



Full wwPDB EM Validation Report ⓘ

Mar 28, 2026 – 08:41 PM UTC

PDB ID : 7WWL / pdb_00007wwl
EMDB ID : EMD-32869
Title : S protein of Delta variant in complex with ZWD12
Authors : Guo, Y.Y.; Zhang, Y.Y.; Zhou, Q.
Deposited on : 2022-02-13
Resolution : 3.00 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:

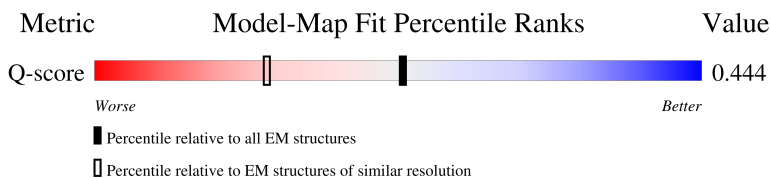
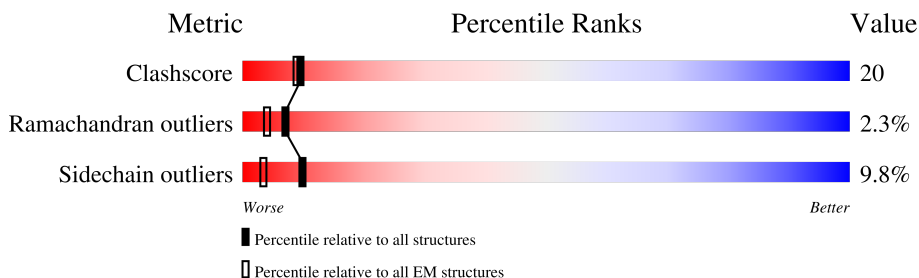
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.00 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	14081 (2.50 - 3.50)

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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1271	
1	B	1271	
1	C	1271	
2	H	123	

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Mol	Chain	Length	Quality of chain
2	I	123	93% 79%19%
2	J	123	97% 77%20%
3	L	108	20% 83%16%
3	M	108	92% 70%25%5%
3	N	108	99% 78%21%
4	D	2	50% 100%
4	E	2	50% 50%
4	F	2	50% 50%
4	G	2	50% 50%
4	K	2	100% 50%
4	O	2	50% 50%
4	P	2	50% 50%
4	Q	2	100% 50%
4	R	2	100% 100%
4	S	2	50% 100%
4	T	2	50% 50%
4	U	2	50% 50%
4	V	2	100%
4	W	2	50% 100%
4	X	2	100% 100%
4	Y	2	50% 100%
4	Z	2	50% 50%
4	a	2	50% 50%
4	b	2	50% 100%
4	c	2	100% 50%

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Mol	Chain	Length	Quality of chain
4	d	2	50%50%
4	e	2	50%100%
4	f	2	50%50%

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 29704 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
1	A	994	Total	C	N	O	S	0	0
			7765	4958	1294	1478	35		
1	B	993	Total	C	N	O	S	0	0
			7759	4955	1293	1476	35		
1	C	993	Total	C	N	O	S	0	0
			7759	4955	1293	1476	35		

There are 48 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	19	ARG	THR	variant	UNP P0DTC2
A	144	ASP	GLY	variant	UNP P0DTC2
A	?	-	GLU	deletion	UNP P0DTC2
A	?	-	PHE	deletion	UNP P0DTC2
A	158	GLY	ARG	variant	UNP P0DTC2
A	452	ARG	LEU	variant	UNP P0DTC2
A	478	LYS	THR	variant	UNP P0DTC2
A	614	GLY	ASP	variant	UNP P0DTC2
A	681	ARG	PRO	variant	UNP P0DTC2
A	817	PRO	PHE	engineered mutation	UNP P0DTC2
A	892	PRO	ALA	engineered mutation	UNP P0DTC2
A	899	PRO	ALA	engineered mutation	UNP P0DTC2
A	942	PRO	ALA	engineered mutation	UNP P0DTC2
A	950	ASN	ASP	variant	UNP P0DTC2
A	986	PRO	LYS	engineered mutation	UNP P0DTC2
A	987	PRO	VAL	engineered mutation	UNP P0DTC2
B	19	ARG	THR	variant	UNP P0DTC2
B	144	ASP	GLY	variant	UNP P0DTC2
B	?	-	GLU	deletion	UNP P0DTC2
B	?	-	PHE	deletion	UNP P0DTC2
B	158	GLY	ARG	variant	UNP P0DTC2
B	452	ARG	LEU	variant	UNP P0DTC2
B	478	LYS	THR	variant	UNP P0DTC2
B	614	GLY	ASP	variant	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	681	ARG	PRO	variant	UNP P0DTC2
B	817	PRO	PHE	engineered mutation	UNP P0DTC2
B	892	PRO	ALA	engineered mutation	UNP P0DTC2
B	899	PRO	ALA	engineered mutation	UNP P0DTC2
B	942	PRO	ALA	engineered mutation	UNP P0DTC2
B	950	ASN	ASP	variant	UNP P0DTC2
B	986	PRO	LYS	engineered mutation	UNP P0DTC2
B	987	PRO	VAL	engineered mutation	UNP P0DTC2
C	19	ARG	THR	variant	UNP P0DTC2
C	144	ASP	GLY	variant	UNP P0DTC2
C	?	-	GLU	deletion	UNP P0DTC2
C	?	-	PHE	deletion	UNP P0DTC2
C	158	GLY	ARG	variant	UNP P0DTC2
C	452	ARG	LEU	variant	UNP P0DTC2
C	478	LYS	THR	variant	UNP P0DTC2
C	614	GLY	ASP	variant	UNP P0DTC2
C	681	ARG	PRO	variant	UNP P0DTC2
C	817	PRO	PHE	engineered mutation	UNP P0DTC2
C	892	PRO	ALA	engineered mutation	UNP P0DTC2
C	899	PRO	ALA	engineered mutation	UNP P0DTC2
C	942	PRO	ALA	engineered mutation	UNP P0DTC2
C	950	ASN	ASP	variant	UNP P0DTC2
C	986	PRO	LYS	engineered mutation	UNP P0DTC2
C	987	PRO	VAL	engineered mutation	UNP P0DTC2

- Molecule 2 is a protein called heavy chain of ZWD12.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	H	123	Total	C	N	O	S	0	0
			967	609	170	184	4		
2	I	123	Total	C	N	O	S	0	0
			967	609	170	184	4		
2	J	123	Total	C	N	O	S	0	0
			967	609	170	184	4		

- Molecule 3 is a protein called light chain of ZWD12.

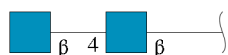
Mol	Chain	Residues	Atoms					AltConf	Trace
3	L	108	Total	C	N	O	S	0	0
			842	532	143	164	3		
3	M	108	Total	C	N	O	S	0	0
			842	532	143	164	3		

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Mol	Chain	Residues	Atoms					AltConf	Trace
3	N	108	Total	C	N	O	S	0	0
			842	532	143	164	3		

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



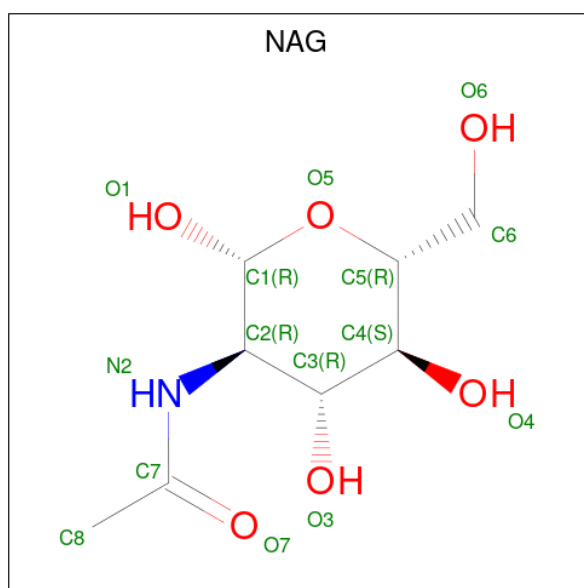
Mol	Chain	Residues	Atoms				AltConf	Trace
4	D	2	Total	C	N	O	0	0
			28	16	2	10		
4	E	2	Total	C	N	O	0	0
			28	16	2	10		
4	F	2	Total	C	N	O	0	0
			28	16	2	10		
4	G	2	Total	C	N	O	0	0
			28	16	2	10		
4	K	2	Total	C	N	O	0	0
			28	16	2	10		
4	O	2	Total	C	N	O	0	0
			28	16	2	10		
4	P	2	Total	C	N	O	0	0
			28	16	2	10		
4	Q	2	Total	C	N	O	0	0
			28	16	2	10		
4	R	2	Total	C	N	O	0	0
			28	16	2	10		
4	S	2	Total	C	N	O	0	0
			28	16	2	10		
4	T	2	Total	C	N	O	0	0
			28	16	2	10		
4	U	2	Total	C	N	O	0	0
			28	16	2	10		
4	V	2	Total	C	N	O	0	0
			28	16	2	10		
4	W	2	Total	C	N	O	0	0
			28	16	2	10		
4	X	2	Total	C	N	O	0	0
			28	16	2	10		
4	Y	2	Total	C	N	O	0	0
			28	16	2	10		

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Mol	Chain	Residues	Atoms				AltConf	Trace
4	Z	2	Total	C	N	O	0	0
			28	16	2	10		
4	a	2	Total	C	N	O	0	0
			28	16	2	10		
4	b	2	Total	C	N	O	0	0
			28	16	2	10		
4	c	2	Total	C	N	O	0	0
			28	16	2	10		
4	d	2	Total	C	N	O	0	0
			28	16	2	10		
4	e	2	Total	C	N	O	0	0
			28	16	2	10		
4	f	2	Total	C	N	O	0	0
			28	16	2	10		

- Molecule 5 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$) (labeled as "Ligand of Interest" by depositor).



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

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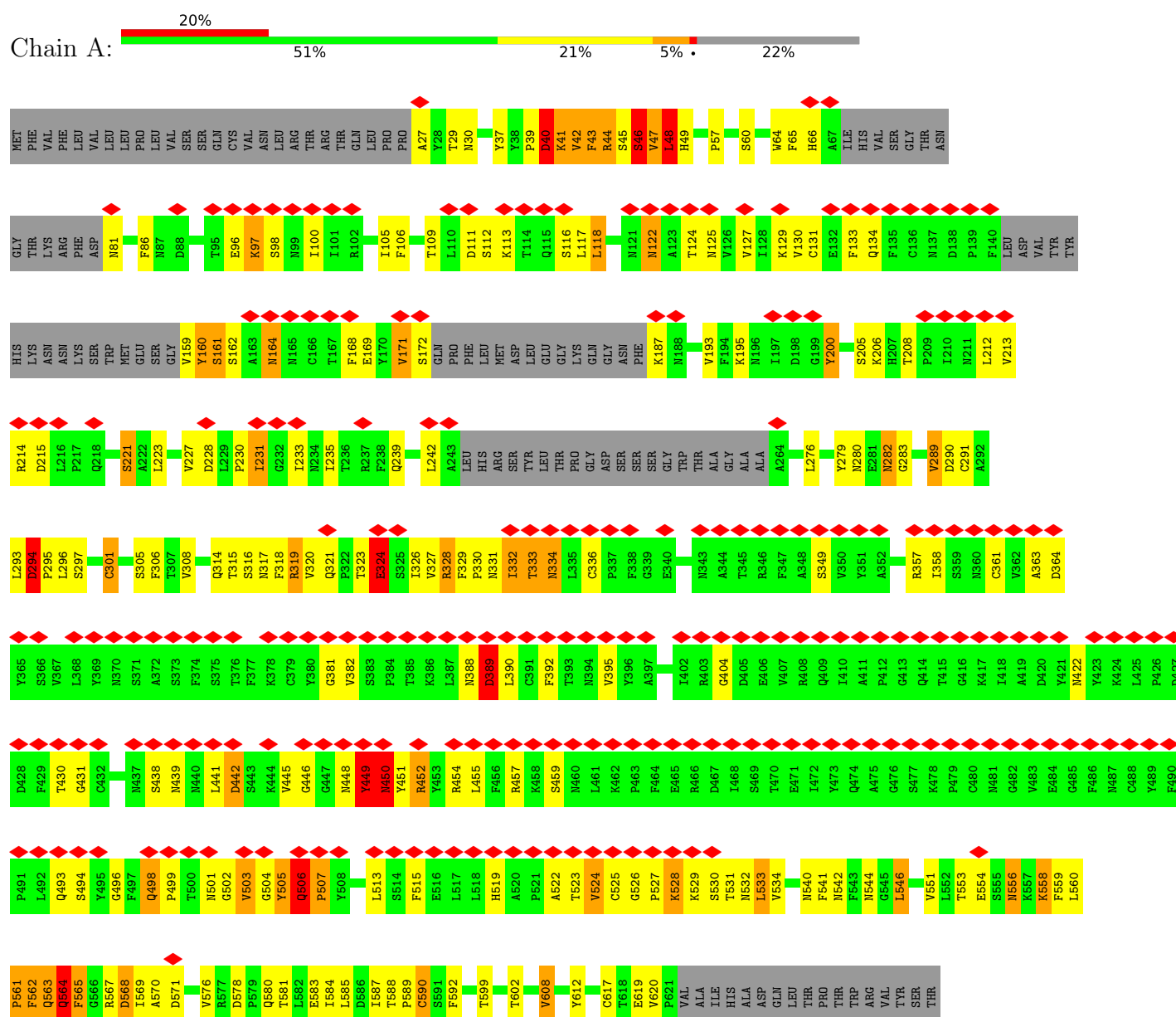
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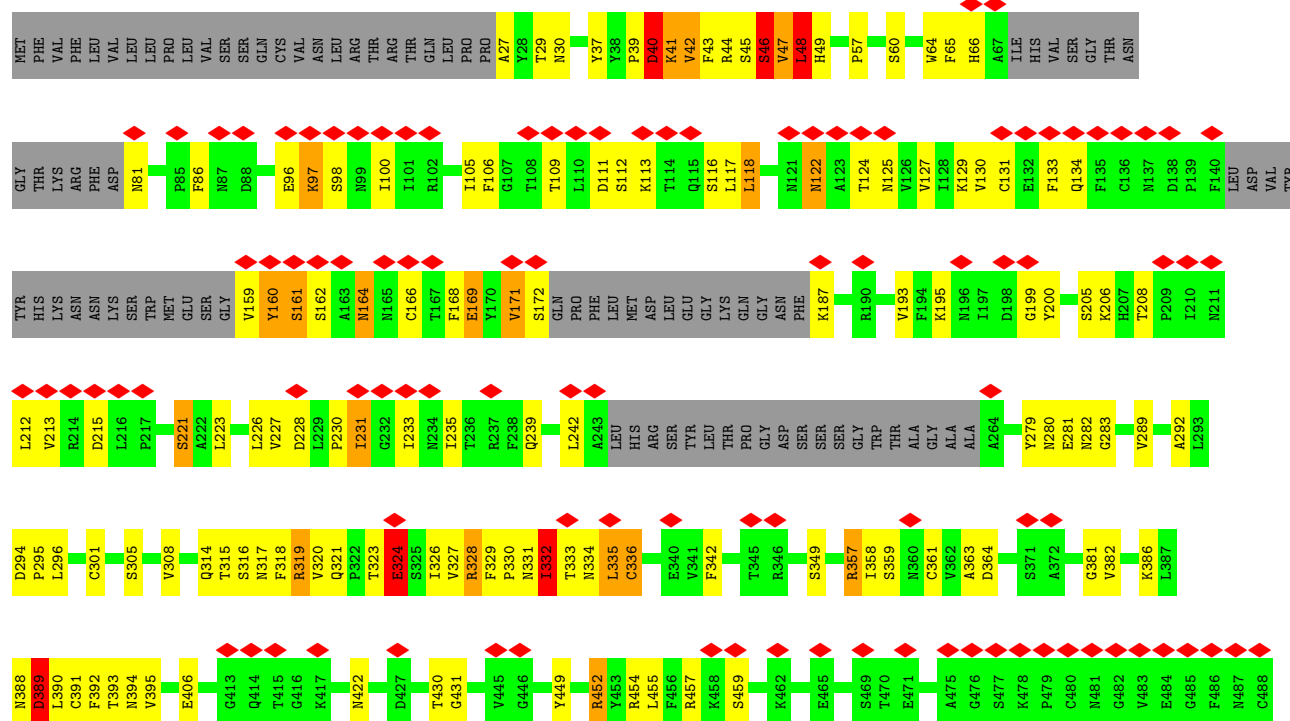
Mol	Chain	Residues	Atoms				AltConf
5	A	1	Total	C	N	O	0
			14	8	1	5	
5	A	1	Total	C	N	O	0
			14	8	1	5	
5	A	1	Total	C	N	O	0
			14	8	1	5	
5	A	1	Total	C	N	O	0
			14	8	1	5	
5	A	1	Total	C	N	O	0
			14	8	1	5	
5	B	1	Total	C	N	O	0
			14	8	1	5	
5	B	1	Total	C	N	O	0
			14	8	1	5	
5	B	1	Total	C	N	O	0
			14	8	1	5	
5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

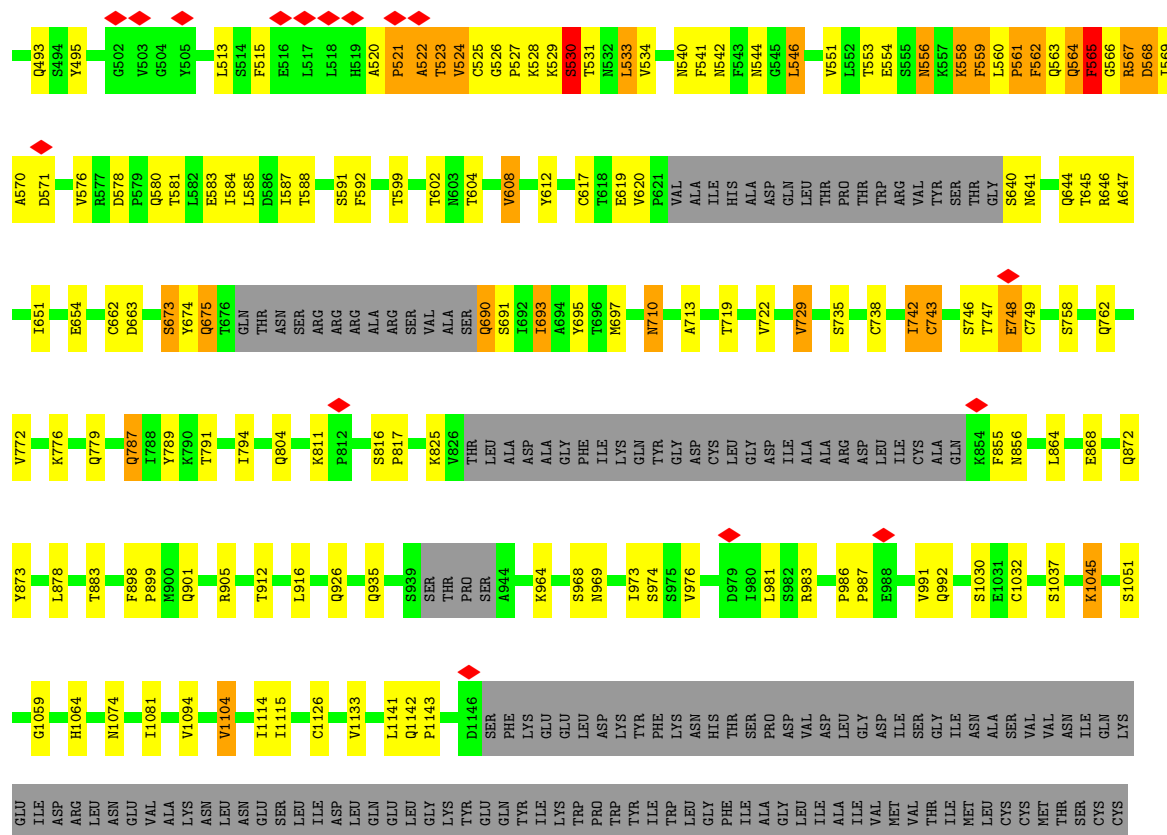
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map 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 diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). 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.

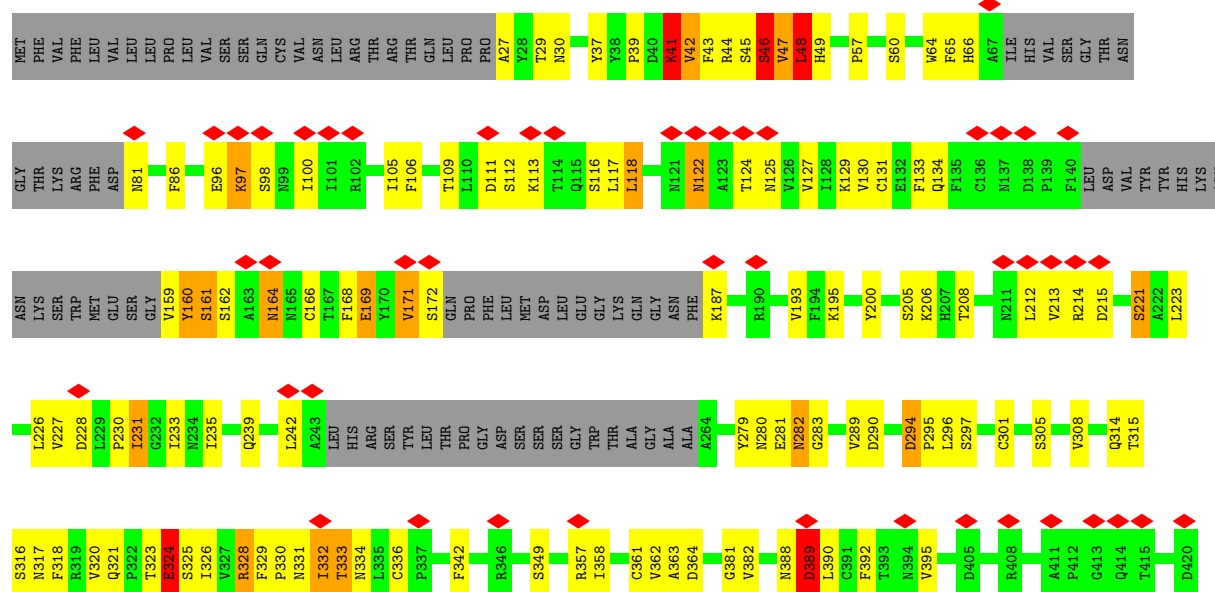
• Molecule 1: Spike glycoprotein

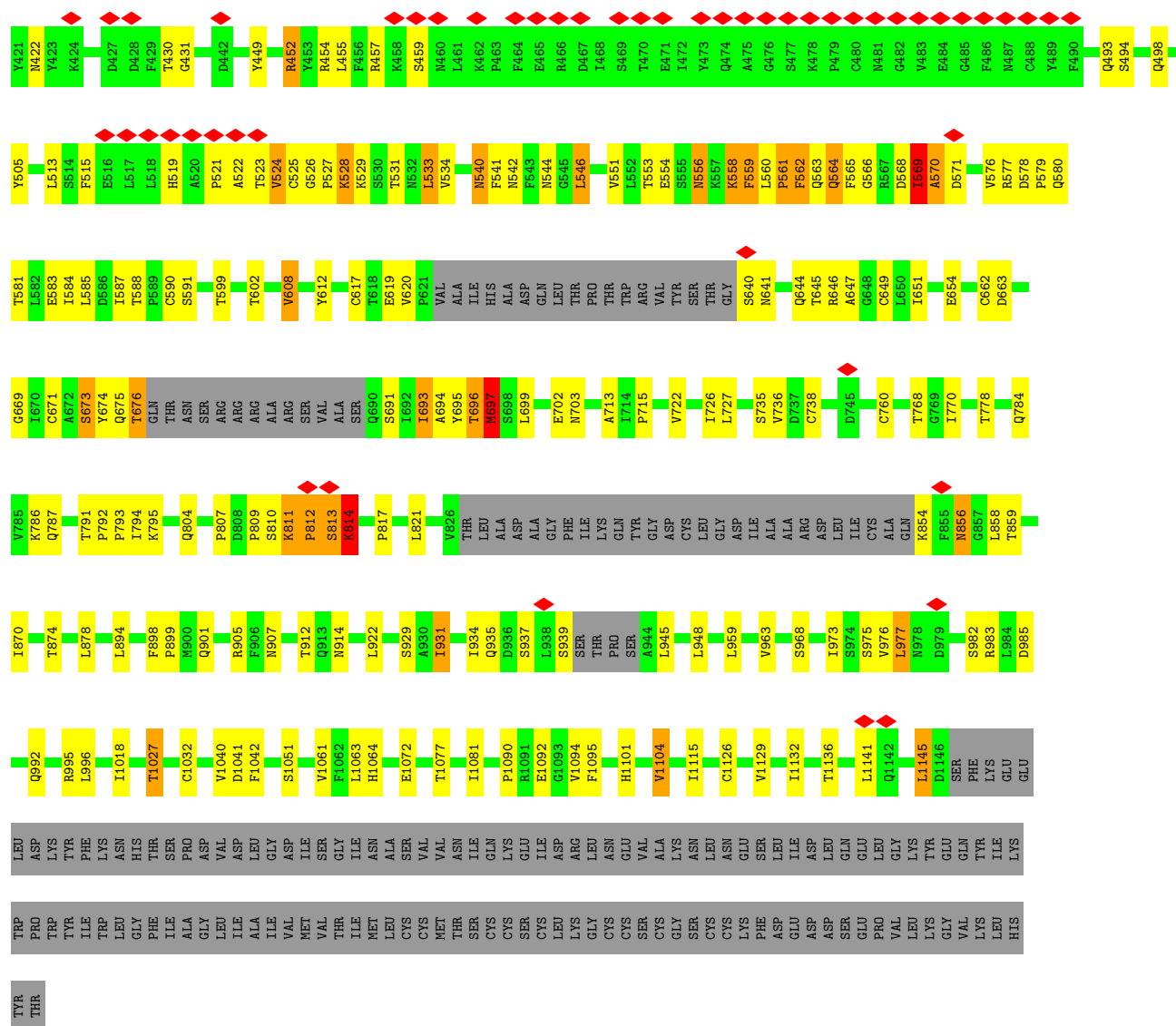




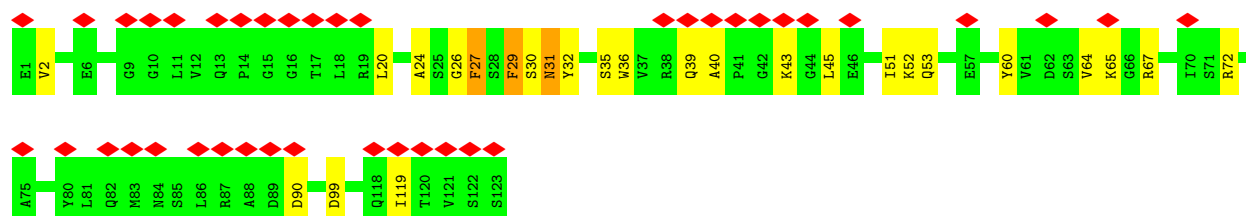
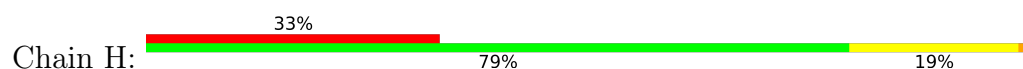


• Molecule 1: Spike glycoprotein

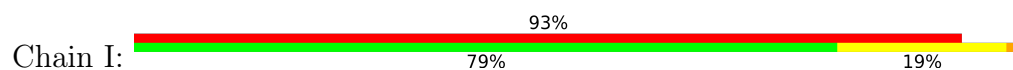




• Molecule 2: heavy chain of ZWD12

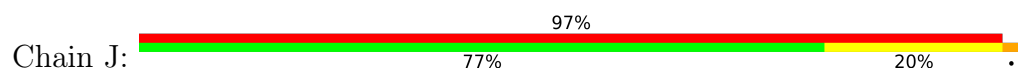


• Molecule 2: heavy chain of ZWD12

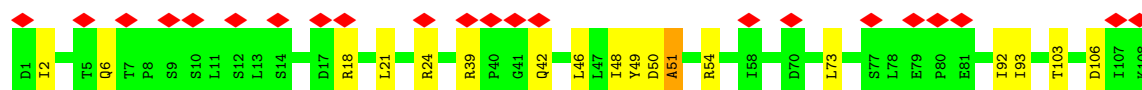
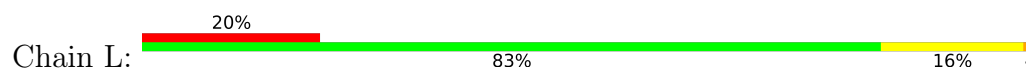




• Molecule 2: heavy chain of ZWD12



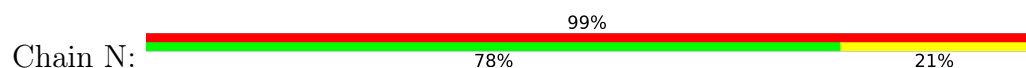
• Molecule 3: light chain of ZWD12

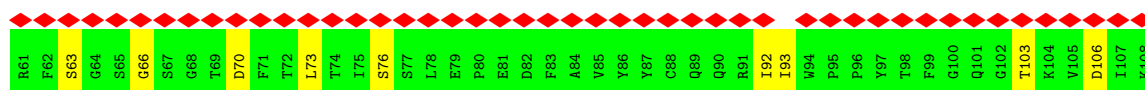


• Molecule 3: light chain of ZWD12



• Molecule 3: light chain of ZWD12





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



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



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



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



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



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



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

Chain a:  50% 50%



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

Chain b:  50% 100%



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

Chain c:  100% 50% 50%



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

Chain d:  50% 50%

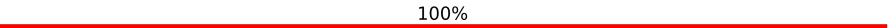


- Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain e:  50% 100%



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

Chain f:  100% 50% 50%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	159808	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.170	Depositor
Minimum map value	-0.096	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.025	Depositor
Map size (Å)	313.056, 313.056, 313.056	wwPDB
Map dimensions	288, 288, 288	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.087, 1.087, 1.087	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

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	0.46	1/7941 (0.0%)	0.63	2/10805 (0.0%)
1	B	0.45	0/7935	0.62	3/10797 (0.0%)
1	C	0.45	0/7935	0.61	2/10797 (0.0%)
2	H	0.32	0/990	0.67	0/1340
2	I	0.33	0/990	0.67	0/1340
2	J	0.33	0/990	0.67	0/1340
3	L	0.26	0/863	0.48	0/1176
3	M	0.26	0/863	0.49	0/1176
3	N	0.26	0/863	0.48	0/1176
All	All	0.43	1/29370 (0.0%)	0.61	7/39947 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	698	SER	CA-C	-6.52	1.44	1.52

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	86	PHE	CA-C-N	5.86	132.73	121.54
1	C	86	PHE	C-N-CA	5.86	132.73	121.54
1	A	86	PHE	CA-C-N	5.86	132.73	121.54
1	A	86	PHE	C-N-CA	5.86	132.73	121.54
1	B	86	PHE	CA-C-N	5.85	132.72	121.54
1	B	86	PHE	C-N-CA	5.85	132.72	121.54
1	B	565	PHE	N-CA-C	5.61	116.78	108.86

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	7765	0	7574	411	0
1	B	7759	0	7569	339	0
1	C	7759	0	7570	373	0
2	H	967	0	924	20	0
2	I	967	0	924	21	0
2	J	967	0	924	28	0
3	L	842	0	819	22	0
3	M	842	0	819	86	0
3	N	842	0	819	41	0
4	D	28	0	25	0	0
4	E	28	0	25	0	0
4	F	28	0	25	0	0
4	G	28	0	25	1	0
4	K	28	0	25	1	0
4	O	28	0	25	0	0
4	P	28	0	25	0	0
4	Q	28	0	25	1	0
4	R	28	0	25	1	0
4	S	28	0	25	0	0
4	T	28	0	25	0	0
4	U	28	0	25	0	0
4	V	28	0	25	1	0
4	W	28	0	25	0	0
4	X	28	0	25	0	0
4	Y	28	0	25	1	0
4	Z	28	0	25	1	0
4	a	28	0	25	0	0
4	b	28	0	25	0	0
4	c	28	0	25	1	0
4	d	28	0	25	2	0
4	e	28	0	25	0	0
4	f	28	0	25	3	0
5	A	126	0	117	7	0
5	B	112	0	104	4	0
5	C	112	0	104	7	0
All	All	29704	0	28842	1166	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 20.

All (1166) 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:329:PHE:CE1	1:C:544:ASN:HA	1.42	1.51
1:B:521:PRO:CB	1:B:564:GLN:HG3	1.53	1.35
1:B:329:PHE:CE1	1:B:544:ASN:HA	1.61	1.34
1:C:522:ALA:HB2	1:C:544:ASN:ND2	1.47	1.29
1:A:703:ASN:HB2	1:B:787:GLN:OE1	1.28	1.27
1:A:449:TYR:CB	3:M:18:ARG:HG3	1.65	1.26
1:B:570:ALA:HB1	1:C:963:VAL:CG1	1.71	1.21
1:A:498:GLN:HB2	3:M:20:THR:HB	1.20	1.19
1:A:654:GLU:HG3	1:A:693:ILE:HG22	1.19	1.18
1:A:295:PRO:HB2	1:A:608:VAL:HG11	1.22	1.18
1:C:449:TYR:CE1	3:N:18:ARG:HD3	1.80	1.15
1:A:329:PHE:CE1	1:A:544:ASN:HA	1.82	1.15
1:B:329:PHE:HB3	1:B:330:PRO:HD2	1.26	1.15
1:A:449:TYR:HB2	3:M:18:ARG:CD	1.76	1.14
1:B:522:ALA:HB2	1:B:544:ASN:ND2	1.62	1.14
1:B:521:PRO:HB3	1:B:564:GLN:HG3	1.21	1.13
1:B:295:PRO:HB2	1:B:608:VAL:HG11	1.16	1.12
1:C:662:CYS:HB2	1:C:697:MET:HE3	1.27	1.12
1:B:382:VAL:HG23	1:C:983:ARG:HB2	1.26	1.11
1:B:570:ALA:HB1	1:C:963:VAL:HG11	1.24	1.11
1:C:329:PHE:CE1	1:C:544:ASN:CA	2.34	1.10
3:M:24:ARG:HD2	3:M:69:THR:HG22	1.24	1.10
1:A:449:TYR:HB3	3:M:18:ARG:HG3	1.29	1.10
1:A:446:GLY:CA	3:M:13:LEU:HD21	1.81	1.09
1:A:983:ARG:HA	1:C:382:VAL:HG23	1.10	1.09
1:A:404:GLY:HA3	1:A:504:GLY:HA2	1.31	1.08
1:B:748:GLU:HG3	1:B:981:LEU:HD21	1.32	1.08
1:C:295:PRO:HB2	1:C:608:VAL:HG11	1.31	1.08
1:C:569:ILE:H	1:C:569:ILE:HD12	1.17	1.07
1:C:328:ARG:HD2	1:C:578:ASP:OD1	1.53	1.06
1:C:522:ALA:HB2	1:C:544:ASN:HD22	0.91	1.06
1:A:498:GLN:HB2	3:M:20:THR:CB	1.85	1.06
1:C:449:TYR:CG	3:N:18:ARG:HD2	1.91	1.06
1:C:521:PRO:HG3	1:C:564:GLN:HG3	1.38	1.06
1:A:329:PHE:CD1	1:A:544:ASN:HA	1.90	1.05
1:A:493:GLN:NE2	3:M:63:SER:HB2	1.70	1.04
1:A:327:VAL:HG11	1:A:528:LYS:CE	1.86	1.04

