



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 02:53 PM UTC

PDB ID : 7O8N / pdb_00007o8n
Title : NmHR light state structure at 7.5 ms (5 - 10 ms) after photoexcitation determined by serial millisecond crystallography
Authors : Mous, S.; Gotthard, G.; Ehrenberg, D.; Sen, S.; James, D.; Johnson, P.; Weinert, T.; Nass, K.; Furrer, A.; Kekilli, D.; Ma, P.; Bruenle, S.; Casadei, C.; Martiel, I.; Dworkowski, F.; Gashi, D.; Skopintsev, P.; Wranik, M.; Knopp, G.; Panepucci, E.; Panneels, V.; Cirelli, C.; Ozerov, D.; Schertler, G.; Wang, M.; Milne, C.; Standfuss, J.; Schapiro, I.; Heberle, J.; Nogly, P.
Deposited on : 2021-04-15
Resolution : 2.10 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

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>.

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

MolProbity	: 4-5-2 with Phenix2.0
Mogul	: 2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	: 2.0
EDS	: 3.0
Buster-report	: wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	: 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	: 9.0.010 (Gargrove)
Density-Fitness	: 1.0.12

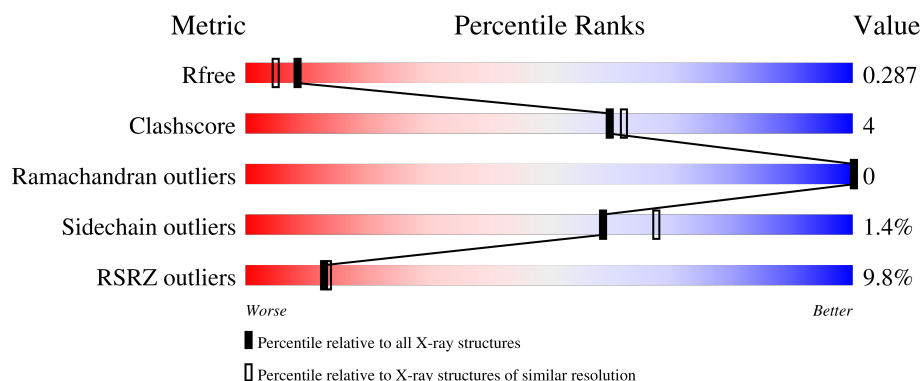
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.10 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}	180053	6658 (2.10-2.10)
Clashscore	190562	7164 (2.10-2.10)
Ramachandran outliers	187476	7099 (2.10-2.10)
Sidechain outliers	187428	7100 (2.10-2.10)
RSRZ outliers	180081	6662 (2.10-2.10)

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 ≥ 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	296	<div> <div>9%</div> <div>81%</div> <div>8%</div> <div>10%</div> </div>

Ideal geometry (proteins) : Engh & Huber (2001)
 Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
 Validation Pipeline (wwPDB-VP) : 2.49

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 2312 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.

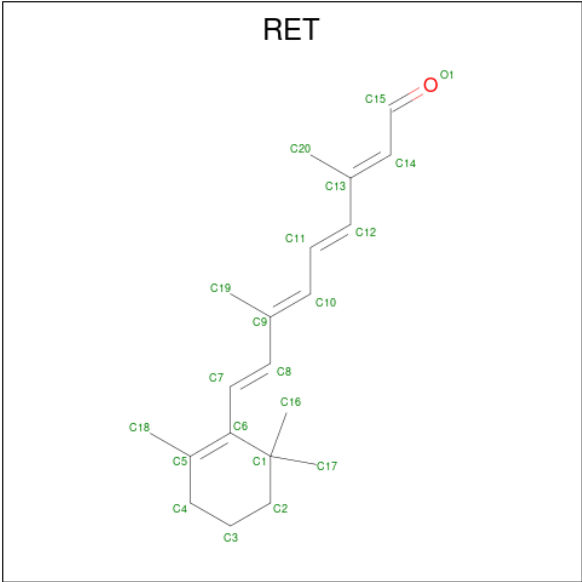
- Molecule 1 is a protein called Chloride pumping rhodopsin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	265	Total	C	N	O	S	0	1	0
			2083	1386	320	362	15			

There are 24 discrepancies between the modelled and reference sequences:

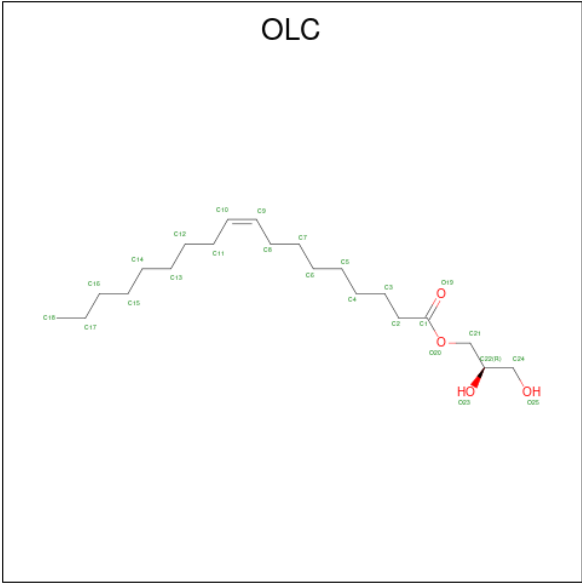
Chain	Residue	Modelled	Actual	Comment	Reference
A	-15	MET	-	initiating methionine	UNP W8VZW3
A	-14	ALA	-	expression tag	UNP W8VZW3
A	-13	SER	-	expression tag	UNP W8VZW3
A	-12	MET	-	expression tag	UNP W8VZW3
A	-11	THR	-	expression tag	UNP W8VZW3
A	-10	GLY	-	expression tag	UNP W8VZW3
A	-9	GLY	-	expression tag	UNP W8VZW3
A	-8	GLN	-	expression tag	UNP W8VZW3
A	-7	GLN	-	expression tag	UNP W8VZW3
A	-6	MET	-	expression tag	UNP W8VZW3
A	-5	GLY	-	expression tag	UNP W8VZW3
A	-4	ARG	-	expression tag	UNP W8VZW3
A	-3	ASP	-	expression tag	UNP W8VZW3
A	-2	PRO	-	expression tag	UNP W8VZW3
A	-1	ASN	-	expression tag	UNP W8VZW3
A	0	SER	-	expression tag	UNP W8VZW3
A	273	LEU	-	expression tag	UNP W8VZW3
A	274	GLU	-	expression tag	UNP W8VZW3
A	275	HIS	-	expression tag	UNP W8VZW3
A	276	HIS	-	expression tag	UNP W8VZW3
A	277	HIS	-	expression tag	UNP W8VZW3
A	278	HIS	-	expression tag	UNP W8VZW3
A	279	HIS	-	expression tag	UNP W8VZW3
A	280	HIS	-	expression tag	UNP W8VZW3

- Molecule 2 is RETINAL (CCD ID: RET) (formula: C₂₀H₂₈O).



Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	C	0	0
			20	20		

- Molecule 3 is (2R)-2,3-dihydroxypropyl (9Z)-octadec-9-enoate (CCD ID: OLC) (formula: C₂₁H₄₀O₄).



