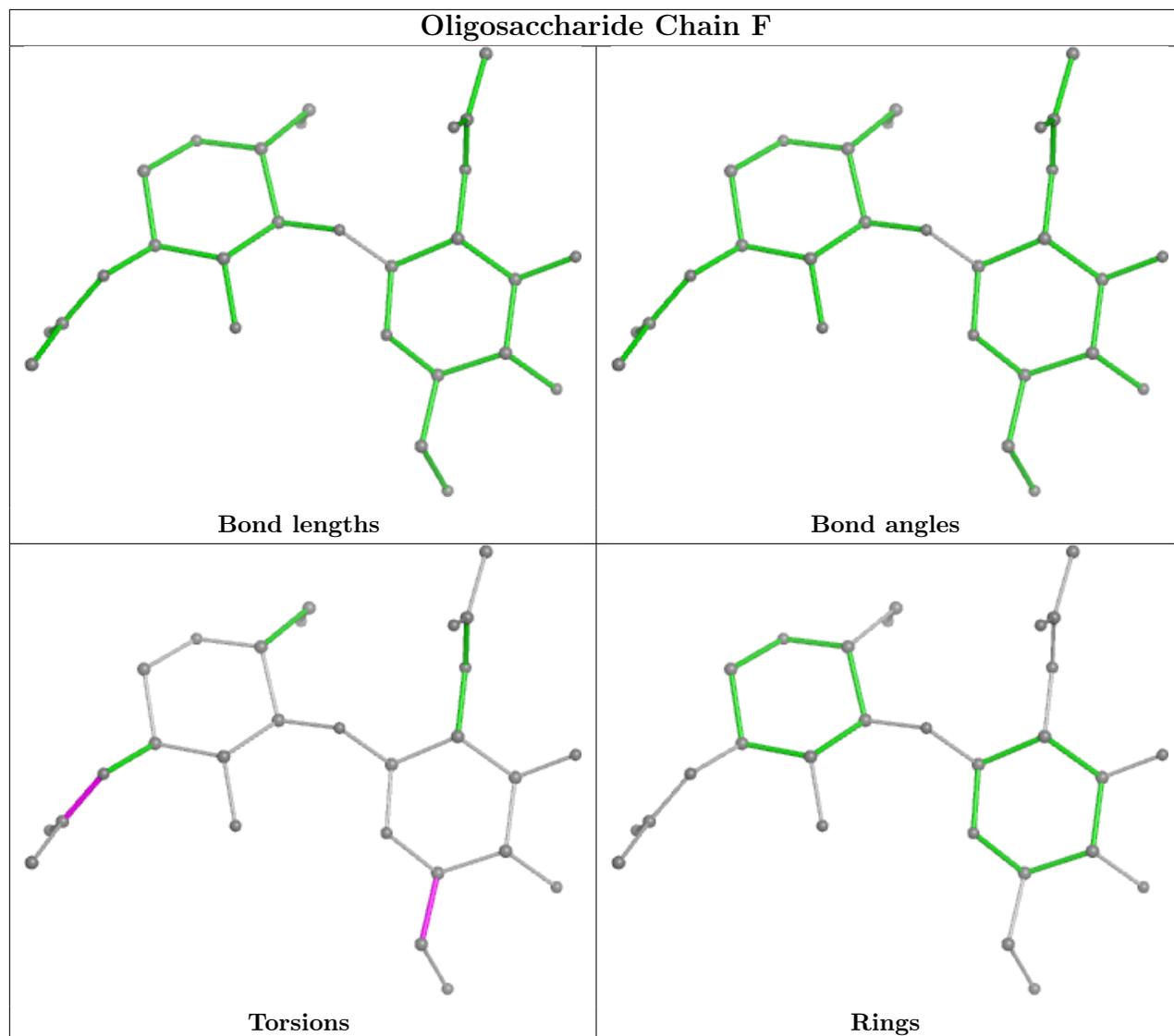
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