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:449:TYR:CB	3:M:18:ARG:CG	2.34	1.04
1:B:560:LEU:HB3	1:B:562:PHE:CE1	1.93	1.03
1:A:449:TYR:HB2	3:M:18:ARG:HD2	1.36	1.03
1:B:328:ARG:HD2	1:B:578:ASP:OD1	1.59	1.03
1:A:327:VAL:CG1	1:A:528:LYS:HE3	1.89	1.02
3:M:24:ARG:CD	3:M:69:THR:HG22	1.88	1.02
1:C:560:LEU:HB3	1:C:562:PHE:CE1	1.93	1.02
1:A:501:ASN:HB2	1:A:506:GLN:NE2	1.74	1.02
1:A:560:LEU:HB3	1:A:562:PHE:CE1	1.93	1.01
4:f:1:NAG:C4	4:f:2:NAG:C1	2.38	1.01
1:A:493:GLN:HE21	3:M:63:SER:CB	1.72	1.01
1:C:329:PHE:CD1	1:C:544:ASN:HA	1.93	1.01
1:A:653:ALA:HA	1:A:692:ILE:O	1.59	1.01
1:B:331:ASN:O	1:B:332:ILE:HG23	1.61	1.00
1:B:570:ALA:CB	1:C:963:VAL:HG11	1.89	1.00
1:C:44:ARG:O	1:C:283:GLY:HA2	1.61	1.00
1:A:449:TYR:HB3	3:M:18:ARG:CG	1.91	1.00
1:A:44:ARG:O	1:A:283:GLY:HA2	1.61	1.00
1:A:494:SER:HB3	3:M:18:ARG:NH2	1.76	1.00
1:A:446:GLY:HA2	3:M:13:LEU:HD21	1.43	1.00
1:C:559:PHE:HZ	1:C:566:GLY:N	1.60	0.99
1:B:748:GLU:CG	1:B:981:LEU:HD21	1.91	0.99
1:B:329:PHE:HB3	1:B:330:PRO:CD	1.91	0.98
1:C:811:LYS:HB2	1:C:812:PRO:CD	1.91	0.98
1:B:382:VAL:CG2	1:C:983:ARG:HB2	1.92	0.97
1:C:449:TYR:CE2	3:N:18:ARG:HB2	1.98	0.97
1:A:327:VAL:HG11	1:A:528:LYS:HE3	0.96	0.96
1:A:501:ASN:HB2	1:A:506:GLN:HE22	1.27	0.95
1:C:560:LEU:HB2	1:C:563:GLN:OE1	1.65	0.95
1:C:329:PHE:HB3	1:C:330:PRO:HD2	1.45	0.95
1:A:493:GLN:HE21	3:M:63:SER:HB2	1.28	0.95
1:A:449:TYR:CB	3:M:18:ARG:CD	2.46	0.94
1:B:382:VAL:HG23	1:C:983:ARG:CB	1.95	0.94
1:B:521:PRO:CB	1:B:564:GLN:CG	2.44	0.94
3:M:24:ARG:HD2	3:M:69:THR:CG2	1.96	0.94
1:A:983:ARG:CA	1:C:382:VAL:HG23	1.98	0.94
1:B:318:PHE:CE1	1:B:620:VAL:O	2.21	0.93
1:A:703:ASN:OD1	1:B:789:TYR:HE1	1.50	0.93
1:A:40:ASP:CG	1:C:519:HIS:HE1	1.77	0.93
1:A:357:ARG:NH1	1:B:200:TYR:CZ	2.36	0.93
1:B:521:PRO:HB3	1:B:564:GLN:CG	1.98	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:329:PHE:HE1	1:C:544:ASN:HA	1.22	0.92
1:C:449:TYR:CE2	3:N:18:ARG:CB	2.52	0.92
1:A:654:GLU:HG3	1:A:693:ILE:CG2	2.00	0.92
1:B:357:ARG:HD3	1:C:230:PRO:HB2	1.51	0.91
1:C:811:LYS:HB2	1:C:812:PRO:HD2	1.50	0.91
1:A:498:GLN:CB	3:M:20:THR:HB	2.00	0.91
1:B:319:ARG:HG3	1:B:319:ARG:HH21	1.35	0.90
1:C:449:TYR:CD1	3:N:18:ARG:CD	2.55	0.90
1:A:551:VAL:HB	1:A:588:THR:CG2	2.02	0.90
3:M:18:ARG:CZ	3:M:76:SER:HA	2.01	0.90
1:A:319:ARG:HH21	1:A:319:ARG:HG3	1.35	0.89
1:A:446:GLY:HA3	3:M:13:LEU:HD21	1.51	0.89
1:C:522:ALA:CB	1:C:544:ASN:ND2	2.33	0.89
1:C:449:TYR:CD2	3:N:18:ARG:HD2	2.07	0.89
1:A:227:VAL:O	1:A:228:ASP:OD2	1.91	0.89
1:A:519:HIS:HE1	1:B:40:ASP:CB	1.86	0.89
1:A:449:TYR:HB2	3:M:18:ARG:CG	2.00	0.89
1:B:551:VAL:HB	1:B:588:THR:CG2	2.02	0.89
1:A:532:ASN:OD1	1:A:533:LEU:N	2.04	0.89
1:A:404:GLY:HA3	1:A:504:GLY:CA	2.03	0.88
1:B:329:PHE:CE1	1:B:544:ASN:CA	2.55	0.88
1:B:329:PHE:CD1	1:B:544:ASN:HA	2.08	0.88
1:C:551:VAL:HB	1:C:588:THR:CG2	2.02	0.88
1:C:449:TYR:CD1	3:N:18:ARG:HD3	2.08	0.88
1:A:533:LEU:HD12	1:A:534:VAL:N	1.89	0.88
1:C:449:TYR:CZ	3:N:18:ARG:HB3	2.09	0.88
1:C:533:LEU:HD12	1:C:534:VAL:N	1.89	0.87
1:A:445:VAL:HG23	2:J:59:HIS:NE2	1.89	0.87
1:B:295:PRO:CB	1:B:608:VAL:HG11	2.03	0.87
1:A:496:GLY:HA3	3:M:74:THR:CG2	2.05	0.87
1:C:45:SER:O	1:C:47:VAL:HG22	1.75	0.87
2:I:31:ASN:H	2:I:53:GLN:HB2	1.40	0.87
1:B:329:PHE:HE1	1:B:544:ASN:HA	1.31	0.86
1:B:333:THR:HG21	1:B:361:CYS:HA	1.57	0.86
1:A:496:GLY:CA	3:M:74:THR:CG2	2.54	0.86
1:B:533:LEU:HD12	1:B:534:VAL:N	1.89	0.86
1:A:45:SER:O	1:A:47:VAL:HG22	1.75	0.85
1:A:46:SER:HA	1:A:279:TYR:O	1.76	0.85
1:A:227:VAL:C	1:A:228:ASP:OD2	2.18	0.85
1:B:521:PRO:HB2	1:B:564:GLN:HG3	1.54	0.85
1:B:45:SER:O	1:B:47:VAL:HG22	1.75	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:40:ASP:OD2	1:C:519:HIS:HE1	1.57	0.85
1:C:46:SER:HA	1:C:279:TYR:O	1.76	0.85
1:A:519:HIS:HE1	1:B:40:ASP:HB3	1.40	0.84
1:A:496:GLY:CA	3:M:74:THR:HG21	2.05	0.84
1:B:565:PHE:HE1	1:C:42:VAL:HG22	1.42	0.84
1:C:41:LYS:H	1:C:41:LYS:HD2	1.39	0.84
1:A:729:VAL:HG13	1:A:1059:GLY:HA2	1.57	0.84
1:B:46:SER:HA	1:B:279:TYR:O	1.76	0.84
1:B:44:ARG:O	1:B:283:GLY:HA2	1.78	0.84
2:J:31:ASN:H	2:J:53:GLN:HB2	1.40	0.83
1:A:703:ASN:OD1	1:B:789:TYR:CE1	2.32	0.83
1:C:449:TYR:CZ	3:N:18:ARG:HD3	2.14	0.83
2:H:31:ASN:H	2:H:53:GLN:HB2	1.40	0.83
1:C:389:ASP:HA	1:C:528:LYS:NZ	1.94	0.83
1:A:653:ALA:CA	1:A:692:ILE:O	2.27	0.82
1:C:318:PHE:CE1	1:C:620:VAL:O	2.33	0.81
1:B:901:GLN:HE21	1:B:905:ARG:HE	1.26	0.81
1:A:560:LEU:HD13	1:A:562:PHE:CE1	2.16	0.81
1:B:560:LEU:HD13	1:B:562:PHE:CE1	2.16	0.81
1:C:329:PHE:HB3	1:C:330:PRO:CD	2.10	0.81
1:C:560:LEU:HD13	1:C:562:PHE:CE1	2.16	0.81
1:C:901:GLN:HE21	1:C:905:ARG:HE	1.27	0.81
1:A:439:ASN:CG	1:A:506:GLN:HG2	2.05	0.80
1:A:449:TYR:HB2	3:M:18:ARG:HG3	1.60	0.80
1:A:505:TYR:OH	3:M:66:GLY:CA	2.30	0.80
1:B:559:PHE:CZ	1:B:565:PHE:C	2.60	0.80
5:A:1405:NAG:HN2	1:C:558:LYS:HE3	1.47	0.80
1:A:559:PHE:CE2	1:A:564:GLN:O	2.34	0.79
1:B:748:GLU:N	1:B:748:GLU:OE2	2.14	0.79
1:B:558:LYS:HE3	5:C:1405:NAG:HN2	1.47	0.79
1:A:707:TYR:HB2	1:B:883:THR:HG23	1.65	0.79
1:C:449:TYR:CG	3:N:18:ARG:CD	2.65	0.79
1:B:318:PHE:HE1	1:B:620:VAL:O	1.65	0.79
1:C:521:PRO:HG3	1:C:564:GLN:CG	2.12	0.79
1:B:560:LEU:HD13	1:B:562:PHE:HE1	1.48	0.78
1:B:743:CYS:SG	1:B:749:CYS:C	2.67	0.78
1:A:295:PRO:CB	1:A:608:VAL:HG11	2.10	0.78
1:C:521:PRO:CG	1:C:564:GLN:HG3	2.12	0.78
1:A:159:VAL:HG22	1:A:160:TYR:H	1.48	0.78
1:A:560:LEU:HD13	1:A:562:PHE:HE1	1.48	0.78
1:B:159:VAL:HG22	1:B:160:TYR:H	1.48	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:40:ASP:OD2	1:C:519:HIS:CE1	2.37	0.78
1:A:505:TYR:OH	3:M:66:GLY:HA2	1.84	0.78
1:C:560:LEU:HD13	1:C:562:PHE:HE1	1.48	0.77
1:A:328:ARG:NH2	1:A:580:GLN:HG3	1.99	0.77
1:C:159:VAL:HG22	1:C:160:TYR:H	1.48	0.77
1:C:328:ARG:CD	1:C:578:ASP:OD1	2.29	0.77
1:A:452:ARG:HH11	1:A:452:ARG:CB	1.98	0.77
1:A:455:LEU:HD13	1:A:493:GLN:OE1	1.85	0.76
1:A:382:VAL:HG23	1:B:983:ARG:HA	1.66	0.76
1:B:327:VAL:HG11	1:B:528:LYS:HD3	1.68	0.76
1:B:521:PRO:CA	1:B:564:GLN:HG3	2.16	0.76
1:A:441:LEU:HD21	2:J:104:GLU:HB2	1.66	0.76
2:H:27:PHE:HD1	2:H:27:PHE:H	1.34	0.76
1:A:502:GLY:O	1:A:505:TYR:HB2	1.86	0.76
1:B:329:PHE:CB	1:B:330:PRO:CD	2.64	0.76
1:C:559:PHE:CZ	1:C:566:GLY:N	2.51	0.76
1:A:1125:ASN:H	1:A:1125:ASN:HD22	1.33	0.76
1:C:329:PHE:CD1	1:C:544:ASN:CA	2.65	0.76
1:C:452:ARG:HH11	1:C:452:ARG:CB	1.98	0.76
1:C:735:SER:OG	1:C:859:THR:CG2	2.34	0.75
2:I:24:ALA:HB1	2:I:27:PHE:CE1	2.21	0.75
1:A:826:VAL:HG13	1:A:1057:PRO:HG2	1.67	0.75
1:B:452:ARG:CB	1:B:452:ARG:HH11	1.98	0.75
2:H:24:ALA:HB1	2:H:27:PHE:CE1	2.21	0.75
1:A:703:ASN:CB	1:B:787:GLN:OE1	2.23	0.75
1:A:854:LYS:O	1:A:855:PHE:HB2	1.87	0.75
1:A:558:LYS:CD	1:A:558:LYS:H	2.00	0.75
1:A:449:TYR:CG	3:M:18:ARG:HG3	2.22	0.75
1:C:558:LYS:CD	1:C:558:LYS:H	2.00	0.75
1:C:559:PHE:CZ	1:C:565:PHE:C	2.65	0.74
1:C:47:VAL:O	1:C:49:HIS:N	2.20	0.74
2:J:27:PHE:HD1	2:J:27:PHE:H	1.34	0.74
1:B:47:VAL:O	1:B:49:HIS:N	2.20	0.74
1:B:560:LEU:HB2	1:B:563:GLN:OE1	1.87	0.74
1:B:558:LYS:CD	1:B:558:LYS:H	2.00	0.74
1:B:559:PHE:HZ	1:B:566:GLY:N	1.86	0.74
1:B:565:PHE:CE1	1:C:42:VAL:HG22	2.23	0.74
1:A:200:TYR:CE1	1:A:228:ASP:HB3	2.21	0.74
1:A:983:ARG:HA	1:C:382:VAL:CG2	2.05	0.74
2:J:24:ALA:HB1	2:J:27:PHE:CE1	2.21	0.74
1:B:382:VAL:HG23	1:C:983:ARG:CA	2.17	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:328:ARG:HD2	1:A:578:ASP:OD1	1.88	0.74
1:B:559:PHE:HZ	1:B:565:PHE:C	1.96	0.74
1:C:564:GLN:HA	1:C:564:GLN:NE2	2.01	0.74
1:C:559:PHE:HE2	1:C:565:PHE:CA	2.01	0.73
1:A:381:GLY:O	1:B:983:ARG:HB3	1.89	0.73
1:A:43:PHE:N	1:C:565:PHE:O	2.21	0.73
1:A:47:VAL:O	1:A:49:HIS:N	2.20	0.73
2:I:27:PHE:HD1	2:I:27:PHE:H	1.34	0.73
1:A:502:GLY:HA3	3:M:70:ASP:OD2	1.88	0.73
1:B:564:GLN:NE2	1:B:565:PHE:CD2	2.57	0.73
1:C:811:LYS:CB	1:C:812:PRO:CD	2.66	0.73
1:A:546:LEU:HD11	1:A:565:PHE:CD2	2.23	0.73
1:B:522:ALA:HB2	1:B:544:ASN:CG	2.13	0.73
1:B:357:ARG:HD3	1:C:230:PRO:CB	2.17	0.72
1:C:449:TYR:CE1	3:N:18:ARG:CD	2.65	0.72
1:C:498:GLN:CD	3:N:20:THR:HG21	2.14	0.72
1:B:1142:GLN:HG3	1:B:1143:PRO:HD3	1.71	0.72
1:A:654:GLU:CG	1:A:693:ILE:HG22	2.11	0.72
1:C:498:GLN:OE1	3:N:20:THR:CG2	2.38	0.72
1:B:319:ARG:HG3	1:B:319:ARG:NH2	2.03	0.72
1:B:522:ALA:CB	1:B:544:ASN:ND2	2.48	0.72
1:C:675:GLN:CG	1:C:676:THR:H	2.03	0.72
1:C:533:LEU:HD12	1:C:533:LEU:C	2.15	0.72
1:B:973:ILE:HG12	1:B:992:GLN:HE21	1.53	0.71
3:M:18:ARG:HG2	3:M:76:SER:O	1.90	0.71
1:A:496:GLY:HA3	3:M:74:THR:HG23	1.71	0.71
1:A:519:HIS:CE1	1:B:40:ASP:CB	2.71	0.71
1:B:328:ARG:CD	1:B:578:ASP:OD1	2.36	0.71
1:A:790:LYS:NZ	1:C:702:GLU:OE2	2.20	0.71
4:f:1:NAG:H4	4:f:2:NAG:C1	2.21	0.71
1:C:559:PHE:CE2	1:C:565:PHE:HA	2.26	0.71
1:A:42:VAL:HA	1:C:565:PHE:O	1.91	0.71
1:B:332:ILE:O	1:B:333:THR:OG1	2.08	0.71
1:B:124:THR:HG21	5:B:1402:NAG:HN2	1.56	0.71
1:C:124:THR:HG21	5:C:1402:NAG:HN2	1.56	0.71
1:A:124:THR:HG21	5:A:1402:NAG:HN2	1.56	0.70
1:B:533:LEU:HD12	1:B:533:LEU:C	2.15	0.70
1:B:523:THR:O	1:B:524:VAL:O	2.09	0.70
1:A:533:LEU:HD12	1:A:533:LEU:C	2.15	0.70
1:B:567:ARG:HD2	1:C:42:VAL:CG1	2.22	0.70
1:C:43:PHE:O	1:C:44:ARG:HG3	1.92	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:329:PHE:HE1	1:C:544:ASN:CA	1.91	0.70
3:M:64:GLY:O	3:M:65:SER:OG	2.07	0.70
3:M:18:ARG:CZ	3:M:76:SER:CA	2.69	0.70
1:A:45:SER:OG	1:A:46:SER:N	2.25	0.70
1:B:392:PHE:CG	1:B:515:PHE:HB3	2.27	0.70
1:B:662:CYS:HB2	1:B:697:MET:HE3	1.73	0.70
1:C:329:PHE:HD1	1:C:544:ASN:HB3	1.56	0.70
1:C:392:PHE:CG	1:C:515:PHE:HB3	2.27	0.70
1:A:319:ARG:HG3	1:A:319:ARG:NH2	2.03	0.70
1:B:690:GLN:N	1:B:690:GLN:OE1	2.25	0.70
1:C:187:LYS:N	1:C:212:LEU:O	2.25	0.69
1:A:392:PHE:CD1	1:A:515:PHE:HB3	2.27	0.69
1:C:945:LEU:HD12	1:C:948:LEU:HD12	1.74	0.69
1:A:44:ARG:O	1:A:283:GLY:CA	2.40	0.69
1:B:394:ASN:ND2	1:C:200:TYR:OH	2.26	0.69
1:A:187:LYS:N	1:A:212:LEU:O	2.25	0.69
1:A:42:VAL:HG22	1:C:565:PHE:CE1	2.27	0.69
1:A:392:PHE:CG	1:A:515:PHE:HB3	2.27	0.69
1:C:329:PHE:CD1	1:C:544:ASN:CB	2.75	0.69
1:B:187:LYS:N	1:B:212:LEU:O	2.25	0.69
1:A:159:VAL:HG22	1:A:160:TYR:N	2.07	0.69
1:B:529:LYS:HD2	1:B:529:LYS:N	2.07	0.69
1:B:570:ALA:HB1	1:C:963:VAL:HG12	1.70	0.69
1:B:43:PHE:O	1:B:44:ARG:HG3	1.93	0.69
1:B:986:PRO:HB2	1:B:987:PRO:HD3	1.74	0.69
1:C:392:PHE:CD1	1:C:515:PHE:HB3	2.27	0.69
1:A:551:VAL:HB	1:A:588:THR:HG23	1.74	0.68
1:B:392:PHE:CD1	1:B:515:PHE:HB3	2.27	0.68
1:C:159:VAL:HG22	1:C:160:TYR:N	2.08	0.68
1:A:501:ASN:CB	1:A:506:GLN:HE22	2.04	0.68
1:B:551:VAL:HB	1:B:588:THR:HG23	1.74	0.68
1:B:560:LEU:O	1:B:562:PHE:N	2.27	0.68
1:A:560:LEU:O	1:A:562:PHE:N	2.27	0.68
1:B:159:VAL:HG22	1:B:160:TYR:N	2.08	0.68
1:A:494:SER:HB3	3:M:18:ARG:HH22	1.59	0.68
1:C:551:VAL:HB	1:C:588:THR:HG23	1.74	0.68
1:C:560:LEU:O	1:C:562:PHE:N	2.26	0.68
1:B:569:ILE:HD12	1:B:569:ILE:H	1.59	0.68
1:A:40:ASP:CG	1:C:519:HIS:CE1	2.67	0.68
1:A:43:PHE:CE1	1:A:283:GLY:HA3	2.29	0.68
1:A:559:PHE:CD1	1:A:584:ILE:HG21	2.28	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:45:SER:OG	1:C:46:SER:N	2.25	0.68
1:A:493:GLN:HE21	3:M:63:SER:HB3	1.57	0.67
1:B:333:THR:HG22	1:B:334:ASN:N	2.09	0.67
1:B:558:LYS:CE	5:C:1405:NAG:HN2	2.06	0.67
1:C:96:GLU:OE1	1:C:98:SER:N	2.28	0.67
1:C:569:ILE:H	1:C:569:ILE:CD1	1.96	0.67
1:A:445:VAL:CG2	2:J:59:HIS:CD2	2.78	0.67
1:C:498:GLN:CD	3:N:20:THR:CG2	2.68	0.67
1:A:546:LEU:HD11	1:A:565:PHE:HD2	1.59	0.67
1:A:564:GLN:N	1:A:564:GLN:HE21	1.92	0.67
1:B:1045:LYS:NZ	1:C:786:LYS:HE3	2.09	0.67
1:A:854:LYS:O	1:A:855:PHE:CB	2.42	0.67
1:B:560:LEU:N	1:B:563:GLN:OE1	2.27	0.67
1:B:570:ALA:CB	1:C:963:VAL:CG1	2.57	0.67
1:C:449:TYR:CZ	3:N:18:ARG:CB	2.76	0.67
1:C:559:PHE:CE2	1:C:565:PHE:CA	2.77	0.67
1:A:442:ASP:O	1:A:507:PRO:HG3	1.95	0.66
1:B:37:TYR:O	1:B:39:PRO:HD3	1.95	0.66
1:B:449:TYR:CG	3:L:18:ARG:HD2	2.30	0.66
1:A:37:TYR:O	1:A:39:PRO:HD3	1.95	0.66
1:B:48:LEU:HD23	1:B:305:SER:HA	1.75	0.66
1:A:187:LYS:HG2	1:A:213:VAL:HA	1.78	0.66
1:A:332:ILE:O	1:A:333:THR:HG23	1.96	0.66
1:B:187:LYS:HG2	1:B:213:VAL:HA	1.78	0.66
1:C:37:TYR:O	1:C:39:PRO:HD3	1.95	0.66
3:M:18:ARG:NE	3:M:76:SER:HA	2.09	0.66
1:A:96:GLU:OE1	1:A:98:SER:N	2.28	0.66
1:C:389:ASP:HA	1:C:528:LYS:HZ2	1.60	0.66
1:B:719:THR:HA	1:B:926:GLN:HE22	1.60	0.66
1:B:564:GLN:HE21	1:B:564:GLN:C	2.04	0.66
1:C:431:GLY:HA3	1:C:513:LEU:O	1.96	0.66
1:C:187:LYS:HG2	1:C:213:VAL:HA	1.77	0.65
1:C:389:ASP:HA	1:C:528:LYS:HZ1	1.60	0.65
1:A:431:GLY:HA3	1:A:513:LEU:O	1.96	0.65
1:B:431:GLY:HA3	1:B:513:LEU:O	1.96	0.65
1:B:96:GLU:OE1	1:B:98:SER:N	2.28	0.65
3:L:24:ARG:NH1	3:M:27:GLU:OE2	2.30	0.65
1:A:506:GLN:HB3	1:A:507:PRO:HD2	1.79	0.65
1:B:560:LEU:HB2	1:B:563:GLN:CD	2.22	0.65
1:A:321:GLN:HA	1:A:321:GLN:OE1	1.97	0.64
1:B:567:ARG:CD	1:C:42:VAL:HG11	2.27	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:505:TYR:CE2	3:N:70:ASP:HB2	2.32	0.64
3:M:24:ARG:NE	3:M:70:ASP:OD1	2.30	0.64
1:B:45:SER:OG	1:B:46:SER:N	2.25	0.64
1:A:559:PHE:CD2	1:A:564:GLN:O	2.51	0.64
1:C:558:LYS:H	1:C:558:LYS:HD2	1.62	0.64
1:A:569:ILE:HD12	1:A:569:ILE:H	1.63	0.64
1:C:449:TYR:CE2	3:N:18:ARG:HB3	2.28	0.64
1:A:318:PHE:CZ	1:A:619:GLU:O	2.50	0.64
1:C:569:ILE:C	1:C:571:ASP:H	2.03	0.64
1:B:393:THR:HG22	1:B:520:ALA:HB3	1.79	0.64
1:A:448:ASN:O	3:M:18:ARG:HB2	1.98	0.64
1:A:43:PHE:CE1	1:A:282:ASN:O	2.51	0.63
1:A:48:LEU:HD23	1:A:305:SER:HA	1.80	0.63
1:A:449:TYR:HE1	1:A:450:ASN:ND2	1.95	0.63
5:A:1405:NAG:HN2	1:C:558:LYS:CE	2.12	0.63
1:A:117:LEU:HD12	1:A:118:LEU:H	1.64	0.63
1:B:117:LEU:HD12	1:B:118:LEU:H	1.64	0.63
1:B:333:THR:CG2	1:B:361:CYS:HA	2.28	0.63
1:C:559:PHE:HZ	1:C:565:PHE:C	2.03	0.63
1:A:334:ASN:OD1	1:A:334:ASN:N	2.31	0.63
1:A:318:PHE:CE1	1:A:620:VAL:O	2.51	0.63
1:A:700:GLY:O	1:A:701:ALA:O	2.17	0.63
1:C:329:PHE:CB	1:C:330:PRO:CD	2.77	0.63
1:A:496:GLY:CA	3:M:74:THR:HG23	2.27	0.63
2:J:31:ASN:H	2:J:53:GLN:CB	2.12	0.63
1:C:321:GLN:HA	1:C:321:GLN:OE1	1.97	0.63
1:A:558:LYS:H	1:A:558:LYS:HD2	1.62	0.63
1:C:96:GLU:OE1	1:C:97:LYS:N	2.32	0.62
1:C:332:ILE:HG22	1:C:333:THR:N	2.14	0.62
1:C:117:LEU:HD12	1:C:118:LEU:H	1.64	0.62
1:C:329:PHE:HD1	1:C:544:ASN:CB	2.10	0.62
1:A:43:PHE:HE1	1:A:282:ASN:O	1.82	0.62
1:A:455:LEU:HD22	1:A:493:GLN:HB2	1.80	0.62
1:B:521:PRO:O	1:B:544:ASN:ND2	2.32	0.62
1:B:566:GLY:HA2	1:C:43:PHE:HB3	1.80	0.62
2:J:2:VAL:HA	2:J:26:GLY:HA3	1.81	0.62
3:N:2:ILE:HD11	3:N:93:ILE:HD12	1.82	0.62
1:A:96:GLU:OE1	1:A:97:LYS:N	2.32	0.62
1:A:808:ASP:HB3	1:A:811:LYS:HD2	1.82	0.62
1:C:124:THR:OG1	1:C:125:ASN:N	2.32	0.62
1:C:804:GLN:HA	1:C:817:PRO:HG2	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:2:ILE:HD11	3:L:93:ILE:HD12	1.82	0.62
1:A:506:GLN:CB	1:A:507:PRO:HD2	2.30	0.62
1:B:321:GLN:OE1	1:B:321:GLN:HA	1.97	0.62
1:B:558:LYS:H	1:B:558:LYS:HD2	1.62	0.62
2:H:2:VAL:HA	2:H:26:GLY:HA3	1.81	0.62
1:A:449:TYR:C	1:A:451:TYR:H	2.07	0.62
1:B:44:ARG:O	1:B:283:GLY:CA	2.48	0.62
1:C:813:SER:O	1:C:814:LYS:HE2	2.00	0.62
1:C:41:LYS:HD2	1:C:41:LYS:N	2.12	0.62
1:C:811:LYS:HB2	1:C:812:PRO:HD3	1.80	0.62
1:B:124:THR:OG1	1:B:125:ASN:N	2.32	0.62
1:B:96:GLU:OE1	1:B:97:LYS:N	2.32	0.61
1:B:335:LEU:O	1:B:336:CYS:C	2.43	0.61
1:A:522:ALA:HB2	1:A:544:ASN:HD22	1.65	0.61
1:C:44:ARG:O	1:C:283:GLY:CA	2.42	0.61
2:I:2:VAL:HA	2:I:26:GLY:HA3	1.81	0.61
1:A:40:ASP:CB	1:C:519:HIS:HE1	2.14	0.61
1:A:124:THR:OG1	1:A:125:ASN:N	2.33	0.61
1:A:1077:THR:HG22	1:A:1095:PHE:O	2.01	0.61
1:B:567:ARG:HB2	1:C:42:VAL:HG12	1.82	0.61
1:A:448:ASN:O	1:A:449:TYR:HB3	1.98	0.61
1:B:523:THR:HG22	1:B:524:VAL:H	1.65	0.61
1:B:617:CYS:H	1:B:644:GLN:HE22	1.49	0.61
1:B:394:ASN:ND2	1:C:200:TYR:CE2	2.69	0.61
3:M:2:ILE:HD11	3:M:93:ILE:HD12	1.82	0.61
1:B:524:VAL:HG22	1:B:525:CYS:N	2.16	0.61
1:B:654:GLU:HG3	1:B:693:ILE:HG22	1.82	0.61
1:A:674:TYR:HH	1:A:690:GLN:N	1.98	0.60
1:A:524:VAL:HG22	1:A:525:CYS:N	2.16	0.60
1:A:559:PHE:HE2	1:A:565:PHE:O	1.84	0.60
1:A:617:CYS:H	1:A:644:GLN:HE22	1.49	0.60
1:A:982:SER:OG	1:C:390:LEU:HD21	2.01	0.60
1:B:569:ILE:HG13	1:C:47:VAL:HG11	1.84	0.60
1:A:498:GLN:HG2	1:A:499:PRO:HD2	1.83	0.60
1:B:326:ILE:HD12	1:B:326:ILE:O	2.02	0.60
1:A:326:ILE:HD12	1:A:326:ILE:O	2.02	0.60
1:B:645:THR:HG22	1:B:647:ALA:H	1.66	0.60
1:C:569:ILE:HG22	1:C:570:ALA:H	1.65	0.60
3:L:24:ARG:NH2	3:M:27:GLU:OE2	2.34	0.60
1:B:357:ARG:HH11	1:B:357:ARG:CG	2.14	0.60
1:C:295:PRO:CB	1:C:608:VAL:HG11	2.20	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:449:TYR:CD2	3:N:18:ARG:CD	2.84	0.60
1:C:556:ASN:HD22	1:C:556:ASN:H	1.49	0.60
1:C:563:GLN:O	1:C:577:ARG:NH1	2.35	0.60
1:C:645:THR:HG22	1:C:647:ALA:H	1.66	0.60
2:I:31:ASN:H	2:I:53:GLN:CB	2.12	0.60
1:A:291:CYS:CB	1:A:301:CYS:SG	2.90	0.60
1:C:449:TYR:CZ	3:N:18:ARG:CD	2.84	0.60
1:B:452:ARG:HH11	1:B:452:ARG:CG	2.14	0.60
1:B:528:LYS:C	1:B:529:LYS:HD2	2.25	0.60
1:B:567:ARG:HD2	1:C:42:VAL:HG11	1.84	0.59
1:C:452:ARG:HH11	1:C:452:ARG:CG	2.14	0.59
1:A:445:VAL:CG2	2:J:59:HIS:NE2	2.62	0.59
1:B:521:PRO:HB2	1:B:564:GLN:CG	2.24	0.59
1:C:662:CYS:HB2	1:C:697:MET:CE	2.17	0.59
1:B:329:PHE:CD1	1:B:544:ASN:CA	2.83	0.59
1:C:560:LEU:CD1	1:C:562:PHE:CE1	2.86	0.59
3:M:24:ARG:HD3	3:M:69:THR:HG22	1.81	0.59
1:A:449:TYR:O	1:A:451:TYR:N	2.34	0.59
1:C:326:ILE:HD12	1:C:326:ILE:O	2.02	0.59
1:A:392:PHE:CD2	1:A:515:PHE:CD1	2.91	0.59
1:A:442:ASP:OD1	1:A:442:ASP:N	2.34	0.59
1:B:164:ASN:OD1	1:B:164:ASN:N	2.35	0.59
1:B:206:LYS:NZ	1:B:221:SER:OG	2.35	0.59
3:M:66:GLY:O	3:M:67:SER:HB2	2.03	0.59
1:A:42:VAL:HG22	1:C:565:PHE:CZ	2.37	0.59
1:B:357:ARG:O	1:B:357:ARG:HG3	2.03	0.59
1:C:675:GLN:HG2	1:C:676:THR:H	1.67	0.59
1:A:43:PHE:HB3	1:C:566:GLY:HA2	1.83	0.59
1:A:645:THR:HG22	1:A:647:ALA:H	1.66	0.59
1:B:382:VAL:HG23	1:C:983:ARG:O	2.03	0.59
1:C:392:PHE:CD2	1:C:515:PHE:CD1	2.91	0.59
1:C:449:TYR:CD1	3:N:18:ARG:NH1	2.70	0.59
1:A:670:ILE:HA	1:A:695:TYR:O	2.03	0.59
1:B:738:CYS:O	1:B:742:ILE:HG13	2.03	0.59
1:C:206:LYS:NZ	1:C:221:SER:OG	2.35	0.59
1:A:556:ASN:HD22	1:A:556:ASN:H	1.49	0.58
1:C:524:VAL:HG22	1:C:525:CYS:N	2.16	0.58
1:B:390:LEU:O	1:B:525:CYS:SG	2.61	0.58
1:C:617:CYS:H	1:C:644:GLN:HE22	1.49	0.58
1:A:506:GLN:CB	1:A:507:PRO:CD	2.80	0.58
1:A:722:VAL:HA	1:A:1064:HIS:O	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:A:1405:NAG:H3	5:A:1405:NAG:H83	1.86	0.58
1:B:392:PHE:CD2	1:B:515:PHE:CD1	2.91	0.58
1:C:390:LEU:O	1:C:525:CYS:SG	2.61	0.58
2:H:31:ASN:H	2:H:53:GLN:CB	2.12	0.58
1:A:164:ASN:OD1	1:A:164:ASN:N	2.35	0.58
1:A:496:GLY:HA2	3:M:74:THR:HG21	1.86	0.58
1:B:556:ASN:H	1:B:556:ASN:HD22	1.49	0.58
1:C:164:ASN:OD1	1:C:164:ASN:N	2.35	0.58
2:H:29:PHE:CE2	2:H:72:ARG:NH1	2.72	0.58
2:I:29:PHE:CE2	2:I:72:ARG:NH1	2.72	0.58
1:A:560:LEU:CD1	1:A:562:PHE:CE1	2.86	0.58
1:A:48:LEU:HD13	1:A:48:LEU:H	1.69	0.58
1:A:494:SER:CB	3:M:18:ARG:NH2	2.59	0.58
4:c:2:NAG:H3	4:c:2:NAG:H83	1.86	0.58
1:B:386:LYS:HG2	1:C:982:SER:O	2.04	0.58
1:B:901:GLN:NE2	1:B:905:ARG:HE	1.99	0.58
1:A:329:PHE:CD1	1:A:544:ASN:CA	2.77	0.58
1:A:390:LEU:O	1:A:525:CYS:SG	2.61	0.58
1:B:48:LEU:HD13	1:B:48:LEU:H	1.69	0.58
2:J:29:PHE:CE2	2:J:72:ARG:NH1	2.72	0.58
1:A:503:VAL:HG12	1:A:504:GLY:N	2.19	0.58
1:A:452:ARG:HH11	1:A:452:ARG:CG	2.14	0.57
1:A:813:SER:O	1:A:813:SER:OG	2.18	0.57
1:A:206:LYS:NZ	1:A:221:SER:OG	2.35	0.57
1:A:901:GLN:HE21	1:A:905:ARG:HE	1.50	0.57
1:C:551:VAL:HB	1:C:588:THR:HG22	1.86	0.57
1:C:811:LYS:CB	1:C:812:PRO:HD2	2.28	0.57
1:A:446:GLY:HA3	3:M:13:LEU:CD2	2.32	0.57
1:A:519:HIS:CE1	1:B:40:ASP:HB3	2.29	0.57
1:A:227:VAL:HG12	1:A:228:ASP:N	2.20	0.57
1:C:804:GLN:HE21	1:C:935:GLN:HE22	1.52	0.57
1:A:276:LEU:HD23	1:A:306:PHE:CE1	2.39	0.57
1:A:445:VAL:HG21	2:J:59:HIS:CD2	2.39	0.57
5:B:1405:NAG:H83	5:B:1405:NAG:H3	1.86	0.57
1:C:41:LYS:H	1:C:41:LYS:CD	2.05	0.57
1:C:47:VAL:O	1:C:47:VAL:HG23	2.04	0.57
1:C:105:ILE:HG12	1:C:239:GLN:HB2	1.87	0.57
1:B:559:PHE:CE2	1:B:565:PHE:HA	2.39	0.57
1:A:439:ASN:OD1	1:A:506:GLN:HG2	2.04	0.57
1:B:47:VAL:O	1:B:47:VAL:HG23	2.04	0.57
1:B:318:PHE:CZ	1:B:619:GLU:O	2.57	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:47:VAL:O	1:A:47:VAL:HG23	2.04	0.57
1:A:329:PHE:CE1	1:A:544:ASN:CA	2.74	0.57
1:A:45:SER:O	1:A:279:TYR:HB2	2.05	0.57
1:A:498:GLN:NE2	3:M:20:THR:O	2.38	0.57
1:B:43:PHE:CG	1:B:44:ARG:N	2.73	0.57
1:B:227:VAL:HG12	1:B:228:ASP:N	2.20	0.57
1:C:48:LEU:HD13	1:C:48:LEU:H	1.69	0.57
1:A:290:ASP:O	1:A:297:SER:HB3	2.05	0.57
1:B:559:PHE:HE2	1:B:565:PHE:CA	2.18	0.57
1:C:290:ASP:O	1:C:297:SER:HB3	2.05	0.57
1:A:29:THR:HG22	1:A:30:ASN:H	1.70	0.56
1:A:898:PHE:N	1:A:899:PRO:CD	2.67	0.56
1:A:105:ILE:HG12	1:A:239:GLN:HB2	1.87	0.56
1:B:43:PHE:CD2	1:B:44:ARG:N	2.73	0.56
1:C:559:PHE:CE2	1:C:565:PHE:C	2.84	0.56
1:A:357:ARG:NH1	1:B:200:TYR:CE1	2.73	0.56
1:A:568:ASP:O	1:A:571:ASP:N	2.39	0.56
1:B:105:ILE:HG12	1:B:239:GLN:HB2	1.87	0.56
1:C:227:VAL:HG12	1:C:228:ASP:N	2.20	0.56
4:d:2:NAG:H83	4:d:2:NAG:H3	1.87	0.56
1:A:449:TYR:CD1	1:A:450:ASN:N	2.73	0.56
1:A:589:PRO:O	1:A:590:CYS:O	2.22	0.56
1:C:29:THR:HG22	1:C:30:ASN:H	1.70	0.56
1:A:449:TYR:CE1	1:A:450:ASN:ND2	2.73	0.56
1:A:496:GLY:HA2	3:M:74:THR:CG2	2.33	0.56
1:A:983:ARG:HB2	1:C:381:GLY:O	2.05	0.56
1:B:394:ASN:ND2	1:C:200:TYR:HE2	2.04	0.56
1:C:654:GLU:HG3	1:C:693:ILE:HG22	1.87	0.56
1:B:29:THR:HG22	1:B:30:ASN:H	1.70	0.56
1:C:735:SER:OG	1:C:859:THR:HG23	2.04	0.56
1:B:560:LEU:CD1	1:B:562:PHE:CE1	2.86	0.56
1:C:569:ILE:C	1:C:571:ASP:N	2.64	0.56
5:C:1405:NAG:H3	5:C:1405:NAG:H83	1.86	0.56
3:L:50:ASP:O	3:L:51:ALA:HB3	2.05	0.56
3:M:50:ASP:O	3:M:51:ALA:HB3	2.05	0.56
1:A:41:LYS:O	1:A:42:VAL:HB	2.05	0.56
1:A:506:GLN:HB3	1:A:507:PRO:CD	2.35	0.56
1:B:663:ASP:OD2	1:B:673:SER:OG	2.22	0.56
1:A:559:PHE:HD2	1:A:563:GLN:O	1.88	0.56
1:A:699:LEU:HD22	1:B:873:TYR:CZ	2.40	0.56
1:B:331:ASN:O	1:B:332:ILE:CG2	2.46	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:67:ARG:NH2	2:J:90:ASP:OD2	2.39	0.56
1:A:45:SER:HA	1:A:280:ASN:O	2.06	0.56
1:A:660:TYR:O	1:A:698:SER:HB2	2.05	0.56
1:B:45:SER:O	1:B:279:TYR:HB2	2.05	0.56
1:B:382:VAL:HG23	1:C:983:ARG:C	2.31	0.56
1:A:57:PRO:O	1:A:60:SER:OG	2.24	0.55
1:B:329:PHE:CE1	1:B:391:CYS:SG	2.99	0.55
1:A:556:ASN:HD22	1:A:556:ASN:N	2.05	0.55
1:B:521:PRO:O	1:B:522:ALA:HB2	2.06	0.55
1:C:45:SER:O	1:C:279:TYR:HB2	2.05	0.55
1:B:382:VAL:CG2	1:C:983:ARG:CB	2.70	0.55
1:C:57:PRO:O	1:C:60:SER:OG	2.24	0.55
1:C:671:CYS:SG	1:C:697:MET:HB3	2.46	0.55
2:H:67:ARG:NH2	2:H:90:ASP:OD2	2.39	0.55
2:I:67:ARG:NH2	2:I:90:ASP:OD2	2.39	0.55
3:N:50:ASP:O	3:N:51:ALA:HB3	2.05	0.55
4:K:2:NAG:H3	4:K:2:NAG:H83	1.87	0.55
1:A:967:SER:O	1:A:967:SER:OG	2.24	0.55
1:A:663:ASP:OD2	1:A:673:SER:OG	2.22	0.55
1:C:45:SER:HA	1:C:280:ASN:O	2.06	0.55
1:B:57:PRO:O	1:B:60:SER:OG	2.24	0.55
1:A:43:PHE:CG	1:A:44:ARG:N	2.74	0.55
1:B:318:PHE:HZ	1:B:619:GLU:O	1.90	0.55
1:A:318:PHE:HZ	1:A:619:GLU:O	1.89	0.55
1:C:663:ASP:OD2	1:C:673:SER:OG	2.22	0.55
2:H:20:LEU:HD21	2:H:119:ILE:HD11	1.89	0.55
1:A:448:ASN:O	3:M:18:ARG:CB	2.54	0.55
1:A:565:PHE:CD1	1:A:565:PHE:N	2.73	0.55
1:C:200:TYR:CE1	1:C:230:PRO:HB3	2.42	0.55
1:C:898:PHE:N	1:C:899:PRO:CD	2.69	0.55
1:A:804:GLN:HA	1:A:817:PRO:HG2	1.90	0.54
3:M:49:TYR:O	3:M:50:ASP:HB2	2.07	0.54
3:N:48:ILE:HG22	3:N:54:ARG:HA	1.89	0.54
1:A:886:TRP:HH2	1:A:904:TYR:HD2	1.56	0.54
1:B:898:PHE:N	1:B:899:PRO:CD	2.71	0.54
1:A:328:ARG:N	1:A:542:ASN:O	2.31	0.54
1:A:699:LEU:HD22	1:B:873:TYR:CE2	2.42	0.54
1:B:111:ASP:OD1	1:B:134:GLN:NE2	2.41	0.54
1:B:1045:LYS:HZ2	1:C:786:LYS:HE3	1.70	0.54
2:J:20:LEU:HD21	2:J:119:ILE:HD11	1.89	0.54
1:A:111:ASP:OD1	1:A:134:GLN:NE2	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:523:THR:O	1:B:524:VAL:C	2.51	0.54
1:B:592:PHE:CE1	1:C:854:LYS:HE3	2.43	0.54
2:I:20:LEU:HD21	2:I:119:ILE:HD11	1.89	0.54
1:B:45:SER:HA	1:B:280:ASN:O	2.06	0.54
1:B:816:SER:HB2	1:B:817:PRO:HD2	1.87	0.54
2:I:27:PHE:CD1	2:I:27:PHE:N	2.73	0.54
3:N:49:TYR:O	3:N:50:ASP:HB2	2.07	0.54
1:A:230:PRO:HB2	1:C:357:ARG:HD3	1.89	0.54
1:A:964:LYS:HD2	1:C:570:ALA:HA	1.89	0.54
1:B:556:ASN:HD22	1:B:556:ASN:N	2.05	0.54
1:B:544:ASN:ND2	1:B:544:ASN:O	2.41	0.54
1:B:561:PRO:O	1:B:562:PHE:HB3	2.08	0.54
1:C:111:ASP:OD1	1:C:134:GLN:NE2	2.41	0.54
1:C:561:PRO:O	1:C:562:PHE:HB3	2.08	0.54
1:A:561:PRO:O	1:A:562:PHE:HB3	2.08	0.54
2:H:39:GLN:HB2	2:H:45:LEU:HD23	1.90	0.54
1:A:551:VAL:HB	1:A:588:THR:HG22	1.86	0.54
1:B:333:THR:HG21	1:B:361:CYS:CA	2.35	0.54
3:L:49:TYR:O	3:L:50:ASP:HB2	2.07	0.54
1:A:43:PHE:O	1:A:44:ARG:HG3	2.08	0.54
1:A:381:GLY:HA3	1:A:430:THR:HA	1.90	0.54
1:A:449:TYR:CB	3:M:18:ARG:HD3	2.37	0.54
1:A:565:PHE:CE1	1:B:42:VAL:HG22	2.43	0.54
1:A:671:CYS:SG	1:A:697:MET:HB3	2.48	0.54
1:C:381:GLY:HA3	1:C:430:THR:HA	1.90	0.54
2:J:24:ALA:HB1	2:J:27:PHE:HE1	1.73	0.53
1:B:100:ILE:O	1:B:242:LEU:HA	2.08	0.53
1:C:333:THR:OG1	1:C:362:VAL:HG23	2.07	0.53
2:H:30:SER:C	2:H:32:TYR:H	2.17	0.53
3:L:21:LEU:HD12	3:L:73:LEU:HD23	1.90	0.53
1:A:40:ASP:CB	1:C:519:HIS:CE1	2.91	0.53
1:A:653:ALA:HB2	1:A:692:ILE:HB	1.90	0.53
1:B:529:LYS:O	1:B:531:THR:N	2.40	0.53
3:M:18:ARG:NH1	3:M:76:SER:N	2.56	0.53
1:A:1141:LEU:HD12	1:C:1141:LEU:HD11	1.90	0.53
