



Full wwPDB EM Validation Report ⓘ

Oct 16, 2024 – 12:40 AM JST

PDB ID : 8X4H
EMDB ID : EMD-38049
Title : SARS-CoV-2 JN.1 Spike
Authors : Yue, C.; Liu, P.
Deposited on : 2023-11-15
Resolution : 3.65 Å (reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : **FAILED**
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : **FAILED**
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.39

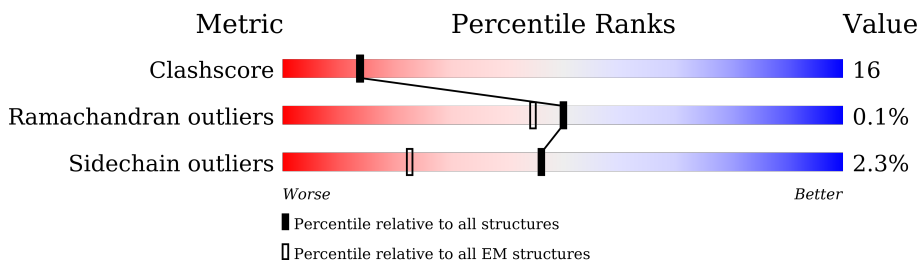
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.65 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)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	A	1206	
1	B	1206	
1	C	1206	
2	D	2	
2	E	2	
2	F	2	
2	G	2	
2	H	2	
2	I	2	

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Mol	Chain	Length	Quality of chain
2	J	2	 100%
2	K	2	 100%
2	L	2	 100%
2	M	2	 100%
2	N	2	 100%
2	O	2	 100%
2	P	2	 100%
2	Q	2	 100%
2	R	2	 100%
2	S	2	 100%
2	T	2	 100%
2	U	2	 100%

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 25824 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, 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 Spike glycoprotein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	1063	8318	5322	1384	1574	38	0	0
1	B	1063	8318	5322	1384	1574	38	0	0
1	C	1063	8318	5322	1384	1574	38	0	0

There are 225 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	ALA	-	expression tag	UNP P0DTC2
A	-1	THR	-	expression tag	UNP P0DTC2
A	16	MET	-	insertion	UNP P0DTC2
A	17	PRO	ASN	conflict	UNP P0DTC2
A	19	PHE	THR	conflict	UNP P0DTC2
A	20	ASN	THR	conflict	UNP P0DTC2
A	21	LEU	ARG	conflict	UNP P0DTC2
A	22	ILE	THR	conflict	UNP P0DTC2
A	23	THR	GLN	conflict	UNP P0DTC2
A	24	THR	LEU	conflict	UNP P0DTC2
A	25	THR	PRO	conflict	UNP P0DTC2
A	26	GLN	PRO	conflict	UNP P0DTC2
A	27	SER	ALA	conflict	UNP P0DTC2
A	50	LEU	SER	conflict	UNP P0DTC2
A	?	-	HIS	deletion	UNP P0DTC2
A	?	-	VAL	deletion	UNP P0DTC2
A	127	PHE	VAL	conflict	UNP P0DTC2
A	143	ASP	GLY	conflict	UNP P0DTC2
A	?	-	TYR	deletion	UNP P0DTC2
A	157	SER	PHE	conflict	UNP P0DTC2
A	158	GLY	ARG	conflict	UNP P0DTC2
A	?	-	ASN	deletion	UNP P0DTC2
A	212	ILE	LEU	variant	UNP P0DTC2
A	213	GLY	VAL	variant	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	216	PHE	LEU	conflict	UNP P0DTC2
A	245	ASN	HIS	conflict	UNP P0DTC2
A	264	ASP	ALA	conflict	UNP P0DTC2
A	332	VAL	ILE	conflict	UNP P0DTC2
A	339	HIS	GLY	conflict	UNP P0DTC2
A	356	THR	LYS	conflict	UNP P0DTC2
A	371	PHE	SER	variant	UNP P0DTC2
A	373	PRO	SER	variant	UNP P0DTC2
A	375	PHE	SER	variant	UNP P0DTC2
A	376	ALA	THR	variant	UNP P0DTC2
A	403	LYS	ARG	conflict	UNP P0DTC2
A	405	ASN	ASP	variant	UNP P0DTC2
A	408	SER	ARG	variant	UNP P0DTC2
A	417	ASN	LYS	variant	UNP P0DTC2
A	440	LYS	ASN	variant	UNP P0DTC2
A	445	HIS	VAL	conflict	UNP P0DTC2
A	446	SER	GLY	variant	UNP P0DTC2
A	450	ASP	ASN	conflict	UNP P0DTC2
A	452	TRP	LEU	conflict	UNP P0DTC2
A	455	SER	LEU	conflict	UNP P0DTC2
A	460	LYS	ASN	variant	UNP P0DTC2
A	477	ASN	SER	variant	UNP P0DTC2
A	478	LYS	THR	variant	UNP P0DTC2
A	481	LYS	ASN	conflict	UNP P0DTC2
A	?	-	VAL	deletion	UNP P0DTC2
A	484	LYS	GLU	variant	UNP P0DTC2
A	486	PRO	PHE	variant	UNP P0DTC2
A	498	ARG	GLN	variant	UNP P0DTC2
A	501	TYR	ASN	variant	UNP P0DTC2
A	505	HIS	TYR	variant	UNP P0DTC2
A	554	LYS	GLU	conflict	UNP P0DTC2
A	570	VAL	ALA	conflict	UNP P0DTC2
A	614	GLY	ASP	variant	UNP P0DTC2
A	621	SER	PRO	conflict	UNP P0DTC2
A	655	TYR	HIS	variant	UNP P0DTC2
A	679	LYS	ASN	variant	UNP P0DTC2
A	681	ARG	PRO	variant	UNP P0DTC2
A	683	ALA	ARG	conflict	UNP P0DTC2
A	685	ALA	ARG	conflict	UNP P0DTC2
A	764	LYS	ASN	variant	UNP P0DTC2
A	796	TYR	ASP	variant	UNP P0DTC2
A	817	PRO	PHE	conflict	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	892	PRO	ALA	conflict	UNP P0DTC2
A	899	PRO	ALA	conflict	UNP P0DTC2
A	939	PHE	SER	conflict	UNP P0DTC2
A	942	PRO	ALA	conflict	UNP P0DTC2
A	954	HIS	GLN	variant	UNP P0DTC2
A	969	LYS	ASN	variant	UNP P0DTC2
A	986	PRO	LYS	variant	UNP P0DTC2
A	987	PRO	VAL	variant	UNP P0DTC2
A	1143	LEU	PRO	conflict	UNP P0DTC2
B	-2	ALA	-	expression tag	UNP P0DTC2
B	-1	THR	-	expression tag	UNP P0DTC2
B	16	MET	-	insertion	UNP P0DTC2
B	17	PRO	ASN	conflict	UNP P0DTC2
B	19	PHE	THR	conflict	UNP P0DTC2
B	20	ASN	THR	conflict	UNP P0DTC2
B	21	LEU	ARG	conflict	UNP P0DTC2
B	22	ILE	THR	conflict	UNP P0DTC2
B	23	THR	GLN	conflict	UNP P0DTC2
B	24	THR	LEU	conflict	UNP P0DTC2
B	25	THR	PRO	conflict	UNP P0DTC2
B	26	GLN	PRO	conflict	UNP P0DTC2
B	27	SER	ALA	conflict	UNP P0DTC2
B	50	LEU	SER	conflict	UNP P0DTC2
B	?	-	HIS	deletion	UNP P0DTC2
B	?	-	VAL	deletion	UNP P0DTC2
B	127	PHE	VAL	conflict	UNP P0DTC2
B	143	ASP	GLY	conflict	UNP P0DTC2
B	?	-	TYR	deletion	UNP P0DTC2
B	157	SER	PHE	conflict	UNP P0DTC2
B	158	GLY	ARG	conflict	UNP P0DTC2
B	?	-	ASN	deletion	UNP P0DTC2
B	212	ILE	LEU	variant	UNP P0DTC2
B	213	GLY	VAL	variant	UNP P0DTC2
B	216	PHE	LEU	conflict	UNP P0DTC2
B	245	ASN	HIS	conflict	UNP P0DTC2
B	264	ASP	ALA	conflict	UNP P0DTC2
B	332	VAL	ILE	conflict	UNP P0DTC2
B	339	HIS	GLY	conflict	UNP P0DTC2
B	356	THR	LYS	conflict	UNP P0DTC2
B	371	PHE	SER	variant	UNP P0DTC2
B	373	PRO	SER	variant	UNP P0DTC2
B	375	PHE	SER	variant	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	376	ALA	THR	variant	UNP P0DTC2
B	403	LYS	ARG	conflict	UNP P0DTC2
B	405	ASN	ASP	variant	UNP P0DTC2
B	408	SER	ARG	variant	UNP P0DTC2
B	417	ASN	LYS	variant	UNP P0DTC2
B	440	LYS	ASN	variant	UNP P0DTC2
B	445	HIS	VAL	conflict	UNP P0DTC2
B	446	SER	GLY	variant	UNP P0DTC2
B	450	ASP	ASN	conflict	UNP P0DTC2
B	452	TRP	LEU	conflict	UNP P0DTC2
B	455	SER	LEU	conflict	UNP P0DTC2
B	460	LYS	ASN	variant	UNP P0DTC2
B	477	ASN	SER	variant	UNP P0DTC2
B	478	LYS	THR	variant	UNP P0DTC2
B	481	LYS	ASN	conflict	UNP P0DTC2
B	?	-	VAL	deletion	UNP P0DTC2
B	484	LYS	GLU	variant	UNP P0DTC2
B	486	PRO	PHE	variant	UNP P0DTC2
B	498	ARG	GLN	variant	UNP P0DTC2
B	501	TYR	ASN	variant	UNP P0DTC2
B	505	HIS	TYR	variant	UNP P0DTC2
B	554	LYS	GLU	conflict	UNP P0DTC2
B	570	VAL	ALA	conflict	UNP P0DTC2
B	614	GLY	ASP	variant	UNP P0DTC2
B	621	SER	PRO	conflict	UNP P0DTC2
B	655	TYR	HIS	variant	UNP P0DTC2
B	679	LYS	ASN	variant	UNP P0DTC2
B	681	ARG	PRO	variant	UNP P0DTC2
B	683	ALA	ARG	conflict	UNP P0DTC2
B	685	ALA	ARG	conflict	UNP P0DTC2
B	764	LYS	ASN	variant	UNP P0DTC2
B	796	TYR	ASP	variant	UNP P0DTC2
B	817	PRO	PHE	conflict	UNP P0DTC2
B	892	PRO	ALA	conflict	UNP P0DTC2
B	899	PRO	ALA	conflict	UNP P0DTC2
B	939	PHE	SER	conflict	UNP P0DTC2
B	942	PRO	ALA	conflict	UNP P0DTC2
B	954	HIS	GLN	variant	UNP P0DTC2
B	969	LYS	ASN	variant	UNP P0DTC2
B	986	PRO	LYS	variant	UNP P0DTC2
B	987	PRO	VAL	variant	UNP P0DTC2
B	1143	LEU	PRO	conflict	UNP P0DTC2

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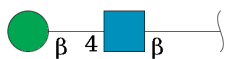
Chain	Residue	Modelled	Actual	Comment	Reference
C	-2	ALA	-	expression tag	UNP P0DTC2
C	-1	THR	-	expression tag	UNP P0DTC2
C	16	MET	-	insertion	UNP P0DTC2
C	17	PRO	ASN	conflict	UNP P0DTC2
C	19	PHE	THR	conflict	UNP P0DTC2
C	20	ASN	THR	conflict	UNP P0DTC2
C	21	LEU	ARG	conflict	UNP P0DTC2
C	22	ILE	THR	conflict	UNP P0DTC2
C	23	THR	GLN	conflict	UNP P0DTC2
C	24	THR	LEU	conflict	UNP P0DTC2
C	25	THR	PRO	conflict	UNP P0DTC2
C	26	GLN	PRO	conflict	UNP P0DTC2
C	27	SER	ALA	conflict	UNP P0DTC2
C	50	LEU	SER	conflict	UNP P0DTC2
C	?	-	HIS	deletion	UNP P0DTC2
C	?	-	VAL	deletion	UNP P0DTC2
C	127	PHE	VAL	conflict	UNP P0DTC2
C	143	ASP	GLY	conflict	UNP P0DTC2
C	?	-	TYR	deletion	UNP P0DTC2
C	157	SER	PHE	conflict	UNP P0DTC2
C	158	GLY	ARG	conflict	UNP P0DTC2
C	?	-	ASN	deletion	UNP P0DTC2
C	212	ILE	LEU	variant	UNP P0DTC2
C	213	GLY	VAL	variant	UNP P0DTC2
C	216	PHE	LEU	conflict	UNP P0DTC2
C	245	ASN	HIS	conflict	UNP P0DTC2
C	264	ASP	ALA	conflict	UNP P0DTC2
C	332	VAL	ILE	conflict	UNP P0DTC2
C	339	HIS	GLY	conflict	UNP P0DTC2
C	356	THR	LYS	conflict	UNP P0DTC2
C	371	PHE	SER	variant	UNP P0DTC2
C	373	PRO	SER	variant	UNP P0DTC2
C	375	PHE	SER	variant	UNP P0DTC2
C	376	ALA	THR	variant	UNP P0DTC2
C	403	LYS	ARG	conflict	UNP P0DTC2
C	405	ASN	ASP	variant	UNP P0DTC2
C	408	SER	ARG	variant	UNP P0DTC2
C	417	ASN	LYS	variant	UNP P0DTC2
C	440	LYS	ASN	variant	UNP P0DTC2
C	445	HIS	VAL	conflict	UNP P0DTC2
C	446	SER	GLY	variant	UNP P0DTC2
C	450	ASP	ASN	conflict	UNP P0DTC2

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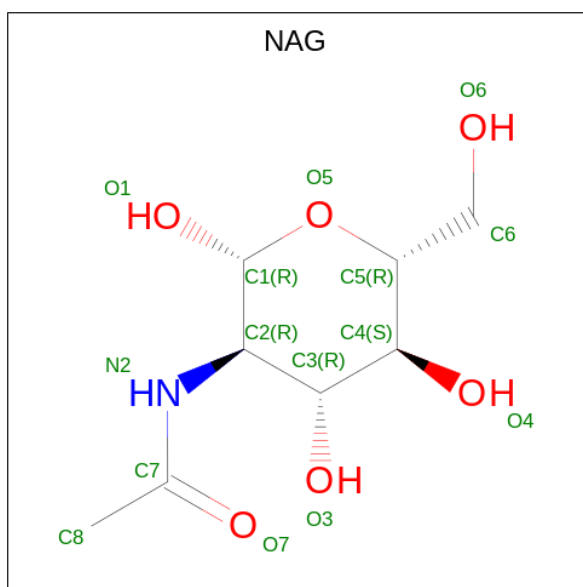
Chain	Residue	Modelled	Actual	Comment	Reference
C	452	TRP	LEU	conflict	UNP P0DTC2
C	455	SER	LEU	conflict	UNP P0DTC2
C	460	LYS	ASN	variant	UNP P0DTC2
C	477	ASN	SER	variant	UNP P0DTC2
C	478	LYS	THR	variant	UNP P0DTC2
C	481	LYS	ASN	conflict	UNP P0DTC2
C	?	-	VAL	deletion	UNP P0DTC2
C	484	LYS	GLU	variant	UNP P0DTC2
C	486	PRO	PHE	variant	UNP P0DTC2
C	498	ARG	GLN	variant	UNP P0DTC2
C	501	TYR	ASN	variant	UNP P0DTC2
C	505	HIS	TYR	variant	UNP P0DTC2
C	554	LYS	GLU	conflict	UNP P0DTC2
C	570	VAL	ALA	conflict	UNP P0DTC2
C	614	GLY	ASP	variant	UNP P0DTC2
C	621	SER	PRO	conflict	UNP P0DTC2
C	655	TYR	HIS	variant	UNP P0DTC2
C	679	LYS	ASN	variant	UNP P0DTC2
C	681	ARG	PRO	variant	UNP P0DTC2
C	683	ALA	ARG	conflict	UNP P0DTC2
C	685	ALA	ARG	conflict	UNP P0DTC2
C	764	LYS	ASN	variant	UNP P0DTC2
C	796	TYR	ASP	variant	UNP P0DTC2
C	817	PRO	PHE	conflict	UNP P0DTC2
C	892	PRO	ALA	conflict	UNP P0DTC2
C	899	PRO	ALA	conflict	UNP P0DTC2
C	939	PHE	SER	conflict	UNP P0DTC2
C	942	PRO	ALA	conflict	UNP P0DTC2
C	954	HIS	GLN	variant	UNP P0DTC2
C	969	LYS	ASN	variant	UNP P0DTC2
C	986	PRO	LYS	variant	UNP P0DTC2
C	987	PRO	VAL	variant	UNP P0DTC2
C	1143	LEU	PRO	conflict	UNP P0DTC2

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



Mol	Chain	Residues	Atoms				AltConf	Trace
2	D	2	Total 25	C 14	N 1	O 10	0	0
2	E	2	Total 25	C 14	N 1	O 10	0	0
2	F	2	Total 25	C 14	N 1	O 10	0	0
2	G	2	Total 25	C 14	N 1	O 10	0	0
2	H	2	Total 25	C 14	N 1	O 10	0	0
2	I	2	Total 25	C 14	N 1	O 10	0	0
2	J	2	Total 25	C 14	N 1	O 10	0	0
2	K	2	Total 25	C 14	N 1	O 10	0	0
2	L	2	Total 25	C 14	N 1	O 10	0	0
2	M	2	Total 25	C 14	N 1	O 10	0	0
2	N	2	Total 25	C 14	N 1	O 10	0	0
2	O	2	Total 25	C 14	N 1	O 10	0	0
2	P	2	Total 25	C 14	N 1	O 10	0	0
2	Q	2	Total 25	C 14	N 1	O 10	0	0
2	R	2	Total 25	C 14	N 1	O 10	0	0
2	S	2	Total 25	C 14	N 1	O 10	0	0
2	T	2	Total 25	C 14	N 1	O 10	0	0
2	U	2	Total 25	C 14	N 1	O 10	0	0

- Molecule 3 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: C₈H₁₅NO₆).



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

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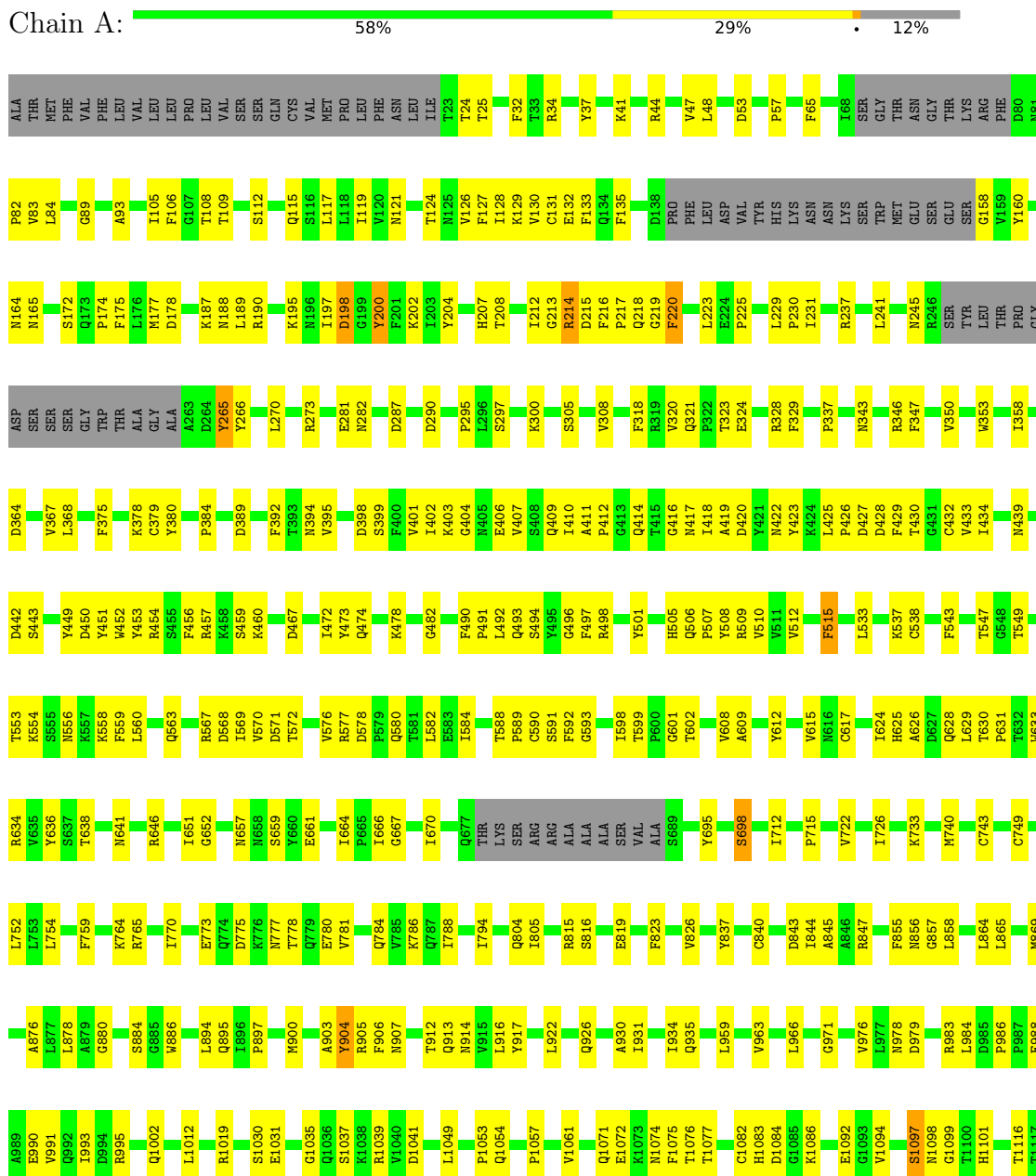
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Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
3	B	1	Total 14	8	1	5	0
3	B	1	Total 14	8	1	5	0
3	B	1	Total 14	8	1	5	0
3	B	1	Total 14	8	1	5	0
3	B	1	Total 14	8	1	5	0
3	B	1	Total 14	8	1	5	0
3	C	1	Total 14	8	1	5	0
3	C	1	Total 14	8	1	5	0
3	C	1	Total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

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. 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. 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: Spike glycoprotein



