Full wwPDB EM Validation Report ⓘ

Nov 5, 2023 – 11:57 pm GMT

PDB ID	:	7ODR
EMDB ID	:	EMD-12845
Title	:	State A of the human mitoribosomal large subunit assembly intermediate
Authors	:	Lenarcic, T.; Jaskolowski, M.; Leibundgut, M.; Scaiola, A.; Schoenhut, T.; Saurer, M.; Lee, R.G.; Rackham, O.; Filipovska, A.; Ban, N.
Deposited on	:	2021-04-30
Resolution	:	2.90 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

EMDB validation analysis	:	0.0.1.dev70
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	FAILED
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	FAILED
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 (i)

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

The reported resolution of this entry is 2.90 Å.

There are no overall percentile quality scores available for this entry.

MolProbity failed to run properly - the sequence quality summary graphics cannot be shown.

2 Entry composition

There are 63 unique types of molecules in this entry. The entry contains 107464 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Mitochondrial assembly of ribosomal large subunit protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	u	110	919	591	154	164	10	0	0

- Molecule 2 is a protein called MIEF1 upstream open reading frame protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
2	v	69	588	372	116	100	0	0

- Molecule 3 is a protein called Acyl carrier protein, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	w	79	638	410	95	128	5	0	0

- Molecule 4 is a protein called 5-methylcytosine rRNA methyltransferase NSUN4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	x	336	2660	1694	465	484	17	0	0

- Molecule 5 is a protein called Transcription termination factor 4, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	y	244	1980	1264	342	362	12	0	0

- Molecule 6 is a protein called 39S ribosomal protein L32, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	0	110	898	554	176	162	6	0	0

- Molecule 7 is a protein called 39S ribosomal protein L33, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	1	55	Total	C	N	O	S	0	0
			455	290	87	76	2		

- Molecule 8 is a protein called 39S ribosomal protein L34, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	2	46	Total	C	N	O	S	0	0
			377	233	83	60	1		

- Molecule 9 is a protein called 39S ribosomal protein L35, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	3	95	Total	C	N	O	S	0	0
			832	539	162	128	3		

- Molecule 10 is a protein called 39S ribosomal protein L36, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	4	38	Total	C	N	O	S	0	0
			342	217	72	49	4		

- Molecule 11 is a protein called 39S ribosomal protein L37, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	5	394	Total	C	N	O	S	0	0
			3210	2073	560	566	11		

- Molecule 12 is a protein called 39S ribosomal protein L38, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	6	354	Total	C	N	O	S	0	0
			2948	1881	525	533	9		

- Molecule 13 is a protein called 39S ribosomal protein L39, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	7	294	Total	C	N	O	S	0	0
			2390	1529	405	438	18		

- Molecule 14 is a protein called 39S ribosomal protein L40, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	8	102	Total	C	N	O	S	0	0
			860	543	152	163	2		

- Molecule 15 is a protein called 39S ribosomal protein L41, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	9	124	Total	C	N	O	S	0	0
			997	644	170	181	2		

- Molecule 16 is a RNA chain called 16S mitochondrial rRNA, DNA (31-MER),16S mitochondrial rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	A	1448	Total	C	N	O	P	0	0
			30460	13658	5442	9912	1448		

- Molecule 17 is a RNA chain called mitochondrial tRNAVal.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	B	72	Total	C	N	O	P	0	0
			1522	683	269	498	72		

- Molecule 18 is a protein called 39S ribosomal protein L2, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	D	240	Total	C	N	O	S	0	0
			1872	1165	378	320	9		

- Molecule 19 is a protein called 39S ribosomal protein L3, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	E	305	Total	C	N	O	S	0	0
			2406	1545	418	432	11		

- Molecule 20 is a protein called 39S ribosomal protein L4, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	F	252	Total	C	N	O	S	0	0
			2031	1305	370	350	6		

- Molecule 21 is a protein called 39S ribosomal protein L9, mitochondrial.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	H	97	Total	C	N	O	0	0
			802	508	155	139		