1:C:64:TRP:HD1	1:C:65:PHE:N	2.07	0.53
1:C:449:TYR:OH	3:N:18:ARG:HB3	2.07	0.53
2:J:30:SER:C	2:J:32:TYR:H	2.17	0.53
1:A:64:TRP:HD1	1:A:65:PHE:N	2.07	0.53
1:B:559:PHE:HE2	1:B:565:PHE:HA	1.73	0.53
1:B:1142:GLN:HG3	1:B:1143:PRO:CD	2.37	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:556:ASN:HD22	1:C:556:ASN:N	2.05	0.53
3:L:48:ILE:HG22	3:L:54:ARG:HA	1.89	0.53
1:A:100:ILE:O	1:A:242:LEU:HA	2.08	0.53
1:B:381:GLY:HA3	1:B:430:THR:HA	1.90	0.53
1:B:449:TYR:CD2	3:L:18:ARG:HD2	2.43	0.53
3:M:21:LEU:HD12	3:M:73:LEU:HD23	1.90	0.53
3:M:48:ILE:HG22	3:M:54:ARG:HA	1.89	0.53
3:N:21:LEU:HD12	3:N:73:LEU:HD23	1.90	0.53
4:G:2:NAG:H3	4:G:2:NAG:H3	1.90	0.53
1:B:327:VAL:O	1:B:530:SER:HA	2.09	0.53
1:C:100:ILE:O	1:C:242:LEU:HA	2.08	0.53
1:C:559:PHE:HE2	1:C:565:PHE:HA	1.63	0.53
1:A:524:VAL:O	1:A:525:CYS:HB2	2.09	0.52
1:A:404:GLY:HA3	1:A:504:GLY:C	2.33	0.52
1:A:544:ASN:O	1:A:544:ASN:ND2	2.41	0.52
1:B:64:TRP:HD1	1:B:65:PHE:N	2.07	0.52
1:B:1104:VAL:HG22	1:B:1115:ILE:HG12	1.91	0.52
2:J:39:GLN:HB2	2:J:45:LEU:HD23	1.90	0.52
2:J:60:TYR:HB2	2:J:65:LYS:HG2	1.91	0.52
1:A:894:LEU:HB3	1:C:713:ALA:HB3	1.90	0.52
1:B:523:THR:C	1:B:524:VAL:O	2.52	0.52
1:B:748:GLU:HG3	1:B:981:LEU:CD2	2.23	0.52
1:B:748:GLU:HG2	1:B:981:LEU:HD21	1.83	0.52
2:I:60:TYR:HB2	2:I:65:LYS:HG2	1.91	0.52
1:A:494:SER:HB3	3:M:18:ARG:HH21	1.70	0.52
1:A:559:PHE:CE2	1:B:43:PHE:HB3	2.45	0.52
1:A:694:ALA:O	1:A:695:TYR:HB3	2.10	0.52
1:B:551:VAL:HB	1:B:588:THR:HG22	1.86	0.52
1:B:559:PHE:CE2	1:B:565:PHE:C	2.88	0.52
1:C:1101:HIS:CD2	4:d:1:NAG:H5	2.45	0.52
2:H:60:TYR:HB2	2:H:65:LYS:HG2	1.91	0.52
1:B:524:VAL:CG2	1:B:525:CYS:N	2.72	0.52
1:B:565:PHE:O	1:C:43:PHE:N	2.37	0.52
1:A:564:GLN:CA	1:A:564:GLN:NE2	2.73	0.52
1:B:357:ARG:CG	1:B:357:ARG:NH1	2.73	0.52
1:B:559:PHE:CE2	1:B:565:PHE:CA	2.91	0.52
1:B:329:PHE:HE1	1:B:544:ASN:CA	2.08	0.52
1:C:524:VAL:CG2	1:C:525:CYS:N	2.72	0.52
2:I:30:SER:C	2:I:32:TYR:H	2.17	0.52
2:I:39:GLN:HB2	2:I:45:LEU:HD23	1.90	0.52
1:A:522:ALA:HB2	1:A:544:ASN:O	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:524:VAL:CG2	1:A:525:CYS:N	2.72	0.52
1:B:333:THR:CG2	1:B:334:ASN:N	2.73	0.52
1:B:558:LYS:HE3	5:C:1405:NAG:N2	2.20	0.52
1:C:48:LEU:CD1	1:C:48:LEU:N	2.73	0.52
1:C:449:TYR:CE2	3:N:18:ARG:CD	2.93	0.52
3:M:18:ARG:NE	3:M:74:THR:HG22	2.24	0.52
1:B:389:ASP:OD1	1:B:389:ASP:N	2.43	0.51
1:B:569:ILE:HG12	1:C:47:VAL:HG12	1.93	0.51
1:C:544:ASN:ND2	1:C:544:ASN:O	2.41	0.51
1:A:964:LYS:HE3	1:C:570:ALA:HA	1.92	0.51
1:B:524:VAL:O	1:B:525:CYS:HB2	2.09	0.51
1:B:560:LEU:CD1	1:B:562:PHE:CZ	2.94	0.51
1:C:332:ILE:CG2	1:C:333:THR:N	2.73	0.51
1:A:326:ILE:HD11	1:A:541:PHE:HB2	1.93	0.51
1:A:449:TYR:C	1:A:449:TYR:CD1	2.88	0.51
1:A:901:GLN:NE2	1:A:905:ARG:HH21	2.08	0.51
1:B:357:ARG:HH21	1:B:359:SER:HB2	1.75	0.51
1:C:332:ILE:O	1:C:333:THR:HG23	2.10	0.51
3:L:92:ILE:HG23	3:L:93:ILE:HG13	1.92	0.51
3:N:92:ILE:HG23	3:N:93:ILE:HG13	1.92	0.51
1:A:48:LEU:N	1:A:48:LEU:CD1	2.73	0.51
1:A:559:PHE:CE1	1:A:584:ILE:HG21	2.45	0.51
1:C:328:ARG:N	1:C:542:ASN:O	2.40	0.51
1:C:715:PRO:HA	1:C:1072:GLU:HA	1.92	0.51
1:A:441:LEU:HD21	2:J:104:GLU:CB	2.36	0.51
1:B:393:THR:CG2	1:B:520:ALA:HB3	2.39	0.51
1:B:559:PHE:HB2	1:B:584:ILE:HG13	1.92	0.51
1:C:560:LEU:CD1	1:C:562:PHE:CZ	2.94	0.51
1:A:131:CYS:H	1:A:133:PHE:HE1	1.59	0.51
2:I:24:ALA:HB1	2:I:27:PHE:CZ	2.45	0.51
1:A:319:ARG:NH2	1:A:319:ARG:CG	2.73	0.51
1:B:48:LEU:N	1:B:48:LEU:CD1	2.73	0.51
1:C:160:TYR:HD1	1:C:161:SER:N	2.09	0.51
1:A:106:PHE:HB3	1:A:235:ILE:HD13	1.93	0.51
1:A:523:THR:O	1:A:524:VAL:O	2.28	0.51
1:C:523:THR:O	1:C:524:VAL:O	2.28	0.51
1:C:559:PHE:HB2	1:C:584:ILE:HG13	1.92	0.51
1:A:559:PHE:CD1	1:A:584:ILE:CG2	2.94	0.50
1:A:560:LEU:CD1	1:A:562:PHE:CZ	2.94	0.50
1:A:705:VAL:HB	1:B:883:THR:HG21	1.93	0.50
1:B:159:VAL:CG2	1:B:160:TYR:H	2.22	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:560:LEU:CB	1:C:563:GLN:OE1	2.50	0.50
1:C:569:ILE:O	1:C:571:ASP:N	2.44	0.50
2:H:24:ALA:HB1	2:H:27:PHE:CZ	2.45	0.50
2:J:27:PHE:CD1	2:J:27:PHE:N	2.73	0.50
1:A:129:LYS:HG2	1:A:133:PHE:HZ	1.76	0.50
1:A:506:GLN:CG	1:A:507:PRO:HD2	2.41	0.50
1:B:130:VAL:HB	1:B:168:PHE:HB3	1.93	0.50
1:C:130:VAL:HB	1:C:168:PHE:HB3	1.93	0.50
1:C:493:GLN:NE2	3:N:63:SER:HB2	2.26	0.50
1:C:524:VAL:O	1:C:525:CYS:HB2	2.09	0.50
1:C:694:ALA:O	1:C:695:TYR:HB3	2.11	0.50
1:A:854:LYS:HD3	1:A:854:LYS:C	2.36	0.50
1:C:569:ILE:HD12	1:C:569:ILE:N	2.02	0.50
1:C:804:GLN:HE21	1:C:935:GLN:NE2	2.08	0.50
1:C:1032:CYS:O	1:C:1051:SER:HB2	2.12	0.50
1:C:106:PHE:HB3	1:C:235:ILE:HD13	1.93	0.50
1:C:129:LYS:HG2	1:C:133:PHE:HZ	1.76	0.50
1:A:498:GLN:HB2	3:M:20:THR:CG2	2.41	0.50
1:B:106:PHE:HB3	1:B:235:ILE:HD13	1.93	0.50
1:B:131:CYS:H	1:B:133:PHE:HE1	1.59	0.50
1:B:567:ARG:HB2	1:C:42:VAL:CG1	2.41	0.50
1:A:160:TYR:HD1	1:A:161:SER:N	2.09	0.50
1:A:501:ASN:CB	1:A:506:GLN:NE2	2.61	0.50
1:C:131:CYS:H	1:C:133:PHE:HE1	1.59	0.50
3:L:48:ILE:HD12	3:L:51:ALA:O	2.12	0.50
1:A:294:ASP:OD1	1:A:294:ASP:N	2.43	0.50
1:A:660:TYR:O	1:A:698:SER:CB	2.60	0.50
1:A:329:PHE:HB3	1:A:330:PRO:HD2	1.94	0.50
1:A:568:ASP:O	1:A:569:ILE:C	2.55	0.50
2:I:52:LYS:O	2:I:72:ARG:NH2	2.45	0.50
2:J:24:ALA:HB1	2:J:27:PHE:CZ	2.46	0.50
2:J:31:ASN:ND2	2:J:31:ASN:N	2.60	0.50
1:C:1090:PRO:HD3	1:C:1095:PHE:CE2	2.47	0.49
3:N:48:ILE:HD12	3:N:51:ALA:O	2.12	0.49
1:A:130:VAL:HB	1:A:168:PHE:HB3	1.93	0.49
1:A:564:GLN:NE2	1:A:564:GLN:HA	2.27	0.49
1:B:329:PHE:HD1	1:B:544:ASN:HB3	1.77	0.49
1:C:363:ALA:O	1:C:526:GLY:HA2	2.12	0.49
3:M:92:ILE:HG23	3:M:93:ILE:HG13	1.92	0.49
2:J:52:LYS:O	2:J:72:ARG:NH2	2.45	0.49
4:V:1:NAG:H62	4:V:2:NAG:H2	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:122:ASN:OD1	1:A:122:ASN:N	2.45	0.49
1:A:452:ARG:CG	1:A:452:ARG:NH1	2.73	0.49
1:B:160:TYR:HD1	1:B:161:SER:N	2.09	0.49
1:B:457:ARG:NH1	1:B:459:SER:O	2.45	0.49
1:B:363:ALA:O	1:B:526:GLY:HA2	2.13	0.49
1:C:807:PRO:O	1:C:809:PRO:HD3	2.12	0.49
2:H:52:LYS:O	2:H:72:ARG:NH2	2.45	0.49
1:A:363:ALA:O	1:A:526:GLY:HA2	2.12	0.49
1:C:122:ASN:OD1	1:C:122:ASN:N	2.45	0.49
1:A:669:GLY:N	1:B:864:LEU:O	2.44	0.49
1:A:735:SER:HB3	1:A:859:THR:HG22	1.94	0.49
1:B:452:ARG:CG	1:B:452:ARG:NH1	2.73	0.49
1:B:521:PRO:HB3	1:B:564:GLN:CB	2.41	0.49
2:I:31:ASN:N	2:I:31:ASN:ND2	2.60	0.49
1:A:231:ILE:HB	1:A:233:ILE:HG22	1.95	0.49
1:A:457:ARG:NH1	1:A:459:SER:O	2.45	0.49
1:A:985:ASP:OD1	1:A:985:ASP:N	2.45	0.49
1:B:569:ILE:HG13	1:C:47:VAL:CG1	2.42	0.49
1:B:569:ILE:CG1	1:C:47:VAL:HG12	2.43	0.49
1:C:389:ASP:OD1	1:C:389:ASP:N	2.43	0.49
1:B:129:LYS:HG2	1:B:133:PHE:HZ	1.77	0.49
1:B:357:ARG:HH11	1:B:357:ARG:HG2	1.77	0.49
1:A:496:GLY:N	3:M:74:THR:HG21	2.27	0.49
1:B:212:LEU:HD23	1:B:215:ASP:HB2	1.95	0.49
3:M:48:ILE:HD12	3:M:51:ALA:O	2.12	0.49
1:A:389:ASP:N	1:A:389:ASP:OD1	2.43	0.48
1:A:896:ILE:HG13	1:A:897:PRO:HD2	1.95	0.48
1:B:452:ARG:HH11	1:B:452:ARG:HB3	1.78	0.48
1:A:171:VAL:HG12	1:A:172:SER:H	1.78	0.48
1:B:567:ARG:HD3	1:C:42:VAL:HG11	1.92	0.48
2:H:31:ASN:N	2:H:31:ASN:ND2	2.60	0.48
1:C:457:ARG:NH1	1:C:459:SER:O	2.45	0.48
1:A:159:VAL:CG2	1:A:160:TYR:H	2.22	0.48
1:B:40:ASP:O	1:B:41:LYS:O	2.32	0.48
1:B:122:ASN:OD1	1:B:122:ASN:N	2.46	0.48
1:B:333:THR:HG22	1:B:334:ASN:H	1.76	0.48
2:I:24:ALA:HB1	2:I:27:PHE:HE1	1.73	0.48
1:A:935:GLN:O	1:A:939:SER:HB3	2.14	0.48
1:A:964:LYS:CE	1:C:570:ALA:HA	2.43	0.48
1:C:1104:VAL:HG22	1:C:1115:ILE:HG12	1.95	0.48
1:B:231:ILE:HB	1:B:233:ILE:HG22	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:329:PHE:O	1:C:579:PRO:HG2	2.14	0.48
1:A:455:LEU:CD1	1:A:493:GLN:OE1	2.59	0.48
1:A:558:LYS:CD	1:A:558:LYS:N	2.75	0.48
1:A:560:LEU:HD13	1:A:562:PHE:CZ	2.48	0.48
1:C:452:ARG:CG	1:C:452:ARG:NH1	2.73	0.48
1:C:560:LEU:HD13	1:C:562:PHE:CZ	2.48	0.48
1:A:364:ASP:OD2	1:A:527:PRO:HG3	2.14	0.48
1:C:46:SER:O	1:C:47:VAL:HG13	2.14	0.48
1:C:227:VAL:HG12	1:C:228:ASP:H	1.79	0.48
1:C:364:ASP:OD2	1:C:527:PRO:HG3	2.14	0.48
2:J:35:SER:OG	2:J:36:TRP:N	2.47	0.48
1:B:364:ASP:OD2	1:B:527:PRO:HG3	2.14	0.47
1:B:455:LEU:HD22	1:B:493:GLN:HB2	1.96	0.47
1:B:710:ASN:N	1:B:710:ASN:HD22	2.11	0.47
1:C:231:ILE:HB	1:C:233:ILE:HG22	1.95	0.47
1:A:349:SER:OG	1:A:452:ARG:O	2.31	0.47
2:H:24:ALA:HB1	2:H:27:PHE:HE1	1.73	0.47
2:I:35:SER:OG	2:I:36:TRP:N	2.47	0.47
1:A:41:LYS:N	1:A:41:LYS:CD	2.73	0.47
1:A:565:PHE:N	1:A:565:PHE:HD1	2.12	0.47
1:B:171:VAL:HG12	1:B:172:SER:H	1.78	0.47
1:B:382:VAL:HA	1:C:983:ARG:O	2.15	0.47
1:C:452:ARG:HH11	1:C:452:ARG:HB3	1.78	0.47
3:M:18:ARG:NH1	3:M:75:ILE:C	2.72	0.47
1:B:46:SER:O	1:B:47:VAL:HG13	2.14	0.47
1:C:212:LEU:HD23	1:C:215:ASP:HB2	1.95	0.47
1:C:569:ILE:HG22	1:C:570:ALA:N	2.28	0.47
1:C:422:ASN:HD21	1:C:454:ARG:H	1.62	0.47
1:C:559:PHE:HE2	1:C:565:PHE:N	2.11	0.47
2:H:35:SER:OG	2:H:36:TRP:N	2.47	0.47
3:N:18:ARG:HG2	3:N:76:SER:HA	1.97	0.47
1:A:212:LEU:HD23	1:A:215:ASP:HB2	1.95	0.47
1:A:336:CYS:HB2	1:A:361:CYS:HB3	1.52	0.47
1:A:886:TRP:CH2	1:A:904:TYR:HD2	2.31	0.47
1:B:327:VAL:HG11	1:B:528:LYS:CD	2.42	0.47
1:A:653:ALA:CB	1:A:692:ILE:O	2.63	0.47
1:B:227:VAL:HG12	1:B:228:ASP:H	1.79	0.47
1:B:349:SER:OG	1:B:452:ARG:O	2.31	0.47
1:B:522:ALA:CB	1:B:544:ASN:CG	2.84	0.47
1:C:117:LEU:HD12	1:C:118:LEU:N	2.30	0.47
1:A:46:SER:O	1:A:47:VAL:HG13	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:316:SER:C	1:A:317:ASN:ND2	2.73	0.47
1:C:171:VAL:HG12	1:C:172:SER:H	1.78	0.47
1:C:640:SER:OG	1:C:641:ASN:N	2.48	0.47
1:C:726:ILE:HG12	1:C:1061:VAL:HG22	1.97	0.47
1:B:329:PHE:CD1	1:B:544:ASN:CB	2.98	0.47
1:C:159:VAL:CG2	1:C:160:TYR:H	2.22	0.47
1:C:329:PHE:CD1	1:C:544:ASN:HB3	2.38	0.47
1:B:729:VAL:HG13	1:B:1059:GLY:HA2	1.98	0.47
1:C:316:SER:C	1:C:317:ASN:ND2	2.73	0.47
1:C:349:SER:OG	1:C:452:ARG:O	2.31	0.47
1:C:696:THR:O	1:C:697:MET:C	2.56	0.47
1:A:227:VAL:HG12	1:A:228:ASP:H	1.78	0.46
1:B:560:LEU:HD22	1:B:561:PRO:HD2	1.97	0.46
1:B:569:ILE:CG1	1:C:47:VAL:CG1	2.93	0.46
1:C:336:CYS:HB2	1:C:361:CYS:HB3	1.52	0.46
1:C:358:ILE:HB	1:C:395:VAL:HB	1.98	0.46
1:C:505:TYR:OH	3:N:66:GLY:HA2	2.16	0.46
1:C:973:ILE:HG12	1:C:992:GLN:HE21	1.79	0.46
1:A:445:VAL:HG21	2:J:59:HIS:HD2	1.80	0.46
1:A:494:SER:CB	3:M:18:ARG:HH21	2.26	0.46
1:A:912:THR:OG1	1:A:914:ASN:ND2	2.48	0.46
1:A:1105:THR:HG22	1:A:1111:GLU:H	1.80	0.46
1:B:710:ASN:HD22	1:B:710:ASN:H	1.62	0.46
1:A:654:GLU:O	1:A:693:ILE:HA	2.16	0.46
1:B:127:VAL:HG11	5:B:1402:NAG:H61	1.98	0.46
1:B:640:SER:OG	1:B:641:ASN:N	2.48	0.46
1:B:804:GLN:HA	1:B:817:PRO:HG2	1.98	0.46
1:B:1045:LYS:HZ1	1:C:786:LYS:HE3	1.79	0.46
1:C:977:LEU:HD12	1:C:996:LEU:HD12	1.98	0.46
1:A:328:ARG:NH2	1:A:580:GLN:CG	2.74	0.46
1:B:690:GLN:N	1:B:690:GLN:CD	2.73	0.46
1:B:722:VAL:HA	1:B:1064:HIS:O	2.16	0.46
1:A:29:THR:HG22	1:A:30:ASN:N	2.31	0.46
1:A:560:LEU:HD22	1:A:561:PRO:HD2	1.97	0.46
1:B:565:PHE:CE1	1:C:42:VAL:HG13	2.51	0.46
1:C:804:GLN:HG3	1:C:935:GLN:HE22	1.80	0.46
1:C:804:GLN:O	1:C:817:PRO:HD2	2.15	0.46
1:B:316:SER:C	1:B:317:ASN:ND2	2.73	0.46
1:B:560:LEU:HD13	1:B:562:PHE:CZ	2.48	0.46
1:C:29:THR:HG22	1:C:30:ASN:N	2.31	0.46
3:M:18:ARG:NH1	3:M:74:THR:HG22	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:592:PHE:CD1	1:A:592:PHE:C	2.93	0.46
1:B:816:SER:HB2	1:B:817:PRO:CD	2.45	0.46
1:A:41:LYS:N	1:A:41:LYS:HD3	2.31	0.46
1:A:422:ASN:HD21	1:A:454:ARG:H	1.62	0.46
1:B:758:SER:O	1:B:762:GLN:HG3	2.16	0.46
3:L:24:ARG:HH12	3:M:27:GLU:CD	2.23	0.46
3:M:18:ARG:HH11	3:M:74:THR:C	2.23	0.46
1:B:713:ALA:HB3	1:C:894:LEU:HB3	1.97	0.45
1:B:1032:CYS:O	1:B:1051:SER:HB2	2.16	0.45
1:C:41:LYS:N	1:C:41:LYS:CD	2.73	0.45
1:C:48:LEU:HD23	1:C:305:SER:HA	1.99	0.45
1:C:455:LEU:HD22	1:C:493:GLN:HB2	1.96	0.45
1:C:560:LEU:HD22	1:C:561:PRO:HD2	1.97	0.45
3:M:18:ARG:CZ	3:M:74:THR:HG22	2.46	0.45
1:A:559:PHE:CE2	1:B:43:PHE:CB	2.98	0.45
1:A:903:ALA:HB1	1:A:913:GLN:HG2	1.98	0.45
1:B:45:SER:O	1:B:279:TYR:CB	2.64	0.45
1:B:422:ASN:HD21	1:B:454:ARG:H	1.62	0.45
1:C:43:PHE:CG	1:C:44:ARG:N	2.85	0.45
1:C:560:LEU:N	1:C:563:GLN:OE1	2.49	0.45
1:A:1094:VAL:HG22	1:A:1107:ARG:HG2	1.98	0.45
1:B:212:LEU:HD12	1:B:212:LEU:HA	1.78	0.45
1:A:45:SER:O	1:A:279:TYR:CB	2.64	0.45
1:A:653:ALA:HB1	1:A:692:ILE:C	2.42	0.45
1:B:117:LEU:HD12	1:B:118:LEU:N	2.30	0.45
1:B:358:ILE:HB	1:B:395:VAL:HB	1.98	0.45
1:A:560:LEU:HD23	1:A:560:LEU:HA	1.79	0.45
1:B:323:THR:O	1:B:324:GLU:HG2	2.16	0.45
1:C:578:ASP:OD2	1:C:581:THR:HG22	2.16	0.45
1:A:127:VAL:HG11	5:A:1402:NAG:H61	1.98	0.45
1:A:187:LYS:HE3	1:A:213:VAL:HG12	1.99	0.45
1:A:323:THR:O	1:A:324:GLU:HG2	2.17	0.45
1:A:498:GLN:CG	3:M:20:THR:HB	2.46	0.45
1:B:564:GLN:NE2	1:B:564:GLN:C	2.73	0.45
1:A:449:TYR:HB3	3:M:18:ARG:CB	2.46	0.45
1:C:328:ARG:NH2	1:C:580:GLN:HG3	2.32	0.45
1:C:738:CYS:HB3	1:C:760:CYS:HB3	1.92	0.45
1:A:358:ILE:HB	1:A:395:VAL:HB	1.98	0.45
1:A:617:CYS:HB2	1:A:649:CYS:HB2	1.87	0.45
1:B:558:LYS:CD	1:B:558:LYS:N	2.75	0.45
1:B:674:TYR:HA	1:B:691:SER:O	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:45:SER:O	1:C:279:TYR:CB	2.64	0.45
1:C:703:ASN:C	1:C:703:ASN:HD22	2.24	0.45
2:I:30:SER:OG	2:I:31:ASN:ND2	2.50	0.45
1:B:336:CYS:HB2	1:B:361:CYS:HB3	1.52	0.45
1:C:159:VAL:CG2	1:C:160:TYR:N	2.78	0.45
2:H:30:SER:OG	2:H:31:ASN:ND2	2.50	0.45
1:A:496:GLY:HA3	3:M:74:THR:OG1	2.17	0.45
1:C:323:THR:O	1:C:324:GLU:HG2	2.16	0.45
1:A:449:TYR:C	1:A:451:TYR:N	2.72	0.44
1:C:187:LYS:HE3	1:C:213:VAL:HG12	1.99	0.44
2:H:30:SER:C	2:H:31:ASN:CG	2.85	0.44
3:N:46:LEU:HD21	3:N:49:TYR:HB3	1.99	0.44
1:A:496:GLY:O	3:M:20:THR:CG2	2.66	0.44
1:A:578:ASP:OD2	1:A:581:THR:HG22	2.16	0.44
1:B:533:LEU:HD12	1:B:534:VAL:CA	2.47	0.44
1:B:578:ASP:OD2	1:B:581:THR:HG22	2.16	0.44
3:L:24:ARG:NH1	3:M:27:GLU:CD	2.76	0.44
3:L:49:TYR:O	3:L:49:TYR:CD2	2.70	0.44
1:B:748:GLU:N	1:B:748:GLU:CD	2.73	0.44
1:C:316:SER:OG	1:C:317:ASN:N	2.48	0.44
1:C:561:PRO:C	1:C:562:PHE:HD1	2.25	0.44
1:C:1141:LEU:O	1:C:1145:LEU:HD12	2.16	0.44
3:M:49:TYR:O	3:M:49:TYR:CD1	2.70	0.44
3:N:49:TYR:O	3:N:49:TYR:CD1	2.70	0.44
1:A:523:THR:C	1:A:524:VAL:O	2.60	0.44
1:A:561:PRO:C	1:A:562:PHE:HD1	2.25	0.44
1:A:670:ILE:HG23	1:A:695:TYR:O	2.17	0.44
1:A:854:LYS:O	1:A:855:PHE:CG	2.71	0.44
1:A:1090:PRO:HD3	1:A:1095:PHE:CE2	2.51	0.44
1:B:29:THR:HG22	1:B:30:ASN:N	2.31	0.44
1:B:559:PHE:HD2	1:B:563:GLN:O	2.00	0.44
1:B:580:GLN:O	4:Q:1:NAG:H83	2.17	0.44
1:B:825:LYS:HB3	1:B:825:LYS:HE2	1.79	0.44
1:C:127:VAL:HG11	5:C:1402:NAG:H61	1.98	0.44
2:J:30:SER:C	2:J:31:ASN:CG	2.85	0.44
1:A:564:GLN:HE21	1:A:564:GLN:CA	2.30	0.44
1:A:959:LEU:HD23	1:A:959:LEU:HA	1.78	0.44
1:B:604:THR:CG2	1:B:674:TYR:CE2	3.00	0.44
1:B:646:ARG:O	1:B:646:ARG:HG3	2.17	0.44
1:B:776:LYS:HE3	1:B:776:LYS:HB3	1.65	0.44
1:C:559:PHE:HZ	1:C:566:GLY:CA	2.30	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:995:ARG:HE	1:C:995:ARG:HB3	1.66	0.44
3:M:46:LEU:HD21	3:M:49:TYR:HB3	1.99	0.44
2:J:30:SER:OG	2:J:31:ASN:ND2	2.50	0.44
1:A:316:SER:OG	1:A:317:ASN:N	2.49	0.44
5:A:1405:NAG:N2	1:C:558:LYS:HE3	2.25	0.44
1:B:388:ASN:C	1:B:389:ASP:CG	2.85	0.44
1:C:134:GLN:HB3	1:C:162:SER:HB2	2.00	0.44
1:C:533:LEU:HD12	1:C:534:VAL:CA	2.48	0.44
1:A:289:VAL:HG23	1:A:306:PHE:CE2	2.53	0.44
1:A:388:ASN:C	1:A:389:ASP:CG	2.85	0.44
1:A:654:GLU:N	1:A:692:ILE:O	2.51	0.44
1:B:294:ASP:OD1	1:B:294:ASP:N	2.50	0.44
1:B:561:PRO:C	1:B:562:PHE:HD1	2.25	0.44
1:B:1045:LYS:NZ	1:C:786:LYS:CE	2.79	0.44
1:C:388:ASN:C	1:C:389:ASP:CG	2.85	0.44
1:C:646:ARG:O	1:C:646:ARG:HG3	2.17	0.44
3:L:46:LEU:HD21	3:L:49:TYR:HB3	1.99	0.44
1:A:505:TYR:CE1	3:M:70:ASP:O	2.71	0.44
1:A:559:PHE:CE1	1:A:584:ILE:CG2	3.01	0.44
1:B:187:LYS:HE3	1:B:213:VAL:HG12	1.99	0.44
1:C:1040:VAL:O	1:C:1041:ASP:HB2	2.17	0.44
2:I:30:SER:C	2:I:31:ASN:CG	2.85	0.44
1:A:533:LEU:HD12	1:A:534:VAL:CA	2.48	0.44
1:A:640:SER:OG	1:A:641:ASN:N	2.48	0.44
1:B:674:TYR:O	1:B:674:TYR:CD2	2.70	0.44
1:A:293:LEU:C	1:A:294:ASP:CG	2.86	0.43
1:A:854:LYS:O	1:A:854:LYS:HD3	2.18	0.43
1:C:1081:ILE:HG12	1:C:1095:PHE:CE2	2.53	0.43
2:I:31:ASN:N	2:I:53:GLN:CB	2.80	0.43
1:A:559:PHE:HE2	1:A:565:PHE:C	2.25	0.43
1:A:1104:VAL:HG22	1:A:1115:ILE:HG12	2.01	0.43
1:B:333:THR:CG2	1:B:334:ASN:H	2.31	0.43
1:C:130:VAL:HG21	1:C:231:ILE:HD12	2.00	0.43
1:C:160:TYR:CD1	1:C:161:SER:N	2.86	0.43
1:C:318:PHE:CZ	1:C:619:GLU:O	2.70	0.43
1:C:523:THR:C	1:C:524:VAL:O	2.60	0.43
1:C:931:ILE:HD13	1:C:931:ILE:HA	1.86	0.43
1:A:160:TYR:CD1	1:A:161:SER:N	2.86	0.43
1:A:1097:SER:HA	1:A:1101:HIS:O	2.18	0.43
1:C:564:GLN:NE2	1:C:564:GLN:CA	2.73	0.43
3:L:24:ARG:CZ	3:M:27:GLU:OE2	2.66	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:117:LEU:HD12	1:A:118:LEU:N	2.30	0.43
1:A:134:GLN:HB3	1:A:162:SER:HB2	2.00	0.43
1:A:291:CYS:SG	1:A:301:CYS:CB	3.03	0.43
1:A:519:HIS:CE1	1:B:40:ASP:HB2	2.54	0.43
1:A:559:PHE:HB2	1:A:584:ILE:HG13	2.01	0.43
1:B:329:PHE:HD1	1:B:544:ASN:CB	2.31	0.43
1:B:695:TYR:CD1	1:B:695:TYR:C	2.96	0.43
1:C:127:VAL:HG21	5:C:1402:NAG:H5	2.01	0.43
1:C:674:TYR:CD1	1:C:691:SER:O	2.71	0.43
2:J:31:ASN:N	2:J:53:GLN:CB	2.80	0.43
1:A:933:LYS:HB2	1:A:933:LYS:HE3	1.86	0.43
1:A:1032:CYS:O	1:A:1051:SER:HB2	2.18	0.43
1:C:325:SER:HA	1:C:540:ASN:O	2.18	0.43
2:H:31:ASN:N	2:H:53:GLN:CB	2.80	0.43
1:A:612:TYR:HE1	1:A:651:ILE:HD12	1.84	0.43
1:A:646:ARG:O	1:A:646:ARG:HG3	2.17	0.43
1:B:521:PRO:HB3	1:B:564:GLN:HB2	2.01	0.43
1:C:329:PHE:CE1	1:C:544:ASN:CB	2.96	0.43
1:A:569:ILE:O	1:A:570:ALA:HB3	2.19	0.43
1:B:394:ASN:ND2	1:C:200:TYR:CZ	2.85	0.43
1:B:986:PRO:CB	1:B:987:PRO:HD3	2.46	0.43
1:A:357:ARG:HH22	1:B:199:GLY:C	2.27	0.43
1:A:983:ARG:CB	1:C:382:VAL:HG23	2.49	0.43
1:C:131:CYS:HB3	1:C:164:ASN:O	2.19	0.43
1:C:533:LEU:C	1:C:533:LEU:CD1	2.86	0.43
1:C:612:TYR:HE1	1:C:651:ILE:HD12	1.84	0.43
3:N:49:TYR:CD1	3:N:49:TYR:C	2.97	0.43
1:A:130:VAL:HG21	1:A:231:ILE:HD12	2.00	0.43
1:A:449:TYR:CD2	3:M:18:ARG:HG3	2.54	0.43
1:A:452:ARG:HH11	1:A:452:ARG:HB3	1.78	0.43
1:C:793:PRO:HG2	1:C:794:ILE:HD12	2.00	0.43
3:M:49:TYR:CD1	3:M:49:TYR:C	2.97	0.43
1:A:294:ASP:HB2	1:A:295:PRO:CD	2.49	0.43
1:A:329:PHE:HE1	1:A:544:ASN:HA	1.65	0.43
1:A:795:LYS:HB3	1:A:797:PHE:CE2	2.54	0.43
1:B:131:CYS:HB3	1:B:164:ASN:O	2.19	0.43
1:C:326:ILE:HD11	1:C:541:PHE:HB2	2.01	0.43
1:C:523:THR:O	1:C:524:VAL:C	2.62	0.43
1:C:722:VAL:HA	1:C:1064:HIS:O	2.19	0.43
1:C:1027:THR:HG22	1:C:1042:PHE:HZ	1.83	0.43
3:M:4:MET:HE3	3:M:4:MET:HB3	1.93	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:130:VAL:HG21	1:B:231:ILE:HD12	2.00	0.42
1:A:496:GLY:O	3:M:20:THR:HG21	2.19	0.42
1:A:674:TYR:HD1	1:A:691:SER:O	2.02	0.42
1:C:735:SER:OG	1:C:859:THR:HG22	2.17	0.42
3:M:106:ASP:OD1	3:M:106:ASP:N	2.51	0.42
1:A:48:LEU:HD13	1:A:48:LEU:N	2.32	0.42
1:C:898:PHE:N	1:C:899:PRO:HD2	2.34	0.42
1:B:134:GLN:HB3	1:B:162:SER:HB2	2.00	0.42
1:B:316:SER:OG	1:B:317:ASN:N	2.48	0.42
1:B:328:ARG:NH2	1:B:580:GLN:HG3	2.34	0.42
1:A:43:PHE:HB2	1:C:559:PHE:CZ	2.54	0.42
1:B:449:TYR:CD1	3:L:18:ARG:HD2	2.54	0.42
3:M:39:ARG:NH1	3:M:42:GLN:OE1	2.53	0.42
3:N:106:ASP:OD1	3:N:106:ASP:N	2.51	0.42
1:A:27:ALA:HB3	1:A:64:TRP:HB3	2.01	0.42
1:A:112:SER:O	1:A:113:LYS:HB3	2.20	0.42
1:A:503:VAL:CG1	1:A:504:GLY:N	2.83	0.42
1:A:503:VAL:CG2	3:N:28:ASN:O	2.68	0.42
1:A:561:PRO:C	1:A:562:PHE:CD1	2.98	0.42
1:C:318:PHE:HE1	1:C:620:VAL:O	1.94	0.42
1:C:561:PRO:C	1:C:562:PHE:CD1	2.98	0.42
1:C:617:CYS:HB2	1:C:649:CYS:HB2	1.87	0.42
1:C:912:THR:OG1	1:C:914:ASN:ND2	2.52	0.42
3:N:39:ARG:NH1	3:N:42:GLN:OE1	2.53	0.42
1:A:127:VAL:HG21	5:A:1402:NAG:H5	2.01	0.42
1:B:334:ASN:C	1:B:336:CYS:H	2.27	0.42
1:C:569:ILE:CD1	1:C:569:ILE:N	2.73	0.42
1:A:131:CYS:HB3	1:A:164:ASN:O	2.19	0.42
1:A:523:THR:O	1:A:524:VAL:C	2.62	0.42
1:A:886:TRP:HH2	1:A:904:TYR:CD2	2.35	0.42
1:B:568:ASP:O	1:B:571:ASP:N	2.46	0.42
3:M:6:GLN:OE1	3:M:103:THR:OG1	2.32	0.42
1:B:561:PRO:C	1:B:562:PHE:CD1	2.98	0.42
1:B:567:ARG:HD2	1:C:42:VAL:HG13	2.00	0.42
1:B:794:ILE:H	1:B:794:ILE:HG13	1.69	0.42
1:C:792:PRO:O	1:C:795:LYS:NZ	2.52	0.42
3:L:39:ARG:NH1	3:L:42:GLN:OE1	2.53	0.42
4:Z:1:NAG:H83	4:Z:1:NAG:H3	2.02	0.42
1:A:439:ASN:OD1	1:A:506:GLN:CG	2.67	0.42
1:A:654:GLU:O	1:A:693:ILE:HG22	2.19	0.42
1:A:964:LYS:CD	1:C:570:ALA:HA	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:569:ILE:O	1:B:570:ALA:HB3	2.19	0.42
1:A:973:ILE:HG23	1:A:992:GLN:NE2	2.35	0.41
1:B:560:LEU:HD23	1:B:560:LEU:HA	1.79	0.41
1:B:612:TYR:HE1	1:B:651:ILE:HD12	1.84	0.41
1:C:390:LEU:C	1:C:525:CYS:SG	3.03	0.41
1:C:973:ILE:HG23	1:C:992:GLN:NE2	2.35	0.41
1:C:985:ASP:OD1	1:C:985:ASP:N	2.46	0.41
3:L:49:TYR:CD2	3:L:49:TYR:C	2.97	0.41
1:B:160:TYR:CD1	1:B:161:SER:N	2.86	0.41
1:C:27:ALA:HB3	1:C:64:TRP:HB3	2.01	0.41
1:C:112:SER:O	1:C:113:LYS:HB3	2.20	0.41
1:A:758:SER:O	1:A:762:GLN:HG3	2.19	0.41
1:C:669:GLY:O	1:C:697:MET:HG2	2.19	0.41
2:I:40:ALA:HB3	2:I:43:LYS:HB2	2.02	0.41
1:A:503:VAL:HG21	3:N:28:ASN:O	2.20	0.41
1:B:127:VAL:HG21	5:B:1402:NAG:H5	2.01	0.41
1:B:330:PRO:O	1:B:331:ASN:C	2.63	0.41
1:C:318:PHE:CZ	1:C:620:VAL:O	2.73	0.41
1:C:342:PHE:HB2	4:Y:1:NAG:H82	2.03	0.41
1:C:559:PHE:HB2	1:C:584:ILE:CD1	2.50	0.41
1:C:736:VAL:HG23	1:C:858:LEU:HD23	2.02	0.41
3:L:106:ASP:OD1	3:L:106:ASP:N	2.51	0.41
1:C:43:PHE:HE1	1:C:282:ASN:O	2.03	0.41
1:C:323:THR:OG1	1:C:324:GLU:OE1	2.37	0.41
1:C:675:GLN:CG	1:C:676:THR:N	2.73	0.41
1:A:193:VAL:HG23	1:A:223:LEU:CD2	2.51	0.41
1:A:323:THR:OG1	1:A:324:GLU:OE1	2.37	0.41
1:A:699:LEU:HD12	1:B:872:GLN:CD	2.45	0.41
1:A:703:ASN:HB2	1:B:787:GLN:CD	2.26	0.41
1:A:770:ILE:HG21	1:A:770:ILE:HD13	1.76	0.41
1:A:898:PHE:N	1:A:899:PRO:HD2	2.34	0.41
1:A:898:PHE:HB3	1:A:899:PRO:HD3	2.02	0.41
1:B:27:ALA:HB3	1:B:64:TRP:HB3	2.01	0.41
1:B:112:SER:O	1:B:113:LYS:HB3	2.20	0.41
1:B:226:LEU:HB3	1:B:227:VAL:HG23	2.03	0.41
1:B:320:VAL:HG12	1:B:321:GLN:N	2.35	0.41
1:B:542:ASN:HA	1:B:546:LEU:O	2.21	0.41
1:C:193:VAL:HG23	1:C:223:LEU:CD2	2.51	0.41
1:C:564:GLN:HA	1:C:564:GLN:HE21	1.84	0.41
1:C:784:GLN:HE21	1:C:784:GLN:HB3	1.63	0.41
1:C:870:ILE:O	1:C:874:THR:HG23	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:959:LEU:HD23	1:C:959:LEU:HA	1.93	0.41
1:A:212:LEU:HD12	1:A:212:LEU:HA	1.78	0.41
1:A:390:LEU:C	1:A:525:CYS:SG	3.03	0.41
1:C:320:VAL:HG12	1:C:321:GLN:N	2.35	0.41
1:C:560:LEU:HD23	1:C:560:LEU:HA	1.79	0.41
1:C:856:ASN:O	1:C:856:ASN:ND2	2.48	0.41
3:M:18:ARG:HE	3:M:74:THR:HG22	1.85	0.41
1:B:326:ILE:HD11	1:B:541:PHE:HB2	2.03	0.41
1:C:113:LYS:O	1:C:113:LYS:NZ	2.31	0.41
1:A:43:PHE:CB	1:C:559:PHE:CE1	3.04	0.41
1:A:213:VAL:HG23	1:A:214:ARG:N	2.36	0.41
1:A:1051:SER:OG	1:A:1064:HIS:ND1	2.46	0.41
1:B:390:LEU:C	1:B:525:CYS:SG	3.03	0.41
1:B:394:ASN:CG	1:C:200:TYR:OH	2.64	0.41
1:B:559:PHE:HB2	1:B:584:ILE:CD1	2.50	0.41
1:B:898:PHE:HB3	1:B:899:PRO:HD3	2.02	0.41
1:C:45:SER:OG	1:C:281:GLU:HA	2.21	0.41
1:C:166:CYS:HB3	1:C:169:GLU:OE1	2.21	0.41
1:C:542:ASN:HA	1:C:546:LEU:O	2.21	0.41
2:J:40:ALA:HB3	2:J:43:LYS:HB2	2.02	0.41
1:A:45:SER:O	1:A:47:VAL:N	2.54	0.41
1:A:230:PRO:HB2	1:C:357:ARG:CD	2.50	0.41
1:A:294:ASP:HB2	1:A:295:PRO:HD2	2.02	0.41
1:A:326:ILE:HD11	1:A:541:PHE:CB	2.51	0.41
1:A:522:ALA:HB2	1:A:544:ASN:ND2	2.33	0.41
1:A:1123:SER:O	1:A:1123:SER:OG	2.39	0.41
1:B:342:PHE:HB2	4:R:1:NAG:H82	2.03	0.41
1:B:541:PHE:CZ	1:B:587:ILE:HD13	2.56	0.41
1:C:48:LEU:HD13	1:C:48:LEU:N	2.32	0.41
1:C:541:PHE:CZ	1:C:587:ILE:HD13	2.56	0.41
2:H:40:ALA:HB3	2:H:43:LYS:HB2	2.03	0.41
1:A:320:VAL:HG12	1:A:321:GLN:N	2.35	0.40
1:A:438:SER:O	1:A:438:SER:OG	2.38	0.40
1:A:560:LEU:HB2	1:A:563:GLN:OE1	2.22	0.40
1:B:200:TYR:CE1	1:B:230:PRO:HB3	2.56	0.40
1:A:113:LYS:O	1:A:113:LYS:NZ	2.31	0.40
1:A:187:LYS:N	1:A:187:LYS:HE2	2.37	0.40
1:A:589:PRO:C	1:A:590:CYS:O	2.65	0.40
1:A:1105:THR:HG21	1:A:1110:TYR:CD1	2.57	0.40
1:B:166:CYS:HB3	1:B:169:GLU:OE1	2.21	0.40
1:C:160:TYR:CD1	1:C:160:TYR:C	3.00	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:187:LYS:N	1:C:187:LYS:HE2	2.37	0.40
1:C:318:PHE:HZ	1:C:619:GLU:O	2.05	0.40
1:C:494:SER:HB3	3:N:18:ARG:NH2	2.36	0.40
1:C:821:LEU:HD22	1:C:939:SER:HB3	2.03	0.40
4:f:1:NAG:O4	4:f:2:NAG:O5	2.28	0.40
1:A:708:SER:OG	1:A:711:SER:HB2	2.22	0.40
1:B:45:SER:OG	1:B:281:GLU:HA	2.21	0.40
1:B:280:ASN:OD1	1:B:281:GLU:N	2.51	0.40
1:B:406:GLU:OE2	1:B:495:TYR:OH	2.33	0.40
1:B:964:LYS:HE3	1:B:964:LYS:HB2	1.77	0.40
1:C:294:ASP:OD1	1:C:294:ASP:N	2.55	0.40
1:B:100:ILE:HG22	1:B:242:LEU:HD23	2.04	0.40
1:B:193:VAL:HG23	1:B:223:LEU:CD2	2.51	0.40
1:C:213:VAL:HG23	1:C:214:ARG:N	2.36	0.40
1:C:226:LEU:HB3	1:C:227:VAL:HG23	2.03	0.40
1:C:227:VAL:CG1	1:C:228:ASP:N	2.84	0.40
3:L:39:ARG:HB2	3:L:42:GLN:HB2	2.03	0.40
3:N:6:GLN:OE1	3:N:103:THR:OG1	2.32	0.40
1:A:541:PHE:CZ	1:A:587:ILE:HD13	2.56	0.40
1:A:559:PHE:HB2	1:A:584:ILE:CD1	2.51	0.40
1:B:127:VAL:HG22	1:B:171:VAL:HG13	2.04	0.40
3:L:6:GLN:OE1	3:L:103:THR:OG1	2.32	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	976/1271 (77%)	857 (88%)	90 (9%)	29 (3%)	3	19
1	B	975/1271 (77%)	862 (88%)	91 (9%)	22 (2%)	5	25
1	C	975/1271 (77%)	861 (88%)	91 (9%)	23 (2%)	4	24