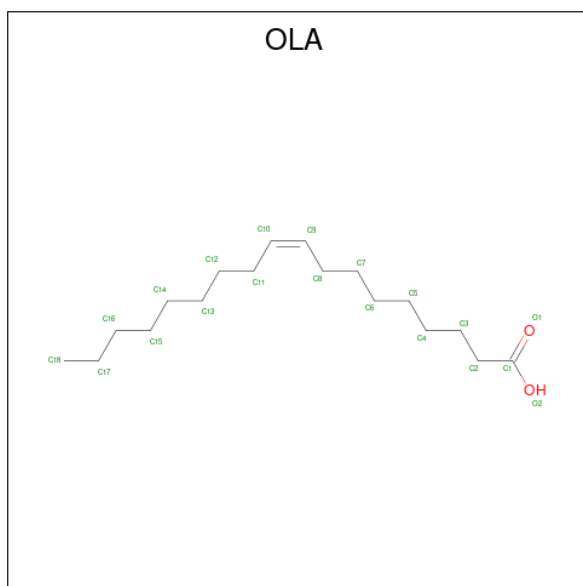
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			25	21	4		
3	A	1	Total	C	O	0	0
			16	12	4		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			10	6	4		

- Molecule 4 is OLEIC ACID (CCD ID: OLA) (formula: $C_{18}H_{34}O_2$).

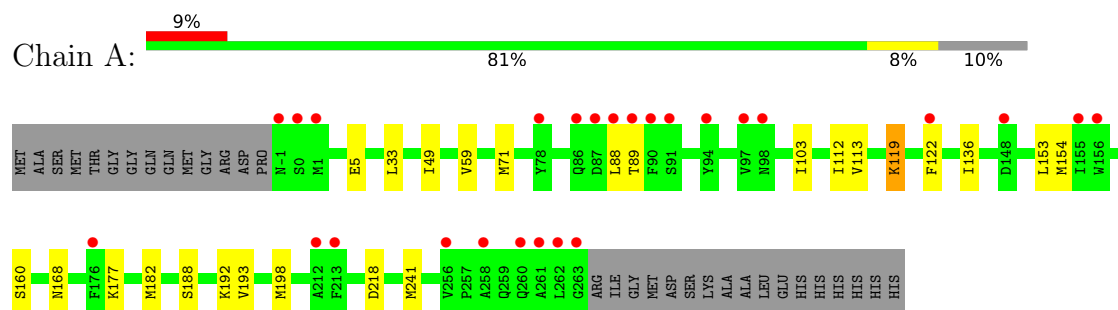


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	C	O	0	0
			20	18	2		
4	A	1	Total	C	O	0	0
			20	18	2		
4	A	1	Total	C	O	0	0
			17	15	2		
4	A	1	Total	C	O	0	0
			20	18	2		
4	A	1	Total	C	O	0	0
			14	12	2		
4	A	1	Total	C		0	0
			17	17			

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	50	Total	O	0	0
			50	50		

- Molecule 1: Chloride pumping rhodopsin



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	104.48Å 51.18Å 78.33Å 90.00° 131.78° 90.00°	Depositor
Resolution (Å)	38.96 – 2.10 38.96 – 2.10	Depositor EDS
% Data completeness (in resolution range)	95.5 (38.96-2.10) 95.5 (38.96-2.10)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.50 (at 2.10Å)	Xtriage
Refinement program	PHENIX 1.19.1_4122	Depositor
R, R_{free}	0.241 , 0.282 0.247 , 0.287	Depositor DCC
R_{free} test set	860 reflections (0.86%)	wwPDB-VP
Wilson B-factor (Å ²)	36.4	Xtriage
Anisotropy	0.225	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.30 , 55.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.52$, $\langle L^2 \rangle = 0.36$	Xtriage
Estimated twinning fraction	0.001 for h,-k,-h-l	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	2312	wwPDB-VP
Average B, all atoms (Å ²)	44.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 12.23% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical 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: OLC, OLA, RET

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.16	0/2139	0.30	0/2916

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	2083	0	2113	18	1
2	A	20	0	27	4	0
3	A	51	0	70	0	0
4	A	108	0	169	2	0
5	A	50	0	0	0	0
All	All	2312	0	2379	20	1

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 4.

All (20) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:193:VAL:HG22	1:A:241:MET:HE3	1.61	0.82
2:A:301:RET:H8	2:A:301:RET:H161	1.62	0.81
1:A:103:ILE:HD12	1:A:136:ILE:HD11	1.67	0.75
2:A:301:RET:H161	2:A:301:RET:C8	2.25	0.67
1:A:103:ILE:HG12	2:A:301:RET:H202	1.79	0.65
1:A:193:VAL:CG2	1:A:241:MET:HE3	2.27	0.64
1:A:49:ILE:HG23	1:A:112:ILE:HD13	1.80	0.62
1:A:113:VAL:O	1:A:182:MET:HE3	2.04	0.57
1:A:188:SER:O	1:A:192:LYS:HE3	2.07	0.55
1:A:33:LEU:HD22	1:A:59:VAL:HG22	1.88	0.55
1:A:198:MET:HE2	1:A:198:MET:HA	1.90	0.54
1:A:168:ASN:CG	1:A:198:MET:HE1	2.34	0.52
1:A:88:LEU:HD22	1:A:88:LEU:N	2.25	0.51
1:A:122[B]:PHE:CD1	4:A:304:OLA:H10	2.47	0.49
1:A:119:LYS:HB2	1:A:119:LYS:NZ	2.29	0.48
1:A:160:SER:OG	2:A:301:RET:H41	2.14	0.47
1:A:71:MET:HG2	1:A:89:THR:HG22	1.98	0.45
1:A:5:GLU:OE1	1:A:5:GLU:N	2.46	0.44
1:A:122[B]:PHE:HD1	4:A:304:OLA:H10	1.82	0.44
1:A:188:SER:OG	1:A:192:LYS:NZ	2.46	0.44

All (1) 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)
1:A:177:LYS:NZ	1:A:218:ASP:OD2[4_445]	2.18	0.02

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	264/296 (89%)	262 (99%)	2 (1%)	0	100	100

There are no Ramachandran outliers to report.

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	219/242 (90%)	216 (99%)	3 (1%)	59 67

All (3) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	119	LYS
1	A	153	LEU
1	A	154	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	115	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

10 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
2	RET	A	301	1	20,20,21	0.64	0	27,27,28	2.08	6 (22%)
4	OLA	A	305	-	19,19,19	0.82	1 (5%)	19,19,19	0.85	1 (5%)
4	OLA	A	310	-	16,16,19	0.93	1 (6%)	15,15,19	0.77	0
4	OLA	A	308	-	19,19,19	0.80	1 (5%)	19,19,19	0.95	2 (10%)
4	OLA	A	304	-	19,19,19	0.83	1 (5%)	19,19,19	0.89	0
3	OLC	A	303	-	15,15,24	1.00	1 (6%)	16,16,25	1.01	1 (6%)
4	OLA	A	309	-	13,13,19	0.98	1 (7%)	13,13,19	0.99	0
4	OLA	A	306	-	16,16,19	0.87	1 (6%)	16,16,19	0.92	0
3	OLC	A	302	-	24,24,24	0.82	1 (4%)	25,25,25	1.01	1 (4%)
3	OLC	A	307	-	9,9,24	1.22	1 (11%)	10,10,25	1.17	1 (10%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	RET	A	301	1	-	0/13/30/31	0/1/1/1
4	OLA	A	305	-	-	11/17/17/17	-
4	OLA	A	310	-	-	6/14/14/17	-
4	OLA	A	308	-	-	10/17/17/17	-
4	OLA	A	304	-	-	9/17/17/17	-
3	OLC	A	303	-	-	9/15/15/24	-
4	OLA	A	309	-	-	7/11/11/17	-
4	OLA	A	306	-	-	9/14/14/17	-
3	OLC	A	302	-	-	8/24/24/24	-
3	OLC	A	307	-	-	7/9/9/24	-

