



# Full wwPDB X-ray Structure Validation Report ⓘ

Nov 1, 2023 – 03:14 PM JST

PDB ID : 5IY5  
Title : Electron transfer complex of cytochrome c and cytochrome c oxidase at 2.0 angstrom resolution  
Authors : Shimada, S.; Baba, J.; Aoe, S.; Shimada, A.; Yamashita, E.; Tsukihara, T.  
Deposited on : 2016-03-24  
Resolution : 2.00 Å(reported)

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

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.36  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36

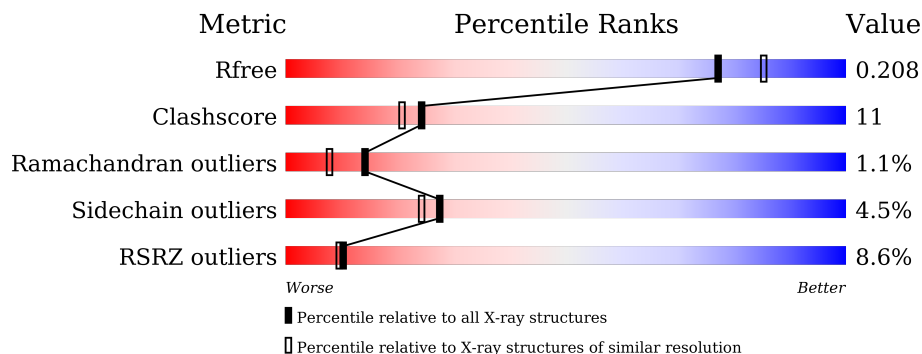
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.00 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	130704	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)
RSRZ outliers	127900	7900 (2.00-2.00)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	514	 4% 85% 14%
1	N	514	 5% 88% 12%
2	B	227	 % 75% 22%
2	O	227	 % 80% 16%
3	C	259	 % 86% 13%
3	P	259	 2% 86% 14%

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Mol	Chain	Length	Quality of chain
4	D	144	3% 82% 15% .
4	Q	144	9% 78% 17% . .
5	E	105	2% 90% 10% .
5	R	105	% 91% 9%
6	F	98	8% 77% 17% 5% .
6	S	98	8% 76% 13% 8% .
7	G	84	19% 71% 18% 10% .
7	T	84	20% 68% 19% 12% .
8	H	79	9% 73% 19% . .
8	U	79	3% 82% 15% .
9	I	73	4% 71% 16% 11% .
9	V	73	15% 66% 27% 5% .
10	J	58	12% 86% 12% .
10	W	58	14% 84% 16%
11	K	49	6% 84% 16%
11	X	49	8% 88% 10% .
12	L	46	2% 80% 15% .
12	Y	46	2% 83% 15% .
13	M	43	5% 91% 7% .
13	Z	43	7% 84% 16%
14	1	105	62% 71% 24% 5%
14	2	105	75% 48% 44% 9%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
17	NA	C	302	-	-	-	X
17	NA	P	302	-	-	-	X
24	CHD	W	101	-	-	-	X
26	CDL	G	101	-	-	X	-
26	CDL	T	101	-	-	X	-
27	UNL	C	310	-	-	X	-
27	UNL	N	601	-	-	X	-
27	UNL	P	308	-	-	X	-
27	UNL	P	310	-	-	X	-
28	PSC	V	101	-	-	X	-
29	ZN	S	101	-	-	X	-
9	SAC	I	1	-	X	-	-
9	SAC	V	1	-	-	-	X



## 2 Entry composition [i](#)

There are 32 unique types of molecules in this entry. The entry contains 34765 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Cytochrome c oxidase subunit 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	514	Total	C	N	O	S	0	11	0
			4084	2731	628	685	40			
1	N	514	Total	C	N	O	S	0	8	0
			4065	2717	627	683	38			

- Molecule 2 is a protein called Cytochrome c oxidase subunit 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	227	Total	C	N	O	S	0	2	0
			1836	1192	283	343	18			
2	O	227	Total	C	N	O	S	0	0	0
			1824	1185	281	340	18			

- Molecule 3 is a protein called Cytochrome c oxidase subunit 3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	C	259	Total	C	N	O	S	0	6	0
			2149	1437	343	355	14			
3	P	259	Total	C	N	O	S	0	5	0
			2143	1433	342	354	14			

- Molecule 4 is a protein called Cytochrome c oxidase subunit 4 isoform 1, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	D	144	Total	C	N	O	S	0	0	0
			1195	777	196	218	4			
4	Q	144	Total	C	N	O	S	0	1	0
			1203	782	199	218	4			

- Molecule 5 is a protein called Cytochrome c oxidase subunit 5A, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	E	105	Total	C	N	O	S	0	0	0
			852	544	144	162	2			
5	R	105	Total	C	N	O	S	0	0	0
			852	544	144	162	2			

- Molecule 6 is a protein called Cytochrome c oxidase subunit 5B, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	F	98	Total	C	N	O	S	0	0	0
			748	464	134	145	5			
6	S	98	Total	C	N	O	S	0	0	0
			748	464	134	145	5			

- Molecule 7 is a protein called Cytochrome c oxidase subunit 6A2, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
7	G	84	Total	C	N	O	P	S	0	0	0
			675	431	129	113	1	1			
7	T	84	Total	C	N	O	P	S	0	0	0
			675	431	129	113	1	1			

- Molecule 8 is a protein called Cytochrome c oxidase subunit 6B1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	H	79	Total	C	N	O	S	0	0	0
			662	417	121	119	5			
8	U	79	Total	C	N	O	S	0	0	0
			662	417	121	119	5			

- Molecule 9 is a protein called Cytochrome c oxidase subunit 6C.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
9	I	73	Total	C	N	O	S	0	0	0
			601	390	107	100	4			
9	V	73	Total	C	N	O	S	0	0	0
			601	390	107	100	4			

- Molecule 10 is a protein called Cytochrome c oxidase subunit 7A1, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	J	58	Total	C	N	O	S	0	0	0
			460	297	78	82	3			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	W	58	Total	C	N	O	S	0	0	0
			460	297	78	82	3			

- Molecule 11 is a protein called Cytochrome c oxidase subunit 7B, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	K	49	Total	C	N	O	S	0	0	0
			384	250	65	67	2			
11	X	49	Total	C	N	O	S	0	0	0
			384	250	65	67	2			

- Molecule 12 is a protein called Cytochrome c oxidase subunit 7C, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	L	46	Total	C	N	O	S	0	0	0
			380	254	64	60	2			
12	Y	46	Total	C	N	O	S	0	0	0
			380	254	64	60	2			

- Molecule 13 is a protein called Cytochrome c oxidase subunit 8B, mitochondrial.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
13	M	43	Total	C	N	O	0	0	0
			335	223	53	59			
13	Z	43	Total	C	N	O	0	0	0
			335	223	53	59			

- Molecule 14 is a protein called Cytochrome c.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
14	1	105	Total	C	N	O	S	0	0	0
			826	526	144	152	4			
14	2	105	Total	C	N	O	S	0	0	0
			826	526	144	152	4			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	0	ACE	-	acetylation	UNP P00004
2	0	ACE	-	acetylation	UNP P00004

- Molecule 15 is COPPER (II) ION (three-letter code: CU) (formula: Cu).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
15	A	1	Total Cu 1 1	0	0
15	N	1	Total Cu 1 1	0	0

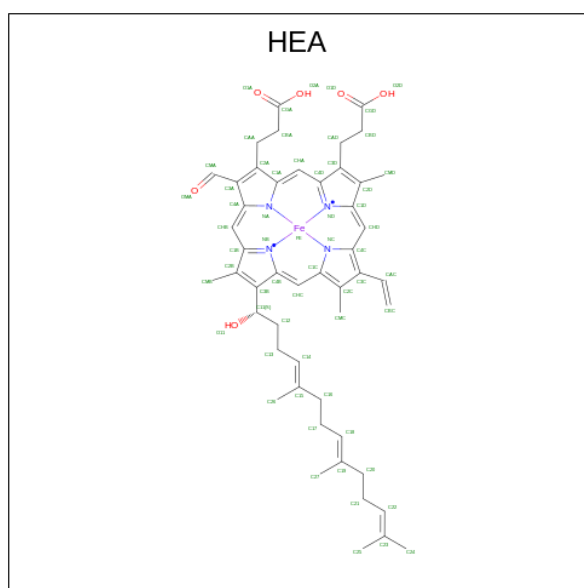
- Molecule 16 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
16	A	1	Total Mg 1 1	0	0
16	N	1	Total Mg 1 1	0	0

- Molecule 17 is SODIUM ION (three-letter code: NA) (formula: Na).

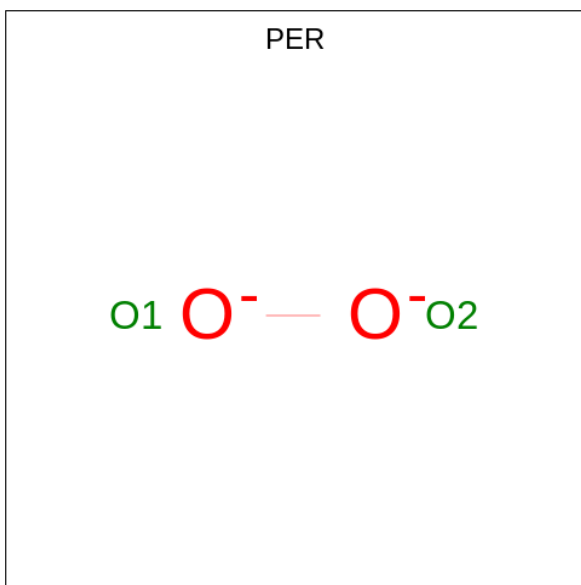
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
17	A	1	Total Na 1 1	0	0
17	C	1	Total Na 1 1	0	0
17	N	1	Total Na 1 1	0	0
17	P	1	Total Na 1 1	0	0

- Molecule 18 is HEME-A (three-letter code: HEA) (formula: C<sub>49</sub>H<sub>56</sub>FeN<sub>4</sub>O<sub>6</sub>).



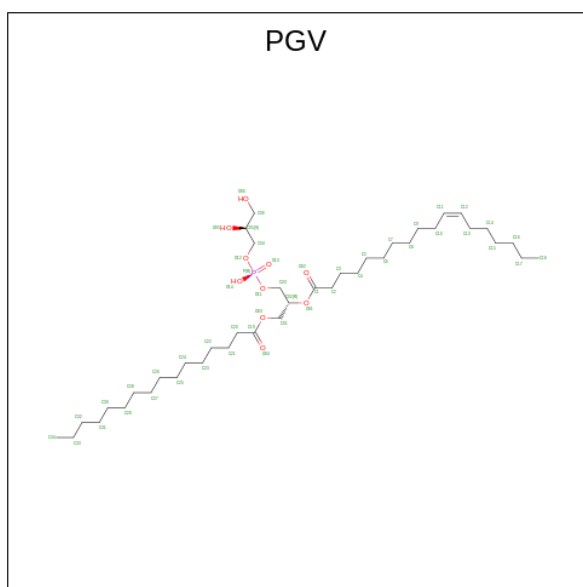
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
18	A	1	Total	C	Fe	N	O	0	1
			69	58	1	4	6		
18	A	1	Total	C	Fe	N	O	0	0
			60	49	1	4	6		
18	N	1	Total	C	Fe	N	O	0	1
			69	58	1	4	6		
18	N	1	Total	C	Fe	N	O	0	0
			60	49	1	4	6		

- Molecule 19 is PEROXIDE ION (three-letter code: PER) (formula: O<sub>2</sub>).



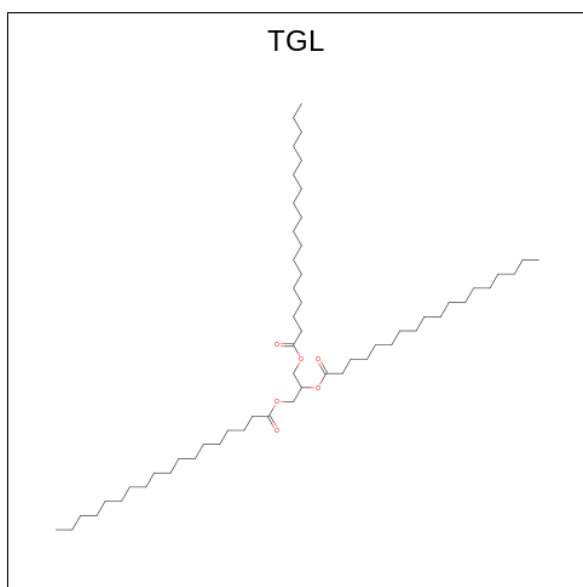
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
19	A	1	Total	O	0	0
			2	2		
19	N	1	Total	O	0	0
			2	2		

- Molecule 20 is (1R)-2-{{[(2S)-2,3-DIHYDROXYPROPYL]OXY}(HYDROXY)PHOSPHORYL]OXY}-1-[(PALMITOYLOXY)METHYL]ETHYL (11E)-OCTADEC-11-ENOATE (three-letter code: PGV) (formula: C<sub>40</sub>H<sub>77</sub>O<sub>10</sub>P).



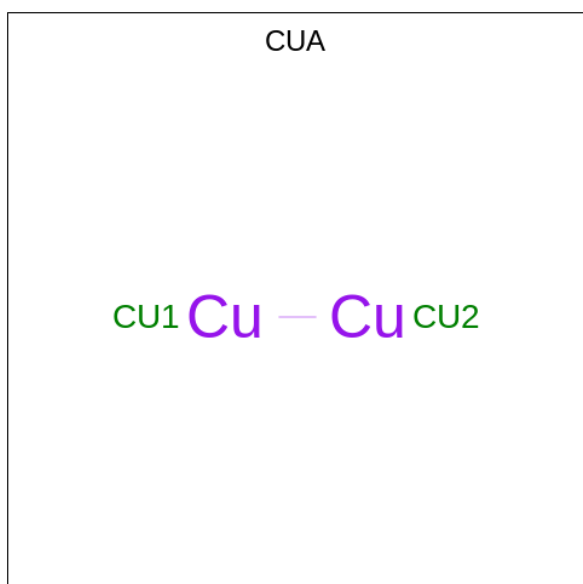
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	O	P		
20	A	1	51	40	10	1	0	0
20	A	1	51	40	10	1	0	0
20	C	1	51	40	10	1	0	0
20	C	1	51	40	10	1	0	0
20	N	1	51	40	10	1	0	0
20	P	1	51	40	10	1	0	0
20	P	1	51	40	10	1	0	0

- Molecule 21 is TRISTEAROYLGLYCEROL (three-letter code: TGL) (formula: C<sub>57</sub>H<sub>110</sub>O<sub>6</sub>).



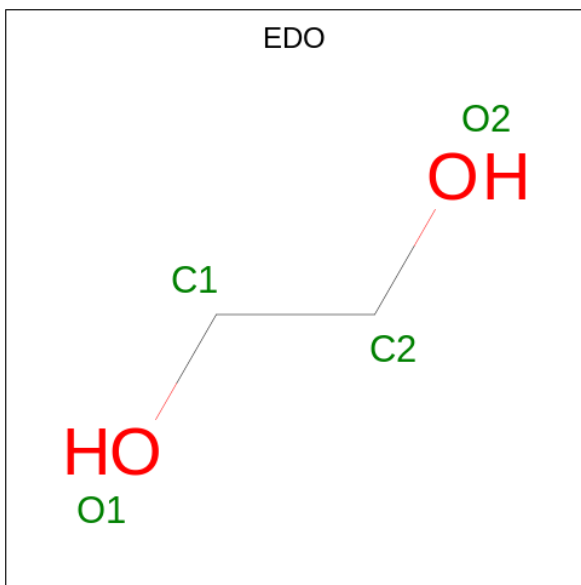
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
21	B	1	Total	C	O	0	0
			63	57	6		
21	D	1	Total	C	O	0	0
			63	57	6		
21	L	1	Total	C	O	0	0
			63	57	6		
21	N	1	Total	C	O	0	0
			63	57	6		
21	Q	1	Total	C	O	0	0
			63	57	6		

- Molecule 22 is DINUCLEAR COPPER ION (three-letter code: CUA) (formula: Cu<sub>2</sub>).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
22	B	1	Total Cu 2 2	0	0
22	O	1	Total Cu 2 2	0	0

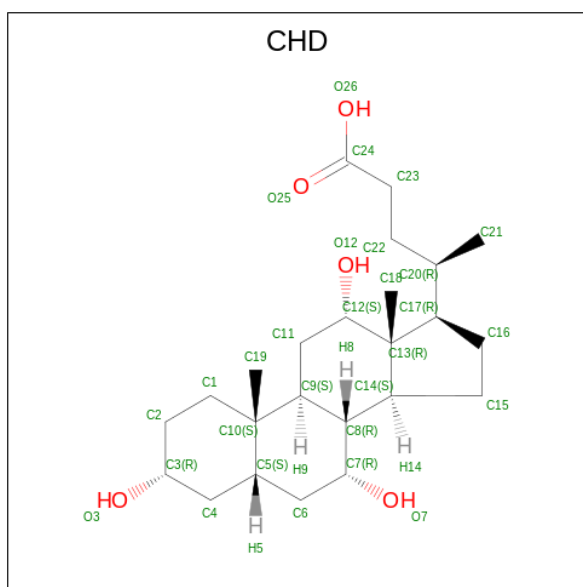
- Molecule 23 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: C<sub>2</sub>H<sub>6</sub>O<sub>2</sub>).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
23	B	1	Total C O 4 2 2	0	0
23	C	1	Total C O 4 2 2	0	0
23	E	1	Total C O 4 2 2	0	0
23	F	1	Total C O 4 2 2	0	0
23	G	1	Total C O 4 2 2	0	0
23	I	1	Total C O 4 2 2	0	0
23	N	1	Total C O 4 2 2	0	0
23	N	1	Total C O 4 2 2	0	0
23	S	1	Total C O 4 2 2	0	0

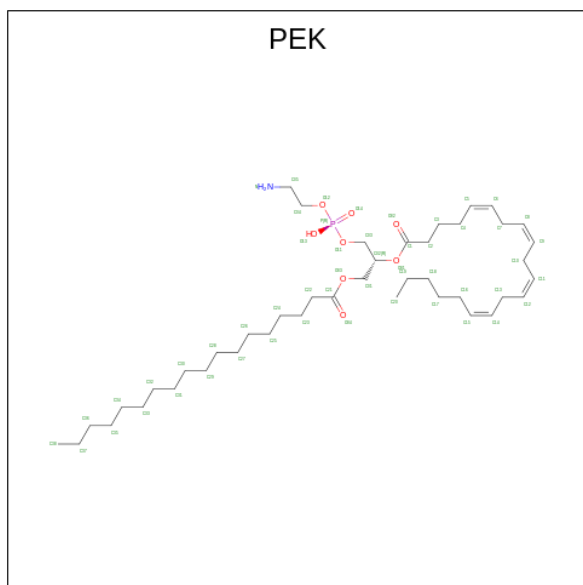
- Molecule 24 is CHOLIC ACID (three-letter code: CHD) (formula: C<sub>24</sub>H<sub>40</sub>O<sub>5</sub>).





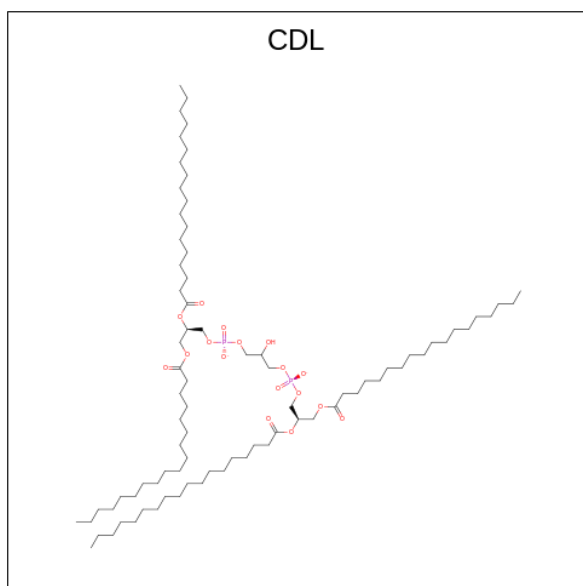
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
24	C	1	Total C O 29 24 5	0	0
24	C	1	Total C O 29 24 5	0	0
24	G	1	Total C O 29 24 5	0	0
24	J	1	Total C O 29 24 5	0	0
24	P	1	Total C O 29 24 5	0	0
24	P	1	Total C O 29 24 5	0	0
24	T	1	Total C O 29 24 5	0	0
24	W	1	Total C O 29 24 5	0	0

- Molecule 25 is (1S)-2-[[[(2-AMINOETHOXY)(HYDROXY)PHOSPHORYL]OXY]-1-[(STEAROYLOXY)METHYL]ETHYL (5E,8E,11E,14E)-ICOSA-5,8,11,14-TETRAENOATE (three-letter code: PEK) (formula: C<sub>43</sub>H<sub>78</sub>NO<sub>8</sub>P).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
25	C	1	Total	C	N	O	P	0	0
			53	43	1	8	1		
25	P	1	Total	C	N	O	P	0	0
			53	43	1	8	1		

- Molecule 26 is CARDIOLIPIN (three-letter code: CDL) (formula:  $C_{81}H_{156}O_{17}P_2$ ).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
26	C	1	Total	C	O	P	0	0
			100	81	17	2		
26	G	1	Total	C	O	P	0	0
			100	81	17	2		

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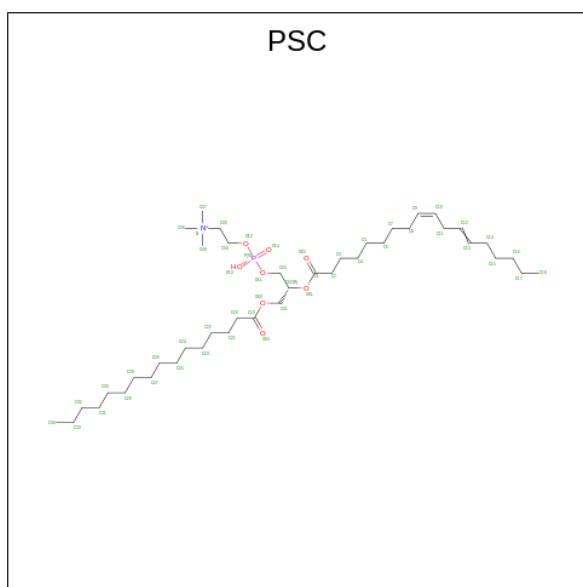
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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
26	P	1	Total	C	O	P	0	0
			100	81	17	2		
26	T	1	Total	C	O	P	0	0
			100	81	17	2		

- Molecule 27 is UNKNOWN LIGAND (three-letter code: UNL) (formula: ).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
27	C	3	Total	C	0	0
			42	42		
27	J	1	Total	C	0	0
			10	10		
27	L	1	Total	C	0	0
			10	10		
27	N	4	Total	C	0	0
			63	63		
27	P	3	Total	C	0	0
			43	43		
27	T	1	Total	C	0	0
			18	18		
27	W	1	Total	C	0	0
			9	9		
27	Y	1	Total	C	0	0
			10	10		

- Molecule 28 is (7R,17E,20E)-4-HYDROXY-N,N,N-TRIMETHYL-9-OXO-7-[(PALMITOYLOXY)METHYL]-3,5,8-TRIOXA-4-PHOSPHAHEXACOSA-17,20-DIEN-1-AMINIUM 4-OXIDE (three-letter code: PSC) (formula: C<sub>42</sub>H<sub>81</sub>NO<sub>8</sub>P).

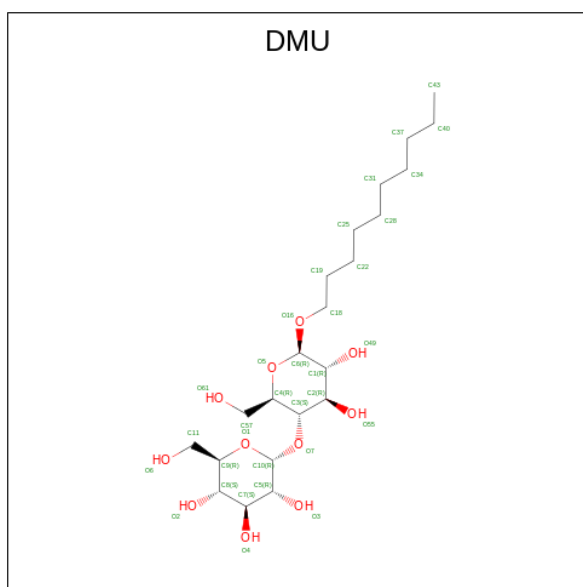


Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
28	E	1	Total	C	N	O	P	0	0
			52	42	1	8	1		
28	V	1	Total	C	N	O	P	0	0
			52	42	1	8	1		

- Molecule 29 is ZINC ION (three-letter code: ZN) (formula: Zn).

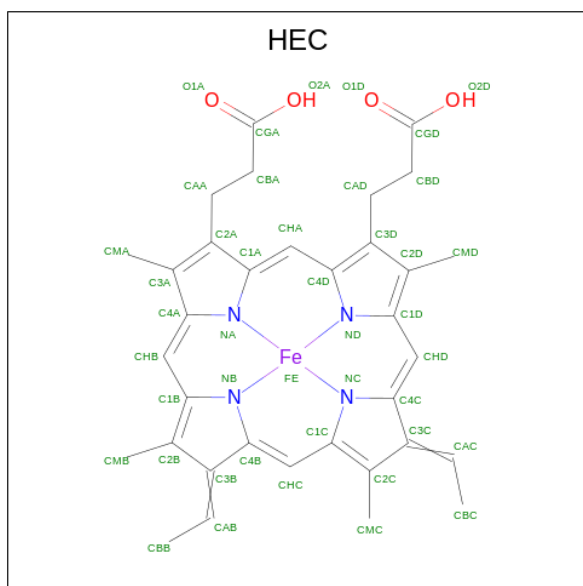
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
29	F	1	Total	Zn	0	0
			1	1		
29	S	1	Total	Zn	0	0
			1	1		

- Molecule 30 is DECYL-BETA-D-MALTOPYRANOSIDE (three-letter code: DMU) (formula: C<sub>22</sub>H<sub>42</sub>O<sub>11</sub>).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
30	M	1	Total	C	O	0	0	
			33	22	11			
30	Z	1	Total	C	O	0	0	
			33	22	11			

- Molecule 31 is HEME C (three-letter code: HEC) (formula:  $C_{34}H_{34}FeN_4O_4$ ).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
31	1	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
31	2	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		

- Molecule 32 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
32	A	252	Total O 252 252	0	0
32	B	193	Total O 193 193	0	0
32	C	137	Total O 137 137	0	0
32	D	122	Total O 122 122	0	0
32	E	119	Total O 119 119	0	0
32	F	97	Total O 97 97	0	0
32	G	60	Total O 60 60	0	0
32	H	76	Total O 76 76	0	0
32	I	49	Total O 49 49	0	0
32	J	30	Total O 30 30	0	0
32	K	29	Total O 29 29	0	0
32	L	33	Total O 33 33	0	0
32	M	26	Total O 26 26	0	0
32	N	229	Total O 229 229	0	0
32	O	141	Total O 141 141	0	0
32	P	110	Total O 110 110	0	0
32	Q	99	Total O 99 99	0	0
32	R	83	Total O 83 83	0	0
32	S	95	Total O 95 95	0	0
32	T	41	Total O 41 41	0	0
32	U	54	Total O 54 54	0	0

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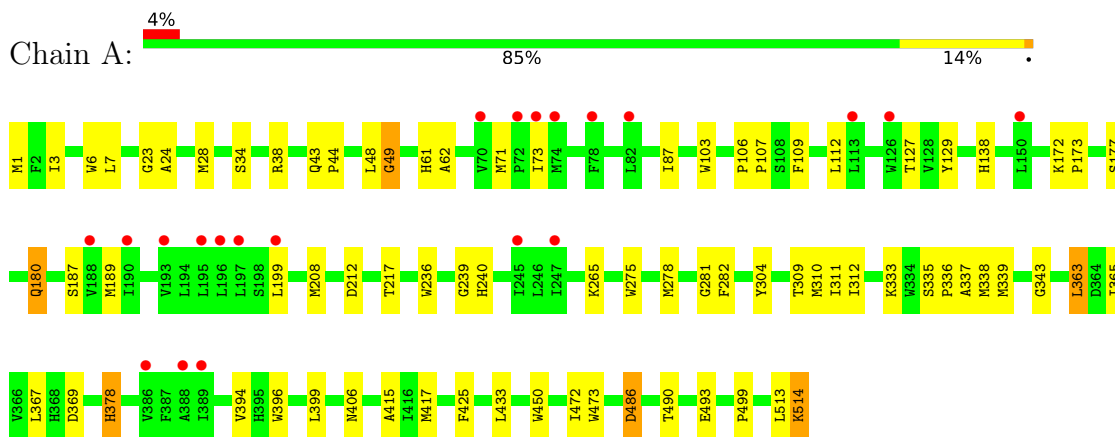
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<b>Mol</b>	<b>Chain</b>	<b>Residues</b>	<b>Atoms</b>		<b>ZeroOcc</b>	<b>AltConf</b>
32	V	17	Total 17	O 17	0	0
32	W	10	Total 10	O 10	0	0
32	X	17	Total 17	O 17	0	0
32	Y	21	Total 21	O 21	0	0
32	Z	16	Total 16	O 16	0	0
32	1	53	Total 53	O 53	0	0
32	2	28	Total 28	O 28	0	0

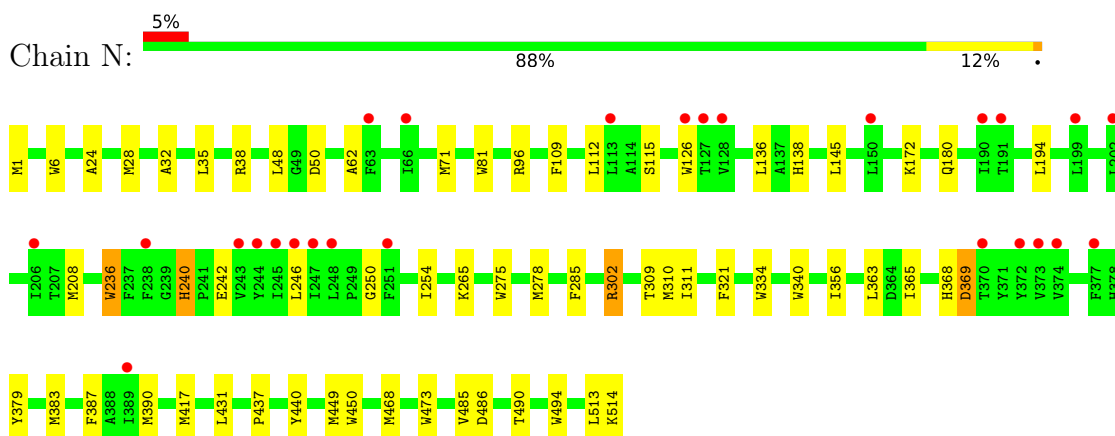
### 3 Residue-property plots

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 electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

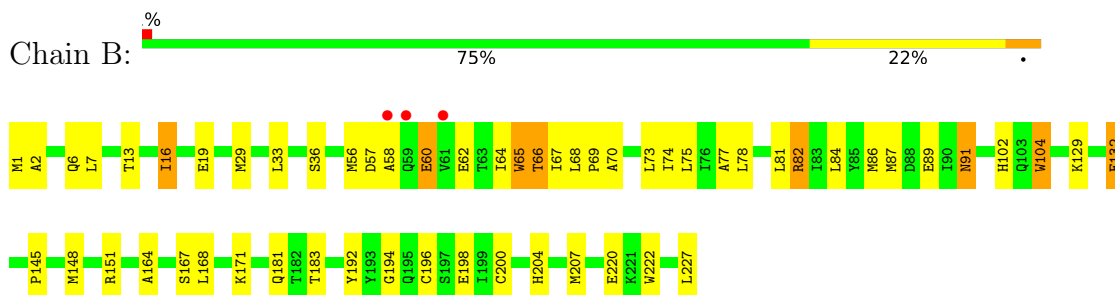
- Molecule 1: Cytochrome c oxidase subunit 1



- Molecule 1: Cytochrome c oxidase subunit 1

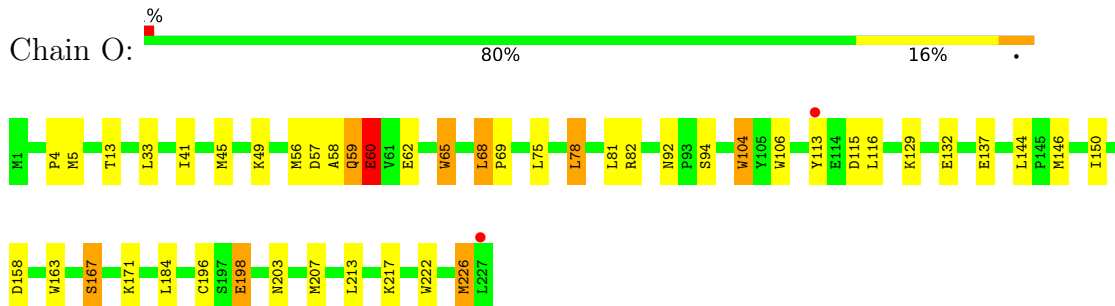


- Molecule 2: Cytochrome c oxidase subunit 2

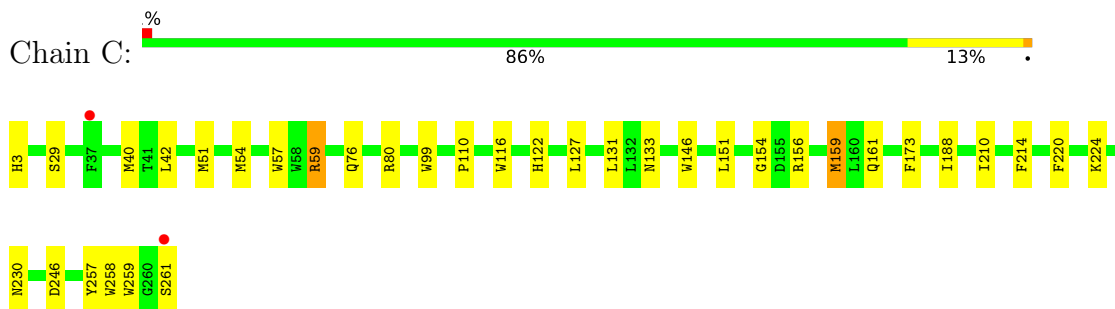




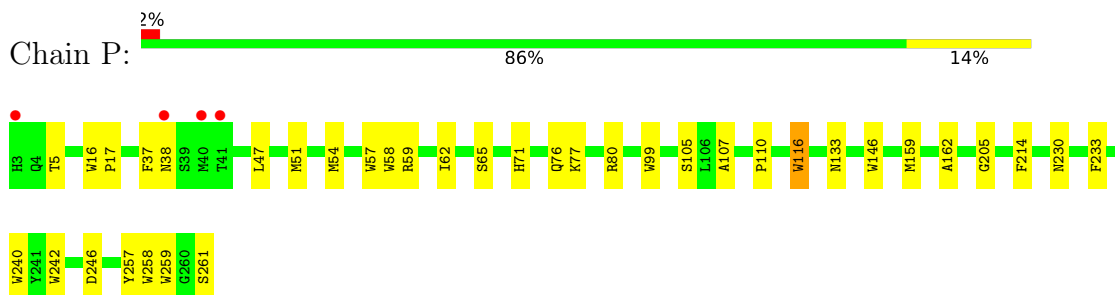
- Molecule 2: Cytochrome c oxidase subunit 2



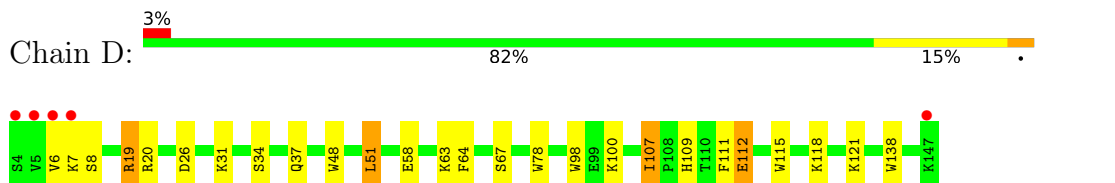
- Molecule 3: Cytochrome c oxidase subunit 3



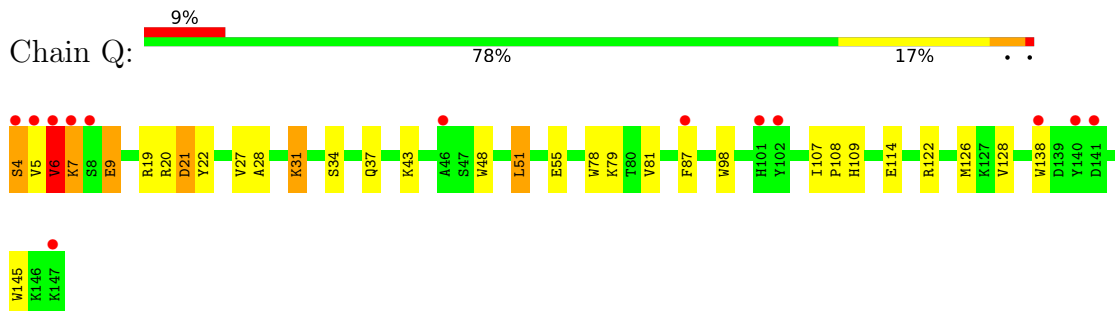
- Molecule 3: Cytochrome c oxidase subunit 3



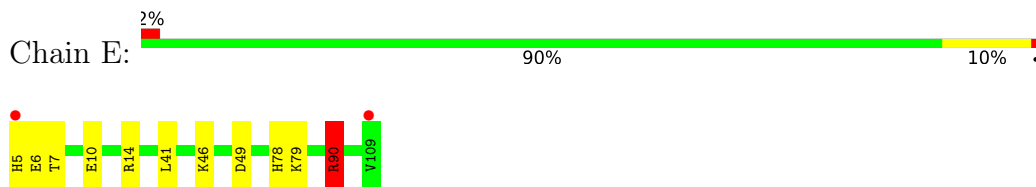
- Molecule 4: Cytochrome c oxidase subunit 4 isoform 1, mitochondrial



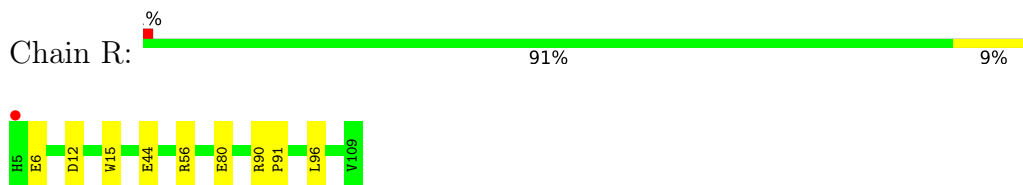
- Molecule 4: Cytochrome c oxidase subunit 4 isoform 1, mitochondrial



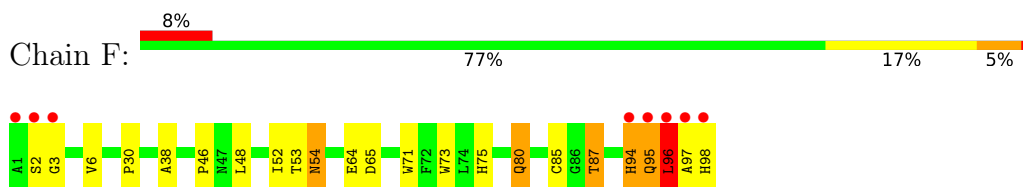
- Molecule 5: Cytochrome c oxidase subunit 5A, mitochondrial



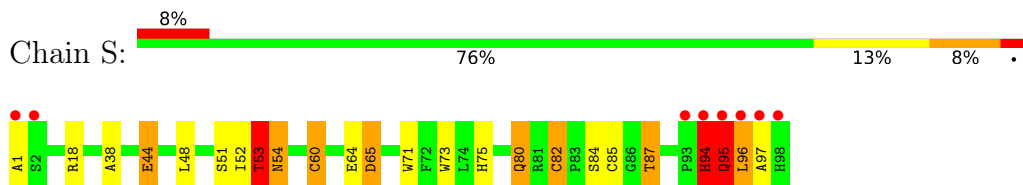
- Molecule 5: Cytochrome c oxidase subunit 5A, mitochondrial



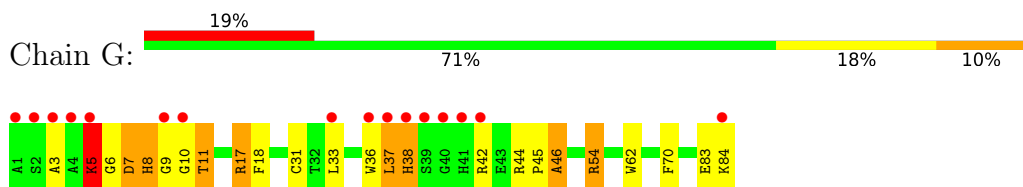
- Molecule 6: Cytochrome c oxidase subunit 5B, mitochondrial



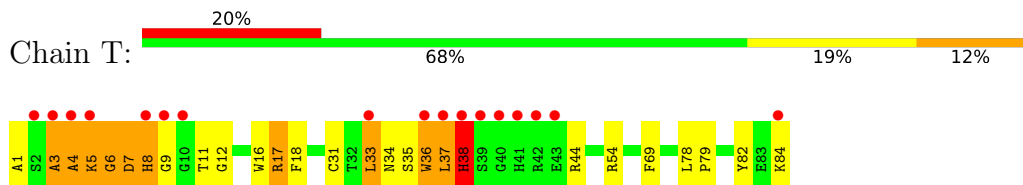
- Molecule 6: Cytochrome c oxidase subunit 5B, mitochondrial



- Molecule 7: Cytochrome c oxidase subunit 6A2, mitochondrial

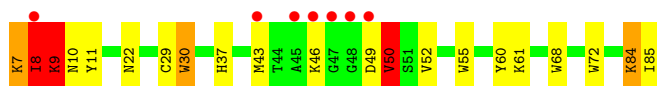


- Molecule 7: Cytochrome c oxidase subunit 6A2, mitochondrial

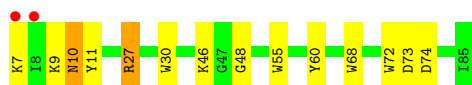
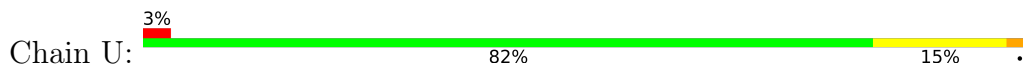


- Molecule 8: Cytochrome c oxidase subunit 6B1

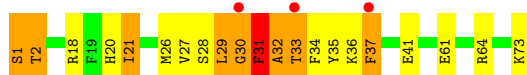




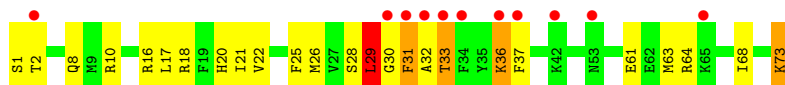
- Molecule 8: Cytochrome c oxidase subunit 6B1



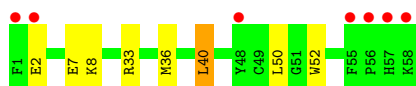
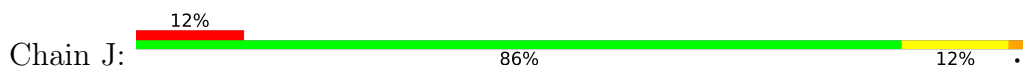
- Molecule 9: Cytochrome c oxidase subunit 6C



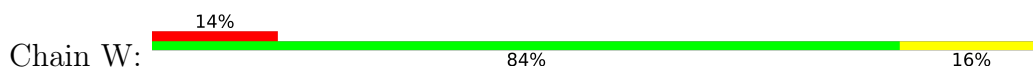
- Molecule 9: Cytochrome c oxidase subunit 6C



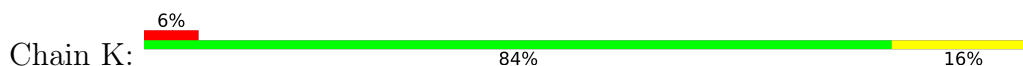
- Molecule 10: Cytochrome c oxidase subunit 7A1, mitochondrial



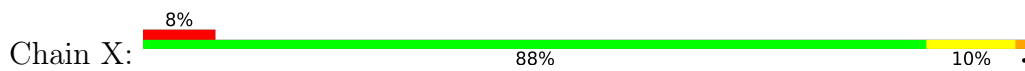
- Molecule 10: Cytochrome c oxidase subunit 7A1, mitochondrial



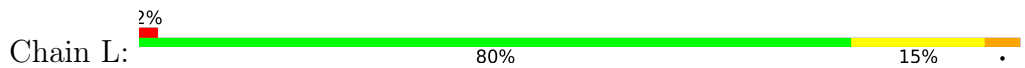
- Molecule 11: Cytochrome c oxidase subunit 7B, mitochondrial



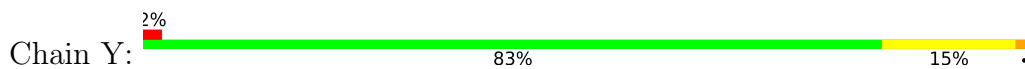
- Molecule 11: Cytochrome c oxidase subunit 7B, mitochondrial



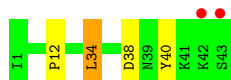
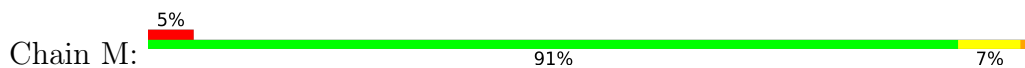
• Molecule 12: Cytochrome c oxidase subunit 7C, mitochondrial



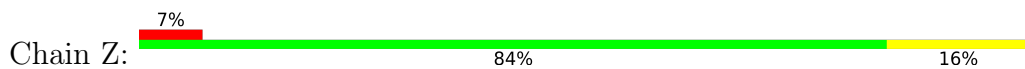
• Molecule 12: Cytochrome c oxidase subunit 7C, mitochondrial



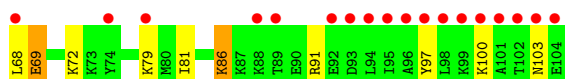
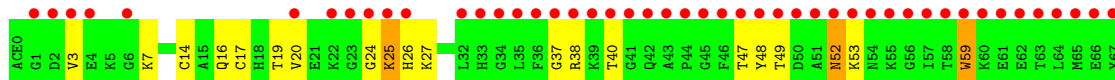
• Molecule 13: Cytochrome c oxidase subunit 8B, mitochondrial



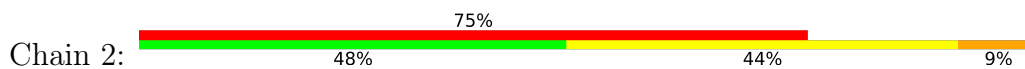
• Molecule 13: Cytochrome c oxidase subunit 8B, mitochondrial

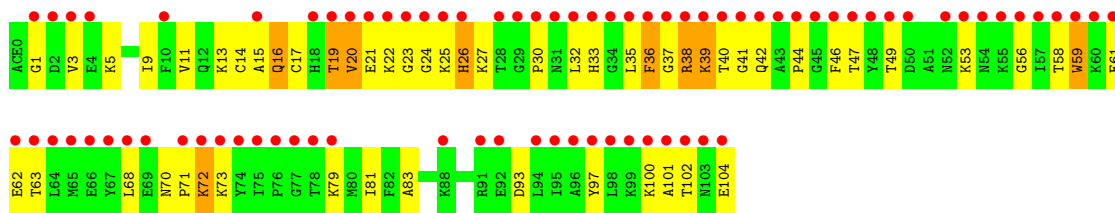


• Molecule 14: Cytochrome c



• Molecule 14: Cytochrome c





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	113.29Å 183.87Å 148.93Å 90.00° 102.12° 90.00°	Depositor
Resolution (Å)	40.00 – 2.00 49.35 – 2.00	Depositor EDS
% Data completeness (in resolution range)	99.4 (40.00-2.00) 99.4 (49.35-2.00)	Depositor EDS
$R_{merge}$	0.10	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.74 (at 2.00Å)	Xtrriage
Refinement program	REFMAC 5.8.0048	Depositor
R, $R_{free}$	0.167 , 0.207 0.168 , 0.208	Depositor DCC
$R_{free}$ test set	19990 reflections (5.03%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	33.5	Xtrriage
Anisotropy	0.586	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.37 , 72.0	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.50$ , $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.97	EDS
Total number of atoms	34765	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	48.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.47% of the height of the origin peak. No significant pseudotranslation is detected.*

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

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

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: PGV, HEC, HEA, FME, TGL, EDO, PER, TPO, UNL, CU, PSC, CHD, CDL, ACE, DMU, CUA, PEK, ZN, MG, SAC, NA

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	1.31	11/4244 (0.3%)	1.04	9/5793 (0.2%)
1	N	1.20	9/4214 (0.2%)	0.94	5/5754 (0.1%)
2	B	1.26	6/1878 (0.3%)	1.09	4/2558 (0.2%)
2	O	0.99	6/1860 (0.3%)	0.96	1/2534 (0.0%)
3	C	1.20	5/2247 (0.2%)	0.87	1/3070 (0.0%)
3	P	1.15	7/2238 (0.3%)	0.86	0/3058
4	D	1.21	7/1229 (0.6%)	1.13	8/1658 (0.5%)
4	Q	1.09	5/1240 (0.4%)	0.97	2/1672 (0.1%)
5	E	1.04	0/871	0.99	5/1182 (0.4%)
5	R	1.01	1/871 (0.1%)	0.89	0/1182
6	F	1.17	3/765 (0.4%)	1.04	2/1038 (0.2%)
6	S	1.15	4/765 (0.5%)	1.15	5/1038 (0.5%)
7	G	1.17	2/690 (0.3%)	1.01	3/937 (0.3%)
7	T	1.20	1/690 (0.1%)	1.09	5/937 (0.5%)
8	H	1.25	7/682 (1.0%)	1.19	4/921 (0.4%)
8	U	1.05	4/682 (0.6%)	0.99	4/921 (0.4%)
9	I	1.09	0/605	1.09	2/802 (0.2%)
9	V	0.86	0/605	0.96	1/802 (0.1%)
10	J	0.96	1/471 (0.2%)	0.88	1/636 (0.2%)
10	W	0.87	1/471 (0.2%)	0.86	0/636
11	K	1.13	1/398 (0.3%)	0.96	0/546
11	X	0.94	1/398 (0.3%)	0.86	0/546
12	L	1.15	0/393	0.90	0/526
12	Y	1.05	0/393	0.95	1/526 (0.2%)
13	M	1.05	0/345	1.01	1/470 (0.2%)
13	Z	1.01	1/345 (0.3%)	1.01	2/470 (0.4%)
14	1	0.73	1/840 (0.1%)	0.78	0/1120
14	2	0.68	1/840 (0.1%)	0.74	0/1120
All	All	1.14	85/31270 (0.3%)	0.98	66/42453 (0.2%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	N	0	1
6	S	0	2
8	H	0	2
9	V	0	2
All	All	0	8

