



Full wwPDB EM Validation Report ⓘ

Mar 4, 2026 – 10:28 PM UTC

PDB ID : 7CZY / pdb_00007czy
EMDB ID : EMD-30521
Title : S protein of SARS-CoV-2 in complex bound with P5A-2F11_2B
Authors : Yan, R.H.; Zhang, Y.Y.; Li, Y.N.; Zhou, Q.
Deposited on : 2020-09-09
Resolution : 3.30 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:

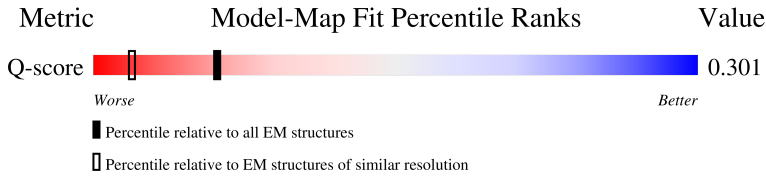
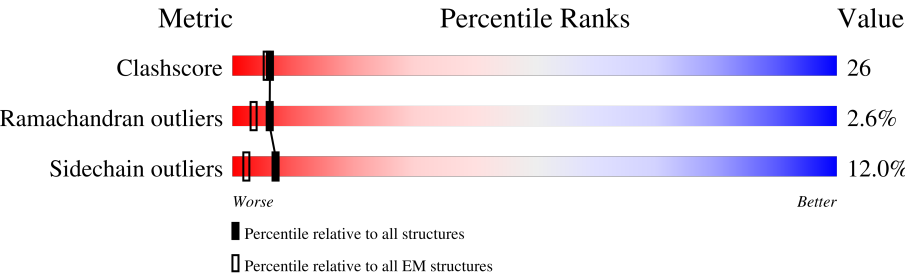
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data 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 i

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

The reported resolution of this entry is 3.30 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	15087 (2.80 - 3.80)

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	1283	21% 55% 20% • 22%
1	B	1283	7% 57% 17% • 23%
1	C	1283	19% 56% 19% • 22%
2	H	452	49% 23% 21% 5% • 50%

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Mol	Chain	Length	Quality of chain
2	J	452	
3	K	220	
3	N	220	
4	D	2	
4	E	2	
4	F	2	
4	G	2	
4	I	2	
4	L	2	
4	M	2	
4	O	2	
4	P	2	
4	Q	2	
4	R	2	
4	S	2	
4	T	2	
4	U	2	
4	V	2	
4	W	2	
4	X	2	
4	Y	2	
4	Z	2	
4	a	2	
4	b	2	
5	c	3	

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Mol	Chain	Length	Quality of chain
5	d	3	100% 33%67%

2 Entry composition [i](#)

There are 6 unique types of molecules in this entry. The entry contains 31186 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	1006	Total	C	N	O	S	0	0
			7863	5019	1308	1500	36		
1	B	982	Total	C	N	O	S	0	0
			7696	4920	1279	1462	35		
1	C	1004	Total	C	N	O	S	0	0
			7853	5014	1307	1496	36		

There are 36 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	986	PRO	LYS	conflict	UNP P0DTC2
A	987	PRO	VAL	conflict	UNP P0DTC2
A	1274	LEU	-	expression tag	UNP P0DTC2
A	1275	GLU	-	expression tag	UNP P0DTC2
A	1276	ASP	-	expression tag	UNP P0DTC2
A	1277	TYR	-	expression tag	UNP P0DTC2
A	1278	LYS	-	expression tag	UNP P0DTC2
A	1279	ASP	-	expression tag	UNP P0DTC2
A	1280	ASP	-	expression tag	UNP P0DTC2
A	1281	ASP	-	expression tag	UNP P0DTC2
A	1282	ASP	-	expression tag	UNP P0DTC2
A	1283	LYS	-	expression tag	UNP P0DTC2
B	986	PRO	LYS	conflict	UNP P0DTC2
B	987	PRO	VAL	conflict	UNP P0DTC2
B	1274	LEU	-	expression tag	UNP P0DTC2
B	1275	GLU	-	expression tag	UNP P0DTC2
B	1276	ASP	-	expression tag	UNP P0DTC2
B	1277	TYR	-	expression tag	UNP P0DTC2
B	1278	LYS	-	expression tag	UNP P0DTC2
B	1279	ASP	-	expression tag	UNP P0DTC2
B	1280	ASP	-	expression tag	UNP P0DTC2
B	1281	ASP	-	expression tag	UNP P0DTC2
B	1282	ASP	-	expression tag	UNP P0DTC2
B	1283	LYS	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
C	986	PRO	LYS	conflict	UNP P0DTC2
C	987	PRO	VAL	conflict	UNP P0DTC2
C	1274	LEU	-	expression tag	UNP P0DTC2
C	1275	GLU	-	expression tag	UNP P0DTC2
C	1276	ASP	-	expression tag	UNP P0DTC2
C	1277	TYR	-	expression tag	UNP P0DTC2
C	1278	LYS	-	expression tag	UNP P0DTC2
C	1279	ASP	-	expression tag	UNP P0DTC2
C	1280	ASP	-	expression tag	UNP P0DTC2
C	1281	ASP	-	expression tag	UNP P0DTC2
C	1282	ASP	-	expression tag	UNP P0DTC2
C	1283	LYS	-	expression tag	UNP P0DTC2

- Molecule 2 is a protein called Immunoglobulin heavy variable 1-8,Immunoglobulin heavy variable 1-8,chain H of P5A-2F11_2B,Epididymis luminal protein 214,Epididymis luminal protein 214.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	H	224	Total	C	N	O	S	0	0
			1670	1053	281	328	8		
2	J	224	Total	C	N	O	S	0	0
			1670	1053	281	328	8		

- Molecule 3 is a protein called IG c168_light_IGKV4-1_IGKJ4,Immunoglobulin kappa constant.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	K	220	Total	C	N	O	S	0	0
			1685	1055	278	346	6		
3	N	220	Total	C	N	O	S	0	0
			1685	1055	278	346	6		

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



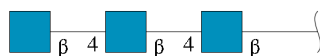
Mol	Chain	Residues	Atoms				AltConf	Trace
4	D	2	Total	C	N	O	0	0
			28	16	2	10		

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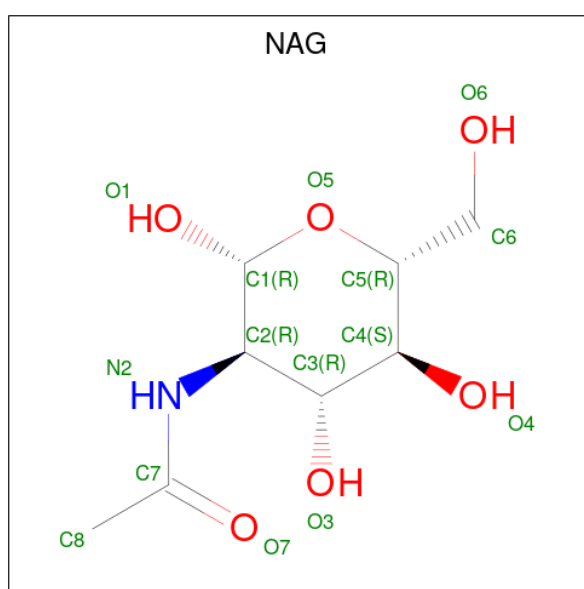
Mol	Chain	Residues	Atoms				AltConf	Trace
4	E	2	Total	C	N	O	0	0
			28	16	2	10		
4	F	2	Total	C	N	O	0	0
			28	16	2	10		
4	G	2	Total	C	N	O	0	0
			28	16	2	10		
4	I	2	Total	C	N	O	0	0
			28	16	2	10		
4	L	2	Total	C	N	O	0	0
			28	16	2	10		
4	M	2	Total	C	N	O	0	0
			28	16	2	10		
4	O	2	Total	C	N	O	0	0
			28	16	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		
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		

- Molecule 5 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				AltConf	Trace
5	c	3	Total	C	N	O	0	0
			42	24	3	15		
5	d	3	Total	C	N	O	0	0
			42	24	3	15		

- Molecule 6 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: C₈H₁₅NO₆) (labeled as "Ligand of Interest" by depositor).



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

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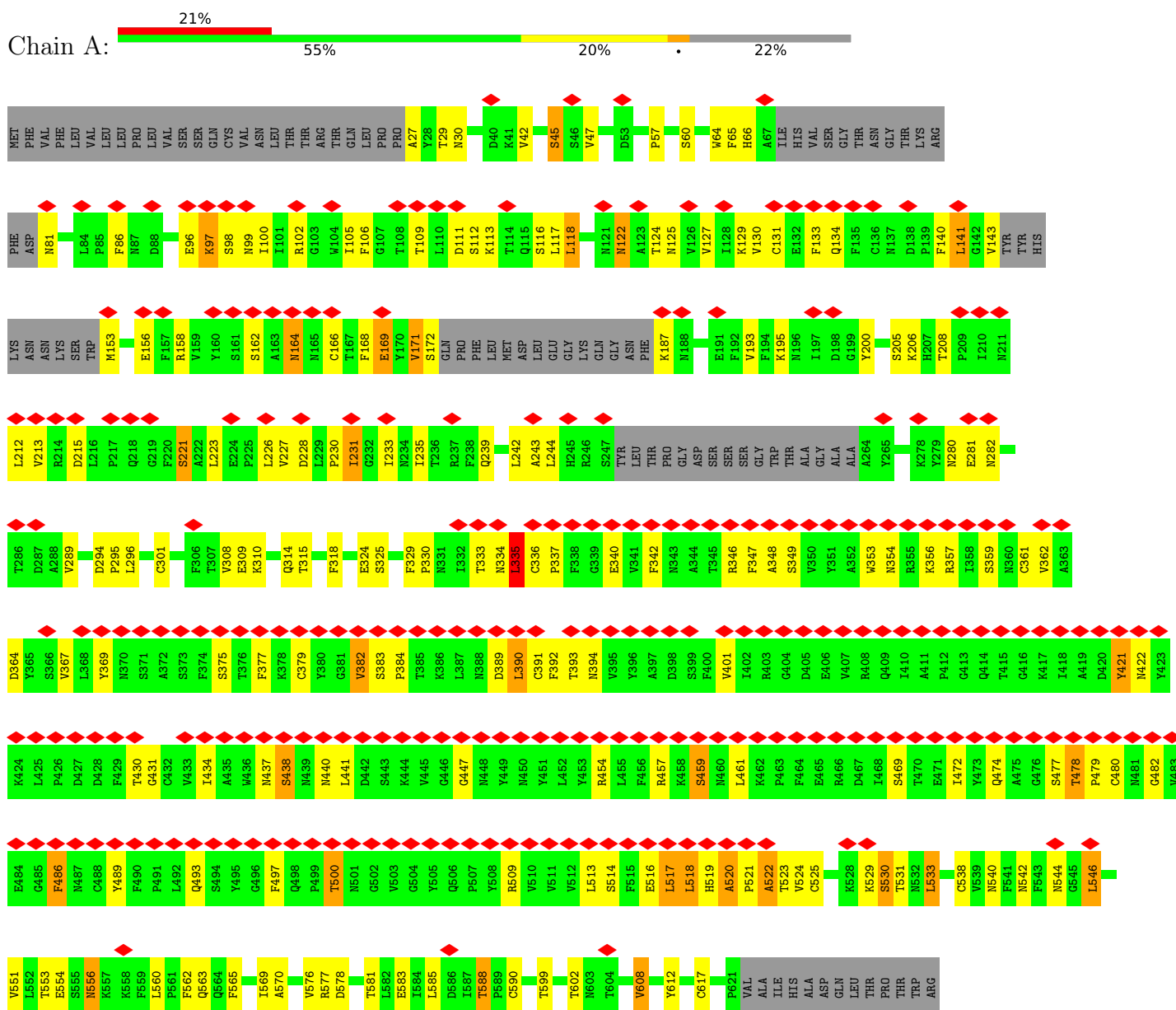
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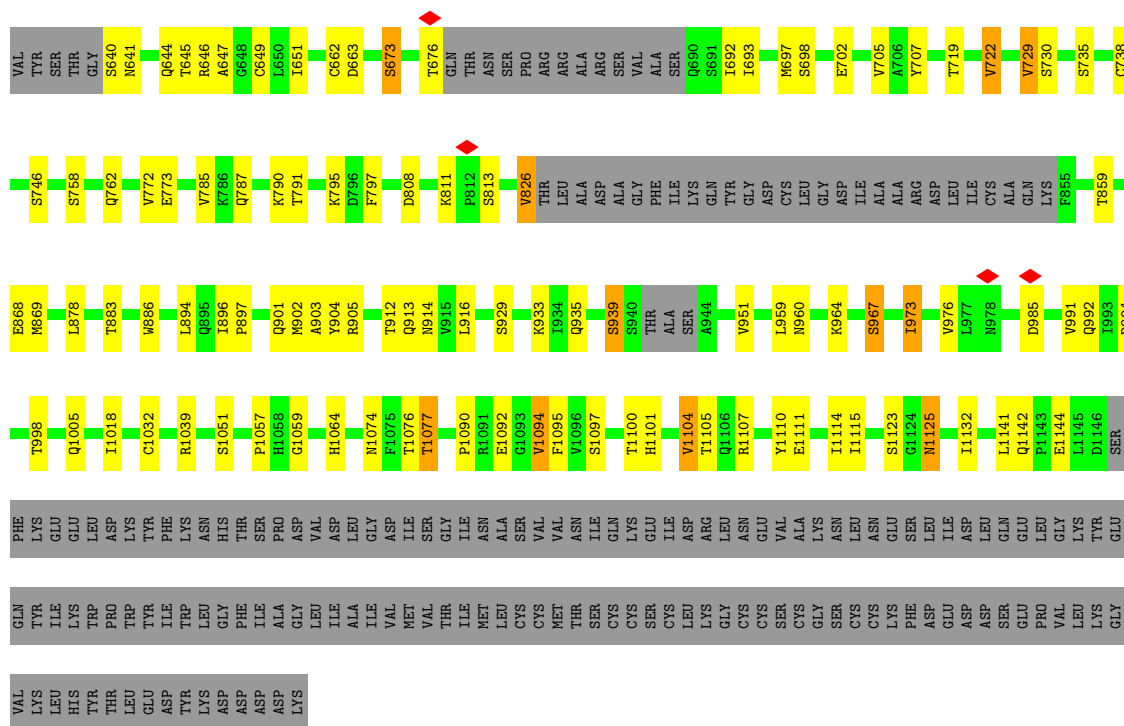
Mol	Chain	Residues	Atoms				AltConf
6	A	1	Total 14	C 8	N 1	O 5	0
6	A	1	Total 14	C 8	N 1	O 5	0
6	B	1	Total 14	C 8	N 1	O 5	0
6	B	1	Total 14	C 8	N 1	O 5	0
6	B	1	Total 14	C 8	N 1	O 5	0
6	B	1	Total 14	C 8	N 1	O 5	0
6	B	1	Total 14	C 8	N 1	O 5	0
6	B	1	Total 14	C 8	N 1	O 5	0
6	B	1	Total 14	C 8	N 1	O 5	0
6	B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

3 Residue-property plots

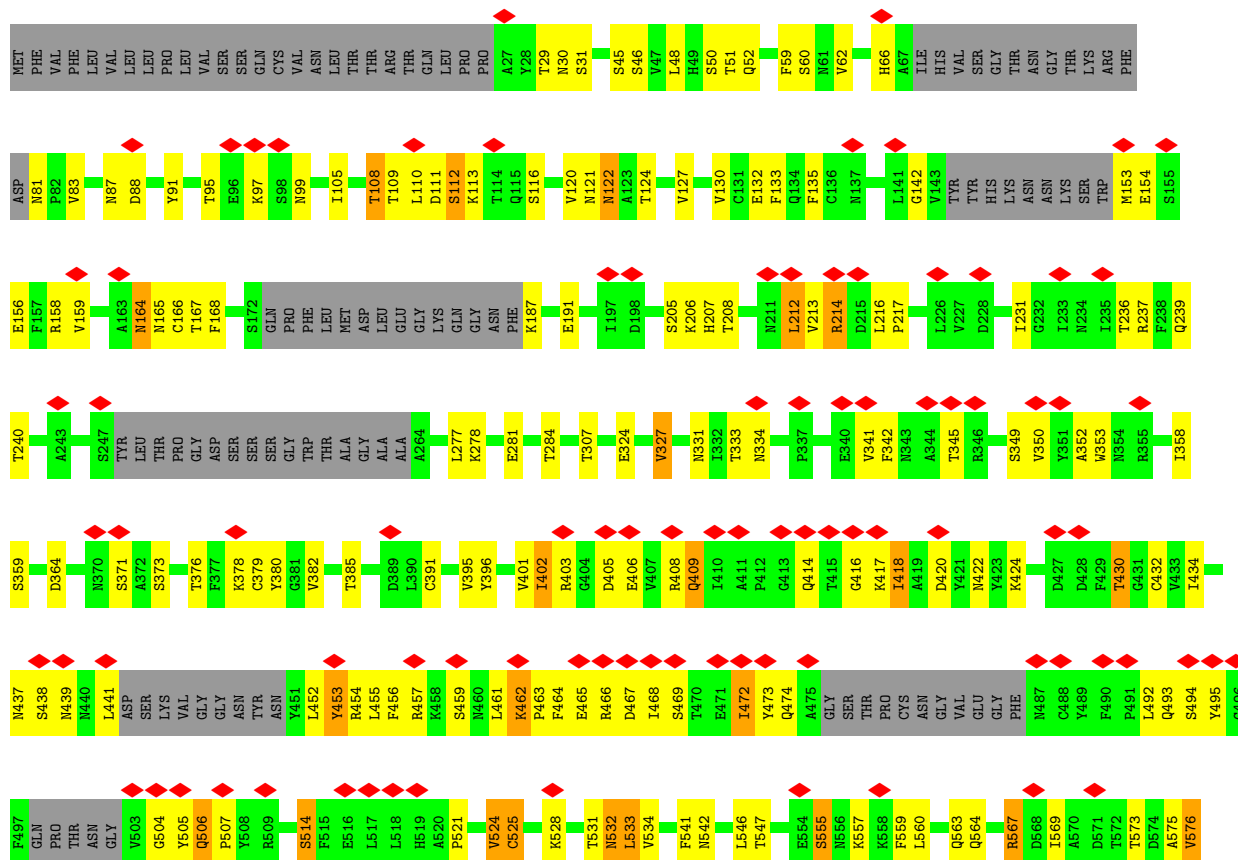
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

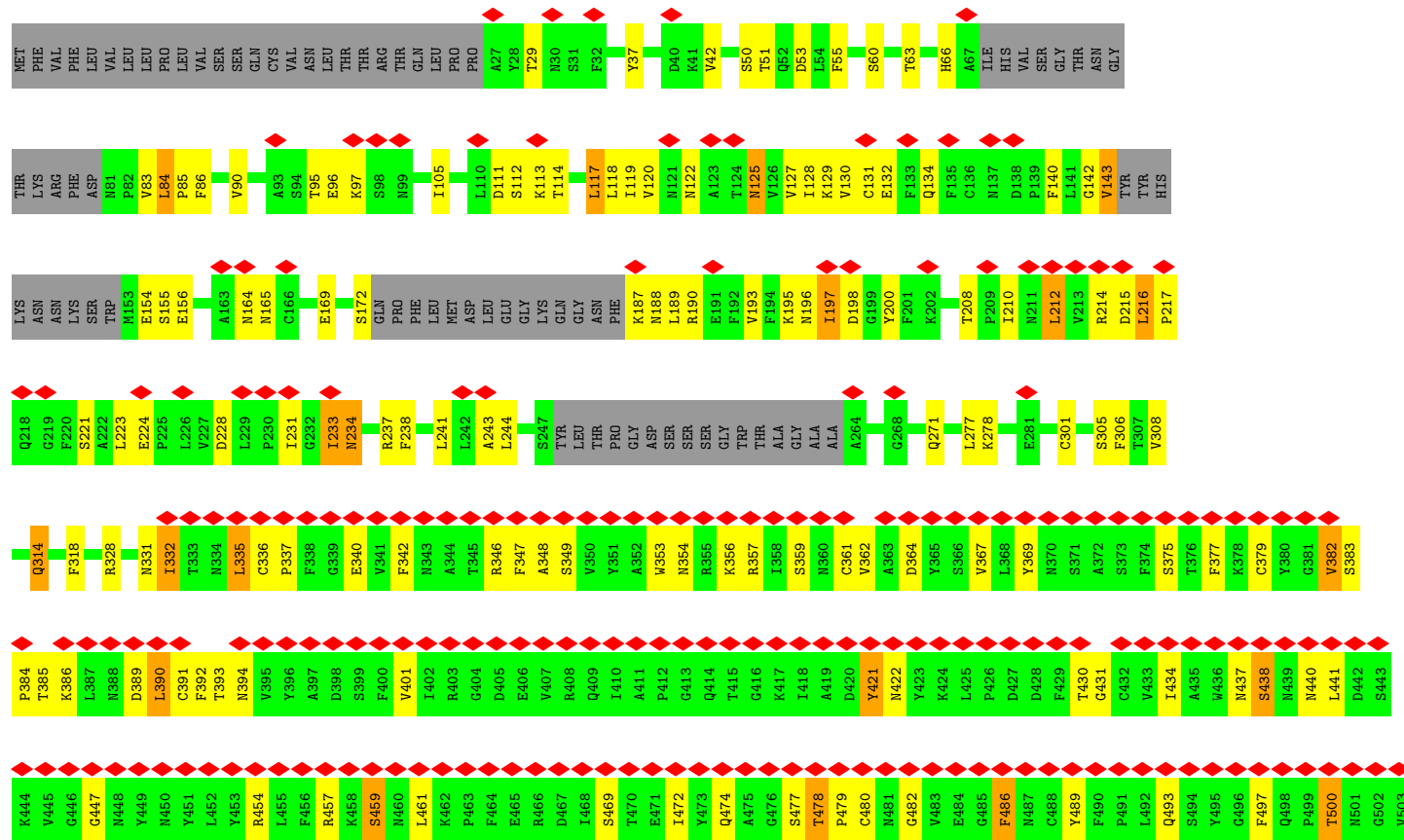
• Molecule 1: Spike glycoprotein

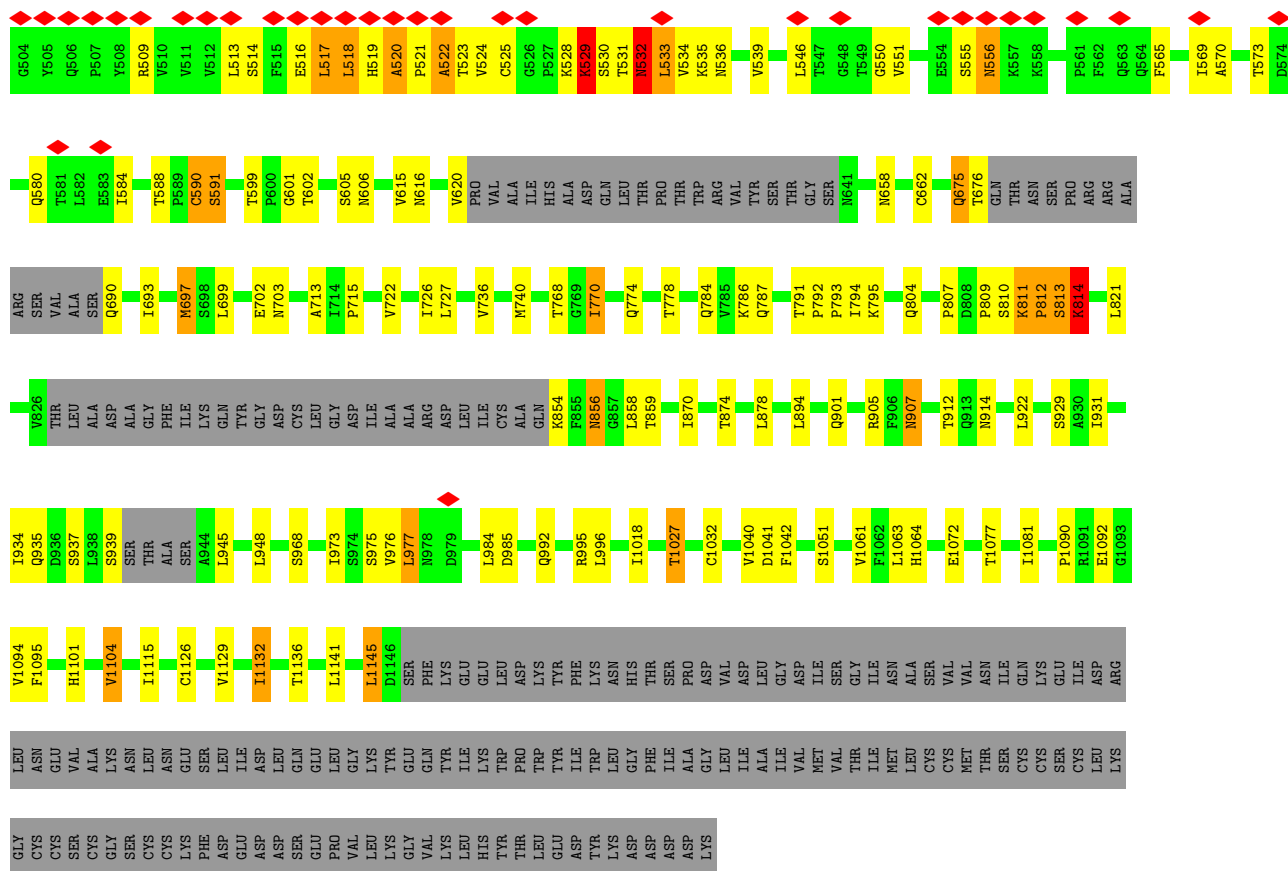




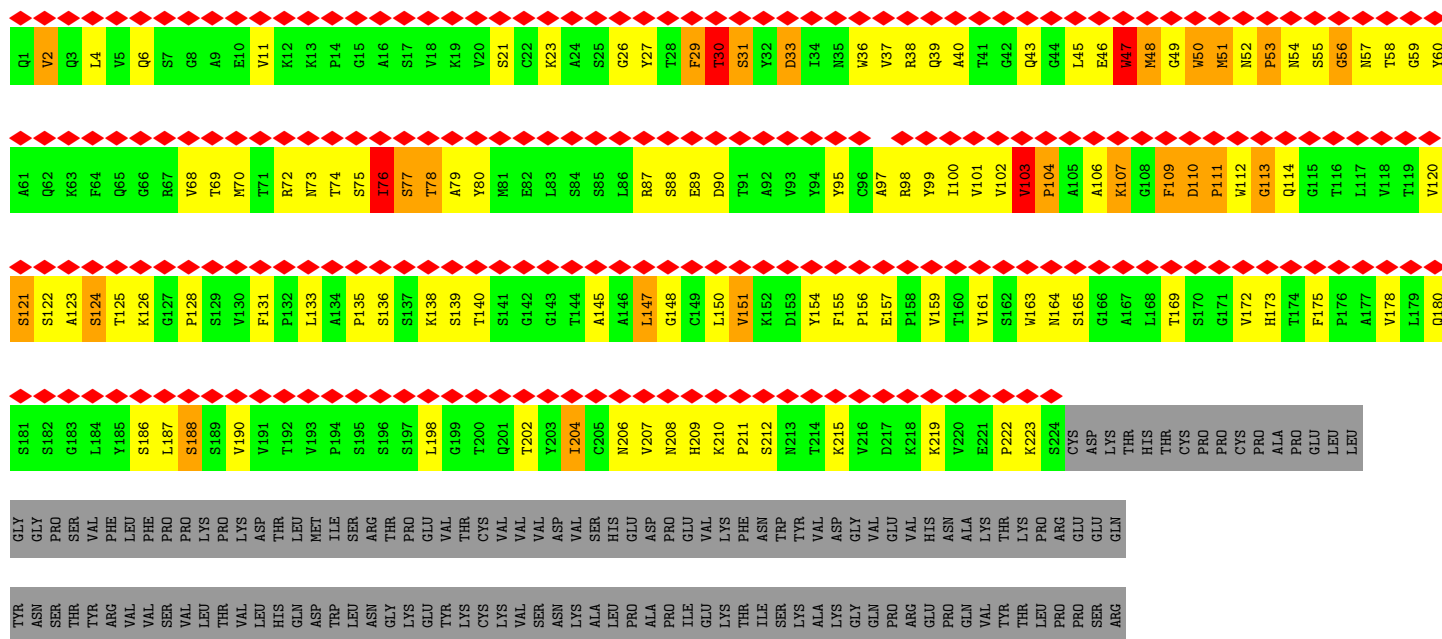
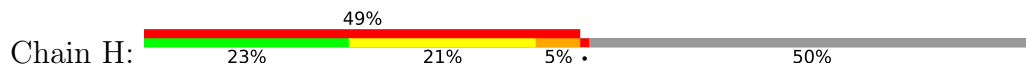
• Molecule 1: Spike glycoprotein





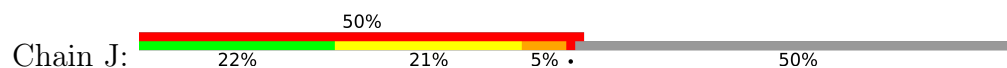


- Molecule 2: Immunoglobulin heavy variable 1-8,Immunoglobulin heavy variable 1-8,chain H of P5A-2F11_2B,Epididymis luminal protein 214,Epididymis luminal protein 214



ASP	GLU	THR	LYS	ASN	GLN	VAL	SER	THR	CYS	LEU	VAL	VAL	GLY	PHE	THR	PRO	SER	ASP	THR	ILE	GLN	ALA	VAL	GLU	TRP	GLU	SER	LEU	SER	PRO	GLY	GLN	PRO	GLU	ASN	ASN	TYR	LYS	THR	THR	PRO	PRO	VAL	VAL	LEU	ASP	SER	GLY	SER	PHE	PHE	LEU	TYR	LYS	LEU	THR	VAL	ASP	LYS	SER	
ARG	TRP	GLN	GLY	ASN	VAL	PHE	SER	CYS	VAL	MET	HIS	GLU	ALA	GLY	LEU	HIS	ASN	HIS	TYR	THR	THR	GLN	LYS	VAL	SER	LEU	SER	LEU	SER	PRO	GLY	GLN	LYS	PRO	GLU	ASN	ASN	TYR	LYS	THR	THR	PRO	PRO	VAL	VAL	LEU	ASP	SER	GLY	SER	PHE	PHE	LEU	TYR	LYS	LEU	THR	VAL	ASP	LYS	SER

- Molecule 2: Immunoglobulin heavy variable 1-8,Immunoglobulin heavy variable 1-8,chain H of P5A-2F11_2B,Epididymis luminal protein 214,Epididymis luminal protein 214

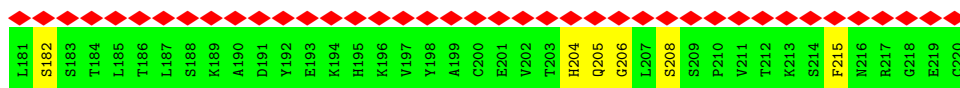


Q1	V2	Q3	L4	V5	Q6	S7	Q8	A9	E10	V11	K12	L13	P14	G15	A16	S17	V18	K19	V20	S21	C22	K23	A24	S25	G26	V27	T28	F29	T30	S31	Y32	D33	I34	N35	K36	V37	R38	Q39	A40	T41	G42	Q43	G44	L45	E46	Q47	M48	Q49	W50	M51	N52	P53	N54	S55	G56	N57	T58	G59	Y60	
A61	Q62	R63	F64	Q65	Q66	R67	V68	T69	W70	T71	R72	K73	T74	S75	T76	S77	T78	A79	Y80	M81	E82	L83	S84	S85	L86	R87	S88	E89	D90	T91	A92	V93	Y94	Y95	C96	A97	R98	Y99	I100	V101	V102	V103	P104	A105	A106	K107	G108	F109	D110	P111	V112	G113	Q114	G115	T116	L117	V118	T119	V120	
S121	S122	A123	S124	T125	K126	G127	P128	S129	V130	F131	P132	L133	A134	P135	S136	S137	K138	S139	T140	S141	G142	G143	T144	A145	A146	L147	G148	C149	L150	V151	K152	D153	Y154	F155	P156	E157	P158	V159	T160	V161	S162	M163	N164	S165	G166	A167	L168	T169	S170	G171	V172	H173	T174	F175	P176	A177	V178	L179	Q180	
S181	S182	G183	L184	Y185	S186	L187	S188	S189	V190	V191	T192	V193	P194	S195	S196	S197	L198	G199	T200	Q201	T202	Y203	T204	C205	N206	V207	N208	H209	K210	P211	S212	M213	T214	K215	V216	D217	K218	K219	V220	E221	P222	K223	S224	CYS	ASP	LYS	THR	THR	CYS	PRO	PRO	CYS	PRO	ALA	PRO	GLU	LEU	GLN		
GLY	GLY	PRO	SER	VAL	PHE	LEU	PHE	PRO	PRO	LYS	ASP	THR	HIS	GLN	LEU	MET	ILE	SER	ASN	ARG	THR	PRO	GLY	THR	GLY	GLU	GLY	THR	VAL	VAL	ASN	ASN	TRP	VAL	HIS	GLY	GLY	GLY	HIS	ASN	ALA	ALA	VAL	GLU	GLU	GLU	GLU	GLN	THR	THR	CYS	PRO	PRO	GLU	LEU	GLN				
TYR	ASN	THR	THR	ARG	VAL	VAL	SER	LEU	VAL	THR	LEU	HIS	GLN	ASP	THR	TRP	TRP	LEU	ASN	ASN	GLY	THR	ALA	LEU	LEU	ASN	ALA	PRO	GLU	THR	ILE	LYS	LYS	ALA	LYS	GLY	GLN	ARG	GLU	GLN	VAL	VAL	THR	LEU	PRO	PRO	ARG	GLU	GLU	GLN	THR	THR	CYS	PRO	PRO	ALA	PRO	GLU	LEU	GLN
ASP	GLU	THR	LYS	ASN	GLN	VAL	SER	THR	CYS	LEU	VAL	VAL	GLY	PHE	THR	PRO	SER	PRO	ASN	ASP	THR	ILE	ALA	VAL	GLU	TRP	GLU	SER	LEU	SER	ASN	GLY	GLN	PRO	GLU	ASP	GLY	GLY	PHE	PHE	LEU	TYR	SER	LYS	THR	LEU	THR	VAL	ASP	LYS	SER	LYS	SER	VAL	ASP	GLY	GLN			
ARG	TRP	GLN	GLY	ASN	VAL	PHE	SER	CYS	VAL	MET	HIS	GLU	ALA	GLY	LEU	HIS	ASN	HIS	TYR	THR	THR	GLN	LYS	VAL	SER	LEU	SER	LEU	SER	PRO	GLY	GLN	PRO	GLU	ASN	GLY	GLY	PHE	PHE	LEU	TYR	SER	LYS	THR	LEU	THR	VAL	ASP	LYS	SER	LYS	SER	VAL	ASP	GLY	GLN	LYS			

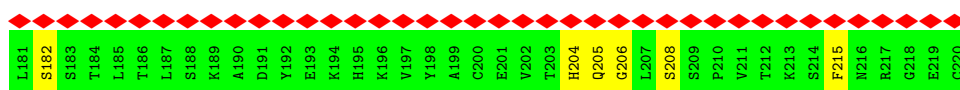
- Molecule 3: IG c168_light_IGKV4-1_IGKJ4,Immunoglobulin kappa constant



D1	I2	V3	M4	T5	Q6	S7	P8	D9	S10	L11	A12	V13	S14	L15	G16	E17	R18	A19	T20	I21	N22	C23	K24	S25	S26	Q27	S28	V29	L30	Y31	S32	S33	N34	N35	K36	N37	Y38	L39	A40	W41	Y42	Q43	Q44	K45	P46	G47	Q48	P49	P50	M51	L52	L53	T54	Y55	W56	A57	S58	T59	R60
E61	S62	G63	V64	P65	D66	R67	F68	S69	G70	S71	G72	S73	G74	T75	D76	F77	T78	L79	T80	S81	S82	S83	L84	Q85	A86	E87	D88	V89	A90	Y91	Y92	Y93	C94	Q95	Q96	Y97	Y98	S99	T100	P101	L102	T103	F104	G105	G106	G107	T108	K109	V110	E111	I112	K113	T114	T115	V116	A117	P118	P119	S120
V121	F122	I123	F124	P125	P126	S127	D128	E129	Q130	L131	K132	S133	G134	T135	A136	S137	V138	V139	C140	L141	L142	M143	M144	F145	Y146	P147	R148	E149	A150	K151	V152	Q153	Y154	K155	V156	D157	M158	A159	L160	Q161	S162	G163	M164	S165	P166	E167	S168	V169	T170	E171	Q172	D173	S174	K175	D176	S177	T178	Y179	S180



- Molecule 3: IG c168_light_IGKV4-1_IGKJ4,Immunoglobulin kappa constant



- 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



- 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



- 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



- 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



- 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



- 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

Chain X:



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

Chain Y:



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

Chain Z:



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

Chain a:



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

Chain b:



- Molecule 5: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain c:



- Molecule 5: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	39337	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)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.157	Depositor
Minimum map value	-0.087	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.02	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

5.1 Standard geometry

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	0.52	0/8039	0.62	4/10936 (0.0%)
1	B	0.43	0/7864	0.59	2/10691 (0.0%)
1	C	0.52	1/8028 (0.0%)	0.60	5/10919 (0.0%)
2	H	0.30	0/1710	0.59	0/2331
2	J	0.30	0/1710	0.59	0/2331
3	K	0.40	0/1722	0.71	0/2343
3	N	0.41	0/1722	0.71	0/2343
All	All	0.47	1/30795 (0.0%)	0.61	11/41894 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	478	THR	C-N	5.03	1.39	1.33

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	86	PHE	CA-C-N	5.91	132.82	121.54
1	A	86	PHE	C-N-CA	5.91	132.82	121.54
1	C	156	GLU	N-CA-C	5.88	115.86	108.45
1	C	588	THR	CA-C-N	-5.57	114.05	119.78
1	C	588	THR	C-N-CA	-5.57	114.05	119.78
1	A	478	THR	CA-C-N	-5.52	114.02	119.93
1	A	478	THR	C-N-CA	-5.52	114.02	119.93
1	C	478	THR	CA-C-N	-5.52	114.03	119.93
1	C	478	THR	C-N-CA	-5.52	114.03	119.93
1	B	212	LEU	CA-C-N	-5.39	117.64	123.08
1	B	212	LEU	C-N-CA	-5.39	117.64	123.08

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	7863	0	7656	217	0
1	B	7696	0	7514	137	0
1	C	7853	0	7652	210	0
2	H	1670	0	1647	270	0
2	J	1670	0	1647	263	0
3	K	1685	0	1616	322	0
3	N	1685	0	1616	320	0
4	D	28	0	25	0	0
4	E	28	0	25	3	0
4	F	28	0	25	0	0
4	G	28	0	25	1	0
4	I	28	0	25	1	0
4	L	28	0	25	0	0
4	M	28	0	25	0	0
4	O	28	0	25	1	0
4	P	28	0	25	0	0
4	Q	28	0	25	0	0
4	R	28	0	25	0	0
4	S	28	0	25	1	0
4	T	28	0	25	0	0
4	U	28	0	25	1	0
4	V	28	0	25	4	0
4	W	28	0	25	1	0
4	X	28	0	25	0	0
4	Y	28	0	25	0	0
4	Z	28	0	25	1	0
4	a	28	0	25	2	0
4	b	28	0	25	0	0
5	c	42	0	37	3	0
5	d	42	0	37	3	0
6	A	126	0	117	4	0
6	B	154	0	142	10	0
6	C	112	0	104	2	0
All	All	31186	0	30310	1588	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 26.

All (1588) 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)
3:N:110:VAL:CG1	3:N:177:SER:HB2	1.36	1.51
3:K:110:VAL:CG1	3:K:177:SER:HB2	1.36	1.51
6:B:1410:NAG:O4	6:B:1411:NAG:C1	1.63	1.46
3:N:110:VAL:HG11	3:N:177:SER:CB	1.51	1.41
3:K:110:VAL:HG11	3:K:177:SER:CB	1.51	1.39
2:H:48:MET:SD	3:K:100:THR:HA	1.69	1.32
2:J:48:MET:SD	3:N:100:THR:HA	1.69	1.30
3:K:93:TYR:CA	3:K:104:PHE:HD2	1.44	1.29
3:N:93:TYR:CA	3:N:104:PHE:HD2	1.44	1.29
3:K:100:THR:HG23	3:K:101:PRO:CD	1.66	1.26
3:N:100:THR:HG23	3:N:101:PRO:CD	1.66	1.25
3:N:38:TYR:CA	3:N:97:TYR:HD2	1.50	1.24
2:H:50:TRP:HZ3	2:H:60:TYR:CE1	1.56	1.24
3:K:38:TYR:CA	3:K:97:TYR:HD2	1.50	1.23
3:N:38:TYR:CA	3:N:97:TYR:CD2	2.22	1.23
3:N:38:TYR:HA	3:N:97:TYR:CE2	1.72	1.23
3:K:38:TYR:HA	3:K:97:TYR:CE2	1.72	1.23
2:J:50:TRP:HZ3	2:J:60:TYR:CE1	1.56	1.23
3:N:38:TYR:CD1	3:N:97:TYR:CD2	2.26	1.23
3:K:38:TYR:CA	3:K:97:TYR:CD2	2.22	1.22
3:N:38:TYR:HD1	3:N:97:TYR:CE2	1.56	1.22
3:K:38:TYR:CD1	3:K:97:TYR:CD2	2.26	1.22
3:K:38:TYR:HD1	3:K:97:TYR:CE2	1.56	1.22
2:J:131:PHE:CE2	3:N:130:GLN:HG3	1.75	1.20
3:N:38:TYR:HA	3:N:97:TYR:CD2	1.77	1.20
3:N:2:ILE:CG2	3:N:96:GLN:HE22	1.55	1.19
3:K:2:ILE:CG2	3:K:96:GLN:HE22	1.55	1.19
3:K:38:TYR:HA	3:K:97:TYR:CD2	1.77	1.17
3:N:93:TYR:C	3:N:104:PHE:CD2	2.22	1.17
2:H:131:PHE:CE2	3:K:130:GLN:HG3	1.80	1.16
3:K:93:TYR:C	3:K:104:PHE:CD2	2.22	1.16
1:A:340:GLU:OE2	1:A:356:LYS:HE2	1.47	1.14
3:N:2:ILE:HG22	3:N:96:GLN:NE2	1.63	1.14
3:K:2:ILE:HG22	3:K:96:GLN:NE2	1.63	1.13
3:K:15:LEU:CD1	3:N:24:LYS:HE2	1.79	1.13
3:N:93:TYR:CA	3:N:104:PHE:CD2	2.32	1.12
1:C:523:THR:HG22	1:C:524:VAL:H	0.97	1.12

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:89:VAL:HG11	3:K:172:GLN:HE21	1.15	1.11
3:N:145:PHE:HE1	3:N:148:ARG:HA	1.14	1.11
1:C:340:GLU:OE2	1:C:356:LYS:HE2	1.47	1.11
2:J:100:ILE:HB	2:J:110:ASP:HB2	1.30	1.10
3:K:93:TYR:CA	3:K:104:PHE:CD2	2.32	1.10
3:N:89:VAL:HG11	3:N:172:GLN:HE21	1.15	1.10
3:K:93:TYR:HA	3:K:104:PHE:CD2	1.87	1.09
1:A:523:THR:HG22	1:A:524:VAL:H	0.97	1.09
2:H:98:ARG:HB2	2:H:111:PRO:HD2	1.33	1.09
1:C:392:PHE:HB3	1:C:517:LEU:HD21	1.35	1.08
3:N:120:SER:HB2	3:N:122:PHE:CZ	1.89	1.08
1:A:392:PHE:HB3	1:A:517:LEU:HD21	1.35	1.08
3:K:120:SER:HB2	3:K:122:PHE:CZ	1.89	1.08
1:C:520:ALA:HB1	1:C:521:PRO:HD2	1.35	1.08
2:J:30:THR:C	2:J:53:PRO:HB3	1.79	1.08
3:N:93:TYR:HA	3:N:104:PHE:CD2	1.87	1.08
1:A:493:GLN:NE2	2:H:31:SER:HB3	1.70	1.07
2:H:30:THR:C	2:H:53:PRO:HB3	1.79	1.07
3:N:94:CYS:SG	3:N:104:PHE:CE1	2.48	1.06
3:K:93:TYR:HA	3:K:104:PHE:HD2	1.19	1.06
1:C:493:GLN:NE2	2:J:31:SER:HB3	1.70	1.06
2:H:101:VAL:HG22	2:H:106:ALA:HB2	1.33	1.06
3:K:145:PHE:HE1	3:K:148:ARG:HA	1.14	1.06
2:H:100:ILE:HB	2:H:110:ASP:HB2	1.30	1.06
3:K:94:CYS:SG	3:K:104:PHE:CE1	2.48	1.05
2:J:110:ASP:HB3	2:J:111:PRO:CD	1.84	1.05
3:K:94:CYS:SG	3:K:104:PHE:CD1	2.49	1.05
1:A:335:LEU:HA	1:A:362:VAL:H	1.16	1.05
2:H:11:VAL:HG21	2:H:155:PHE:CE2	1.92	1.05
2:H:110:ASP:HB3	2:H:111:PRO:CD	1.84	1.05
2:J:101:VAL:HG22	2:J:106:ALA:HB2	1.33	1.05
2:H:30:THR:HG22	2:H:53:PRO:C	1.82	1.05
3:K:117:ALA:O	3:K:206:GLY:HA3	1.57	1.05
2:J:11:VAL:HG21	2:J:155:PHE:CE2	1.92	1.05
3:N:94:CYS:SG	3:N:104:PHE:CD1	2.49	1.05
2:H:48:MET:SD	3:K:100:THR:CA	2.45	1.04
2:H:29:PHE:HB3	2:H:77:SER:HB2	1.40	1.04
2:H:110:ASP:OD2	2:H:111:PRO:HD3	1.58	1.04
2:J:30:THR:HG22	2:J:53:PRO:C	1.82	1.04
1:A:392:PHE:HB3	1:A:517:LEU:CD2	1.88	1.04
3:K:28:SER:HB3	3:K:98:TYR:HE1	1.20	1.04

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:29:PHE:HB3	2:J:77:SER:HB2	1.39	1.04
2:J:98:ARG:HB2	2:J:111:PRO:HD2	1.33	1.04
1:A:520:ALA:HB1	1:A:521:PRO:HD2	1.35	1.03
3:N:86:ALA:O	3:N:87:GLU:CD	2.02	1.03
3:N:110:VAL:HG22	3:N:111:GLU:H	1.20	1.03
3:N:117:ALA:O	3:N:206:GLY:HA3	1.57	1.03
2:J:48:MET:SD	3:N:100:THR:CA	2.45	1.03
3:N:38:TYR:CD1	3:N:97:TYR:CE2	2.45	1.03
3:K:86:ALA:O	3:K:87:GLU:CD	2.02	1.03
2:J:110:ASP:OD2	2:J:111:PRO:HD3	1.58	1.03
3:N:28:SER:HB3	3:N:98:TYR:HE1	1.20	1.03
3:K:110:VAL:HG22	3:K:111:GLU:H	1.20	1.02
1:C:392:PHE:HB3	1:C:517:LEU:CD2	1.88	1.02
3:K:38:TYR:CD1	3:K:97:TYR:CE2	2.45	1.02
3:N:28:SER:HB3	3:N:98:TYR:CE1	1.95	1.02
3:N:100:THR:CG2	3:N:101:PRO:HD2	1.90	1.02
2:H:30:THR:CG2	2:H:53:PRO:C	2.33	1.02
2:H:38:ARG:HD2	2:H:47:TRP:CZ3	1.94	1.02
2:J:30:THR:CG2	2:J:53:PRO:C	2.33	1.02
2:J:38:ARG:HD2	2:J:47:TRP:CZ3	1.94	1.02
2:J:30:THR:HG22	2:J:53:PRO:CB	1.89	1.02
2:J:45:LEU:O	2:J:46:GLU:HG3	1.60	1.02
2:H:30:THR:HG22	2:H:53:PRO:CB	1.89	1.01
2:J:103:VAL:HB	2:J:104:PRO:HD3	1.42	1.01
3:K:100:THR:CG2	3:K:101:PRO:HD2	1.90	1.01
2:J:50:TRP:CZ3	2:J:60:TYR:CE1	2.48	1.01
2:H:103:VAL:HB	2:H:104:PRO:HD3	1.42	1.01
3:K:28:SER:HB3	3:K:98:TYR:CE1	1.95	1.01
2:H:50:TRP:CZ3	2:H:60:TYR:CE1	2.48	1.01
2:J:131:PHE:CE2	3:N:130:GLN:CG	2.44	1.01
6:B:1410:NAG:C4	6:B:1411:NAG:C1	2.38	1.01
1:C:550:GLY:HA2	1:C:590:CYS:SG	2.01	1.00
1:B:422:ASN:HD21	1:B:455:LEU:H	1.08	1.00
2:H:139:SER:CB	3:K:122:PHE:HB3	1.91	1.00
3:N:110:VAL:CB	3:N:177:SER:CB	2.40	1.00
1:A:523:THR:HG22	1:A:524:VAL:N	1.72	1.00
1:A:392:PHE:CB	1:A:517:LEU:HD21	1.92	0.99
2:H:107:LYS:HD3	3:K:55:TYR:CE2	1.97	0.99
3:N:100:THR:OG1	3:N:101:PRO:HD3	1.62	0.99
1:C:392:PHE:CB	1:C:517:LEU:HD21	1.92	0.99
2:J:139:SER:CB	3:N:122:PHE:HB3	1.91	0.99