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	310	OLA	C10-C9	3.51	1.51	1.31
4	A	304	OLA	C10-C9	2.83	1.47	1.31
4	A	309	OLA	C10-C9	2.80	1.47	1.31
4	A	305	OLA	C10-C9	2.79	1.47	1.31
4	A	306	OLA	C10-C9	2.75	1.47	1.31
4	A	308	OLA	C10-C9	2.73	1.47	1.31
3	A	307	OLC	O20-C1	2.56	1.40	1.33
3	A	303	OLC	O20-C1	2.54	1.40	1.33
3	A	302	OLC	O20-C1	2.54	1.40	1.33

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	301	RET	C20-C13-C14	-5.49	108.48	123.63
2	A	301	RET	C12-C13-C14	5.46	133.05	118.55
2	A	301	RET	C3-C4-C5	-4.70	105.68	114.06
3	A	302	OLC	O20-C1-C2	3.21	121.62	111.83
3	A	307	OLC	O20-C1-C2	3.07	120.46	111.15
3	A	303	OLC	O20-C1-C2	2.89	120.66	111.83
2	A	301	RET	C7-C8-C9	-2.69	122.26	126.23
2	A	301	RET	C18-C5-C6	-2.36	121.91	124.48
4	A	308	OLA	O2-C1-C2	2.10	120.63	114.00
2	A	301	RET	C8-C7-C6	2.08	132.54	127.00
4	A	308	OLA	C3-C2-C1	-2.07	109.11	114.51
4	A	305	OLA	O2-C1-C2	2.01	120.35	114.00

There are no chirality outliers.

All (76) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	303	OLC	C21-C22-C24-O25
3	A	307	OLC	O20-C21-C22-C24
3	A	307	OLC	O20-C21-C22-O23
4	A	304	OLA	C6-C7-C8-C9
3	A	303	OLC	O20-C21-C22-C24
4	A	305	OLA	C1-C2-C3-C4
3	A	303	OLC	C4-C5-C6-C7
3	A	302	OLC	C2-C1-O20-C21
3	A	303	OLC	O20-C21-C22-O23
4	A	304	OLA	C2-C3-C4-C5
4	A	304	OLA	C3-C4-C5-C6
4	A	304	OLA	C11-C12-C13-C14

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Mol	Chain	Res	Type	Atoms
3	A	303	OLC	O23-C22-C24-O25
3	A	302	OLC	C13-C14-C15-C16
4	A	310	OLA	C3-C4-C5-C6
3	A	302	OLC	O19-C1-O20-C21
3	A	303	OLC	C1-C2-C3-C4
4	A	310	OLA	C2-C3-C4-C5
3	A	302	OLC	C5-C6-C7-C8
4	A	308	OLA	C3-C4-C5-C6
4	A	309	OLA	C3-C4-C5-C6
4	A	306	OLA	C2-C3-C4-C5
4	A	308	OLA	C13-C14-C15-C16
3	A	303	OLC	C6-C7-C8-C9
3	A	302	OLC	C6-C7-C8-C9
4	A	305	OLA	C4-C5-C6-C7
4	A	306	OLA	C10-C11-C12-C13
4	A	310	OLA	C10-C11-C12-C13
3	A	307	OLC	C2-C1-O20-C21
4	A	310	OLA	C11-C12-C13-C14
4	A	308	OLA	C11-C10-C9-C8
4	A	308	OLA	C6-C7-C8-C9
4	A	305	OLA	C11-C10-C9-C8
4	A	306	OLA	C11-C10-C9-C8
4	A	305	OLA	C10-C11-C12-C13
4	A	306	OLA	C6-C7-C8-C9
3	A	307	OLC	O19-C1-O20-C21
3	A	302	OLC	C4-C5-C6-C7
4	A	310	OLA	C13-C14-C15-C16
4	A	308	OLA	C15-C16-C17-C18
4	A	308	OLA	C12-C13-C14-C15
4	A	308	OLA	C5-C6-C7-C8
4	A	304	OLA	C5-C6-C7-C8
3	A	302	OLC	C15-C16-C17-C18
4	A	308	OLA	C1-C2-C3-C4
4	A	304	OLA	C4-C5-C6-C7
4	A	309	OLA	C5-C6-C7-C8
4	A	310	OLA	C6-C7-C8-C9
4	A	306	OLA	C1-C2-C3-C4
4	A	306	OLA	C4-C5-C6-C7
4	A	305	OLA	C3-C4-C5-C6
4	A	305	OLA	C14-C15-C16-C17
4	A	305	OLA	C11-C12-C13-C14
4	A	309	OLA	C1-C2-C3-C4