- Molecule 22 is a protein called 39S ribosomal protein L10, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	I	163	Total	C	N	O	S	0	0
			1324	854	240	220	10		

- Molecule 23 is a protein called 39S ribosomal protein L11, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	J	175	Total	C	N	O	S	0	0
			1330	847	237	244	2		

- Molecule 24 is a protein called 39S ribosomal protein L13, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	K	177	Total	C	N	O	S	0	0
			1455	936	259	253	7		

- Molecule 25 is a protein called 39S ribosomal protein L14, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	L	115	Total	C	N	O	S	0	0
			890	559	171	155	5		

- Molecule 26 is a protein called 39S ribosomal protein L15, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	M	291	Total	C	N	O	S	0	0
			2327	1483	430	408	6		

- Molecule 27 is a protein called 39S ribosomal protein L16, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	N	212	Total	C	N	O	S	0	0
			1723	1107	310	297	9		

- Molecule 28 is a protein called 39S ribosomal protein L17, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	O	154	Total	C	N	O	S	0	0
			1259	792	241	219	7		

- Molecule 29 is a protein called 39S ribosomal protein L18, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	P	144	Total	C	N	O	S	0	0
			1173	733	224	211	5		

- Molecule 30 is a protein called 39S ribosomal protein L19, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Q	221	Total	C	N	O	S	0	0
			1843	1179	327	328	9		

- Molecule 31 is a protein called 39S ribosomal protein L20, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	R	140	Total	C	N	O	S	0	0
			1154	732	231	187	4		

- Molecule 32 is a protein called 39S ribosomal protein L21, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	S	161	Total	C	N	O	S	0	0
			1293	835	227	227	4		

- Molecule 33 is a protein called 39S ribosomal protein L22, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	T	166	Total	C	N	O	S	0	0
			1369	875	254	233	7		

- Molecule 34 is a protein called 39S ribosomal protein L23, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	U	152	Total	C	N	O	S	0	0
			1251	788	234	226	3		

- Molecule 35 is a protein called 39S ribosomal protein L24, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	V	205	Total	C	N	O	S	0	0
			1676	1068	298	302	8		

- Molecule 36 is a protein called 39S ribosomal protein L27, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	W	106	Total	C	N	O	S	0	0
			835	536	157	139	3		

- Molecule 37 is a protein called 39S ribosomal protein L28, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	X	244	Total	C	N	O	S	0	0
			2044	1322	352	365	5		

- Molecule 38 is a protein called 39S ribosomal protein L47, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	Y	181	Total	C	N	O	S	0	0
			1556	995	298	259	4		

- Molecule 39 is a protein called 39S ribosomal protein L30, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Z	122	Total	C	N	O	S	0	0
			996	636	186	171	3		

- Molecule 40 is a protein called 39S ribosomal protein L42, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	a	100	Total	C	N	O	S	0	0
			840	529	152	154	5		

- Molecule 41 is a protein called 39S ribosomal protein L43, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	b	149	Total	C	N	O	S	0	0
			1189	739	230	217	3		

- Molecule 42 is a protein called 39S ribosomal protein L44, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	c	286	Total	C	N	O	S	0	0
			2299	1470	397	423	9		

- Molecule 43 is a protein called 39S ribosomal protein L45, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	d	259	Total	C	N	O	S	0	0
			2124	1357	369	384	14		

- Molecule 44 is a protein called 39S ribosomal protein L46, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	e	228	Total	C	N	O	S	0	0
			1848	1174	326	342	6		

- Molecule 45 is a protein called 39S ribosomal protein L48, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	f	150	Total	C	N	O	S	0	0
			1196	764	197	231	4		

- Molecule 46 is a protein called 39S ribosomal protein L49, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	g	134	Total	C	N	O	S	0	0
			1113	719	193	199	2		

- Molecule 47 is a protein called 39S ribosomal protein L50, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	h	110	Total	C	N	O	S	0	0
			895	568	156	168	3		

