WORLDWIDE wwPDB
PROTEIN DATA BANK

wwPDB EM Validation Summary Report (i)

Apr 16, 2024 – 06:58 am BST

PDB ID	:	7NWT
EMDB ID	:	EMD-12635
Title	:	Initiated 70S ribosome in complex with 2A protein from encephalomyocarditis virus (EMCV)
Authors	:	Hill, C.H.; Napthine, S.; Pekarek, L.; Kibe, A.; Firth, A.E.; Graham, S.C.; Caliskan, N.; Brierley, I.
Deposited on	:	2021-03-17
Resolution	:	2.66 Å(reported)
Based on initial model	:	5MDZ

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1   Overall quality at a glance ⓘ

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

The reported resolution of this entry is 2.66 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 61 unique types of molecules in this entry. The entry contains 149932 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 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	B	271	Total	C	N	O	S	0	0
			2082	1288	423	364	7		

- Molecule 2 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	209	Total	C	N	O	S	0	0
			1565	979	288	294	4		

- Molecule 3 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	D	201	Total	C	N	O	S	0	0
			1552	974	283	290	5		

- Molecule 4 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	E	177	Total	C	N	O	S	0	0
			1410	899	249	256	6		

- Molecule 5 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	F	175	Total	C	N	O	S	0	0
			1313	826	241	244	2		

- Molecule 6 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	G	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 7 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	H	130	Total	C	N	O	S	0	0
			980	620	174	182	4		

- Molecule 8 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	I	135	Total	C	N	O	S	0	0
			984	622	171	185	6		

- Molecule 9 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	J	142	Total	C	N	O	S	0	0
			1129	714	212	199	4		

- Molecule 10 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	K	123	Total	C	N	O	S	0	0
			946	593	181	166	6		

- Molecule 11 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	L	144	Total	C	N	O	S	0	0
			1053	654	207	190	2		

- Molecule 12 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	M	136	Total	C	N	O	S	0	0
			1074	686	205	177	6		

- Molecule 13 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	N	119	Total	C	N	O	S	0	0
			951	588	195	163	5		

- Molecule 14 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	O	116	Total 892	C 552	N 178	O 162	0	0

- Molecule 15 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	P	114	Total 917	C 574	N 179	O 163	S 1	0	0

- Molecule 16 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
16	Q	117	Total 947	C 604	N 192	O 151	0	0

- Molecule 17 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	R	103	Total 816	C 516	N 153	O 145	S 2	0	0

- Molecule 18 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	S	110	Total 857	C 532	N 166	O 156	S 3	0	0

- Molecule 19 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	T	94	Total 746	C 470	N 140	O 134	S 2	0	0

- Molecule 20 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
20	U	103	Total 788	C 498	N 148	O 142	0	0

- Molecule 21 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	V	94	Total 753	C 479	N 137	O 134	S 3	0	0

- Molecule 22 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	W	76	Total 582	C 360	N 117	O 104	S 1	0	0

- Molecule 23 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	X	77	Total 625	C 388	N 129	O 106	S 2	0	0

- Molecule 24 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Y	62	Total 501	C 308	N 98	O 94	S 1	0	0

- Molecule 25 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Z	58	Total 448	C 281	N 87	O 78	S 2	0	0

- Molecule 26 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	1	2903	Total 62336	C 27816	N 11470	O 20147	P 2903	0	0

- Molecule 27 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	2	1534	Total 32929	C 14693	N 6041	O 10661	P 1534	0	0

- Molecule 28 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	3	120	Total 2569	C 1144	N 468	O 837	P 120	0	0

- Molecule 29 is a RNA chain called fMet-NH-tRNA(fMet).