• Molecule 1: Spike glycoprotein



ALA	THR	LYS	ARG	PHE	ASP	VAL	DEO	PHE	PHE	LEU	VAL	LEU	LEU	LEU	PRO	PRO	VAL	CYS	GLN	SER	SER	VAL	ILE	ILE	T23	T24	T28	Y28	T29	N30	R34	Y37	R44	V47	L48	H49	L50	D53	L54	P57	F58	F59	T63	W64	F65	L68	SER	GLY	THR	ASN	THR	GLY		
THR	LYS	ARG	PHE	ASP	VAL	DEO	PHE	PHE	LEU	VAL	LEU	LEU	LEU	PRO	PRO	VAL	CYS	GLN	SER	SER	VAL	ILE	ILE	T23	T24	T28	Y28	T29	N30	R34	Y37	R44	V47	L48	H49	L50	D53	L54	P57	F58	F59	T63	W64	F65	L68	SER	GLY	THR	ASN	THR	GLY			
GLU	SER	G158	S162	A163	M164	M165	C166	L84	S94	T95	E96	K97	G103	M104	T108	T109	L110	D111	S112	K113	L114	Q115	S116	L117	L118	L119	V120	M121	V126	F127	I128	C131	E132	F133	Q134	F135	D138	PRO	PHE	LEU	ASP	VAL	TYR	HIS	LYS	ASN	ASN	LYS	SER	TRP	MET	THR	GLU	SER
THR	PRO	GLY	ASP	SER	SER	GLY	TRP	THR	ALA	ALA	ALA	A263	D264	Y265	Q271	P272	R273	M282	G283	L188	L189	R190	E191	L296	S297	E298	T299	G300	C301	T302	L303	K304	S305	F306	T307	V308	K310	N317	F318	R319	T323	E324	V327	R328	F329	P330	R237	F238	R246	SER	TYR	LEU	F342	
R343	F347	V350	M337	S358	M339	K360	N360	D364	Y369	R370	F371	F374	A376	K378	C379	Y380	G381	P384	L387	N388	D389	L390	T393	N394	V395	D398	V401	I402	K403	E406	Q409	I410	A411	Q414	I418	N422	L425	P426	D427	F428	D429	F430	L435	C336	P337	F429	D428	F430	T430					
V433	I434	A435	M436	S437	M439	K440	L441	D442	S443	G447	M448	Y449	D450	Y453	R454	S455	F456	R457	K458	S459	K460	L461	K462	E465	T466	P467	Q493	G496	F497	R498	Y501	H505	Q506	P507	T508	R509	V512	F515	E516	L517	A520	G526	S530	T547										
C548	T549	T553	K554	S555	N556	K557	R558	L559	L560	Q563	R567	D568	I569	V570	D574	R577	G578	G579	E582	S583	I584	L585	D586	I587	T588	P589	C590	S591	F592	G593	G594	V595	T599	P600	G601	T602	V608	A609	V610	L611	Y612	V615	M616	C617	T618	V722	T723	T724	A623	I624	L629	T630		
P631	T632	W633	R634	Y635	S637	T638	Q644	T645	R646	A647	G648	I651	S659	I664	P665	I666	G667	I670	C671	A672	Q675	T676	Q677	THR	LYS	SER	ARG	ARG	ARG	ALA	ALA	S689	I693	M697	S698	L699	I714	P715	V722	T723	T724	A623	E725	I726	V736									
C743	E748	C749	L752	F759	T761	R765	T778	I788	T791	P792	K795	Q804	I805	L806	K811	N812	N814	Y817	L822	I831	I834	V826	A831	G832	F833	I834	Y837	G838	D839	C840	L945	L946	K947	T961	L962	V963	K964	Q965	K969	I844	V976	L977	N978	N979	L884	D985								
L858	L864	L865	M869	A876	L877	L878	A879	G880	S884	G885	W886	L894	Q895	M900	Y904	R905	T912	Q913	N914	L922	Q926	I831	I834	I834	Q935	L945	G946	K947	T961	L962	V963	K964	Q965	K969	I844	V976	L977	N978	N979	L884	D985													
P986	P987	E988	A989	I993	L996	I997	L1004	Q1005	T1006	S1030	E1031	G1035	Q1036	S1037	R1038	V1040	D1041	H1048	L1049	M1050	P1053	Q1054	P1057	V1061	V1065	P1069	A1070	E1071	E1072	K1073	M1074	F1075	T1076	I1081	G1093	V1094	V1095	S1097	N1098	G1099	T1100	H1101	H1102	F1103										
Q1106	R1107	E1111	I1114	S1123	G1124	N1125	V1129	D1139	E1142	L1143	E1144	LEU	ASP	SER	PHE	VAL	GLU	GLU	LEU	ASP	HIS	THR	SER	PRO	ASP	VAL	ASP	LEU	GLY	ILE	ILE	ALA	SER	VAL	ASN	ASN	ILE	GLN	GLY	LEU	ILE	ASP	ARG											
LEU	ASN	GLU	VAL	ALA	LYS	ASN	LEU	LEU	ASN	GLN	GLU	LEU	LEU	GLN	GLY	LYS	TYR	GLU	GLN	GLN																																		

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



WAG1
BMA2

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

Chain E:  100%



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

Chain F:  100%



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

Chain G:  100%



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

Chain H:  100%



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

Chain I:  100%



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

Chain J:  100%



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

Chain K:  100%



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

Chain L:  100%

MAG1
BMA2

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

Chain M:  100%MAG1
BMA2

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

Chain N:  100%MAG1
BMA2


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

Chain O:  100%MAG1
BMA2

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

Chain P:  100%MAG1
BMA2

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

Chain Q:  100%MAG1
BMA2

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

Chain R:  100%MAG1
BMA2

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

Chain S:  100%MAG1
BMA2

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

Chain T:  100%

MAG1
BMA2

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

Chain U:  100%

MAG1
BMA2

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	223122	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TECNAI ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor

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: NAG, BMA

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.34	0/8518	0.52	1/11592 (0.0%)
1	B	0.34	0/8518	0.53	1/11592 (0.0%)
1	C	0.35	0/8518	0.52	0/11592
All	All	0.35	0/25554	0.52	2/34776 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	242	LEU	CA-CB-CG	5.94	128.97	115.30
1	A	198	ASP	CB-CG-OD1	5.10	122.89	118.30

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	8318	0	8107	271	0
1	B	8318	0	8107	316	0
1	C	8318	0	8107	280	0
2	D	25	0	22	0	0
2	E	25	0	22	0	0
2	F	25	0	22	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	G	25	0	22	0	0
2	H	25	0	22	0	0
2	I	25	0	22	0	0
2	J	25	0	22	0	0
2	K	25	0	22	0	0
2	L	25	0	22	0	0
2	M	25	0	22	0	0
2	N	25	0	22	0	0
2	O	25	0	22	0	0
2	P	25	0	22	0	0
2	Q	25	0	22	0	0
2	R	25	0	22	0	0
2	S	25	0	22	0	0
2	T	25	0	22	0	0
2	U	25	0	22	0	0
3	A	140	0	130	2	0
3	B	140	0	130	4	0
3	C	140	0	130	4	0
All	All	25824	0	25107	792	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 16.