- Molecule 48 is a protein called 39S ribosomal protein L51, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	i	97	Total	C	N	O	S	0	0
			828	532	165	127	4		

- Molecule 49 is a protein called 39S ribosomal protein L52, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	j	94	Total	C	N	O	S	0	0
			745	463	144	136	2		

- Molecule 50 is a protein called 39S ribosomal protein L53, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	k	101	Total	C	N	O	S	0	0
			774	479	148	142	5		

- Molecule 51 is a protein called 39S ribosomal protein L54, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	l	82	Total	C	N	O	S	0	0
			688	437	120	128	3		

- Molecule 52 is a protein called 39S ribosomal protein L55, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	m	51	Total	C	N	O	S	0	0
			419	262	82	73	2		

- Molecule 53 is a protein called Ribosomal protein 63, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	o	94	Total	C	N	O	S	0	0
			798	501	165	129	3		

- Molecule 54 is a protein called Peptidyl-tRNA hydrolase ICT1, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	p	147	Total	C	N	O	S	0	0
			1205	748	228	225	4		

- Molecule 55 is a protein called Growth arrest and DNA damage-inducible proteins-interacting protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	q	141	Total	C	N	O	S	0	0
			1177	732	229	211	5		

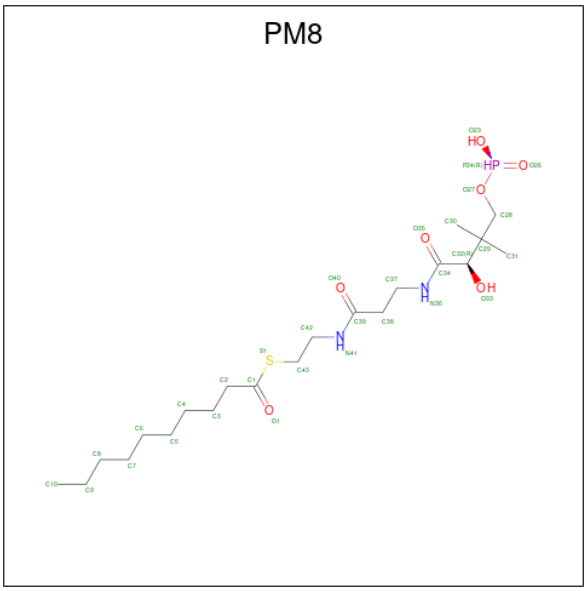
- Molecule 56 is a protein called 39S ribosomal protein S18a, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	r	162	Total	C	N	O	S	0	0
			1322	839	252	223	8		

- Molecule 57 is a protein called 39S ribosomal protein S30, mitochondrial.

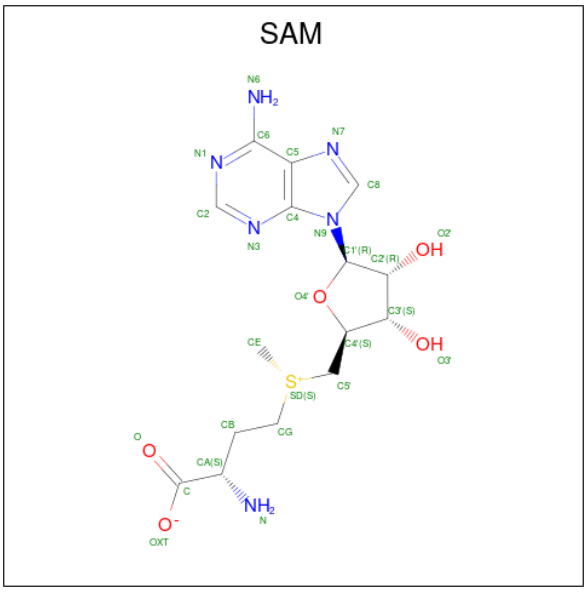
Mol	Chain	Residues	Atoms					AltConf	Trace
57	s	386	Total	C	N	O	S	0	0
			3155	2023	559	559	14		

- Molecule 58 is S-(2-{[N-(2-HYDROXY-4-{[HYDROXY(OXIDO)PHOSPHINO]OXY}-3,3-DIMETHYLBUTANOYL)-BETA-ALANYL]AMINO}ETHYL) DECANETHIOATE (three-letter code: PM8) (formula: $C_{21}H_{41}N_2O_7PS$).