All (85) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	P	116	TRP	CD2-CE2	8.38	1.51	1.41
2	B	132	GLU	CD-OE2	8.22	1.34	1.25
6	S	60	CYS	CB-SG	8.20	1.96	1.82
2	B	167	SER	CB-OG	-8.05	1.31	1.42
1	N	236	TRP	CD2-CE2	7.79	1.50	1.41
1	N	275	TRP	CD2-CE2	7.66	1.50	1.41
4	D	115	TRP	CD2-CE2	7.58	1.50	1.41
3	C	116	TRP	CD2-CE2	7.46	1.50	1.41
1	A	396	TRP	CD2-CE2	7.42	1.50	1.41
2	B	65	TRP	CD2-CE2	7.40	1.50	1.41
2	O	106	TRP	CD2-CE2	7.02	1.49	1.41
3	P	242	TRP	CD2-CE2	7.02	1.49	1.41
3	C	99	TRP	CD2-CE2	6.78	1.49	1.41
6	F	73	TRP	CD2-CE2	6.65	1.49	1.41
1	A	473	TRP	CD2-CE2	6.63	1.49	1.41
1	A	49	GLY	C-O	6.61	1.34	1.23
8	H	9	LYS	C-O	6.61	1.35	1.23
7	G	36	TRP	CD2-CE2	6.59	1.49	1.41
6	S	71	TRP	CD2-CE2	6.58	1.49	1.41
8	H	8	ILE	N-CA	6.50	1.59	1.46
3	P	57	TRP	CD2-CE2	6.42	1.49	1.41
1	A	378	HIS	CG-CD2	6.36	1.46	1.35
1	N	340	TRP	CD2-CE2	6.34	1.49	1.41
1	A	61	HIS	CG-CD2	6.31	1.46	1.35
1	A	275	TRP	CD2-CE2	6.30	1.49	1.41
4	D	138	TRP	CD2-CE2	6.28	1.48	1.41
3	P	259	TRP	CD2-CE2	6.24	1.48	1.41
14	1	59	TRP	CD2-CE2	6.22	1.48	1.41
6	F	71	TRP	CD2-CE2	6.22	1.48	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	259	TRP	CD2-CE2	6.20	1.48	1.41
8	H	72	TRP	CD2-CE2	6.08	1.48	1.41
4	D	98	TRP	CD2-CE2	6.05	1.48	1.41
8	U	72	TRP	CD2-CE2	6.04	1.48	1.41
4	Q	145	TRP	CD2-CE2	5.98	1.48	1.41
3	P	99	TRP	CD2-CE2	5.97	1.48	1.41
8	U	55	TRP	CD2-CE2	5.88	1.48	1.41
3	P	58	TRP	CD2-CE2	5.87	1.48	1.41
6	S	73	TRP	CD2-CE2	5.86	1.48	1.41
3	C	57	TRP	CD2-CE2	5.84	1.48	1.41
7	G	62	TRP	CD2-CE2	5.81	1.48	1.41
7	T	36	TRP	CD2-CE2	5.78	1.48	1.41
1	A	450	TRP	CD2-CE2	5.78	1.48	1.41
1	A	6	TRP	CD2-CE2	5.77	1.48	1.41
1	N	81	TRP	CD2-CE2	5.75	1.48	1.41
11	K	29	TRP	CD2-CE2	5.72	1.48	1.41
8	U	68	TRP	CD2-CE2	5.66	1.48	1.41
1	N	473	TRP	CD2-CE2	5.65	1.48	1.41
4	Q	138	TRP	CD2-CE2	5.64	1.48	1.41
4	D	112	GLU	CD-OE1	5.63	1.31	1.25
2	B	222	TRP	CD2-CE2	5.61	1.48	1.41
4	Q	22	TYR	CG-CD1	5.60	1.46	1.39
8	U	30	TRP	CD2-CE2	5.59	1.48	1.41
1	N	126	TRP	CD2-CE2	5.58	1.48	1.41
11	X	53	TRP	CD2-CE2	5.57	1.48	1.41
4	Q	9	GLU	CD-OE2	5.56	1.31	1.25
4	D	48	TRP	CD2-CE2	5.55	1.48	1.41
2	O	104	TRP	CD2-CE2	5.55	1.48	1.41
5	R	15	TRP	CD2-CE2	5.51	1.48	1.41
1	A	493	GLU	CD-OE2	-5.47	1.19	1.25
2	O	65	TRP	CD2-CE2	5.46	1.48	1.41
10	W	52	TRP	CD2-CE2	5.37	1.47	1.41
1	N	494	TRP	CD2-CE2	5.33	1.47	1.41
2	B	198	GLU	CD-OE2	-5.31	1.19	1.25
6	F	94	HIS	CB-CG	5.30	1.59	1.50
2	O	163	TRP	CD2-CE2	5.29	1.47	1.41
8	H	30	TRP	CD2-CE2	5.27	1.47	1.41
8	H	30	TRP	CG-CD1	5.27	1.44	1.36
1	N	334	TRP	CD2-CE2	5.25	1.47	1.41
10	J	52	TRP	CD2-CE2	5.23	1.47	1.41
8	H	68	TRP	CD2-CE2	5.20	1.47	1.41
2	O	222	TRP	CD2-CE2	5.19	1.47	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	D	67	SER	CB-OG	5.17	1.49	1.42
6	S	82	CYS	CB-SG	-5.17	1.73	1.81
8	H	55	TRP	CD2-CE2	5.16	1.47	1.41
3	C	258	TRP	CD2-CE2	5.11	1.47	1.41
2	O	198	GLU	C-O	5.11	1.33	1.23
3	P	240	TRP	CD2-CE2	5.09	1.47	1.41
1	N	6	TRP	CD2-CE2	5.08	1.47	1.41
1	A	187	SER	CA-CB	5.08	1.60	1.52
4	Q	98	TRP	CD2-CE2	5.08	1.47	1.41
1	A	103	TRP	CD2-CE2	5.08	1.47	1.41
4	D	115	TRP	CG-CD1	5.04	1.43	1.36
13	Z	32	TRP	CD2-CE2	5.03	1.47	1.41
2	B	104	TRP	CD2-CE2	5.03	1.47	1.41
14	2	59	TRP	CD2-CE2	5.03	1.47	1.41

All (66) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	D	20	ARG	NE-CZ-NH2	-11.62	114.49	120.30
2	B	82	ARG	NE-CZ-NH2	11.54	126.07	120.30
1	A	71	MET	CG-SD-CE	-11.09	82.46	100.20
1	A	486	ASP	CB-CG-OD1	10.23	127.51	118.30
5	E	90	ARG	NE-CZ-NH1	9.99	125.29	120.30
8	H	9	LYS	CA-CB-CG	-9.89	91.63	113.40
8	H	8	ILE	CG1-CB-CG2	9.71	132.77	111.40
4	D	20	ARG	NE-CZ-NH1	9.12	124.86	120.30
1	A	486	ASP	CB-CG-OD2	-8.95	110.25	118.30
5	E	90	ARG	NE-CZ-NH2	-8.82	115.89	120.30
4	D	19	ARG	NE-CZ-NH2	8.12	124.36	120.30
9	I	21	ILE	CG1-CB-CG2	-7.64	94.60	111.40
8	U	27	ARG	NE-CZ-NH2	-7.38	116.61	120.30
2	B	82	ARG	NE-CZ-NH1	-7.26	116.67	120.30
8	H	9	LYS	O-C-N	7.16	134.15	122.70
2	O	82	ARG	NE-CZ-NH2	-7.04	116.78	120.30
7	G	17	ARG	NE-CZ-NH2	-6.89	116.86	120.30
6	F	96	LEU	CB-CG-CD2	-6.87	99.32	111.00
1	N	71	MET	CG-SD-CE	-6.86	89.23	100.20
7	T	12	GLY	N-CA-C	6.74	129.95	113.10
7	T	5	LYS	CD-CE-NZ	6.61	126.91	111.70
4	D	51	LEU	CB-CG-CD2	6.49	122.04	111.00
13	Z	19	LEU	CA-CB-CG	6.40	130.02	115.30
6	S	60	CYS	O-C-N	6.27	132.73	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	U	73	ASP	CB-CG-OD1	6.05	123.75	118.30
8	H	9	LYS	CB-CG-CD	-6.04	95.91	111.60
7	T	33	LEU	CA-CB-CG	5.99	129.08	115.30
6	S	18	ARG	NE-CZ-NH2	-5.99	117.31	120.30
1	A	189	MET	CA-CB-CG	-5.92	103.23	113.30
5	E	14	ARG	NE-CZ-NH2	-5.92	117.34	120.30
1	A	49	GLY	N-CA-C	-5.89	98.39	113.10
6	S	65	ASP	CB-CG-OD2	-5.84	113.05	118.30
5	E	49	ASP	CB-CG-OD1	5.83	123.55	118.30
8	U	27	ARG	NE-CZ-NH1	5.78	123.19	120.30
7	T	17	ARG	CB-CG-CD	-5.77	96.61	111.60
5	E	14	ARG	NE-CZ-NH1	5.75	123.18	120.30
4	Q	51	LEU	CB-CG-CD1	5.68	120.66	111.00
2	B	167	SER	CB-CA-C	-5.66	99.34	110.10
1	A	212	ASP	CB-CG-OD2	5.66	123.39	118.30
4	D	51	LEU	CB-CG-CD1	5.63	120.58	111.00
13	M	34	LEU	CB-CG-CD1	5.61	120.53	111.00
9	I	31	PHE	N-CA-C	-5.60	95.88	111.00
1	A	208	MET	CG-SD-CE	5.58	109.13	100.20
7	G	17	ARG	CB-CG-CD	-5.58	97.09	111.60
4	D	26	ASP	CB-CG-OD2	-5.55	113.31	118.30
1	N	96	ARG	NE-CZ-NH2	-5.54	117.53	120.30
6	F	3	GLY	N-CA-C	-5.53	99.27	113.10
9	V	29	LEU	CA-CB-CG	5.51	127.97	115.30
3	C	59	ARG	NE-CZ-NH2	-5.50	117.55	120.30
4	D	19	ARG	NE-CZ-NH1	-5.47	117.56	120.30
1	A	363	LEU	CB-CG-CD2	5.46	120.29	111.00
10	J	40	LEU	CB-CG-CD2	5.45	120.27	111.00
7	G	54	ARG	NE-CZ-NH2	-5.44	117.58	120.30
8	U	74	ASP	CB-CG-OD1	5.43	123.19	118.30
6	S	60	CYS	CA-C-N	-5.37	105.39	117.20
2	B	168	LEU	CB-CG-CD1	-5.35	101.91	111.00
1	N	302	ARG	NE-CZ-NH1	-5.34	117.63	120.30
7	T	17	ARG	NE-CZ-NH2	-5.26	117.67	120.30
1	A	199	LEU	CB-CG-CD2	-5.25	102.07	111.00
4	D	19	ARG	CB-CA-C	-5.18	100.04	110.40
12	Y	20	ARG	NE-CZ-NH1	5.17	122.88	120.30
6	S	53	THR	CB-CA-C	-5.13	97.75	111.60
1	N	208	MET	CG-SD-CE	5.11	108.38	100.20
1	N	50	ASP	CB-CG-OD1	5.10	122.89	118.30
4	Q	20	ARG	NE-CZ-NH2	-5.07	117.77	120.30
13	Z	19	LEU	CB-CG-CD2	-5.04	102.43	111.00

There are no chirality outliers.

All (8) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	240	HIS	Sidechain
8	H	8	ILE	Peptide
8	H	9	LYS	Peptide
1	N	240	HIS	Sidechain
6	S	94	HIS	Peptide
6	S	95	GLN	Peptide
9	V	32	ALA	Peptide
9	V	33	THR	Peptide

## 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	4084	0	4069	63	0
1	N	4065	0	4046	44	0
2	B	1836	0	1843	43	0
2	O	1824	0	1833	40	0
3	C	2149	0	2075	24	0
3	P	2143	0	2067	29	0
4	D	1195	0	1183	16	0
4	Q	1203	0	1196	30	0
5	E	852	0	845	8	0
5	R	852	0	845	5	0
6	F	748	0	728	25	0
6	S	748	0	729	25	0
7	G	675	0	643	20	0
7	T	675	0	644	26	0
8	H	662	0	623	36	0
8	U	662	0	623	7	0
9	I	601	0	613	39	0
9	V	601	0	613	19	0
10	J	460	0	459	7	0
10	W	460	0	459	12	0
11	K	384	0	366	5	0
11	X	384	0	366	8	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
12	L	380	0	380	12	0
12	Y	380	0	380	6	0
13	M	335	0	352	1	0
13	Z	335	0	352	4	0
14	1	826	0	849	25	0
14	2	826	0	848	40	0
15	A	1	0	0	0	0
15	N	1	0	0	0	0
16	A	1	0	0	0	0
16	N	1	0	0	0	0
17	A	1	0	0	0	0
17	C	1	0	0	0	0
17	N	1	0	0	0	0
17	P	1	0	0	0	0
18	A	129	0	88	9	0
18	N	129	0	88	10	0
19	A	2	0	0	0	0
19	N	2	0	0	1	0
20	A	102	0	152	9	0
20	C	102	0	152	14	0
20	N	51	0	76	1	0
20	P	102	0	152	10	0
21	B	63	0	110	6	0
21	D	63	0	110	12	0
21	L	63	0	110	20	0
21	N	63	0	110	2	0
21	Q	63	0	110	10	0
22	B	2	0	0	0	0
22	O	2	0	0	0	0
23	B	4	0	6	0	0
23	C	4	0	6	0	0
23	E	4	0	6	1	0
23	F	4	0	6	0	0
23	G	4	0	6	0	0
23	I	4	0	6	0	0
23	N	8	0	12	0	0
23	S	4	0	6	0	0
24	C	58	0	78	4	0
24	G	29	0	39	0	0
24	J	29	0	38	5	0
24	P	58	0	78	2	0
24	T	29	0	39	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
24	W	29	0	37	5	0
25	C	53	0	77	7	0
25	P	53	0	77	3	0
26	C	100	0	156	15	0
26	G	100	0	156	23	0
26	P	100	0	156	12	0
26	T	100	0	156	24	0
27	C	42	0	0	4	0
27	J	10	0	0	1	0
27	L	10	0	0	1	0
27	N	63	0	0	2	0
27	P	43	0	0	6	0
27	T	18	0	0	1	0
27	W	9	0	0	1	0
27	Y	10	0	0	1	0
28	E	52	0	80	19	0
28	V	52	0	80	21	0
29	F	1	0	0	0	0
29	S	1	0	0	2	0
30	M	33	0	42	1	0
30	Z	33	0	42	1	0
31	1	43	0	31	4	0
31	2	43	0	30	4	0
32	1	53	0	0	6	0
32	2	28	0	0	7	0
32	A	252	0	0	19	0
32	B	193	0	0	6	0
32	C	137	0	0	7	0
32	D	122	0	0	7	0
32	E	119	0	0	6	0
32	F	97	0	0	2	2
32	G	60	0	0	11	0
32	H	76	0	0	7	0
32	I	49	0	0	5	0
32	J	30	0	0	3	0
32	K	29	0	0	1	0
32	L	33	0	0	1	0
32	M	26	0	0	2	0
32	N	229	0	0	6	0
32	O	141	0	0	3	0
32	P	110	0	0	9	0
32	Q	99	0	0	7	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
32	R	83	0	0	1	0
32	S	95	0	0	5	0
32	T	41	0	0	3	0
32	U	54	0	0	4	2
32	V	17	0	0	2	0
32	W	10	0	0	0	0
32	X	17	0	0	3	0
32	Y	21	0	0	0	0
32	Z	16	0	0	0	0
All	All	34765	0	32733	716	2

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 11.

All (716) 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)
27:C:310:UNL:C4	27:C:310:UNL:C6	1.76	1.36
32:A:927:HOH:O	26:T:101:CDL:H412	1.17	1.28
5:E:79:LYS:HE3	32:E:387:HOH:O	1.31	1.24
27:W:102:UNL:C5	27:W:102:UNL:C4	2.17	1.23
1:A:486:ASP:OD2	4:D:19:ARG:HD2	1.32	1.21
19:N:607:PER:O2	19:N:607:PER:O1	1.54	1.21
9:I:29:LEU:O	9:I:32:ALA:N	1.71	1.20
32:P:475:HOH:O	10:W:58:LYS:HE2	1.38	1.20
24:J:101:CHD:H212	32:J:221:HOH:O	1.41	1.17
28:V:101:PSC:H343	28:V:101:PSC:H12	1.22	1.14
28:E:201:PSC:H221	28:E:201:PSC:C01	1.79	1.13
32:C:526:HOH:O	26:G:101:CDL:H551	0.98	1.12
9:I:29:LEU:O	9:I:32:ALA:CA	1.98	1.12
32:A:927:HOH:O	26:T:101:CDL:C40	1.97	1.12
28:E:201:PSC:H221	28:E:201:PSC:O03	1.37	1.10
26:P:306:CDL:OB3	32:P:401:HOH:O	1.65	1.10
14:1:17:CYS:SG	31:1:201:HEC:HAC	1.78	1.09
8:H:7:LYS:O	8:H:8:ILE:CG2	2.01	1.09
21:L:101:TGL:OC1	21:L:101:TGL:HC41	1.29	1.08
26:G:101:CDL:CB2	32:G:244:HOH:O	2.00	1.07
6:F:94:HIS:HB2	6:F:96:LEU:HB2	1.09	1.06
8:H:7:LYS:O	8:H:8:ILE:HB	1.47	1.06
27:P:310:UNL:C5	27:P:310:UNL:C4	2.33	1.06
27:C:310:UNL:C6	27:C:310:UNL:C5	2.33	1.06

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:220:GLU:OE2	32:B:401:HOH:O	1.73	1.05
1:A:282:PHE:HA	7:T:4:ALA:HB3	1.36	1.05
9:I:26:MET:O	9:I:30:GLY:CA	2.05	1.05
8:H:7:LYS:O	8:H:8:ILE:CB	2.05	1.04
28:E:201:PSC:H343	28:E:201:PSC:H12	1.40	1.04
20:A:607:PGV:H22	32:A:701:HOH:O	1.57	1.04
27:L:102:UNL:C4	27:L:102:UNL:C10	2.35	1.04
3:C:133:ASN:ND2	32:C:402:HOH:O	1.89	1.04
28:V:101:PSC:H22	32:V:212:HOH:O	1.58	1.03
9:V:29:LEU:O	9:V:31:PHE:N	1.91	1.03
4:D:6:VAL:HG21	4:D:31:LYS:NZ	1.75	1.01
21:D:201:TGL:H231	21:D:201:TGL:HA91	1.40	1.00
9:I:26:MET:O	9:I:30:GLY:HA3	1.61	1.00
9:I:31:PHE:CZ	9:I:32:ALA:O	2.15	1.00
10:W:33:ARG:HG2	24:W:101:CHD:H152	1.42	0.99
8:H:9:LYS:N	8:H:9:LYS:HD3	1.49	0.98
6:F:85:CYS:SG	6:F:87:THR:HG23	2.02	0.98
26:C:306:CDL:O1	32:C:401:HOH:O	1.83	0.97
8:H:7:LYS:O	8:H:8:ILE:HG22	1.62	0.97
8:H:8:ILE:N	32:H:101:HOH:O	1.94	0.96
2:O:226:MET:HA	2:O:226:MET:CE	1.96	0.96
25:C:303:PEK:H161	25:C:303:PEK:H11	1.47	0.94
7:G:11:TPO:O	32:G:201:HOH:O	1.87	0.94
3:P:133:ASN:ND2	32:P:402:HOH:O	2.02	0.93
2:B:29:MET:HG3	9:I:31:PHE:HZ	1.33	0.92
32:A:927:HOH:O	26:T:101:CDL:C41	1.82	0.91
26:G:101:CDL:HB21	32:G:244:HOH:O	1.62	0.91
3:P:37:PHE:CE1	10:W:58:LYS:HG3	2.05	0.91
6:F:30:PRO:O	6:F:96:LEU:HD21	1.70	0.91
26:P:306:CDL:H1	32:P:403:HOH:O	1.70	0.91
9:I:29:LEU:O	9:I:32:ALA:CB	2.19	0.90
1:N:514:LYS:HE2	32:S:258:HOH:O	1.70	0.90
32:P:493:HOH:O	6:S:1:ALA:HB1	1.67	0.90
21:L:101:TGL:OC1	21:L:101:TGL:CC4	2.16	0.90
4:Q:21:ASP:HB2	32:Q:301:HOH:O	1.72	0.90
2:O:58:ALA:O	2:O:62:GLU:HG3	1.71	0.90
6:F:75:HIS:H	6:F:80:GLN:HE22	1.19	0.89
6:S:85:CYS:SG	6:S:87:THR:HG23	2.13	0.88
14:2:81:ILE:HD12	32:2:328:HOH:O	1.74	0.87
26:G:101:CDL:H522	26:G:101:CDL:H241	1.55	0.87
12:L:2:HIS:CD2	12:L:3:TYR:H	1.93	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:B:301:TGL:H121	21:B:301:TGL:H302	1.56	0.87
9:I:29:LEU:O	9:I:32:ALA:HB2	1.75	0.86
1:A:417[B]:MET:HE3	32:A:921:HOH:O	1.75	0.86
20:P:305:PGV:H062	32:U:103:HOH:O	1.76	0.86
12:L:20:ARG:HH21	21:L:101:TGL:HC52	1.39	0.86
3:P:37:PHE:CD1	10:W:58:LYS:HG3	2.11	0.85
27:Y:101:UNL:C5	27:Y:101:UNL:C4	2.54	0.85
6:F:30:PRO:O	6:F:96:LEU:CD2	2.24	0.85
1:A:282:PHE:HA	7:T:4:ALA:CB	2.07	0.84
26:G:101:CDL:H111	26:G:101:CDL:HA21	1.57	0.84
26:G:101:CDL:HB22	32:G:244:HOH:O	1.70	0.84
9:I:33:THR:HG22	9:I:37:PHE:HB3	1.57	0.84
28:E:201:PSC:O03	28:E:201:PSC:C22	2.23	0.84
6:F:94:HIS:CB	6:F:96:LEU:HB2	2.02	0.84
8:H:84:LYS:HA	8:H:84:LYS:HZ3	1.42	0.83
27:C:310:UNL:C4	27:C:310:UNL:C5	2.56	0.83
11:X:54:ARG:HH21	11:X:54:ARG:HG3	1.43	0.83
20:P:304:PGV:H151	20:P:304:PGV:H11	1.58	0.83
6:F:94:HIS:HB2	6:F:96:LEU:CB	2.02	0.83
2:B:16:ILE:HD13	32:B:549:HOH:O	1.79	0.82
9:I:30:GLY:O	9:I:31:PHE:C	2.16	0.82
9:I:26:MET:O	9:I:30:GLY:N	2.12	0.81
6:S:75:HIS:H	6:S:80:GLN:HE22	1.23	0.81
4:D:6:VAL:HG21	4:D:31:LYS:HZ1	1.41	0.81
3:P:205:GLY:HA3	25:P:303:PEK:H161	1.63	0.81
4:Q:31:LYS:HE3	32:Q:376:HOH:O	1.80	0.81
20:A:607:PGV:H211	32:M:216:HOH:O	1.80	0.80
8:U:46:LYS:HE3	32:U:143:HOH:O	1.80	0.80
14:2:20:VAL:HG12	14:2:102:THR:HG22	1.64	0.80
2:B:81:LEU:HD12	26:T:101:CDL:H351	1.64	0.80
6:S:64:GLU:O	6:S:65:ASP:HB2	1.81	0.79
32:N:737:HOH:O	21:Q:201:TGL:HB32	1.83	0.79
28:V:101:PSC:H291	28:V:101:PSC:H331	1.65	0.79
11:X:54:ARG:HH21	11:X:54:ARG:CG	1.96	0.79
24:P:307:CHD:H231	32:P:504:HOH:O	1.83	0.79
20:A:608:PGV:H343	25:C:303:PEK:H383	1.65	0.78
21:L:101:TGL:H312	21:L:101:TGL:C36	2.13	0.78
12:L:2:HIS:HD2	12:L:3:TYR:H	1.30	0.78
14:2:3:VAL:HG13	14:2:97:TYR:HA	1.65	0.78
20:P:305:PGV:C06	32:U:103:HOH:O	2.31	0.78
32:N:725:HOH:O	3:P:77:LYS:HE3	1.83	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:6:GLY:O	7:G:7:ASP:HB2	1.83	0.78
1:N:417:MET:HE3	32:N:928:HOH:O	1.83	0.78
27:J:102:UNL:C10	27:J:102:UNL:C6	2.62	0.77
12:L:24:MET:HG3	32:L:223:HOH:O	1.83	0.77
2:B:29:MET:HG3	9:I:31:PHE:CZ	2.17	0.77
4:Q:21:ASP:CB	32:Q:301:HOH:O	2.29	0.77
1:A:514:LYS:HA	6:F:38:ALA:HB3	1.67	0.77
12:L:20:ARG:NH2	21:L:101:TGL:HC52	1.99	0.77
14:2:70:ASN:HB3	14:2:73:LYS:HB3	1.67	0.76
6:F:94:HIS:HD2	6:F:97:ALA:H	1.33	0.76
1:A:28:MET:CE	18:A:604[B]:HEA:H271	2.15	0.76
14:2:21:GLU:OE2	14:2:24:GLY:HA3	1.86	0.76
14:2:19:THR:HG23	14:2:27:LYS:HD2	1.67	0.76
4:Q:21:ASP:CG	32:Q:301:HOH:O	2.23	0.75
7:G:38:HIS:NE2	26:G:101:CDL:H122	2.01	0.75
9:I:31:PHE:CE1	9:I:32:ALA:O	2.38	0.75
9:V:10:ARG:HD3	28:V:101:PSC:H063	1.67	0.75
2:B:58:ALA:O	2:B:62:GLU:HG3	1.87	0.75
14:1:81:ILE:CG2	32:1:346:HOH:O	2.34	0.74
6:F:94:HIS:O	32:F:201:HOH:O	2.06	0.74
4:D:78:TRP:HB3	21:D:201:TGL:HB22	1.69	0.74
4:D:100:LYS:NZ	32:D:301:HOH:O	2.21	0.73
28:E:201:PSC:H12	28:E:201:PSC:C34	2.14	0.73
1:N:28:MET:HE1	18:N:605[B]:HEA:C27	2.18	0.73
2:O:116:LEU:HD11	2:O:226:MET:HG2	1.69	0.73
2:O:56:MET:HB3	28:V:101:PSC:H211	1.70	0.73
9:I:2:THR:N	32:I:201:HOH:O	1.94	0.73
26:P:306:CDL:H521	26:P:306:CDL:OB9	1.87	0.73
14:1:17:CYS:SG	31:1:201:HEC:C3C	2.75	0.73
2:O:226:MET:HA	2:O:226:MET:HE2	1.70	0.73
2:B:19:GLU:OE2	2:B:82:ARG:NH1	2.22	0.72
8:H:43:MET:CE	8:H:49:ASP:H	2.02	0.72
9:I:31:PHE:CD2	9:I:32:ALA:N	2.57	0.72
4:D:6:VAL:HG21	4:D:31:LYS:HZ2	1.51	0.72
28:E:201:PSC:H221	28:E:201:PSC:H011	1.71	0.72
14:2:71:PRO:HD2	14:2:83:ALA:O	1.89	0.72
1:A:28:MET:CE	18:A:604[B]:HEA:C27	2.68	0.72
2:O:226:MET:HA	2:O:226:MET:HE3	1.71	0.72
2:O:57:ASP:H	28:V:101:PSC:H202	1.55	0.71
8:H:84:LYS:HZ2	8:H:85:ILE:H	1.36	0.71
4:Q:87:PHE:HB2	32:X:113:HOH:O	1.90	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:194:LEU:HD22	1:N:285:PHE:HE2	1.53	0.71
8:H:8:ILE:C	8:H:9:LYS:HD3	2.11	0.71
28:E:201:PSC:H343	28:E:201:PSC:C12	2.18	0.71
9:I:29:LEU:C	9:I:32:ALA:H	1.94	0.71
20:A:608:PGV:H183	25:C:303:PEK:H322	1.72	0.70
26:G:101:CDL:H271	27:N:601:UNL:C17	2.21	0.70
28:V:101:PSC:H343	28:V:101:PSC:C12	2.13	0.70
14:1:17:CYS:SG	31:1:201:HEC:CBC	2.76	0.70
2:B:66:THR:HG22	2:B:67:ILE:HD13	1.72	0.70
14:2:16:GLN:H	14:2:16:GLN:HE21	1.38	0.70
8:H:7:LYS:C	32:H:101:HOH:O	2.26	0.69
4:Q:19[B]:ARG:HD3	4:Q:21:ASP:OD1	1.92	0.69
3:P:37:PHE:HE1	10:W:58:LYS:HG3	1.57	0.69
14:2:32:LEU:HD22	14:2:35:LEU:HD22	1.74	0.69
4:Q:28:ALA:O	4:Q:31:LYS:HD2	1.93	0.69
9:I:31:PHE:O	9:I:34:PHE:N	2.18	0.69
9:V:31:PHE:C	9:V:31:PHE:CD1	2.66	0.69
21:D:201:TGL:H122	21:D:201:TGL:HB81	1.75	0.68
7:T:34:ASN:O	7:T:38:HIS:HB3	1.92	0.68
1:A:282:PHE:CA	7:T:4:ALA:HB3	2.19	0.68
20:A:608:PGV:H343	25:C:303:PEK:C38	2.23	0.68
2:B:57:ASP:H	28:E:201:PSC:H211	1.58	0.68
1:A:239:GLY:CA	32:A:900:HOH:O	2.42	0.68
6:S:60:CYS:HG	29:S:101:ZN:ZN	1.05	0.68
12:L:14:SER:H	21:L:101:TGL:HC31	1.60	0.67
1:A:304:TYR:HD1	26:T:101:CDL:HB32	1.59	0.67
1:N:28:MET:HE1	18:N:605[B]:HEA:H271	1.75	0.67
2:O:116:LEU:HD11	2:O:226:MET:CG	2.24	0.67
1:A:337:ALA:HB2	1:A:394:VAL:HG23	1.76	0.67
26:T:101:CDL:H271	27:T:102:UNL:C17	2.24	0.67
6:F:64:GLU:O	6:F:65:ASP:HB2	1.95	0.67
28:V:101:PSC:H072	32:V:201:HOH:O	1.94	0.67
12:Y:26:THR:HG23	13:Z:25:SER:HB3	1.77	0.67
7:T:38:HIS:CD2	7:T:38:HIS:O	2.48	0.67
21:B:301:TGL:H211	21:B:301:TGL:H342	1.76	0.66
8:H:84:LYS:HA	8:H:84:LYS:NZ	2.09	0.66
1:N:28:MET:CE	18:N:605[B]:HEA:H271	2.25	0.66
26:C:306:CDL:H522	26:C:306:CDL:OB9	1.96	0.66
9:I:30:GLY:C	9:I:32:ALA:N	2.38	0.66
9:V:73:LYS:HB3	9:V:73:LYS:NZ	2.08	0.66
2:B:145:PRO:HG2	2:B:148:MET:HE2	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:514:LYS:HA	6:S:38:ALA:HB3	1.77	0.66
4:Q:34:SER:H	4:Q:37:GLN:NE2	1.94	0.66
26:T:101:CDL:H382	26:T:101:CDL:H152	1.78	0.66
2:B:64:ILE:HG22	32:B:554:HOH:O	1.95	0.66
14:1:86:LYS:HE3	14:1:86:LYS:HA	1.77	0.66
1:A:28:MET:HE2	18:A:604[B]:HEA:C27	2.24	0.66
1:N:145:LEU:HD11	27:P:310:UNL:C6	2.26	0.66
1:A:172:LYS:HZ1	7:T:9:GLY:HA3	1.60	0.65
32:A:927:HOH:O	26:T:101:CDL:H401	1.76	0.65
28:V:101:PSC:C28	28:V:101:PSC:H322	2.27	0.65
4:Q:4:SER:N	4:Q:31:LYS:H	1.95	0.65
7:G:45:PRO:O	7:G:46:ALA:CB	2.44	0.65
12:L:25:MET:HG2	21:L:101:TGL:HA62	1.78	0.65
1:A:28:MET:HE2	18:A:604[B]:HEA:H273	1.79	0.64
6:F:94:HIS:O	6:F:95:GLN:HB3	1.94	0.64
7:T:7:ASP:O	7:T:8:HIS:HB2	1.97	0.64
14:1:19:THR:HG23	14:1:27:LYS:HD2	1.79	0.64
14:2:26:HIS:CD2	14:2:26:HIS:H	2.15	0.64
28:V:101:PSC:P	28:V:101:PSC:H012	2.37	0.64
1:A:239:GLY:HA3	32:A:900:HOH:O	1.98	0.64
9:I:33:THR:HG22	9:I:37:PHE:CB	2.27	0.64
8:U:9:LYS:O	8:U:10:ASN:HB2	1.97	0.64
4:D:109:HIS:HD2	32:D:355:HOH:O	1.80	0.64
31:2:201:HEC:HBC1	32:2:317:HOH:O	1.97	0.64
11:X:54:ARG:HG3	11:X:54:ARG:NH2	2.06	0.64
21:D:201:TGL:HA91	21:D:201:TGL:C23	2.17	0.63
9:I:73:LYS:HD3	9:I:73:LYS:N	2.12	0.63
3:P:80[B]:ARG:HH22	27:P:308:UNL:C1	2.10	0.63
3:C:220:PHE:HB2	26:C:306:CDL:H711	1.81	0.63
7:T:17:ARG:HD3	32:T:205:HOH:O	1.98	0.63
31:2:201:HEC:CBC	32:2:317:HOH:O	2.46	0.63
20:C:305:PGV:C06	8:H:22:ASN:HD22	2.12	0.63
5:R:44:GLU:OE1	32:R:201:HOH:O	2.15	0.63
1:N:28:MET:CE	18:N:605[B]:HEA:C27	2.77	0.63
21:N:608:TGL:HA72	21:N:608:TGL:H221	1.79	0.63
6:S:94:HIS:O	6:S:95:GLN:HB2	1.99	0.63
1:A:339:MET:HE2	32:D:392:HOH:O	1.99	0.63
2:B:57:ASP:H	28:E:201:PSC:C21	2.11	0.62
2:B:68:LEU:HD23	28:E:201:PSC:H171	1.80	0.62
3:C:51[A]:MET:SD	26:C:306:CDL:H612	2.38	0.62
14:2:30:PRO:HD3	14:2:46:PHE:CE2	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:A:892:HOH:O	12:L:2:HIS:HE1	1.81	0.62
21:L:101:TGL:C23	21:L:101:TGL:HA92	2.29	0.62
1:A:278[B]:MET:HE1	7:T:6:GLY:H	1.65	0.62
6:S:60:CYS:SG	29:S:101:ZN:ZN	1.88	0.62
4:Q:9:GLU:HA	4:Q:9:GLU:OE1	2.00	0.62
4:Q:43:LYS:HE3	4:Q:55:GLU:OE1	1.98	0.62
14:1:7:LYS:HG3	14:1:97:TYR:CE1	2.35	0.62
14:2:16:GLN:H	14:2:16:GLN:NE2	1.96	0.62
28:V:101:PSC:H322	28:V:101:PSC:H281	1.82	0.62
32:B:554:HOH:O	28:E:201:PSC:H151	2.00	0.62
26:G:101:CDL:C27	27:N:601:UNL:C17	2.76	0.62
9:I:30:GLY:O	9:I:32:ALA:N	2.32	0.62
8:H:84:LYS:NZ	8:H:85:ILE:H	1.97	0.61
2:O:57:ASP:N	28:V:101:PSC:H202	2.15	0.61
26:G:101:CDL:H142	26:G:101:CDL:OB2	1.99	0.61
2:O:116:LEU:CD1	2:O:226:MET:CG	2.79	0.61
2:O:198:GLU:OE2	32:O:401:HOH:O	2.16	0.61
4:Q:34:SER:H	4:Q:37:GLN:HE21	1.46	0.61
26:T:101:CDL:H322	26:T:101:CDL:OA7	1.99	0.61
14:2:22:LYS:HA	14:2:33:HIS:HB2	1.82	0.61
7:T:37:LEU:O	7:T:38:HIS:CB	2.49	0.61
1:A:310:MET:CE	2:B:77:ALA:HB2	2.31	0.61
10:W:33:ARG:HG2	24:W:101:CHD:C15	2.25	0.61
2:B:86:MET:O	2:B:89:GLU:HG2	2.00	0.61
2:O:196:CYS:HB2	2:O:207:MET:HG3	1.83	0.61
7:G:38:HIS:NE2	26:G:101:CDL:H362	2.16	0.60
20:N:612:PGV:H61	3:P:54:MET:HG2	1.83	0.60
7:G:84:LYS:N	32:G:203:HOH:O	2.19	0.60
14:2:5:LYS:HD3	14:2:93:ASP:OD2	2.02	0.60
3:C:3:HIS:HA	32:C:410:HOH:O	2.01	0.60
10:J:7:GLU:HG3	32:J:220:HOH:O	2.01	0.60
1:N:486:ASP:OD2	4:Q:19[A]:ARG:NE	2.34	0.60
26:T:101:CDL:CA5	26:T:101:CDL:H311	2.31	0.60
26:P:306:CDL:H262	26:P:306:CDL:H222	1.84	0.60
7:G:7:ASP:O	7:G:8:HIS:HB2	2.02	0.60
1:N:265:LYS:HB2	1:N:490:THR:HG21	1.83	0.59
20:P:304:PGV:H11	20:P:304:PGV:C15	2.27	0.59
26:G:101:CDL:HB32	26:G:101:CDL:H201	1.84	0.59
21:Q:201:TGL:HB32	21:Q:201:TGL:HG2	1.83	0.59
2:O:116:LEU:CD1	2:O:226:MET:HG2	2.33	0.59
7:G:9:GLY:HA3	1:N:172:LYS:HZ1	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:17:ARG:HD3	32:G:208:HOH:O	2.01	0.59
8:H:9:LYS:HB3	32:H:102:HOH:O	2.03	0.59
3:C:224:LYS:HE3	26:C:306:CDL:HB32	1.85	0.59
26:G:101:CDL:H371	2:O:81:LEU:HD12	1.85	0.59
3:C:210:ILE:HG12	20:C:304:PGV:H132	1.85	0.58
12:Y:26:THR:HG23	13:Z:25:SER:CB	2.33	0.58
1:A:282:PHE:HZ	26:T:101:CDL:H752	1.68	0.58
1:A:278[B]:MET:CE	7:T:5:LYS:HB3	2.33	0.58
21:L:101:TGL:HA92	21:L:101:TGL:H231	1.85	0.58
32:P:493:HOH:O	6:S:1:ALA:CB	2.35	0.58
6:F:96:LEU:C	6:F:98:HIS:H	2.07	0.58
26:T:101:CDL:OB4	26:T:101:CDL:H1	2.03	0.58
7:G:5:LYS:HA	1:N:278[B]:MET:CE	2.34	0.58
20:C:305:PGV:H061	8:H:22:ASN:ND2	2.18	0.57
9:I:31:PHE:HE1	9:I:35:TYR:CB	2.17	0.57
1:A:112:LEU:C	1:A:112:LEU:HD23	2.24	0.57
2:B:56:MET:HA	28:E:201:PSC:H212	1.87	0.57
21:D:201:TGL:HG32	21:D:201:TGL:OB1	2.04	0.57
9:I:28:SER:O	9:I:31:PHE:HD2	1.88	0.57
1:A:304:TYR:CD1	26:T:101:CDL:HB32	2.40	0.57
1:N:32:ALA:HB3	12:Y:36:PRO:HG2	1.86	0.57
1:A:278[B]:MET:SD	7:T:5:LYS:HB3	2.45	0.57
25:C:303:PEK:H161	25:C:303:PEK:C11	2.28	0.57
20:C:304:PGV:H12	26:C:306:CDL:H622	1.86	0.57
11:X:24:PHE:O	11:X:28:VAL:HG12	2.05	0.57
32:A:858:HOH:O	6:F:96:LEU:CD1	2.53	0.56
6:F:85:CYS:SG	6:F:87:THR:CG2	2.87	0.56
1:A:177:SER:H	1:A:180:GLN:NE2	2.04	0.56
4:Q:27:VAL:HG21	4:Q:31:LYS:HE2	1.87	0.56
21:Q:201:TGL:HC21	21:Q:201:TGL:HG11	1.88	0.56
1:A:265:LYS:HB2	1:A:490:THR:HG21	1.87	0.56
1:A:28:MET:HE1	18:A:604[B]:HEA:H271	1.86	0.56
8:H:9:LYS:N	8:H:9:LYS:CD	2.41	0.56
8:H:43:MET:HE2	8:H:49:ASP:H	1.70	0.56
1:A:514:LYS:HE2	32:F:237:HOH:O	2.06	0.56
7:T:3:ALA:O	7:T:4:ALA:HB2	2.06	0.56
24:C:307:CHD:H41	24:C:307:CHD:O7	2.06	0.55
2:B:196:CYS:HB2	2:B:207:MET:HG3	1.89	0.55
14:1:48:TYR:HB2	14:1:53:LYS:HG3	1.87	0.55
1:A:406:ASN:HD21	20:A:607:PGV:H31	1.71	0.55
21:Q:201:TGL:HG11	21:Q:201:TGL:CC2	2.36	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:514:LYS:HA	6:F:38:ALA:CB	2.35	0.55
2:B:84:LEU:HA	2:B:87:MET:HE2	1.87	0.55
4:D:121:LYS:HE2	11:K:52:GLU:OE2	2.07	0.55
26:G:101:CDL:H111	26:G:101:CDL:CA2	2.32	0.55
1:N:194:LEU:HD22	1:N:285:PHE:CE2	2.39	0.55
6:S:64:GLU:O	6:S:65:ASP:CB	2.48	0.55
4:Q:109:HIS:HD2	32:Q:371:HOH:O	1.89	0.55
21:D:201:TGL:CA3	32:D:392:HOH:O	2.54	0.55
6:F:94:HIS:CD2	6:F:97:ALA:H	2.19	0.55
9:I:33:THR:HA	9:I:36:LYS:HB3	1.89	0.55
24:P:301:CHD:H12	24:P:301:CHD:H212	1.88	0.55
21:D:201:TGL:HA31	32:D:392:HOH:O	2.06	0.54
28:E:201:PSC:H072	32:I:221:HOH:O	2.07	0.54
3:P:47:LEU:O	3:P:51[B]:MET:HG3	2.07	0.54
26:G:101:CDL:O1	32:G:202:HOH:O	2.18	0.54
6:S:60:CYS:SG	6:S:85:CYS:SG	3.05	0.54
31:2:201:HEC:HBC2	31:2:201:HEC:HHD	1.88	0.54
1:A:365:ILE:HD11	32:A:899:HOH:O	2.06	0.54
9:I:30:GLY:C	9:I:32:ALA:H	2.09	0.54
6:S:53:THR:CG2	32:S:292:HOH:O	2.55	0.54
14:1:19:THR:CG2	14:1:27:LYS:HD2	2.37	0.54
32:A:858:HOH:O	6:F:96:LEU:HD11	2.07	0.54
6:F:94:HIS:CG	6:F:95:GLN:N	2.75	0.54
9:V:17:LEU:CD2	28:V:101:PSC:H271	2.38	0.54
2:O:104:TRP:CG	2:O:203:ASN:HB2	2.43	0.54
8:U:9:LYS:O	8:U:10:ASN:CB	2.55	0.54
32:A:911:HOH:O	26:T:101:CDL:H131	2.07	0.54
2:B:57:ASP:H	28:E:201:PSC:C20	2.21	0.54
9:V:31:PHE:CD1	9:V:31:PHE:O	2.60	0.54
11:X:54:ARG:CG	11:X:54:ARG:NH2	2.64	0.54
4:Q:9:GLU:HB3	32:S:275:HOH:O	2.07	0.53
1:A:177:SER:H	1:A:180:GLN:HE21	1.56	0.53
1:A:312[A]:ILE:HD12	32:A:763:HOH:O	2.07	0.53
1:N:379:TYR:O	1:N:383[A]:MET:HB2	2.08	0.53
2:O:59:GLN:O	2:O:60:GLU:HG3	2.09	0.53
23:E:202:EDO:H22	32:E:391:HOH:O	2.08	0.53
14:1:49:THR:HG23	14:1:79:LYS:HD3	1.90	0.53
8:H:49:ASP:O	8:H:50:VAL:HB	2.09	0.53
21:Q:201:TGL:H352	9:V:16:ARG:HE	1.73	0.53
9:V:17:LEU:HD21	28:V:101:PSC:H271	1.90	0.53
1:N:449:MET:SD	2:O:5:MET:HG2	2.49	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Q:28:ALA:O	4:Q:31:LYS:CD	2.56	0.53
32:N:737:HOH:O	21:Q:201:TGL:HG2	2.08	0.53
28:V:101:PSC:H291	28:V:101:PSC:C33	2.32	0.53
2:B:33:LEU:HD11	9:I:29:LEU:HD13	1.91	0.52
2:B:57:ASP:N	28:E:201:PSC:H211	2.24	0.52
8:H:7:LYS:CA	8:H:7:LYS:HE3	2.39	0.52
26:T:101:CDL:H132	26:T:101:CDL:H342	1.91	0.52
1:A:513:LEU:O	1:A:514:LYS:CB	2.55	0.52
1:N:365:ILE:HD11	32:N:863:HOH:O	2.08	0.52
6:S:85:CYS:SG	6:S:87:THR:CG2	2.94	0.52
8:U:9:LYS:O	8:U:10:ASN:ND2	2.40	0.52
8:H:43:MET:HE3	8:H:49:ASP:H	1.75	0.52
14:1:16:GLN:CB	32:1:338:HOH:O	2.58	0.52
9:I:31:PHE:HE1	9:I:35:TYR:H	1.57	0.52
21:L:101:TGL:H231	21:L:101:TGL:CA9	2.39	0.52
4:D:107:ILE:HD13	11:K:39:GLU:HB2	1.92	0.52
7:T:31:CYS:SG	26:T:101:CDL:H551	2.49	0.52
11:X:54:ARG:HH21	11:X:54:ARG:CB	2.23	0.52
7:G:31:CYS:SG	26:G:101:CDL:H512	2.50	0.52
8:H:8:ILE:C	8:H:9:LYS:O	2.46	0.52
2:O:13:THR:OG1	2:O:167:SER:HB2	2.09	0.52
7:T:7:ASP:CG	7:T:8:HIS:N	2.63	0.52
14:1:52:ASN:HD22	14:1:52:ASN:C	2.14	0.52
14:2:68:LEU:HD21	31:2:201:HEC:HMB2	1.92	0.52
5:E:78:HIS:HD2	32:E:364:HOH:O	1.91	0.51
21:L:101:TGL:C36	21:L:101:TGL:C31	2.88	0.51
3:C:161[B]:GLN:HG2	24:C:307:CHD:O7	2.10	0.51
1:N:431:LEU:HD21	1:N:450:TRP:HB2	1.92	0.51
3:P:5:THR:HG21	6:S:96:LEU:HD13	1.92	0.51
14:2:62:GLU:HG2	14:2:63:THR:HG23	1.92	0.51
3:C:156:ARG:HE	24:C:307:CHD:C24	2.23	0.51
26:C:306:CDL:H262	26:C:306:CDL:H381	1.91	0.51
3:P:5:THR:CG2	6:S:96:LEU:HD13	2.41	0.51
27:P:310:UNL:C4	27:P:310:UNL:C6	2.89	0.51
8:U:7:LYS:HE3	8:U:10:ASN:HD21	1.74	0.51
10:J:2:GLU:HG2	32:J:209:HOH:O	2.11	0.51
1:N:24:ALA:HA	18:N:605[A]:HEA:H22	1.93	0.51
26:P:306:CDL:H162	26:P:306:CDL:H201	1.93	0.51
14:2:36:PHE:CE2	14:2:61:GLU:HG3	2.46	0.51
9:I:29:LEU:O	9:I:32:ALA:HA	2.05	0.51
6:S:82:CYS:C	6:S:84:SER:N	2.63	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:343:GLY:HA2	21:D:201:TGL:H201	1.93	0.51
8:H:10:ASN:N	32:H:102:HOH:O	1.98	0.51
32:A:950:HOH:O	14:1:81:ILE:HG21	2.10	0.51
14:2:30:PRO:HD3	14:2:46:PHE:CZ	2.46	0.51
1:A:310:MET:HE1	2:B:77:ALA:HB2	1.93	0.50
9:I:1:SAC:CB	9:I:1:SAC:H2A1	2.40	0.50
26:G:101:CDL:H372	2:O:78:LEU:HD12	1.94	0.50
8:H:7:LYS:HE3	8:H:7:LYS:HA	1.93	0.50
4:D:107:ILE:HD11	4:D:111:PHE:CB	2.42	0.50
4:D:118:LYS:HB3	11:K:53:TRP:HB3	1.94	0.50
24:J:101:CHD:H61	24:J:101:CHD:H21	1.94	0.50
9:V:61:GLU:OE1	9:V:64:ARG:NH2	2.45	0.50
20:C:305:PGV:H061	8:H:22:ASN:HD22	1.76	0.50
1:N:309:THR:HG22	18:N:606:HEA:HMB2	1.92	0.50
26:T:101:CDL:H791	26:T:101:CDL:H832	1.93	0.50
26:C:306:CDL:HB21	10:J:8:LYS:HD2	1.92	0.50
14:2:3:VAL:O	14:2:97:TYR:HB2	2.11	0.50
20:C:305:PGV:H11	3:P:258:TRP:HH2	1.76	0.50
1:N:514:LYS:HA	6:S:38:ALA:CB	2.41	0.50
2:O:137:GLU:OE1	4:Q:122:ARG:NH1	2.37	0.50
3:P:59:ARG:HG3	26:P:306:CDL:HA22	1.92	0.50
14:2:9:ILE:O	14:2:13:LYS:HG2	2.11	0.50
14:2:42:GLN:O	14:2:44:PRO:HD3	2.11	0.50
9:I:33:THR:O	9:I:34:PHE:C	2.49	0.50
2:O:56:MET:CB	28:V:101:PSC:H211	2.41	0.50
2:O:68:LEU:HB3	2:O:69:PRO:HD3	1.94	0.50
12:Y:46:LYS:O	12:Y:47:LYS:HB2	2.11	0.50
1:A:49:GLY:HA3	32:A:908:HOH:O	2.10	0.50
14:1:72:LYS:HD2	32:1:334:HOH:O	2.12	0.50
20:C:304:PGV:H172	26:C:306:CDL:H631	1.93	0.49
21:L:101:TGL:C31	21:L:101:TGL:H362	2.42	0.49
14:2:3:VAL:HG11	14:2:100:LYS:HD2	1.94	0.49
6:F:46:PRO:O	6:F:48:LEU:HD22	2.12	0.49
2:O:58:ALA:O	2:O:62:GLU:CG	2.53	0.49
2:B:70:ALA:HB1	26:T:101:CDL:H441	1.95	0.49
26:C:306:CDL:OB9	26:C:306:CDL:HB4	2.11	0.49
8:H:46:LYS:HE2	8:H:46:LYS:HA	1.94	0.49
2:O:116:LEU:CD1	2:O:226:MET:HG3	2.42	0.49
10:W:36:MET:HB3	24:W:101:CHD:C18	2.42	0.49
3:C:146:TRP:CZ2	7:G:17:ARG:HG3	2.48	0.49
6:F:52:ILE:HA	6:F:94:HIS:HB3	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:34:SER:H	4:D:37:GLN:NE2	2.11	0.49
14:2:13:LYS:HE3	32:2:311:HOH:O	2.13	0.49
1:A:333:LYS:HE2	32:M:212:HOH:O	2.11	0.49
14:1:16:GLN:HB3	32:1:338:HOH:O	2.12	0.49
8:H:9:LYS:N	32:H:101:HOH:O	2.18	0.48
9:V:33:THR:O	9:V:36:LYS:N	2.46	0.48
14:1:47:THR:HB	32:1:332:HOH:O	2.12	0.48
1:A:24:ALA:HB2	18:A:604[B]:HEA:H253	1.95	0.48
28:E:201:PSC:H222	28:E:201:PSC:H21	1.95	0.48
9:I:31:PHE:CE2	9:I:32:ALA:O	2.64	0.48
14:2:72:LYS:NZ	14:2:83:ALA:HA	2.29	0.48
21:B:301:TGL:H301	21:B:301:TGL:HA72	1.96	0.48
2:B:86:MET:HB3	32:B:536:HOH:O	2.14	0.48
26:G:101:CDL:H402	26:G:101:CDL:H172	1.95	0.48
1:N:240:HIS:C	1:N:240:HIS:CD2	2.86	0.48
10:W:36:MET:HG2	24:W:101:CHD:H183	1.94	0.48
7:T:31:CYS:SG	26:T:101:CDL:H532	2.54	0.48
4:D:63:LYS:HG2	4:D:64:PHE:CE2	2.49	0.48
9:I:33:THR:O	9:I:36:LYS:N	2.47	0.48
1:N:485:VAL:HG22	13:Z:1:ILE:HG13	1.95	0.48
1:A:309:THR:HG22	18:A:605:HEA:HMB2	1.96	0.47
14:2:32:LEU:O	14:2:102:THR:HB	2.13	0.47
7:G:11:TPO:HG22	32:G:210:HOH:O	2.13	0.47
3:P:246:ASP:HB2	32:P:485:HOH:O	2.13	0.47
12:Y:47:LYS:OXT	12:Y:47:LYS:HD2	2.14	0.47
9:I:61:GLU:OE1	9:I:64:ARG:NE	2.40	0.47
21:L:101:TGL:H312	21:L:101:TGL:H363	1.92	0.47
3:P:107:ALA:HB2	20:P:305:PGV:H031	1.96	0.47
2:B:129[A]:LYS:NZ	2:B:132:GLU:OE1	2.43	0.47
8:H:9:LYS:HG3	8:H:11:TYR:H	1.80	0.47
6:S:53:THR:HG22	32:S:292:HOH:O	2.14	0.47
7:G:10:GLY:N	32:G:205:HOH:O	2.47	0.47
7:G:37:LEU:HD23	26:G:101:CDL:H381	1.96	0.47
8:H:7:LYS:C	8:H:8:ILE:HG22	2.34	0.47
9:I:33:THR:HA	9:I:36:LYS:HE3	1.95	0.47
1:N:437:PRO:HG2	1:N:440:TYR:CZ	2.49	0.47
2:O:41:ILE:O	2:O:45:MET:HG2	2.15	0.47
3:P:37:PHE:CE2	27:P:310:UNL:C1	2.98	0.47
4:Q:78:TRP:N	21:Q:201:TGL:HB22	2.30	0.47
21:Q:201:TGL:H362	9:V:20:HIS:CE1	2.49	0.47
7:T:3:ALA:O	32:T:201:HOH:O	2.20	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:V:101:PSC:O02	28:V:101:PSC:H011	2.15	0.47
26:C:306:CDL:HB21	10:J:8:LYS:CD	2.45	0.47
20:P:304:PGV:C15	20:P:304:PGV:C11	2.92	0.47
7:T:44:ARG:HD2	7:T:82:TYR:CE1	2.50	0.47
14:1:3:VAL:HG13	14:1:97:TYR:HA	1.97	0.47
14:2:16:GLN:NE2	14:2:16:GLN:N	2.63	0.47
14:2:49:THR:O	14:2:53:LYS:HB2	2.14	0.47
8:H:52:VAL:HG11	8:U:48:GLY:HA3	1.97	0.46
1:N:468:MET:HE3	18:N:605[B]:HEA:H22	1.96	0.46
4:Q:19[B]:ARG:CD	4:Q:21:ASP:OD1	2.61	0.46
9:V:63:MET:HB3	9:V:68:ILE:HD11	1.98	0.46
21:D:201:TGL:HA32	32:D:392:HOH:O	2.16	0.46
8:H:43:MET:HE3	8:H:49:ASP:N	2.31	0.46
2:O:33:LEU:HD12	9:V:28:SER:HB3	1.96	0.46
20:P:304:PGV:H151	20:P:304:PGV:C11	2.37	0.46
14:1:3:VAL:HG21	14:1:100:LYS:HE2	1.97	0.46
3:C:76:GLN:NE2	3:C:80[A]:ARG:HH21	2.13	0.46
3:C:110:PRO:HB3	8:H:30:TRP:CE3	2.50	0.46
3:C:131:LEU:HD11	26:G:101:CDL:H552	1.96	0.46
3:C:133:ASN:HB3	3:C:173:PHE:CE2	2.50	0.46
26:G:101:CDL:H212	1:N:311:ILE:CD1	2.44	0.46
20:C:305:PGV:H321	7:T:1:ALA:HB2	1.96	0.46
3:P:16:TRP:N	3:P:17:PRO:CD	2.78	0.46
14:2:11:VAL:HA	14:2:15:ALA:HB2	1.96	0.46
4:Q:6:VAL:HG12	4:Q:7:LYS:H	1.79	0.46
6:S:51:SER:O	6:S:94:HIS:N	2.49	0.46
21:D:201:TGL:OB1	21:D:201:TGL:CG3	2.64	0.46
28:E:201:PSC:C22	28:E:201:PSC:H011	2.44	0.46
1:A:87:ILE:O	1:A:173:PRO:HD3	2.16	0.46
26:C:306:CDL:O1	26:C:306:CDL:OA3	2.34	0.46
32:A:911:HOH:O	26:T:101:CDL:H151	2.15	0.46
1:N:28:MET:CE	18:N:605[B]:HEA:H273	2.46	0.46
1:A:310:MET:HB3	2:B:73:LEU:HD22	1.97	0.46
12:L:46:LYS:O	12:L:47:LYS:HB2	2.15	0.46
2:B:13:THR:HG21	2:B:192:TYR:CZ	2.51	0.45
7:G:44:ARG:HA	7:G:45:PRO:HD3	1.87	0.45
2:B:145:PRO:HG2	2:B:148:MET:CE	2.43	0.45
21:B:301:TGL:H101	21:B:301:TGL:HA62	1.98	0.45
20:P:305:PGV:H041	32:U:103:HOH:O	2.15	0.45
5:E:90:ARG:HD3	32:E:370:HOH:O	2.16	0.45
9:I:31:PHE:HE1	9:I:35:TYR:HB3	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:20:ARG:HH22	21:L:101:TGL:HC72	1.82	0.45
11:X:44:PRO:HG3	32:X:115:HOH:O	2.15	0.45
1:A:217:THR:HG22	3:C:188:ILE:HG12	1.99	0.45
1:A:399:LEU:O	1:A:499:PRO:HA	2.16	0.45
5:E:46:LYS:HG2	32:E:333:HOH:O	2.16	0.45
21:L:101:TGL:H312	21:L:101:TGL:H362	1.93	0.45
21:D:201:TGL:H362	9:I:20:HIS:CE1	2.51	0.45
1:N:368:HIS:CD2	1:N:369:ASP:HB2	2.51	0.45
1:N:390:MET:HE1	1:N:468:MET:SD	2.57	0.45
28:V:101:PSC:H12	28:V:101:PSC:C34	2.16	0.45
1:A:43:GLN:HB2	1:A:44:PRO:HD2	1.98	0.45
1:A:311:ILE:CD1	26:T:101:CDL:H201	2.47	0.45
1:A:378:HIS:CG	1:A:425:PHE:CE1	3.05	0.45
20:A:607:PGV:C2	32:A:701:HOH:O	2.35	0.45
2:B:129[A]:LYS:NZ	32:B:407:HOH:O	2.49	0.45
24:C:301:CHD:O7	20:C:305:PGV:H42	2.17	0.45
6:F:53:THR:OG1	6:F:54:ASN:N	2.43	0.45
8:H:43:MET:CE	8:H:49:ASP:N	2.77	0.45
1:N:250:GLY:O	1:N:254:ILE:HG12	2.17	0.45
2:O:116:LEU:HD11	2:O:226:MET:HG3	1.98	0.45
3:P:146:TRP:CD2	3:P:162:ALA:HB2	2.51	0.45
1:A:310:MET:HE3	2:B:77:ALA:HB2	1.98	0.45
9:V:33:THR:HA	9:V:37:PHE:HD2	1.82	0.45
5:E:6:GLU:O	28:E:201:PSC:H081	2.17	0.45
7:G:45:PRO:O	7:G:46:ALA:HB3	2.17	0.45
12:Y:35:ALA:HB3	12:Y:36:PRO:HD3	1.99	0.45
6:S:44:GLU:H	6:S:44:GLU:CD	2.19	0.45
14:1:40:THR:HG22	14:1:59:TRP:CE2	2.52	0.45
7:T:37:LEU:O	7:T:38:HIS:HB2	2.16	0.44
20:C:305:PGV:H032	32:C:502:HOH:O	2.17	0.44
14:1:16:GLN:HB2	32:1:338:HOH:O	2.17	0.44
14:1:25:LYS:HZ3	14:1:26:HIS:H	1.64	0.44
1:N:321:PHE:CE2	28:V:101:PSC:H162	2.53	0.44
14:2:11:VAL:O	14:2:15:ALA:HB3	2.18	0.44
28:E:201:PSC:H041	32:I:221:HOH:O	2.18	0.44
6:S:53:THR:HG23	32:S:292:HOH:O	2.17	0.44
1:A:278[B]:MET:HE1	7:T:5:LYS:HB3	2.00	0.44
2:B:58:ALA:O	2:B:62:GLU:CG	2.61	0.44
21:L:101:TGL:HC22	21:L:101:TGL:HC81	2.00	0.44
2:O:144:LEU:HD22	2:O:150:ILE:HD13	1.99	0.44
1:A:281:GLY:O	7:T:4:ALA:HB1	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:O:129:LYS:HE2	32:O:516:HOH:O	2.18	0.44
3:P:47:LEU:O	3:P:51[A]:MET:HG2	2.18	0.44
26:P:306:CDL:H471	26:P:306:CDL:H441	1.80	0.44
21:Q:201:TGL:HA91	21:Q:201:TGL:H231	1.99	0.44
5:R:12:ASP:OD2	5:R:44:GLU:HG3	2.18	0.44
2:O:4:PRO:HG2	32:X:115:HOH:O	2.17	0.44
2:O:146:MET:HA	2:O:213:LEU:HD12	2.00	0.43
3:P:62:ILE:CD1	26:P:306:CDL:H522	2.48	0.43
1:A:367:LEU:HD21	1:A:433:LEU:HD23	2.01	0.43
20:A:608:PGV:H311	25:C:303:PEK:H382	2.00	0.43
3:C:54:MET:HE1	20:C:304:PGV:H141	2.01	0.43
8:H:37:HIS:HD2	32:H:127:HOH:O	2.00	0.43
1:N:309:THR:CG2	18:N:606:HEA:HMB2	2.49	0.43
3:P:37:PHE:HE1	10:W:58:LYS:CG	2.27	0.43
20:C:305:PGV:C06	8:H:22:ASN:ND2	2.76	0.43
26:C:306:CDL:C19	26:C:306:CDL:H602	2.49	0.43
5:E:41:LEU:HA	32:I:228:HOH:O	2.17	0.43
10:J:33:ARG:HG2	24:J:101:CHD:H151	1.99	0.43
4:Q:48:TRP:HB2	5:R:96:LEU:O	2.18	0.43
6:S:82:CYS:C	6:S:84:SER:H	2.21	0.43
21:N:608:TGL:H221	21:N:608:TGL:CA7	2.47	0.43
26:T:101:CDL:H241	26:T:101:CDL:H542	2.00	0.43
2:B:227:LEU:HD23	2:B:227:LEU:HA	1.75	0.43
3:C:210:ILE:HD13	20:C:304:PGV:H302	1.99	0.43
14:2:35:LEU:O	14:2:37:GLY:N	2.52	0.43
1:A:23:GLY:HA3	1:A:73:ILE:HG13	1.99	0.43
5:E:79:LYS:HD2	32:E:412:HOH:O	2.19	0.43
10:J:40:LEU:HD12	24:J:101:CHD:H183	2.01	0.43
20:P:304:PGV:H282	20:P:304:PGV:H312	1.86	0.43
4:Q:114:GLU:HG3	11:X:51:LYS:HE3	2.01	0.43
9:V:18:ARG:NH2	28:V:101:PSC:C7	2.82	0.43
1:N:136[A]:LEU:HD11	32:2:328:HOH:O	2.18	0.43
1:N:310:MET:HE2	1:N:356:ILE:HG23	1.99	0.43
2:O:150:ILE:HD12	2:O:184:LEU:HD22	2.01	0.43
2:B:102:HIS:O	2:B:104:TRP:HA	2.19	0.43
21:L:101:TGL:H261	21:L:101:TGL:H232	1.67	0.43
9:V:29:LEU:O	9:V:31:PHE:CA	2.65	0.43
14:1:100:LYS:HB3	14:1:100:LYS:HE3	1.73	0.43
25:C:303:PEK:H041	7:G:70:PHE:HB2	2.01	0.43
4:D:34:SER:H	4:D:37:GLN:HE21	1.67	0.43
1:N:302:ARG:HH11	1:N:302:ARG:HD2	1.70	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:O:132:GLU:HB3	2:O:137:GLU:HG3	2.00	0.43
25:P:303:PEK:H71	25:P:303:PEK:H31	2.00	0.43
9:I:2:THR:CA	32:I:201:HOH:O	2.59	0.42
5:R:90:ARG:HB3	5:R:91:PRO:HD3	2.01	0.42
2:B:7:LEU:HD11	21:B:301:TGL:H152	2.01	0.42
2:O:92:ASN:N	2:O:92:ASN:HD22	2.18	0.42
4:Q:78:TRP:CE2	4:Q:79:LYS:HG3	2.54	0.42
14:2:26:HIS:ND1	14:2:46:PHE:HB2	2.33	0.42
14:2:58:THR:HG22	14:2:59:TRP:N	2.34	0.42
3:C:151:LEU:HB2	3:C:159:MET:HG3	2.00	0.42
26:G:101:CDL:HA22	32:G:244:HOH:O	2.19	0.42
2:B:68:LEU:HB3	2:B:69:PRO:HD3	2.02	0.42
2:B:74:ILE:HG12	26:T:101:CDL:H402	2.02	0.42
6:S:96:LEU:O	6:S:97:ALA:HB3	2.19	0.42
26:T:101:CDL:H152	26:T:101:CDL:H362	2.00	0.42
26:P:306:CDL:HB22	26:P:306:CDL:OB6	2.20	0.42
4:Q:19[A]:ARG:HG2	32:Q:385:HOH:O	2.19	0.42
4:Q:81:VAL:HG11	21:Q:201:TGL:HB62	2.02	0.42
4:Q:126:MET:HG3	4:Q:128:VAL:HG23	2.01	0.42
6:S:52:ILE:CG2	6:S:96:LEU:HB2	2.50	0.42
10:W:24:GLY:N	10:W:28:ASP:OD2	2.50	0.42
14:2:38:ARG:NH2	14:2:38:ARG:HB2	2.35	0.42
1:A:106:PRO:HB2	1:A:107:PRO:HD3	2.01	0.42
6:F:94:HIS:HD2	6:F:97:ALA:N	2.11	0.42
6:F:94:HIS:CG	6:F:95:GLN:H	2.38	0.42
9:I:27:VAL:O	9:I:31:PHE:N	2.49	0.42
1:N:48:LEU:O	13:Z:41:LYS:HE2	2.20	0.42
2:O:57:ASP:O	2:O:60:GLU:OE2	2.38	0.42
8:U:9:LYS:HG3	8:U:11:TYR:H	1.84	0.42
9:V:25:PHE:O	9:V:29:LEU:HB2	2.20	0.42
4:D:107:ILE:HD11	4:D:111:PHE:HB2	2.01	0.42
3:P:37:PHE:HD1	10:W:58:LYS:HG3	1.71	0.42
26:P:306:CDL:H612	26:P:306:CDL:H642	1.65	0.42
6:S:54:ASN:HD22	6:S:54:ASN:H	1.66	0.42
14:2:16:GLN:NE2	32:2:303:HOH:O	2.51	0.42
14:2:49:THR:CG2	14:2:79:LYS:HG2	2.50	0.42
1:A:309:THR:CG2	18:A:605:HEA:HMB2	2.50	0.42
2:B:164:ALA:O	2:B:194:GLY:HA3	2.20	0.42
1:N:112:LEU:HD23	1:N:112:LEU:C	2.40	0.42
3:P:257:TYR:O	3:P:261:SER:HB3	2.20	0.42
25:P:303:PEK:H221	7:T:69:PHE:CD1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:P:306:CDL:HA21	26:P:306:CDL:CB5	2.49	0.42
9:V:63:MET:HB3	9:V:68:ILE:CD1	2.50	0.42
2:B:2:ALA:HA	2:B:6:GLN:OE1	2.18	0.42
3:C:42:LEU:HD23	3:C:42:LEU:HA	1.79	0.42
30:M:101:DMU:H30	30:M:101:DMU:O1	2.19	0.42
1:N:242:GLU:O	1:N:246:LEU:HG	2.20	0.42
3:P:76:GLN:HE21	3:P:233:PHE:HB2	1.84	0.42
9:V:22:VAL:O	9:V:26:MET:HG2	2.20	0.42
1:A:472:ILE:HG21	21:L:101:TGL:HA91	2.02	0.42
5:E:7:THR:OG1	5:E:10:GLU:HG3	2.20	0.42
11:K:50:PRO:HD2	32:K:105:HOH:O	2.19	0.42
14:1:86:LYS:HE3	14:1:86:LYS:CA	2.45	0.42
2:B:91:ASN:OD1	2:B:183:THR:HG21	2.20	0.41
2:B:148:MET:HE3	2:B:148:MET:HB3	1.63	0.41
3:C:122:HIS:CE1	32:C:498:HOH:O	2.73	0.41
14:2:97:TYR:CE1	14:2:101:ALA:HB2	2.55	0.41
1:A:3:ILE:HG12	1:A:7:LEU:HD22	2.02	0.41
20:C:305:PGV:H161	32:T:241:HOH:O	2.21	0.41
2:O:129:LYS:HB3	2:O:129:LYS:HE3	1.61	0.41
3:P:51[B]:MET:HE1	20:P:304:PGV:H172	2.02	0.41
3:P:105:SER:HA	3:P:116:TRP:CE3	2.56	0.41
3:P:146:TRP:HB2	7:T:16:TRP:HB3	2.02	0.41
31:1:201:HEC:HMC1	31:1:201:HEC:HBC3	2.02	0.41
1:A:513:LEU:HD23	1:A:513:LEU:HA	1.87	0.41
11:K:32:MET:O	11:K:32:MET:HG2	2.19	0.41
12:L:2:HIS:HD2	12:L:3:TYR:N	2.08	0.41
2:O:49:LYS:HE3	32:O:437:HOH:O	2.20	0.41
7:T:3:ALA:O	7:T:4:ALA:CB	2.68	0.41
2:B:151:ARG:HD3	2:B:181:GLN:HE21	1.84	0.41
3:C:257:TYR:O	3:C:261:SER:HB3	2.21	0.41
7:G:31:CYS:SG	26:G:101:CDL:H532	2.61	0.41
26:P:306:CDL:CA2	32:P:403:HOH:O	2.67	0.41
14:2:59:TRP:HA	14:2:59:TRP:CE3	2.56	0.41
8:H:7:LYS:N	32:H:101:HOH:O	2.53	0.41
2:O:78:LEU:HD12	2:O:78:LEU:HA	1.84	0.41
4:Q:107:ILE:HB	4:Q:108:PRO:CD	2.51	0.41
10:W:36:MET:HB3	24:W:101:CHD:H183	2.02	0.41
1:A:48:LEU:HB2	32:A:721:HOH:O	2.20	0.41
2:B:200:CYS:SG	2:B:204:HIS:HA	2.61	0.41
9:I:29:LEU:O	9:I:30:GLY:C	2.59	0.41
10:J:36:MET:HG2	24:J:101:CHD:H162	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:383[A]:MET:O	1:N:387:PHE:HB2	2.21	0.41
3:P:65:SER:HB3	3:P:71:HIS:CE1	2.56	0.41
26:C:306:CDL:H602	26:C:306:CDL:H201	2.02	0.41
1:N:136[B]:LEU:HD11	32:N:925:HOH:O	2.21	0.41
21:L:101:TGL:H291	21:L:101:TGL:H122	1.71	0.41
1:N:236:TRP:CH2	18:N:606:HEA:HBD1	2.56	0.41
24:T:103:CHD:H12	24:T:103:CHD:H212	2.02	0.41
3:C:154:GLY:HA2	6:F:6:VAL:HB	2.02	0.41
3:C:246:ASP:HB2	32:C:477:HOH:O	2.20	0.41
2:O:116:LEU:HD13	2:O:226:MET:CG	2.51	0.41
30:Z:101:DMU:H15	30:Z:101:DMU:H9	1.98	0.41
14:2:16:GLN:HG3	32:2:316:HOH:O	2.21	0.41
1:A:127:THR:HB	1:A:129:TYR:CE1	2.56	0.41
2:B:36:SER:HB3	21:B:301:TGL:C13	2.51	0.41
1:A:236:TRP:CH2	18:A:605:HEA:HBD1	2.56	0.40
1:A:335:SER:HB2	1:A:336:PRO:HD2	2.03	0.40
1:A:415:ALA:HB1	21:D:201:TGL:H121	2.03	0.40
3:C:59:ARG:HG3	26:C:306:CDL:H512	2.03	0.40
14:1:69:GLU:HG3	14:1:91:ARG:CZ	2.50	0.40
14:2:104:GLU:OE1	14:2:104:GLU:HA	2.21	0.40
2:O:68:LEU:CD2	28:V:101:PSC:H172	2.50	0.40
7:T:78:LEU:HB3	7:T:79:PRO:HD2	2.03	0.40
4:Q:48:TRP:CH2	5:R:56:ARG:HA	2.56	0.40
3:C:29:SER:HB2	27:C:310:UNL:C4	2.51	0.40
7:G:10:GLY:HA3	32:G:205:HOH:O	2.21	0.40
12:L:25:MET:HG2	21:L:101:TGL:CA6	2.48	0.40
1:N:513:LEU:HD23	1:N:513:LEU:HA	1.83	0.40
3:P:80[B]:ARG:NH2	27:P:308:UNL:C1	2.81	0.40
4:Q:31:LYS:HG3	32:Q:399:HOH:O	2.21	0.40
14:1:68:LEU:HD23	14:1:68:LEU:HA	1.89	0.40
14:2:3:VAL:CG1	14:2:97:TYR:HA	2.45	0.40
20:A:607:PGV:H231	13:M:12:PRO:HG3	2.03	0.40
4:D:112:GLU:HB3	32:D:363:HOH:O	2.21	0.40