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:100:THR:CG2	3:K:101:PRO:CD	2.41	0.99
3:K:38:TYR:C	3:K:97:TYR:CD2	2.40	0.99
3:N:100:THR:CG2	3:N:101:PRO:CD	2.41	0.99
2:H:45:LEU:O	2:H:46:GLU:HG3	1.60	0.99
3:K:110:VAL:CB	3:K:177:SER:CB	2.40	0.99
3:N:38:TYR:C	3:N:97:TYR:CD2	2.40	0.99
3:N:110:VAL:CG1	3:N:177:SER:CB	2.21	0.98
1:C:811:LYS:HB2	1:C:812:PRO:CD	1.91	0.98
3:N:38:TYR:CB	3:N:97:TYR:HD2	1.77	0.98
1:C:676:THR:HA	1:C:690:GLN:HB3	1.46	0.98
3:K:100:THR:OG1	3:K:101:PRO:HD3	1.62	0.98
1:C:523:THR:HG22	1:C:524:VAL:N	1.72	0.98
2:H:38:ARG:HG3	2:H:47:TRP:CZ3	1.98	0.98
1:A:523:THR:CG2	1:A:524:VAL:H	1.77	0.97
2:H:131:PHE:CE2	3:K:130:GLN:CG	2.47	0.97
3:K:38:TYR:HD1	3:K:97:TYR:CD2	1.74	0.97
3:K:110:VAL:HB	3:K:177:SER:HB3	1.46	0.97
2:J:38:ARG:HG3	2:J:47:TRP:CZ3	1.98	0.97
1:C:675:GLN:HE21	1:C:675:GLN:HA	1.27	0.97
3:K:38:TYR:CB	3:K:97:TYR:HD2	1.76	0.96
3:K:100:THR:HG23	3:K:101:PRO:HD2	0.98	0.96
1:C:523:THR:CG2	1:C:524:VAL:H	1.77	0.96
1:C:346:ARG:NH2	1:C:347:PHE:O	1.98	0.96
3:N:38:TYR:HD1	3:N:97:TYR:CD2	1.74	0.96
1:A:335:LEU:HB3	1:A:362:VAL:HB	1.47	0.96
2:H:45:LEU:HB2	3:K:102:LEU:HD21	1.48	0.96
3:N:100:THR:HG23	3:N:101:PRO:HD2	0.98	0.95
3:N:148:ARG:HE	3:N:169:VAL:HG11	1.31	0.95
3:K:110:VAL:HG21	3:K:177:SER:OG	1.67	0.95
3:N:110:VAL:HG21	3:N:177:SER:OG	1.67	0.95
3:K:38:TYR:C	3:K:97:TYR:HD2	1.74	0.95
3:N:110:VAL:HB	3:N:177:SER:HB3	1.46	0.95
3:N:38:TYR:C	3:N:97:TYR:HD2	1.74	0.94
1:A:346:ARG:NH2	1:A:347:PHE:O	1.98	0.94
2:J:107:LYS:HD3	3:N:55:TYR:CE2	2.03	0.94
2:J:50:TRP:CZ3	2:J:60:TYR:CD1	2.56	0.94
3:N:92:TYR:O	3:N:104:PHE:CD2	2.21	0.94
3:K:92:TYR:O	3:K:104:PHE:CD2	2.21	0.94
2:H:50:TRP:CZ3	2:H:60:TYR:CD1	2.56	0.93
2:H:103:VAL:HG23	2:H:104:PRO:CD	1.98	0.93
2:H:38:ARG:HG3	2:H:47:TRP:CE3	2.04	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:N:93:TYR:HA	3:N:104:PHE:HD2	1.19	0.93
1:B:577:ARG:HH11	1:B:582:LEU:HD13	1.32	0.93
2:J:11:VAL:HG21	2:J:155:PHE:CZ	2.04	0.93
2:H:38:ARG:HD2	2:H:47:TRP:HZ3	1.30	0.93
2:J:45:LEU:HB2	3:N:102:LEU:HD21	1.50	0.93
2:J:103:VAL:CB	2:J:104:PRO:HD3	1.98	0.93
3:N:93:TYR:C	3:N:104:PHE:HD2	1.68	0.93
3:K:93:TYR:C	3:K:104:PHE:HD2	1.68	0.93
2:J:38:ARG:HG3	2:J:47:TRP:CE3	2.04	0.93
2:J:50:TRP:HZ3	2:J:60:TYR:CD1	1.87	0.93
3:K:2:ILE:HG22	3:K:96:GLN:HE22	0.77	0.93
3:K:86:ALA:O	3:K:87:GLU:OE1	1.86	0.93
2:J:103:VAL:HG23	2:J:104:PRO:CD	1.98	0.93
2:H:103:VAL:CB	2:H:104:PRO:HD3	1.98	0.92
2:H:11:VAL:HG21	2:H:155:PHE:CZ	2.04	0.92
2:J:30:THR:HG22	2:J:53:PRO:CA	2.00	0.92
2:H:30:THR:HG22	2:H:53:PRO:CA	2.00	0.92
1:C:811:LYS:HB2	1:C:812:PRO:HD2	1.50	0.92
3:K:148:ARG:HE	3:K:169:VAL:HG11	1.31	0.92
1:A:335:LEU:HA	1:A:362:VAL:N	1.84	0.91
2:H:103:VAL:HG23	2:H:104:PRO:HD2	1.51	0.91
2:H:98:ARG:HB2	2:H:111:PRO:CD	2.00	0.91
3:N:86:ALA:O	3:N:87:GLU:OE1	1.87	0.91
2:H:50:TRP:HZ3	2:H:60:TYR:CD1	1.87	0.91
2:H:110:ASP:CB	2:H:111:PRO:CD	2.47	0.91
2:J:98:ARG:HB2	2:J:111:PRO:CD	2.00	0.91
3:K:172:GLN:N	3:K:172:GLN:OE1	2.04	0.91
2:J:131:PHE:HE2	3:N:130:GLN:HG3	1.35	0.91
2:J:50:TRP:CH2	2:J:70:MET:SD	2.64	0.91
2:H:50:TRP:CH2	2:H:70:MET:SD	2.64	0.91
2:H:101:VAL:HA	2:H:106:ALA:HA	1.53	0.91
2:J:30:THR:CA	2:J:53:PRO:HB3	2.01	0.91
2:J:11:VAL:CG2	2:J:155:PHE:CZ	2.54	0.91
3:N:2:ILE:HG22	3:N:96:GLN:HE22	0.77	0.91
3:K:15:LEU:CD1	3:N:24:LYS:CE	2.49	0.90
2:H:50:TRP:HE3	2:H:59:GLY:O	1.55	0.90
2:J:50:TRP:HE3	2:J:59:GLY:O	1.55	0.90
2:J:101:VAL:HA	2:J:106:ALA:HA	1.53	0.90
2:J:110:ASP:CB	2:J:111:PRO:HD3	2.01	0.90
2:H:48:MET:SD	3:K:100:THR:O	2.29	0.90
2:H:110:ASP:CB	2:H:111:PRO:HD3	2.01	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:110:ASP:CB	2:J:111:PRO:CD	2.47	0.90
2:H:30:THR:CA	2:H:53:PRO:HB3	2.01	0.90
3:N:172:GLN:OE1	3:N:172:GLN:N	2.04	0.90
1:A:493:GLN:NE2	2:H:31:SER:CB	2.35	0.90
2:H:11:VAL:CG2	2:H:155:PHE:CZ	2.54	0.90
3:K:30:LEU:HD13	3:K:38:TYR:CE2	2.07	0.90
2:J:103:VAL:HG23	2:J:104:PRO:HD2	1.51	0.90
3:N:145:PHE:CE1	3:N:148:ARG:HA	2.06	0.89
2:H:29:PHE:CG	2:H:77:SER:CB	2.55	0.89
2:J:131:PHE:CZ	3:N:130:GLN:HG3	2.07	0.89
3:N:110:VAL:CB	3:N:177:SER:HB2	2.00	0.89
2:J:29:PHE:CG	2:J:77:SER:CB	2.55	0.89
2:H:110:ASP:HB3	2:H:111:PRO:HD3	1.53	0.89
3:K:110:VAL:CB	3:K:177:SER:HB3	2.02	0.89
3:K:120:SER:HB2	3:K:122:PHE:HZ	1.38	0.89
3:K:110:VAL:CB	3:K:177:SER:HB2	2.00	0.89
1:C:493:GLN:NE2	2:J:31:SER:CB	2.35	0.89
2:J:110:ASP:HB3	2:J:111:PRO:HD3	1.53	0.89
3:K:38:TYR:CB	3:K:97:TYR:CD2	2.55	0.89
2:J:38:ARG:CD	2:J:47:TRP:HZ3	1.85	0.88
1:C:529:LYS:HG2	1:C:530:SER:N	1.88	0.88
2:H:38:ARG:CD	2:H:47:TRP:HZ3	1.85	0.88
3:K:145:PHE:CE1	3:K:148:ARG:HA	2.06	0.88
3:N:30:LEU:HD13	3:N:38:TYR:CE2	2.07	0.88
2:J:38:ARG:HD2	2:J:47:TRP:HZ3	1.30	0.88
2:J:50:TRP:HB2	2:J:59:GLY:H	1.39	0.88
3:K:94:CYS:H	3:K:104:PHE:CB	1.87	0.88
3:N:89:VAL:CG1	3:N:172:GLN:HE21	1.87	0.88
3:K:172:GLN:N	3:K:179:TYR:CE1	2.42	0.88
2:J:48:MET:SD	3:N:100:THR:O	2.32	0.88
2:J:139:SER:HB3	3:N:122:PHE:HB3	1.55	0.88
2:H:103:VAL:CG2	2:H:104:PRO:HD3	2.04	0.88
2:J:11:VAL:HG23	2:J:155:PHE:HZ	1.39	0.88
2:J:103:VAL:CG2	2:J:104:PRO:HD3	2.04	0.88
3:N:94:CYS:H	3:N:104:PHE:CB	1.86	0.88
2:H:131:PHE:CZ	3:K:130:GLN:HG3	2.09	0.87
2:J:110:ASP:HB3	2:J:111:PRO:HD2	1.57	0.87
3:N:30:LEU:HD13	3:N:38:TYR:HE2	1.39	0.87
2:H:110:ASP:HB3	2:H:111:PRO:HD2	1.56	0.87
2:H:139:SER:O	3:K:122:PHE:CD1	2.28	0.87
3:K:94:CYS:H	3:K:104:PHE:HB2	1.39	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:139:SER:O	3:N:122:PHE:CD1	2.27	0.87
3:K:38:TYR:CG	3:K:97:TYR:CD2	2.63	0.87
3:N:38:TYR:CB	3:N:97:TYR:CD2	2.55	0.87
3:N:94:CYS:H	3:N:104:PHE:HB2	1.39	0.87
3:N:172:GLN:N	3:N:179:TYR:CE1	2.42	0.87
3:N:120:SER:HB2	3:N:122:PHE:HZ	1.38	0.86
2:H:38:ARG:CD	2:H:47:TRP:CZ3	2.58	0.86
3:K:28:SER:CB	3:K:98:TYR:HE1	1.87	0.86
1:C:393:THR:O	1:C:523:THR:HG21	1.76	0.86
3:K:30:LEU:HD13	3:K:38:TYR:HE2	1.39	0.86
2:H:50:TRP:HB2	2:H:59:GLY:H	1.39	0.86
3:K:102:LEU:HD12	3:K:103:THR:N	1.91	0.86
2:J:38:ARG:CD	2:J:47:TRP:CZ3	2.58	0.86
2:H:139:SER:HB3	3:K:122:PHE:HB3	1.54	0.86
1:A:392:PHE:CD2	1:A:517:LEU:HD21	2.11	0.86
1:C:392:PHE:CD2	1:C:517:LEU:HD21	2.11	0.86
3:K:110:VAL:CG1	3:K:177:SER:CB	2.21	0.86
2:J:50:TRP:CZ2	2:J:70:MET:SD	2.69	0.86
1:A:729:VAL:HG13	1:A:1059:GLY:HA2	1.57	0.86
3:K:89:VAL:CG1	3:K:172:GLN:HE21	1.87	0.86
3:N:38:TYR:CG	3:N:97:TYR:CD2	2.63	0.86
1:C:335:LEU:HA	1:C:362:VAL:HB	1.58	0.86
3:N:110:VAL:CB	3:N:177:SER:HB3	2.03	0.86
2:H:11:VAL:HG23	2:H:155:PHE:HZ	1.38	0.85
2:H:50:TRP:CZ2	2:H:70:MET:SD	2.69	0.85
2:J:131:PHE:CZ	3:N:130:GLN:CB	2.59	0.85
3:N:38:TYR:HA	3:N:97:TYR:HE2	1.37	0.85
2:H:29:PHE:CD1	2:H:77:SER:OG	2.28	0.85
2:J:38:ARG:CG	2:J:47:TRP:HZ3	1.89	0.85
3:N:28:SER:CB	3:N:98:TYR:HE1	1.87	0.85
1:C:520:ALA:HB1	1:C:521:PRO:CD	2.06	0.85
1:B:577:ARG:HD3	1:B:582:LEU:CD1	2.07	0.85
1:A:393:THR:O	1:A:523:THR:HG21	1.76	0.85
1:A:520:ALA:HB1	1:A:521:PRO:CD	2.06	0.84
3:N:102:LEU:HD12	3:N:103:THR:N	1.91	0.84
3:K:145:PHE:CD2	3:K:179:TYR:O	2.31	0.84
3:N:89:VAL:HG11	3:N:172:GLN:NE2	1.92	0.84
2:J:110:ASP:CG	2:J:111:PRO:HD3	2.02	0.84
1:C:516:GLU:O	1:C:517:LEU:HD22	1.78	0.84
2:H:23:LYS:HA	2:H:78:THR:HG22	1.60	0.84
2:H:38:ARG:CG	2:H:47:TRP:HZ3	1.89	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:38:ARG:CG	2:J:47:TRP:CZ3	2.60	0.83
3:N:41:TRP:HZ3	3:N:104:PHE:CZ	1.95	0.83
1:C:127:VAL:HG21	6:C:1402:NAG:H5	1.59	0.83
2:H:110:ASP:CG	2:H:111:PRO:HD3	2.02	0.83
3:K:92:TYR:O	3:K:104:PHE:CE2	2.32	0.83
2:J:29:PHE:CD1	2:J:77:SER:OG	2.28	0.83
2:H:131:PHE:CZ	3:K:130:GLN:CB	2.60	0.83
3:N:92:TYR:O	3:N:104:PHE:CE2	2.32	0.83
1:C:676:THR:C	1:C:690:GLN:HE21	1.86	0.83
2:H:131:PHE:HE2	3:K:130:GLN:HG3	1.38	0.83
1:B:901:GLN:HE21	1:B:905:ARG:HE	1.26	0.83
3:K:41:TRP:HZ3	3:K:104:PHE:CZ	1.95	0.83
3:K:110:VAL:HG21	3:K:177:SER:CB	2.08	0.83
1:A:516:GLU:O	1:A:517:LEU:HD22	1.78	0.83
3:N:110:VAL:HG21	3:N:177:SER:CB	2.08	0.83
3:N:145:PHE:CD2	3:N:179:TYR:O	2.31	0.83
2:J:23:LYS:HA	2:J:78:THR:HG22	1.60	0.83
2:H:38:ARG:CG	2:H:47:TRP:CZ3	2.60	0.83
3:K:100:THR:CB	3:K:101:PRO:HD3	2.09	0.82
3:K:15:LEU:HD12	3:N:24:LYS:HE2	1.60	0.82
3:K:89:VAL:HG11	3:K:172:GLN:NE2	1.92	0.82
3:N:93:TYR:HA	3:N:104:PHE:HB3	1.61	0.82
2:H:101:VAL:CG2	2:H:106:ALA:HB2	2.10	0.82
2:J:101:VAL:CG2	2:J:106:ALA:HB2	2.10	0.81
3:N:100:THR:CB	3:N:101:PRO:HD3	2.09	0.81
1:C:901:GLN:HE21	1:C:905:ARG:HE	1.27	0.81
1:B:452:LEU:HG	1:B:492:LEU:HD22	1.63	0.81
1:B:577:ARG:HD3	1:B:582:LEU:HD13	1.60	0.81
3:K:38:TYR:HA	3:K:97:TYR:HE2	1.37	0.81
3:K:93:TYR:HA	3:K:104:PHE:HB3	1.61	0.81
2:H:101:VAL:HG22	2:H:106:ALA:CB	2.11	0.81
3:K:67:ARG:HH12	3:K:85:GLN:HB3	1.46	0.81
3:N:95:GLN:HG3	3:N:96:GLN:H	1.45	0.80
1:B:214:ARG:H	1:B:214:ARG:HH21	1.30	0.80
2:H:29:PHE:CG	2:H:77:SER:HB3	2.16	0.80
2:H:11:VAL:CG2	2:H:155:PHE:HZ	1.93	0.80
3:K:95:GLN:HG3	3:K:96:GLN:H	1.45	0.80
2:J:11:VAL:CG2	2:J:155:PHE:HZ	1.93	0.80
2:J:101:VAL:HG22	2:J:106:ALA:CB	2.11	0.80
2:H:103:VAL:CB	2:H:104:PRO:CD	2.59	0.80
3:N:110:VAL:HG11	3:N:177:SER:O	1.80	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:N:100:THR:CG2	3:N:101:PRO:HD3	2.12	0.79
2:H:107:LYS:CD	3:K:55:TYR:CE2	2.65	0.79
3:N:100:THR:CB	3:N:101:PRO:CD	2.61	0.79
2:J:103:VAL:CB	2:J:104:PRO:CD	2.59	0.79
2:J:102:VAL:O	2:J:104:PRO:HD2	1.81	0.79
3:N:67:ARG:HH12	3:N:85:GLN:HB3	1.46	0.79
2:J:29:PHE:CG	2:J:77:SER:HB3	2.16	0.79
1:C:390:LEU:HD23	1:C:391:CYS:H	1.48	0.79
2:H:102:VAL:O	2:H:104:PRO:HD2	1.81	0.79
3:K:110:VAL:HG11	3:K:177:SER:O	1.80	0.79
2:H:50:TRP:CE3	2:H:59:GLY:O	2.36	0.78
3:K:172:GLN:N	3:K:179:TYR:HE1	1.80	0.78
1:C:422:ASN:HD21	1:C:454:ARG:H	1.32	0.78
3:K:100:THR:CG2	3:K:101:PRO:HD3	2.12	0.78
1:C:392:PHE:O	1:C:523:THR:HB	1.83	0.78
3:K:100:THR:CB	3:K:101:PRO:CD	2.61	0.78
3:K:15:LEU:HD11	3:N:24:LYS:HE2	1.63	0.78
2:J:50:TRP:CE3	2:J:59:GLY:O	2.36	0.78
3:N:172:GLN:N	3:N:179:TYR:HE1	1.80	0.78
1:A:390:LEU:HD23	1:A:391:CYS:H	1.48	0.77
2:H:48:MET:SD	3:K:100:THR:C	2.68	0.77
2:J:45:LEU:C	2:J:46:GLU:HG3	2.09	0.77
2:H:103:VAL:HB	2:H:104:PRO:CD	2.13	0.77
2:H:131:PHE:CZ	3:K:130:GLN:HB2	2.19	0.77
3:K:94:CYS:N	3:K:104:PHE:CB	2.48	0.77
2:J:97:ALA:HB3	2:J:109:PHE:HD2	1.49	0.77
1:A:392:PHE:O	1:A:523:THR:HB	1.83	0.76
2:H:103:VAL:CG2	2:H:104:PRO:CD	2.61	0.76
2:J:101:VAL:HG13	2:J:106:ALA:N	2.00	0.76
2:J:131:PHE:CZ	3:N:130:GLN:HB2	2.21	0.76
2:H:101:VAL:HG13	2:H:106:ALA:N	2.00	0.76
2:J:30:THR:CG2	2:J:53:PRO:CA	2.64	0.76
3:N:110:VAL:HG22	3:N:111:GLU:N	1.99	0.76
3:K:109:LYS:HG2	3:K:172:GLN:HB3	1.68	0.76
2:J:50:TRP:HZ3	2:J:60:TYR:HE1	1.26	0.76
3:N:110:VAL:CG2	3:N:177:SER:CB	2.64	0.76
3:K:39:LEU:HD21	3:K:77:PHE:CE2	2.20	0.76
2:J:48:MET:SD	3:N:100:THR:C	2.69	0.76
2:J:123:ALA:O	2:J:124:SER:OG	2.04	0.76
2:H:30:THR:CG2	2:H:53:PRO:CA	2.64	0.76
2:H:123:ALA:O	2:H:124:SER:OG	2.04	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:143:ASN:O	3:K:144:ASN:O	2.04	0.76
1:A:826:VAL:HG13	1:A:1057:PRO:HG2	1.68	0.76
1:A:335:LEU:HB2	1:A:362:VAL:O	1.86	0.75
1:A:422:ASN:HD21	1:A:454:ARG:H	1.32	0.75
1:C:675:GLN:HA	1:C:675:GLN:NE2	2.00	0.75
3:N:39:LEU:HD21	3:N:77:PHE:CE2	2.20	0.75
3:N:94:CYS:N	3:N:104:PHE:CB	2.48	0.75
1:A:335:LEU:CB	1:A:362:VAL:HB	2.15	0.75
2:H:97:ALA:HB3	2:H:109:PHE:HD2	1.49	0.75
3:N:109:LYS:HG2	3:N:172:GLN:HB3	1.68	0.75
2:H:45:LEU:C	2:H:46:GLU:HG3	2.09	0.75
3:K:6:GLN:CD	3:K:105:GLY:O	2.30	0.75
3:N:6:GLN:CD	3:N:105:GLY:O	2.30	0.75
1:A:1125:ASN:H	1:A:1125:ASN:HD22	1.33	0.75
1:C:533:LEU:HG	1:C:533:LEU:O	1.86	0.75
2:J:103:VAL:CG2	2:J:104:PRO:CD	2.61	0.75
3:N:143:ASN:O	3:N:144:ASN:O	2.04	0.75
3:K:110:VAL:CG2	3:K:177:SER:CB	2.64	0.75
2:H:50:TRP:HZ3	2:H:60:TYR:HE1	1.27	0.74
2:H:72:ARG:HH21	2:H:77:SER:HB2	1.52	0.74
2:J:26:GLY:O	2:J:27:TYR:CD1	2.41	0.74
3:K:37:ASN:HB2	3:K:56:TRP:O	1.88	0.74
2:J:48:MET:HG3	2:J:49:GLY:N	2.03	0.74
2:H:26:GLY:O	2:H:27:TYR:CD1	2.41	0.74
1:C:676:THR:C	1:C:690:GLN:NE2	2.45	0.74
3:N:30:LEU:HD22	3:N:38:TYR:CZ	2.22	0.74
3:N:12:ALA:HB1	3:N:110:VAL:O	1.88	0.74
3:K:30:LEU:HD22	3:K:38:TYR:CZ	2.22	0.74
3:K:110:VAL:CG1	3:K:177:SER:O	2.36	0.73
3:N:110:VAL:CG1	3:N:177:SER:O	2.36	0.73
2:H:48:MET:HG3	2:H:49:GLY:N	2.03	0.73
2:J:107:LYS:CD	3:N:55:TYR:CE2	2.71	0.73
1:A:392:PHE:HD2	1:A:517:LEU:HD21	1.53	0.73
3:K:12:ALA:HB1	3:K:110:VAL:O	1.88	0.73
3:N:37:ASN:HB2	3:N:56:TRP:O	1.88	0.73
1:B:577:ARG:HH11	1:B:582:LEU:CD1	2.01	0.73
1:B:973:ILE:HG12	1:B:992:GLN:HE21	1.53	0.73
1:B:1142:GLN:HG3	1:B:1143:PRO:HD3	1.71	0.73
1:B:164:ASN:ND2	6:B:1403:NAG:O6	2.22	0.72
1:C:392:PHE:HD2	1:C:517:LEU:HD21	1.53	0.72
1:A:340:GLU:OE2	1:A:356:LYS:CE	2.35	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:131:PHE:CE2	3:K:130:GLN:HB2	2.24	0.72
2:J:72:ARG:HH21	2:J:77:SER:HB2	1.52	0.72
2:J:131:PHE:CZ	3:N:130:GLN:CG	2.71	0.72
3:K:85:GLN:HG2	3:N:76:ASP:CG	2.15	0.72
2:J:131:PHE:CE2	3:N:130:GLN:HB2	2.25	0.71
1:B:124:THR:OG1	6:B:1402:NAG:N2	2.22	0.71
3:K:39:LEU:CD2	3:K:77:PHE:CE2	2.73	0.71
3:K:15:LEU:HA	3:K:84:LEU:HD22	1.72	0.71
2:J:178:VAL:CG2	3:N:166:GLN:OE1	2.38	0.71
1:A:790:LYS:NZ	1:C:702:GLU:OE2	2.20	0.71
2:H:29:PHE:HB3	2:H:77:SER:CB	2.19	0.71
3:N:15:LEU:HA	3:N:84:LEU:HD22	1.72	0.71
3:K:2:ILE:CG2	3:K:96:GLN:NE2	2.36	0.71
3:K:28:SER:CB	3:K:98:TYR:CE1	2.68	0.71
2:J:139:SER:CA	3:N:122:PHE:HB3	2.21	0.71
2:J:178:VAL:HG22	3:N:166:GLN:OE1	1.89	0.71
3:N:28:SER:CB	3:N:98:TYR:CE1	2.68	0.71
3:N:39:LEU:CD2	3:N:77:PHE:CE2	2.74	0.71
2:H:131:PHE:CZ	3:K:130:GLN:CG	2.73	0.71
6:B:1410:NAG:H4	6:B:1411:NAG:C1	2.21	0.70
3:N:2:ILE:CG2	3:N:96:GLN:NE2	2.36	0.70
3:N:171:GLU:C	3:N:179:TYR:HE1	1.99	0.70
2:H:60:TYR:CE1	2:H:68:VAL:HG23	2.26	0.70
3:K:110:VAL:HG22	3:K:111:GLU:N	1.99	0.70
1:B:153:MET:HE3	1:B:154:GLU:HG3	1.72	0.70
1:C:359:SER:O	1:C:524:VAL:CG1	2.39	0.70
3:K:171:GLU:C	3:K:179:TYR:HE1	1.99	0.70
1:A:124:THR:HG21	6:A:1402:NAG:HN2	1.56	0.70
1:A:187:LYS:N	1:A:212:LEU:O	2.25	0.70
2:J:29:PHE:HB3	2:J:77:SER:CB	2.19	0.70
2:J:131:PHE:CE2	3:N:130:GLN:CB	2.73	0.70
3:K:84:LEU:C	3:K:84:LEU:HD23	2.17	0.70
1:B:391:CYS:HA	1:B:525:CYS:HB2	1.73	0.70
3:K:41:TRP:CZ3	3:K:104:PHE:CZ	2.80	0.69
3:K:67:ARG:NH1	3:K:85:GLN:HB3	2.07	0.69
2:J:60:TYR:CE1	2:J:68:VAL:HG23	2.26	0.69
2:J:98:ARG:HG3	2:J:111:PRO:HG3	1.74	0.69
3:N:41:TRP:CZ3	3:N:104:PHE:CZ	2.80	0.69
3:N:145:PHE:H	3:N:178:THR:HB	1.57	0.69
1:A:359:SER:O	1:A:524:VAL:CG1	2.39	0.69
1:C:945:LEU:HD12	1:C:948:LEU:HD12	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:98:ARG:HG3	2:H:111:PRO:HG3	1.74	0.69
2:H:178:VAL:HG22	3:K:166:GLN:OE1	1.92	0.69
2:H:131:PHE:CE2	3:K:130:GLN:CB	2.75	0.69
3:K:86:ALA:O	3:K:87:GLU:CG	2.41	0.69
3:N:67:ARG:NH1	3:N:85:GLN:HB3	2.07	0.69
2:J:29:PHE:CB	2:J:77:SER:HB2	2.19	0.69
1:B:577:ARG:NH1	1:B:582:LEU:HD13	2.07	0.69
2:H:97:ALA:HB3	2:H:109:PHE:CD2	2.28	0.69
3:N:84:LEU:C	3:N:84:LEU:HD23	2.17	0.69
3:N:86:ALA:O	3:N:87:GLU:CG	2.41	0.69
1:C:569:ILE:H	1:C:569:ILE:HD12	1.56	0.69
3:N:93:TYR:CA	3:N:104:PHE:HB3	2.23	0.69
2:H:54:ASN:O	2:H:56:GLY:N	2.26	0.69
2:J:54:ASN:O	2:J:56:GLY:N	2.26	0.69
2:J:97:ALA:CB	2:J:109:PHE:HD2	2.06	0.69
3:K:94:CYS:N	3:K:104:PHE:CG	2.61	0.68
3:N:94:CYS:N	3:N:104:PHE:CG	2.61	0.68
3:N:110:VAL:CG1	3:N:146:TYR:HE1	2.05	0.68
1:C:233:ILE:HG12	1:C:234:ASN:H	1.58	0.68
3:K:89:VAL:CG1	3:K:172:GLN:NE2	2.55	0.68
2:J:21:SER:HB2	2:J:80:TYR:CE1	2.29	0.68
2:H:178:VAL:CG2	3:K:166:GLN:OE1	2.41	0.68
3:K:110:VAL:CG1	3:K:146:TYR:HE1	2.05	0.68
2:J:97:ALA:HB3	2:J:109:PHE:CD2	2.28	0.68
1:B:546:LEU:HD11	1:B:573:THR:HG21	1.74	0.68
2:H:29:PHE:CB	2:H:77:SER:HB2	2.19	0.68
3:N:146:TYR:HB2	3:N:147:PRO:HD3	1.76	0.68
2:H:97:ALA:CB	2:H:109:PHE:HD2	2.06	0.68
2:J:98:ARG:HG3	2:J:111:PRO:CG	2.23	0.68
2:H:98:ARG:HG3	2:H:111:PRO:CG	2.23	0.68
3:K:145:PHE:H	3:K:178:THR:HB	1.58	0.68
1:B:403:ARG:NH2	1:B:405:ASP:OD2	2.27	0.68
3:K:93:TYR:CA	3:K:104:PHE:HB3	2.23	0.68
3:N:89:VAL:CG1	3:N:172:GLN:NE2	2.55	0.68
2:H:21:SER:HB2	2:H:80:TYR:CE1	2.29	0.68
1:B:406:GLU:HG3	1:B:418:ILE:HG13	1.75	0.68
2:H:39:GLN:HE22	2:H:43:GLN:H	1.42	0.68
2:H:139:SER:CA	3:K:122:PHE:HB3	2.24	0.68
1:A:477:SER:H	3:K:30:LEU:CD1	2.07	0.67
2:H:139:SER:O	3:K:122:PHE:HD1	1.76	0.67
3:N:116:VAL:CG1	3:N:147:PRO:HG2	2.24	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:96:GLU:OE1	1:A:98:SER:N	2.28	0.67
2:J:139:SER:O	3:N:122:PHE:HD1	1.75	0.67
3:K:94:CYS:N	3:K:104:PHE:CD2	2.62	0.67
3:K:170:THR:O	3:K:179:TYR:CE1	2.48	0.67
2:J:21:SER:HB2	2:J:80:TYR:HE1	1.60	0.67
1:C:392:PHE:CG	1:C:517:LEU:HD21	2.29	0.67
3:K:116:VAL:CG1	3:K:147:PRO:HG2	2.24	0.67
3:N:2:ILE:HD13	3:N:99:SER:OG	1.95	0.67
1:A:310:LYS:NZ	1:A:663:ASP:OD1	2.27	0.67
1:C:340:GLU:OE2	1:C:356:LYS:CE	2.35	0.67
1:B:97:LYS:HD3	1:B:97:LYS:H	1.60	0.67
2:J:131:PHE:CZ	3:N:130:GLN:CA	2.78	0.67
3:N:94:CYS:N	3:N:104:PHE:CD2	2.62	0.67
3:N:110:VAL:HG13	3:N:146:TYR:CE1	2.30	0.67
1:A:392:PHE:CG	1:A:517:LEU:HD21	2.29	0.66
1:B:83:VAL:HG11	1:B:237:ARG:HH21	1.59	0.66
1:B:1045:LYS:NZ	1:C:786:LYS:HE3	2.09	0.66
1:C:85:PRO:HA	1:C:237:ARG:HA	1.78	0.66
2:H:21:SER:HB2	2:H:80:TYR:HE1	1.60	0.66
3:N:170:THR:O	3:N:179:TYR:CE1	2.48	0.66
1:A:187:LYS:HG2	1:A:213:VAL:HA	1.77	0.66
2:H:101:VAL:HG13	2:H:106:ALA:CA	2.25	0.66
2:J:101:VAL:HG13	2:J:106:ALA:CA	2.25	0.66
3:K:112:ILE:CB	3:K:146:TYR:CZ	2.79	0.66
3:K:146:TYR:HB2	3:K:147:PRO:HD3	1.76	0.66
1:B:577:ARG:NH1	1:B:582:LEU:CD1	2.58	0.66
3:N:37:ASN:O	3:N:38:TYR:HB2	1.96	0.66
1:C:811:LYS:CB	1:C:812:PRO:CD	2.66	0.66
3:K:2:ILE:HD13	3:K:99:SER:OG	1.95	0.66
3:K:37:ASN:O	3:K:38:TYR:HB2	1.96	0.66
1:C:392:PHE:HD2	1:C:517:LEU:CD2	2.09	0.66
2:J:11:VAL:HG21	2:J:155:PHE:HE2	1.57	0.66
2:H:50:TRP:O	2:H:51:MET:HB3	1.96	0.66
3:K:110:VAL:HG13	3:K:146:TYR:CE1	2.30	0.66
3:N:102:LEU:O	3:N:103:THR:HG23	1.95	0.66
1:B:691:SER:O	1:B:692:ILE:HG13	1.96	0.65
1:C:111:ASP:OD1	1:C:134:GLN:NE2	2.28	0.65
3:N:112:ILE:CB	3:N:146:TYR:CZ	2.79	0.65
1:C:662:CYS:HB2	1:C:697:MET:HE3	1.76	0.65
1:C:189:LEU:HB2	1:C:210:ILE:HD13	1.78	0.65
3:N:148:ARG:NE	3:N:169:VAL:HG11	2.10	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:392:PHE:HD2	1:A:517:LEU:CD2	2.09	0.65
2:H:29:PHE:CD2	2:H:77:SER:HB3	2.31	0.65
2:J:50:TRP:O	2:J:51:MET:HB3	1.96	0.65
1:A:569:ILE:HD12	1:A:569:ILE:H	1.60	0.65
1:C:216:LEU:HD12	1:C:217:PRO:HD2	1.78	0.65
2:J:30:THR:HG22	2:J:53:PRO:HB3	1.77	0.65
3:N:38:TYR:O	3:N:39:LEU:HB3	1.95	0.65
1:B:719:THR:HA	1:B:926:GLN:HE22	1.60	0.65
1:A:705:VAL:HB	1:B:883:THR:HG21	1.78	0.65
1:B:358:ILE:HB	1:B:395:VAL:HB	1.78	0.65
2:H:30:THR:CG2	2:H:53:PRO:CB	2.73	0.65
3:K:102:LEU:O	3:K:103:THR:HG23	1.96	0.65
2:J:29:PHE:CD2	2:J:77:SER:HB3	2.31	0.65
2:J:139:SER:HA	3:N:122:PHE:HB3	1.78	0.65
2:H:30:THR:HG22	2:H:53:PRO:HB3	1.77	0.65
1:A:523:THR:HG22	1:A:524:VAL:HG22	1.79	0.65
1:C:523:THR:HG22	1:C:524:VAL:HG22	1.79	0.65
2:H:208:ASN:HB3	2:H:215:LYS:HE2	1.79	0.65
1:B:108:THR:HA	1:B:236:THR:HG22	1.79	0.65
2:H:6:GLN:HE21	2:H:113:GLY:HA3	1.61	0.65
3:K:108:THR:O	3:K:109:LYS:HG3	1.97	0.65
3:N:108:THR:O	3:N:109:LYS:HG3	1.97	0.65
1:C:477:SER:H	3:N:30:LEU:CD1	2.10	0.64
3:K:38:TYR:O	3:K:39:LEU:HB3	1.95	0.64
2:H:75:SER:O	2:H:76:ILE:HG23	1.98	0.64
2:J:6:GLN:HE21	2:J:113:GLY:HA3	1.61	0.64
1:B:472:ILE:HD13	1:B:474:GLN:HB3	1.79	0.64
3:K:39:LEU:CD2	3:K:77:PHE:CZ	2.80	0.64
2:J:30:THR:HG23	2:J:53:PRO:C	2.22	0.64
3:N:120:SER:CB	3:N:122:PHE:CZ	2.75	0.64
5:c:2:NAG:H3	5:c:3:NAG:O7	1.98	0.64
1:B:455:LEU:HD21	1:B:457:ARG:HG3	1.78	0.64
3:K:122:PHE:CD2	3:K:141:LEU:HD23	2.33	0.64
1:C:522:ALA:O	1:C:523:THR:OG1	2.14	0.64
3:N:39:LEU:CD2	3:N:77:PHE:CZ	2.80	0.64
3:N:122:PHE:CD2	3:N:141:LEU:HD23	2.33	0.64
1:B:350:VAL:HG22	1:B:453:TYR:HB2	1.79	0.64
2:H:131:PHE:CZ	3:K:130:GLN:CA	2.80	0.64
1:C:391:CYS:SG	1:C:523:THR:O	2.56	0.64
1:C:676:THR:HA	1:C:690:GLN:CB	2.25	0.64
2:H:30:THR:HG23	2:H:53:PRO:C	2.22	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:39:GLN:HE22	2:J:43:GLN:H	1.42	0.64
2:J:60:TYR:CE1	2:J:68:VAL:CG2	2.81	0.64
3:K:13:VAL:HB	3:K:17:GLU:OE1	1.98	0.64
3:K:94:CYS:SG	3:K:104:PHE:CZ	2.88	0.64
2:J:75:SER:O	2:J:76:ILE:HG23	1.98	0.64
1:B:607:GLN:O	1:B:608:VAL:HG23	1.98	0.64
2:J:208:ASN:HB3	2:J:215:LYS:HE2	1.79	0.64
2:J:131:PHE:CZ	3:N:130:GLN:HA	2.33	0.63
3:N:38:TYR:CD1	3:N:97:TYR:CG	2.86	0.63
5:d:2:NAG:H3	5:d:3:NAG:O7	1.98	0.63
3:K:41:TRP:CZ2	3:K:79:LEU:N	2.66	0.63
1:A:391:CYS:SG	1:A:523:THR:O	2.56	0.63
2:H:11:VAL:HG21	2:H:155:PHE:HE2	1.57	0.63
2:H:60:TYR:CE1	2:H:68:VAL:CG2	2.81	0.63
3:N:32:SER:C	3:N:34:ASN:H	2.07	0.63
2:J:133:LEU:HD11	2:J:150:LEU:HB2	1.81	0.63
3:K:148:ARG:NE	3:K:169:VAL:HG11	2.10	0.63
2:J:101:VAL:HG13	2:J:106:ALA:HB2	1.81	0.63
1:A:522:ALA:O	1:A:523:THR:OG1	2.14	0.63
3:N:13:VAL:HB	3:N:17:GLU:OE1	1.98	0.63
3:N:110:VAL:CG1	3:N:146:TYR:CE1	2.82	0.63
1:C:196:ASN:ND2	1:C:200:TYR:O	2.32	0.63
1:C:332:ILE:HD12	1:C:332:ILE:O	1.98	0.63
2:H:161:VAL:HG22	2:H:207:VAL:HG22	1.81	0.63
3:N:41:TRP:CZ2	3:N:79:LEU:N	2.66	0.63
1:B:111:ASP:OD1	1:B:112:SER:N	2.31	0.62
3:K:93:TYR:HA	3:K:104:PHE:CB	2.29	0.62
1:A:124:THR:OG1	1:A:125:ASN:N	2.32	0.62
2:J:31:SER:N	2:J:53:PRO:HG3	2.14	0.62
1:A:117:LEU:HD12	1:A:118:LEU:H	1.64	0.62
1:C:811:LYS:HB2	1:C:812:PRO:HD3	1.80	0.62
2:H:29:PHE:CB	2:H:77:SER:CB	2.76	0.62
3:K:96:GLN:HB3	3:K:99:SER:HB2	1.81	0.62
2:H:31:SER:N	2:H:53:PRO:HG3	2.15	0.62
1:A:808:ASP:HB3	1:A:811:LYS:HD2	1.82	0.62
3:K:116:VAL:HG11	3:K:205:GLN:HB3	1.82	0.62
1:C:457:ARG:NH1	1:C:459:SER:O	2.33	0.62
1:C:813:SER:O	1:C:814:LYS:HE2	2.00	0.62
3:K:110:VAL:CG1	3:K:146:TYR:CE1	2.82	0.62
2:J:29:PHE:CB	2:J:77:SER:CB	2.76	0.62
2:J:39:GLN:NE2	2:J:40:ALA:O	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:N:93:TYR:HA	3:N:104:PHE:CB	2.30	0.62
1:A:457:ARG:NH1	1:A:459:SER:O	2.33	0.62
1:C:529:LYS:HG2	1:C:530:SER:H	1.62	0.62
2:H:39:GLN:NE2	2:H:40:ALA:O	2.33	0.62
1:B:454:ARG:HH21	1:B:493:GLN:HG3	1.63	0.62
3:K:37:ASN:O	3:K:38:TYR:CB	2.48	0.62
3:K:122:PHE:HE2	3:K:143:ASN:HB2	1.65	0.61
1:B:391:CYS:CA	1:B:525:CYS:HB2	2.30	0.61
2:J:30:THR:CG2	2:J:53:PRO:O	2.48	0.61
3:N:93:TYR:HA	3:N:104:PHE:CG	2.35	0.61
3:K:32:SER:C	3:K:34:ASN:H	2.07	0.61
1:A:96:GLU:OE1	1:A:97:LYS:N	2.32	0.61
1:B:560:LEU:H	1:B:563:GLN:HE21	1.45	0.61
1:C:516:GLU:O	1:C:517:LEU:CD2	2.48	0.61
2:H:133:LEU:HD11	2:H:150:LEU:HB2	1.81	0.61
3:K:15:LEU:HD13	3:N:24:LYS:CE	2.30	0.61
2:J:161:VAL:HG22	2:J:207:VAL:HG22	1.81	0.61
3:N:37:ASN:O	3:N:38:TYR:CB	2.48	0.61
3:N:116:VAL:HG11	3:N:205:GLN:HB3	1.82	0.61
1:A:1077:THR:HG22	1:A:1095:PHE:O	2.01	0.61
1:C:392:PHE:HB3	1:C:517:LEU:HD22	1.82	0.61
2:J:97:ALA:HB1	2:J:109:PHE:HB3	1.82	0.61
3:K:38:TYR:CD1	3:K:97:TYR:CG	2.86	0.61
2:H:97:ALA:HB1	2:H:109:PHE:HB3	1.82	0.61
3:N:96:GLN:O	3:N:97:TYR:HB2	1.99	0.61
2:H:30:THR:CG2	2:H:53:PRO:O	2.48	0.61
2:J:98:ARG:HB2	2:J:110:ASP:HB3	1.82	0.61
3:N:95:GLN:CG	3:N:96:GLN:H	2.12	0.61
1:A:357:ARG:HH12	1:A:394:ASN:HD21	1.49	0.61
2:H:139:SER:HA	3:K:122:PHE:HB3	1.82	0.61
2:H:139:SER:HA	3:K:122:PHE:HD1	1.66	0.61
3:N:94:CYS:SG	3:N:104:PHE:CZ	2.88	0.61
3:N:99:SER:C	3:N:100:THR:HG22	2.26	0.61
1:C:112:SER:HB2	1:C:113:LYS:HD3	1.83	0.60
2:H:101:VAL:HG13	2:H:106:ALA:HB2	1.81	0.60
2:H:123:ALA:C	2:H:124:SER:HG	2.05	0.60
3:N:96:GLN:HB3	3:N:99:SER:CB	2.31	0.60
3:N:96:GLN:HB3	3:N:99:SER:HB2	1.81	0.60
5:d:1:NAG:H62	5:d:2:NAG:C8	2.31	0.60
2:H:99:TYR:HA	2:H:109:PHE:HA	1.83	0.60
5:c:1:NAG:H62	5:c:2:NAG:C8	2.31	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:533:LEU:HD12	1:A:533:LEU:C	2.27	0.60
3:K:96:GLN:HB3	3:K:99:SER:CB	2.31	0.60
2:J:72:ARG:HG3	2:J:78:THR:C	2.27	0.60
1:A:617:CYS:H	1:A:644:GLN:HE22	1.49	0.60
1:B:395:VAL:HG23	1:B:524:VAL:HG11	1.84	0.60
2:H:131:PHE:CZ	3:K:130:GLN:HA	2.36	0.60
3:K:39:LEU:HD22	3:K:77:PHE:CZ	2.37	0.60
3:K:99:SER:C	3:K:100:THR:HG22	2.26	0.60
2:J:72:ARG:HG3	2:J:78:THR:O	2.01	0.60
1:C:357:ARG:HH12	1:C:394:ASN:HD21	1.49	0.60
1:C:521:PRO:O	1:C:522:ALA:HB2	2.01	0.60
2:H:72:ARG:HG3	2:H:78:THR:C	2.27	0.60
2:H:72:ARG:HG3	2:H:78:THR:O	2.01	0.60
2:J:30:THR:HG23	2:J:53:PRO:O	2.01	0.60
1:B:409:GLN:NE2	1:B:416:GLY:HA3	2.17	0.60
2:H:98:ARG:HB2	2:H:110:ASP:HB3	1.82	0.60
3:K:96:GLN:O	3:K:97:TYR:HB2	1.99	0.60
1:A:361:CYS:N	1:A:524:VAL:HG12	2.17	0.60
1:A:556:ASN:HD22	1:A:556:ASN:H	1.49	0.60
2:H:30:THR:HG23	2:H:53:PRO:O	2.01	0.60
3:K:120:SER:CB	3:K:122:PHE:CZ	2.75	0.60
3:N:39:LEU:HD22	3:N:77:PHE:CZ	2.37	0.60
3:N:109:LYS:HE2	3:N:179:TYR:OH	2.02	0.60
1:A:361:CYS:H	1:A:524:VAL:HG12	1.65	0.60
1:A:521:PRO:O	1:A:522:ALA:HB2	2.01	0.60
2:J:2:VAL:HB	2:J:27:TYR:HE1	1.66	0.60
3:N:94:CYS:SG	3:N:104:PHE:CG	2.90	0.60
1:A:164:ASN:OD1	1:A:164:ASN:N	2.35	0.60
3:K:110:VAL:CG2	3:K:111:GLU:H	2.04	0.60
2:J:138:LYS:HD2	3:N:123:ILE:HG23	1.84	0.60
3:N:122:PHE:HE2	3:N:143:ASN:HB2	1.65	0.60
2:H:2:VAL:HB	2:H:27:TYR:HE1	1.67	0.59
2:J:120:VAL:O	2:J:121:SER:HB3	2.02	0.59
1:A:335:LEU:CB	1:A:362:VAL:O	2.50	0.59
1:B:206:LYS:HD2	1:B:207:HIS:H	1.68	0.59
1:B:216:LEU:HD12	1:B:217:PRO:HD2	1.85	0.59
1:C:95:THR:HG22	1:C:96:GLU:H	1.66	0.59
2:J:50:TRP:CB	2:J:59:GLY:H	2.13	0.59
3:K:103:THR:O	3:K:104:PHE:HB2	2.02	0.59
3:N:103:THR:O	3:N:104:PHE:HB2	2.02	0.59
1:A:141:LEU:HB2	1:A:156:GLU:HB2	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:516:GLU:O	1:A:517:LEU:CD2	2.48	0.59
3:K:95:GLN:CG	3:K:96:GLN:H	2.12	0.59
3:K:109:LYS:HE2	3:K:179:TYR:OH	2.02	0.59
2:J:99:TYR:HA	2:J:109:PHE:HA	1.83	0.59
2:H:102:VAL:O	2:H:104:PRO:CD	2.50	0.59
2:H:120:VAL:O	2:H:121:SER:HB3	2.02	0.59
2:H:138:LYS:HD2	3:K:123:ILE:HG23	1.84	0.59
3:K:4:MET:HG2	3:K:96:GLN:HE21	1.68	0.59
2:J:133:LEU:HD21	3:N:139:VAL:HG21	1.84	0.59
1:A:645:THR:HG22	1:A:647:ALA:H	1.66	0.59
2:J:102:VAL:O	2:J:104:PRO:CD	2.50	0.59
3:N:11:LEU:O	3:N:13:VAL:N	2.35	0.59
1:C:489:TYR:CE2	2:J:101:VAL:HG21	2.38	0.59
2:H:100:ILE:O	2:H:106:ALA:HB1	2.03	0.59
3:K:11:LEU:O	3:K:13:VAL:N	2.36	0.59
3:K:94:CYS:SG	3:K:104:PHE:CG	2.90	0.59
1:C:811:LYS:CB	1:C:812:PRO:HD2	2.28	0.59
1:C:361:CYS:N	1:C:524:VAL:HG12	2.18	0.59
1:C:599:THR:HG22	1:C:601:GLY:H	1.66	0.59
2:J:102:VAL:O	2:J:102:VAL:HG23	2.01	0.58
3:N:44:GLN:NE2	3:N:45:LYS:O	2.36	0.58
1:A:722:VAL:HA	1:A:1064:HIS:O	2.03	0.58
1:C:438:SER:O	1:C:438:SER:OG	2.21	0.58
2:H:74:THR:HG22	2:H:74:THR:O	2.03	0.58
3:K:30:LEU:HB2	3:K:38:TYR:CE2	2.38	0.58
3:N:147:PRO:O	3:N:204:HIS:NE2	2.35	0.58
1:A:206:LYS:NZ	1:A:221:SER:OG	2.35	0.58
2:H:97:ALA:HB2	2:H:112:TRP:CE3	2.38	0.58
3:N:30:LEU:HB2	3:N:38:TYR:CE2	2.39	0.58
3:N:100:THR:OG1	3:N:101:PRO:CD	2.46	0.58
1:A:489:TYR:CE2	2:H:101:VAL:HG21	2.38	0.58
1:B:452:LEU:HD21	1:B:492:LEU:HD13	1.85	0.58
3:K:44:GLN:NE2	3:K:45:LYS:O	2.36	0.58
2:J:74:THR:HG22	2:J:74:THR:O	2.04	0.58
3:N:84:LEU:HD23	3:N:85:GLN:N	2.19	0.58
2:H:157:GLU:CD	2:H:157:GLU:H	2.12	0.58
3:K:84:LEU:HD23	3:K:85:GLN:N	2.19	0.58
2:J:97:ALA:HB2	2:J:112:TRP:CE3	2.38	0.58
1:A:901:GLN:HE21	1:A:905:ARG:HE	1.50	0.58
2:H:102:VAL:O	2:H:102:VAL:HG23	2.01	0.58
2:H:133:LEU:HD21	3:K:139:VAL:HG21	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:147:PRO:O	3:K:204:HIS:NE2	2.35	0.58
2:J:157:GLU:CD	2:J:157:GLU:H	2.12	0.58
4:Z:2:NAG:H3	4:Z:2:NAG:H83	1.86	0.58
1:A:438:SER:O	1:A:438:SER:OG	2.21	0.58
2:J:103:VAL:HB	2:J:104:PRO:CD	2.13	0.58
3:N:4:MET:HB2	3:N:103:THR:CB	2.33	0.58
1:A:329:PHE:HB3	1:A:330:PRO:HD2	1.85	0.58
1:C:493:GLN:HE21	2:J:31:SER:CB	2.17	0.58
2:H:101:VAL:HA	2:H:106:ALA:CA	2.29	0.58
2:H:190:VAL:HG21	3:K:141:LEU:HD22	1.85	0.58
2:J:30:THR:CG2	2:J:53:PRO:CB	2.73	0.58
3:N:45:LYS:NZ	3:N:87:GLU:O	2.37	0.58
1:B:214:ARG:HD3	1:B:214:ARG:N	2.18	0.57
2:H:30:THR:C	2:H:53:PRO:CB	2.67	0.57
3:K:4:MET:HB2	3:K:103:THR:CB	2.33	0.57
2:J:109:PHE:N	2:J:109:PHE:HD1	2.02	0.57
2:H:50:TRP:CB	2:H:59:GLY:H	2.13	0.57
6:A:1405:NAG:H3	6:A:1405:NAG:H83	1.86	0.57
2:J:100:ILE:O	2:J:106:ALA:HB1	2.03	0.57
3:N:4:MET:HG2	3:N:96:GLN:HE21	1.68	0.57
1:A:477:SER:H	3:K:30:LEU:HD11	1.69	0.57
3:K:171:GLU:C	3:K:179:TYR:CE1	2.81	0.57
2:J:88:SER:HA	2:J:120:VAL:HB	1.87	0.57
1:B:901:GLN:NE2	1:B:905:ARG:HE	1.99	0.57
3:K:121:VAL:O	3:K:122:PHE:CD1	2.58	0.57
2:H:88:SER:HA	2:H:120:VAL:HB	1.86	0.57
1:A:813:SER:O	1:A:813:SER:OG	2.18	0.57
2:J:139:SER:HB3	3:N:122:PHE:CB	2.31	0.57
3:N:92:TYR:C	3:N:104:PHE:CD2	2.83	0.57
2:H:139:SER:HB3	3:K:122:PHE:CB	2.31	0.57
1:A:335:LEU:HA	1:A:362:VAL:CA	2.35	0.57
1:B:408:ARG:O	1:B:414:GLN:NE2	2.32	0.57
6:B:1405:NAG:H83	6:B:1405:NAG:H3	1.87	0.57
2:J:139:SER:HA	3:N:122:PHE:HD1	1.68	0.57
4:a:2:NAG:H3	4:a:2:NAG:H83	1.87	0.57
3:K:45:LYS:NZ	3:K:87:GLU:O	2.37	0.56
1:A:29:THR:HG22	1:A:30:ASN:H	1.70	0.56
1:A:563:GLN:O	1:A:577:ARG:NH1	2.38	0.56
1:B:105:ILE:HG13	1:B:110:LEU:HD11	1.87	0.56
1:C:534:VAL:CG2	1:C:539:VAL:HG11	2.34	0.56
3:K:92:TYR:C	3:K:104:PHE:CD2	2.83	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:213:VAL:HB	1:B:214:ARG:HD3	1.87	0.56
1:C:804:GLN:HE21	1:C:935:GLN:HE22	1.52	0.56
2:J:101:VAL:HA	2:J:106:ALA:CA	2.29	0.56
2:H:139:SER:HA	3:K:122:PHE:CD1	2.40	0.56
2:J:30:THR:C	2:J:53:PRO:CB	2.67	0.56
2:J:109:PHE:N	2:J:109:PHE:CD1	2.73	0.56
1:A:105:ILE:HG12	1:A:239:GLN:HB2	1.87	0.56
3:K:93:TYR:HA	3:K:104:PHE:CG	2.35	0.56
3:N:115:THR:C	3:N:117:ALA:H	2.14	0.56
1:B:187:LYS:NZ	1:B:213:VAL:HG13	2.21	0.56
1:A:519:HIS:O	1:A:519:HIS:ND1	2.38	0.56
6:C:1405:NAG:H3	6:C:1405:NAG:H83	1.88	0.56
3:K:110:VAL:HG11	3:K:146:TYR:HE1	1.69	0.56
3:N:121:VAL:O	3:N:122:PHE:CD1	2.58	0.56
1:C:353:TRP:CD1	1:C:353:TRP:H	2.24	0.56
1:C:519:HIS:O	1:C:519:HIS:ND1	2.38	0.56
2:H:107:LYS:HD3	3:K:55:TYR:HE2	1.66	0.56
2:H:109:PHE:HD1	2:H:109:PHE:N	2.02	0.56
3:N:170:THR:O	3:N:179:TYR:CD1	2.59	0.56
2:H:101:VAL:HG13	2:H:106:ALA:H	1.70	0.56
3:K:170:THR:O	3:K:179:TYR:CD1	2.59	0.56
1:A:391:CYS:SG	1:A:524:VAL:O	2.64	0.56
1:C:342:PHE:HB3	4:V:1:NAG:H82	1.87	0.56
3:N:110:VAL:HG11	3:N:146:TYR:HE1	1.69	0.56
1:A:227:VAL:HG12	1:A:228:ASP:N	2.20	0.55
1:A:493:GLN:HE21	2:H:31:SER:CB	2.17	0.55
2:H:128:PRO:HB2	2:H:151:VAL:HG23	1.88	0.55
3:K:33:SER:C	3:K:35:ASN:H	2.13	0.55
4:I:2:NAG:H3	4:I:2:NAG:H83	1.87	0.55
2:H:6:GLN:O	2:H:114:GLN:NE2	2.39	0.55
2:J:139:SER:HA	3:N:122:PHE:CD1	2.41	0.55
3:N:38:TYR:CA	3:N:97:TYR:CE2	2.59	0.55
3:N:145:PHE:CE2	3:N:179:TYR:O	2.59	0.55
1:A:663:ASP:OD2	1:A:673:SER:OG	2.22	0.55
2:H:33:ASP:OD1	2:H:33:ASP:N	2.38	0.55
3:N:33:SER:C	3:N:35:ASN:H	2.13	0.55
1:A:342:PHE:HB3	4:E:1:NAG:H82	1.87	0.55
1:A:347:PHE:CE1	1:A:509:ARG:HD3	2.42	0.55
1:A:392:PHE:CD2	1:A:517:LEU:CD2	2.85	0.55
1:C:391:CYS:SG	1:C:524:VAL:O	2.64	0.55
3:K:4:MET:HB2	3:K:103:THR:HB	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:145:PHE:CE2	3:K:179:TYR:O	2.59	0.55
1:A:392:PHE:HB3	1:A:517:LEU:HD22	1.82	0.55
1:A:533:LEU:HD12	1:A:533:LEU:O	2.06	0.55
1:B:577:ARG:CD	1:B:582:LEU:HD13	2.35	0.55
1:C:113:LYS:HD2	1:C:164:ASN:HD21	1.71	0.55
2:H:21:SER:HA	2:H:80:TYR:CD1	2.42	0.55
2:H:109:PHE:N	2:H:109:PHE:CD1	2.73	0.55
2:J:190:VAL:HG21	3:N:141:LEU:HD22	1.88	0.55
1:A:390:LEU:HD23	1:A:391:CYS:N	2.19	0.55
1:A:392:PHE:HA	1:A:517:LEU:HD11	1.89	0.55
1:B:661:GLU:OE2	1:B:698:SER:OG	2.25	0.55
2:H:51:MET:HG3	2:H:52:ASN:N	2.22	0.55
2:H:104:PRO:HB3	3:K:36:LYS:NZ	2.21	0.55
3:N:91:VAL:HA	3:N:106:GLY:O	2.07	0.55
3:N:171:GLU:C	3:N:179:TYR:CE1	2.81	0.55
2:J:11:VAL:HG23	2:J:155:PHE:CZ	2.23	0.55
2:J:138:LYS:NZ	3:N:215:PHE:HB3	2.22	0.55
1:A:477:SER:HB3	3:K:30:LEU:HD12	1.90	0.54
1:C:129:LYS:HD3	1:C:131:CYS:SG	2.46	0.54
2:H:138:LYS:NZ	3:K:215:PHE:HB3	2.21	0.54
3:K:115:THR:C	3:K:117:ALA:H	2.14	0.54
2:J:33:ASP:OD1	2:J:33:ASP:N	2.38	0.54
1:B:352:ALA:HB2	1:B:468:ILE:HD12	1.88	0.54
1:C:347:PHE:CE1	1:C:509:ARG:HD3	2.42	0.54
1:C:421:TYR:HA	1:C:461:LEU:HG	1.90	0.54
3:K:71:SER:OG	3:K:72:GLY:N	2.41	0.54
3:K:91:VAL:HA	3:K:106:GLY:O	2.07	0.54
3:K:94:CYS:N	3:K:104:PHE:HB2	2.12	0.54
3:K:110:VAL:HG11	3:K:177:SER:C	2.33	0.54
2:J:6:GLN:O	2:J:114:GLN:NE2	2.39	0.54
1:A:353:TRP:CD1	1:A:353:TRP:H	2.24	0.54
1:A:556:ASN:HD22	1:A:556:ASN:N	2.05	0.54
2:H:101:VAL:HG13	2:H:106:ALA:CB	2.38	0.54
3:N:110:VAL:HG11	3:N:177:SER:C	2.33	0.54
1:A:707:TYR:HB3	1:B:792:PRO:HG3	1.90	0.54
2:H:139:SER:O	3:K:122:PHE:CE1	2.61	0.54
2:H:208:ASN:HD22	2:H:210:LYS:HE3	1.71	0.54
3:K:66:ASP:O	3:K:69:SER:OG	2.26	0.54
1:A:335:LEU:CA	1:A:362:VAL:H	2.04	0.54
1:A:335:LEU:CA	1:A:362:VAL:HB	2.36	0.54
1:A:489:TYR:HE2	2:H:101:VAL:HG11	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:2:ILE:CD1	3:K:99:SER:OG	2.56	0.54
2:J:128:PRO:HB2	2:J:151:VAL:HG23	1.88	0.54