Mol	Chain	Residues	Atoms						AltConf	Trace
29	5	76	Total 1622	C 725	N 292	O 528	P 76	S 1	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
5	8	4SU	G	conflict	GB 1317722521

- Molecule 30 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	a	66	Total 522	C 323	N 99	O 94	S 6	0	0

- Molecule 31 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	b	56	Total 444	C 269	N 94	O 80	S 1	0	0

- Molecule 32 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
32	c	52	Total 426	C 275	N 78	O 73	0	0

- Molecule 33 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	d	46	Total 377	C 228	N 90	O 57	S 2	0	0

- Molecule 34 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
34	e	64	504	323	105	74	2	0	0

- Molecule 35 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	f	38	302	185	65	48	4	0	0

- Molecule 36 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	g	225	1760	1113	316	323	8	0	0

- Molecule 37 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
37	h	208	1636	1036	307	290	3	0	0

- Molecule 38 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
38	i	205	1643	1026	315	298	4	0	0

- Molecule 39 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
39	j	156	1152	717	217	212	6	0	0

- Molecule 40 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
40	k	104	848	536	153	152	7	0	0

- Molecule 41 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	l	151	Total 1181	C 735	N 227	O 215	S 4	0	0

- Molecule 42 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	m	129	Total 979	C 616	N 173	O 184	S 6	0	0

- Molecule 43 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	n	127	Total 1022	C 634	N 206	O 179	S 3	0	0

- Molecule 44 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	o	99	Total 790	C 495	N 151	O 143	S 1	0	0

- Molecule 45 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	p	117	Total 877	C 540	N 174	O 160	S 3	0	0

- Molecule 46 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	q	123	Total 957	C 591	N 196	O 165	S 5	0	0

- Molecule 47 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	r	116	Total 900	C 558	N 181	O 158	S 3	0	0

- Molecule 48 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	s	100	Total	C	N	O	S	0	0
			805	499	164	139	3		

- Molecule 49 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	t	88	Total	C	N	O	S	0	0
			714	439	144	130	1		

- Molecule 50 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	u	82	Total	C	N	O	S	0	0
			649	406	128	114	1		

- Molecule 51 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	v	80	Total	C	N	O	S	0	0
			648	411	121	113	3		

- Molecule 52 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	w	66	Total	C	N	O	S	0	0
			544	344	102	97	1		

- Molecule 53 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	x	83	Total	C	N	O	S	0	0
			663	424	126	111	2		

- Molecule 54 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	y	86	Total	C	N	O	S	0	0
			669	414	138	114	3		

- Molecule 55 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	z	70	Total 589	C 366	N 125	O 97	S 1	0	0

- Molecule 56 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	XX	8	Total 176	C 78	N 34	O 56	P 8	0	0

- Molecule 57 is a protein called Protein 2A.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	AA	127	Total 1067	C 690	N 192	O 182	S 3	0	0
57	BB	130	Total 1111	C 716	N 204	O 188	S 3	2	0
57	CC	125	Total 1048	C 677	N 190	O 178	S 3	0	0

There are 27 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AA	144	GLY	-	expression tag	UNP P12296
AA	145	SER	-	expression tag	UNP P12296
AA	146	LYS	-	expression tag	UNP P12296
AA	147	HIS	-	expression tag	UNP P12296
AA	148	HIS	-	expression tag	UNP P12296
AA	149	HIS	-	expression tag	UNP P12296
AA	150	HIS	-	expression tag	UNP P12296
AA	151	HIS	-	expression tag	UNP P12296
AA	152	HIS	-	expression tag	UNP P12296
BB	144	GLY	-	expression tag	UNP P12296
BB	145	SER	-	expression tag	UNP P12296
BB	146	LYS	-	expression tag	UNP P12296
BB	147	HIS	-	expression tag	UNP P12296
BB	148	HIS	-	expression tag	UNP P12296
BB	149	HIS	-	expression tag	UNP P12296
BB	150	HIS	-	expression tag	UNP P12296
BB	151	HIS	-	expression tag	UNP P12296
BB	152	HIS	-	expression tag	UNP P12296
CC	144	GLY	-	expression tag	UNP P12296
CC	145	SER	-	expression tag	UNP P12296
CC	146	LYS	-	expression tag	UNP P12296