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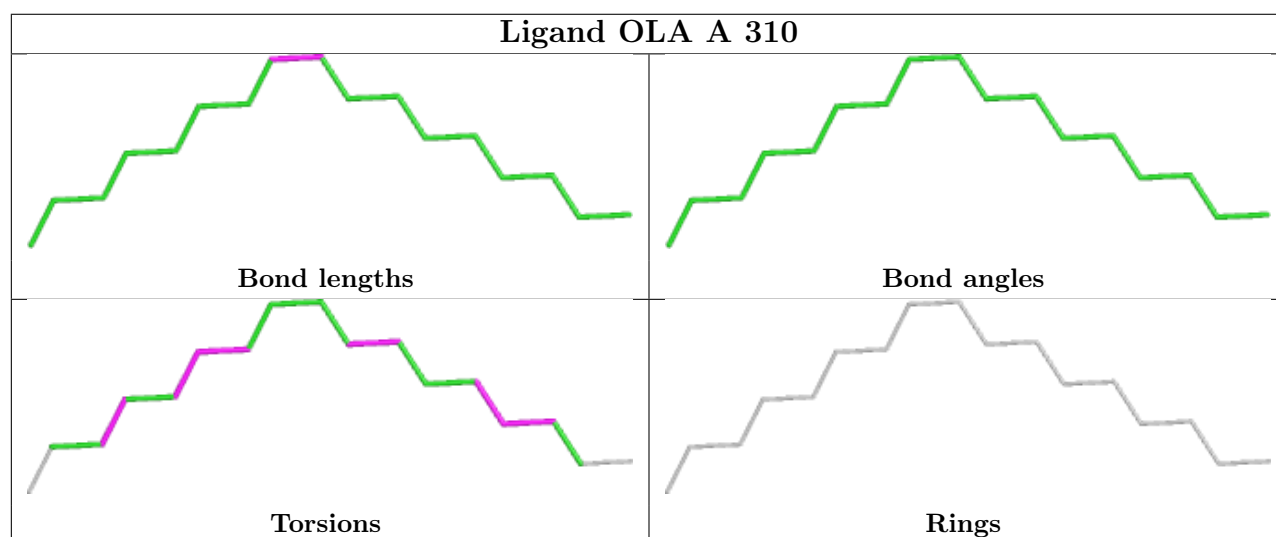
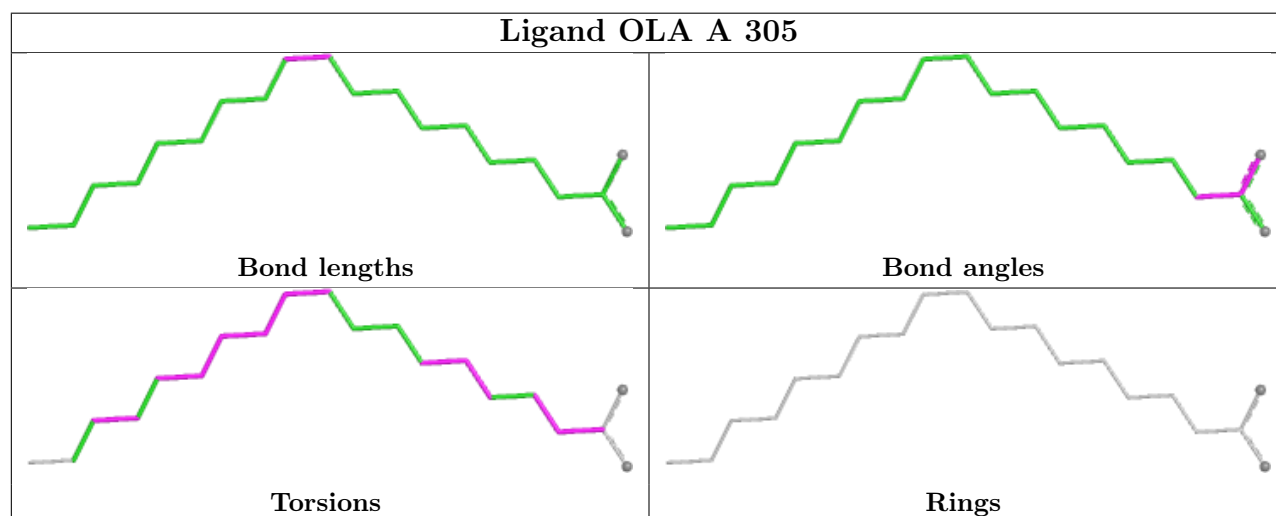
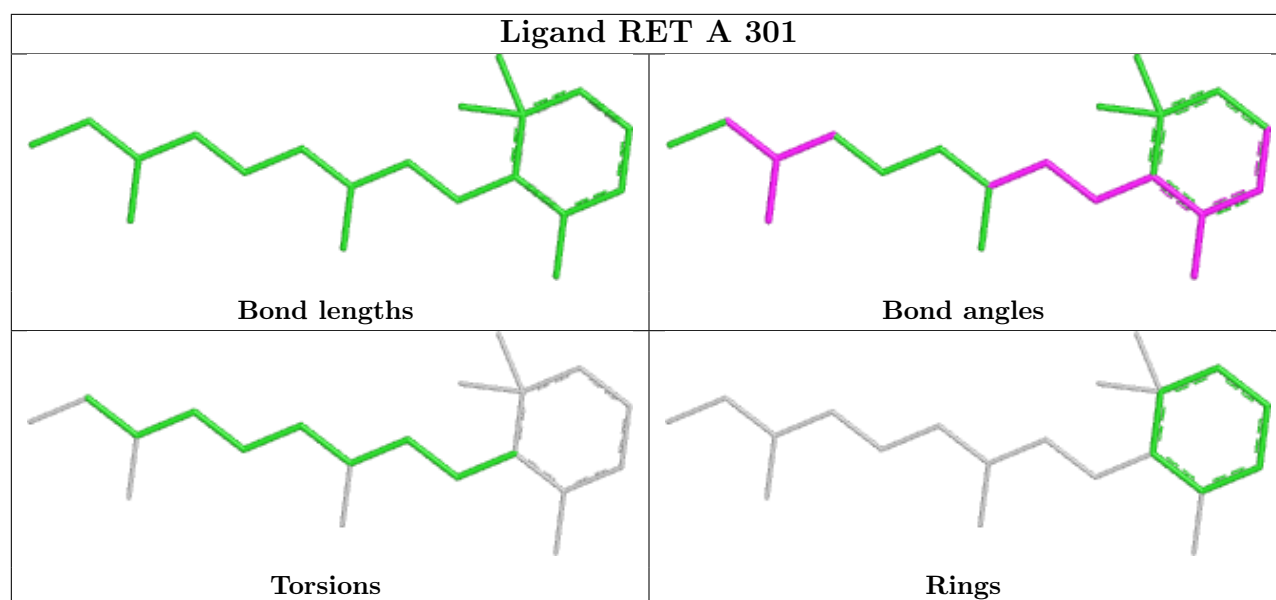
Mol	Chain	Res	Type	Atoms
4	A	306	OLA	C11-C12-C13-C14
3	A	307	OLC	O20-C1-C2-C3
4	A	309	OLA	C7-C8-C9-C10
4	A	305	OLA	C12-C13-C14-C15
4	A	309	OLA	C4-C5-C6-C7
4	A	308	OLA	O2-C1-C2-C3
3	A	307	OLC	O19-C1-C2-C3
4	A	309	OLA	O1-C1-C2-C3
3	A	303	OLC	C2-C3-C4-C5
4	A	308	OLA	O1-C1-C2-C3
4	A	309	OLA	O2-C1-C2-C3
3	A	302	OLC	O23-C22-C24-O25
3	A	307	OLC	O23-C22-C24-O25
4	A	305	OLA	O2-C1-C2-C3
4	A	305	OLA	O1-C1-C2-C3
4	A	304	OLA	C7-C8-C9-C10
4	A	306	OLA	C9-C10-C11-C12
4	A	305	OLA	C9-C10-C11-C12
4	A	306	OLA	C7-C8-C9-C10
4	A	304	OLA	C11-C10-C9-C8
4	A	304	OLA	C9-C10-C11-C12
3	A	303	OLC	O19-C1-O20-C21