All (792) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:200:TYR:HA	1:B:230:PRO:HA	1.31	1.06
1:A:379:CYS:HA	1:A:432:CYS:HB3	1.49	0.92
1:C:134:GLN:HG3	1:C:135:PHE:CD2	2.05	0.91
1:B:242:LEU:HD12	1:B:243:ALA:H	1.38	0.89
1:C:342:PHE:HB3	1:C:371:PHE:CE2	2.08	0.88
1:B:833:PHE:HB2	1:C:646:ARG:HG3	1.55	0.87
1:B:452:TRP:HB3	1:B:492:LEU:HD21	1.60	0.84
1:A:804:GLN:NE2	1:A:935:GLN:OE1	2.15	0.80
1:B:200:TYR:CA	1:B:230:PRO:HA	2.10	0.80
1:A:646:ARG:HG3	1:C:833:PHE:HB2	1.62	0.80
1:C:44:ARG:HB3	1:C:47:VAL:HG11	1.64	0.78
1:C:425:LEU:HD12	1:C:426:PRO:HD2	1.63	0.78
1:B:133:PHE:HB2	1:B:160:TYR:HB2	1.65	0.78
1:B:857:GLY:HA2	1:C:592:PHE:CE2	2.18	0.78
1:C:905:ARG:CZ	1:C:1050:MET:HG2	2.13	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:857:GLY:HA2	1:B:592:PHE:CE2	2.19	0.77
1:C:454:ARG:NH1	1:C:467:ASP:O	2.18	0.77
1:C:342:PHE:HB3	1:C:371:PHE:CD2	2.21	0.76
1:C:804:GLN:NE2	1:C:935:GLN:OE1	2.18	0.75
1:B:170:TYR:CD1	1:B:229:LEU:HD11	2.21	0.75
1:B:454:ARG:NH1	1:B:467:ASP:O	2.19	0.75
1:B:34:ARG:NH2	1:B:219:GLY:O	2.22	0.73
1:C:726:ILE:HG12	1:C:1061:VAL:HG22	1.69	0.73
1:A:454:ARG:HH12	1:A:467:ASP:HB3	1.53	0.72
1:A:454:ARG:NH1	1:A:467:ASP:O	2.22	0.72
1:C:329:PHE:HB3	1:C:330:PRO:HD2	1.70	0.72
1:B:600:PRO:HD3	1:B:692:ILE:HD11	1.71	0.72
1:A:131:CYS:SG	1:A:132:GLU:N	2.63	0.71
1:A:856:ASN:HD21	1:A:963:VAL:HG13	1.54	0.71
1:B:44:ARG:HB3	1:B:47:VAL:HG11	1.72	0.71
1:B:629:LEU:HG	1:B:631:PRO:HD2	1.73	0.70
1:B:983:ARG:HE	1:C:517:LEU:HD13	1.55	0.70
1:C:48:LEU:HD13	1:C:305:SER:HA	1.73	0.70
1:C:422:ASN:ND2	1:C:454:ARG:O	2.21	0.70
1:A:577:ARG:HD3	1:A:582:LEU:HD13	1.73	0.70
1:C:34:ARG:NH2	1:C:219:GLY:O	2.25	0.70
1:C:369:TYR:HA	1:C:374:PHE:HE2	1.56	0.70
1:B:406:GLU:HG2	1:B:418:ILE:HG13	1.73	0.70
1:C:188:ASN:HD21	1:C:207:HIS:HB3	1.57	0.69
1:A:588:THR:HG23	1:C:840:CYS:HB2	1.75	0.69
1:A:984:LEU:HD23	1:A:988:GLU:HB3	1.73	0.69
1:A:907:ASN:OD1	1:A:913:GLN:HG3	1.92	0.69
1:A:442:ASP:OD1	1:A:509:ARG:NH2	2.26	0.69
1:C:117:LEU:HD23	1:C:119:ILE:HD11	1.73	0.68
1:C:369:TYR:HA	1:C:374:PHE:CE2	2.27	0.68
1:A:44:ARG:HB3	1:A:47:VAL:HG11	1.74	0.68
1:A:320:VAL:N	1:A:591:SER:OG	2.23	0.68
1:B:200:TYR:HA	1:B:230:PRO:CA	2.18	0.68
1:A:318:PHE:HZ	1:A:615:VAL:HG21	1.58	0.68
1:A:895:GLN:NE2	1:B:1074:ASN:OD1	2.27	0.67
1:A:321:GLN:HE21	1:A:630:THR:HG1	1.43	0.67
1:C:131:CYS:SG	1:C:132:GLU:N	2.68	0.67
1:C:128:ILE:HB	1:C:170:TYR:HB3	1.77	0.67
1:B:726:ILE:HG12	1:B:1061:VAL:HG22	1.77	0.67
1:C:108:THR:HG22	1:C:109:THR:HG23	1.77	0.66
1:B:454:ARG:HH12	1:B:467:ASP:HB3	1.59	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:195:LYS:HE3	1:A:202:LYS:HD3	1.76	0.66
1:C:231:ILE:HG22	1:C:233:ILE:HG12	1.76	0.66
1:A:501:TYR:HB3	1:A:505:HIS:HB2	1.78	0.65
1:B:37:TYR:HB3	1:B:223:LEU:HB2	1.79	0.65
1:B:912:THR:OG1	1:B:914:ASN:OD1	2.13	0.65
1:B:599:THR:HB	1:B:608:VAL:HG12	1.79	0.65
1:B:422:ASN:ND2	1:B:454:ARG:O	2.19	0.65
1:C:189:LEU:HB2	1:C:213:GLY:HA3	1.78	0.65
1:A:412:PRO:HG3	1:A:429:PHE:HB3	1.78	0.65
1:A:108:THR:HG22	1:A:109:THR:HG23	1.78	0.65
1:B:188:ASN:HA	1:B:209:PRO:HA	1.78	0.65
1:C:134:GLN:HG3	1:C:135:PHE:CE2	2.32	0.65
1:B:455:SER:HB3	1:B:493:GLN:HE22	1.63	0.64
1:A:726:ILE:HG12	1:A:1061:VAL:HG22	1.78	0.64
1:C:462:LYS:HB2	1:C:465:GLU:HG3	1.80	0.64
1:C:569:ILE:HG23	1:C:570:VAL:HG13	1.79	0.64
1:A:837:TYR:OH	1:B:589:PRO:O	2.14	0.64
1:C:858:LEU:HD11	1:C:962:LEU:HD13	1.78	0.64
1:C:984:LEU:HB2	1:C:989:ALA:HB2	1.80	0.64
1:B:34:ARG:NH1	1:B:221:SER:OG	2.31	0.64
1:C:577:ARG:HD3	1:C:582:LEU:HD13	1.79	0.64
1:A:57:PRO:HG3	1:A:273:ARG:HD2	1.80	0.64
1:A:1116:THR:OG1	1:A:1118:ASP:OD1	2.16	0.64
1:A:558:LYS:HZ1	1:C:282:ASN:HD22	1.44	0.64
1:A:903:ALA:HB1	1:A:913:GLN:HG2	1.78	0.64
1:C:303:LEU:HD21	1:C:308:VAL:HG12	1.79	0.64
1:B:65:PHE:HB2	1:B:265:TYR:HB3	1.81	0.63
1:B:131:CYS:SG	1:B:132:GLU:N	2.71	0.63
1:C:83:VAL:HG22	1:C:237:ARG:HD2	1.80	0.63
1:C:659:SER:HB3	1:C:698:SER:HB2	1.80	0.63
1:B:99:ASN:OD1	1:B:102:ARG:NH1	2.32	0.63
1:C:406:GLU:HG2	1:C:418:ILE:HG13	1.81	0.63
1:C:1076:THR:HB	1:C:1097:SER:HB3	1.81	0.63
1:C:442:ASP:OD1	1:C:509:ARG:NH2	2.31	0.63
1:C:599:THR:HB	1:C:608:VAL:HG12	1.80	0.63
1:A:346:ARG:NH1	1:A:450:ASP:OD2	2.32	0.63
1:B:742:ILE:HG23	1:B:1000:ARG:HB2	1.80	0.63
1:A:212:ILE:HG22	1:A:214:ARG:HG3	1.79	0.63
1:B:773:GLU:OE2	1:B:774:GLN:NE2	2.31	0.63
1:C:307:THR:HA	1:C:602:THR:HG21	1.79	0.63
1:B:57:PRO:HG3	1:B:273:ARG:HD2	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:406:GLU:HA	1:B:409:GLN:HB3	1.82	0.62
1:C:1106:GLN:NE2	1:C:1111:GLU:OE1	2.32	0.62
1:B:126:VAL:HG13	1:B:174:PRO:HA	1.82	0.62
1:C:433:VAL:HG12	1:C:512:VAL:HG23	1.82	0.62
1:A:914:ASN:ND2	1:B:1123:SER:OG	2.32	0.62
1:A:1074:ASN:OD1	1:C:895:GLN:NE2	2.33	0.62
1:B:549:THR:OG1	1:B:590:CYS:SG	2.53	0.62
1:B:914:ASN:ND2	1:C:1123:SER:OG	2.31	0.62
1:C:65:PHE:HB2	1:C:265:TYR:HB3	1.80	0.62
1:C:624:ILE:HG23	1:C:634:ARG:HD2	1.82	0.62
1:C:612:TYR:HE2	1:C:651:ILE:HD12	1.65	0.61
1:C:449:TYR:HA	1:C:496:GLY:HA2	1.82	0.61
1:A:971:GLY:HA3	1:A:995:ARG:HH21	1.65	0.61
1:A:983:ARG:HD2	1:B:517:LEU:HD13	1.83	0.61
1:C:134:GLN:HG3	1:C:135:PHE:HD2	1.65	0.61
1:B:242:LEU:HD12	1:B:243:ALA:N	2.12	0.61
1:A:837:TYR:OH	1:B:590:CYS:O	2.18	0.61
1:B:486:PRO:O	1:B:487:ASN:ND2	2.34	0.61
1:C:821:LEU:HD11	1:C:935:GLN:HG3	1.81	0.60
1:B:317:ASN:HD22	1:B:592:PHE:HE1	1.48	0.60
1:B:178:ASP:HA	1:B:188:ASN:HD21	1.65	0.60
1:B:631:PRO:O	1:B:634:ARG:NH2	2.32	0.60
1:A:629:LEU:HG	1:A:631:PRO:HD2	1.84	0.60
1:A:722:VAL:HG12	1:A:930:ALA:HB1	1.82	0.60
1:A:1077:THR:OG1	1:C:900:MET:SD	2.56	0.60
1:A:869:MET:HB2	1:B:699:LEU:HD21	1.83	0.60
1:A:590:CYS:O	1:C:837:TYR:OH	2.08	0.59
1:A:912:THR:OG1	1:A:914:ASN:OD1	2.19	0.59
1:A:1123:SER:OG	1:C:914:ASN:ND2	2.35	0.59
1:A:295:PRO:HG3	1:A:633:TRP:HD1	1.66	0.59
1:A:406:GLU:N	1:A:406:GLU:OE1	2.36	0.59
1:A:826:VAL:HB	1:A:1057:PRO:HG2	1.84	0.59
1:C:722:VAL:HG22	1:C:1065:VAL:HG22	1.84	0.59
1:A:715:PRO:HD3	1:C:894:LEU:HD13	1.83	0.58
1:A:777:ASN:O	1:A:781:VAL:HG23	2.03	0.58
1:C:912:THR:OG1	1:C:914:ASN:OD1	2.20	0.58
1:A:187:LYS:H	1:A:212:ILE:HG13	1.68	0.58
1:A:1041:ASP:HB3	1:C:1030:SER:HB3	1.85	0.58
1:A:1053:PRO:O	1:A:1054:GLN:NE2	2.27	0.58
1:A:200:TYR:HA	1:A:230:PRO:HA	1.85	0.58
1:C:636:TYR:HE2	1:C:638:THR:HB	1.67	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1053:PRO:O	1:C:1054:GLN:NE2	2.27	0.58
1:A:894:LEU:HD13	1:B:715:PRO:HD3	1.85	0.58
1:B:844:ILE:HG23	1:C:556:ASN:H	1.68	0.58
1:B:856:ASN:HD21	1:B:963:VAL:HG13	1.68	0.58
1:B:895:GLN:NE2	1:C:1074:ASN:OD1	2.36	0.58
1:C:439:ASN:O	1:C:443:SER:OG	2.17	0.58
1:C:103:GLY:HA3	1:C:120:VAL:HA	1.85	0.58
1:C:724:THR:HB	1:C:934:ILE:HD11	1.85	0.58
1:C:736:VAL:HG11	1:C:1004:LEU:HD11	1.86	0.58
1:B:1075:PHE:O	1:B:1076:THR:OG1	2.22	0.58
1:A:624:ILE:HG23	1:A:634:ARG:HD2	1.86	0.58
1:B:1076:THR:HB	1:B:1097:SER:HB3	1.86	0.58
1:A:121:ASN:HD21	1:A:175:PHE:HB2	1.67	0.57
1:B:128:ILE:HD12	1:B:170:TYR:HD1	1.69	0.57
1:B:557:LYS:HB2	1:B:584:ILE:HD13	1.86	0.57
1:B:427:ASP:OD1	1:B:428:ASP:N	2.37	0.57
1:C:381:GLY:HA3	1:C:430:THR:HA	1.86	0.57
1:C:905:ARG:HD2	1:C:1049:LEU:O	2.03	0.57
1:A:570:VAL:HG21	1:C:852:ALA:HB1	1.85	0.57
1:B:85:PRO:O	1:B:269:TYR:OH	2.19	0.57
1:B:894:LEU:HD13	1:C:715:PRO:HD3	1.85	0.57
1:C:310:LYS:HG3	1:C:600:PRO:HA	1.86	0.57
1:A:922:LEU:HD11	1:A:926:GLN:HE21	1.70	0.57
1:B:1050:MET:HE2	1:B:1052:PHE:CE1	2.40	0.57
1:A:612:TYR:HE2	1:A:651:ILE:HD12	1.70	0.57
1:A:770:ILE:HD11	1:A:1012:LEU:HD23	1.85	0.57
1:A:398:ASP:HB2	1:A:512:VAL:HG12	1.86	0.57
1:C:1075:PHE:O	1:C:1076:THR:OG1	2.23	0.57
1:C:792:PRO:O	1:C:795:LYS:NZ	2.38	0.57
1:B:181:GLY:H	1:B:186:PHE:HD2	1.53	0.56
1:A:599:THR:HB	1:A:608:VAL:HG12	1.87	0.56
1:A:1129:VAL:HG13	1:C:917:TYR:HB3	1.88	0.56
1:B:206:LYS:HB3	1:B:223:LEU:HD23	1.87	0.56
1:B:208:THR:HB	1:B:210:ILE:HG12	1.87	0.56
1:B:1050:MET:CE	1:B:1052:PHE:CE1	2.88	0.56
1:A:24:THR:HG21	1:A:82:PRO:HD3	1.86	0.56
1:A:788:ILE:HG23	1:A:876:ALA:HB2	1.87	0.56
1:C:28:TYR:CE2	1:C:63:THR:HG22	2.40	0.56
1:C:53:ASP:OD1	1:C:54:LEU:N	2.35	0.56
1:B:417:ASN:OD1	1:B:455:SER:HA	2.06	0.56
1:B:437:ASN:OD1	1:B:439:ASN:ND2	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:722:VAL:HG22	1:B:1065:VAL:HG22	1.86	0.56
1:B:295:PRO:HG3	1:B:633:TRP:CD1	2.41	0.56
1:C:371:PHE:CD2	1:C:371:PHE:O	2.59	0.56
1:B:37:TYR:OH	1:B:54:LEU:O	2.24	0.56
1:A:549:THR:OG1	1:A:590:CYS:SG	2.59	0.55
1:C:441:LEU:HD22	1:C:509:ARG:HH12	1.71	0.55
1:A:48:LEU:HD13	1:A:305:SER:HA	1.88	0.55
1:C:178:ASP:OD1	1:C:178:ASP:N	2.37	0.55
1:C:549:THR:OG1	1:C:590:CYS:SG	2.58	0.55
1:C:850:ILE:HD12	1:C:850:ILE:H	1.71	0.55
1:A:131:CYS:HB3	1:A:133:PHE:CZ	2.42	0.55
1:A:158:GLY:C	1:A:160:TYR:H	2.09	0.55
1:B:931:ILE:O	1:B:934:ILE:HG22	2.07	0.55
1:A:712:ILE:HD13	1:A:1094:VAL:HG11	1.88	0.55
1:B:178:ASP:OD1	1:B:178:ASP:N	2.39	0.55
1:B:837:TYR:OH	1:C:590:CYS:O	2.11	0.55
1:A:422:ASN:ND2	1:A:454:ARG:O	2.30	0.55
1:B:878:LEU:HD21	1:B:1052:PHE:HB3	1.88	0.55
1:B:1144:GLU:N	1:B:1144:GLU:OE1	2.40	0.55
1:C:501:TYR:HB3	1:C:505:HIS:HB2	1.88	0.55
1:B:37:TYR:OH	1:B:53:ASP:OD2	2.24	0.55
1:C:406:GLU:HA	1:C:409:GLN:HB3	1.88	0.55
1:B:307:THR:HA	1:B:602:THR:HG21	1.89	0.55
1:B:369:TYR:HA	1:B:374:PHE:CZ	2.41	0.55
1:B:959:LEU:O	1:B:963:VAL:HG23	2.07	0.55
1:C:131:CYS:HB3	1:C:133:PHE:CZ	2.42	0.55
1:A:190:ARG:HD3	1:A:207:HIS:CE1	2.43	0.55
1:A:560:LEU:HD13	1:A:563:GLN:HE21	1.72	0.55
1:B:403:LYS:HB2	1:B:495:TYR:HE2	1.72	0.55
1:C:34:ARG:NH1	1:C:221:SER:OG	2.40	0.55
1:C:791:THR:HG21	1:C:806:LEU:HD13	1.90	0.54
1:B:1053:PRO:O	1:B:1054:GLN:NE2	2.33	0.54
1:B:822:LEU:HD22	1:B:945:LEU:HD21	1.88	0.54
1:B:736:VAL:HB	1:B:858:LEU:HD23	1.90	0.54
1:B:831:ALA:HB3	1:B:834:ILE:HG23	1.89	0.54
1:B:598:ILE:HB	1:B:609:ALA:HB3	1.89	0.54
1:C:398:ASP:HB2	1:C:512:VAL:HG12	1.90	0.54
1:A:328:ARG:NH1	1:A:578:ASP:OD1	2.40	0.54
1:C:127:PHE:HE1	3:C:1301:NAG:H62	1.71	0.54
1:C:395:VAL:HG22	1:C:515:PHE:HD1	1.72	0.54
1:A:450:ASP:OD1	1:A:450:ASP:N	2.38	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1075:PHE:O	1:A:1076:THR:OG1	2.19	0.54
1:C:557:LYS:HD3	1:C:559:PHE:HE1	1.72	0.54
1:C:30:ASN:HD21	1:C:59:PHE:HD1	1.56	0.54
1:A:490:PHE:CD2	1:A:491:PRO:HD2	2.43	0.54
1:A:1002:GLN:NE2	1:C:1005:GLN:OE1	2.40	0.54
1:B:843:ASP:O	1:B:845:ALA:N	2.41	0.54
1:B:99:ASN:HB2	1:B:102:ARG:HH22	1.73	0.53
1:B:129:LYS:HB3	1:B:169:GLU:HG2	1.90	0.53
1:B:298:GLU:O	1:B:302:THR:HG23	2.07	0.53
1:B:493:GLN:N	1:B:493:GLN:OE1	2.41	0.53
1:B:976:VAL:HB	1:B:979:ASP:OD2	2.09	0.53
1:C:447:GLY:HA2	1:C:498:ARG:HG2	1.89	0.53
1:C:350:VAL:HG11	1:C:418:ILE:HD12	1.89	0.53
1:C:880:GLY:O	1:C:884:SER:OG	2.21	0.53
1:B:555:SER:HB2	1:B:586:ASP:OD1	2.09	0.53
1:C:94:SER:HB2	1:C:264:ASP:HB2	1.90	0.53
1:A:558:LYS:NZ	1:C:282:ASN:HD22	2.06	0.53
1:A:840:CYS:HB2	1:B:588:THR:HG23	1.91	0.53
1:B:986:PRO:O	1:B:990:GLU:HG2	2.08	0.53
1:B:365:TYR:HD2	1:B:368:LEU:HD13	1.72	0.53
1:C:57:PRO:HG3	1:C:273:ARG:HD2	1.91	0.53
1:C:461:LEU:HD21	1:C:467:ASP:HB2	1.89	0.53
1:C:497:PHE:HA	1:C:501:TYR:HE2	1.72	0.53
1:A:976:VAL:HB	1:A:979:ASP:HB2	1.89	0.53
1:C:343:ASN:OD1	3:C:1302:NAG:N2	2.42	0.53
1:C:736:VAL:HG22	1:C:858:LEU:HD21	1.91	0.53
1:C:215:ASP:O	1:C:216:PHE:C	2.46	0.53
1:C:831:ALA:HB3	1:C:834:ILE:HG23	1.91	0.53
1:A:65:PHE:HB2	1:A:265:TYR:HB3	1.91	0.52
1:B:858:LEU:HD22	1:B:959:LEU:HD21	1.92	0.52
1:B:905:ARG:HD2	1:B:1049:LEU:O	2.08	0.52
1:A:212:ILE:H	1:A:212:ILE:HD12	1.74	0.52
1:A:411:ALA:HB3	1:A:414:GLN:HG3	1.91	0.52
1:A:459:SER:OG	1:A:460:LYS:N	2.42	0.52
1:B:409:GLN:OE1	1:B:419:ALA:N	2.30	0.52
1:B:132:GLU:N	1:B:166:CYS:SG	2.79	0.52
1:B:1050:MET:CE	1:B:1052:PHE:HE1	2.21	0.52
1:C:425:LEU:HD11	1:C:429:PHE:CD1	2.45	0.52
1:C:559:PHE:HB3	1:C:577:ARG:NH2	2.24	0.52
1:A:389:ASP:OD2	1:A:389:ASP:N	2.42	0.52
1:B:406:GLU:N	1:B:406:GLU:OE1	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:904:TYR:OH	1:B:1094:VAL:HG23	2.09	0.52
1:C:826:VAL:HB	1:C:1057:PRO:HG2	1.91	0.52
1:B:532:ASN:OD1	1:B:533:LEU:N	2.42	0.52
1:C:839:ASP:O	1:C:843:ASP:N	2.43	0.52
1:A:880:GLY:O	1:A:884:SER:OG	2.21	0.52
1:C:454:ARG:HH12	1:C:467:ASP:HB3	1.74	0.52
1:C:985:ASP:OD2	1:C:987:PRO:HD2	2.10	0.52
1:A:752:LEU:HD13	1:A:993:ILE:HG22	1.92	0.52
1:B:847:ARG:NH1	1:C:574:ASP:HA	2.25	0.52
1:A:337:PRO:HD2	1:A:358:ILE:HG23	1.91	0.52
1:A:598:ILE:HG23	1:A:664:ILE:HG21	1.92	0.52
1:A:733:LYS:NZ	1:A:775:ASP:OD2	2.43	0.51
1:B:858:LEU:HD11	1:B:962:LEU:HD23	1.92	0.51
1:A:815:ARG:HD2	1:A:823:PHE:HE2	1.75	0.51
1:B:396:TYR:HB2	1:B:514:SER:HB3	1.92	0.51
1:B:1031:GLU:OE2	1:C:1039:ARG:NE	2.42	0.51
1:A:416:GLY:N	1:A:420:ASP:OD2	2.38	0.51
1:A:845:ALA:C	1:B:557:LYS:HE2	2.31	0.51
1:B:983:ARG:HG2	1:C:390:LEU:HD21	1.91	0.51
1:C:555:SER:HB2	1:C:586:ASP:OD1	2.10	0.51
1:C:843:ASP:O	1:C:845:ALA:N	2.41	0.51
1:A:1076:THR:HB	1:A:1097:SER:HB3	1.92	0.51
1:B:94:SER:HB2	1:B:264:ASP:HB2	1.91	0.51
1:A:778:THR:HG22	1:A:865:LEU:HD12	1.92	0.51
1:C:804:GLN:O	1:C:818:ILE:HG13	2.10	0.51
1:B:904:TYR:CE2	1:C:1107:ARG:HG2	2.46	0.51
1:C:206:LYS:HB3	1:C:223:LEU:HD23	1.92	0.51
1:A:189:LEU:HD22	1:A:217:PRO:HG2	1.93	0.51
1:A:856:ASN:ND2	1:A:963:VAL:HG13	2.24	0.51
1:B:329:PHE:O	1:B:580:GLN:NE2	2.42	0.51
1:A:1075:PHE:HB3	1:A:1097:SER:O	2.10	0.51
1:B:1072:GLU:N	1:B:1072:GLU:OE1	2.44	0.51
1:C:347:PHE:CE1	1:C:509:ARG:HD3	2.45	0.51
1:C:749:CYS:SG	1:C:997:ILE:HD11	2.51	0.51
1:A:34:ARG:NH2	1:A:219:GLY:O	2.44	0.51
1:A:93:ALA:HB3	1:A:266:TYR:HB2	1.93	0.51
1:A:214:ARG:NE	1:A:215:ASP:H	2.10	0.51
1:A:598:ILE:HB	1:A:609:ALA:HB3	1.93	0.51
1:B:295:PRO:HG3	1:B:633:TRP:HD1	1.74	0.51
1:B:736:VAL:HB	1:B:858:LEU:CD2	2.41	0.50
1:A:886:TRP:HB3	1:A:1035:GLY:HA2	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:864:LEU:HA	1:C:667:GLY:HA2	1.92	0.50
1:A:1039:ARG:NE	1:C:1031:GLU:OE1	2.44	0.50
1:B:403:LYS:HD2	1:B:406:GLU:OE1	2.11	0.50
1:B:834:ILE:HD12	1:B:836:GLN:HB2	1.94	0.50
1:B:906:PHE:CD2	1:B:916:LEU:HB2	2.46	0.50
1:B:343:ASN:HD22	3:B:1302:NAG:C7	2.23	0.50
1:C:200:TYR:HA	1:C:230:PRO:HA	1.93	0.50
1:B:118:LEU:HD12	1:B:129:LYS:HD2	1.93	0.50
1:B:965:GLN:O	1:B:968:SER:OG	2.28	0.50
1:C:976:VAL:HB	1:C:979:ASP:HB2	1.93	0.50
1:B:287:ASP:OD2	1:B:288:ALA:N	2.44	0.50
1:B:742:ILE:HG21	1:B:997:ILE:HD13	1.94	0.50
1:C:310:LYS:HG2	1:C:664:ILE:HD11	1.93	0.50
1:C:961:THR:O	1:C:965:GLN:HG2	2.12	0.50
1:A:559:PHE:HB2	1:A:584:ILE:HD11	1.94	0.50
1:A:823:PHE:HD1	1:A:1057:PRO:HG3	1.75	0.50
1:C:34:ARG:NH1	1:C:191:GLU:OE2	2.44	0.50
1:C:379:CYS:HB2	1:C:384:PRO:HD3	1.93	0.50
1:C:453:TYR:HE1	1:C:493:GLN:HB3	1.77	0.50
1:A:553:THR:OG1	1:A:554:LYS:N	2.45	0.49
1:A:855:PHE:HA	1:B:589:PRO:HG3	1.94	0.49
1:B:350:VAL:HG22	1:B:422:ASN:HB3	1.93	0.49
1:B:917:TYR:HB3	1:C:1129:VAL:HG13	1.93	0.49
1:C:188:ASN:ND2	1:C:207:HIS:HB3	2.24	0.49
1:A:379:CYS:HB2	1:A:384:PRO:HD3	1.93	0.49
1:A:931:ILE:O	1:A:934:ILE:HG22	2.12	0.49
1:A:991:VAL:O	1:A:995:ARG:HG3	2.11	0.49
1:B:353:TRP:O	1:B:466:ARG:NH1	2.45	0.49
1:B:557:LYS:HB2	1:B:584:ILE:HG21	1.93	0.49
1:B:720:ILE:HG13	1:B:923:ILE:HG13	1.94	0.49
1:C:121:ASN:HD21	1:C:175:PHE:HB2	1.78	0.49
1:A:300:LYS:HG3	1:A:305:SER:O	2.12	0.49
1:B:406:GLU:HG3	1:B:409:GLN:NE2	2.28	0.49
1:C:116:SER:N	1:C:131:CYS:O	2.38	0.49
1:B:46:SER:OG	1:B:281:GLU:OE1	2.20	0.49
1:B:364:ASP:O	1:B:367:VAL:HG22	2.13	0.49
1:A:900:MET:HG2	1:A:917:TYR:OH	2.13	0.49
1:A:905:ARG:HD2	1:A:1049:LEU:O	2.12	0.49
1:B:42:VAL:HG11	1:C:567:ARG:HD2	1.95	0.49
1:B:110:LEU:HD23	1:B:237:ARG:HE	1.77	0.49
1:C:347:PHE:HB2	1:C:401:VAL:HG13	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:350:VAL:HG11	1:A:418:ILE:HD12	1.93	0.49
1:C:411:ALA:HB3	1:C:414:GLN:HG3	1.94	0.49
1:B:457:ARG:NH1	1:B:467:ASP:OD2	2.45	0.49
1:C:406:GLU:OE1	1:C:406:GLU:N	2.43	0.49
1:C:439:ASN:OD1	1:C:507:PRO:HD2	2.12	0.49
1:A:245:ASN:N	1:A:245:ASN:OD1	2.46	0.49
1:A:906:PHE:CD2	1:A:916:LEU:HB2	2.48	0.49
1:C:865:LEU:HD22	1:C:869:MET:HG3	1.95	0.49
1:A:44:ARG:HB3	1:A:47:VAL:CG1	2.43	0.48
1:A:164:ASN:OD1	1:A:165:ASN:N	2.46	0.48
1:C:134:GLN:H	1:C:162:SER:HB2	1.78	0.48
1:C:437:ASN:OD1	1:C:439:ASN:ND2	2.46	0.48
1:C:715:PRO:HG3	1:C:1069:PRO:HB3	1.95	0.48
1:A:318:PHE:HD2	1:A:629:LEU:HD11	1.77	0.48
1:B:347:PHE:HD2	1:B:399:SER:HB2	1.77	0.48
1:C:450:ASP:N	1:C:450:ASP:OD1	2.37	0.48
1:A:295:PRO:HB2	1:A:608:VAL:HG21	1.93	0.48
1:A:765:ARG:NE	1:B:957:GLN:OE1	2.46	0.48
1:A:864:LEU:HA	1:B:667:GLY:HA2	1.95	0.48
1:A:1039:ARG:CZ	1:C:1031:GLU:OE1	2.61	0.48
1:B:869:MET:HA	1:B:872:GLN:HG3	1.95	0.48
1:A:187:LYS:HB2	1:A:212:ILE:HG23	1.94	0.48
1:B:770:ILE:HD11	1:B:1012:LEU:HA	1.93	0.48
1:C:788:ILE:HG23	1:C:876:ALA:HB2	1.95	0.48
1:A:417:ASN:O	1:A:422:ASN:ND2	2.46	0.48
1:C:50:LEU:HD13	1:C:304:LYS:HE3	1.96	0.48
1:C:189:LEU:HB2	1:C:213:GLY:CA	2.42	0.48
1:B:318:PHE:HZ	1:B:615:VAL:HG21	1.78	0.48
1:B:804:GLN:O	1:B:818:ILE:HG12	2.13	0.48
1:B:858:LEU:HD13	1:B:959:LEU:CD2	2.44	0.48
1:B:1050:MET:HE1	1:B:1052:PHE:HE1	1.78	0.48
1:A:636:TYR:HE2	1:A:638:THR:HB	1.79	0.48
1:B:103:GLY:HA3	1:B:120:VAL:HA	1.96	0.48
1:B:364:ASP:OD1	1:B:364:ASP:N	2.42	0.48
1:A:115:GLN:OE1	1:A:130:VAL:HG12	2.14	0.48
1:A:457:ARG:NH1	1:A:467:ASP:OD2	2.43	0.48
1:C:318:PHE:CE1	1:C:593:GLY:HA3	2.48	0.48
1:A:922:LEU:CD1	1:A:926:GLN:HE21	2.27	0.48
1:A:1072:GLU:OE1	1:A:1072:GLU:N	2.47	0.48
1:B:379:CYS:HB2	1:B:384:PRO:HD3	1.95	0.48
1:C:1098:ASN:CG	1:C:1101:HIS:H	2.17	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:378:LYS:HG2	1:A:380:TYR:CE1	2.49	0.48
1:C:115:GLN:HE21	1:C:233:ILE:HB	1.78	0.48
1:A:164:ASN:HB2	3:A:1304:NAG:O7	2.14	0.47
1:A:1094:VAL:HG22	1:C:904:TYR:OH	2.14	0.47
1:B:199:GLY:HA3	1:B:232:GLY:HA2	1.95	0.47
1:B:582:LEU:CD2	3:B:1306:NAG:H81	2.44	0.47
1:B:839:ASP:O	1:B:843:ASP:N	2.47	0.47
1:A:25:THR:O	1:A:65:PHE:HA	2.14	0.47
1:A:204:TYR:CE2	1:A:225:PRO:HG3	2.50	0.47
1:A:379:CYS:HA	1:A:432:CYS:CB	2.34	0.47
1:B:102:ARG:HB2	1:B:241:LEU:HD23	1.94	0.47
1:C:1093:GLY:H	1:C:1107:ARG:HH22	1.62	0.47
1:A:213:GLY:O	1:A:214:ARG:C	2.52	0.47