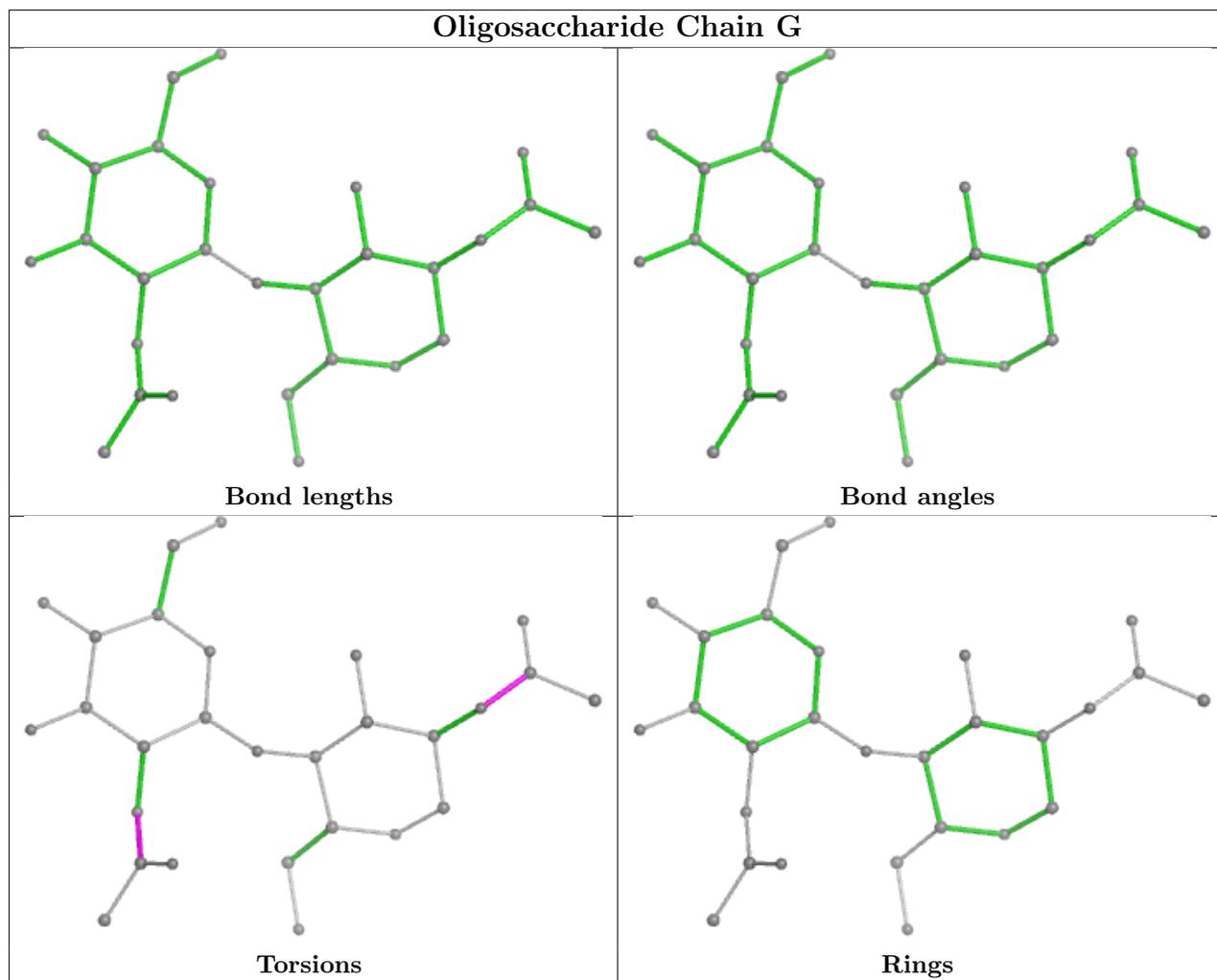


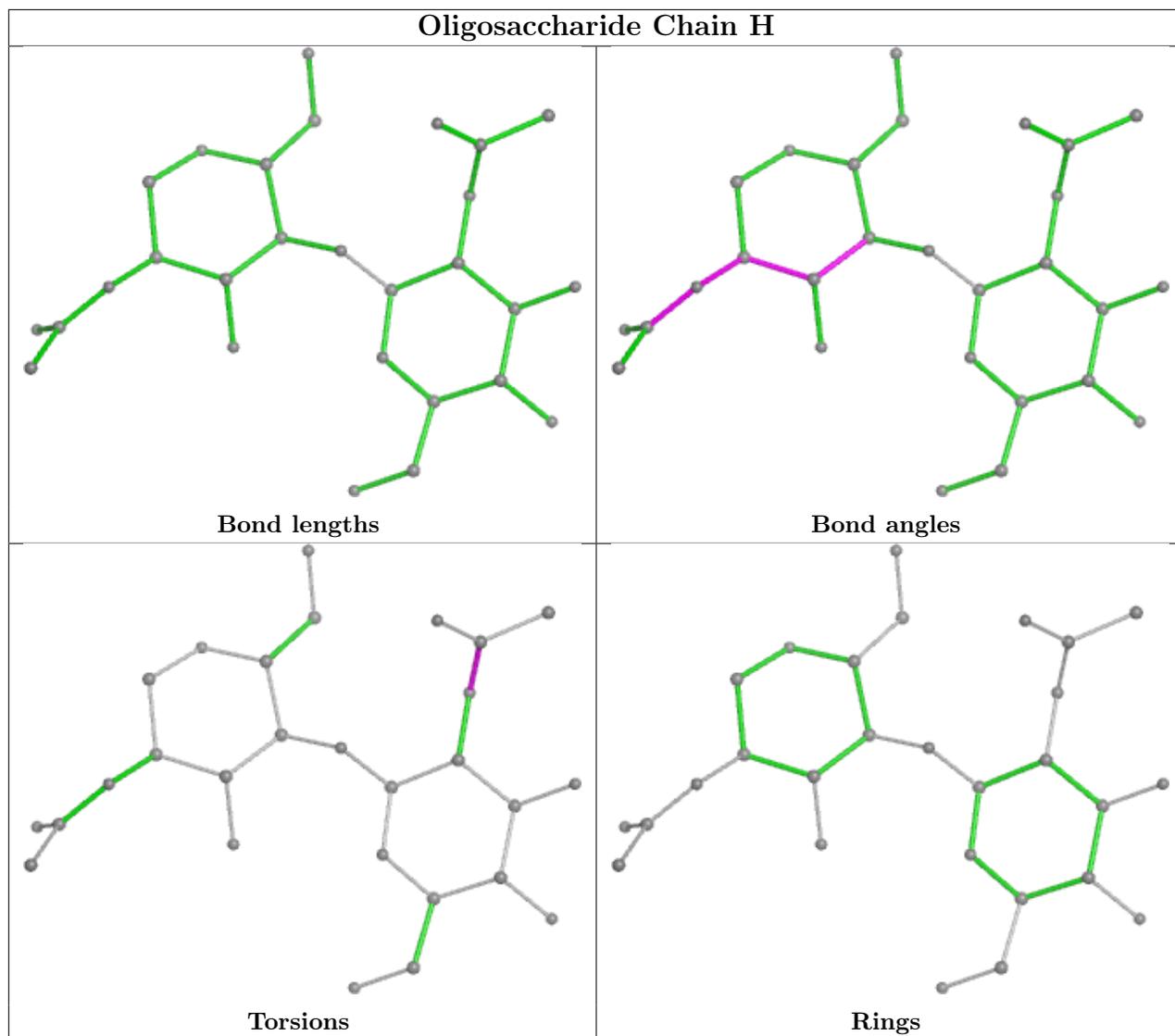


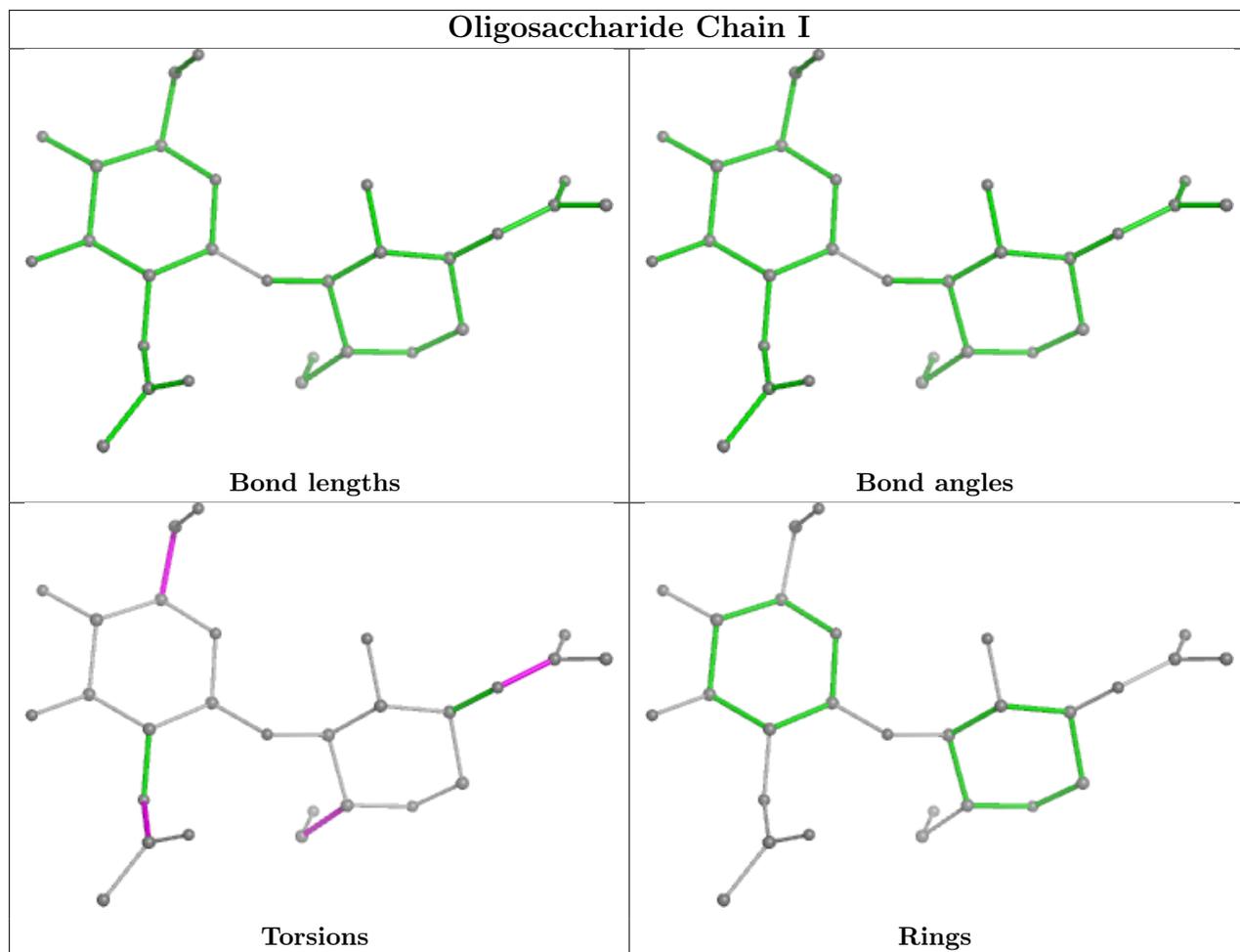


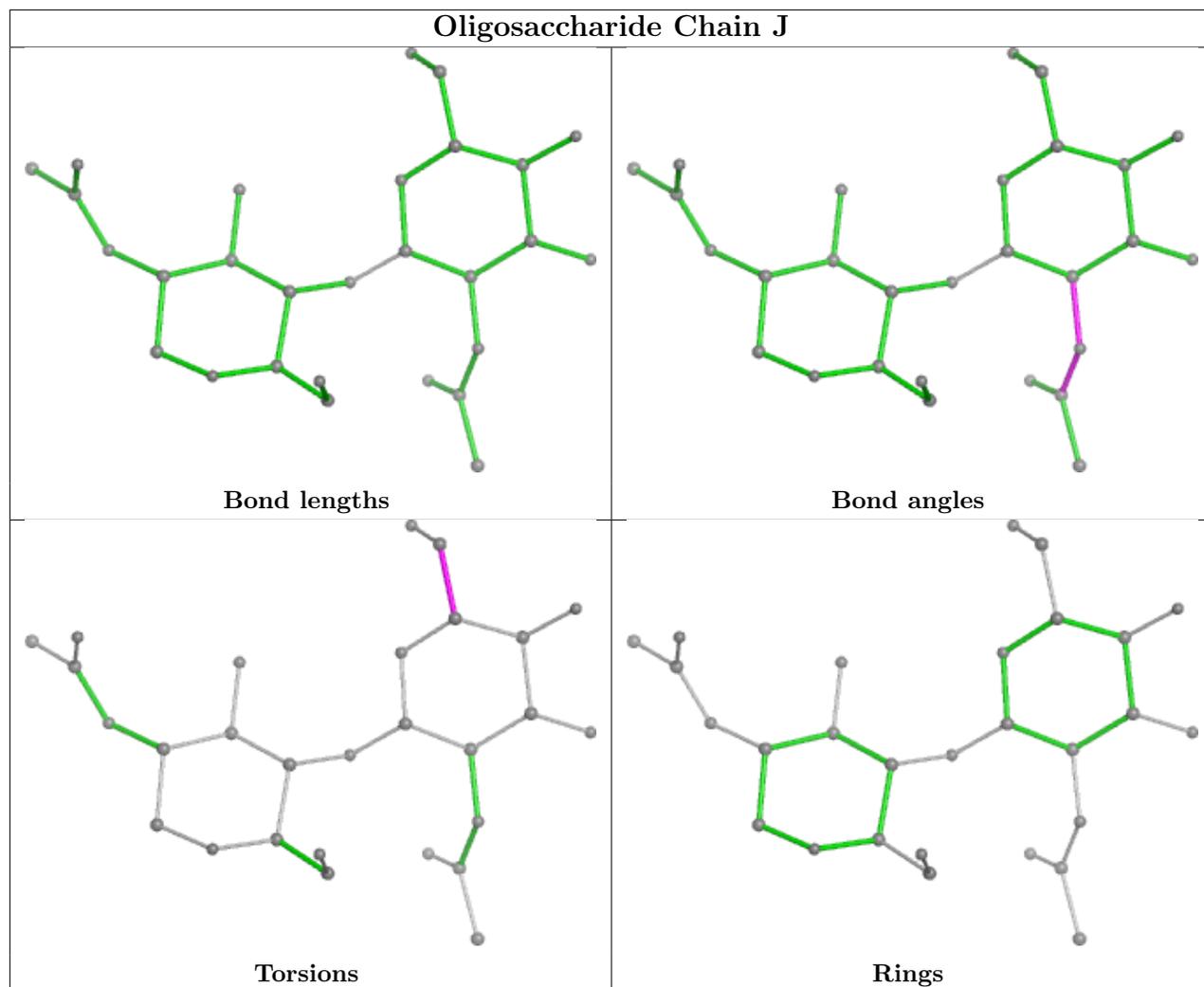


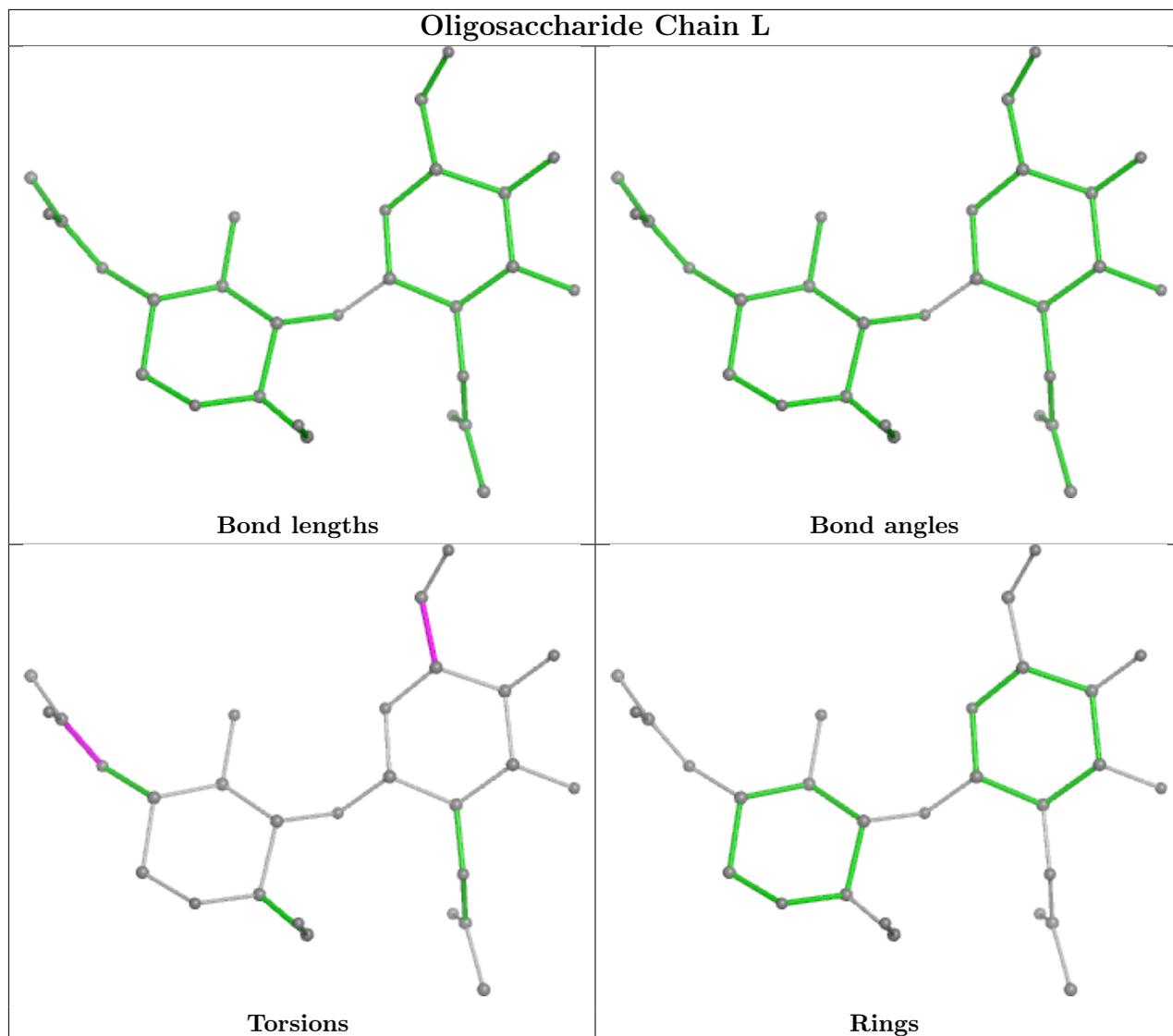


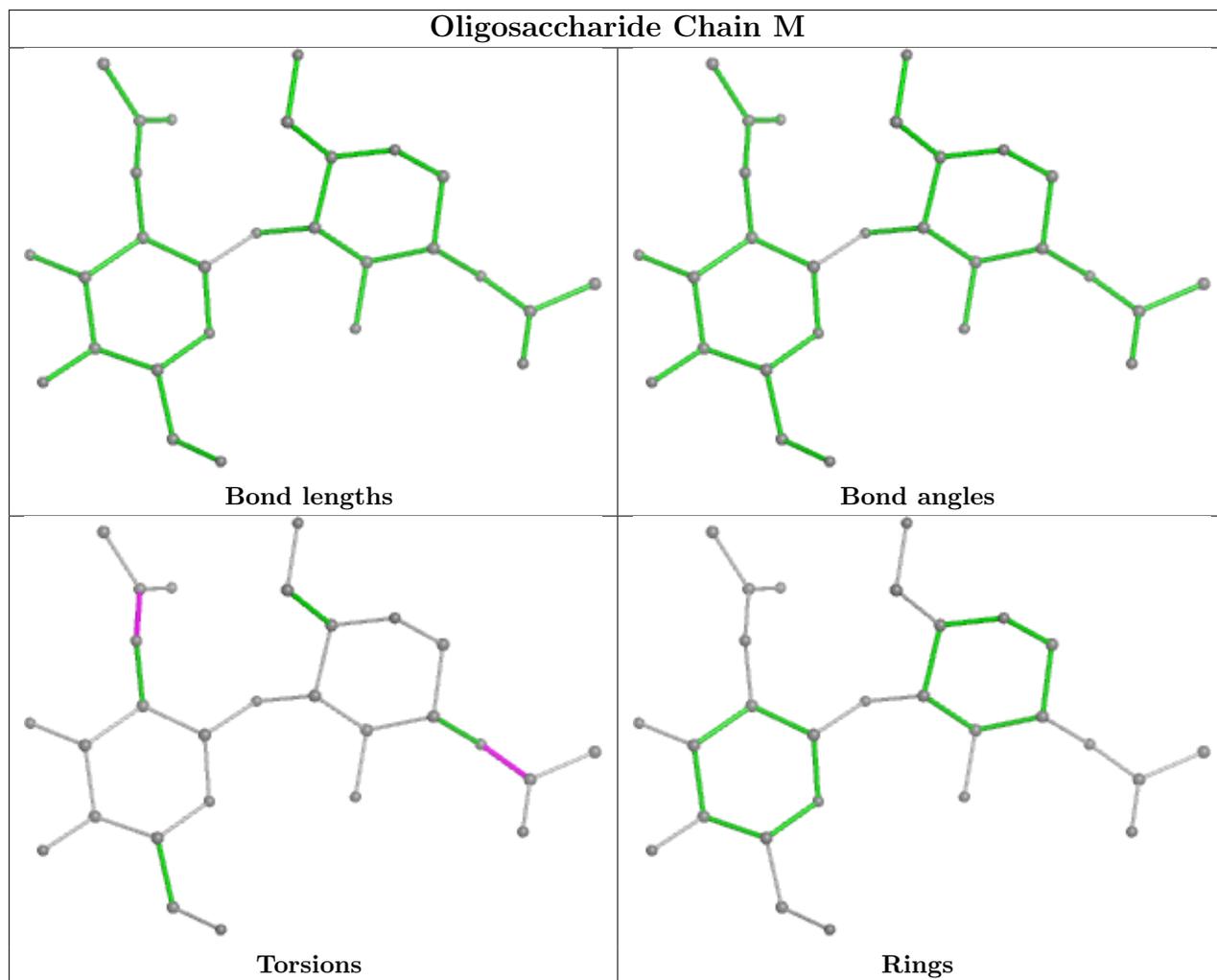


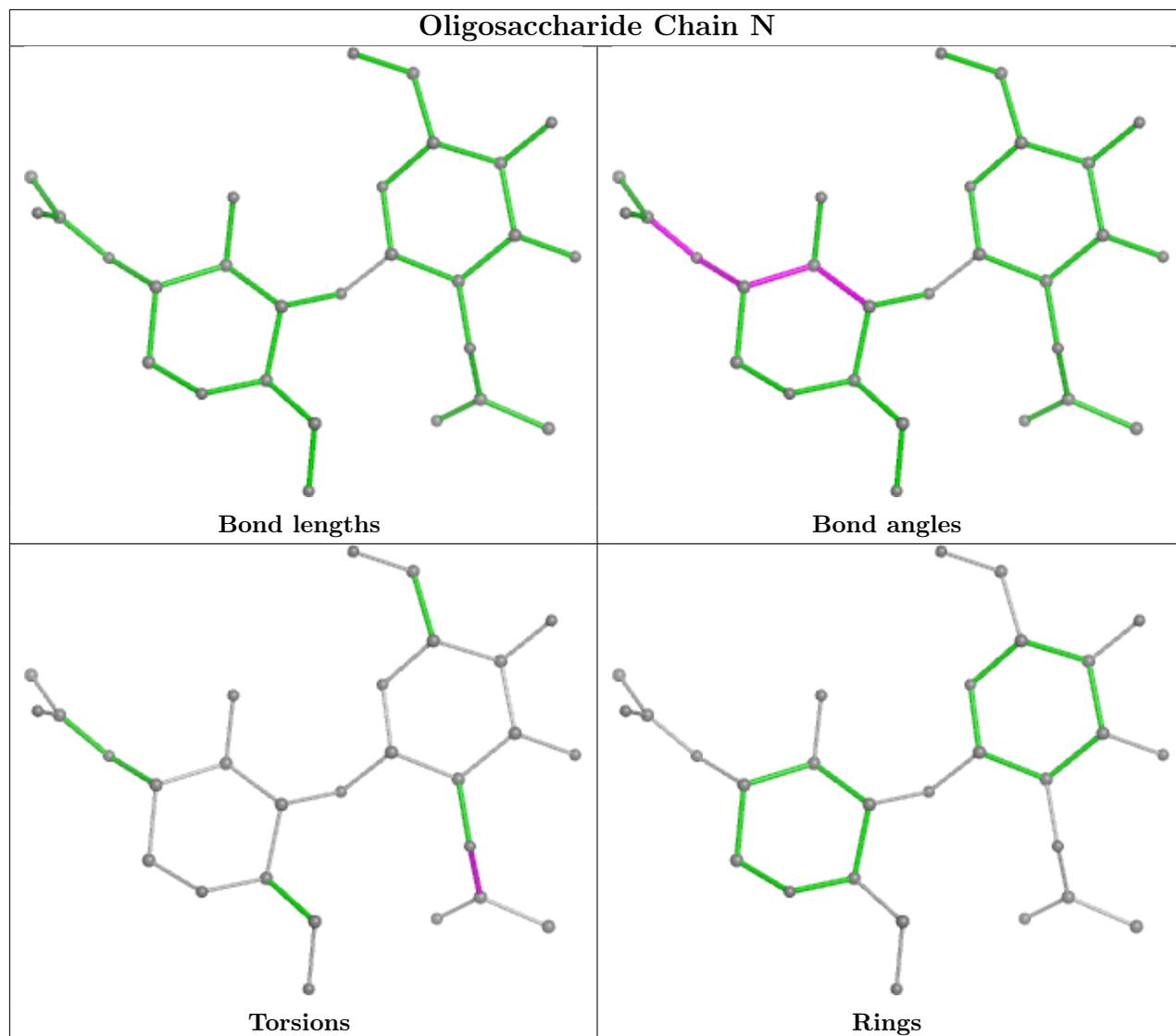


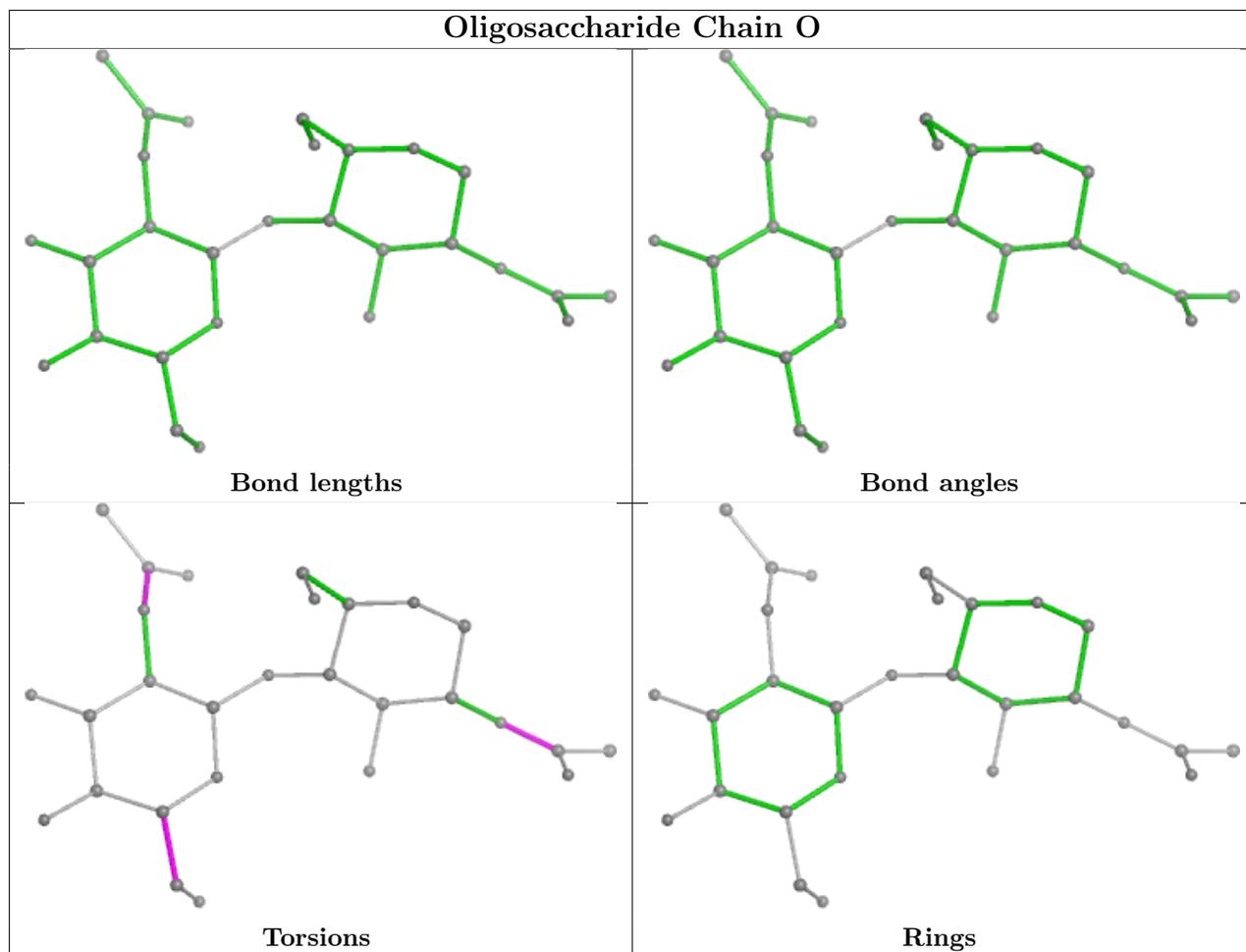


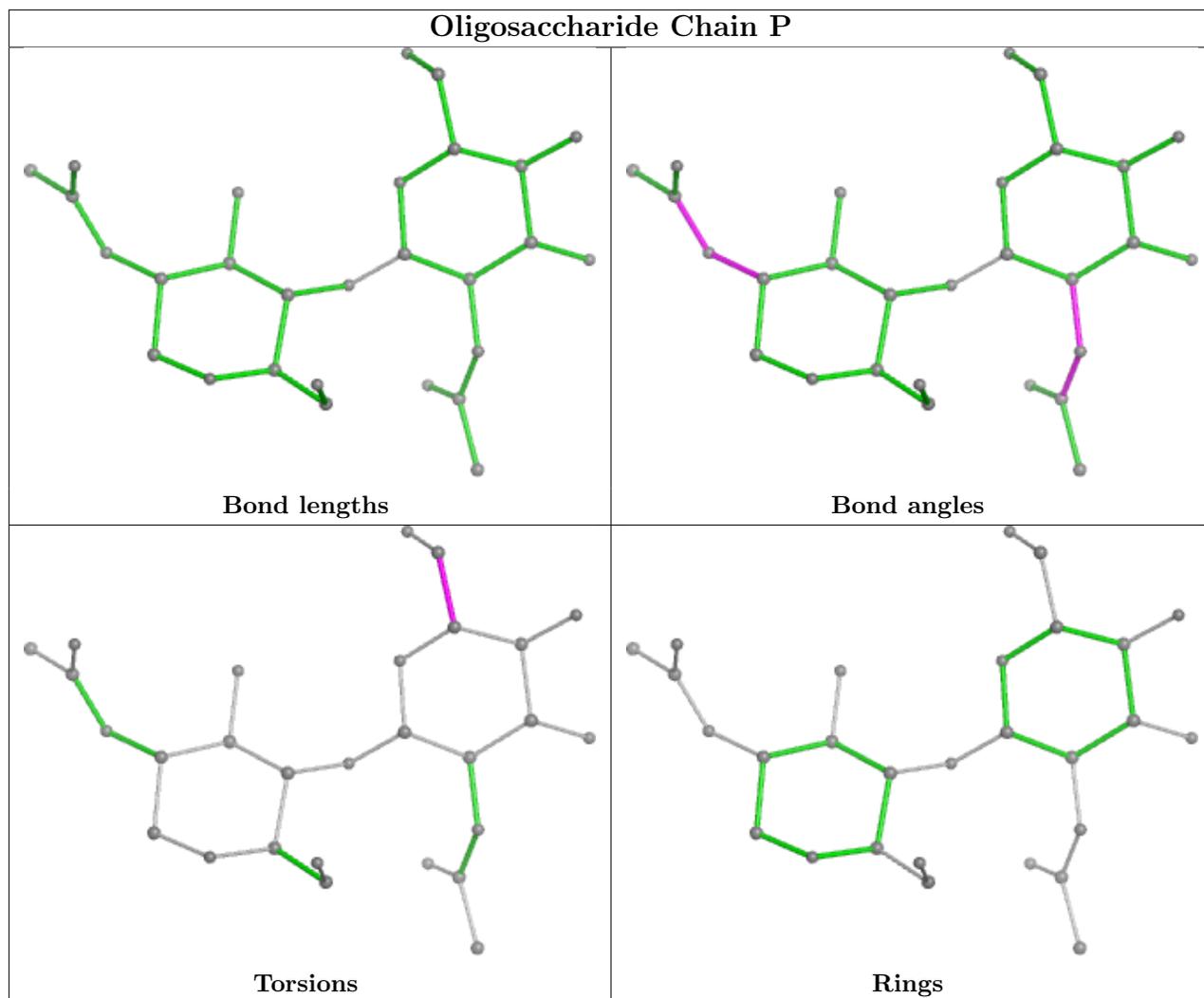


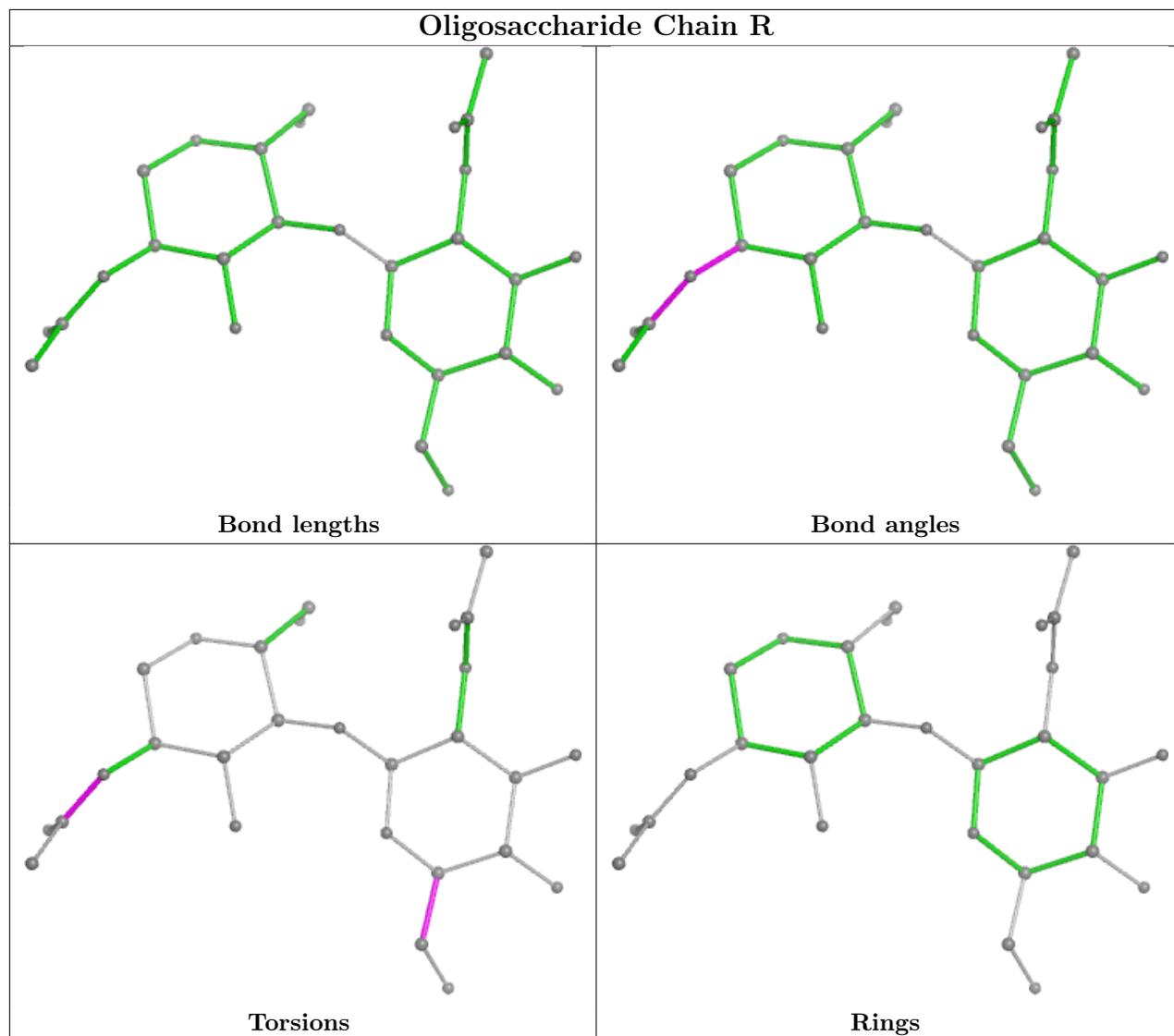


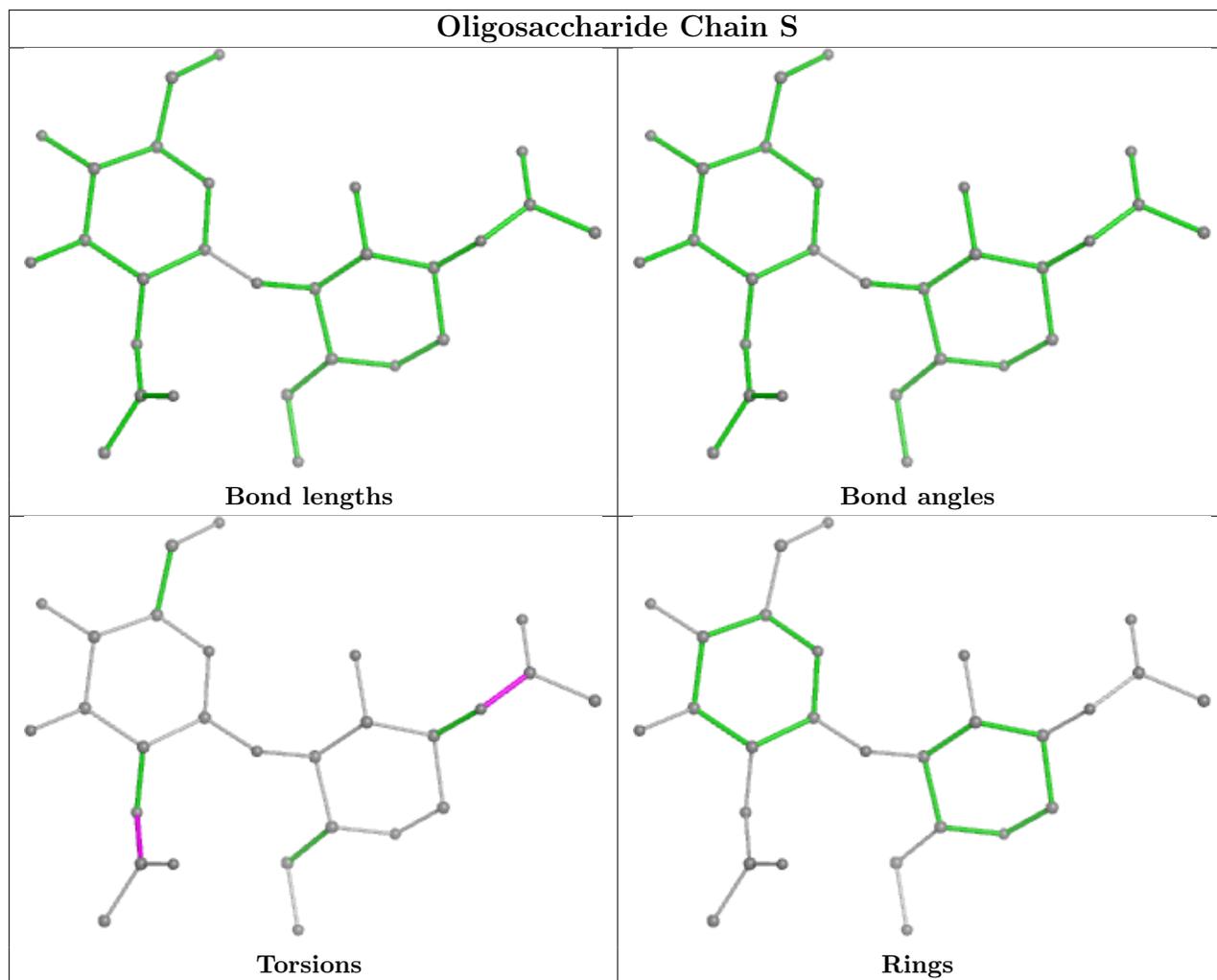


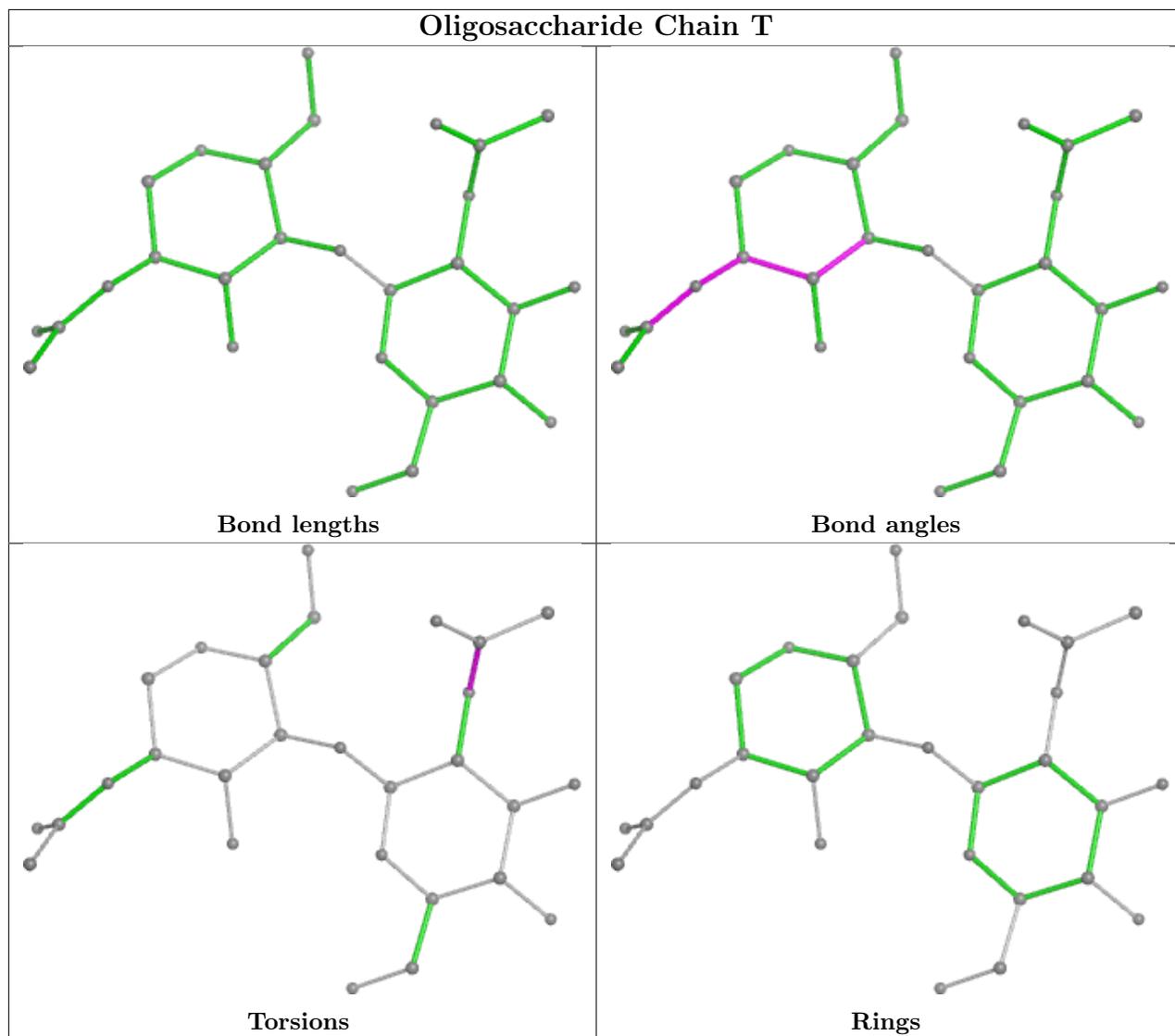


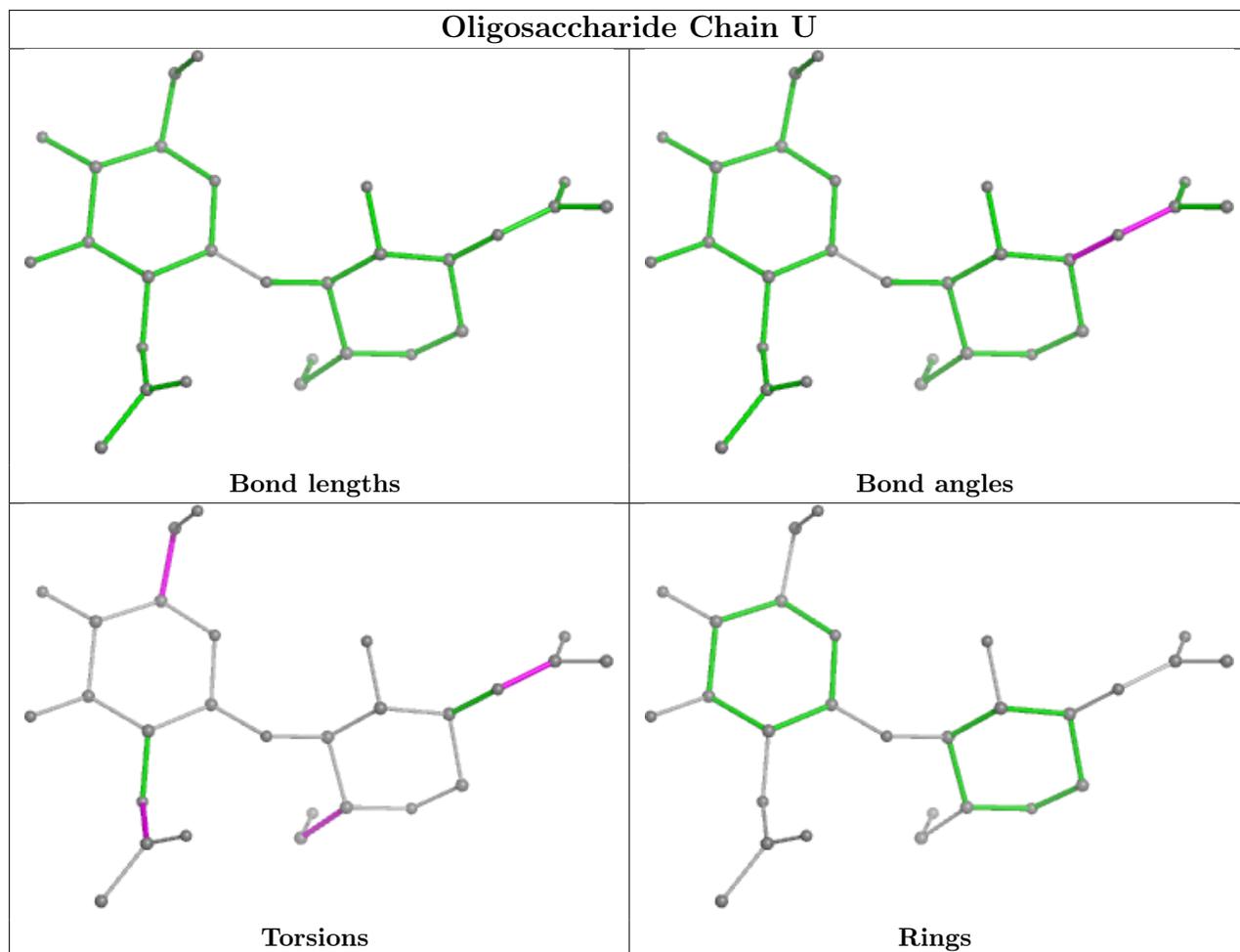


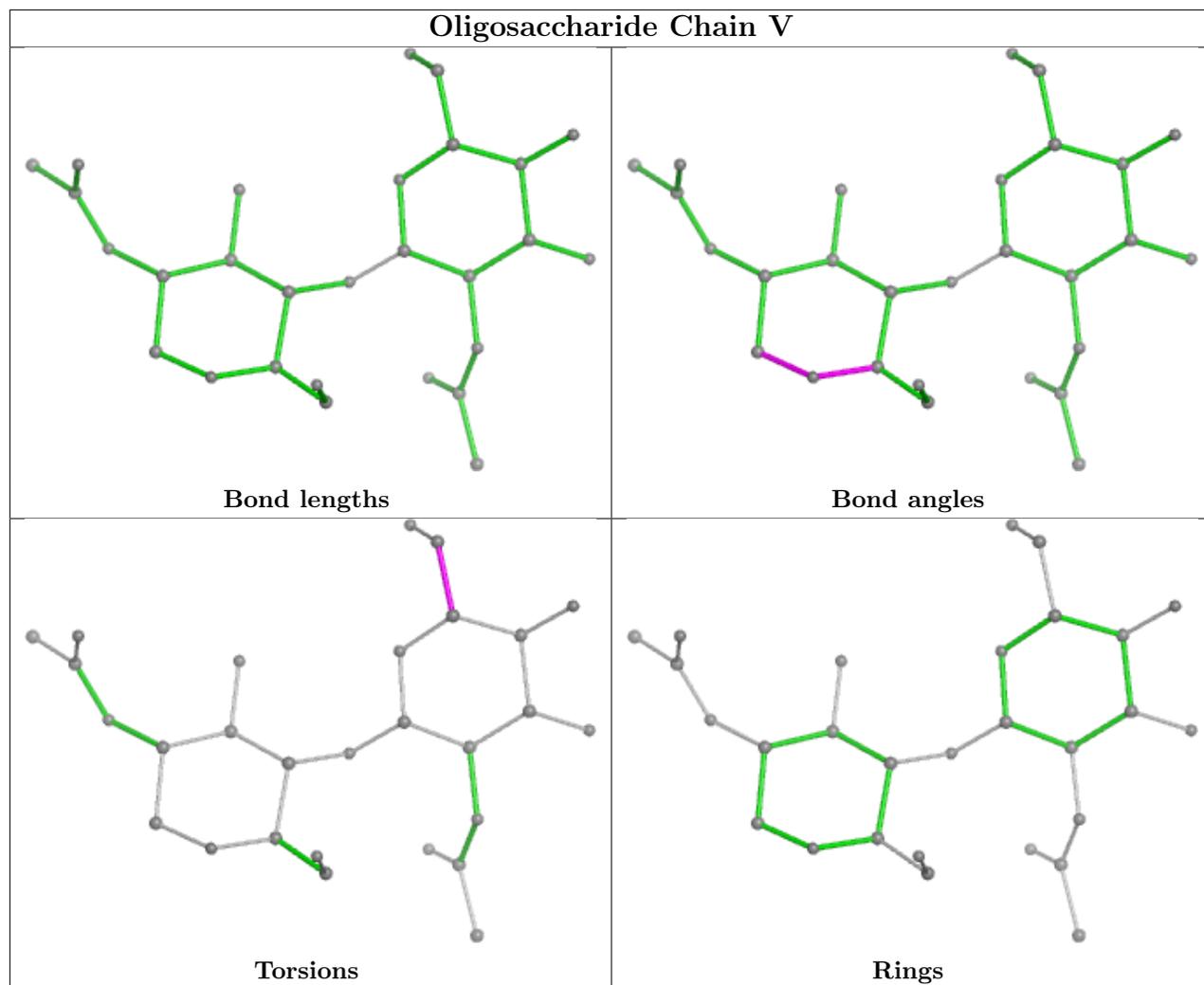


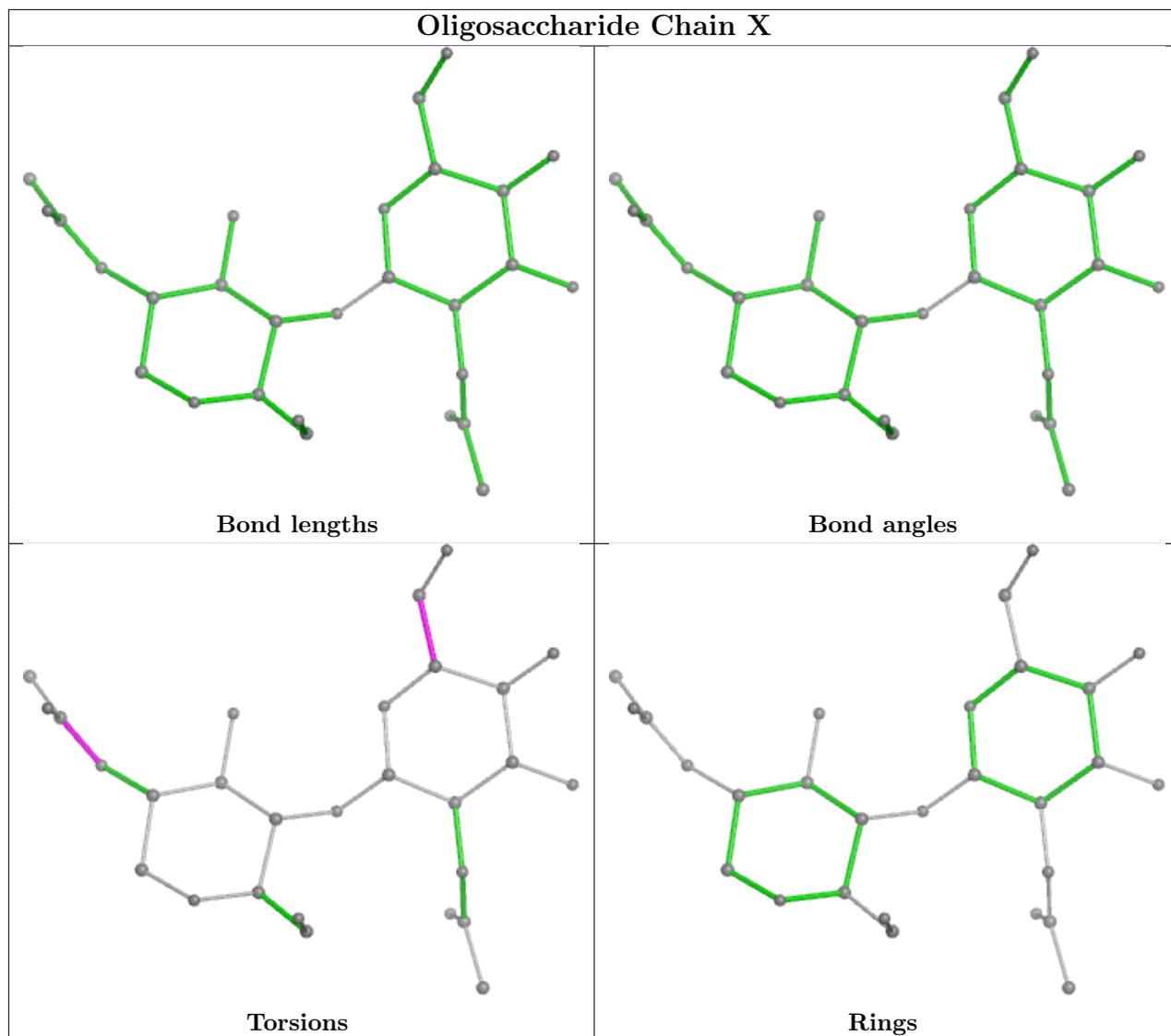


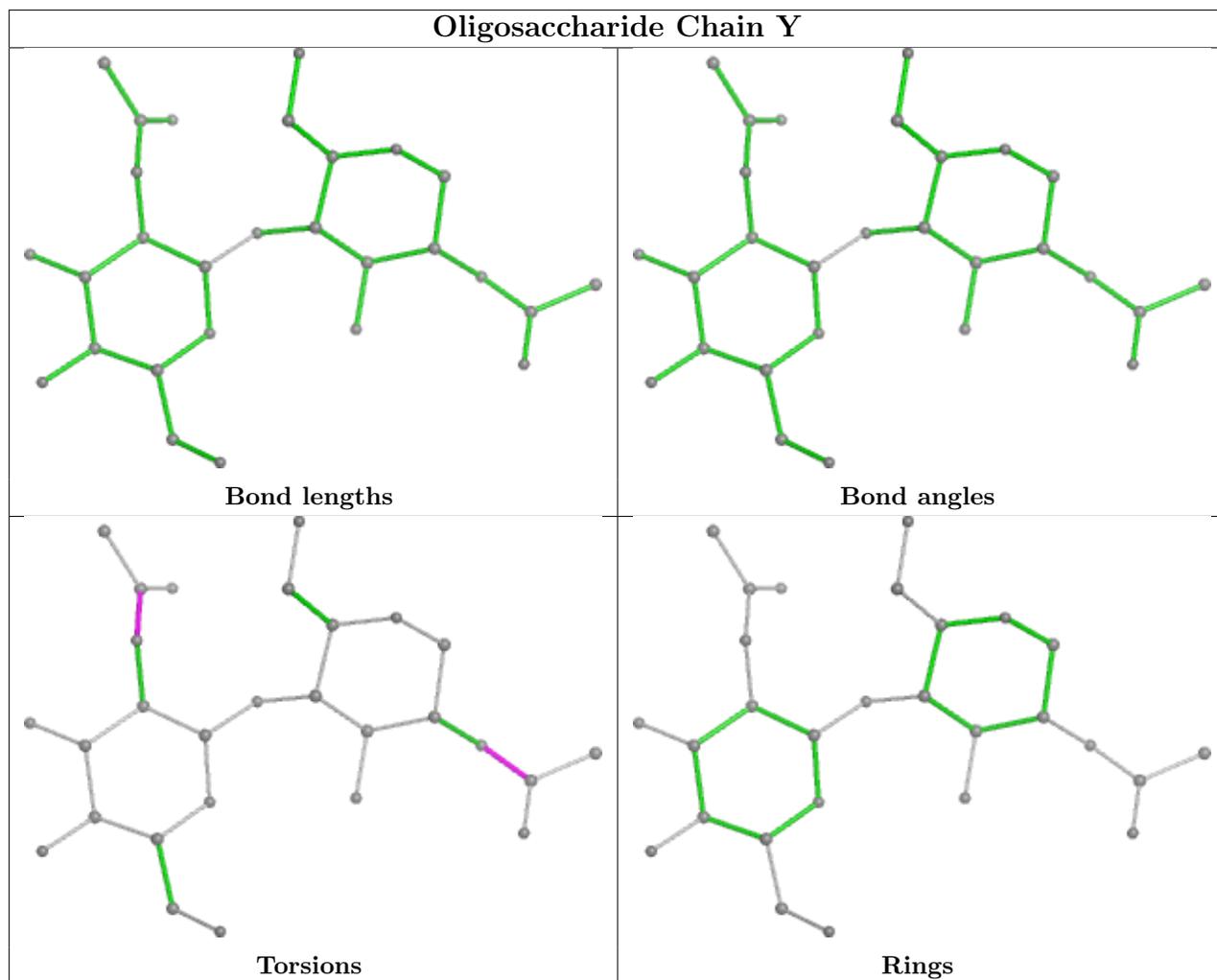


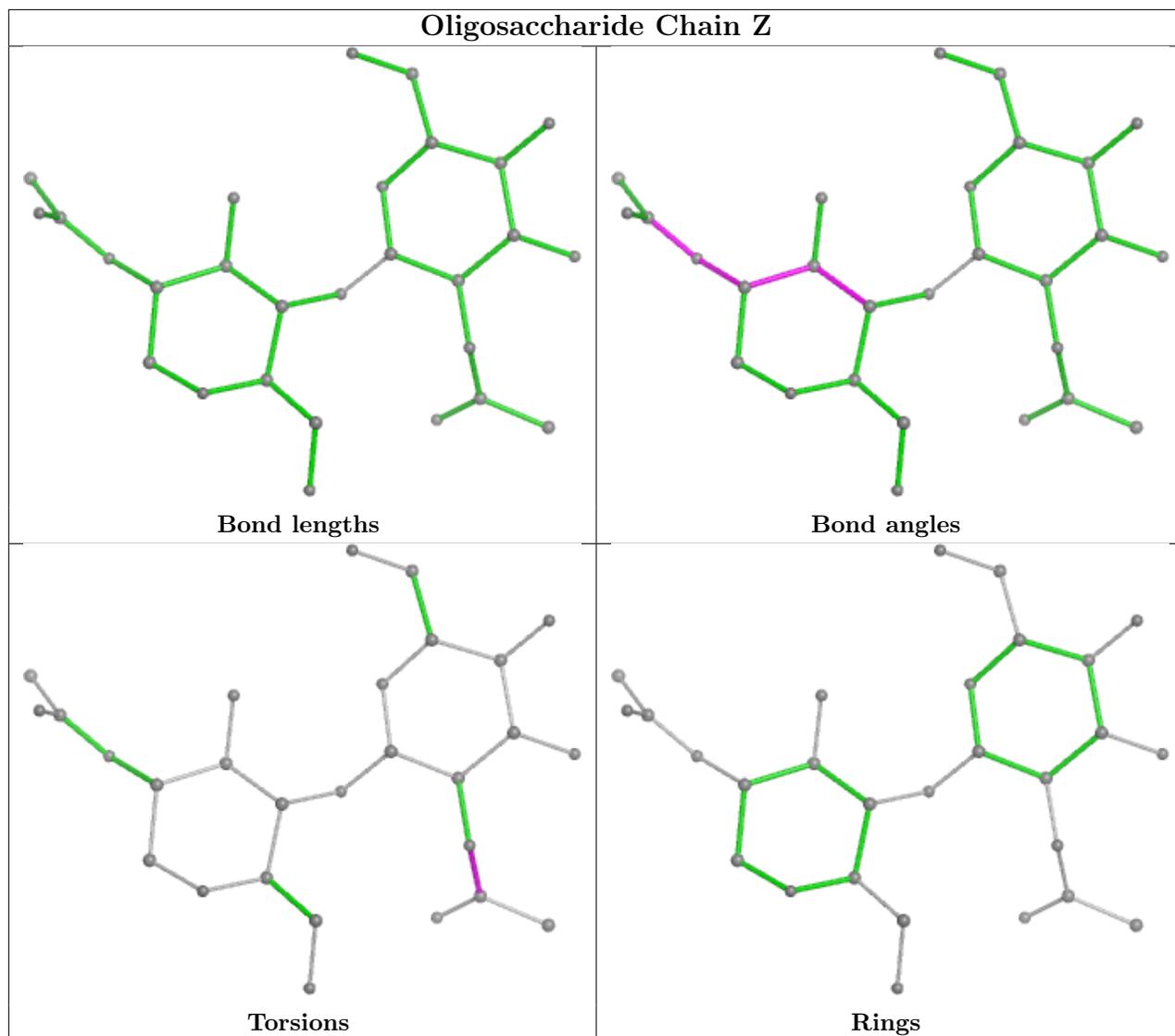


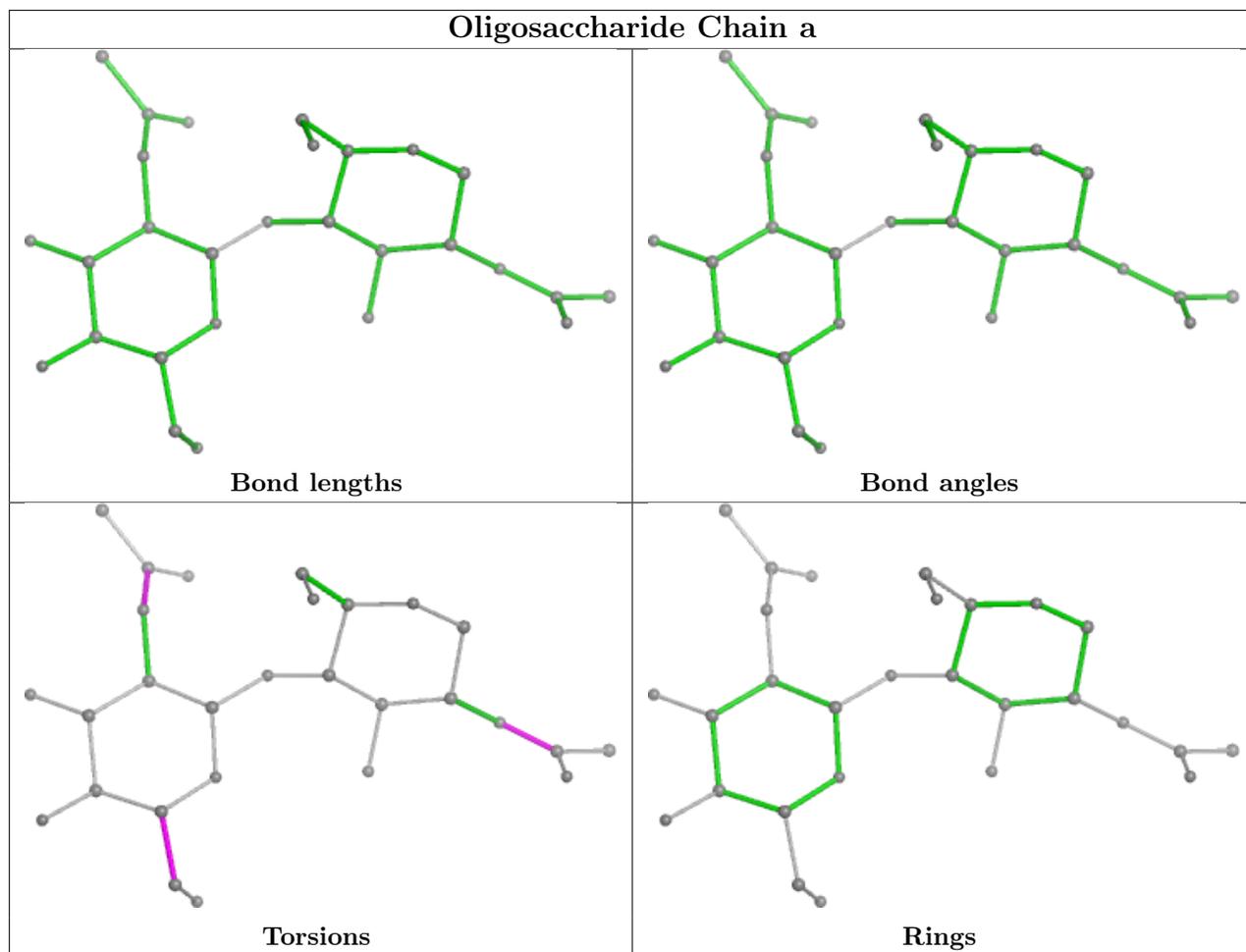


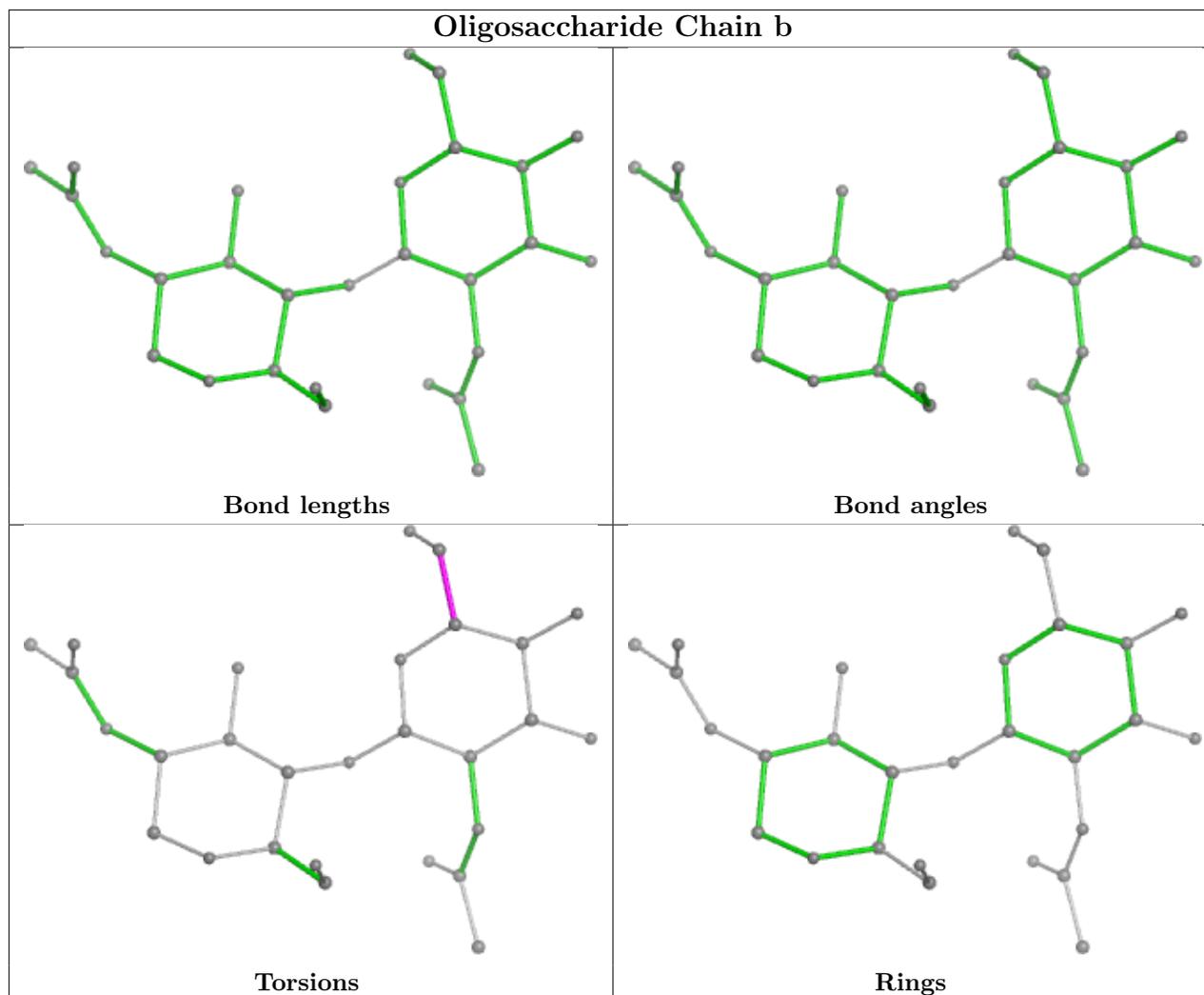












## 5.6 Ligand geometry [i](#)

20 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
4	NAG	A	3019	1	14,14,15	0.44	0	17,19,21	0.68	0
4	NAG	B	3000	1	14,14,15	0.41	0	17,19,21	1.35	2 (11%)
4	NAG	A	3011	1	14,14,15	0.42	0	17,19,21	0.71	0
4	NAG	B	3014	1	14,14,15	0.44	0	17,19,21	1.47	3 (17%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
4	NAG	A	3000	1	14,14,15	0.41	0	17,19,21	1.35	2 (11%)
4	NAG	A	3022	1	14,14,15	0.43	0	17,19,21	0.67	0
4	NAG	B	3019	1	14,14,15	0.44	0	17,19,21	0.70	0
4	NAG	A	3014	1	14,14,15	0.45	0	17,19,21	1.46	3 (17%)
4	NAG	D	3011	1	14,14,15	0.42	0	17,19,21	0.72	0
4	NAG	C	3011	1	14,14,15	0.42	0	17,19,21	0.72	0
4	NAG	D	3000	1	14,14,15	0.41	0	17,19,21	1.34	2 (11%)
4	NAG	D	3022	1	14,14,15	0.42	0	17,19,21	0.67	0
4	NAG	D	3014	1	14,14,15	0.45	0	17,19,21	1.45	3 (17%)
4	NAG	C	3000	1	14,14,15	0.42	0	17,19,21	1.35	2 (11%)
4	NAG	C	3014	1	14,14,15	0.45	0	17,19,21	1.43	3 (17%)
4	NAG	C	3022	1	14,14,15	0.42	0	17,19,21	0.70	0
4	NAG	B	3022	1	14,14,15	0.42	0	17,19,21	0.70	0