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	H	121/123 (98%)	104 (86%)	16 (13%)	1 (1%)	16	50
2	I	121/123 (98%)	104 (86%)	16 (13%)	1 (1%)	16	50
2	J	121/123 (98%)	104 (86%)	16 (13%)	1 (1%)	16	50
3	L	106/108 (98%)	98 (92%)	7 (7%)	1 (1%)	14	48
3	M	106/108 (98%)	96 (91%)	7 (7%)	3 (3%)	4	21
3	N	106/108 (98%)	96 (91%)	8 (8%)	2 (2%)	6	30
All	All	3607/4506 (80%)	3182 (88%)	342 (10%)	83 (2%)	7	25

All (83) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	48	LEU
1	A	389	ASP
1	A	449	TYR
1	A	450	ASN
1	A	524	VAL
1	A	562	PHE
1	A	564	GLN
1	A	590	CYS
1	A	701	ALA
1	A	855	PHE
1	B	41	LYS
1	B	48	LEU
1	B	332	ILE
1	B	389	ASP
1	B	524	VAL
1	B	530	SER
1	B	562	PHE
1	C	41	LYS
1	C	42	VAL
1	C	48	LEU
1	C	389	ASP
1	C	524	VAL
1	C	562	PHE
1	C	814	LYS
3	M	67	SER
1	A	41	LYS
1	A	46	SER
1	A	160	TYR
1	A	332	ILE

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Mol	Chain	Res	Type
1	B	46	SER
1	B	160	TYR
1	B	522	ALA
1	B	742	ILE
1	B	743	CYS
1	C	46	SER
1	C	160	TYR
1	C	331	ASN
1	C	697	MET
1	C	810	SER
3	L	51	ALA
3	M	51	ALA
3	N	51	ALA
1	A	43	PHE
1	A	695	TYR
1	A	710	ASN
1	B	42	VAL
3	M	65	SER
1	A	44	ARG
1	A	324	GLU
1	A	331	ASN
1	A	561	PRO
1	A	691	SER
1	B	324	GLU
1	B	561	PRO
1	B	675	GLN
1	B	746	SER
1	C	324	GLU
1	C	561	PRO
1	C	570	ALA
1	C	590	CYS
1	C	813	SER
2	H	29	PHE
2	I	29	PHE
2	J	29	PHE
1	A	40	ASP
1	A	42	VAL
1	A	47	VAL
1	A	294	ASP
1	A	503	VAL
1	A	506	GLN
1	A	507	PRO

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Mol	Chain	Res	Type
1	B	40	ASP
1	B	47	VAL
1	B	292	ALA
1	C	47	VAL
1	C	294	ASP
1	C	812	PRO
3	N	17	ASP
1	C	332	ILE
1	C	811	LYS
1	B	336	CYS
1	C	569	ILE
1	B	521	PRO

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	871/1112 (78%)	758 (87%)	113 (13%)	4	19
1	B	870/1112 (78%)	778 (89%)	92 (11%)	6	27
1	C	870/1112 (78%)	780 (90%)	90 (10%)	7	28
2	H	103/103 (100%)	98 (95%)	5 (5%)	22	56
2	I	103/103 (100%)	98 (95%)	5 (5%)	22	56
2	J	103/103 (100%)	98 (95%)	5 (5%)	22	56
3	L	93/93 (100%)	93 (100%)	0	100	100
3	M	93/93 (100%)	91 (98%)	2 (2%)	45	74
3	N	93/93 (100%)	93 (100%)	0	100	100
All	All	3199/3924 (82%)	2887 (90%)	312 (10%)	10	30

All (312) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	40	ASP
1	A	46	SER

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Mol	Chain	Res	Type
1	A	48	LEU
1	A	66	HIS
1	A	81	ASN
1	A	97	LYS
1	A	109	THR
1	A	116	SER
1	A	118	LEU
1	A	122	ASN
1	A	161	SER
1	A	164	ASN
1	A	169	GLU
1	A	171	VAL
1	A	195	LYS
1	A	200	TYR
1	A	205	SER
1	A	208	THR
1	A	221	SER
1	A	231	ILE
1	A	282	ASN
1	A	289	VAL
1	A	294	ASP
1	A	296	LEU
1	A	301	CYS
1	A	308	VAL
1	A	314	GLN
1	A	315	THR
1	A	319	ARG
1	A	324	GLU
1	A	328	ARG
1	A	333	THR
1	A	334	ASN
1	A	389	ASP
1	A	442	ASP
1	A	449	TYR
1	A	450	ASN
1	A	452	ARG
1	A	498	GLN
1	A	505	TYR
1	A	506	GLN
1	A	528	LYS
1	A	529	LYS
1	A	530	SER

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Mol	Chain	Res	Type
1	A	531	THR
1	A	533	LEU
1	A	540	ASN
1	A	546	LEU
1	A	553	THR
1	A	554	GLU
1	A	556	ASN
1	A	558	LYS
1	A	563	GLN
1	A	564	GLN
1	A	565	PHE
1	A	567	ARG
1	A	568	ASP
1	A	576	VAL
1	A	583	GLU
1	A	585	LEU
1	A	599	THR
1	A	602	THR
1	A	608	VAL
1	A	673	SER
1	A	692	ILE
1	A	696	THR
1	A	702	GLU
1	A	704	SER
1	A	705	VAL
1	A	719	THR
1	A	722	VAL
1	A	729	VAL
1	A	730	SER
1	A	738	CYS
1	A	746	SER
1	A	772	VAL
1	A	773	GLU
1	A	785	VAL
1	A	787	GLN
1	A	791	THR
1	A	826	VAL
1	A	855	PHE
1	A	868	GLU
1	A	878	LEU
1	A	883	THR
1	A	902	MET

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Mol	Chain	Res	Type
1	A	916	LEU
1	A	929	SER
1	A	939	SER
1	A	951	VAL
1	A	960	ASN
1	A	967	SER
1	A	973	ILE
1	A	976	VAL
1	A	991	VAL
1	A	994	ASP
1	A	998	THR
1	A	1005	GLN
1	A	1018	ILE
1	A	1039	ARG
1	A	1074	ASN
1	A	1076	THR
1	A	1077	THR
1	A	1092	GLU
1	A	1094	VAL
1	A	1100	THR
1	A	1104	VAL
1	A	1114	ILE
1	A	1123	SER
1	A	1125	ASN
1	A	1132	ILE
1	A	1142	GLN
1	A	1144	GLU
1	B	40	ASP
1	B	46	SER
1	B	48	LEU
1	B	66	HIS
1	B	81	ASN
1	B	97	LYS
1	B	109	THR
1	B	116	SER
1	B	118	LEU
1	B	122	ASN
1	B	161	SER
1	B	164	ASN
1	B	169	GLU
1	B	171	VAL
1	B	195	LYS

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Mol	Chain	Res	Type
1	B	205	SER
1	B	208	THR
1	B	221	SER
1	B	231	ILE
1	B	282	ASN
1	B	289	VAL
1	B	296	LEU
1	B	301	CYS
1	B	308	VAL
1	B	314	GLN
1	B	315	THR
1	B	319	ARG
1	B	324	GLU
1	B	328	ARG
1	B	332	ILE
1	B	335	LEU
1	B	357	ARG
1	B	389	ASP
1	B	452	ARG
1	B	523	THR
1	B	530	SER
1	B	533	LEU
1	B	540	ASN
1	B	546	LEU
1	B	553	THR
1	B	554	GLU
1	B	556	ASN
1	B	558	LYS
1	B	559	PHE
1	B	564	GLN
1	B	565	PHE
1	B	567	ARG
1	B	568	ASP
1	B	576	VAL
1	B	583	GLU
1	B	585	LEU
1	B	591	SER
1	B	599	THR
1	B	602	THR
1	B	608	VAL
1	B	673	SER
1	B	675	GLN