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:F:266:HOH:O	32:U:148:HOH:O[1_455]	2.11	0.09
32:F:276:HOH:O	32:U:141:HOH:O[1_455]	2.14	0.06



## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	524/514 (102%)	510 (97%)	14 (3%)	0	100	100
1	N	520/514 (101%)	504 (97%)	16 (3%)	0	100	100
2	B	227/227 (100%)	217 (96%)	9 (4%)	1 (0%)	34	30
2	O	225/227 (99%)	216 (96%)	8 (4%)	1 (0%)	34	30
3	C	263/259 (102%)	259 (98%)	4 (2%)	0	100	100
3	P	262/259 (101%)	256 (98%)	5 (2%)	1 (0%)	34	30
4	D	142/144 (99%)	135 (95%)	7 (5%)	0	100	100
4	Q	143/144 (99%)	136 (95%)	5 (4%)	2 (1%)	11	5
5	E	103/105 (98%)	102 (99%)	1 (1%)	0	100	100
5	R	103/105 (98%)	102 (99%)	1 (1%)	0	100	100
6	F	96/98 (98%)	90 (94%)	4 (4%)	2 (2%)	7	2
6	S	96/98 (98%)	90 (94%)	3 (3%)	3 (3%)	4	1
7	G	81/84 (96%)	65 (80%)	10 (12%)	6 (7%)	1	0
7	T	81/84 (96%)	64 (79%)	10 (12%)	7 (9%)	1	0
8	H	77/79 (98%)	70 (91%)	4 (5%)	3 (4%)	3	1
8	U	77/79 (98%)	73 (95%)	3 (4%)	1 (1%)	12	6
9	I	71/73 (97%)	67 (94%)	1 (1%)	3 (4%)	3	1
9	V	71/73 (97%)	65 (92%)	4 (6%)	2 (3%)	5	1
10	J	56/58 (97%)	56 (100%)	0	0	100	100
10	W	56/58 (97%)	55 (98%)	0	1 (2%)	8	3
11	K	47/49 (96%)	47 (100%)	0	0	100	100
11	X	47/49 (96%)	44 (94%)	3 (6%)	0	100	100
12	L	44/46 (96%)	42 (96%)	2 (4%)	0	100	100
12	Y	44/46 (96%)	42 (96%)	2 (4%)	0	100	100
13	M	41/43 (95%)	38 (93%)	3 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
13	Z	41/43 (95%)	41 (100%)	0	0	100	100
14	1	103/105 (98%)	90 (87%)	11 (11%)	2 (2%)	8	3
14	2	103/105 (98%)	81 (79%)	15 (15%)	7 (7%)	1	0
All	All	3744/3768 (99%)	3557 (95%)	145 (4%)	42 (1%)	14	8

All (42) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
6	F	2	SER
6	F	96	LEU
7	G	3	ALA
7	G	7	ASP
7	G	8	HIS
7	G	46	ALA
8	H	8	ILE
8	H	9	LYS
8	H	50	VAL
9	I	2	THR
9	I	32	ALA
3	P	38	ASN
6	S	96	LEU
7	T	4	ALA
7	T	7	ASP
7	T	8	HIS
7	T	38	HIS
8	U	10	ASN
9	V	30	GLY
10	W	56	PRO
14	2	25	LYS
14	2	36	PHE
14	2	39	LYS
2	B	60	GLU
7	G	5	LYS
2	O	60	GLU
6	S	94	HIS
7	T	3	ALA
14	1	24	GLY
7	G	38	HIS
6	S	95	GLN
7	T	37	LEU
14	2	56	GLY

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Mol	Chain	Res	Type
4	Q	5	VAL
7	T	6	GLY
9	V	29	LEU
4	Q	6	VAL
14	1	37	GLY
14	2	1	GLY
9	I	30	GLY
14	2	23	GLY
14	2	41	GLY

### 5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	437/426 (103%)	429 (98%)	8 (2%)	59	63
1	N	433/426 (102%)	425 (98%)	8 (2%)	59	63
2	B	212/210 (101%)	204 (96%)	8 (4%)	33	31
2	O	210/210 (100%)	196 (93%)	14 (7%)	16	11
3	C	230/224 (103%)	225 (98%)	5 (2%)	52	55
3	P	229/224 (102%)	225 (98%)	4 (2%)	60	65
4	D	128/128 (100%)	123 (96%)	5 (4%)	32	30
4	Q	129/128 (101%)	123 (95%)	6 (5%)	26	22
5	E	92/92 (100%)	90 (98%)	2 (2%)	52	55
5	R	92/92 (100%)	90 (98%)	2 (2%)	52	55
6	F	81/81 (100%)	77 (95%)	4 (5%)	25	21
6	S	81/81 (100%)	75 (93%)	6 (7%)	13	9
7	G	67/67 (100%)	60 (90%)	7 (10%)	7	4
7	T	67/67 (100%)	60 (90%)	7 (10%)	7	4
8	H	71/71 (100%)	63 (89%)	8 (11%)	6	3
8	U	71/71 (100%)	69 (97%)	2 (3%)	43	44
9	I	57/57 (100%)	50 (88%)	7 (12%)	4	2

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	V	57/57 (100%)	51 (90%)	6 (10%)	7	4
10	J	49/49 (100%)	48 (98%)	1 (2%)	55	58
10	W	49/49 (100%)	47 (96%)	2 (4%)	30	28
11	K	39/39 (100%)	37 (95%)	2 (5%)	24	19
11	X	39/39 (100%)	38 (97%)	1 (3%)	46	48
12	L	39/39 (100%)	36 (92%)	3 (8%)	13	8
12	Y	39/39 (100%)	36 (92%)	3 (8%)	13	8
13	M	37/37 (100%)	34 (92%)	3 (8%)	11	7
13	Z	37/37 (100%)	35 (95%)	2 (5%)	22	18
14	1	86/86 (100%)	78 (91%)	8 (9%)	9	5
14	2	86/86 (100%)	75 (87%)	11 (13%)	4	2
All	All	3244/3212 (101%)	3099 (96%)	145 (4%)	27	24

All (145) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	38	ARG
1	A	109	PHE
1	A	138	HIS
1	A	180	GLN
1	A	338	MET
1	A	363	LEU
1	A	369	ASP
1	A	514	LYS
2	B	16	ILE
2	B	60	GLU
2	B	65	TRP
2	B	66	THR
2	B	75	LEU
2	B	78	LEU
2	B	91	ASN
2	B	171	LYS
3	C	40	MET
3	C	127	LEU
3	C	159	MET
3	C	214	PHE
3	C	230	ASN
4	D	7	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
4	D	8	SER
4	D	51	LEU
4	D	58	GLU
4	D	107	ILE
5	E	5	HIS
5	E	90	ARG
6	F	54	ASN
6	F	80	GLN
6	F	87	THR
6	F	95	GLN
7	G	5	LYS
7	G	18	PHE
7	G	33	LEU
7	G	37	LEU
7	G	42	ARG
7	G	54	ARG
7	G	83	GLU
8	H	7	LYS
8	H	8	ILE
8	H	9	LYS
8	H	29	CYS
8	H	50	VAL
8	H	60	TYR
8	H	61	LYS
8	H	84	LYS
9	I	18	ARG
9	I	21	ILE
9	I	29	LEU
9	I	31	PHE
9	I	33	THR
9	I	37	PHE
9	I	41	GLU
10	J	50	LEU
11	K	7	PRO
11	K	54	ARG
12	L	2	HIS
12	L	5	GLU
12	L	47	LYS
13	M	34	LEU
13	M	38	ASP
13	M	40	TYR
1	N	35	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	N	38	ARG
1	N	109	PHE
1	N	115	SER
1	N	138	HIS
1	N	180	GLN
1	N	363	LEU
1	N	369	ASP
2	O	59	GLN
2	O	60	GLU
2	O	65	TRP
2	O	68	LEU
2	O	75	LEU
2	O	78	LEU
2	O	94	SER
2	O	113	TYR
2	O	115	ASP
2	O	158	ASP
2	O	167	SER
2	O	171	LYS
2	O	217	LYS
2	O	226	MET
3	P	110	PRO
3	P	159	MET
3	P	214	PHE
3	P	230	ASN
4	Q	4	SER
4	Q	6	VAL
4	Q	7	LYS
4	Q	21	ASP
4	Q	31	LYS
4	Q	51	LEU
5	R	6	GLU
5	R	80	GLU
6	S	44	GLU
6	S	48	LEU
6	S	53	THR
6	S	54	ASN
6	S	80	GLN
6	S	87	THR
7	T	18	PHE
7	T	33	LEU
7	T	35	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
7	T	36	TRP
7	T	38	HIS
7	T	54	ARG
7	T	84	LYS
8	U	27	ARG
8	U	60	TYR
9	V	2	THR
9	V	8	GLN
9	V	21	ILE
9	V	31	PHE
9	V	36	LYS
9	V	73	LYS
10	W	2	GLU
10	W	50	LEU
11	X	54	ARG
12	Y	2	HIS
12	Y	5	GLU
12	Y	20	ARG
13	Z	34	LEU
13	Z	43	SER
14	1	14	CYS
14	1	20	VAL
14	1	25	LYS
14	1	38	ARG
14	1	52	ASN
14	1	69	GLU
14	1	86	LYS
14	1	103	ASN
14	2	14	CYS
14	2	16	GLN
14	2	17	CYS
14	2	19	THR
14	2	20	VAL
14	2	26	HIS
14	2	38	ARG
14	2	39	LYS
14	2	40	THR
14	2	47	THR
14	2	72	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (54) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	80	ASN
1	A	98	ASN
1	A	178	GLN
1	A	180	GLN
1	A	512	ASN
2	B	10	GLN
2	B	181	GLN
2	B	195	GLN
3	C	50	ASN
3	C	68	GLN
3	C	76	GLN
4	D	37	GLN
4	D	109	HIS
5	E	94	ASN
6	F	54	ASN
6	F	80	GLN
6	F	94	HIS
6	F	95	GLN
6	F	98	HIS
7	G	8	HIS
8	H	22	ASN
9	I	20	HIS
10	J	29	ASN
12	L	2	HIS
1	N	4	ASN
1	N	80	ASN
1	N	98	ASN
1	N	178	GLN
1	N	180	GLN
1	N	413	HIS
1	N	512	ASN
2	O	10	GLN
2	O	22	HIS
2	O	92	ASN
2	O	181	GLN
2	O	195	GLN
3	P	3	HIS
3	P	68	GLN
3	P	70	HIS
3	P	76	GLN
4	Q	37	GLN
4	Q	101	HIS
5	R	94	ASN

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Mol	Chain	Res	Type
6	S	54	ASN
6	S	80	GLN
7	T	38	HIS
8	U	10	ASN
8	U	12	GLN
8	U	37	HIS
9	V	20	HIS
10	W	29	ASN
14	1	103	ASN
14	2	16	GLN
14	2	26	HIS

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

8 non-standard protein/DNA/RNA residues 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
1	FME	N	1	1	8,9,10	0.82	0	7,9,11	6.36	5 (71%)
7	TPO	T	11	7	8,10,11	2.15	2 (25%)	10,14,16	1.27	1 (10%)
7	TPO	G	11	7	8,10,11	1.80	2 (25%)	10,14,16	1.05	0
9	SAC	V	1	9	7,8,9	2.50	2 (28%)	8,9,11	1.76	3 (37%)
9	SAC	I	1	9	7,8,9	2.23	2 (28%)	8,9,11	2.36	3 (37%)
1	FME	A	1	1	8,9,10	1.47	1 (12%)	7,9,11	5.60	5 (71%)
2	FME	B	1	2	8,9,10	2.62	3 (37%)	7,9,11	8.29	5 (71%)
2	FME	O	1	2	8,9,10	0.83	0	7,9,11	0.96	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
1	FME	N	1	1	-	4/7/9/11	-
7	TPO	T	11	7	-	6/9/11/13	-
7	TPO	G	11	7	-	4/9/11/13	-
9	SAC	V	1	9	-	2/7/8/10	-
9	SAC	I	1	9	-	6/7/8/10	-
1	FME	A	1	1	-	4/7/9/11	-
2	FME	B	1	2	-	1/7/9/11	-
2	FME	O	1	2	-	0/7/9/11	-

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1	FME	CA-N	5.44	1.54	1.46
9	V	1	SAC	OAC-C1A	4.88	1.34	1.23
9	I	1	SAC	OAC-C1A	4.72	1.33	1.23
9	V	1	SAC	CA-N	4.17	1.52	1.46
2	B	1	FME	O1-CN	-3.92	1.10	1.22
1	A	1	FME	CA-N	3.68	1.51	1.46
7	T	11	TPO	P-O1P	3.58	1.62	1.50
7	T	11	TPO	P-OG1	3.35	1.65	1.59
9	I	1	SAC	CA-N	3.20	1.50	1.46
7	G	11	TPO	P-O1P	3.13	1.60	1.50
7	G	11	TPO	P-OG1	3.10	1.65	1.59
2	B	1	FME	CB-CA	2.66	1.58	1.53

All (22) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1	FME	CA-N-CN	-20.68	91.02	122.82
1	N	1	FME	CA-N-CN	-15.59	98.84	122.82
1	A	1	FME	CA-N-CN	-13.93	101.39	122.82
2	B	1	FME	O1-CN-N	5.84	140.65	125.27
9	I	1	SAC	CA-N-C1A	4.65	131.72	123.15
1	N	1	FME	CE-SD-CG	3.93	113.91	100.40
9	I	1	SAC	C2A-C1A-N	3.44	121.92	116.10
2	B	1	FME	C-CA-N	3.13	115.39	109.73
1	A	1	FME	CE-SD-CG	3.08	111.00	100.40
1	N	1	FME	O1-CN-N	2.92	132.96	125.27
1	N	1	FME	C-CA-N	-2.85	104.58	109.73

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	T	11	TPO	P-OG1-CB	2.58	131.00	123.21
1	A	1	FME	CG-CB-CA	-2.55	105.87	112.95
9	V	1	SAC	C2A-C1A-N	2.54	120.40	116.10
9	V	1	SAC	CA-N-C1A	2.51	127.78	123.15
1	N	1	FME	CG-CB-CA	-2.42	106.21	112.95
9	V	1	SAC	C-CA-N	2.31	113.91	109.73
1	A	1	FME	O1-CN-N	2.20	131.07	125.27
2	B	1	FME	O-C-CA	-2.15	119.13	124.78
2	B	1	FME	CG-CB-CA	-2.07	107.21	112.95
9	I	1	SAC	OAC-C1A-N	-2.02	118.25	121.95
1	A	1	FME	O-C-CA	-2.01	119.51	124.78

There are no chirality outliers.

All (27) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	1	FME	O1-CN-N-CA
1	A	1	FME	N-CA-CB-CG
2	B	1	FME	O1-CN-N-CA
7	G	11	TPO	N-CA-CB-OG1
7	G	11	TPO	CA-CB-OG1-P
9	I	1	SAC	CB-CA-N-C1A
9	I	1	SAC	O-C-CA-CB
9	I	1	SAC	C-CA-CB-OG
1	N	1	FME	O1-CN-N-CA
1	N	1	FME	N-CA-CB-CG
7	T	11	TPO	N-CA-CB-CG2
7	T	11	TPO	N-CA-CB-OG1
7	T	11	TPO	C-CA-CB-CG2
7	T	11	TPO	CA-CB-OG1-P
9	I	1	SAC	C2A-C1A-N-CA
9	I	1	SAC	OAC-C1A-N-CA
9	V	1	SAC	C2A-C1A-N-CA
9	V	1	SAC	OAC-C1A-N-CA
1	N	1	FME	CB-CG-SD-CE
9	I	1	SAC	N-CA-CB-OG
1	A	1	FME	CB-CG-SD-CE
7	G	11	TPO	N-CA-CB-CG2
7	T	11	TPO	CB-OG1-P-O1P
1	A	1	FME	C-CA-CB-CG
1	N	1	FME	C-CA-CB-CG
7	T	11	TPO	CB-OG1-P-O3P

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Mol	Chain	Res	Type	Atoms
7	G	11	TPO	O-C-CA-CB

There are no ring outliers.

2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	G	11	TPO	2	0
9	I	1	SAC	1	0

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 76 ligands modelled in this entry, 10 are monoatomic and 15 are unknown - leaving 51 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
21	TGL	Q	201	-	62,62,62	1.40	6 (9%)	65,65,65	1.29	9 (13%)
21	TGL	B	301	-	62,62,62	1.45	8 (12%)	65,65,65	1.87	13 (20%)
20	PGV	A	608	-	50,50,50	1.06	4 (8%)	53,56,56	1.28	6 (11%)
21	TGL	D	201	-	62,62,62	1.39	6 (9%)	65,65,65	1.51	8 (12%)
18	HEA	A	605	1,19	57,67,67	1.66	15 (26%)	61,103,103	2.10	22 (36%)
31	HEC	1	201	14	32,50,50	1.30	3 (9%)	24,82,82	1.95	8 (33%)
28	PSC	E	201	-	51,51,51	1.32	3 (5%)	57,59,59	1.51	9 (15%)
20	PGV	A	607	-	50,50,50	1.12	2 (4%)	53,56,56	1.05	5 (9%)
25	PEK	C	303	-	52,52,52	0.96	2 (3%)	55,57,57	1.20	5 (9%)
31	HEC	2	201	14	32,50,50	1.45	4 (12%)	24,82,82	1.08	1 (4%)
23	EDO	E	202	-	3,3,3	0.50	0	2,2,2	0.73	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
24	CHD	C	301	-	32,32,32	1.31	4 (12%)	51,51,51	1.76	10 (19%)
28	PSC	V	101	-	51,51,51	1.21	3 (5%)	57,59,59	1.31	5 (8%)
21	TGL	L	101	-	62,62,62	1.56	6 (9%)	65,65,65	1.58	14 (21%)
20	PGV	P	305	-	50,50,50	1.29	2 (4%)	53,56,56	1.39	6 (11%)
26	CDL	C	306	-	99,99,99	1.39	12 (12%)	105,111,111	1.41	10 (9%)
23	EDO	N	614	-	3,3,3	0.41	0	2,2,2	0.47	0
26	CDL	G	101	-	99,99,99	1.44	12 (12%)	105,111,111	1.35	13 (12%)
26	CDL	T	101	-	99,99,99	1.43	12 (12%)	105,111,111	1.48	15 (14%)
18	HEA	N	606	1,19	57,67,67	1.73	12 (21%)	61,103,103	1.77	17 (27%)
30	DMU	M	101	-	34,34,34	0.74	0	45,45,45	1.77	9 (20%)
18	HEA	A	604[B]	-	57,67,67	1.59	11 (19%)	61,103,103	1.82	16 (26%)
24	CHD	T	103	-	32,32,32	1.25	4 (12%)	51,51,51	2.01	18 (35%)
24	CHD	G	102	-	32,32,32	1.13	2 (6%)	51,51,51	1.99	13 (25%)
30	DMU	Z	101	-	34,34,34	0.75	1 (2%)	45,45,45	1.07	5 (11%)
24	CHD	P	307	-	32,32,32	0.64	0	51,51,51	2.37	19 (37%)
23	EDO	C	311	-	3,3,3	0.61	0	2,2,2	0.29	0
23	EDO	S	102	-	3,3,3	0.64	0	2,2,2	0.79	0
23	EDO	I	101	-	3,3,3	0.63	0	2,2,2	0.28	0
24	CHD	J	101	-	32,32,32	0.89	1 (3%)	51,51,51	2.13	15 (29%)
23	EDO	G	103	-	3,3,3	0.84	0	2,2,2	0.68	0
18	HEA	N	605[B]	-	57,67,67	1.47	8 (14%)	61,103,103	1.90	19 (31%)
23	EDO	N	613	-	3,3,3	0.57	0	2,2,2	0.37	0
24	CHD	W	101	-	32,32,32	0.92	2 (6%)	51,51,51	3.13	23 (45%)
18	HEA	A	604[A]	-	57,67,67	1.60	12 (21%)	61,103,103	1.88	16 (26%)
22	CUA	O	301	2	0,1,1	-	-	-	-	-
20	PGV	P	304	-	50,50,50	0.82	2 (4%)	53,56,56	1.17	6 (11%)
22	CUA	B	302	2	0,1,1	-	-	-	-	-
19	PER	A	606	18,15	0,1,1	-	-	-	-	-
24	CHD	P	301	-	32,32,32	1.09	2 (6%)	51,51,51	1.85	13 (25%)
23	EDO	B	303	-	3,3,3	0.78	0	2,2,2	0.48	0
20	PGV	C	304	-	50,50,50	0.80	2 (4%)	53,56,56	1.33	7 (13%)
23	EDO	F	102	-	3,3,3	0.45	0	2,2,2	0.54	0
20	PGV	C	305	-	50,50,50	1.40	3 (6%)	53,56,56	1.42	7 (13%)
20	PGV	N	612	-	50,50,50	0.85	1 (2%)	53,56,56	1.21	4 (7%)
25	PEK	P	303	-	52,52,52	0.99	3 (5%)	55,57,57	0.96	2 (3%)
19	PER	N	607	18,15	0,1,1	-	-	-	-	-
26	CDL	P	306	-	99,99,99	1.41	12 (12%)	105,111,111	1.22	10 (9%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
18	HEA	N	605[A]	-	57,67,67	1.47	8 (14%)	61,103,103	1.88	17 (27%)
24	CHD	C	307	-	32,32,32	0.91	1 (3%)	51,51,51	3.50	25 (49%)
21	TGL	N	608	-	62,62,62	1.48	8 (12%)	65,65,65	2.09	14 (21%)

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
21	TGL	Q	201	-	-	35/65/65/65	-
21	TGL	B	301	-	-	33/65/65/65	-
20	PGV	A	608	-	-	12/55/55/55	-
21	TGL	D	201	-	-	38/65/65/65	-
18	HEA	A	605	1,19	-	5/32/76/76	-
31	HEC	1	201	14	-	1/10/54/54	-
28	PSC	E	201	-	-	36/55/55/55	-
20	PGV	A	607	-	-	30/55/55/55	-
25	PEK	C	303	-	-	20/56/56/56	-
31	HEC	2	201	14	-	6/10/54/54	-
23	EDO	E	202	-	-	1/1/1/1	-
24	CHD	C	301	-	-	2/9/74/74	0/4/4/4
28	PSC	V	101	-	-	35/55/55/55	-
21	TGL	L	101	-	-	46/65/65/65	-
20	PGV	P	305	-	-	31/55/55/55	-
26	CDL	C	306	-	-	62/110/110/110	-
23	EDO	N	614	-	-	1/1/1/1	-
26	CDL	G	101	-	-	58/110/110/110	-
26	CDL	T	101	-	-	61/110/110/110	-
18	HEA	N	606	1,19	-	4/32/76/76	-
30	DMU	M	101	-	-	6/19/59/59	0/2/2/2
18	HEA	A	604[B]	-	-	4/32/76/76	-
24	CHD	T	103	-	-	2/9/74/74	0/4/4/4
24	CHD	G	102	-	-	3/9/74/74	0/4/4/4
30	DMU	Z	101	-	-	4/19/59/59	0/2/2/2
24	CHD	P	307	-	-	5/9/74/74	1/4/4/4
23	EDO	C	311	-	-	1/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
23	EDO	S	102	-	-	0/1/1/1	-
23	EDO	I	101	-	-	0/1/1/1	-
24	CHD	J	101	-	-	7/9/74/74	0/4/4/4
23	EDO	G	103	-	-	0/1/1/1	-
18	HEA	N	605[B]	-	-	6/32/76/76	-
23	EDO	N	613	-	-	0/1/1/1	-
24	CHD	W	101	-	-	8/9/74/74	0/4/4/4
18	HEA	A	604[A]	-	-	3/32/76/76	-
20	PGV	P	304	-	-	12/55/55/55	-
24	CHD	P	301	-	-	2/9/74/74	0/4/4/4
23	EDO	B	303	-	-	1/1/1/1	-
20	PGV	C	304	-	-	19/55/55/55	-
23	EDO	F	102	-	-	0/1/1/1	-
20	PGV	C	305	-	-	30/55/55/55	-
20	PGV	N	612	-	-	9/55/55/55	-
25	PEK	P	303	-	-	20/56/56/56	-
26	CDL	P	306	-	-	67/110/110/110	-
18	HEA	N	605[A]	-	-	4/32/76/76	-
24	CHD	C	307	-	-	8/9/74/74	0/4/4/4
21	TGL	N	608	-	-	34/65/65/65	-

All (199) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
21	L	101	TGL	OG2-CB1	7.00	1.54	1.34
20	C	305	PGV	O01-C1	5.88	1.50	1.34
21	L	101	TGL	OG3-CC1	5.77	1.50	1.33
28	E	201	PSC	O01-C1	5.63	1.50	1.34
28	V	101	PSC	O01-C1	5.60	1.50	1.34
26	G	101	CDL	OB6-CB5	5.47	1.49	1.34
21	N	608	TGL	OG2-CB1	5.40	1.49	1.34
26	C	306	CDL	OB8-CB7	5.36	1.49	1.33
20	P	305	PGV	O03-C19	5.29	1.48	1.33
21	N	608	TGL	OG1-CA1	5.28	1.48	1.33
26	T	101	CDL	OB6-CB5	5.28	1.49	1.34
21	D	201	TGL	OG1-CA1	5.22	1.48	1.33
26	C	306	CDL	OA6-CA5	5.21	1.49	1.34
20	C	305	PGV	O03-C19	5.19	1.48	1.33
20	P	305	PGV	O01-C1	5.16	1.48	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
21	B	301	TGL	OG3-CC1	5.15	1.48	1.33
21	Q	201	TGL	OG2-CB1	5.13	1.48	1.34
26	P	306	CDL	OA8-CA7	5.11	1.48	1.33
26	T	101	CDL	OA8-CA7	5.07	1.48	1.33
26	T	101	CDL	OA6-CA5	5.07	1.48	1.34
20	A	607	PGV	O03-C19	5.05	1.48	1.33
21	N	608	TGL	OG3-CC1	5.04	1.48	1.33
26	G	101	CDL	OB8-CB7	5.03	1.48	1.33
21	Q	201	TGL	OG3-CC1	5.02	1.48	1.33
21	D	201	TGL	OG2-CB1	5.02	1.48	1.34
26	P	306	CDL	OA6-CA5	5.01	1.48	1.34
26	C	306	CDL	OA8-CA7	4.94	1.47	1.33
21	B	301	TGL	OG1-CA1	4.93	1.47	1.33
26	P	306	CDL	OB8-CB7	4.92	1.47	1.33
21	Q	201	TGL	OG1-CA1	4.88	1.47	1.33
18	A	605	HEA	CHC-C4B	4.85	1.47	1.35
26	G	101	CDL	OA8-CA7	4.77	1.47	1.33
21	L	101	TGL	OG1-CA1	4.76	1.47	1.33
21	D	201	TGL	OG3-CC1	4.69	1.47	1.33
28	E	201	PSC	O03-C19	4.69	1.47	1.33
26	P	306	CDL	OB6-CB5	4.68	1.47	1.34
26	T	101	CDL	OB8-CB7	4.66	1.46	1.33
26	G	101	CDL	OA6-CA5	4.59	1.47	1.34
20	N	612	PGV	O03-C19	4.55	1.46	1.33
25	P	303	PEK	O01-C1	4.40	1.46	1.34
18	N	606	HEA	C4D-C3D	-4.35	1.37	1.45
25	C	303	PEK	O01-C1	4.33	1.46	1.34
21	B	301	TGL	OG2-CB1	4.30	1.46	1.34
18	N	606	HEA	CHD-C1D	4.25	1.45	1.35
20	A	607	PGV	O01-C1	4.24	1.46	1.34
31	1	201	HEC	CBC-CAC	-4.20	1.33	1.49
18	N	606	HEA	C1D-ND	-4.13	1.33	1.40
31	2	201	HEC	CBB-CAB	-4.09	1.34	1.49
31	2	201	HEC	CBC-CAC	-4.05	1.34	1.49
31	1	201	HEC	CBB-CAB	-3.99	1.34	1.49
18	N	605[A]	HEA	CHC-C4B	3.96	1.45	1.35
18	N	605[B]	HEA	CHC-C4B	3.96	1.45	1.35
20	A	608	PGV	O03-C19	3.94	1.44	1.33
21	B	301	TGL	OC1-CC1	-3.88	1.11	1.22
28	V	101	PSC	O03-C19	3.79	1.44	1.33
26	C	306	CDL	OB6-CB5	3.77	1.44	1.34
28	E	201	PSC	C13-C12	3.74	1.53	1.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	V	101	PSC	C13-C12	3.71	1.53	1.31
18	A	604[A]	HEA	C4D-C3D	-3.63	1.38	1.45
18	A	604[B]	HEA	C4D-C3D	-3.63	1.38	1.45
31	2	201	HEC	C4B-C3B	3.62	1.49	1.43
18	A	604[A]	HEA	C1D-ND	-3.59	1.34	1.40
18	A	604[B]	HEA	C1D-ND	-3.59	1.34	1.40
18	A	604[A]	HEA	CHD-C1D	3.54	1.44	1.35
18	A	604[B]	HEA	CHD-C1D	3.54	1.44	1.35
18	A	604[A]	HEA	CHC-C4B	3.51	1.44	1.35
18	A	604[B]	HEA	CHC-C4B	3.51	1.44	1.35
26	P	306	CDL	C59-C58	-3.43	1.32	1.51
24	G	102	CHD	C4-C3	3.36	1.58	1.51
25	P	303	PEK	O03-C21	3.33	1.43	1.33
21	L	101	TGL	C20-CA9	-3.30	1.33	1.51
26	C	306	CDL	C59-C58	-3.22	1.33	1.51
18	N	605[A]	HEA	CHD-C1D	3.20	1.43	1.35
18	N	605[B]	HEA	CHD-C1D	3.20	1.43	1.35
20	P	304	PGV	O01-C1	3.17	1.43	1.34
26	P	306	CDL	C82-C81	-3.16	1.33	1.51
26	T	101	CDL	C59-C58	-3.15	1.33	1.51
18	N	606	HEA	O11-C11	3.11	1.49	1.42
21	N	608	TGL	C20-CA9	-3.11	1.34	1.51
21	L	101	TGL	C10-CB9	-3.11	1.34	1.51
26	C	306	CDL	C79-C78	-3.10	1.34	1.51
20	C	304	PGV	O03-C19	3.09	1.42	1.33
26	C	306	CDL	C62-C61	-3.09	1.34	1.51
26	C	306	CDL	C19-C18	-3.08	1.34	1.51
31	2	201	HEC	C2B-C3B	-3.08	1.37	1.40
21	Q	201	TGL	C15-CC9	-3.06	1.34	1.51
26	G	101	CDL	C42-C41	-3.05	1.34	1.51
24	T	103	CHD	C4-C3	3.04	1.57	1.51
18	A	605	HEA	CHD-C1D	3.04	1.42	1.35
26	P	306	CDL	C79-C78	-3.04	1.34	1.51
26	T	101	CDL	C19-C18	-3.03	1.34	1.51
26	G	101	CDL	C22-C21	-3.03	1.34	1.51
26	G	101	CDL	C62-C61	-3.01	1.34	1.51
21	D	201	TGL	C10-CB9	-3.00	1.34	1.51
18	A	605	HEA	FE-NB	2.99	2.11	1.96
26	C	306	CDL	C82-C81	-2.99	1.34	1.51
26	C	306	CDL	C22-C21	-2.99	1.34	1.51
26	P	306	CDL	C19-C18	-2.99	1.34	1.51
25	C	303	PEK	O03-C21	2.99	1.42	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
18	N	605[A]	HEA	C1D-ND	-2.99	1.35	1.40
18	N	605[B]	HEA	C1D-ND	-2.99	1.35	1.40
21	D	201	TGL	C15-CC9	-2.98	1.34	1.51
26	T	101	CDL	C62-C61	-2.97	1.34	1.51
26	P	306	CDL	C62-C61	-2.95	1.35	1.51
21	N	608	TGL	C15-CC9	-2.94	1.35	1.51
18	N	605[A]	HEA	C4B-NB	-2.94	1.35	1.40
18	N	605[B]	HEA	C4B-NB	-2.94	1.35	1.40
26	P	306	CDL	C39-C38	-2.94	1.35	1.51
26	C	306	CDL	C42-C41	-2.94	1.35	1.51
26	P	306	CDL	C22-C21	-2.93	1.35	1.51
26	P	306	CDL	C42-C41	-2.93	1.35	1.51
26	T	101	CDL	C39-C38	-2.92	1.35	1.51
21	B	301	TGL	C15-CC9	-2.92	1.35	1.51
21	Q	201	TGL	C10-CB9	-2.92	1.35	1.51
26	G	101	CDL	C19-C18	-2.92	1.35	1.51
26	G	101	CDL	C39-C38	-2.91	1.35	1.51
21	B	301	TGL	C20-CA9	-2.91	1.35	1.51
26	T	101	CDL	C82-C81	-2.90	1.35	1.51
26	G	101	CDL	C82-C81	-2.88	1.35	1.51
18	A	605	HEA	C1D-ND	-2.88	1.35	1.40
20	P	304	PGV	O03-C19	2.84	1.41	1.33
24	G	102	CHD	C13-C14	-2.83	1.50	1.55
26	G	101	CDL	C79-C78	-2.82	1.35	1.51
26	G	101	CDL	C59-C58	-2.82	1.35	1.51
24	T	103	CHD	O26-C24	-2.82	1.21	1.30
26	T	101	CDL	C22-C21	-2.80	1.35	1.51
21	N	608	TGL	C10-CB9	-2.79	1.35	1.51
18	A	605	HEA	C1B-NB	-2.78	1.33	1.38
26	T	101	CDL	C42-C41	-2.77	1.36	1.51
31	1	201	HEC	C4B-C3B	2.77	1.48	1.43
20	A	608	PGV	O01-C1	2.77	1.42	1.34
21	D	201	TGL	C20-CA9	-2.77	1.36	1.51
18	N	605[A]	HEA	O11-C11	2.76	1.48	1.42
18	N	605[B]	HEA	O11-C11	2.76	1.48	1.42
18	N	606	HEA	FE-ND	2.75	2.10	1.96
24	C	301	CHD	C8-C7	2.73	1.58	1.53
26	T	101	CDL	C79-C78	-2.71	1.36	1.51
21	L	101	TGL	C15-CC9	-2.70	1.36	1.51
18	N	606	HEA	CAA-C2A	2.69	1.56	1.52
18	N	606	HEA	CHC-C4B	2.67	1.41	1.35
18	N	606	HEA	C3B-C2B	2.67	1.40	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	P	301	CHD	C18-C13	2.64	1.58	1.54
26	C	306	CDL	C39-C38	-2.64	1.36	1.51
18	N	605[A]	HEA	C3B-C2B	2.62	1.40	1.34
18	N	605[B]	HEA	C3B-C2B	2.62	1.40	1.34
18	N	606	HEA	C1C-CHC	2.62	1.48	1.41
24	P	301	CHD	C8-C7	2.57	1.57	1.53
30	Z	101	DMU	O16-C6	2.54	1.44	1.40
18	A	605	HEA	FE-ND	2.53	2.09	1.96
24	C	301	CHD	C11-C9	2.52	1.57	1.53
18	A	605	HEA	C3A-C2A	-2.50	1.36	1.40
18	A	605	HEA	C3B-C2B	2.50	1.40	1.34
21	Q	201	TGL	C20-CA9	-2.50	1.37	1.51
21	B	301	TGL	C10-CB9	-2.50	1.37	1.51
24	C	301	CHD	C16-C17	2.48	1.59	1.54
18	A	605	HEA	C18-C19	2.45	1.38	1.33
24	T	103	CHD	C11-C9	2.44	1.57	1.53
18	A	605	HEA	CMC-C2C	2.44	1.56	1.51
18	N	606	HEA	C4B-C3B	-2.44	1.40	1.44
20	C	305	PGV	C01-C02	2.41	1.58	1.50
18	A	604[A]	HEA	C1B-C2B	-2.41	1.39	1.44
18	A	604[B]	HEA	C1B-C2B	-2.41	1.39	1.44
21	N	608	TGL	OC1-CC1	-2.39	1.15	1.22
18	N	605[A]	HEA	CMB-C2B	2.35	1.55	1.50
18	N	605[B]	HEA	CMB-C2B	2.35	1.55	1.50
18	A	604[A]	HEA	C3B-C2B	2.31	1.40	1.34
18	A	604[B]	HEA	C3B-C2B	2.31	1.40	1.34
20	A	608	PGV	O03-C01	2.31	1.50	1.45
18	N	605[A]	HEA	FE-NB	2.31	2.08	1.96
18	N	605[B]	HEA	FE-NB	2.31	2.08	1.96
18	A	605	HEA	C4B-NB	-2.29	1.36	1.40
18	A	604[A]	HEA	C4B-C3B	-2.29	1.40	1.44
18	A	604[B]	HEA	C4B-C3B	-2.29	1.40	1.44
25	P	303	PEK	O03-C01	-2.27	1.40	1.45
18	N	606	HEA	C18-C19	2.27	1.38	1.33
24	W	101	CHD	C20-C17	2.23	1.58	1.54
18	A	605	HEA	C4D-C3D	-2.22	1.41	1.45
20	C	304	PGV	O01-C1	2.22	1.40	1.34
18	A	604[A]	HEA	C22-C23	2.21	1.38	1.32
18	A	604[A]	HEA	C3C-CAC	2.20	1.52	1.47
18	A	604[B]	HEA	C3C-CAC	2.20	1.52	1.47
20	A	608	PGV	O01-C02	-2.19	1.41	1.46
24	C	301	CHD	C18-C13	2.18	1.57	1.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
18	N	606	HEA	C1B-NB	-2.12	1.34	1.38
18	A	604[A]	HEA	C1D-C2D	-2.11	1.40	1.44
18	A	604[B]	HEA	C1D-C2D	-2.11	1.40	1.44
24	T	103	CHD	C23-C24	2.10	1.55	1.50
18	A	605	HEA	C4B-C3B	-2.08	1.41	1.44
18	A	604[A]	HEA	C14-C15	2.08	1.38	1.33
18	A	604[B]	HEA	C14-C15	2.08	1.38	1.33
21	N	608	TGL	OG2-CG2	2.07	1.51	1.46
24	J	101	CHD	C2-C3	2.07	1.56	1.51
24	C	307	CHD	C11-C12	2.07	1.56	1.53
18	A	604[A]	HEA	C1B-NB	-2.06	1.34	1.38
18	A	604[B]	HEA	C1B-NB	-2.06	1.34	1.38
21	B	301	TGL	OG1-CG1	-2.05	1.40	1.45
18	A	605	HEA	C16-C15	2.05	1.55	1.51
24	W	101	CHD	C13-C17	2.05	1.59	1.55
18	A	605	HEA	C1B-C2B	-2.02	1.40	1.44