Mol	Chain	Residues	Atoms						AltConf
58	w	1	Total	C	N	O	P	S	0
			32	21	2	7	1	1	

- Molecule 59 is S-ADENOSYLMETHIONINE (three-letter code: SAM) (formula: $C_{15}H_{22}N_6O_5S$).



Mol	Chain	Residues	Atoms					AltConf
59	x	1	Total	C	N	O	S	0
			27	15	6	5	1	

- Molecule 60 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
60	0	1	Total	Zn	0
			1	1	
60	4	1	Total	Zn	0
			1	1	

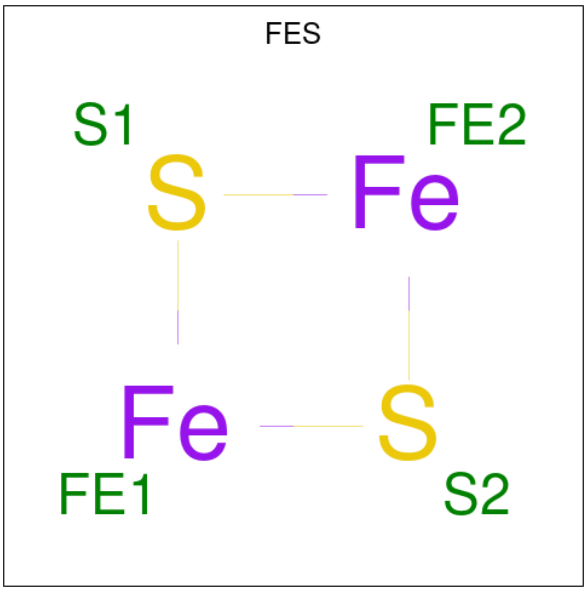
- Molecule 61 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
61	9	1	Total	Mg	0
			1	1	
61	A	92	Total	Mg	0
			92	92	
61	D	1	Total	Mg	0
			1	1	
61	M	1	Total	Mg	0
			1	1	
61	O	1	Total	Mg	0
			1	1	
61	g	1	Total	Mg	0
			1	1	

- Molecule 62 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms	AltConf
62	A	2	Total K 2 2	0

- Molecule 63 is FE2/S2 (INORGANIC) CLUSTER (three-letter code: FES) (formula: Fe_2S_2).



Mol	Chain	Residues	Atoms	AltConf
63	r	1	Total Fe S 4 2 2	0

MolProbity failed to run properly - this section is therefore empty.

3 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	123267	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor

4 Model quality

4.1 Standard geometry

MolProbity failed to run properly - this section is therefore empty.

4.2 Too-close contacts

MolProbity failed to run properly - this section is therefore empty.

4.3 Torsion angles

4.3.1 Protein backbone

MolProbity failed to run properly - this section is therefore empty.

4.3.2 Protein sidechains

MolProbity failed to run properly - this section is therefore empty.

4.3.3 RNA

MolProbity failed to run properly - this section is therefore empty.