1:B:410:ILE:HG13	1:B:425:LEU:HD11	1.96	0.47
1:B:805:ILE:O	1:B:816:SER:OG	2.25	0.47
1:C:1093:GLY:N	1:C:1107:ARG:HH12	2.12	0.47
1:A:178:ASP:N	1:A:178:ASP:OD1	2.47	0.47
1:B:208:THR:C	1:B:210:ILE:H	2.17	0.47
1:B:568:ASP:OD1	1:B:572:THR:OG1	2.28	0.47
1:B:980:ILE:HD11	1:B:993:ILE:HG13	1.95	0.47
1:C:811:LYS:HG2	1:C:813:SER:H	1.79	0.47
1:A:32:PHE:HD2	1:A:218:GLN:HB3	1.79	0.47
1:A:158:GLY:C	1:A:160:TYR:N	2.67	0.47
1:A:659:SER:HB3	1:A:698:SER:HB2	1.97	0.47
1:B:457:ARG:NE	1:B:459:SER:O	2.46	0.47
1:A:197:ILE:HG12	1:A:198:ASP:OD1	2.15	0.47
1:A:560:LEU:HB2	1:A:563:GLN:HG2	1.97	0.47
1:A:844:ILE:HG23	1:B:556:ASN:H	1.79	0.47
1:A:847:ARG:NH1	1:B:574:ASP:HA	2.29	0.47
1:A:856:ASN:HD22	1:A:966:LEU:HD12	1.80	0.47
1:A:993:ILE:HD13	1:A:993:ILE:HA	1.80	0.47
1:B:197:ILE:O	1:B:198:ASP:C	2.51	0.47
1:B:439:ASN:O	1:B:443:SER:OG	2.20	0.47
1:B:541:PHE:CZ	1:B:587:ILE:HD13	2.49	0.47
1:B:543:PHE:HB3	1:B:576:VAL:HG11	1.97	0.47
1:C:177:MET:H	1:C:190:ARG:HH12	1.62	0.47
1:C:318:PHE:HZ	1:C:615:VAL:HG21	1.80	0.47
1:C:778:THR:HG22	1:C:865:LEU:HD12	1.97	0.47
1:B:826:VAL:HB	1:B:1057:PRO:HG2	1.96	0.47
1:C:805:ILE:HB	1:C:878:LEU:HD11	1.97	0.47
1:A:124:THR:O	1:A:174:PRO:HD3	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:402:ILE:HD12	1:A:406:GLU:HB3	1.97	0.47
1:A:740:MET:HB2	1:B:319:ARG:NH2	2.29	0.47
1:B:904:TYR:OH	1:C:1094:VAL:HG13	2.15	0.47
1:C:1094:VAL:HG23	1:C:1096:VAL:HG23	1.96	0.47
1:C:1098:ASN:OD1	1:C:1101:HIS:N	2.33	0.47
1:A:126:VAL:HG22	1:A:172:SER:H	1.80	0.47
1:A:321:GLN:N	1:A:628:GLN:O	2.46	0.47
1:B:641:ASN:O	1:B:642:VAL:HG23	2.14	0.47
1:C:931:ILE:O	1:C:934:ILE:HG22	2.15	0.47
1:C:993:ILE:O	1:C:997:ILE:HG12	2.15	0.47
1:A:406:GLU:HG2	1:A:418:ILE:HG13	1.96	0.46
1:B:398:ASP:HB2	1:B:512:VAL:HG22	1.96	0.46
1:B:811:LYS:NZ	1:B:820:ASP:OD2	2.37	0.46
1:A:215:ASP:O	1:A:216:PHE:C	2.53	0.46
1:A:318:PHE:CZ	1:A:615:VAL:HG21	2.45	0.46
1:B:24:THR:HG21	1:B:82:PRO:HD3	1.97	0.46
1:B:453:TYR:HB3	1:B:495:TYR:HE1	1.79	0.46
1:C:121:ASN:ND2	1:C:175:PHE:HB2	2.30	0.46
1:C:376:ALA:HB3	1:C:435:ALA:HB3	1.96	0.46
1:B:905:ARG:CZ	1:B:1050:MET:HG2	2.45	0.46
1:A:419:ALA:HA	1:A:423:TYR:O	2.15	0.46
1:A:897:PRO:HD3	1:B:711:SER:O	2.15	0.46
1:C:557:LYS:HD3	1:C:559:PHE:CE1	2.50	0.46
1:A:106:PHE:HB2	1:A:117:LEU:HB3	1.97	0.46
1:B:671:CYS:SG	1:B:697:MET:HE3	2.56	0.46
1:A:364:ASP:O	1:A:367:VAL:HG22	2.14	0.46
1:A:1030:SER:HB3	1:B:1041:ASP:HB3	1.97	0.46
1:C:1125:ASN:OD1	1:C:1125:ASN:N	2.49	0.46
1:A:127:PHE:O	1:A:129:LYS:HG2	2.15	0.46
1:A:323:THR:OG1	1:A:324:GLU:OE2	2.32	0.46
1:B:459:SER:OG	1:B:460:LYS:N	2.49	0.46
1:B:869:MET:HB2	1:C:699:LEU:HD11	1.97	0.46
1:C:427:ASP:OD1	1:C:428:ASP:N	2.48	0.46
1:A:37:TYR:HB3	1:A:223:LEU:HB2	1.96	0.46
1:C:462:LYS:HA	1:C:462:LYS:HD3	1.76	0.46
1:A:83:VAL:HG11	1:A:237:ARG:CZ	2.46	0.46
1:A:109:THR:H	1:A:237:ARG:HD3	1.80	0.46
1:A:112:SER:HA	1:A:132:GLU:HG2	1.97	0.46
1:A:556:ASN:H	1:C:844:ILE:HG23	1.80	0.46
1:A:754:LEU:HD23	1:A:754:LEU:HA	1.80	0.46
1:B:295:PRO:HB2	1:B:608:VAL:HG21	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:858:LEU:HA	1:C:858:LEU:HD23	1.58	0.46
1:A:472:ILE:HG12	1:A:482:GLY:O	2.16	0.45
1:B:108:THR:O	1:B:109:THR:OG1	2.33	0.45
1:B:290:ASP:O	1:B:297:SER:HB3	2.16	0.45
1:B:748:GLU:O	1:B:752:LEU:HD23	2.16	0.45
1:B:1030:SER:HB3	1:C:1041:ASP:HB3	1.98	0.45
1:C:319:ARG:O	1:C:630:THR:OG1	2.24	0.45
1:C:337:PRO:HD2	1:C:358:ILE:HG23	1.97	0.45
1:A:900:MET:HB2	1:A:900:MET:HE2	1.65	0.45
1:A:1092:GLU:OE2	1:A:1092:GLU:N	2.50	0.45
1:B:204:TYR:CE2	1:B:225:PRO:HG3	2.52	0.45
1:B:403:LYS:HG2	1:B:404:GLY:H	1.81	0.45
1:B:848:ASP:OD1	1:B:848:ASP:N	2.43	0.45
1:C:388:ASN:O	1:C:526:GLY:HA3	2.17	0.45
1:A:764:LYS:HD2	1:B:314:GLN:OE1	2.16	0.45
1:A:805:ILE:O	1:A:816:SER:OG	2.28	0.45
1:A:1031:GLU:OE2	1:B:1039:ARG:NE	2.40	0.45
1:C:323:THR:OG1	1:C:324:GLU:N	2.47	0.45
1:C:453:TYR:CZ	1:C:455:SER:HB3	2.52	0.45
1:C:568:ASP:OD2	1:C:570:VAL:HG22	2.15	0.45
1:A:329:PHE:O	1:A:580:GLN:NE2	2.44	0.45
1:A:1083:HIS:CD2	1:A:1136:THR:HA	2.51	0.45
1:C:816:SER:HB2	1:C:819:GLU:HB2	1.98	0.45
1:A:375:PHE:HE2	1:A:407:VAL:HG11	1.82	0.45
1:A:395:VAL:HG22	1:A:515:PHE:HD2	1.82	0.45
1:B:170:TYR:CG	1:B:229:LEU:HD11	2.51	0.45
1:B:342:PHE:CZ	1:B:511:VAL:HG11	2.51	0.45
1:B:581:THR:HG22	1:B:583:GLU:HB3	1.98	0.45
1:B:736:VAL:HG23	1:B:857:GLY:O	2.17	0.45
1:B:962:LEU:HD22	1:B:1007:TYR:CG	2.52	0.45
1:B:984:LEU:HB3	1:B:989:ALA:HB2	1.98	0.45
1:B:1031:GLU:OE1	1:B:1039:ARG:NH1	2.50	0.45
1:A:41:LYS:HE2	1:B:562:PHE:O	2.16	0.45
1:A:321:GLN:NE2	1:A:630:THR:OG1	2.31	0.45
1:A:404:GLY:O	1:A:407:VAL:HG12	2.17	0.45
1:A:740:MET:SD	1:B:319:ARG:NH2	2.72	0.45
1:B:804:GLN:NE2	1:B:935:GLN:OE1	2.45	0.45
1:C:1081:ILE:HG12	1:C:1095:PHE:CE2	2.52	0.45
1:A:308:VAL:H	1:A:602:THR:HG23	1.82	0.45
1:B:173:GLN:H	1:B:173:GLN:HG3	1.63	0.45
1:B:1075:PHE:HB3	1:B:1097:SER:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:425:LEU:HD12	1:C:426:PRO:CD	2.41	0.45
1:C:761:THR:HG22	1:C:765:ARG:NH2	2.32	0.45
1:B:335:LEU:HD23	1:B:336:CYS:N	2.32	0.45
1:B:338:PHE:HA	1:B:341:VAL:HG12	1.98	0.45
1:B:372:ALA:HB3	1:B:374:PHE:CE2	2.52	0.45
1:B:391:CYS:HB3	1:B:522:ALA:HB1	1.99	0.45
1:C:271:GLN:HG2	1:C:272:PRO:HD2	1.98	0.45
1:C:457:ARG:NE	1:C:459:SER:O	2.49	0.45
1:A:402:ILE:HG12	1:A:510:VAL:HG21	1.99	0.45
1:A:456:PHE:HB2	1:A:491:PRO:HA	1.99	0.45
1:B:108:THR:O	1:B:114:THR:OG1	2.33	0.45
1:B:192:PHE:HB3	1:B:194:PHE:CE1	2.52	0.45
1:B:976:VAL:O	1:B:980:ILE:HG23	2.17	0.45
1:C:119:ILE:HG23	1:C:128:ILE:HD12	1.98	0.45
1:C:666:ILE:HD12	1:C:670:ILE:HG22	1.98	0.45
1:C:850:ILE:O	1:C:854:LYS:HG2	2.17	0.45
1:A:1098:ASN:OD1	1:A:1101:HIS:N	2.40	0.44
1:B:655:TYR:OH	1:B:696:THR:OG1	2.28	0.44
1:B:778:THR:HG22	1:B:865:LEU:HD12	1.99	0.44
1:B:804:GLN:HB3	1:B:818:ILE:HD11	1.98	0.44
1:C:84:LEU:N	1:C:238:PHE:O	2.41	0.44
1:C:560:LEU:H	1:C:563:GLN:HG3	1.81	0.44
1:A:89:GLY:HA3	1:A:270:LEU:HD12	1.98	0.44
1:C:97:LYS:HG2	1:C:187:LYS:HE2	1.97	0.44
1:C:204:TYR:CE2	1:C:225:PRO:HG3	2.51	0.44
1:C:714:ILE:HD11	1:C:1094:VAL:HG21	1.99	0.44
1:B:393:THR:OG1	1:B:394:ASN:N	2.50	0.44
1:B:743:CYS:HB3	1:B:749:CYS:HB3	1.77	0.44
1:B:906:PHE:HE1	1:B:1049:LEU:HD11	1.82	0.44
1:B:978:ASN:HB3	1:C:547:THR:HG22	1.98	0.44
1:A:666:ILE:HB	1:A:670:ILE:O	2.18	0.44
1:B:738:CYS:O	1:B:742:ILE:HG13	2.16	0.44
1:C:666:ILE:HD11	1:C:672:ALA:HB2	1.99	0.44
1:C:922:LEU:HD11	1:C:926:GLN:HE21	1.83	0.44
1:A:350:VAL:HG22	1:A:422:ASN:HB3	1.99	0.44
1:A:917:TYR:HB3	1:B:1129:VAL:HG13	1.99	0.44
1:B:517:LEU:HD23	1:B:517:LEU:HA	1.79	0.44
1:C:44:ARG:O	1:C:283:GLY:HA2	2.18	0.44
1:C:748:GLU:O	1:C:752:LEU:HD13	2.18	0.44
1:A:290:ASP:O	1:A:297:SER:HB3	2.18	0.44
1:A:497:PHE:CD1	1:A:507:PRO:HG3	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:570:VAL:HG23	1:B:572:THR:HG23	2.00	0.44
1:B:1098:ASN:OD1	1:B:1099:GLY:N	2.51	0.44
1:C:858:LEU:HD12	1:C:963:VAL:HG12	2.00	0.44
1:A:65:PHE:CE2	1:A:84:LEU:HD11	2.53	0.44
1:B:290:ASP:OD1	1:B:291:CYS:N	2.50	0.44
1:B:922:LEU:O	1:B:926:GLN:HG3	2.18	0.44
1:C:401:VAL:HG12	1:C:509:ARG:HG3	2.00	0.44
1:B:598:ILE:HG23	1:B:664:ILE:HG21	1.98	0.44
1:C:114:THR:C	1:C:132:GLU:HG3	2.38	0.44
1:A:105:ILE:HD11	1:A:241:LEU:HD21	2.00	0.44
1:A:401:VAL:HG21	1:A:451:TYR:CZ	2.53	0.44
1:A:858:LEU:HD21	1:A:959:LEU:HD22	1.99	0.44
1:B:966:LEU:O	1:B:966:LEU:HD23	2.18	0.44
1:C:110:LEU:HD13	1:C:110:LEU:HA	1.83	0.44
1:B:65:PHE:CE2	1:B:84:LEU:HD11	2.53	0.43
1:B:128:ILE:HD12	1:B:170:TYR:CD1	2.51	0.43
1:B:850:ILE:O	1:B:854:LYS:HG2	2.18	0.43
1:B:873:TYR:CZ	1:C:699:LEU:HD23	2.53	0.43
1:C:629:LEU:HG	1:C:631:PRO:HD2	1.99	0.43
1:C:1098:ASN:OD1	1:C:1099:GLY:N	2.51	0.43
1:A:906:PHE:HE1	1:A:1049:LEU:HD11	1.82	0.43
1:A:1098:ASN:OD1	1:A:1099:GLY:N	2.52	0.43
1:B:194:PHE:HB3	1:B:201:PHE:CZ	2.53	0.43
1:B:303:LEU:HD23	1:B:308:VAL:HG12	2.00	0.43
1:B:337:PRO:HD2	1:B:358:ILE:HG23	1.99	0.43
1:C:425:LEU:HD11	1:C:429:PHE:CG	2.52	0.43
1:A:844:ILE:O	1:B:555:SER:OG	2.33	0.43
1:B:904:TYR:HD1	1:B:904:TYR:HA	1.63	0.43
1:C:387:LEU:HD23	1:C:387:LEU:HA	1.87	0.43
1:C:554:LYS:NZ	1:C:583:GLU:HB2	2.34	0.43
1:C:588:THR:HG22	1:C:589:PRO:O	2.18	0.43
1:C:996:LEU:HD23	1:C:996:LEU:HA	1.74	0.43
1:A:133:PHE:HB3	1:A:160:TYR:HB2	1.99	0.43
1:A:1082:CYS:HB2	1:A:1132:ILE:HD13	2.00	0.43
1:C:403:LYS:HB3	1:C:406:GLU:OE1	2.18	0.43
1:C:1072:GLU:N	1:C:1072:GLU:OE1	2.51	0.43
1:A:189:LEU:HB3	1:A:208:THR:OG1	2.18	0.43
1:A:560:LEU:H	1:A:563:GLN:HG3	1.82	0.43
1:A:641:ASN:HB2	1:A:652:GLY:H	1.84	0.43
1:B:115:GLN:CG	1:B:130:VAL:HG12	2.48	0.43
1:B:315:THR:OG1	1:B:316:SER:N	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:335:LEU:HD23	1:B:336:CYS:H	1.84	0.43
1:B:742:ILE:O	1:B:1000:ARG:NH1	2.52	0.43
1:C:430:THR:O	1:C:430:THR:OG1	2.35	0.43
1:A:433:VAL:HG12	1:A:512:VAL:HG23	2.00	0.43
1:A:657:ASN:HB3	3:A:1308:NAG:O5	2.19	0.43
1:B:903:ALA:HB1	1:B:913:GLN:HG2	1.99	0.43
1:A:318:PHE:CE1	1:A:593:GLY:HA3	2.54	0.43
1:A:816:SER:HB2	1:A:819:GLU:HB2	2.00	0.43
1:A:843:ASP:O	1:A:845:ALA:N	2.51	0.43
1:B:451:TYR:HB2	1:B:495:TYR:HB2	2.01	0.43
1:B:666:ILE:HD11	1:B:672:ALA:HB2	2.01	0.43
1:C:229:LEU:HD12	1:C:231:ILE:HD11	2.01	0.43
1:C:335:LEU:HD23	1:C:336:CYS:N	2.33	0.43
1:C:646:ARG:HD3	1:C:646:ARG:HA	1.88	0.43
1:A:121:ASN:ND2	1:A:175:PHE:HB2	2.34	0.43
1:A:328:ARG:NH1	1:A:533:LEU:HB2	2.33	0.43
1:A:1098:ASN:CG	1:A:1101:HIS:H	2.22	0.43
1:B:574:ASP:O	1:B:587:ILE:N	2.51	0.43
1:A:474:GLN:HG3	1:A:478:LYS:O	2.19	0.43
1:A:740:MET:HG2	1:A:857:GLY:HA3	2.01	0.43
1:B:177:MET:O	1:B:188:ASN:ND2	2.51	0.43
1:B:402:ILE:HD11	1:B:510:VAL:HG21	2.01	0.43
1:B:560:LEU:O	1:B:563:GLN:HB2	2.19	0.43
1:B:560:LEU:HB2	1:B:563:GLN:HG2	2.01	0.43
1:B:1054:GLN:N	1:B:1061:VAL:O	2.44	0.43
1:C:131:CYS:HB2	1:C:166:CYS:HB3	1.92	0.43
1:C:636:TYR:CE2	1:C:638:THR:HB	2.50	0.43
1:C:900:MET:HA	1:C:917:TYR:OH	2.19	0.43
1:A:667:GLY:HA2	1:C:864:LEU:HA	2.00	0.43
1:B:220:PHE:HE2	1:B:285:ILE:HG22	1.83	0.43
1:B:737:ASP:HB2	1:C:317:ASN:HD21	1.84	0.43
1:B:830:ASP:OD2	1:B:850:ILE:HG23	2.18	0.43
1:C:104:TRP:HB3	1:C:238:PHE:HE1	1.84	0.43
1:C:969:LYS:H	1:C:969:LYS:HD2	1.84	0.43
1:C:1071:GLN:H	1:C:1071:GLN:HG3	1.48	0.43
1:A:231:ILE:HD13	1:A:231:ILE:HA	1.79	0.42
1:B:392:PHE:CD1	1:B:517:LEU:HD21	2.54	0.42
1:B:559:PHE:HB2	1:B:584:ILE:HD11	2.01	0.42
1:B:756:TYR:O	1:B:759:PHE:HD2	2.02	0.42
1:C:675:GLN:HG3	1:C:693:ILE:HD11	2.00	0.42
1:C:1048:HIS:NE2	1:C:1050:MET:O	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:318:PHE:HE1	1:A:593:GLY:HA3	1.85	0.42
1:A:350:VAL:HG21	1:A:418:ILE:HG23	2.00	0.42
1:A:425:LEU:HD23	1:A:426:PRO:HD2	2.00	0.42
1:A:661:GLU:O	1:A:695:TYR:OH	2.24	0.42
1:B:411:ALA:HB3	1:B:414:GLN:HG3	2.01	0.42
1:B:461:LEU:HD21	1:B:467:ASP:HB2	2.00	0.42
1:A:324:GLU:OE2	1:A:537:LYS:HD2	2.19	0.42
1:A:430:THR:O	1:A:430:THR:OG1	2.30	0.42
1:A:857:GLY:HA2	1:B:592:PHE:CD2	2.52	0.42
1:B:190:ARG:HD3	1:B:207:HIS:NE2	2.35	0.42
1:B:317:ASN:HA	1:B:594:GLY:HA2	2.01	0.42
1:B:328:ARG:NH1	1:B:533:LEU:HB2	2.34	0.42
1:B:410:ILE:HD11	1:B:423:TYR:HD1	1.84	0.42
1:B:886:TRP:HB3	1:B:1035:GLY:HA2	2.01	0.42
1:B:1005:GLN:OE1	1:C:1006:THR:OG1	2.20	0.42
1:C:126:VAL:HG22	1:C:172:SER:H	1.85	0.42
1:C:334:ASN:ND2	1:C:360:ASN:O	2.34	0.42
1:A:177:MET:O	1:A:188:ASN:ND2	2.53	0.42
1:B:520:ALA:HB1	1:B:521:PRO:HD2	2.00	0.42
1:C:298:GLU:O	1:C:302:THR:HG23	2.19	0.42
1:C:378:LYS:HA	1:C:378:LYS:HD3	1.82	0.42
1:A:449:TYR:HA	1:A:496:GLY:HA2	2.01	0.42
1:A:922:LEU:O	1:A:922:LEU:HD12	2.20	0.42
1:B:38:TYR:CE1	1:B:285:ILE:HG13	2.55	0.42
1:C:37:TYR:HB3	1:C:223:LEU:HB2	2.00	0.42
1:C:342:PHE:HD2	1:C:371:PHE:HD2	1.65	0.42
1:C:743:CYS:HB3	1:C:749:CYS:HB3	1.85	0.42
1:A:454:ARG:HD2	1:A:492:LEU:HB3	2.01	0.42
1:B:318:PHE:CE1	1:B:593:GLY:HA3	2.54	0.42
1:B:880:GLY:O	1:B:884:SER:OG	2.26	0.42
1:C:393:THR:CG2	1:C:520:ALA:HB3	2.50	0.42
1:B:86:PHE:CE2	1:B:106:PHE:HE2	2.38	0.42
1:B:108:THR:HG22	1:B:109:THR:HG23	2.02	0.42
1:B:113:LYS:HB3	1:B:113:LYS:HE2	1.79	0.42
1:B:199:GLY:O	1:B:200:TYR:C	2.58	0.42
1:B:740:MET:HE1	1:C:319:ARG:HD3	2.01	0.42
1:C:364:ASP:OD1	1:C:364:ASP:N	2.40	0.42
1:C:616:ASN:OD1	1:C:644:GLN:NE2	2.52	0.42
1:C:822:LEU:HD22	1:C:945:LEU:HD21	2.02	0.42
1:A:368:LEU:HD11	1:A:434:ILE:HG12	2.01	0.42
1:A:904:TYR:HD1	1:A:904:TYR:HA	1.60	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:124:THR:OG1	3:B:1301:NAG:O7	2.28	0.42
1:B:305:SER:OG	1:B:306:PHE:N	2.53	0.42
1:B:497:PHE:CD1	1:B:507:PRO:HG3	2.54	0.42
1:C:595:VAL:HG21	1:C:633:TRP:CZ2	2.55	0.42
1:C:988:GLU:N	1:C:988:GLU:OE2	2.53	0.42
1:A:308:VAL:O	1:A:601:GLY:HA2	2.19	0.42
1:A:780:GLU:O	1:A:784:GLN:NE2	2.53	0.42
1:B:329:PHE:CE2	1:B:528:LYS:HB3	2.55	0.42
1:C:24:THR:HG21	1:C:82:PRO:HD3	2.02	0.42
1:C:111:ASP:N	1:C:111:ASP:OD1	2.53	0.42
1:C:497:PHE:CG	1:C:507:PRO:HG3	2.54	0.42
1:A:978:ASN:N	1:A:978:ASN:OD1	2.53	0.42
1:B:31:SER:HB3	1:B:62:VAL:CG1	2.50	0.42
1:B:381:GLY:HA3	1:B:430:THR:HA	2.00	0.42
1:B:404:GLY:HA2	1:B:508:TYR:HD2	1.85	0.42
1:C:402:ILE:HG12	1:C:406:GLU:HB2	2.01	0.42
1:A:410:ILE:HD11	1:A:418:ILE:HG22	2.02	0.41
1:A:626:ALA:HB3	1:A:628:GLN:HG2	2.02	0.41
1:A:1084:ASP:HB2	1:A:1086:LYS:NZ	2.35	0.41
1:B:773:GLU:OE1	1:B:777:ASN:ND2	2.53	0.41
1:B:844:ILE:O	1:C:557:LYS:HG3	2.20	0.41
1:B:1048:HIS:NE2	1:B:1050:MET:O	2.53	0.41
1:C:117:LEU:HD11	1:C:231:ILE:HG21	2.02	0.41
1:C:610:VAL:HG11	1:C:633:TRP:CH2	2.54	0.41
1:C:1096:VAL:O	1:C:1103:PHE:N	2.46	0.41
1:A:119:ILE:HG23	1:A:128:ILE:HG12	2.02	0.41
1:A:427:ASP:OD1	1:A:428:ASP:N	2.52	0.41
1:A:547:THR:HG23	1:C:978:ASN:HB3	2.02	0.41
1:A:773:GLU:OE2	1:A:1019:ARG:NE	2.50	0.41
1:A:786:LYS:H	1:A:786:LYS:HG2	1.57	0.41
1:A:986:PRO:O	1:A:990:GLU:HG2	2.19	0.41
1:B:44:ARG:HB3	1:B:47:VAL:CG1	2.47	0.41
1:B:118:LEU:O	1:B:128:ILE:HA	2.20	0.41
1:C:28:TYR:CE2	3:C:1303:NAG:H5	2.56	0.41
1:C:947:LYS:HE3	1:C:947:LYS:HB2	1.75	0.41
1:C:1114:ILE:HD13	1:C:1114:ILE:HA	1.91	0.41
1:A:177:MET:H	1:A:207:HIS:CE1	2.38	0.41
1:A:282:ASN:O	1:B:558:LYS:HB2	2.20	0.41
1:A:347:PHE:CE1	1:A:509:ARG:HD3	2.54	0.41
1:A:439:ASN:O	1:A:443:SER:OG	2.29	0.41
1:A:589:PRO:O	1:C:837:TYR:OH	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:163:ALA:HA	1:B:166:CYS:SG	2.60	0.41
1:B:164:ASN:HB3	3:B:1304:NAG:O7	2.20	0.41
1:B:381:GLY:HA3	1:B:430:THR:HG23	2.01	0.41
1:C:618:THR:O	1:C:622:VAL:HG22	2.21	0.41
1:C:633:TRP:O	1:C:633:TRP:CE3	2.74	0.41
1:B:202:LYS:HE2	1:B:202:LYS:HB3	1.90	0.41
1:C:318:PHE:CZ	1:C:615:VAL:HG21	2.54	0.41
1:A:403:LYS:HB3	1:A:406:GLU:OE1	2.21	0.41
1:A:498:ARG:H	1:A:501:TYR:HE1	1.68	0.41
1:B:395:VAL:HG22	1:B:515:PHE:HD2	1.85	0.41
1:B:478:LYS:HB2	1:B:478:LYS:HE3	1.84	0.41
1:B:858:LEU:HD11	1:B:962:LEU:CD2	2.51	0.41
1:B:946:GLY:O	1:B:950:ASP:HB2	2.20	0.41
1:C:108:THR:O	1:C:109:THR:OG1	2.38	0.41
1:C:342:PHE:CD2	1:C:371:PHE:HD2	2.38	0.41
1:C:595:VAL:HG21	1:C:633:TRP:HZ2	1.86	0.41
1:A:497:PHE:CG	1:A:507:PRO:HG3	2.56	0.41
1:A:543:PHE:HB3	1:A:576:VAL:HG11	2.02	0.41
1:A:900:MET:HE1	1:B:1077:THR:CG2	2.49	0.41
1:B:121:ASN:HD21	1:B:175:PHE:HB2	1.86	0.41
1:B:352:ALA:HB1	1:B:466:ARG:HH22	1.85	0.41
1:B:403:LYS:HG2	1:B:404:GLY:N	2.36	0.41
1:B:934:ILE:HD12	1:B:937:SER:OG	2.21	0.41
1:C:393:THR:HG21	1:C:520:ALA:HB3	2.02	0.41
1:A:347:PHE:HD2	1:A:399:SER:HB2	1.86	0.41
1:B:317:ASN:ND2	1:B:592:PHE:HE1	2.18	0.41
1:B:1083:HIS:CD2	1:B:1136:THR:HA	2.56	0.41
1:C:164:ASN:HB2	3:C:1304:NAG:O7	2.20	0.41
1:C:290:ASP:O	1:C:297:SER:HB3	2.20	0.41
1:C:300:LYS:HG2	1:C:305:SER:O	2.19	0.41
1:C:612:TYR:O	1:C:648:GLY:HA3	2.20	0.41
1:B:318:PHE:HD2	1:B:629:LEU:HD11	1.86	0.41
1:B:347:PHE:CE1	1:B:509:ARG:HD3	2.56	0.41
1:B:631:PRO:HA	1:B:633:TRP:CZ3	2.56	0.41
1:C:329:PHE:HB3	1:C:330:PRO:CD	2.47	0.41
1:A:220:PHE:HD2	1:A:287:ASP:HA	1.85	0.41
1:A:805:ILE:HD12	1:A:878:LEU:HD11	2.03	0.41
1:A:1071:GLN:H	1:A:1071:GLN:HG3	1.48	0.41
1:B:48:LEU:HD13	1:B:48:LEU:HA	1.93	0.41
1:B:559:PHE:HB3	1:B:577:ARG:NH2	2.35	0.41
1:B:770:ILE:O	1:B:774:GLN:HG2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1027:THR:O	1:B:1031:GLU:HG3	2.21	0.41
1:B:1098:ASN:CG	1:B:1101:HIS:H	2.23	0.41
1:C:296:LEU:HD11	1:C:308:VAL:HG21	2.03	0.41
1:C:327:VAL:O	1:C:530:SER:HA	2.20	0.41
1:A:403:LYS:HG2	1:A:505:HIS:HA	2.03	0.41
1:B:128:ILE:HB	1:B:170:TYR:HB3	2.01	0.41
1:C:553:THR:O	1:C:585:LEU:HA	2.21	0.41
1:A:281:GLU:HG2	1:A:282:ASN:N	2.35	0.40
1:A:567:ARG:HD3	1:A:571:ASP:HA	2.03	0.40
1:B:204:TYR:HA	1:B:225:PRO:HA	2.03	0.40
1:C:1139:ASP:OD1	1:C:1142:GLN:N	2.41	0.40
1:A:493:GLN:OE1	1:A:494:SER:N	2.54	0.40
1:A:570:VAL:HG23	1:A:572:THR:HG23	2.03	0.40
1:A:794:ILE:HD12	1:A:794:ILE:HA	1.88	0.40
1:B:34:ARG:HE	1:B:34:ARG:HB2	1.57	0.40
1:B:560:LEU:O	1:B:577:ARG:NH2	2.54	0.40
1:B:624:ILE:HG23	1:B:634:ARG:HD2	2.03	0.40
1:B:674:TYR:CZ	1:B:690:GLN:HB3	2.57	0.40
1:C:886:TRP:HB3	1:C:1035:GLY:HA2	2.03	0.40
1:A:765:ARG:HH22	1:B:961:THR:HG21	1.86	0.40
1:B:239:GLN:HG2	1:B:240:THR:H	1.87	0.40
1:B:873:TYR:CE2	1:C:699:LEU:HD23	2.57	0.40
1:C:350:VAL:HG21	1:C:418:ILE:HG23	2.04	0.40
1:A:406:GLU:HA	1:A:409:GLN:HB3	2.02	0.40
1:A:567:ARG:HA	1:A:572:THR:O	2.22	0.40
1:A:638:THR:O	1:A:638:THR:OG1	2.33	0.40
1:B:296:LEU:HD11	1:B:308:VAL:HG21	2.03	0.40
1:B:498:ARG:N	1:B:501:TYR:OH	2.54	0.40
1:B:528:LYS:HE2	1:B:528:LYS:HB2	1.71	0.40
1:B:847:ARG:N	1:C:574:ASP:OD2	2.34	0.40
1:C:448:ASN:O	1:C:497:PHE:N	2.52	0.40
1:A:229:LEU:H	1:A:229:LEU:HD23	1.86	0.40
1:A:439:ASN:ND2	1:A:506:GLN:OE1	2.55	0.40
1:A:568:ASP:CG	1:A:569:ILE:N	2.75	0.40
1:A:743:CYS:HB3	1:A:749:CYS:HB3	1.70	0.40
1:A:823:PHE:CD1	1:A:1057:PRO:HG3	2.56	0.40
1:C:553:THR:OG1	1:C:554:LYS:N	2.55	0.40
1:C:586:ASP:OD1	1:C:586:ASP:N	2.54	0.40
1:C:588:THR:HG23	1:C:589:PRO:HD2	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 PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1053/1206 (87%)	959 (91%)	94 (9%)	0	100	100
1	B	1053/1206 (87%)	964 (92%)	88 (8%)	1 (0%)	48	78
1	C	1053/1206 (87%)	959 (91%)	92 (9%)	2 (0%)	44	72
All	All	3159/3618 (87%)	2882 (91%)	274 (9%)	3 (0%)	50	78