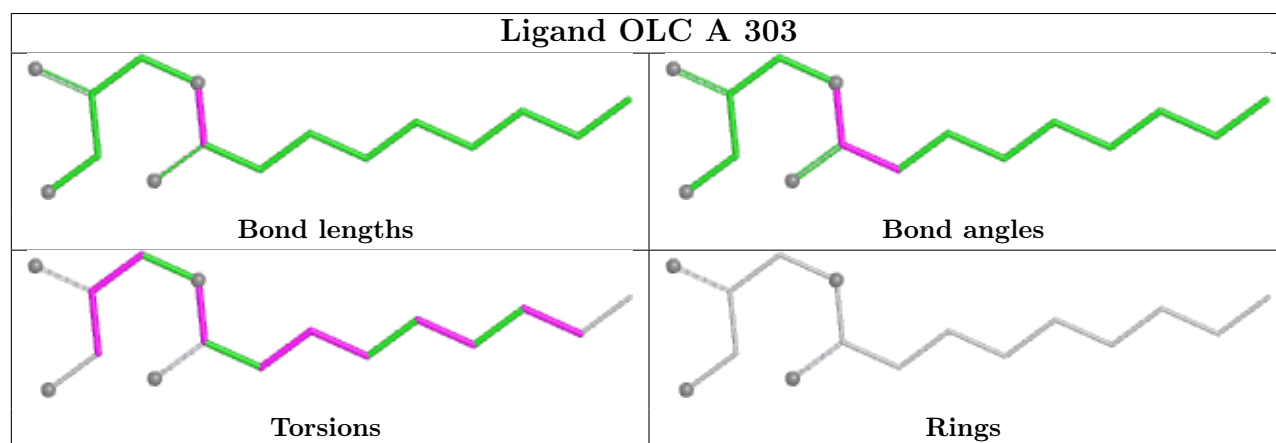
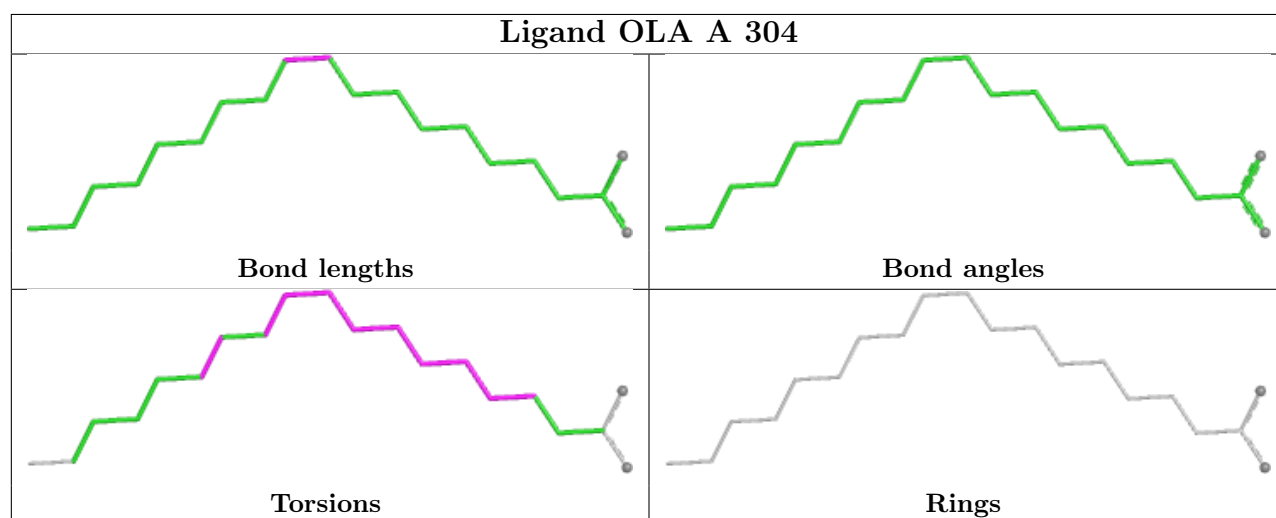
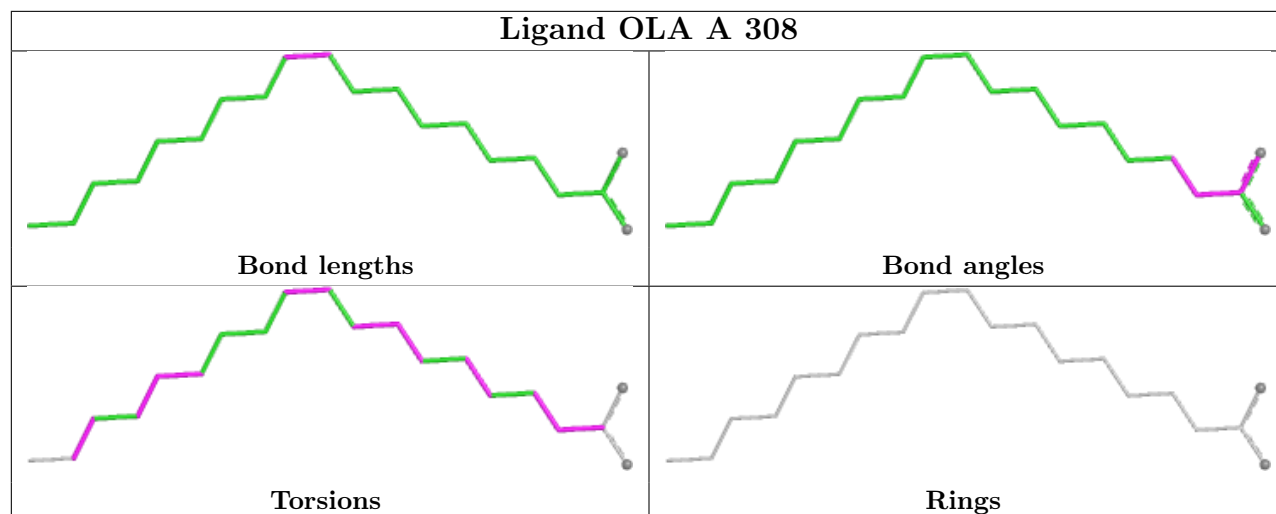
There are no ring outliers.