All (434) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	C	307	CHD	C10-C9-C8	10.37	122.96	111.82
24	W	101	CHD	C17-C13-C12	9.83	126.64	117.67
24	C	307	CHD	C6-C5-C4	-7.51	102.55	111.19
24	W	101	CHD	C13-C17-C20	7.48	128.43	119.50
24	C	307	CHD	C4-C5-C10	7.22	120.33	112.66
24	G	102	CHD	C6-C7-C8	6.79	118.73	111.48
21	B	301	TGL	CG2-OG2-CB1	6.74	134.38	117.79
21	N	608	TGL	CG2-OG2-CB1	6.60	134.03	117.79
21	D	201	TGL	OG2-CB1-CB2	6.52	125.56	111.50
28	E	201	PSC	O01-C1-C2	6.43	125.35	111.50
24	C	307	CHD	C15-C14-C8	6.42	127.30	118.33
24	C	307	CHD	C19-C10-C1	-6.40	97.94	108.26
24	W	101	CHD	C15-C14-C8	6.24	127.05	118.33
24	C	307	CHD	C11-C9-C8	-6.05	102.02	110.88
26	T	101	CDL	OB6-CB5-C51	5.97	124.36	111.50
21	N	608	TGL	OG3-CC1-CC2	5.87	130.33	111.91
24	P	307	CHD	C9-C10-C5	5.85	116.79	108.58
24	W	101	CHD	C1-C10-C5	5.81	116.36	107.77
18	A	605	HEA	C4D-CHA-C1A	5.81	130.22	122.56
21	L	101	TGL	OG2-CB1-CB2	5.79	123.98	111.50
24	C	307	CHD	C11-C12-C13	5.77	117.16	111.24
21	B	301	TGL	CG3-OG3-CC1	5.76	138.47	117.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	C	301	CHD	C15-C14-C13	5.69	109.13	103.55
24	C	307	CHD	C6-C7-C8	-5.65	105.45	111.48
26	C	306	CDL	CB4-OB6-CB5	-5.63	103.92	117.79
24	P	307	CHD	C10-C9-C8	5.61	117.84	111.82
24	G	102	CHD	C6-C5-C4	-5.56	104.78	111.19
24	J	101	CHD	C13-C17-C20	5.56	126.13	119.50
24	T	103	CHD	C18-C13-C12	-5.54	103.42	109.07
18	N	605[A]	HEA	C13-C12-C11	-5.53	106.05	114.35
18	N	605[B]	HEA	C13-C12-C11	-5.53	106.05	114.35
21	B	301	TGL	OG2-CG2-CG1	5.49	128.27	108.40
26	G	101	CDL	OB6-CB5-C51	5.47	123.30	111.50
20	P	305	PGV	O01-C1-C2	5.46	123.26	111.50
24	W	101	CHD	C17-C13-C14	-5.43	94.62	100.09
24	P	307	CHD	C9-C11-C12	-5.33	107.27	114.30
21	B	301	TGL	OG2-CB1-CB2	5.28	122.89	111.50
24	W	101	CHD	C14-C8-C7	5.27	118.80	111.81
26	T	101	CDL	OA6-CA5-C11	5.24	122.80	111.50
24	W	101	CHD	C14-C8-C9	-5.22	102.55	109.71
24	J	101	CHD	C22-C20-C17	5.22	121.07	110.28
24	C	307	CHD	C11-C9-C10	5.22	119.11	113.73
21	N	608	TGL	OG1-CA1-CA2	5.19	128.20	111.91
18	A	604[A]	HEA	C13-C12-C11	-5.16	106.60	114.35
18	A	604[B]	HEA	C13-C12-C11	-5.16	106.60	114.35
21	N	608	TGL	OG2-CB1-CB2	5.10	122.50	111.50
20	C	305	PGV	O01-C1-C2	5.10	122.49	111.50
28	V	101	PSC	O01-C1-C2	5.07	122.42	111.50
20	P	305	PGV	O03-C19-C20	5.03	127.70	111.91
31	I	201	HEC	CBD-CAD-C3D	-4.86	104.33	112.62
18	A	605	HEA	C4A-CHB-C1B	4.84	128.95	122.56
24	W	101	CHD	C6-C5-C4	-4.84	105.61	111.19
18	N	606	HEA	CAD-CBD-CGD	-4.78	103.33	113.60
18	A	605	HEA	C13-C12-C11	-4.76	107.20	114.35
26	C	306	CDL	OA6-CA5-C11	4.74	121.72	111.50
24	C	301	CHD	C21-C20-C22	-4.72	102.96	110.36
24	P	301	CHD	C15-C14-C13	4.69	108.15	103.55
20	N	612	PGV	O03-C19-C20	4.51	126.07	111.91
30	M	101	DMU	C18-O16-C6	-4.51	106.37	113.84
21	N	608	TGL	OG3-CC1-OC1	-4.45	112.36	123.59
24	P	307	CHD	C14-C8-C9	-4.39	103.69	109.71
21	N	608	TGL	CG3-OG3-CC1	4.32	133.13	117.12
30	M	101	DMU	O2-C8-C9	-4.29	98.63	109.30
24	W	101	CHD	C18-C13-C12	-4.24	104.75	109.07

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	C	307	CHD	C21-C20-C22	-4.17	103.83	110.36
18	N	605[A]	HEA	C20-C21-C22	-4.13	98.32	111.88
24	P	307	CHD	C16-C17-C13	4.12	107.59	103.55
18	A	605	HEA	CAD-CBD-CGD	-4.09	104.80	113.60
24	P	307	CHD	C4-C5-C10	4.06	116.97	112.66
26	G	101	CDL	OA6-CA5-C11	4.04	120.22	111.50
30	M	101	DMU	O1-C9-C11	4.02	116.42	106.44
18	A	604[A]	HEA	C27-C19-C20	4.01	122.03	115.27
26	T	101	CDL	CA4-OA6-CA5	4.00	127.65	117.79
21	N	608	TGL	OG1-CA1-OA1	-3.99	113.52	123.59
24	W	101	CHD	C6-C7-C8	3.98	115.73	111.48
18	A	605	HEA	CMC-C2C-C3C	3.98	132.12	124.68
24	P	307	CHD	C14-C8-C7	3.98	117.08	111.81
28	V	101	PSC	C21-C20-C19	-3.96	99.21	113.62
24	C	307	CHD	C14-C8-C9	-3.96	104.28	109.71
24	C	307	CHD	C15-C14-C13	3.95	107.43	103.55
24	J	101	CHD	C16-C17-C20	3.95	118.26	112.15
20	N	612	PGV	O03-C19-O04	-3.92	113.69	123.59
21	L	101	TGL	OG3-CC1-CC2	3.92	124.22	111.91
30	M	101	DMU	O3-C5-C7	3.92	119.40	110.35
24	T	103	CHD	C13-C17-C20	-3.90	114.84	119.50
26	C	306	CDL	OB8-CB7-C71	3.86	124.01	111.91
20	C	305	PGV	O03-C19-C20	3.85	123.98	111.91
24	J	101	CHD	C17-C13-C14	-3.81	96.25	100.09
24	W	101	CHD	C1-C10-C9	-3.79	105.39	111.35
21	B	301	TGL	OG1-CA1-CA2	3.79	123.80	111.91
18	A	604[B]	HEA	C27-C19-C20	3.76	121.60	115.27
26	P	306	CDL	OB8-CB7-C71	3.76	123.70	111.91
24	C	307	CHD	C21-C20-C17	3.73	118.63	112.92
24	G	102	CHD	O12-C12-C13	-3.72	104.74	111.03
24	J	101	CHD	C15-C14-C13	3.72	107.20	103.55
24	C	307	CHD	C1-C2-C3	3.72	115.24	110.47
24	P	307	CHD	C15-C14-C8	3.70	123.50	118.33
18	A	605	HEA	CMC-C2C-C1C	-3.70	122.78	128.46
18	A	605	HEA	CHD-C1D-ND	-3.68	119.83	124.38
18	A	604[A]	HEA	CAA-CBA-CGA	-3.67	103.47	113.76
18	A	604[B]	HEA	CAA-CBA-CGA	-3.67	103.47	113.76
24	J	101	CHD	C14-C8-C7	3.67	116.67	111.81
25	C	303	PEK	O03-C21-O04	-3.65	114.39	123.59
24	P	301	CHD	C9-C11-C12	-3.63	109.50	114.30
20	A	608	PGV	O03-C19-O04	-3.63	114.44	123.59
21	N	608	TGL	OG2-CG2-CG3	3.61	121.47	108.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
20	A	608	PGV	O01-C1-O02	-3.60	115.01	123.70
20	C	305	PGV	C01-O03-C19	3.59	130.41	117.12
18	A	604[A]	HEA	C13-C14-C15	-3.58	119.04	127.66
18	A	604[B]	HEA	C13-C14-C15	-3.58	119.04	127.66
26	T	101	CDL	OA8-CA7-C31	3.58	123.14	111.91
21	N	608	TGL	CG3-CG2-CG1	-3.57	103.36	111.79
20	A	608	PGV	O01-C1-C2	3.57	119.19	111.50
21	Q	201	TGL	OG1-CA1-CA2	3.55	123.04	111.91
21	Q	201	TGL	OG3-CC1-CC2	3.53	123.00	111.91
20	C	304	PGV	O01-C1-O02	-3.53	115.17	123.70
24	P	301	CHD	C13-C14-C8	-3.53	110.23	114.74
25	C	303	PEK	O03-C01-C02	-3.53	98.17	108.43
24	C	307	CHD	C14-C8-C7	3.52	116.48	111.81
20	C	304	PGV	O03-C19-O04	-3.52	114.71	123.59
24	C	307	CHD	C9-C10-C5	3.51	113.50	108.58
24	W	101	CHD	C10-C9-C8	3.50	115.58	111.82
24	G	102	CHD	C18-C13-C12	-3.50	105.51	109.07
18	A	605	HEA	CBA-CAA-C2A	-3.49	106.72	112.60
24	P	301	CHD	C22-C23-C24	-3.48	103.26	112.51
31	1	201	HEC	CMC-C2C-C3C	3.48	129.91	125.82
18	A	604[A]	HEA	O2A-CGA-CBA	3.47	125.19	114.03
18	A	604[B]	HEA	O2A-CGA-CBA	3.47	125.19	114.03
18	A	605	HEA	CMB-C2B-C1B	3.47	130.33	125.04
18	N	606	HEA	O1A-CGA-CBA	-3.47	111.93	123.08
24	J	101	CHD	C4-C3-C2	3.45	114.67	110.55
18	A	604[A]	HEA	C26-C15-C16	-3.42	109.51	115.27
18	A	604[B]	HEA	C26-C15-C16	-3.42	109.51	115.27
24	T	103	CHD	O26-C24-O25	-3.37	114.89	123.30
24	W	101	CHD	C4-C5-C10	3.37	116.24	112.66
24	T	103	CHD	C15-C14-C13	3.37	106.85	103.55
21	L	101	TGL	CG2-OG2-CB1	3.36	126.07	117.79
25	P	303	PEK	C2-C3-C4	3.36	119.21	113.23
24	P	307	CHD	C1-C10-C9	-3.35	106.09	111.35
24	P	307	CHD	O7-C7-C8	3.34	116.89	109.43
24	W	101	CHD	C6-C5-C10	3.33	116.19	112.66
18	A	604[A]	HEA	C21-C20-C19	3.31	123.87	112.98
25	C	303	PEK	C01-O03-C21	3.31	129.37	117.12
18	A	604[A]	HEA	C20-C19-C18	-3.29	114.45	121.12
24	T	103	CHD	C4-C3-C2	3.28	114.47	110.55
21	B	301	TGL	OG3-CC1-CC2	3.28	122.20	111.91
20	P	304	PGV	O01-C1-C2	3.28	118.56	111.50
18	N	605[A]	HEA	C3C-C4C-NC	3.27	113.44	109.21

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
18	N	605[B]	HEA	C3C-C4C-NC	3.27	113.44	109.21
18	N	605[A]	HEA	O2D-CGD-CBD	3.27	124.54	114.03
18	N	605[B]	HEA	O2D-CGD-CBD	3.27	124.54	114.03
21	N	608	TGL	OG3-CG3-CG2	3.27	117.95	108.43
26	P	306	CDL	OA6-CA5-C11	3.26	118.54	111.50
21	D	201	TGL	OG3-CC1-CC2	3.25	122.11	111.91
24	T	103	CHD	C9-C8-C7	3.24	115.75	111.88
20	C	305	PGV	C02-O01-C1	3.23	125.75	117.79
31	I	201	HEC	CMC-C2C-C1C	-3.22	123.52	128.46
18	N	606	HEA	C27-C19-C20	3.21	120.68	115.27
24	G	102	CHD	C13-C17-C20	-3.20	115.67	119.50
26	G	101	CDL	CB6-OB8-CB7	3.20	128.98	117.12
21	D	201	TGL	OG1-CG1-CG2	3.20	117.75	108.43
24	J	101	CHD	C10-C9-C8	3.18	115.23	111.82
21	Q	201	TGL	OG2-CB1-CB2	3.18	118.34	111.50
21	D	201	TGL	OG1-CA1-CA2	3.17	121.86	111.91
21	N	608	TGL	OG2-CG2-CG1	3.17	119.86	108.40
18	N	605[A]	HEA	CAD-CBD-CGD	-3.16	106.79	113.60
18	N	605[B]	HEA	CAD-CBD-CGD	-3.16	106.79	113.60
18	N	605[A]	HEA	C3D-C4D-ND	3.16	113.42	110.36
18	N	605[B]	HEA	C3D-C4D-ND	3.16	113.42	110.36
26	C	306	CDL	CA6-OA8-CA7	3.15	128.77	117.12
30	M	101	DMU	O3-C5-C10	-3.14	102.43	110.05
24	C	301	CHD	C17-C13-C14	-3.13	96.94	100.09
24	P	301	CHD	C17-C13-C14	-3.10	96.96	100.09
18	N	606	HEA	C20-C19-C18	-3.10	114.84	121.12
24	P	301	CHD	C1-C10-C5	3.09	112.34	107.77
24	J	101	CHD	C1-C2-C3	3.08	114.41	110.47
24	P	301	CHD	C6-C7-C8	3.05	114.74	111.48
24	C	301	CHD	C5-C4-C3	-3.04	108.30	112.76
21	Q	201	TGL	OG1-CG1-CG2	3.03	117.25	108.43
20	A	608	PGV	O03-C19-C20	3.03	121.41	111.91
26	T	101	CDL	OA8-CA6-CA4	3.02	117.22	108.43
18	N	606	HEA	C2B-C1B-NB	3.02	113.50	109.88
18	A	605	HEA	O2A-CGA-CBA	3.02	123.72	114.03
18	N	605[B]	HEA	C27-C19-C20	3.01	120.34	115.27
28	E	201	PSC	O01-C1-O02	-3.00	116.45	123.70
24	J	101	CHD	C9-C11-C12	-3.00	110.34	114.30
25	P	303	PEK	O01-C1-C2	2.99	117.94	111.50
21	L	101	TGL	CG3-OG3-CC1	2.98	128.15	117.12
25	C	303	PEK	O01-C1-C2	2.98	117.92	111.50
24	P	301	CHD	C11-C12-C13	2.97	114.30	111.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
20	C	304	PGV	O01-C1-C2	2.97	117.90	111.50
24	C	301	CHD	C11-C9-C8	2.97	115.22	110.88
18	N	605[A]	HEA	CHB-C1B-NB	2.93	127.62	124.43
18	N	605[B]	HEA	CHB-C1B-NB	2.93	127.62	124.43
26	P	306	CDL	OB6-CB5-C51	2.93	117.82	111.50
24	P	307	CHD	O7-C7-C6	-2.90	102.74	109.94
18	A	605	HEA	C3D-C4D-ND	2.90	113.17	110.36
26	C	306	CDL	C52-C51-CB5	-2.88	103.14	113.62
24	C	307	CHD	C18-C13-C12	2.88	112.00	109.07
21	D	201	TGL	OG2-CB1-OB1	-2.88	116.74	123.70
21	L	101	TGL	OB1-CB1-CB2	-2.86	112.56	123.73
21	L	101	TGL	OG1-CG1-CG2	2.86	116.76	108.43
26	T	101	CDL	OB8-CB6-CB4	2.86	116.75	108.43
18	N	606	HEA	C1B-C2B-C3B	-2.83	103.42	106.80
24	T	103	CHD	O3-C3-C2	-2.81	103.00	110.16
24	C	307	CHD	C16-C17-C13	2.81	106.31	103.55
31	I	201	HEC	C3B-C4B-NB	-2.81	105.64	110.94
20	A	607	PGV	O03-C19-C20	2.81	120.72	111.91
28	V	101	PSC	C28-C27-C26	-2.80	100.20	114.42
21	L	101	TGL	OG1-CA1-CA2	2.78	120.63	111.91
26	C	306	CDL	OB6-CB5-C51	2.78	117.48	111.50
26	P	306	CDL	OA8-CA7-C31	2.77	120.60	111.91
21	B	301	TGL	OB1-CB1-CB2	-2.76	112.96	123.73
26	G	101	CDL	OB8-CB7-C71	2.76	120.56	111.91
24	J	101	CHD	C1-C10-C5	2.76	111.84	107.77
26	G	101	CDL	OA6-CA5-OA7	-2.75	117.05	123.70
18	N	605[A]	HEA	C16-C15-C14	-2.75	115.55	121.12
18	N	605[B]	HEA	C16-C15-C14	-2.75	115.55	121.12
28	E	201	PSC	C28-C27-C26	-2.75	100.47	114.42
24	J	101	CHD	C13-C14-C8	-2.75	111.23	114.74
20	A	607	PGV	C01-O03-C19	2.71	127.17	117.12
24	T	103	CHD	C14-C13-C12	2.71	109.92	107.40
24	W	101	CHD	C11-C12-C13	2.69	114.01	111.24
30	M	101	DMU	C10-C5-C7	-2.69	104.39	110.00
18	A	605	HEA	CMB-C2B-C3B	-2.68	125.23	130.34
24	G	102	CHD	C1-C2-C3	2.68	113.91	110.47
24	J	101	CHD	C15-C14-C8	2.68	122.07	118.33
21	N	608	TGL	OB1-CB1-CB2	-2.66	113.35	123.73
28	E	201	PSC	O03-C19-C20	2.65	120.24	111.91
24	P	307	CHD	C4-C3-C2	2.65	113.72	110.55
18	A	605	HEA	C2B-C1B-NB	2.64	113.04	109.88
24	T	103	CHD	C6-C5-C4	-2.63	108.16	111.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
31	1	201	HEC	O2A-CGA-CBA	2.63	122.49	114.03
18	A	605	HEA	CHB-C1B-NB	-2.63	121.57	124.43
26	C	306	CDL	OA8-CA7-C31	2.63	120.17	111.91
24	T	103	CHD	C22-C23-C24	-2.63	105.53	112.51
20	C	304	PGV	O03-C19-C20	2.63	120.15	111.91
24	C	301	CHD	C11-C12-C13	2.62	113.94	111.24
20	C	304	PGV	C27-C26-C25	-2.61	101.17	114.42
21	Q	201	TGL	OG3-CC1-OC1	-2.61	117.01	123.59
24	C	307	CHD	O7-C7-C8	2.61	115.25	109.43
18	N	605[A]	HEA	CHB-C1B-C2B	-2.60	120.91	124.98
18	N	605[B]	HEA	CHB-C1B-C2B	-2.60	120.91	124.98
20	P	305	PGV	O03-C19-O04	-2.60	117.02	123.59
26	T	101	CDL	CB6-CB4-CB3	-2.60	105.64	111.79
21	Q	201	TGL	OG1-CA1-OA1	-2.60	117.04	123.59
26	G	101	CDL	CB4-OB6-CB5	2.59	124.17	117.79
24	G	102	CHD	C1-C10-C9	-2.58	107.30	111.35
18	A	604[A]	HEA	CHA-C4D-C3D	-2.57	121.06	124.84
18	A	604[B]	HEA	CHA-C4D-C3D	-2.57	121.06	124.84
18	N	605[A]	HEA	C26-C15-C16	2.57	119.59	115.27
18	N	605[B]	HEA	C26-C15-C16	2.57	119.59	115.27
26	G	101	CDL	OA8-CA7-C31	2.57	119.96	111.91
24	W	101	CHD	C2-C1-C10	2.57	117.18	112.78
24	W	101	CHD	O7-C7-C6	-2.56	103.59	109.94
21	L	101	TGL	C11-C10-CB9	2.56	127.43	114.42
24	T	103	CHD	O12-C12-C11	-2.56	103.91	109.12
24	T	103	CHD	C9-C10-C5	2.55	112.17	108.58
26	G	101	CDL	C83-C82-C81	2.55	127.36	114.42
28	E	201	PSC	C31-C30-C29	-2.54	101.54	114.42
18	N	605[B]	HEA	C17-C18-C19	2.53	133.76	127.66
20	P	304	PGV	O03-C19-O04	-2.52	117.23	123.59
18	A	604[A]	HEA	CMC-C2C-C3C	2.52	129.40	124.68
18	A	604[B]	HEA	CMC-C2C-C3C	2.52	129.40	124.68
24	W	101	CHD	C9-C10-C5	2.51	112.11	108.58
18	A	604[B]	HEA	C20-C19-C18	-2.51	116.03	121.12
18	N	605[A]	HEA	C4A-CHB-C1B	2.51	125.86	122.56
18	N	605[B]	HEA	C4A-CHB-C1B	2.51	125.86	122.56
18	N	605[A]	HEA	CBA-CAA-C2A	2.50	116.82	112.60
18	N	605[B]	HEA	CBA-CAA-C2A	2.50	116.82	112.60
18	N	606	HEA	CHA-C4D-C3D	-2.50	121.16	124.84
24	C	301	CHD	C16-C15-C14	-2.50	100.18	105.13
30	Z	101	DMU	O1-C9-C11	2.50	112.64	106.44
24	P	307	CHD	C19-C10-C5	-2.49	106.14	110.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
18	A	605	HEA	C2D-C1D-ND	2.49	112.79	109.84
18	N	605[A]	HEA	C2D-C1D-ND	2.49	112.79	109.84
18	N	605[B]	HEA	C2D-C1D-ND	2.49	112.79	109.84
24	C	301	CHD	C18-C13-C12	2.49	111.60	109.07
24	G	102	CHD	C19-C10-C1	-2.48	104.26	108.26
20	P	305	PGV	O03-C01-C02	2.48	115.66	108.43
18	A	604[A]	HEA	C3C-C4C-NC	2.48	112.42	109.21
18	A	604[B]	HEA	C3C-C4C-NC	2.48	112.42	109.21
18	A	604[A]	HEA	CHA-C4D-ND	2.47	127.12	124.43
18	A	604[B]	HEA	CHA-C4D-ND	2.47	127.12	124.43
20	A	608	PGV	O14-P-O13	2.47	124.45	112.24
20	P	304	PGV	O14-P-O13	2.47	124.45	112.24
18	N	606	HEA	C16-C15-C14	2.47	126.11	121.12
18	N	606	HEA	CMB-C2B-C1B	2.47	128.79	125.04
24	P	307	CHD	C22-C23-C24	-2.46	105.97	112.51
24	P	307	CHD	C15-C14-C13	2.45	105.96	103.55
18	A	605	HEA	O2D-CGD-CBD	2.45	121.89	114.03
18	N	606	HEA	CHC-C4B-NB	2.44	127.40	124.38
20	A	607	PGV	O01-C1-C2	2.43	116.74	111.50
24	T	103	CHD	C1-C10-C5	2.42	111.35	107.77
26	G	101	CDL	OB8-CB7-OB9	-2.42	117.49	123.59
21	L	101	TGL	OG2-CG2-CG3	2.42	117.16	108.40
18	A	604[B]	HEA	C17-C18-C19	-2.42	121.84	127.66
30	M	101	DMU	O1-C9-C8	-2.42	105.30	109.69
24	T	103	CHD	C5-C4-C3	-2.41	109.22	112.76
24	P	301	CHD	C13-C17-C20	-2.40	116.63	119.50
26	P	306	CDL	OB8-CB7-OB9	-2.40	117.55	123.59
18	A	605	HEA	O1A-CGA-CBA	-2.39	115.39	123.08
26	T	101	CDL	C82-C81-C80	2.39	126.56	114.42
21	N	608	TGL	OG1-CG1-CG2	2.39	115.39	108.43
28	E	201	PSC	O01-C02-C03	2.38	117.03	108.40
18	N	605[A]	HEA	O1D-CGD-CBD	-2.38	115.44	123.08
18	N	605[B]	HEA	O1D-CGD-CBD	-2.38	115.44	123.08
20	N	612	PGV	O01-C1-O02	-2.37	117.97	123.70
21	Q	201	TGL	C11-C10-CB9	2.37	126.44	114.42
24	C	307	CHD	C9-C11-C12	-2.36	111.19	114.30
18	N	605[A]	HEA	CAA-CBA-CGA	-2.36	107.15	113.76
18	N	605[B]	HEA	CAA-CBA-CGA	-2.36	107.15	113.76
24	C	307	CHD	O12-C12-C13	-2.36	107.05	111.03
20	C	305	PGV	O03-C01-C02	2.36	115.29	108.43
24	C	301	CHD	C16-C17-C13	2.35	105.86	103.55
20	P	304	PGV	C02-O01-C1	2.35	123.57	117.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
26	T	101	CDL	OB8-CB7-OB9	-2.34	117.67	123.59
30	Z	101	DMU	O5-C4-C57	2.34	112.26	106.44
20	A	607	PGV	C5-C4-C3	-2.34	102.53	114.42
25	C	303	PEK	O13-P-O14	2.34	123.79	112.24
24	W	101	CHD	C18-C13-C17	2.33	114.86	111.21
20	P	304	PGV	O01-C1-O02	-2.33	118.06	123.70
30	M	101	DMU	O4-C7-C8	-2.33	104.97	110.35
26	P	306	CDL	C56-C55-C54	-2.33	102.62	114.42
26	P	306	CDL	CA6-OA8-CA7	2.32	125.72	117.12
24	G	102	CHD	C2-C1-C10	2.32	116.76	112.78
30	M	101	DMU	O4-C7-C5	2.31	115.69	110.35
24	W	101	CHD	C14-C13-C12	-2.30	105.26	107.40
28	V	101	PSC	C25-C24-C23	-2.30	102.75	114.42
21	B	301	TGL	OG3-CC1-OC1	-2.30	117.80	123.59
18	A	604[A]	HEA	C4A-CHB-C1B	2.30	125.59	122.56
18	A	604[B]	HEA	C4A-CHB-C1B	2.30	125.59	122.56
24	P	307	CHD	C23-C22-C20	-2.30	110.33	114.52
20	A	608	PGV	O03-C01-C02	2.29	115.11	108.43
26	P	306	CDL	OB8-CB6-CB4	-2.29	101.76	108.43
24	G	102	CHD	O7-C7-C6	-2.29	104.26	109.94
18	N	605[B]	HEA	C25-C23-C24	2.29	119.66	114.60
18	A	605	HEA	O1D-CGD-CBD	-2.29	115.73	123.08
26	P	306	CDL	C54-C53-C52	-2.28	102.86	114.42
31	1	201	HEC	O2A-CGA-O1A	-2.27	117.65	123.30
31	2	201	HEC	C3B-C4B-NB	-2.26	106.67	110.94
30	Z	101	DMU	C1-C2-C3	2.26	114.84	109.68
21	D	201	TGL	OG3-CG3-CG2	2.26	115.00	108.43
24	T	103	CHD	C6-C7-C8	2.26	113.89	111.48
18	N	606	HEA	O2D-CGD-CBD	2.26	121.28	114.03
26	G	101	CDL	C60-C59-C58	2.25	125.86	114.42
24	P	301	CHD	C18-C13-C14	2.25	114.73	111.21
21	L	101	TGL	CA5-CA4-CA3	-2.25	103.00	114.42
24	P	301	CHD	C14-C13-C12	-2.25	105.31	107.40
28	E	201	PSC	C02-O01-C1	2.24	123.32	117.79
21	L	101	TGL	CC4-CC3-CC2	-2.24	105.14	113.19
26	T	101	CDL	OA6-CA5-OA7	-2.24	118.29	123.70
18	A	605	HEA	C1B-C2B-C3B	-2.24	104.13	106.80
24	C	307	CHD	C16-C17-C20	2.23	115.60	112.15
18	A	604[A]	HEA	O1A-CGA-CBA	-2.23	115.93	123.08
18	A	604[B]	HEA	O1A-CGA-CBA	-2.23	115.93	123.08
24	J	101	CHD	C11-C12-C13	2.22	113.52	111.24
21	D	201	TGL	C21-C20-CA9	2.21	125.66	114.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	W	101	CHD	C9-C11-C12	-2.20	111.39	114.30
21	Q	201	TGL	C21-C20-CA9	2.20	125.60	114.42
24	P	307	CHD	C21-C20-C22	-2.20	106.91	110.36
24	W	101	CHD	C19-C10-C5	-2.20	106.63	110.36
21	B	301	TGL	OG1-CA1-OA1	-2.20	118.04	123.59
20	P	305	PGV	O01-C1-O02	-2.20	118.39	123.70
18	N	605[A]	HEA	C21-C20-C19	2.19	120.19	112.98
20	C	305	PGV	O01-C02-C01	2.19	116.34	108.40
24	C	307	CHD	C2-C1-C10	2.19	116.53	112.78
18	A	605	HEA	CAD-C3D-C2D	2.19	131.95	127.88
21	L	101	TGL	OG3-CG3-CG2	2.18	114.79	108.43
24	C	301	CHD	C13-C14-C8	-2.18	111.96	114.74
26	C	306	CDL	C83-C82-C81	2.17	125.44	114.42
20	P	304	PGV	C22-C21-C20	-2.17	105.39	113.19
20	P	305	PGV	O04-C19-C20	-2.17	115.27	123.73
26	C	306	CDL	C39-C38-C37	2.16	125.40	114.42
28	V	101	PSC	C29-C28-C27	-2.16	103.47	114.42
24	C	307	CHD	C5-C4-C3	2.16	115.92	112.76
24	P	307	CHD	C5-C4-C3	-2.16	109.59	112.76
24	C	307	CHD	C23-C22-C20	-2.15	110.58	114.52
20	C	304	PGV	C03-C02-C01	-2.15	106.70	111.79
28	E	201	PSC	C21-C20-C19	-2.15	105.80	113.62
26	C	306	CDL	C40-C39-C38	2.14	125.28	114.42
24	G	102	CHD	C18-C13-C14	2.14	114.55	111.21
30	Z	101	DMU	C7-C8-C9	2.13	114.05	110.24
18	A	604[A]	HEA	CMB-C2B-C3B	-2.13	126.28	130.34
18	A	604[B]	HEA	CMB-C2B-C3B	-2.13	126.28	130.34
24	T	103	CHD	C1-C10-C9	-2.13	108.00	111.35
26	P	306	CDL	C82-C81-C80	2.13	125.24	114.42
26	T	101	CDL	C83-C82-C81	2.13	125.23	114.42
18	N	606	HEA	C16-C17-C18	2.13	118.88	111.88
26	T	101	CDL	OB7-CB5-C51	-2.13	115.44	123.73
18	N	606	HEA	O1D-CGD-CBD	-2.13	116.25	123.08
24	P	301	CHD	C14-C8-C7	-2.12	108.99	111.81
24	T	103	CHD	C13-C14-C8	-2.12	112.03	114.74
26	T	101	CDL	OA6-CA4-CA6	2.12	116.08	108.40
24	P	307	CHD	O3-C3-C4	-2.12	105.63	109.85
26	G	101	CDL	CA6-OA8-CA7	2.11	124.95	117.12
20	A	607	PGV	C8-C9-C10	-2.11	104.58	113.79
26	G	101	CDL	C82-C81-C80	2.11	125.15	114.42
24	P	301	CHD	O26-C24-O25	-2.11	118.05	123.30
24	J	101	CHD	C14-C8-C9	-2.10	106.82	109.71

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
21	N	608	TGL	C10-CB9-CB8	2.10	125.10	114.42
18	N	606	HEA	O2A-CGA-CBA	2.10	120.77	114.03
18	A	605	HEA	C1D-C2D-C3D	-2.10	104.75	106.96
18	N	606	HEA	C3C-C4C-NC	2.09	111.91	109.21
28	E	201	PSC	C03-C02-C01	-2.09	106.86	111.79
18	A	605	HEA	C3C-C4C-NC	2.08	111.90	109.21
24	T	103	CHD	C19-C10-C1	-2.08	104.91	108.26
31	1	201	HEC	C3C-C4C-NC	-2.08	107.02	110.94
21	B	301	TGL	C10-CB9-CB8	2.08	124.98	114.42
20	N	612	PGV	O01-C1-C2	2.08	115.98	111.50
18	N	606	HEA	C4A-CHB-C1B	2.07	125.30	122.56
20	C	305	PGV	C21-C20-C19	2.07	121.14	113.62
21	L	101	TGL	C16-C15-CC9	2.07	124.91	114.42
20	C	304	PGV	O14-P-O13	2.06	122.42	112.24
21	L	101	TGL	OC1-CC1-CC2	-2.05	115.73	123.73
18	A	604[B]	HEA	C21-C22-C23	-2.05	120.74	127.75
21	Q	201	TGL	OG2-CB1-OB1	-2.05	118.75	123.70
18	N	606	HEA	CAD-C3D-C2D	2.05	131.69	127.88
26	G	101	CDL	C80-C79-C78	2.05	124.83	114.42
24	W	101	CHD	O26-C24-C23	2.05	120.61	114.03
26	T	101	CDL	C79-C78-C77	2.04	124.80	114.42
24	G	102	CHD	C4-C3-C2	2.04	112.99	110.55
21	B	301	TGL	C16-C15-CC9	2.04	124.79	114.42
18	A	604[A]	HEA	C16-C17-C18	2.04	118.57	111.88
21	D	201	TGL	C16-C15-CC9	2.03	124.74	114.42
21	B	301	TGL	CA3-CA2-CA1	-2.03	106.24	113.62
26	T	101	CDL	C63-C62-C61	2.02	124.70	114.42
21	B	301	TGL	C15-CC9-CC8	2.02	124.66	114.42
18	N	605[B]	HEA	C21-C22-C23	-2.02	120.86	127.75
31	1	201	HEC	CMB-C2B-C1B	-2.01	125.37	128.46
18	N	605[A]	HEA	CHA-C4D-C3D	-2.01	121.88	124.84
18	N	605[B]	HEA	CHA-C4D-C3D	-2.01	121.88	124.84
24	G	102	CHD	C15-C14-C13	2.01	105.52	103.55
30	Z	101	DMU	O55-C2-C1	-2.00	105.72	110.35

There are no chirality outliers.

All (772) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
18	N	605[B]	HEA	C16-C17-C18-C19
18	N	605[B]	HEA	C19-C20-C21-C22
20	C	305	PGV	C04-O12-P-O13

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Mol	Chain	Res	Type	Atoms
20	C	305	PGV	O01-C02-C03-O11
20	P	305	PGV	C03-O11-P-O12
20	P	305	PGV	C03-O11-P-O13
20	P	305	PGV	C03-O11-P-O14
20	P	305	PGV	O01-C02-C03-O11
20	P	305	PGV	O12-C04-C05-C06
20	P	305	PGV	C04-C05-C06-O06
21	B	301	TGL	OB1-CB1-OG2-CG2
21	B	301	TGL	OG1-CG1-CG2-OG2
21	D	201	TGL	OG1-CG1-CG2-OG2
21	D	201	TGL	CC2-CC1-OG3-CG3
21	D	201	TGL	OC1-CC1-OG3-CG3
21	L	101	TGL	CB2-CB1-OG2-CG2
21	L	101	TGL	OB1-CB1-OG2-CG2
21	N	608	TGL	OB1-CB1-OG2-CG2
21	N	608	TGL	OG1-CG1-CG2-OG2
21	N	608	TGL	CC2-CC1-OG3-CG3
21	N	608	TGL	OC1-CC1-OG3-CG3
21	Q	201	TGL	CB2-CB1-OG2-CG2
21	Q	201	TGL	OB1-CB1-OG2-CG2
24	J	101	CHD	C13-C17-C20-C22
24	J	101	CHD	C16-C17-C20-C21
24	W	101	CHD	C13-C17-C20-C22
24	W	101	CHD	C16-C17-C20-C21
24	W	101	CHD	C16-C17-C20-C22
26	C	306	CDL	CA2-C1-CB2-OB2
26	C	306	CDL	CA3-OA5-PA1-OA3
26	C	306	CDL	CA3-OA5-PA1-OA4
26	C	306	CDL	OA7-CA5-OA6-CA4
26	C	306	CDL	CB3-OB5-PB2-OB2
26	C	306	CDL	C51-CB5-OB6-CB4
26	G	101	CDL	CA2-OA2-PA1-OA3
26	G	101	CDL	CA2-OA2-PA1-OA4
26	G	101	CDL	C11-CA5-OA6-CA4
26	G	101	CDL	CB3-OB5-PB2-OB2
26	P	306	CDL	CB2-OB2-PB2-OB3
26	P	306	CDL	CB2-OB2-PB2-OB4
26	P	306	CDL	CB3-OB5-PB2-OB3
26	P	306	CDL	CB3-OB5-PB2-OB4
26	T	101	CDL	CA2-OA2-PA1-OA3
26	T	101	CDL	CA3-OA5-PA1-OA3
26	T	101	CDL	CA3-OA5-PA1-OA4

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Mol	Chain	Res	Type	Atoms
26	T	101	CDL	C11-CA5-OA6-CA4
26	T	101	CDL	OA9-CA7-OA8-CA6
26	T	101	CDL	C31-CA7-OA8-CA6
26	T	101	CDL	C1-CB2-OB2-PB2
26	T	101	CDL	CB3-OB5-PB2-OB3
28	E	201	PSC	C03-O11-P-O13
28	E	201	PSC	C04-O12-P-O13
28	E	201	PSC	C04-O12-P-O14
28	E	201	PSC	O12-C04-C05-N
28	E	201	PSC	C2-C1-O01-C02
28	E	201	PSC	C9-C10-C11-C12
28	V	101	PSC	C03-O11-P-O12
28	V	101	PSC	C03-O11-P-O13
28	V	101	PSC	C03-O11-P-O14
28	V	101	PSC	C2-C1-O01-C02
28	V	101	PSC	C11-C12-C13-C14
21	Q	201	TGL	OC1-CC1-OG3-CG3
28	V	101	PSC	O04-C19-O03-C01
21	Q	201	TGL	CC2-CC1-OG3-CG3
24	J	101	CHD	C16-C17-C20-C22
26	C	306	CDL	OB7-CB5-OB6-CB4
28	E	201	PSC	O02-C1-O01-C02
28	V	101	PSC	O02-C1-O01-C02
28	V	101	PSC	C20-C19-O03-C01
21	N	608	TGL	CB2-CB1-OG2-CG2
26	C	306	CDL	C11-CA5-OA6-CA4
24	J	101	CHD	C20-C22-C23-C24
26	P	306	CDL	C61-C62-C63-C64
20	A	607	PGV	C20-C19-O03-C01
26	T	101	CDL	C71-CB7-OB8-CB6
20	A	607	PGV	C10-C11-C12-C13
20	C	304	PGV	C10-C11-C12-C13
25	C	303	PEK	C13-C14-C15-C16
26	T	101	CDL	C79-C80-C81-C82
26	G	101	CDL	OA7-CA5-OA6-CA4
26	T	101	CDL	OA7-CA5-OA6-CA4
20	A	607	PGV	O04-C19-O03-C01
20	P	305	PGV	O12-C04-C05-O05
26	C	306	CDL	O1-C1-CB2-OB2
26	G	101	CDL	O1-C1-CA2-OA2
28	E	201	PSC	C20-C19-O03-C01
20	P	305	PGV	C2-C1-O01-C02

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Mol	Chain	Res	Type	Atoms
21	B	301	TGL	CB2-CB1-OG2-CG2
26	T	101	CDL	C22-C23-C24-C25
28	V	101	PSC	C26-C27-C28-C29
20	P	304	PGV	C28-C29-C30-C31
21	D	201	TGL	CA9-C20-C21-C22
30	Z	101	DMU	C19-C22-C25-C28
21	B	301	TGL	C15-C16-C17-C18
24	W	101	CHD	C17-C20-C22-C23
26	P	306	CDL	C58-C59-C60-C61
26	G	101	CDL	CB4-CB3-OB5-PB2
26	T	101	CDL	OB9-CB7-OB8-CB6
28	E	201	PSC	O04-C19-O03-C01
21	L	101	TGL	C12-C13-C14-C29
18	A	604[A]	HEA	C19-C20-C21-C22
18	A	604[B]	HEA	C19-C20-C21-C22
18	N	605[B]	HEA	C15-C16-C17-C18
26	T	101	CDL	C51-CB5-OB6-CB4
26	T	101	CDL	C17-C18-C19-C20
28	E	201	PSC	C04-C05-N-C06
21	B	301	TGL	CC2-CC1-OG3-CG3
28	E	201	PSC	C6-C7-C8-C9
20	C	305	PGV	C1-C2-C3-C4
30	M	101	DMU	O6-C11-C9-O1
24	C	307	CHD	C17-C20-C22-C23
26	T	101	CDL	O1-C1-CB2-OB2
28	V	101	PSC	C29-C30-C31-C32
20	P	305	PGV	O02-C1-O01-C02
21	L	101	TGL	C23-C24-C25-C26
21	B	301	TGL	OC1-CC1-OG3-CG3
24	P	307	CHD	C17-C20-C22-C23
31	2	201	HEC	C2A-CAA-CBA-CGA
24	C	307	CHD	C21-C20-C22-C23
21	N	608	TGL	CA1-CA2-CA3-CA4
26	T	101	CDL	CB7-C71-C72-C73
21	L	101	TGL	C20-C21-C22-C23
24	J	101	CHD	C13-C17-C20-C21
21	B	301	TGL	CB1-CB2-CB3-CB4
21	D	201	TGL	CC1-CC2-CC3-CC4
26	C	306	CDL	CB7-C71-C72-C73
26	G	101	CDL	CB5-C51-C52-C53
26	P	306	CDL	CA7-C31-C32-C33
21	L	101	TGL	CA2-CA1-OG1-CG1

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Mol	Chain	Res	Type	Atoms
24	P	307	CHD	C21-C20-C22-C23
21	D	201	TGL	CB1-CB2-CB3-CB4
28	V	101	PSC	C19-C20-C21-C22
30	M	101	DMU	O6-C11-C9-C8
21	N	608	TGL	C10-C11-C12-C13
24	W	101	CHD	C21-C20-C22-C23
21	L	101	TGL	CA9-C20-C21-C22
26	T	101	CDL	OB7-CB5-OB6-CB4
24	W	101	CHD	C13-C17-C20-C21
26	T	101	CDL	CA5-C11-C12-C13
20	A	608	PGV	C10-C11-C12-C13
25	P	303	PEK	C7-C8-C9-C10
28	E	201	PSC	C11-C10-C9-C8
20	A	607	PGV	C03-O11-P-O12
20	C	305	PGV	C04-O12-P-O11
20	P	305	PGV	C04-O12-P-O11
26	C	306	CDL	CA3-OA5-PA1-OA2
26	G	101	CDL	CA2-OA2-PA1-OA5
26	G	101	CDL	CA3-OA5-PA1-OA2
26	P	306	CDL	CB2-OB2-PB2-OB5
26	P	306	CDL	CB3-OB5-PB2-OB2
26	T	101	CDL	CA3-OA5-PA1-OA2
26	T	101	CDL	CB3-OB5-PB2-OB2
28	E	201	PSC	C03-O11-P-O12
28	E	201	PSC	C04-O12-P-O11
21	Q	201	TGL	C20-C21-C22-C23
26	G	101	CDL	CB2-C1-CA2-OA2
26	T	101	CDL	CA2-C1-CB2-OB2
30	Z	101	DMU	O16-C18-C19-C22
20	N	612	PGV	C26-C27-C28-C29
28	E	201	PSC	C04-C05-N-C07
28	E	201	PSC	C04-C05-N-C08
21	D	201	TGL	CB9-C10-C11-C12
21	Q	201	TGL	CC9-C15-C16-C17
26	P	306	CDL	C59-C60-C61-C62
28	V	101	PSC	C4-C5-C6-C7
20	A	607	PGV	C20-C21-C22-C23
21	D	201	TGL	C17-C18-C19-C33
21	D	201	TGL	C18-C19-C33-C34
21	Q	201	TGL	CB9-C10-C11-C12
21	Q	201	TGL	C13-C14-C29-C30
25	P	303	PEK	C26-C27-C28-C29

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Mol	Chain	Res	Type	Atoms
26	C	306	CDL	C59-C60-C61-C62
26	T	101	CDL	C31-C32-C33-C34
20	P	305	PGV	C20-C21-C22-C23
21	N	608	TGL	CA5-CA6-CA7-CA8
26	G	101	CDL	C72-C73-C74-C75
26	P	306	CDL	C21-C22-C23-C24
21	D	201	TGL	CG3-CG2-OG2-CB1
21	B	301	TGL	CC4-CC5-CC6-CC7
21	Q	201	TGL	CA7-CA8-CA9-C20
21	Q	201	TGL	CB7-CB8-CB9-C10
26	G	101	CDL	C42-C43-C44-C45
26	G	101	CDL	C76-C77-C78-C79
26	P	306	CDL	C37-C38-C39-C40
20	P	305	PGV	C5-C6-C7-C8
21	D	201	TGL	C23-C24-C25-C26
21	L	101	TGL	CC3-CC4-CC5-CC6
25	C	303	PEK	C28-C29-C30-C31
26	C	306	CDL	C12-C13-C14-C15
26	C	306	CDL	C20-C21-C22-C23
26	G	101	CDL	C12-C13-C14-C15
26	P	306	CDL	C56-C57-C58-C59
26	T	101	CDL	C58-C59-C60-C61
20	P	305	PGV	C6-C7-C8-C9
21	B	301	TGL	C11-C10-CB9-CB8
21	B	301	TGL	C22-C23-C24-C25
21	L	101	TGL	CB7-CB8-CB9-C10
21	L	101	TGL	C19-C33-C34-C35
21	Q	201	TGL	CC3-CC4-CC5-CC6
21	Q	201	TGL	C17-C18-C19-C33
26	C	306	CDL	C82-C83-C84-C85
26	T	101	CDL	C38-C39-C40-C41
21	L	101	TGL	CC1-CC2-CC3-CC4
25	C	303	PEK	C21-C22-C23-C24
20	P	304	PGV	C24-C25-C26-C27
20	P	305	PGV	C30-C31-C32-C33
21	B	301	TGL	CA4-CA5-CA6-CA7
21	N	608	TGL	CC6-CC7-CC8-CC9
26	P	306	CDL	C62-C63-C64-C65
28	E	201	PSC	C27-C28-C29-C30
21	L	101	TGL	OA1-CA1-OG1-CG1
21	N	608	TGL	CC4-CC5-CC6-CC7
26	C	306	CDL	C76-C77-C78-C79

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Mol	Chain	Res	Type	Atoms
26	G	101	CDL	C19-C20-C21-C22
26	G	101	CDL	C61-C62-C63-C64
26	P	306	CDL	C40-C41-C42-C43
26	P	306	CDL	C81-C82-C83-C84
21	L	101	TGL	CB3-CB4-CB5-CB6
21	L	101	TGL	C21-C22-C23-C24
21	N	608	TGL	CB7-CB8-CB9-C10
21	N	608	TGL	CC5-CC6-CC7-CC8
21	Q	201	TGL	C10-C11-C12-C13
25	P	303	PEK	C28-C29-C30-C31
26	C	306	CDL	C13-C14-C15-C16
26	C	306	CDL	C31-C32-C33-C34
26	C	306	CDL	C63-C64-C65-C66
26	P	306	CDL	C73-C74-C75-C76
21	N	608	TGL	C23-C24-C25-C26
21	Q	201	TGL	CB6-CB7-CB8-CB9
26	C	306	CDL	C21-C22-C23-C24
26	P	306	CDL	C43-C44-C45-C46
26	T	101	CDL	C40-C41-C42-C43
30	M	101	DMU	C22-C25-C28-C31
20	A	607	PGV	O02-C1-O01-C02
26	P	306	CDL	OB7-CB5-OB6-CB4
26	P	306	CDL	C51-CB5-OB6-CB4
26	C	306	CDL	C81-C82-C83-C84
28	V	101	PSC	C14-C15-C16-C17
28	E	201	PSC	C1-C2-C3-C4
20	C	305	PGV	C28-C29-C30-C31
20	N	612	PGV	C29-C30-C31-C32
20	P	304	PGV	C25-C26-C27-C28
21	L	101	TGL	CB4-CB5-CB6-CB7
21	L	101	TGL	CC4-CC5-CC6-CC7
21	N	608	TGL	CA3-CA4-CA5-CA6
21	N	608	TGL	C11-C12-C13-C14
21	Q	201	TGL	CA6-CA7-CA8-CA9
26	C	306	CDL	C17-C18-C19-C20
26	T	101	CDL	C82-C83-C84-C85
28	V	101	PSC	C2-C3-C4-C5
20	C	304	PGV	C29-C30-C31-C32
21	B	301	TGL	CA9-C20-C21-C22
21	N	608	TGL	CA2-CA3-CA4-CA5
21	Q	201	TGL	CA4-CA5-CA6-CA7
25	C	303	PEK	C34-C35-C36-C37

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Mol	Chain	Res	Type	Atoms
26	C	306	CDL	C71-C72-C73-C74
26	G	101	CDL	C82-C83-C84-C85
20	A	607	PGV	C14-C15-C16-C17
20	A	607	PGV	C27-C28-C29-C30
20	C	304	PGV	C24-C25-C26-C27
21	Q	201	TGL	CC5-CC6-CC7-CC8
20	C	304	PGV	C14-C15-C16-C17
21	B	301	TGL	CB9-C10-C11-C12
21	N	608	TGL	C12-C13-C14-C29
21	Q	201	TGL	C23-C24-C25-C26
20	A	607	PGV	C23-C24-C25-C26
21	B	301	TGL	CB7-CB8-CB9-C10
21	B	301	TGL	C20-C21-C22-C23
21	L	101	TGL	CB6-CB7-CB8-CB9
20	A	607	PGV	C29-C30-C31-C32
20	C	305	PGV	C2-C3-C4-C5
20	C	305	PGV	C6-C7-C8-C9
26	C	306	CDL	C22-C23-C24-C25
26	T	101	CDL	C59-C60-C61-C62
21	D	201	TGL	C21-C22-C23-C24
26	T	101	CDL	C52-C53-C54-C55
20	P	305	PGV	C23-C24-C25-C26
21	N	608	TGL	C13-C14-C29-C30
20	C	305	PGV	C19-C20-C21-C22
26	T	101	CDL	CA7-C31-C32-C33
20	A	607	PGV	C2-C1-O01-C02
20	P	305	PGV	C26-C27-C28-C29
26	P	306	CDL	C80-C81-C82-C83
20	P	305	PGV	O05-C05-C06-O06
25	C	303	PEK	C16-C17-C18-C19
26	G	101	CDL	C14-C15-C16-C17
26	P	306	CDL	C51-C52-C53-C54
21	Q	201	TGL	CB2-CB3-CB4-CB5
26	P	306	CDL	C82-C83-C84-C85
21	D	201	TGL	CA6-CA7-CA8-CA9
26	C	306	CDL	C43-C44-C45-C46
26	P	306	CDL	C35-C36-C37-C38
23	E	202	EDO	O1-C1-C2-O2
20	C	305	PGV	C7-C8-C9-C10
20	C	305	PGV	C23-C24-C25-C26
28	V	101	PSC	C30-C31-C32-C33
21	L	101	TGL	CB1-CB2-CB3-CB4