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	97	LYS
1	C	216	PHE
1	B	216	PHE

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 PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	926/1054 (88%)	901 (97%)	25 (3%)	40	60
1	B	926/1054 (88%)	907 (98%)	19 (2%)	48	67
1	C	926/1054 (88%)	905 (98%)	21 (2%)	45	64
All	All	2778/3162 (88%)	2713 (98%)	65 (2%)	46	64

All (65) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	53	ASP
1	A	135	PHE
1	A	200	TYR
1	A	214	ARG
1	A	220	PHE
1	A	265	TYR
1	A	343	ASN
1	A	353	TRP
1	A	392	PHE
1	A	394	ASN
1	A	452	TRP
1	A	453	TYR
1	A	473	TYR
1	A	508	TYR
1	A	515	PHE
1	A	538	CYS
1	A	592	PHE
1	A	617	CYS
1	A	625	HIS
1	A	698	SER
1	A	759	PHE
1	A	904	TYR
1	A	1037	SER
1	A	1097	SER
1	A	1125	ASN
1	B	61	ASN
1	B	228	ASP
1	B	265	TYR
1	B	357	ARG
1	B	364	ASP
1	B	371	PHE
1	B	377	PHE
1	B	456	PHE
1	B	457	ARG
1	B	486	PRO
1	B	523	THR
1	B	568	ASP
1	B	591	SER
1	B	867	ASP
1	B	869	MET
1	B	873	TYR
1	B	904	TYR
1	B	1097	SER

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Mol	Chain	Res	Type
1	B	1118	ASP
1	C	95	THR
1	C	113	LYS
1	C	133	PHE
1	C	168	PHE
1	C	214	ARG
1	C	216	PHE
1	C	220	PHE
1	C	265	TYR
1	C	303	LEU
1	C	334	ASN
1	C	343	ASN
1	C	364	ASP
1	C	377	PHE
1	C	394	ASN
1	C	453	TYR
1	C	586	ASP
1	C	697	MET
1	C	759	PHE
1	C	858	LEU
1	C	1037	SER
1	C	1041	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	26	GLN
1	A	207	HIS
1	B	1106	GLN
1	C	317	ASN

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

36 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	D	1	2,1	14,14,15	0.36	0	17,19,21	0.39	0
2	BMA	D	2	2	11,11,12	0.58	0	15,15,17	0.71	0
2	NAG	E	1	2,1	14,14,15	0.26	0	17,19,21	0.41	0
2	BMA	E	2	2	11,11,12	0.54	0	15,15,17	0.70	0
2	NAG	F	1	2,1	14,14,15	0.17	0	17,19,21	0.40	0
2	BMA	F	2	2	11,11,12	0.70	0	15,15,17	0.73	0
2	NAG	G	1	2,1	14,14,15	0.32	0	17,19,21	0.40	0
2	BMA	G	2	2	11,11,12	0.52	0	15,15,17	0.82	0
2	NAG	H	1	2,1	14,14,15	0.26	0	17,19,21	0.44	0
2	BMA	H	2	2	11,11,12	0.60	0	15,15,17	0.69	0
2	NAG	I	1	2,1	14,14,15	1.26	1 (7%)	17,19,21	1.18	1 (5%)
2	BMA	I	2	2	11,11,12	0.46	0	15,15,17	1.10	1 (6%)
2	NAG	J	1	2,1	14,14,15	0.39	0	17,19,21	0.41	0
2	BMA	J	2	2	11,11,12	0.63	0	15,15,17	0.83	0
2	NAG	K	1	2,1	14,14,15	0.30	0	17,19,21	0.37	0
2	BMA	K	2	2	11,11,12	0.64	0	15,15,17	0.72	0
2	NAG	L	1	2,1	14,14,15	0.20	0	17,19,21	0.43	0
2	BMA	L	2	2	11,11,12	0.47	0	15,15,17	0.82	0
2	NAG	M	1	2,1	14,14,15	0.27	0	17,19,21	0.44	0
2	BMA	M	2	2	11,11,12	0.63	0	15,15,17	0.67	0
2	NAG	N	1	2,1	14,14,15	0.23	0	17,19,21	0.50	0
2	BMA	N	2	2	11,11,12	0.50	0	15,15,17	0.70	0
2	NAG	O	1	2,1	14,14,15	1.31	1 (7%)	17,19,21	1.15	1 (5%)
2	BMA	O	2	2	11,11,12	0.48	0	15,15,17	0.99	1 (6%)
2	NAG	P	1	2,1	14,14,15	0.18	0	17,19,21	0.37	0
2	BMA	P	2	2	11,11,12	0.47	0	15,15,17	0.85	0
2	NAG	Q	1	2,1	14,14,15	0.16	0	17,19,21	0.49	0
2	BMA	Q	2	2	11,11,12	0.64	0	15,15,17	0.83	0
2	NAG	R	1	2,1	14,14,15	0.21	0	17,19,21	0.40	0
2	BMA	R	2	2	11,11,12	0.64	0	15,15,17	0.70	0
2	NAG	S	1	2,1	14,14,15	0.32	0	17,19,21	0.43	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	BMA	S	2	2	11,11,12	0.50	0	15,15,17	0.70	0
2	NAG	T	1	2,1	14,14,15	0.31	0	17,19,21	0.41	0
2	BMA	T	2	2	11,11,12	0.56	0	15,15,17	0.66	0
2	NAG	U	1	2,1	14,14,15	1.18	1 (7%)	17,19,21	1.13	1 (5%)
2	BMA	U	2	2	11,11,12	0.60	0	15,15,17	1.19	1 (6%)

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	D	1	2,1	-	0/6/23/26	0/1/1/1
2	BMA	D	2	2	-	0/2/19/22	0/1/1/1
2	NAG	E	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	E	2	2	-	0/2/19/22	0/1/1/1
2	NAG	F	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	F	2	2	-	0/2/19/22	0/1/1/1
2	NAG	G	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	G	2	2	-	0/2/19/22	0/1/1/1
2	NAG	H	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	H	2	2	-	0/2/19/22	0/1/1/1
2	NAG	I	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	I	2	2	-	0/2/19/22	0/1/1/1
2	NAG	J	1	2,1	-	0/6/23/26	0/1/1/1
2	BMA	J	2	2	-	0/2/19/22	0/1/1/1
2	NAG	K	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	K	2	2	-	0/2/19/22	0/1/1/1
2	NAG	L	1	2,1	-	1/6/23/26	0/1/1/1
2	BMA	L	2	2	-	0/2/19/22	0/1/1/1
2	NAG	M	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	M	2	2	-	0/2/19/22	0/1/1/1
2	NAG	N	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	N	2	2	-	0/2/19/22	0/1/1/1
2	NAG	O	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	O	2	2	-	0/2/19/22	0/1/1/1
2	NAG	P	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	P	2	2	-	0/2/19/22	0/1/1/1
2	NAG	Q	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	Q	2	2	-	0/2/19/22	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	NAG	R	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	R	2	2	-	0/2/19/22	0/1/1/1
2	NAG	S	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	S	2	2	-	0/2/19/22	0/1/1/1
2	NAG	T	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	T	2	2	-	0/2/19/22	0/1/1/1
2	NAG	U	1	2,1	-	2/6/23/26	0/1/1/1
2	BMA	U	2	2	-	2/2/19/22	0/1/1/1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	O	1	NAG	O5-C1	-4.58	1.36	1.43
2	I	1	NAG	O5-C1	-4.35	1.36	1.43
2	U	1	NAG	O5-C1	-4.03	1.37	1.43

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	I	1	NAG	C3-C4-C5	3.46	116.41	110.24
2	O	1	NAG	C3-C4-C5	3.26	116.06	110.24
2	U	1	NAG	C3-C4-C5	3.14	115.83	110.24
2	U	2	BMA	C1-O5-C5	2.69	115.84	112.19
2	I	2	BMA	C1-O5-C5	2.62	115.74	112.19
2	O	2	BMA	C1-O5-C5	2.27	115.27	112.19

There are no chirality outliers.

All (33) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	H	1	NAG	O5-C5-C6-O6
2	S	1	NAG	O5-C5-C6-O6
2	M	1	NAG	O5-C5-C6-O6
2	O	1	NAG	O5-C5-C6-O6
2	G	1	NAG	O5-C5-C6-O6
2	I	1	NAG	O5-C5-C6-O6
2	U	1	NAG	O5-C5-C6-O6
2	H	1	NAG	C4-C5-C6-O6
2	U	1	NAG	C4-C5-C6-O6
2	F	1	NAG	O5-C5-C6-O6

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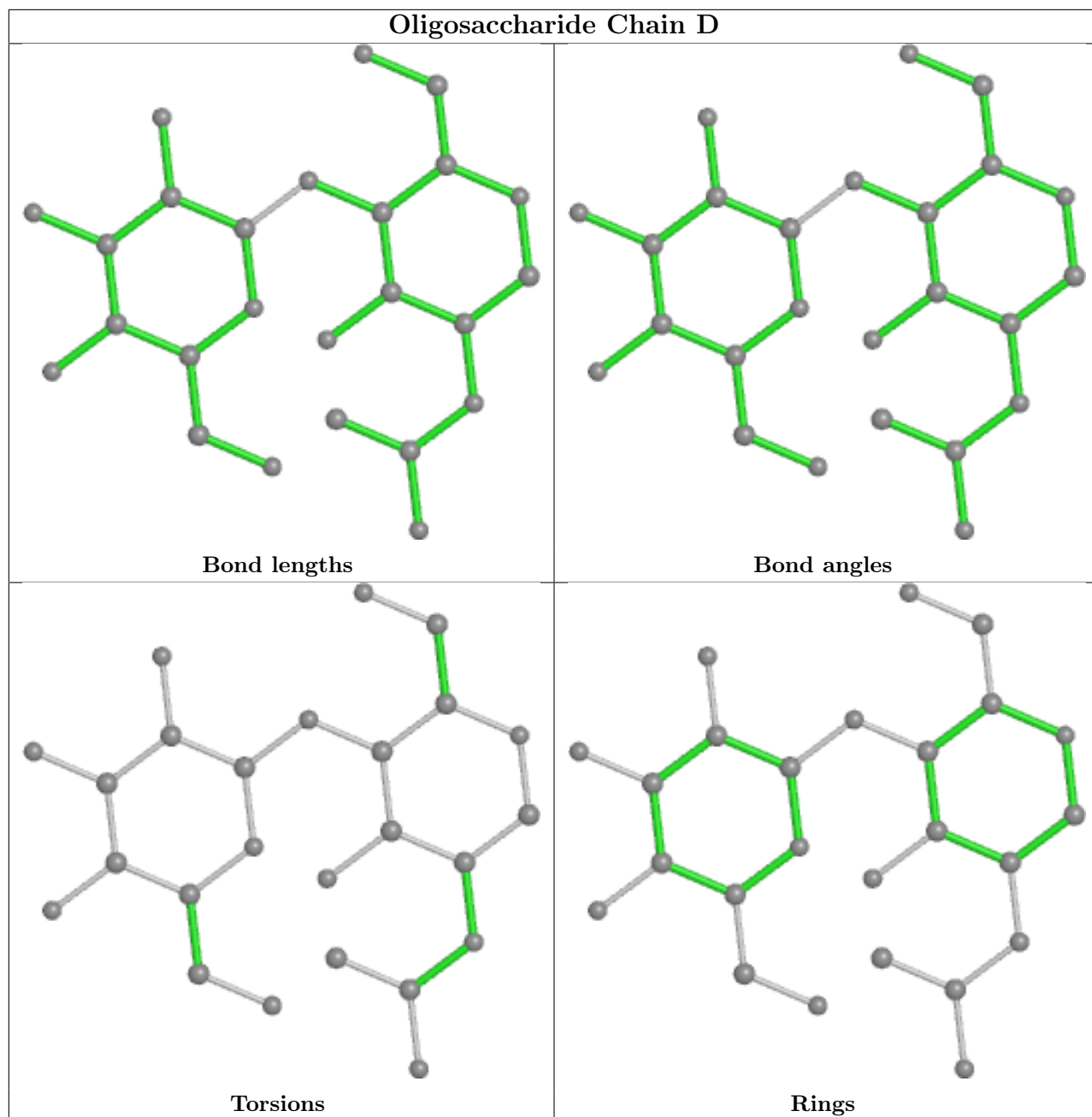
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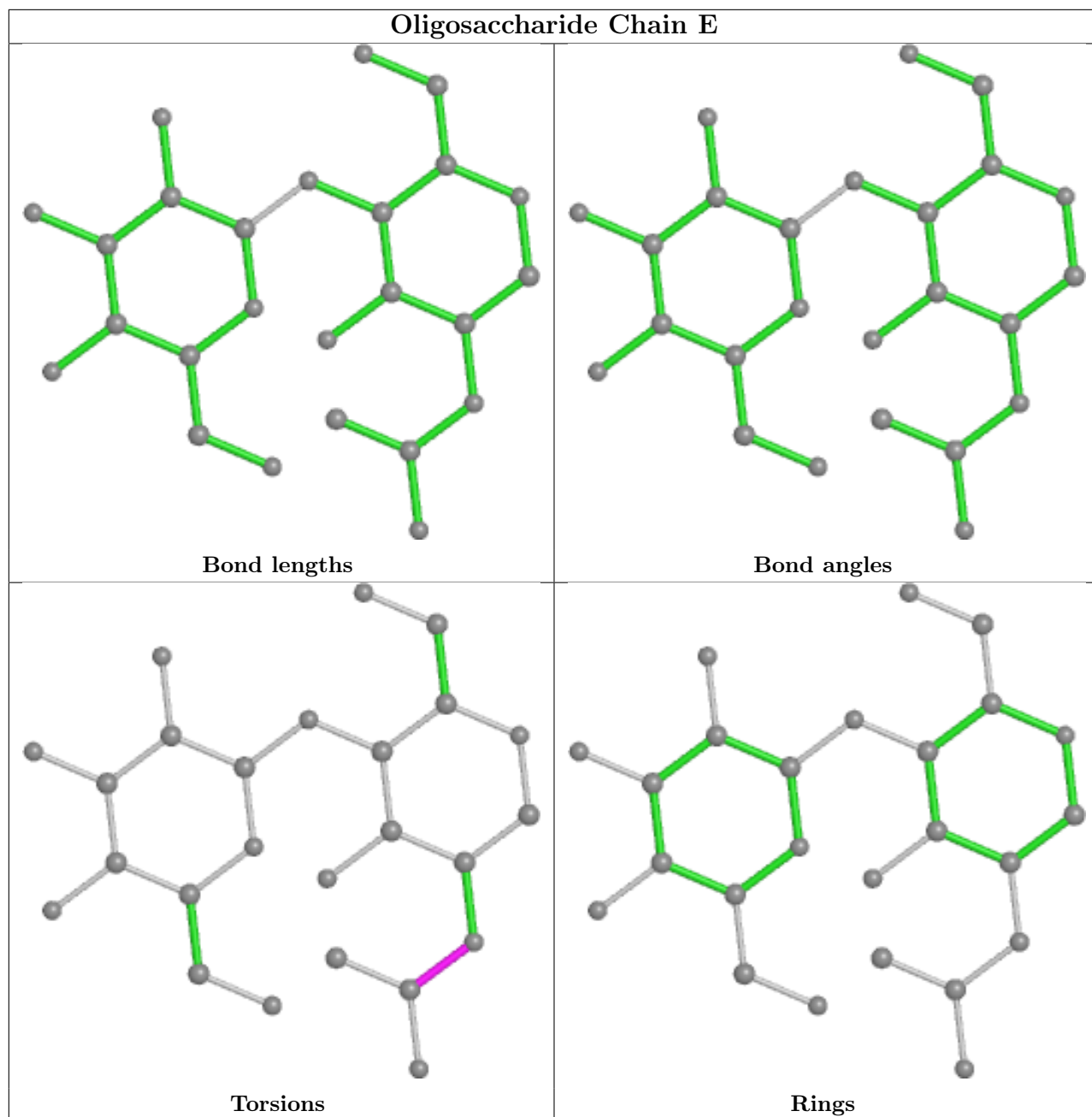
Mol	Chain	Res	Type	Atoms
2	E	1	NAG	C8-C7-N2-C2
2	E	1	NAG	O7-C7-N2-C2
2	K	1	NAG	C8-C7-N2-C2
2	K	1	NAG	O7-C7-N2-C2
2	Q	1	NAG	C8-C7-N2-C2
2	Q	1	NAG	O7-C7-N2-C2
2	O	1	NAG	C4-C5-C6-O6
2	N	1	NAG	O5-C5-C6-O6
2	U	2	BMA	O5-C5-C6-O6
2	I	1	NAG	C4-C5-C6-O6
2	R	1	NAG	O5-C5-C6-O6
2	F	1	NAG	C4-C5-C6-O6
2	G	1	NAG	C4-C5-C6-O6
2	S	1	NAG	C4-C5-C6-O6
2	P	1	NAG	O5-C5-C6-O6
2	P	1	NAG	C4-C5-C6-O6
2	M	1	NAG	C4-C5-C6-O6
2	U	2	BMA	C4-C5-C6-O6
2	T	1	NAG	O5-C5-C6-O6
2	N	1	NAG	C4-C5-C6-O6
2	R	1	NAG	C4-C5-C6-O6
2	L	1	NAG	O5-C5-C6-O6
2	T	1	NAG	C4-C5-C6-O6

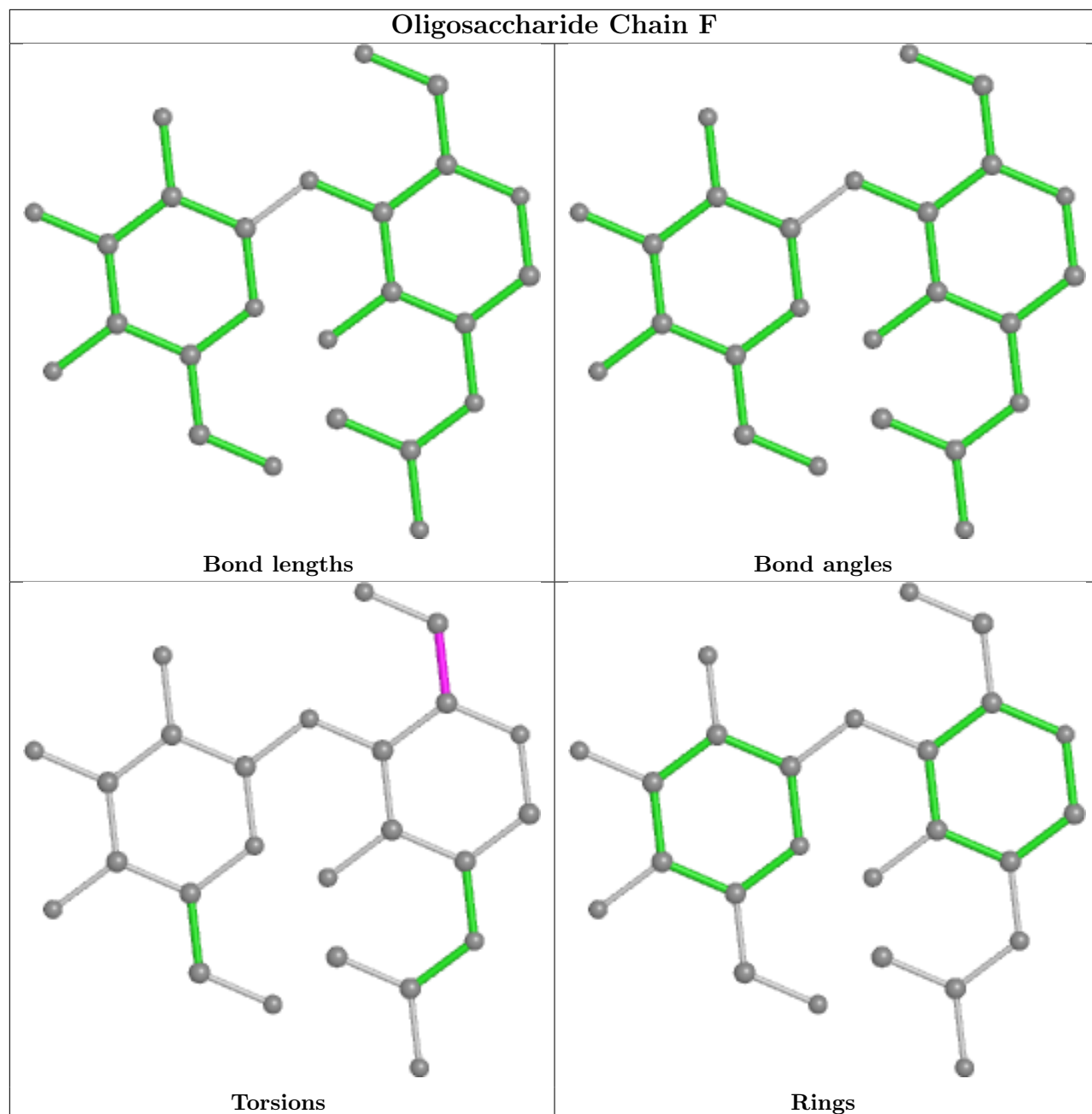
There are no ring outliers.