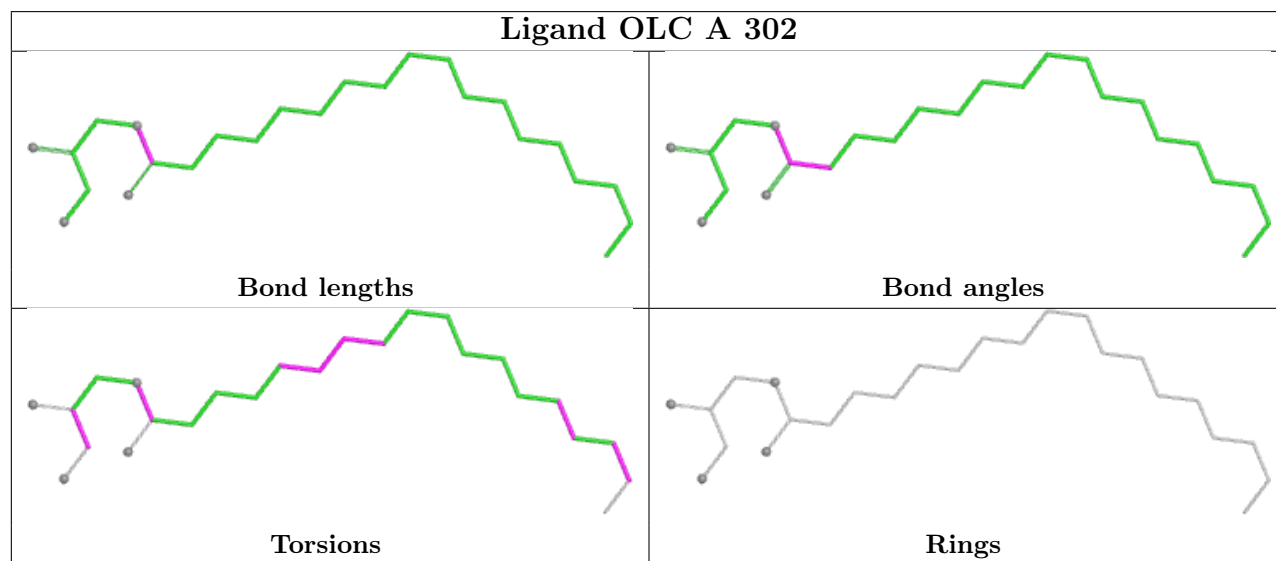
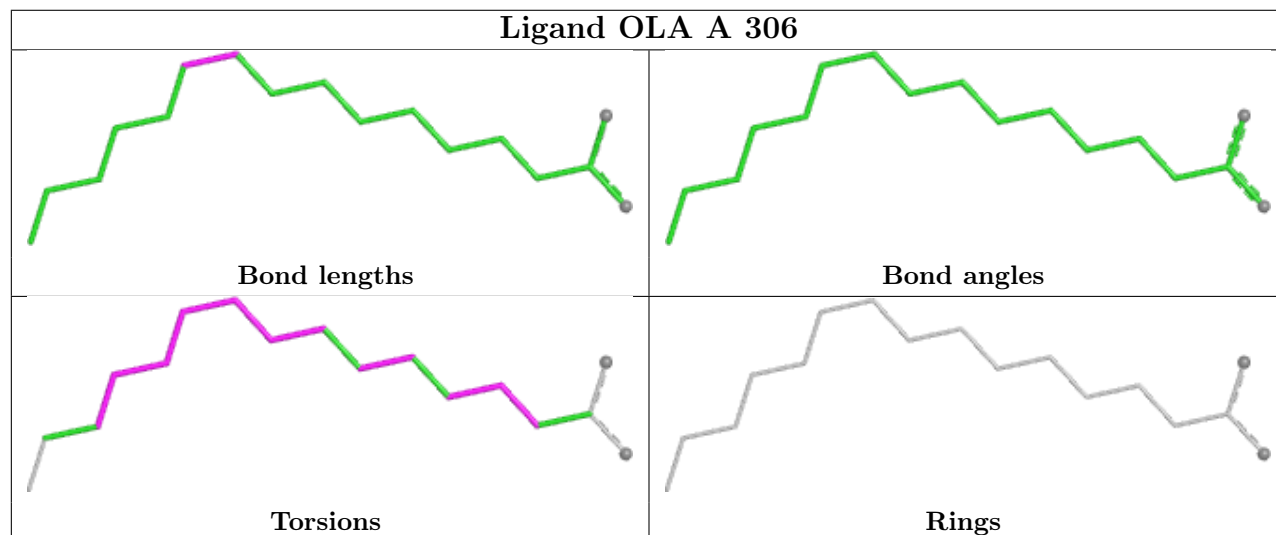
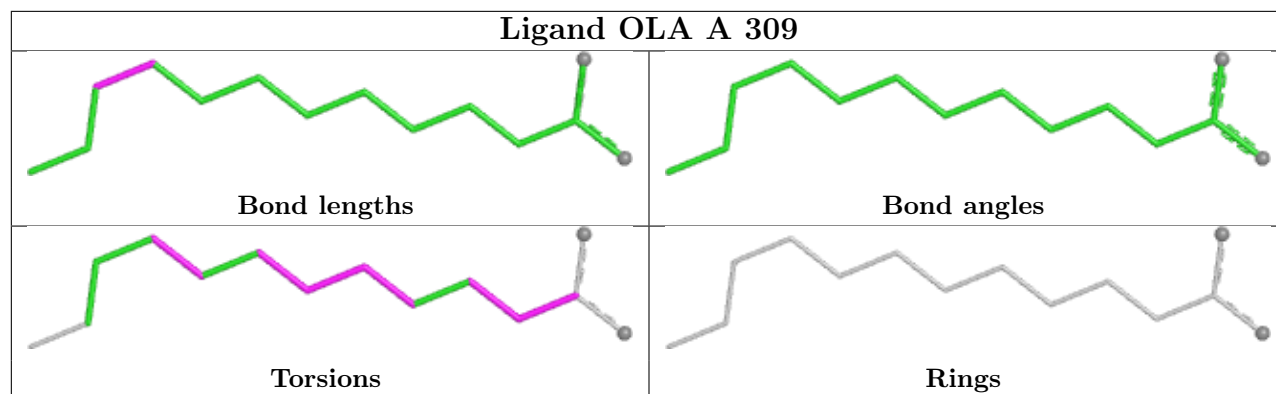
2 monomers are involved in 6 short contacts:

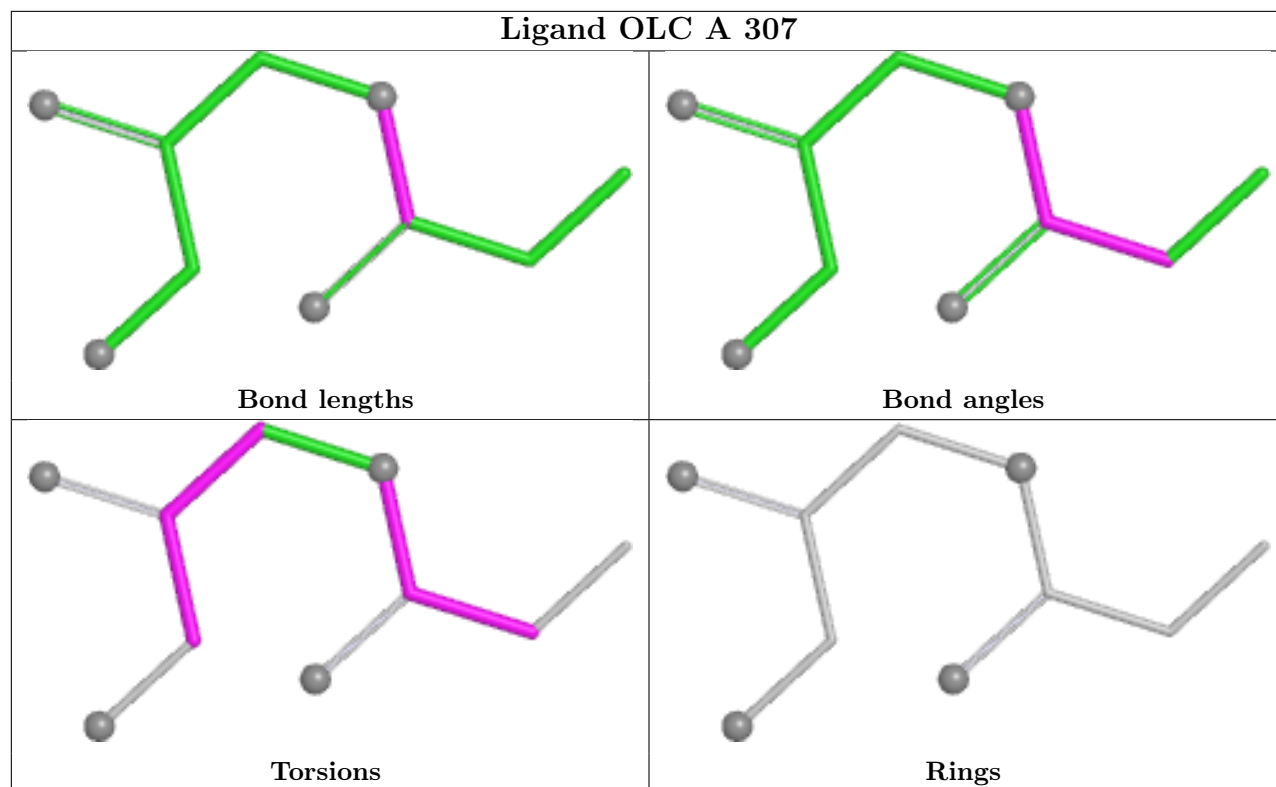
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	301	RET	4	0
4	A	304	OLA	2	0

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 ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th 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 ²)	Q<0.9
1	A	265/296 (89%)	0.83	26 (9%) 13 13	26, 39, 65, 93	1 (0%)

All (26) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	1	MET	5.0
1	A	94	TYR	4.3
1	A	261	ALA	3.8
1	A	88	LEU	3.6
1	A	0	SER	3.4
1	A	-1	ASN	3.3
1	A	263	GLY	3.0
1	A	122[A]	PHE	3.0
1	A	262	LEU	3.0
1	A	89	THR	2.9
1	A	148	ASP	2.8
1	A	98	ASN	2.7
1	A	87	ASP	2.7
1	A	260	GLN	2.6
1	A	78	TYR	2.5
1	A	86	GLN	2.5
1	A	90	PHE	2.5
1	A	258	ALA	2.4
1	A	155	ILE	2.3
1	A	91	SER	2.2
1	A	176	PHE	2.2
1	A	213	PHE	2.2
1	A	256	VAL	2.1
1	A	156	TRP	2.1
1	A	97	VAL	2.1
1	A	212	ALA	2.1