4	NAG	D	3019	1	14,14,15	0.44	0	17,19,21	0.69	0
4	NAG	C	3019	1	14,14,15	0.42	0	17,19,21	0.68	0
4	NAG	B	3011	1	14,14,15	0.43	0	17,19,21	0.69	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	A	3019	1	-	2/6/23/26	0/1/1/1
4	NAG	B	3000	1	-	3/6/23/26	0/1/1/1
4	NAG	A	3011	1	-	4/6/23/26	0/1/1/1
4	NAG	B	3014	1	-	5/6/23/26	0/1/1/1
4	NAG	A	3000	1	-	3/6/23/26	0/1/1/1
4	NAG	A	3022	1	-	2/6/23/26	0/1/1/1
4	NAG	B	3019	1	-	3/6/23/26	0/1/1/1
4	NAG	A	3014	1	-	5/6/23/26	0/1/1/1
4	NAG	D	3011	1	-	4/6/23/26	0/1/1/1
4	NAG	C	3011	1	-	4/6/23/26	0/1/1/1
4	NAG	D	3000	1	-	3/6/23/26	0/1/1/1
4	NAG	D	3022	1	-	2/6/23/26	0/1/1/1
4	NAG	D	3014	1	-	5/6/23/26	0/1/1/1
4	NAG	C	3000	1	-	3/6/23/26	0/1/1/1
4	NAG	C	3014	1	-	5/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	C	3022	1	-	2/6/23/26	0/1/1/1
4	NAG	B	3022	1	-	2/6/23/26	0/1/1/1
4	NAG	D	3019	1	-	3/6/23/26	0/1/1/1
4	NAG	C	3019	1	-	2/6/23/26	0/1/1/1
4	NAG	B	3011	1	-	4/6/23/26	0/1/1/1

There are no bond length outliers.

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	3014	NAG	C2-N2-C7	4.17	128.84	122.90
4	B	3014	NAG	C2-N2-C7	4.07	128.70	122.90
4	D	3014	NAG	C2-N2-C7	4.07	128.70	122.90
4	A	3000	NAG	C1-C2-N2	4.02	117.36	110.49
4	B	3000	NAG	C1-C2-N2	4.02	117.35	110.49
4	D	3000	NAG	C1-C2-N2	4.01	117.33	110.49
4	C	3000	NAG	C1-C2-N2	3.97	117.28	110.49
4	C	3014	NAG	C2-N2-C7	3.91	128.47	122.90
4	C	3000	NAG	C2-N2-C7	3.29	127.59	122.90
4	A	3000	NAG	C2-N2-C7	3.25	127.53	122.90
4	D	3000	NAG	C2-N2-C7	3.25	127.53	122.90
4	B	3000	NAG	C2-N2-C7	3.25	127.53	122.90
4	C	3014	NAG	C1-C2-N2	3.04	115.68	110.49
4	B	3014	NAG	C1-C2-N2	2.97	115.55	110.49
4	D	3014	NAG	C1-C2-N2	2.92	115.47	110.49
4	A	3014	NAG	C1-C2-N2	2.90	115.44	110.49
4	A	3014	NAG	O5-C1-C2	2.55	115.31	111.29
4	B	3014	NAG	O5-C1-C2	2.53	115.28	111.29
4	C	3014	NAG	O5-C1-C2	2.51	115.25	111.29
4	D	3014	NAG	O5-C1-C2	2.50	115.24	111.29