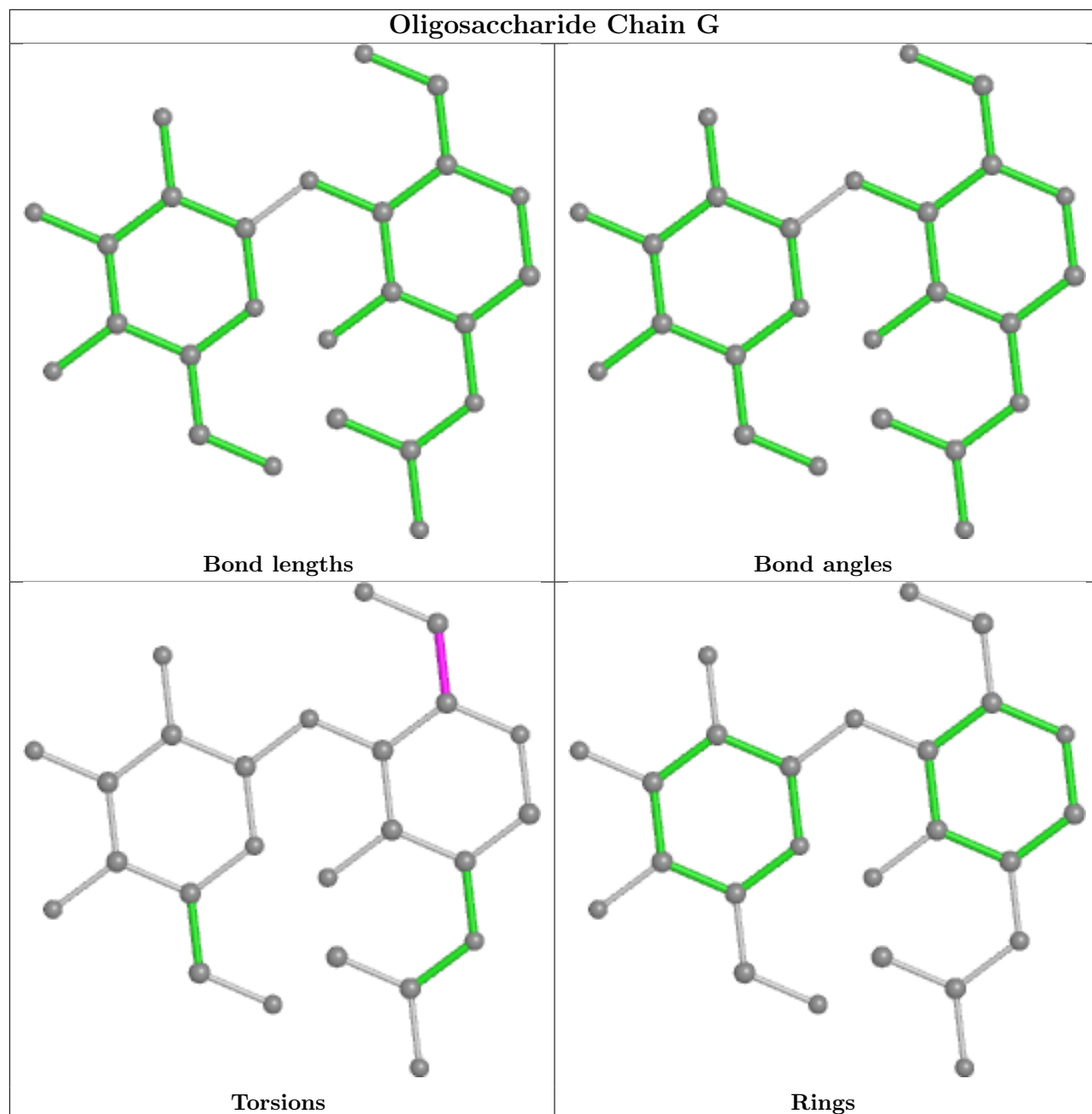
No monomer is involved in short contacts.

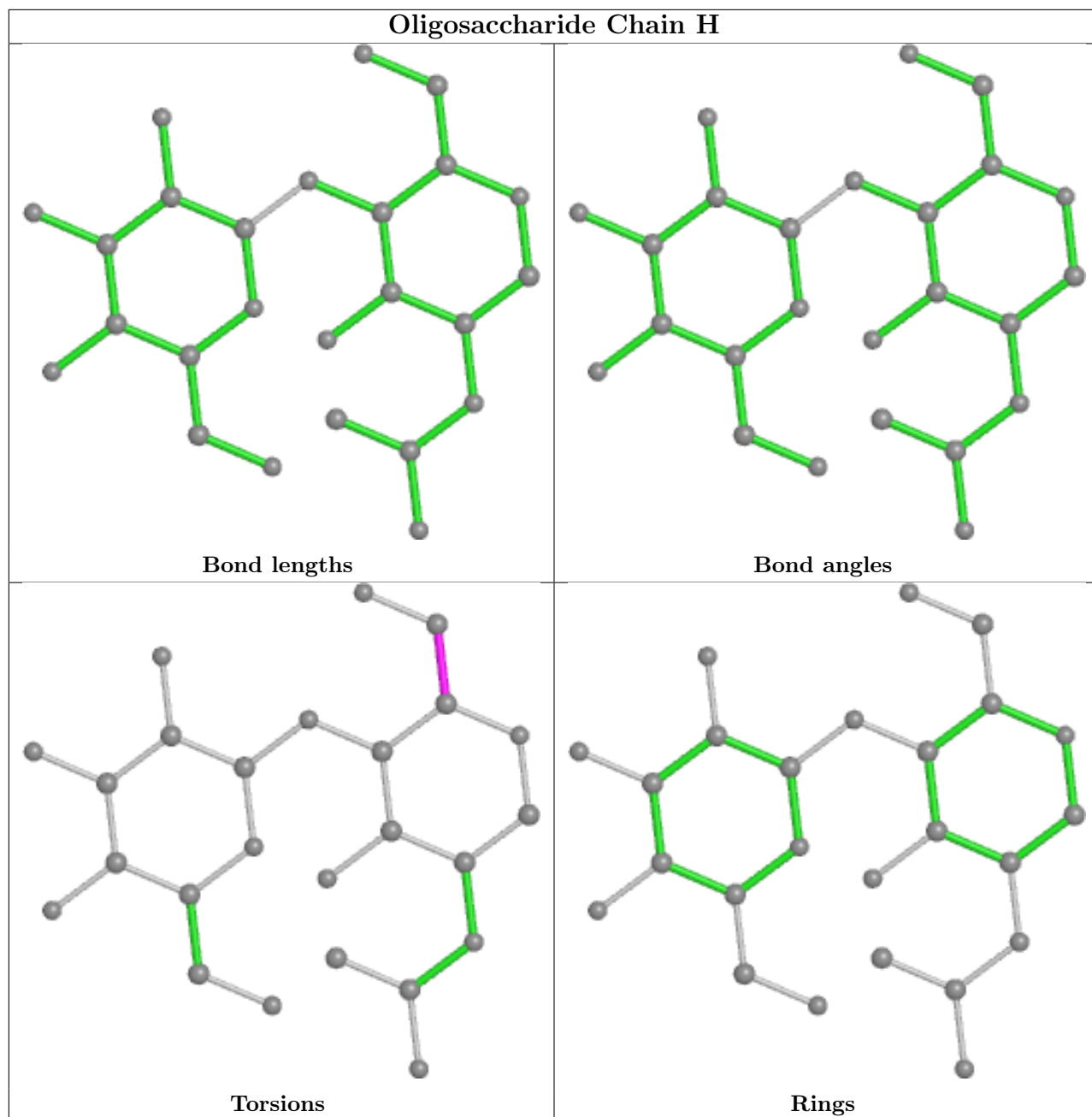
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