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Mol	Chain	Res	Type
1	B	690	GLN
1	B	693	ILE
1	B	710	ASN
1	B	729	VAL
1	B	735	SER
1	B	747	THR
1	B	748	GLU
1	B	772	VAL
1	B	779	GLN
1	B	787	GLN
1	B	791	THR
1	B	811	LYS
1	B	855	PHE
1	B	856	ASN
1	B	868	GLU
1	B	878	LEU
1	B	912	THR
1	B	916	LEU
1	B	935	GLN
1	B	968	SER
1	B	969	ASN
1	B	974	SER
1	B	976	VAL
1	B	991	VAL
1	B	1030	SER
1	B	1037	SER
1	B	1045	LYS
1	B	1074	ASN
1	B	1081	ILE
1	B	1094	VAL
1	B	1104	VAL
1	B	1114	ILE
1	B	1126	CYS
1	B	1133	VAL
1	B	1141	LEU
1	C	41	LYS
1	C	46	SER
1	C	48	LEU
1	C	66	HIS
1	C	81	ASN
1	C	97	LYS
1	C	109	THR

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Mol	Chain	Res	Type
1	C	116	SER
1	C	118	LEU
1	C	122	ASN
1	C	161	SER
1	C	164	ASN
1	C	169	GLU
1	C	171	VAL
1	C	195	LYS
1	C	205	SER
1	C	208	THR
1	C	221	SER
1	C	231	ILE
1	C	282	ASN
1	C	289	VAL
1	C	296	LEU
1	C	301	CYS
1	C	308	VAL
1	C	314	GLN
1	C	315	THR
1	C	324	GLU
1	C	328	ARG
1	C	333	THR
1	C	334	ASN
1	C	389	ASP
1	C	452	ARG
1	C	528	LYS
1	C	529	LYS
1	C	531	THR
1	C	533	LEU
1	C	540	ASN
1	C	546	LEU
1	C	553	THR
1	C	554	GLU
1	C	556	ASN
1	C	558	LYS
1	C	559	PHE
1	C	564	GLN
1	C	568	ASP
1	C	569	ILE
1	C	576	VAL
1	C	583	GLU
1	C	585	LEU

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Mol	Chain	Res	Type
1	C	591	SER
1	C	599	THR
1	C	602	THR
1	C	608	VAL
1	C	673	SER
1	C	676	THR
1	C	693	ILE
1	C	696	THR
1	C	697	MET
1	C	699	LEU
1	C	727	LEU
1	C	768	THR
1	C	770	ILE
1	C	778	THR
1	C	787	GLN
1	C	791	THR
1	C	814	LYS
1	C	856	ASN
1	C	878	LEU
1	C	907	ASN
1	C	922	LEU
1	C	929	SER
1	C	931	ILE
1	C	934	ILE
1	C	937	SER
1	C	968	SER
1	C	975	SER
1	C	976	VAL
1	C	977	LEU
1	C	1018	ILE
1	C	1027	THR
1	C	1063	LEU
1	C	1077	THR
1	C	1092	GLU
1	C	1094	VAL
1	C	1104	VAL
1	C	1126	CYS
1	C	1129	VAL
1	C	1132	ILE
1	C	1136	THR
1	C	1145	LEU
2	H	27	PHE

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Mol	Chain	Res	Type
2	H	31	ASN
2	H	51	ILE
2	H	64	VAL
2	H	99	ASP
2	I	27	PHE
2	I	31	ASN
2	I	51	ILE
2	I	64	VAL
2	I	99	ASP
3	M	18	ARG
3	M	20	THR
2	J	27	PHE
2	J	31	ASN
2	J	51	ILE
2	J	64	VAL
2	J	99	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (98) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	134	GLN
1	A	137	ASN
1	A	188	ASN
1	A	314	GLN
1	A	317	ASN
1	A	422	ASN
1	A	450	ASN
1	A	493	GLN
1	A	498	GLN
1	A	506	GLN
1	A	519	HIS
1	A	542	ASN
1	A	556	ASN
1	A	564	GLN
1	A	644	GLN
1	A	658	ASN
1	A	675	GLN
1	A	703	ASN
1	A	755	GLN
1	A	762	GLN
1	A	787	GLN
1	A	901	GLN

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Mol	Chain	Res	Type
1	A	914	ASN
1	A	926	GLN
1	A	949	GLN
1	A	955	ASN
1	A	969	ASN
1	A	992	GLN
1	A	1010	GLN
1	A	1054	GLN
1	A	1113	GLN
1	A	1125	ASN
1	B	134	GLN
1	B	137	ASN
1	B	188	ASN
1	B	314	GLN
1	B	317	ASN
1	B	422	ASN
1	B	450	ASN
1	B	474	GLN
1	B	542	ASN
1	B	556	ASN
1	B	564	GLN
1	B	644	GLN
1	B	658	ASN
1	B	675	GLN
1	B	690	GLN
1	B	710	ASN
1	B	804	GLN
1	B	901	GLN
1	B	914	ASN
1	B	920	GLN
1	B	926	GLN
1	B	949	GLN
1	B	957	GLN
1	B	960	ASN
1	B	992	GLN
1	B	1011	GLN
1	B	1083	HIS
1	B	1101	HIS
1	C	134	GLN
1	C	137	ASN
1	C	188	ASN
1	C	314	GLN

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Mol	Chain	Res	Type
1	C	317	ASN
1	C	422	ASN
1	C	450	ASN
1	C	493	GLN
1	C	519	HIS
1	C	542	ASN
1	C	544	ASN
1	C	556	ASN
1	C	564	GLN
1	C	613	GLN
1	C	644	GLN
1	C	658	ASN
1	C	703	ASN
1	C	764	ASN
1	C	779	GLN
1	C	784	GLN
1	C	804	GLN
1	C	901	GLN
1	C	907	ASN
1	C	914	ASN
1	C	926	GLN
1	C	935	GLN
1	C	949	GLN
1	C	992	GLN
1	C	1010	GLN
1	C	1011	GLN
1	C	1071	GLN
1	C	1101	HIS
1	C	1125	ASN
2	H	31	ASN
2	H	59	HIS
2	I	31	ASN
2	J	31	ASN
2	J	84	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

46 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
4	NAG	D	1	4,1	14,14,15	0.51	0	17,19,21	0.51	0
4	NAG	D	2	4	14,14,15	0.26	0	17,19,21	0.59	0
4	NAG	E	1	4,1	14,14,15	0.20	0	17,19,21	0.58	0
4	NAG	E	2	4	14,14,15	0.24	0	17,19,21	0.62	1 (5%)
4	NAG	F	1	4,1	14,14,15	0.31	0	17,19,21	0.64	1 (5%)
4	NAG	F	2	4	14,14,15	0.52	0	17,19,21	0.49	0
4	NAG	G	1	4,1	14,14,15	0.36	0	17,19,21	0.74	0
4	NAG	G	2	4	14,14,15	0.30	0	17,19,21	1.40	2 (11%)
4	NAG	K	1	4,1	14,14,15	0.67	1 (7%)	17,19,21	0.71	0
4	NAG	K	2	4	14,14,15	0.42	0	17,19,21	1.49	3 (17%)
4	NAG	O	1	4,1	14,14,15	0.68	1 (7%)	17,19,21	0.67	0
4	NAG	O	2	4	14,14,15	0.28	0	17,19,21	0.68	0
4	NAG	P	1	4,1	14,14,15	0.23	0	17,19,21	0.70	1 (5%)
4	NAG	P	2	4	14,14,15	0.17	0	17,19,21	0.49	0
4	NAG	Q	1	4,1	14,14,15	0.51	0	17,19,21	0.51	0
4	NAG	Q	2	4	14,14,15	0.26	0	17,19,21	0.60	0
4	NAG	R	1	4,1	14,14,15	0.19	0	17,19,21	0.58	0
4	NAG	R	2	4	14,14,15	0.24	0	17,19,21	0.62	1 (5%)
4	NAG	S	1	4,1	14,14,15	0.31	0	17,19,21	0.41	0
4	NAG	S	2	4	14,14,15	0.41	0	17,19,21	0.38	0
4	NAG	T	1	4,1	14,14,15	0.36	0	17,19,21	1.17	1 (5%)
4	NAG	T	2	4	14,14,15	0.26	0	17,19,21	0.49	0
4	NAG	U	1	4,1	14,14,15	0.30	0	17,19,21	0.72	1 (5%)
4	NAG	U	2	4	14,14,15	0.21	0	17,19,21	0.41	0
4	NAG	V	1	4,1	14,14,15	0.71	1 (7%)	17,19,21	0.92	1 (5%)
4	NAG	V	2	4	14,14,15	0.36	0	17,19,21	0.73	1 (5%)
4	NAG	W	1	4,1	14,14,15	0.21	0	17,19,21	0.45	0
4	NAG	W	2	4	14,14,15	0.28	0	17,19,21	0.40	0
4	NAG	X	1	4,1	14,14,15	0.53	0	17,19,21	0.50	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	NAG	X	2	4	14,14,15	0.24	0	17,19,21	0.60	0
4	NAG	Y	1	4,1	14,14,15	0.19	0	17,19,21	0.58	0
4	NAG	Y	2	4	14,14,15	0.24	0	17,19,21	0.62	1 (5%)
4	NAG	Z	1	4,1	14,14,15	0.23	0	17,19,21	1.44	2 (11%)
4	NAG	Z	2	4	14,14,15	0.18	0	17,19,21	0.52	0
4	NAG	a	1	4,1	14,14,15	0.51	0	17,19,21	0.72	1 (5%)
4	NAG	a	2	4	14,14,15	0.40	0	17,19,21	0.49	0
4	NAG	b	1	4,1	14,14,15	0.39	0	17,19,21	0.41	0
4	NAG	b	2	4	14,14,15	0.20	0	17,19,21	0.77	0
4	NAG	c	1	4,1	14,14,15	0.38	0	17,19,21	0.50	0
4	NAG	c	2	4	14,14,15	0.59	0	17,19,21	1.38	2 (11%)
4	NAG	d	1	4,1	14,14,15	0.60	0	17,19,21	0.44	0
4	NAG	d	2	4	14,14,15	0.35	0	17,19,21	1.43	2 (11%)
4	NAG	e	1	4,1	14,14,15	0.38	0	17,19,21	0.47	0
4	NAG	e	2	4	14,14,15	0.23	0	17,19,21	0.51	0
4	NAG	f	1	4,1	14,14,15	0.42	0	17,19,21	1.13	2 (11%)
4	NAG	f	2	4	14,14,15	0.36	0	17,19,21	0.43	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	D	1	4,1	-	1/6/23/26	0/1/1/1
4	NAG	D	2	4	-	2/6/23/26	0/1/1/1
4	NAG	E	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	E	2	4	-	2/6/23/26	0/1/1/1
4	NAG	F	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	F	2	4	-	2/6/23/26	0/1/1/1
4	NAG	G	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	G	2	4	-	4/6/23/26	0/1/1/1
4	NAG	K	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	K	2	4	-	6/6/23/26	0/1/1/1
4	NAG	O	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	O	2	4	-	4/6/23/26	0/1/1/1
4	NAG	P	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	P	2	4	-	0/6/23/26	0/1/1/1
4	NAG	Q	1	4,1	-	1/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	Q	2	4	-	2/6/23/26	0/1/1/1
4	NAG	R	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	R	2	4	-	2/6/23/26	0/1/1/1
4	NAG	S	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	S	2	4	-	1/6/23/26	0/1/1/1
4	NAG	T	1	4,1	-	1/6/23/26	0/1/1/1
4	NAG	T	2	4	-	0/6/23/26	0/1/1/1
4	NAG	U	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	U	2	4	-	3/6/23/26	0/1/1/1
4	NAG	V	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	V	2	4	-	3/6/23/26	0/1/1/1
4	NAG	W	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	W	2	4	-	2/6/23/26	0/1/1/1
4	NAG	X	1	4,1	-	1/6/23/26	0/1/1/1
4	NAG	X	2	4	-	2/6/23/26	0/1/1/1
4	NAG	Y	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	Y	2	4	-	2/6/23/26	0/1/1/1
4	NAG	Z	1	4,1	-	6/6/23/26	0/1/1/1
4	NAG	Z	2	4	-	2/6/23/26	0/1/1/1
4	NAG	a	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	a	2	4	-	2/6/23/26	0/1/1/1
4	NAG	b	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	b	2	4	-	2/6/23/26	0/1/1/1
4	NAG	c	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	c	2	4	-	6/6/23/26	0/1/1/1
4	NAG	d	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	d	2	4	-	5/6/23/26	0/1/1/1
4	NAG	e	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	e	2	4	-	2/6/23/26	0/1/1/1
4	NAG	f	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	f	2	4	-	0/6/23/26	0/1/1/1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	V	1	NAG	O5-C1	-2.57	1.39	1.43
4	O	1	NAG	O5-C1	-2.47	1.39	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	K	1	NAG	O5-C1	-2.21	1.40	1.43

All (23) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	Z	1	NAG	C2-N2-C7	4.98	129.57	122.90
4	K	2	NAG	C2-N2-C7	4.72	129.23	122.90
4	d	2	NAG	C2-N2-C7	4.61	129.07	122.90
4	c	2	NAG	C2-N2-C7	4.55	129.00	122.90
4	G	2	NAG	C2-N2-C7	4.53	128.97	122.90
4	T	1	NAG	C1-O5-C5	3.37	116.71	112.19
4	K	2	NAG	C1-C2-N2	2.62	114.56	110.43
4	G	2	NAG	C1-C2-N2	2.59	114.52	110.43
4	d	2	NAG	C1-C2-N2	2.43	114.27	110.43
4	V	1	NAG	O4-C4-C3	-2.35	104.84	110.38
4	U	1	NAG	C1-O5-C5	2.32	115.29	112.19
4	f	1	NAG	C8-C7-N2	2.29	119.91	116.12
4	a	1	NAG	C1-O5-C5	2.28	115.24	112.19
4	f	1	NAG	C2-N2-C7	-2.18	119.98	122.90
4	R	2	NAG	C1-O5-C5	2.13	115.05	112.19
4	Y	2	NAG	C1-O5-C5	2.13	115.03	112.19
4	E	2	NAG	C1-O5-C5	2.12	115.03	112.19
4	Z	1	NAG	C1-C2-N2	2.12	113.77	110.43
4	P	1	NAG	C1-O5-C5	2.12	115.02	112.19
4	K	2	NAG	C1-O5-C5	2.10	115.00	112.19
4	V	2	NAG	C1-O5-C5	2.08	114.97	112.19
4	c	2	NAG	C1-C2-N2	2.04	113.65	110.43
4	F	1	NAG	C1-O5-C5	2.00	114.87	112.19

There are no chirality outliers.

All (94) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	Z	2	NAG	O5-C5-C6-O6
4	b	1	NAG	O5-C5-C6-O6
4	a	2	NAG	O5-C5-C6-O6
4	D	2	NAG	O5-C5-C6-O6
4	O	1	NAG	O5-C5-C6-O6
4	Q	2	NAG	O5-C5-C6-O6
4	V	1	NAG	O5-C5-C6-O6
4	X	2	NAG	O5-C5-C6-O6
4	D	2	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
4	Q	2	NAG	C4-C5-C6-O6
4	V	1	NAG	C4-C5-C6-O6
4	X	2	NAG	C4-C5-C6-O6
4	a	1	NAG	O5-C5-C6-O6
4	V	2	NAG	O5-C5-C6-O6
4	O	1	NAG	C4-C5-C6-O6
4	a	1	NAG	C4-C5-C6-O6
4	b	1	NAG	C4-C5-C6-O6
4	W	1	NAG	C4-C5-C6-O6
4	a	2	NAG	C4-C5-C6-O6
4	c	2	NAG	O5-C5-C6-O6
4	Z	2	NAG	C4-C5-C6-O6
4	V	2	NAG	C4-C5-C6-O6
4	W	2	NAG	O5-C5-C6-O6
4	c	2	NAG	C4-C5-C6-O6
4	Z	1	NAG	O5-C5-C6-O6
4	Z	1	NAG	C4-C5-C6-O6
4	G	2	NAG	C8-C7-N2-C2
4	G	2	NAG	O7-C7-N2-C2
4	K	2	NAG	C8-C7-N2-C2
4	K	2	NAG	O7-C7-N2-C2
4	U	2	NAG	C8-C7-N2-C2
4	U	2	NAG	O7-C7-N2-C2
4	Z	1	NAG	C8-C7-N2-C2
4	Z	1	NAG	O7-C7-N2-C2
4	c	2	NAG	C8-C7-N2-C2
4	c	2	NAG	O7-C7-N2-C2
4	d	2	NAG	C8-C7-N2-C2
4	d	2	NAG	O7-C7-N2-C2
4	G	1	NAG	C4-C5-C6-O6
4	K	1	NAG	C4-C5-C6-O6
4	W	2	NAG	C4-C5-C6-O6
4	W	1	NAG	O5-C5-C6-O6
4	G	1	NAG	O5-C5-C6-O6
4	K	1	NAG	O5-C5-C6-O6
4	O	2	NAG	C4-C5-C6-O6
4	O	2	NAG	O5-C5-C6-O6
4	d	1	NAG	O5-C5-C6-O6
4	E	1	NAG	C4-C5-C6-O6
4	R	1	NAG	C4-C5-C6-O6
4	Y	1	NAG	C4-C5-C6-O6
4	d	1	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
4	P	1	NAG	C4-C5-C6-O6
4	P	1	NAG	O5-C5-C6-O6
4	d	2	NAG	O5-C5-C6-O6
4	R	2	NAG	C4-C5-C6-O6
4	Y	2	NAG	C4-C5-C6-O6
4	E	2	NAG	C4-C5-C6-O6
4	E	1	NAG	O5-C5-C6-O6
4	R	1	NAG	O5-C5-C6-O6
4	Y	1	NAG	O5-C5-C6-O6
4	E	2	NAG	O5-C5-C6-O6
4	R	2	NAG	O5-C5-C6-O6
4	Y	2	NAG	O5-C5-C6-O6
4	U	2	NAG	O5-C5-C6-O6
4	Z	1	NAG	C1-C2-N2-C7
4	Q	1	NAG	O5-C5-C6-O6
4	D	1	NAG	O5-C5-C6-O6
4	X	1	NAG	O5-C5-C6-O6
4	U	1	NAG	C4-C5-C6-O6
4	F	2	NAG	C4-C5-C6-O6
4	F	2	NAG	O5-C5-C6-O6
4	e	2	NAG	C4-C5-C6-O6
4	c	1	NAG	C4-C5-C6-O6
4	O	2	NAG	C3-C2-N2-C7
4	T	1	NAG	C3-C2-N2-C7
4	V	2	NAG	C3-C2-N2-C7
4	b	2	NAG	C3-C2-N2-C7
4	d	2	NAG	C3-C2-N2-C7
4	e	2	NAG	O5-C5-C6-O6
4	S	2	NAG	C4-C5-C6-O6
4	K	2	NAG	C4-C5-C6-O6
4	c	1	NAG	O5-C5-C6-O6
4	K	2	NAG	O5-C5-C6-O6
4	G	2	NAG	C1-C2-N2-C7
4	K	2	NAG	C1-C2-N2-C7
4	O	2	NAG	C1-C2-N2-C7
4	b	2	NAG	C1-C2-N2-C7
4	c	2	NAG	C1-C2-N2-C7
4	d	2	NAG	C1-C2-N2-C7
4	G	2	NAG	C3-C2-N2-C7
4	K	2	NAG	C3-C2-N2-C7
4	Z	1	NAG	C3-C2-N2-C7
4	c	2	NAG	C3-C2-N2-C7

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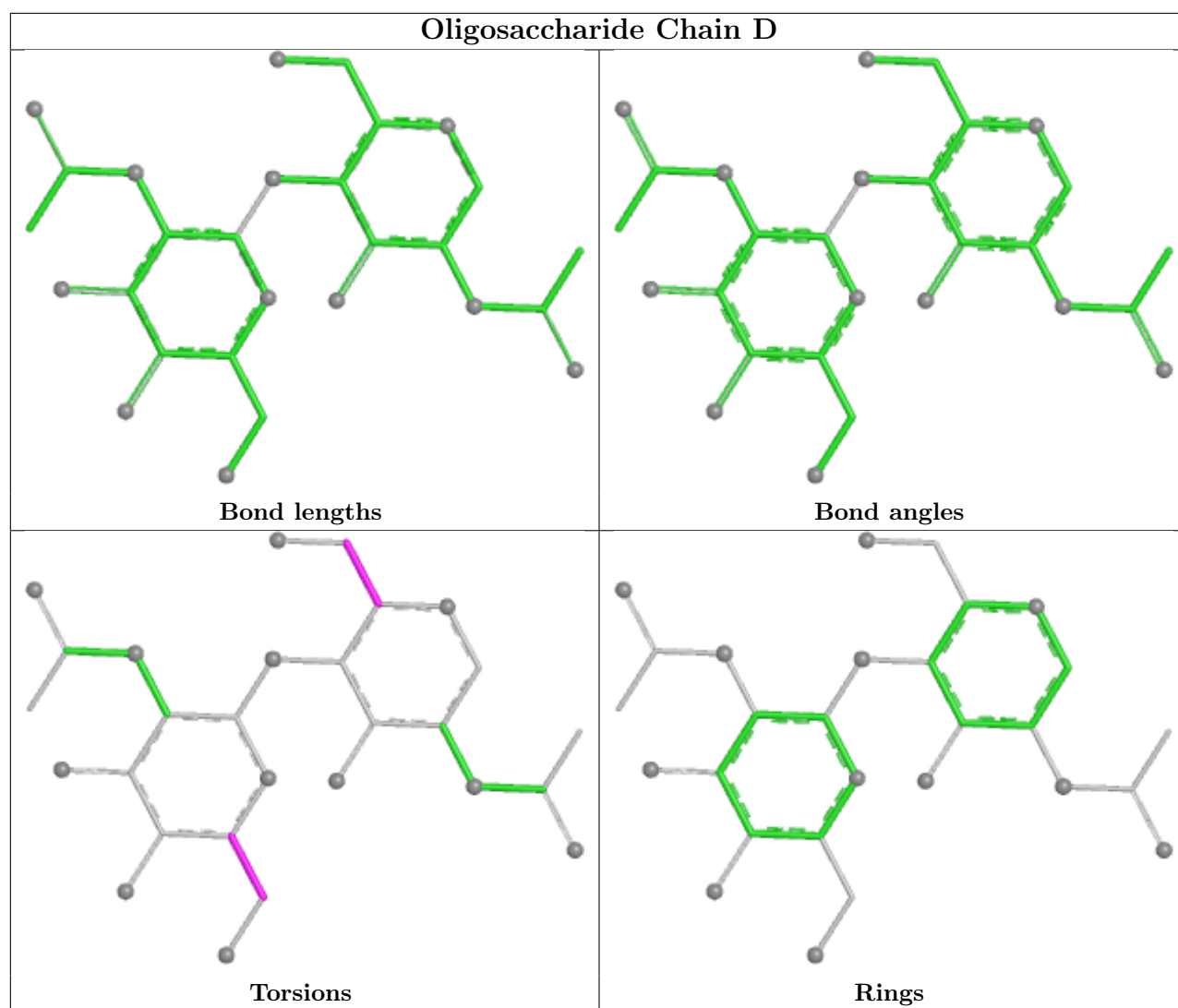
Mol	Chain	Res	Type	Atoms
4	U	1	NAG	O5-C5-C6-O6

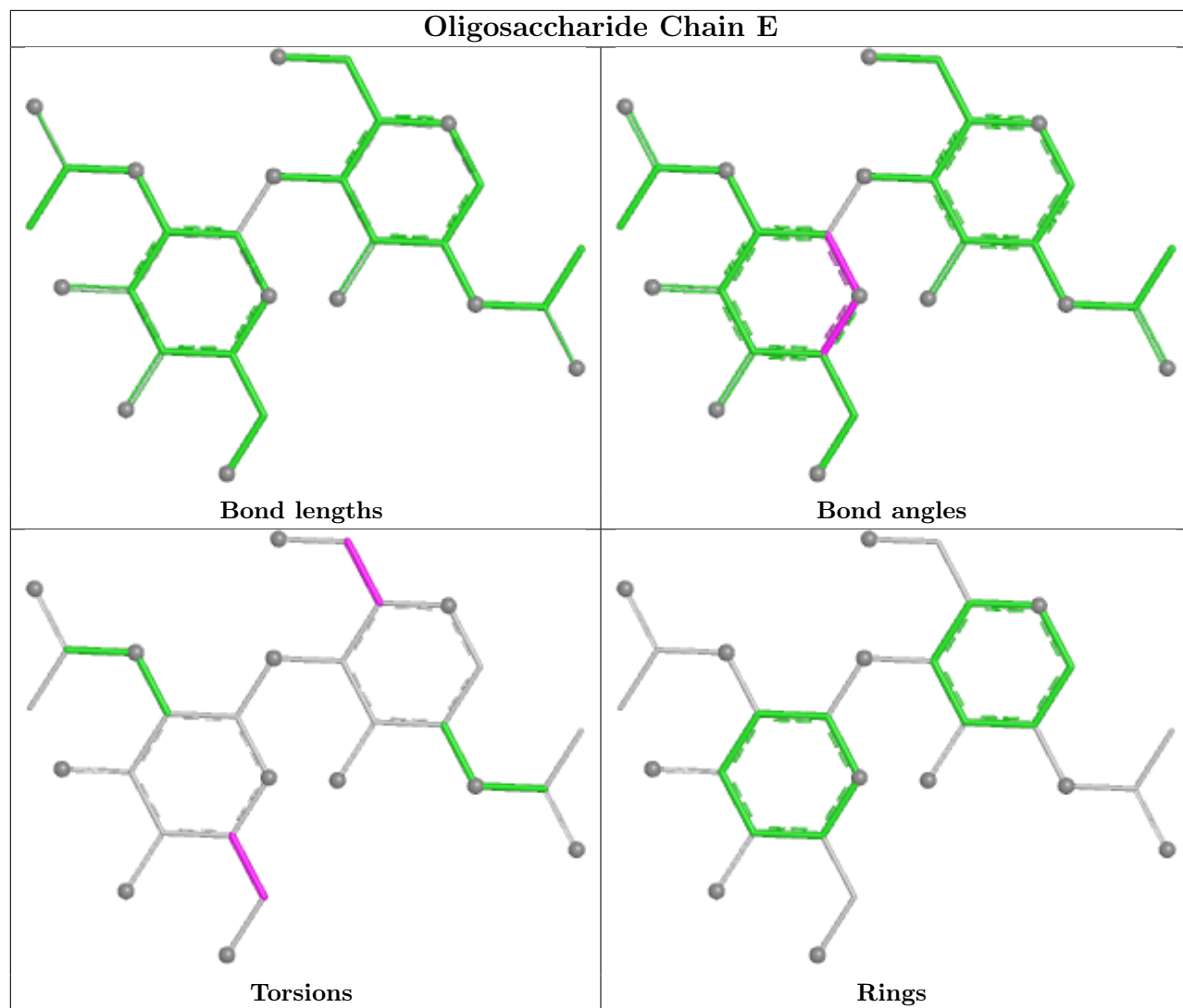
There are no ring outliers.

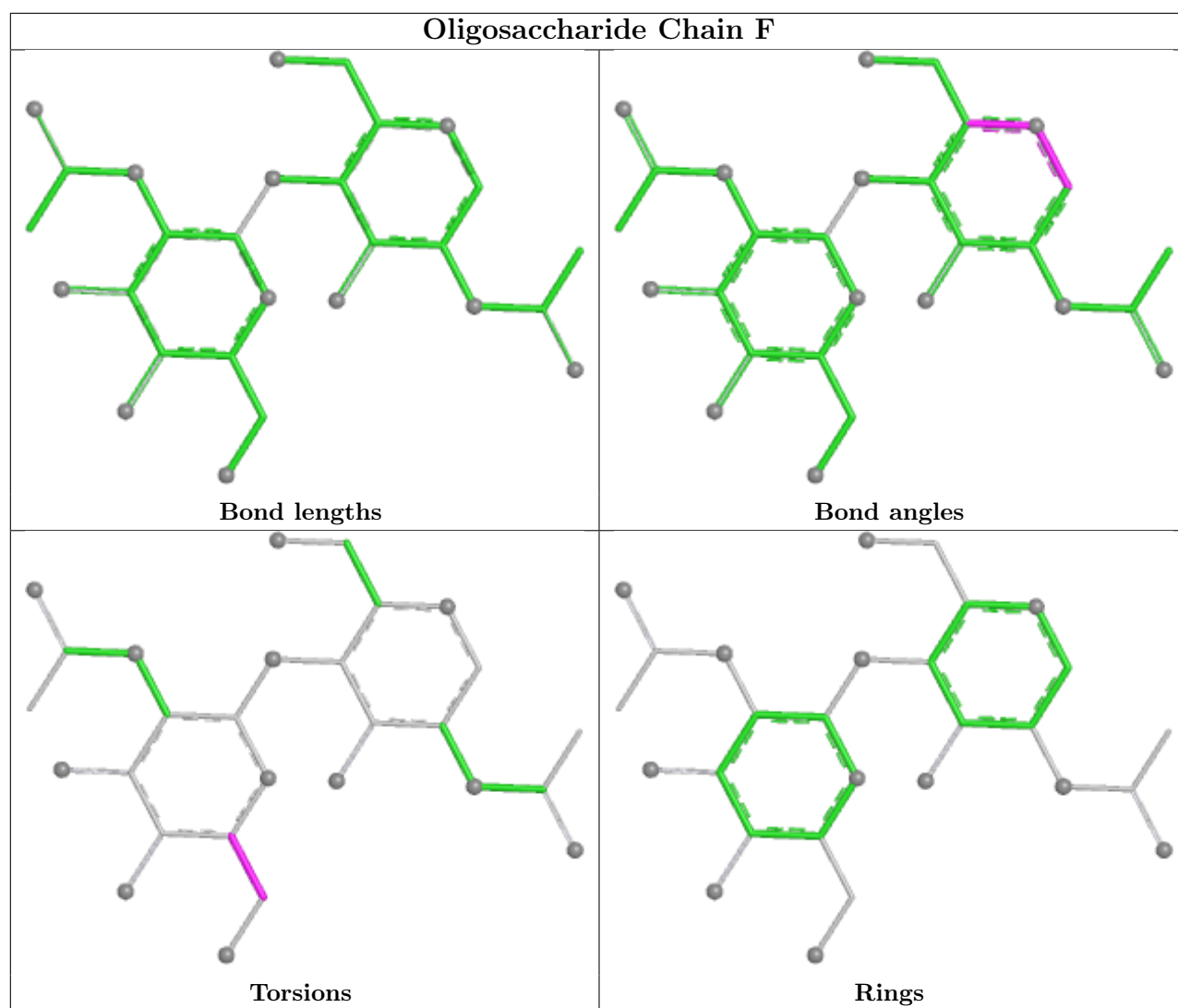
13 monomers are involved in 13 short contacts:

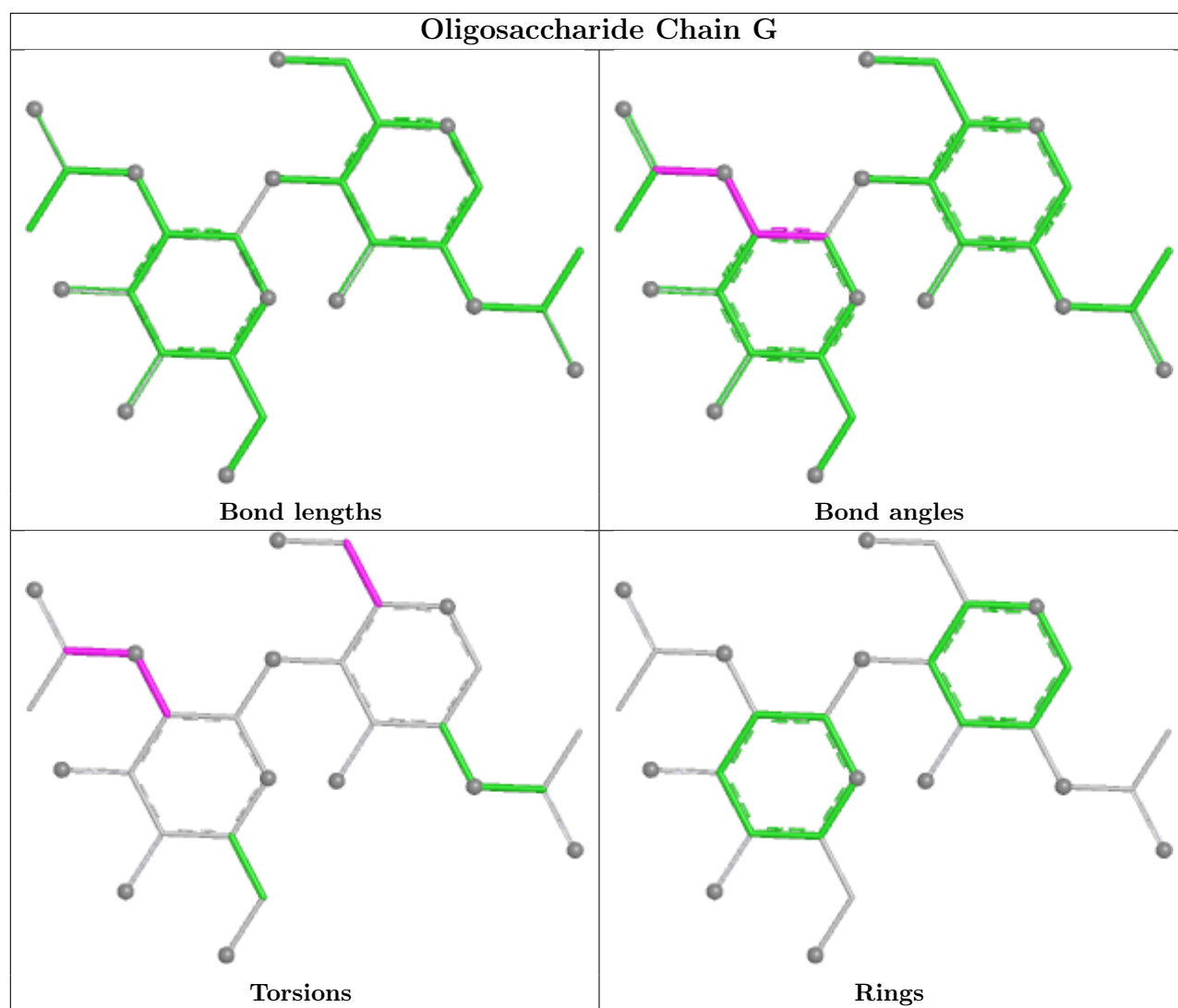
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	V	2	NAG	1	0
4	Z	1	NAG	1	0
4	c	2	NAG	1	0
4	f	1	NAG	3	0
4	G	2	NAG	1	0
4	V	1	NAG	1	0
4	R	1	NAG	1	0
4	K	2	NAG	1	0
4	f	2	NAG	3	0
4	d	2	NAG	1	0
4	Q	1	NAG	1	0
4	Y	1	NAG	1	0
4	d	1	NAG	1	0

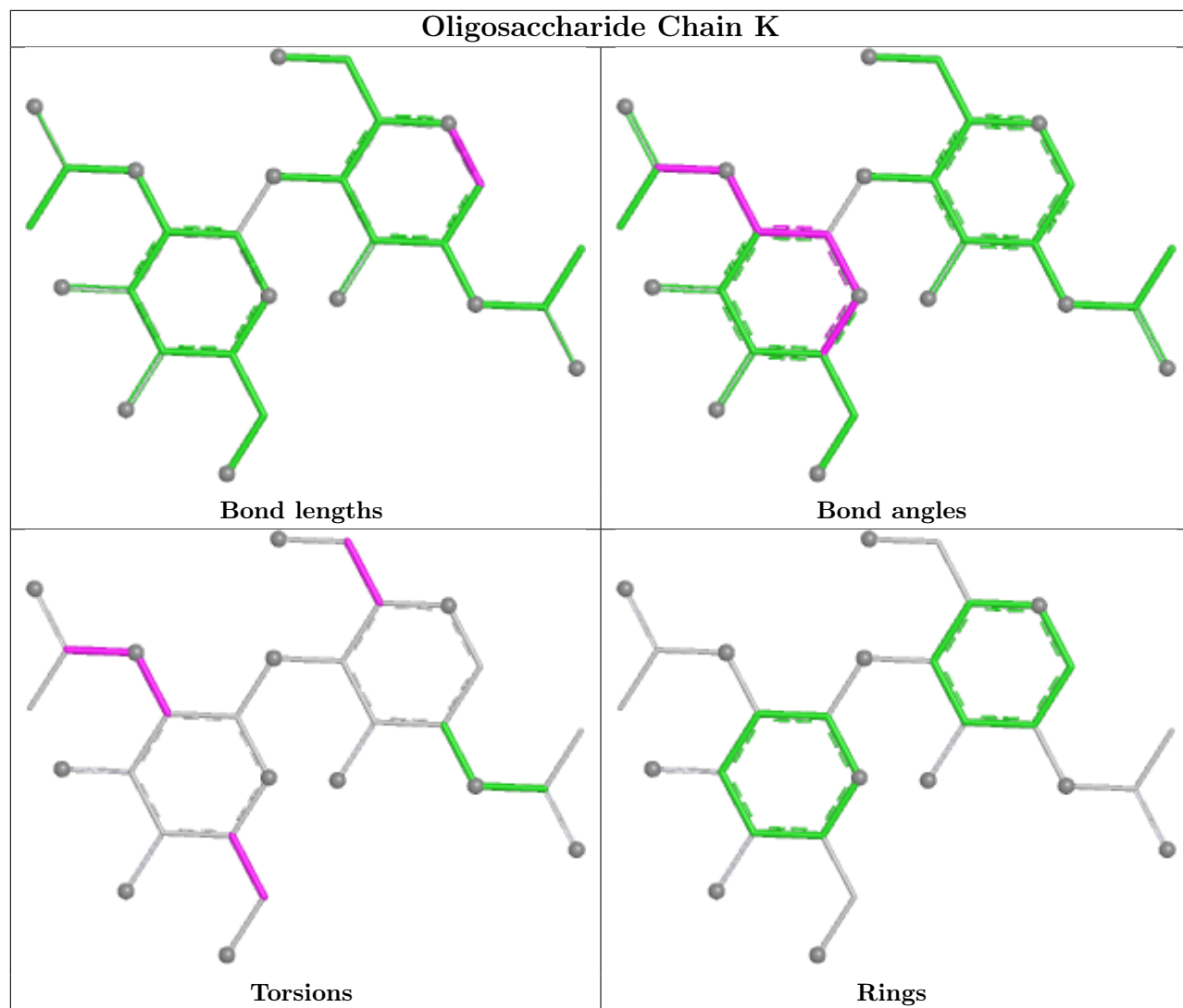
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