There are no chirality outliers.

All (66) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	3000	NAG	C8-C7-N2-C2
4	A	3000	NAG	O7-C7-N2-C2
4	A	3019	NAG	C8-C7-N2-C2
4	A	3019	NAG	O7-C7-N2-C2
4	A	3022	NAG	O7-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
4	B	3000	NAG	C8-C7-N2-C2
4	B	3000	NAG	O7-C7-N2-C2
4	B	3019	NAG	C8-C7-N2-C2
4	B	3019	NAG	O7-C7-N2-C2
4	B	3022	NAG	O7-C7-N2-C2
4	C	3000	NAG	C8-C7-N2-C2
4	C	3000	NAG	O7-C7-N2-C2
4	C	3019	NAG	C8-C7-N2-C2
4	C	3019	NAG	O7-C7-N2-C2
4	C	3022	NAG	O7-C7-N2-C2
4	D	3000	NAG	C8-C7-N2-C2
4	D	3000	NAG	O7-C7-N2-C2
4	D	3019	NAG	C8-C7-N2-C2
4	D	3019	NAG	O7-C7-N2-C2
4	D	3022	NAG	O7-C7-N2-C2
4	A	3011	NAG	C8-C7-N2-C2
4	A	3011	NAG	O7-C7-N2-C2
4	A	3022	NAG	C8-C7-N2-C2
4	B	3011	NAG	C8-C7-N2-C2
4	B	3011	NAG	O7-C7-N2-C2
4	B	3022	NAG	C8-C7-N2-C2
4	C	3011	NAG	C8-C7-N2-C2
4	C	3011	NAG	O7-C7-N2-C2
4	C	3022	NAG	C8-C7-N2-C2
4	D	3011	NAG	C8-C7-N2-C2
4	D	3011	NAG	O7-C7-N2-C2
4	D	3022	NAG	C8-C7-N2-C2
4	B	3014	NAG	C8-C7-N2-C2
4	C	3014	NAG	C8-C7-N2-C2
4	D	3014	NAG	C8-C7-N2-C2
4	B	3014	NAG	O5-C5-C6-O6
4	C	3014	NAG	O5-C5-C6-O6
4	D	3014	NAG	O5-C5-C6-O6
4	A	3014	NAG	O5-C5-C6-O6
4	A	3014	NAG	C8-C7-N2-C2
4	B	3014	NAG	O7-C7-N2-C2
4	C	3014	NAG	O7-C7-N2-C2
4	D	3014	NAG	O7-C7-N2-C2
4	A	3014	NAG	C1-C2-N2-C7
4	B	3014	NAG	C1-C2-N2-C7
4	C	3014	NAG	C1-C2-N2-C7
4	D	3014	NAG	C1-C2-N2-C7

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Mol	Chain	Res	Type	Atoms
4	A	3014	NAG	O7-C7-N2-C2
4	B	3011	NAG	O5-C5-C6-O6
4	A	3011	NAG	O5-C5-C6-O6
4	C	3011	NAG	O5-C5-C6-O6
4	D	3011	NAG	O5-C5-C6-O6
4	B	3014	NAG	C4-C5-C6-O6
4	C	3014	NAG	C4-C5-C6-O6
4	D	3014	NAG	C4-C5-C6-O6
4	A	3014	NAG	C4-C5-C6-O6
4	B	3011	NAG	C4-C5-C6-O6
4	A	3000	NAG	C3-C2-N2-C7
4	B	3000	NAG	C3-C2-N2-C7
4	C	3000	NAG	C3-C2-N2-C7
4	D	3000	NAG	C3-C2-N2-C7
4	A	3011	NAG	C4-C5-C6-O6
4	C	3011	NAG	C4-C5-C6-O6