4.4 Non-standard residues in protein, DNA, RNA chains

4 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	$\#\|Z\| > 2$
50	AYA	k	2	50	6,7,8	1.24	1 (16%)	5,8,10	1.32	1 (20%)
24	SAC	K	2	24	7,8,9	1.02	0	8,9,11	0.81	0
34	AYA	U	2	34	6,7,8	1.30	1 (16%)	5,8,10	1.22	1 (20%)
41	THC	b	2	41	8,9,10	1.06	1 (12%)	9,11,13	0.71	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
50	AYA	k	2	50	-	0/4/6/8	-
24	SAC	K	2	24	-	2/7/8/10	-
34	AYA	U	2	34	-	0/4/6/8	-
41	THC	b	2	41	-	0/8/10/12	-

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
34	U	2	AYA	CA-N	-2.57	1.43	1.46
50	k	2	AYA	CA-N	-2.27	1.44	1.46
41	b	2	THC	CA-N1	-2.15	1.43	1.46

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
50	k	2	AYA	CB-CA-N	2.71	112.63	109.61
34	U	2	AYA	CB-CA-N	2.58	112.48	109.61

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
24	K	2	SAC	N-CA-CB-OG
24	K	2	SAC	C-CA-CB-OG

There are no ring outliers.

No monomer is involved in short contacts.

4.5 Carbohydrates (i)

There are no monosaccharides in this entry.

4.6 Ligand geometry (i)

Of 104 ligands modelled in this entry, 101 are monoatomic - leaving 3 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	$\#\|Z\| > 2$
59	SAM	x	401	-	24,29,29	1.21	3 (12%)	23,42,42	1.59	4 (17%)
58	PM8	w	200	3	25,31,31	0.22	0	30,38,38	0.43	0
63	FES	r	201	22,56	0,4,4	-	-	-		

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
59	SAM	x	401	-	-	5/12/33/33	0/3/3/3
58	PM8	w	200	3	-	14/36/38/38	-
63	FES	r	201	22,56	-	-	0/1/1/1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
59	x	401	SAM	C2-N3	4.01	1.38	1.32
59	x	401	SAM	C2-N1	2.46	1.38	1.33
59	x	401	SAM	OXT-C	-2.17	1.23	1.30

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
59	x	401	SAM	N3-C2-N1	-5.45	120.16	128.68
59	x	401	SAM	OXT-C-O	-2.84	117.63	124.09
59	x	401	SAM	C3'-C2'-C1'	2.79	105.18	100.98
59	x	401	SAM	OXT-C-CA	2.21	120.91	113.38

There are no chirality outliers.