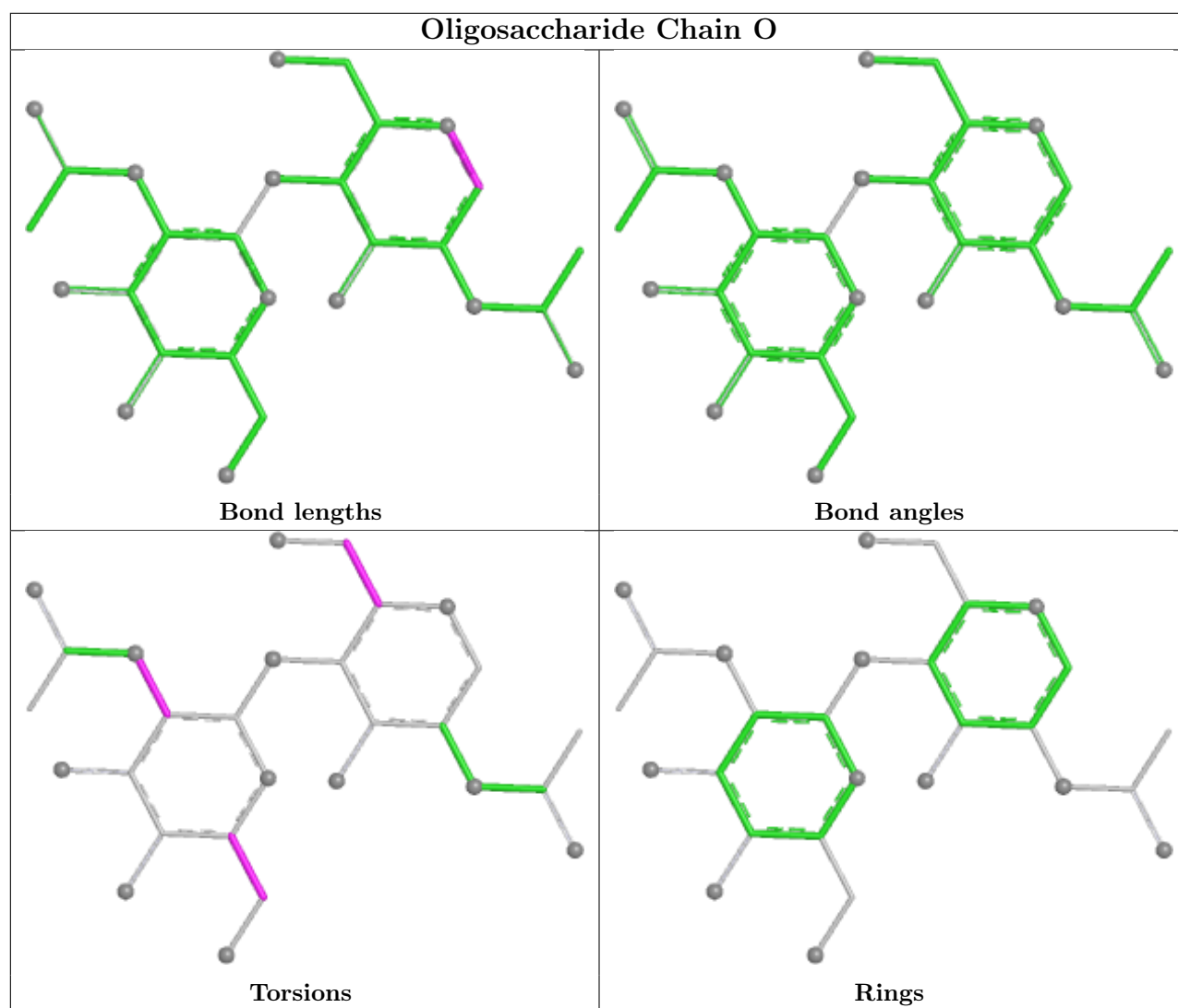


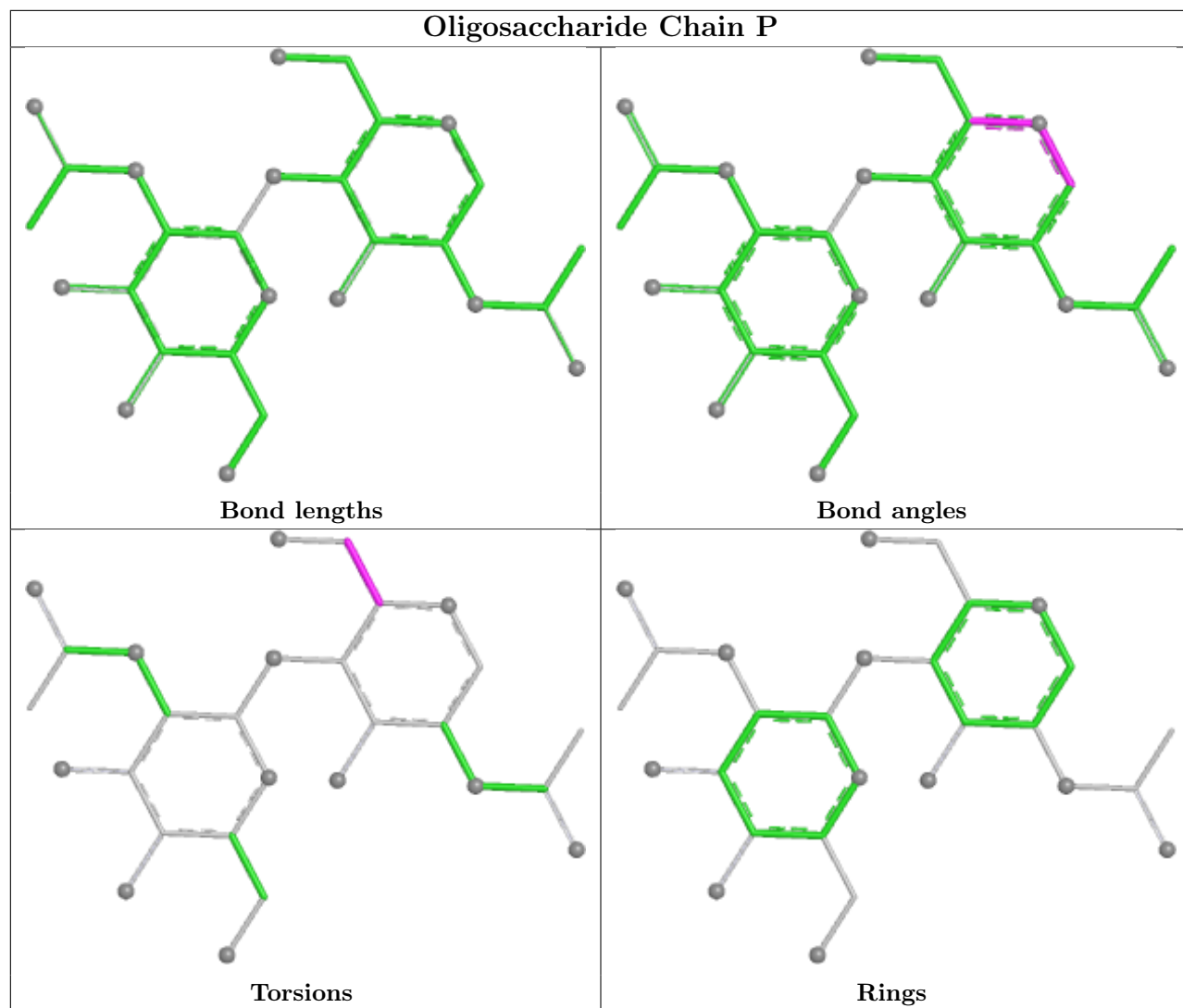


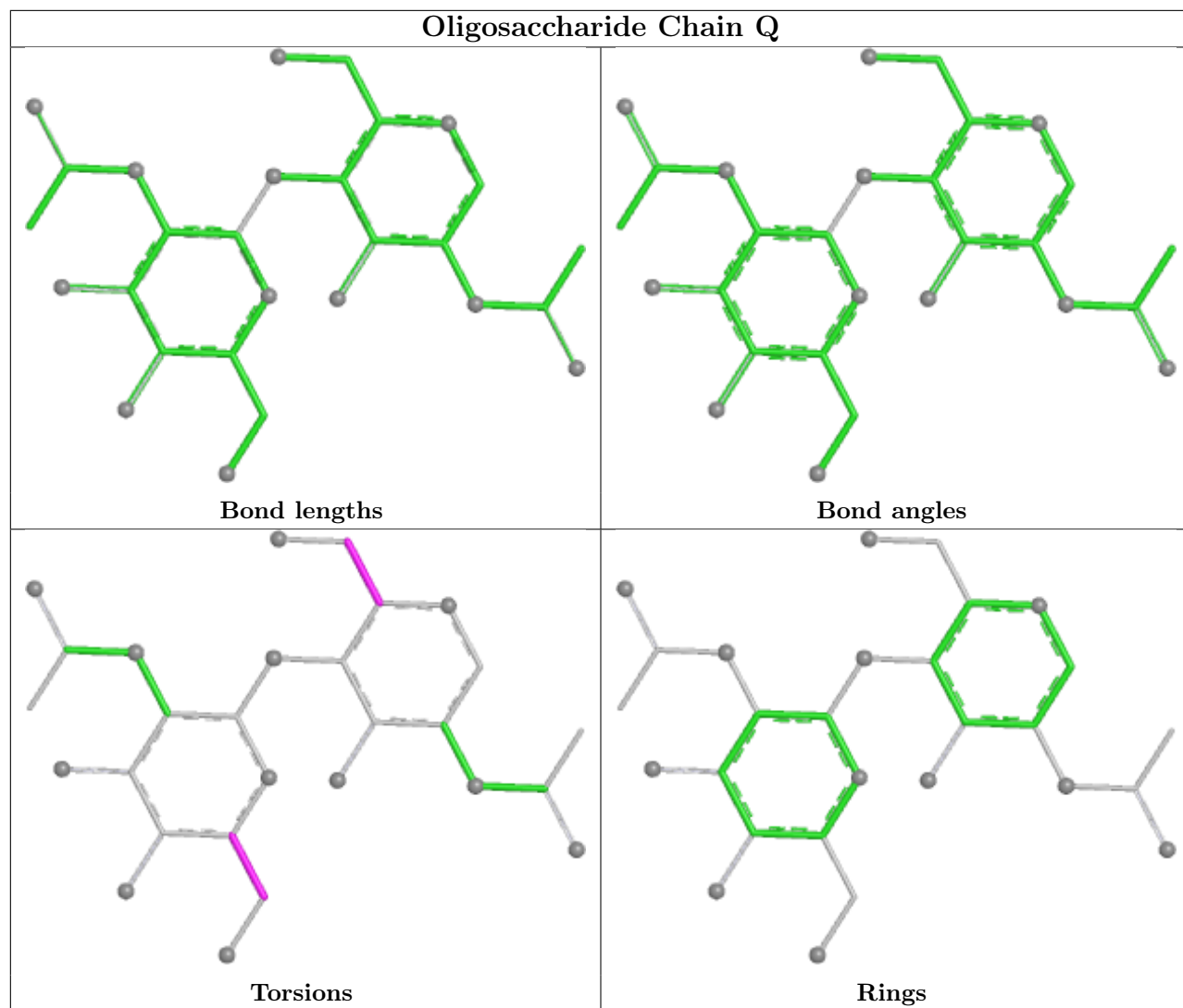


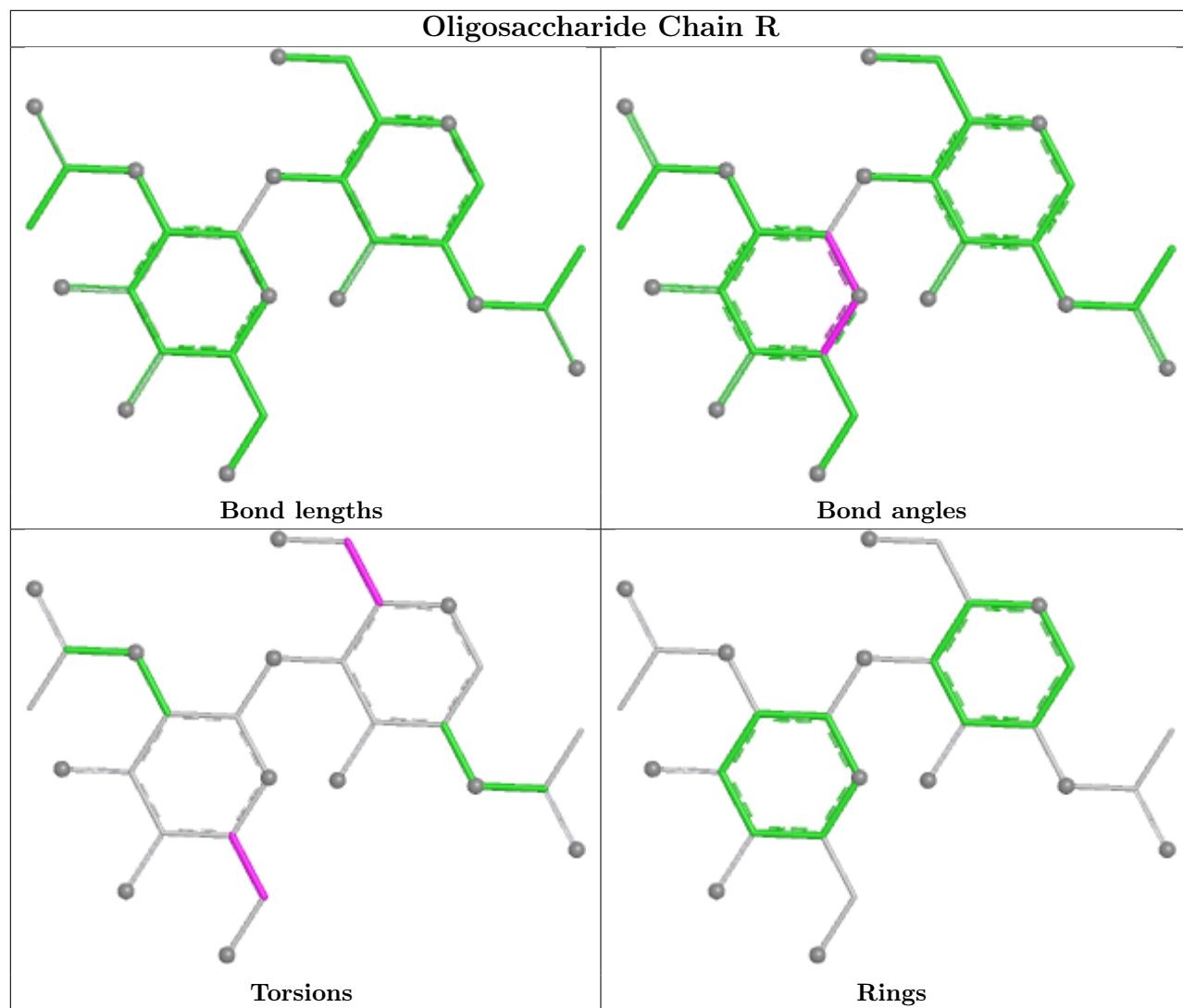


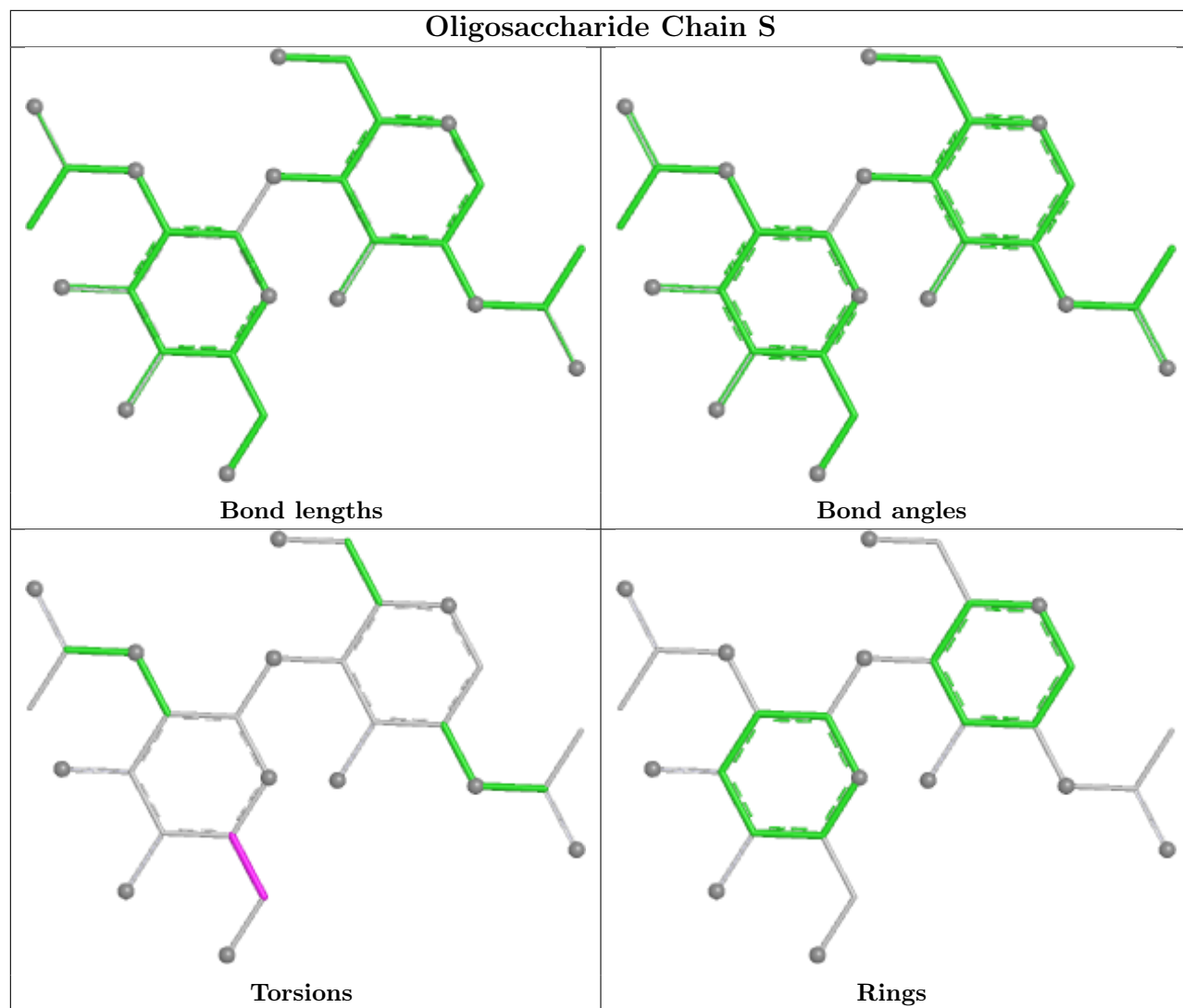


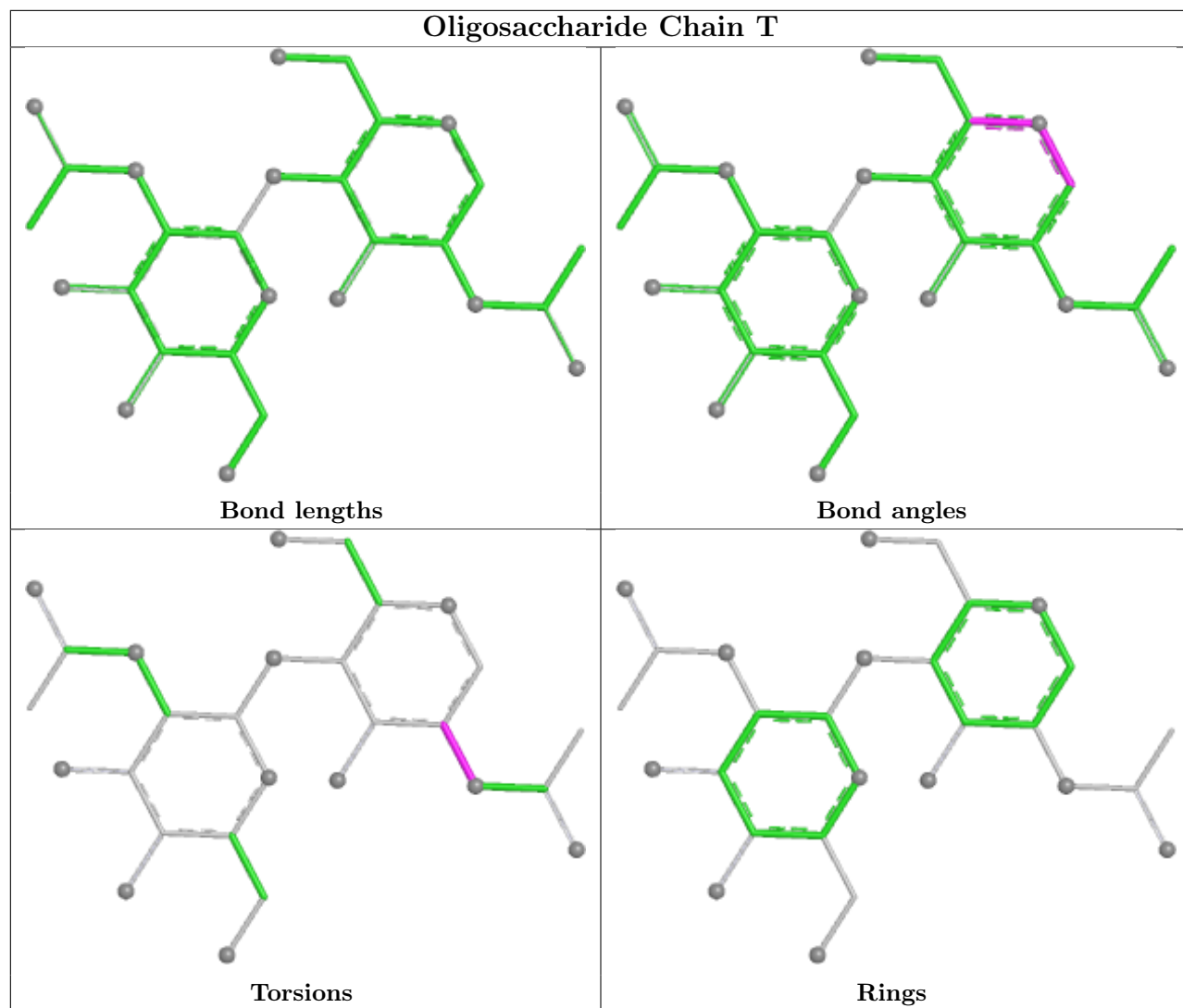


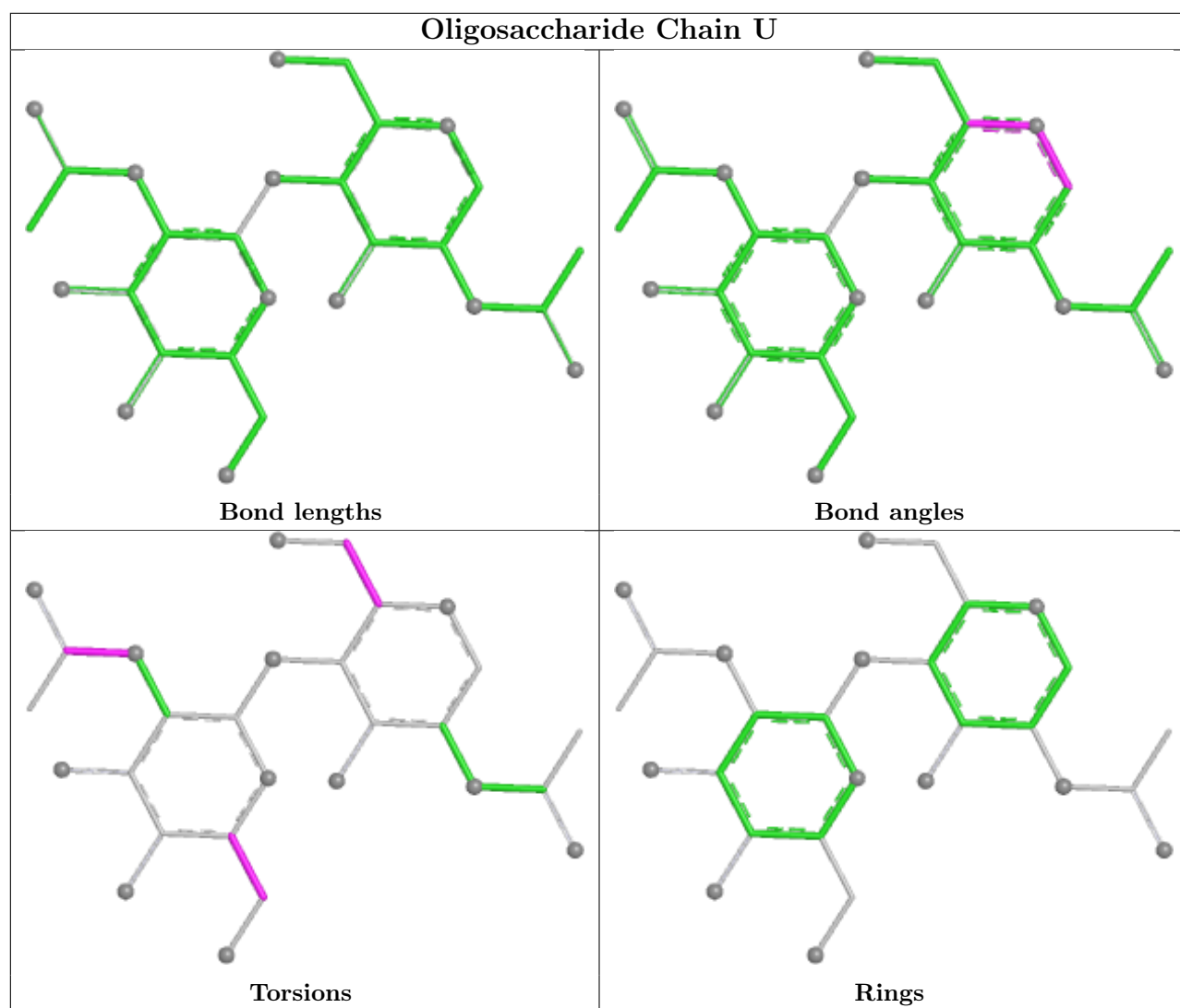


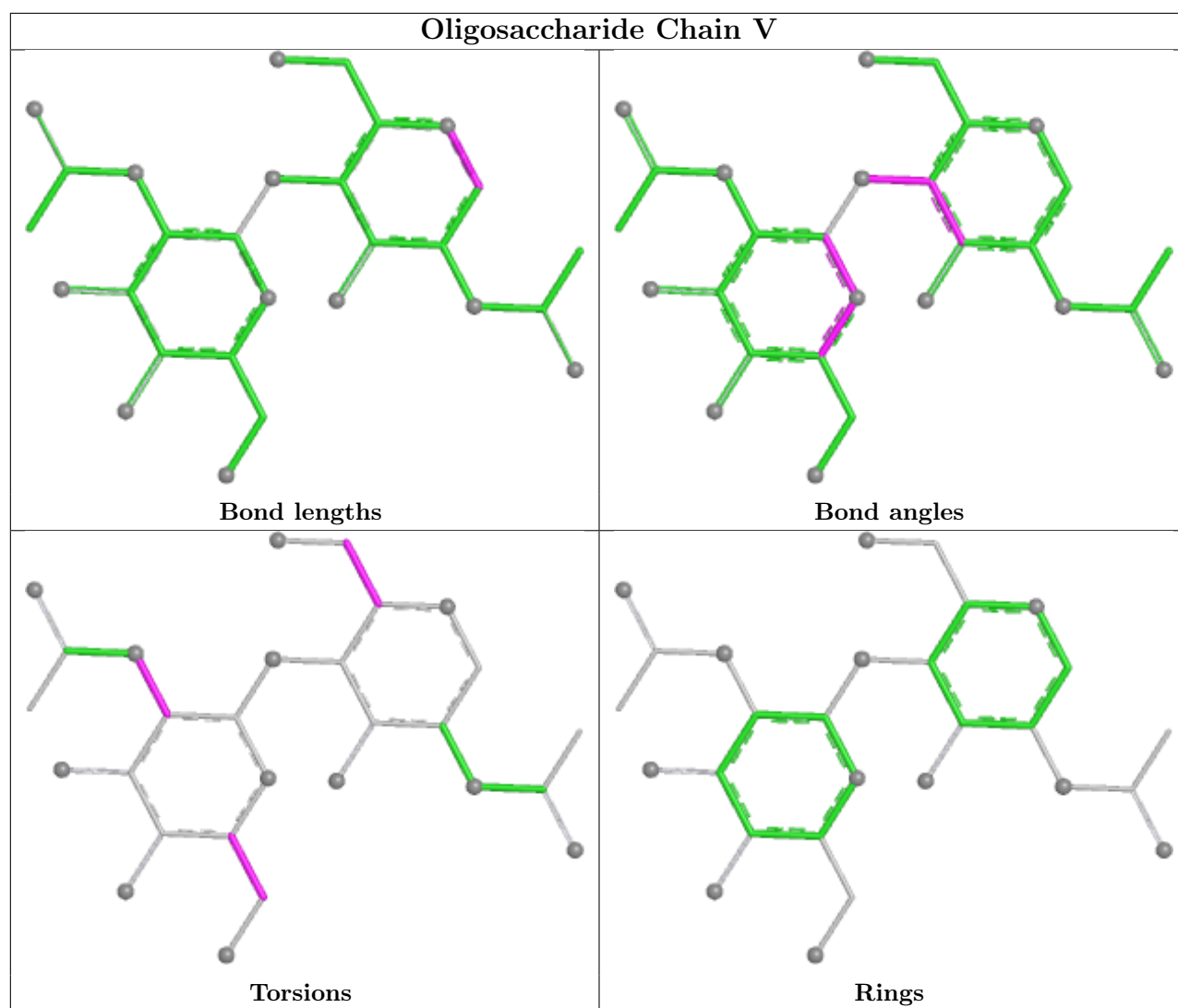


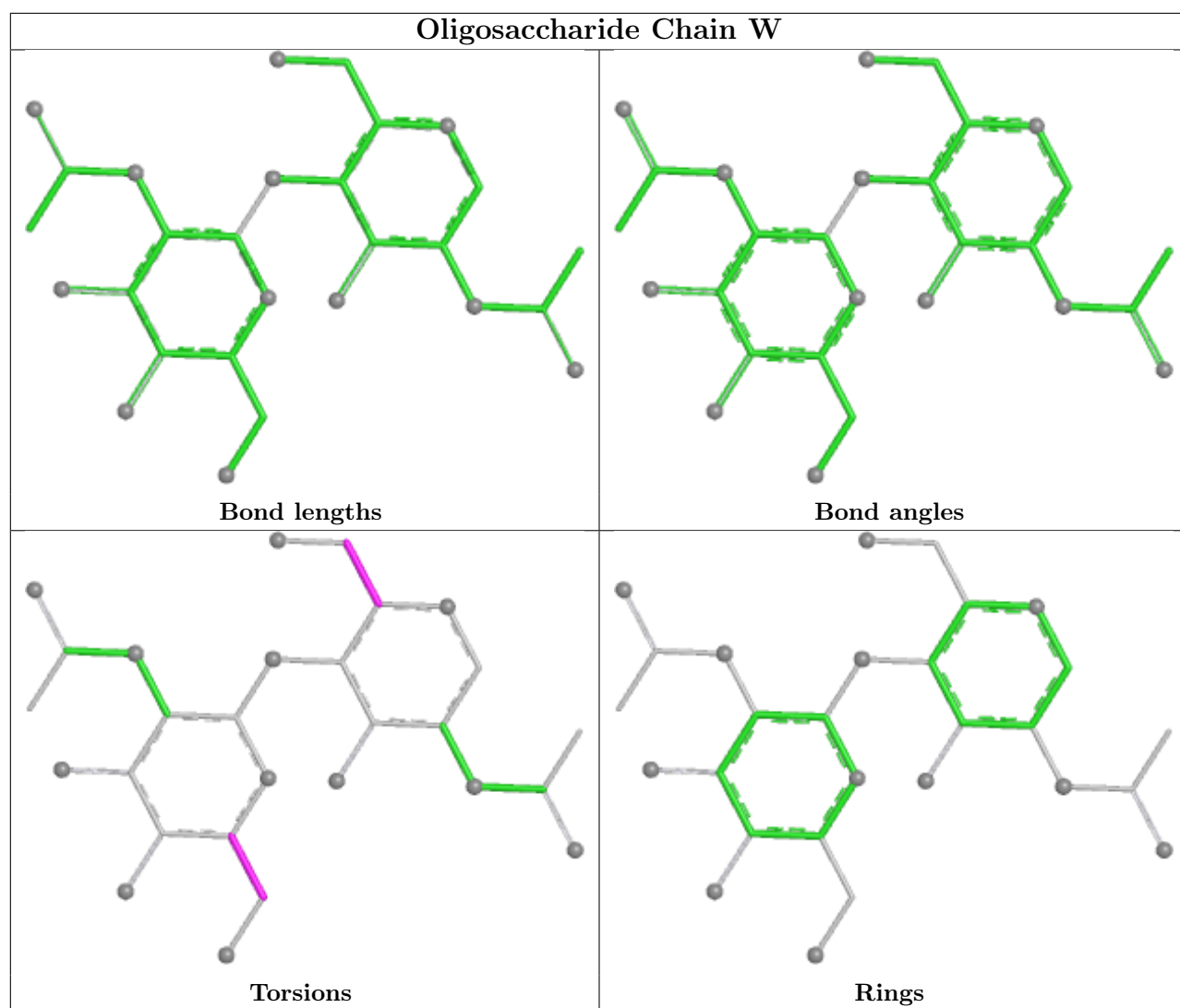


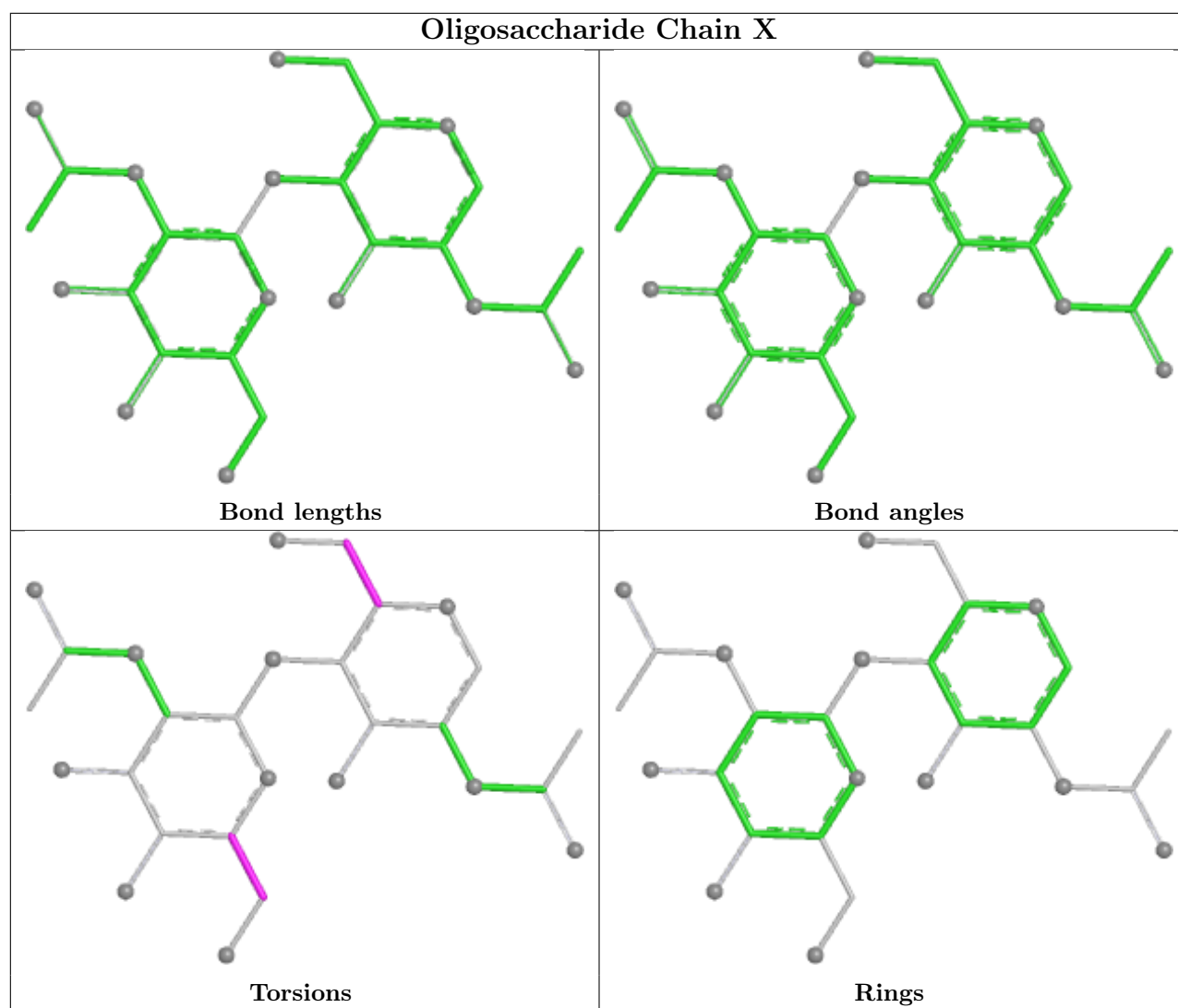


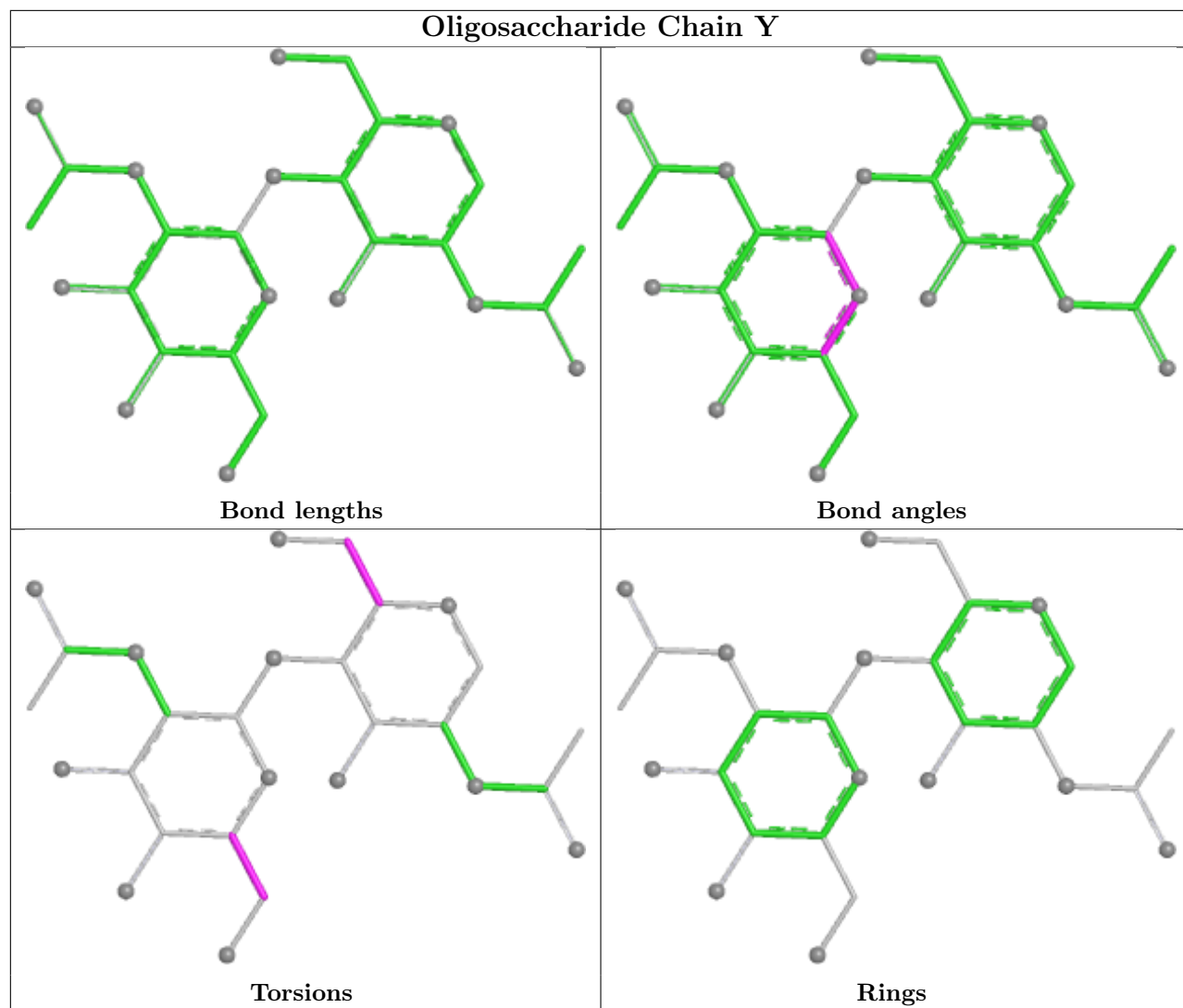


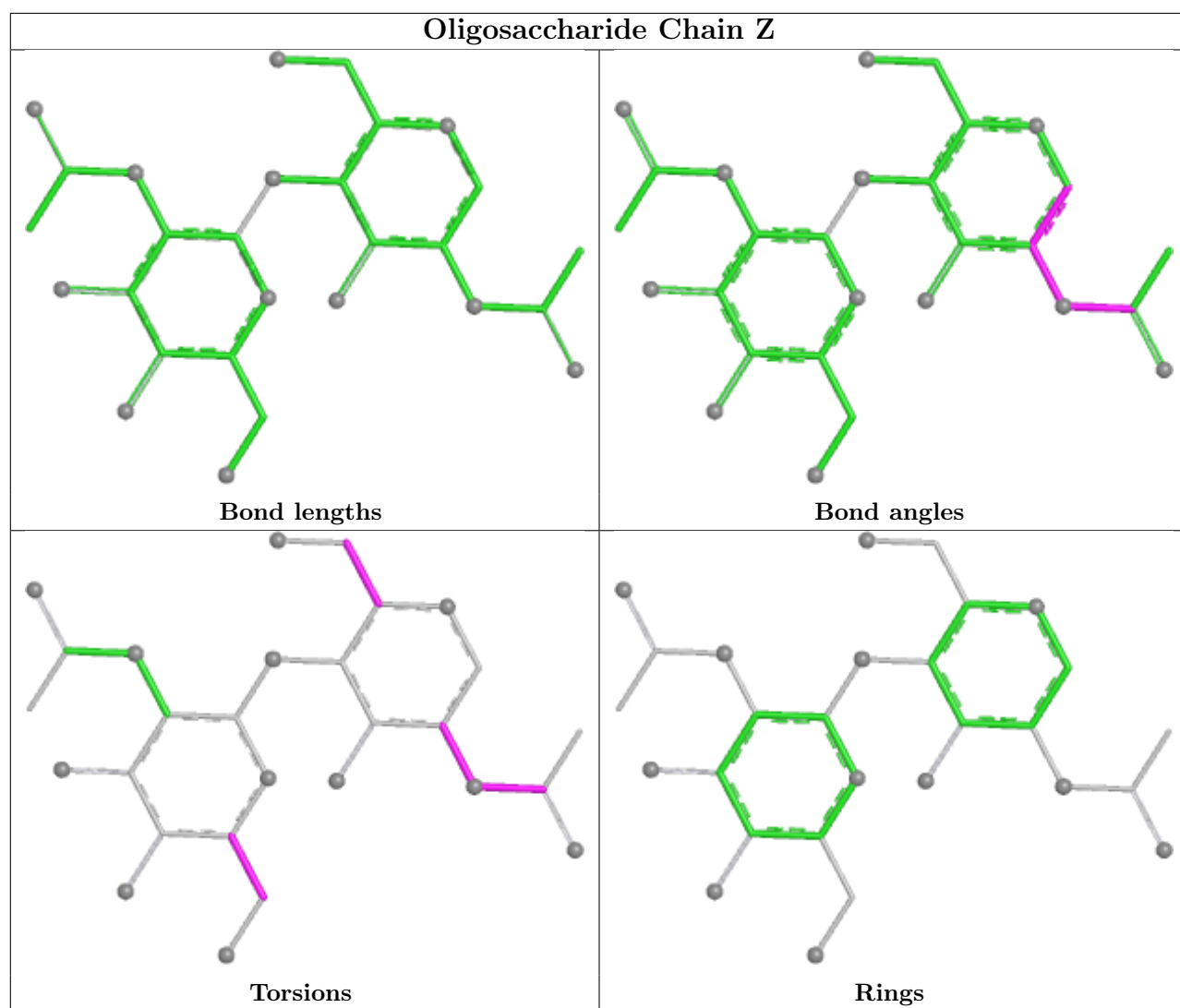


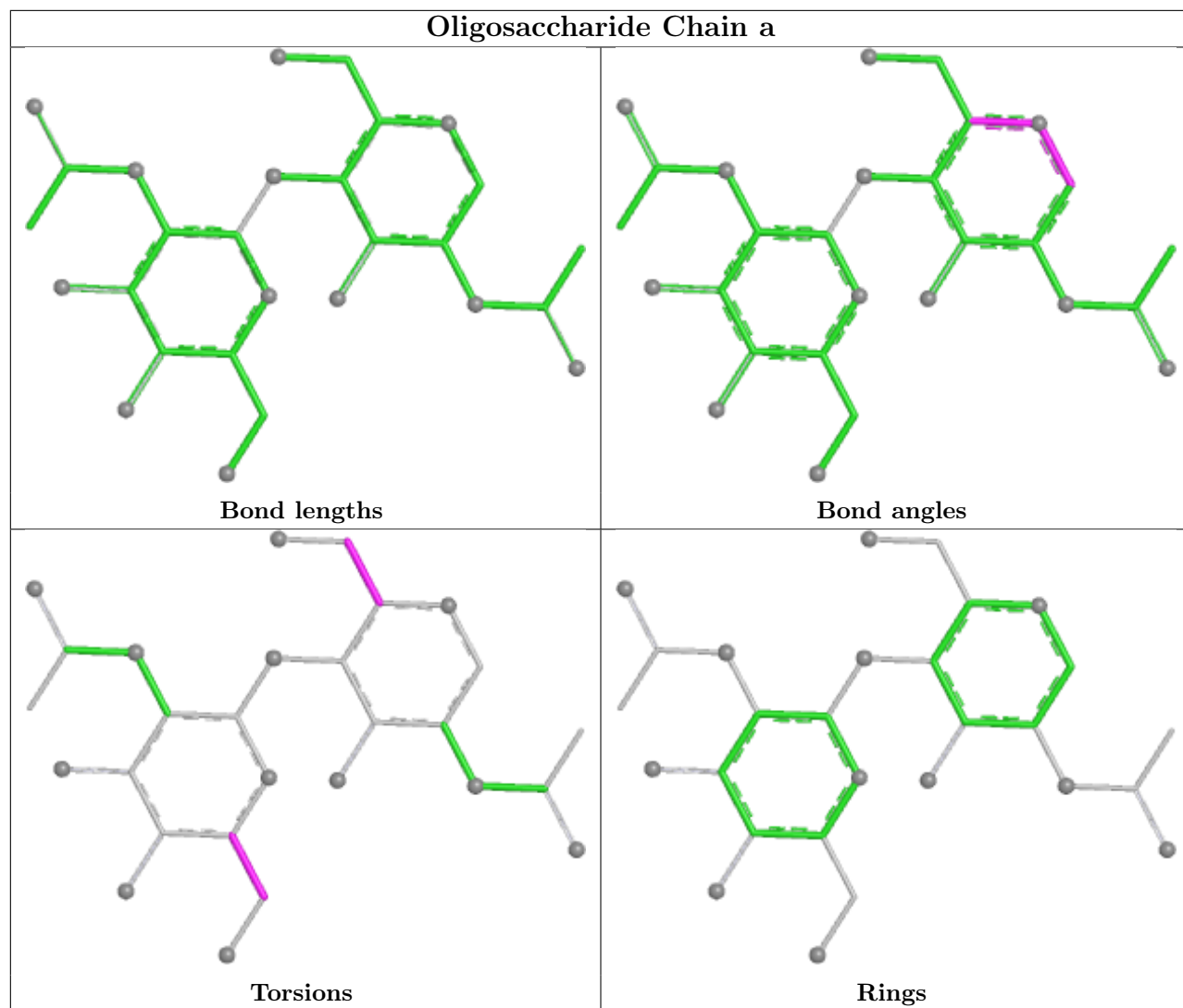


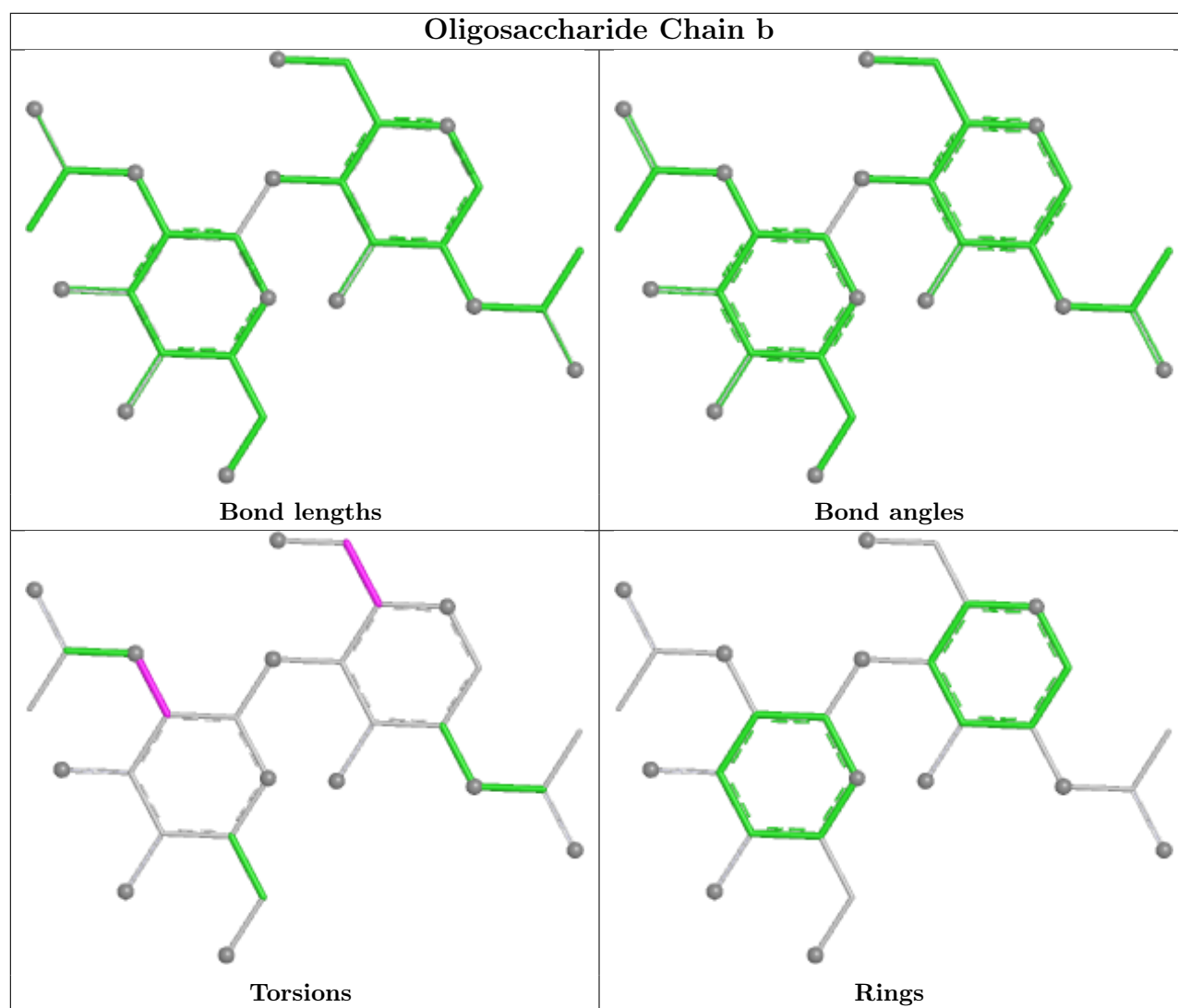


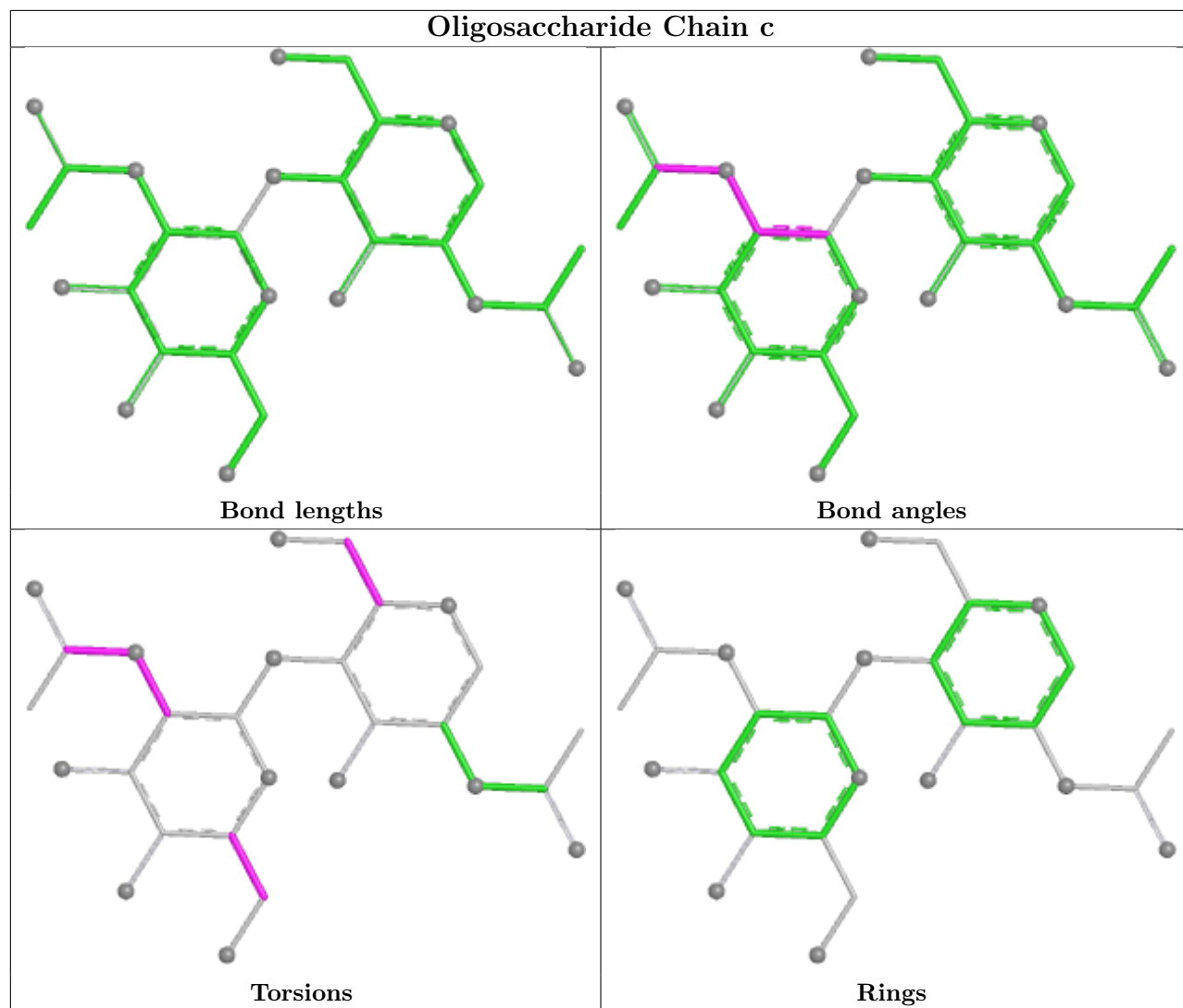


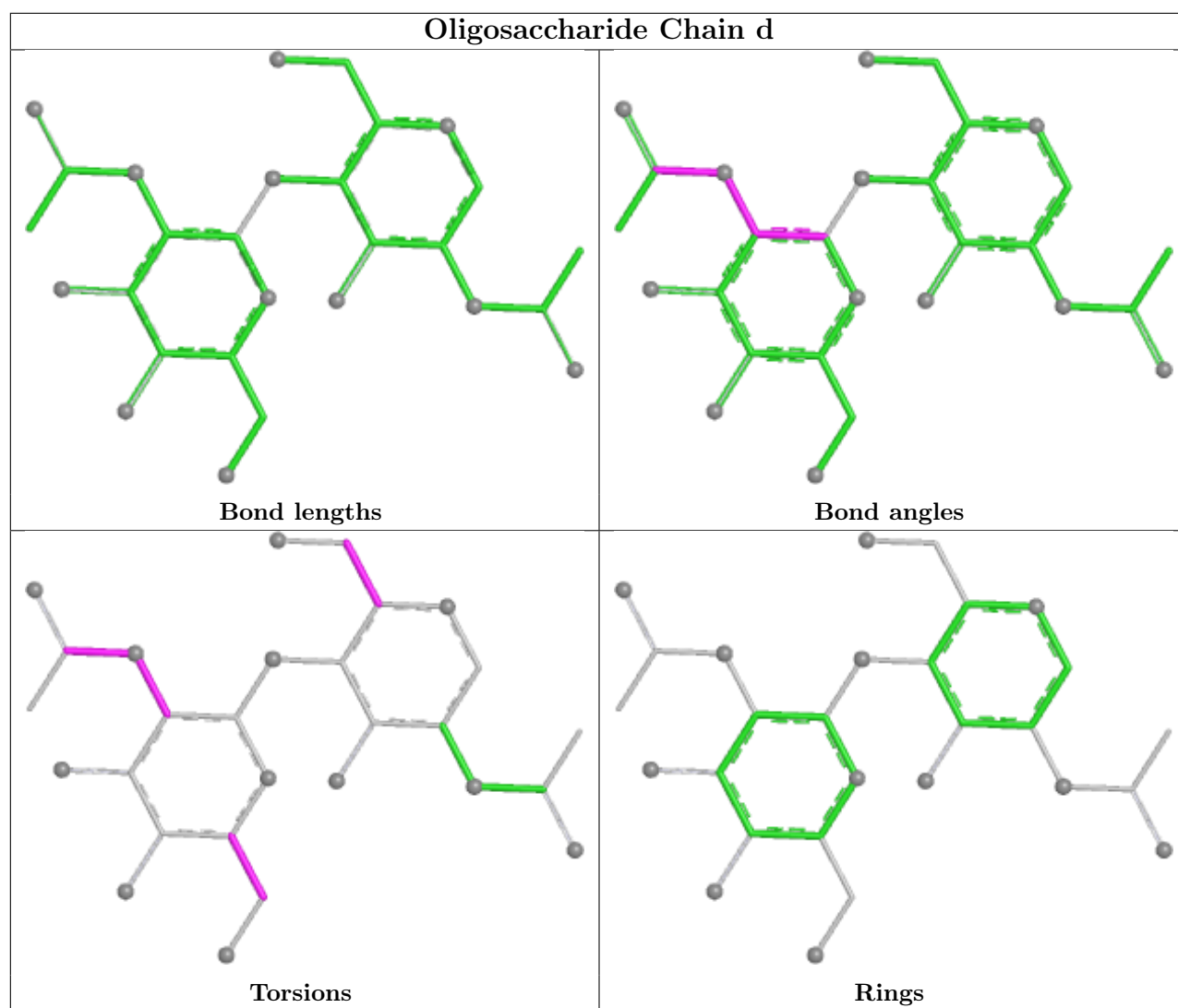


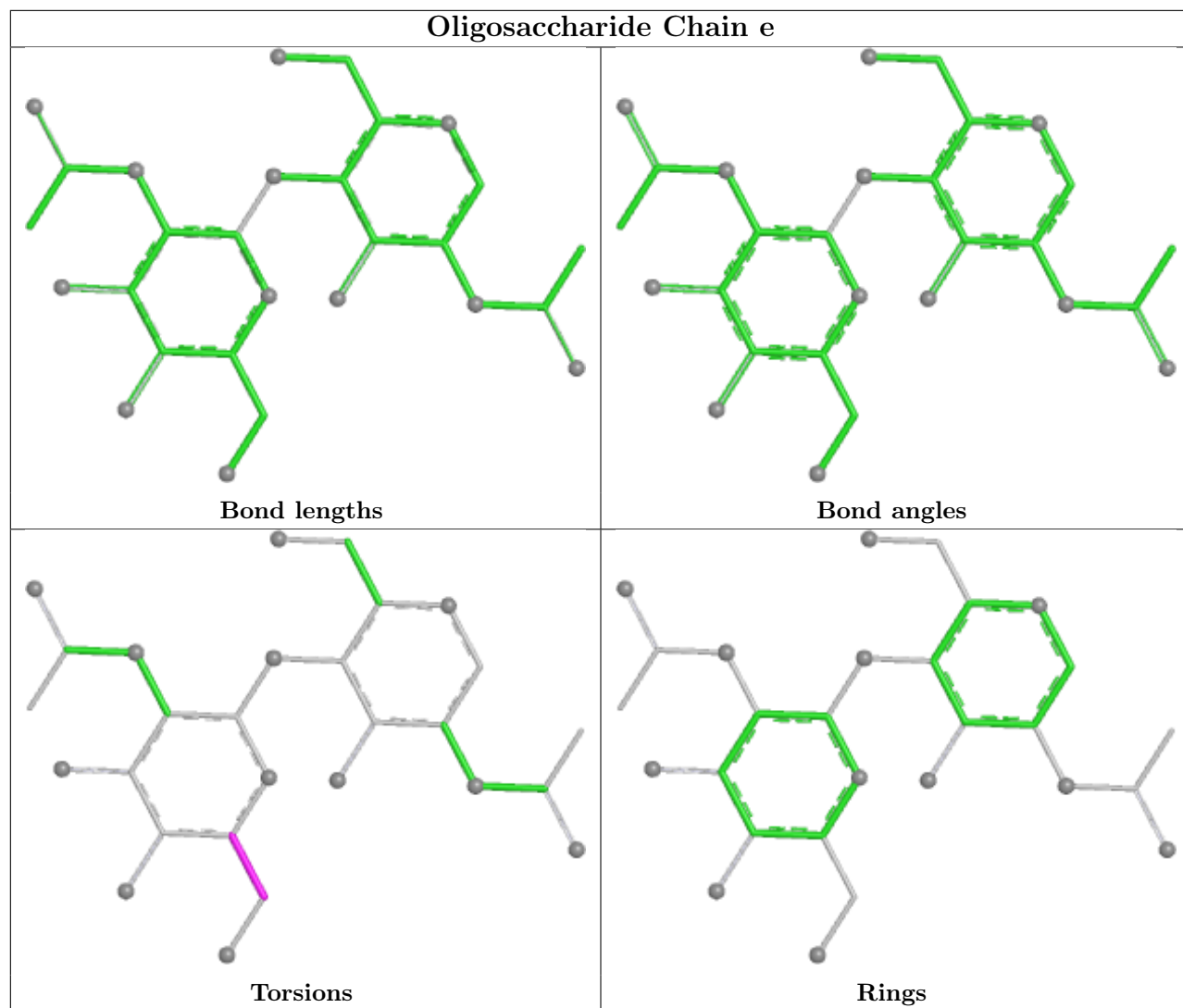


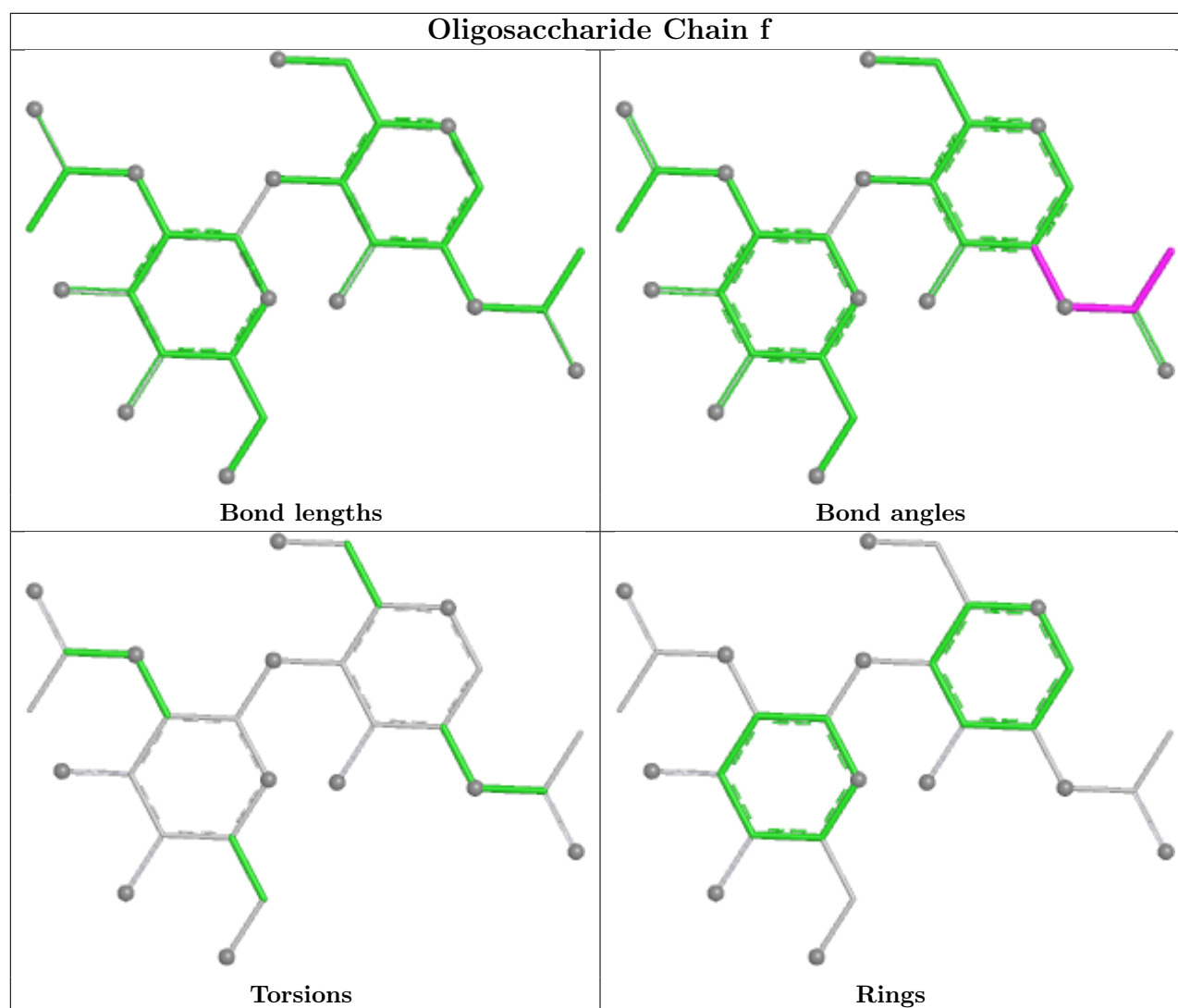












5.6 Ligand geometry [i](#)

25 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	$\# Z > 2$
5	NAG	A	1402	1	14,14,15	0.21	0	17,19,21	0.66	0
5	NAG	A	1407	1	14,14,15	0.24	0	17,19,21	0.51	0
5	NAG	A	1409	1	14,14,15	0.51	0	17,19,21	0.37	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	NAG	C	1402	1	14,14,15	0.22	0	17,19,21	0.66	0
5	NAG	B	1406	1	14,14,15	0.29	0	17,19,21	0.40	0
5	NAG	C	1405	1	14,14,15	0.59	0	17,19,21	1.34	2 (11%)
5	NAG	A	1408	1	14,14,15	0.32	0	17,19,21	0.40	0
5	NAG	C	1404	1	14,14,15	0.49	0	17,19,21	0.54	0
5	NAG	A	1401	1	14,14,15	0.32	0	17,19,21	0.35	0
5	NAG	C	1406	1	14,14,15	0.28	0	17,19,21	0.40	0
5	NAG	B	1407	1	14,14,15	0.24	0	17,19,21	0.51	0
5	NAG	C	1408	1	14,14,15	0.32	0	17,19,21	0.40	0
5	NAG	B	1403	1	14,14,15	0.19	0	17,19,21	0.44	0
5	NAG	C	1407	1	14,14,15	0.24	0	17,19,21	0.52	0
5	NAG	B	1401	1	14,14,15	0.31	0	17,19,21	0.35	0
5	NAG	A	1406	1	14,14,15	0.28	0	17,19,21	0.40	0
5	NAG	B	1408	1	14,14,15	0.33	0	17,19,21	0.39	0
5	NAG	C	1403	1	14,14,15	0.20	0	17,19,21	0.44	0
5	NAG	B	1405	1	14,14,15	0.60	0	17,19,21	1.34	2 (11%)
5	NAG	B	1404	1	14,14,15	0.50	0	17,19,21	0.54	0
5	NAG	A	1405	1	14,14,15	0.59	0	17,19,21	1.34	2 (11%)
5	NAG	A	1404	1	14,14,15	0.49	0	17,19,21	0.55	0
5	NAG	C	1401	1	14,14,15	0.33	0	17,19,21	0.35	0
5	NAG	A	1403	1	14,14,15	0.20	0	17,19,21	0.44	0
5	NAG	B	1402	1	14,14,15	0.20	0	17,19,21	0.67	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
5	NAG	A	1402	1	-	2/6/23/26	0/1/1/1
5	NAG	A	1407	1	-	0/6/23/26	0/1/1/1
5	NAG	A	1409	1	-	2/6/23/26	0/1/1/1
5	NAG	C	1402	1	-	2/6/23/26	0/1/1/1
5	NAG	B	1406	1	-	2/6/23/26	0/1/1/1
5	NAG	C	1405	1	-	6/6/23/26	0/1/1/1
5	NAG	A	1408	1	-	2/6/23/26	0/1/1/1
5	NAG	C	1404	1	-	2/6/23/26	0/1/1/1
5	NAG	A	1401	1	-	2/6/23/26	0/1/1/1
5	NAG	C	1406	1	-	2/6/23/26	0/1/1/1
5	NAG	B	1407	1	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	NAG	C	1408	1	-	2/6/23/26	0/1/1/1
5	NAG	B	1403	1	-	2/6/23/26	0/1/1/1
5	NAG	C	1407	1	-	0/6/23/26	0/1/1/1
5	NAG	B	1401	1	-	2/6/23/26	0/1/1/1
5	NAG	A	1406	1	-	2/6/23/26	0/1/1/1
5	NAG	B	1408	1	-	2/6/23/26	0/1/1/1
5	NAG	C	1403	1	-	2/6/23/26	0/1/1/1
5	NAG	B	1405	1	-	6/6/23/26	0/1/1/1
5	NAG	B	1404	1	-	2/6/23/26	0/1/1/1
5	NAG	A	1405	1	-	6/6/23/26	0/1/1/1
5	NAG	A	1404	1	-	2/6/23/26	0/1/1/1
5	NAG	C	1401	1	-	2/6/23/26	0/1/1/1
5	NAG	A	1403	1	-	2/6/23/26	0/1/1/1
5	NAG	B	1402	1	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	B	1405	NAG	C2-N2-C7	4.61	129.08	122.90
5	C	1405	NAG	C2-N2-C7	4.61	129.07	122.90
5	A	1405	NAG	C2-N2-C7	4.60	129.07	122.90
5	B	1405	NAG	C1-C2-N2	2.11	113.75	110.43
5	C	1405	NAG	C1-C2-N2	2.10	113.74	110.43
5	A	1405	NAG	C1-C2-N2	2.09	113.73	110.43

There are no chirality outliers.

All (56) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	1406	NAG	O5-C5-C6-O6
5	B	1406	NAG	O5-C5-C6-O6
5	C	1406	NAG	O5-C5-C6-O6
5	A	1402	NAG	O5-C5-C6-O6
5	A	1404	NAG	O5-C5-C6-O6
5	B	1402	NAG	O5-C5-C6-O6
5	B	1404	NAG	O5-C5-C6-O6
5	C	1402	NAG	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
5	C	1404	NAG	O5-C5-C6-O6
5	C	1405	NAG	O5-C5-C6-O6
5	A	1401	NAG	O5-C5-C6-O6
5	B	1401	NAG	O5-C5-C6-O6
5	C	1401	NAG	O5-C5-C6-O6
5	A	1402	NAG	C4-C5-C6-O6
5	B	1402	NAG	C4-C5-C6-O6
5	C	1402	NAG	C4-C5-C6-O6
5	A	1405	NAG	O5-C5-C6-O6
5	B	1405	NAG	O5-C5-C6-O6
5	A	1409	NAG	C4-C5-C6-O6
5	A	1405	NAG	C4-C5-C6-O6
5	B	1405	NAG	C4-C5-C6-O6
5	C	1405	NAG	C4-C5-C6-O6
5	A	1408	NAG	O5-C5-C6-O6
5	B	1408	NAG	O5-C5-C6-O6
5	C	1408	NAG	O5-C5-C6-O6
5	A	1409	NAG	O5-C5-C6-O6
5	A	1406	NAG	C4-C5-C6-O6
5	B	1406	NAG	C4-C5-C6-O6
5	C	1406	NAG	C4-C5-C6-O6
5	A	1405	NAG	C8-C7-N2-C2
5	A	1405	NAG	O7-C7-N2-C2
5	B	1405	NAG	C8-C7-N2-C2
5	B	1405	NAG	O7-C7-N2-C2
5	C	1405	NAG	C8-C7-N2-C2
5	C	1405	NAG	O7-C7-N2-C2
5	A	1404	NAG	C4-C5-C6-O6
5	B	1404	NAG	C4-C5-C6-O6
5	C	1404	NAG	C4-C5-C6-O6
5	A	1403	NAG	O5-C5-C6-O6
5	B	1403	NAG	O5-C5-C6-O6
5	C	1403	NAG	O5-C5-C6-O6
5	B	1403	NAG	C4-C5-C6-O6
5	C	1403	NAG	C4-C5-C6-O6
5	A	1403	NAG	C4-C5-C6-O6
5	A	1408	NAG	C4-C5-C6-O6
5	B	1408	NAG	C4-C5-C6-O6
5	C	1408	NAG	C4-C5-C6-O6
5	A	1401	NAG	C4-C5-C6-O6
5	B	1401	NAG	C4-C5-C6-O6
5	C	1401	NAG	C4-C5-C6-O6

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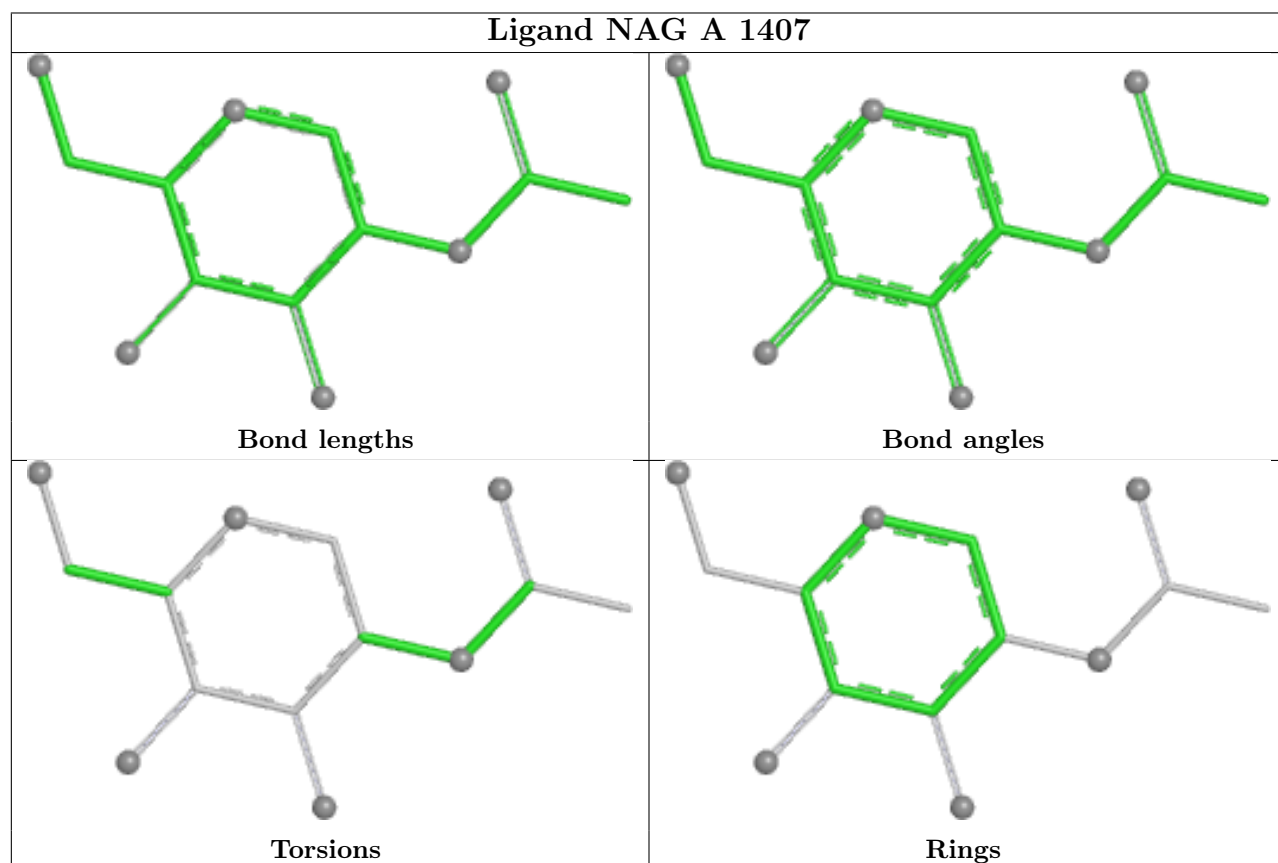
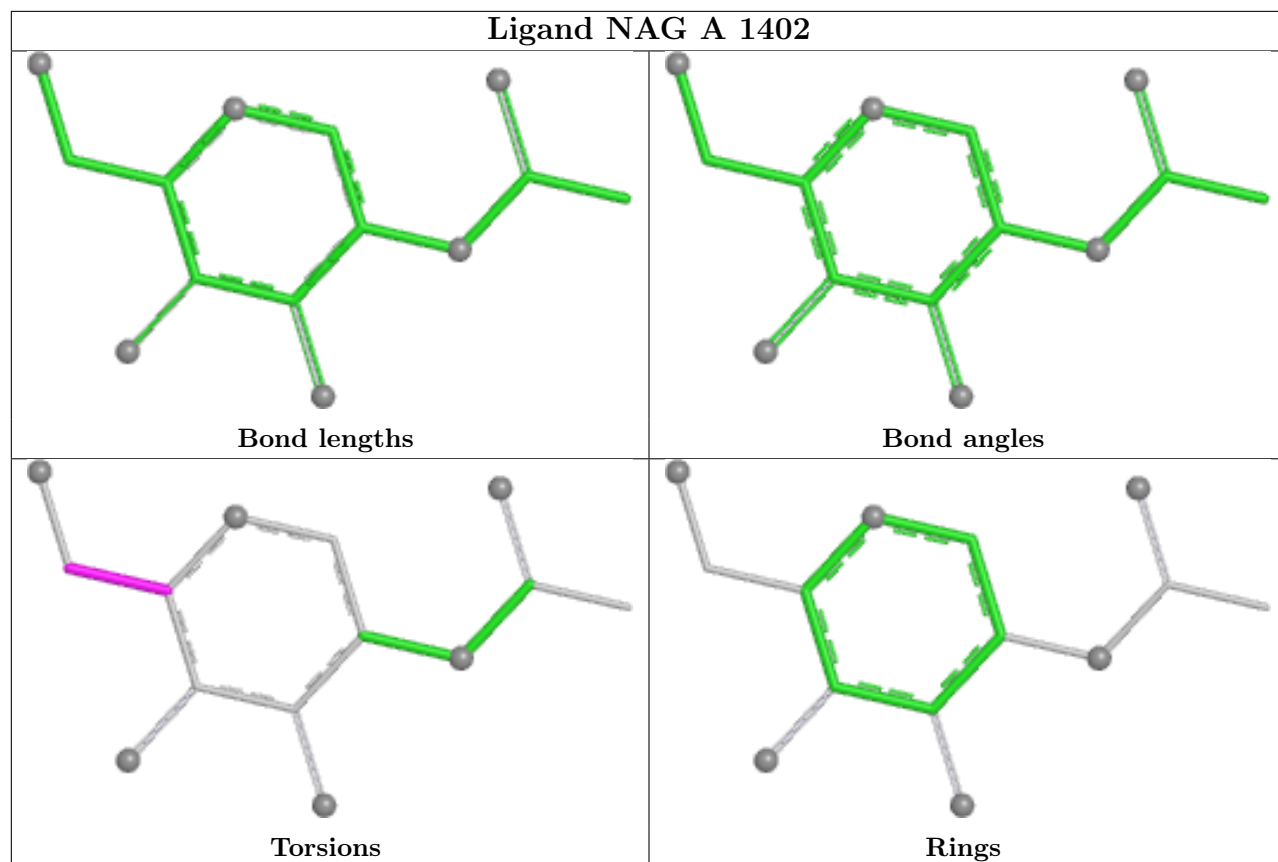
Mol	Chain	Res	Type	Atoms
5	A	1405	NAG	C1-C2-N2-C7
5	B	1405	NAG	C1-C2-N2-C7
5	C	1405	NAG	C1-C2-N2-C7
5	A	1405	NAG	C3-C2-N2-C7
5	B	1405	NAG	C3-C2-N2-C7
5	C	1405	NAG	C3-C2-N2-C7

There are no ring outliers.

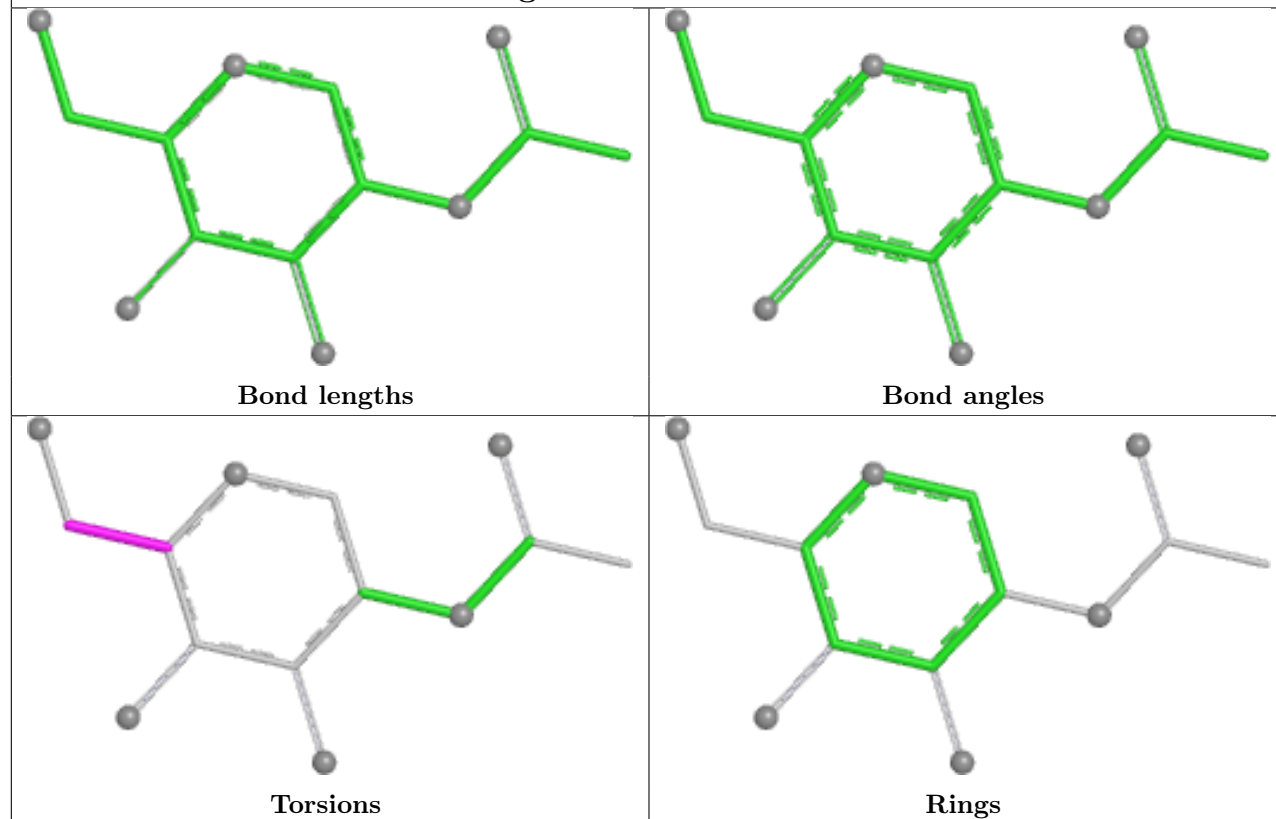
6 monomers are involved in 18 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	1402	NAG	3	0
5	C	1402	NAG	3	0
5	C	1405	NAG	4	0
5	B	1405	NAG	1	0
5	A	1405	NAG	4	0
5	B	1402	NAG	3	0

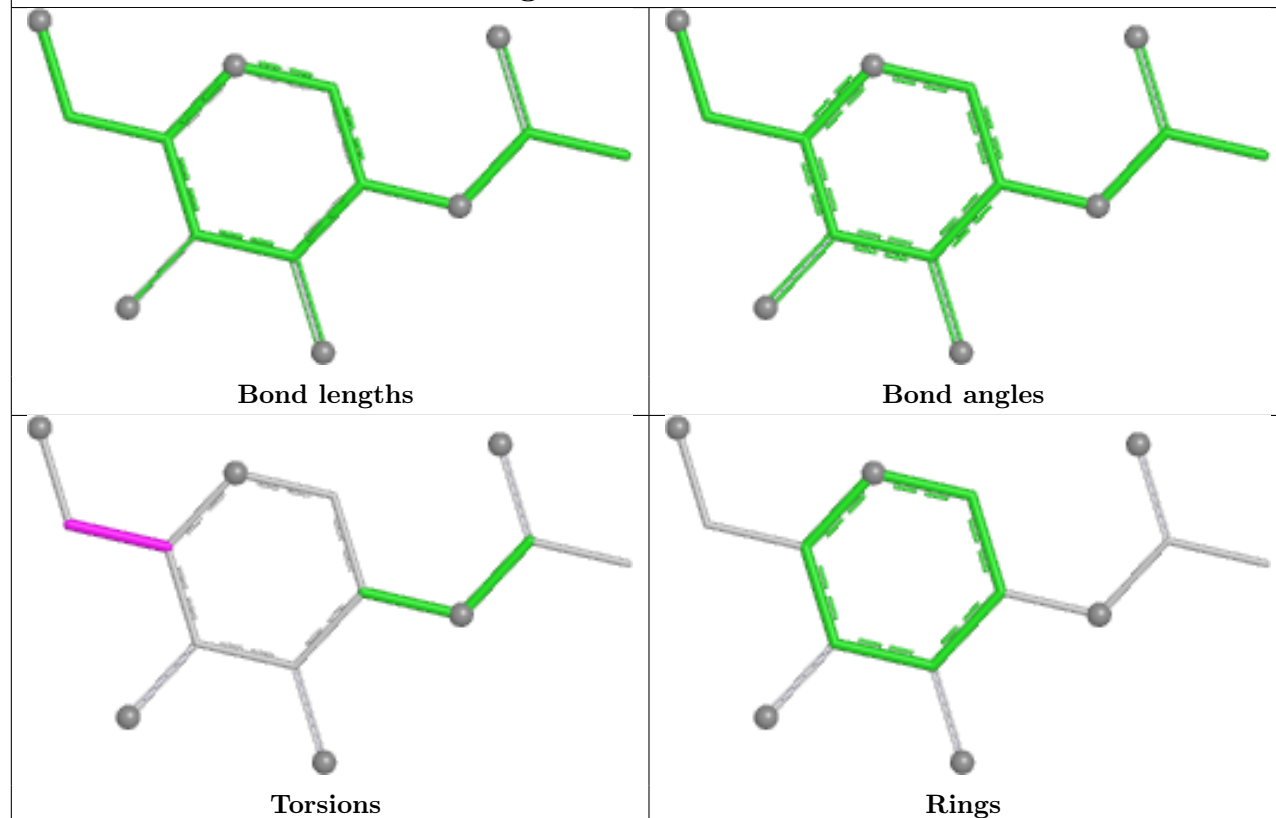
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