4	D	3011	NAG	C4-C5-C6-O6
4	D	3019	NAG	C4-C5-C6-O6
4	B	3019	NAG	C4-C5-C6-O6

There are no ring outliers.

No monomer is involved in short contacts.

## 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<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	1836/1859 (98%)	1.37	449 (24%) <b>2</b> <b>2</b>	22, 80, 142, 183	1 (0%)
1	B	1836/1859 (98%)	1.25	382 (20%) <b>3</b> <b>3</b>	28, 74, 129, 163	1 (0%)
1	C	1836/1859 (98%)	0.87	236 (12%) <b>9</b> <b>9</b>	21, 57, 103, 143	1 (0%)
1	D	1836/1859 (98%)	1.23	387 (21%) <b>3</b> <b>3</b>	28, 72, 136, 176	1 (0%)
All	All	7344/7436 (98%)	1.18	1454 (19%) <b>3</b> <b>3</b>	21, 71, 130, 183	4 (0%)

All (1454) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	2202	TRP	8.2
1	B	1493	LEU	7.6
1	A	2220	LEU	7.1
1	A	1493	LEU	7.0
1	C	1486	VAL	6.9
1	C	1493	LEU	6.8
1	D	2686	ILE	6.7
1	C	1045	PRO	6.7
1	B	956	LEU	6.7
1	B	1045	PRO	6.4
1	D	1493	LEU	6.4
1	D	1423	LEU	6.2
1	D	1429	LEU	6.0
1	C	1489	ILE	6.0
1	B	1429	LEU	6.0
1	D	1307	PHE	6.0
1	A	1489	ILE	6.0
1	A	2412	LEU	6.0
1	A	2713	ALA	5.9
1	B	1425	ALA	5.9
1	B	1486	VAL	5.9

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	1045	PRO	5.8
1	A	1119	LEU	5.8
1	D	1119	LEU	5.8
1	A	1122	LEU	5.7
1	D	1045	PRO	5.7
1	B	1013	ALA	5.6
1	D	1486	VAL	5.6
1	C	1423	LEU	5.6
1	D	956	LEU	5.6
1	D	974	GLY	5.6
1	B	1489	ILE	5.6
1	B	973	VAL	5.5
1	D	1489	ILE	5.5
1	A	956	LEU	5.4
1	D	2688	GLY	5.4
1	A	1423	LEU	5.4
1	C	1429	LEU	5.3
1	B	1421	ASN	5.3
1	B	979	PHE	5.3
1	B	1365	LEU	5.2
1	D	1122	LEU	5.2
1	A	1486	VAL	5.2
1	A	1365	LEU	5.1
1	B	1423	LEU	5.1
1	C	1425	ALA	5.1
1	D	1309	HIS	5.1
1	D	1016	MET	5.0
1	D	2649	PHE	5.0
1	D	2684	LEU	5.0
1	D	2685	LEU	4.9
1	D	983	PRO	4.9
1	D	2713	ALA	4.9
1	A	2394	TYR	4.9
1	A	1184	LEU	4.9
1	A	1307	PHE	4.8
1	B	1491	TYR	4.8
1	D	2716	LEU	4.8
1	C	1013	ALA	4.8
1	A	1495	LYS	4.8
1	A	2221	GLY	4.8
1	D	2690	THR	4.8
1	C	973	VAL	4.7