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

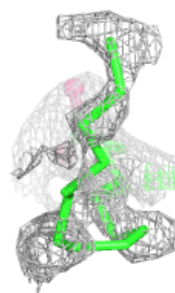
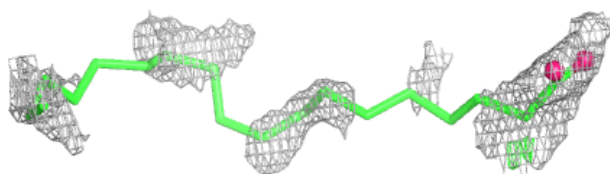
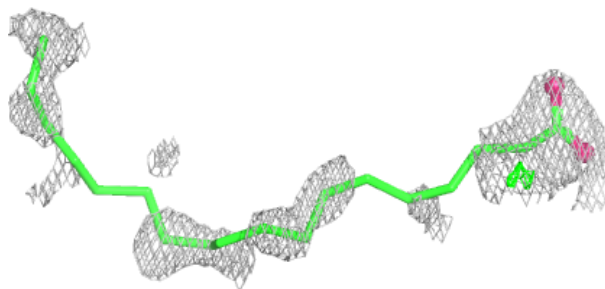
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
4	OLA	A	308	20/20	0.57	0.19	65,95,103,104	0
3	OLC	A	307	10/25	0.65	0.22	59,105,116,119	0
4	OLA	A	305	20/20	0.67	0.19	60,71,87,96	0
4	OLA	A	304	20/20	0.73	0.22	53,69,96,102	0
4	OLA	A	306	17/20	0.74	0.18	45,62,82,89	0
4	OLA	A	309	14/20	0.74	0.19	57,65,80,92	0
4	OLA	A	310	17/20	0.75	0.20	44,64,76,82	0
3	OLC	A	303	16/25	0.79	0.15	50,59,77,84	0
3	OLC	A	302	25/25	0.82	0.17	36,53,70,78	0
2	RET	A	301	20/21	0.93	0.08	27,31,38,39	0

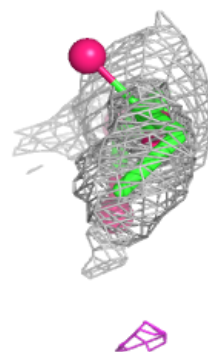
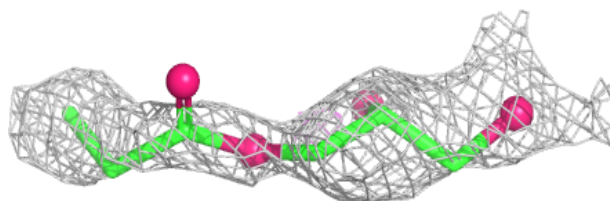
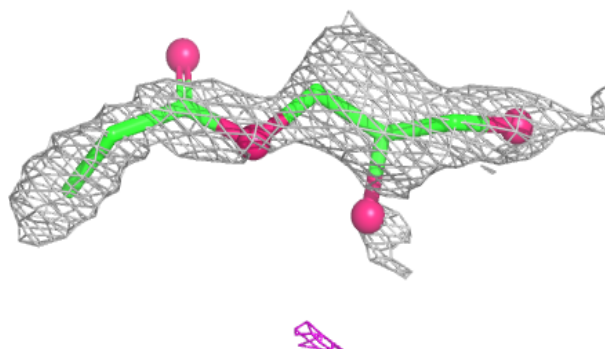
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around OLA A 308:

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

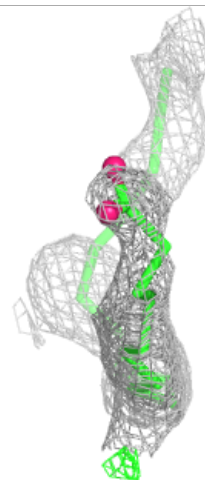
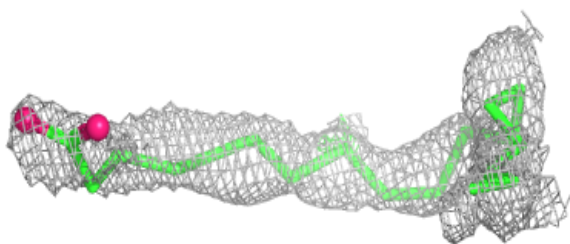
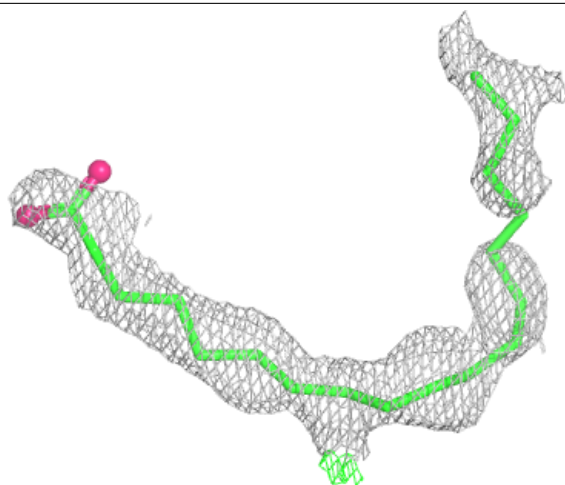
**Electron density around OLC A 307:**

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



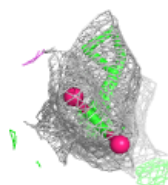
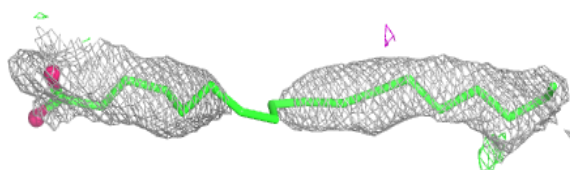
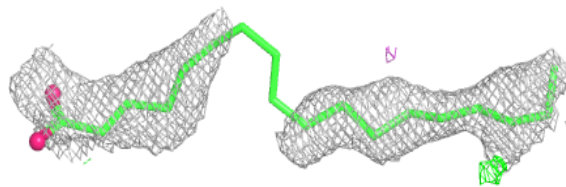
Electron density around OLA A 305:

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

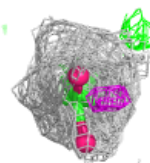
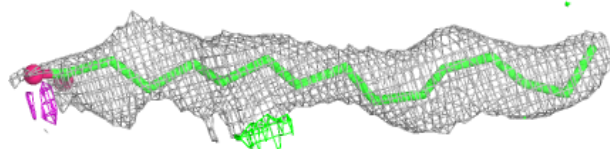
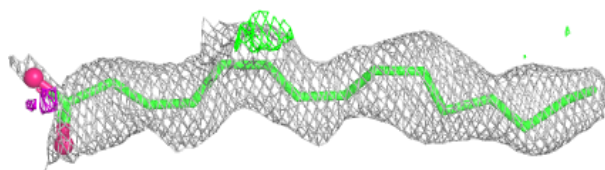


Electron density around OLA A 304:

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

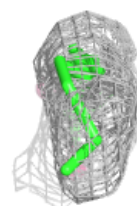
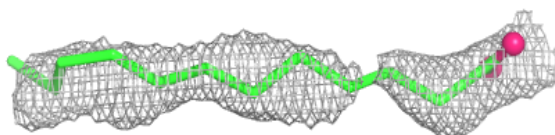
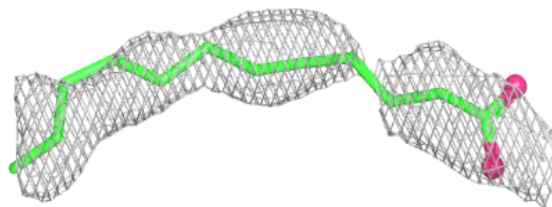
**Electron density around OLA A 306:**

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

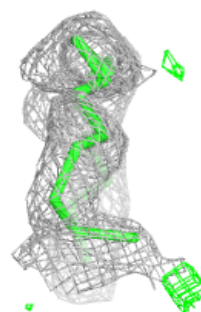
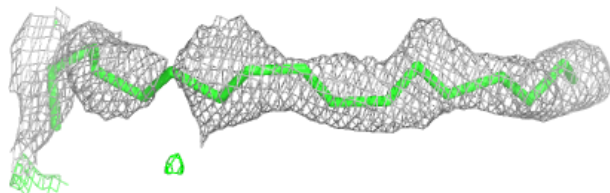
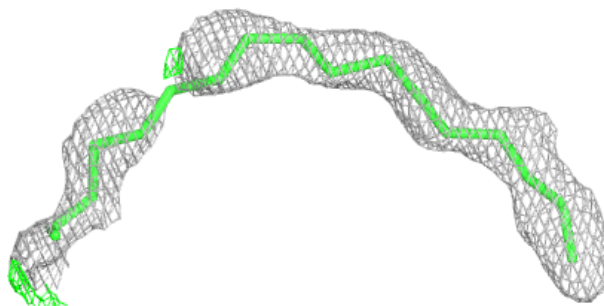


Electron density around OLA A 309:

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

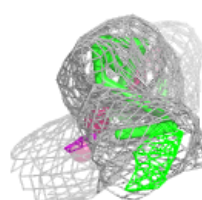
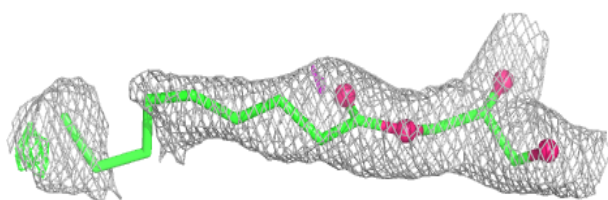
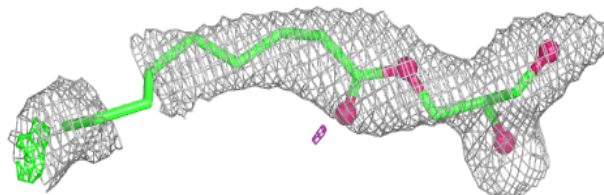
**Electron density around OLA A 310:**

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

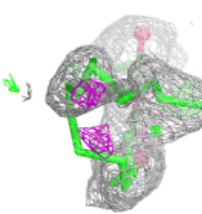
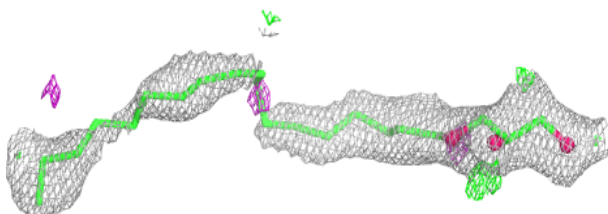
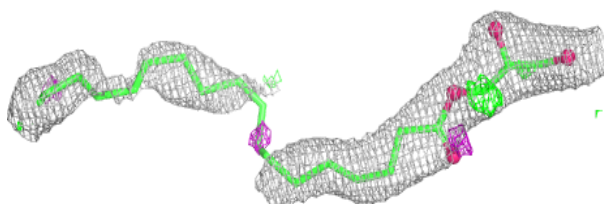


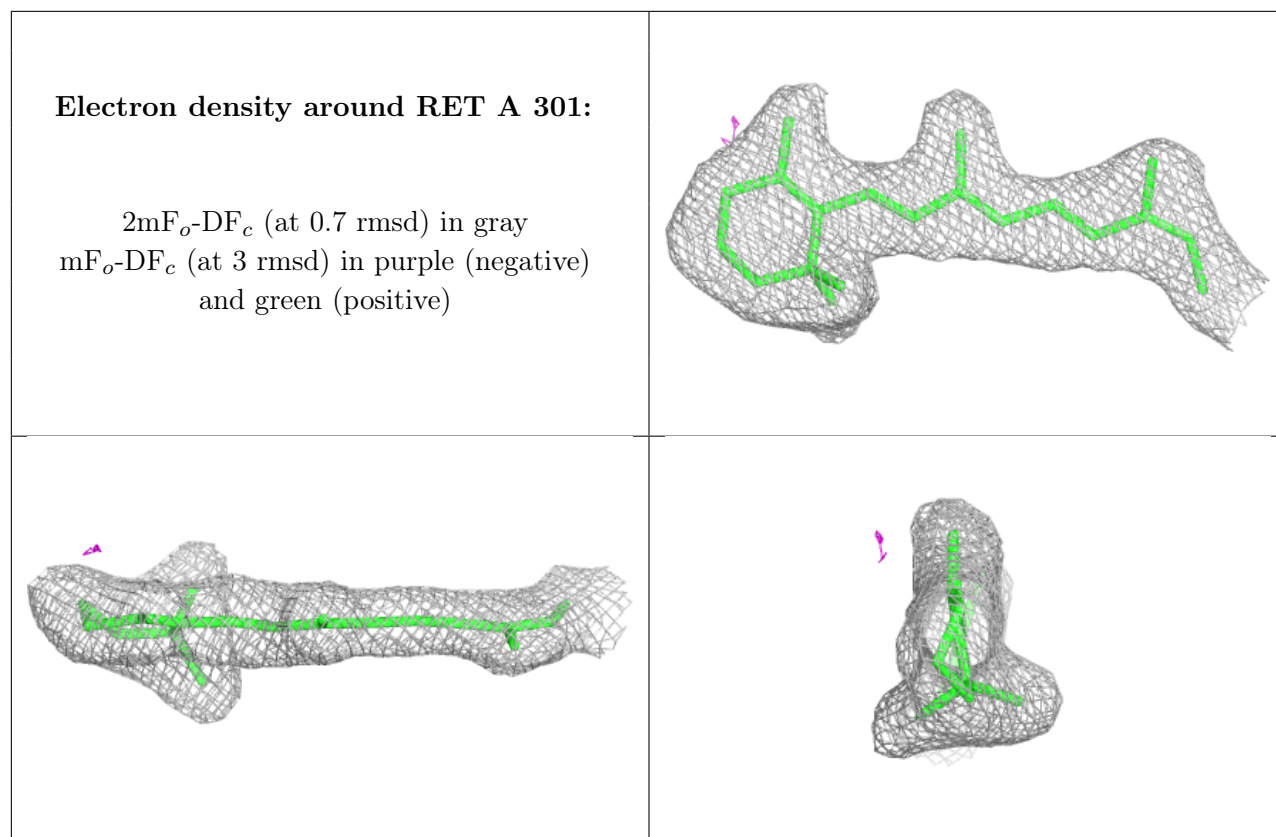
Electron density around OLC A 303:

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

**Electron density around OLC A 302:**

$2mF_o-DF_c$ (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.