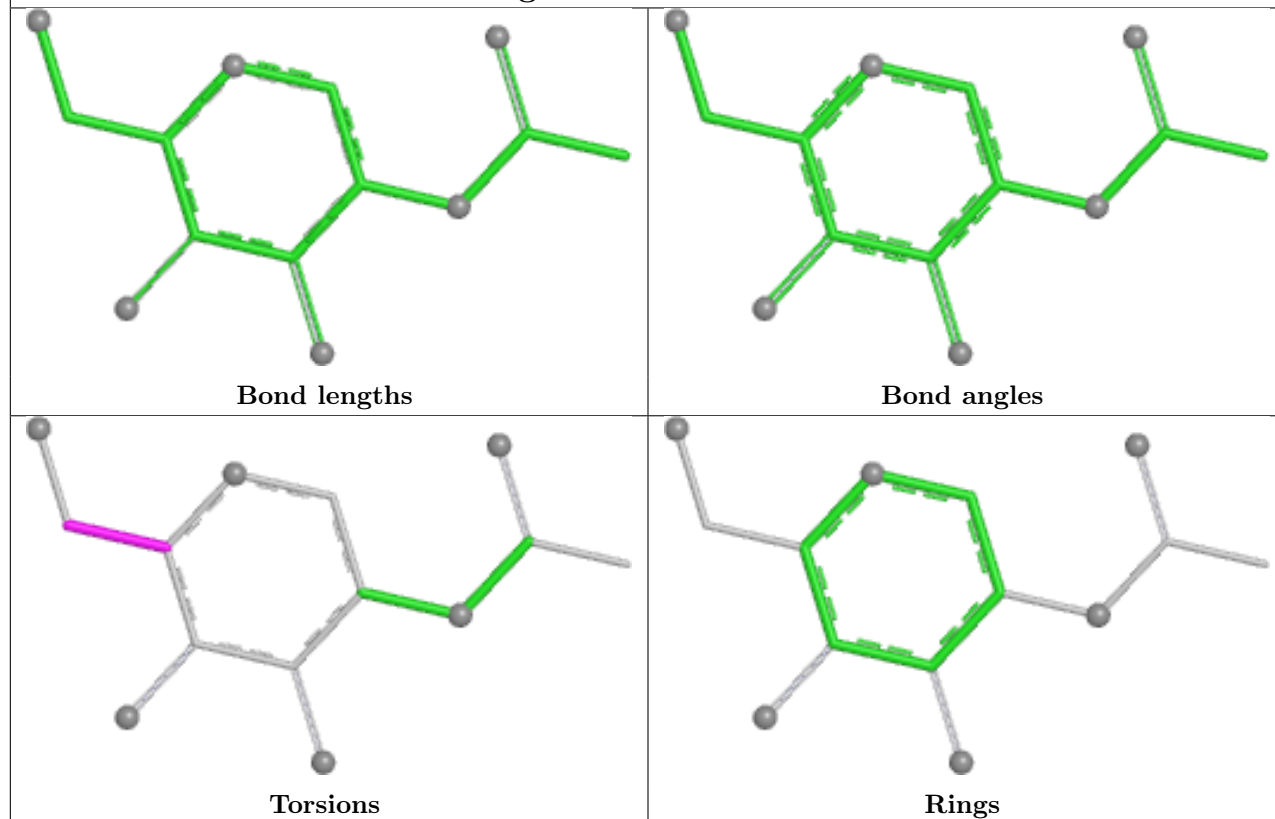
Ligand NAG A 1409



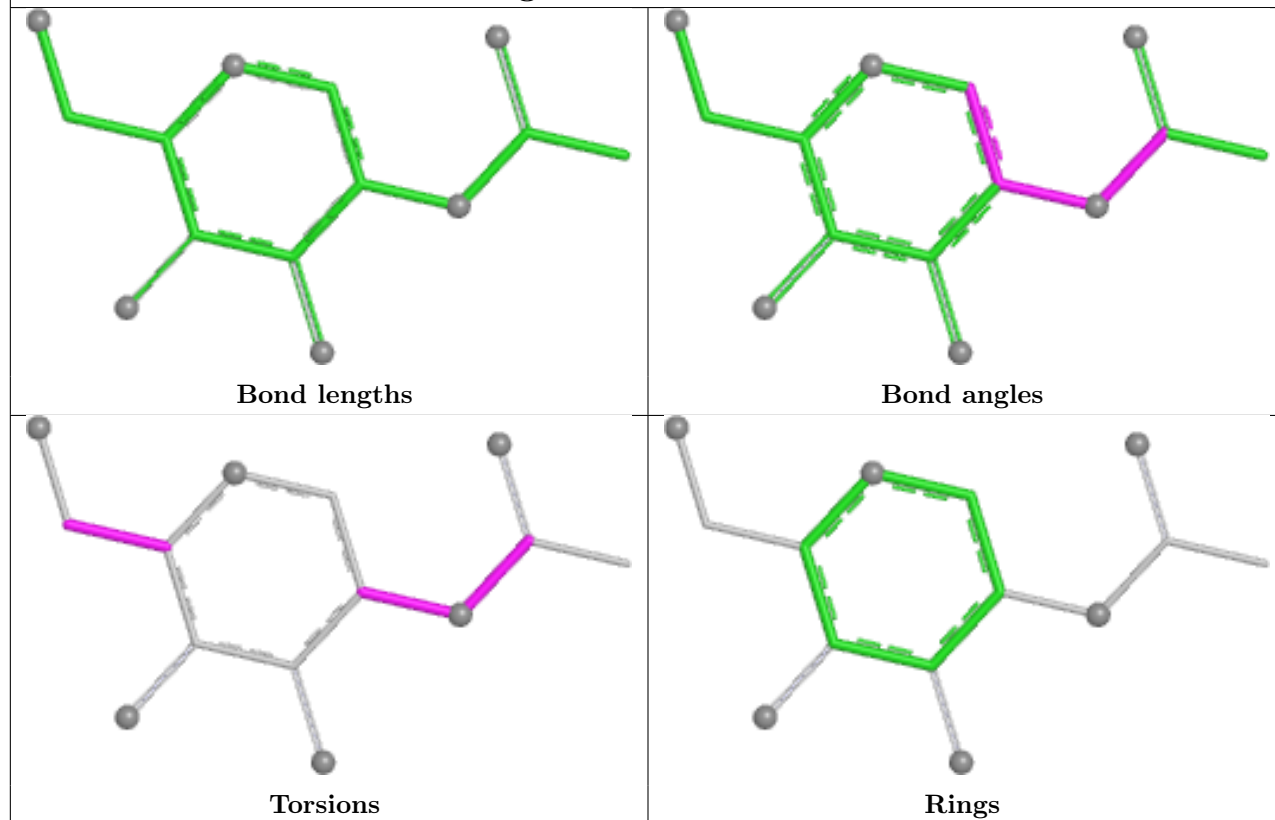
Ligand NAG C 1402



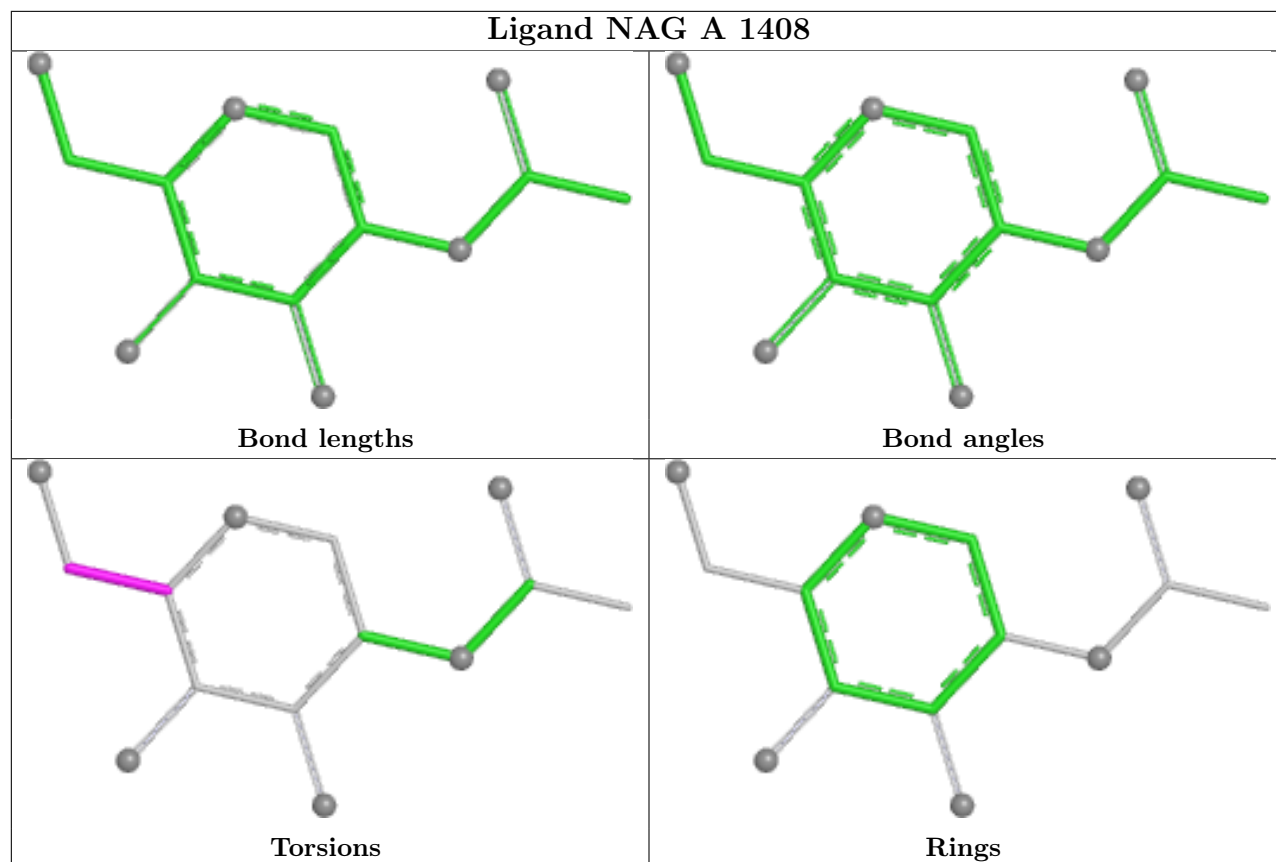
Ligand NAG B 1406



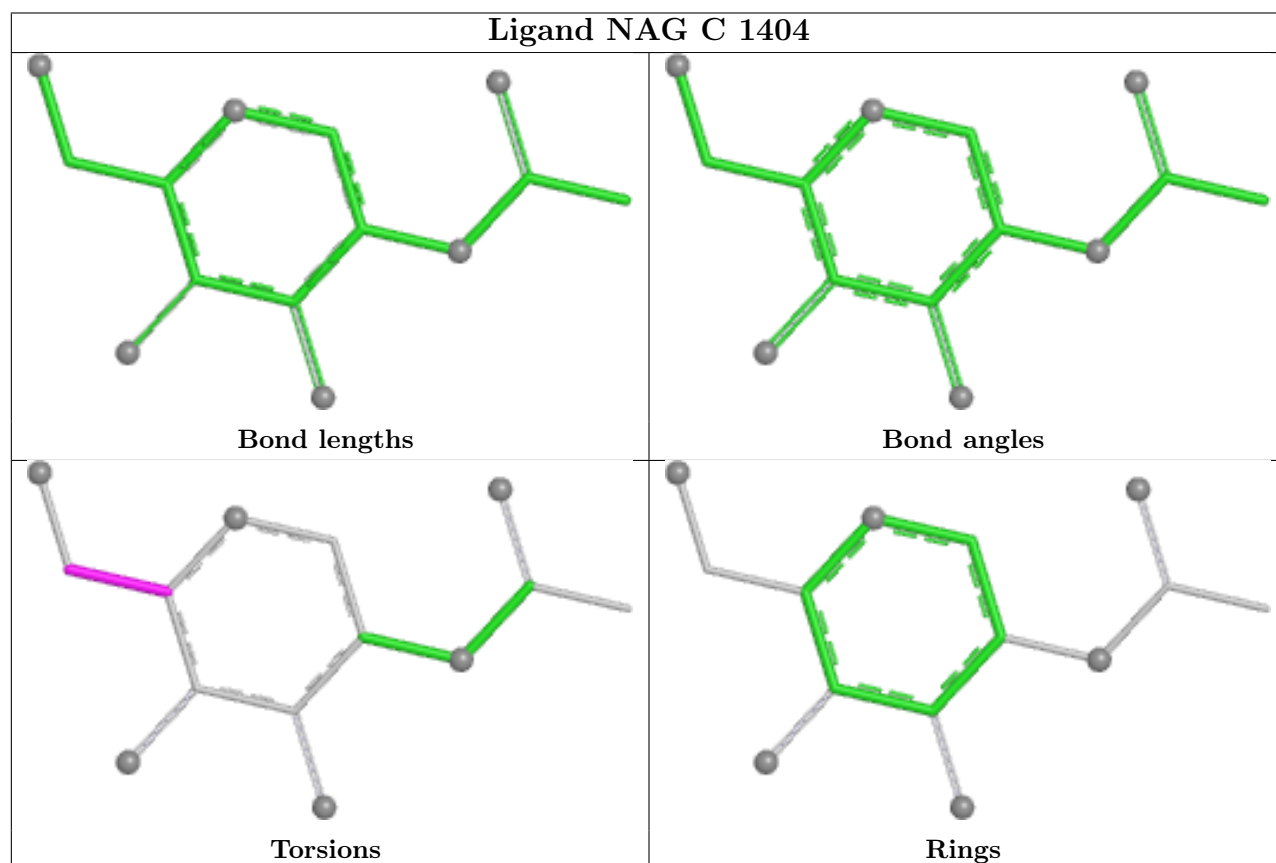
Ligand NAG C 1405



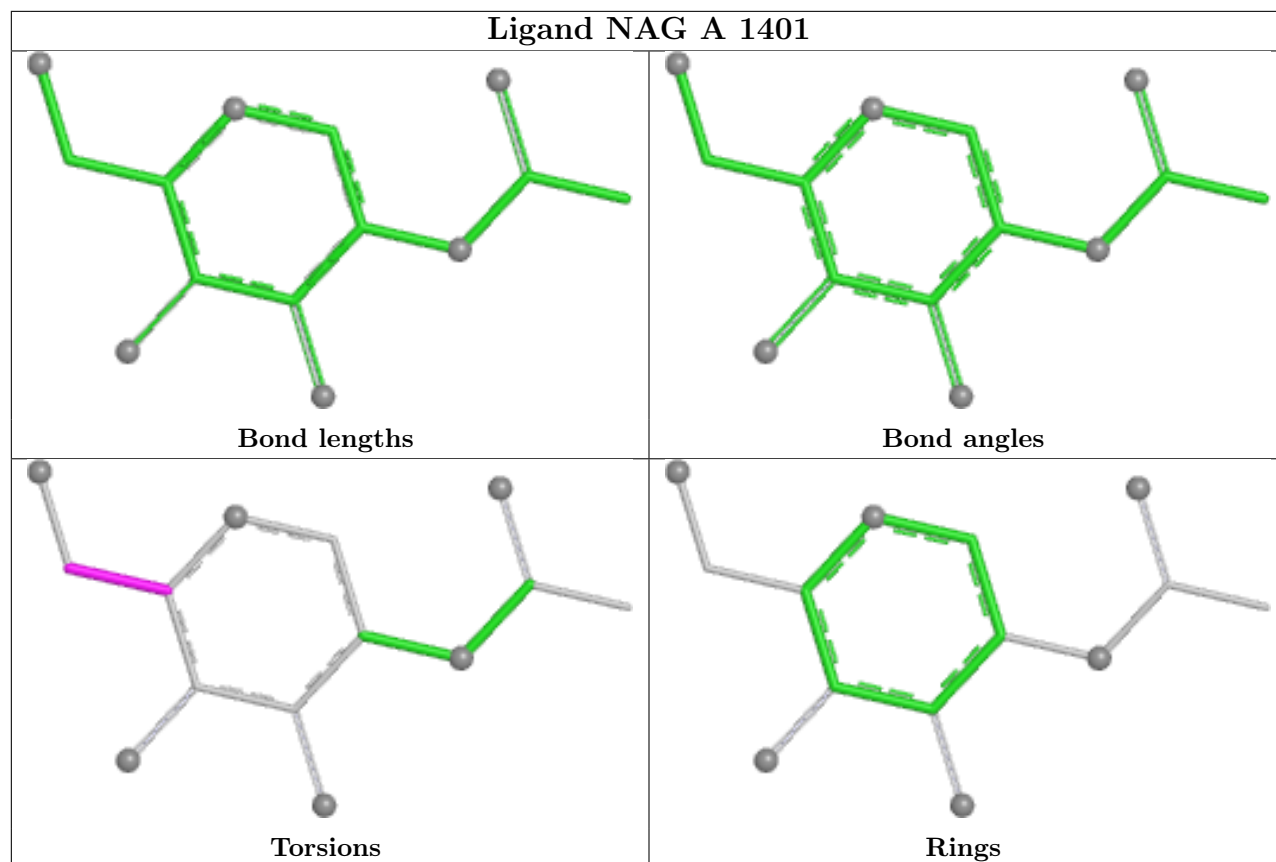
Ligand NAG A 1408



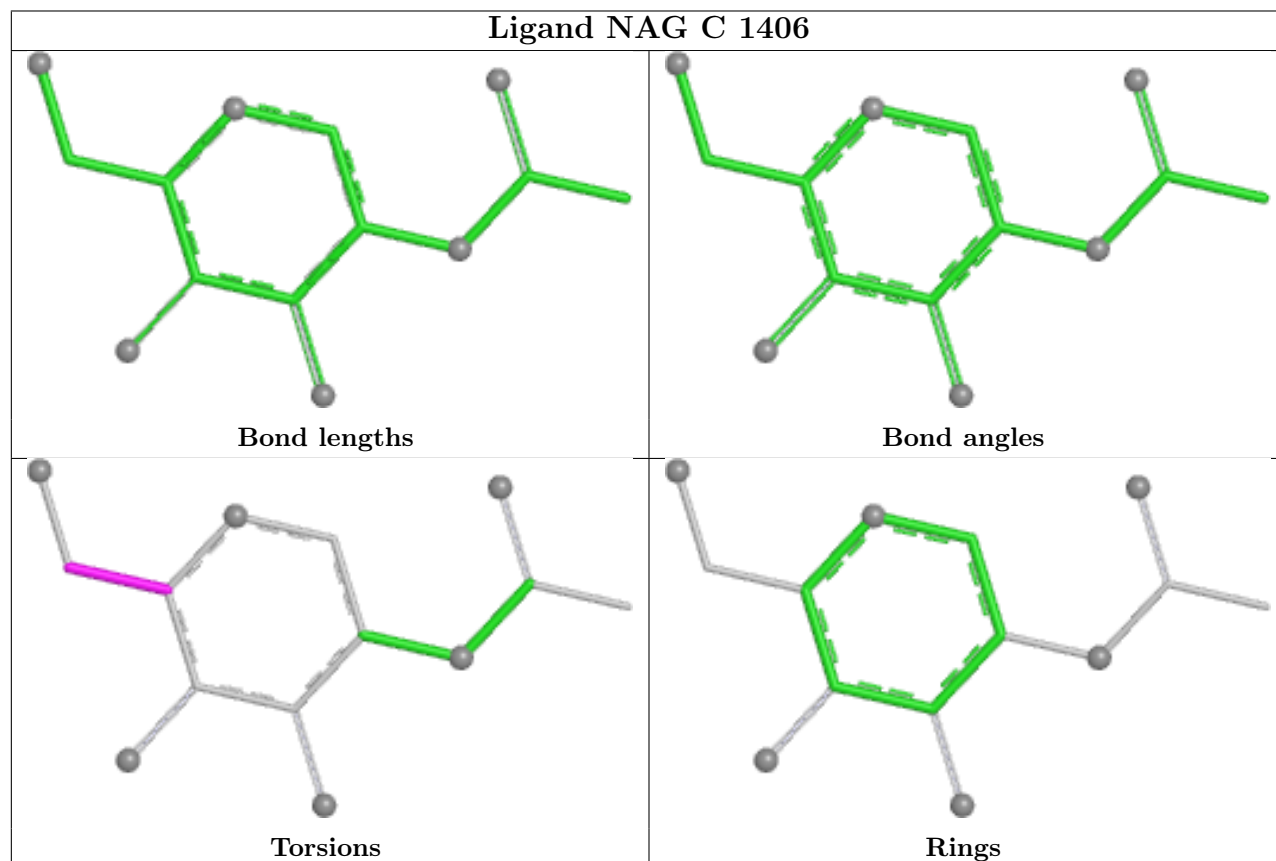
Ligand NAG C 1404



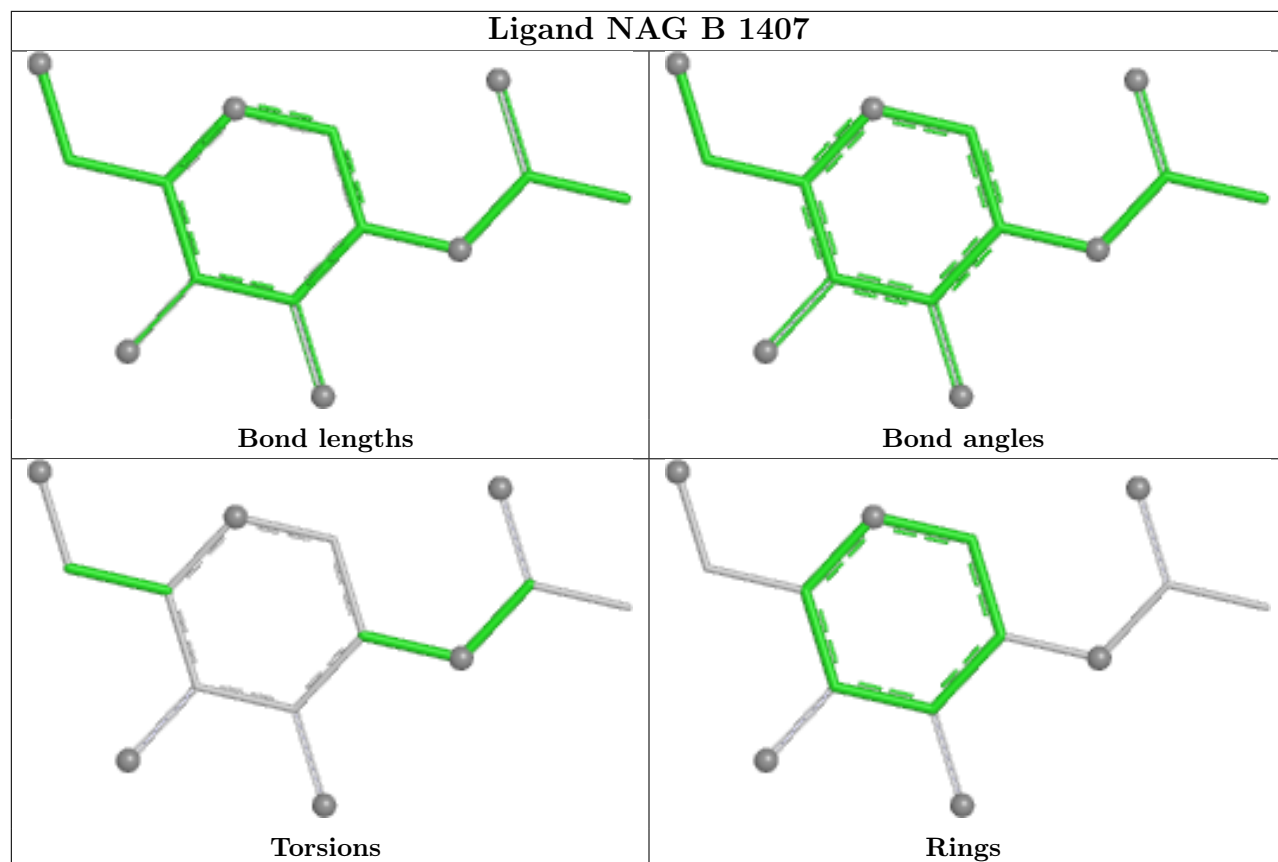
Ligand NAG A 1401



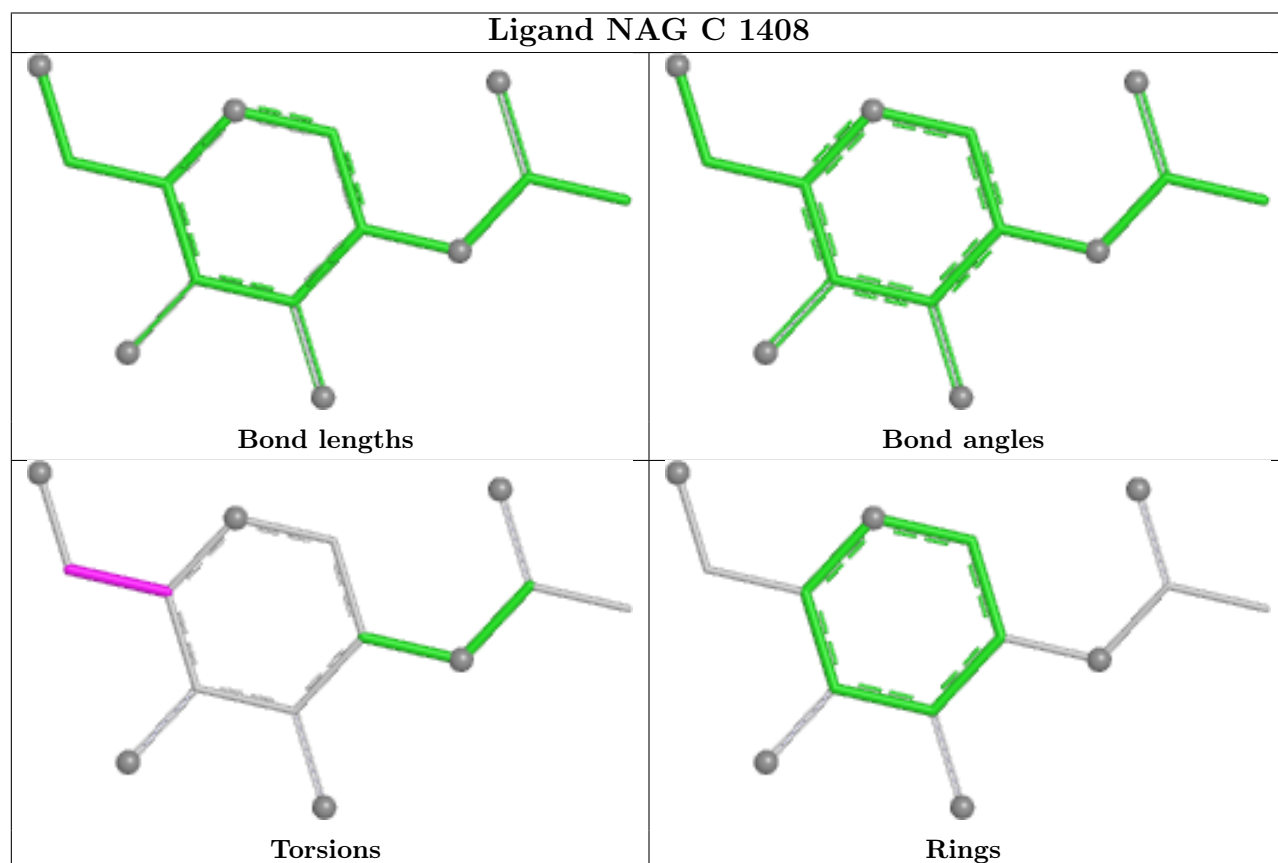
Ligand NAG C 1406



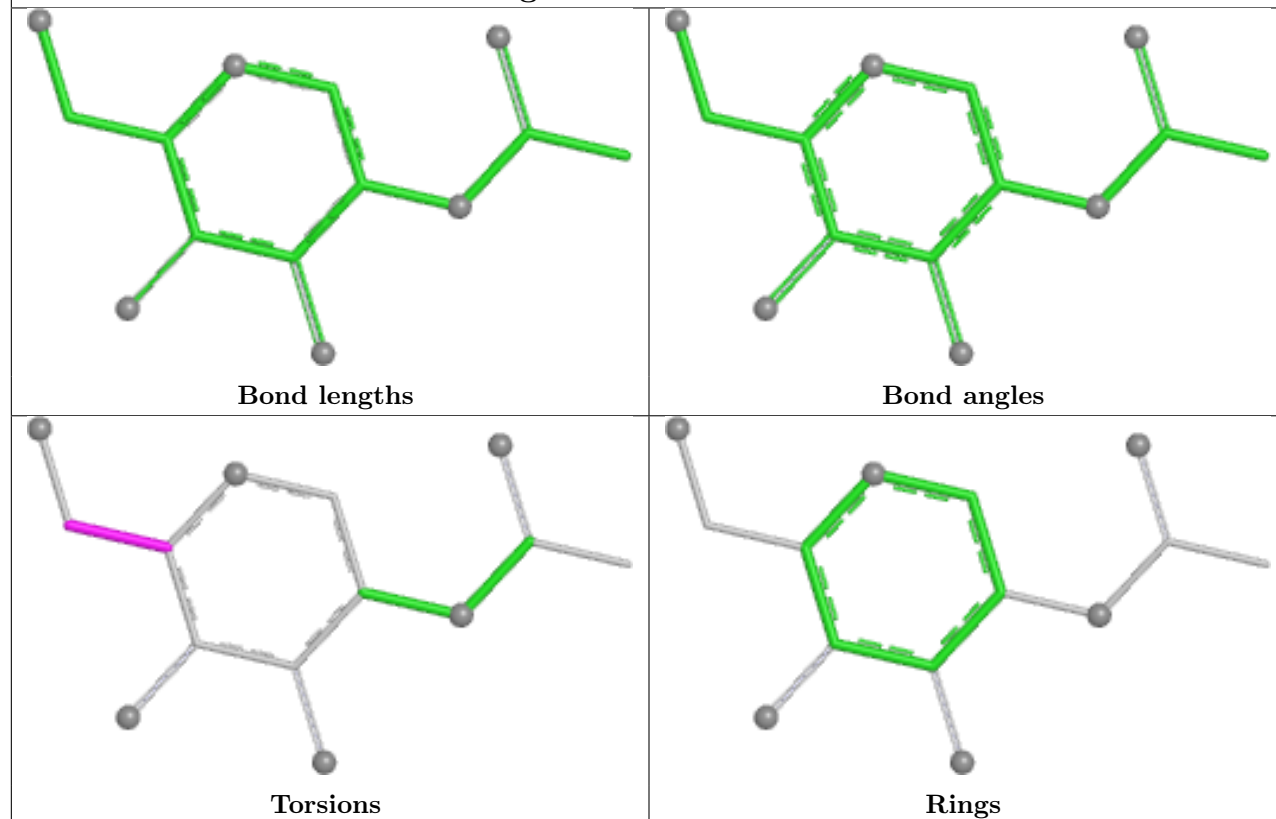
Ligand NAG B 1407



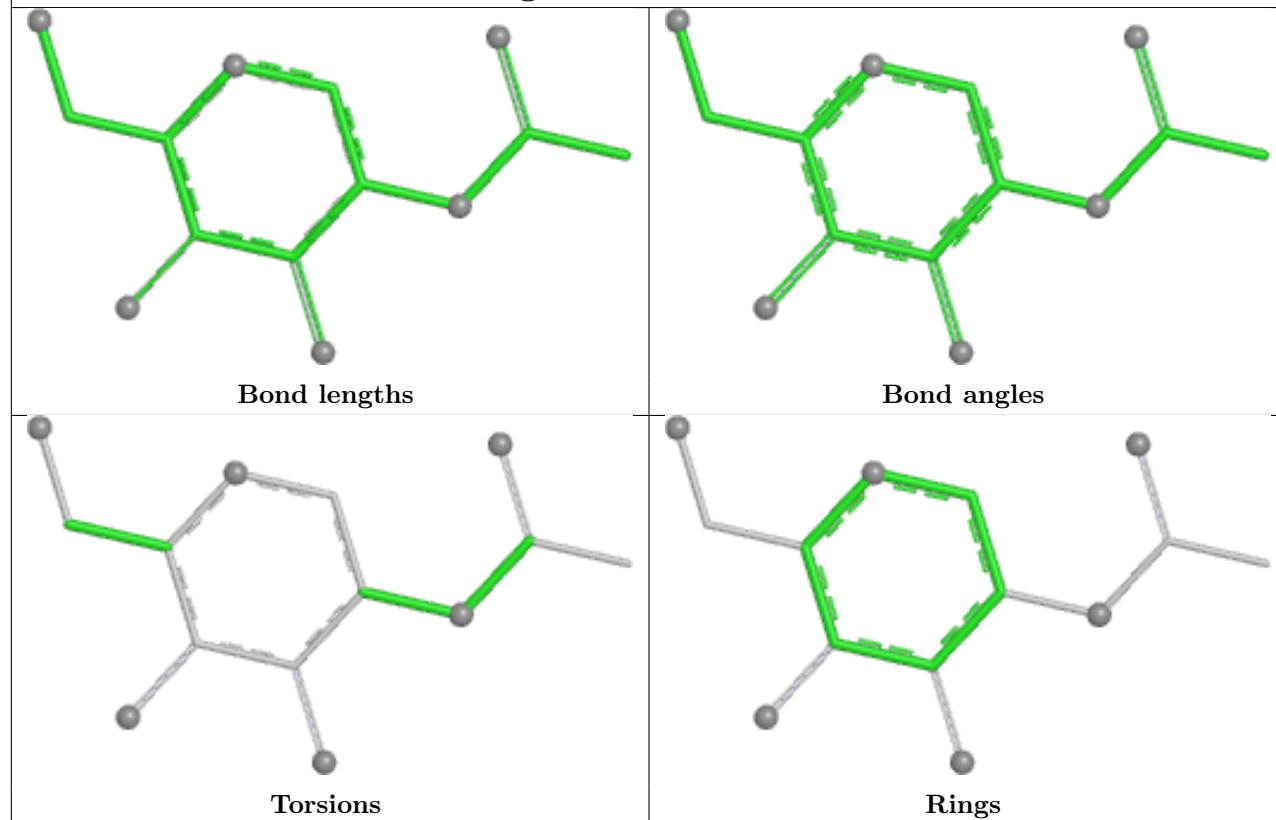
Ligand NAG C 1408



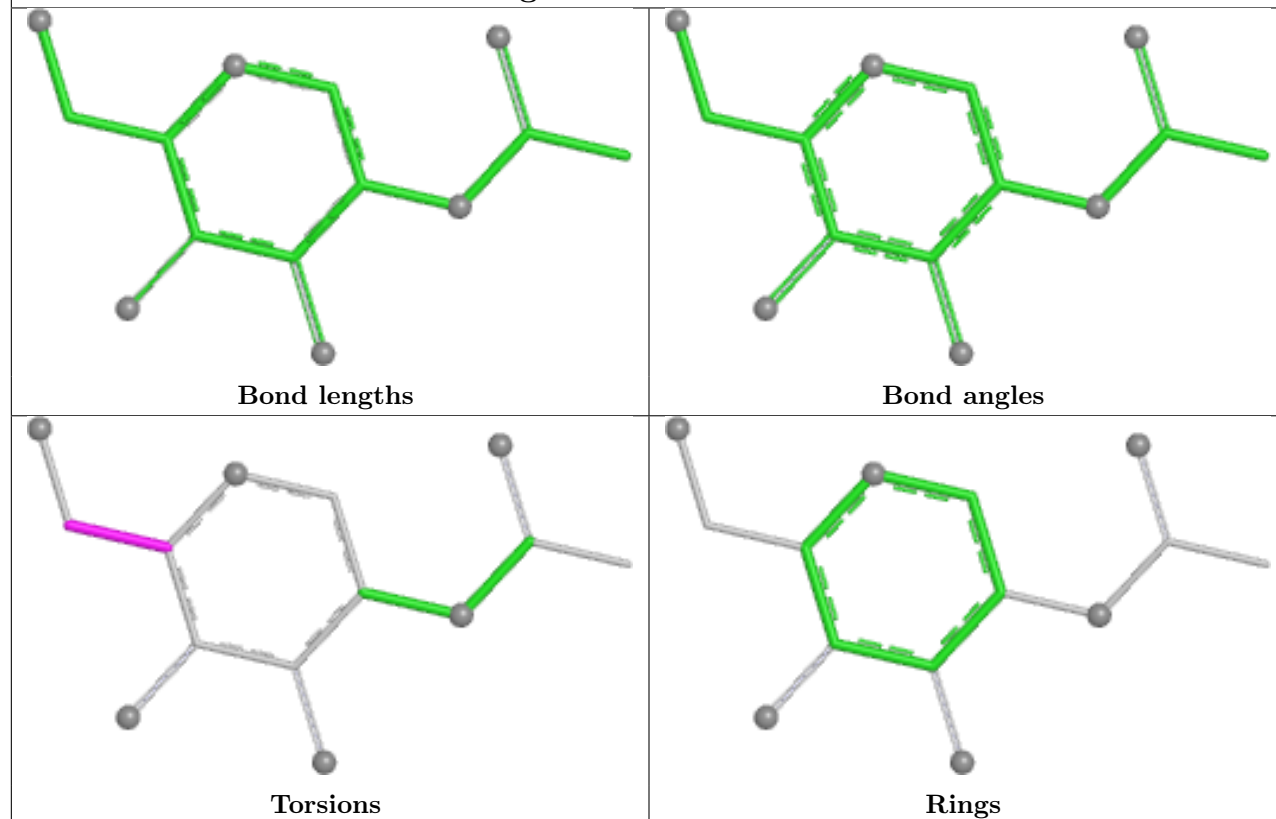
Ligand NAG B 1403



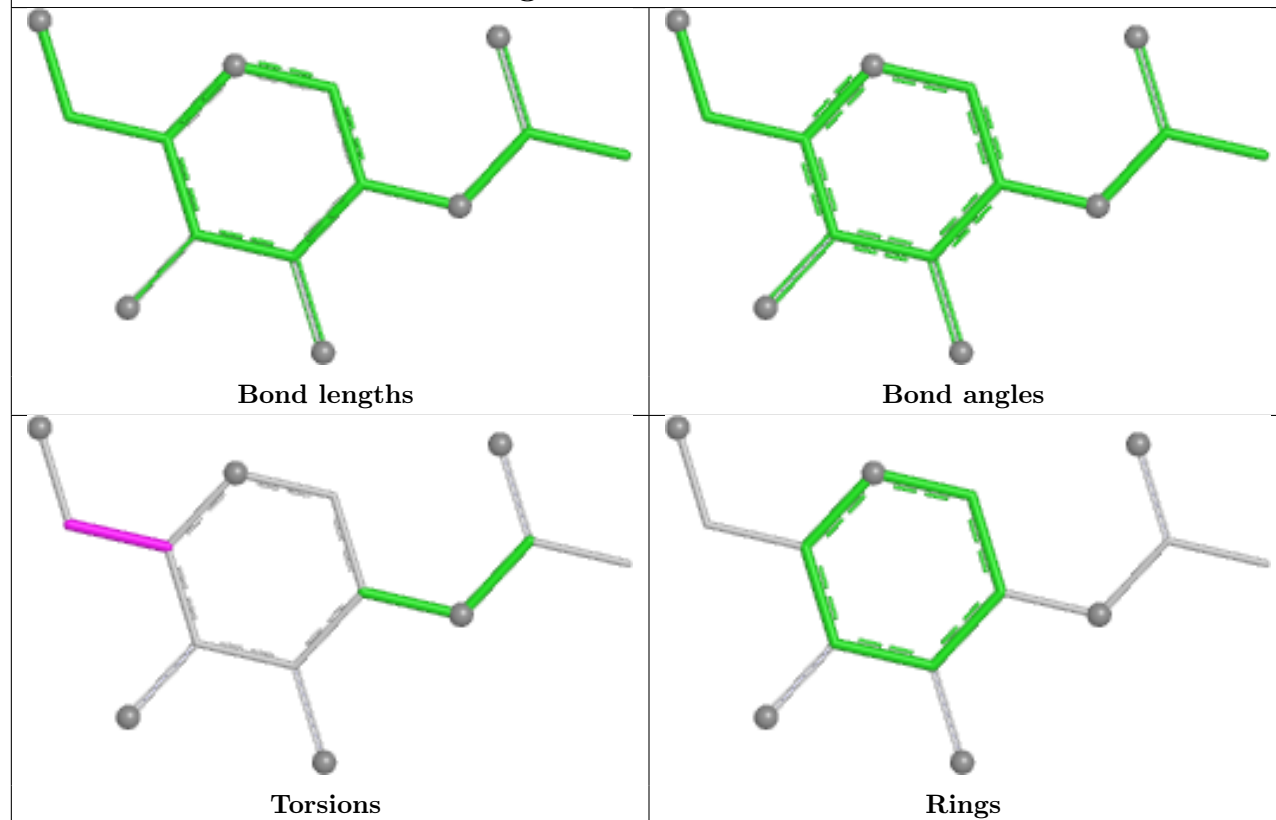
Ligand NAG C 1407



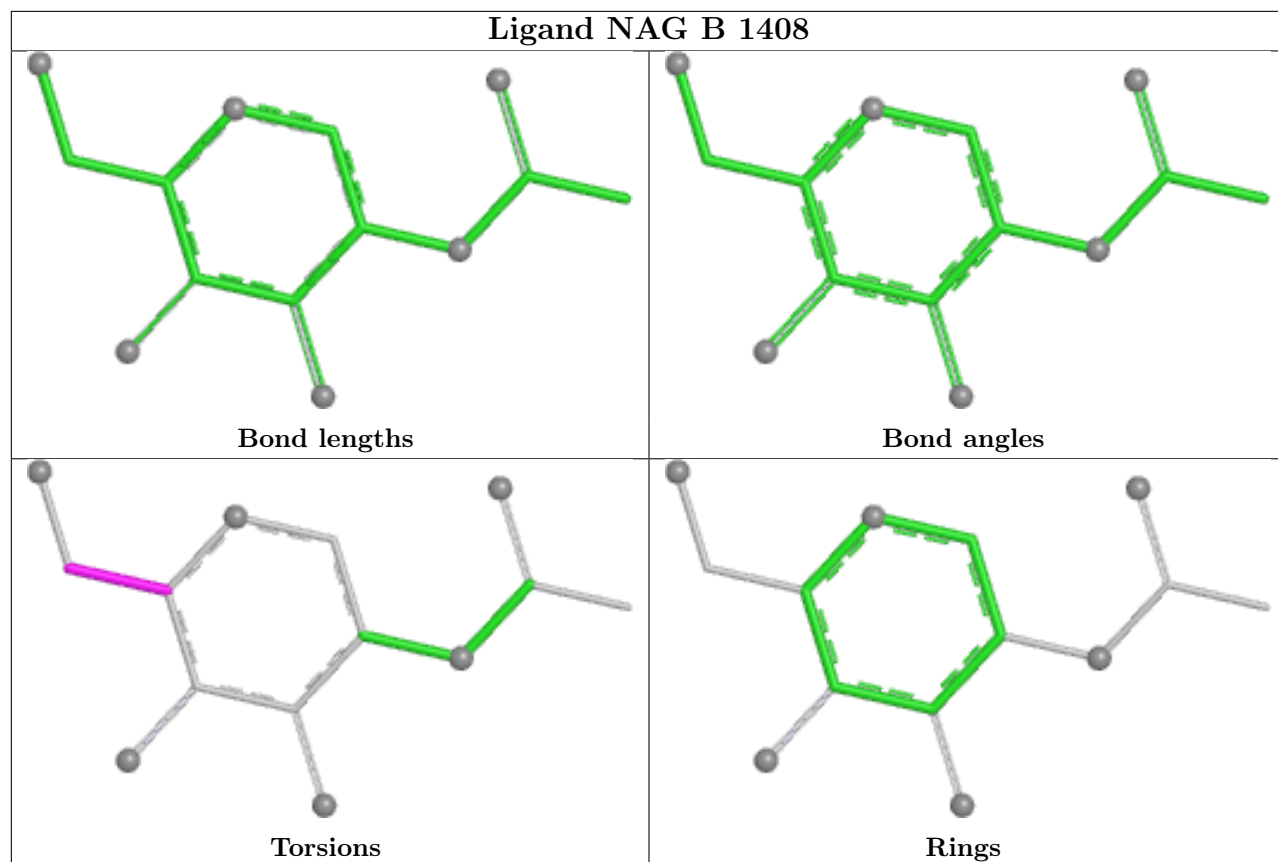
Ligand NAG B 1401



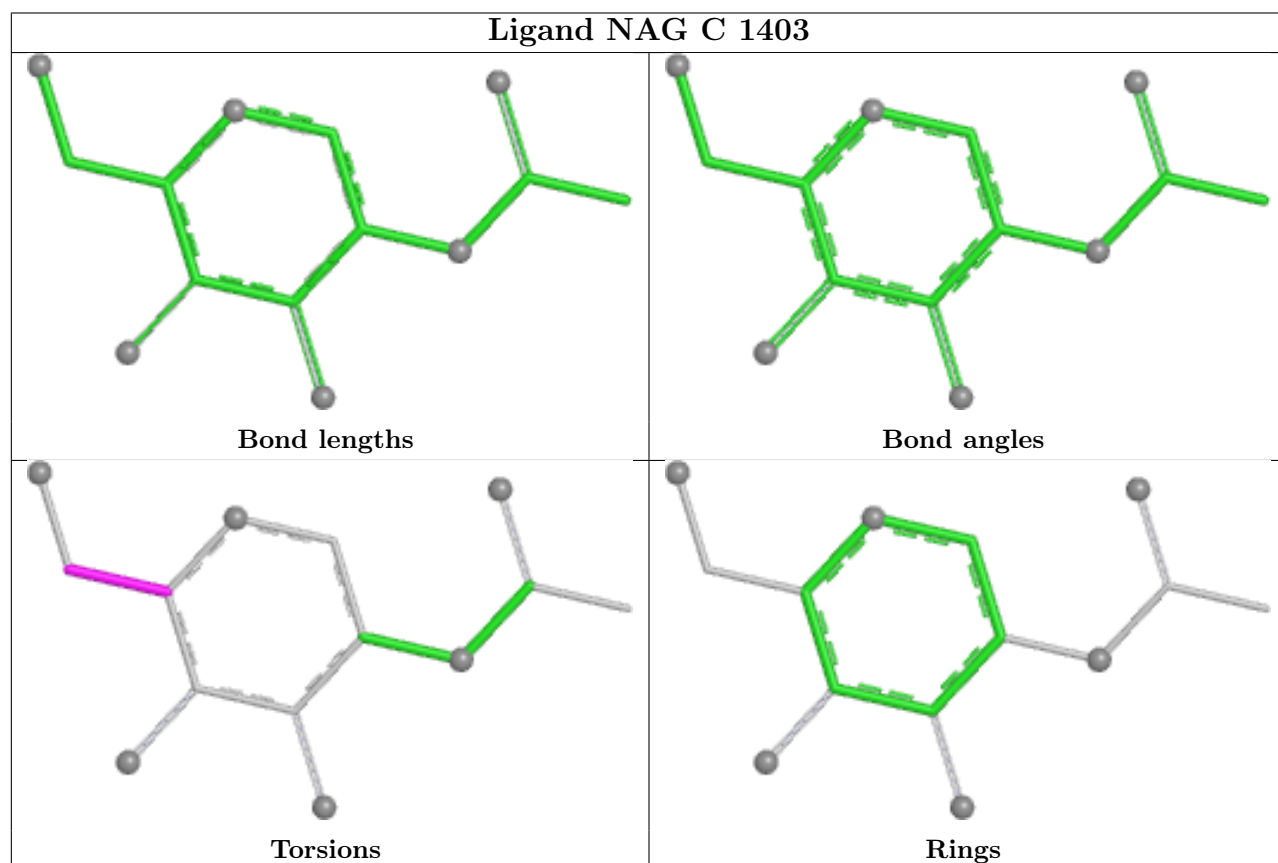
Ligand NAG A 1406



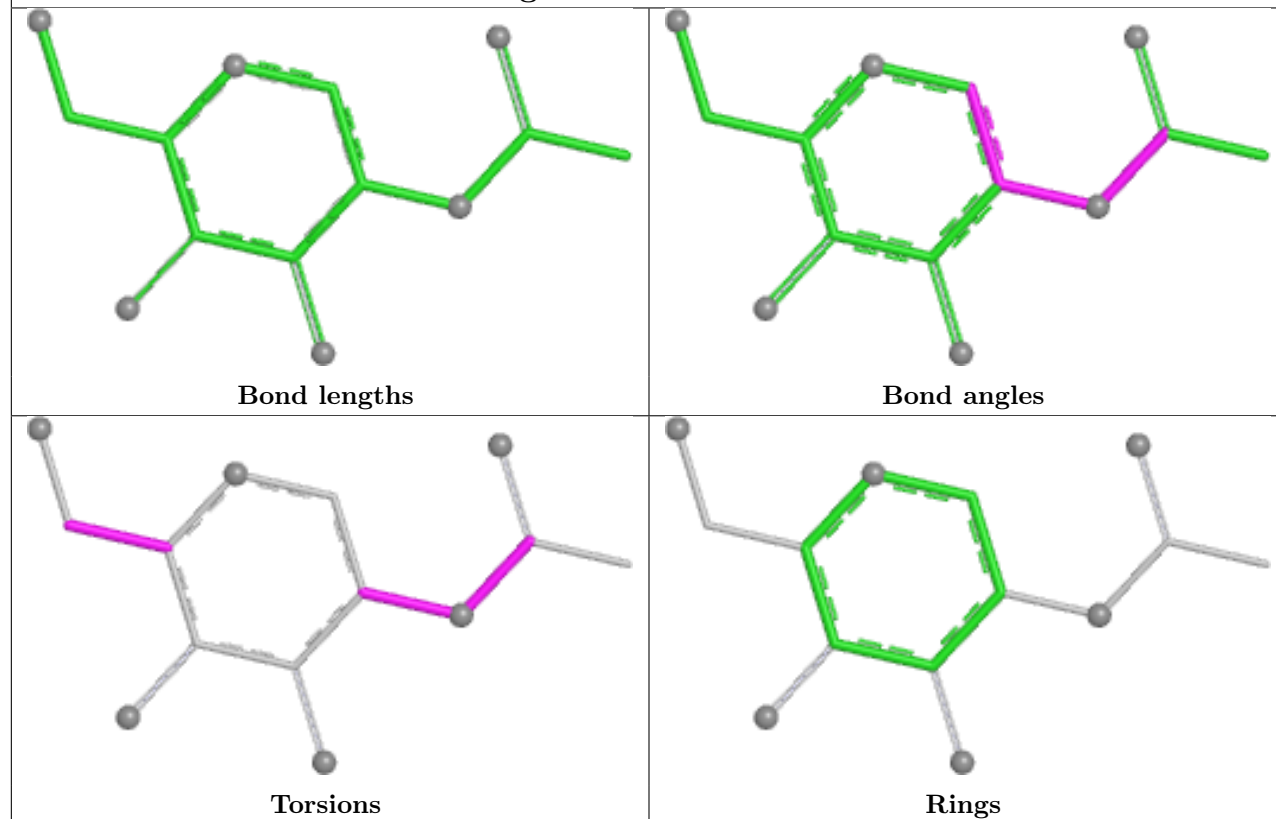
Ligand NAG B 1408



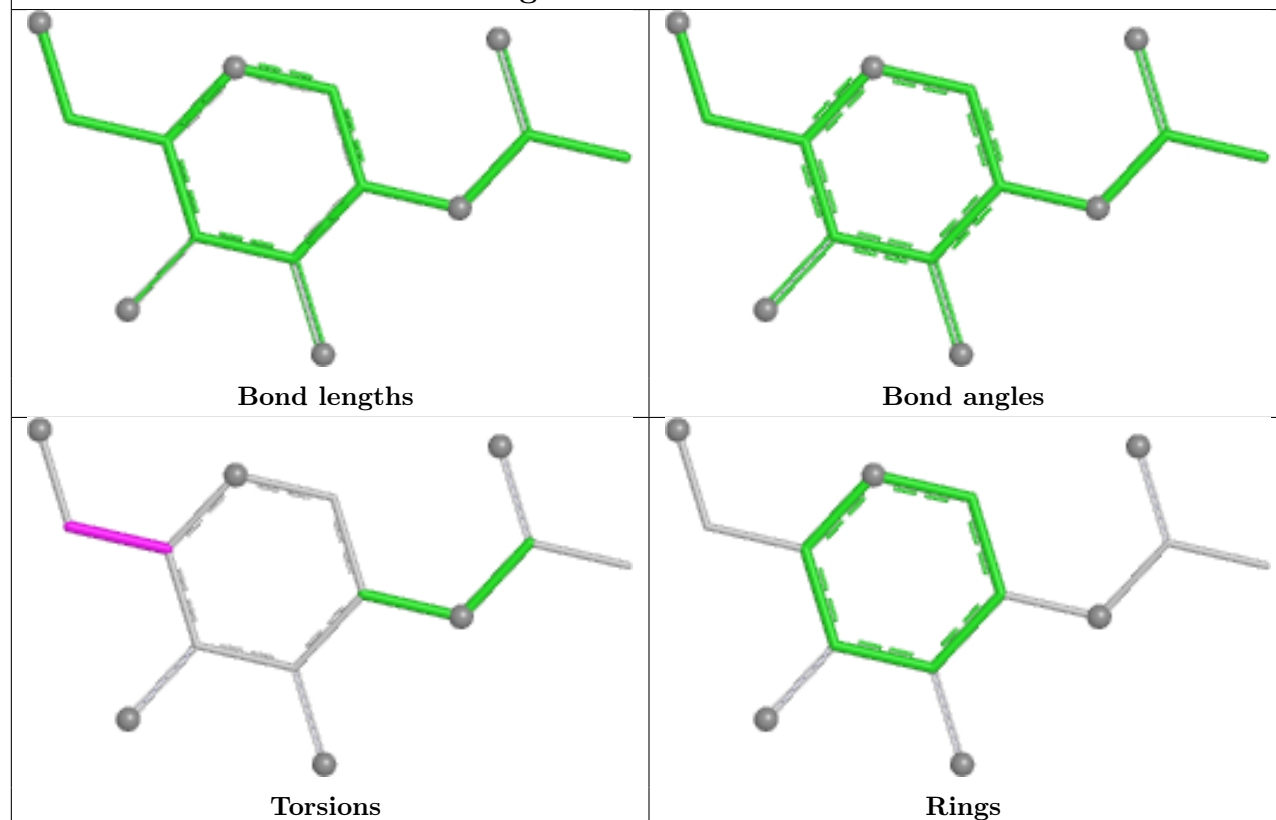
Ligand NAG C 1403



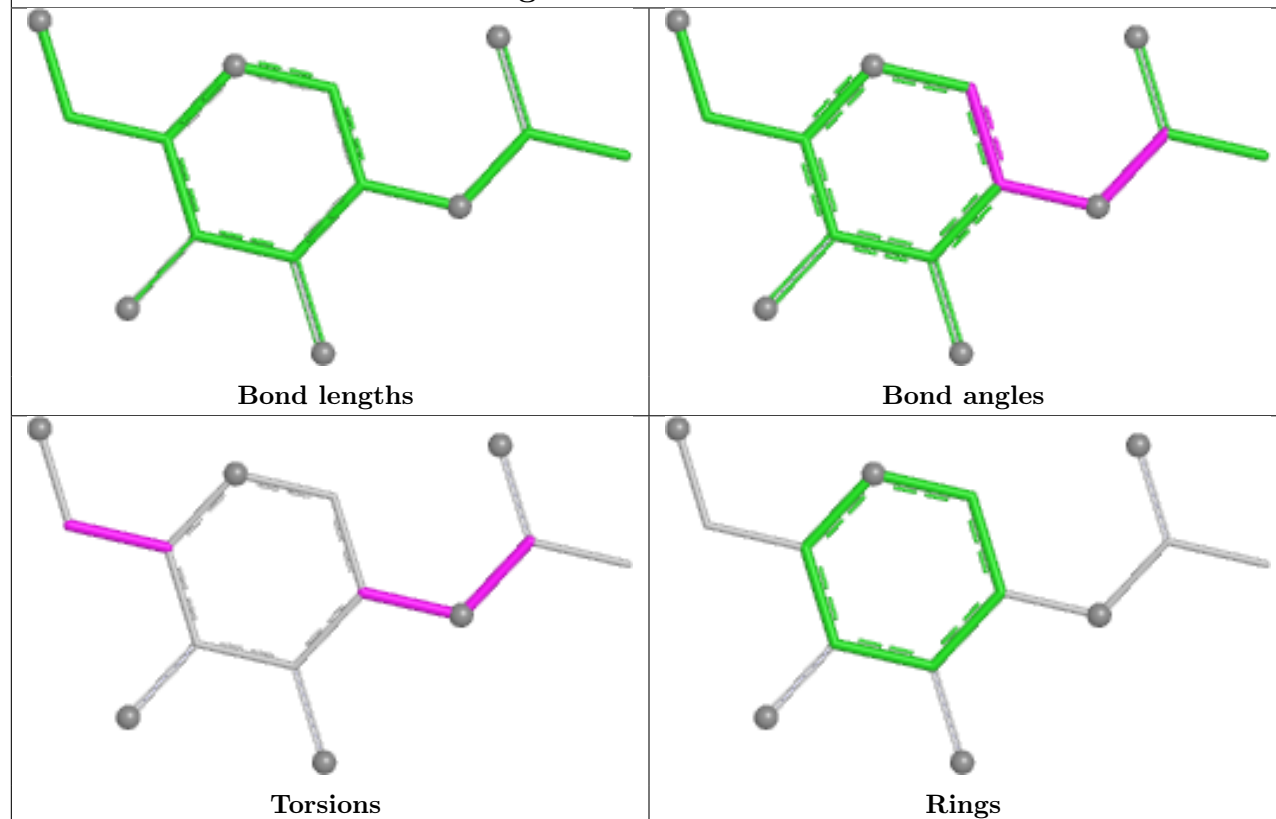
Ligand NAG B 1405



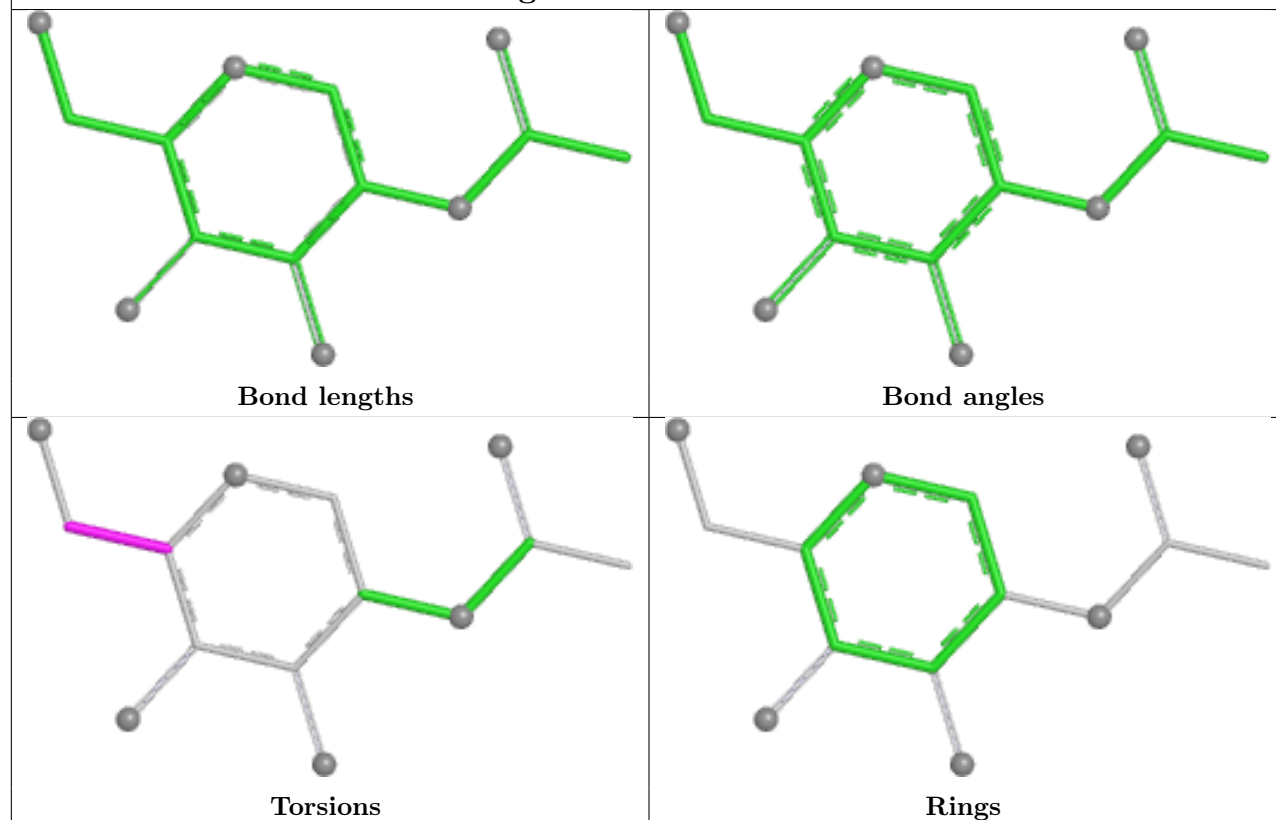
Ligand NAG B 1404

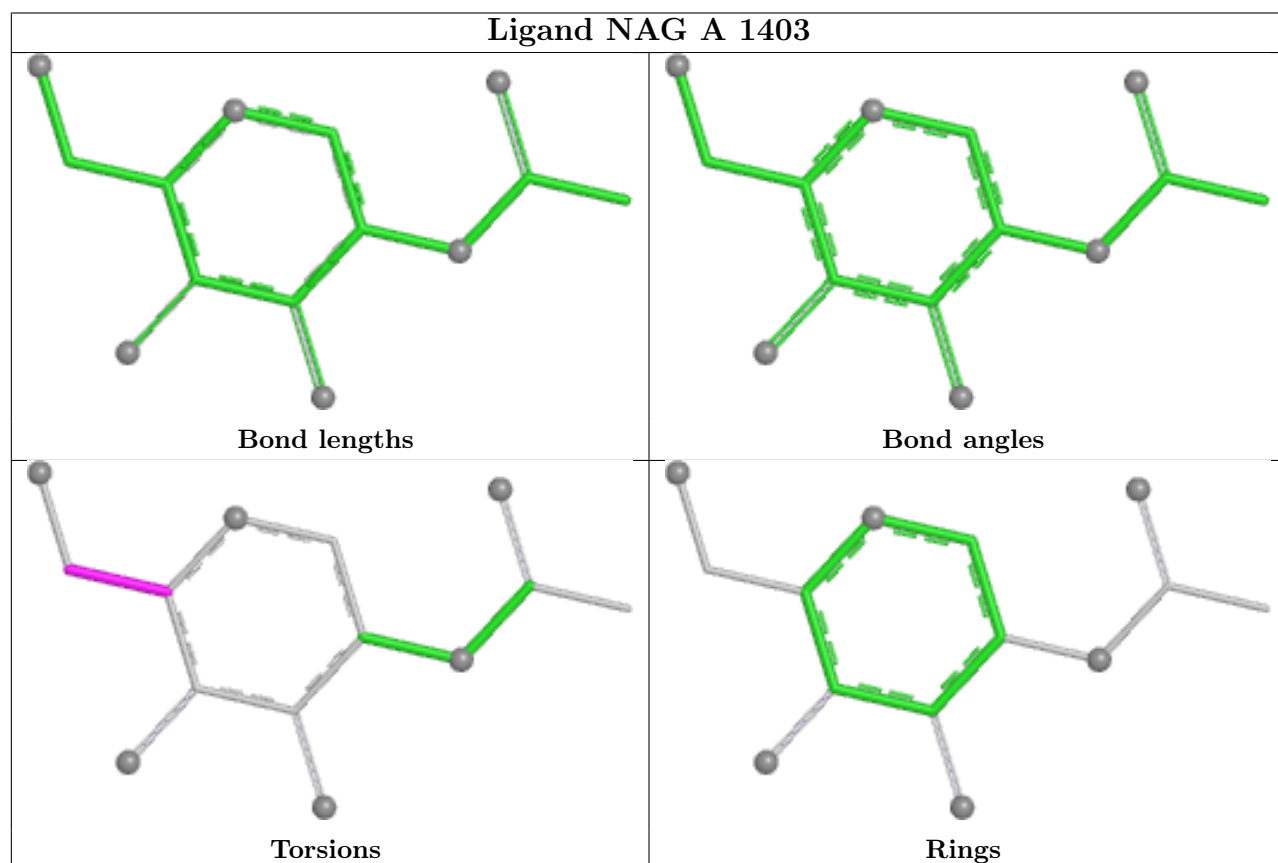
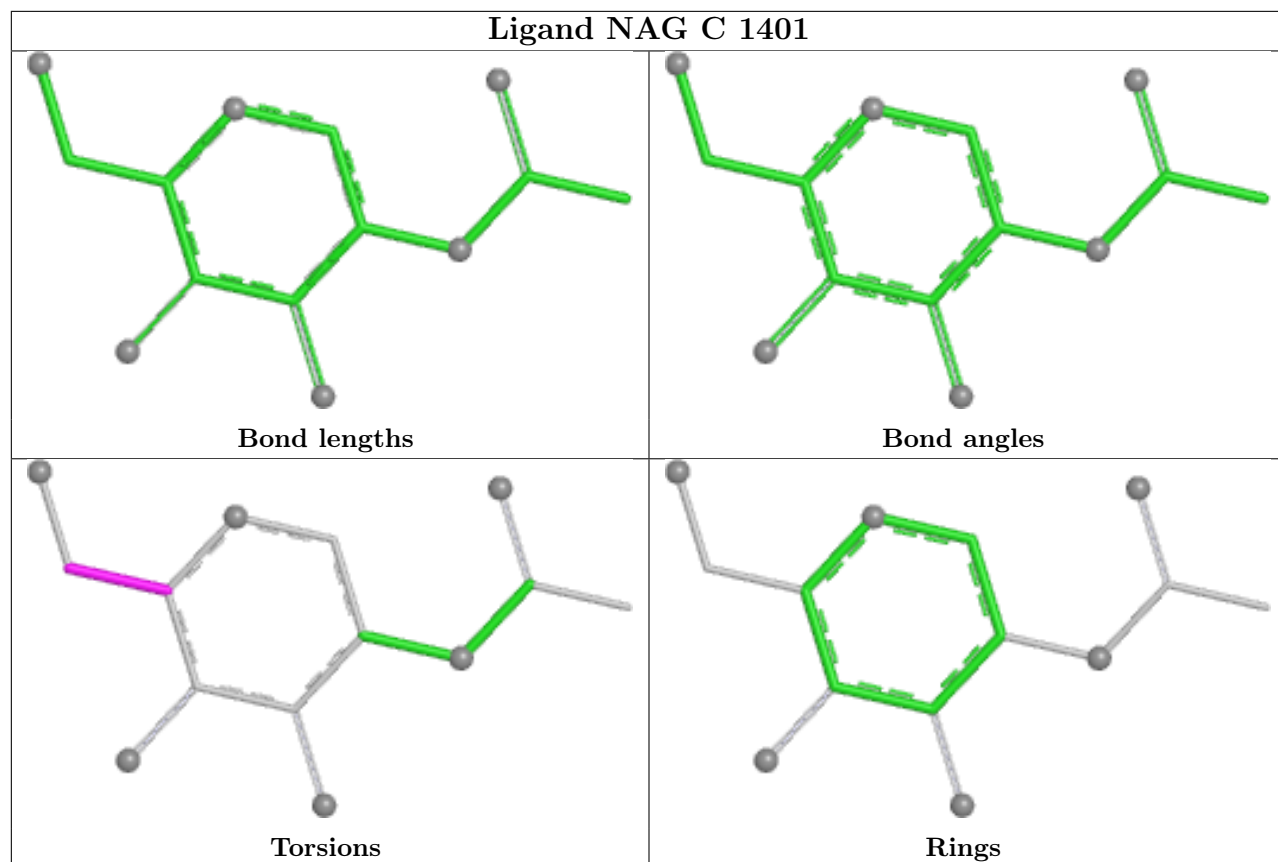


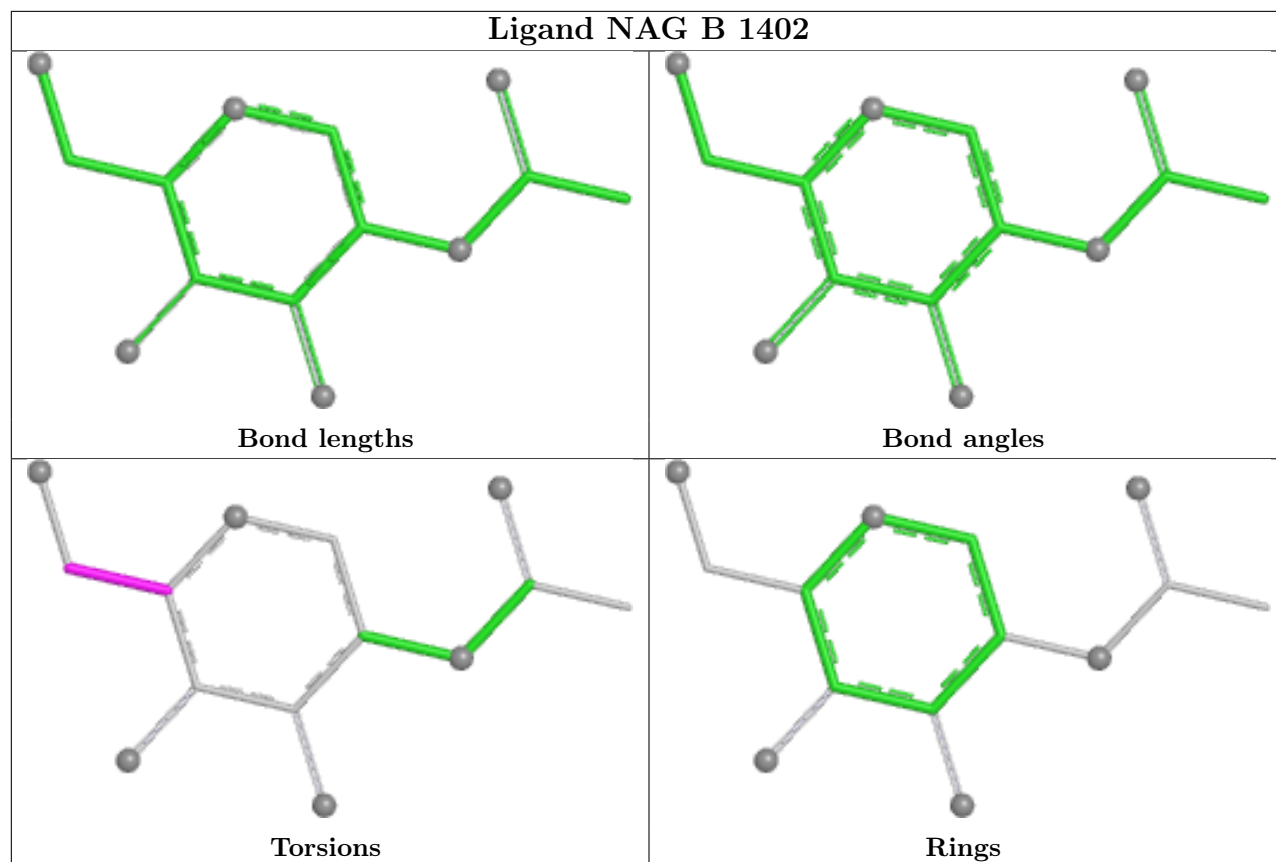
Ligand NAG A 1405



Ligand NAG A 1404







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.

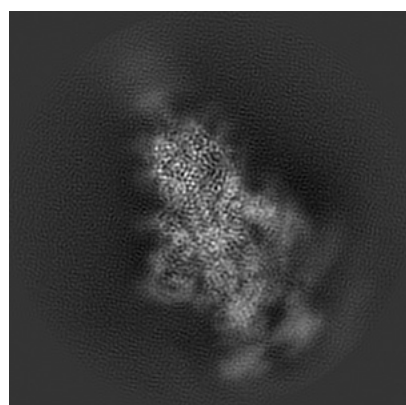
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-32869. These allow visual inspection of the internal detail of the map and identification of artifacts.

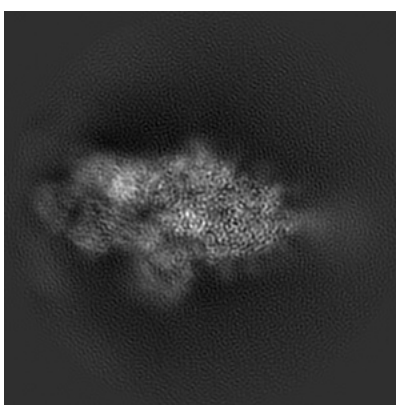
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

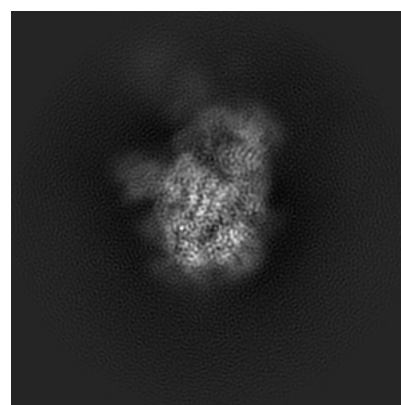
6.1.1 Primary map



X



Y

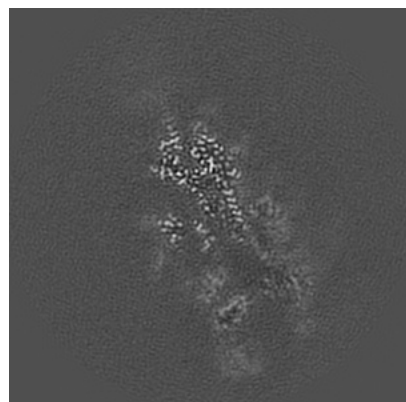


Z

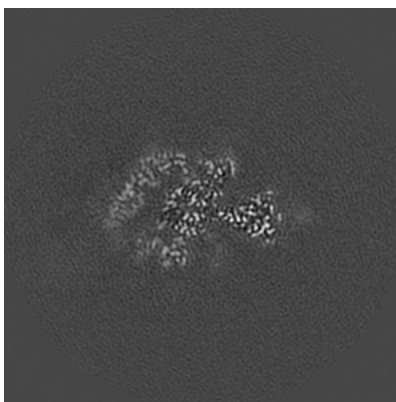
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

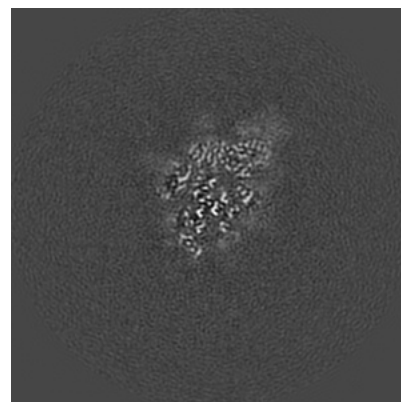
6.2.1 Primary map



X Index: 144



Y Index: 144

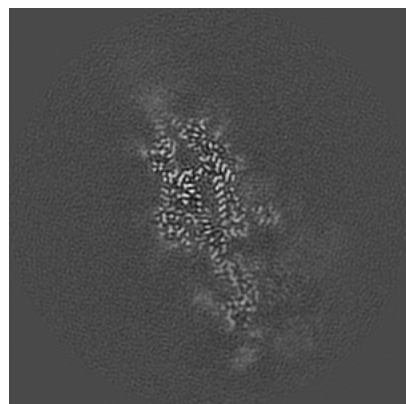


Z Index: 144

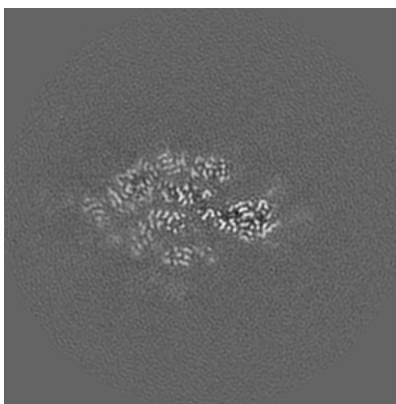
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

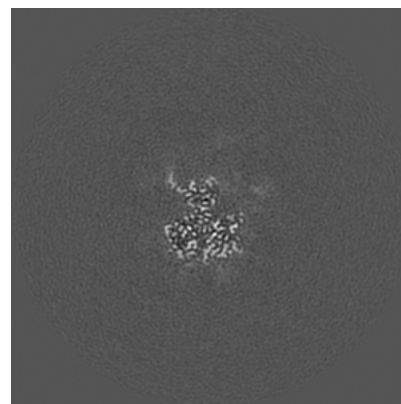
6.3.1 Primary map



X Index: 132



Y Index: 149

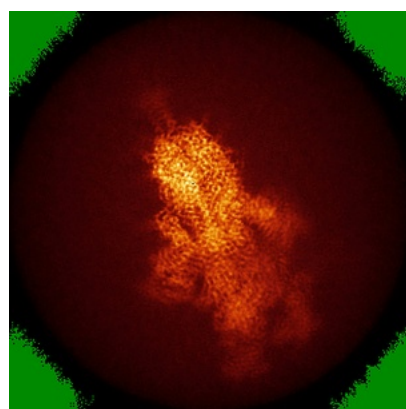


Z Index: 167