1:A:359:SER:O	1:A:524:VAL:HG11	2.06	0.54
1:A:886:TRP:HH2	1:A:904:TYR:HD2	1.56	0.54
1:C:359:SER:O	1:C:524:VAL:HG11	2.06	0.54
3:K:120:SER:CB	3:K:122:PHE:HZ	2.17	0.54
2:J:38:ARG:HG3	2:J:47:TRP:HE3	1.69	0.54
2:J:135:PRO:HG3	2:J:147:LEU:HD23	1.90	0.54
2:J:139:SER:HA	3:N:122:PHE:CB	2.38	0.54
3:N:110:VAL:CG2	3:N:111:GLU:H	2.04	0.54
1:A:100:ILE:O	1:A:242:LEU:HA	2.08	0.54
1:A:551:VAL:HB	1:A:588:THR:HG23	1.88	0.54
1:C:390:LEU:HD23	1:C:391:CYS:N	2.19	0.54
2:H:107:LYS:HB2	3:K:55:TYR:CD2	2.43	0.54
1:B:166:CYS:SG	1:B:167:THR:N	2.81	0.54
1:B:1142:GLN:HG3	1:B:1143:PRO:CD	2.37	0.54
1:B:165:ASN:OD1	6:B:1403:NAG:N2	2.40	0.54
1:C:477:SER:H	3:N:30:LEU:HD11	1.73	0.54
3:N:122:PHE:HD2	3:N:141:LEU:HD23	1.73	0.54
1:A:111:ASP:OD1	1:A:134:GLN:NE2	2.41	0.54
1:C:392:PHE:HA	1:C:517:LEU:HD11	1.89	0.54
2:J:208:ASN:HD22	2:J:210:LYS:HE3	1.71	0.54
3:N:4:MET:HB2	3:N:103:THR:HB	1.88	0.54
3:N:36:LYS:O	3:N:37:ASN:ND2	2.41	0.54
3:N:72:GLY:HA2	3:N:77:PHE:HB3	1.89	0.54
4:E:1:NAG:H61	4:E:2:NAG:HN2	1.71	0.54
1:B:333:THR:OG1	1:B:334:ASN:N	2.41	0.53
2:J:21:SER:HA	2:J:80:TYR:CD1	2.42	0.53
2:J:98:ARG:CB	2:J:111:PRO:HD2	2.23	0.53
3:N:16:GLY:N	3:N:84:LEU:O	2.41	0.53
3:N:66:ASP:O	3:N:69:SER:OG	2.26	0.53
3:N:94:CYS:N	3:N:104:PHE:HB2	2.12	0.53
3:N:108:THR:OG1	3:N:109:LYS:N	2.41	0.53
4:V:1:NAG:H61	4:V:2:NAG:HN2	1.71	0.53
2:H:29:PHE:CD1	2:H:77:SER:CB	2.89	0.53
3:K:72:GLY:HA2	3:K:77:PHE:HB3	1.89	0.53
3:N:2:ILE:CD1	3:N:99:SER:OG	2.56	0.53
3:K:108:THR:OG1	3:K:109:LYS:N	2.41	0.53
2:J:29:PHE:CD1	2:J:77:SER:CB	2.89	0.53
4:G:2:NAG:H83	4:G:2:NAG:H3	1.90	0.53
1:C:97:LYS:HB3	1:C:187:LYS:HA	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:175:PHE:HE2	3:K:180:SER:C	2.17	0.53
2:J:101:VAL:HG13	2:J:106:ALA:CB	2.38	0.53
1:C:489:TYR:HE2	2:J:101:VAL:HG11	1.73	0.53
2:H:148:GLY:HA2	2:H:163:TRP:HZ2	1.73	0.53
2:J:51:MET:HG3	2:J:52:ASN:N	2.22	0.53
3:N:71:SER:OG	3:N:72:GLY:N	2.41	0.53
3:N:110:VAL:HG11	3:N:177:SER:CA	2.33	0.53
1:C:392:PHE:CD2	1:C:517:LEU:CD2	2.85	0.53
3:K:16:GLY:N	3:K:84:LEU:O	2.41	0.53
3:K:110:VAL:HG11	3:K:177:SER:HB2	0.59	0.53
3:K:144:ASN:O	3:K:145:PHE:HB3	2.08	0.53
1:A:1141:LEU:HD12	1:C:1141:LEU:HD11	1.90	0.53
2:H:135:PRO:HG3	2:H:147:LEU:HD23	1.89	0.53
1:A:421:TYR:HA	1:A:461:LEU:HG	1.90	0.53
1:A:516:GLU:C	1:A:517:LEU:CD2	2.82	0.53
1:B:1104:VAL:HG22	1:B:1115:ILE:HG12	1.91	0.53
2:H:38:ARG:HG3	2:H:47:TRP:HE3	1.69	0.53
2:J:101:VAL:HG13	2:J:106:ALA:H	1.70	0.53
3:N:116:VAL:HG12	3:N:116:VAL:O	2.09	0.53
1:A:544:ASN:O	1:A:544:ASN:ND2	2.41	0.53
1:C:477:SER:HB3	3:N:30:LEU:HD12	1.90	0.53
3:K:34:ASN:O	3:K:36:LYS:N	2.42	0.53
2:J:21:SER:HA	2:J:80:TYR:HD1	1.74	0.53
1:B:402:ILE:O	1:B:507:PRO:HA	2.09	0.53
1:C:105:ILE:HG23	1:C:241:LEU:HD11	1.91	0.53
1:C:516:GLU:C	1:C:517:LEU:CD2	2.82	0.53
2:J:30:THR:HA	2:J:53:PRO:HB3	1.89	0.53
3:N:93:TYR:N	3:N:104:PHE:HD2	2.01	0.53
1:A:57:PRO:O	1:A:60:SER:OG	2.24	0.52
1:B:1045:LYS:HZ2	1:C:786:LYS:HE3	1.72	0.52
2:H:6:GLN:HE22	2:H:95:TYR:HA	1.74	0.52
3:K:3:VAL:O	3:K:25:SER:HB2	2.09	0.52
3:K:6:GLN:NE2	3:K:8:PRO:O	2.38	0.52
2:H:30:THR:CG2	2:H:53:PRO:HB3	2.37	0.52
3:N:6:GLN:NE2	3:N:8:PRO:HD2	2.25	0.52
1:A:493:GLN:HE22	2:H:31:SER:HB3	1.69	0.52
2:H:30:THR:HA	2:H:53:PRO:HB3	1.89	0.52
3:K:30:LEU:HD22	3:K:38:TYR:CE2	2.44	0.52
3:K:39:LEU:HD22	3:K:77:PHE:CE2	2.44	0.52
2:J:148:GLY:HA2	2:J:163:TRP:HZ2	1.73	0.52
1:A:894:LEU:HB3	1:C:713:ALA:HB3	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:112:SER:O	1:B:113:LYS:HB2	2.10	0.52
1:C:193:VAL:HG23	1:C:223:LEU:HD23	1.91	0.52
2:H:72:ARG:HD2	2:H:79:ALA:HB2	1.91	0.52
2:J:87:ARG:HG3	2:J:89:GLU:HG3	1.91	0.52
1:B:424:LYS:HB3	1:B:463:PRO:HA	1.92	0.52
2:H:23:LYS:HA	2:H:78:THR:CG2	2.36	0.52
3:K:122:PHE:HD2	3:K:141:LEU:HD23	1.73	0.52
2:J:139:SER:O	3:N:122:PHE:CE1	2.61	0.52
3:N:54:ILE:HG21	3:N:70:GLY:HA3	1.92	0.52
3:N:144:ASN:O	3:N:145:PHE:HB3	2.08	0.52
1:B:457:ARG:NH2	1:B:469:SER:O	2.43	0.52
3:K:116:VAL:HG12	3:K:116:VAL:O	2.09	0.52
3:N:3:VAL:O	3:N:25:SER:HB2	2.09	0.52
3:N:3:VAL:O	3:N:25:SER:CB	2.58	0.52
1:A:335:LEU:HA	1:A:362:VAL:HB	1.92	0.52
1:B:403:ARG:HA	1:B:495:TYR:OH	2.10	0.52
1:C:113:LYS:HD3	1:C:113:LYS:N	2.25	0.52
3:K:3:VAL:O	3:K:25:SER:CB	2.58	0.52
2:J:21:SER:CB	2:J:80:TYR:CE1	2.93	0.52
3:N:11:LEU:O	3:N:13:VAL:HG13	2.10	0.52
3:N:39:LEU:HD22	3:N:77:PHE:CE2	2.44	0.52
1:A:379:CYS:HB3	1:A:382:VAL:O	2.10	0.52
1:B:353:TRP:CZ2	1:B:466:ARG:HB3	2.45	0.52
1:C:1101:HIS:CD2	4:a:1:NAG:H5	2.45	0.52
3:K:6:GLN:NE2	3:K:8:PRO:HD2	2.24	0.52
1:B:380:TYR:O	1:B:430:THR:HA	2.11	0.51
1:B:555:SER:OG	1:B:584:ILE:O	2.28	0.51
2:H:107:LYS:CD	3:K:55:TYR:CZ	2.93	0.51
3:K:11:LEU:O	3:K:13:VAL:HG13	2.10	0.51
3:N:34:ASN:O	3:N:36:LYS:N	2.42	0.51
1:A:901:GLN:NE2	1:A:905:ARG:HH21	2.07	0.51
2:H:139:SER:HA	3:K:122:PHE:CB	2.40	0.51
3:N:39:LEU:HD11	3:N:77:PHE:CE1	2.46	0.51
1:A:64:TRP:HD1	1:A:65:PHE:N	2.07	0.51
1:B:560:LEU:H	1:B:563:GLN:NE2	2.08	0.51
2:H:21:SER:CB	2:H:80:TYR:CE1	2.93	0.51
2:H:31:SER:N	2:H:53:PRO:CG	2.74	0.51
2:H:87:ARG:HG3	2:H:89:GLU:HG3	1.91	0.51
3:K:54:ILE:HG21	3:K:70:GLY:HA3	1.92	0.51
2:J:6:GLN:HE22	2:J:95:TYR:HA	1.74	0.51
1:C:715:PRO:HA	1:C:1072:GLU:HA	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:50:TRP:CD1	2:H:50:TRP:N	2.77	0.51
2:J:11:VAL:CG2	2:J:155:PHE:CE2	2.77	0.51
2:J:57:ASN:O	2:J:58:THR:HB	2.11	0.51
3:N:148:ARG:HH21	3:N:169:VAL:HB	1.76	0.51
1:C:83:VAL:HG22	1:C:237:ARG:HD2	1.92	0.51
3:K:140:CYS:HB2	3:K:154:TRP:CH2	2.46	0.51
2:J:23:LYS:HA	2:J:78:THR:CG2	2.36	0.51
2:J:29:PHE:HB3	2:J:72:ARG:NH2	2.26	0.51
2:J:31:SER:N	2:J:53:PRO:CG	2.74	0.51
1:C:379:CYS:HB3	1:C:382:VAL:O	2.10	0.51
1:C:534:VAL:HG21	1:C:539:VAL:HG11	1.93	0.51
2:J:223:LYS:CE	3:N:125:PRO:HD2	2.40	0.51
1:A:130:VAL:HB	1:A:168:PHE:HB3	1.93	0.51
1:A:348:ALA:HB2	1:A:354:ASN:ND2	2.26	0.51
2:J:30:THR:CG2	2:J:53:PRO:HB3	2.37	0.51
2:J:97:ALA:CB	2:J:109:PHE:CD2	2.91	0.51
2:J:104:PRO:HB3	3:N:36:LYS:NZ	2.25	0.51
3:N:30:LEU:HD22	3:N:38:TYR:CE2	2.44	0.51
3:N:97:TYR:O	3:N:99:SER:N	2.43	0.51
3:N:140:CYS:HB2	3:N:154:TRP:CH2	2.45	0.51
3:K:39:LEU:HD11	3:K:77:PHE:CE1	2.46	0.51
3:N:30:LEU:HB2	3:N:38:TYR:CD2	2.46	0.51
1:C:97:LYS:HD3	1:C:187:LYS:HA	1.93	0.51
1:C:348:ALA:HB2	1:C:354:ASN:ND2	2.26	0.51
3:K:97:TYR:O	3:K:99:SER:N	2.43	0.51
2:J:72:ARG:HD2	2:J:79:ALA:HB2	1.91	0.51
2:J:223:LYS:CE	3:N:125:PRO:CD	2.88	0.51
1:A:129:LYS:HG2	1:A:133:PHE:HZ	1.76	0.51
1:A:329:PHE:CE1	1:A:544:ASN:HA	2.45	0.51
1:C:113:LYS:H	1:C:132:GLU:HB3	1.76	0.51
2:H:30:THR:CB	2:H:53:PRO:HB3	2.41	0.51
2:H:138:LYS:NZ	3:K:215:PHE:CB	2.75	0.51
2:J:38:ARG:CG	2:J:47:TRP:CE3	2.87	0.51
2:J:138:LYS:NZ	3:N:215:PHE:CB	2.75	0.51
3:N:41:TRP:HZ3	3:N:104:PHE:HZ	1.55	0.51
3:N:86:ALA:C	3:N:87:GLU:OE1	2.54	0.51
1:C:401:VAL:HG22	1:C:509:ARG:HG2	1.94	0.50
2:H:57:ASN:O	2:H:58:THR:HB	2.11	0.50
2:H:139:SER:CA	3:K:122:PHE:HD1	2.22	0.50
2:H:21:SER:HA	2:H:80:TYR:HD1	1.74	0.50
2:H:29:PHE:HB3	2:H:72:ARG:NH2	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:164:ASN:ND2	2:H:202:THR:O	2.45	0.50
1:A:401:VAL:HG22	1:A:509:ARG:HG2	1.94	0.50
1:C:804:GLN:HE21	1:C:935:GLN:NE2	2.08	0.50
1:C:580:GLN:O	4:U:1:NAG:H62	2.11	0.50
3:N:6:GLN:NE2	3:N:8:PRO:O	2.38	0.50
3:N:61:GLU:HB2	3:N:64:VAL:HB	1.93	0.50
1:A:964:LYS:HE3	1:C:570:ALA:HA	1.93	0.50
3:K:86:ALA:C	3:K:87:GLU:OE1	2.54	0.50
2:J:139:SER:C	3:N:122:PHE:HD1	2.20	0.50
3:K:148:ARG:HH21	3:K:169:VAL:HB	1.76	0.50
1:A:106:PHE:HB3	1:A:235:ILE:HD13	1.93	0.50
1:B:616:ASN:HB3	1:B:618:THR:HG22	1.94	0.50
1:C:1090:PRO:HD3	1:C:1095:PHE:CE2	2.47	0.50
2:J:30:THR:CB	2:J:53:PRO:HB3	2.41	0.50
4:S:1:NAG:H62	4:S:2:NAG:H2	1.93	0.50
1:B:675:GLN:HA	1:B:690:GLN:HG3	1.93	0.50
1:C:335:LEU:O	1:C:362:VAL:O	2.30	0.50
2:H:50:TRP:CZ3	2:H:60:TYR:HD1	2.24	0.50
2:H:101:VAL:CG1	2:H:106:ALA:HB2	2.42	0.50
2:H:139:SER:C	3:K:122:PHE:HD1	2.20	0.50
1:B:31:SER:O	1:B:59:PHE:HA	2.10	0.49
1:B:350:VAL:HG23	1:B:422:ASN:HD22	1.77	0.49
1:C:807:PRO:O	1:C:809:PRO:HD3	2.12	0.49
3:K:93:TYR:N	3:K:104:PHE:HD2	2.01	0.49
1:A:735:SER:HB3	1:A:859:THR:HG22	1.94	0.49
2:J:30:THR:HG22	2:J:53:PRO:HB2	1.89	0.49
1:C:1032:CYS:O	1:C:1051:SER:HB2	2.12	0.49
2:H:223:LYS:CE	3:K:125:PRO:HD2	2.42	0.49
3:K:95:GLN:HG3	3:K:96:GLN:N	2.23	0.49
3:N:94:CYS:HG	3:N:104:PHE:CE1	1.69	0.49
1:B:112:SER:N	1:B:133:PHE:O	2.45	0.49
1:C:493:GLN:HE21	2:J:31:SER:HB2	1.78	0.49
3:K:110:VAL:CG2	3:K:177:SER:HB2	2.40	0.49
2:H:50:TRP:CZ3	2:H:60:TYR:HE1	2.11	0.49
2:H:59:GLY:O	2:H:60:TYR:CG	2.66	0.49
2:H:76:ILE:O	2:H:77:SER:OG	2.31	0.49
3:K:54:ILE:HD12	3:K:59:THR:HA	1.95	0.49
3:K:100:THR:OG1	3:K:101:PRO:CD	2.46	0.49
3:K:110:VAL:HG11	3:K:177:SER:CA	2.33	0.49
1:A:493:GLN:HE21	2:H:31:SER:HB2	1.78	0.49
1:C:117:LEU:HB2	1:C:130:VAL:HG22	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:550:GLY:CA	1:C:590:CYS:SG	2.90	0.49
3:K:30:LEU:HB2	3:K:38:TYR:CD2	2.46	0.49
2:J:139:SER:CA	3:N:122:PHE:HD1	2.24	0.49
3:N:4:MET:HB2	3:N:103:THR:OG1	2.13	0.49
3:N:41:TRP:HZ3	3:N:104:PHE:CE2	2.29	0.49
1:C:437:ASN:OD1	1:C:438:SER:N	2.46	0.49
2:H:138:LYS:HZ3	3:K:215:PHE:HB3	1.76	0.49
2:J:76:ILE:O	2:J:77:SER:OG	2.31	0.49
1:B:331:ASN:HD22	4:O:1:NAG:H83	1.78	0.49
1:C:200:TYR:HB3	1:C:228:ASP:OD1	2.13	0.49
1:C:535:LYS:O	1:C:536:ASN:HB2	2.13	0.49
2:H:138:LYS:HZ3	3:K:215:PHE:CB	2.25	0.49
2:H:223:LYS:CE	3:K:125:PRO:CD	2.90	0.49
3:K:12:ALA:HA	3:K:109:LYS:H	1.78	0.49
3:K:146:TYR:CE1	3:K:177:SER:O	2.66	0.49
3:N:37:ASN:HB3	3:N:38:TYR:H	1.47	0.49
3:N:146:TYR:CE1	3:N:177:SER:O	2.66	0.49
1:C:480:CYS:C	1:C:482:GLY:H	2.21	0.49
2:H:98:ARG:CB	2:H:111:PRO:HD2	2.23	0.49
3:K:4:MET:HB2	3:K:103:THR:OG1	2.13	0.49
3:K:61:GLU:HB2	3:K:64:VAL:HB	1.93	0.49
2:J:30:THR:HG22	2:J:54:ASN:N	2.27	0.49
1:A:122:ASN:OD1	1:A:122:ASN:N	2.46	0.49
1:A:131:CYS:H	1:A:133:PHE:HE1	1.59	0.49
1:A:171:VAL:HG12	1:A:172:SER:H	1.78	0.49
1:A:431:GLY:HA3	1:A:513:LEU:O	2.13	0.49
1:B:396:TYR:HB2	1:B:514:SER:HB2	1.95	0.49
2:J:128:PRO:HD3	2:J:209:HIS:HD1	1.78	0.49
1:A:896:ILE:HG13	1:A:897:PRO:HD2	1.95	0.48
1:B:457:ARG:NH1	1:B:467:ASP:HB3	2.28	0.48
3:N:54:ILE:HD12	3:N:59:THR:HA	1.95	0.48
1:A:530:SER:C	1:A:531:THR:CG2	2.86	0.48
2:H:60:TYR:CZ	2:H:68:VAL:HG23	2.48	0.48
2:J:50:TRP:CZ3	2:J:60:TYR:HE1	2.10	0.48
2:J:60:TYR:CZ	2:J:68:VAL:HG23	2.48	0.48
2:J:164:ASN:ND2	2:J:202:THR:O	2.45	0.48
3:N:110:VAL:HG11	3:N:177:SER:HB2	0.59	0.48
3:N:39:LEU:HD21	3:N:77:PHE:CZ	2.46	0.48
3:N:120:SER:CB	3:N:122:PHE:HZ	2.17	0.48
1:C:431:GLY:HA3	1:C:513:LEU:O	2.12	0.48
1:C:500:THR:O	1:C:500:THR:OG1	2.31	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:50:TRP:N	2:J:50:TRP:CD1	2.77	0.48
2:J:101:VAL:CG1	2:J:106:ALA:HB2	2.42	0.48
3:N:12:ALA:HA	3:N:109:LYS:H	1.78	0.48
1:C:385:THR:HG1	1:C:386:LYS:HZ3	1.57	0.48
2:H:97:ALA:CB	2:H:109:PHE:CD2	2.91	0.48
2:J:59:GLY:O	2:J:60:TYR:CG	2.66	0.48
1:A:227:VAL:HG12	1:A:228:ASP:H	1.79	0.48
1:A:707:TYR:HB2	1:B:883:THR:HG23	1.94	0.48
1:B:327:VAL:HG22	1:B:542:ASN:HB3	1.96	0.48
1:C:530:SER:C	1:C:531:THR:CG2	2.86	0.48
2:H:159:VAL:HG22	2:H:209:HIS:CD2	2.49	0.48
1:B:1045:LYS:HZ1	1:C:786:LYS:HE3	1.77	0.48
3:K:36:LYS:O	3:K:37:ASN:ND2	2.41	0.48
1:A:523:THR:CG2	1:A:524:VAL:N	2.45	0.48
1:A:935:GLN:O	1:A:939:SER:HB3	2.14	0.48
1:B:281:GLU:OE2	6:B:1405:NAG:H81	2.14	0.48
1:B:576:VAL:O	1:B:584:ILE:HA	2.13	0.48
1:C:197:ILE:HG22	1:C:198:ASP:H	1.78	0.48
1:C:1104:VAL:HG22	1:C:1115:ILE:HG12	1.95	0.48
2:H:29:PHE:HA	2:H:98:ARG:HH22	1.79	0.48
1:A:437:ASN:OD1	1:A:438:SER:N	2.46	0.48
1:A:662:CYS:HB2	1:A:697:MET:HE3	1.94	0.48
2:H:128:PRO:HD3	2:H:209:HIS:HD1	1.78	0.48
3:N:4:MET:HG2	3:N:96:GLN:NE2	2.28	0.48
2:H:72:ARG:HG2	2:H:73:ASN:H	1.79	0.48
2:H:77:SER:OG	2:H:77:SER:O	2.32	0.48
2:H:101:VAL:CB	2:H:106:ALA:HB2	2.44	0.48
2:H:156:PRO:HB2	2:H:209:HIS:NE2	2.29	0.48
2:J:156:PRO:HB2	2:J:209:HIS:NE2	2.29	0.48
2:J:175:PHE:HE2	3:N:180:SER:C	2.21	0.48
1:C:516:GLU:C	1:C:517:LEU:HD23	2.39	0.47
2:J:77:SER:OG	2:J:77:SER:O	2.32	0.47
2:J:107:LYS:HB2	3:N:55:TYR:CD2	2.49	0.47
1:A:231:ILE:HB	1:A:233:ILE:HG22	1.95	0.47
1:A:516:GLU:C	1:A:517:LEU:HD23	2.39	0.47
1:A:886:TRP:CH2	1:A:904:TYR:HD2	2.31	0.47
1:B:557:LYS:NZ	1:B:575:ALA:HB2	2.29	0.47
1:B:710:ASN:N	1:B:710:ASN:HD22	2.11	0.47
1:C:118:LEU:O	1:C:128:ILE:HA	2.14	0.47
2:H:140:THR:HG23	2:H:145:ALA:HB2	1.97	0.47
3:K:172:GLN:CA	3:K:179:TYR:CE1	2.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:223:LYS:HE3	3:N:125:PRO:CD	2.44	0.47
1:A:480:CYS:C	1:A:482:GLY:H	2.21	0.47
1:C:675:GLN:NE2	1:C:675:GLN:CA	2.73	0.47
3:K:15:LEU:CD1	3:N:24:LYS:NZ	2.76	0.47
1:A:45:SER:O	1:A:47:VAL:HG22	2.14	0.47
3:K:4:MET:HG2	3:K:96:GLN:NE2	2.28	0.47
2:J:159:VAL:HG22	2:J:209:HIS:CD2	2.49	0.47
3:N:33:SER:O	3:N:35:ASN:N	2.42	0.47
1:B:459:SER:C	1:B:461:LEU:H	2.23	0.47
3:N:32:SER:C	3:N:34:ASN:N	2.73	0.47
3:N:78:THR:OG1	3:N:79:LEU:O	2.32	0.47
1:A:530:SER:O	1:A:531:THR:HG22	2.14	0.47
1:C:140:PHE:CE2	1:C:244:LEU:HB2	2.49	0.47
1:C:143:VAL:C	1:C:154:GLU:HA	2.38	0.47
1:C:605:SER:OG	1:C:606:ASN:N	2.47	0.47
1:C:726:ILE:HG12	1:C:1061:VAL:HG22	1.96	0.47
2:H:59:GLY:O	2:H:60:TYR:CD1	2.68	0.47
3:K:32:SER:C	3:K:34:ASN:N	2.73	0.47
3:K:38:TYR:CA	3:K:97:TYR:CE2	2.59	0.47
2:J:72:ARG:HG2	2:J:73:ASN:H	1.79	0.47
2:J:140:THR:HG23	2:J:145:ALA:HB2	1.97	0.47
3:N:102:LEU:CD1	3:N:103:THR:N	2.73	0.47
1:B:403:ARG:NH2	1:B:504:GLY:O	2.47	0.47
1:C:66:HIS:CE1	1:C:214:ARG:HH22	2.32	0.47
1:C:278:LYS:HB2	1:C:306:PHE:CZ	2.50	0.47
1:C:973:ILE:HG12	1:C:992:GLN:HE21	1.79	0.47
2:H:21:SER:CB	2:H:80:TYR:HE1	2.28	0.47
3:K:41:TRP:HZ3	3:K:104:PHE:CE2	2.29	0.47
3:K:41:TRP:CE2	3:K:79:LEU:HB2	2.49	0.47
3:K:78:THR:OG1	3:K:79:LEU:O	2.32	0.47
2:J:29:PHE:HA	2:J:98:ARG:HH22	1.79	0.47
2:J:59:GLY:O	2:J:60:TYR:CD1	2.68	0.47
3:N:97:TYR:C	3:N:99:SER:N	2.72	0.47
3:N:121:VAL:C	3:N:122:PHE:CG	2.93	0.47
1:A:212:LEU:HD23	1:A:215:ASP:HB2	1.95	0.47
1:C:529:LYS:HB3	1:C:529:LYS:HE2	1.59	0.47
1:C:530:SER:O	1:C:531:THR:HG22	2.14	0.47
2:H:11:VAL:CG2	2:H:155:PHE:CE2	2.77	0.47
3:K:15:LEU:HD11	3:N:24:LYS:CE	2.31	0.47
2:J:178:VAL:HG21	3:N:166:GLN:HB3	1.97	0.47
3:N:41:TRP:CE2	3:N:79:LEU:HB2	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:N:80:THR:O	3:N:80:THR:HG22	2.14	0.47
1:B:748:GLU:CD	1:B:981:LEU:HD21	2.40	0.47
1:C:361:CYS:H	1:C:524:VAL:HG12	1.79	0.47
1:C:486:PHE:CE2	2:J:48:MET:HE2	2.50	0.47
1:C:493:GLN:HE22	2:J:31:SER:CB	2.26	0.47
1:C:804:GLN:HG3	1:C:935:GLN:HE22	1.80	0.47
3:N:148:ARG:O	3:N:150:ALA:N	2.42	0.47
1:A:985:ASP:OD1	1:A:985:ASP:N	2.45	0.47
1:B:577:ARG:HD3	1:B:582:LEU:HD11	1.92	0.47
3:K:39:LEU:HD21	3:K:77:PHE:CZ	2.46	0.47
3:K:80:THR:HG22	3:K:80:THR:O	2.14	0.47
2:J:72:ARG:HG3	2:J:79:ALA:HA	1.97	0.47
2:J:101:VAL:HG12	2:J:102:VAL:N	2.30	0.47
2:J:223:LYS:HE3	3:N:125:PRO:CG	2.45	0.47
1:A:486:PHE:CE2	2:H:48:MET:HE2	2.50	0.46
1:B:713:ALA:HB3	1:C:894:LEU:HB3	1.97	0.46
1:C:474:GLN:HE22	1:C:479:PRO:HA	1.80	0.46
3:N:172:GLN:CA	3:N:179:TYR:CE1	2.97	0.46
1:A:1105:THR:HG22	1:A:1111:GLU:H	1.80	0.46
1:B:729:VAL:HG13	1:B:1059:GLY:HA2	1.98	0.46
1:B:825:LYS:HB3	1:B:825:LYS:HE2	1.79	0.46
2:H:101:VAL:HG12	2:H:102:VAL:N	2.30	0.46
3:K:97:TYR:C	3:K:99:SER:N	2.72	0.46
3:K:110:VAL:HG11	3:K:146:TYR:CE1	2.49	0.46
1:B:603:ASN:OD1	6:B:1407:NAG:N2	2.49	0.46
1:C:66:HIS:HE1	1:C:214:ARG:HH22	1.62	0.46
2:H:26:GLY:C	2:H:27:TYR:CD1	2.93	0.46
3:K:41:TRP:CD2	3:K:79:LEU:HB2	2.50	0.46
3:N:41:TRP:CD2	3:N:79:LEU:HB2	2.50	0.46
1:A:421:TYR:OH	2:H:103:VAL:HG13	2.15	0.46
2:H:97:ALA:HB2	2:H:112:TRP:CZ3	2.51	0.46
2:H:223:LYS:HE3	3:K:125:PRO:CD	2.45	0.46
3:K:14:SER:CB	3:N:7:SER:OG	2.63	0.46
1:A:127:VAL:HG11	6:A:1402:NAG:H61	1.98	0.46
1:A:369:TYR:CE2	1:A:384:PRO:HB2	2.50	0.46
1:A:393:THR:HA	1:A:523:THR:HB	1.98	0.46
2:H:107:LYS:HD2	3:K:55:TYR:CZ	2.50	0.46
1:A:493:GLN:HE22	2:H:31:SER:CB	2.26	0.46
1:A:967:SER:O	1:A:967:SER:OG	2.24	0.46
1:C:53:ASP:HB3	1:C:55:PHE:CE2	2.51	0.46
1:C:369:TYR:CE2	1:C:384:PRO:HB2	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:393:THR:HA	1:C:523:THR:HB	1.98	0.46
1:C:421:TYR:OH	2:J:103:VAL:HG13	2.15	0.46
1:C:977:LEU:HD12	1:C:996:LEU:HD12	1.98	0.46
2:J:101:VAL:CB	2:J:106:ALA:HB2	2.44	0.46
2:J:209:HIS:CD2	2:J:211:PRO:HD2	2.51	0.46
3:N:73:SER:OG	3:N:76:ASP:O	2.30	0.46
1:A:364:ASP:O	1:A:367:VAL:HG12	2.15	0.46
2:H:72:ARG:HG3	2:H:79:ALA:HA	1.97	0.46
2:H:139:SER:CA	3:K:122:PHE:CD1	2.98	0.46
3:K:2:ILE:HG12	3:K:26:SER:HB2	1.98	0.46
1:A:117:LEU:HD12	1:A:118:LEU:N	2.30	0.46
1:A:912:THR:OG1	1:A:914:ASN:ND2	2.48	0.46
1:B:532:ASN:ND2	1:B:533:LEU:H	2.14	0.46
1:B:567:ARG:HE	1:B:567:ARG:HB3	1.47	0.46
1:B:710:ASN:HD22	1:B:710:ASN:H	1.62	0.46
1:C:703:ASN:C	1:C:703:ASN:HD22	2.24	0.46
2:H:107:LYS:HD3	3:K:55:TYR:CZ	2.49	0.46
2:H:178:VAL:HG21	3:K:166:GLN:HB3	1.96	0.46
3:K:41:TRP:HZ3	3:K:104:PHE:HZ	1.55	0.46
2:J:26:GLY:C	2:J:27:TYR:CD1	2.93	0.46
3:N:67:ARG:HB2	3:N:82:SER:O	2.16	0.46
1:A:447:GLY:HA2	1:A:497:PHE:O	2.16	0.46
1:B:437:ASN:HD21	1:B:506:GLN:HE21	1.64	0.46
1:C:364:ASP:O	1:C:367:VAL:HG12	2.15	0.46
1:C:493:GLN:HE22	2:J:31:SER:HB3	1.69	0.46
2:H:190:VAL:HG11	3:K:141:LEU:HD22	1.96	0.46
3:K:33:SER:O	3:K:35:ASN:N	2.42	0.46
3:K:121:VAL:C	3:K:122:PHE:CG	2.93	0.46
1:B:1032:CYS:O	1:B:1051:SER:HB2	2.16	0.46
1:C:377:PHE:CD2	1:C:434:ILE:HG12	2.51	0.46
2:H:209:HIS:CD2	2:H:211:PRO:HD2	2.51	0.46
3:K:95:GLN:CG	3:K:96:GLN:N	2.79	0.46
3:K:110:VAL:HG13	3:K:146:TYR:CD1	2.51	0.46
3:K:148:ARG:C	3:K:150:ALA:H	2.23	0.46
2:J:51:MET:H	2:J:58:THR:HA	1.81	0.46
2:J:136:SER:HB3	2:J:138:LYS:HG2	1.98	0.46
1:A:29:THR:HG22	1:A:30:ASN:N	2.31	0.45
1:A:377:PHE:CD2	1:A:434:ILE:HG12	2.51	0.45
1:B:424:LYS:HG3	1:B:461:LEU:O	2.17	0.45
1:B:722:VAL:HA	1:B:1064:HIS:O	2.16	0.45
1:B:758:SER:O	1:B:762:GLN:HG3	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:67:ARG:HB2	3:K:82:SER:O	2.16	0.45
3:K:93:TYR:C	3:K:104:PHE:CG	2.88	0.45
3:K:115:THR:C	3:K:117:ALA:N	2.73	0.45
2:J:29:PHE:O	2:J:31:SER:N	2.49	0.45
3:N:92:TYR:C	3:N:104:PHE:HD2	2.23	0.45
3:N:115:THR:C	3:N:117:ALA:N	2.73	0.45
1:A:153:MET:SD	1:A:153:MET:N	2.90	0.45
1:A:474:GLN:HE22	1:A:479:PRO:HA	1.80	0.45
1:A:1094:VAL:HG22	1:A:1107:ARG:HG2	1.99	0.45
1:B:130:VAL:HG21	1:B:231:ILE:HD12	1.98	0.45
1:C:447:GLY:HA2	1:C:497:PHE:O	2.16	0.45
2:H:76:ILE:O	2:H:77:SER:CB	2.64	0.45
2:H:154:TYR:OH	2:H:187:LEU:HD23	2.17	0.45
2:J:21:SER:CB	2:J:80:TYR:HE1	2.28	0.45
2:J:154:TYR:OH	2:J:187:LEU:HD23	2.17	0.45
3:N:32:SER:O	3:N:34:ASN:N	2.50	0.45
1:A:335:LEU:CA	1:A:362:VAL:O	2.65	0.45
2:H:36:TRP:O	2:H:47:TRP:HB3	2.17	0.45
1:A:578:ASP:OD2	1:A:581:THR:HG22	2.16	0.45
1:B:472:ILE:H	1:B:472:ILE:HG13	1.56	0.45
2:H:30:THR:HG22	2:H:54:ASN:N	2.27	0.45
2:J:97:ALA:HB2	2:J:112:TRP:CZ3	2.51	0.45
3:N:146:TYR:HB2	3:N:147:PRO:CD	2.45	0.45
1:A:334:ASN:O	1:A:362:VAL:CG2	2.65	0.45
1:A:903:ALA:HB1	1:A:913:GLN:HG2	1.98	0.45
2:H:101:VAL:C	2:H:102:VAL:HG13	2.42	0.45
3:K:32:SER:O	3:K:34:ASN:N	2.50	0.45
2:J:36:TRP:O	2:J:47:TRP:HB3	2.17	0.45
2:J:110:ASP:OD2	2:J:111:PRO:CD	2.47	0.45
2:J:123:ALA:C	2:J:124:SER:HG	2.14	0.45
2:J:223:LYS:HE3	3:N:125:PRO:HD2	1.98	0.45
1:A:560:LEU:O	1:A:562:PHE:N	2.47	0.45
1:A:1090:PRO:HD3	1:A:1095:PHE:CE2	2.51	0.45
1:B:521:PRO:HG3	1:B:564:GLN:HE21	1.80	0.45
1:C:37:TYR:HA	1:C:223:LEU:H	1.81	0.45
1:C:314:GLN:HE21	1:C:314:GLN:HB2	1.56	0.45
2:H:107:LYS:HD2	3:K:55:TYR:CE2	2.51	0.45
2:J:107:LYS:CD	3:N:55:TYR:CZ	2.99	0.45
1:B:353:TRP:CD1	1:B:353:TRP:H	2.34	0.45
1:C:676:THR:CA	1:C:690:GLN:HE21	2.29	0.45
2:H:30:THR:HG22	2:H:53:PRO:HB2	1.89	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:101:VAL:HA	2:H:106:ALA:CB	2.47	0.45
2:H:223:LYS:HE3	3:K:125:PRO:HD2	1.99	0.45
2:J:101:VAL:HA	2:J:106:ALA:CB	2.47	0.45
2:J:139:SER:CA	3:N:122:PHE:CD1	2.99	0.45
1:A:617:CYS:HB2	1:A:649:CYS:HB2	1.87	0.45
3:N:110:VAL:HG13	3:N:146:TYR:CD1	2.51	0.45
1:A:187:LYS:HE3	1:A:213:VAL:HG12	1.99	0.45
1:A:334:ASN:O	1:A:362:VAL:HB	2.17	0.45
1:A:500:THR:O	1:A:500:THR:OG1	2.31	0.45
1:B:521:PRO:HG3	1:B:564:GLN:NE2	2.32	0.45
2:H:4:LEU:HD23	2:H:4:LEU:HA	1.78	0.45
3:N:96:GLN:O	3:N:97:TYR:CB	2.65	0.45
1:A:440:ASN:ND2	1:A:441:LEU:HG	2.32	0.44
1:A:676:THR:HB	1:A:693:ILE:HG21	1.98	0.44
1:B:350:VAL:HG11	1:B:402:ILE:HG23	1.99	0.44
1:B:437:ASN:OD1	1:B:438:SER:N	2.51	0.44
2:J:4:LEU:HD23	2:J:4:LEU:HA	1.78	0.44
1:A:134:GLN:HB3	1:A:162:SER:HB2	2.00	0.44
1:C:1141:LEU:O	1:C:1145:LEU:HD12	2.16	0.44
2:H:29:PHE:O	2:H:31:SER:N	2.49	0.44
2:H:136:SER:HB3	2:H:138:LYS:HG2	1.98	0.44
3:K:102:LEU:HD12	3:K:103:THR:CA	2.47	0.44
2:J:76:ILE:O	2:J:77:SER:CB	2.64	0.44
2:J:190:VAL:HG11	3:N:141:LEU:HD22	1.99	0.44
3:N:95:GLN:HG3	3:N:96:GLN:N	2.23	0.44
3:N:110:VAL:CG2	3:N:177:SER:HB2	2.40	0.44
1:A:521:PRO:O	1:A:522:ALA:CB	2.66	0.44
1:B:453:TYR:HD1	1:B:453:TYR:H	1.64	0.44
1:B:1045:LYS:NZ	1:C:786:LYS:CE	2.79	0.44
1:C:523:THR:CG2	1:C:524:VAL:N	2.45	0.44
1:A:335:LEU:O	1:A:362:VAL:O	2.36	0.44
1:B:376:THR:CG2	1:B:378:LYS:HG3	2.48	0.44
3:K:147:PRO:HD2	3:K:204:HIS:CE1	2.53	0.44
2:J:101:VAL:C	2:J:102:VAL:HG13	2.42	0.44
1:A:520:ALA:CB	1:A:521:PRO:CD	2.79	0.44
1:C:142:GLY:H	1:C:243:ALA:HA	1.83	0.44
3:N:147:PRO:HD2	3:N:204:HIS:CE1	2.53	0.44
1:B:454:ARG:NH2	1:B:456:PHE:HZ	2.16	0.44
3:K:96:GLN:O	3:K:97:TYR:CB	2.65	0.44
3:N:2:ILE:HG12	3:N:26:SER:HB2	1.98	0.44
3:N:146:TYR:CB	3:N:147:PRO:HD3	2.45	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:140:PHE:CG	1:A:244:LEU:HD11	2.53	0.44
1:C:84:LEU:HD13	1:C:238:PHE:CE1	2.52	0.44
1:C:1081:ILE:HG12	1:C:1095:PHE:CE2	2.53	0.44
2:H:204:ILE:HG23	2:H:219:LYS:HD2	2.00	0.44
3:K:110:VAL:HG13	3:K:146:TYR:HE1	1.70	0.44
1:A:646:ARG:O	1:A:646:ARG:HG3	2.17	0.44
1:B:439:ASN:HB3	1:B:506:GLN:HB2	1.99	0.44
1:C:212:LEU:HD12	1:C:212:LEU:HA	1.77	0.44
1:C:440:ASN:ND2	1:C:441:LEU:HG	2.32	0.44
2:H:163:TRP:HD1	2:H:172:VAL:HG13	1.83	0.44
3:K:146:TYR:CB	3:K:147:PRO:HD3	2.45	0.44
2:J:178:VAL:HG21	3:N:166:GLN:OE1	2.17	0.44
1:A:130:VAL:HG21	1:A:231:ILE:HD12	2.00	0.43
1:A:530:SER:C	1:A:531:THR:HG23	2.43	0.43
1:A:546:LEU:HD11	1:A:565:PHE:CG	2.53	0.43
1:B:461:LEU:HD12	1:B:461:LEU:HA	1.85	0.43
1:C:1040:VAL:O	1:C:1041:ASP:HB2	2.17	0.43
2:J:151:VAL:HG13	2:J:187:LEU:HG	2.01	0.43
3:N:85:GLN:OE1	3:N:87:GLU:OE2	2.35	0.43
1:A:477:SER:N	3:K:30:LEU:HD11	2.32	0.43
1:A:640:SER:OG	1:A:641:ASN:N	2.48	0.43
1:A:959:LEU:HD23	1:A:959:LEU:HA	1.78	0.43
1:A:1104:VAL:HG22	1:A:1115:ILE:HG12	2.00	0.43
1:B:364:ASP:OD1	1:B:364:ASP:N	2.50	0.43
3:K:85:GLN:OE1	3:K:87:GLU:OE2	2.35	0.43
2:J:204:ILE:HG23	2:J:219:LYS:HD2	2.00	0.43
3:N:28:SER:HA	3:N:98:TYR:OH	2.17	0.43
1:C:132:GLU:CD	1:C:165:ASN:HB2	2.43	0.43
3:K:92:TYR:C	3:K:104:PHE:HD2	2.23	0.43
2:J:163:TRP:HD1	2:J:172:VAL:HG13	1.83	0.43
3:N:145:PHE:O	3:N:145:PHE:CD1	2.71	0.43
1:A:612:TYR:HE1	1:A:651:ILE:HD12	1.84	0.43
3:K:30:LEU:CD1	3:K:38:TYR:CE2	2.92	0.43
3:N:95:GLN:CG	3:N:96:GLN:N	2.79	0.43
3:N:110:VAL:HG11	3:N:146:TYR:CE1	2.49	0.43
1:A:933:LYS:HB2	1:A:933:LYS:HE3	1.86	0.43
1:B:121:ASN:O	1:B:121:ASN:ND2	2.50	0.43
1:B:167:THR:HG22	1:B:168:PHE:H	1.82	0.43
1:C:119:ILE:HG13	1:C:128:ILE:HG23	2.01	0.43
1:C:532:ASN:HB2	1:C:533:LEU:H	1.72	0.43
2:H:51:MET:H	2:H:58:THR:HA	1.81	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:180:GLN:OE1	2:H:186:SER:OG	2.31	0.43
2:H:223:LYS:HE3	3:K:125:PRO:CG	2.48	0.43
3:K:2:ILE:O	3:K:96:GLN:NE2	2.51	0.43
3:K:28:SER:HA	3:K:98:TYR:OH	2.17	0.43
3:K:146:TYR:HB2	3:K:147:PRO:CD	2.45	0.43
3:N:112:ILE:CB	3:N:146:TYR:OH	2.67	0.43
1:A:795:LYS:HB3	1:A:797:PHE:CE2	2.54	0.43
1:A:1097:SER:HA	1:A:1101:HIS:O	2.19	0.43
1:B:559:PHE:O	1:B:560:LEU:HD13	2.18	0.43
1:C:486:PHE:CE2	2:J:48:MET:CE	3.02	0.43
2:H:2:VAL:HB	2:H:27:TYR:CE1	2.52	0.43
3:K:97:TYR:C	3:K:99:SER:H	2.26	0.43
2:J:87:ARG:NH1	2:J:90:ASP:OD1	2.52	0.43
3:N:33:SER:C	3:N:35:ASN:N	2.77	0.43
3:N:41:TRP:CG	3:N:79:LEU:HD12	2.53	0.43
3:N:110:VAL:HG13	3:N:146:TYR:HE1	1.70	0.43
1:A:1032:CYS:O	1:A:1051:SER:HB2	2.18	0.43
6:B:1410:NAG:O4	6:B:1411:NAG:O5	2.28	0.43
1:C:521:PRO:O	1:C:522:ALA:CB	2.66	0.43
2:H:87:ARG:NH1	2:H:90:ASP:OD1	2.52	0.43
3:K:41:TRP:CG	3:K:79:LEU:HD12	2.53	0.43
2:J:164:ASN:OD1	2:J:204:ILE:HG13	2.19	0.43
2:J:223:LYS:HE2	3:N:125:PRO:CD	2.49	0.43
3:N:2:ILE:O	3:N:96:GLN:NE2	2.51	0.43
3:N:148:ARG:NH2	3:N:169:VAL:HB	2.34	0.43
4:V:1:NAG:H61	4:V:2:NAG:N2	2.33	0.43
1:A:131:CYS:HB3	1:A:164:ASN:O	2.19	0.43
1:A:294:ASP:OD1	1:A:294:ASP:N	2.50	0.43
1:C:530:SER:C	1:C:531:THR:HG23	2.42	0.43
2:H:151:VAL:HG13	2:H:187:LEU:HG	2.01	0.43
2:H:164:ASN:OD1	2:H:204:ILE:HG13	2.19	0.43
3:K:112:ILE:CB	3:K:146:TYR:OH	2.67	0.43
1:B:462:LYS:H	1:B:462:LYS:HD3	1.84	0.43
1:C:784:GLN:HE21	1:C:784:GLN:HB3	1.63	0.43
2:H:11:VAL:HG23	2:H:155:PHE:CZ	2.23	0.43
2:H:175:PHE:HE2	3:K:180:SER:O	2.01	0.43
2:J:124:SER:OG	2:J:125:THR:N	2.52	0.43
2:J:187:LEU:HD12	2:J:188:SER:N	2.34	0.43
4:E:1:NAG:H61	4:E:2:NAG:N2	2.33	0.43
1:A:27:ALA:HB3	1:A:64:TRP:HB3	2.01	0.43
1:A:869:MET:HE1	1:C:697:MET:HG3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:91:TYR:OH	1:B:191:GLU:HG2	2.18	0.43
1:B:600:PRO:HB3	1:B:674:TYR:HB2	2.00	0.43
1:C:556:ASN:HD22	1:C:556:ASN:HA	1.53	0.43
1:C:995:ARG:HE	1:C:995:ARG:HB3	1.66	0.43
3:K:36:LYS:CE	3:K:56:TRP:CZ3	3.02	0.43
1:A:127:VAL:HG21	6:A:1402:NAG:H5	2.01	0.42
1:B:472:ILE:CD1	1:B:474:GLN:HB3	2.47	0.42
1:C:722:VAL:HA	1:C:1064:HIS:O	2.19	0.42
1:C:912:THR:OG1	1:C:914:ASN:ND2	2.51	0.42
2:H:38:ARG:CG	2:H:47:TRP:CE3	2.87	0.42
3:K:15:LEU:O	3:N:22:ASN:CG	2.62	0.42
3:N:6:GLN:OE1	3:N:9:ASP:OD1	2.37	0.42
3:N:97:TYR:C	3:N:99:SER:H	2.26	0.42
1:A:141:LEU:O	1:A:243:ALA:HA	2.18	0.42
3:K:145:PHE:O	3:K:145:PHE:CD1	2.71	0.42
3:K:148:ARG:NH2	3:K:169:VAL:HB	2.34	0.42
3:N:148:ARG:C	3:N:150:ALA:H	2.23	0.42
1:A:113:LYS:O	1:A:113:LYS:NZ	2.31	0.42
1:A:486:PHE:CE2	2:H:48:MET:CE	3.02	0.42
1:B:29:THR:OG1	1:B:30:ASN:N	2.50	0.42
2:H:124:SER:OG	2:H:125:THR:N	2.52	0.42
3:K:147:PRO:HB2	3:K:204:HIS:NE2	2.35	0.42
3:K:171:GLU:O	3:K:172:GLN:C	2.63	0.42
2:J:156:PRO:HD2	2:J:209:HIS:CE1	2.54	0.42
3:N:99:SER:HB3	3:N:100:THR:H	1.71	0.42
3:N:147:PRO:HB2	3:N:204:HIS:NE2	2.35	0.42
1:A:112:SER:O	1:A:113:LYS:HB3	2.20	0.42
2:H:156:PRO:HD2	2:H:209:HIS:CE1	2.54	0.42
1:B:567:ARG:HG2	1:C:42:VAL:HG11	2.02	0.42
1:C:529:LYS:CG	1:C:530:SER:N	2.70	0.42
1:C:792:PRO:O	1:C:795:LYS:NZ	2.52	0.42
2:J:50:TRP:CZ3	2:J:60:TYR:HD1	2.24	0.42
3:N:102:LEU:HD12	3:N:103:THR:CA	2.47	0.42
3:N:171:GLU:O	3:N:172:GLN:C	2.63	0.42
1:A:569:ILE:O	1:A:570:ALA:HB3	2.19	0.42
3:K:6:GLN:OE1	3:K:9:ASP:OD1	2.37	0.42
3:N:36:LYS:CE	3:N:56:TRP:CZ3	3.02	0.42
1:A:393:THR:H	1:A:517:LEU:HD22	1.85	0.42
1:C:1027:THR:HG22	1:C:1042:PHE:HZ	1.83	0.42
2:H:187:LEU:HD12	2:H:188:SER:N	2.34	0.42
2:J:30:THR:HG23	2:J:53:PRO:CA	2.48	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:138:LYS:HZ3	3:N:215:PHE:CB	2.33	0.42
5:d:1:NAG:H62	5:d:2:NAG:H81	2.02	0.42
1:A:99:ASN:O	1:A:102:ARG:NE	2.35	0.42
1:B:187:LYS:HZ3	1:B:213:VAL:HG13	1.84	0.42
1:C:736:VAL:HG23	1:C:858:LEU:HD23	2.02	0.42
1:C:856:ASN:O	1:C:856:ASN:ND2	2.48	0.42
2:H:37:VAL:HG22	2:H:95:TYR:HB2	2.02	0.42
2:J:2:VAL:HB	2:J:27:TYR:CE1	2.52	0.42
2:J:180:GLN:OE1	2:J:186:SER:OG	2.31	0.42
1:A:973:ILE:HG23	1:A:992:GLN:NE2	2.35	0.42
1:B:495:TYR:CZ	1:B:507:PRO:HG3	2.55	0.42
1:C:233:ILE:HG12	1:C:234:ASN:N	2.28	0.42
1:C:393:THR:H	1:C:517:LEU:HD22	1.85	0.42
1:A:42:VAL:HG22	1:C:565:PHE:CZ	2.55	0.42
1:A:493:GLN:NE2	2:H:31:SER:HB2	2.29	0.42
1:C:740:MET:HE2	1:C:740:MET:HB2	1.91	0.42
1:C:793:PRO:HG2	1:C:794:ILE:HD12	2.00	0.42
2:J:198:LEU:HB3	2:J:222:PRO:HG3	2.02	0.42
1:B:379:CYS:HA	1:B:432:CYS:HA	2.02	0.41
3:K:44:GLN:NE2	3:K:48:GLN:O	2.38	0.41
3:N:82:SER:O	3:N:83:SER:C	2.63	0.41
1:B:110:LEU:HD12	1:B:110:LEU:HA	1.71	0.41
1:B:341:VAL:HG23	1:B:342:PHE:HD1	1.84	0.41
1:C:122:ASN:ND2	1:C:125:ASN:HB2	2.35	0.41
2:H:131:PHE:CE1	3:K:129:GLU:HB3	2.55	0.41
2:H:175:PHE:CE2	3:K:180:SER:C	2.97	0.41
4:W:1:NAG:H83	4:W:1:NAG:H3	2.02	0.41
1:A:758:SER:O	1:A:762:GLN:HG3	2.19	0.41
2:H:208:ASN:HB3	2:H:215:LYS:CE	2.49	0.41
1:B:81:ASN:O	1:B:239:GLN:NE2	2.54	0.41
1:B:376:THR:O	1:B:434:ILE:HA	2.20	0.41
1:C:117:LEU:HD22	1:C:231:ILE:HD12	2.03	0.41
1:A:886:TRP:HH2	1:A:904:TYR:CD2	2.35	0.41
2:H:198:LEU:HB3	2:H:222:PRO:HG3	2.02	0.41
3:K:37:ASN:HB3	3:K:38:TYR:H	1.47	0.41
3:N:15:LEU:H	3:N:15:LEU:HG	1.71	0.41
3:N:44:GLN:NE2	3:N:48:GLN:O	2.38	0.41
1:A:393:THR:O	1:A:523:THR:CG2	2.58	0.41
1:B:142:GLY:O	1:B:156:GLU:HG3	2.21	0.41
1:B:187:LYS:HG2	1:B:212:LEU:O	2.21	0.41
1:B:541:PHE:O	1:B:547:THR:HA	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:520:ALA:CB	1:C:521:PRO:CD	2.79	0.41
2:H:209:HIS:HD2	2:H:211:PRO:HD2	1.86	0.41
3:K:15:LEU:HD13	3:N:24:LYS:NZ	2.35	0.41
2:J:45:LEU:O	2:J:46:GLU:CG	2.49	0.41
1:A:280:ASN:OD1	1:A:281:GLU:N	2.51	0.41
1:A:295:PRO:HB2	1:A:608:VAL:HG11	2.02	0.41
1:C:480:CYS:C	1:C:482:GLY:N	2.78	0.41
2:H:60:TYR:CD1	2:H:68:VAL:HG21	2.56	0.41
5:c:1:NAG:H62	5:c:2:NAG:H81	2.02	0.41
1:A:226:LEU:HB3	1:A:227:VAL:HG23	2.03	0.41
1:C:111:ASP:CG	1:C:112:SER:H	2.28	0.41
1:C:188:ASN:HB2	1:C:190:ARG:HH11	1.86	0.41
3:N:96:GLN:HB2	3:N:101:PRO:O	2.21	0.41
3:N:147:PRO:HD2	3:N:204:HIS:HE1	1.85	0.41
1:A:193:VAL:HG23	1:A:223:LEU:CD2	2.51	0.41
1:A:335:LEU:HA	1:A:362:VAL:CB	2.50	0.41
1:B:403:ARG:NE	1:B:505:TYR:HD1	2.19	0.41
1:C:474:GLN:NE2	1:C:479:PRO:HA	2.36	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:K:115:THR:OG1	3:K:116:VAL:N	2.53	0.41
2:J:60:TYR:CD1	2:J:68:VAL:HG21	2.56	0.41
3:N:37:ASN:CB	3:N:56:TRP:O	2.66	0.41
1:B:122:ASN:OD1	1:B:122:ASN:N	2.49	0.41
1:C:347:PHE:CD1	1:C:509:ARG:HD3	2.56	0.41
1:C:854:LYS:HE2	1:C:854:LYS:HB3	1.88	0.41
3:K:82:SER:O	3:K:83:SER:C	2.63	0.41
3:K:148:ARG:O	3:K:150:ALA:N	2.42	0.41
2:J:68:VAL:HG12	2:J:81:MET:HE1	2.03	0.41
2:J:194:PRO:O	2:J:197:SER:OG	2.37	0.41
3:N:93:TYR:CD1	3:N:104:PHE:O	2.74	0.41
1:A:309:GLU:H	1:A:309:GLU:HG2	1.71	0.40
1:A:1051:SER:OG	1:A:1064:HIS:ND1	2.46	0.40
1:C:821:LEU:HD22	1:C:939:SER:HB3	2.03	0.40
2:H:148:GLY:HA2	2:H:163:TRP:CZ2	2.56	0.40
2:J:138:LYS:HZ3	3:N:215:PHE:HB3	1.85	0.40
1:A:166:CYS:HB3	1:A:169:GLU:OE1	2.21	0.40
1:B:135:PHE:HE1	1:B:159:VAL:HG12	1.86	0.40
1:B:416:GLY:O	1:B:420:ASP:N	2.45	0.40
1:B:1040:VAL:O	1:B:1041:ASP:HB2	2.21	0.40
1:C:328:ARG:HD2	1:C:328:ARG:HA	1.76	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:770:ILE:O	1:C:774:GLN:HG2	2.21	0.40
1:C:870:ILE:O	1:C:874:THR:HG23	2.21	0.40
2:H:207:VAL:O	2:H:215:LYS:HA	2.22	0.40
3:K:15:LEU:O	3:N:22:ASN:HB3	2.22	0.40
3:K:84:LEU:C	3:K:84:LEU:CD2	2.88	0.40
3:K:96:GLN:HB2	3:K:101:PRO:O	2.21	0.40
1:A:200:TYR:CE1	1:A:230:PRO:HB3	2.56	0.40
1:A:542:ASN:HA	1:A:546:LEU:O	2.21	0.40
1:B:646:ARG:O	1:B:646:ARG:HG3	2.22	0.40
1:C:615:VAL:HG12	1:C:616:ASN:O	2.20	0.40
3:K:6:GLN:HG2	3:K:105:GLY:O	2.21	0.40
2:J:37:VAL:HG22	2:J:95:TYR:HB2	2.02	0.40
3:N:6:GLN:HG2	3:N:105:GLY:O	2.21	0.40
3:N:30:LEU:CD1	3:N:38:TYR:CE2	2.92	0.40
1:A:474:GLN:NE2	1:A:479:PRO:HA	2.36	0.40
1:A:480:CYS:C	1:A:482:GLY:N	2.78	0.40
1:A:538:CYS:HB2	1:A:590:CYS:HB3	1.79	0.40
1:A:1105:THR:HG21	1:A:1110:TYR:CD1	2.57	0.40
1:B:132:GLU:HG3	1:B:165:ASN:HB2	2.02	0.40
1:B:776:LYS:HE3	1:B:776:LYS:HB3	1.65	0.40
1:C:984:LEU:HD23	1:C:984:LEU:HA	1.91	0.40
3:K:99:SER:HB3	3:K:100:THR:H	1.71	0.40
3:N:110:VAL:HG21	3:N:177:SER:HG	1.80	0.40
1:A:127:VAL:HG22	1:A:171:VAL:HG13	2.04	0.40
1:C:129:LYS:NZ	1:C:169:GLU:HG2	2.36	0.40
1:C:342:PHE:CB	4:V:1:NAG:H82	2.52	0.40
1:C:907:ASN:HD22	1:C:907:ASN:HA	1.64	0.40
1:C:1132:ILE:H	1:C:1132:ILE:HG13	1.24	0.40
2:H:104:PRO:CB	3:K:36:LYS:HZ1	2.35	0.40
2:H:139:SER:OG	3:K:122:PHE:HB3	2.20	0.40
2:H:223:LYS:HE2	3:K:125:PRO:CD	2.52	0.40
3:K:15:LEU:O	3:N:22:ASN:CB	2.69	0.40
2:J:209:HIS:HD2	2:J:211:PRO:HD2	1.86	0.40
3:N:6:GLN:CG	3:N:105:GLY:O	2.69	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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	988/1283 (77%)	891 (90%)	90 (9%)	7 (1%)	18	49
1	B	958/1283 (75%)	868 (91%)	89 (9%)	1 (0%)	48	75
1	C	986/1283 (77%)	885 (90%)	86 (9%)	15 (2%)	8	32
2	H	222/452 (49%)	175 (79%)	31 (14%)	16 (7%)	1	6
2	J	222/452 (49%)	175 (79%)	31 (14%)	16 (7%)	1	6
3	K	218/220 (99%)	162 (74%)	33 (15%)	23 (11%)	0	2
3	N	218/220 (99%)	162 (74%)	33 (15%)	23 (11%)	0	2
All	All	3812/5193 (73%)	3318 (87%)	393 (10%)	101 (3%)	6	23