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Mol	Chain	Res	Type	Atoms
21	D	201	TGL	C21-C20-CA9-CA8
26	P	306	CDL	C41-C42-C43-C44
20	C	305	PGV	C14-C15-C16-C17
21	L	101	TGL	CB2-CB3-CB4-CB5
26	G	101	CDL	C11-C12-C13-C14
26	T	101	CDL	C57-C58-C59-C60
20	C	305	PGV	C11-C10-C9-C8
26	C	306	CDL	C71-CB7-OB8-CB6
25	P	303	PEK	C23-C24-C25-C26
26	C	306	CDL	C33-C34-C35-C36
26	T	101	CDL	C71-C72-C73-C74
20	C	304	PGV	C30-C31-C32-C33
26	P	306	CDL	C79-C80-C81-C82
28	V	101	PSC	C5-C6-C7-C8
28	V	101	PSC	C28-C29-C30-C31
26	C	306	CDL	C38-C39-C40-C41
26	P	306	CDL	C23-C24-C25-C26
26	C	306	CDL	C31-CA7-OA8-CA6
26	G	101	CDL	C71-CB7-OB8-CB6
18	A	604[B]	HEA	C15-C16-C17-C18
20	N	612	PGV	C13-C14-C15-C16
26	T	101	CDL	C20-C21-C22-C23
26	G	101	CDL	C51-CB5-OB6-CB4
26	P	306	CDL	C76-C77-C78-C79
20	C	305	PGV	C24-C25-C26-C27
26	T	101	CDL	OB6-CB4-CB6-OB8
26	T	101	CDL	C60-C61-C62-C63
20	P	304	PGV	C29-C30-C31-C32
26	T	101	CDL	C37-C38-C39-C40
20	P	305	PGV	C11-C10-C9-C8
20	P	304	PGV	C1-C2-C3-C4
20	P	304	PGV	C27-C28-C29-C30
21	L	101	TGL	C22-C23-C24-C25
26	C	306	CDL	C15-C16-C17-C18
26	C	306	CDL	C41-C42-C43-C44
26	T	101	CDL	C56-C57-C58-C59
21	B	301	TGL	CC7-CC8-CC9-C15
26	C	306	CDL	OA9-CA7-OA8-CA6
26	G	101	CDL	OB7-CB5-OB6-CB4
26	C	306	CDL	C14-C15-C16-C17
20	A	607	PGV	C22-C23-C24-C25
21	L	101	TGL	C11-C12-C13-C14

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Mol	Chain	Res	Type	Atoms
26	C	306	CDL	C56-C57-C58-C59
20	A	607	PGV	C02-C03-O11-P
26	C	306	CDL	C1-CA2-OA2-PA1
20	P	304	PGV	C22-C23-C24-C25
20	C	304	PGV	C7-C8-C9-C10
21	D	201	TGL	CC6-CC7-CC8-CC9
25	P	303	PEK	C1-C2-C3-C4
26	C	306	CDL	CA7-C31-C32-C33
26	P	306	CDL	CB7-C71-C72-C73
28	E	201	PSC	C19-C20-C21-C22
28	E	201	PSC	C22-C23-C24-C25
21	L	101	TGL	CA1-CA2-CA3-CA4
26	G	101	CDL	C52-C53-C54-C55
26	T	101	CDL	C63-C64-C65-C66
26	G	101	CDL	CA2-C1-CB2-OB2
31	2	201	HEC	C3D-CAD-CBD-CGD
20	A	608	PGV	C13-C14-C15-C16
30	M	101	DMU	C25-C28-C31-C34
28	E	201	PSC	C26-C27-C28-C29
20	A	607	PGV	C25-C26-C27-C28
21	N	608	TGL	C29-C30-C31-C32
21	Q	201	TGL	C21-C22-C23-C24
20	P	305	PGV	C24-C25-C26-C27
21	B	301	TGL	OG1-CG1-CG2-CG3
21	N	608	TGL	CG1-CG2-CG3-OG3
21	Q	201	TGL	OG1-CG1-CG2-CG3
26	P	306	CDL	CA3-CA4-CA6-OA8
26	T	101	CDL	CA3-CA4-CA6-OA8
26	T	101	CDL	CB3-CB4-CB6-OB8
28	E	201	PSC	O03-C01-C02-C03
28	E	201	PSC	C2-C3-C4-C5
28	E	201	PSC	C24-C25-C26-C27
25	C	303	PEK	C7-C8-C9-C10
20	P	305	PGV	C31-C32-C33-C34
21	D	201	TGL	C29-C30-C31-C32
21	N	608	TGL	C25-C26-C27-C28
21	N	608	TGL	C14-C29-C30-C31
20	C	305	PGV	C25-C26-C27-C28
26	C	306	CDL	C83-C84-C85-C86
26	G	101	CDL	C44-C45-C46-C47
20	C	304	PGV	C27-C28-C29-C30
26	P	306	CDL	C38-C39-C40-C41

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Mol	Chain	Res	Type	Atoms
26	P	306	CDL	C78-C79-C80-C81
21	B	301	TGL	CB5-CB6-CB7-CB8
21	N	608	TGL	CC2-CC3-CC4-CC5
26	G	101	CDL	C58-C59-C60-C61
30	M	101	DMU	C34-C37-C40-C43
21	B	301	TGL	CA2-CA1-OG1-CG1
20	N	612	PGV	C4-C5-C6-C7
20	P	305	PGV	C15-C16-C17-C18
25	C	303	PEK	C17-C18-C19-C20
28	E	201	PSC	C01-C02-O01-C1
28	V	101	PSC	C01-C02-O01-C1
26	P	306	CDL	C13-C14-C15-C16
20	C	304	PGV	C15-C16-C17-C18
28	V	101	PSC	C21-C22-C23-C24
26	C	306	CDL	OB5-CB3-CB4-OB6
20	C	304	PGV	C26-C27-C28-C29
21	D	201	TGL	CA5-CA6-CA7-CA8
28	V	101	PSC	C15-C16-C17-C18
26	C	306	CDL	OB9-CB7-OB8-CB6
20	C	305	PGV	C27-C28-C29-C30
25	C	303	PEK	C15-C16-C17-C18
26	P	306	CDL	C11-CA5-OA6-CA4
21	Q	201	TGL	CC7-CC8-CC9-C15
26	P	306	CDL	C31-C32-C33-C34
21	N	608	TGL	OG2-CG2-CG3-OG3
26	G	101	CDL	OB6-CB4-CB6-OB8
28	E	201	PSC	C28-C29-C30-C31
26	G	101	CDL	OB9-CB7-OB8-CB6
20	C	304	PGV	C13-C14-C15-C16
21	N	608	TGL	CA7-CA8-CA9-C20
26	G	101	CDL	C60-C61-C62-C63
20	A	607	PGV	C31-C32-C33-C34
20	C	304	PGV	C31-C32-C33-C34
26	T	101	CDL	C64-C65-C66-C67
20	A	607	PGV	C2-C3-C4-C5
20	N	612	PGV	C14-C15-C16-C17
28	E	201	PSC	C31-C32-C33-C34
28	V	101	PSC	C27-C28-C29-C30
20	N	612	PGV	C12-C13-C14-C15
25	C	303	PEK	C4-C5-C6-C7
21	N	608	TGL	C16-C17-C18-C19
26	C	306	CDL	C53-C54-C55-C56

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Mol	Chain	Res	Type	Atoms
20	P	305	PGV	C01-C02-C03-O11
26	C	306	CDL	OB5-CB3-CB4-CB6
26	G	101	CDL	OB5-CB3-CB4-CB6
21	D	201	TGL	CA3-CA4-CA5-CA6
21	Q	201	TGL	C11-C12-C13-C14
25	P	303	PEK	C27-C28-C29-C30
25	C	303	PEK	O12-C04-C05-N
25	P	303	PEK	C16-C17-C18-C19
28	V	101	PSC	C25-C26-C27-C28
26	P	306	CDL	C63-C64-C65-C66
21	D	201	TGL	CC3-CC4-CC5-CC6
26	P	306	CDL	O1-C1-CA2-OA2
21	B	301	TGL	OA1-CA1-OG1-CG1
21	L	101	TGL	C24-C25-C26-C27
26	T	101	CDL	C55-C56-C57-C58
21	L	101	TGL	C21-C20-CA9-CA8
26	C	306	CDL	C34-C35-C36-C37
28	E	201	PSC	C23-C24-C25-C26
20	P	304	PGV	C02-C03-O11-P
28	V	101	PSC	C02-C03-O11-P
20	P	305	PGV	C22-C23-C24-C25
21	B	301	TGL	CA5-CA6-CA7-CA8
21	B	301	TGL	CB3-CB4-CB5-CB6
25	C	303	PEK	C32-C33-C34-C35
21	D	201	TGL	OG1-CG1-CG2-CG3
21	L	101	TGL	OG1-CG1-CG2-CG3
21	N	608	TGL	OG1-CG1-CG2-CG3
26	P	306	CDL	CB3-CB4-CB6-OB8
21	B	301	TGL	C11-C12-C13-C14
21	L	101	TGL	C29-C30-C31-C32
26	G	101	CDL	CA7-C31-C32-C33
20	N	612	PGV	C10-C11-C12-C13
25	P	303	PEK	C4-C5-C6-C7
20	N	612	PGV	C31-C32-C33-C34
21	L	101	TGL	C33-C34-C35-C36
26	G	101	CDL	C75-C76-C77-C78
26	T	101	CDL	C41-C42-C43-C44
21	N	608	TGL	CB4-CB5-CB6-CB7
26	P	306	CDL	C15-C16-C17-C18
28	V	101	PSC	C20-C21-C22-C23
21	L	101	TGL	C13-C14-C29-C30
26	G	101	CDL	C37-C38-C39-C40

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Mol	Chain	Res	Type	Atoms
21	B	301	TGL	CA3-CA4-CA5-CA6
26	C	306	CDL	CB4-CB6-OB8-CB7
20	A	608	PGV	C31-C32-C33-C34
26	C	306	CDL	C35-C36-C37-C38
28	E	201	PSC	C10-C11-C12-C13
28	V	101	PSC	C9-C10-C11-C12
26	G	101	CDL	C23-C24-C25-C26
20	C	305	PGV	O05-C05-C06-O06
21	N	608	TGL	CB1-CB2-CB3-CB4
21	B	301	TGL	C24-C25-C26-C27
21	Q	201	TGL	OG1-CA1-CA2-CA3
21	Q	201	TGL	C19-C33-C34-C35
21	L	101	TGL	OG2-CG2-CG3-OG3
21	Q	201	TGL	OG1-CG1-CG2-OG2
26	P	306	CDL	OB6-CB4-CB6-OB8
28	E	201	PSC	O03-C01-C02-O01
21	D	201	TGL	C11-C12-C13-C14
25	P	303	PEK	C33-C34-C35-C36
25	C	303	PEK	C26-C27-C28-C29
26	C	306	CDL	C79-C80-C81-C82
26	P	306	CDL	C74-C75-C76-C77
30	Z	101	DMU	C18-C19-C22-C25
26	P	306	CDL	C60-C61-C62-C63
21	L	101	TGL	C11-C10-CB9-CB8
20	C	305	PGV	C01-C02-C03-O11
24	G	102	CHD	C17-C20-C22-C23
21	D	201	TGL	C11-C10-CB9-CB8
21	L	101	TGL	C10-C11-C12-C13
25	C	303	PEK	C10-C11-C12-C13
26	P	306	CDL	C57-C58-C59-C60
20	C	304	PGV	C12-C13-C14-C15
26	P	306	CDL	OA7-CA5-OA6-CA4
28	E	201	PSC	C4-C5-C6-C7
20	A	607	PGV	O03-C01-C02-C03
21	D	201	TGL	CG1-CG2-CG3-OG3
26	T	101	CDL	CB4-CB3-OB5-PB2
20	A	607	PGV	C15-C16-C17-C18
26	G	101	CDL	OB5-CB3-CB4-OB6
28	V	101	PSC	O01-C02-C03-O11
24	C	307	CHD	C20-C22-C23-C24
21	Q	201	TGL	CA2-CA3-CA4-CA5
26	T	101	CDL	C54-C55-C56-C57

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Mol	Chain	Res	Type	Atoms
20	P	304	PGV	C11-C12-C13-C14
26	P	306	CDL	CB2-C1-CA2-OA2
20	P	304	PGV	C7-C8-C9-C10
26	P	306	CDL	C75-C76-C77-C78
20	A	607	PGV	O03-C01-C02-O01
26	C	306	CDL	OB6-CB4-CB6-OB8
26	C	306	CDL	C60-C61-C62-C63
26	P	306	CDL	C34-C35-C36-C37
26	C	306	CDL	C16-C17-C18-C19
26	T	101	CDL	C14-C15-C16-C17
21	D	201	TGL	C25-C26-C27-C28
26	C	306	CDL	C61-C62-C63-C64
21	B	301	TGL	CB6-CB7-CB8-CB9
25	P	303	PEK	C10-C11-C12-C13
21	L	101	TGL	CA4-CA5-CA6-CA7
21	L	101	TGL	C16-C15-CC9-CC8
26	P	306	CDL	C17-C18-C19-C20
20	C	305	PGV	C3-C4-C5-C6
21	L	101	TGL	C17-C18-C19-C33
26	T	101	CDL	C78-C79-C80-C81
20	A	608	PGV	C12-C13-C14-C15
26	G	101	CDL	CB2-OB2-PB2-OB5
21	D	201	TGL	CA2-CA3-CA4-CA5
30	M	101	DMU	C19-C22-C25-C28
20	P	305	PGV	C02-C03-O11-P
26	P	306	CDL	CA4-CA3-OA5-PA1
25	C	303	PEK	C33-C34-C35-C36
26	C	306	CDL	C36-C37-C38-C39
20	A	607	PGV	C03-O11-P-O13
20	C	305	PGV	C04-O12-P-O14
20	P	305	PGV	C04-O12-P-O13
26	C	306	CDL	CB3-OB5-PB2-OB3
26	G	101	CDL	CA3-OA5-PA1-OA3
26	G	101	CDL	CB2-OB2-PB2-OB4
26	G	101	CDL	CB3-OB5-PB2-OB4
26	P	306	CDL	CA2-OA2-PA1-OA3
26	T	101	CDL	CB3-OB5-PB2-OB4
26	G	101	CDL	C77-C78-C79-C80
25	P	303	PEK	C22-C21-O03-C01
28	V	101	PSC	C01-C02-C03-O11
26	G	101	CDL	C32-C31-CA7-OA8
24	C	307	CHD	C16-C17-C20-C21

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Mol	Chain	Res	Type	Atoms
26	G	101	CDL	C16-C17-C18-C19
28	E	201	PSC	C05-C04-O12-P
28	E	201	PSC	C3-C4-C5-C6
21	L	101	TGL	CA2-CA3-CA4-CA5
20	A	608	PGV	C27-C28-C29-C30
21	B	301	TGL	CA6-CA7-CA8-CA9
25	C	303	PEK	C23-C24-C25-C26
26	G	101	CDL	O1-C1-CB2-OB2
26	G	101	CDL	C59-C60-C61-C62
26	G	101	CDL	CB3-CB4-CB6-OB8
31	2	201	HEC	C1A-C2A-CAA-CBA
31	2	201	HEC	C3A-C2A-CAA-CBA
21	D	201	TGL	OG2-CG2-CG3-OG3
26	P	306	CDL	OA6-CA4-CA6-OA8
26	T	101	CDL	OA6-CA4-CA6-OA8
28	V	101	PSC	O03-C01-C02-O01
26	P	306	CDL	C12-C13-C14-C15
21	Q	201	TGL	C14-C29-C30-C31
20	C	304	PGV	C02-C03-O11-P
25	P	303	PEK	C17-C18-C19-C20
21	D	201	TGL	C20-C21-C22-C23
20	C	304	PGV	C25-C26-C27-C28
20	P	305	PGV	C21-C22-C23-C24
20	P	305	PGV	C27-C28-C29-C30
25	P	303	PEK	C21-C22-C23-C24
21	D	201	TGL	C10-C11-C12-C13
21	N	608	TGL	CC7-CC8-CC9-C15
28	E	201	PSC	O03-C19-C20-C21
20	A	607	PGV	C21-C22-C23-C24
25	C	303	PEK	C24-C25-C26-C27
21	B	301	TGL	CG1-CG2-OG2-CB1
20	A	607	PGV	C01-C02-C03-O11
24	P	307	CHD	C20-C22-C23-C24
18	N	606	HEA	C11-C12-C13-C14
20	C	304	PGV	C1-C2-C3-C4
21	Q	201	TGL	CA5-CA6-CA7-CA8
26	P	306	CDL	CB4-CB6-OB8-CB7
20	A	608	PGV	C02-C01-O03-C19
20	C	305	PGV	C31-C32-C33-C34
21	B	301	TGL	C21-C22-C23-C24
21	L	101	TGL	OG1-CG1-CG2-OG2
20	A	607	PGV	C04-O12-P-O11

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Mol	Chain	Res	Type	Atoms
20	C	305	PGV	C03-O11-P-O12
26	P	306	CDL	CA3-OA5-PA1-OA2
26	T	101	CDL	CB2-OB2-PB2-OB5
21	B	301	TGL	CG1-CG2-CG3-OG3
21	L	101	TGL	CG1-CG2-CG3-OG3
26	C	306	CDL	CA3-CA4-CA6-OA8
26	T	101	CDL	C12-C13-C14-C15
26	C	306	CDL	C75-C76-C77-C78
25	P	303	PEK	C35-C36-C37-C38
28	E	201	PSC	C14-C15-C16-C17
26	C	306	CDL	C44-C45-C46-C47
20	C	304	PGV	C05-C04-O12-P
20	A	607	PGV	O01-C1-C2-C3
18	A	605	HEA	CAA-CBA-CGA-O1A
26	G	101	CDL	C81-C82-C83-C84
20	P	304	PGV	C11-C10-C9-C8
20	C	305	PGV	C10-C11-C12-C13
24	C	301	CHD	C22-C23-C24-O25
24	P	301	CHD	C22-C23-C24-O26
21	Q	201	TGL	CB3-CB4-CB5-CB6
18	N	605[A]	HEA	C19-C20-C21-C22
21	D	201	TGL	CC5-CC6-CC7-CC8
20	A	607	PGV	C11-C10-C9-C8
21	L	101	TGL	C16-C17-C18-C19
26	T	101	CDL	O1-C1-CA2-OA2
24	C	307	CHD	C22-C23-C24-O25
24	C	307	CHD	C22-C23-C24-O26
24	P	307	CHD	C22-C23-C24-O26
26	P	306	CDL	C1-CB2-OB2-PB2
26	T	101	CDL	C1-CA2-OA2-PA1
18	A	604[A]	HEA	CAD-CBD-CGD-O1D
18	A	604[B]	HEA	CAD-CBD-CGD-O1D
24	P	301	CHD	C22-C23-C24-O25
31	2	201	HEC	CAA-CBA-CGA-O2A
21	L	101	TGL	CC2-CC3-CC4-CC5
20	P	304	PGV	C31-C32-C33-C34
21	D	201	TGL	CC7-CC8-CC9-C15
21	L	101	TGL	CC5-CC6-CC7-CC8
26	T	101	CDL	C53-C54-C55-C56
18	A	605	HEA	CAD-CBD-CGD-O1D
24	J	101	CHD	C22-C23-C24-O25
31	2	201	HEC	CAA-CBA-CGA-O1A

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Mol	Chain	Res	Type	Atoms
21	N	608	TGL	CG1-CG2-OG2-CB1
20	C	305	PGV	C15-C16-C17-C18
28	V	101	PSC	C3-C4-C5-C6
20	A	607	PGV	C9-C10-C11-C12
21	N	608	TGL	C11-C10-CB9-CB8
25	C	303	PEK	C6-C7-C8-C9
25	C	303	PEK	C9-C10-C11-C12
20	P	305	PGV	C25-C26-C27-C28
26	C	306	CDL	C1-CB2-OB2-PB2
20	A	607	PGV	O05-C05-C06-O06
20	A	607	PGV	C7-C8-C9-C10
20	P	305	PGV	C9-C10-C11-C12
26	C	306	CDL	C52-C53-C54-C55
18	A	605	HEA	CAA-CBA-CGA-O2A
18	N	606	HEA	CAD-CBD-CGD-O1D
21	D	201	TGL	C33-C34-C35-C36
26	G	101	CDL	C31-C32-C33-C34
21	D	201	TGL	OB1-CB1-OG2-CG2
24	G	102	CHD	C22-C23-C24-O25
18	A	604[A]	HEA	CAD-CBD-CGD-O2D
18	A	604[B]	HEA	CAD-CBD-CGD-O2D
18	A	605	HEA	CAD-CBD-CGD-O2D
24	J	101	CHD	C22-C23-C24-O26
24	P	307	CHD	C22-C23-C24-O25
21	L	101	TGL	CB9-C10-C11-C12
26	G	101	CDL	C51-C52-C53-C54
25	P	303	PEK	C31-C32-C33-C34
26	G	101	CDL	C73-C74-C75-C76
18	N	605[A]	HEA	CAD-CBD-CGD-O1D
18	N	605[B]	HEA	CAD-CBD-CGD-O1D
21	L	101	TGL	C14-C29-C30-C31
26	C	306	CDL	C74-C75-C76-C77
18	N	606	HEA	CAD-CBD-CGD-O2D
26	P	306	CDL	CA5-C11-C12-C13
24	C	301	CHD	C22-C23-C24-O26
24	T	103	CHD	C22-C23-C24-O26
25	P	303	PEK	C29-C30-C31-C32
28	E	201	PSC	C7-C8-C9-C10
26	P	306	CDL	C42-C43-C44-C45
26	P	306	CDL	C84-C85-C86-C87
24	G	102	CHD	C22-C23-C24-O26
26	T	101	CDL	OB5-CB3-CB4-CB6

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Mol	Chain	Res	Type	Atoms
26	P	306	CDL	C77-C78-C79-C80
21	L	101	TGL	OG1-CA1-CA2-CA3
26	G	101	CDL	C52-C51-CB5-OB6
21	N	608	TGL	CB9-C10-C11-C12
20	C	305	PGV	C05-C04-O12-P
20	A	608	PGV	C14-C15-C16-C17
21	D	201	TGL	C24-C25-C26-C27
18	N	606	HEA	C2D-C3D-CAD-CBD
21	B	301	TGL	C12-C13-C14-C29
21	Q	201	TGL	C24-C25-C26-C27
20	C	304	PGV	C11-C12-C13-C14
21	D	201	TGL	CA1-CA2-CA3-CA4
30	Z	101	DMU	C31-C34-C37-C40
28	V	101	PSC	C24-C25-C26-C27
28	V	101	PSC	C11-C10-C9-C8
26	P	306	CDL	C24-C25-C26-C27
24	W	101	CHD	C22-C23-C24-O26
20	P	305	PGV	C13-C14-C15-C16
21	D	201	TGL	CC4-CC5-CC6-CC7
26	T	101	CDL	C35-C36-C37-C38
26	P	306	CDL	C19-C20-C21-C22
26	T	101	CDL	C32-C31-CA7-OA8
25	P	303	PEK	C30-C31-C32-C33
25	P	303	PEK	O04-C21-O03-C01
20	C	304	PGV	C9-C10-C11-C12
25	C	303	PEK	C14-C15-C16-C17
26	C	306	CDL	CB3-CB4-CB6-OB8
21	Q	201	TGL	OA1-CA1-CA2-CA3
20	A	607	PGV	O01-C02-C03-O11
24	T	103	CHD	C22-C23-C24-O25
26	G	101	CDL	C84-C85-C86-C87
21	D	201	TGL	OG3-CC1-CC2-CC3
23	N	614	EDO	O1-C1-C2-O2
21	Q	201	TGL	CC6-CC7-CC8-CC9
26	C	306	CDL	C77-C78-C79-C80
20	C	305	PGV	O12-C04-C05-O05
20	A	608	PGV	C4-C5-C6-C7
26	G	101	CDL	C62-C63-C64-C65
26	P	306	CDL	C32-C31-CA7-OA8
28	V	101	PSC	C22-C23-C24-C25
26	G	101	CDL	C39-C40-C41-C42
20	P	305	PGV	C1-C2-C3-C4

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Mol	Chain	Res	Type	Atoms
25	P	303	PEK	C15-C16-C17-C18
20	A	608	PGV	O03-C19-C20-C21
18	N	605[A]	HEA	CAD-CBD-CGD-O2D
18	N	605[B]	HEA	CAD-CBD-CGD-O2D
24	W	101	CHD	C22-C23-C24-O25
21	L	101	TGL	OG2-CB1-CB2-CB3
21	L	101	TGL	C25-C26-C27-C28
21	N	608	TGL	CA9-C20-C21-C22
26	P	306	CDL	C22-C23-C24-C25
20	C	305	PGV	C04-C05-C06-O06
21	B	301	TGL	C16-C15-CC9-CC8
20	C	305	PGV	O12-C04-C05-C06
21	B	301	TGL	CC6-CC7-CC8-CC9
26	T	101	CDL	C32-C31-CA7-OA9
28	V	101	PSC	C7-C8-C9-C10
28	V	101	PSC	O03-C01-C02-C03
26	P	306	CDL	C72-C73-C74-C75
24	C	307	CHD	C13-C17-C20-C21
21	D	201	TGL	OC1-CC1-CC2-CC3
18	A	605	HEA	C26-C15-C16-C17
26	P	306	CDL	C32-C31-CA7-OA9
20	A	607	PGV	C04-O12-P-O13
26	C	306	CDL	CB2-OB2-PB2-OB3
26	C	306	CDL	CB3-OB5-PB2-OB4
26	P	306	CDL	CA2-OA2-PA1-OA4
28	V	101	PSC	C04-O12-P-O13
23	B	303	EDO	O1-C1-C2-O2
23	C	311	EDO	O1-C1-C2-O2
18	N	605[A]	HEA	CAA-CBA-CGA-O2A
18	N	605[B]	HEA	CAA-CBA-CGA-O2A
21	L	101	TGL	OB1-CB1-CB2-CB3
26	P	306	CDL	OB9-CB7-OB8-CB6
26	G	101	CDL	C55-C56-C57-C58
26	G	101	CDL	C79-C80-C81-C82
20	A	608	PGV	C19-C20-C21-C22
26	T	101	CDL	C12-C11-CA5-OA6
21	Q	201	TGL	C15-C16-C17-C18
26	G	101	CDL	C21-C22-C23-C24
24	C	307	CHD	C16-C17-C20-C22
26	T	101	CDL	C19-C20-C21-C22
20	C	305	PGV	O01-C1-C2-C3
26	C	306	CDL	C52-C51-CB5-OB6

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Mol	Chain	Res	Type	Atoms
26	G	101	CDL	C80-C81-C82-C83
20	C	304	PGV	C28-C29-C30-C31
20	N	612	PGV	O03-C19-C20-C21
21	Q	201	TGL	C25-C26-C27-C28
20	A	608	PGV	C11-C10-C9-C8
25	P	303	PEK	C25-C26-C27-C28
26	T	101	CDL	C12-C11-CA5-OA7
31	1	201	HEC	CAA-CBA-CGA-O1A
20	A	608	PGV	C9-C10-C11-C12
20	C	305	PGV	C9-C10-C11-C12
25	C	303	PEK	C22-C23-C24-C25
20	C	305	PGV	O02-C1-C2-C3
21	D	201	TGL	OG1-CA1-CA2-CA3

All (1) ring outliers are listed below:

Mol	Chain	Res	Type	Atoms
24	P	307	CHD	C1-C10-C2-C3-C4-C5

38 monomers are involved in 249 short contacts:

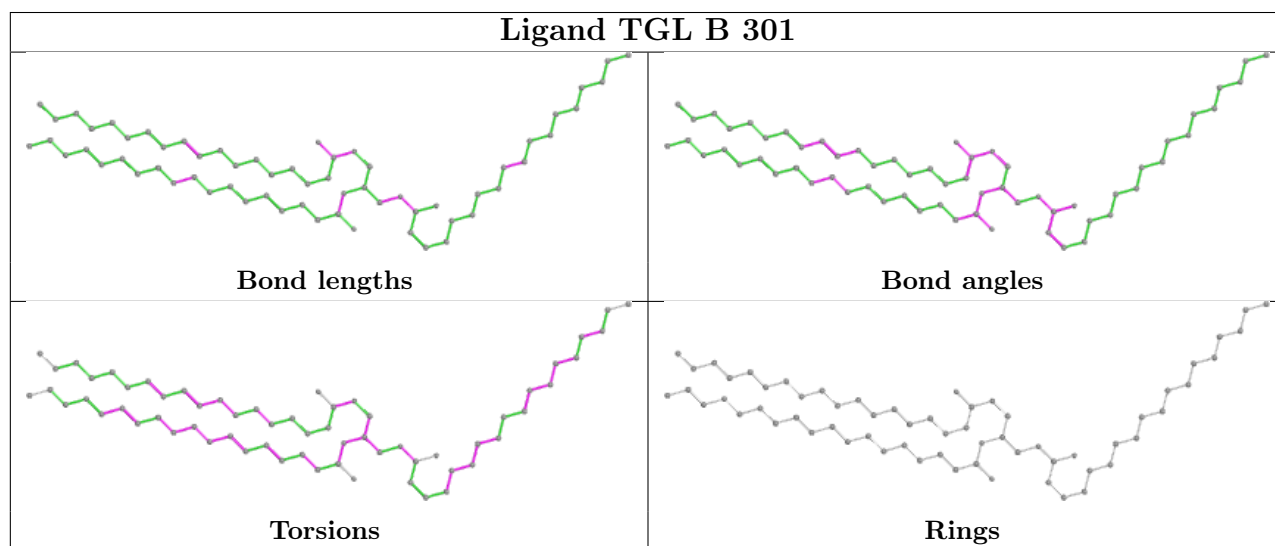
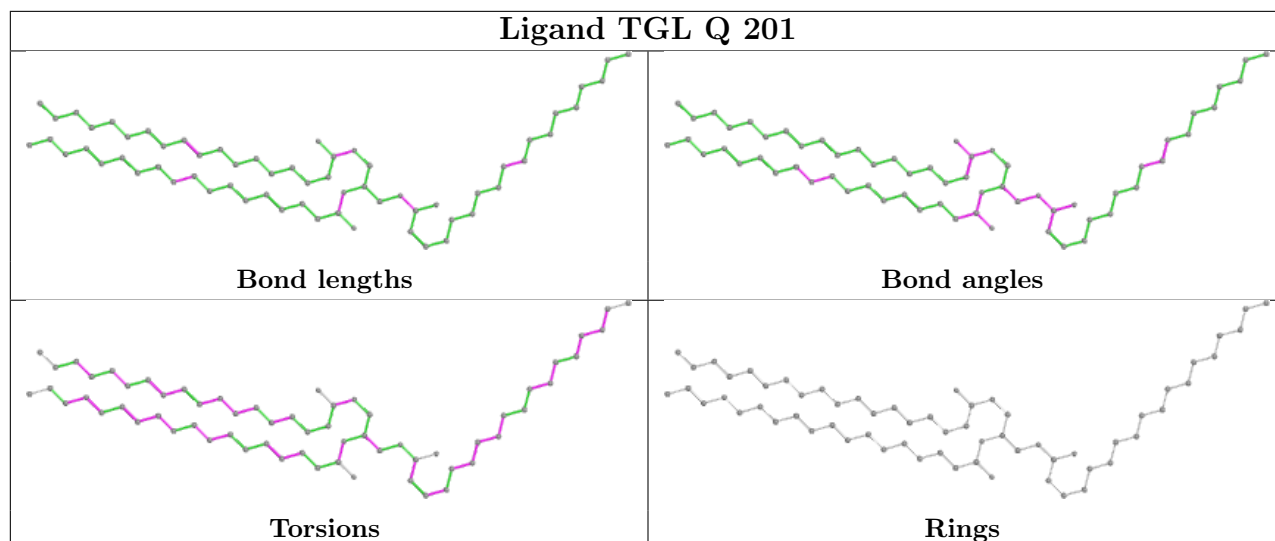
Mol	Chain	Res	Type	Clashes	Symm-Clashes
21	Q	201	TGL	10	0
21	B	301	TGL	6	0
20	A	608	PGV	4	0
21	D	201	TGL	12	0
18	A	605	HEA	3	0
31	1	201	HEC	4	0
28	E	201	PSC	19	0
20	A	607	PGV	5	0
25	C	303	PEK	7	0
31	2	201	HEC	4	0
23	E	202	EDO	1	0
24	C	301	CHD	1	0
28	V	101	PSC	21	0
21	L	101	TGL	20	0
20	P	305	PGV	4	0
26	C	306	CDL	15	0
26	G	101	CDL	23	0
26	T	101	CDL	24	0
18	N	606	HEA	3	0
30	M	101	DMU	1	0

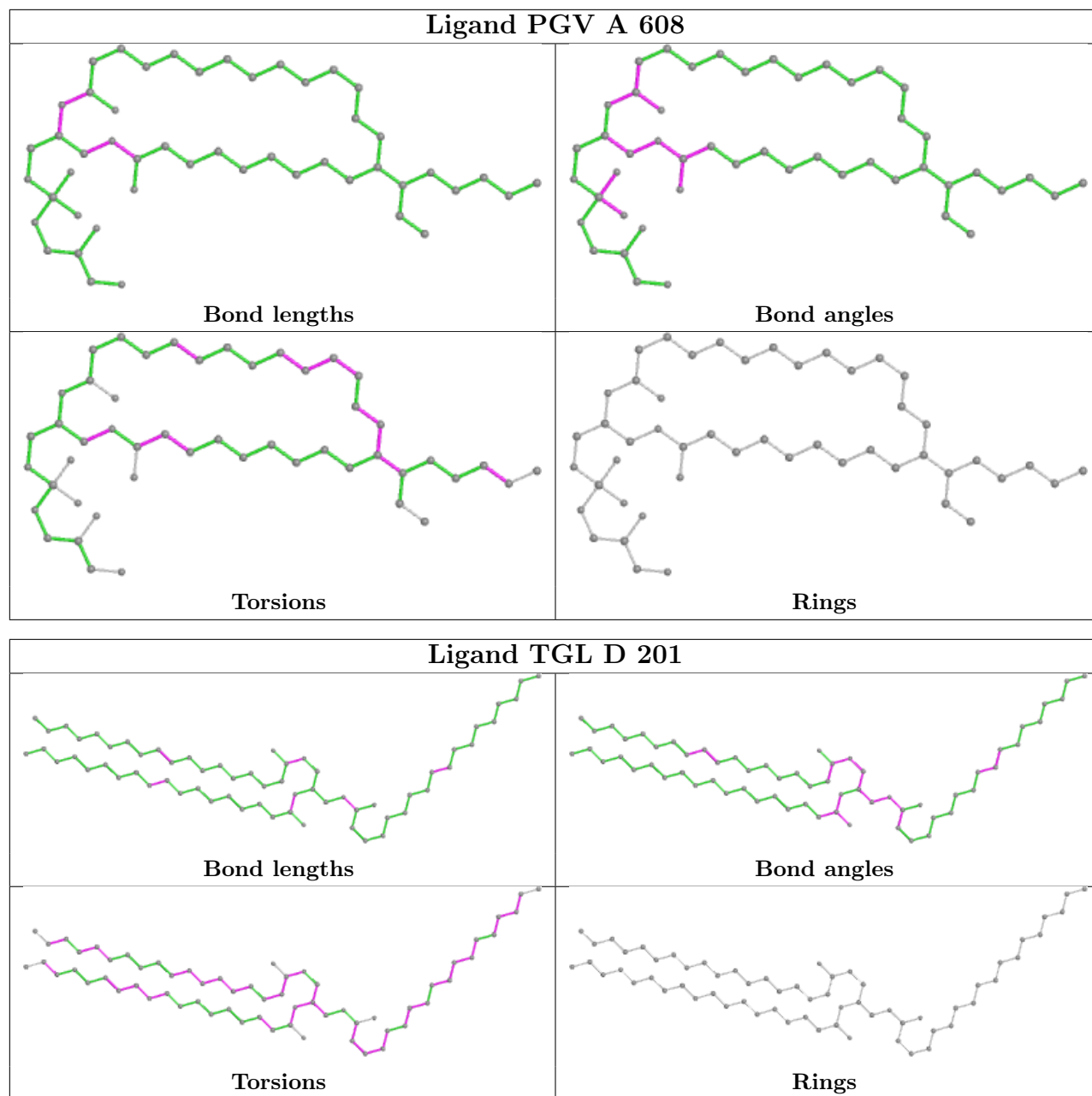
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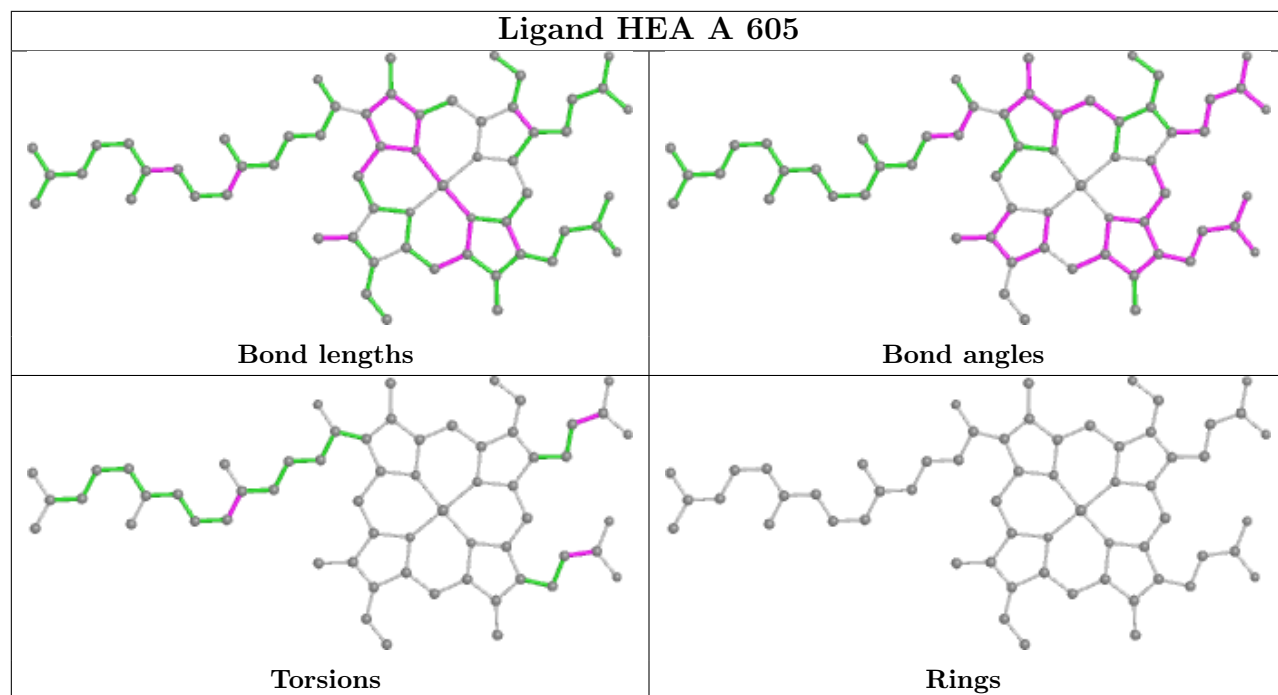
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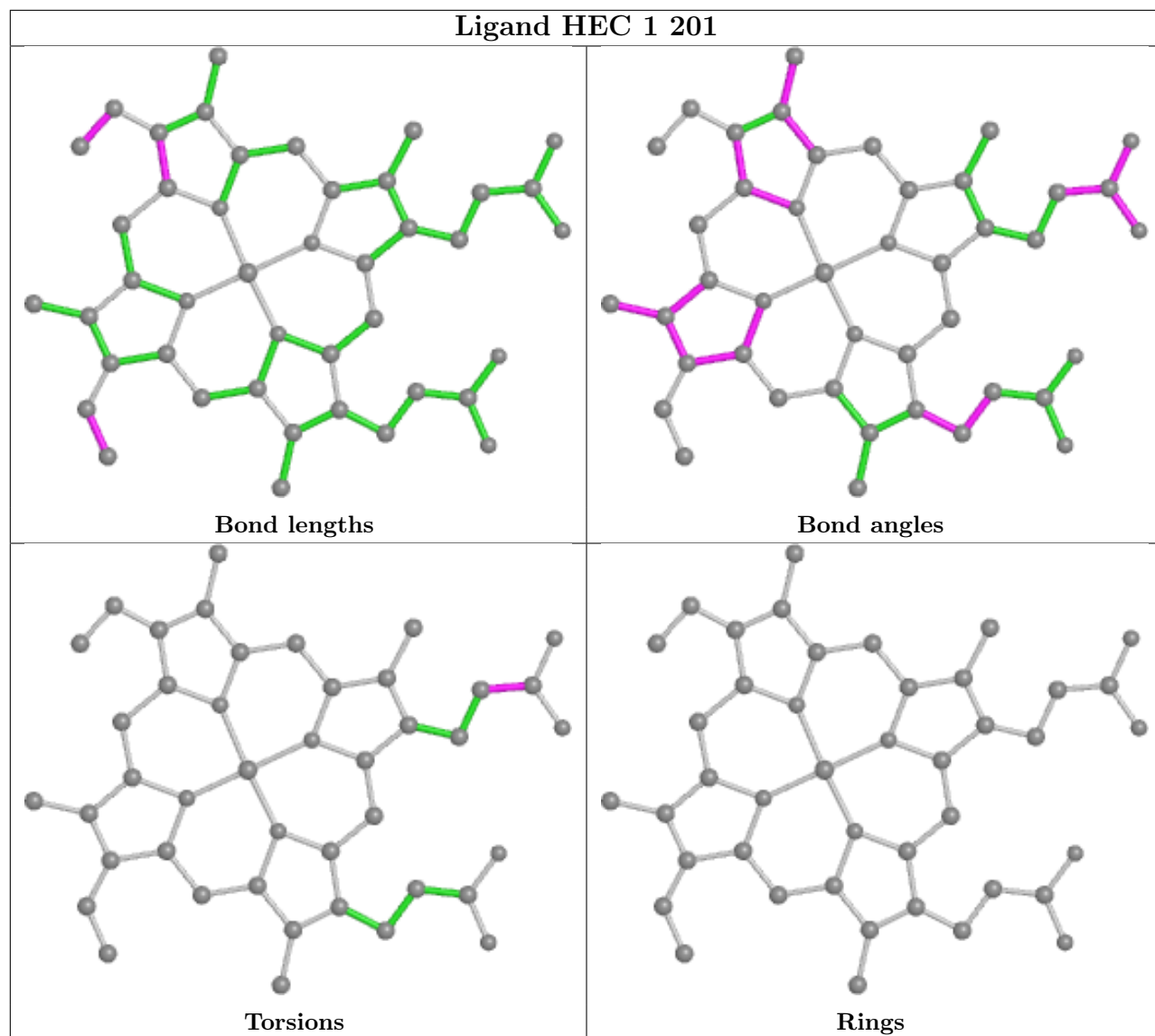
Mol	Chain	Res	Type	Clashes	Symm-Clashes
18	A	604[B]	HEA	6	0
24	T	103	CHD	1	0
30	Z	101	DMU	1	0
24	P	307	CHD	1	0
24	J	101	CHD	5	0
18	N	605[B]	HEA	6	0
24	W	101	CHD	5	0
20	P	304	PGV	6	0
24	P	301	CHD	1	0
20	C	304	PGV	5	0
20	C	305	PGV	9	0
20	N	612	PGV	1	0
25	P	303	PEK	3	0
19	N	607	PER	1	0
26	P	306	CDL	12	0
18	N	605[A]	HEA	1	0
24	C	307	CHD	3	0
21	N	608	TGL	2	0

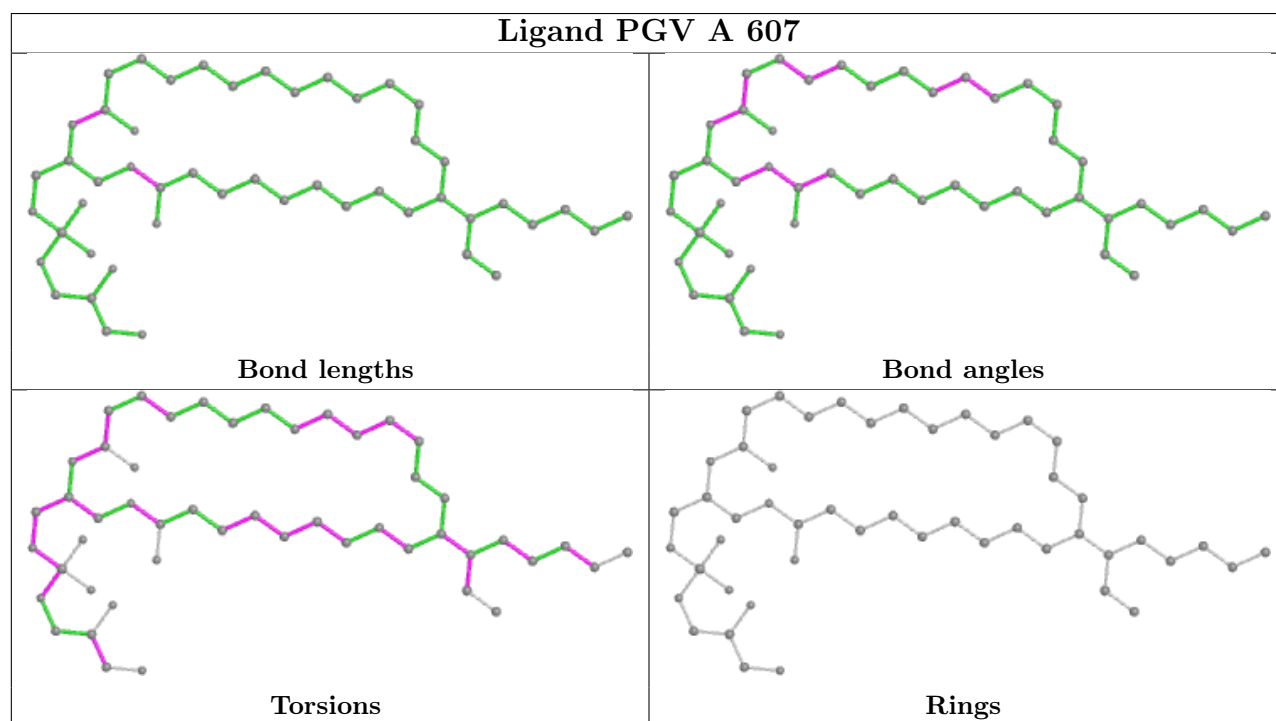
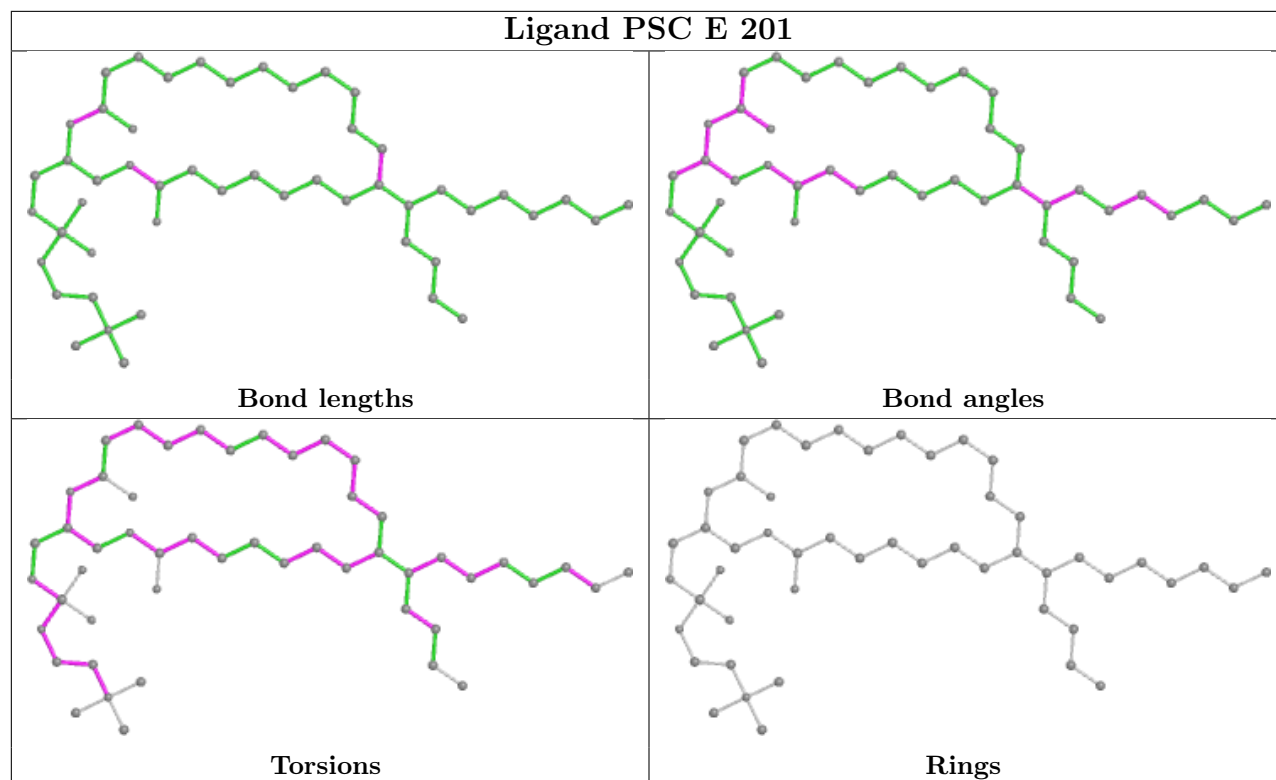
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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.