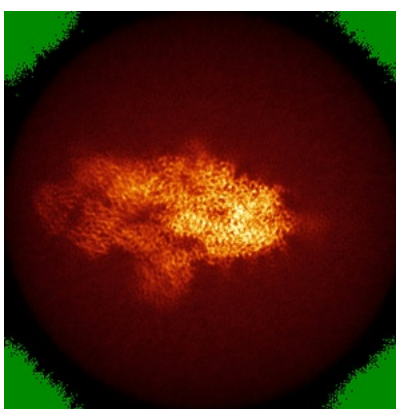
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

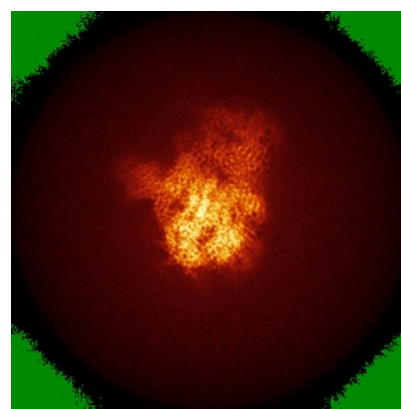
6.4.1 Primary map



X



Y



Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.025. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

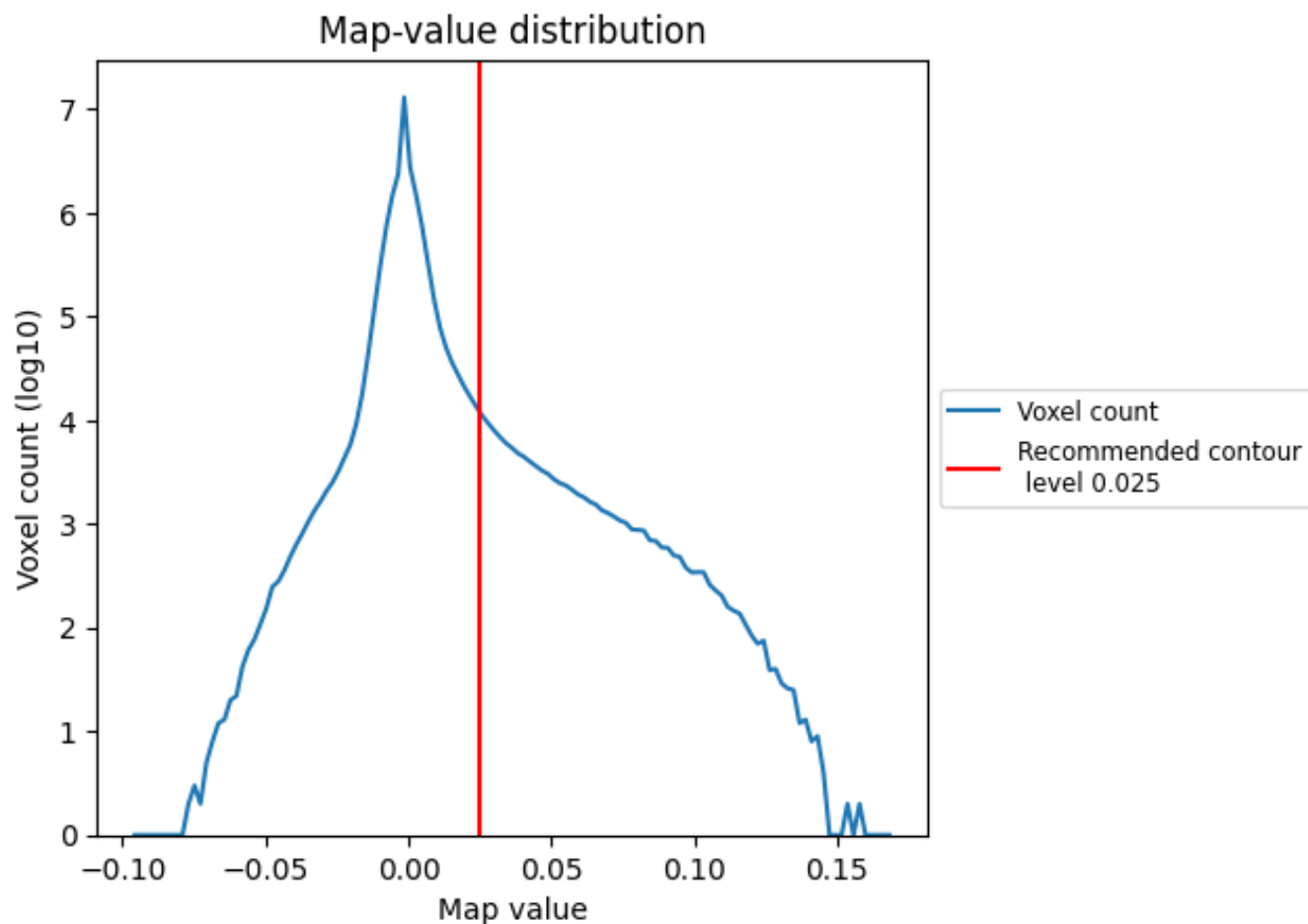
6.6 Mask visualisation [i](#)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis [i](#)

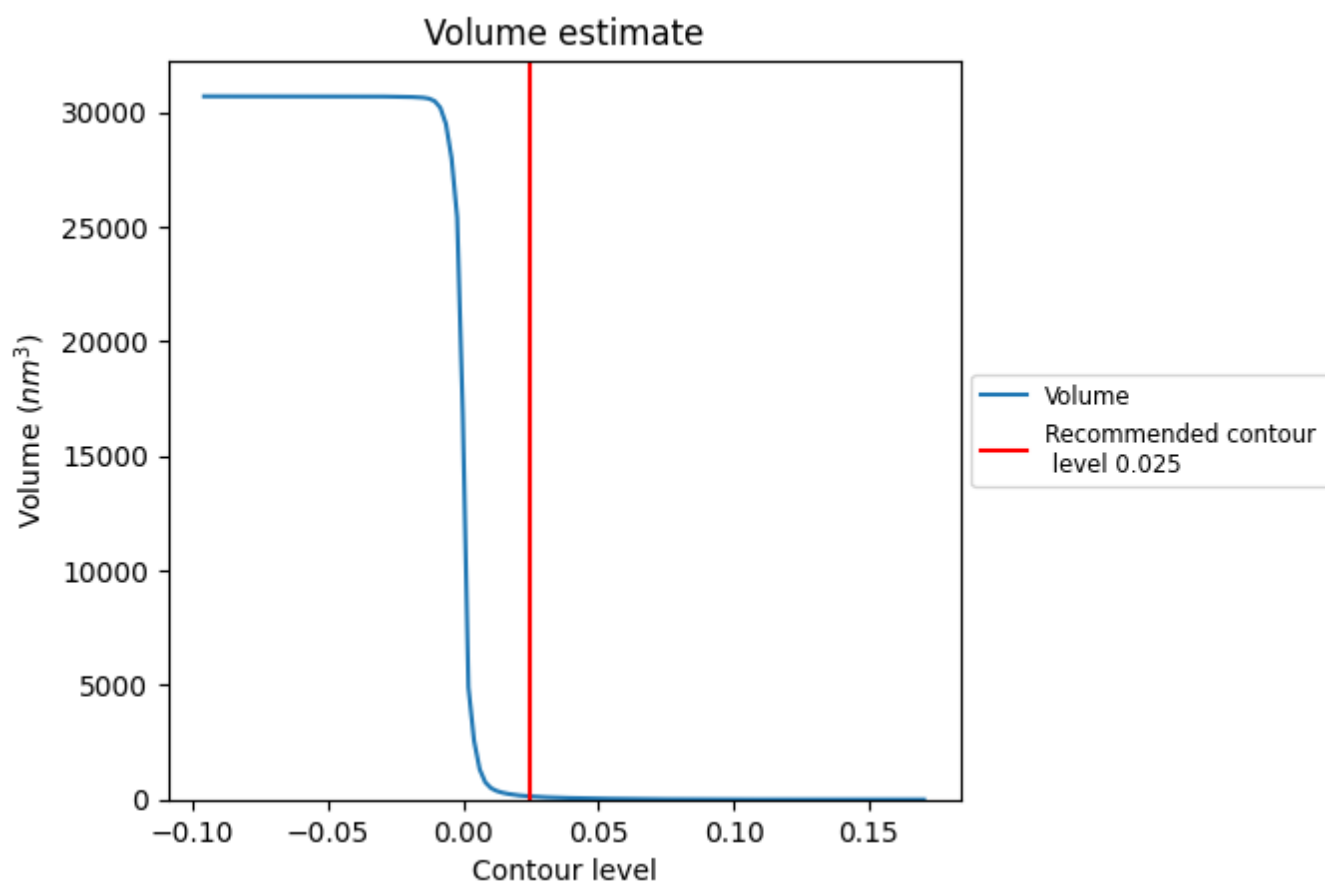
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

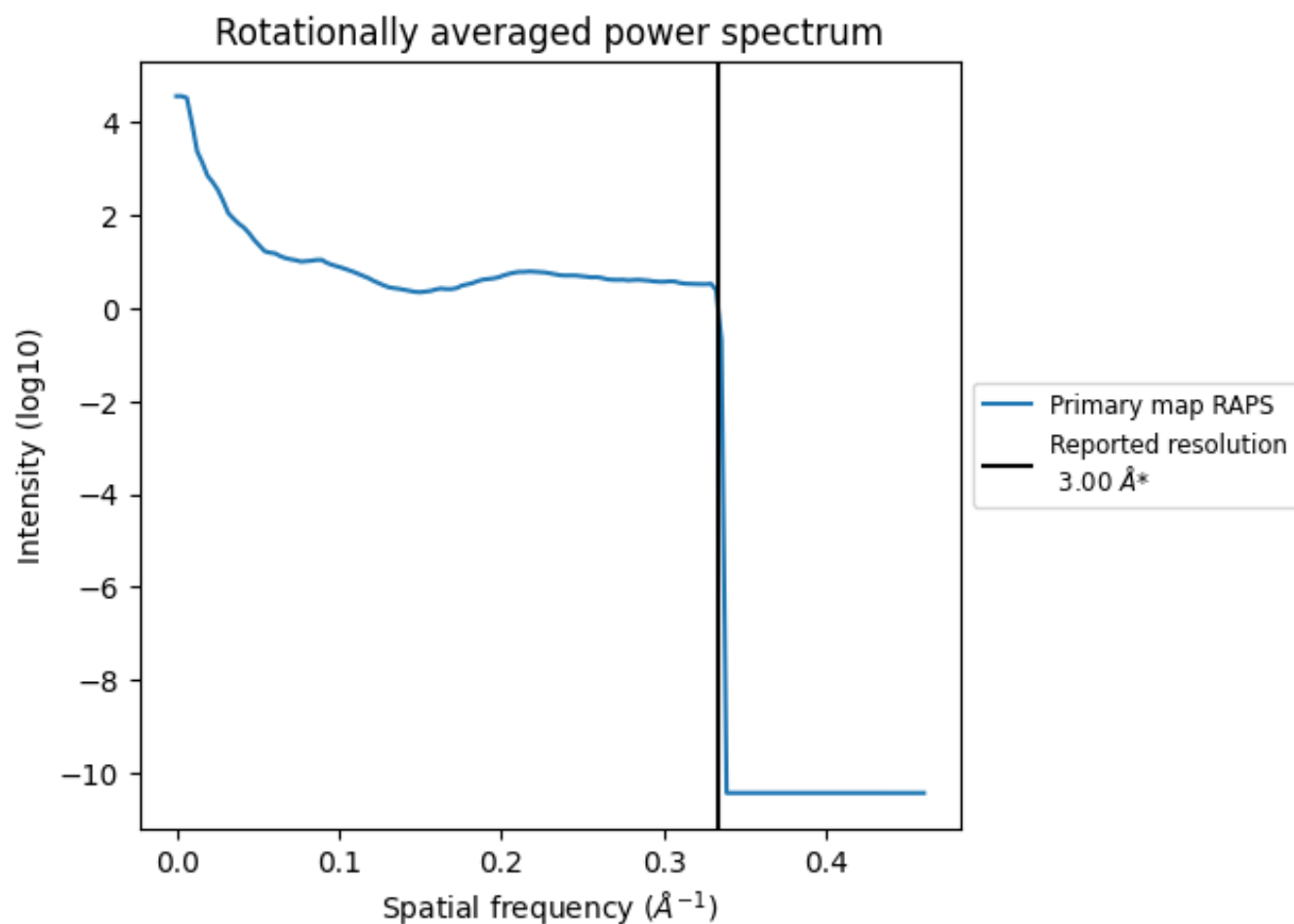
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 137 nm³; this corresponds to an approximate mass of 124 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum ⓘ



*Reported resolution corresponds to spatial frequency of 0.333 Å⁻¹

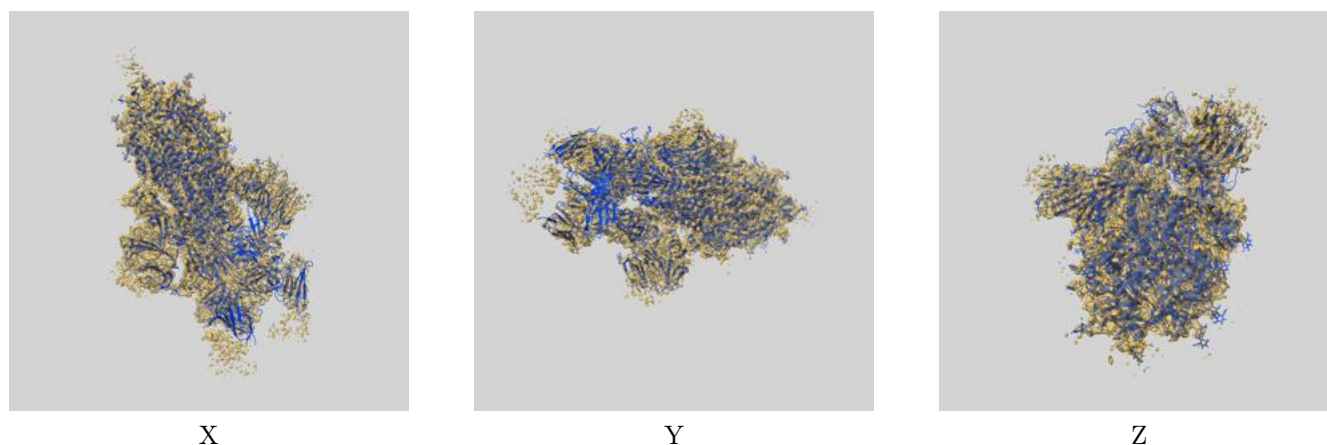
8 Fourier-Shell correlation ⓘ

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

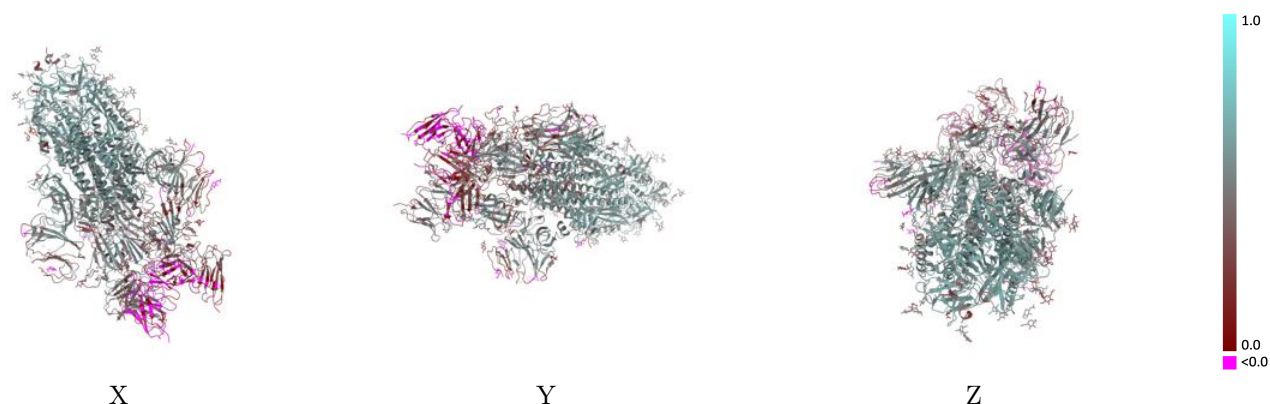
This section contains information regarding the fit between EMDB map EMD-32869 and PDB model 7WWL. Per-residue inclusion information can be found in section 3 on page 10.

9.1 Map-model overlay [i](#)



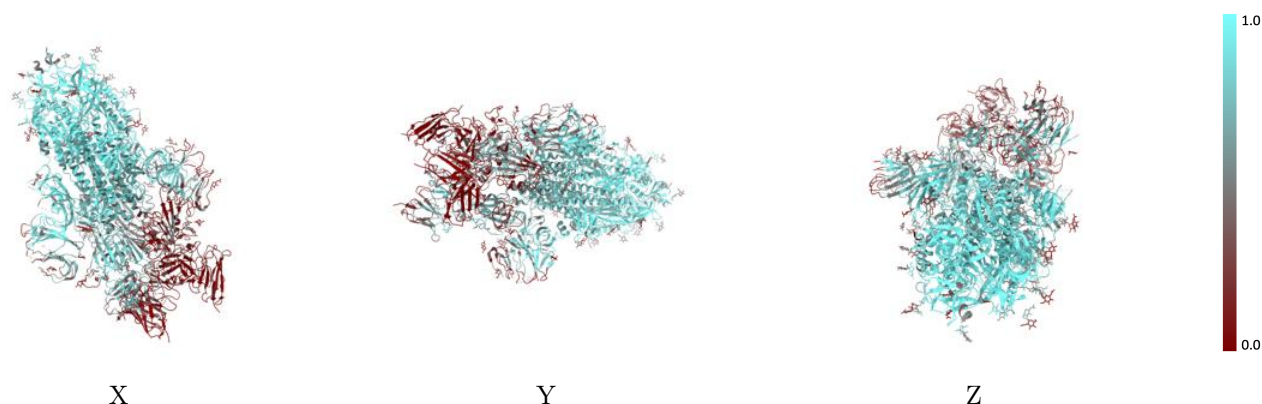
The images above show the 3D surface view of the map at the recommended contour level 0.025 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



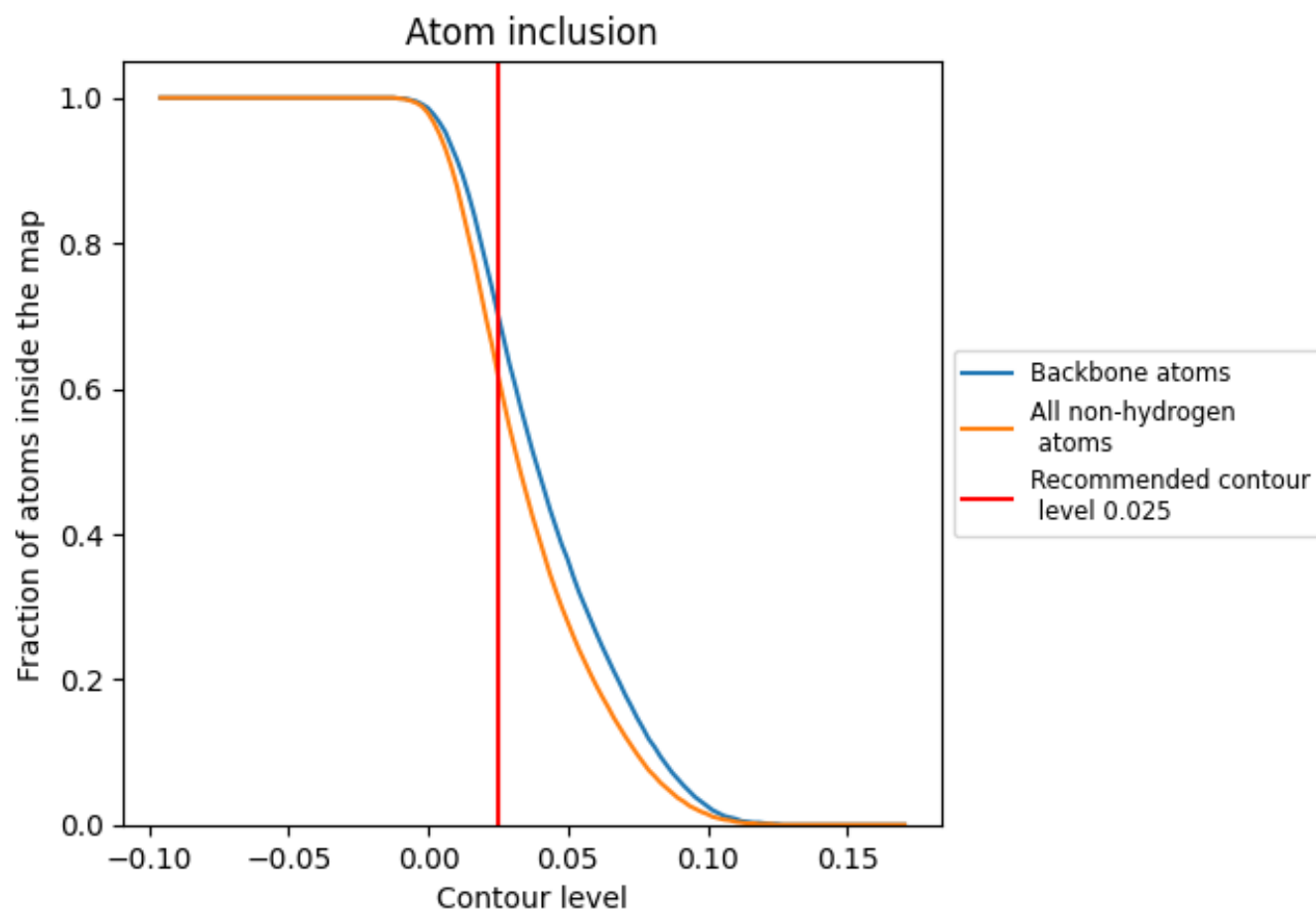
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.025).

9.4 Atom inclusion [i](#)



At the recommended contour level, 70% of all backbone atoms, 62% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.025) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6180	 0.4440
A	 0.6370	 0.4820
B	 0.7340	 0.4950
C	 0.7520	 0.5150
D	 0.2500	 0.2320
E	 0.3210	 0.2900
F	 0.5710	 0.5210
G	 0.6070	 0.3750
H	 0.5220	 0.4300
I	 0.1170	 -0.0010
J	 0.0920	 0.2190
K	 0.1790	 0.4010
L	 0.6150	 0.4740
M	 0.1460	 0.0200
N	 0.0210	 0.1860
O	 0.5360	 0.3820
P	 0.4640	 0.3610
Q	 0.0710	 0.2000
R	 0.2140	 0.1480
S	 0.3210	 0.3690
T	 0.5710	 0.4330
U	 0.5360	 0.4360
V	 0.6070	 0.5050
W	 0.3570	 0.4550
X	 0.1430	 0.1670
Y	 0.6430	 0.4450
Z	 0.4640	 0.3790
a	 0.7500	 0.4970
b	 0.4290	 0.2940
c	 0.1790	 0.3670
d	 0.5710	 0.4280
e	 0.4640	 0.4470
f	 0.1070	 0.3340