All (101) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	518	LEU
1	C	518	LEU
1	C	814	LYS
2	H	55	SER
2	H	103	VAL
3	K	12	ALA
3	K	35	ASN
3	K	37	ASN
3	K	38	TYR
3	K	99	SER
3	K	100	THR
3	K	112	ILE
3	K	144	ASN
2	J	55	SER
2	J	103	VAL
3	N	12	ALA
3	N	35	ASN
3	N	37	ASN

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Mol	Chain	Res	Type
3	N	38	TYR
3	N	99	SER
3	N	100	THR
3	N	112	ILE
3	N	144	ASN
1	A	335	LEU
1	C	532	ASN
1	C	591	SER
1	C	810	SER
2	H	76	ILE
2	H	104	PRO
3	K	31	TYR
3	K	34	ASN
3	K	39	LEU
3	K	97	TYR
3	K	98	TYR
2	J	76	ILE
2	J	104	PRO
3	N	31	TYR
3	N	34	ASN
3	N	39	LEU
3	N	97	TYR
3	N	98	TYR
1	A	522	ALA
1	C	331	ASN
1	C	522	ALA
1	C	529	LYS
2	H	30	THR
2	H	31	SER
2	H	77	SER
2	H	121	SER
3	K	17	GLU
3	K	103	THR
3	K	114	ARG
3	K	145	PHE
3	K	149	GLU
2	J	30	THR
2	J	31	SER
2	J	77	SER
2	J	121	SER
3	N	17	GLU
3	N	103	THR

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Mol	Chain	Res	Type
3	N	114	ARG
3	N	145	PHE
3	N	149	GLU
1	A	349	SER
1	A	520	ALA
1	C	336	CYS
1	C	349	SER
1	C	520	ALA
1	C	813	SER
2	H	29	PHE
2	H	124	SER
3	K	30	LEU
3	K	101	PRO
3	K	115	THR
2	J	29	PHE
2	J	124	SER
3	N	30	LEU
3	N	101	PRO
3	N	115	THR
1	A	337	PRO
1	B	88	ASP
2	H	47	TRP
2	H	56	GLY
2	H	111	PRO
3	K	109	LYS
2	J	47	TRP
2	J	56	GLY
2	J	111	PRO
3	N	109	LYS
1	A	336	CYS
1	C	811	LYS
1	C	812	PRO
2	H	53	PRO
2	H	110	ASP
2	J	53	PRO
2	J	110	ASP
3	K	110	VAL
3	N	110	VAL
1	C	337	PRO
2	H	113	GLY
2	J	113	GLY

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	881/1122 (78%)	770 (87%)	111 (13%)	4	18
1	B	862/1122 (77%)	756 (88%)	106 (12%)	4	19
1	C	879/1122 (78%)	776 (88%)	103 (12%)	5	20
2	H	188/399 (47%)	164 (87%)	24 (13%)	4	18
2	J	188/399 (47%)	164 (87%)	24 (13%)	4	18
3	K	191/194 (98%)	172 (90%)	19 (10%)	7	27
3	N	191/194 (98%)	172 (90%)	19 (10%)	7	27
All	All	3380/4552 (74%)	2974 (88%)	406 (12%)	7	20

All (406) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	45	SER
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	141	LEU
1	A	143	VAL
1	A	158	ARG
1	A	164	ASN
1	A	169	GLU
1	A	171	VAL
1	A	195	LYS
1	A	205	SER
1	A	208	THR
1	A	221	SER
1	A	231	ILE
1	A	282	ASN

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Mol	Chain	Res	Type
1	A	289	VAL
1	A	296	LEU
1	A	301	CYS
1	A	308	VAL
1	A	314	GLN
1	A	315	THR
1	A	318	PHE
1	A	324	GLU
1	A	325	SER
1	A	333	THR
1	A	335	LEU
1	A	375	SER
1	A	382	VAL
1	A	383	SER
1	A	389	ASP
1	A	390	LEU
1	A	421	TYR
1	A	430	THR
1	A	438	SER
1	A	459	SER
1	A	469	SER
1	A	472	ILE
1	A	478	THR
1	A	486	PHE
1	A	500	THR
1	A	514	SER
1	A	517	LEU
1	A	518	LEU
1	A	525	CYS
1	A	529	LYS
1	A	530	SER
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	576	VAL
1	A	583	GLU
1	A	585	LEU
1	A	588	THR
1	A	599	THR

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Mol	Chain	Res	Type
1	A	602	THR
1	A	608	VAL
1	A	673	SER
1	A	692	ILE
1	A	698	SER
1	A	702	GLU
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	868	GLU
1	A	878	LEU
1	A	883	THR
1	A	902	MET
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

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Mol	Chain	Res	Type
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	45	SER
1	B	46	SER
1	B	48	LEU
1	B	50	SER
1	B	51	THR
1	B	52	GLN
1	B	60	SER
1	B	62	VAL
1	B	66	HIS
1	B	87	ASN
1	B	95	THR
1	B	99	ASN
1	B	108	THR
1	B	109	THR
1	B	112	SER
1	B	116	SER
1	B	120	VAL
1	B	122	ASN
1	B	127	VAL
1	B	158	ARG
1	B	164	ASN
1	B	205	SER
1	B	208	THR
1	B	214	ARG
1	B	240	THR
1	B	277	LEU
1	B	278	LYS
1	B	284	THR
1	B	307	THR
1	B	324	GLU
1	B	327	VAL
1	B	345	THR
1	B	349	SER
1	B	359	SER
1	B	371	SER

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Mol	Chain	Res	Type
1	B	373	SER
1	B	382	VAL
1	B	385	THR
1	B	401	VAL
1	B	402	ILE
1	B	409	GLN
1	B	417	LYS
1	B	418	ILE
1	B	430	THR
1	B	441	LEU
1	B	453	TYR
1	B	462	LYS
1	B	464	PHE
1	B	465	GLU
1	B	472	ILE
1	B	473	TYR
1	B	494	SER
1	B	506	GLN
1	B	514	SER
1	B	524	VAL
1	B	525	CYS
1	B	528	LYS
1	B	531	THR
1	B	532	ASN
1	B	533	LEU
1	B	534	VAL
1	B	555	SER
1	B	567	ARG
1	B	569	ILE
1	B	576	VAL
1	B	582	LEU
1	B	597	VAL
1	B	606	ASN
1	B	607	GLN
1	B	608	VAL
1	B	615	VAL
1	B	617	CYS
1	B	619	GLU
1	B	640	SER
1	B	642	VAL
1	B	676	THR
1	B	710	ASN

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Mol	Chain	Res	Type
1	B	729	VAL
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	29	THR
1	C	50	SER
1	C	51	THR
1	C	60	SER
1	C	63	THR
1	C	84	LEU
1	C	86	PHE
1	C	90	VAL
1	C	114	THR
1	C	117	LEU
1	C	120	VAL
1	C	125	ASN
1	C	143	VAL

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Mol	Chain	Res	Type
1	C	155	SER
1	C	172	SER
1	C	195	LYS
1	C	197	ILE
1	C	208	THR
1	C	212	LEU
1	C	215	ASP
1	C	216	LEU
1	C	221	SER
1	C	224	GLU
1	C	233	ILE
1	C	234	ASN
1	C	271	GLN
1	C	277	LEU
1	C	301	CYS
1	C	305	SER
1	C	308	VAL
1	C	314	GLN
1	C	318	PHE
1	C	332	ILE
1	C	335	LEU
1	C	375	SER
1	C	382	VAL
1	C	383	SER
1	C	389	ASP
1	C	390	LEU
1	C	421	TYR
1	C	430	THR
1	C	438	SER
1	C	459	SER
1	C	469	SER
1	C	472	ILE
1	C	478	THR
1	C	486	PHE
1	C	500	THR
1	C	514	SER
1	C	517	LEU
1	C	518	LEU
1	C	525	CYS
1	C	528	LYS
1	C	529	LYS
1	C	532	ASN

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Mol	Chain	Res	Type
1	C	533	LEU
1	C	546	LEU
1	C	551	VAL
1	C	555	SER
1	C	556	ASN
1	C	573	THR
1	C	584	ILE
1	C	590	CYS
1	C	591	SER
1	C	602	THR
1	C	620	VAL
1	C	658	ASN
1	C	675	GLN
1	C	693	ILE
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	859	THR
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

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Mol	Chain	Res	Type
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	2	VAL
2	H	30	THR
2	H	33	ASP
2	H	47	TRP
2	H	48	MET
2	H	50	TRP
2	H	51	MET
2	H	69	THR
2	H	76	ILE
2	H	78	THR
2	H	103	VAL
2	H	107	LYS
2	H	109	PHE
2	H	122	SER
2	H	126	LYS
2	H	147	LEU
2	H	151	VAL
2	H	165	SER
2	H	169	THR
2	H	173	HIS
2	H	188	SER
2	H	204	ILE
2	H	206	ASN
2	H	212	SER
3	K	6	GLN
3	K	15	LEU
3	K	17	GLU
3	K	31	TYR
3	K	37	ASN
3	K	38	TYR
3	K	39	LEU
3	K	59	THR
3	K	97	TYR
3	K	99	SER
3	K	100	THR
3	K	103	THR

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Mol	Chain	Res	Type
3	K	111	GLU
3	K	120	SER
3	K	137	SER
3	K	165	SER
3	K	177	SER
3	K	182	SER
3	K	208	SER
2	J	2	VAL
2	J	30	THR
2	J	33	ASP
2	J	47	TRP
2	J	48	MET
2	J	50	TRP
2	J	51	MET
2	J	69	THR
2	J	76	ILE
2	J	78	THR
2	J	103	VAL
2	J	107	LYS
2	J	109	PHE
2	J	122	SER
2	J	126	LYS
2	J	147	LEU
2	J	151	VAL
2	J	165	SER
2	J	169	THR
2	J	173	HIS
2	J	188	SER
2	J	204	ILE
2	J	206	ASN
2	J	212	SER
3	N	6	GLN
3	N	15	LEU
3	N	17	GLU
3	N	31	TYR
3	N	37	ASN
3	N	38	TYR
3	N	39	LEU
3	N	59	THR
3	N	97	TYR
3	N	99	SER
3	N	100	THR

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Mol	Chain	Res	Type
3	N	103	THR
3	N	111	GLU
3	N	120	SER
3	N	137	SER
3	N	165	SER
3	N	177	SER
3	N	182	SER
3	N	208	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (111) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	134	GLN
1	A	137	ASN
1	A	188	ASN
1	A	394	ASN
1	A	422	ASN
1	A	440	ASN
1	A	450	ASN
1	A	481	ASN
1	A	493	GLN
1	A	498	GLN
1	A	556	ASN
1	A	644	GLN
1	A	658	ASN
1	A	675	GLN
1	A	690	GLN
1	A	703	ASN
1	A	755	GLN
1	A	762	GLN
1	A	787	GLN
1	A	824	ASN
1	A	901	GLN
1	A	914	ASN
1	A	926	GLN
1	A	949	GLN
1	A	969	ASN
1	A	992	GLN
1	A	1010	GLN
1	A	1054	GLN
1	A	1125	ASN
1	B	52	GLN

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Mol	Chain	Res	Type
1	B	164	ASN
1	B	188	ASN
1	B	196	ASN
1	B	245	HIS
1	B	334	ASN
1	B	422	ASN
1	B	460	ASN
1	B	487	ASN
1	B	506	GLN
1	B	532	ASN
1	B	540	ASN
1	B	563	GLN
1	B	606	ASN
1	B	607	GLN
1	B	613	GLN
1	B	675	GLN
1	B	690	GLN
1	B	703	ASN
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	30	ASN
1	C	49	HIS
1	C	66	HIS
1	C	188	ASN
1	C	207	HIS
1	C	271	GLN
1	C	314	GLN
1	C	321	GLN
1	C	394	ASN
1	C	422	ASN
1	C	440	ASN

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Mol	Chain	Res	Type
1	C	450	ASN
1	C	481	ASN
1	C	493	GLN
1	C	498	GLN
1	C	542	ASN
1	C	556	ASN
1	C	606	ASN
1	C	641	ASN
1	C	675	GLN
1	C	690	GLN
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	992	GLN
1	C	1010	GLN
1	C	1011	GLN
1	C	1071	GLN
1	C	1101	HIS
1	C	1106	GLN
1	C	1125	ASN
2	H	3	GLN
2	H	6	GLN
2	H	213	ASN
3	K	43	GLN
3	K	96	GLN
3	K	143	ASN
2	J	3	GLN
2	J	6	GLN
2	J	213	ASN
3	N	43	GLN
3	N	96	GLN
3	N	143	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 ⓘ

48 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	1,4	14,14,15	0.49	0	17,19,21	0.52	0
4	NAG	D	2	4	14,14,15	0.26	0	17,19,21	0.61	0
4	NAG	E	1	1,4	14,14,15	0.53	0	17,19,21	0.59	0
4	NAG	E	2	4	14,14,15	0.27	0	17,19,21	0.46	0
4	NAG	F	1	1,4	14,14,15	0.32	0	17,19,21	0.65	1 (5%)
4	NAG	F	2	4	14,14,15	0.53	0	17,19,21	0.48	0
4	NAG	G	1	1,4	14,14,15	0.37	0	17,19,21	0.74	0
4	NAG	G	2	4	14,14,15	0.32	0	17,19,21	1.39	2 (11%)
4	NAG	I	1	1,4	14,14,15	0.65	1 (7%)	17,19,21	0.71	0
4	NAG	I	2	4	14,14,15	0.42	0	17,19,21	1.48	3 (17%)
4	NAG	L	1	1,4	14,14,15	0.67	1 (7%)	17,19,21	0.68	0
4	NAG	L	2	4	14,14,15	0.30	0	17,19,21	0.68	0
4	NAG	M	1	1,4	14,14,15	0.25	0	17,19,21	0.70	1 (5%)
4	NAG	M	2	4	14,14,15	0.14	0	17,19,21	0.48	0
4	NAG	O	1	1,4	14,14,15	0.31	0	17,19,21	0.43	0
4	NAG	O	2	4	14,14,15	0.17	0	17,19,21	0.49	0
4	NAG	P	1	1,4	14,14,15	0.30	0	17,19,21	0.41	0
4	NAG	P	2	4	14,14,15	0.40	0	17,19,21	0.39	0
4	NAG	Q	1	1,4	14,14,15	0.37	0	17,19,21	1.14	1 (5%)
4	NAG	Q	2	4	14,14,15	0.26	0	17,19,21	0.47	0
4	NAG	R	1	1,4	14,14,15	0.28	0	17,19,21	0.70	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	NAG	R	2	4	14,14,15	0.20	0	17,19,21	0.42	0
4	NAG	S	1	1,4	14,14,15	0.72	1 (7%)	17,19,21	0.91	1 (5%)
4	NAG	S	2	4	14,14,15	0.35	0	17,19,21	0.72	1 (5%)
4	NAG	T	1	1,4	14,14,15	0.25	0	17,19,21	0.46	0
4	NAG	T	2	4	14,14,15	0.30	0	17,19,21	0.41	0
4	NAG	U	1	1,4	14,14,15	0.30	0	17,19,21	0.57	0
4	NAG	U	2	4	14,14,15	0.31	0	17,19,21	0.55	0
4	NAG	V	1	1,4	14,14,15	0.53	0	17,19,21	0.58	0
4	NAG	V	2	4	14,14,15	0.28	0	17,19,21	0.46	0
4	NAG	W	1	1,4	14,14,15	0.23	0	17,19,21	1.43	2 (11%)
4	NAG	W	2	4	14,14,15	0.20	0	17,19,21	0.53	0
4	NAG	X	1	1,4	14,14,15	0.51	0	17,19,21	0.72	1 (5%)
4	NAG	X	2	4	14,14,15	0.40	0	17,19,21	0.47	0
4	NAG	Y	1	1,4	14,14,15	0.36	0	17,19,21	0.42	0
4	NAG	Y	2	4	14,14,15	0.18	0	17,19,21	0.76	0
4	NAG	Z	1	1,4	14,14,15	0.37	0	17,19,21	0.49	0
4	NAG	Z	2	4	14,14,15	0.61	1 (7%)	17,19,21	1.39	2 (11%)
4	NAG	a	1	1,4	14,14,15	0.64	1 (7%)	17,19,21	0.45	0
4	NAG	a	2	4	14,14,15	0.32	0	17,19,21	1.44	2 (11%)
4	NAG	b	1	1,4	14,14,15	0.40	0	17,19,21	0.45	0
4	NAG	b	2	4	14,14,15	0.24	0	17,19,21	0.50	0
5	NAG	c	1	5,2	14,14,15	0.42	0	17,19,21	1.16	2 (11%)
5	NAG	c	2	5	14,14,15	0.30	0	17,19,21	0.97	1 (5%)
5	NAG	c	3	5	14,14,15	0.29	0	17,19,21	0.57	0
5	NAG	d	1	5,2	14,14,15	0.43	0	17,19,21	1.17	2 (11%)
5	NAG	d	2	5	14,14,15	0.30	0	17,19,21	0.98	1 (5%)
5	NAG	d	3	5	14,14,15	0.29	0	17,19,21	0.55	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	1,4	-	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	1,4	-	0/6/23/26	0/1/1/1
4	NAG	E	2	4	-	3/6/23/26	0/1/1/1
4	NAG	F	1	1,4	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	F	2	4	-	2/6/23/26	0/1/1/1
4	NAG	G	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	G	2	4	-	4/6/23/26	0/1/1/1
4	NAG	I	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	I	2	4	-	6/6/23/26	0/1/1/1
4	NAG	L	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	L	2	4	-	4/6/23/26	0/1/1/1
4	NAG	M	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	M	2	4	-	0/6/23/26	0/1/1/1
4	NAG	O	1	1,4	-	4/6/23/26	0/1/1/1
4	NAG	O	2	4	-	2/6/23/26	0/1/1/1
4	NAG	P	1	1,4	-	0/6/23/26	0/1/1/1
4	NAG	P	2	4	-	1/6/23/26	0/1/1/1
4	NAG	Q	1	1,4	-	1/6/23/26	0/1/1/1
4	NAG	Q	2	4	-	0/6/23/26	0/1/1/1
4	NAG	R	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	R	2	4	-	3/6/23/26	0/1/1/1
4	NAG	S	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	S	2	4	-	3/6/23/26	0/1/1/1
4	NAG	T	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	T	2	4	-	2/6/23/26	0/1/1/1
4	NAG	U	1	1,4	-	3/6/23/26	0/1/1/1
4	NAG	U	2	4	-	4/6/23/26	0/1/1/1
4	NAG	V	1	1,4	-	0/6/23/26	0/1/1/1
4	NAG	V	2	4	-	3/6/23/26	0/1/1/1
4	NAG	W	1	1,4	-	6/6/23/26	0/1/1/1
4	NAG	W	2	4	-	2/6/23/26	0/1/1/1
4	NAG	X	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	X	2	4	-	2/6/23/26	0/1/1/1
4	NAG	Y	1	1,4	-	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	1,4	-	2/6/23/26	0/1/1/1
4	NAG	Z	2	4	-	6/6/23/26	0/1/1/1
4	NAG	a	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	a	2	4	-	5/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	b	1	1,4	-	0/6/23/26	0/1/1/1
4	NAG	b	2	4	-	2/6/23/26	0/1/1/1
5	NAG	c	1	5,2	-	0/6/23/26	0/1/1/1
5	NAG	c	2	5	-	3/6/23/26	0/1/1/1
5	NAG	c	3	5	-	2/6/23/26	0/1/1/1
5	NAG	d	1	5,2	-	0/6/23/26	0/1/1/1
5	NAG	d	2	5	-	3/6/23/26	0/1/1/1
5	NAG	d	3	5	-	2/6/23/26	0/1/1/1

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	S	1	NAG	O5-C1	-2.63	1.39	1.43
4	L	1	NAG	O5-C1	-2.45	1.39	1.43
4	I	1	NAG	O5-C1	-2.20	1.40	1.43
4	a	1	NAG	O5-C1	-2.07	1.40	1.43
4	Z	2	NAG	C1-C2	2.04	1.55	1.52

All (24) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	W	1	NAG	C2-N2-C7	4.94	129.52	122.90
4	a	2	NAG	C2-N2-C7	4.63	129.10	122.90
4	I	2	NAG	C2-N2-C7	4.62	129.09	122.90
4	Z	2	NAG	C2-N2-C7	4.60	129.07	122.90
4	G	2	NAG	C2-N2-C7	4.59	129.06	122.90
4	Q	1	NAG	C1-O5-C5	3.25	116.55	112.19
4	I	2	NAG	C1-C2-N2	2.65	114.60	110.43
4	G	2	NAG	C1-C2-N2	2.46	114.31	110.43
4	a	2	NAG	C1-C2-N2	2.45	114.30	110.43
5	d	2	NAG	O5-C1-C2	-2.43	107.53	111.29
5	c	1	NAG	C8-C7-N2	2.41	120.11	116.12
5	d	1	NAG	C8-C7-N2	2.40	120.09	116.12
5	c	2	NAG	O5-C1-C2	-2.39	107.60	111.29
4	S	1	NAG	O4-C4-C3	-2.35	104.85	110.38
4	X	1	NAG	C1-O5-C5	2.31	115.28	112.19
4	R	1	NAG	C1-O5-C5	2.25	115.20	112.19
4	M	1	NAG	C1-O5-C5	2.17	115.10	112.19
4	I	2	NAG	C1-O5-C5	2.14	115.06	112.19
4	W	1	NAG	C1-C2-N2	2.14	113.80	110.43
5	d	1	NAG	C2-N2-C7	-2.08	120.11	122.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	S	2	NAG	C1-O5-C5	2.07	114.96	112.19
4	F	1	NAG	C1-O5-C5	2.06	114.95	112.19
5	c	1	NAG	C2-N2-C7	-2.05	120.15	122.90
4	Z	2	NAG	C1-C2-N2	2.02	113.61	110.43

There are no chirality outliers.

All (105) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	c	2	NAG	C1-C2-N2-C7
5	c	2	NAG	C8-C7-N2-C2
5	c	2	NAG	O7-C7-N2-C2
5	d	2	NAG	C1-C2-N2-C7
5	d	2	NAG	C8-C7-N2-C2
5	d	2	NAG	O7-C7-N2-C2
4	W	2	NAG	O5-C5-C6-O6
4	X	2	NAG	O5-C5-C6-O6
4	Y	1	NAG	O5-C5-C6-O6
4	D	2	NAG	O5-C5-C6-O6
4	L	1	NAG	O5-C5-C6-O6
4	S	1	NAG	O5-C5-C6-O6
4	U	2	NAG	O7-C7-N2-C2
4	O	2	NAG	O5-C5-C6-O6
4	D	2	NAG	C4-C5-C6-O6
4	S	1	NAG	C4-C5-C6-O6
4	X	1	NAG	O5-C5-C6-O6
4	L	1	NAG	C4-C5-C6-O6
4	S	2	NAG	O5-C5-C6-O6
4	X	1	NAG	C4-C5-C6-O6
4	Y	1	NAG	C4-C5-C6-O6
4	X	2	NAG	C4-C5-C6-O6
4	U	1	NAG	C8-C7-N2-C2
4	U	1	NAG	O7-C7-N2-C2
4	U	2	NAG	C8-C7-N2-C2
4	O	1	NAG	O5-C5-C6-O6
4	T	1	NAG	C4-C5-C6-O6
4	Z	2	NAG	O5-C5-C6-O6
4	O	2	NAG	C4-C5-C6-O6
4	W	2	NAG	C4-C5-C6-O6
4	O	1	NAG	C4-C5-C6-O6
4	S	2	NAG	C4-C5-C6-O6
4	Z	2	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
4	T	2	NAG	O5-C5-C6-O6
4	W	1	NAG	O5-C5-C6-O6
4	W	1	NAG	C4-C5-C6-O6
4	G	2	NAG	C8-C7-N2-C2
4	G	2	NAG	O7-C7-N2-C2
4	I	2	NAG	C8-C7-N2-C2
4	I	2	NAG	O7-C7-N2-C2
4	O	1	NAG	C8-C7-N2-C2
4	O	1	NAG	O7-C7-N2-C2
4	R	2	NAG	C8-C7-N2-C2
4	R	2	NAG	O7-C7-N2-C2
4	W	1	NAG	C8-C7-N2-C2
4	W	1	NAG	O7-C7-N2-C2
4	Z	2	NAG	C8-C7-N2-C2
4	Z	2	NAG	O7-C7-N2-C2
4	a	2	NAG	C8-C7-N2-C2
4	a	2	NAG	O7-C7-N2-C2
4	G	1	NAG	C4-C5-C6-O6
4	I	1	NAG	C4-C5-C6-O6
4	T	2	NAG	C4-C5-C6-O6
4	T	1	NAG	O5-C5-C6-O6
5	c	3	NAG	C8-C7-N2-C2
5	d	3	NAG	C8-C7-N2-C2
4	U	2	NAG	C4-C5-C6-O6
4	G	1	NAG	O5-C5-C6-O6
4	I	1	NAG	O5-C5-C6-O6
4	L	2	NAG	C4-C5-C6-O6
4	L	2	NAG	O5-C5-C6-O6
4	a	1	NAG	O5-C5-C6-O6
4	a	1	NAG	C4-C5-C6-O6
4	M	1	NAG	C4-C5-C6-O6
4	U	1	NAG	O5-C5-C6-O6
4	M	1	NAG	O5-C5-C6-O6
5	c	3	NAG	O7-C7-N2-C2
5	d	3	NAG	O7-C7-N2-C2
4	U	2	NAG	O5-C5-C6-O6
4	a	2	NAG	O5-C5-C6-O6
4	R	2	NAG	O5-C5-C6-O6
4	W	1	NAG	C1-C2-N2-C7
4	D	1	NAG	O5-C5-C6-O6
4	R	1	NAG	C4-C5-C6-O6
4	F	2	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
4	F	2	NAG	O5-C5-C6-O6
4	b	2	NAG	C4-C5-C6-O6
4	Z	1	NAG	C4-C5-C6-O6
4	L	2	NAG	C3-C2-N2-C7
4	Q	1	NAG	C3-C2-N2-C7
4	S	2	NAG	C3-C2-N2-C7
4	Y	2	NAG	C3-C2-N2-C7
4	a	2	NAG	C3-C2-N2-C7
4	b	2	NAG	O5-C5-C6-O6
4	P	2	NAG	C4-C5-C6-O6
4	I	2	NAG	C4-C5-C6-O6
4	Z	1	NAG	O5-C5-C6-O6
4	I	2	NAG	O5-C5-C6-O6
4	G	2	NAG	C1-C2-N2-C7
4	I	2	NAG	C1-C2-N2-C7
4	L	2	NAG	C1-C2-N2-C7
4	Y	2	NAG	C1-C2-N2-C7
4	Z	2	NAG	C1-C2-N2-C7
4	a	2	NAG	C1-C2-N2-C7
4	E	2	NAG	C4-C5-C6-O6
4	V	2	NAG	C4-C5-C6-O6
4	E	2	NAG	C3-C2-N2-C7
4	G	2	NAG	C3-C2-N2-C7
4	I	2	NAG	C3-C2-N2-C7
4	V	2	NAG	C3-C2-N2-C7
4	W	1	NAG	C3-C2-N2-C7
4	Z	2	NAG	C3-C2-N2-C7
4	R	1	NAG	O5-C5-C6-O6
4	E	2	NAG	O5-C5-C6-O6
4	V	2	NAG	O5-C5-C6-O6

There are no ring outliers.

20 monomers are involved in 22 short contacts:

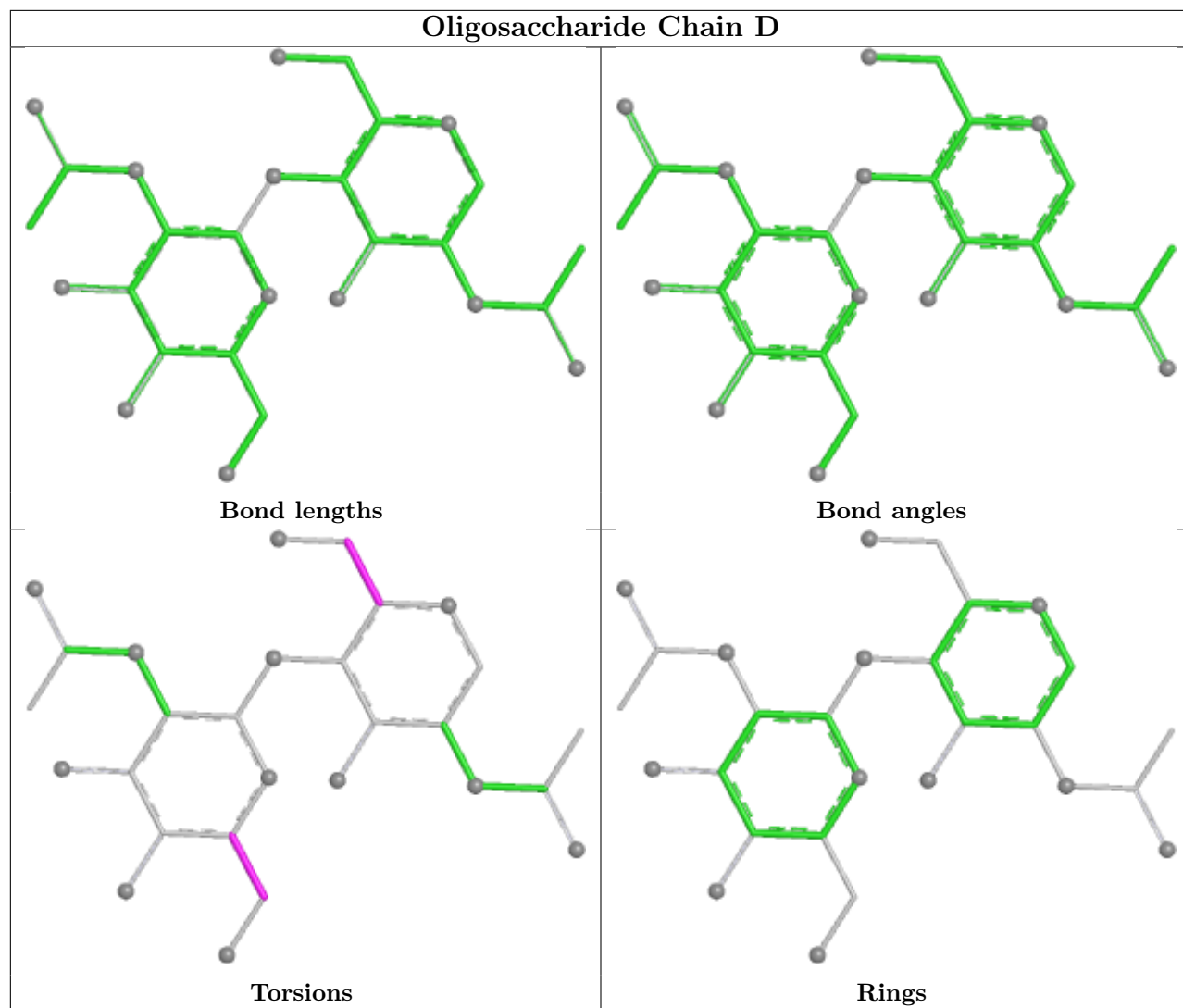
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	G	2	NAG	1	0
4	O	1	NAG	1	0
4	Z	2	NAG	1	0
4	E	1	NAG	3	0
5	d	1	NAG	2	0
5	c	2	NAG	3	0
4	I	2	NAG	1	0

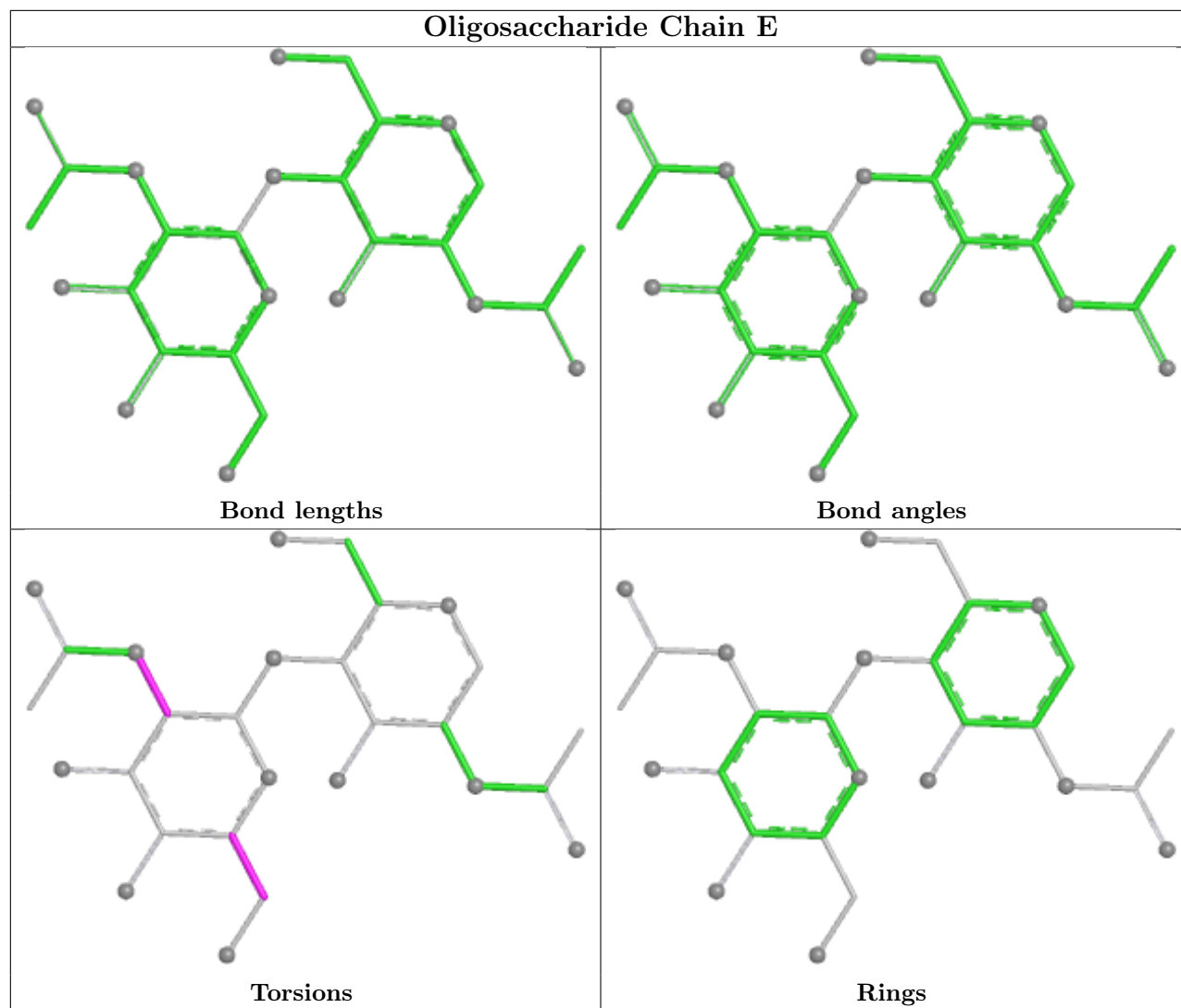
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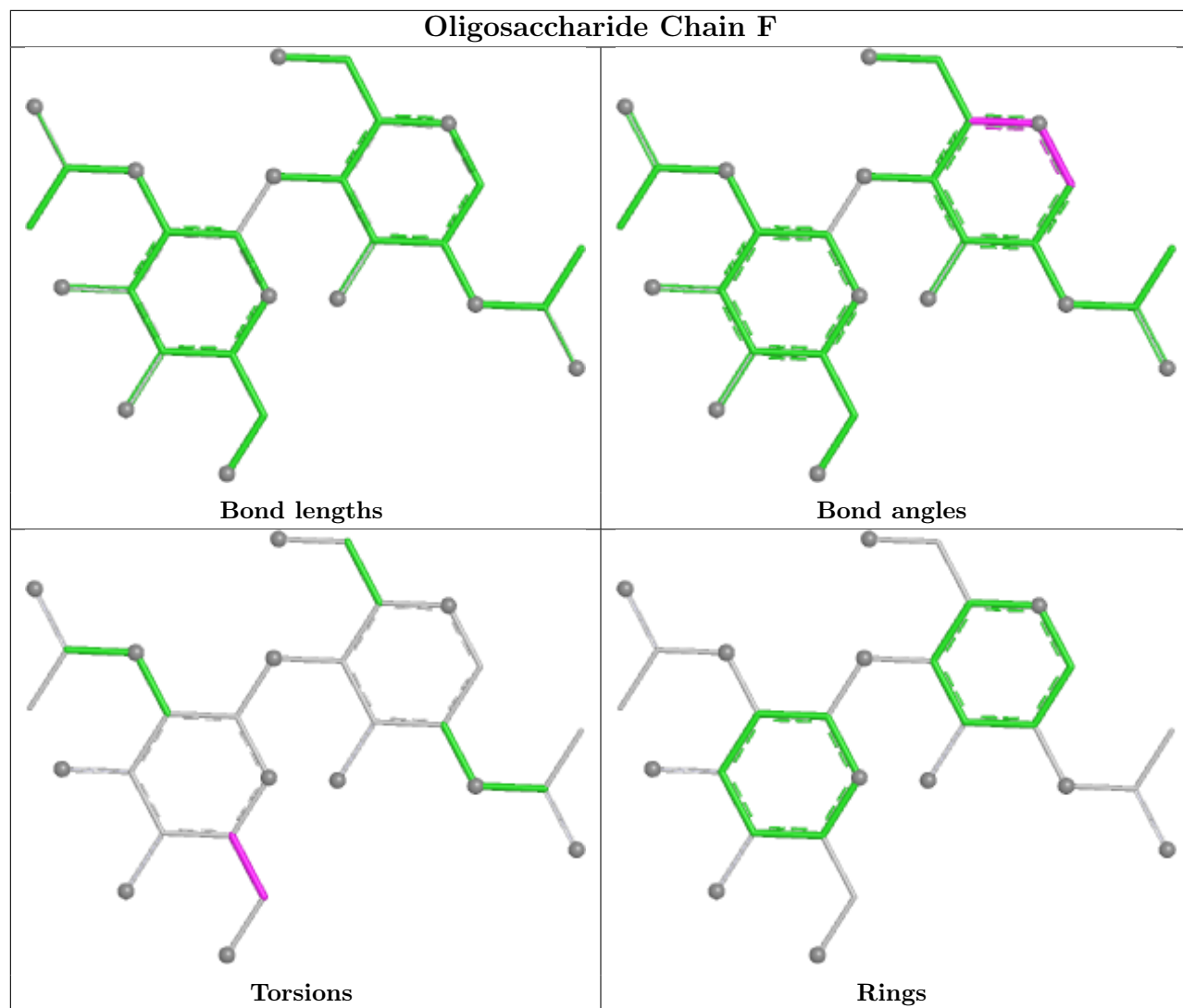
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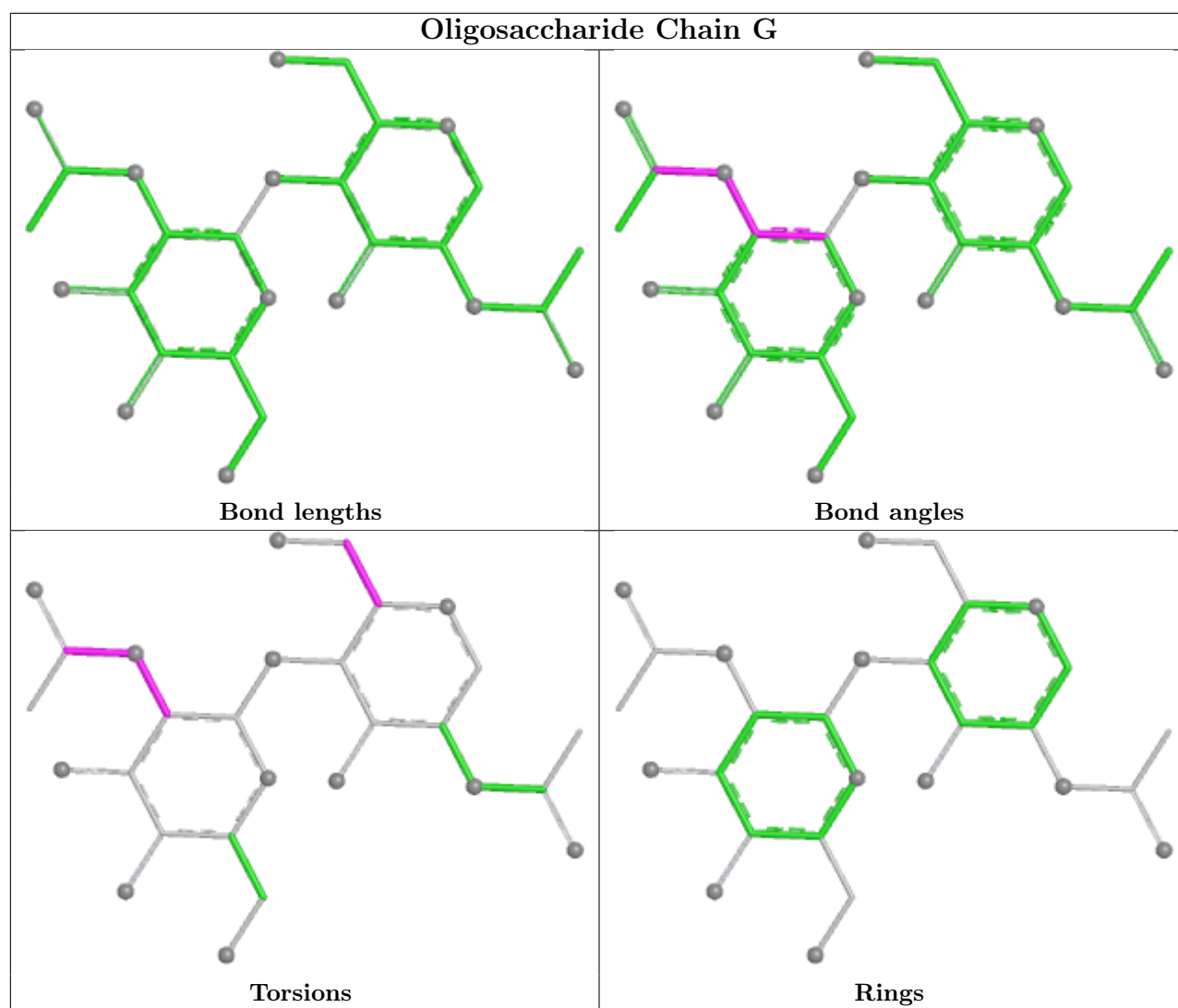
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	S	2	NAG	1	0
5	d	2	NAG	3	0
4	a	2	NAG	1	0
4	V	1	NAG	4	0
4	a	1	NAG	1	0
4	E	2	NAG	2	0
4	W	1	NAG	1	0
4	S	1	NAG	1	0
4	V	2	NAG	2	0
5	c	3	NAG	1	0
5	d	3	NAG	1	0
4	U	1	NAG	1	0
5	c	1	NAG	2	0