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	C	1487	PRO	4.7
1	B	1184	LEU	4.7
1	B	982	TYR	4.7
1	A	973	VAL	4.7
1	D	1303	ARG	4.7
1	A	2711	LEU	4.6
1	B	1122	LEU	4.6
1	C	956	LEU	4.6
1	C	1016	MET	4.6
1	D	973	VAL	4.6
1	D	2752	VAL	4.6
1	B	1671	SER	4.6
1	B	1496	LEU	4.6
1	B	1016	MET	4.6
1	D	982	TYR	4.6
1	A	2198	SER	4.6
1	A	2531	TYR	4.6
1	A	1428	PRO	4.6
1	C	1428	PRO	4.6
1	A	1350	LEU	4.5
1	A	1429	LEU	4.5
1	B	2498	LEU	4.5
1	D	2632	HIS	4.5
1	A	1016	MET	4.5
1	C	1037	MET	4.5
1	A	1872	ARG	4.4
1	C	982	TYR	4.4
1	A	1180	THR	4.4
1	C	1769	ASP	4.4
1	A	2218	LEU	4.4
1	C	1365	LEU	4.4
1	B	2202	TRP	4.4
1	A	2498	LEU	4.4
1	D	1184	LEU	4.4
1	D	1487	PRO	4.4
1	A	2688	GLY	4.4
1	D	1389	ILE	4.4
1	B	2531	TYR	4.4
1	B	1297	THR	4.3
1	A	1037	MET	4.3
1	B	1389	ILE	4.3
1	B	1218	LYS	4.3

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Mol	Chain	Res	Type	RSRZ
1	B	1307	PHE	4.3
1	A	1053	VAL	4.3
1	B	1498	ILE	4.3
1	D	2711	LEU	4.3
1	C	1367	PHE	4.3
1	C	1122	LEU	4.3
1	A	982	TYR	4.3
1	D	1306	GLU	4.3
1	B	1477	ILE	4.3
1	D	1037	MET	4.2
1	C	985	TYR	4.2
1	A	1013	ALA	4.2
1	B	1185	ILE	4.2
1	B	1418	LEU	4.2
1	A	2226	THR	4.2
1	B	1672	GLY	4.2
1	C	1389	ILE	4.1
1	A	1014	PRO	4.1
1	A	1487	PRO	4.1
1	C	1481	PRO	4.1
1	C	1870	HIS	4.1
1	D	1310	SER	4.1
1	B	1590	LEU	4.1
1	C	1184	LEU	4.1
1	B	1487	PRO	4.1
1	D	1349	ASP	4.1
1	B	1419	GLY	4.1
1	B	1367	PHE	4.1
1	C	1431	CYS	4.1
1	D	985	TYR	4.1
1	C	1049	LEU	4.1
1	B	1769	ASP	4.1
1	D	1255	SER	4.0
1	B	1670	ALA	4.0
1	A	1367	PHE	4.0
1	D	1015	PHE	4.0
1	D	1284	PHE	4.0
1	D	2498	LEU	4.0
1	B	2752	VAL	4.0
1	B	2687	ASN	4.0
1	B	1035	LEU	4.0
1	B	1119	LEU	4.0

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	D	1442	LEU	4.0
1	D	2648	TYR	4.0
1	B	1366	PRO	4.0
1	B	1422	ASP	4.0
1	C	983	PRO	4.0
1	A	2173	THR	4.0
1	D	2710	GLY	4.0
1	C	979	PHE	4.0
1	B	2686	ILE	4.0
1	D	1114	ILE	4.0
1	A	2052	LYS	4.0
1	B	2689	ARG	4.0
1	B	1348	LYS	3.9
1	D	2531	TYR	3.9
1	D	1701	GLN	3.9
1	A	1054	ARG	3.9
1	C	1015	PHE	3.9
1	D	1590	LEU	3.9
1	A	2174	ALA	3.9
1	A	2755	ASP	3.9
1	B	1431	CYS	3.9
1	D	2755	ASP	3.9
1	A	985	TYR	3.9
1	B	2052	LYS	3.9
1	A	2199	LEU	3.9
1	D	979	PHE	3.9
1	B	1604	ILE	3.9
1	A	980	VAL	3.9
1	A	984	LYS	3.9
1	D	2720	LYS	3.9
1	A	1370	ALA	3.9
1	C	1418	LEU	3.8
1	D	1365	LEU	3.8
1	D	2712	THR	3.8
1	B	1444	TRP	3.8
1	C	1303	ARG	3.8
1	B	1299	ILE	3.8
1	A	2752	VAL	3.8
1	D	1053	VAL	3.8
1	D	2052	LYS	3.8
1	D	1143	LEU	3.8
1	D	1925	PHE	3.8

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	2409	ILE	3.8
1	B	1856	ILE	3.8
1	C	974	GLY	3.8
1	A	983	PRO	3.8
1	C	1498	ILE	3.8
1	D	2652	ILE	3.8
1	A	1425	ALA	3.7
1	B	984	LYS	3.7
1	A	1498	ILE	3.7
1	D	1185	ILE	3.7
1	A	1296	VAL	3.7
1	A	2175	VAL	3.7
1	A	2176	MET	3.7
1	B	980	VAL	3.7
1	B	1492	SER	3.7
1	B	1186	LEU	3.7
1	C	1182	PRO	3.7
1	C	1366	PRO	3.7
1	D	1259	LEU	3.7
1	D	1496	LEU	3.7
1	B	1037	MET	3.7
1	B	1120	VAL	3.7
1	C	1014	PRO	3.7
1	A	974	GLY	3.7
1	D	1367	PHE	3.7
1	A	1125	ILE	3.7
1	D	2691	ARG	3.7
1	D	2692	ARG	3.7
1	A	2690	THR	3.7
1	A	2383	PHE	3.7
1	B	1476	ILE	3.7
1	C	1444	TRP	3.6
1	D	2665	THR	3.6
1	D	1120	VAL	3.6
1	D	2660	VAL	3.6
1	C	2052	LYS	3.6
1	C	1780	SER	3.6
1	A	1491	TYR	3.6
1	C	1442	LEU	3.6
1	B	1872	ARG	3.6
1	D	1872	ARG	3.6
1	A	1405	ILE	3.6

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	1405	ILE	3.6
1	B	1424	THR	3.6
1	D	975	VAL	3.6
1	D	984	LYS	3.6
1	D	1023	TRP	3.6
1	A	1481	PRO	3.6
1	A	1496	LEU	3.6
1	B	1014	PRO	3.6
1	B	1428	PRO	3.6
1	A	2201	TYR	3.6
1	A	2686	ILE	3.6
1	A	1757	LYS	3.6
1	A	1424	THR	3.6
1	D	1180	THR	3.6
1	D	2661	THR	3.6
1	A	1255	SER	3.6
1	A	2222	PRO	3.6
1	A	2200	MET	3.6
1	C	1419	GLY	3.6
1	D	1495	LYS	3.6
1	A	1143	LEU	3.6
1	C	972	LEU	3.6
1	D	1407	LYS	3.5
1	A	2223	TYR	3.5
1	C	1422	ASP	3.5
1	D	2773	TYR	3.5
1	A	1389	ILE	3.5
1	A	1413	ILE	3.5
1	B	1015	PHE	3.5
1	B	1593	ILE	3.5
1	B	1341	VAL	3.5
1	D	2049	LYS	3.5
1	A	2652	ILE	3.5
1	A	2689	ARG	3.5
1	C	2752	VAL	3.5
1	A	1366	PRO	3.5
1	D	1481	PRO	3.5
1	A	2219	LYS	3.5
1	A	2224	ALA	3.5
1	B	1285	ASN	3.5
1	B	987	TYR	3.5
1	B	1253	CYS	3.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	1303	ARG	3.5
1	A	1333	THR	3.5
1	C	1007	THR	3.5
1	B	1182	PRO	3.5
1	A	1418	LEU	3.5
1	B	2685	LEU	3.5
1	D	1049	LEU	3.5
1	A	1488	GLY	3.5
1	B	985	TYR	3.5
1	A	1189	LYS	3.5
1	D	1428	PRO	3.4
1	A	2140	LEU	3.4
1	B	1350	LEU	3.4
1	B	1578	ALA	3.4
1	A	1309	HIS	3.4
1	B	1483	HIS	3.4
1	A	1269	VAL	3.4
1	B	1296	VAL	3.4
1	D	1296	VAL	3.4
1	B	983	PRO	3.4
1	C	1496	LEU	3.4
1	B	1020	ARG	3.4
1	D	1422	ASP	3.4
1	D	1444	TRP	3.4
1	A	1453	MET	3.4
1	A	1482	MET	3.4
1	B	1316	LYS	3.4
1	A	1476	ILE	3.4
1	C	1125	ILE	3.4
1	D	1059	ILE	3.4
1	C	1424	THR	3.4
1	A	2648	TYR	3.4
1	A	964	VAL	3.4
1	A	1400	VAL	3.4
1	B	1440	VAL	3.4
1	D	998	LEU	3.4
1	A	2691	ARG	3.4
1	D	1020	ARG	3.4
1	D	2086	GLY	3.4
1	D	2751	ARG	3.4
1	A	1754	GLU	3.4
1	C	2642	GLU	3.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	2472	MET	3.4
1	B	2616	ILE	3.4
1	A	1182	PRO	3.4
1	A	1460	LEU	3.4
1	B	1143	LEU	3.4
1	D	1498	ILE	3.3
1	A	2665	THR	3.3
1	B	1286	TYR	3.3
1	C	2531	TYR	3.3
1	D	1286	TYR	3.3
1	D	1491	TYR	3.3
1	A	1515	VAL	3.3
1	A	2408	SER	3.3
1	B	1181	CYS	3.3
1	C	1054	ARG	3.3
1	C	1488	GLY	3.3
1	D	1312	ASN	3.3
1	A	1023	TRP	3.3
1	A	1251	ILE	3.3
1	A	1518	ILE	3.3
1	B	1007	THR	3.3
1	B	1426	VAL	3.3
1	C	1255	SER	3.3
1	C	1296	VAL	3.3
1	B	1417	LEU	3.3
1	D	1350	LEU	3.3
1	D	2636	LYS	3.3
1	D	1285	ASN	3.3
1	D	1314	ALA	3.3
1	A	1422	ASP	3.3
1	D	2696	ILE	3.3
1	A	2270	ARG	3.3
1	A	1052	PHE	3.3
1	D	1366	PRO	3.3
1	A	1554	VAL	3.3
1	D	1269	VAL	3.3
1	A	1286	TYR	3.3
1	A	1590	LEU	3.3
1	C	1181	CYS	3.3
1	D	1200	ASP	3.3
1	D	1769	ASP	3.3
1	A	2434	GLN	3.3

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Mol	Chain	Res	Type	RSRZ
1	D	2683	THR	3.3
1	A	1029	PHE	3.3
1	A	2391	GLU	3.3
1	B	1010	PHE	3.3
1	B	1495	LYS	3.3
1	C	1284	PHE	3.3
1	C	1307	PHE	3.3
1	C	1495	LYS	3.3
1	B	1394	TYR	3.3
1	A	2687	ASN	3.3
1	A	2545	CYS	3.3
1	D	1431	CYS	3.3
1	A	2135	ILE	3.2
1	A	2371	ILE	3.2
1	A	2646	THR	3.2
1	B	2690	THR	3.2
1	C	989	ILE	3.2
1	D	2669	LYS	3.2
1	D	1052	PHE	3.2
1	A	1036	VAL	3.2
1	B	959	LEU	3.2
1	D	980	VAL	3.2
1	D	1186	LEU	3.2
1	A	2051	GLY	3.2
1	C	1392	ASP	3.2
1	B	1870	HIS	3.2
1	D	1551	LYS	3.2
1	A	2139	PRO	3.2
1	B	2683	THR	3.2
1	A	979	PHE	3.2
1	B	1049	LEU	3.2
1	C	2498	LEU	3.2
1	D	1417	LEU	3.2
1	C	1373	GLY	3.2
1	C	1491	TYR	3.2
1	A	1185	ILE	3.2
1	B	1413	ILE	3.2
1	B	1883	ILE	3.2
1	D	2694	THR	3.2
1	B	1453	MET	3.2
1	A	2716	LEU	3.2
1	C	1119	LEU	3.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	D	2218	LEU	3.2
1	A	1341	VAL	3.2
1	A	1359	GLY	3.2
1	B	1822	VAL	3.2
1	C	1285	ASN	3.2
1	A	1769	ASP	3.2
1	B	2620	ASP	3.2
1	D	1210	ASP	3.2
1	A	967	THR	3.2
1	B	1482	MET	3.2
1	C	1323	PRO	3.2
1	A	1310	SER	3.2
1	A	1442	LEU	3.2
1	A	2382	LEU	3.2
1	D	2769	GLY	3.2
1	A	1217	VAL	3.1
1	D	1012	ARG	3.1
1	A	1126	LYS	3.1
1	A	1444	TRP	3.1
1	A	1547	ASP	3.1
1	C	2755	ASP	3.1
1	D	1490	ASP	3.1
1	A	1047	CYS	3.1
1	C	2616	ILE	3.1
1	A	2197	ARG	3.1
1	A	2751	ARG	3.1
1	B	1448	LEU	3.1
1	D	1420	SER	3.1
1	C	2687	ASN	3.1
1	A	1120	VAL	3.1
1	A	1870	HIS	3.1
1	B	977	VAL	3.1
1	C	977	VAL	3.1
1	D	999	VAL	3.1
1	D	1036	VAL	3.1
1	A	988	THR	3.1
1	A	2712	THR	3.1
1	A	1049	LEU	3.1
1	A	1015	PHE	3.1
1	A	1925	PHE	3.1
1	B	1359	GLY	3.1
1	D	1050	SER	3.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	D	2657	SER	3.1
1	A	2008	VAL	3.1
1	C	1023	TRP	3.1
1	B	2223	TYR	3.1
1	A	1256	CYS	3.1
1	C	1405	ILE	3.1
1	C	984	LYS	3.1
1	B	1778	LEU	3.1
1	D	1315	HIS	3.1
1	C	980	VAL	3.1
1	C	1426	VAL	3.1
1	C	2546	GLU	3.1
1	B	1669	ASP	3.1
1	B	1458	TYR	3.1
1	D	2633	TYR	3.1
1	A	1427	ARG	3.1
1	A	2685	LEU	3.0
1	D	2344	GLY	3.0
1	C	1004	SER	3.0
1	A	977	VAL	3.0
1	A	2195	MET	3.0
1	B	1032	MET	3.0
1	A	1210	ASP	3.0
1	B	2755	ASP	3.0
1	C	1020	ARG	3.0
1	D	1014	PRO	3.0
1	A	1151	THR	3.0
1	A	2131	ILE	3.0
1	A	1186	LEU	3.0
1	B	1396	LEU	3.0
1	B	2051	GLY	3.0
1	B	2220	LEU	3.0
1	B	1494	SER	3.0
1	D	1311	ASN	3.0
1	A	2191	VAL	3.0
1	B	1053	VAL	3.0
1	A	1349	ASP	3.0
1	C	1210	ASP	3.0
1	D	1568	ASP	3.0
1	B	1054	ARG	3.0
1	C	1696	LYS	3.0
1	B	1023	TRP	3.0

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Mol	Chain	Res	Type	RSRZ
1	B	972	LEU	3.0
1	B	2218	LEU	3.0
1	D	972	LEU	3.0
1	D	1418	LEU	3.0
1	C	1482	MET	3.0
1	A	1142	PHE	3.0
1	A	965	VAL	3.0
1	B	965	VAL	3.0
1	B	1474	VAL	3.0
1	A	2720	LYS	3.0
1	B	1169	ASP	3.0
1	B	1427	ARG	3.0
1	C	1454	ASP	3.0
1	D	1348	LYS	3.0
1	B	2174	ALA	3.0
1	D	2138	THR	3.0
1	B	1329	TYR	3.0
1	A	2546	GLU	3.0
1	D	2643	GLY	3.0
1	A	1354	SER	3.0
1	B	1420	SER	3.0
1	C	1845	ASN	3.0
1	D	1484	CYS	3.0
1	B	1142	PHE	3.0
1	B	1945	LYS	3.0
1	C	1337	ARG	3.0
1	D	2689	ARG	3.0
1	C	1332	ASP	3.0
1	C	1432	ASP	3.0
1	B	1501	ALA	3.0
1	B	1315	HIS	2.9
1	D	1347	THR	2.9
1	A	1059	ILE	2.9
1	A	2798	GLU	2.9
1	B	1251	ILE	2.9
1	B	1831	ILE	2.9
1	D	1831	ILE	2.9
1	A	2225	ASN	2.9
1	A	1894	LYS	2.9
1	A	2501	LYS	2.9
1	A	2669	LYS	2.9
1	B	1371	ARG	2.9