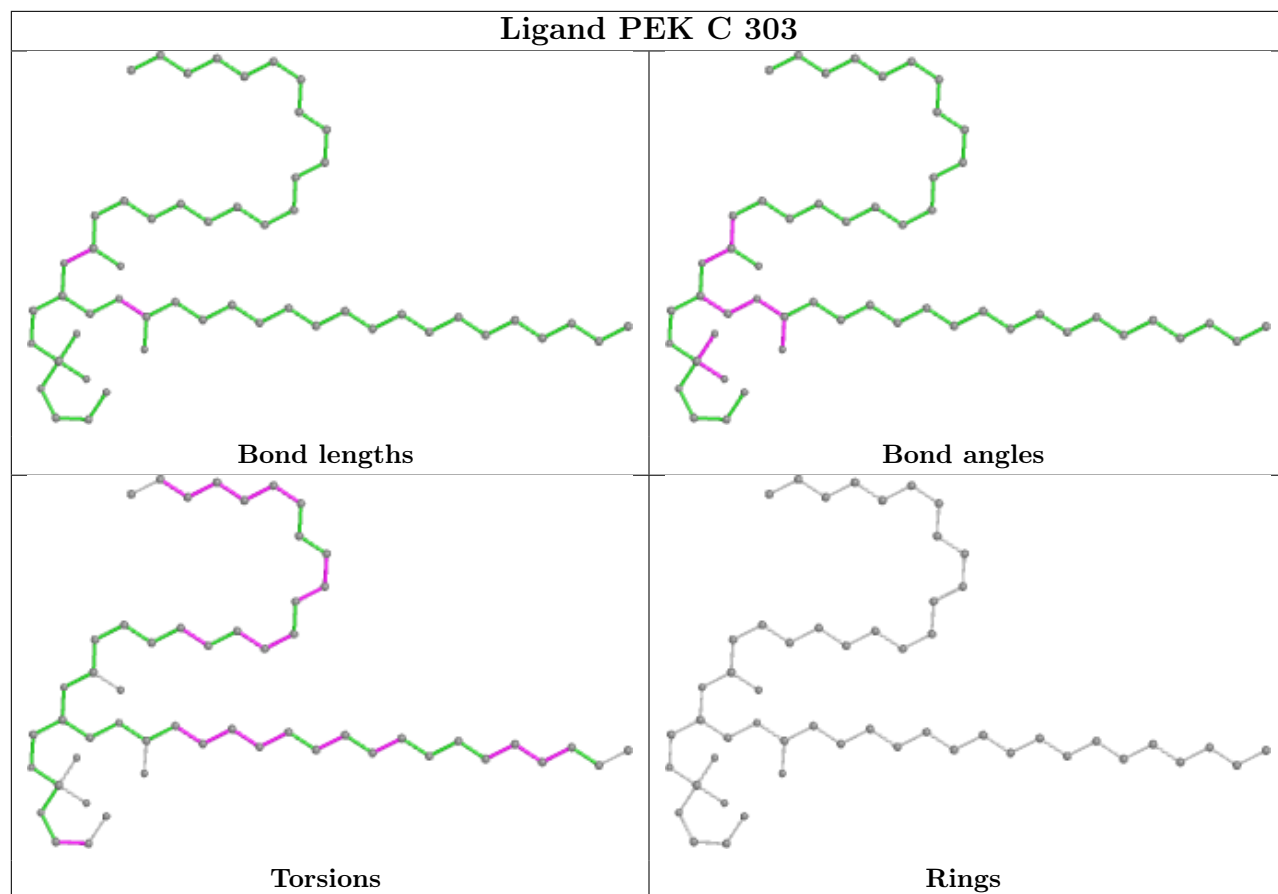




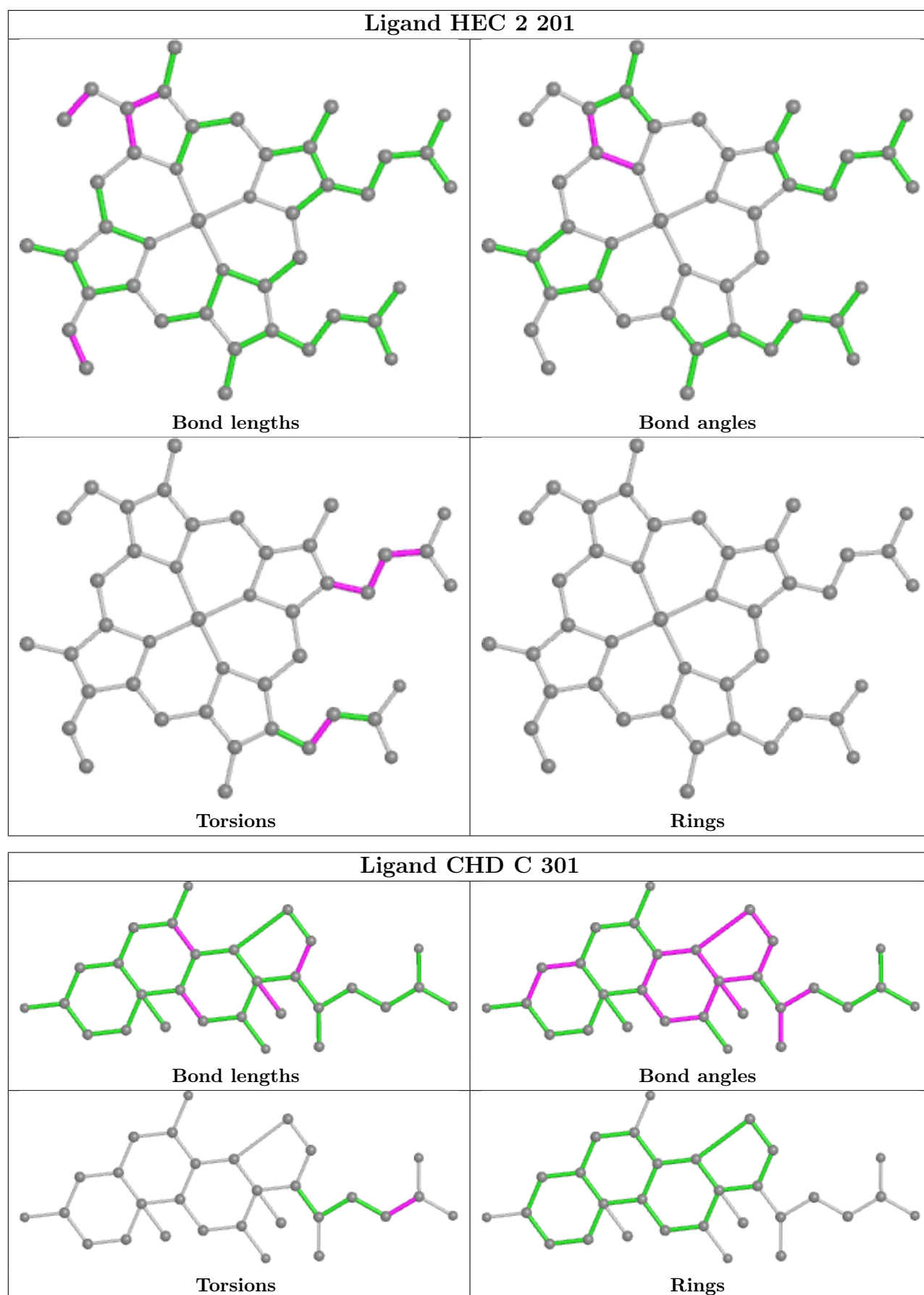


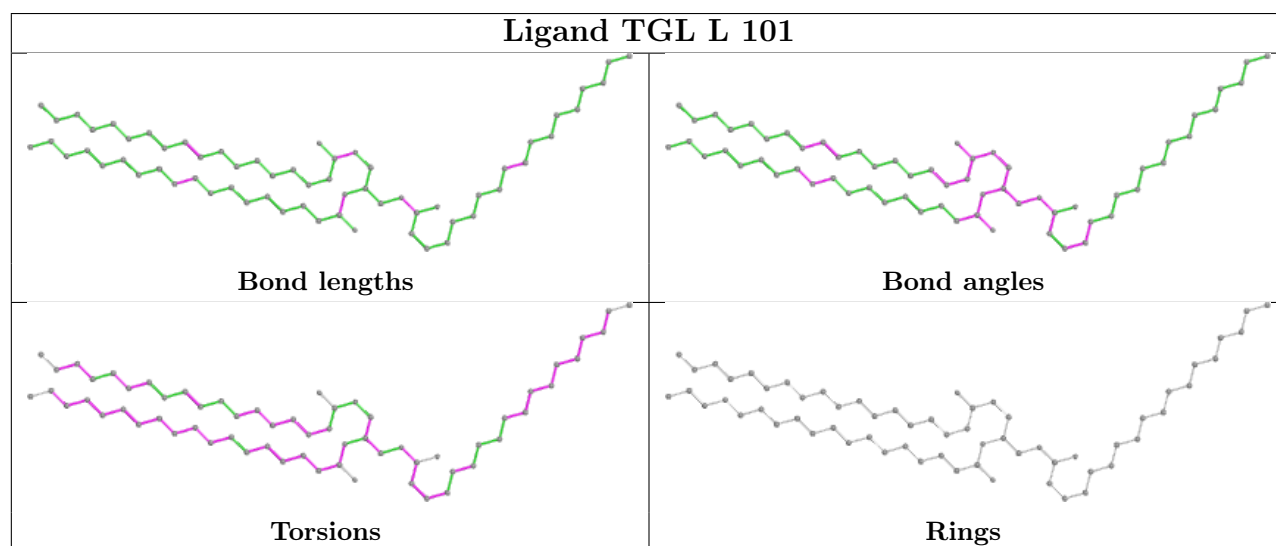
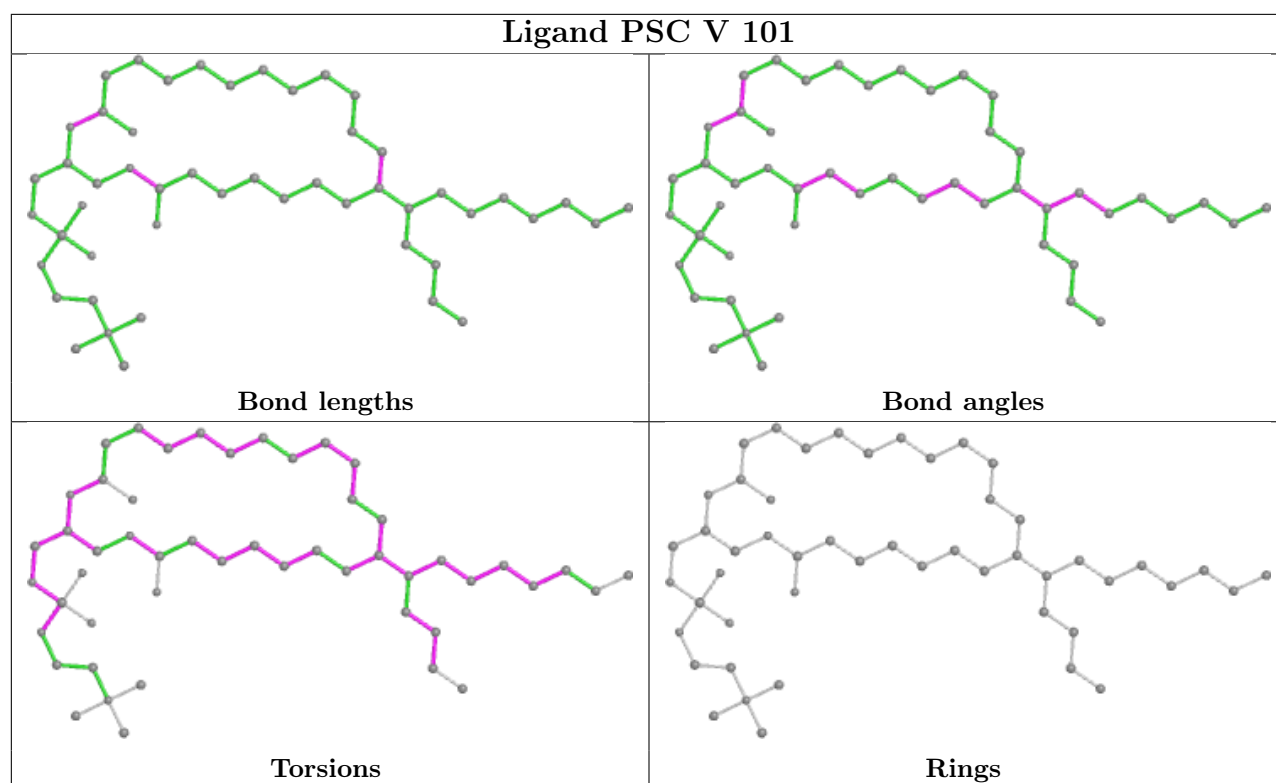


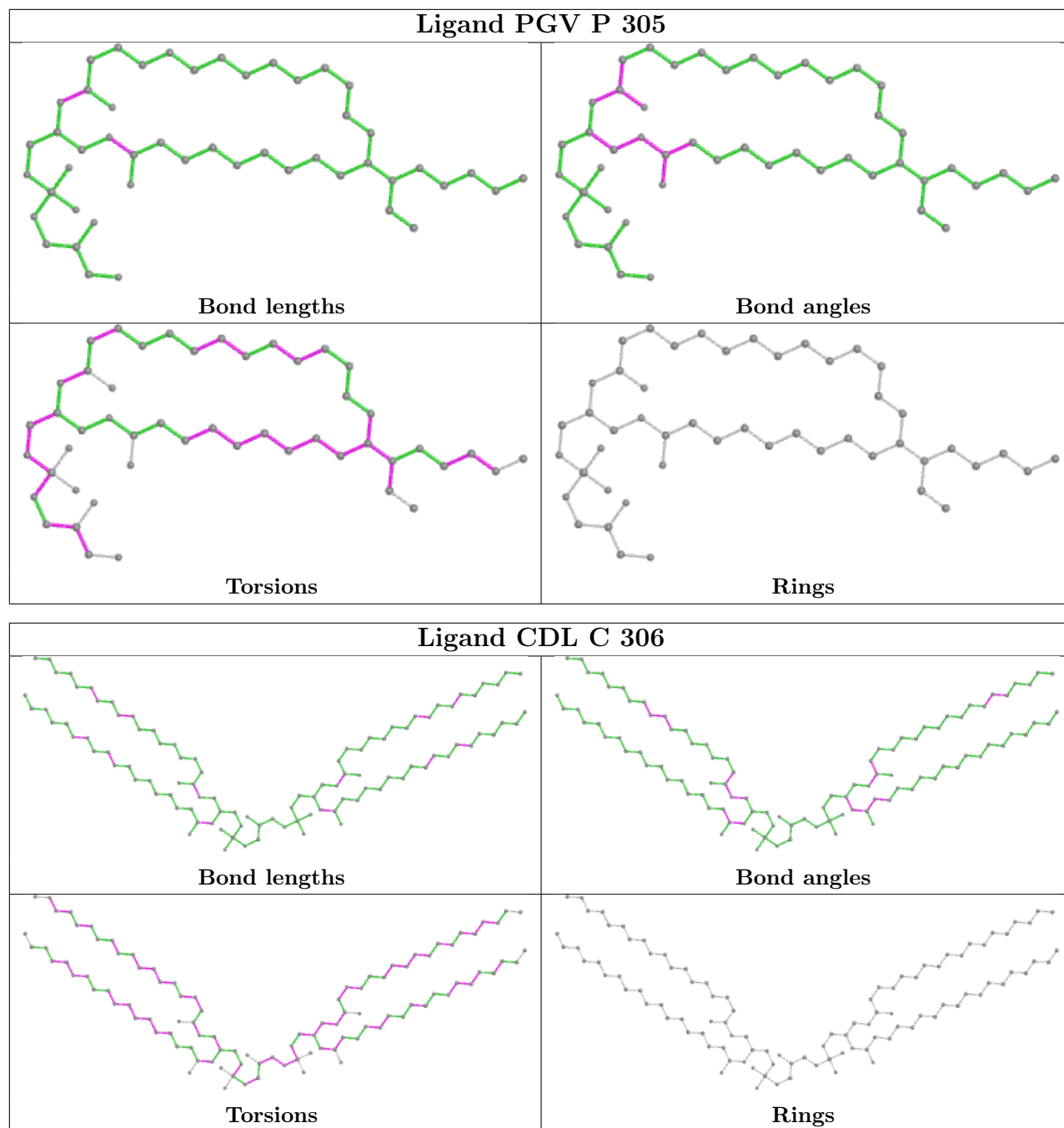


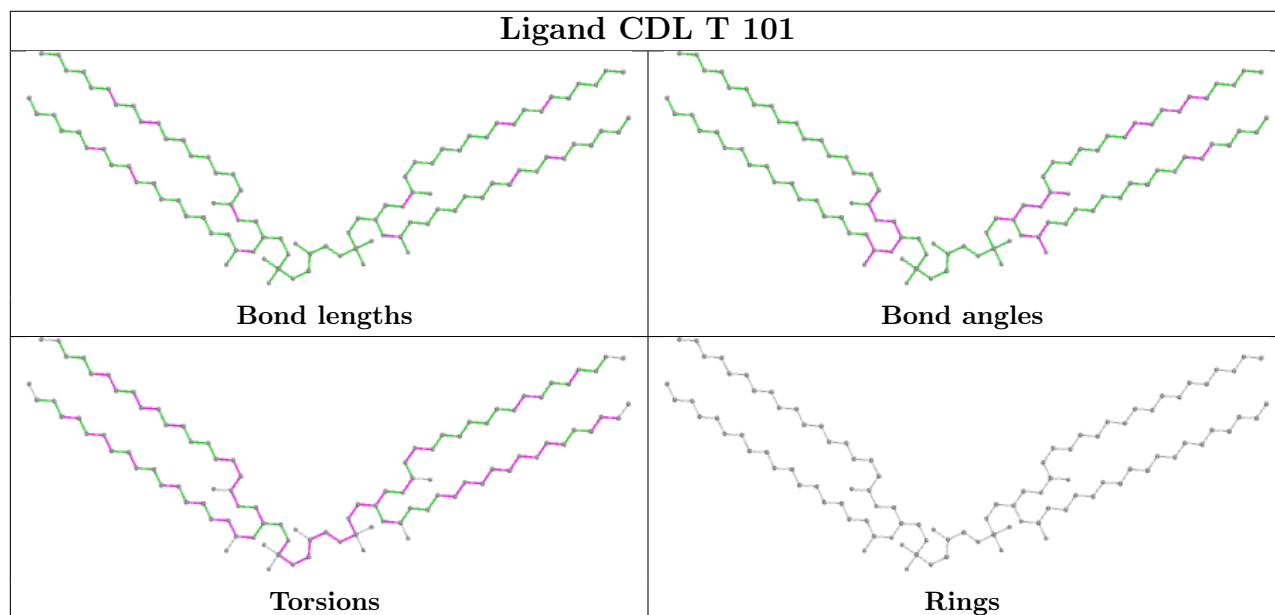
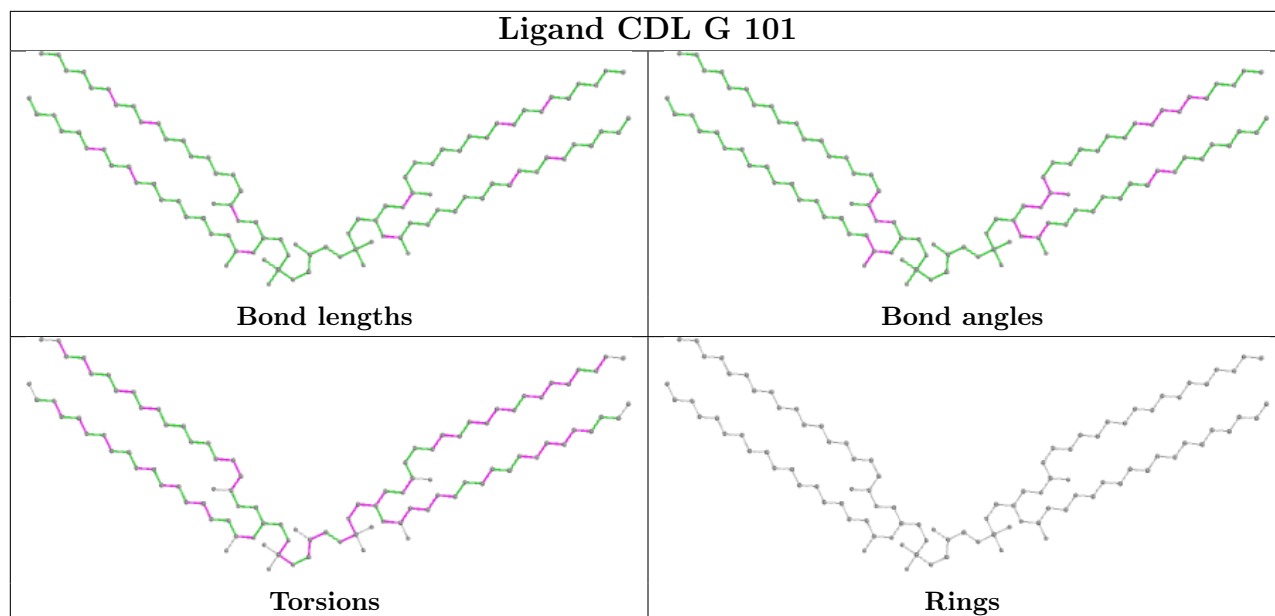


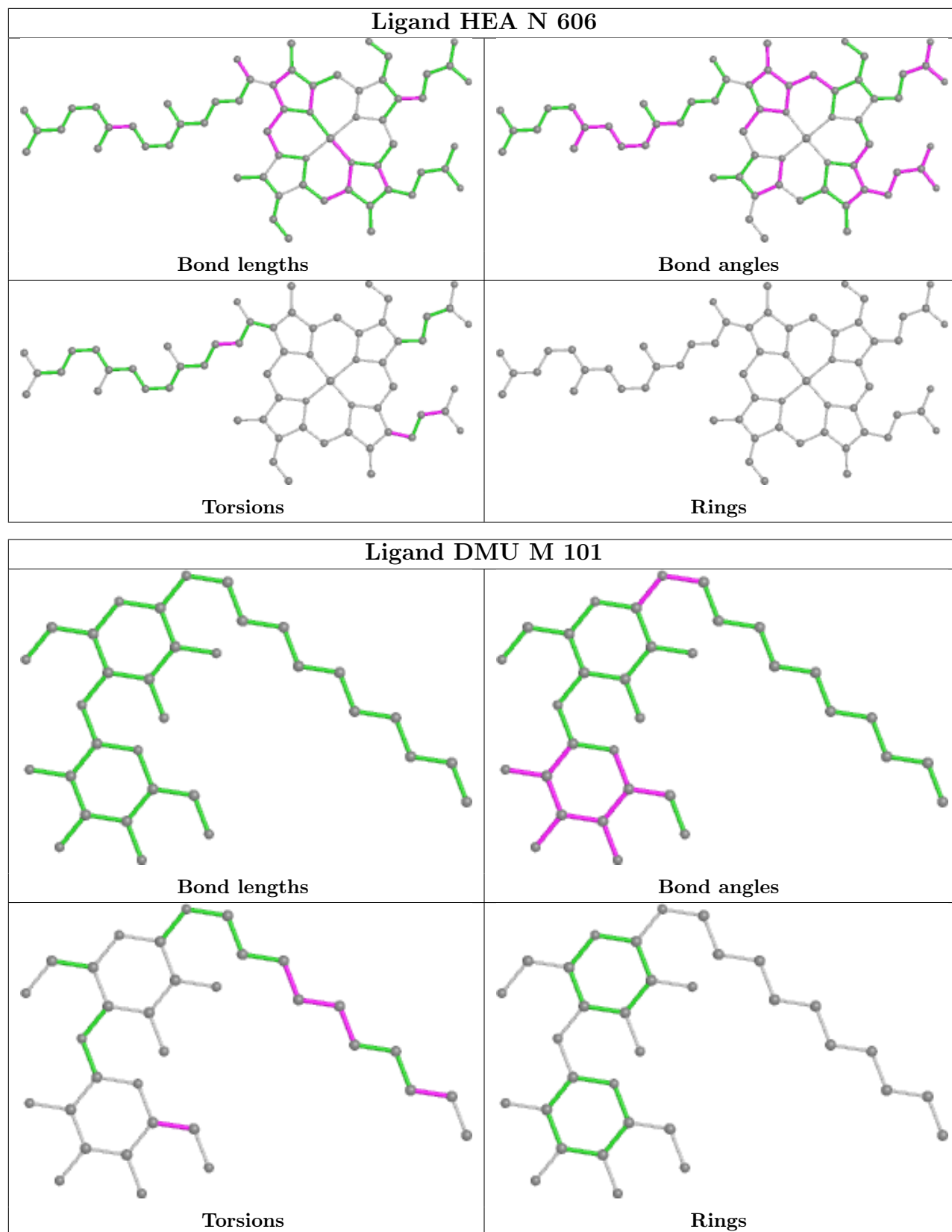


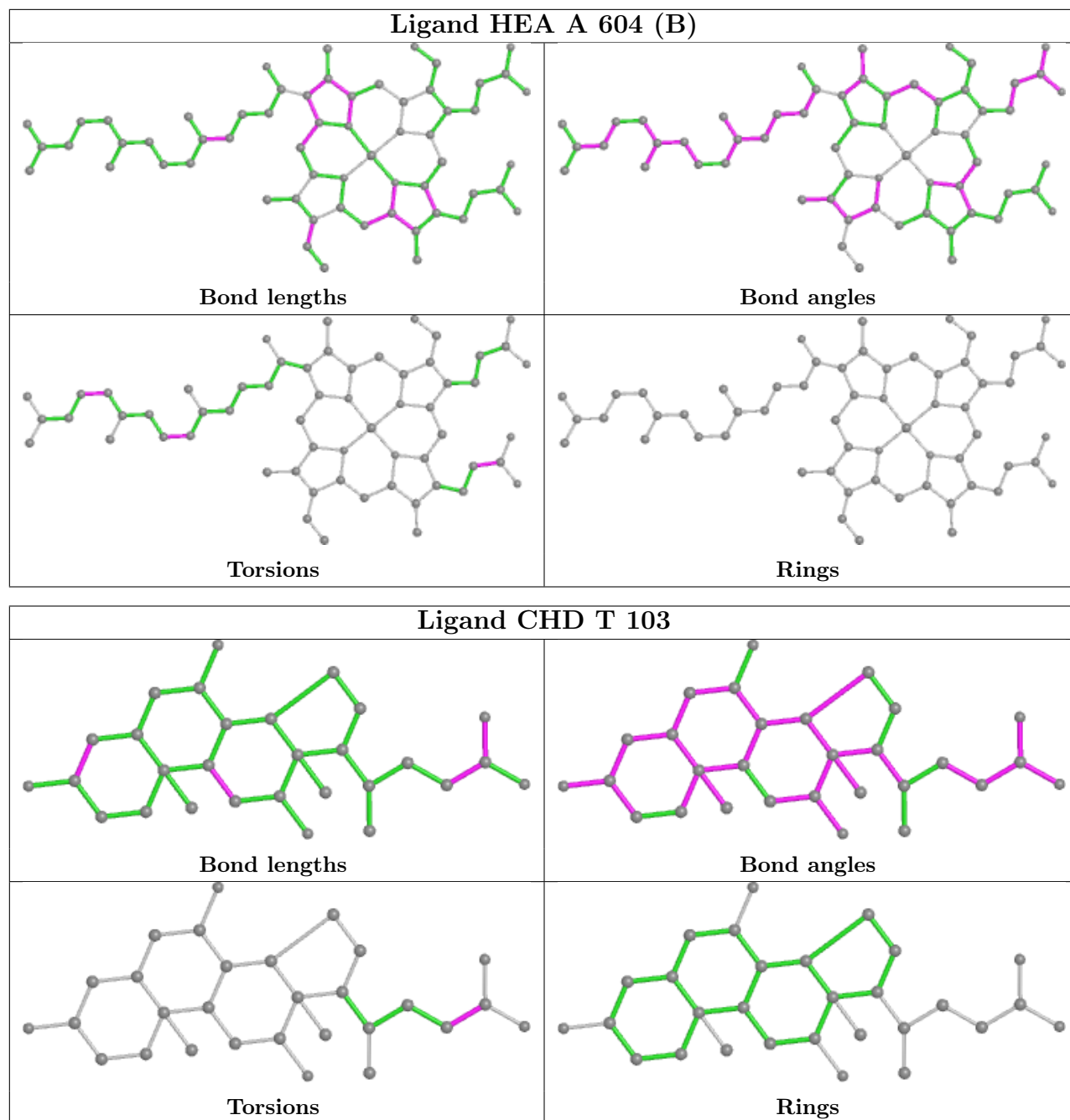


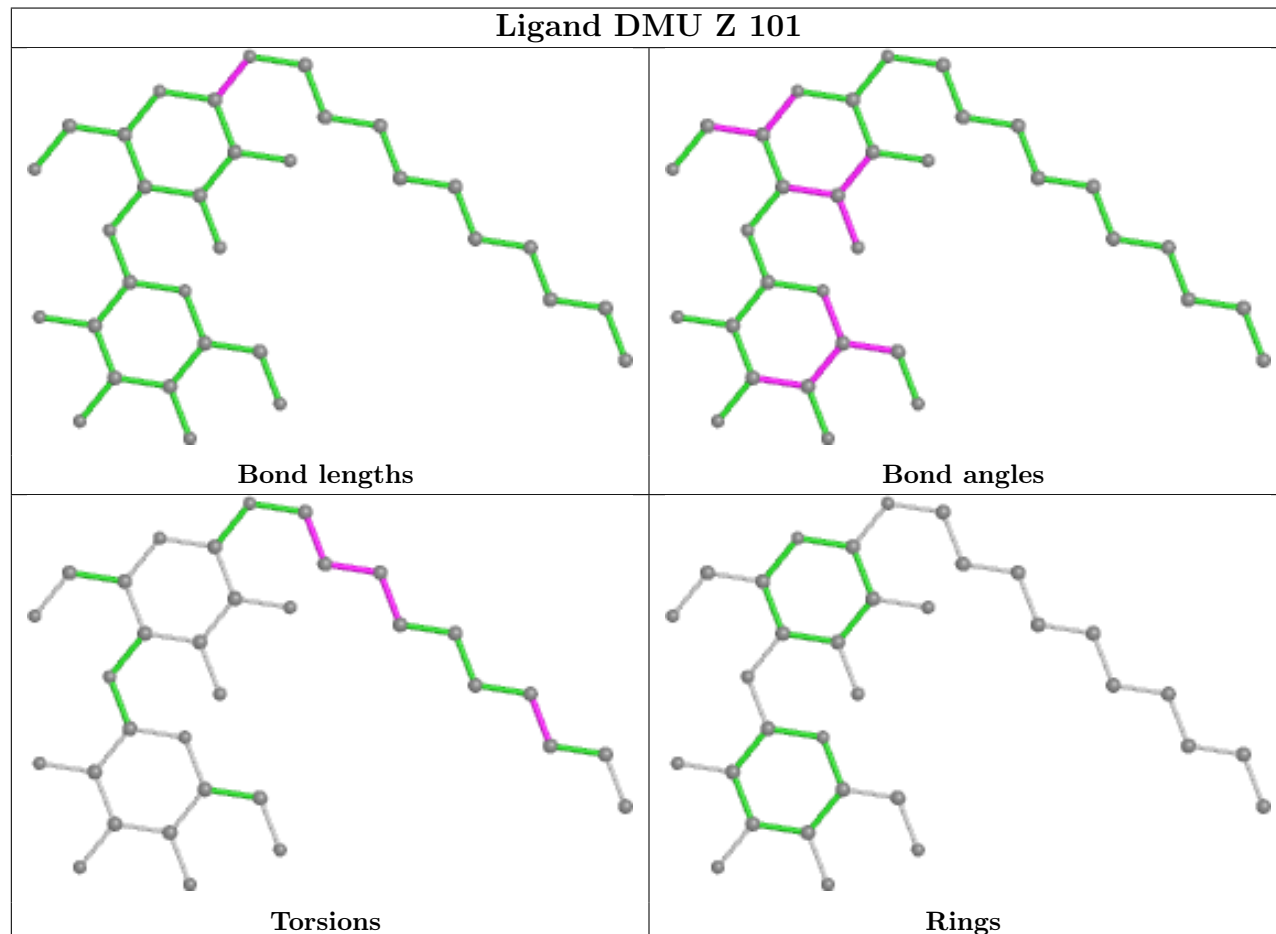
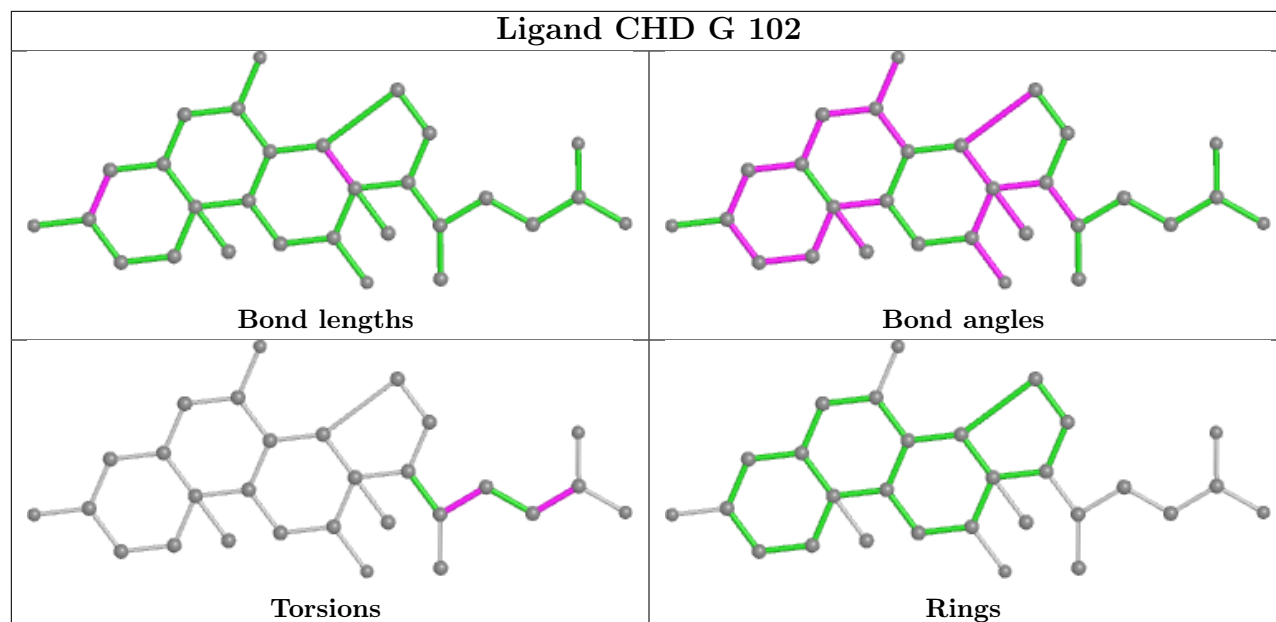


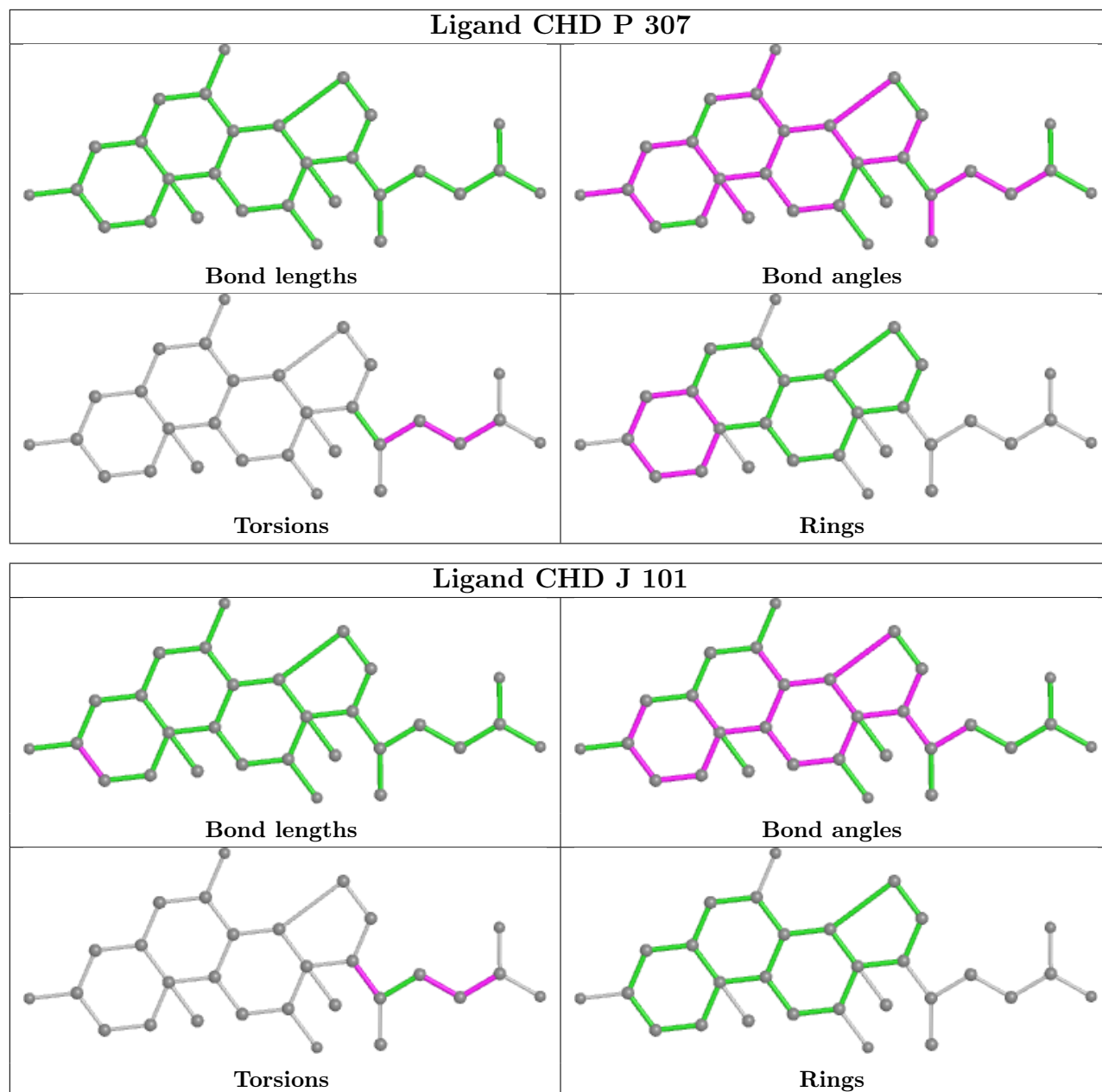




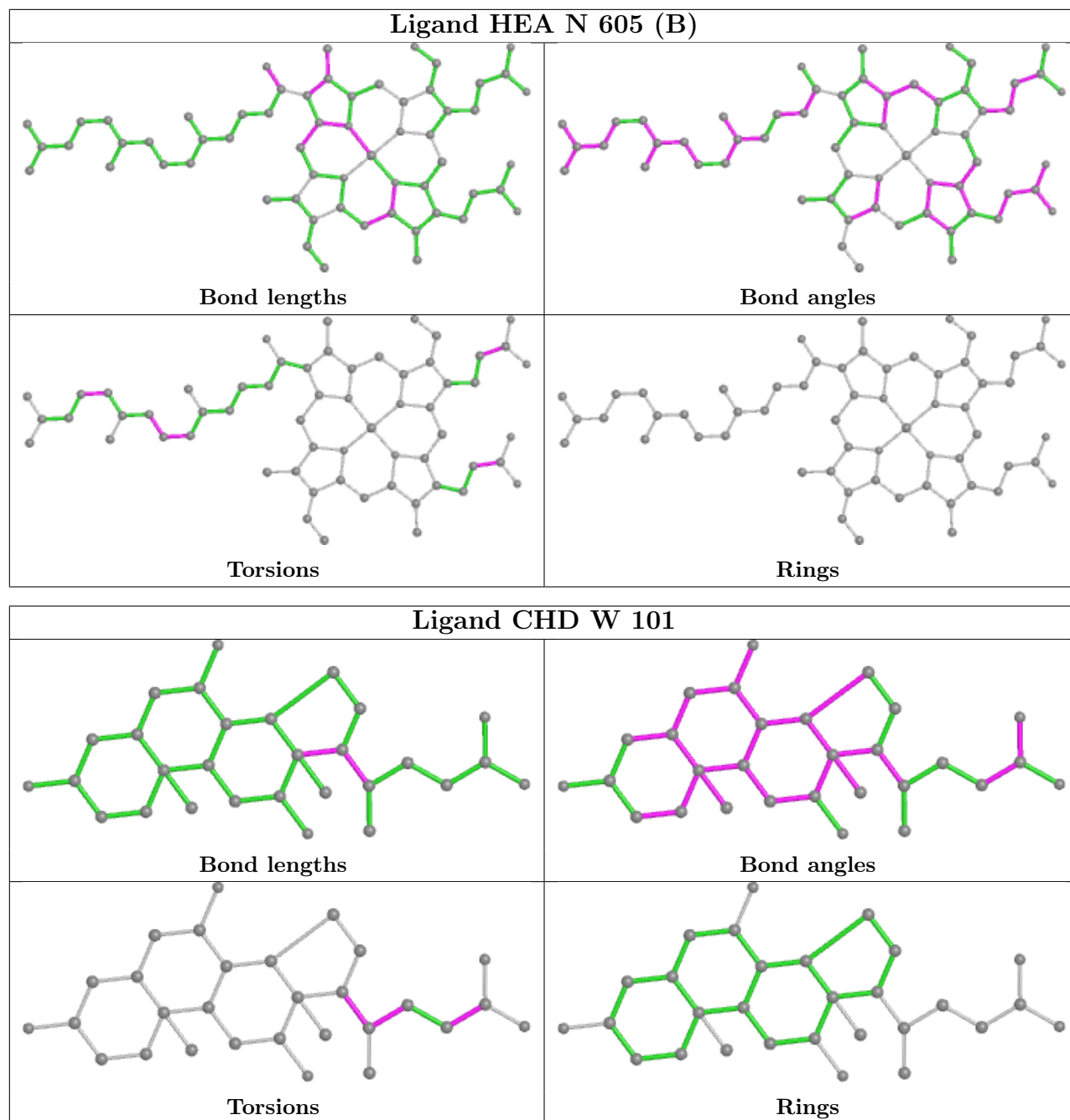


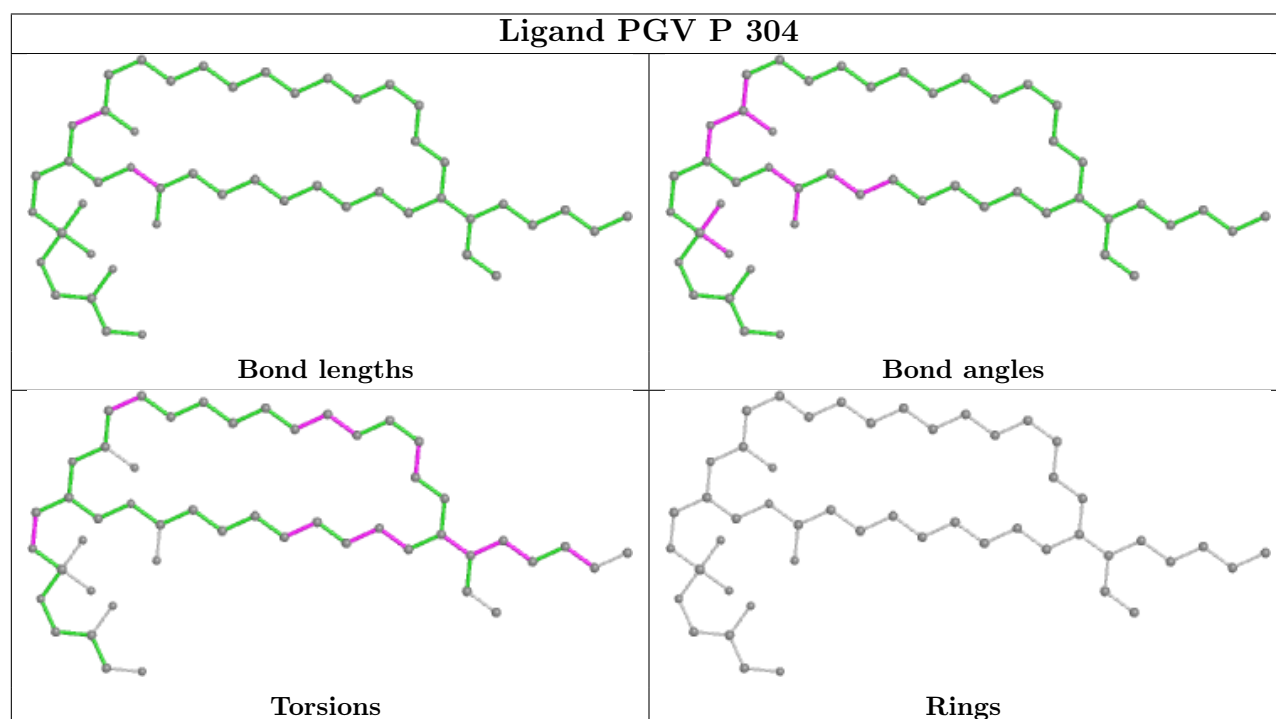
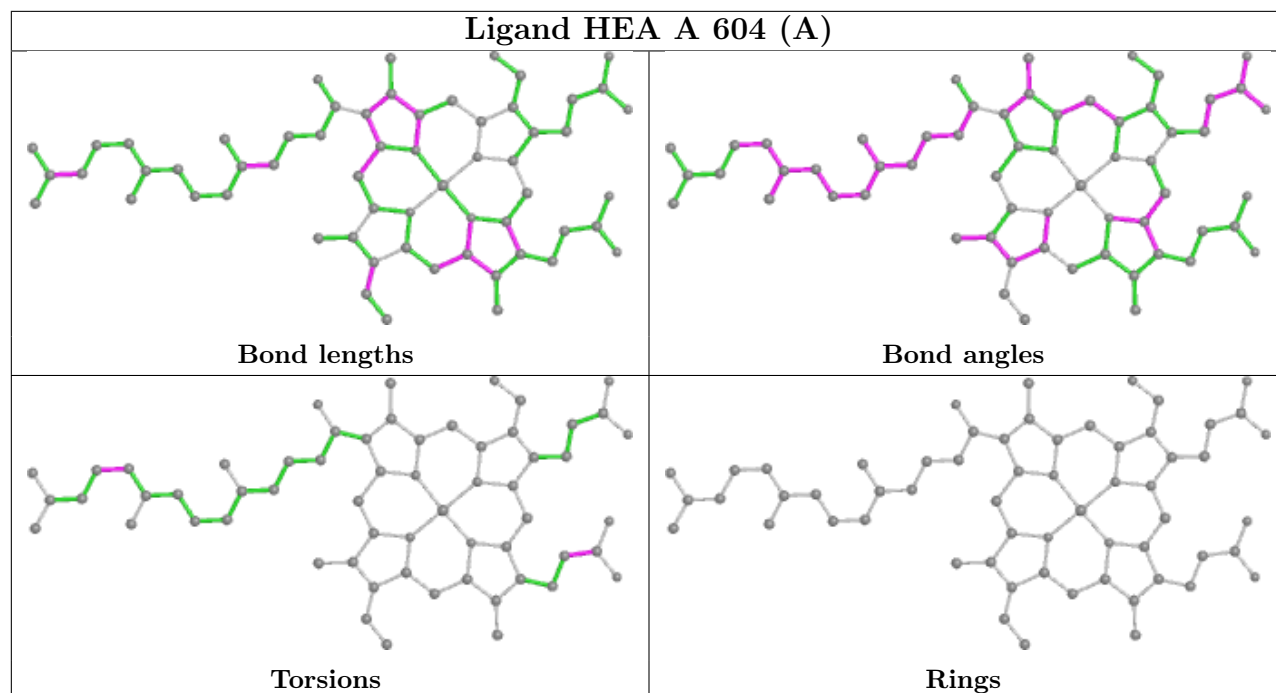


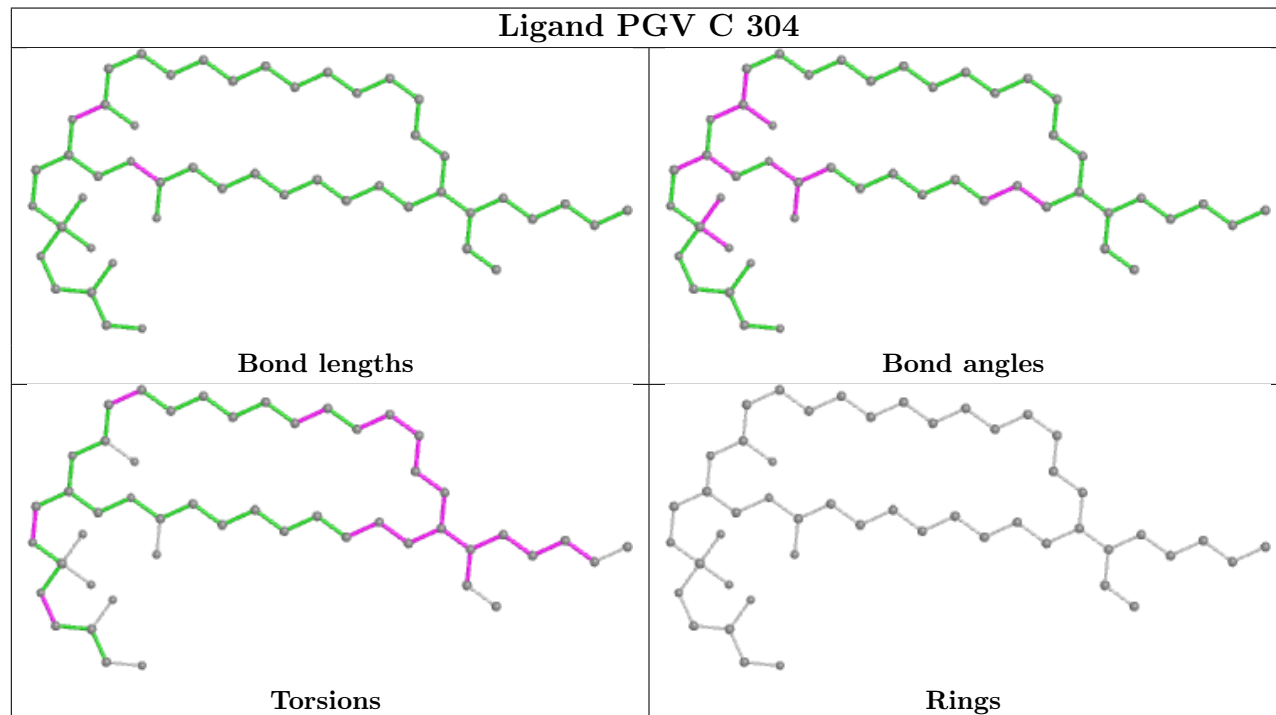
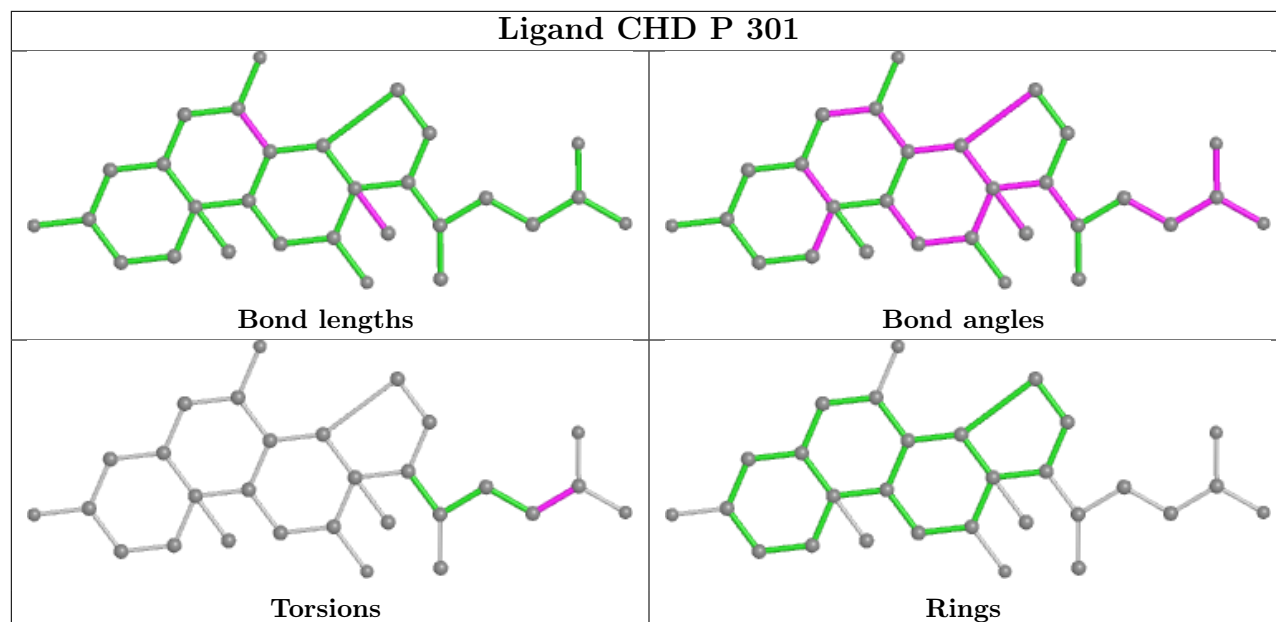


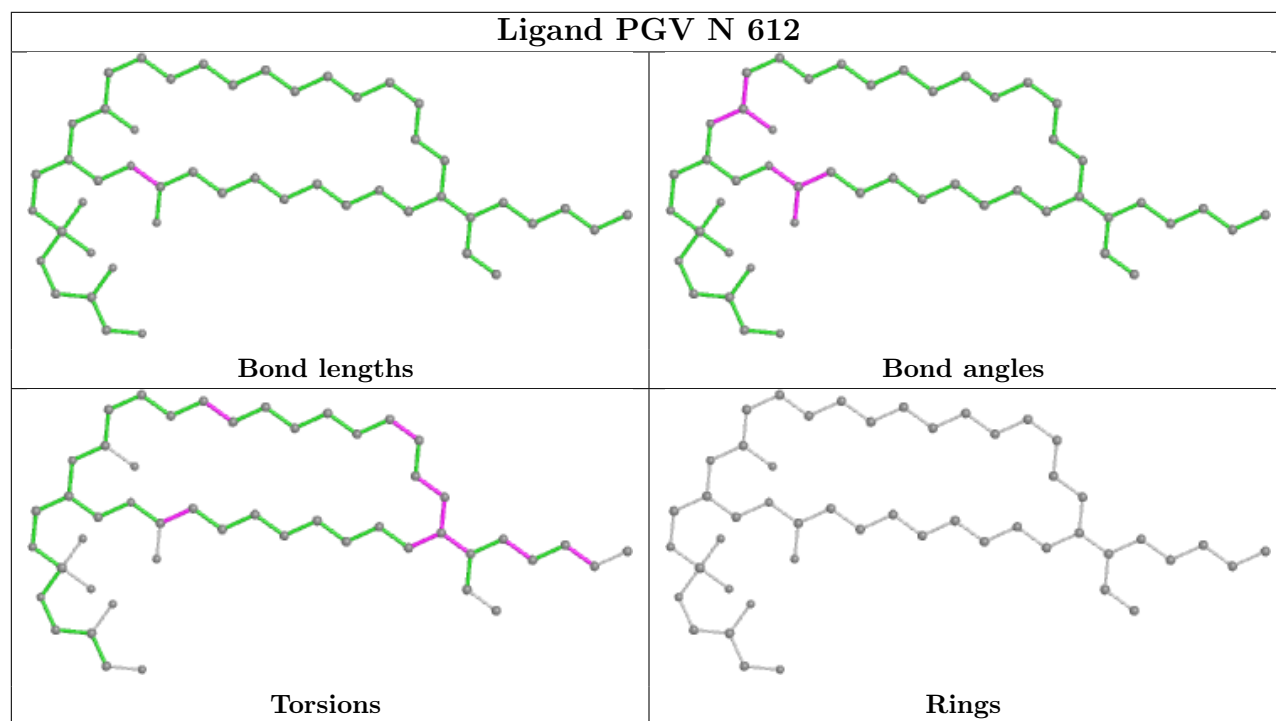
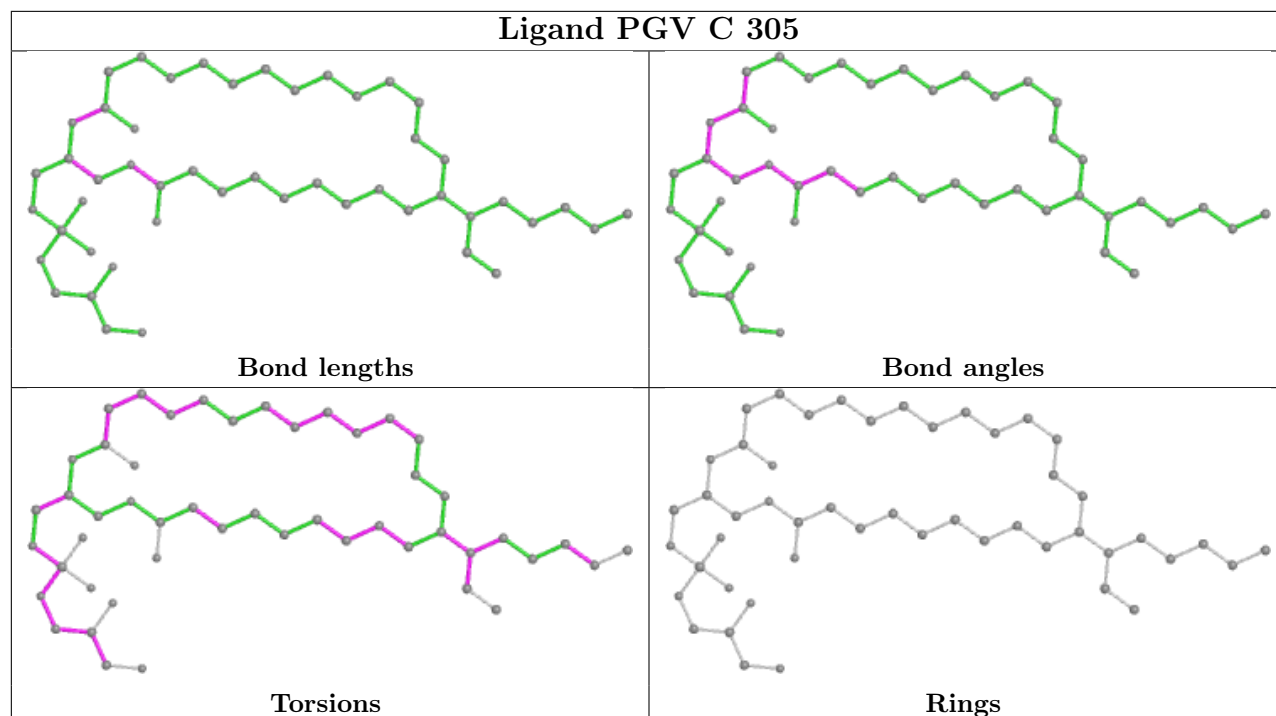