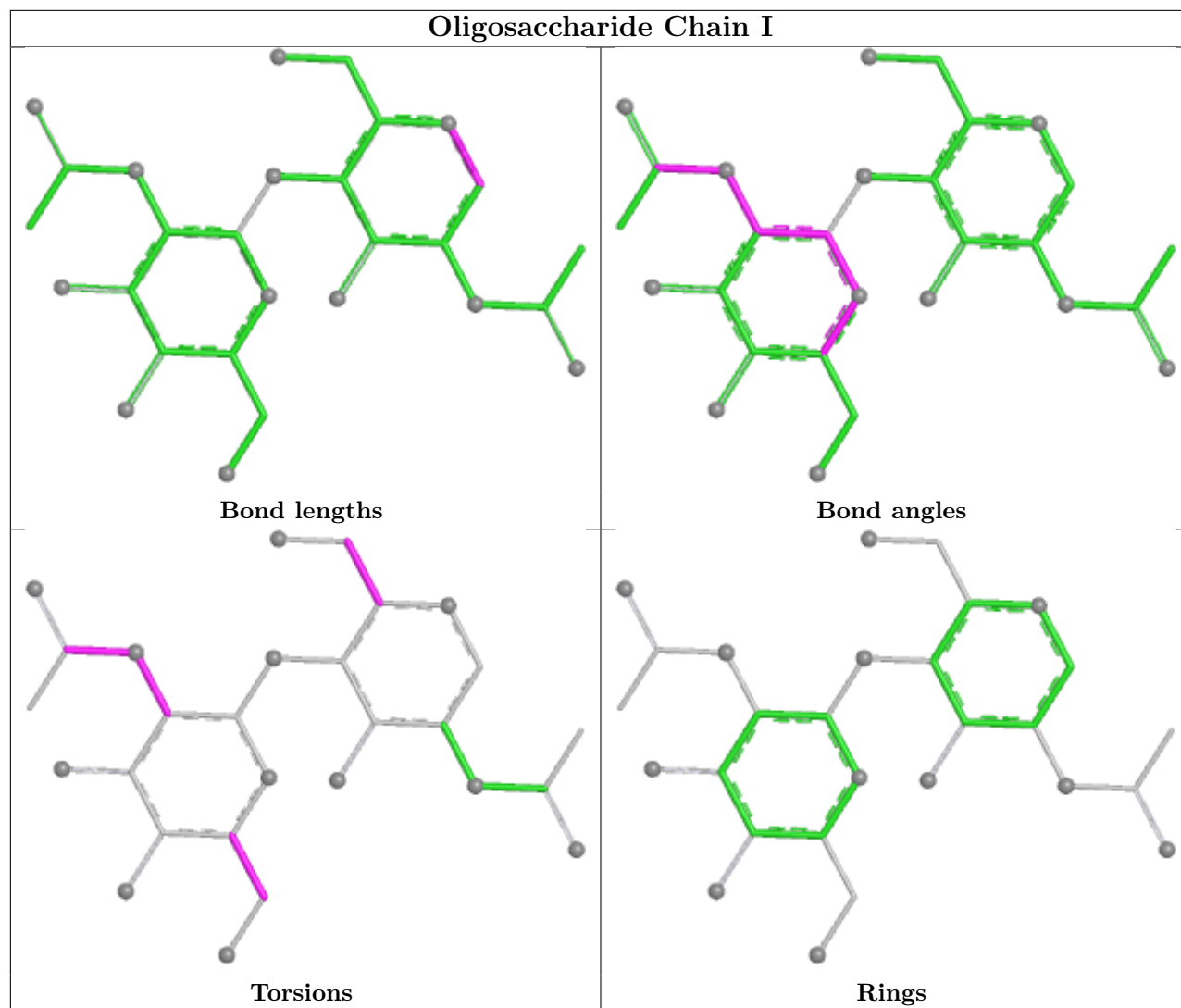
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