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	1393	LYS	2.9
1	B	2529	LYS	2.9
1	C	1047	CYS	2.9
1	A	1284	PHE	2.9
1	A	2407	PHE	2.9
1	C	1053	VAL	2.9
1	D	1182	PRO	2.9
1	B	2688	GLY	2.9
1	D	2472	MET	2.9
1	D	1477	ILE	2.9
1	A	1348	LYS	2.9
1	C	1348	LYS	2.9
1	D	2706	ASN	2.9
1	A	1005	SER	2.9
1	A	1494	SER	2.9
1	A	1484	CYS	2.9
1	B	1484	CYS	2.9
1	A	1392	ASP	2.9
1	B	999	VAL	2.9
1	D	1426	VAL	2.9
1	D	1669	ASP	2.9
1	D	1870	HIS	2.9
1	B	2585	ALA	2.9
1	D	2718	GLU	2.9
1	C	1861	THR	2.9
1	D	1488	GLY	2.9
1	A	2692	ARG	2.9
1	C	1590	LEU	2.9
1	D	989	ILE	2.9
1	C	1421	ASN	2.9
1	A	2364	TYR	2.9
1	C	1310	SER	2.9
1	B	2383	PHE	2.9
1	C	1256	CYS	2.9
1	D	996	PHE	2.9
1	D	1047	CYS	2.9
1	B	1770	ASP	2.9
1	C	1120	VAL	2.9
1	D	964	VAL	2.9
1	B	1370	ALA	2.9
1	A	2137	GLU	2.9
1	A	2392	GLU	2.9

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Mol	Chain	Res	Type	RSRZ
1	A	2472	MET	2.9
1	B	1667	ARG	2.9
1	B	2576	ARG	2.9
1	C	1074	ARG	2.9
1	A	1419	GLY	2.9
1	A	1259	LEU	2.9
1	D	1125	ILE	2.9
1	D	1148	LEU	2.9
1	D	2131	ILE	2.9
1	D	2634	LEU	2.9
1	B	1309	HIS	2.9
1	D	1187	TRP	2.8
1	A	1669	ASP	2.8
1	A	1770	ASP	2.8
1	A	1459	VAL	2.8
1	B	1201	PRO	2.8
1	D	1772	VAL	2.8
1	A	1308	LYS	2.8
1	D	1115	MET	2.8
1	B	1303	ARG	2.8
1	D	1054	ARG	2.8
1	A	1760	THR	2.8
1	B	1347	THR	2.8
1	B	1373	GLY	2.8
1	A	2410	ASN	2.8
1	C	1420	SER	2.8
1	D	1005	SER	2.8
1	D	2630	SER	2.8
1	A	1374	ASP	2.8
1	A	1121	PRO	2.8
1	A	2436	VAL	2.8
1	C	975	VAL	2.8
1	D	977	VAL	2.8
1	C	1484	CYS	2.8
1	D	2545	CYS	2.8
1	D	2585	ALA	2.8
1	D	1768	ARG	2.8
1	A	1373	GLY	2.8
1	A	2683	THR	2.8
1	B	986	GLY	2.8
1	B	1638	THR	2.8
1	D	1419	GLY	2.8

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	1442	LEU	2.8
1	B	1571	LEU	2.8
1	B	1664	LEU	2.8
1	D	1265	LEU	2.8
1	A	1421	ASN	2.8
1	C	1185	ILE	2.8
1	D	1405	ILE	2.8
1	D	2549	GLN	2.8
1	A	1780	SER	2.8
1	A	2630	SER	2.8
1	A	2393	TYR	2.8
1	B	1210	ASP	2.8
1	D	2717	ASP	2.8
1	D	2798	GLU	2.8
1	D	1554	VAL	2.8
1	B	1441	ARG	2.8
1	B	2173	THR	2.8
1	D	1691	THR	2.8
1	A	1417	LEU	2.8
1	D	1421	ASN	2.8
1	A	978	SER	2.8
1	D	1252	SER	2.8
1	B	1189	LYS	2.8
1	A	1490	ASP	2.8
1	A	2287	ASP	2.8
1	C	1441	ARG	2.8
1	C	2751	ARG	2.8
1	D	971	PRO	2.8
1	D	1121	PRO	2.8
1	B	1925	PHE	2.8
1	C	1010	PHE	2.8
1	A	2544	ALA	2.8
1	A	2731	ALA	2.8
1	D	1013	ALA	2.8
1	B	2545	CYS	2.8
1	D	1256	CYS	2.8
1	B	1403	THR	2.8
1	C	1180	THR	2.8
1	D	2732	LEU	2.8
1	A	2616	ILE	2.7
1	A	2063	SER	2.7
1	C	978	SER	2.7

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Mol	Chain	Res	Type	RSRZ
1	B	1048	ASP	2.7
1	D	1984	ASP	2.7
1	A	2649	PHE	2.7
1	B	1611	TYR	2.7
1	C	987	TYR	2.7
1	D	2223	TYR	2.7
1	D	965	VAL	2.7
1	B	1402	ALA	2.7
1	B	2224	ALA	2.7
1	D	1548	CYS	2.7
1	A	2647	HIS	2.7
1	C	1116	THR	2.7
1	C	1477	ILE	2.7
1	D	1427	ARG	2.7
1	D	2725	ASP	2.7
1	A	2117	PHE	2.7
1	D	2693	PHE	2.7
1	D	1578	ALA	2.7
1	A	1187	TRP	2.7
1	A	2192	GLN	2.7
1	D	1693	GLY	2.7
1	C	2545	CYS	2.7
1	D	1181	CYS	2.7
1	B	1460	LEU	2.7
1	B	1703	LEU	2.7
1	B	2412	LEU	2.7
1	C	2529	LYS	2.7
1	A	2797	ASN	2.7
1	B	2325	ASN	2.7
1	D	1482	MET	2.7
1	B	1255	SER	2.7
1	B	1310	SER	2.7
1	D	1048	ASP	2.7
1	D	1650	ASP	2.7
1	B	1317	TYR	2.7
1	B	1379	VAL	2.7
1	C	1052	PHE	2.7
1	A	1578	ALA	2.7
1	A	1701	GLN	2.7
1	B	2544	ALA	2.7
1	D	1425	ALA	2.7
1	B	1628	GLY	2.7

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Mol	Chain	Res	Type	RSRZ
1	A	2374	LEU	2.7
1	B	998	LEU	2.7
1	B	1180	THR	2.7
1	B	1861	THR	2.7
1	D	1007	THR	2.7
1	C	2472	MET	2.7
1	D	2530	MET	2.7
1	B	1313	PRO	2.7
1	D	2714	ASP	2.7
1	A	2363	VAL	2.7
1	A	2455	GLN	2.7
1	B	1330	VAL	2.7
1	B	2660	VAL	2.7
1	C	1309	HIS	2.7
1	D	1788	VAL	2.7
1	A	1150	TYR	2.7
1	C	1189	LYS	2.7
1	D	1316	LYS	2.7
1	A	2344	GLY	2.6
1	A	1383	LEU	2.6
1	A	1776	THR	2.6
1	B	1344	LEU	2.6
1	B	2716	LEU	2.6
1	C	1012	ARG	2.6
1	D	2708	ARG	2.6
1	A	1461	GLU	2.6
1	A	2642	GLU	2.6
1	D	1754	GLU	2.6
1	D	2137	GLU	2.6
1	D	2748	GLU	2.6
1	A	1431	CYS	2.6
1	B	989	ILE	2.6
1	D	1290	ILE	2.6
1	B	1252	SER	2.6
1	C	1046	SER	2.6
1	B	1481	PRO	2.6
1	A	2232	ASP	2.6
1	A	2717	ASP	2.6
1	C	1522	ASP	2.6
1	A	2529	LYS	2.6
1	D	1308	LYS	2.6
1	A	1437	VAL	2.6

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	2650	VAL	2.6
1	B	1450	VAL	2.6
1	A	2384	ALA	2.6
1	B	1478	ALA	2.6
1	B	2713	ALA	2.6
1	B	1479	GLY	2.6
1	D	2051	GLY	2.6
1	A	1302	LEU	2.6
1	A	1362	GLU	2.6
1	B	1404	MET	2.6
1	B	1673	MET	2.6
1	C	1319	LEU	2.6
1	D	1302	LEU	2.6
1	A	989	ILE	2.6
1	B	1414	ILE	2.6
1	A	2657	SER	2.6
1	B	978	SER	2.6
1	B	1331	SER	2.6
1	A	2656	ASP	2.6
1	B	1490	ASP	2.6
1	D	2232	ASP	2.6
1	A	1483	HIS	2.6
1	A	2632	HIS	2.6
1	B	981	LYS	2.6
1	D	2543	GLN	2.6
1	D	2729	GLN	2.6
1	A	975	VAL	2.6
1	A	1441	ARG	2.6
1	B	1036	VAL	2.6
1	B	1437	VAL	2.6
1	B	2572	VAL	2.6
1	B	2691	ARG	2.6
1	A	1326	GLY	2.6
1	A	1358	ALA	2.6
1	A	2086	GLY	2.6
1	D	1257	ASN	2.6
1	A	2551	ILE	2.6
1	A	1268	PRO	2.6
1	C	1407	LYS	2.6
1	D	2681	GLN	2.6
1	A	1480	ARG	2.6
1	B	2751	ARG	2.6

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	D	1480	ARG	2.6
1	A	2196	PHE	2.6
1	B	964	VAL	2.6
1	B	1138	PHE	2.6
1	B	1461	GLU	2.6
1	B	1754	GLU	2.6
1	B	2041	GLY	2.6
1	C	1370	ALA	2.6
1	D	2607	GLY	2.6
1	D	2650	VAL	2.6
1	A	1129	LEU	2.6
1	A	1148	LEU	2.6
1	A	1347	THR	2.6
1	A	1540	LEU	2.6
1	C	1302	LEU	2.6
1	C	1417	LEU	2.6
1	C	1702	THR	2.6
1	D	1424	THR	2.6
1	D	2646	THR	2.6
1	A	1873	ASN	2.6
1	A	1551	LYS	2.6
1	A	1585	ILE	2.6
1	B	1847	ILE	2.6
1	A	1315	HIS	2.6
1	A	2750	SER	2.6
1	B	1187	TRP	2.6
1	B	1434	SER	2.6
1	B	1780	SER	2.6
1	B	2632	HIS	2.6
1	C	1494	SER	2.6
1	D	1046	SER	2.6
1	B	1701	GLN	2.6
1	D	1432	ASP	2.6
1	D	2745	ASP	2.6
1	C	1480	ARG	2.6
1	D	2546	GLU	2.5
1	D	2583	GLU	2.5
1	A	2113	VAL	2.5
1	B	2749	GLY	2.5
1	C	1440	VAL	2.5
1	C	1479	GLY	2.5
1	A	2721	ALA	2.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	C	1554	VAL	2.5
1	D	1010	PHE	2.5
1	D	1172	VAL	2.5
1	A	2138	THR	2.5
1	C	1186	LEU	2.5
1	A	1477	ILE	2.5
1	A	1570	ILE	2.5
1	A	2521	ILE	2.5
1	A	1046	SER	2.5
1	B	1433	SER	2.5
1	D	1492	SER	2.5
1	C	1770	ASP	2.5
1	D	2608	ARG	2.5
1	C	1754	GLU	2.5
1	D	1301	GLU	2.5
1	A	2769	GLY	2.5
1	A	1010	PHE	2.5
1	A	1314	ALA	2.5
1	A	1774	VAL	2.5
1	B	1459	VAL	2.5
1	A	2404	LEU	2.5
1	A	2435	LEU	2.5
1	B	1874	LEU	2.5
1	B	1916	LEU	2.5
1	D	1129	LEU	2.5
1	D	1460	LEU	2.5
1	B	1360	THR	2.5
1	D	967	THR	2.5
1	D	1151	THR	2.5
1	A	1407	LYS	2.5
1	A	1856	ILE	2.5
1	C	1604	ILE	2.5
1	A	1944	ASP	2.5
1	A	1375	GLY	2.5
1	A	999	VAL	2.5
1	C	1036	VAL	2.5
1	D	2609	VAL	2.5
1	D	2675	VAL	2.5
1	A	2636	LYS	2.5
1	A	2724	LEU	2.5
1	B	1887	LYS	2.5
1	B	1416	THR	2.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	2764	THR	2.5
1	C	1347	THR	2.5
1	C	2797	ASN	2.5
1	C	1315	HIS	2.5
1	A	1317	TYR	2.5
1	B	1398	TYR	2.5
1	D	1413	ILE	2.5
1	D	2616	ILE	2.5
1	A	1430	SER	2.5
1	D	978	SER	2.5
1	A	1200	ASP	2.5
1	A	1984	ASP	2.5
1	A	2101	ASP	2.5
1	D	2255	ASP	2.5
1	A	1181	CYS	2.5
1	C	1308	LYS	2.5
1	D	1218	LYS	2.5
1	D	2742	LYS	2.5
1	A	1379	VAL	2.5
1	A	2205	VAL	2.5
1	B	2767	VAL	2.5
1	C	1341	VAL	2.5
1	A	972	LEU	2.5
1	A	1529	LEU	2.5
1	A	1116	THR	2.5
1	B	1311	ASN	2.5
1	B	1702	THR	2.5
1	D	970	THR	2.5
1	C	1872	ARG	2.5
1	C	2455	GLN	2.5
1	A	1398	TYR	2.4
1	D	1565	TYR	2.4
1	A	1414	ILE	2.4
1	A	1420	SER	2.4
1	B	1125	ILE	2.4
1	C	2519	SER	2.4
1	D	1145	SER	2.4
1	D	2613	ILE	2.4
1	D	2707	ILE	2.4
1	A	1332	ASP	2.4
1	B	2195	MET	2.4
1	C	1200	ASP	2.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	1140	LYS	2.4
1	B	1308	LYS	2.4
1	D	1189	LYS	2.4
1	B	1260	ALA	2.4
1	C	1358	ALA	2.4
1	D	2544	ALA	2.4
1	A	2433	PHE	2.4
1	B	1176	PHE	2.4
1	B	1284	PHE	2.4
1	C	998	LEU	2.4
1	D	1142	PHE	2.4
1	D	2220	LEU	2.4
1	B	1682	ASN	2.4
1	A	2694	THR	2.4
1	B	967	THR	2.4
1	D	1313	PRO	2.4
1	A	1492	SER	2.4
1	A	1604	ILE	2.4
1	C	2530	MET	2.4
1	D	1179	GLU	2.4
1	D	1453	MET	2.4
1	D	1430	SER	2.4
1	D	2642	GLU	2.4
1	B	993	ASP	2.4
1	D	1276	ASP	2.4
1	B	2584	LYS	2.4
1	C	1551	LYS	2.4
1	C	2501	LYS	2.4
1	A	2247	ARG	2.4
1	A	998	LEU	2.4
1	A	1265	LEU	2.4
1	A	1357	VAL	2.4
1	B	957	VAL	2.4
1	B	1457	LEU	2.4
1	D	1778	LEU	2.4
1	A	1638	THR	2.4
1	A	2754	THR	2.4
1	C	1638	THR	2.4
1	D	988	THR	2.4
1	D	1292	PRO	2.4
1	A	2530	MET	2.4
1	C	1433	SER	2.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	1762	ASP	2.4
1	A	2633	TYR	2.4
1	B	2501	LYS	2.4
1	D	2291	LYS	2.4
1	B	2548	GLY	2.4
1	C	1427	ARG	2.4
1	B	1047	CYS	2.4
1	C	1253	CYS	2.4
1	C	1460	LEU	2.4
1	D	1266	LEU	2.4
1	D	2794	LEU	2.4
1	A	2775	VAL	2.4
1	B	1280	PHE	2.4
1	B	1312	ASN	2.4
1	C	1217	VAL	2.4
1	A	1702	THR	2.4
1	B	1034	THR	2.4
1	B	1885	THR	2.4
1	B	2454	THR	2.4
1	D	1702	THR	2.4
1	A	1316	LYS	2.4
1	D	1857	LYS	2.4
1	D	2758	LYS	2.4
1	A	2654	SER	2.4
1	B	2519	SER	2.4
1	D	1587	ILE	2.4
1	C	1048	ASP	2.4
1	D	1790	ASP	2.4
1	A	2427	TYR	2.4
1	A	969	GLY	2.4
1	B	1361	GLY	2.4
1	C	1371	ARG	2.4
1	D	1128	HIS	2.4
1	A	2517	GLN	2.4
1	A	1285	ASN	2.4
1	A	1548	CYS	2.4
1	B	1027	ASN	2.4
1	C	1703	LEU	2.4
1	A	2679	VAL	2.3
1	A	2693	PHE	2.3
1	B	1152	PHE	2.3
1	B	1391	VAL	2.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	C	1269	VAL	2.3
1	C	1437	VAL	2.3
1	D	1138	PHE	2.3
1	D	2670	VAL	2.3
1	C	1404	MET	2.3
1	A	981	LYS	2.3
1	A	1299	ILE	2.3
1	A	2437	ILE	2.3
1	B	1004	SER	2.3
1	B	1354	SER	2.3
1	B	2522	ILE	2.3
1	B	2652	ILE	2.3
1	C	1490	ASP	2.3
1	C	2521	ILE	2.3
1	D	1770	ASP	2.3
1	B	1339	TYR	2.3
1	C	2689	ARG	2.3
1	A	2085	GLY	2.3
1	B	1018	GLN	2.3
1	C	1701	GLN	2.3
1	D	1485	GLN	2.3
1	D	2780	GLN	2.3
1	A	1344	LEU	2.3
1	B	2518	LEU	2.3
1	C	1344	LEU	2.3
1	D	1344	LEU	2.3
1	A	1824	ALA	2.3
1	D	1545	ALA	2.3
1	D	2687	ASN	2.3
1	A	1115	MET	2.3
1	B	1243	MET	2.3
1	B	1333	THR	2.3
1	B	2391	GLU	2.3
1	B	2436	VAL	2.3
1	B	2665	THR	2.3
1	C	1379	VAL	2.3
1	D	1058	VAL	2.3
1	D	1321	VAL	2.3
1	D	2326	VAL	2.3
1	A	1313	PRO	2.3
1	A	2078	LYS	2.3
1	D	2454	THR	2.3