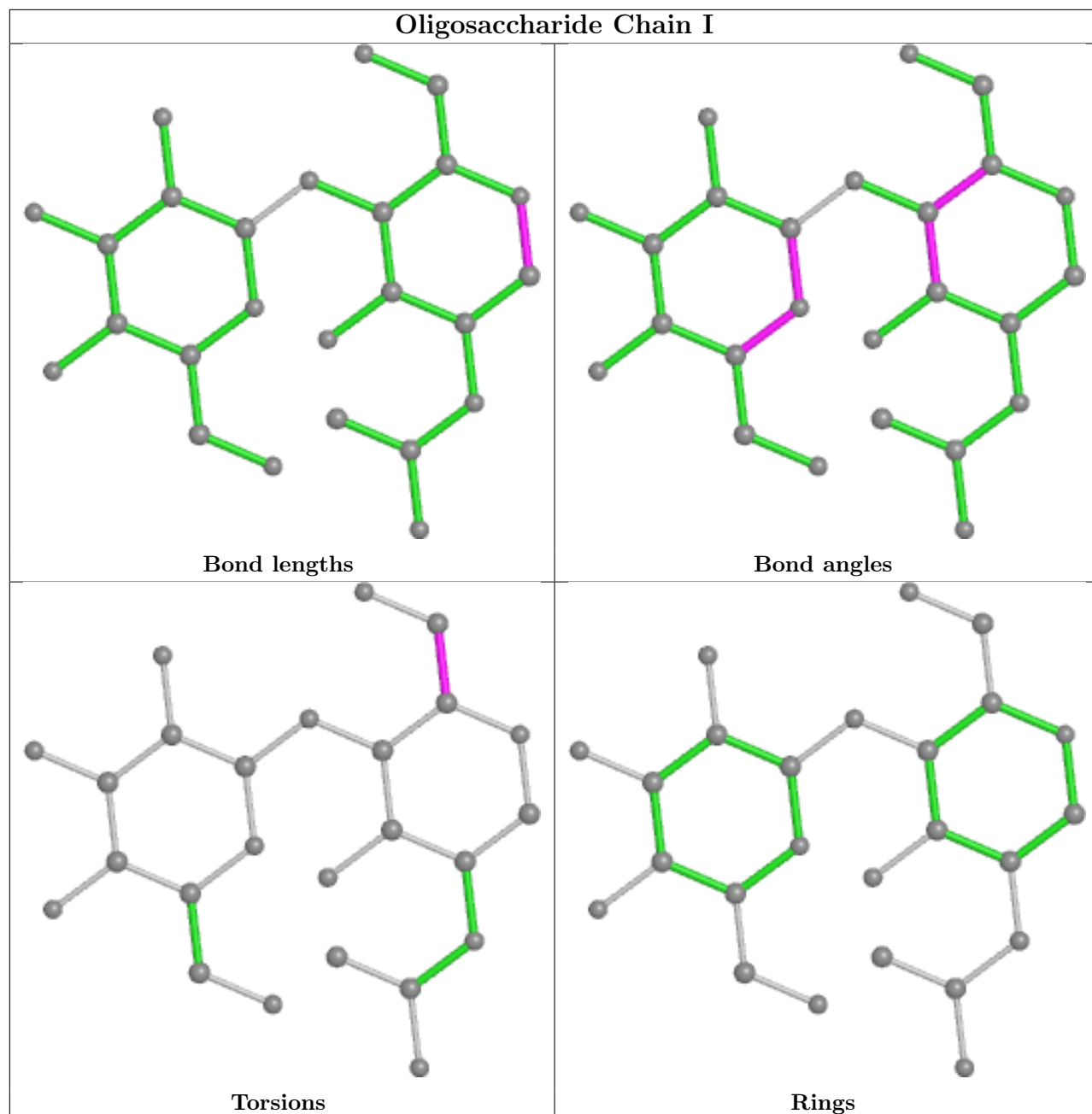


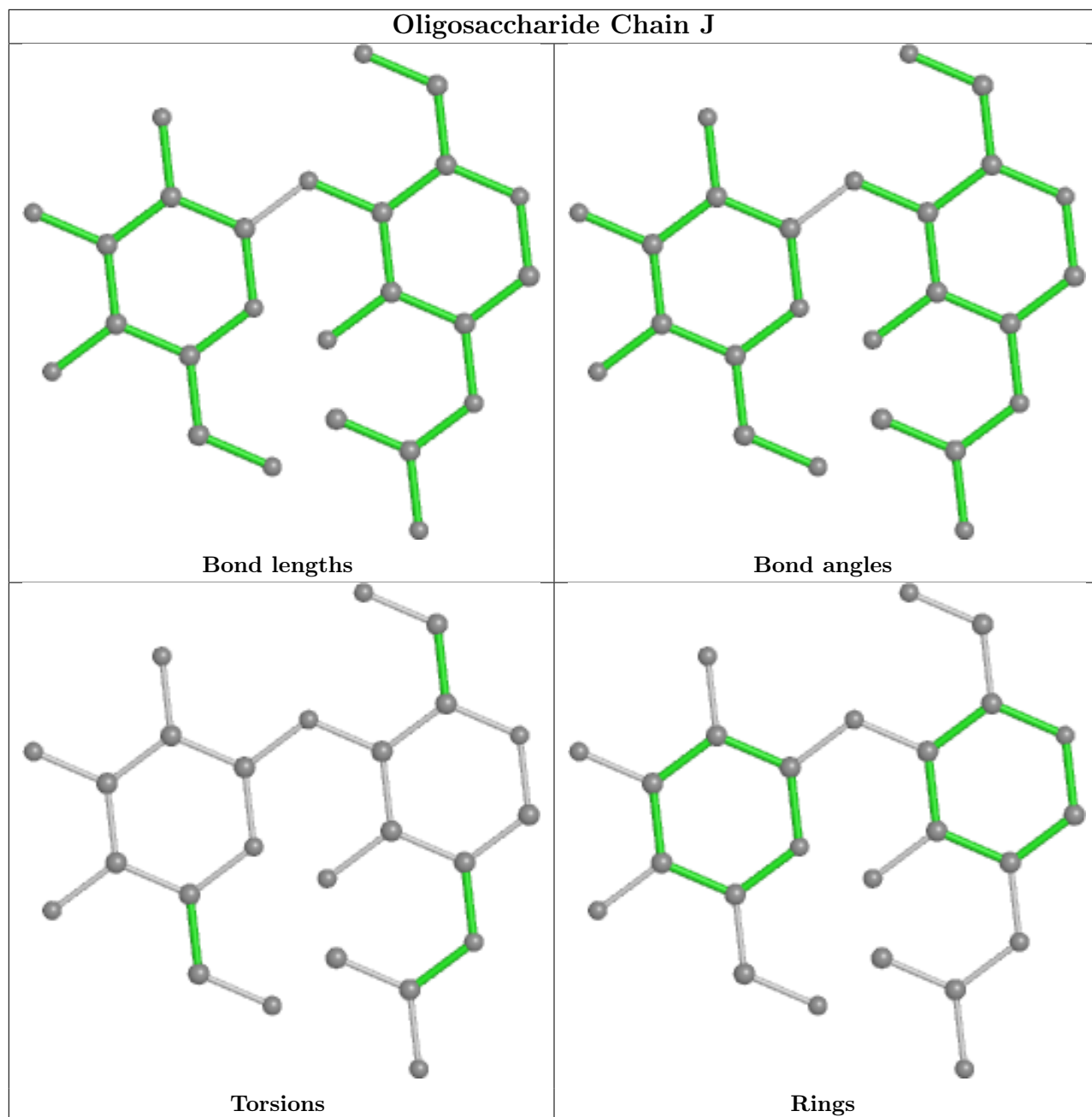


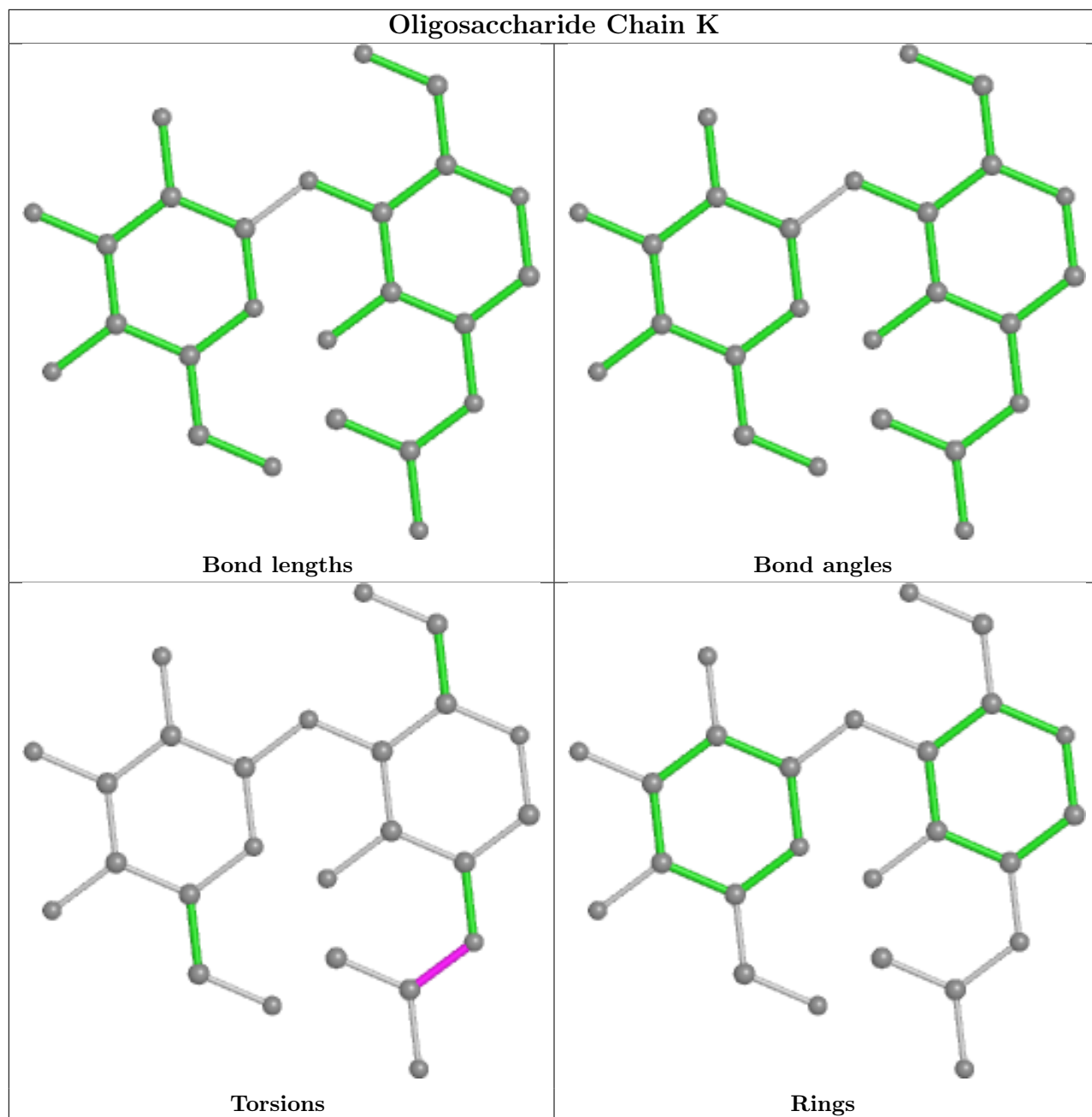


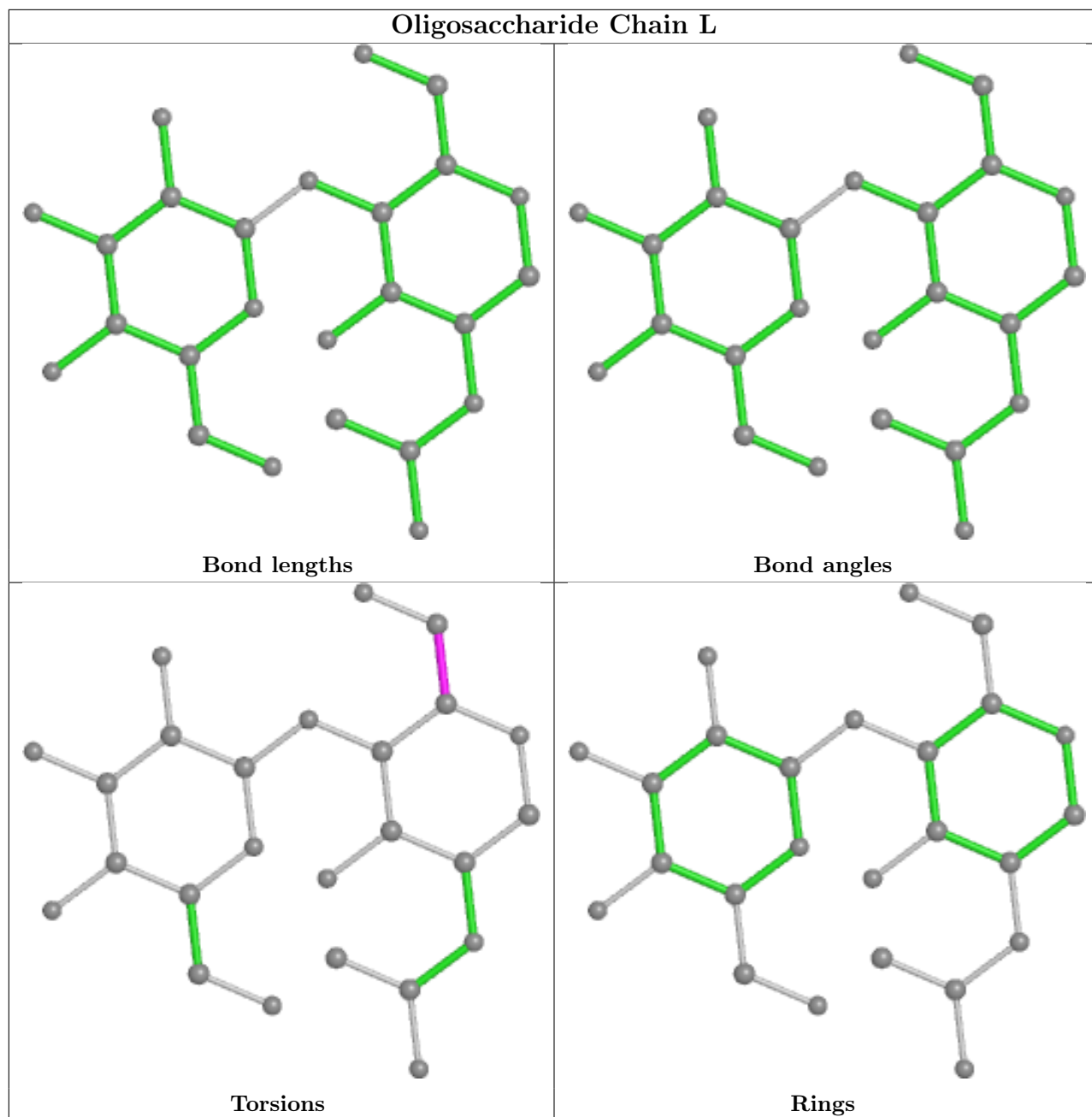


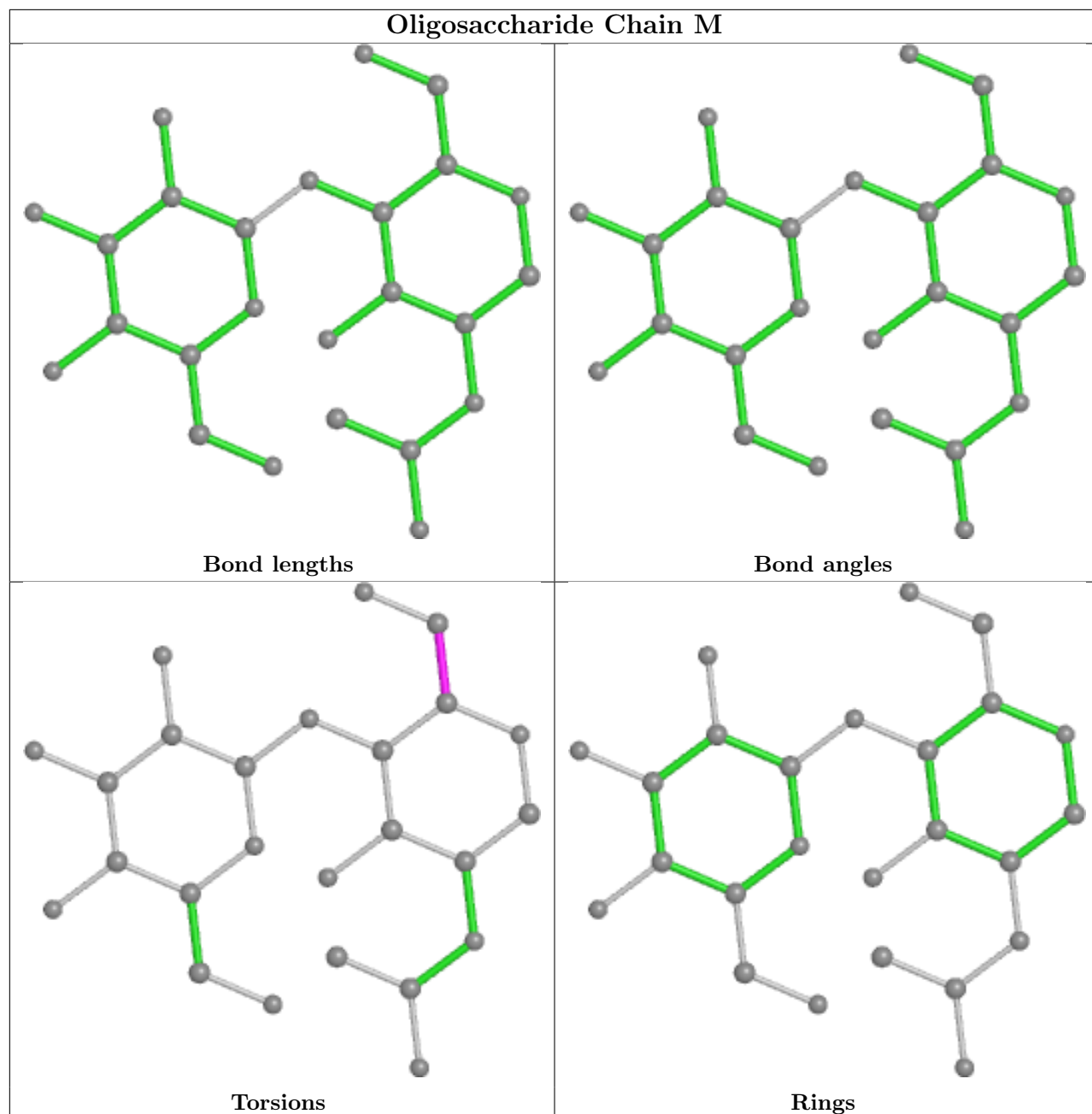


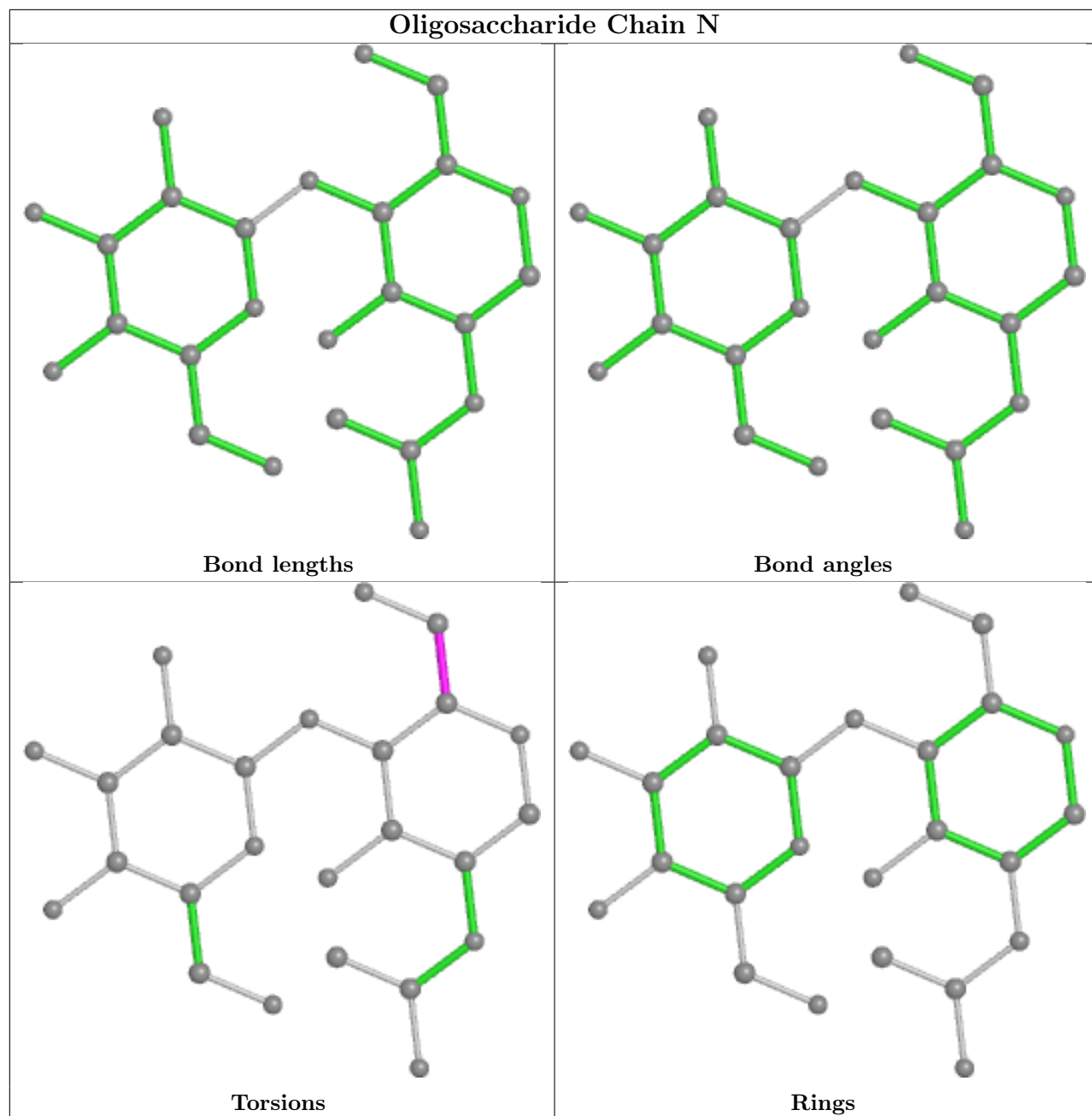


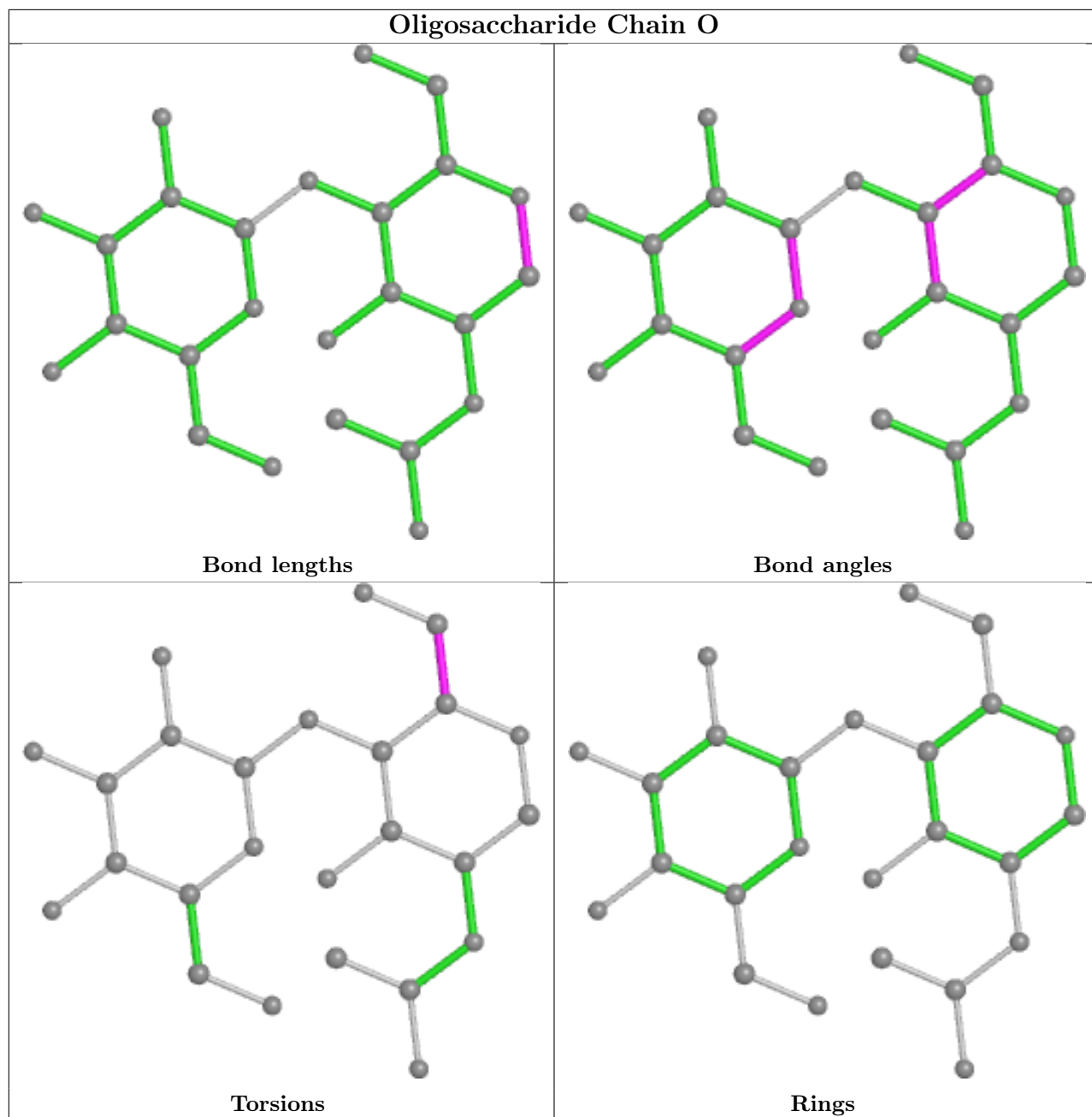


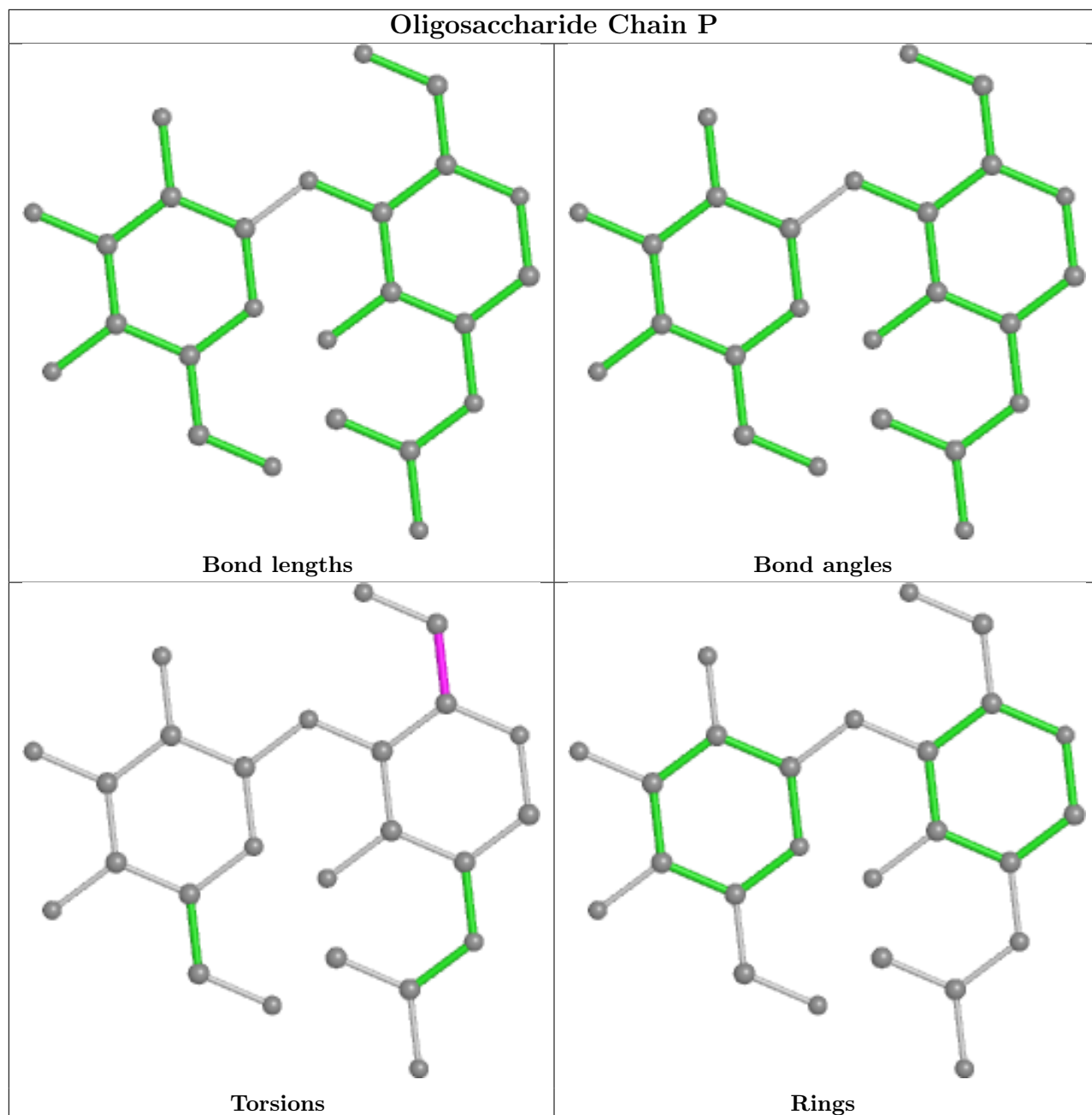


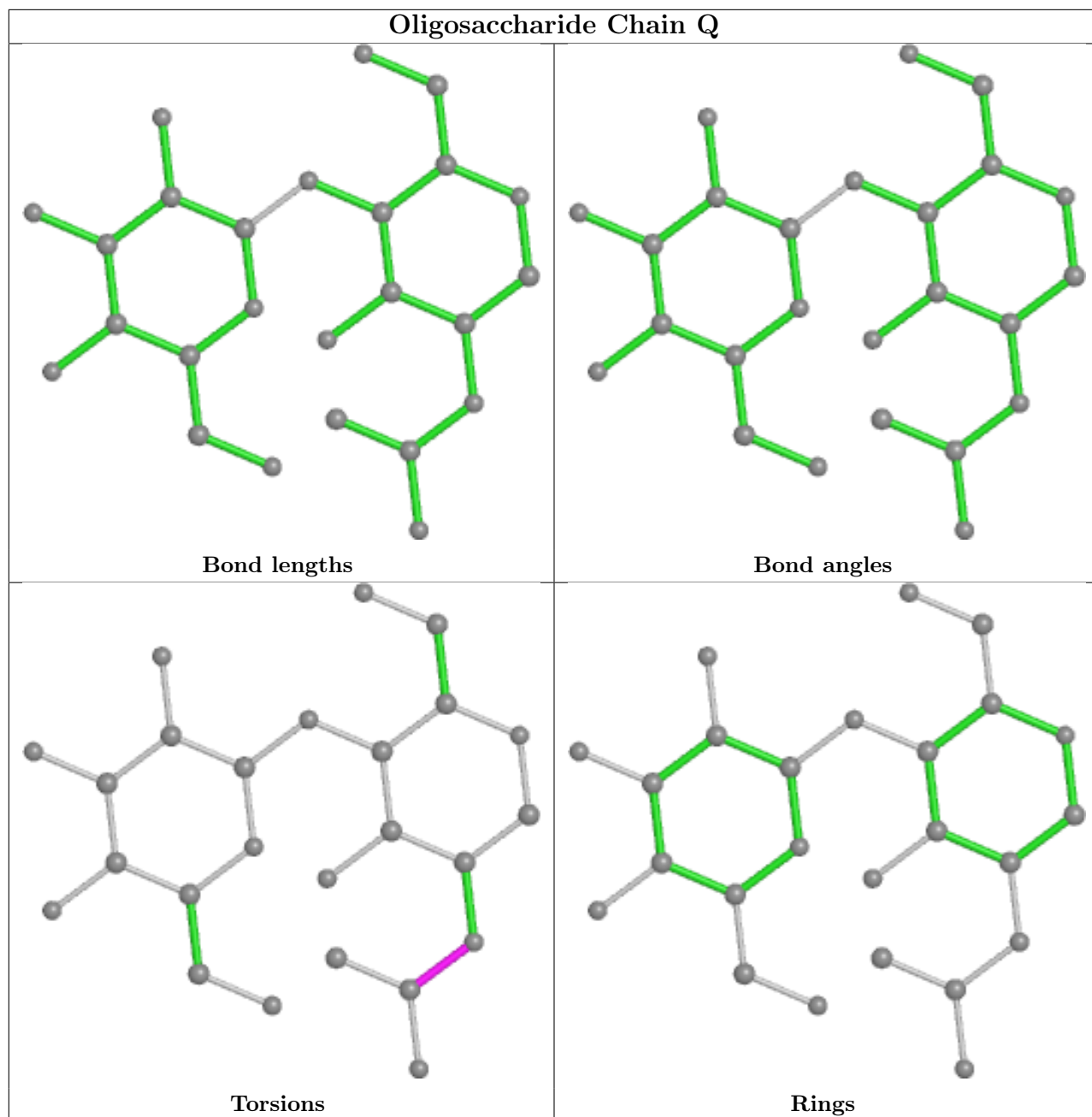


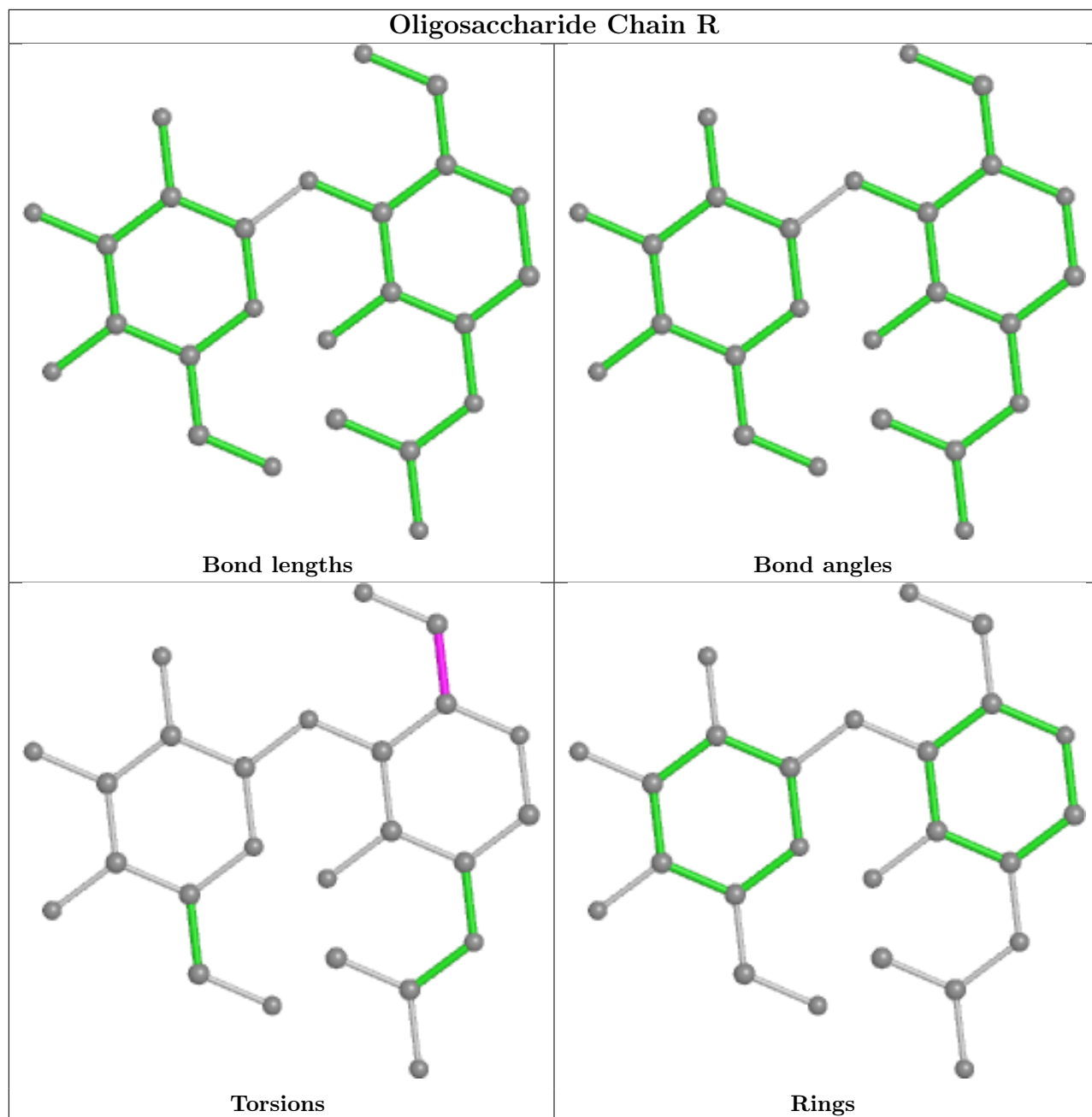


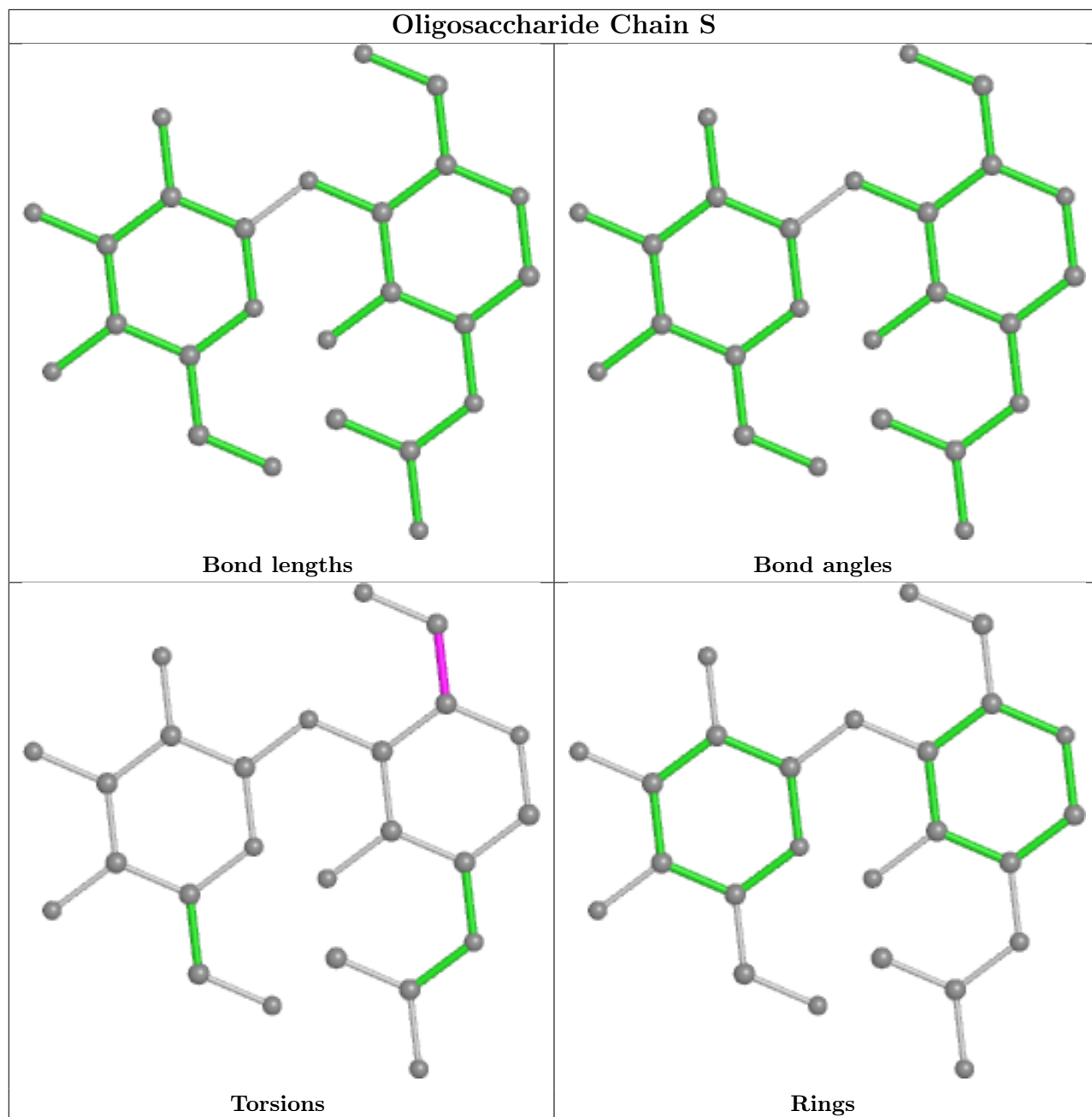


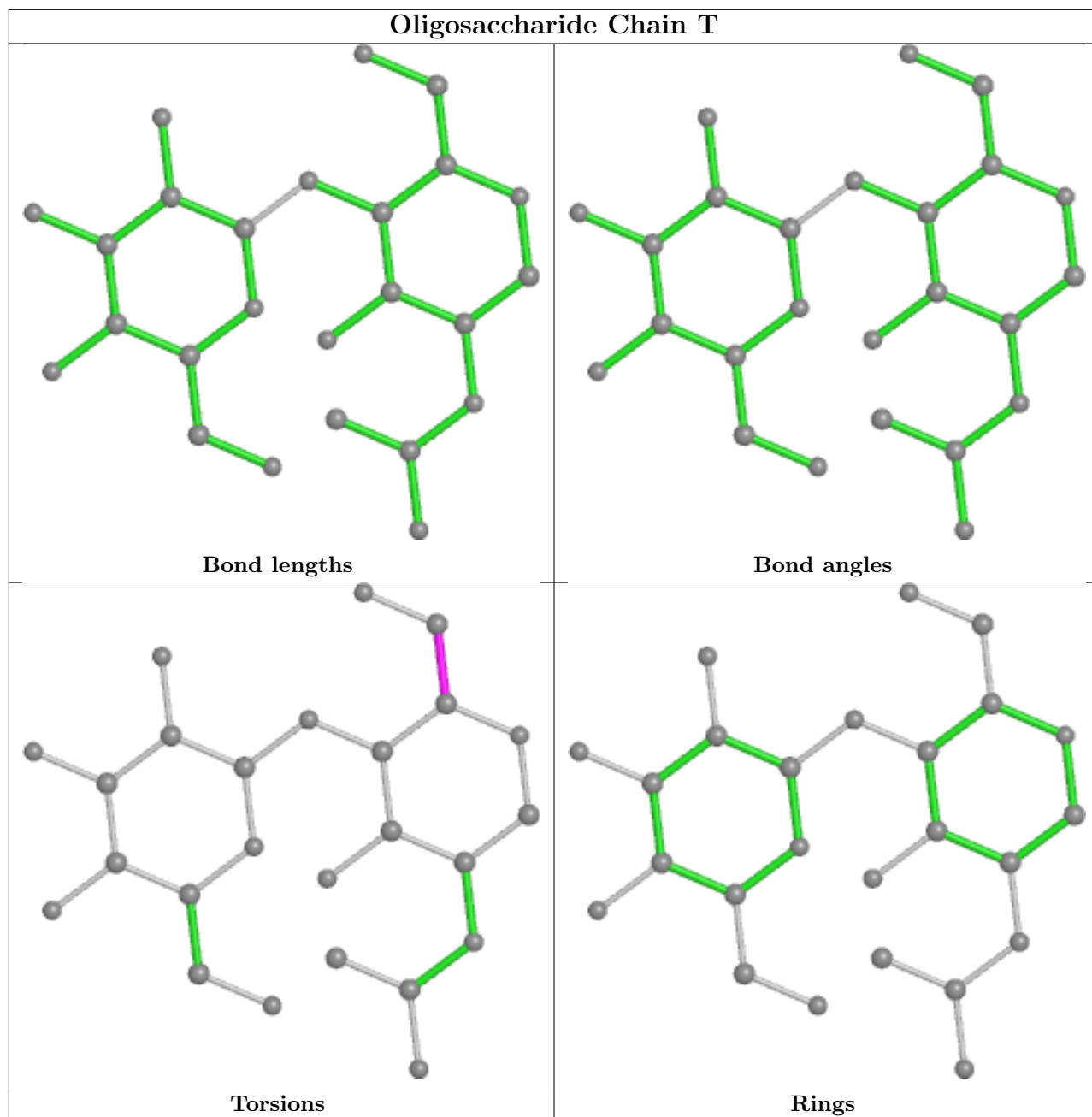


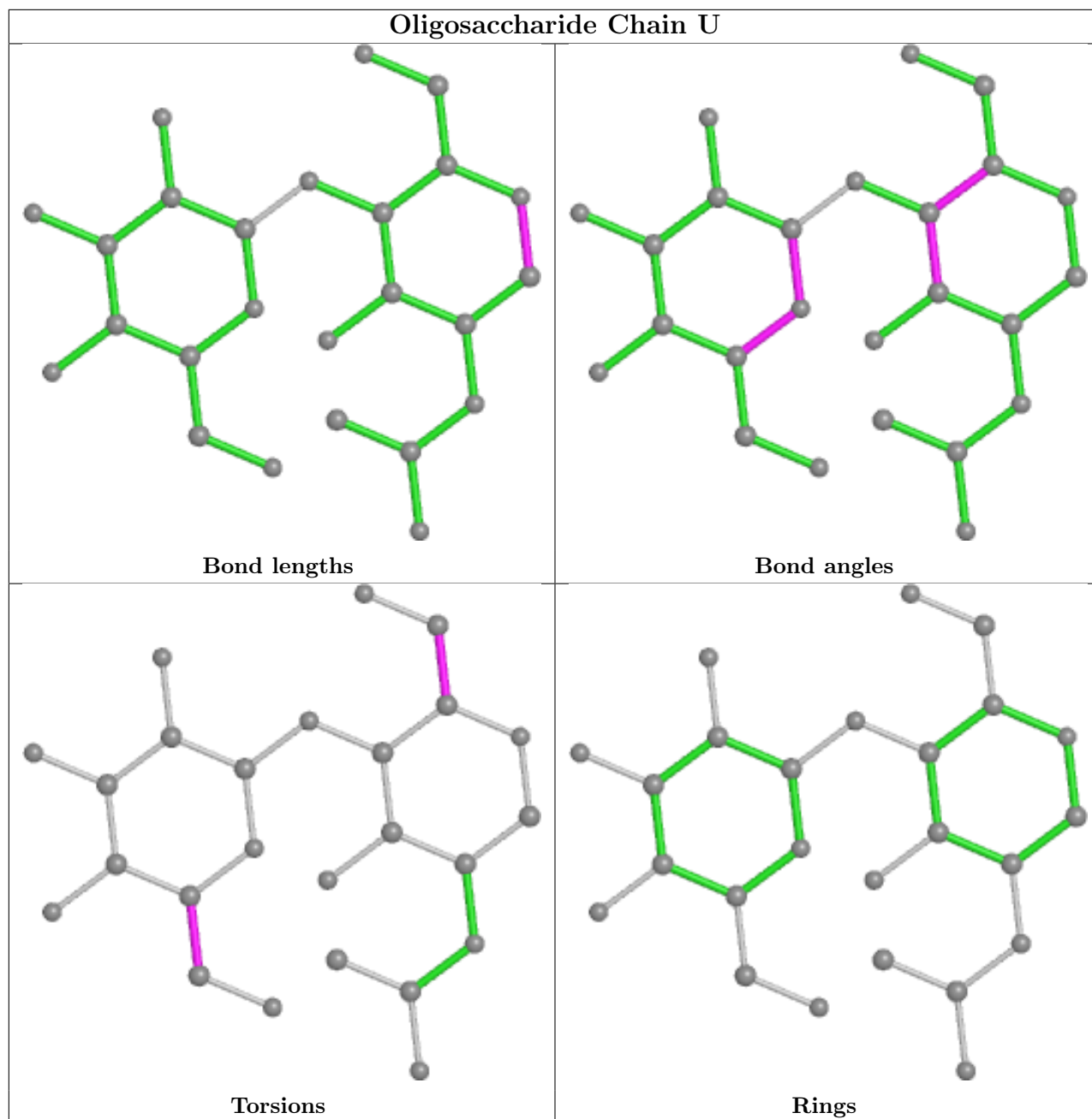












5.6 Ligand geometry [i](#)

30 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	NAG	A	1310	1	14,14,15	0.22	0	17,19,21	0.47	0
3	NAG	C	1302	1	14,14,15	0.77	1 (7%)	17,19,21	0.68	0
3	NAG	B	1308	1	14,14,15	0.32	0	17,19,21	0.39	0
3	NAG	A	1308	1	14,14,15	0.35	0	17,19,21	0.47	0
3	NAG	C	1305	1	14,14,15	0.21	0	17,19,21	0.38	0
3	NAG	B	1301	1	14,14,15	0.25	0	17,19,21	0.48	0
3	NAG	B	1309	1	14,14,15	0.18	0	17,19,21	0.43	0
3	NAG	A	1301	1	14,14,15	0.25	0	17,19,21	0.57	0
3	NAG	B	1303	1	14,14,15	0.26	0	17,19,21	0.38	0
3	NAG	A	1303	1	14,14,15	0.25	0	17,19,21	0.42	0
3	NAG	C	1303	1	14,14,15	0.39	0	17,19,21	0.41	0
3	NAG	B	1305	1	14,14,15	0.27	0	17,19,21	0.39	0
3	NAG	C	1301	1	14,14,15	0.18	0	17,19,21	0.61	0
3	NAG	A	1305	1	14,14,15	0.21	0	17,19,21	0.47	0
3	NAG	C	1307	1	14,14,15	0.32	0	17,19,21	1.39	1 (5%)
3	NAG	A	1306	1	14,14,15	0.19	0	17,19,21	0.50	0
3	NAG	B	1307	1	14,14,15	0.39	0	17,19,21	1.40	1 (5%)
3	NAG	C	1306	1	14,14,15	0.17	0	17,19,21	0.55	0
3	NAG	A	1302	1	14,14,15	0.39	0	17,19,21	0.37	0
3	NAG	A	1304	1	14,14,15	0.47	0	17,19,21	0.54	0
3	NAG	B	1302	1	14,14,15	0.34	0	17,19,21	0.45	0
3	NAG	C	1308	1	14,14,15	0.35	0	17,19,21	0.46	0
3	NAG	B	1310	1	14,14,15	0.18	0	17,19,21	0.50	0
3	NAG	C	1309	1	14,14,15	0.20	0	17,19,21	0.42	0
3	NAG	A	1307	1	14,14,15	0.35	0	17,19,21	1.37	1 (5%)
3	NAG	C	1304	1	14,14,15	0.28	0	17,19,21	0.45	0
3	NAG	B	1306	1	14,14,15	0.33	0	17,19,21	0.44	0
3	NAG	A	1309	1	14,14,15	0.21	0	17,19,21	0.44	0
3	NAG	C	1310	1	14,14,15	0.22	0	17,19,21	0.50	0
3	NAG	B	1304	1	14,14,15	0.28	0	17,19,21	0.53	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	A	1310	1	-	4/6/23/26	0/1/1/1
3	NAG	C	1302	1	-	4/6/23/26	0/1/1/1
3	NAG	B	1308	1	-	0/6/23/26	0/1/1/1
3	NAG	A	1308	1	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	C	1305	1	-	0/6/23/26	0/1/1/1
3	NAG	B	1301	1	-	4/6/23/26	0/1/1/1
3	NAG	B	1309	1	-	2/6/23/26	0/1/1/1
3	NAG	A	1301	1	-	3/6/23/26	0/1/1/1
3	NAG	B	1303	1	-	0/6/23/26	0/1/1/1
3	NAG	A	1303	1	-	2/6/23/26	0/1/1/1
3	NAG	C	1303	1	-	0/6/23/26	0/1/1/1
3	NAG	B	1305	1	-	0/6/23/26	0/1/1/1