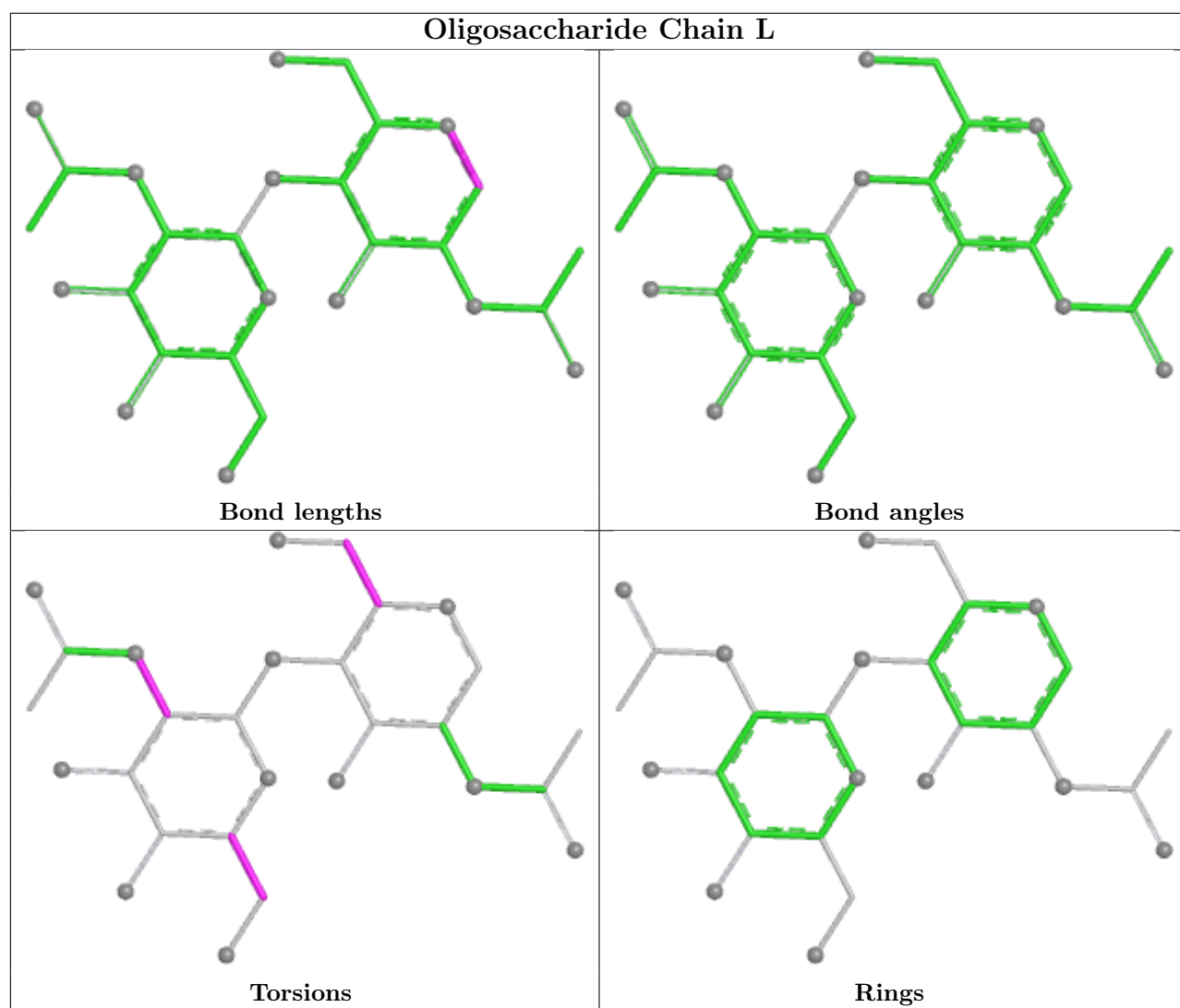


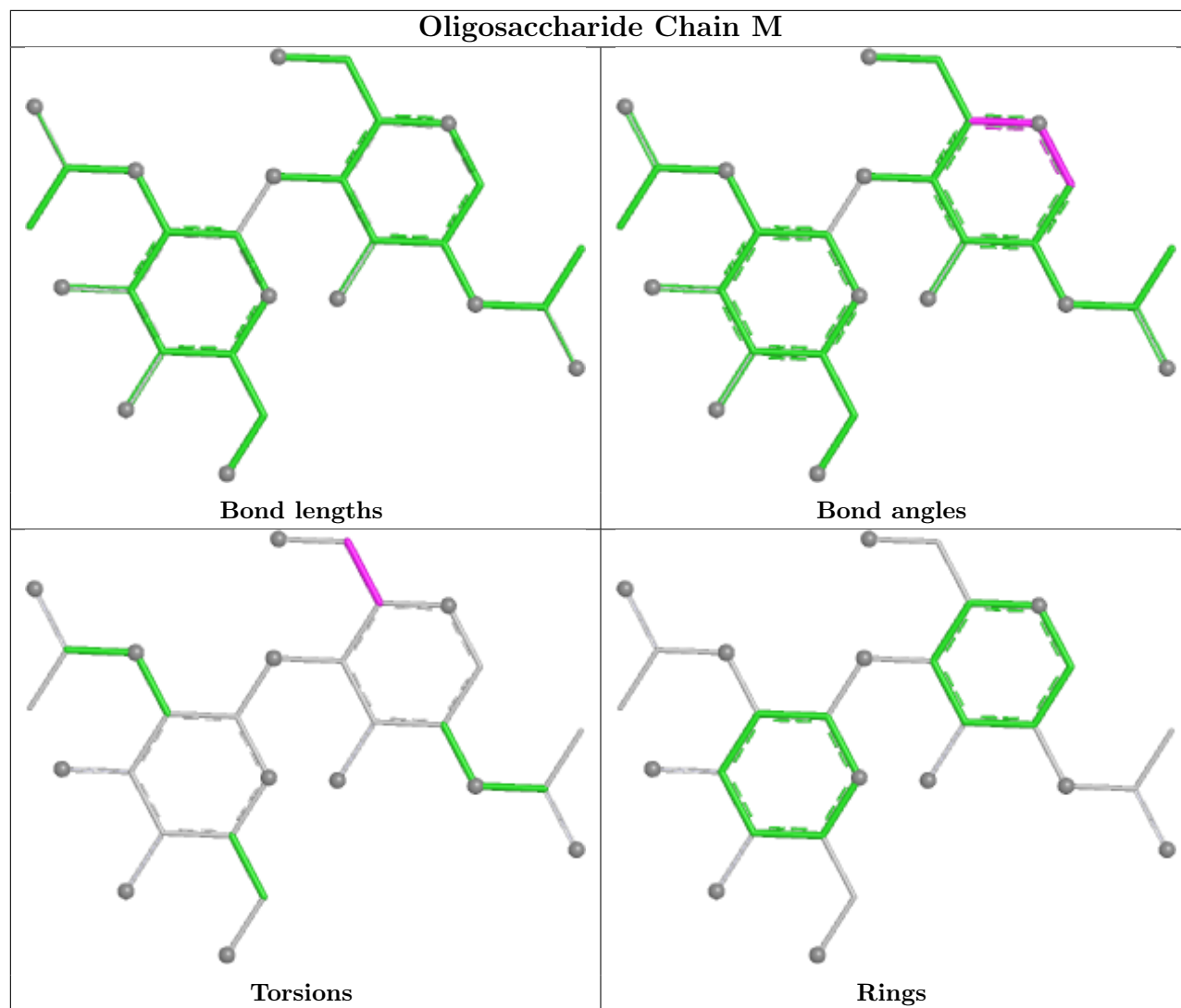


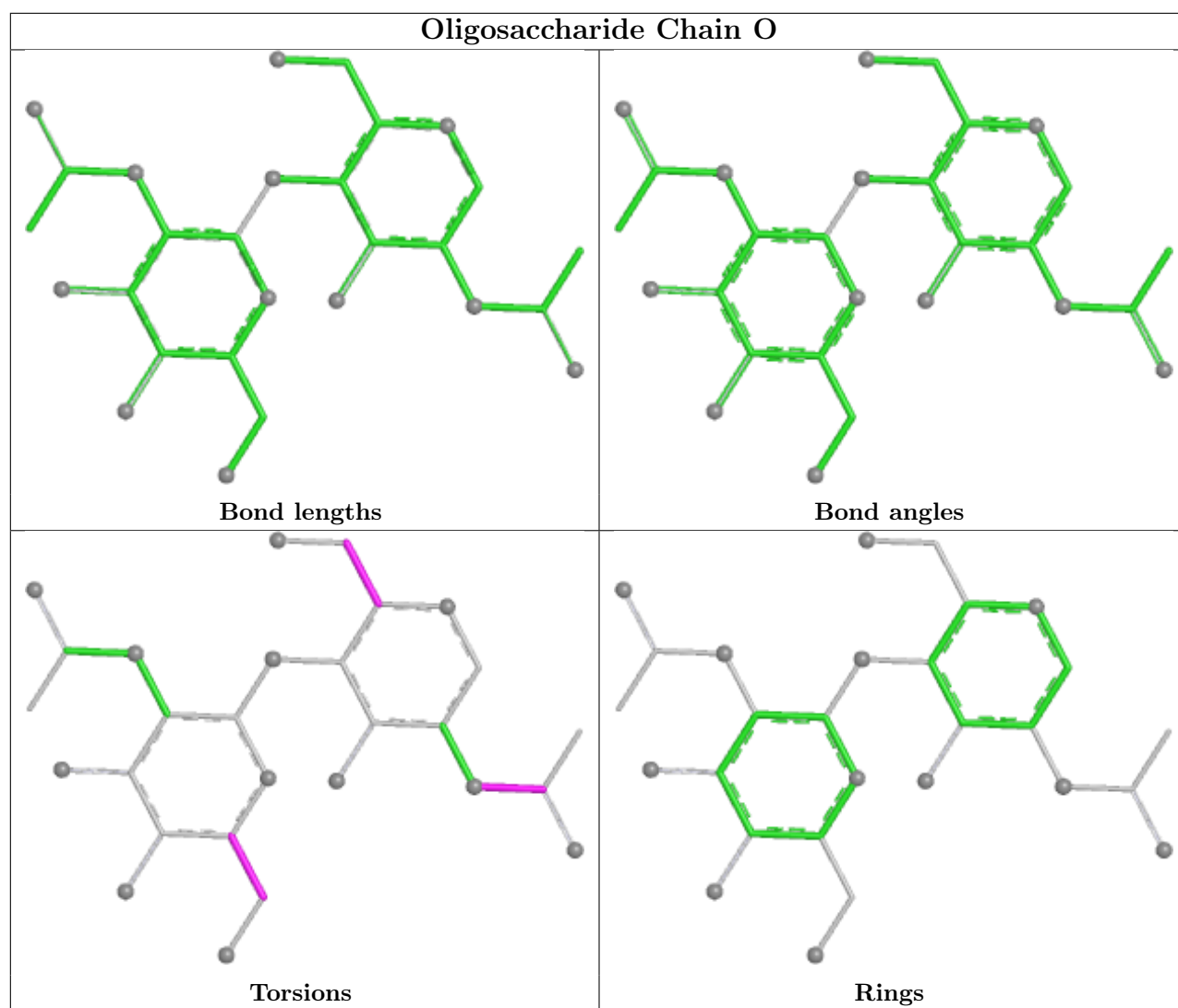


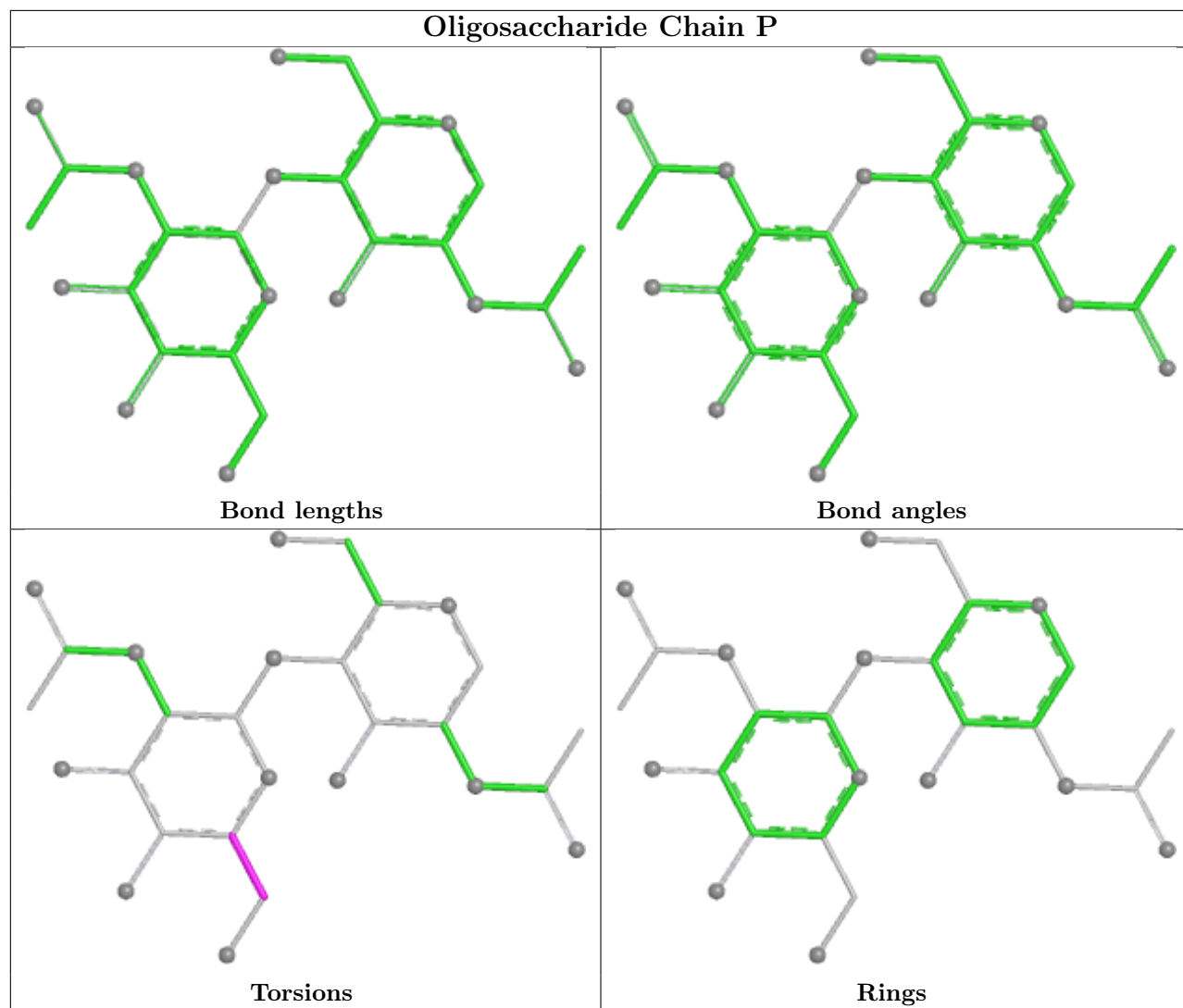


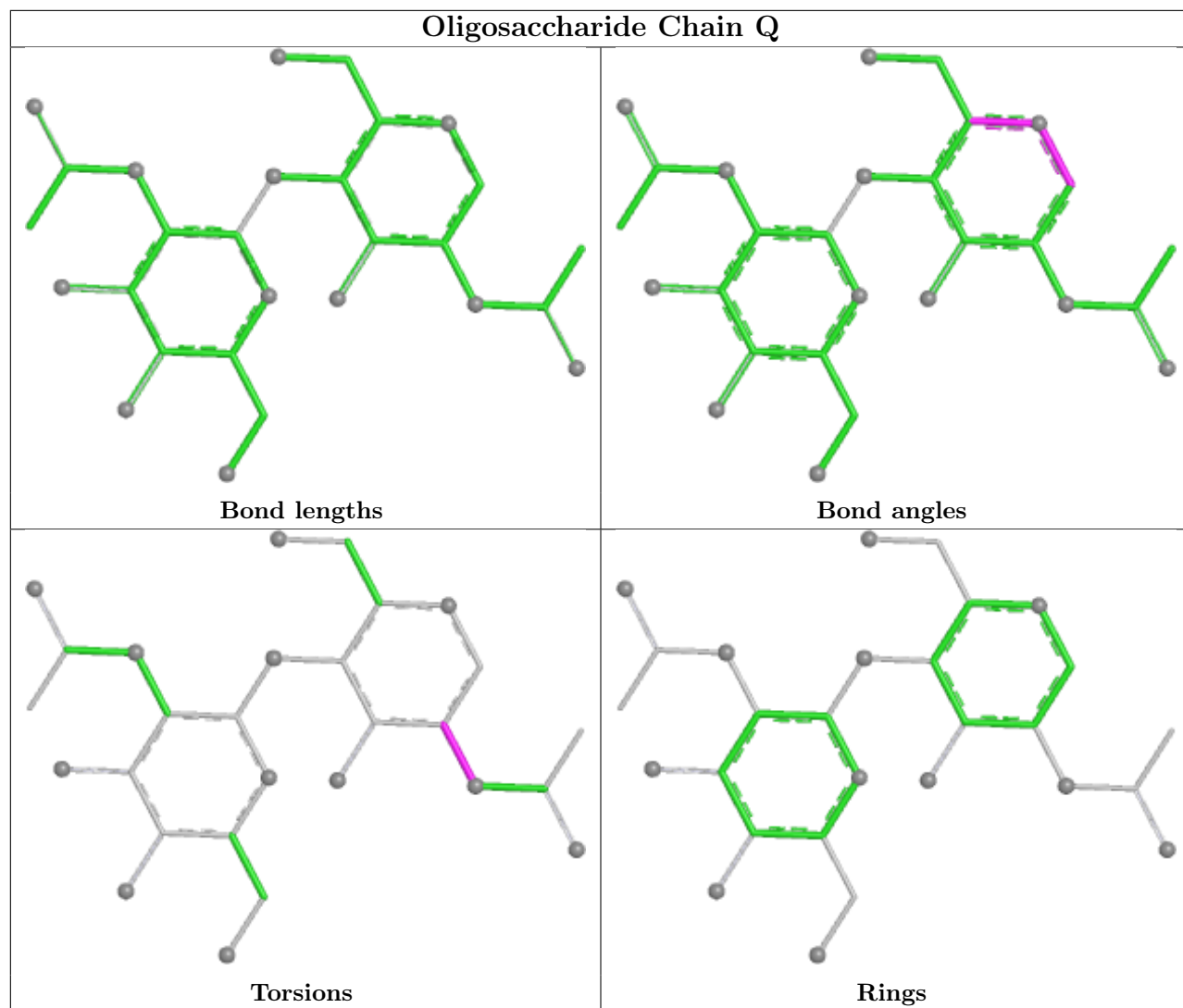


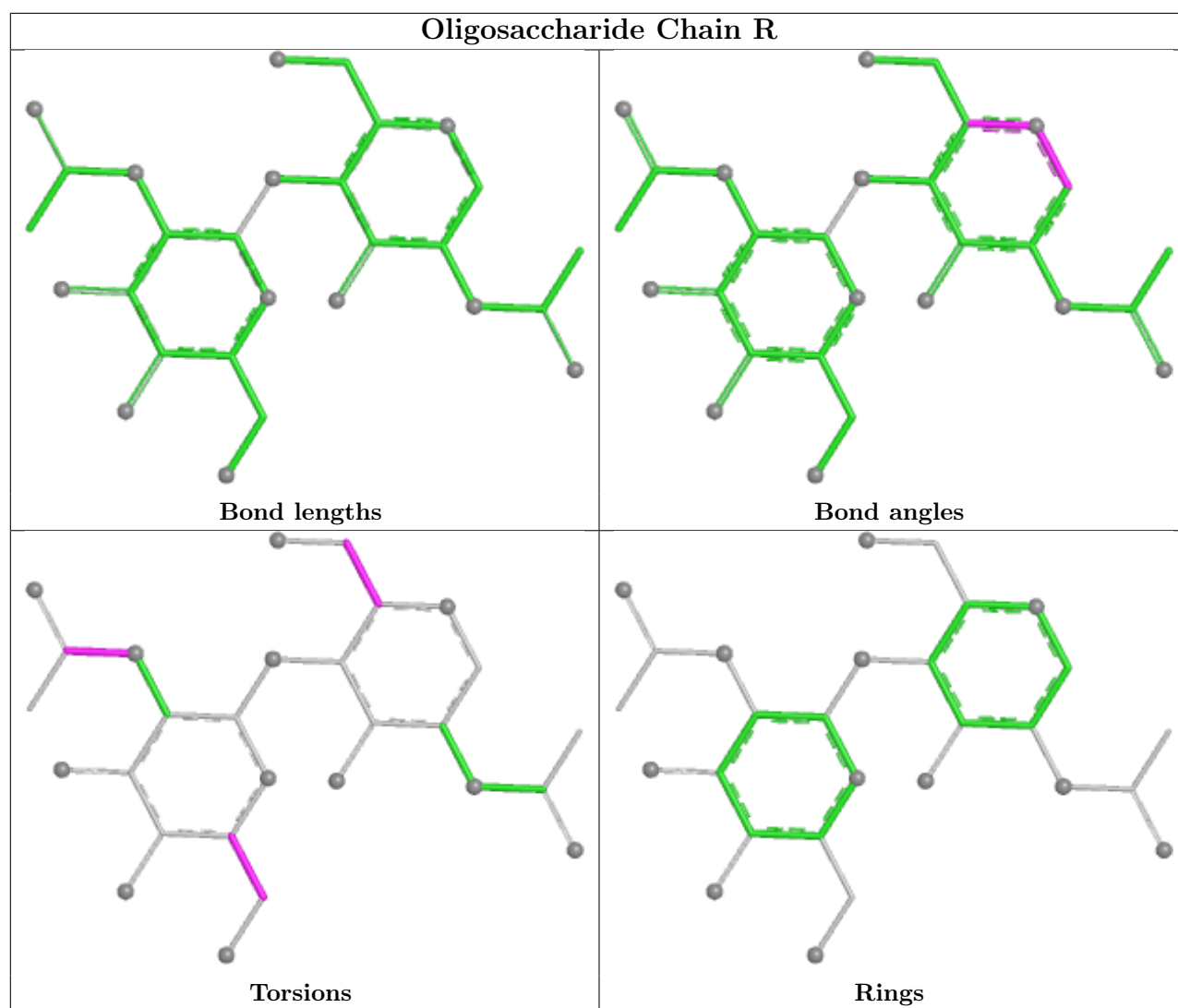


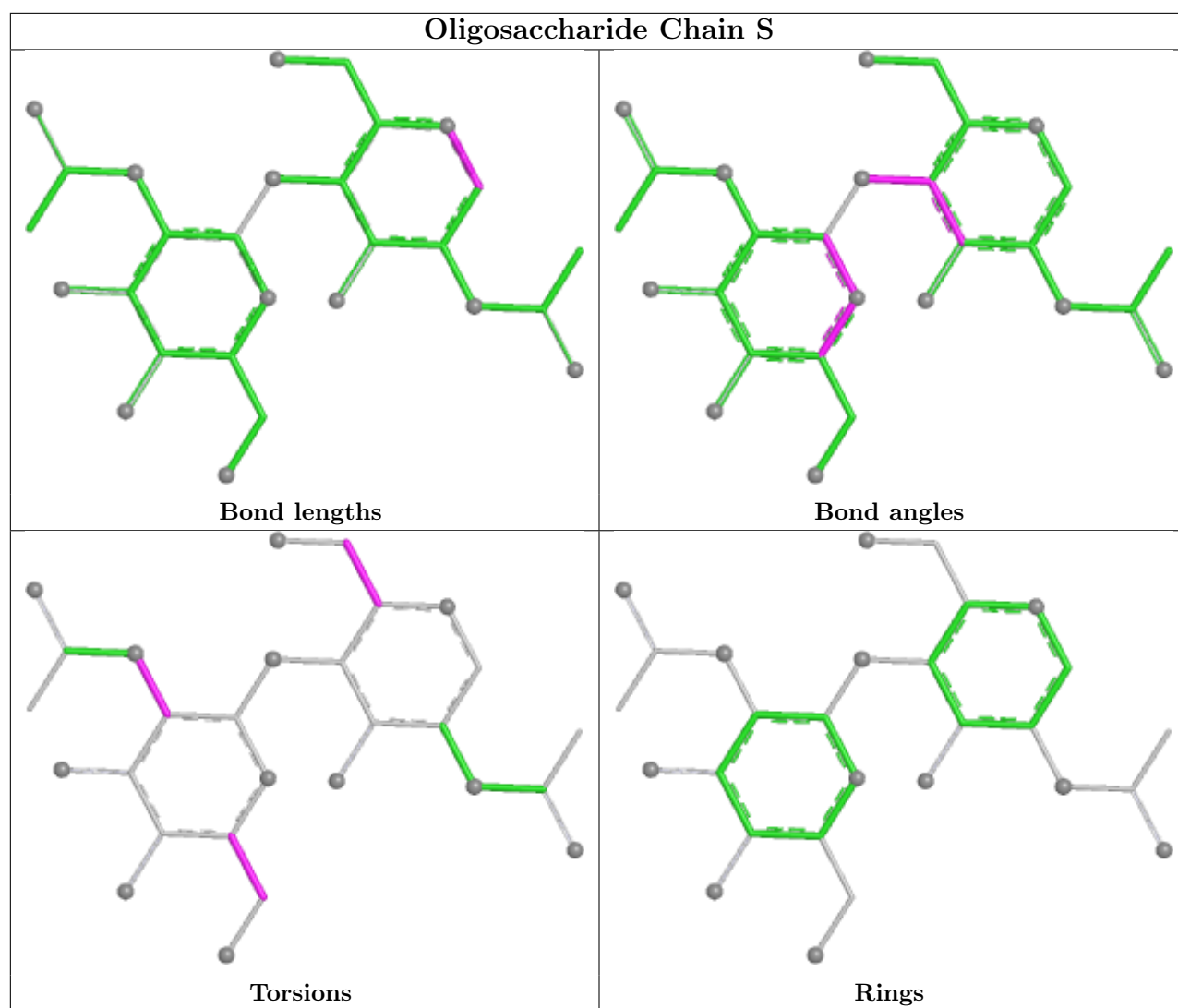


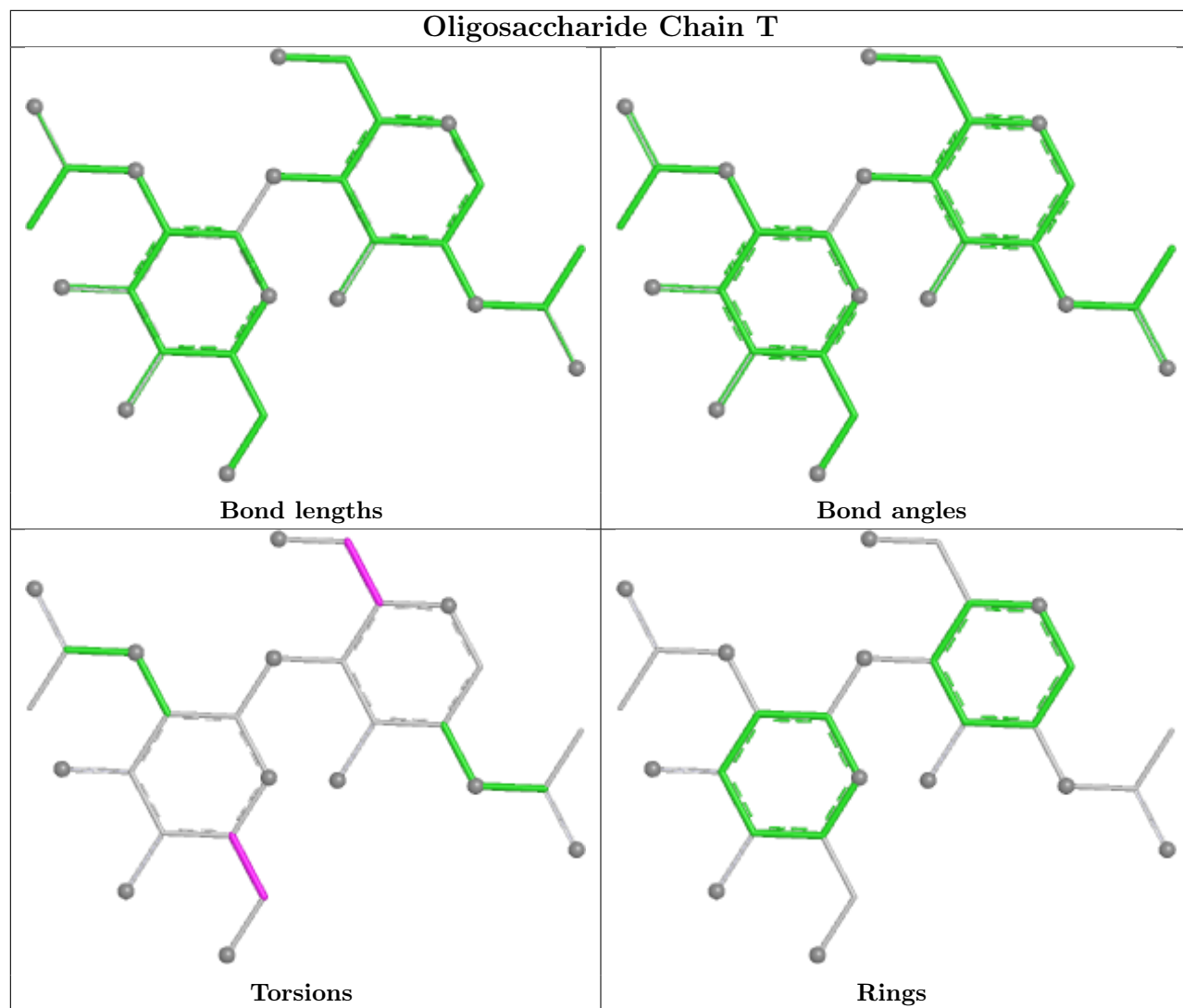


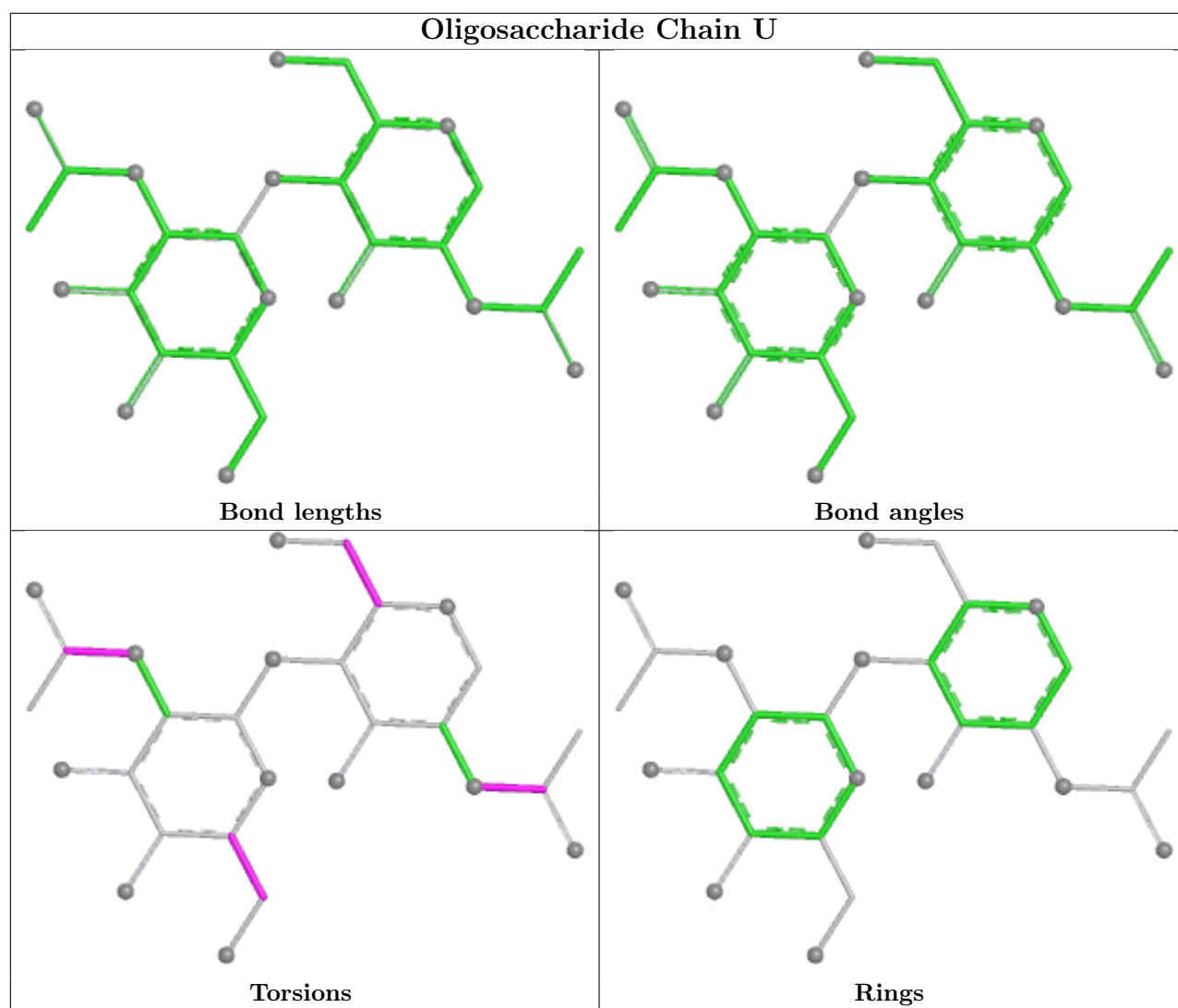


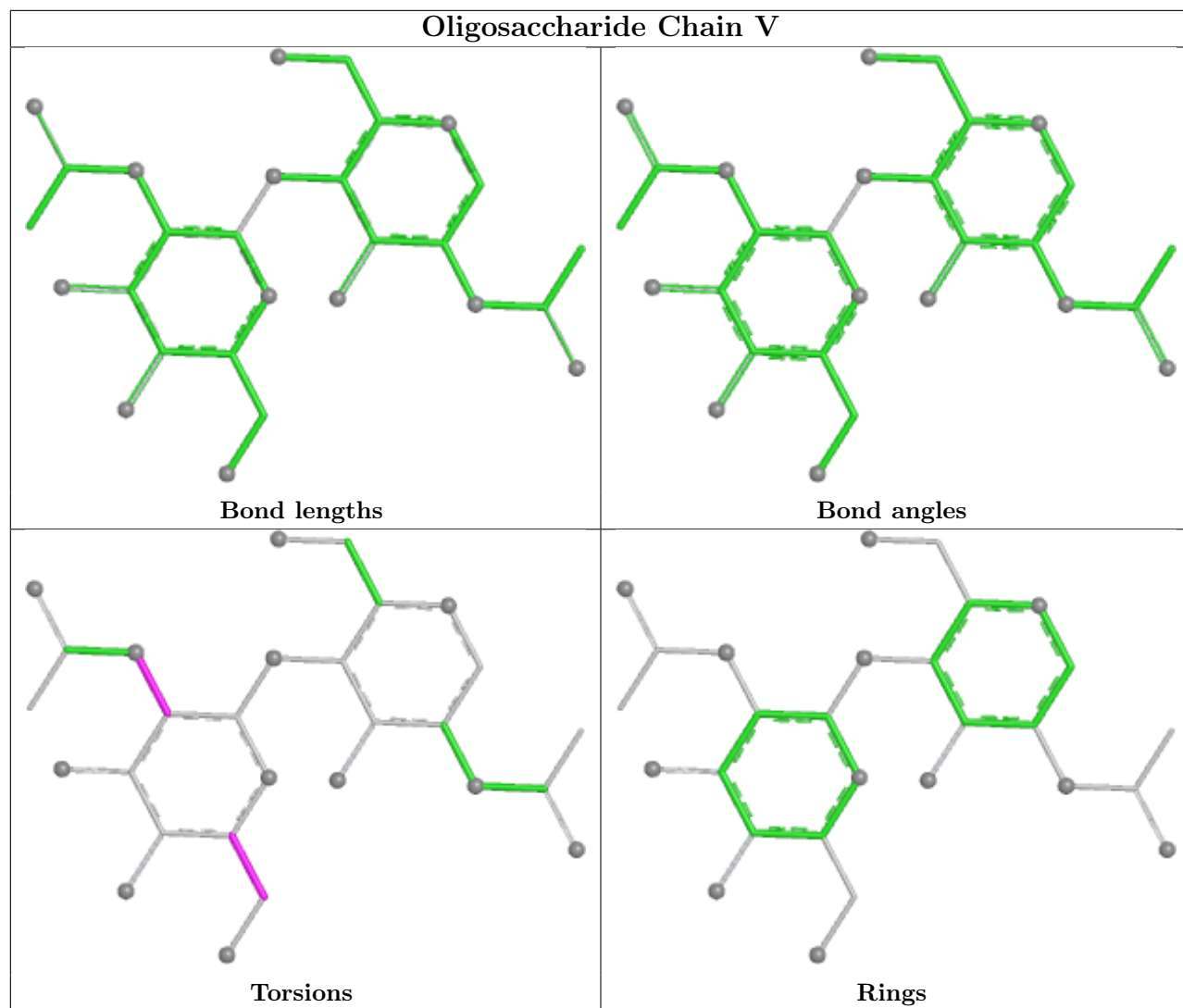


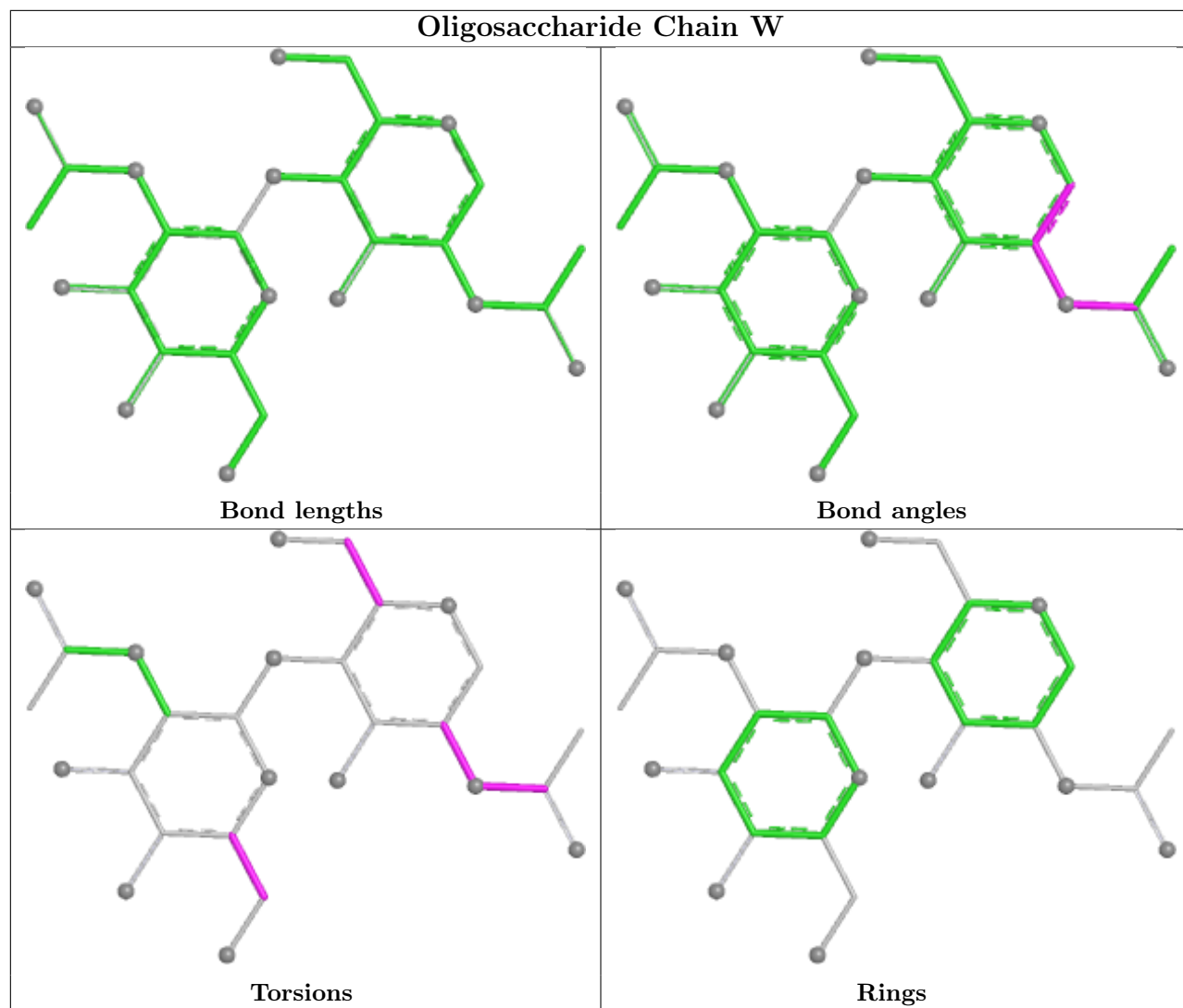


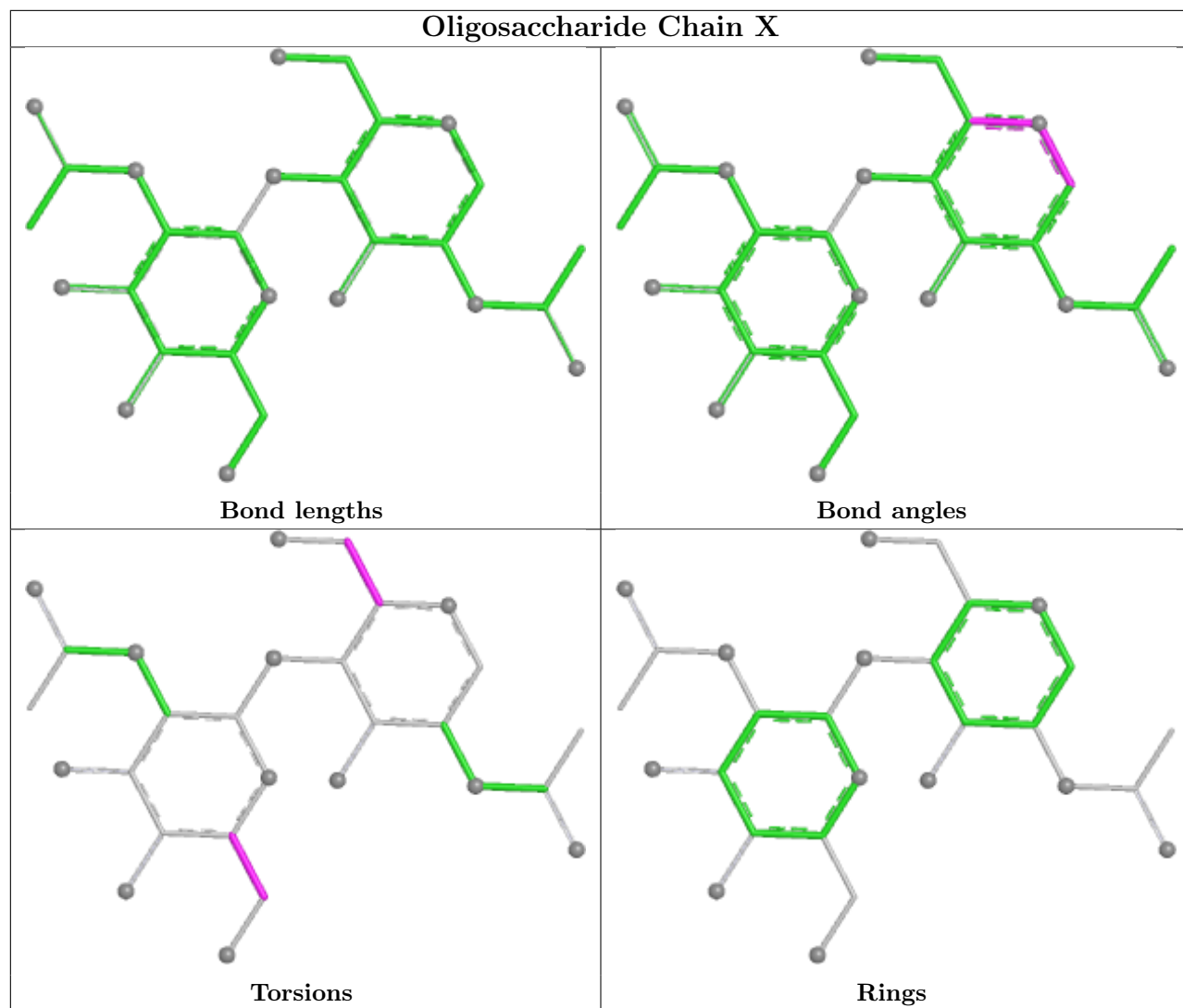


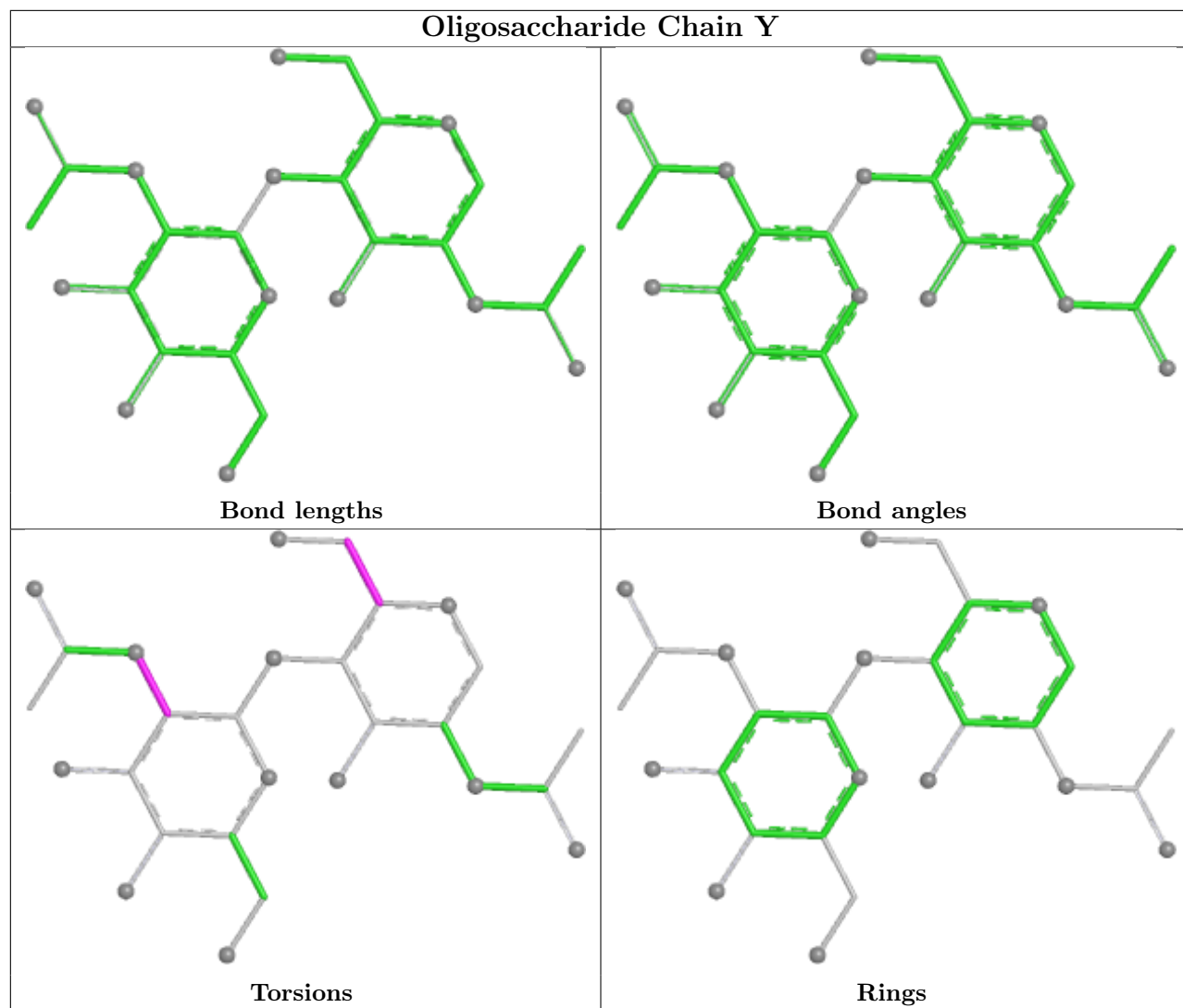


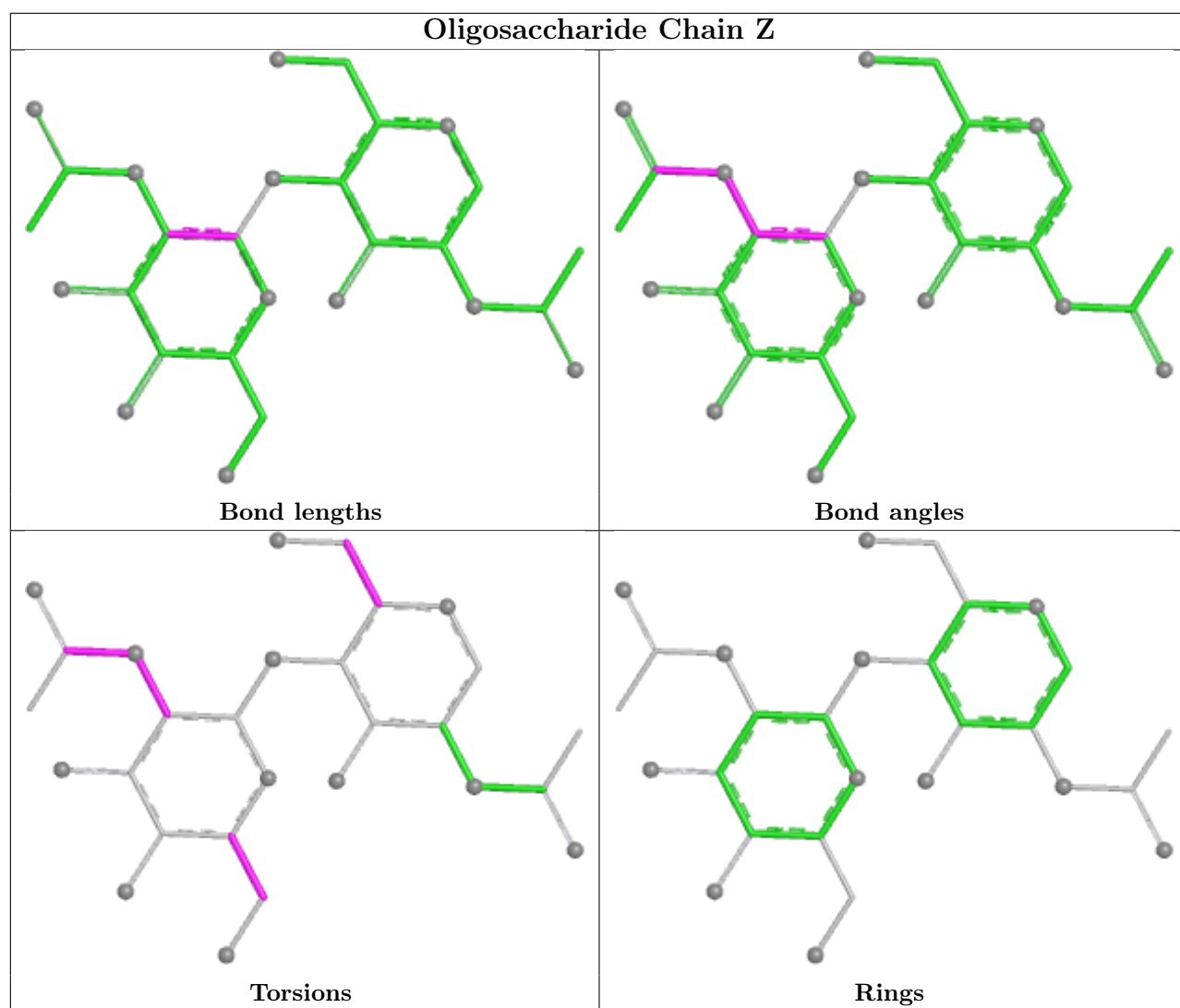


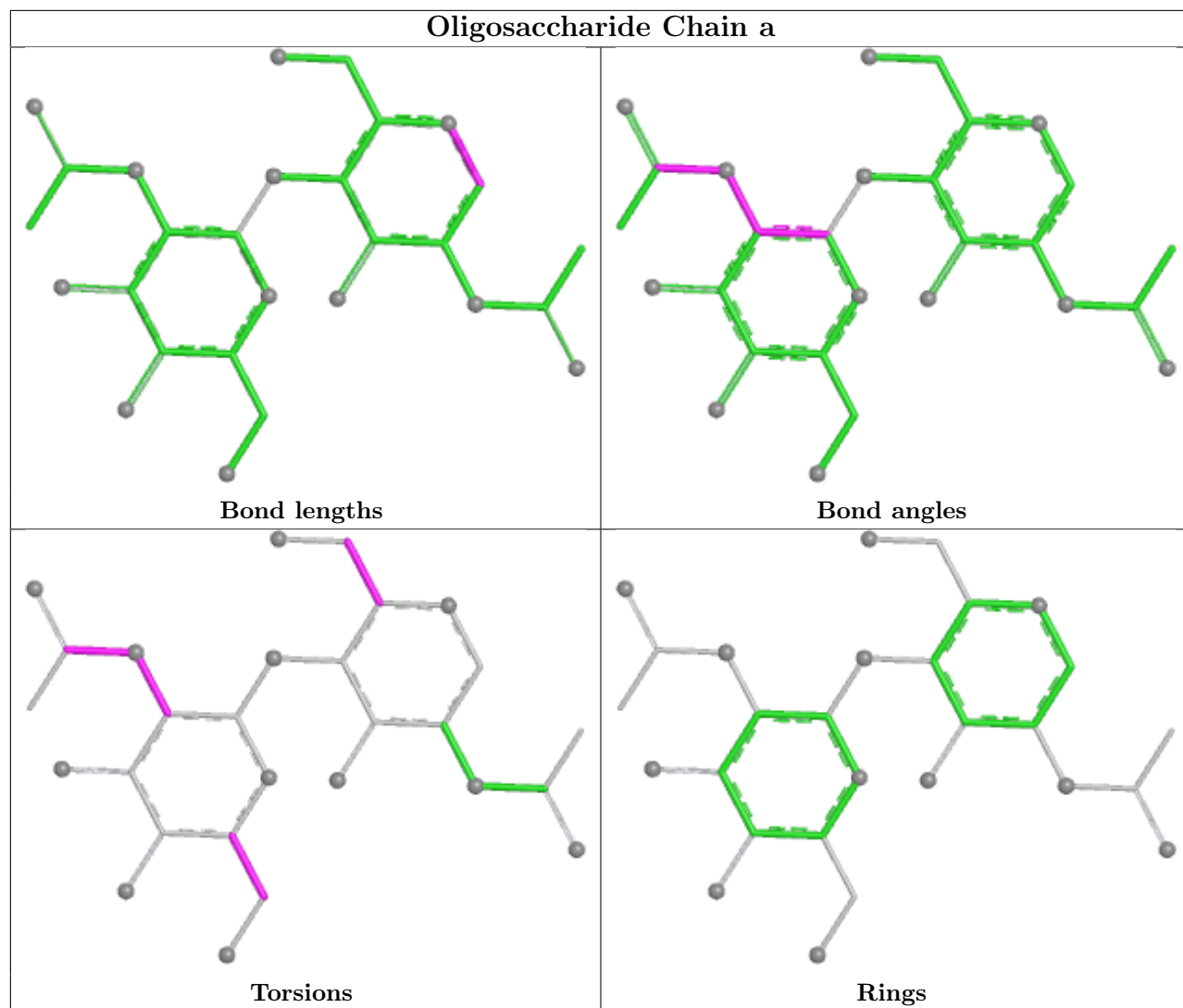


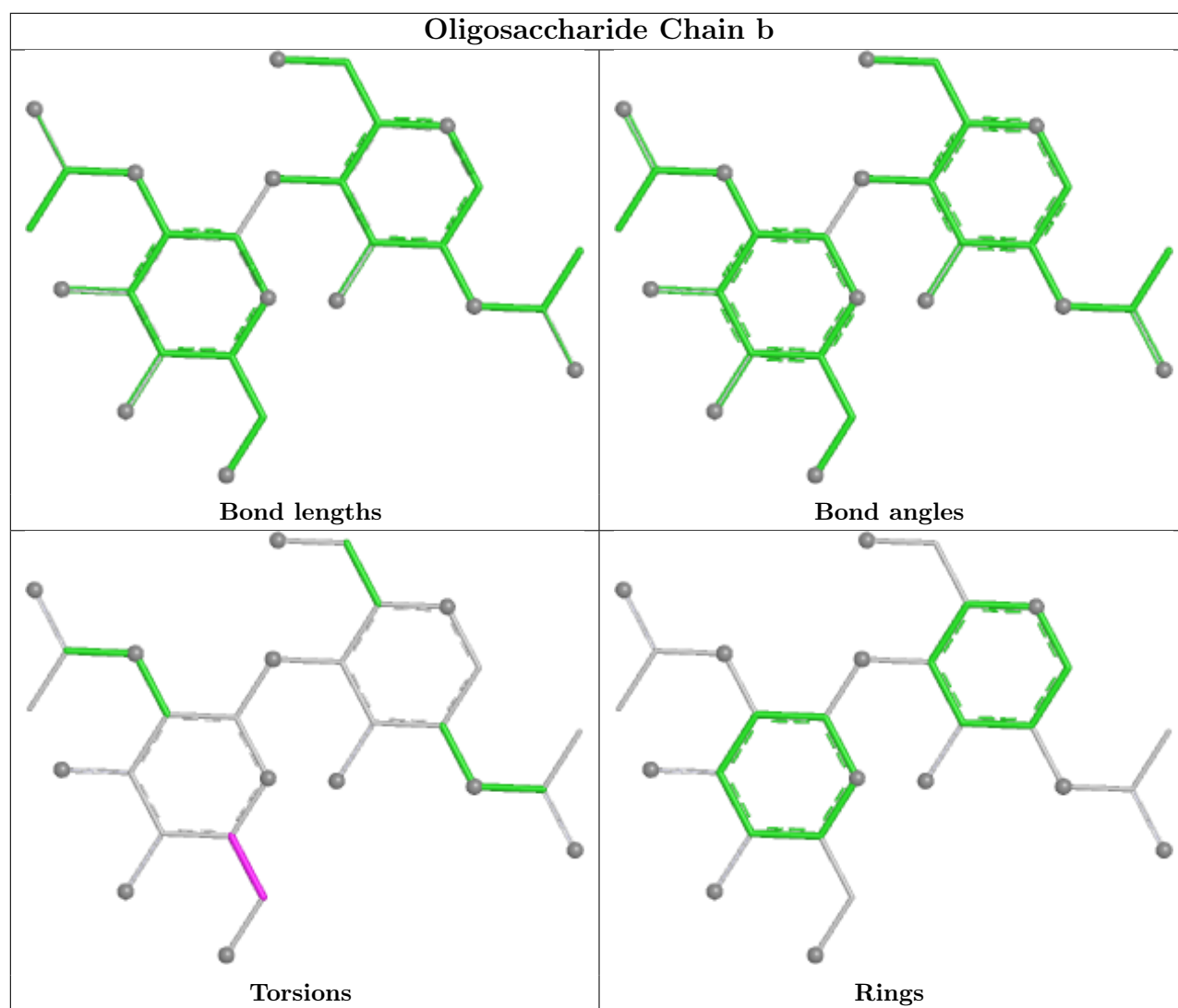


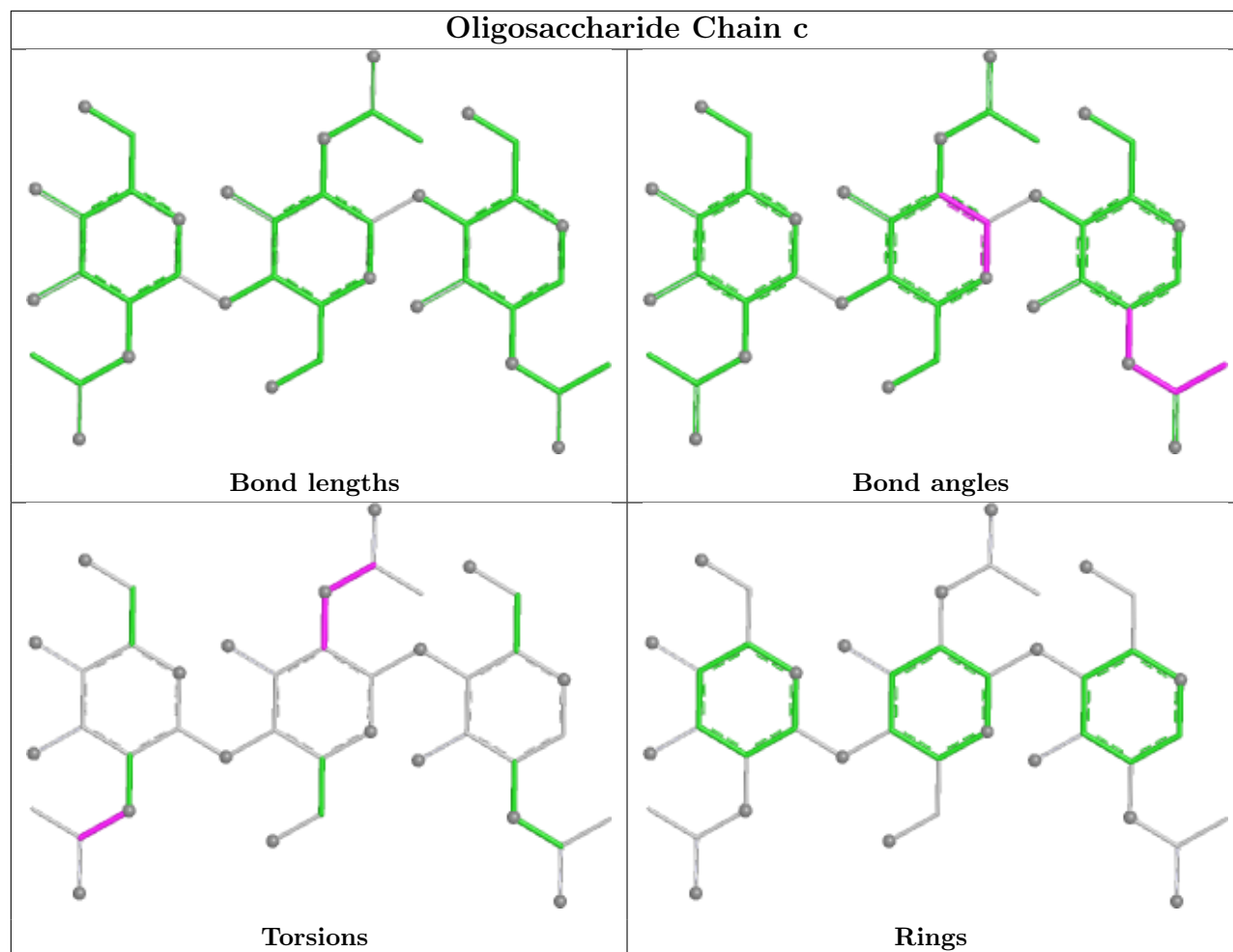


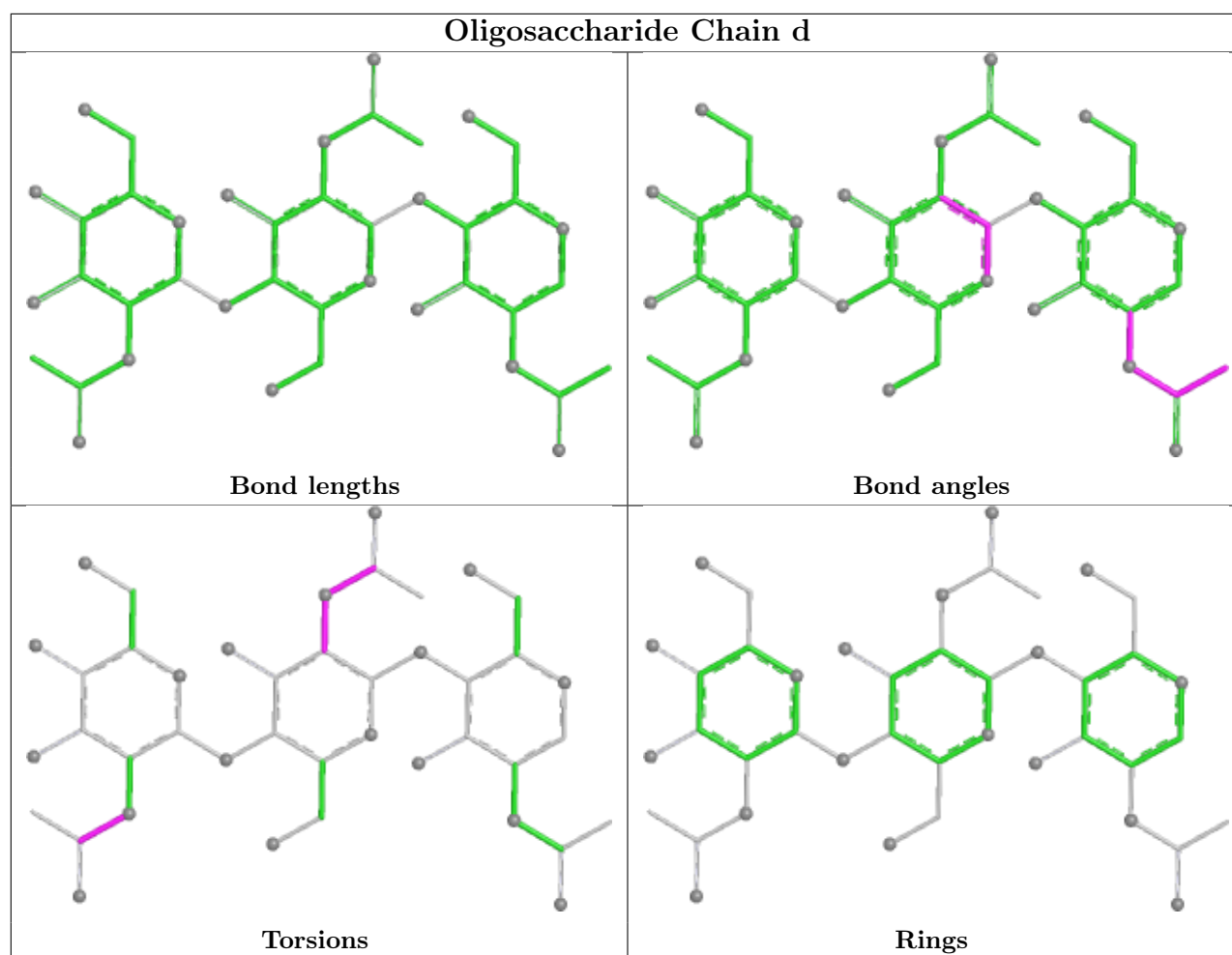












5.6 Ligand geometry [i](#)

28 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	$\# Z > 2$
6	NAG	A	1408	1	14,14,15	0.32	0	17,19,21	0.40	0
6	NAG	B	1410	1	14,14,15	0.42	0	17,19,21	1.15	2 (11%)
6	NAG	C	1405	1	14,14,15	0.39	0	17,19,21	1.38	2 (11%)
6	NAG	C	1407	1	14,14,15	0.39	0	17,19,21	0.66	0
6	NAG	B	1404	1	14,14,15	0.34	0	17,19,21	0.61	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
6	NAG	A	1407	1	14,14,15	0.27	0	17,19,21	0.51	0
6	NAG	C	1401	1	14,14,15	0.47	0	17,19,21	0.79	1 (5%)
6	NAG	A	1409	1	14,14,15	0.48	0	17,19,21	0.36	0
6	NAG	A	1403	1	14,14,15	0.20	0	17,19,21	0.44	0
6	NAG	B	1401	1	14,14,15	0.31	0	17,19,21	0.56	0
6	NAG	C	1403	1	14,14,15	0.53	0	17,19,21	0.47	0
6	NAG	C	1404	1	14,14,15	0.31	0	17,19,21	0.38	0
6	NAG	B	1402	1	14,14,15	0.32	0	17,19,21	0.66	0
6	NAG	A	1402	1	14,14,15	0.22	0	17,19,21	0.65	0
6	NAG	C	1408	1	14,14,15	0.15	0	17,19,21	0.59	0
6	NAG	C	1406	1	14,14,15	0.22	0	17,19,21	0.38	0
6	NAG	A	1406	1	14,14,15	0.28	0	17,19,21	0.40	0
6	NAG	B	1405	1	14,14,15	0.41	0	17,19,21	1.35	2 (11%)
6	NAG	A	1405	1	14,14,15	0.58	0	17,19,21	1.33	2 (11%)
6	NAG	A	1401	1	14,14,15	0.31	0	17,19,21	0.35	0
6	NAG	B	1408	1	14,14,15	0.32	0	17,19,21	0.45	0
6	NAG	A	1404	1	14,14,15	0.46	0	17,19,21	0.56	0
6	NAG	B	1409	1	14,14,15	0.19	0	17,19,21	0.41	0
6	NAG	B	1411	-	14,14,15	0.33	0	17,19,21	0.43	0
6	NAG	B	1403	1	14,14,15	0.31	0	17,19,21	0.43	0
6	NAG	B	1407	1	14,14,15	0.44	0	17,19,21	0.77	1 (5%)
6	NAG	B	1406	1	14,14,15	0.40	0	17,19,21	0.83	1 (5%)
6	NAG	C	1402	1	14,14,15	0.44	0	17,19,21	0.59	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
6	NAG	A	1408	1	-	2/6/23/26	0/1/1/1
6	NAG	B	1410	1	-	0/6/23/26	0/1/1/1
6	NAG	C	1405	1	-	4/6/23/26	0/1/1/1
6	NAG	C	1407	1	-	4/6/23/26	0/1/1/1
6	NAG	B	1404	1	-	2/6/23/26	0/1/1/1
6	NAG	A	1407	1	-	0/6/23/26	0/1/1/1
6	NAG	C	1401	1	-	1/6/23/26	0/1/1/1
6	NAG	A	1409	1	-	2/6/23/26	0/1/1/1
6	NAG	A	1403	1	-	2/6/23/26	0/1/1/1
6	NAG	B	1401	1	-	2/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	NAG	C	1403	1	-	3/6/23/26	0/1/1/1
6	NAG	C	1404	1	-	1/6/23/26	0/1/1/1
6	NAG	B	1402	1	-	2/6/23/26	0/1/1/1
6	NAG	A	1402	1	-	2/6/23/26	0/1/1/1
6	NAG	C	1408	1	-	2/6/23/26	0/1/1/1
6	NAG	C	1406	1	-	2/6/23/26	0/1/1/1
6	NAG	A	1406	1	-	2/6/23/26	0/1/1/1
6	NAG	B	1405	1	-	6/6/23/26	0/1/1/1
6	NAG	A	1405	1	-	6/6/23/26	0/1/1/1
6	NAG	A	1401	1	-	2/6/23/26	0/1/1/1
6	NAG	B	1408	1	-	2/6/23/26	0/1/1/1
6	NAG	A	1404	1	-	2/6/23/26	0/1/1/1
6	NAG	B	1409	1	-	2/6/23/26	0/1/1/1
6	NAG	B	1411	-	-	0/6/23/26	0/1/1/1
6	NAG	B	1403	1	-	2/6/23/26	0/1/1/1
6	NAG	B	1407	1	-	4/6/23/26	0/1/1/1
6	NAG	B	1406	1	-	4/6/23/26	0/1/1/1
6	NAG	C	1402	1	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	C	1405	NAG	C2-N2-C7	4.59	129.06	122.90
6	A	1405	NAG	C2-N2-C7	4.57	129.02	122.90
6	B	1405	NAG	C2-N2-C7	4.39	128.78	122.90
6	C	1401	NAG	C1-O5-C5	2.87	116.03	112.19
6	B	1406	NAG	C1-O5-C5	2.61	115.68	112.19
6	C	1405	NAG	C1-C2-N2	2.48	114.35	110.43
6	B	1407	NAG	C1-O5-C5	2.43	115.45	112.19
6	B	1410	NAG	C8-C7-N2	2.34	119.99	116.12
6	B	1405	NAG	C1-C2-N2	2.30	114.06	110.43
6	A	1405	NAG	C1-C2-N2	2.12	113.78	110.43
6	B	1410	NAG	C2-N2-C7	-2.09	120.10	122.90
6	B	1404	NAG	C1-O5-C5	2.02	114.89	112.19

There are no chirality outliers.

All (63) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	B	1408	NAG	O5-C5-C6-O6
6	B	1401	NAG	O5-C5-C6-O6
6	A	1406	NAG	O5-C5-C6-O6
6	B	1402	NAG	O5-C5-C6-O6
6	C	1408	NAG	O5-C5-C6-O6
6	A	1404	NAG	O5-C5-C6-O6
6	A	1405	NAG	O5-C5-C6-O6
6	B	1401	NAG	C4-C5-C6-O6
6	A	1401	NAG	O5-C5-C6-O6
6	A	1402	NAG	O5-C5-C6-O6
6	A	1402	NAG	C4-C5-C6-O6
6	B	1404	NAG	O5-C5-C6-O6
6	B	1408	NAG	C4-C5-C6-O6
6	A	1409	NAG	C4-C5-C6-O6
6	A	1405	NAG	C4-C5-C6-O6
6	B	1404	NAG	C4-C5-C6-O6
6	A	1408	NAG	O5-C5-C6-O6
6	B	1407	NAG	O5-C5-C6-O6
6	B	1402	NAG	C4-C5-C6-O6
6	A	1409	NAG	O5-C5-C6-O6
6	A	1406	NAG	C4-C5-C6-O6
6	A	1405	NAG	C8-C7-N2-C2
6	A	1405	NAG	O7-C7-N2-C2
6	B	1405	NAG	C8-C7-N2-C2
6	B	1405	NAG	O7-C7-N2-C2
6	C	1405	NAG	C8-C7-N2-C2
6	C	1405	NAG	O7-C7-N2-C2
6	C	1406	NAG	C8-C7-N2-C2
6	C	1406	NAG	O7-C7-N2-C2
6	B	1407	NAG	C4-C5-C6-O6
6	C	1401	NAG	O5-C5-C6-O6
6	C	1408	NAG	C4-C5-C6-O6
6	A	1404	NAG	C4-C5-C6-O6
6	B	1405	NAG	O5-C5-C6-O6
6	A	1403	NAG	C4-C5-C6-O6
6	A	1403	NAG	O5-C5-C6-O6
6	C	1403	NAG	O5-C5-C6-O6
6	C	1407	NAG	C4-C5-C6-O6
6	C	1403	NAG	C4-C5-C6-O6
6	B	1409	NAG	C4-C5-C6-O6
6	A	1408	NAG	C4-C5-C6-O6
6	B	1403	NAG	O5-C5-C6-O6
6	B	1406	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
6	B	1403	NAG	C4-C5-C6-O6
6	C	1404	NAG	O5-C5-C6-O6
6	C	1407	NAG	O5-C5-C6-O6
6	B	1409	NAG	O5-C5-C6-O6
6	A	1401	NAG	C4-C5-C6-O6
6	B	1405	NAG	C4-C5-C6-O6
6	B	1406	NAG	O5-C5-C6-O6
6	B	1406	NAG	C3-C2-N2-C7
6	B	1407	NAG	C3-C2-N2-C7
6	C	1407	NAG	C3-C2-N2-C7
6	A	1405	NAG	C1-C2-N2-C7
6	B	1405	NAG	C1-C2-N2-C7
6	B	1406	NAG	C1-C2-N2-C7
6	B	1407	NAG	C1-C2-N2-C7
6	C	1405	NAG	C1-C2-N2-C7
6	C	1407	NAG	C1-C2-N2-C7
6	A	1405	NAG	C3-C2-N2-C7
6	B	1405	NAG	C3-C2-N2-C7
6	C	1403	NAG	C3-C2-N2-C7
6	C	1405	NAG	C3-C2-N2-C7

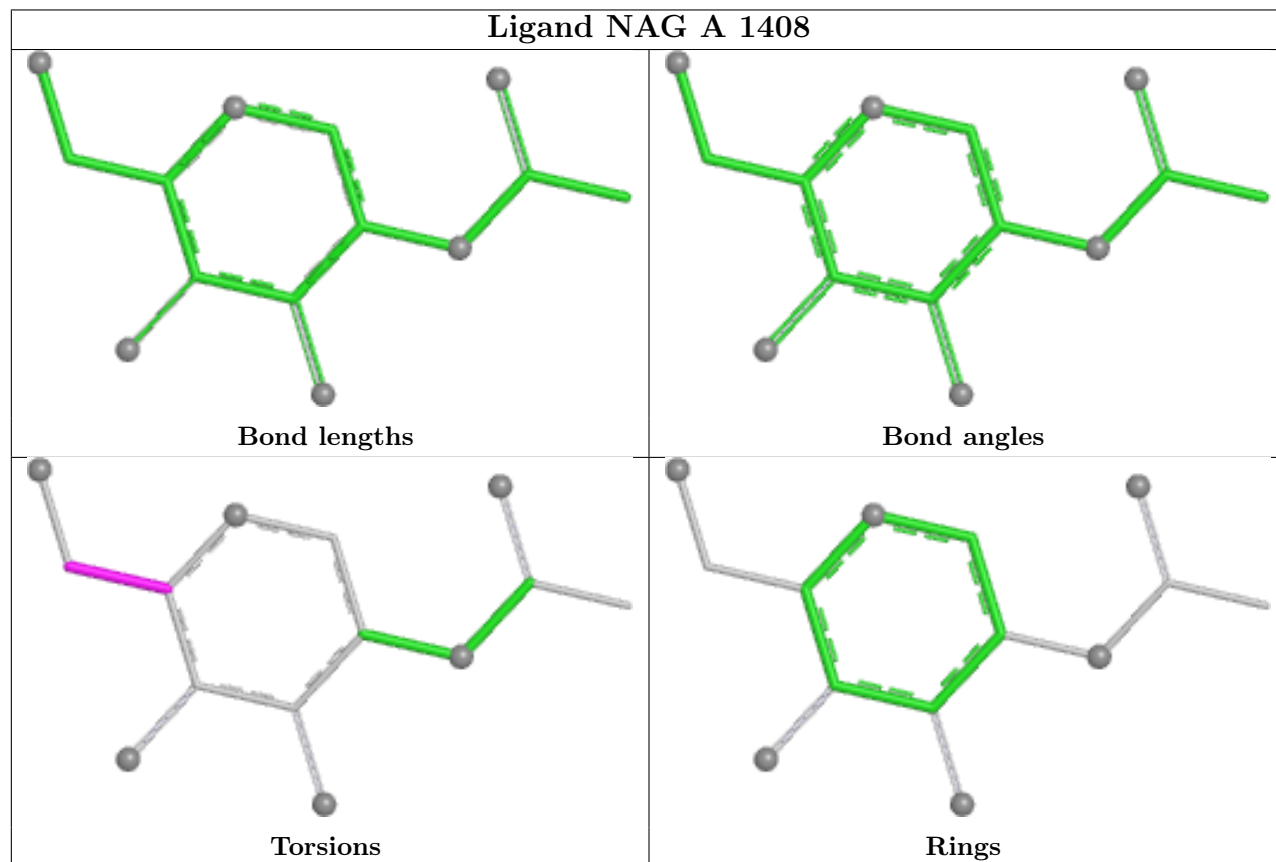
There are no ring outliers.

10 monomers are involved in 16 short contacts:

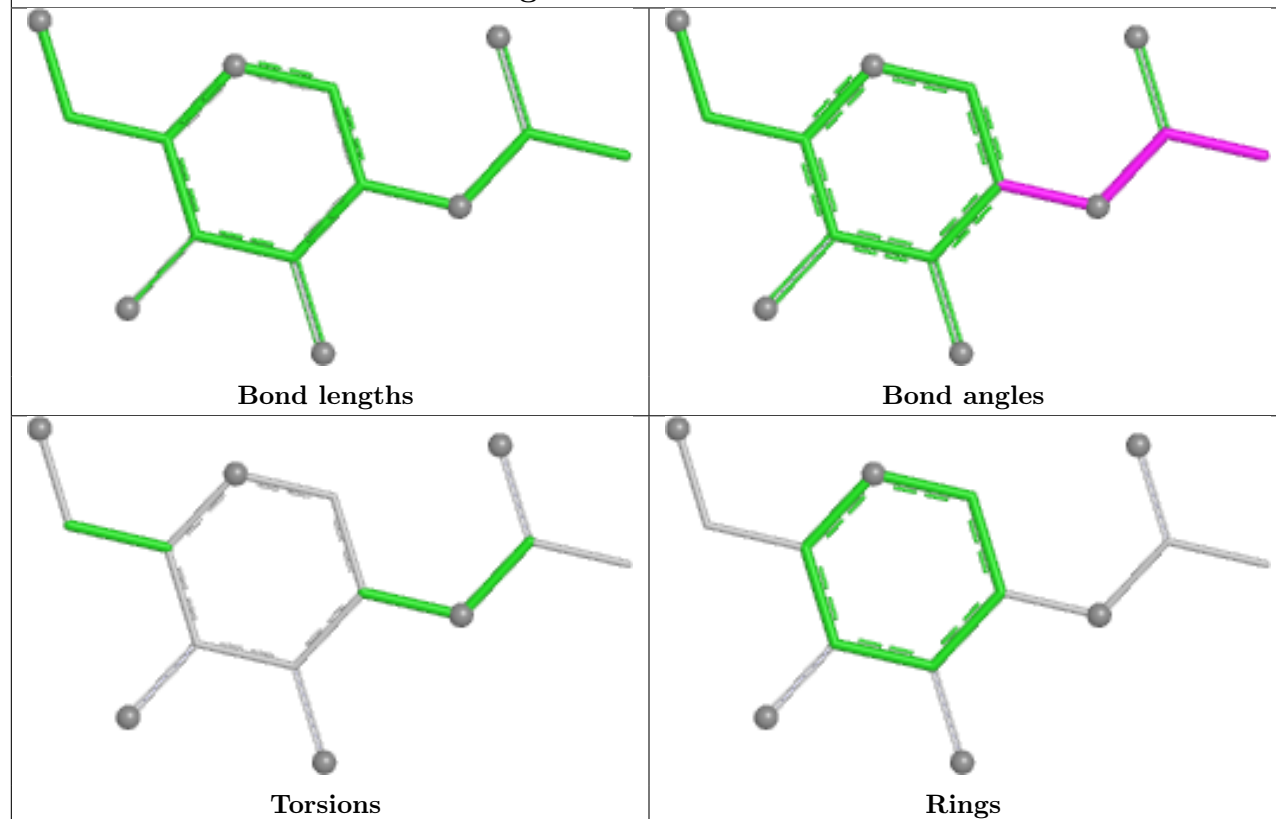
Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	B	1410	NAG	4	0
6	C	1405	NAG	1	0
6	B	1402	NAG	1	0
6	A	1402	NAG	3	0
6	B	1405	NAG	2	0
6	A	1405	NAG	1	0
6	B	1411	NAG	4	0
6	B	1403	NAG	2	0
6	B	1407	NAG	1	0
6	C	1402	NAG	1	0

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

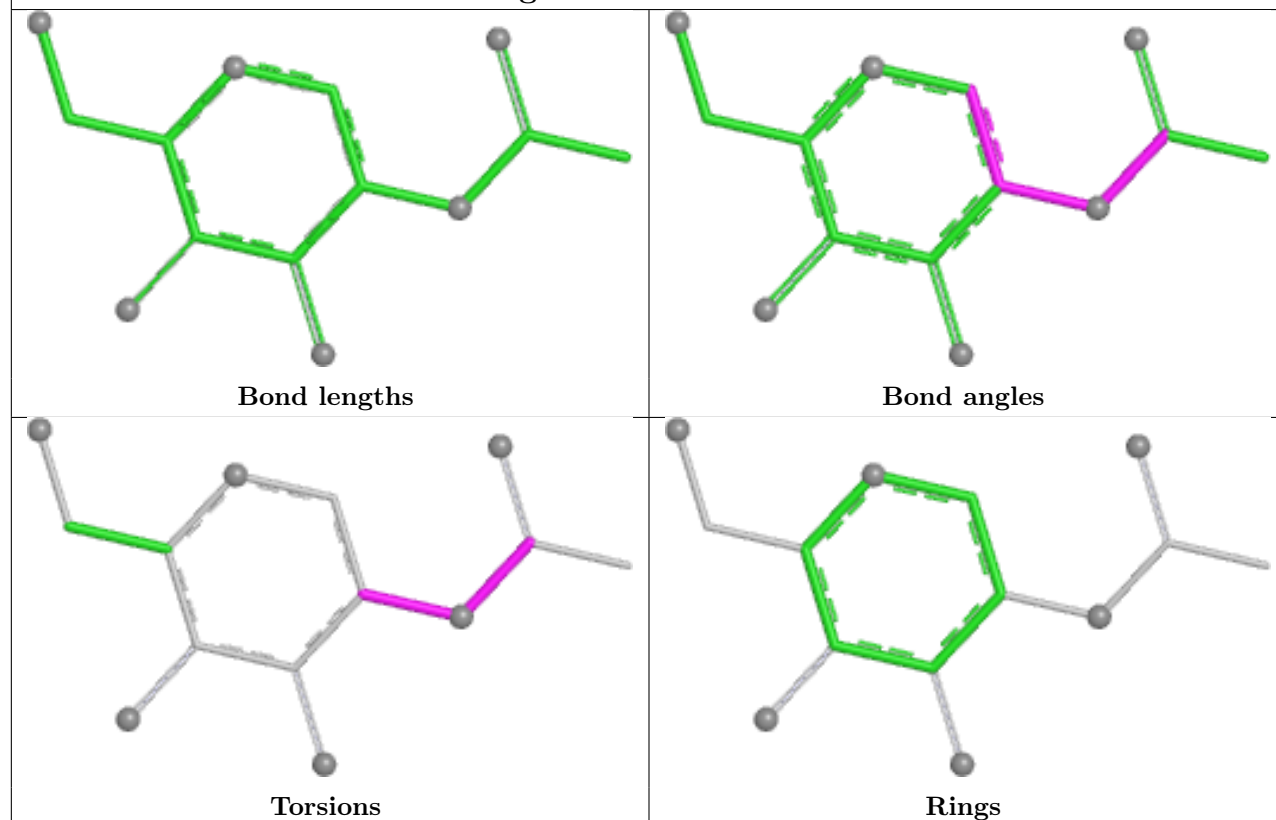
highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified 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.