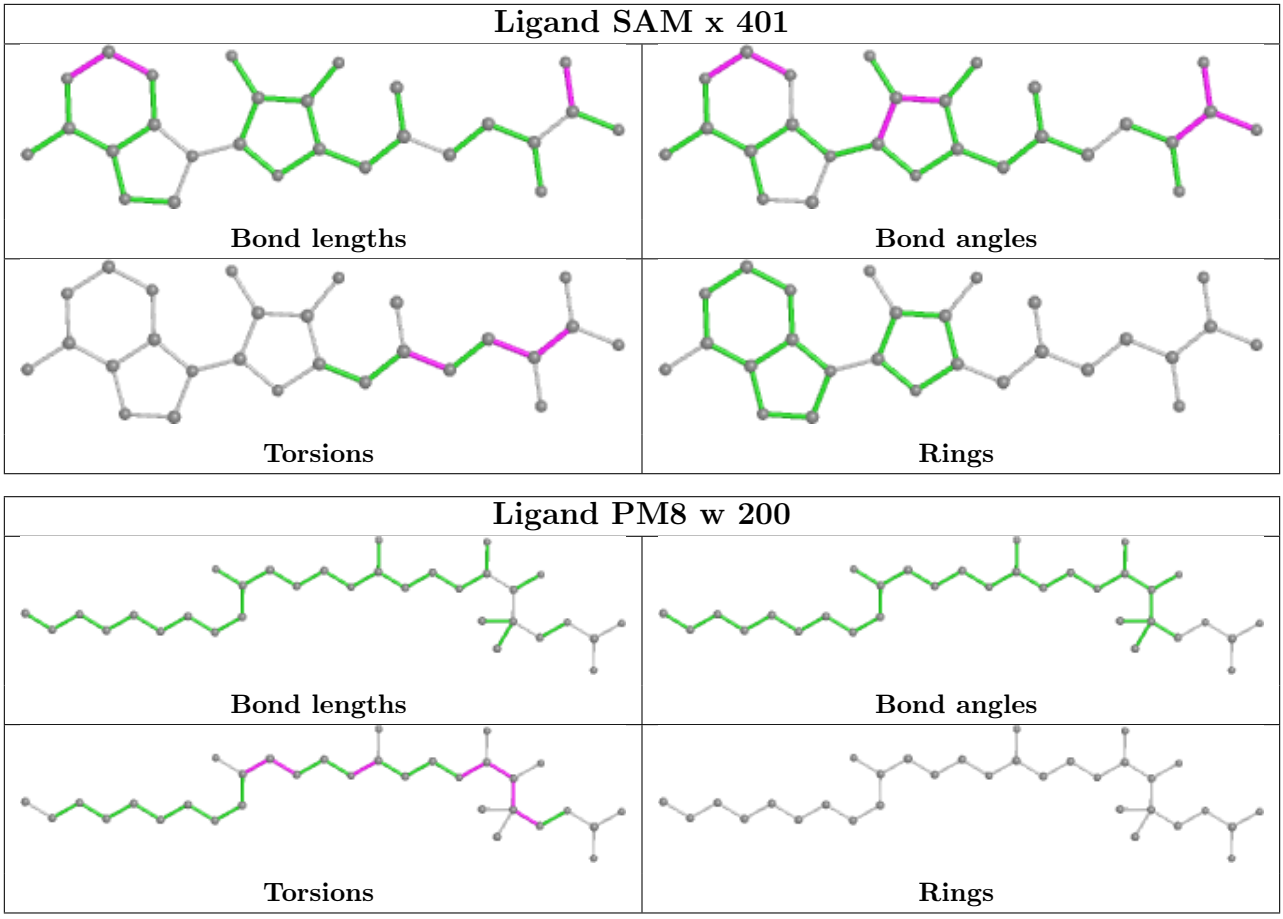
All (19) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
58	w	200	PM8	O27-C28-C29-C32
58	w	200	PM8	C32-C34-N36-C37
58	w	200	PM8	O1-C1-S1-C43
58	w	200	PM8	C2-C1-S1-C43
59	x	401	SAM	N-CA-CB-CG
59	x	401	SAM	C-CA-CB-CG
59	x	401	SAM	CB-CG-SD-C5'
58	w	200	PM8	C38-C39-N41-C42
58	w	200	PM8	O35-C34-N36-C37
58	w	200	PM8	O40-C39-N41-C42
58	w	200	PM8	O27-C28-C29-C30
58	w	200	PM8	O27-C28-C29-C31
58	w	200	PM8	O33-C32-C34-O35
59	x	401	SAM	CB-CG-SD-CE
58	w	200	PM8	O33-C32-C34-N36
58	w	200	PM8	C42-C43-S1-C1
58	w	200	PM8	C31-C29-C32-C34
59	x	401	SAM	OXT-C-CA-N
58	w	200	PM8	C28-C29-C32-C34

There are no ring outliers.

No monomer is involved in short contacts.

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



4.7 Other polymers (i)

There are no such residues in this entry.

4.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
16	A	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	3251:N	O3'	3252:N	P	17.10
1	A	3236:N	O3'	3237:N	P	13.81

5 Map visualisation

This section contains visualisations of the EMDB entry EMD-12845. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

5.1 Orthogonal projections

This section was not generated.

5.2 Central slices

This section was not generated.

5.3 Largest variance slices

This section was not generated.

5.4 Orthogonal standard-deviation projections (False-color)

This section was not generated.

5.5 Orthogonal surface views

This section was not generated.

5.6 Mask visualisation

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

6 Map analysis

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

6.1 Map-value distribution

This section was not generated.

6.2 Volume estimate versus contour level

This section was not generated.

6.3 Rotationally averaged power spectrum

This section was not generated. The rotationally averaged power spectrum had issues being displayed.

7 Fourier-Shell correlation (i)

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

8 Map-model fit

This section was not generated.