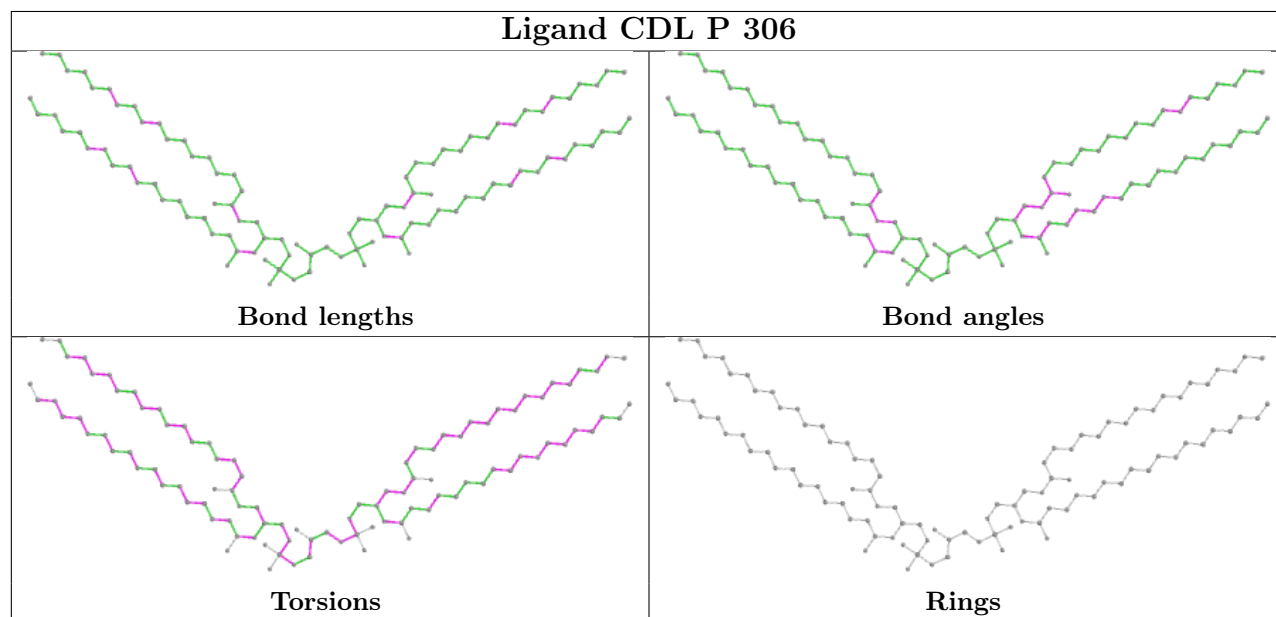
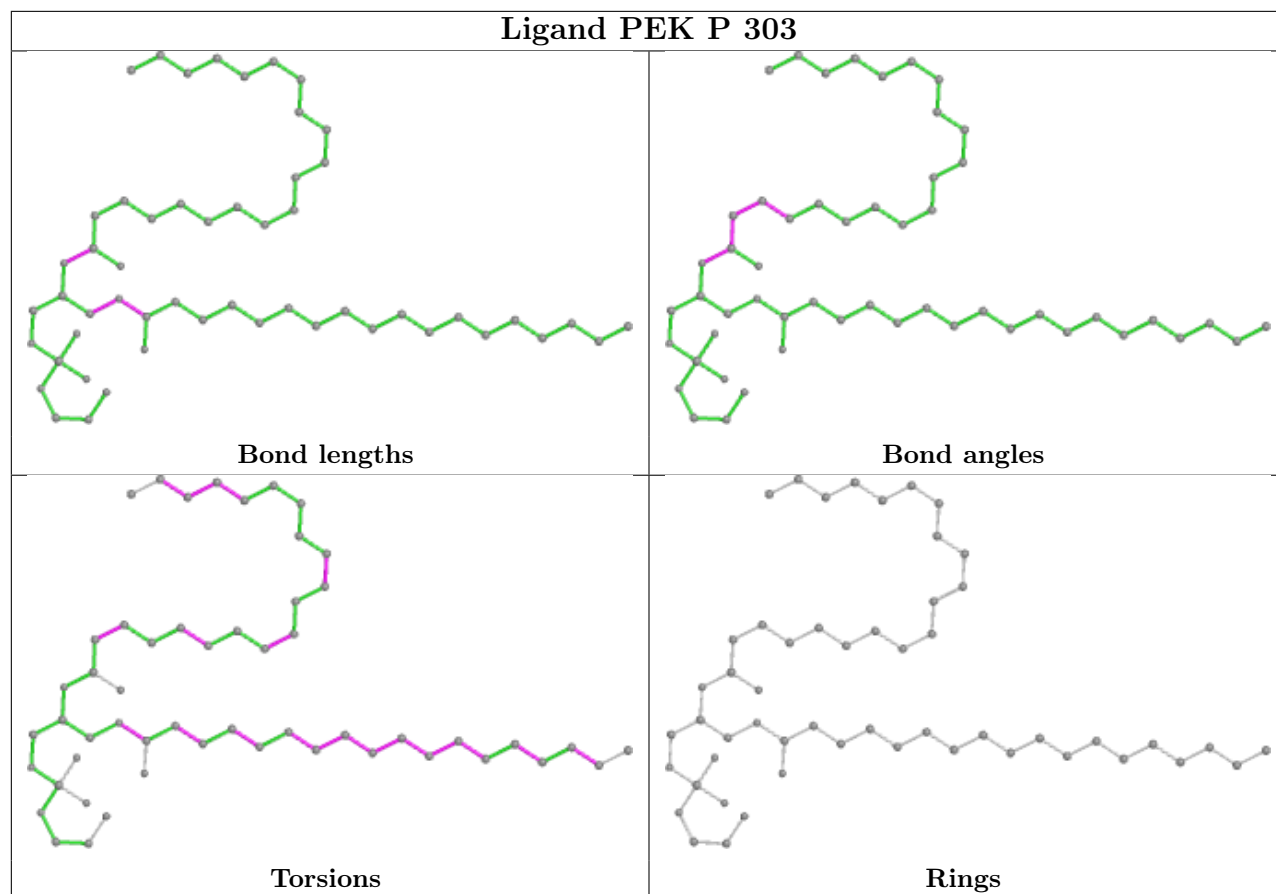


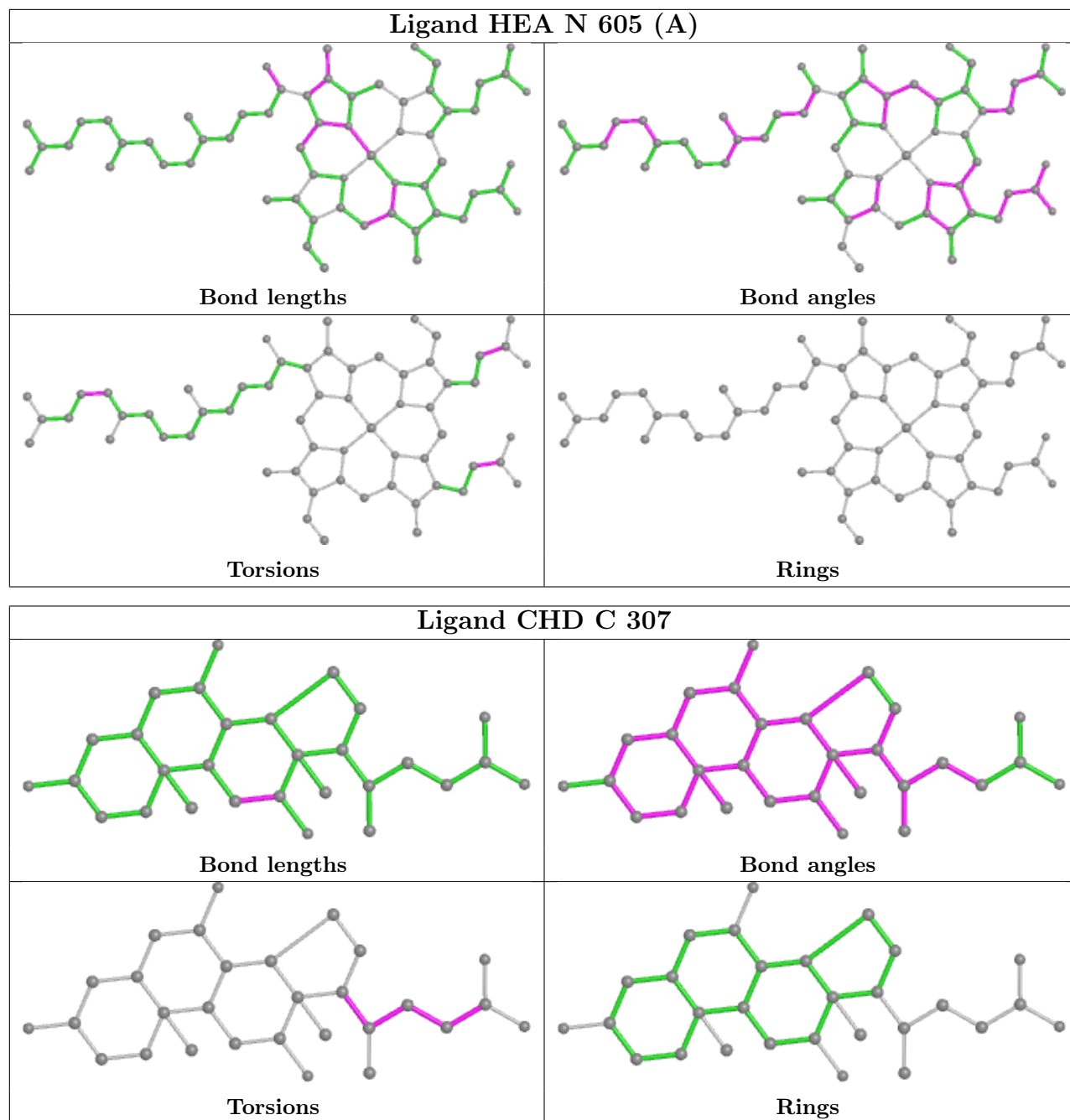


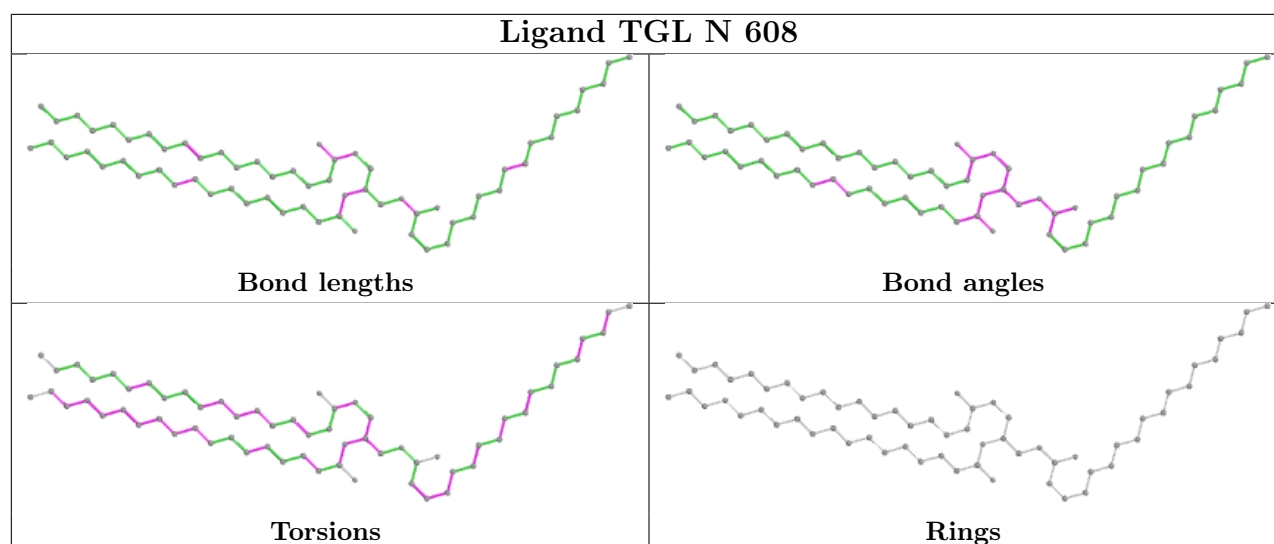












## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Fit of model and data i

### 6.1 Protein, DNA and RNA chains i

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	A	513/514 (99%)	0.21	21 (4%) 37 36	22, 30, 39, 74	0
1	N	513/514 (99%)	0.23	26 (5%) 28 27	27, 36, 48, 71	0
2	B	226/227 (99%)	-0.34	3 (1%) 77 76	26, 35, 59, 109	0
2	O	226/227 (99%)	-0.15	2 (0%) 84 83	34, 49, 78, 98	0
3	C	259/259 (100%)	-0.54	2 (0%) 86 85	26, 35, 48, 83	0
3	P	259/259 (100%)	-0.55	4 (1%) 73 72	28, 38, 52, 87	0
4	D	144/144 (100%)	-0.53	5 (3%) 44 43	30, 38, 63, 144	0
4	Q	144/144 (100%)	0.16	13 (9%) 9 8	32, 50, 81, 139	0
5	E	105/105 (100%)	-0.42	2 (1%) 66 65	30, 38, 62, 134	0
5	R	105/105 (100%)	-0.61	1 (0%) 82 81	33, 41, 62, 123	0
6	F	98/98 (100%)	-0.05	8 (8%) 11 11	30, 40, 95, 141	0
6	S	98/98 (100%)	0.25	8 (8%) 11 11	32, 45, 106, 141	0
7	G	83/84 (98%)	0.56	16 (19%) 1 0	34, 44, 116, 138	0
7	T	83/84 (98%)	0.80	17 (20%) 1 0	31, 47, 111, 136	0
8	H	79/79 (100%)	-0.11	7 (8%) 9 8	33, 43, 90, 106	0
8	U	79/79 (100%)	-0.18	2 (2%) 57 56	38, 49, 69, 137	0
9	I	72/73 (98%)	-0.15	3 (4%) 36 35	33, 46, 66, 79	0
9	V	72/73 (98%)	0.99	11 (15%) 2 1	36, 63, 85, 111	0
10	J	58/58 (100%)	0.36	7 (12%) 4 3	36, 46, 75, 135	0
10	W	58/58 (100%)	0.72	8 (13%) 2 2	39, 53, 84, 144	0
11	K	49/49 (100%)	-0.15	3 (6%) 21 20	35, 42, 58, 70	0
11	X	49/49 (100%)	0.61	4 (8%) 11 11	47, 58, 77, 78	0
12	L	46/46 (100%)	-0.53	1 (2%) 62 60	30, 38, 59, 104	0
12	Y	46/46 (100%)	-0.50	1 (2%) 62 60	36, 46, 69, 111	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
13	M	43/43 (100%)	-0.20	2 (4%) 31 30	32, 40, 79, 127	0
13	Z	43/43 (100%)	-0.05	3 (6%) 16 15	36, 50, 81, 108	0
14	1	104/105 (99%)	2.81	65 (62%) 0 0	45, 90, 118, 125	0
14	2	104/105 (99%)	4.61	79 (75%) 0 0	67, 115, 139, 147	0
All	All	3758/3768 (99%)	0.17	324 (8%) 10 9	22, 40, 98, 147	0

All (324) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
4	Q	5	VAL	13.5
4	Q	7	LYS	13.3
6	S	1	ALA	13.3
10	W	57	HIS	12.5
14	2	57	ILE	12.1
14	2	35	LEU	11.9
6	S	98	HIS	11.8
14	2	58	THR	11.3
6	F	1	ALA	10.7
10	J	58	LYS	10.5
14	2	36	PHE	10.4
6	S	97	ALA	10.3
10	J	57	HIS	10.3
14	2	32	LEU	10.2
6	S	96	LEU	10.1
14	2	95	ILE	9.7
4	Q	6	VAL	9.6
14	2	59	TRP	9.3
6	F	98	HIS	9.1
14	2	40	THR	9.0
9	V	30	GLY	8.8
14	2	43	ALA	8.6
14	2	22	LYS	8.4
14	2	64	LEU	8.3
6	F	97	ALA	8.3
7	T	10	GLY	8.3
14	2	46	PHE	8.2
5	E	5	HIS	8.1
14	2	74	TYR	7.9
14	2	33	HIS	7.9
14	2	38	ARG	7.8
7	G	3	ALA	7.7

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
4	D	5	VAL	7.6
14	2	103	ASN	7.6
14	1	37	GLY	7.5
14	2	76	PRO	7.5
14	2	104	GLU	7.3
8	U	8	ILE	7.3
14	2	45	GLY	7.1
14	2	39	LYS	7.1
14	1	43	ALA	7.1
6	S	94	HIS	7.1
14	2	1	GLY	7.0
14	2	75	ILE	7.0
14	1	102	THR	7.0
14	1	34	GLY	6.9
14	2	42	GLN	6.7
13	M	43	SER	6.6
14	2	77	GLY	6.5
14	2	21	GLU	6.5
14	2	67	TYR	6.5
14	1	101	ALA	6.5
7	G	40	GLY	6.4
7	T	40	GLY	6.4
6	S	2	SER	6.3
8	U	7	LYS	6.3
10	W	58	LYS	6.2
14	1	42	GLN	6.2
14	2	102	THR	6.2
14	1	58	THR	6.1
14	1	95	ILE	6.1
7	G	10	GLY	6.1
14	1	36	PHE	6.1
14	2	98	LEU	6.1
14	2	101	ALA	6.1
7	T	42	ARG	6.1
14	2	19	THR	6.0
14	2	37	GLY	6.0
14	1	57	ILE	6.0
14	1	53	LYS	5.9
14	2	23	GLY	5.9
14	2	20	VAL	5.8
14	2	61	GLU	5.8
14	2	55	LYS	5.8

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
14	2	3	VAL	5.8
14	2	97	TYR	5.7
14	1	47	THR	5.7
14	2	96	ALA	5.6
5	R	5	HIS	5.6
9	V	33	THR	5.6
14	1	74	TYR	5.5
4	Q	4	SER	5.5
4	D	4	SER	5.5
7	G	36	TRP	5.5
14	2	34	GLY	5.4
4	D	7	LYS	5.4
7	G	39	SER	5.4
14	2	44	PRO	5.4
14	2	99	LYS	5.3
14	1	24	GLY	5.3
14	2	24	GLY	5.3
14	2	63	THR	5.3
14	1	41	GLY	5.2
14	2	18	HIS	5.2
14	2	56	GLY	5.2
14	2	68	LEU	5.2
7	G	2	SER	5.1
9	V	2	THR	5.1
6	F	2	SER	5.1
14	2	28	THR	5.1
14	1	98	LEU	5.1
14	2	60	LYS	5.1
14	2	78	THR	5.0
14	1	99	LYS	5.0
14	1	46	PHE	4.9
14	1	40	THR	4.9
4	Q	8	SER	4.9
14	1	35	LEU	4.9
8	H	48	GLY	4.9
14	1	3	VAL	4.8
14	2	25	LYS	4.8
14	2	54	ASN	4.7
14	1	33	HIS	4.7
7	T	36	TRP	4.7
14	1	32	LEU	4.7
14	1	59	TRP	4.7

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
6	F	96	LEU	4.6
4	Q	147	LYS	4.6
7	G	9	GLY	4.6
7	T	84	LYS	4.6
14	2	48	TYR	4.6
7	G	5	LYS	4.5
8	H	45	ALA	4.5
14	1	44	PRO	4.5
14	2	71	PRO	4.5
14	2	62	GLU	4.5
7	T	37	LEU	4.5
14	2	65	MET	4.5
14	2	26	HIS	4.5
7	G	41	HIS	4.4
14	1	54	ASN	4.4
14	1	39	LYS	4.4
7	T	41	HIS	4.4
10	W	55	PHE	4.4
14	1	96	ALA	4.3
7	T	2	SER	4.3
10	W	1	PHE	4.3
14	1	50	ASP	4.3
14	1	62	GLU	4.2
2	O	227	LEU	4.2
14	1	68	LEU	4.2
4	D	6	VAL	4.2
14	2	41	GLY	4.2
14	1	48	TYR	4.2
9	V	32	ALA	4.1
12	Y	47	LYS	4.1
10	J	1	PHE	4.1
14	1	51	ALA	4.1
9	I	30	GLY	4.1
7	T	39	SER	4.1
14	2	47	THR	4.1
2	B	59	GLN	4.0
9	I	37	PHE	4.0
14	1	25	LYS	4.0
10	W	48	TYR	4.0
14	1	38	ARG	4.0
14	1	1	GLY	3.9
14	1	104	GLU	3.9

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
14	2	4	GLU	3.9
8	H	49	ASP	3.8
14	1	49	THR	3.8
10	J	56	PRO	3.8
6	F	95	GLN	3.8
14	2	30	PRO	3.8
14	2	49	THR	3.7
14	2	100	LYS	3.7
14	2	94	LEU	3.7
9	V	37	PHE	3.7
14	2	72	LYS	3.7
6	S	93	PRO	3.7
4	Q	102	TYR	3.7
14	2	15	ALA	3.7
9	V	34	PHE	3.7
4	Q	101	HIS	3.6
7	G	42	ARG	3.6
2	O	113	TYR	3.6
7	T	38	HIS	3.6
14	1	23	GLY	3.5
14	1	56	GLY	3.5
14	2	29	GLY	3.5
3	P	3	HIS	3.5
14	2	66	GLU	3.5
14	1	64	LEU	3.4
11	K	7	PRO	3.4
14	2	52	ASN	3.4
1	A	113[A]	LEU	3.4
14	1	103	ASN	3.4
14	1	100	LYS	3.4
7	T	9	GLY	3.3
14	2	31	ASN	3.3
14	2	2	ASP	3.3
1	N	199	LEU	3.2
7	G	84	LYS	3.2
13	Z	42	LYS	3.2
8	H	8	ILE	3.2
14	1	63	THR	3.2
7	G	4	ALA	3.2
6	S	95	GLN	3.1
14	2	53	LYS	3.1
14	1	60	LYS	3.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
6	F	94	HIS	3.1
13	Z	35	TYR	3.1
1	A	73	ILE	3.1
7	T	3	ALA	3.0
10	W	56	PRO	3.0
14	1	61	GLU	3.0
1	N	374	VAL	3.0
12	L	47	LYS	3.0
14	1	55	LYS	3.0
7	T	8	HIS	2.9
14	1	52	ASN	2.9
7	T	43	GLU	2.9
4	Q	140	TYR	2.9
8	H	47	GLY	2.9
9	I	33	THR	2.8
14	1	97	TYR	2.8
5	E	109	VAL	2.8
10	W	52	TRP	2.8
11	X	6	ALA	2.8
14	2	73	LYS	2.8
14	1	45	GLY	2.8
14	1	22	LYS	2.8
14	2	10	PHE	2.7
14	2	88	LYS	2.7
13	Z	43	SER	2.7
2	B	58	ALA	2.7
7	G	38	HIS	2.7
14	1	66	GLU	2.7
14	1	26	HIS	2.7
14	1	65	MET	2.7
9	V	53	ASN	2.7
1	N	373	VAL	2.6
14	1	2	ASP	2.6
8	H	46	LYS	2.6
7	T	4	ALA	2.6
10	J	2	GLU	2.6
7	G	37	LEU	2.6
14	2	79	LYS	2.6
4	Q	87	PHE	2.6
14	1	4	GLU	2.6
1	N	377	PHE	2.5
4	Q	138	TRP	2.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
8	H	43	MET	2.5
1	N	63	PHE	2.5
7	G	1	ALA	2.5
10	W	4	ARG	2.5
11	X	27	ALA	2.4
14	1	89	THR	2.4
1	A	82	LEU	2.4
1	N	246	LEU	2.4
1	A	386	VAL	2.4
1	A	70	VAL	2.4
1	N	66	ILE	2.4
14	1	67	TYR	2.4
14	2	92	GLU	2.4
9	V	42	LYS	2.4
3	C	37	PHE	2.4
9	V	65	LYS	2.4
1	N	126	TRP	2.4
14	1	93	ASP	2.4
1	N	127	THR	2.3
6	F	3	GLY	2.3
3	P	41	THR	2.3
1	A	199	LEU	2.3
1	N	238	PHE	2.3
11	X	23	THR	2.3
14	1	6	GLY	2.3
3	P	40	MET	2.2
14	2	50	ASP	2.2
1	A	247	ILE	2.2
1	N	245	ILE	2.2
1	N	247	ILE	2.2
1	N	202	LEU	2.2
3	P	38	ASN	2.2
13	M	42	LYS	2.2
9	V	36	LYS	2.2
9	V	31	PHE	2.2
1	A	389	ILE	2.2
1	A	150	LEU	2.2
1	A	78	PHE	2.2
1	N	372	TYR	2.2
14	1	20	VAL	2.2
14	2	91	ARG	2.2
14	2	69	GLU	2.2

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Mol	Chain	Res	Type	RSRZ
1	A	245	ILE	2.2
1	A	196	LEU	2.2
1	N	128	VAL	2.2
1	A	74	MET	2.2
1	A	197	LEU	2.1
1	N	150	LEU	2.1
14	1	88	LYS	2.1
10	J	55	PHE	2.1
3	C	261	SER	2.1
4	Q	141	ASP	2.1
1	A	195	LEU	2.1
1	N	113[A]	LEU	2.1
11	K	6	ALA	2.1
1	A	190	ILE	2.1
1	N	248	LEU	2.1
1	A	188	VAL	2.1
10	J	48	TYR	2.1
1	N	206	ILE	2.1
1	A	388	ALA	2.1
4	Q	46	ALA	2.1
1	N	251	PHE	2.1
7	T	5	LYS	2.1
14	1	92	GLU	2.0
1	A	72	PRO	2.0
1	N	190	ILE	2.0
7	T	33	LEU	2.0
14	1	94	LEU	2.0
1	N	370	THR	2.0
11	K	23	THR	2.0
11	X	34	THR	2.0
1	N	243	VAL	2.0
2	B	61	VAL	2.0
1	N	244	TYR	2.0
14	1	79	LYS	2.0
1	A	126	TRP	2.0
1	N	191	THR	2.0
1	N	389	ILE	2.0
7	G	33	LEU	2.0
1	A	193	VAL	2.0
4	D	147	LYS	2.0



## 6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
9	SAC	V	1	9/10	0.31	0.92	131,137,150,153	0
7	TPO	T	11	11/12	0.45	0.35	85,109,117,125	0
7	TPO	G	11	11/12	0.50	0.33	81,97,160,160	0
9	SAC	I	1	9/10	0.75	0.39	98,106,110,119	0
1	FME	A	1	10/11	0.95	0.13	40,52,71,88	0
1	FME	N	1	10/11	0.96	0.17	43,61,73,95	0
2	FME	B	1	10/11	0.98	0.10	30,35,39,51	0
2	FME	O	1	10/11	0.98	0.14	49,56,65,78	0

## 6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 6.4 Ligands [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
17	NA	P	302	1/1	0.55	0.51	57,57,57,57	0
17	NA	C	302	1/1	0.59	0.57	59,59,59,59	0
26	CDL	G	101	100/100	0.66	0.30	58,103,158,163	0
27	UNL	P	309	16/-	0.68	0.17	70,79,89,95	0
24	CHD	W	101	29/29	0.70	0.43	73,114,126,130	0
26	CDL	T	101	100/100	0.73	0.25	61,95,153,161	0
27	UNL	J	102	10/-	0.73	0.29	61,65,77,92	0
20	PGV	P	305	51/51	0.73	0.24	54,86,135,150	0
21	TGL	Q	201	63/63	0.74	0.21	52,82,104,109	0
20	PGV	C	305	51/51	0.74	0.24	55,80,122,138	0
27	UNL	N	601	17/-	0.76	0.18	52,60,83,85	0
21	TGL	D	201	63/63	0.76	0.22	47,70,101,105	0
27	UNL	T	102	18/-	0.76	0.18	47,66,85,92	0
28	PSC	E	201	52/52	0.76	0.26	50,79,162,163	0

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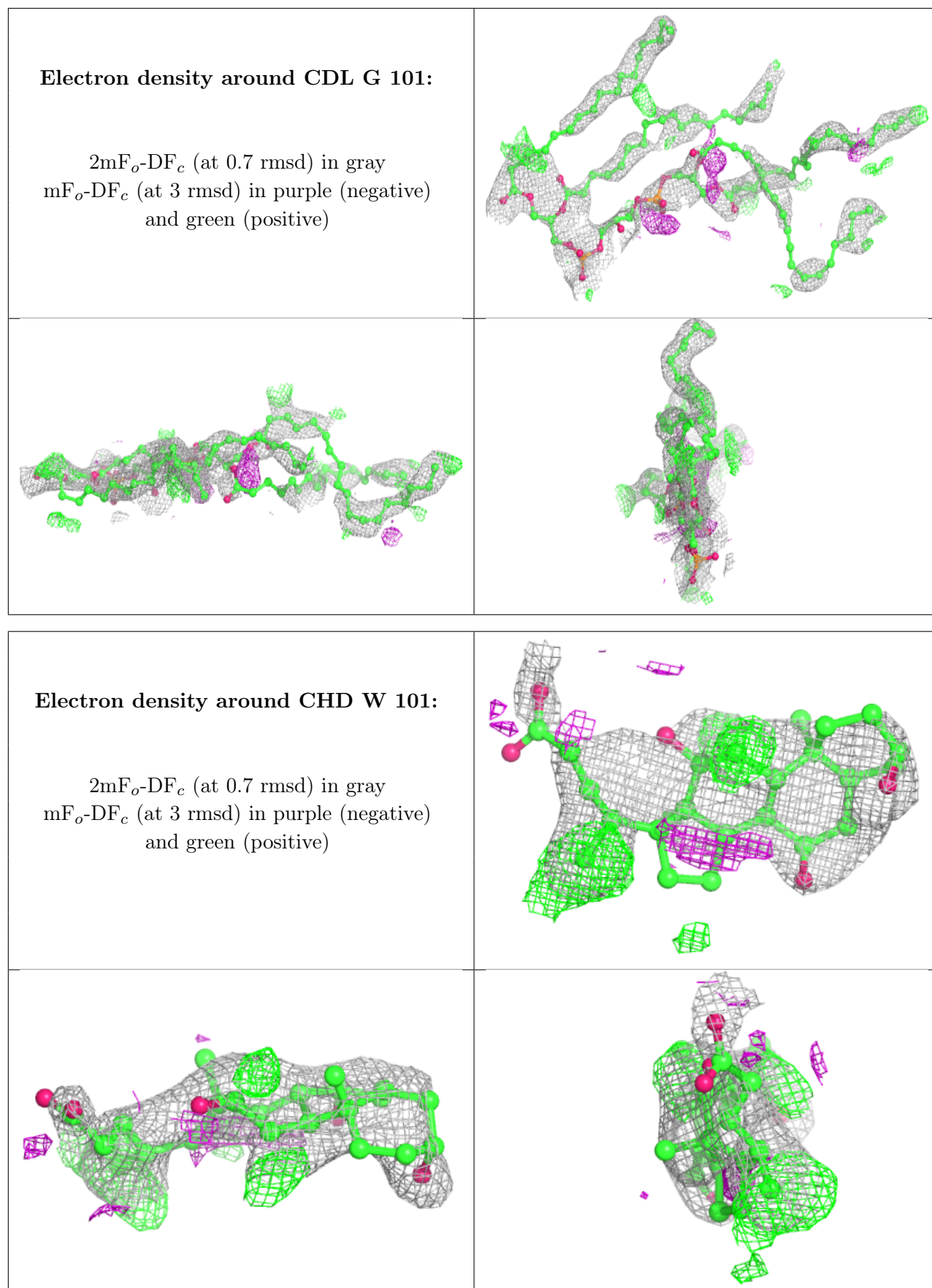
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
30	DMU	Z	101	33/33	0.76	0.30	55,76,107,113	0
27	UNL	C	309	17/-	0.77	0.16	60,71,87,90	0
27	UNL	N	609	16/-	0.77	0.32	54,59,79,85	0
20	PGV	A	607	51/51	0.77	0.30	44,84,151,159	0
27	UNL	Y	101	10/-	0.78	0.40	69,76,86,94	0
21	TGL	L	101	63/63	0.78	0.26	45,70,98,107	0
27	UNL	W	102	9/-	0.78	0.24	59,62,79,82	0
27	UNL	C	310	7/-	0.79	0.34	41,64,76,83	0
26	CDL	P	306	100/100	0.79	0.27	49,97,149,159	0
27	UNL	L	102	10/-	0.80	0.27	61,75,82,86	0
28	PSC	V	101	52/52	0.82	0.23	49,77,145,166	0
24	CHD	C	307	29/29	0.82	0.26	73,85,93,99	0
23	EDO	I	101	4/4	0.83	0.14	55,59,63,72	0
26	CDL	C	306	100/100	0.83	0.23	51,86,124,152	0
21	TGL	N	608	63/63	0.83	0.19	51,73,104,115	0
27	UNL	N	611	12/-	0.84	0.16	48,56,68,69	0
24	CHD	J	101	29/29	0.84	0.32	61,75,106,109	0
27	UNL	C	308	18/-	0.85	0.20	55,66,77,81	0
27	UNL	P	310	7/-	0.85	0.27	53,60,76,88	0
27	UNL	N	610	18/-	0.85	0.19	51,59,69,70	0
23	EDO	E	202	4/4	0.85	0.33	57,61,68,79	0
27	UNL	P	308	20/-	0.86	0.20	58,64,72,73	0
24	CHD	P	307	29/29	0.89	0.29	71,80,88,95	0
21	TGL	B	301	63/63	0.90	0.18	33,68,103,114	0
24	CHD	P	301	29/29	0.91	0.12	40,45,52,55	0
30	DMU	M	101	33/33	0.92	0.14	40,46,62,65	0
25	PEK	C	303	53/53	0.93	0.16	34,48,88,97	0
23	EDO	N	614	4/4	0.93	0.16	56,59,63,85	0
31	HEC	2	201	43/43	0.94	0.26	79,101,135,149	0
20	PGV	P	304	51/51	0.95	0.13	30,46,73,76	0
16	MG	A	602	1/1	0.95	0.21	36,36,36,36	0
31	HEC	1	201	43/43	0.95	0.19	57,81,94,99	0
25	PEK	P	303	53/53	0.95	0.13	39,53,94,101	0
20	PGV	C	304	51/51	0.96	0.12	31,38,95,103	0
24	CHD	T	103	29/29	0.96	0.08	30,36,42,53	0
24	CHD	G	102	29/29	0.96	0.08	35,38,43,52	0
16	MG	N	603	1/1	0.96	0.25	42,42,42,42	0
24	CHD	C	301	29/29	0.96	0.08	34,40,48,53	0
23	EDO	C	311	4/4	0.97	0.08	48,51,51,52	0
20	PGV	A	608	51/51	0.97	0.15	29,41,68,74	0
23	EDO	F	102	4/4	0.97	0.14	45,47,49,49	0
23	EDO	G	103	4/4	0.97	0.09	37,39,49,51	0

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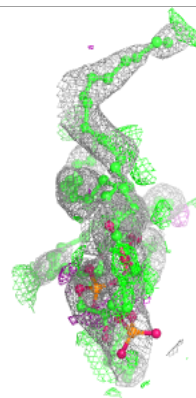
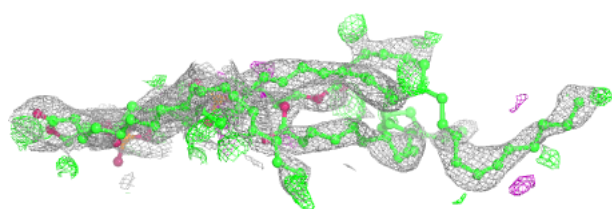
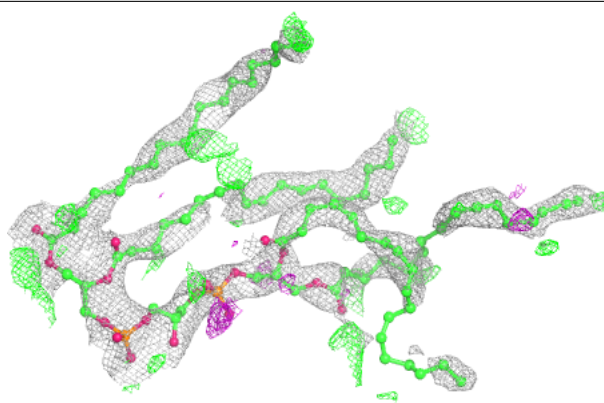
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
20	PGV	N	612	51/51	0.97	0.15	33,43,70,80	0
17	NA	N	604	1/1	0.97	0.09	45,45,45,45	0
23	EDO	S	102	4/4	0.97	0.08	44,45,46,53	0
23	EDO	B	303	4/4	0.98	0.13	30,31,33,36	0
18	HEA	N	605[A]	60/60	0.98	0.18	32,38,47,50	9
23	EDO	N	613	4/4	0.98	0.16	38,38,39,41	0
18	HEA	N	605[B]	60/60	0.98	0.18	32,38,44,47	9
19	PER	N	607	2/2	0.98	0.10	36,36,36,48	0
18	HEA	A	605	60/60	0.99	0.14	22,26,33,39	0
18	HEA	A	604[A]	60/60	0.99	0.15	23,28,38,40	9
29	ZN	S	101	1/1	0.99	0.05	37,37,37,37	0
18	HEA	A	604[B]	60/60	0.99	0.15	23,28,35,40	9
22	CUA	O	301	2/2	0.99	0.09	42,42,42,43	0
18	HEA	N	606	60/60	0.99	0.19	27,33,41,47	0
19	PER	A	606	2/2	0.99	0.10	40,40,40,54	0
15	CU	A	601	1/1	1.00	0.13	29,29,29,29	0
15	CU	N	602	1/1	1.00	0.14	35,35,35,35	0
22	CUA	B	302	2/2	1.00	0.11	27,27,27,29	0
17	NA	A	603	1/1	1.00	0.05	31,31,31,31	0
29	ZN	F	101	1/1	1.00	0.10	36,36,36,36	0

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

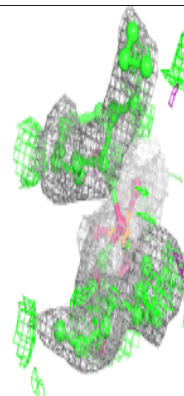
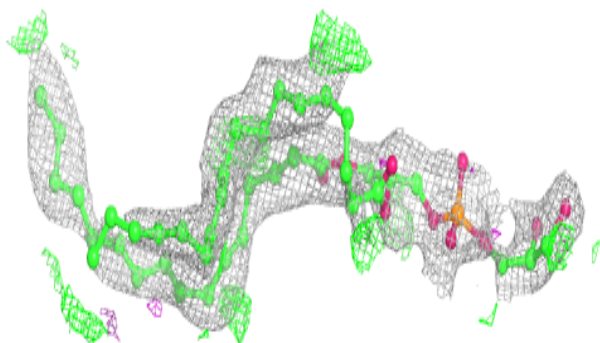
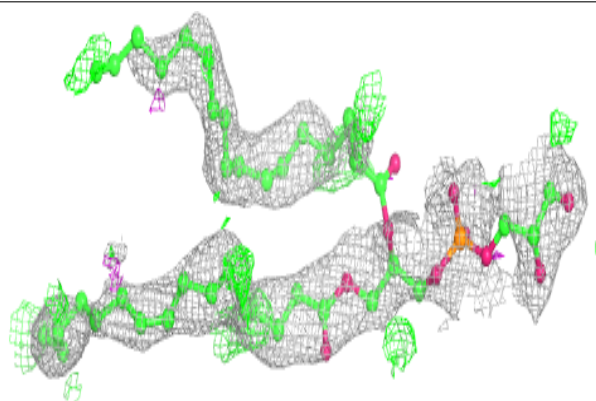


**Electron density around CDL T 101:**

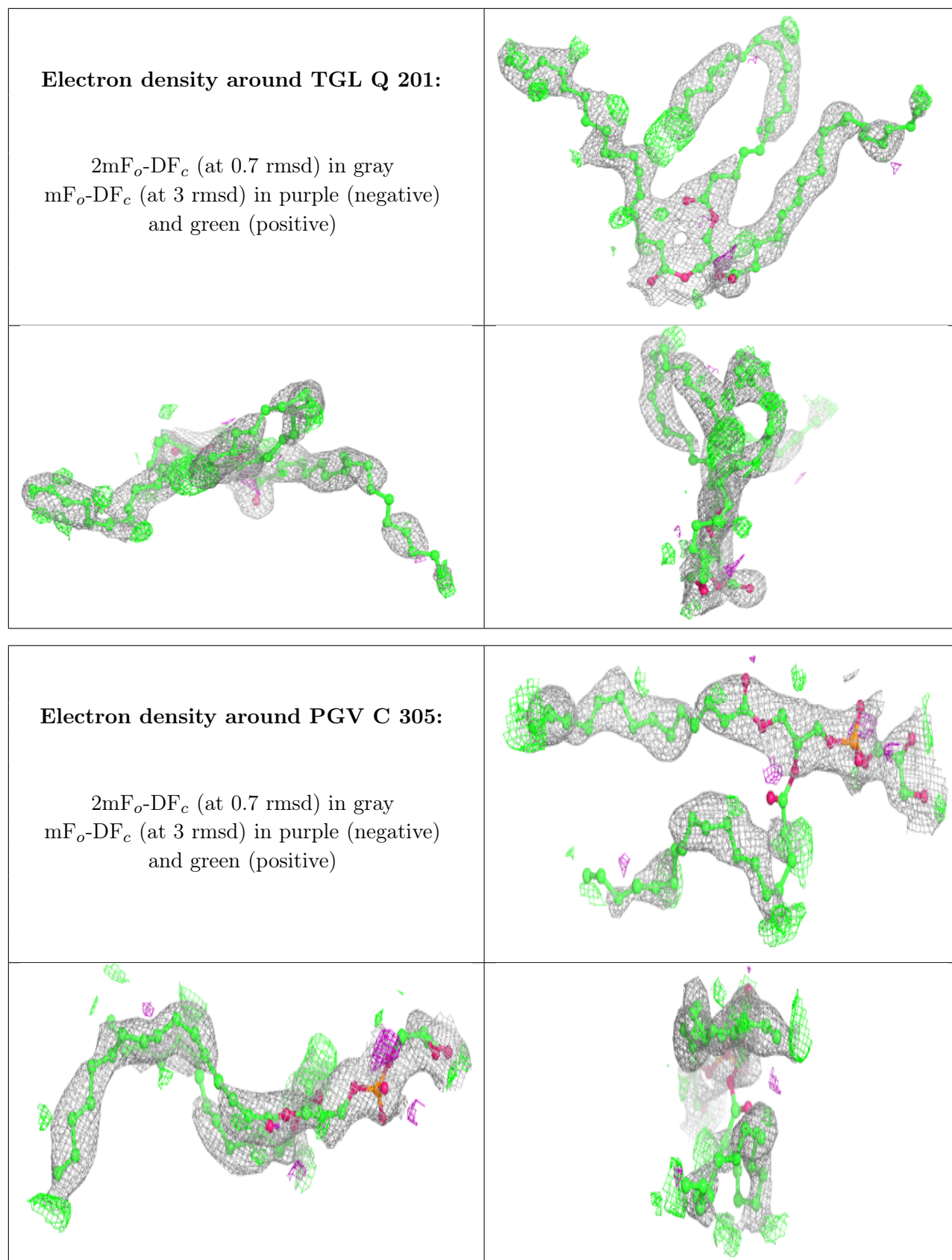
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

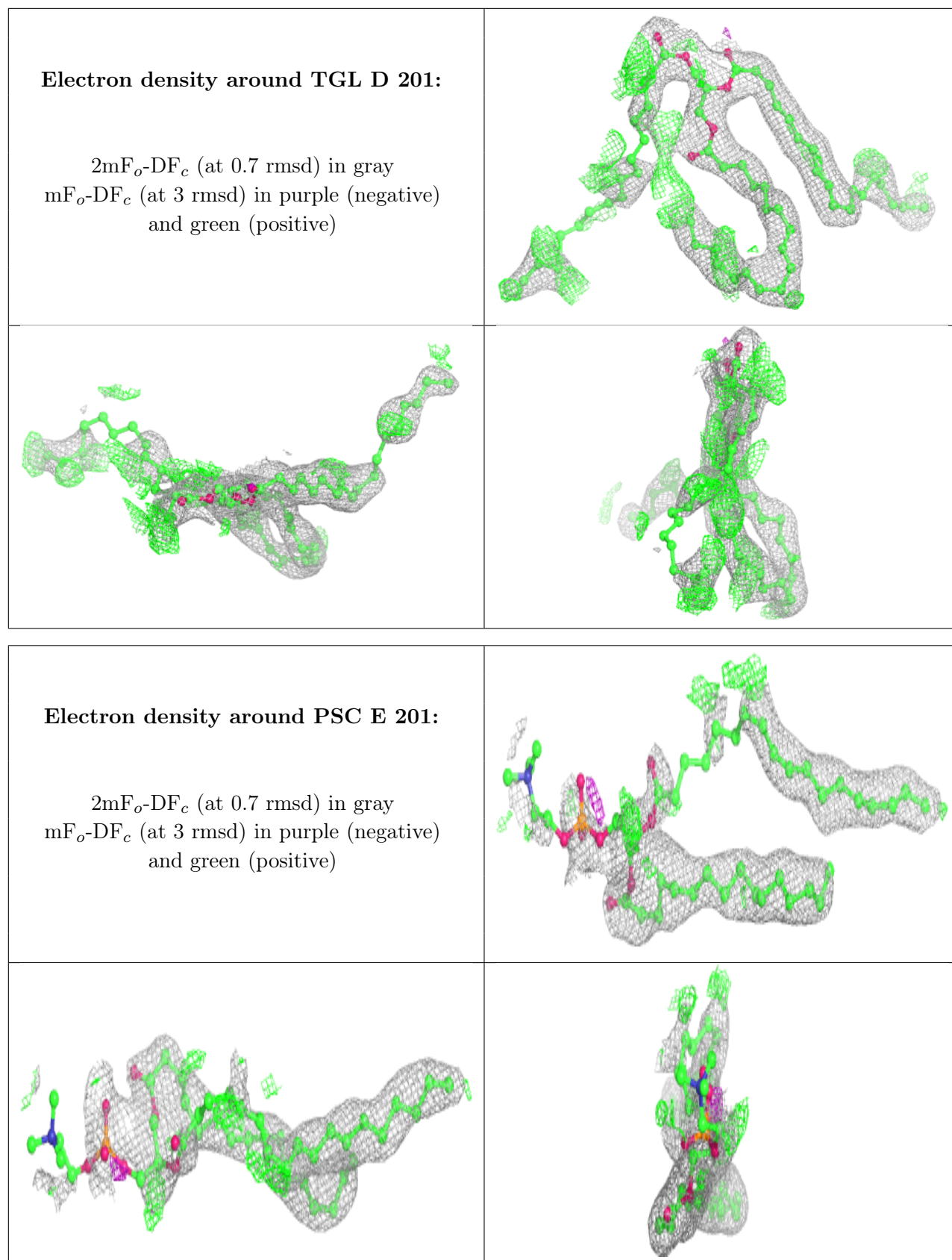
**Electron density around PGV P 305:**

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



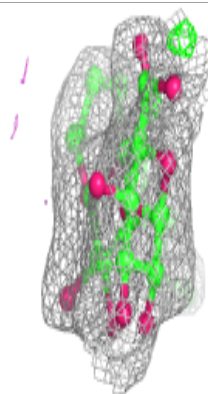
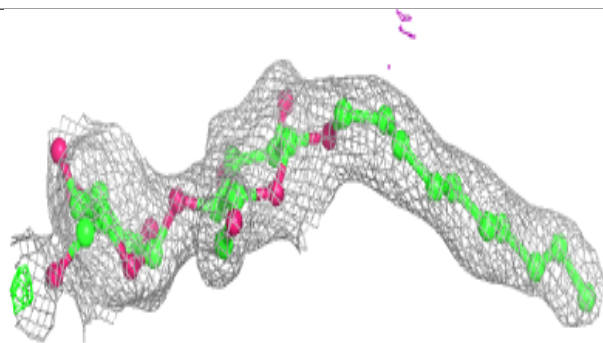
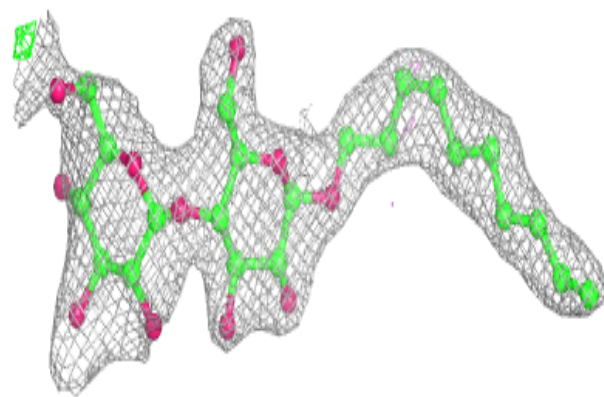




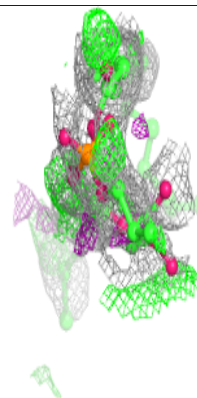
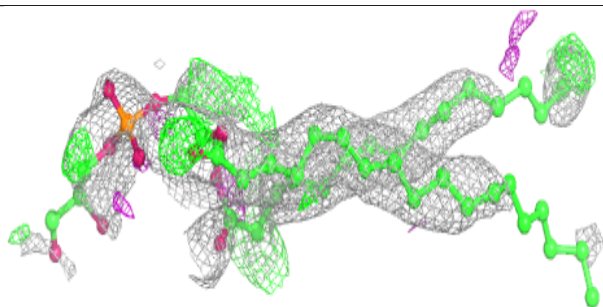
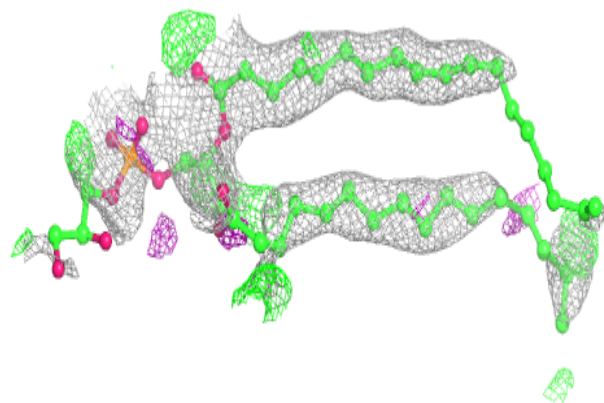


**Electron density around DMU Z 101:**

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

**Electron density around PGV A 607:**

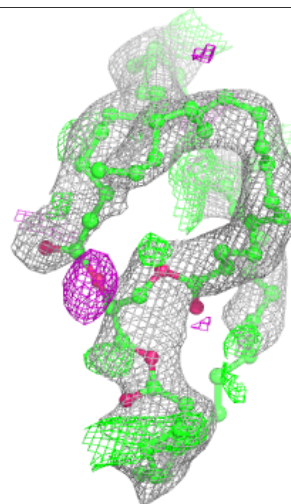
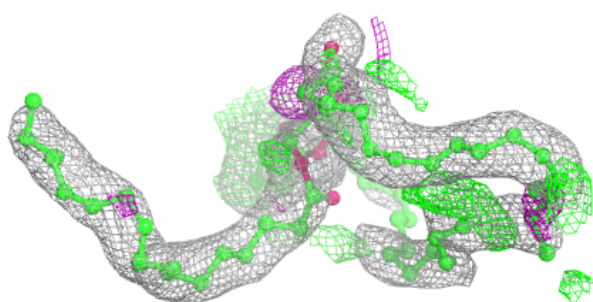
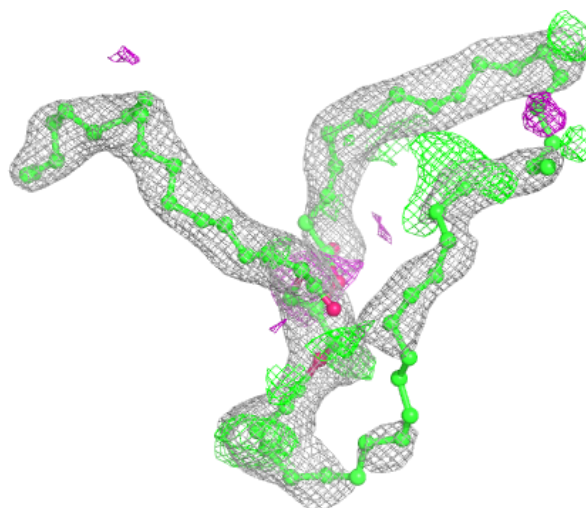
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