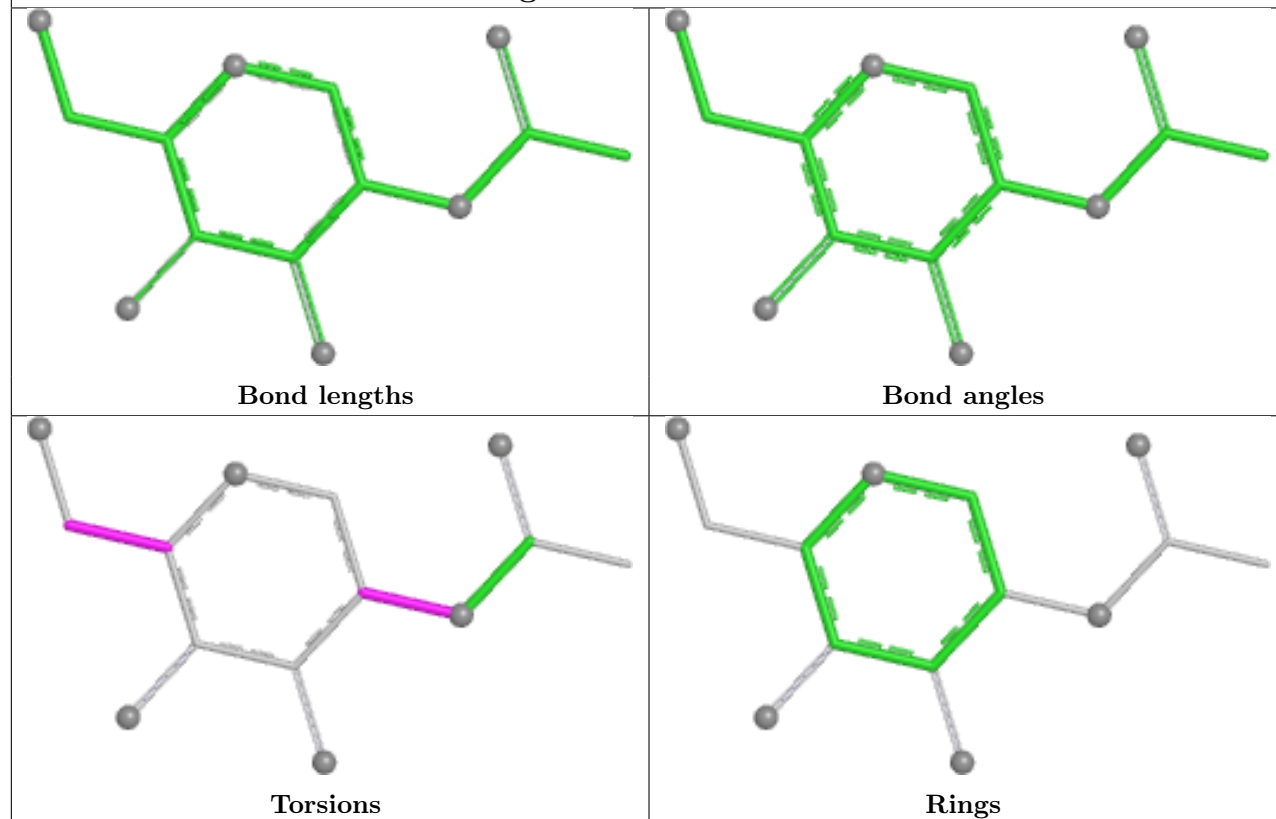
Ligand NAG B 1410



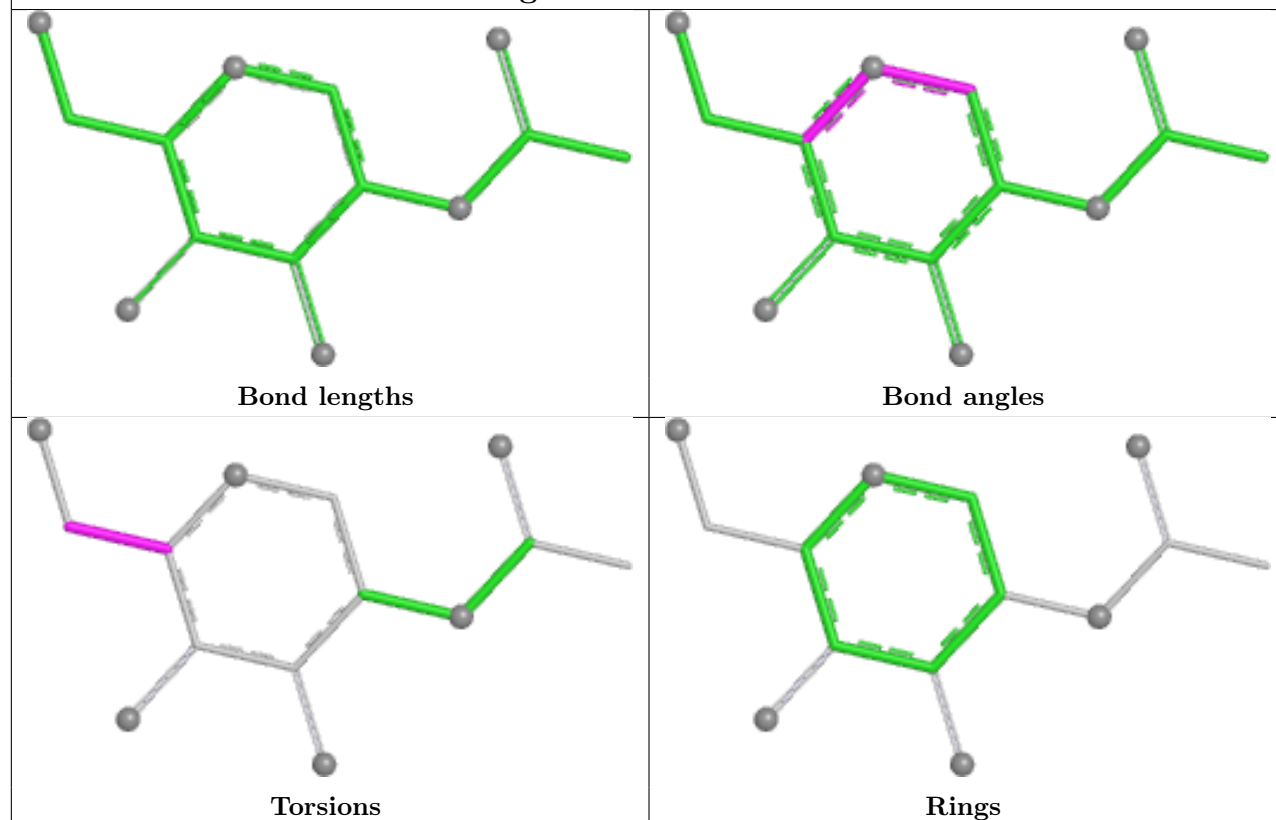
Ligand NAG C 1405



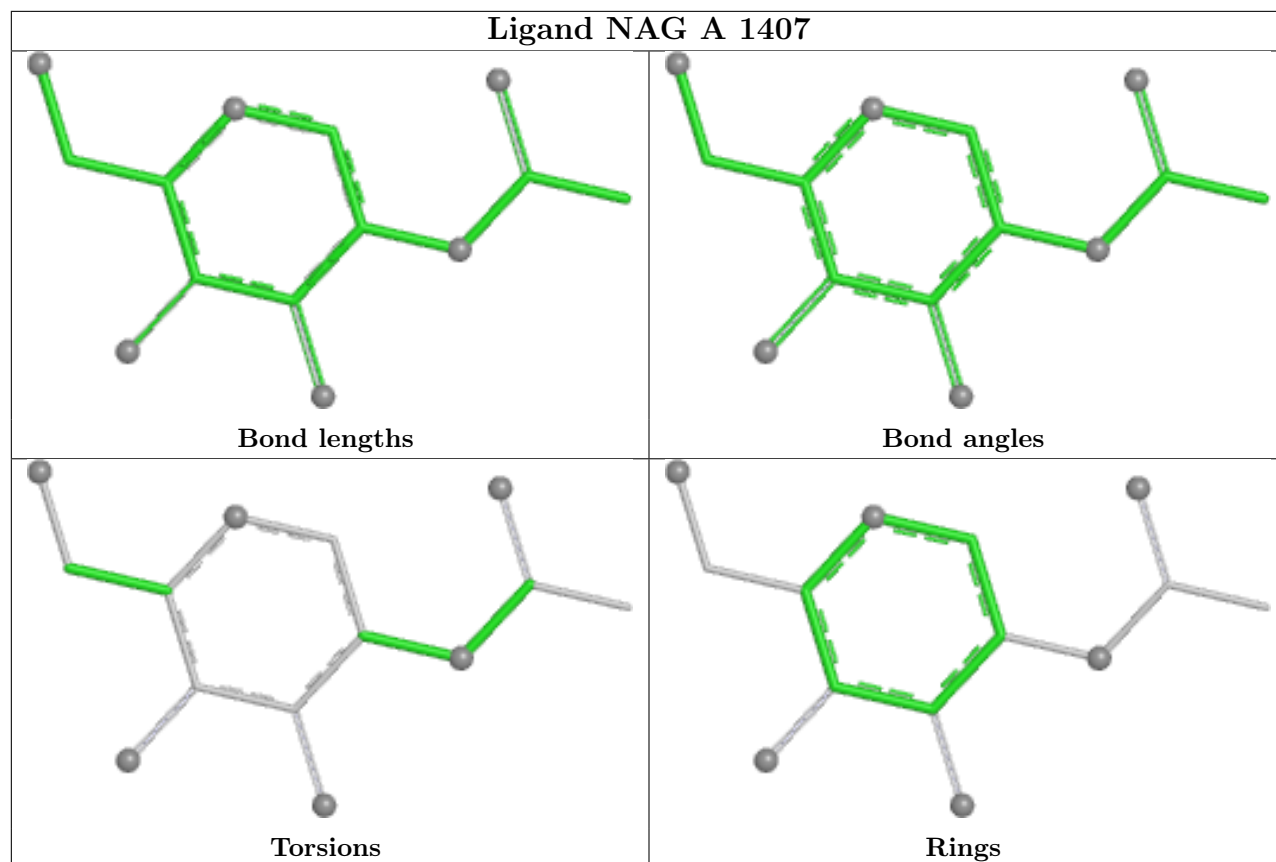
Ligand NAG C 1407



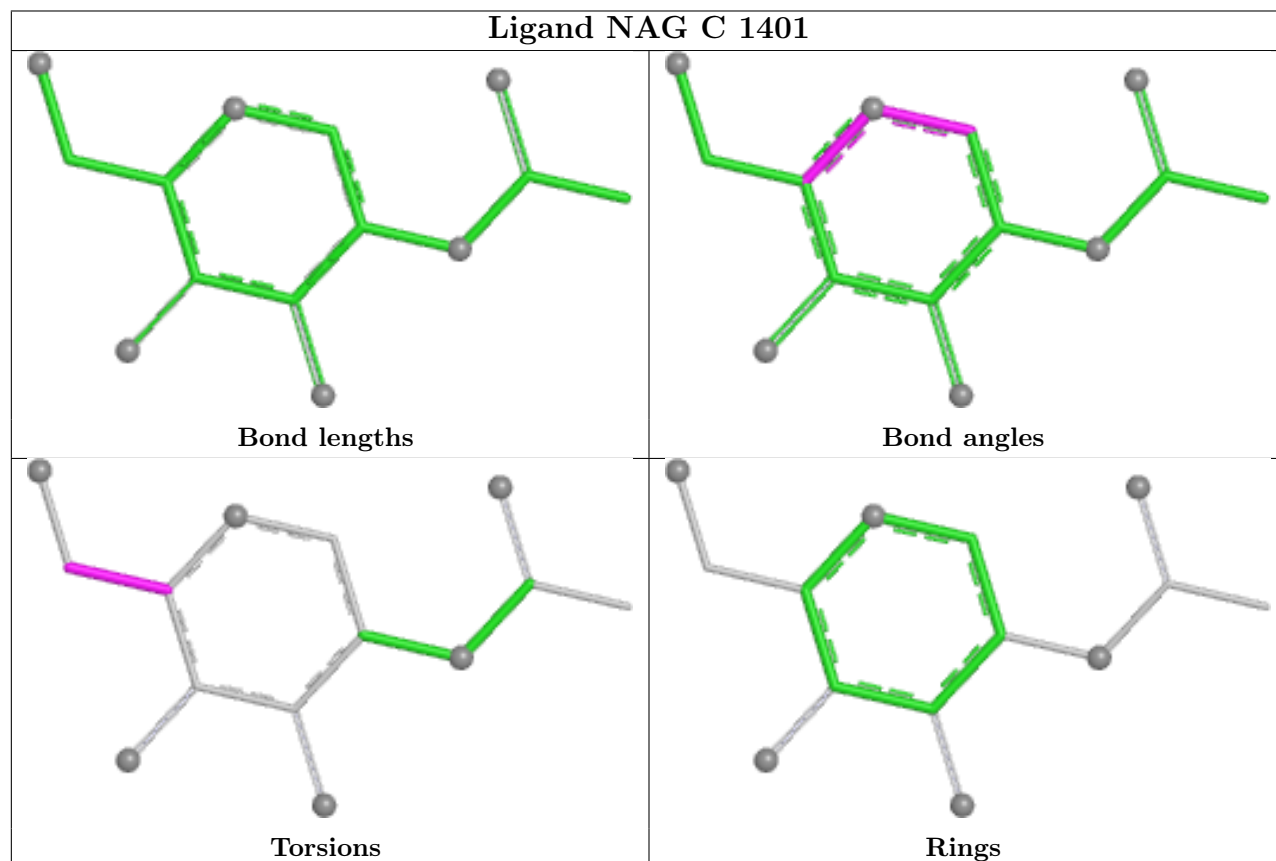
Ligand NAG B 1404



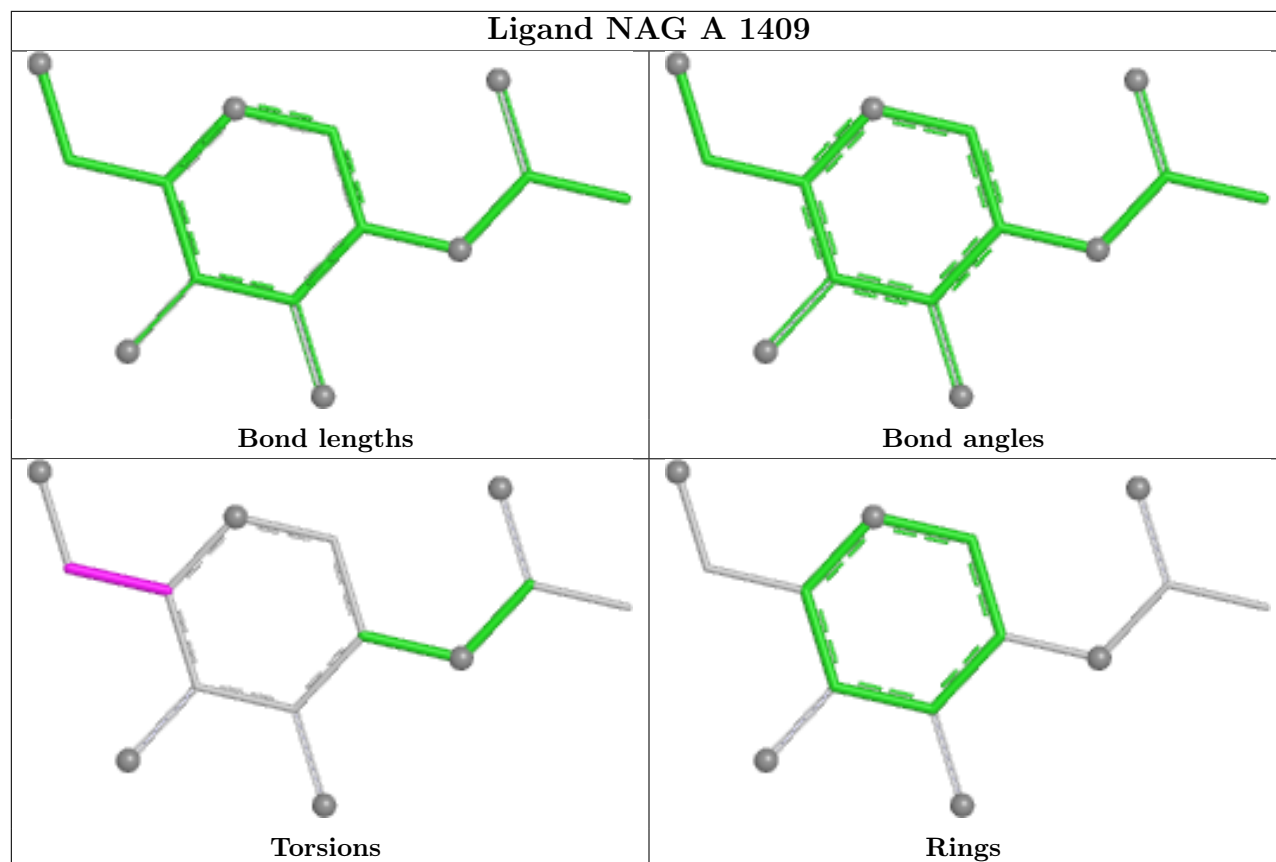
Ligand NAG A 1407



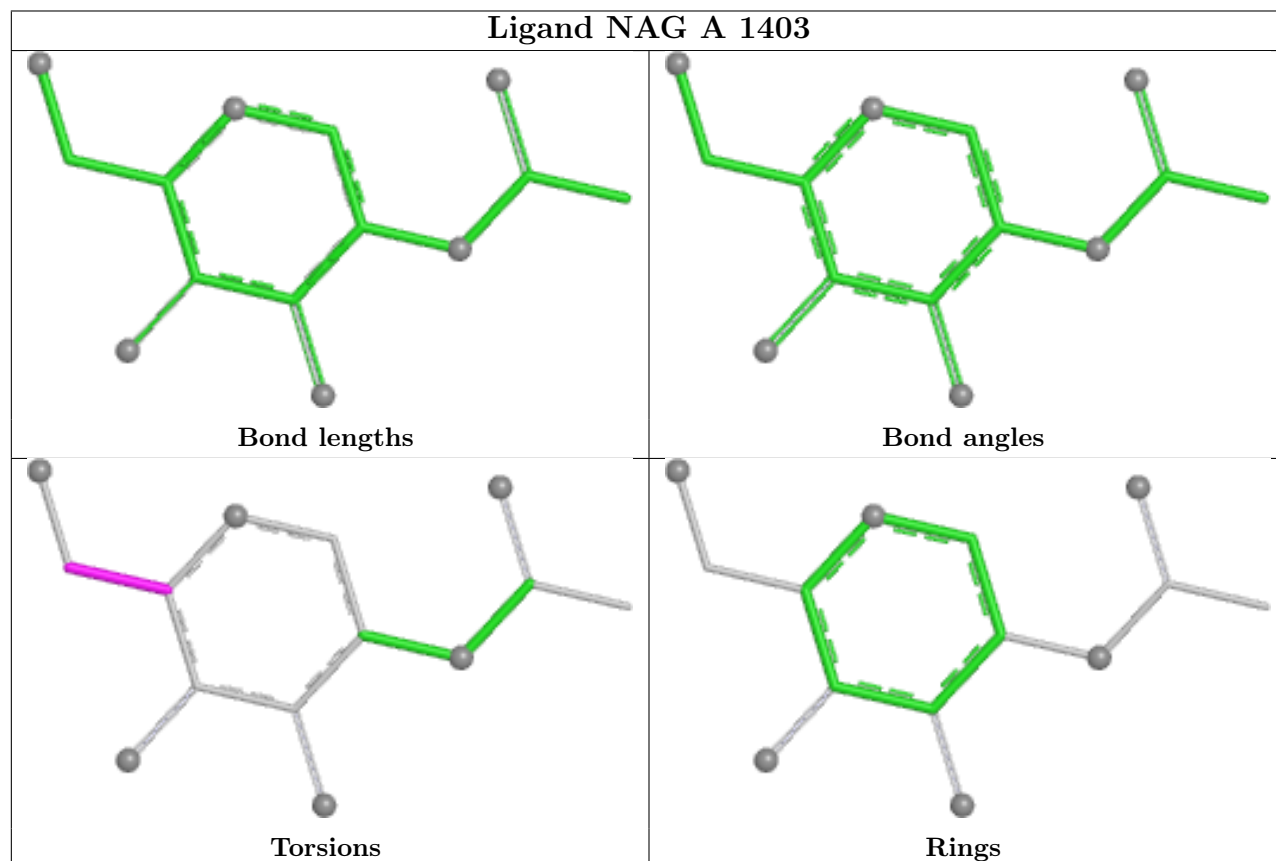
Ligand NAG C 1401



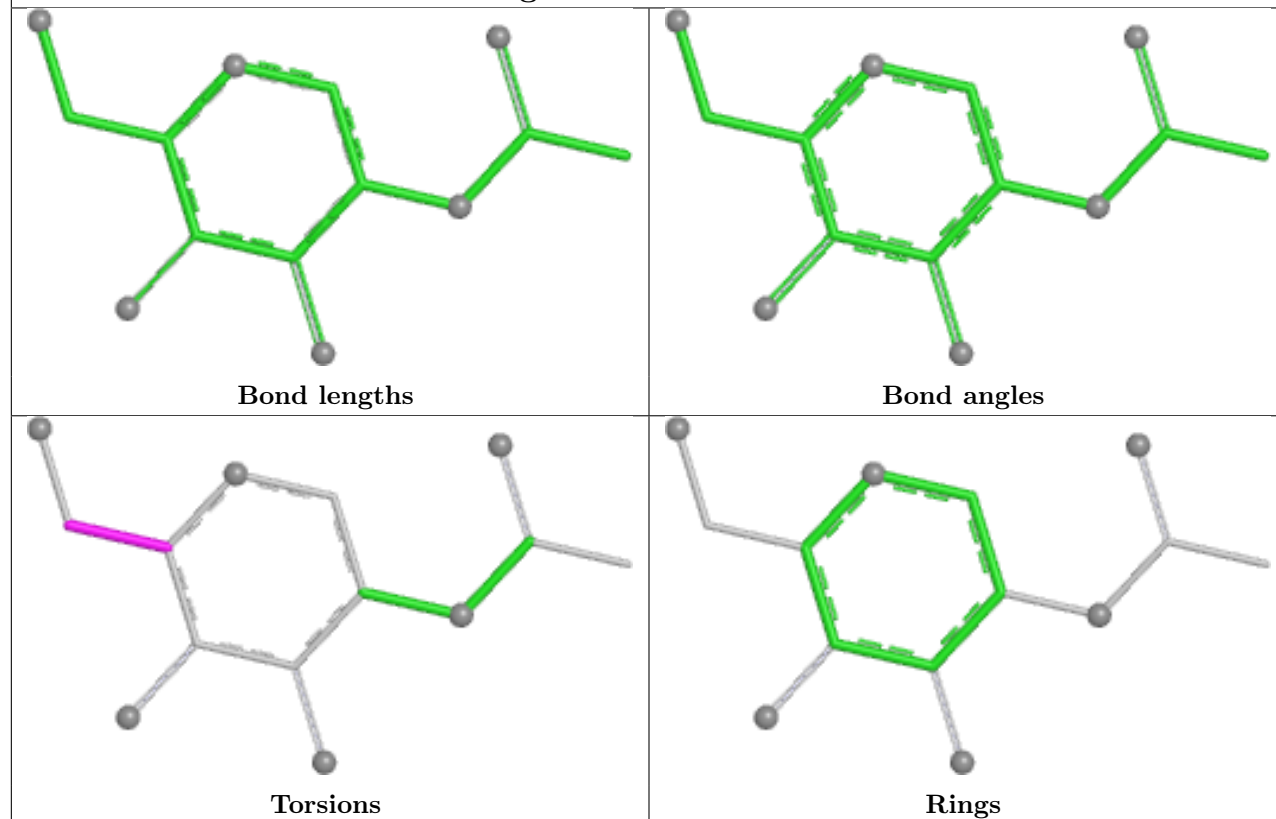
Ligand NAG A 1409



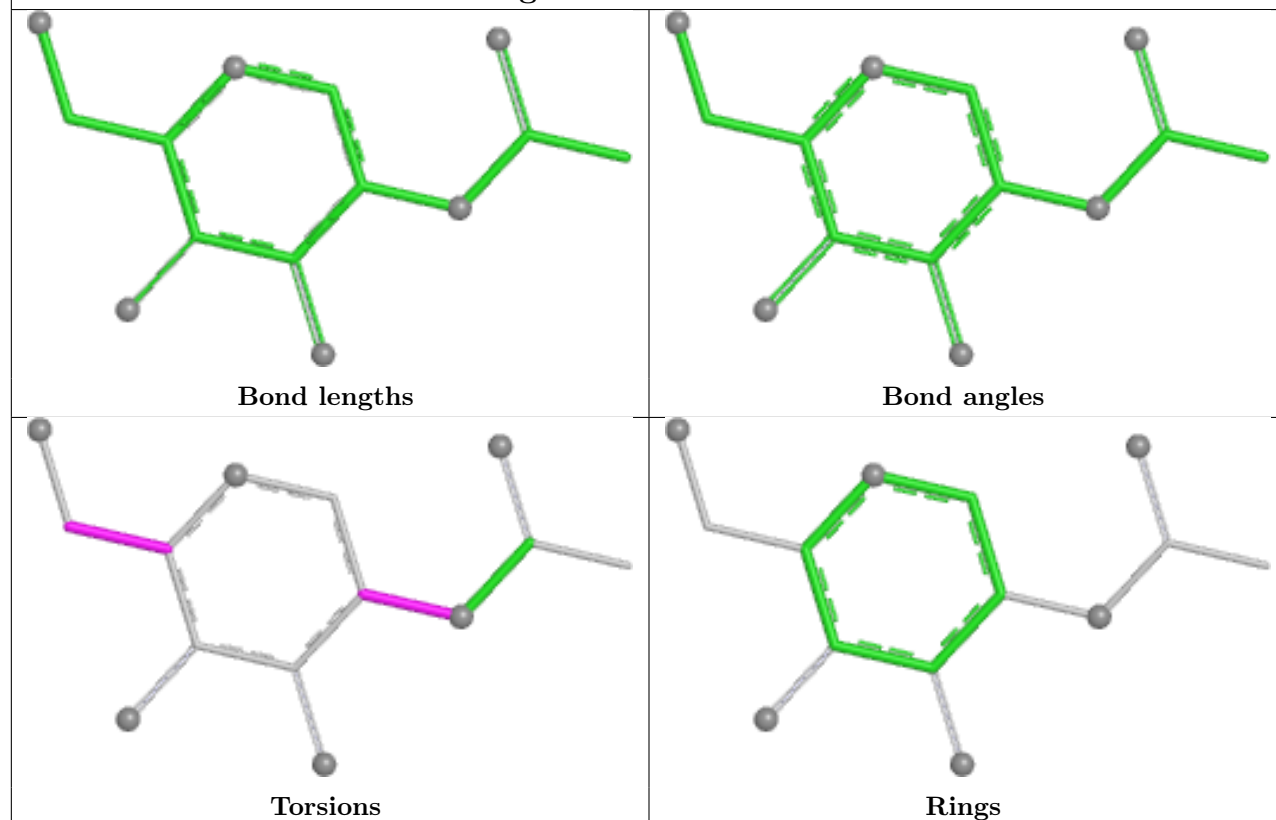
Ligand NAG A 1403



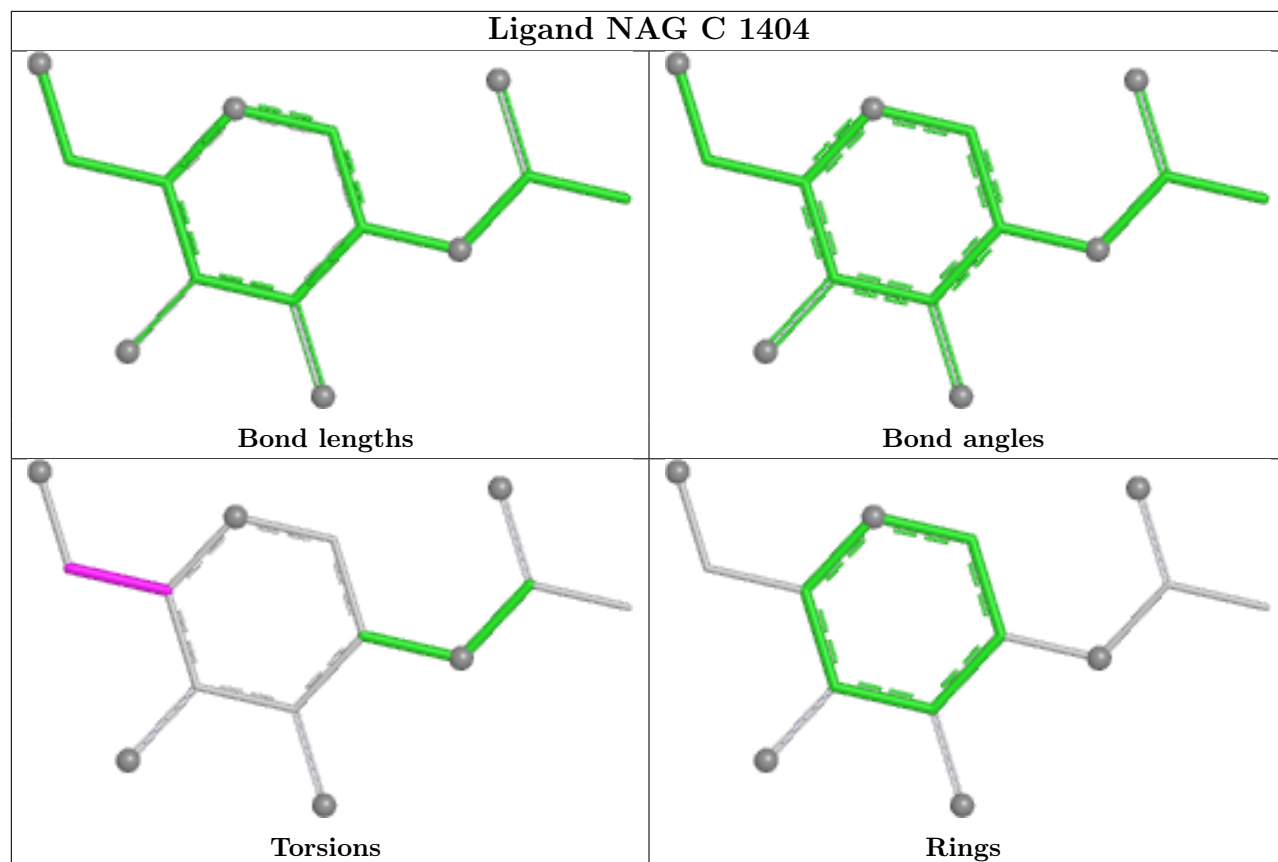
Ligand NAG B 1401



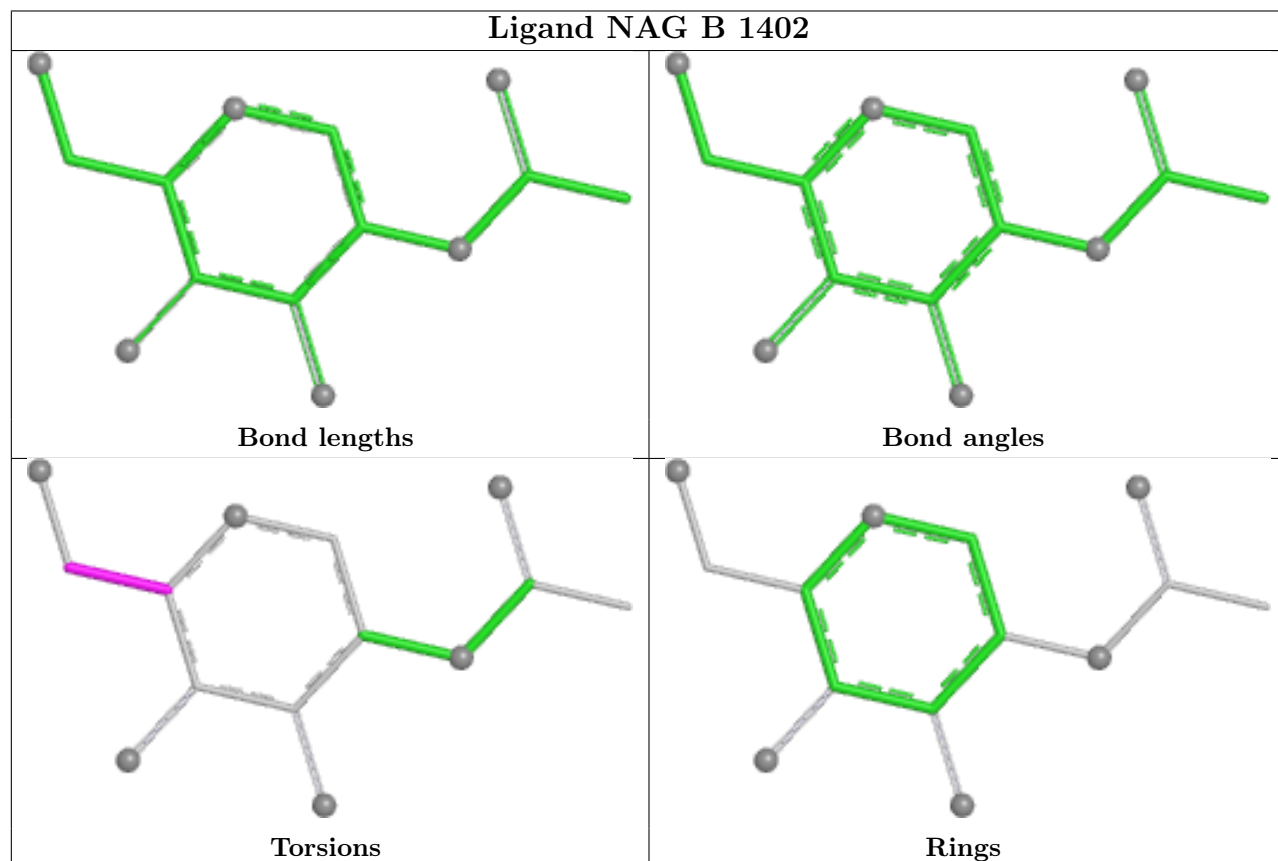
Ligand NAG C 1403



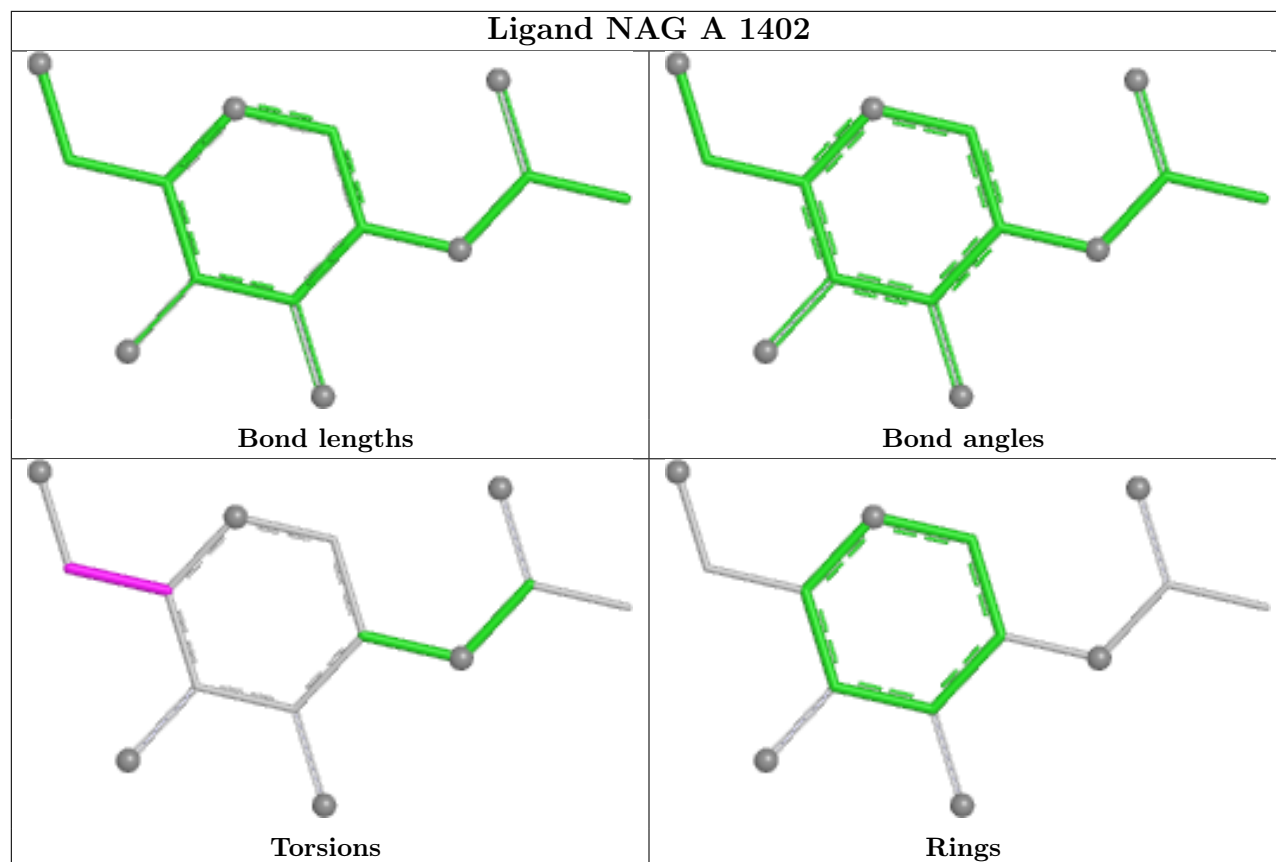
Ligand NAG C 1404



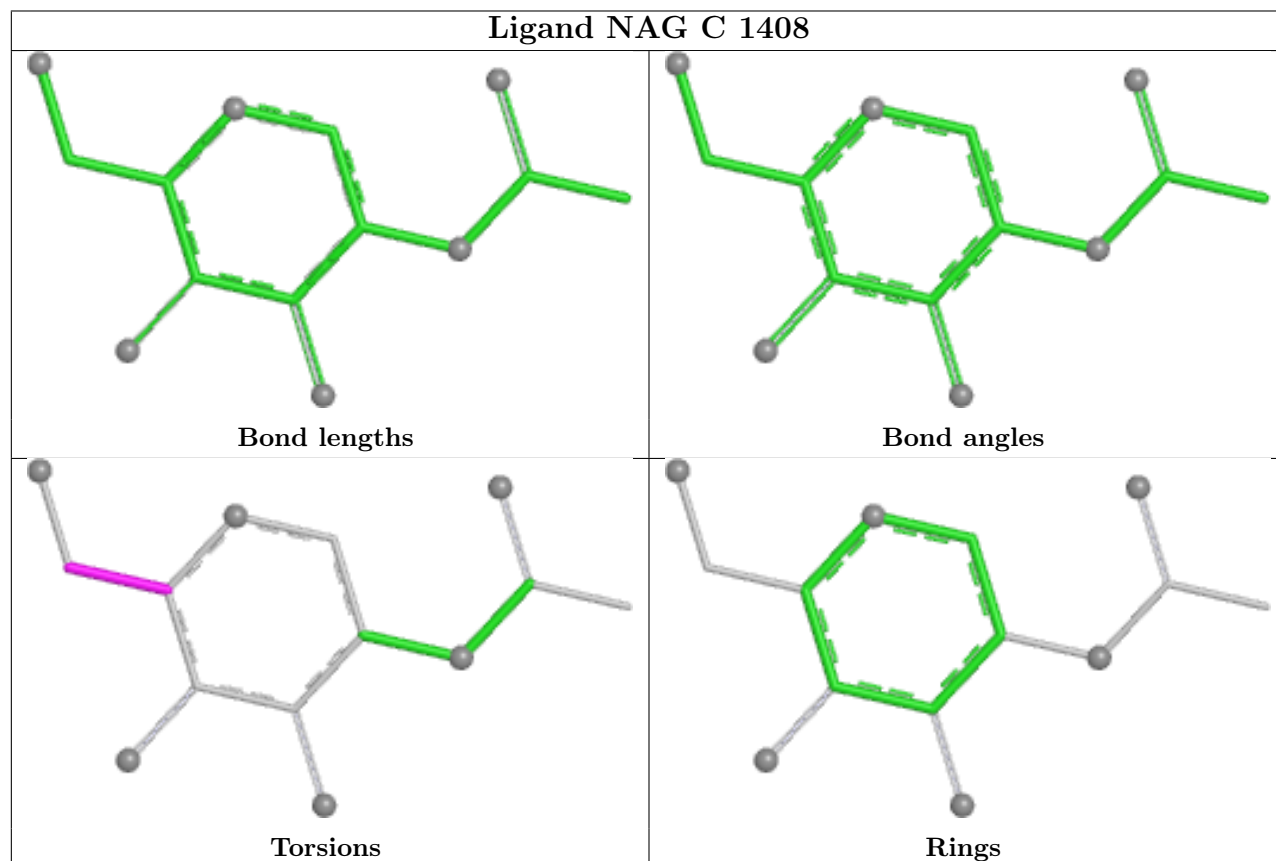
Ligand NAG B 1402



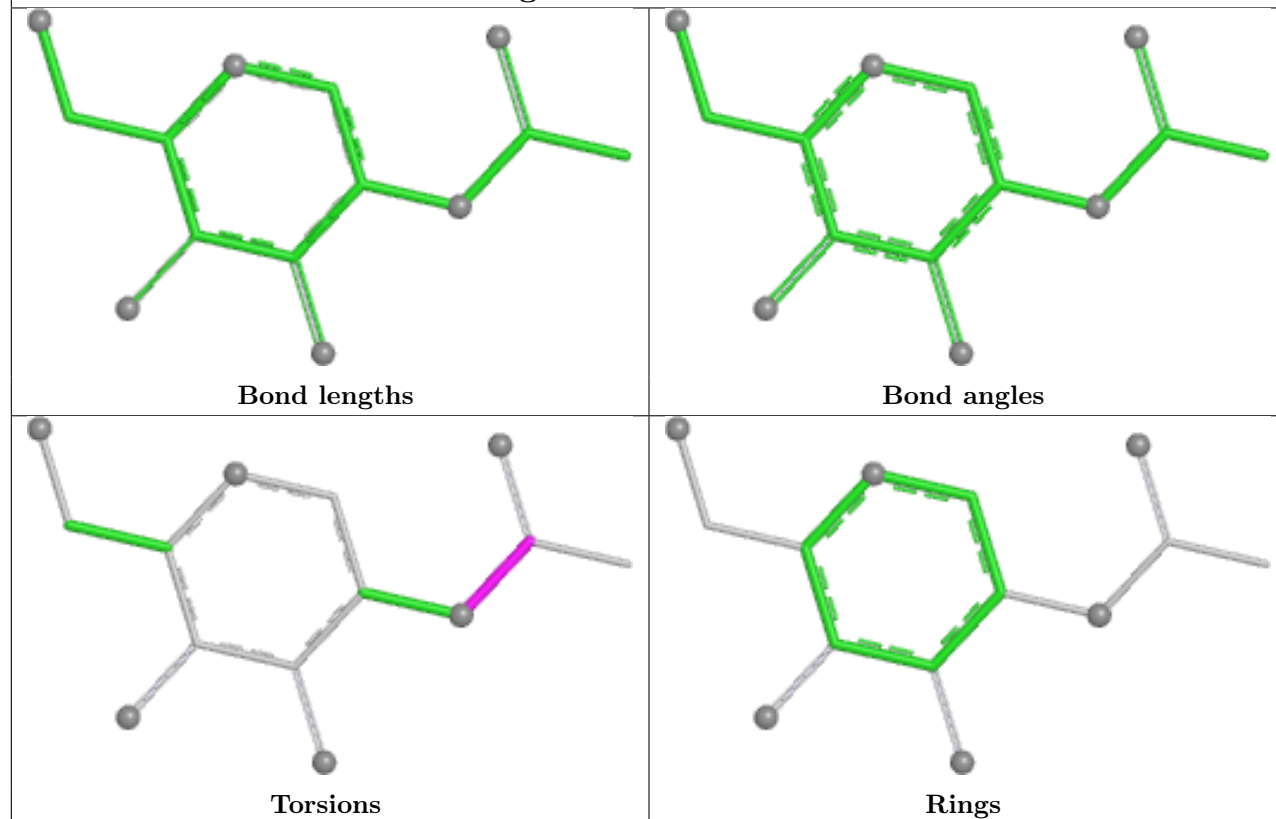
Ligand NAG A 1402



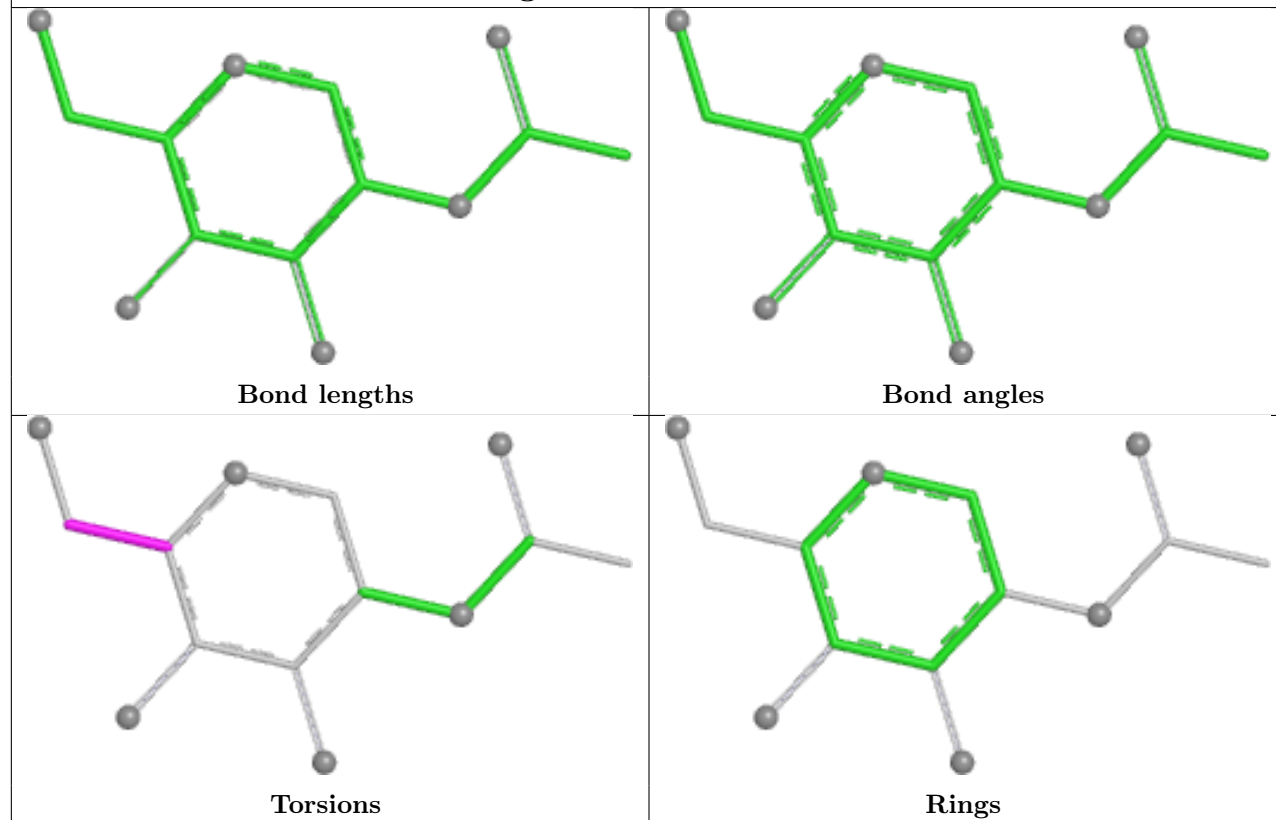
Ligand NAG C 1408



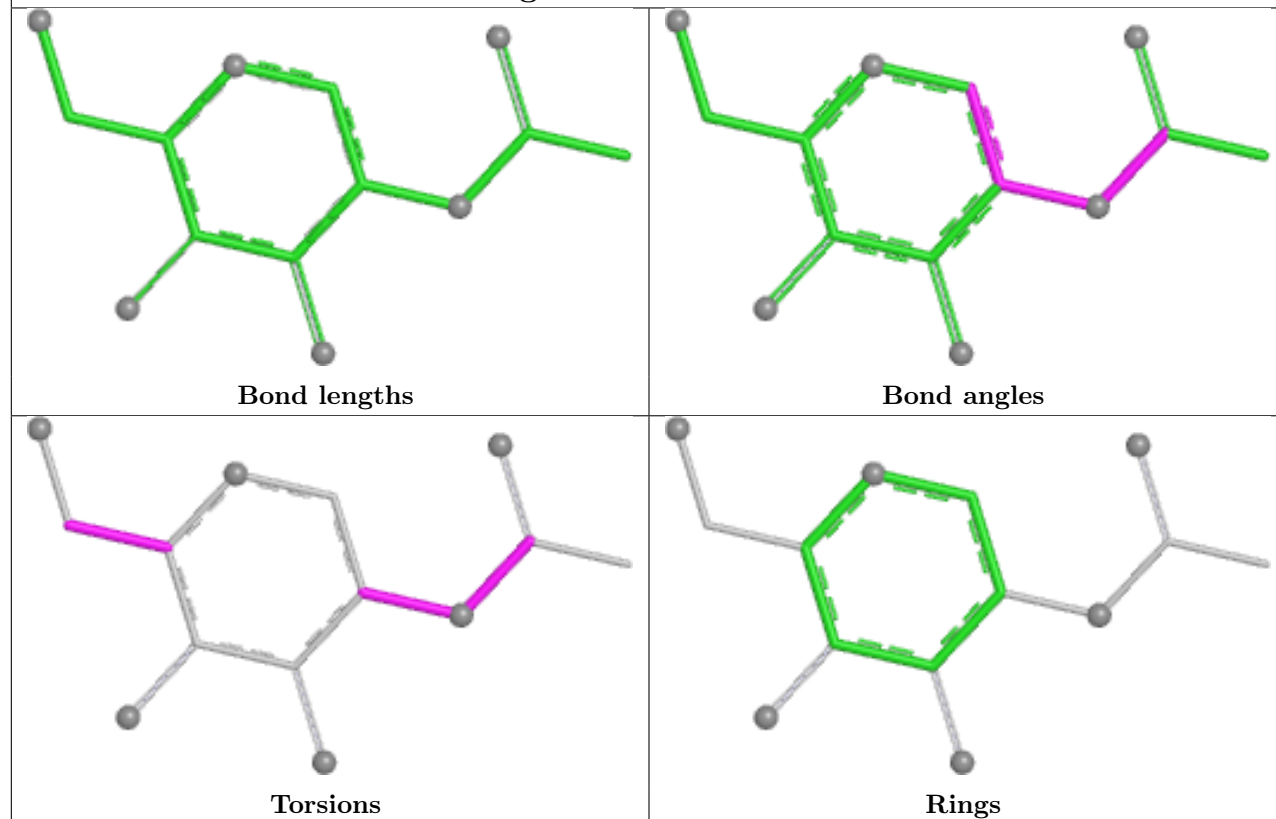
Ligand NAG C 1406



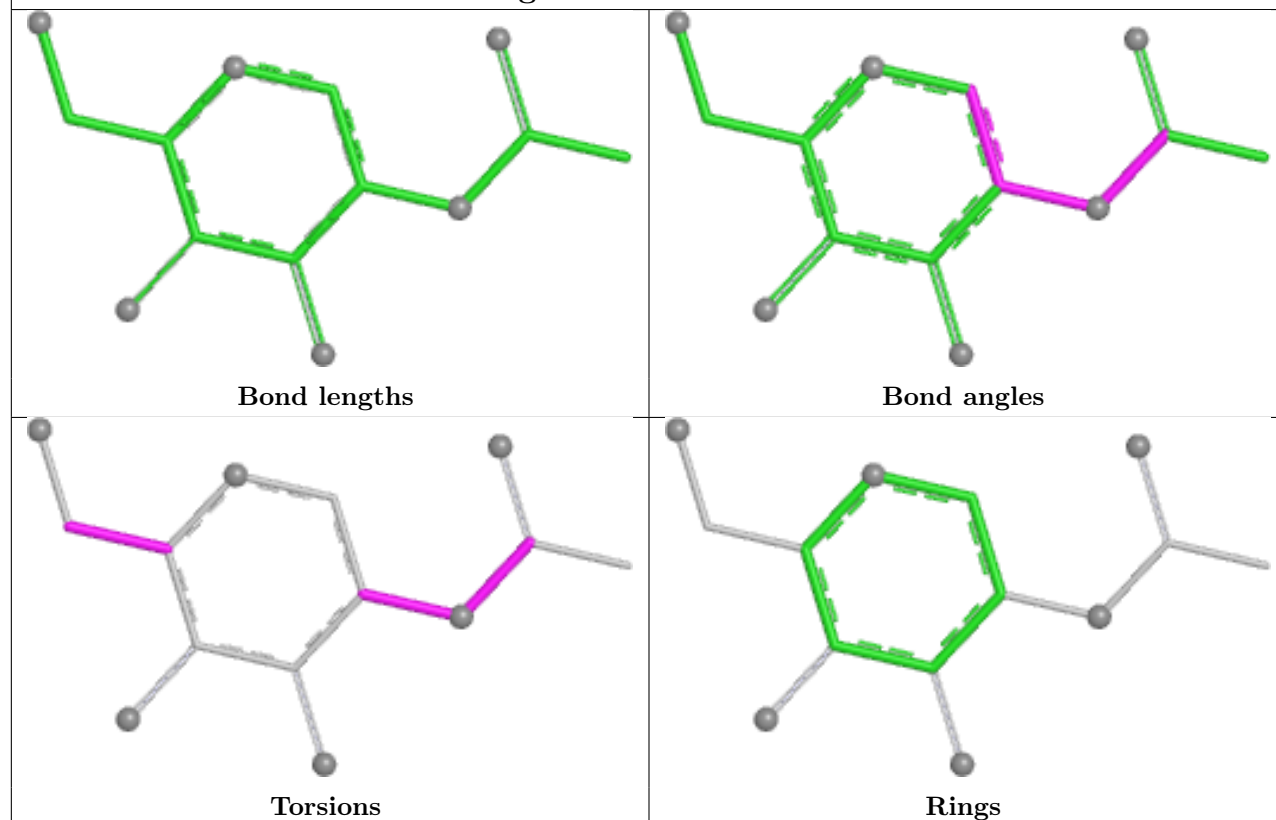
Ligand NAG A 1406



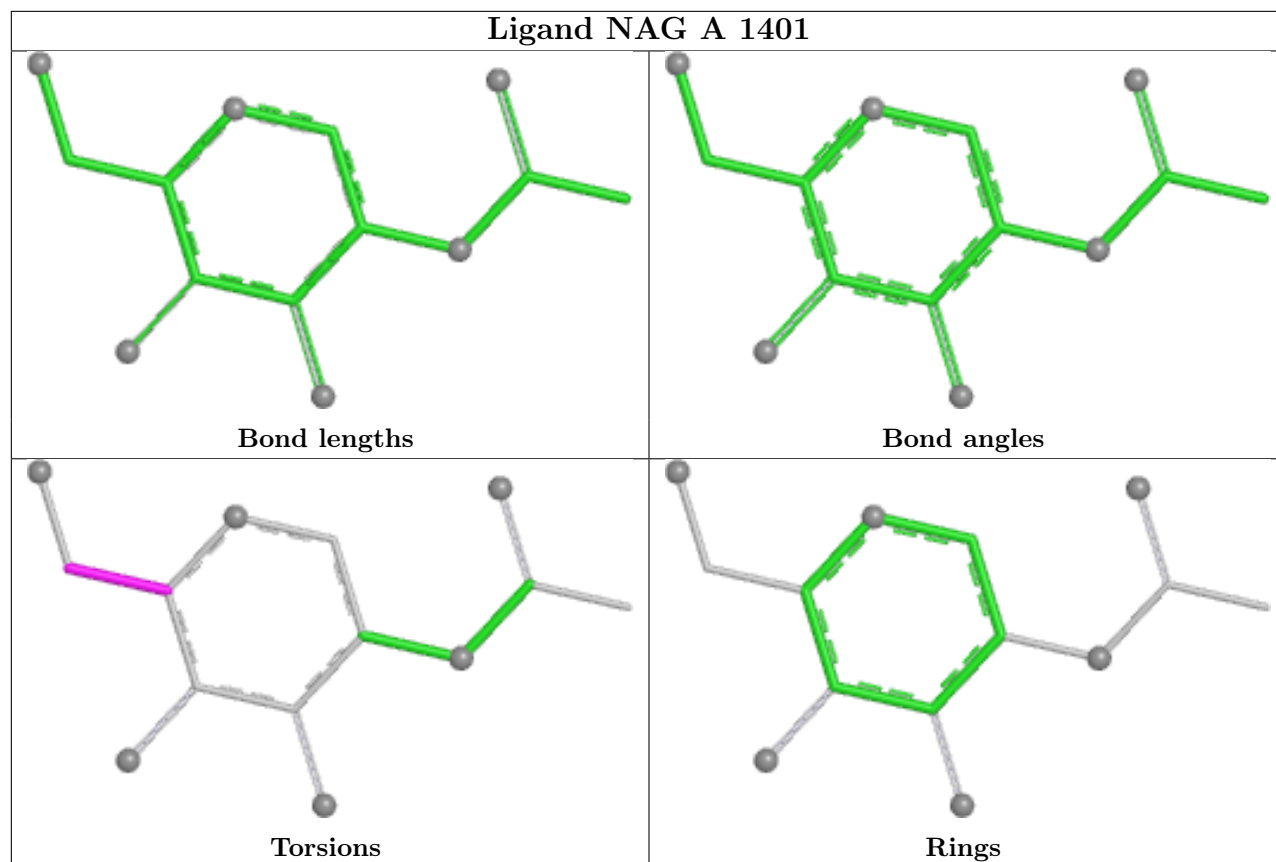
Ligand NAG B 1405



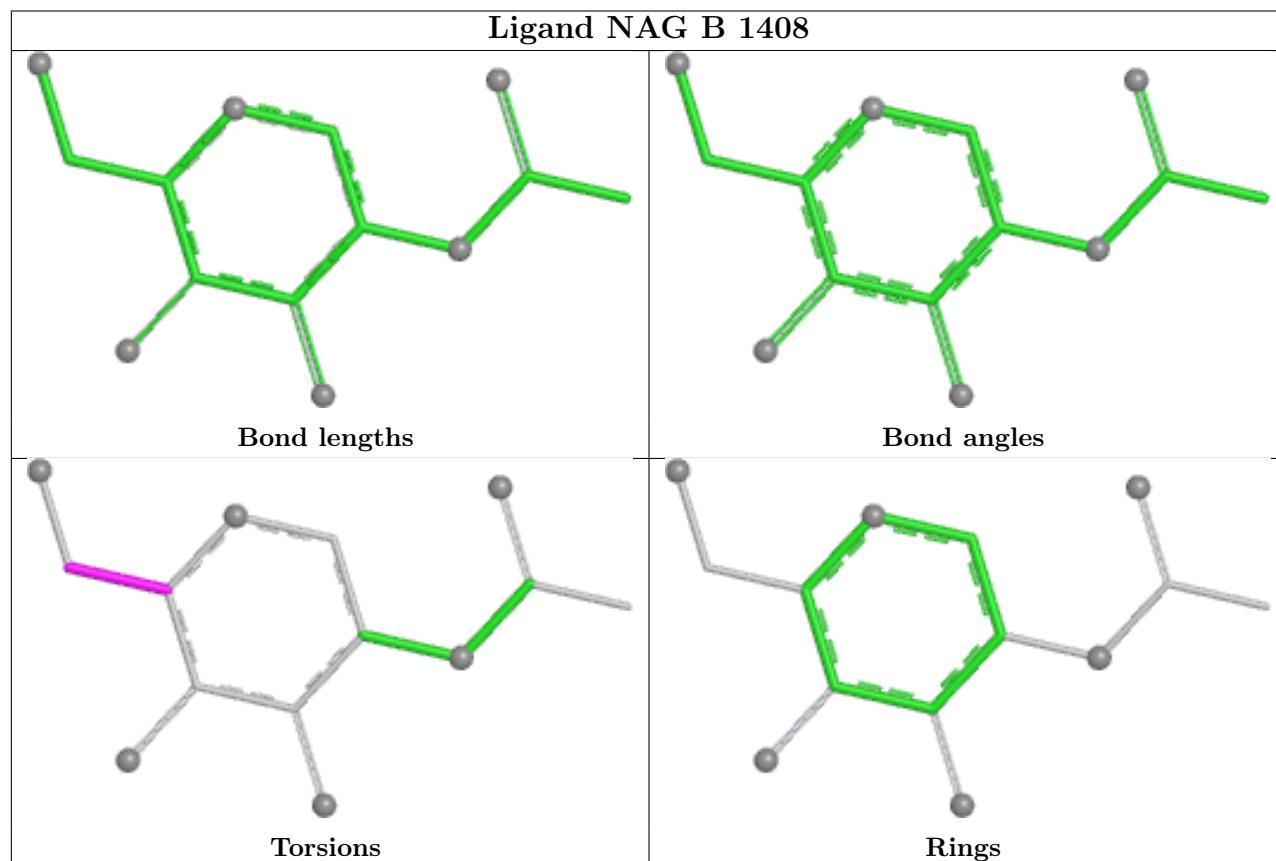
Ligand NAG A 1405



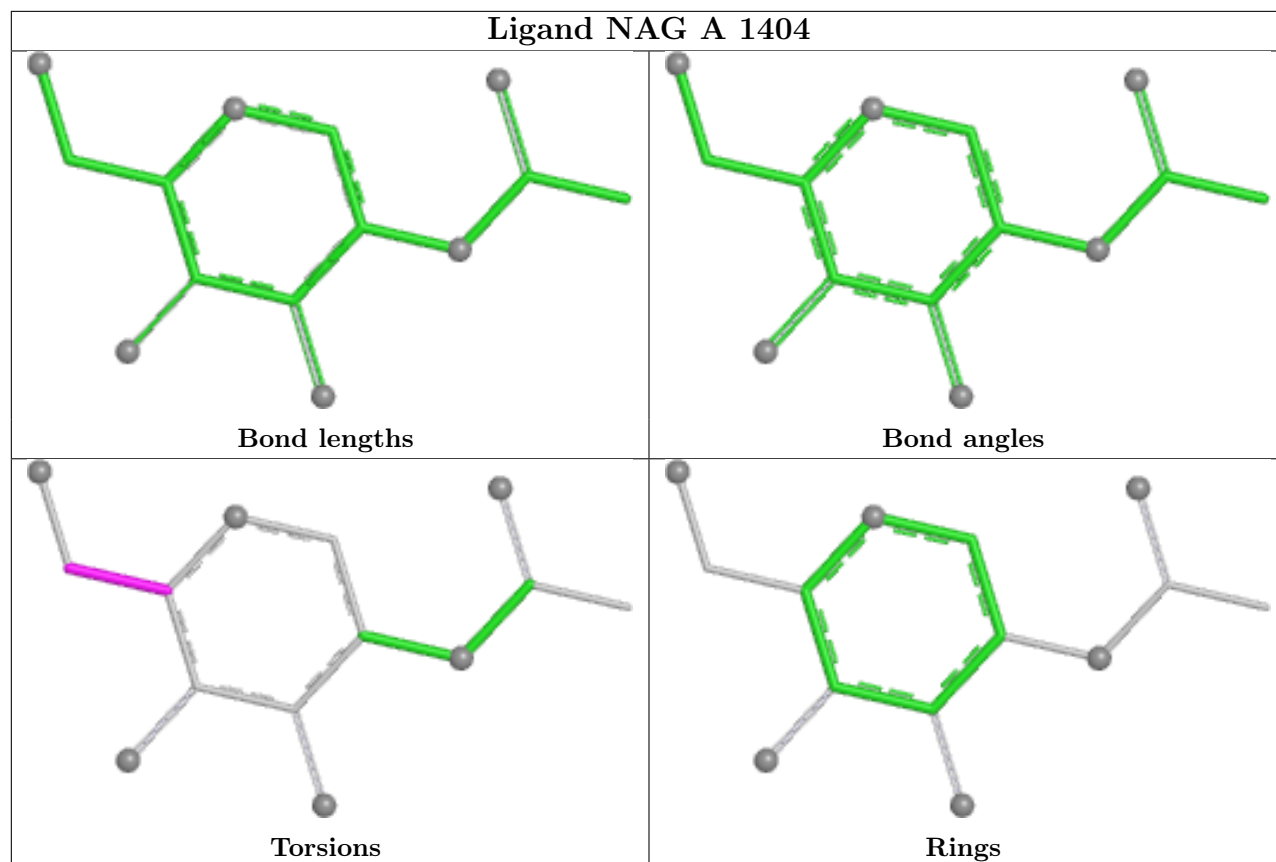
Ligand NAG A 1401



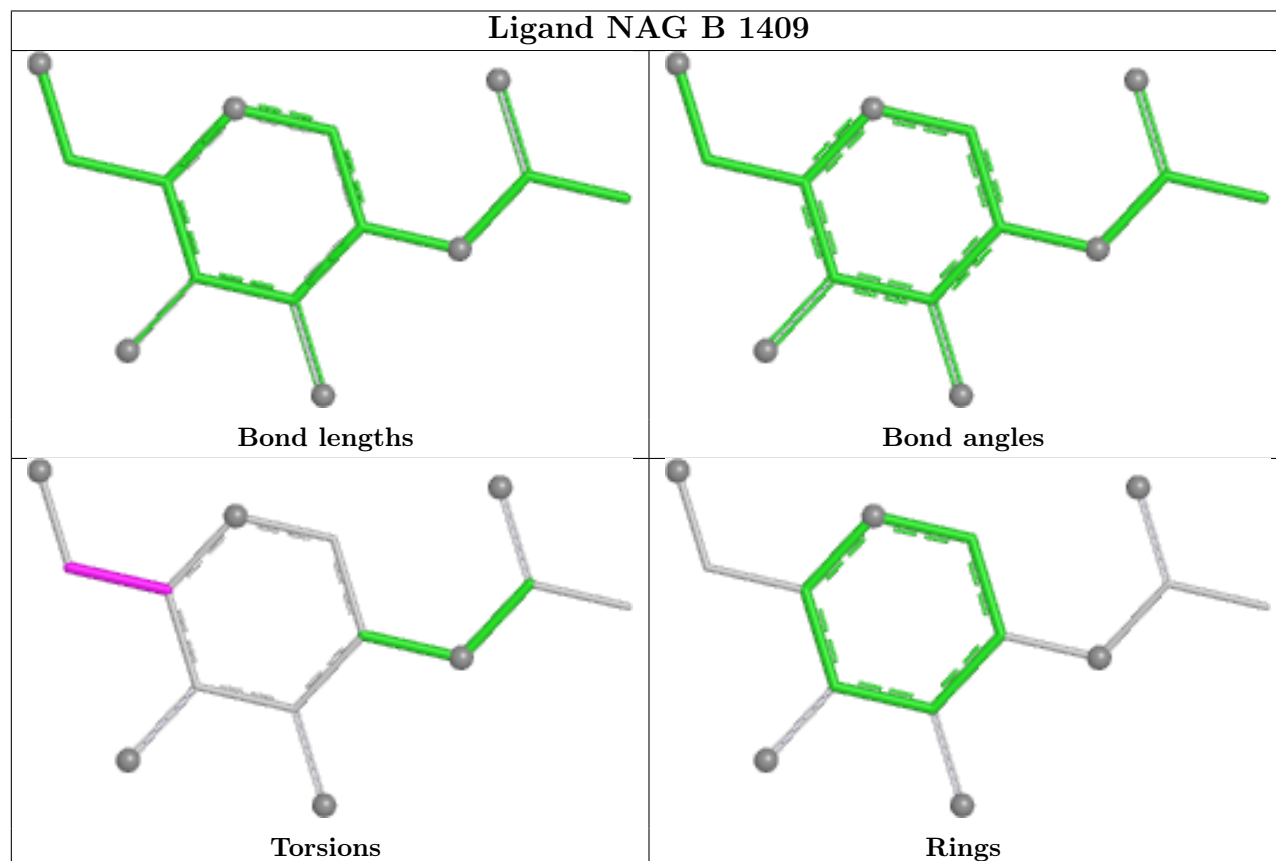
Ligand NAG B 1408



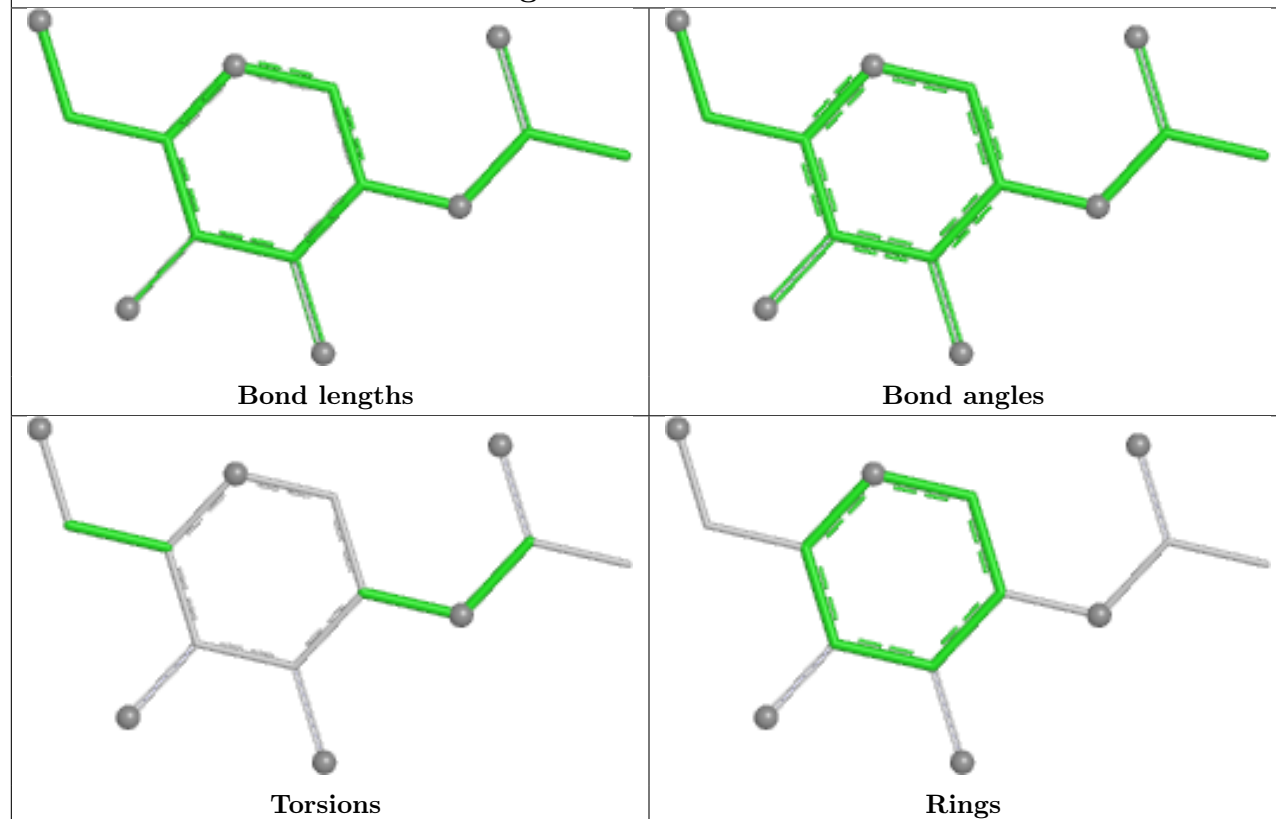
Ligand NAG A 1404



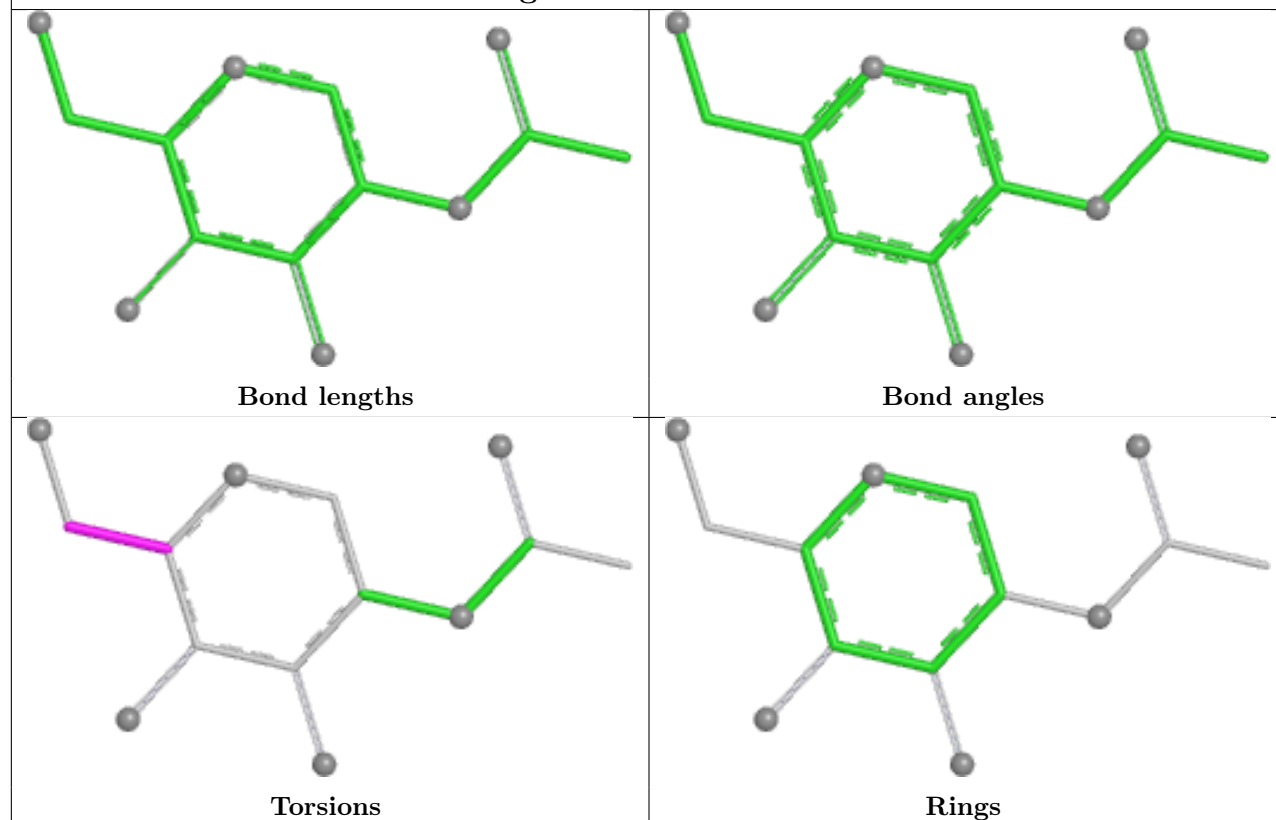
Ligand NAG B 1409



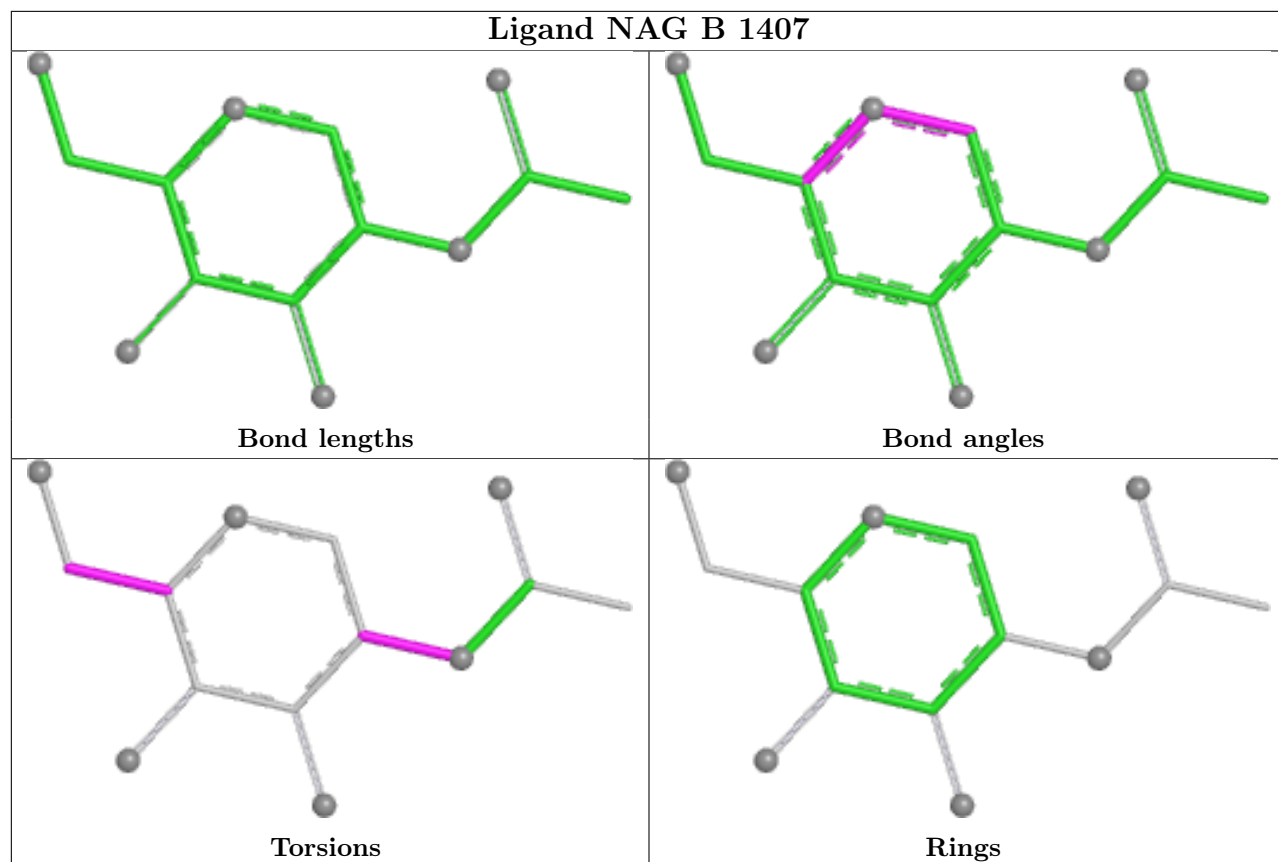
Ligand NAG B 1411



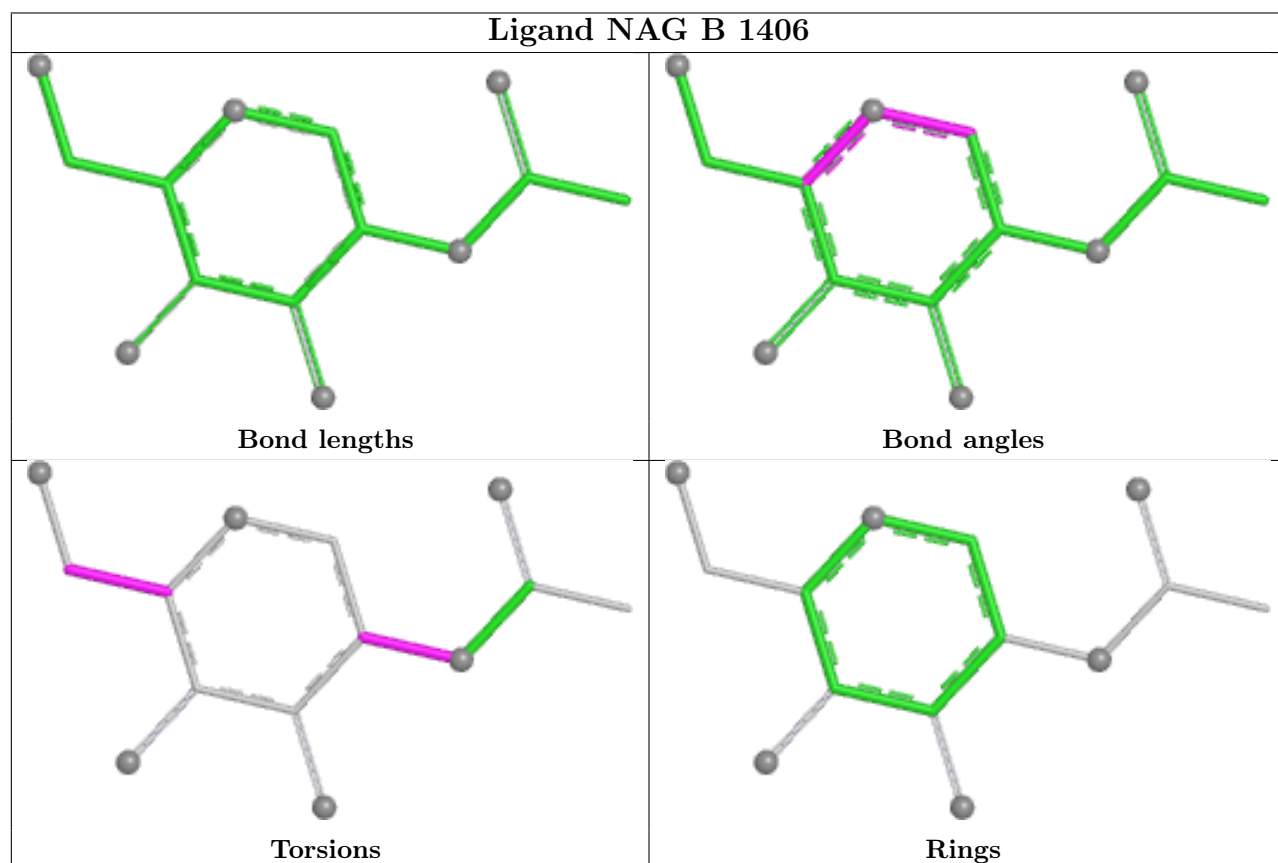
Ligand NAG B 1403

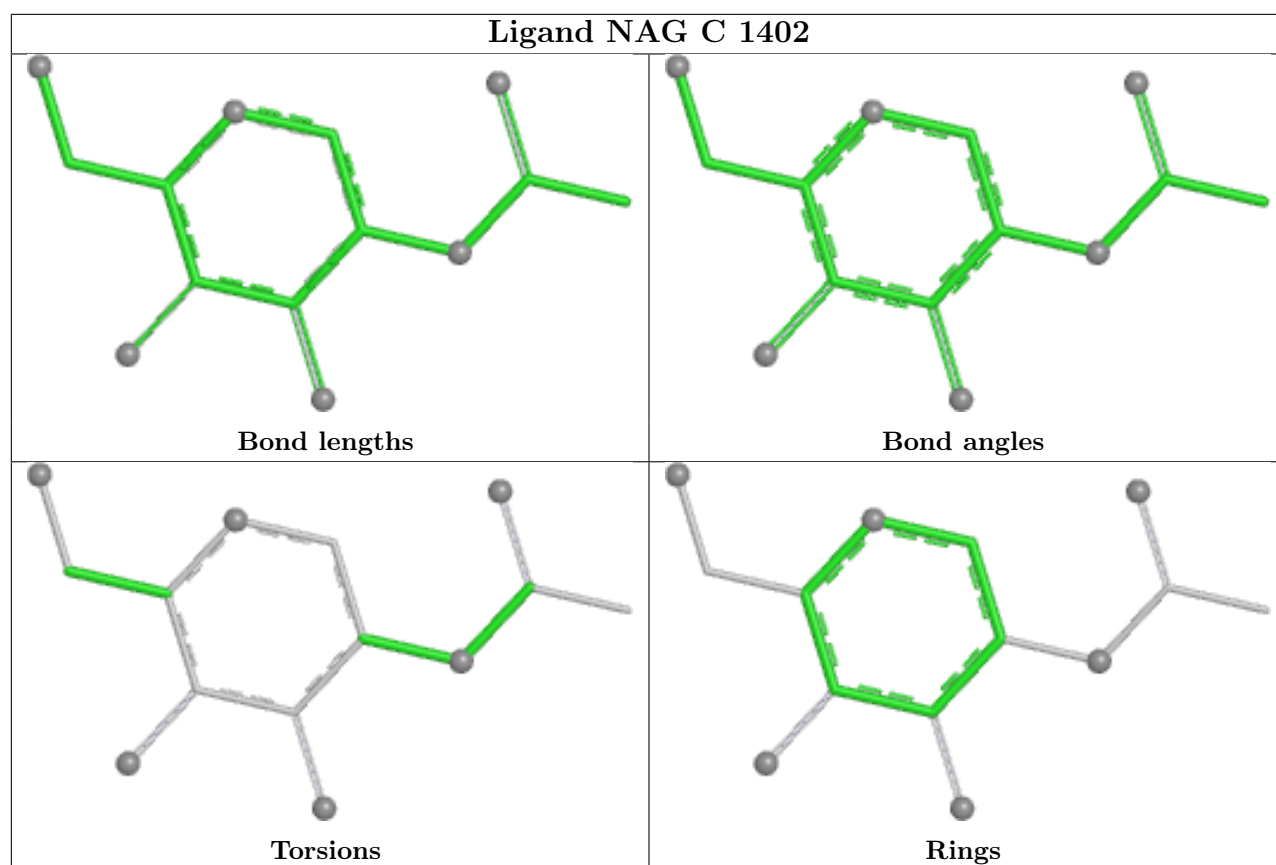


Ligand NAG B 1407



Ligand NAG B 1406





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.

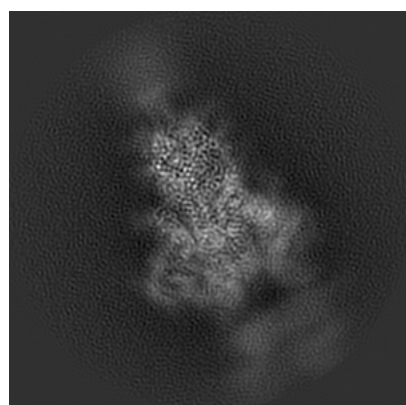
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-30521. These allow visual inspection of the internal detail of the map and identification of artifacts.

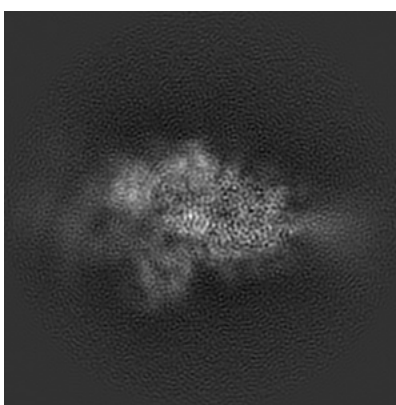
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

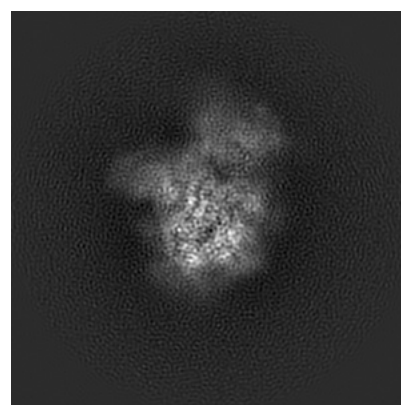
6.1.1 Primary map



X



Y

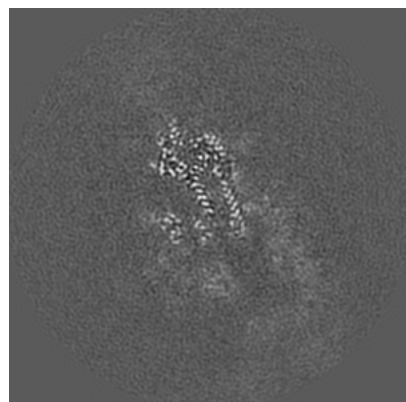


Z

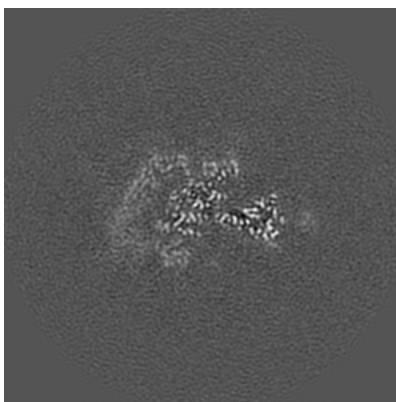
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

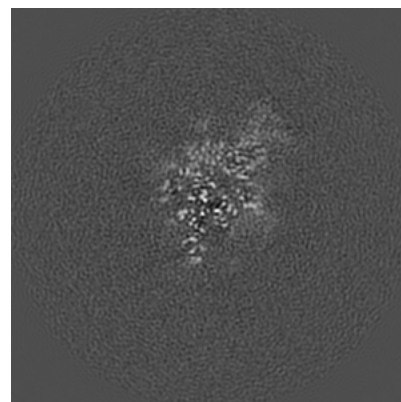
6.2.1 Primary map



X Index: 144



Y Index: 144

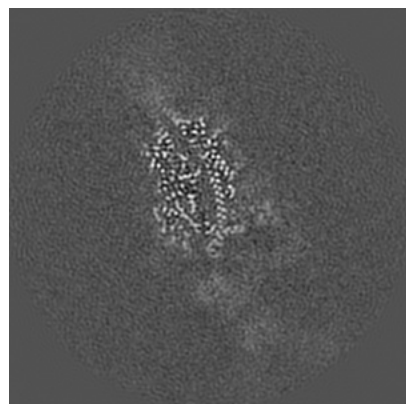


Z Index: 144

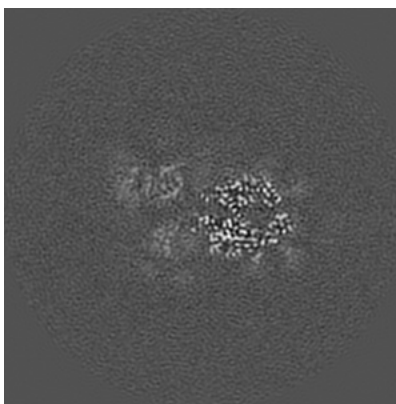