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Mol	Chain	Res	Type	RSRZ
1	D	1268	PRO	2.3
1	D	2753	TRP	2.3
1	A	1438	SER	2.3
1	A	1847	ILE	2.3
1	A	2134	ILE	2.3
1	A	2745	ASP	2.3
1	B	1183	SER	2.3
1	B	1430	SER	2.3
1	B	2197	ARG	2.3
1	B	2551	ILE	2.3
1	C	1252	SER	2.3
1	C	2632	HIS	2.3
1	B	992	GLN	2.3
1	B	1161	GLY	2.3
1	B	1282	GLY	2.3
1	A	1130	MET	2.3
1	B	1259	LEU	2.3
1	A	1264	LYS	2.3
1	B	1126	LYS	2.3
1	C	1126	LYS	2.3
1	C	1362	GLU	2.3
1	C	2325	ASN	2.3
1	D	1370	ALA	2.3
1	A	1292	PRO	2.3
1	A	2360	VAL	2.3
1	B	1464	VAL	2.3
1	B	1052	PHE	2.3
1	B	2646	THR	2.3
1	D	1861	THR	2.3
1	C	1187	TRP	2.3
1	D	1441	ARG	2.3
1	C	1483	HIS	2.3
1	C	2255	ASP	2.3
1	D	2701	SER	2.3
1	A	2780	GLN	2.3
1	A	2570	GLY	2.3
1	B	1277	GLY	2.3
1	D	2111	GLY	2.3
1	A	1458	TYR	2.3
1	A	2193	TYR	2.3
1	C	981	LYS	2.3
1	B	1300	LEU	2.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	C	2109	GLU	2.3
1	B	1651	ASN	2.3
1	D	2325	ASN	2.3
1	A	2627	VAL	2.3
1	B	1400	VAL	2.3
1	C	2173	THR	2.3
1	D	2436	VAL	2.3
1	A	2126	PHE	2.3
1	B	996	PHE	2.3
1	B	1074	ARG	2.3
1	D	2647	HIS	2.3
1	A	2150	ILE	2.3
1	A	2389	SER	2.3
1	A	2581	ILE	2.3
1	A	2613	ILE	2.3
1	B	2367	SER	2.3
1	B	2796	GLN	2.3
1	C	1669	ASP	2.3
1	D	1856	ILE	2.3
1	D	2135	ILE	2.3
1	D	2666	SER	2.3
1	B	1003	GLY	2.3
1	B	1561	GLY	2.3
1	B	2111	GLY	2.3
1	C	1003	GLY	2.3
1	D	1359	GLY	2.3
1	D	2667	GLY	2.3
1	B	1696	LYS	2.2
1	B	2758	LYS	2.2
1	C	1316	LYS	2.2
1	D	1757	LYS	2.2
1	B	1643	TYR	2.2
1	D	1317	TYR	2.2
1	A	2518	LEU	2.2
1	B	1845	ASN	2.2
1	B	2762	LEU	2.2
1	D	2724	LEU	2.2
1	D	1497	ALA	2.2
1	A	971	PRO	2.2
1	A	2715	THR	2.2
1	A	2316	ARG	2.2
1	B	1579	VAL	2.2

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Mol	Chain	Res	Type	RSRZ
1	C	1768	ARG	2.2
1	C	1822	VAL	2.2
1	D	1830	THR	2.2
1	D	2754	THR	2.2
1	D	1294	ARG	2.2
1	A	1117	GLN	2.2
1	A	2796	GLN	2.2
1	B	2255	ASP	2.2
1	B	2521	ILE	2.2
1	B	2630	SER	2.2
1	C	1547	ASP	2.2
1	B	1595	ILE	2.2
1	D	1494	SER	2.2
1	D	2134	ILE	2.2
1	A	994	GLY	2.2
1	A	2132	LYS	2.2
1	A	2411	GLY	2.2
1	B	1488	GLY	2.2
1	C	2584	LYS	2.2
1	A	1384	MET	2.2
1	B	1301	GLU	2.2
1	A	2040	LEU	2.2
1	A	2082	LEU	2.2
1	A	2684	LEU	2.2
1	B	1319	LEU	2.2
1	C	1123	ASN	2.2
1	D	1304	ASN	2.2
1	D	1339	TYR	2.2
1	A	2317	ALA	2.2
1	A	2663	ALA	2.2
1	B	1497	ALA	2.2
1	C	971	PRO	2.2
1	D	1201	PRO	2.2
1	D	2197	ARG	2.2
1	A	1403	THR	2.2
1	B	988	THR	2.2
1	C	1034	THR	2.2
1	A	1426	VAL	2.2
1	A	1788	VAL	2.2
1	A	2675	VAL	2.2
1	B	1217	VAL	2.2
1	B	1238	VAL	2.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	D	2723	VAL	2.2
1	D	2126	PHE	2.2
1	A	2543	GLN	2.2
1	D	2796	GLN	2.2
1	A	1070	ASP	2.2
1	B	1118	SER	2.2
1	B	1553	ASP	2.2
1	C	1276	ASP	2.2
1	D	2029	SER	2.2
1	D	2340	LYS	2.2
1	D	2654	SER	2.2
1	A	2696	ILE	2.2
1	D	1604	ILE	2.2
1	D	1346	GLY	2.2
1	D	2783	GLU	2.2
1	A	1247	ARG	2.2
1	A	1266	LEU	2.2
1	A	1396	LEU	2.2
1	A	1457	LEU	2.2
1	A	1768	ARG	2.2
1	C	1571	LEU	2.2
1	D	1928	ARG	2.2
1	D	2662	LEU	2.2
1	A	1339	TYR	2.2
1	A	1394	TYR	2.2
1	D	2709	TYR	2.2
1	A	1445	PRO	2.2
1	A	2785	ALA	2.2
1	D	1483	HIS	2.2
1	A	2609	VAL	2.2
1	D	1174	VAL	2.2
1	B	1946	GLN	2.2
1	C	2565	PHE	2.2
1	A	1385	SER	2.2
1	B	1200	ASP	2.2
1	C	1548	CYS	2.2
1	D	2506	ASP	2.2
1	A	1060	ILE	2.2
1	A	1543	GLY	2.2
1	B	2085	GLY	2.2
1	D	1761	ILE	2.2
1	B	1355	GLU	2.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	2583	GLU	2.2
1	B	2642	GLU	2.2
1	D	2548	GLY	2.2
1	B	1026	TRP	2.2
1	A	1020	ARG	2.2
1	B	1012	ARG	2.2
1	B	1467	ARG	2.2
1	A	1008	LEU	2.2
1	A	1311	ASN	2.2
1	A	2447	LEU	2.2
1	B	1540	LEU	2.2
1	A	2165	TYR	2.2
1	B	1160	TYR	2.2
1	C	2223	TYR	2.2
1	A	1830	THR	2.2
1	B	1686	THR	2.2
1	A	2792	GLN	2.2
1	C	1018	GLN	2.2
1	C	1485	GLN	2.2
1	D	2767	VAL	2.2
1	A	1945	LYS	2.2
1	B	1029	PHE	2.2
1	B	1340	LYS	2.2
1	B	1894	LYS	2.2
1	D	2078	LYS	2.2
1	B	1953	MET	2.2
1	D	1944	ASP	2.2
1	C	1094	SER	2.1
1	C	1183	SER	2.1
1	C	1438	SER	2.1
1	C	2389	SER	2.1
1	D	2673	SER	2.1
1	A	1465	ILE	2.1
1	B	1059	ILE	2.1
1	B	2581	ILE	2.1
1	C	1277	GLY	2.1
1	C	1856	ILE	2.1
1	D	2085	GLY	2.1
1	A	2747	ARG	2.1
1	D	1337	ARG	2.1
1	A	1552	ASN	2.1
1	A	1798	LEU	2.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	2659	LEU	2.1
1	B	1263	ASN	2.1
1	B	1328	LEU	2.1
1	B	1875	LEU	2.1
1	C	1778	LEU	2.1
1	D	2539	LEU	2.1
1	D	1445	PRO	2.1
1	D	2139	PRO	2.1
1	A	1402	ALA	2.1
1	B	1485	GLN	2.1
1	C	1824	ALA	2.1
1	C	2544	ALA	2.1
1	C	2713	ALA	2.1
1	A	1887	LYS	2.1
1	B	1116	THR	2.1
1	C	1297	THR	2.1
1	C	1757	LYS	2.1
1	C	2646	THR	2.1
1	D	990	THR	2.1
1	D	1116	THR	2.1
1	D	1305	LYS	2.1
1	D	1776	THR	2.1
1	D	2173	THR	2.1
1	D	2552	THR	2.1
1	B	1281	VAL	2.1
1	C	965	VAL	2.1
1	D	1324	VAL	2.1
1	D	1357	VAL	2.1
1	D	1822	VAL	2.1
1	D	2698	PHE	2.1
1	C	1032	MET	2.1
1	A	1447	ASP	2.1
1	B	1374	ASP	2.1
1	D	1762	ASP	2.1
1	D	2656	ASP	2.1
1	A	1004	SER	2.1
1	B	1346	GLY	2.1
1	C	986	GLY	2.1
1	C	1492	SER	2.1
1	C	1818	SER	2.1
1	D	1250	SER	2.1
1	D	2765	GLY	2.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	1275	ILE	2.1
1	A	2146	ARG	2.1
1	A	2414	ILE	2.1
1	B	1242	ILE	2.1
1	C	2131	ILE	2.1
1	D	2522	ILE	2.1
1	A	1703	LEU	2.1
1	B	2711	LEU	2.1
1	C	2202	TRP	2.1
1	A	1201	PRO	2.1
1	C	1121	PRO	2.1
1	B	1551	LYS	2.1
1	B	2543	GLN	2.1
1	C	992	GLN	2.1
1	D	1126	LYS	2.1
1	A	1034	THR	2.1
1	A	1297	THR	2.1
1	B	1446	THR	2.1
1	D	2727	ALA	2.1
1	A	2349	TYR	2.1
1	A	1174	VAL	2.1
1	A	2142	VAL	2.1
1	B	1324	VAL	2.1
1	D	1131	VAL	2.1
1	D	1474	VAL	2.1
1	A	1443	GLU	2.1
1	C	996	PHE	2.1
1	B	1432	ASP	2.1
1	B	1563	ASP	2.1
1	C	1070	ASP	2.1
1	C	1650	ASP	2.1
1	D	1070	ASP	2.1
1	A	2041	GLY	2.1
1	B	2654	SER	2.1
1	B	2666	SER	2.1
1	D	1354	SER	2.1
1	D	1968	SER	2.1
1	D	2054	SER	2.1
1	D	2527	ARG	2.1
1	D	2795	ARG	2.1
1	A	1114	ILE	2.1
1	B	1518	ILE	2.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	C	1060	ILE	2.1
1	A	1279	LEU	2.1
1	A	1300	LEU	2.1
1	A	1516	LEU	2.1
1	A	1485	GLN	2.1
1	A	2584	LYS	2.1
1	B	1555	ASN	2.1
1	D	1140	LYS	2.1
1	D	1529	LEU	2.1
1	D	2761	LEU	2.1
1	C	1230	GLN	2.1
1	A	2227	THR	2.1
1	B	1626	ALA	2.1
1	C	1578	ALA	2.1
1	D	1402	ALA	2.1
1	D	1478	ALA	2.1
1	D	2540	THR	2.1
1	D	2663	ALA	2.1
1	B	2530	MET	2.1
1	A	1058	VAL	2.1
1	A	1869	VAL	2.1
1	B	1011	GLU	2.1
1	B	1269	VAL	2.1
1	C	1443	GLU	2.1
1	C	2798	GLU	2.1
1	D	1443	GLU	2.1
1	D	2109	GLU	2.1
1	B	1399	PHE	2.1
1	B	2527	ARG	2.1
1	A	1432	ASP	2.1
1	A	1454	ASP	2.1
1	A	2143	ASP	2.1
1	A	2255	ASP	2.1
1	B	1568	ASP	2.1
1	A	986	GLY	2.1
1	A	1298	SER	2.1
1	B	974	GLY	2.1
1	B	1575	SER	2.1
1	A	2104	ILE	2.1
1	B	1888	ILE	2.1
1	C	1526	ILE	2.1
1	D	1476	ILE	2.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	1857	LYS	2.1
1	A	1859	LYS	2.1
1	A	2758	LYS	2.1
1	B	1407	LYS	2.1
1	C	1364	CYS	2.1
1	C	1945	LYS	2.1
1	D	2501	LYS	2.1
1	B	1268	PRO	2.1
1	B	1516	LEU	2.1
1	B	1873	ASN	2.1
1	C	1383	LEU	2.1
1	C	2796	GLN	2.1
1	D	2659	LEU	2.1
1	A	1478	ALA	2.1
1	A	1783	ALA	2.1
1	C	1403	THR	2.1
1	D	1760	THR	2.1
1	B	1362	GLU	2.0
1	B	2546	GLU	2.0
1	C	1369	GLU	2.0
1	D	1362	GLU	2.0
1	A	2251	ARG	2.0
1	B	1675	ARG	2.0
1	A	2660	VAL	2.0
1	B	1357	VAL	2.0
1	B	1656	VAL	2.0
1	B	2773	TYR	2.0
1	A	1436	ASP	2.0
1	A	2043	GLY	2.0
1	A	2653	GLY	2.0
1	B	1447	ASP	2.0
1	B	2287	ASP	2.0
1	C	1359	GLY	2.0
1	D	1890	ASP	2.0
1	D	2287	ASP	2.0
1	A	2367	SER	2.0
1	B	1298	SER	2.0
1	B	1438	SER	2.0
1	D	1750	SER	2.0
1	A	2606	LYS	2.0
1	B	2613	ILE	2.0
1	C	1465	ILE	2.0

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	D	1242	ILE	2.0
1	D	1299	ILE	2.0
1	D	1763	ILE	2.0
1	D	1814	ILE	2.0
1	D	2595	ILE	2.0
1	D	2606	LYS	2.0
1	B	1903	GLN	2.0
1	A	2141	PRO	2.0
1	A	2577	LEU	2.0
1	B	1129	LEU	2.0
1	B	2662	LEU	2.0
1	C	1265	LEU	2.0
1	D	1300	LEU	2.0
1	D	2629	ASN	2.0
1	A	2385	MET	2.0
1	A	1012	ARG	2.0
1	A	1179	GLU	2.0
1	A	1416	THR	2.0
1	A	2564	ALA	2.0
1	B	1151	THR	2.0
1	B	2247	ARG	2.0
1	C	1478	ALA	2.0
1	A	1440	VAL	2.0
1	A	2723	VAL	2.0
1	B	1408	VAL	2.0
1	D	1379	VAL	2.0
1	D	1437	VAL	2.0
1	D	1781	VAL	2.0
1	A	2774	TYR	2.0
1	A	1276	ASP	2.0
1	B	1056	ASP	2.0
1	B	1454	ASP	2.0
1	B	1589	ASP	2.0
1	C	1762	ASP	2.0
1	C	1890	ASP	2.0
1	D	1029	PHE	2.0
1	A	1734	HIS	2.0
1	A	2369	SER	2.0
1	A	2373	SER	2.0
1	D	1780	SER	2.0
1	D	1060	ILE	2.0
1	D	1113	ILE	2.0

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Mol	Chain	Res	Type	RSRZ
1	D	2551	ILE	2.0
1	B	1139	GLN	2.0
1	D	1903	GLN	2.0
1	A	1845	ASN	2.0
1	B	1256	CYS	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](#)

SUGAR-RSR INFOmissingINFO

## 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
4	NAG	A	3019	14/15	0.42	0.19	183,185,186,186	0
4	NAG	B	3019	14/15	0.49	0.17	128,131,135,135	0
4	NAG	D	3019	14/15	0.50	0.19	123,126,128,130	0
4	NAG	C	3019	14/15	0.53	0.18	116,118,120,121	0
4	NAG	A	3014	14/15	0.64	0.21	110,113,116,116	0
4	NAG	B	3022	14/15	0.64	0.16	145,148,152,152	0
4	NAG	B	3011	14/15	0.65	0.22	106,109,111,112	0
4	NAG	B	3014	14/15	0.66	0.19	91,95,100,102	0
4	NAG	C	3014	14/15	0.67	0.20	92,96,96,96	0
4	NAG	C	3011	14/15	0.68	0.20	87,92,93,95	0
4	NAG	A	3000	14/15	0.69	0.19	184,187,188,188	0
4	NAG	A	3022	14/15	0.69	0.16	134,137,139,139	0
4	NAG	B	3000	14/15	0.70	0.19	166,170,173,174	0
4	NAG	C	3000	14/15	0.70	0.18	121,122,124,124	0
4	NAG	D	3000	14/15	0.70	0.18	150,156,159,160	0
4	NAG	D	3014	14/15	0.70	0.18	96,100,101,102	0
4	NAG	A	3011	14/15	0.70	0.18	98,103,107,108	0
4	NAG	D	3022	14/15	0.75	0.14	124,127,128,128	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
4	NAG	D	3011	14/15	0.77	0.17	117,120,124,125	0
4	NAG	C	3022	14/15	0.78	0.13	111,113,114,115	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.