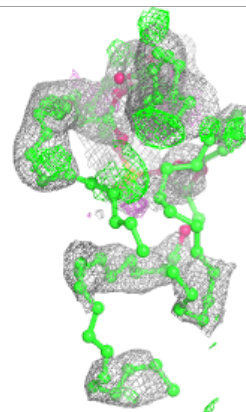
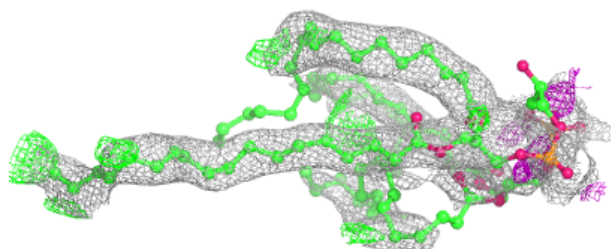
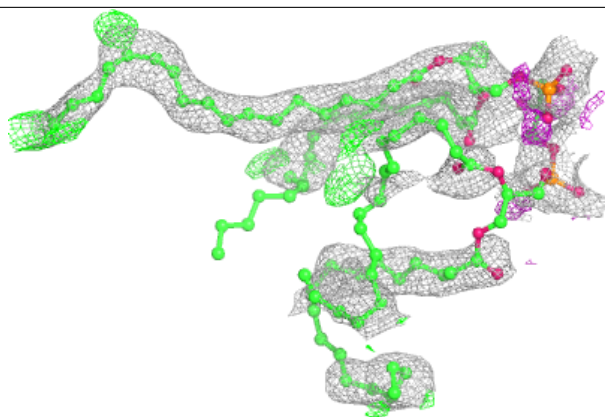
**Electron density around TGL L 101:**

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

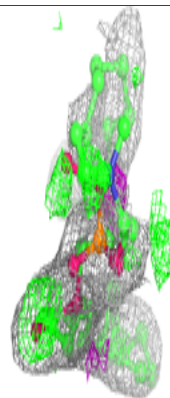
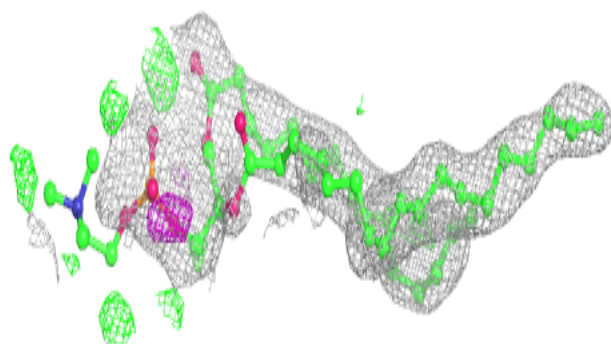
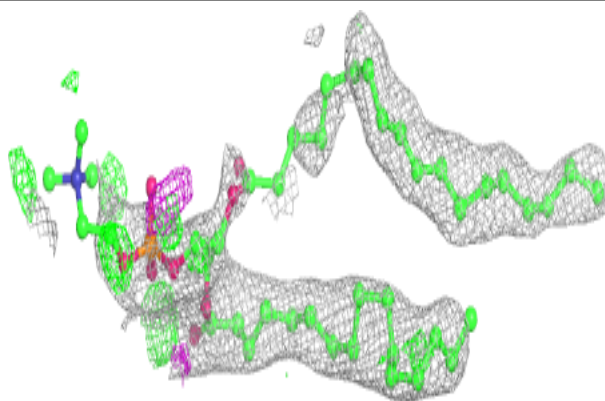


**Electron density around CDL P 306:**

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

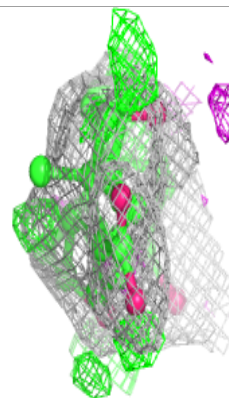
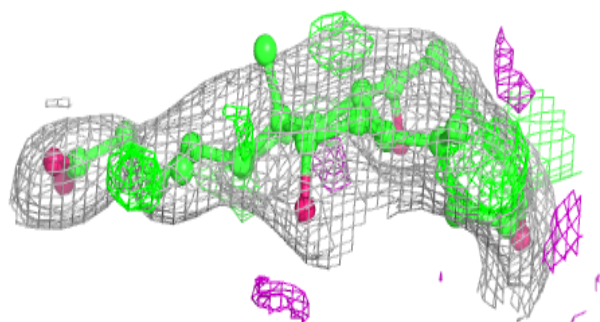
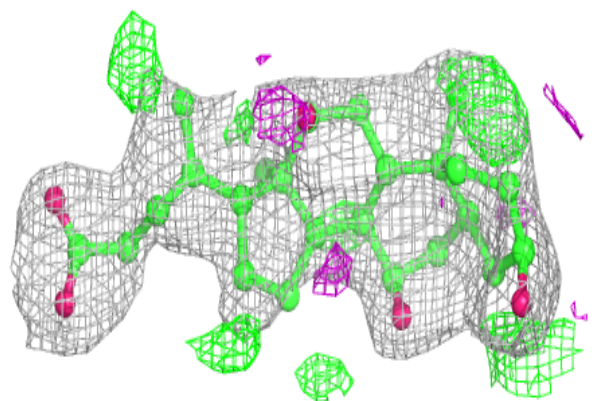
**Electron density around PSC V 101:**

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

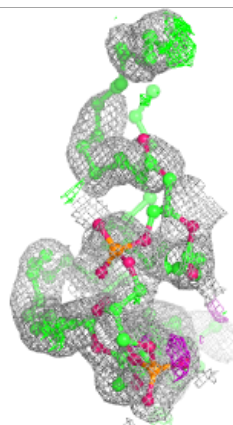
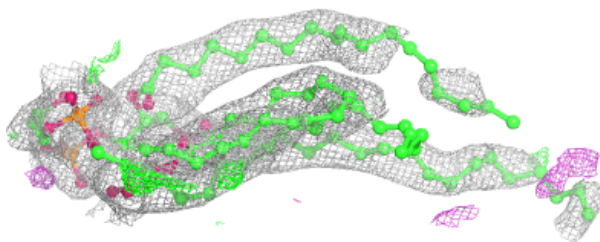
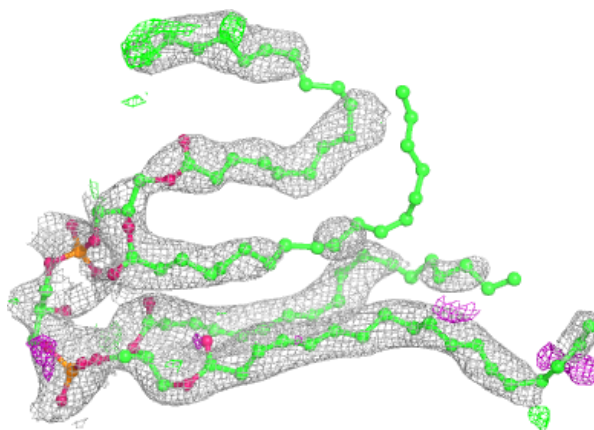


**Electron density around CHD C 307:**

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

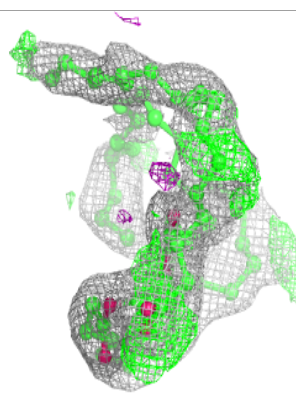
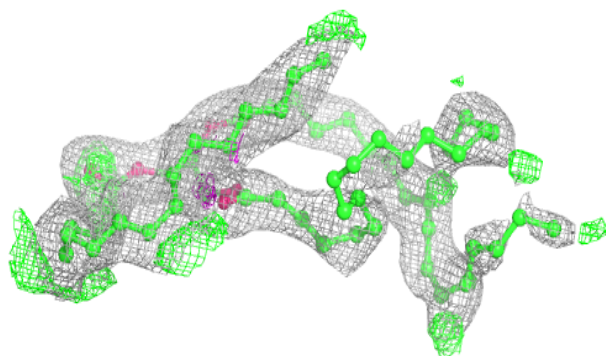
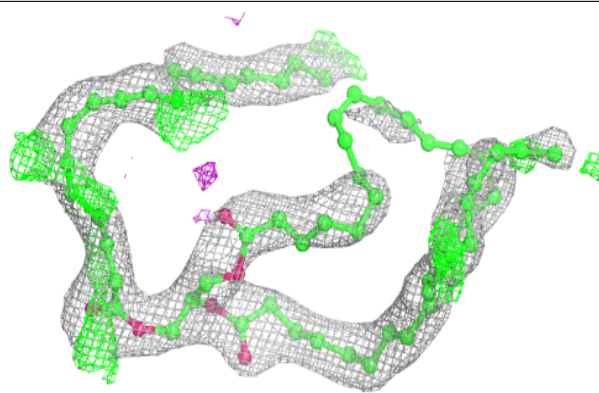
**Electron density around CDL C 306:**

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

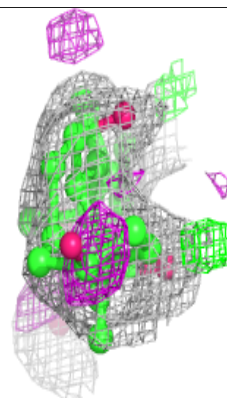
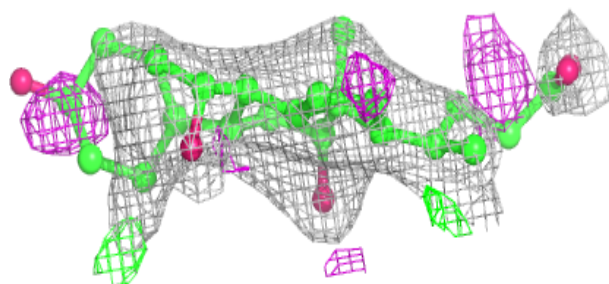
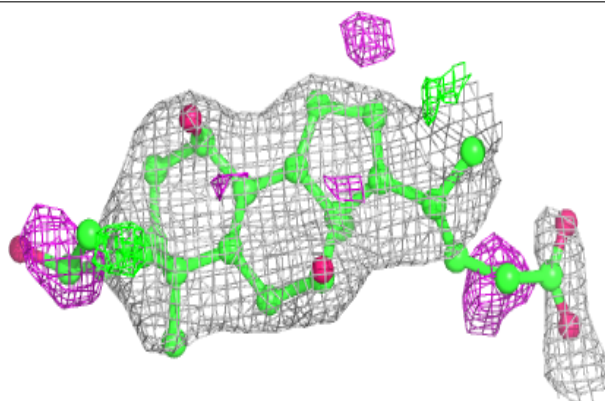


**Electron density around TGL N 608:**

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

**Electron density around CHD J 101:**

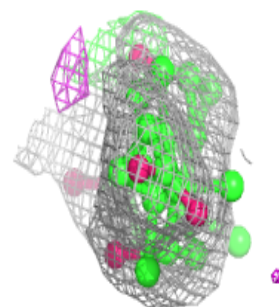
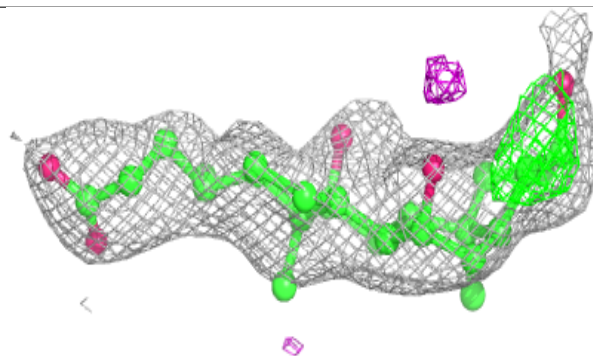
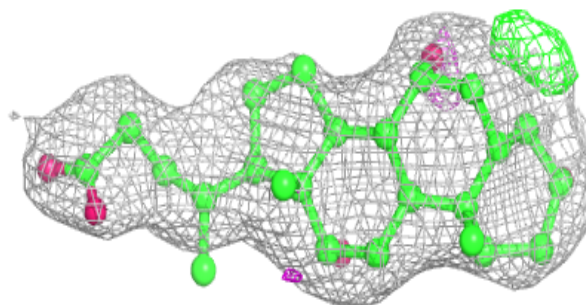
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





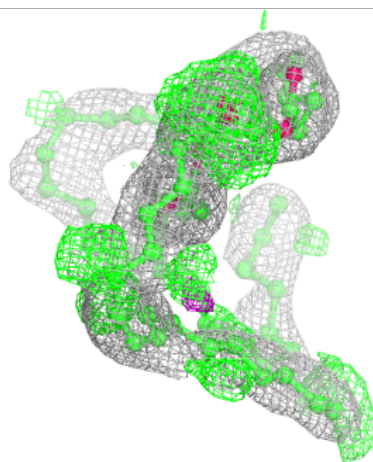
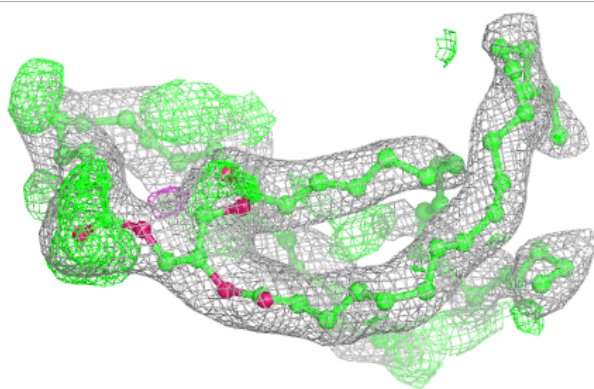
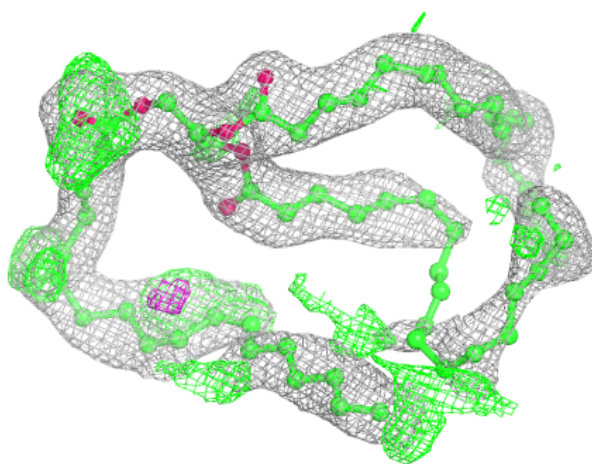
**Electron density around CHD P 307:**

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



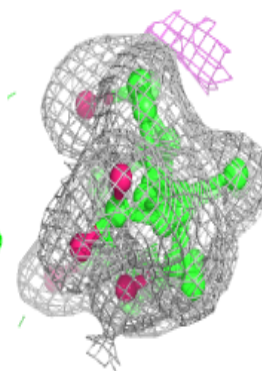
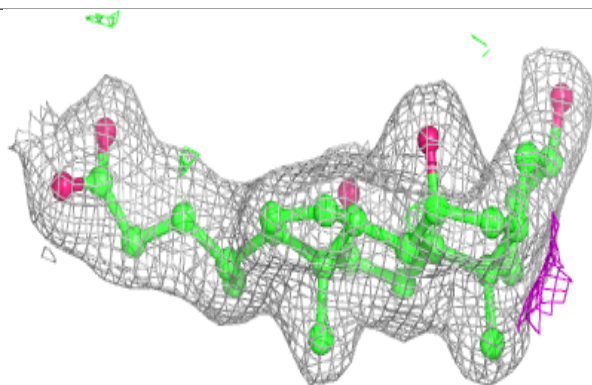
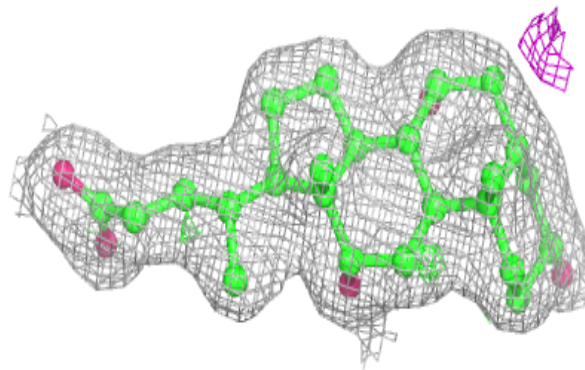
**Electron density around TGL B 301:**

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

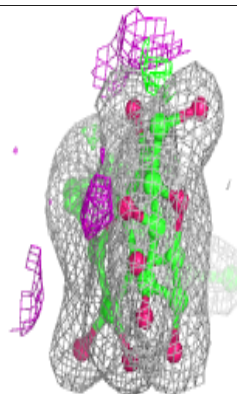
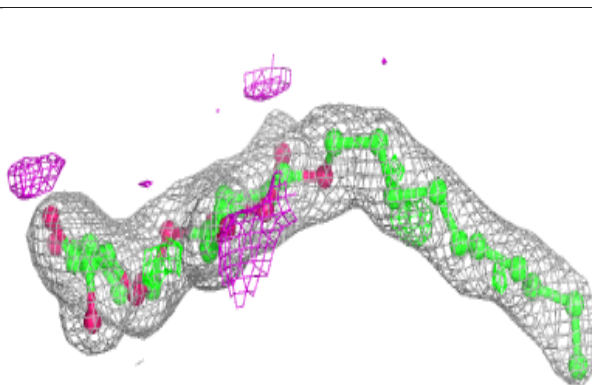
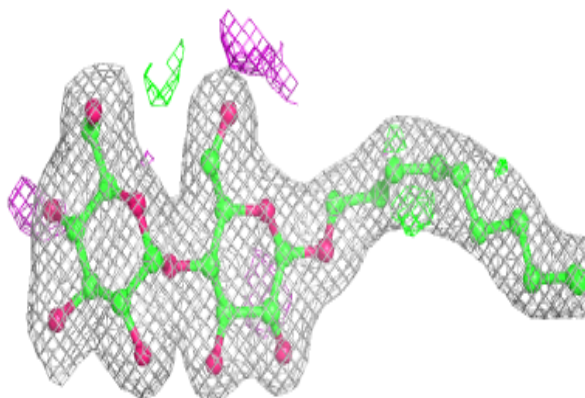


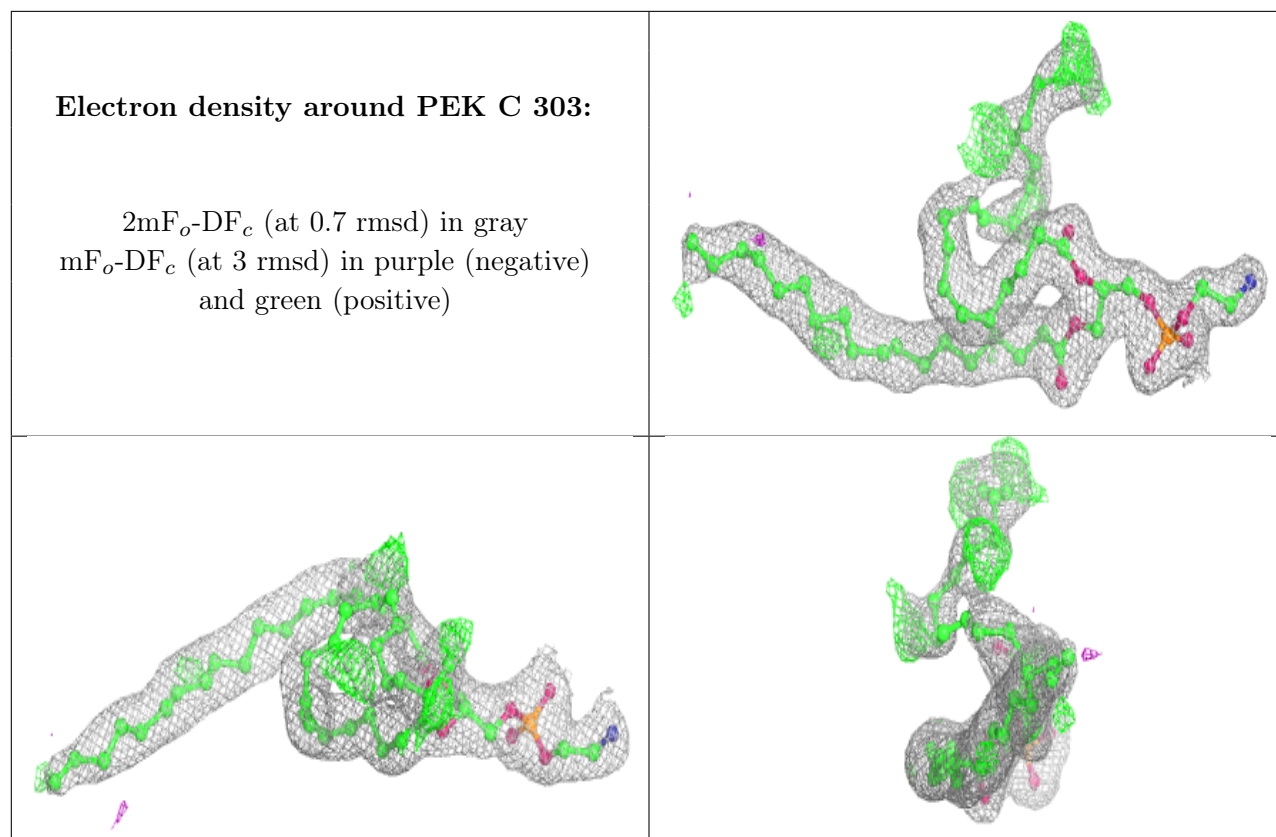
**Electron density around CHD P 301:**

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

**Electron density around DMU M 101:**

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

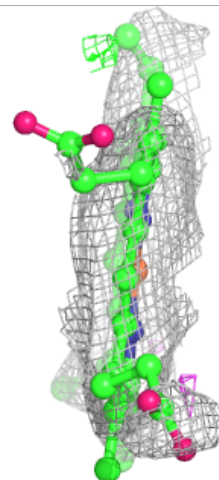
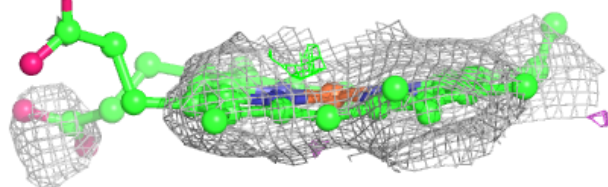
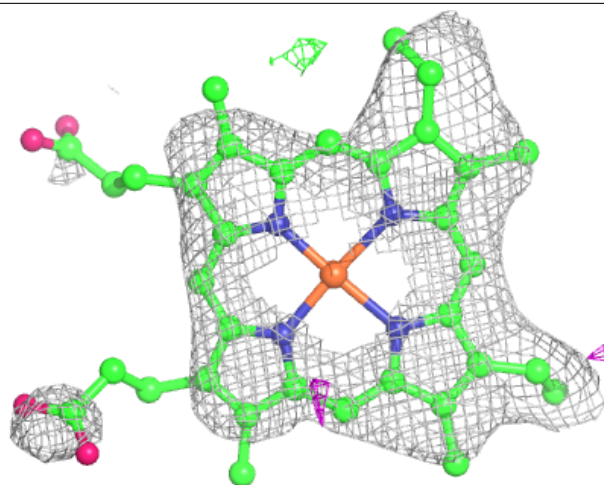


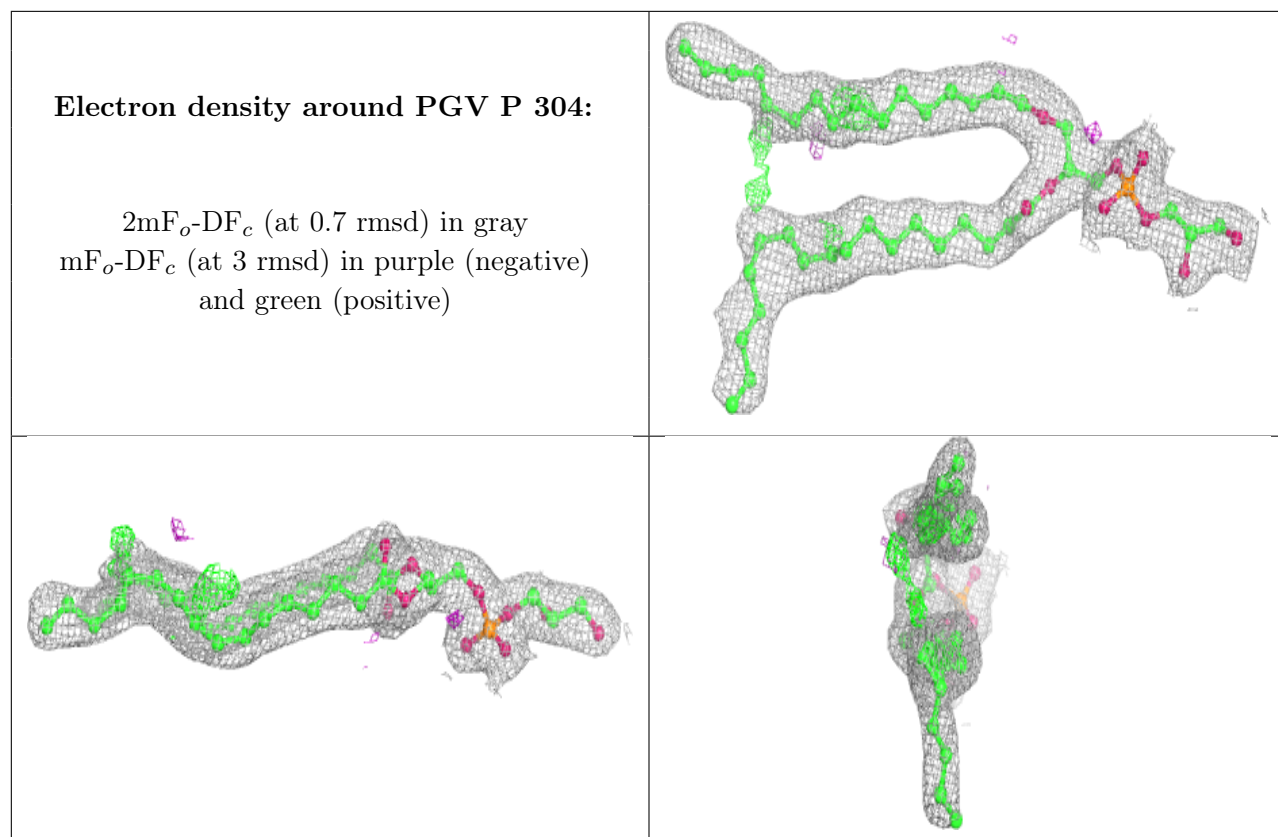




**Electron density around HEC 2 201:**

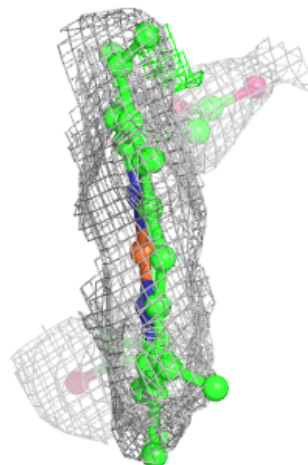
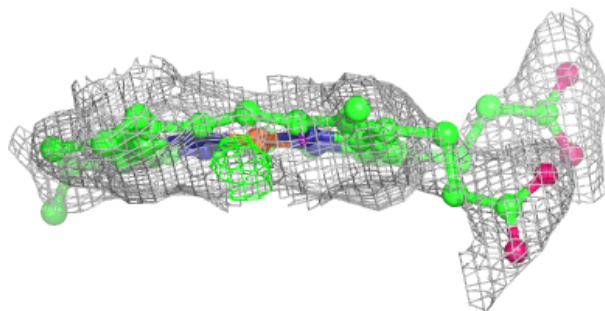
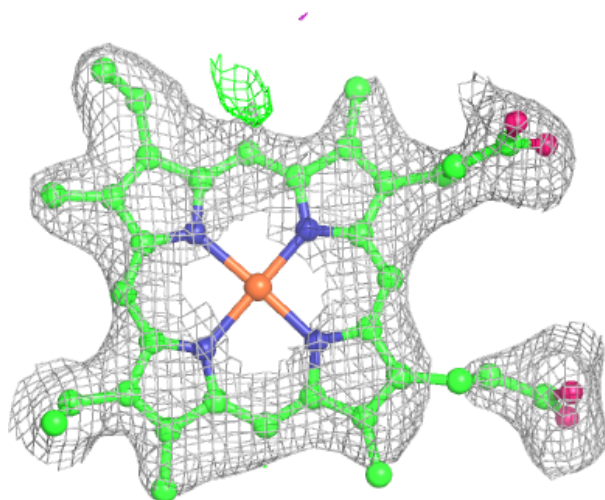
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





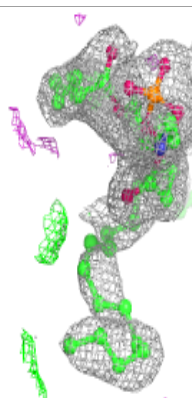
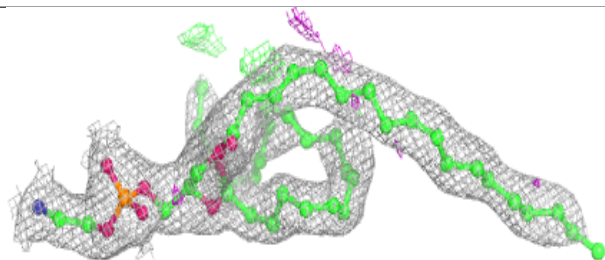
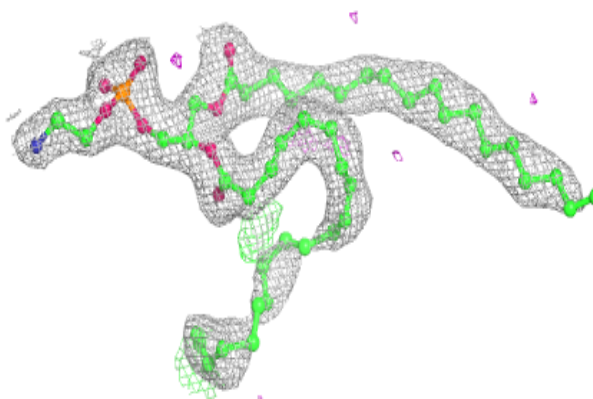
**Electron density around HEC 1 201:**

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

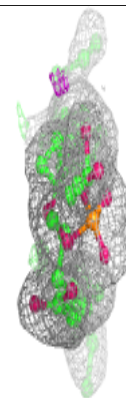
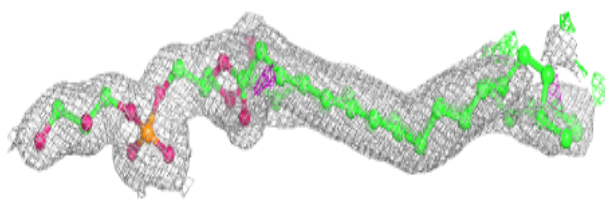
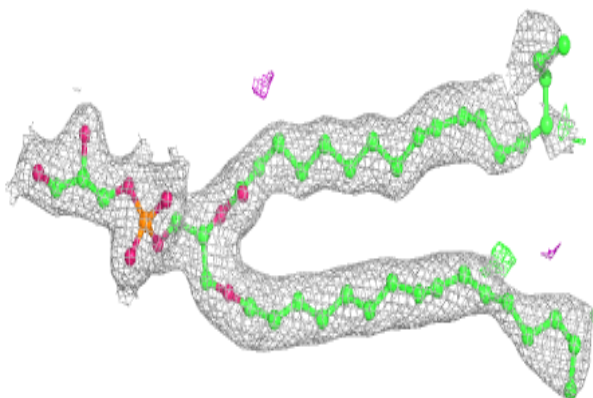


**Electron density around PEK P 303:**

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

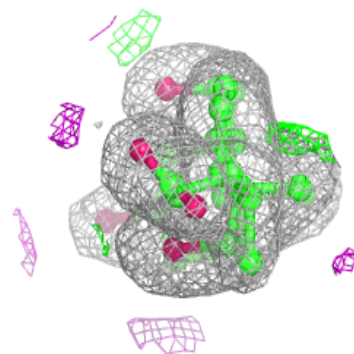
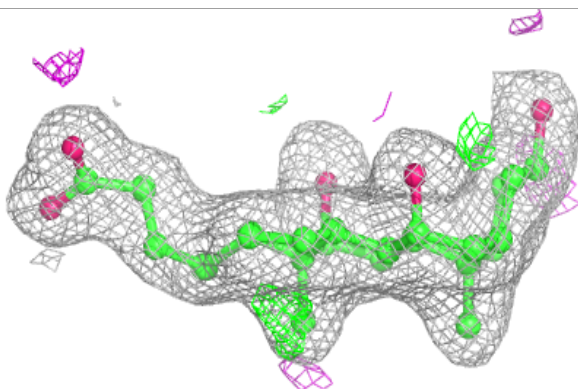
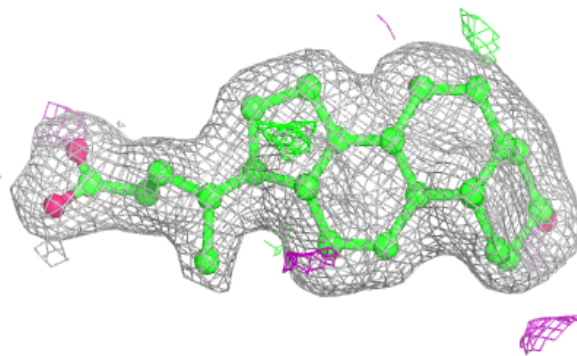
**Electron density around PGV C 304:**

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

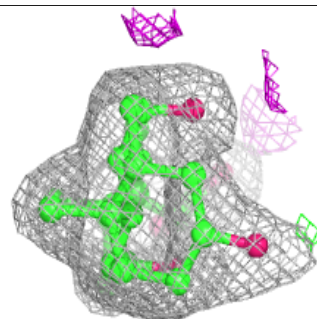
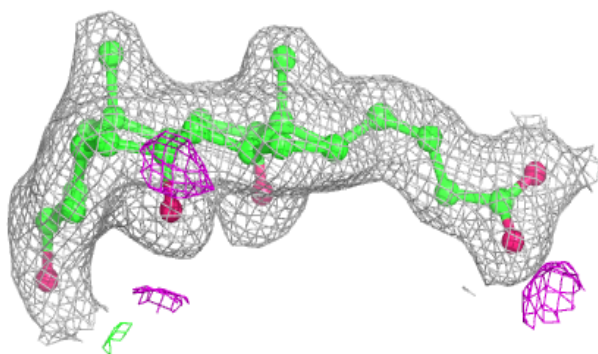
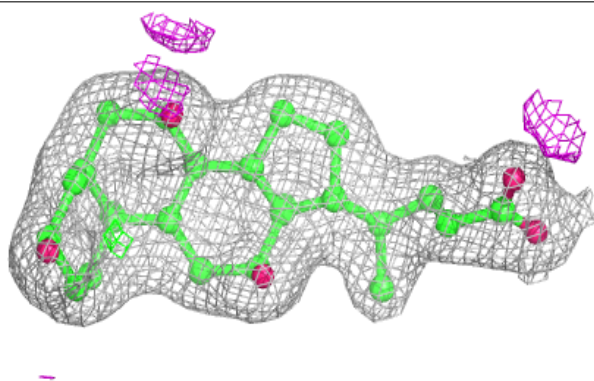


**Electron density around CHD T 103:**

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

**Electron density around CHD G 102:**

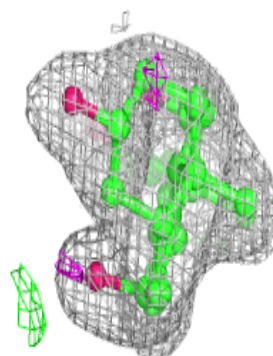
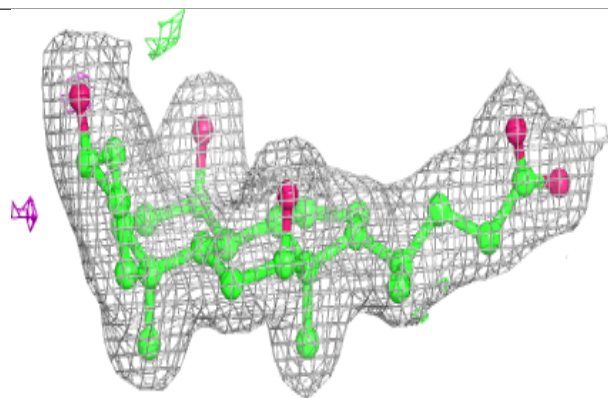
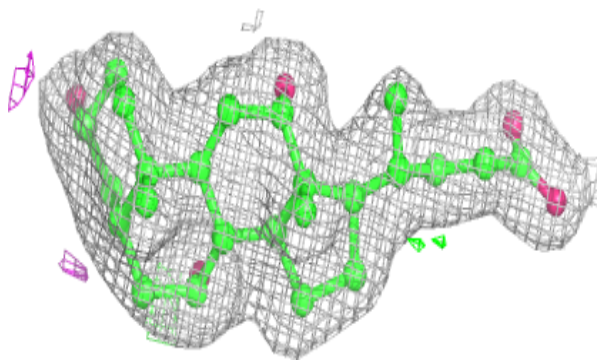
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



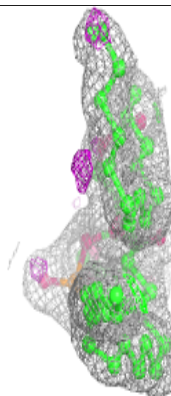
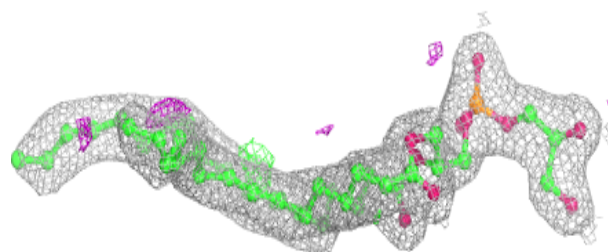
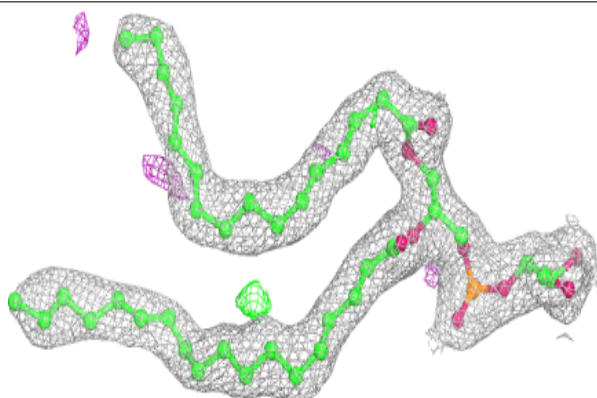


**Electron density around CHD C 301:**

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

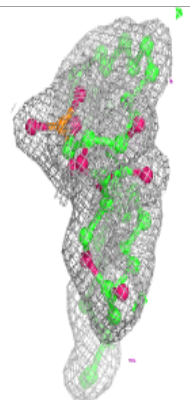
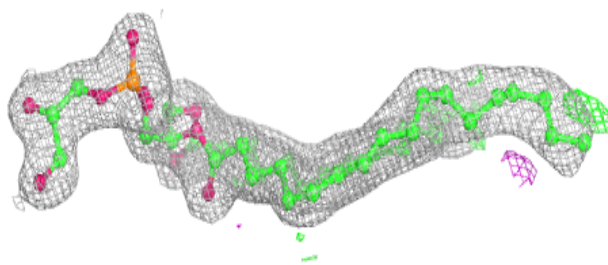
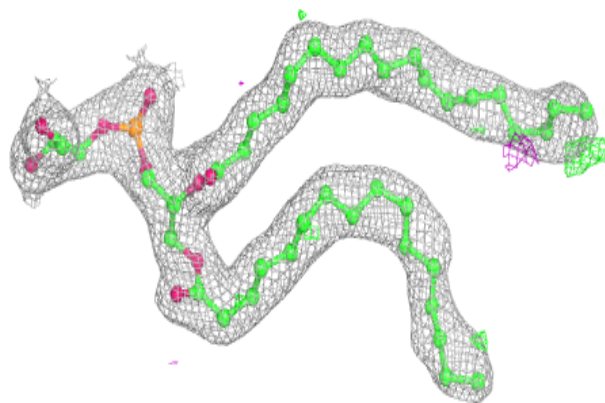
**Electron density around PGV A 608:**

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

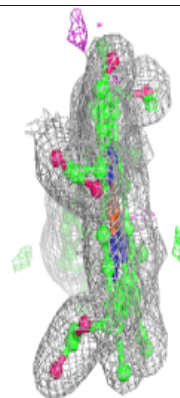
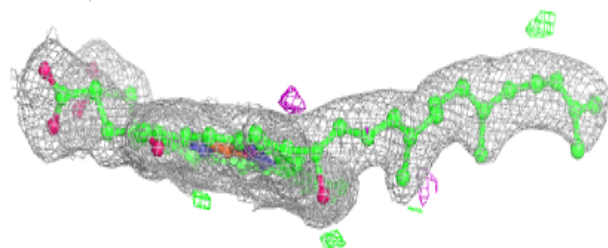
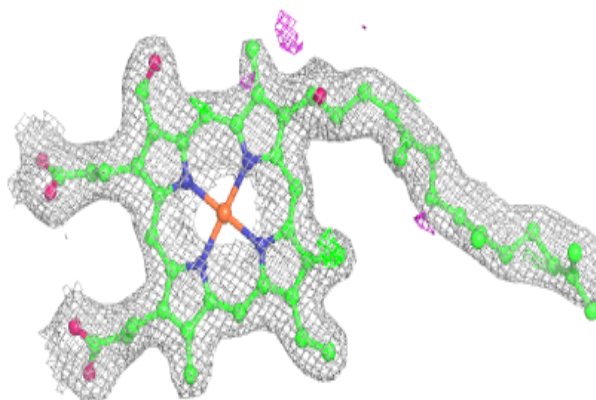


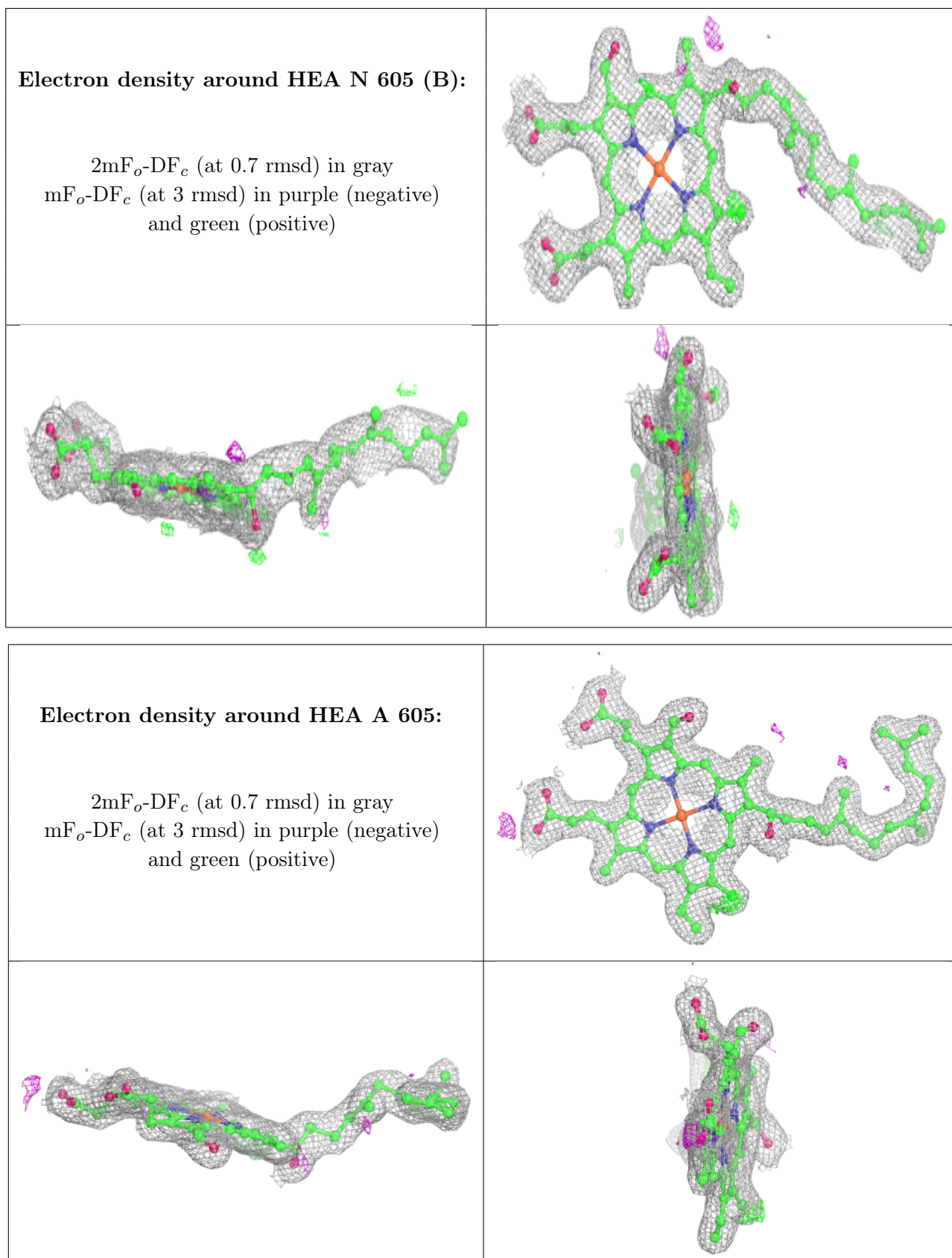
**Electron density around PGV N 612:**

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

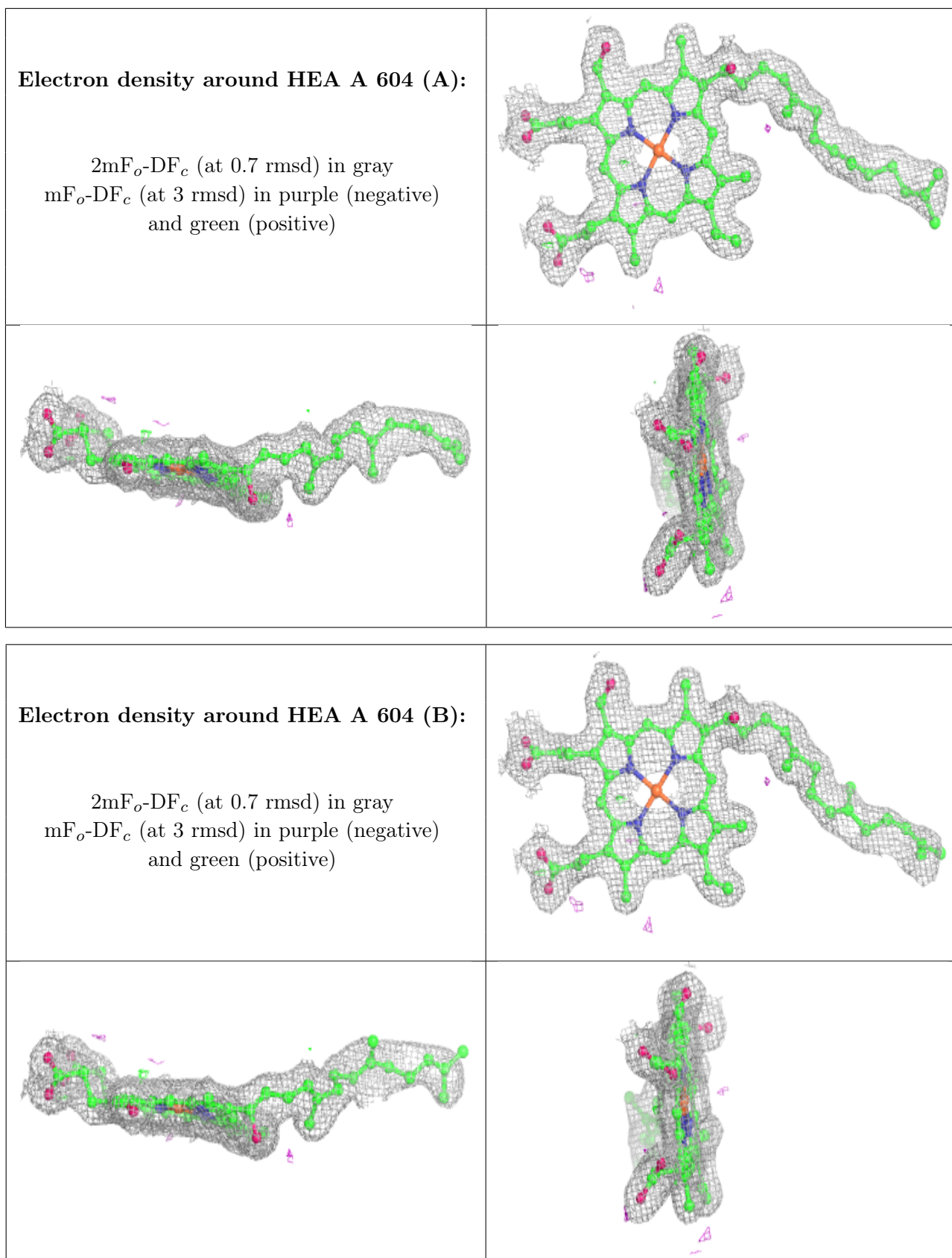
**Electron density around HEA N 605 (A):**

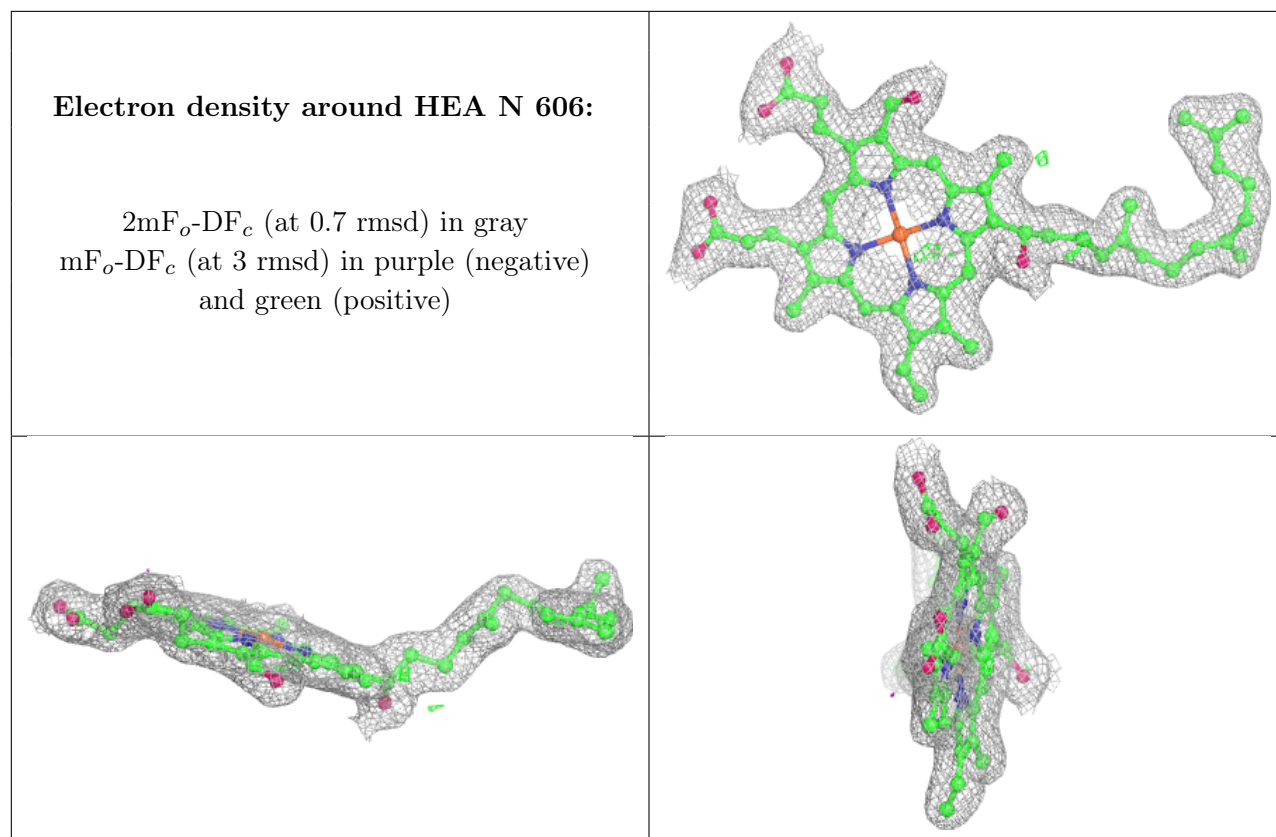
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)











## 6.5 Other polymers [i](#)

There are no such residues in this entry.