3	NAG	C	1301	1	-	3/6/23/26	0/1/1/1
3	NAG	A	1305	1	-	0/6/23/26	0/1/1/1
3	NAG	C	1307	1	-	0/6/23/26	0/1/1/1
3	NAG	A	1306	1	-	0/6/23/26	0/1/1/1
3	NAG	B	1307	1	-	0/6/23/26	0/1/1/1
3	NAG	C	1306	1	-	0/6/23/26	0/1/1/1
3	NAG	A	1302	1	-	1/6/23/26	0/1/1/1
3	NAG	A	1304	1	-	3/6/23/26	0/1/1/1
3	NAG	B	1302	1	-	1/6/23/26	0/1/1/1
3	NAG	C	1308	1	-	2/6/23/26	0/1/1/1
3	NAG	B	1310	1	-	4/6/23/26	0/1/1/1
3	NAG	C	1309	1	-	2/6/23/26	0/1/1/1
3	NAG	A	1307	1	-	0/6/23/26	0/1/1/1
3	NAG	C	1304	1	-	3/6/23/26	0/1/1/1
3	NAG	B	1306	1	-	2/6/23/26	0/1/1/1
3	NAG	A	1309	1	-	2/6/23/26	0/1/1/1
3	NAG	C	1310	1	-	4/6/23/26	0/1/1/1
3	NAG	B	1304	1	-	3/6/23/26	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	1302	NAG	C1-C2	2.64	1.56	1.52

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	1307	NAG	C1-O5-C5	5.19	119.22	112.19
3	B	1307	NAG	C1-O5-C5	5.17	119.20	112.19
3	A	1307	NAG	C1-O5-C5	5.06	119.04	112.19

There are no chirality outliers.

All (49) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1310	NAG	C4-C5-C6-O6
3	B	1310	NAG	C4-C5-C6-O6
3	C	1310	NAG	C4-C5-C6-O6
3	A	1310	NAG	O5-C5-C6-O6
3	B	1310	NAG	O5-C5-C6-O6
3	C	1309	NAG	O5-C5-C6-O6
3	A	1301	NAG	C4-C5-C6-O6
3	B	1301	NAG	O5-C5-C6-O6
3	C	1310	NAG	O5-C5-C6-O6
3	A	1301	NAG	O5-C5-C6-O6
3	C	1302	NAG	O5-C5-C6-O6
3	C	1309	NAG	C4-C5-C6-O6
3	C	1302	NAG	C4-C5-C6-O6
3	C	1301	NAG	O5-C5-C6-O6
3	A	1304	NAG	C8-C7-N2-C2
3	A	1304	NAG	O7-C7-N2-C2
3	A	1310	NAG	C8-C7-N2-C2
3	A	1310	NAG	O7-C7-N2-C2
3	B	1304	NAG	C8-C7-N2-C2
3	B	1304	NAG	O7-C7-N2-C2
3	B	1310	NAG	C8-C7-N2-C2
3	B	1310	NAG	O7-C7-N2-C2
3	C	1304	NAG	C8-C7-N2-C2
3	C	1304	NAG	O7-C7-N2-C2
3	C	1310	NAG	C8-C7-N2-C2
3	C	1310	NAG	O7-C7-N2-C2
3	C	1308	NAG	O5-C5-C6-O6
3	A	1309	NAG	O5-C5-C6-O6
3	B	1309	NAG	O5-C5-C6-O6
3	A	1309	NAG	C4-C5-C6-O6
3	A	1303	NAG	C4-C5-C6-O6
3	B	1309	NAG	C4-C5-C6-O6
3	C	1308	NAG	C4-C5-C6-O6
3	C	1302	NAG	C1-C2-N2-C7
3	A	1302	NAG	O5-C5-C6-O6
3	A	1303	NAG	O5-C5-C6-O6
3	C	1304	NAG	O5-C5-C6-O6
3	A	1304	NAG	O5-C5-C6-O6
3	B	1302	NAG	O5-C5-C6-O6
3	B	1304	NAG	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
3	B	1301	NAG	C4-C5-C6-O6
3	C	1301	NAG	C4-C5-C6-O6
3	B	1306	NAG	C4-C5-C6-O6
3	A	1301	NAG	C3-C2-N2-C7
3	B	1301	NAG	C3-C2-N2-C7
3	C	1301	NAG	C3-C2-N2-C7
3	C	1302	NAG	C3-C2-N2-C7
3	B	1306	NAG	O5-C5-C6-O6
3	B	1301	NAG	C1-C2-N2-C7

There are no ring outliers.

10 monomers are involved in 10 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	C	1302	NAG	1	0
3	A	1308	NAG	1	0
3	B	1301	NAG	1	0
3	C	1303	NAG	1	0
3	C	1301	NAG	1	0
3	A	1304	NAG	1	0
3	B	1302	NAG	1	0
3	C	1304	NAG	1	0
3	B	1306	NAG	1	0
3	B	1304	NAG	1	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.