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

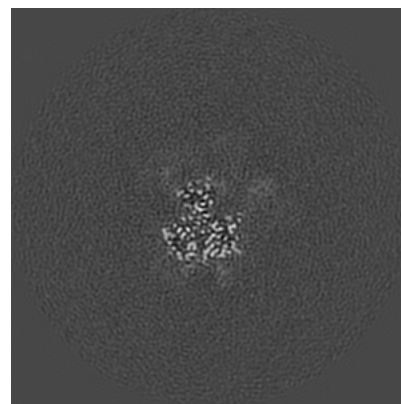
6.3.1 Primary map



X Index: 129



Y Index: 129

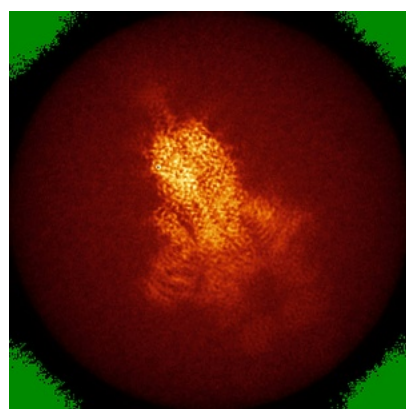


Z Index: 170

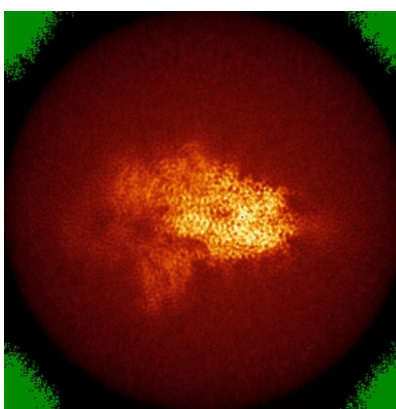
The images above show the largest variance slices of the map in three orthogonal directions.

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

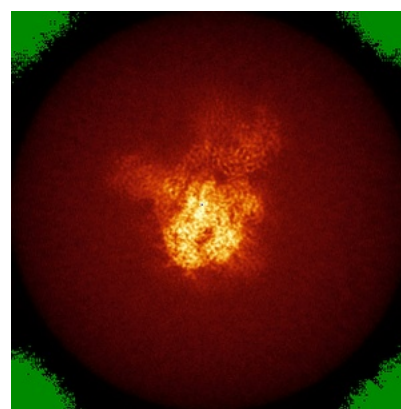
6.4.1 Primary map



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

This section was not generated.

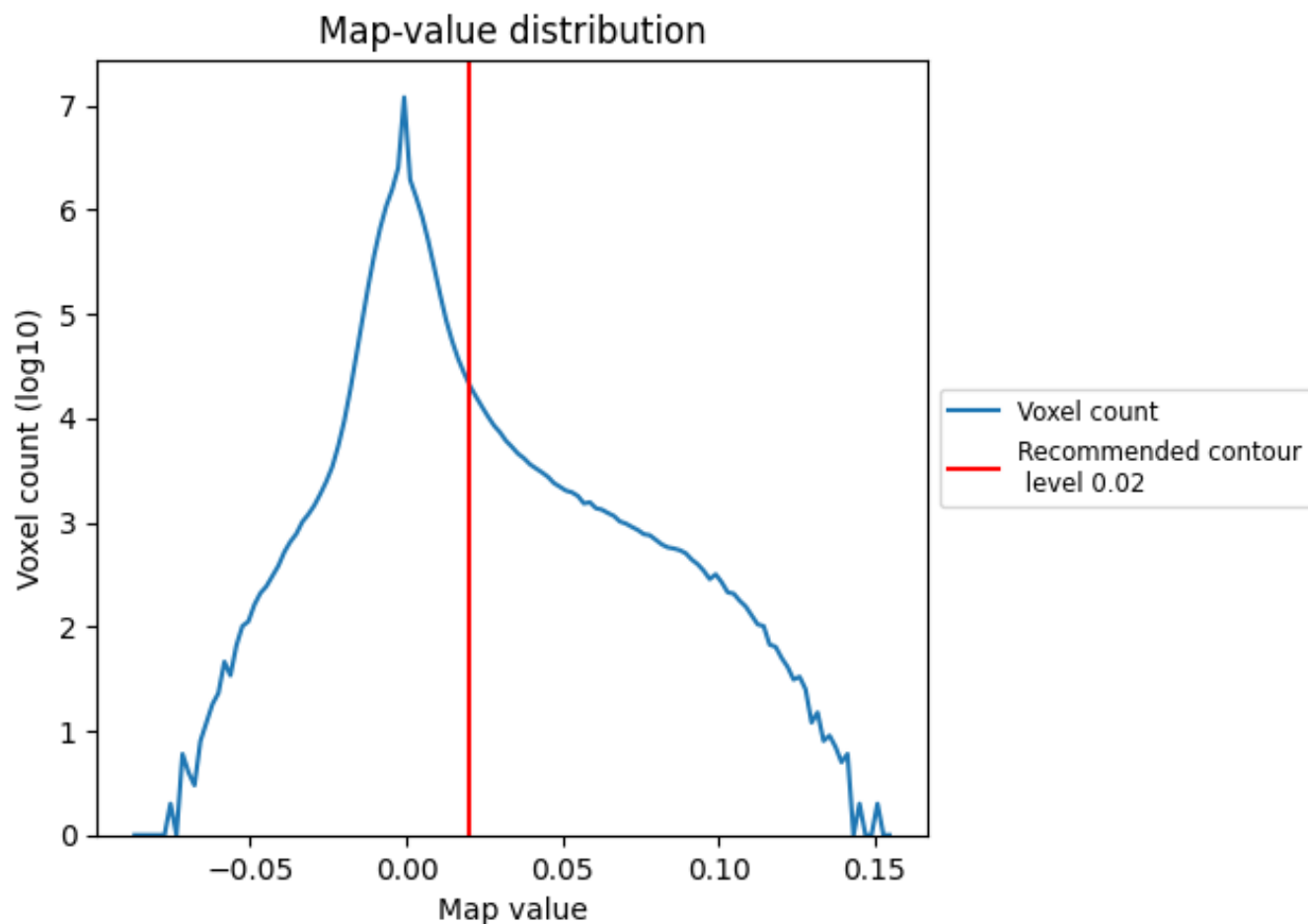
6.6 Mask visualisation

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

7 Map analysis [i](#)

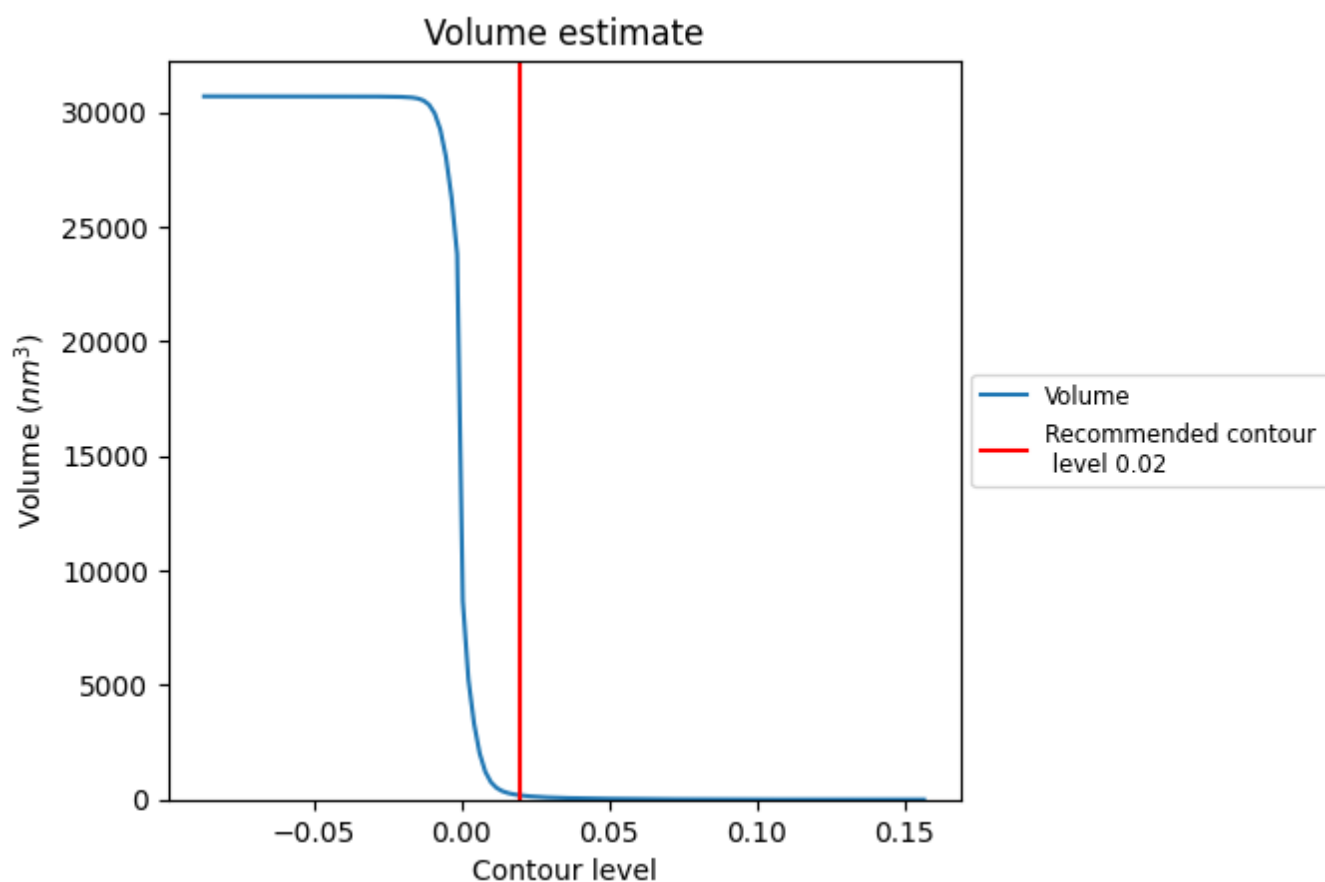
This section contains the results of statistical analysis of the map.

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.

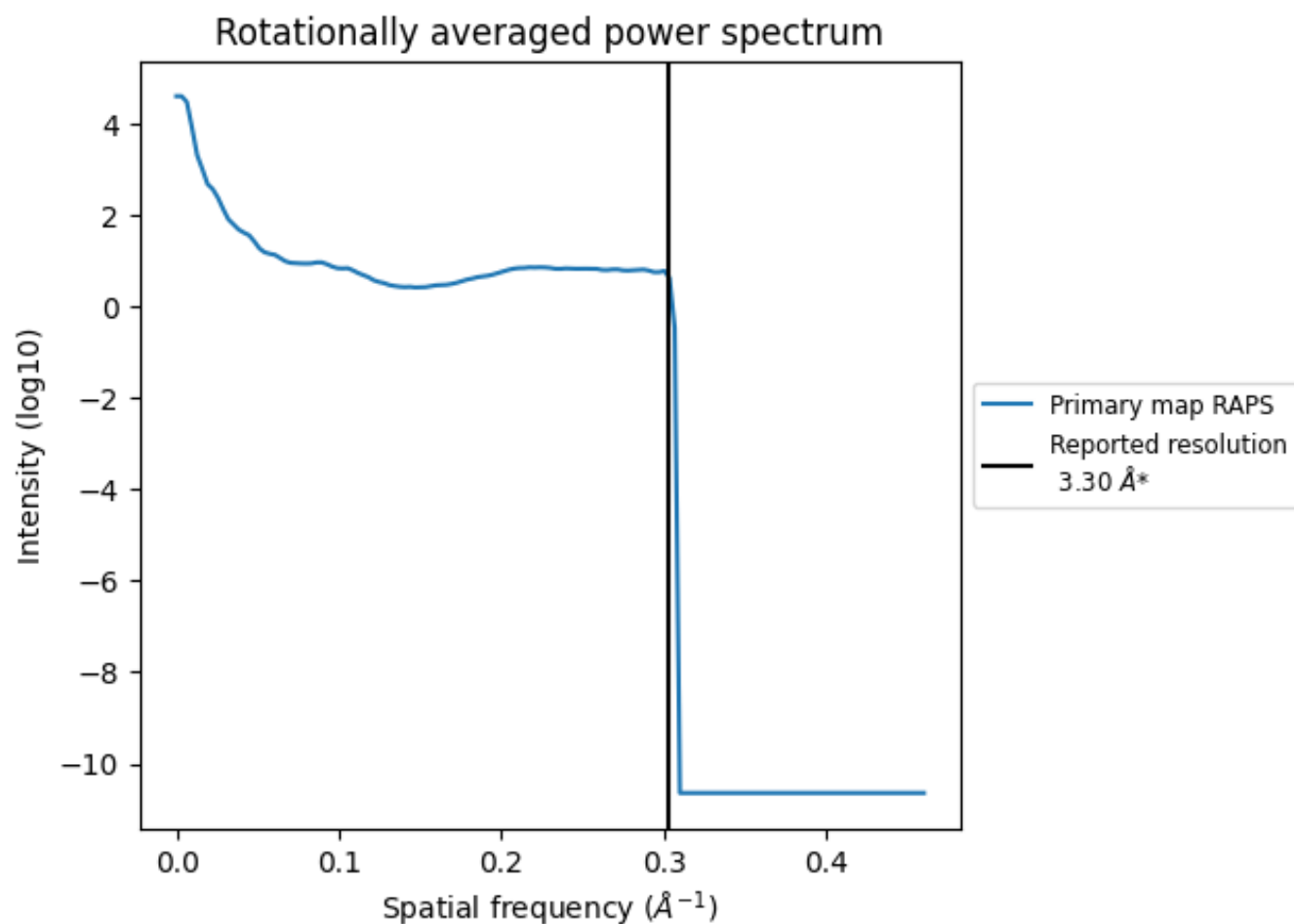
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 186 nm³; this corresponds to an approximate mass of 168 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 0.303 Å⁻¹

8 Fourier-Shell correlation

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

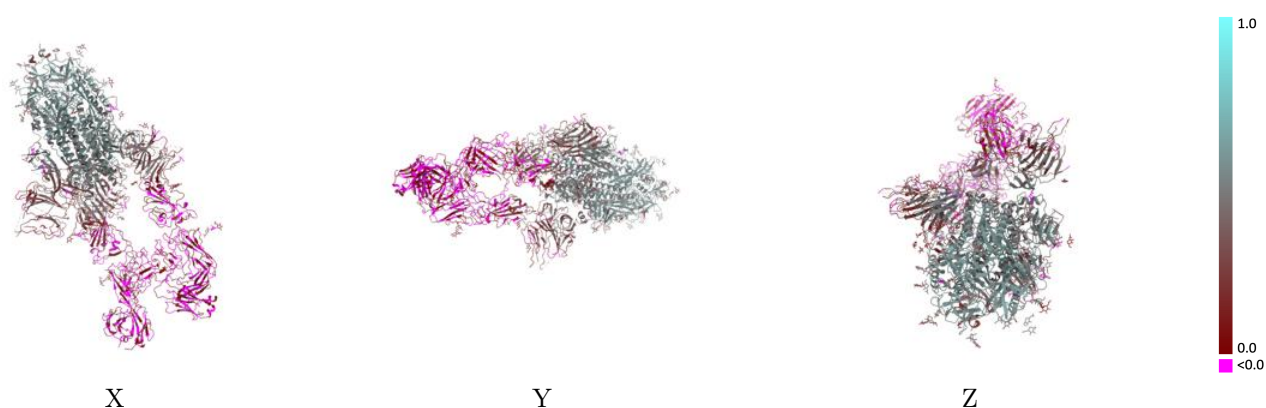
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-30521 and PDB model 7CZY. Per-residue inclusion information can be found in section 3 on page 10.

9.1 Map-model overlay [i](#)

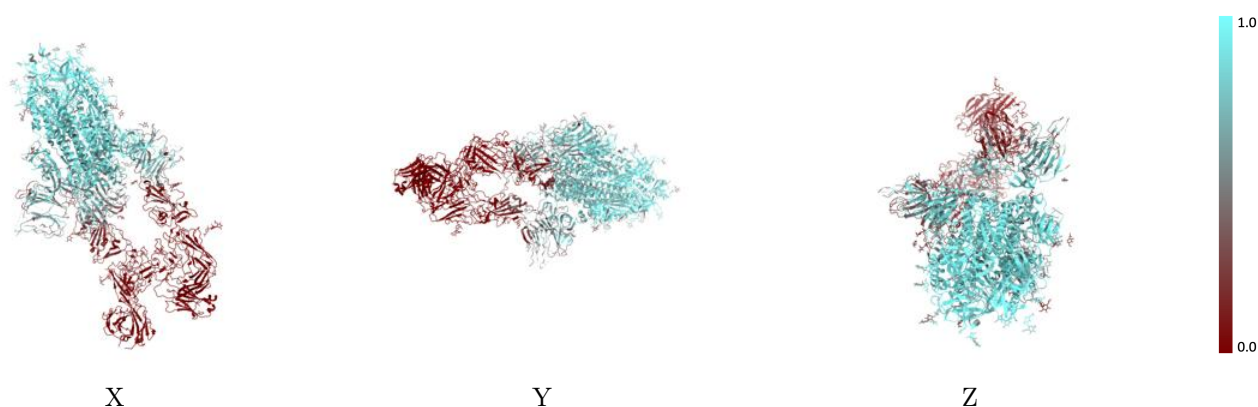
This section was not generated.

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



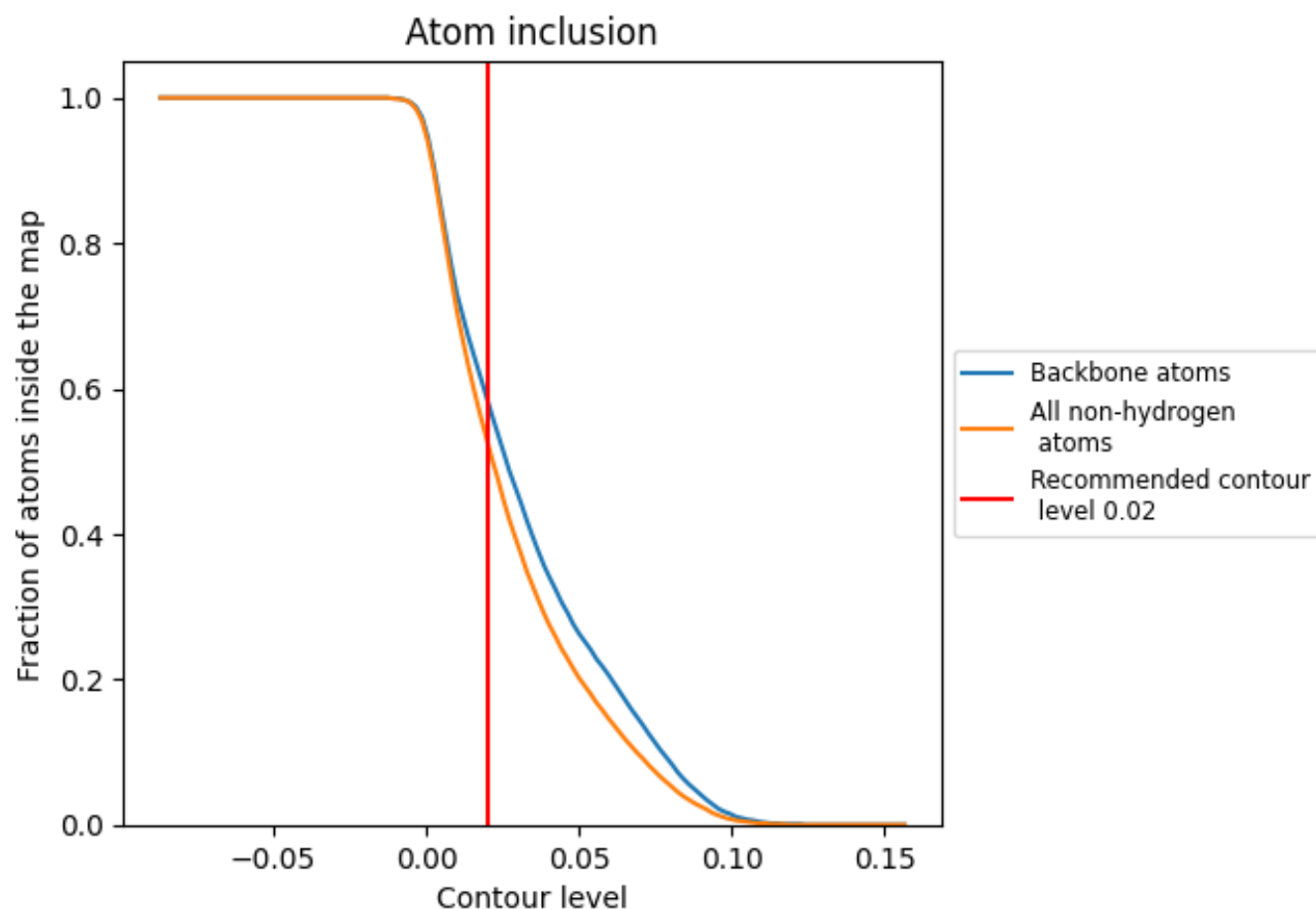
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.02).

9.4 Atom inclusion [i](#)



At the recommended contour level, 58% of all backbone atoms, 53% 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 (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5280	 0.3010
A	 0.6300	 0.3540
B	 0.7610	 0.4320
C	 0.6370	 0.3570
D	 0.5000	 0.2670
E	 0.1430	 0.1280
F	 0.7500	 0.4190
G	 0.7140	 0.3640
H	 0.0060	 0.0440
I	 0.5000	 0.2800
J	 0.0060	 0.0110
K	 0.0110	 0.0080
L	 0.7860	 0.4520
M	 0.5710	 0.3310
N	 0.0050	 0.0070
O	 0.3210	 0.1200
P	 0.4640	 0.3040
Q	 0.7500	 0.3940
R	 0.6430	 0.3320
S	 0.7860	 0.4030
T	 0.7500	 0.4350
U	 0.1430	 0.0590
V	 0.0360	 0.0550
W	 0.5000	 0.3600
X	 0.8210	 0.4360
Y	 0.5360	 0.2740
Z	 0.3930	 0.2840
a	 0.7860	 0.3800
b	 0.6070	 0.3050
c	 0.0480	 0.1150
d	 0.0000	 0.1400