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Chain	Residue	Modelled	Actual	Comment	Reference
CC	147	HIS	-	expression tag	UNP P12296
CC	148	HIS	-	expression tag	UNP P12296
CC	149	HIS	-	expression tag	UNP P12296
CC	150	HIS	-	expression tag	UNP P12296
CC	151	HIS	-	expression tag	UNP P12296
CC	152	HIS	-	expression tag	UNP P12296

- Molecule 58 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
58	B	1	Total 1	Mg 1	0
58	C	1	Total 1	Mg 1	0
58	M	1	Total 1	Mg 1	0
58	N	1	Total 1	Mg 1	0
58	Q	1	Total 1	Mg 1	0
58	1	290	Total 290	Mg 290	0
58	2	128	Total 128	Mg 128	0
58	3	8	Total 8	Mg 8	0
58	5	3	Total 3	Mg 3	0
58	b	1	Total 1	Mg 1	0
58	i	1	Total 1	Mg 1	0
58	BB	1	Total 1	Mg 1	0

- Molecule 59 is N-FORMYLMETHIONINE (three-letter code: FME) (formula: $C_6H_{11}NO_3S$).

FME
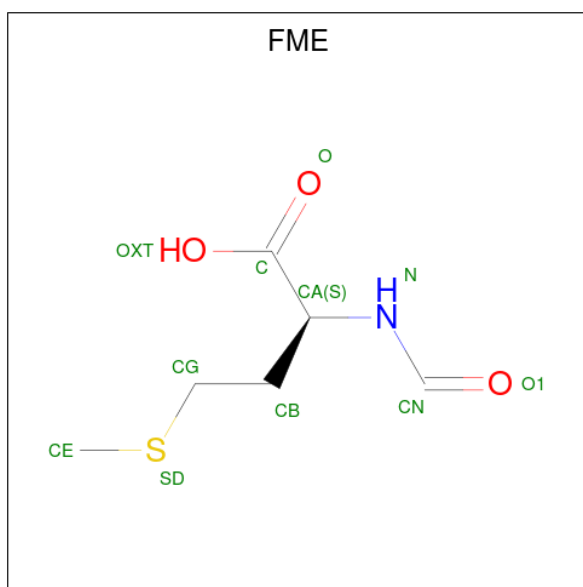
Mol	Chain	Residues	Atoms					AltConf
59	5	1	Total 10	C 6	N 1	O 2	S 1	0

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

Mol	Chain	Residues	Atoms		AltConf
60	a	1	Total 1	Zn 1	0
60	f	1	Total 1	Zn 1	0

- Molecule 61 is water.

Mol	Chain	Residues	Atoms		AltConf
61	B	2	Total 2	O 2	0

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

3 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	120749	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION; The contrast transfer function (CTF) was estimated per-image using CtfFind4. All further phase+amplitude correction was performed internally in Relion. Per-particle CTF refinement was done after polishing	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	54.4	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	75000	Depositor
Image detector	FEI FALCON III (4k 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 ⓘ

40 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	$\#|Z| > 2$
27	MA6	2	1519	27	18,26,27	1.37	2 (11%)	19,38,41	3.41	2 (10%)
26	OMC	1	2498	58,26	19,22,23	2.69	8 (42%)	26,31,34	0.97	1 (3%)
29	4OC	5	32	29	20,23,24	2.83	8 (40%)	26,32,35	0.97	2 (7%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
26	PSU	1	955	26	18,21,22	1.15	1 (5%)	22,30,33	2.02	4 (18%)
26	PSU	1	2504	26	18,21,22	1.02	1 (5%)	22,30,33	1.87	4 (18%)
26	6MZ	1	2030	26	18,25,26	1.70	5 (27%)	16,36,39	2.96	5 (31%)
26	OMG	1	2251	29,26	18,26,27	2.34	8 (44%)	19,38,41	1.44	3 (15%)
27	PSU	2	516	58,27	18,21,22	1.08	1 (5%)	22,30,33	1.81	3 (13%)
29	5MU	5	54	29	19,22,23	4.75	7 (36%)	28,32,35	3.65	9 (32%)
27	7MG	2	527	27	22,26,27	3.26	10 (45%)	29,39,42	1.95	8 (27%)
29	4SU	5	8	29	18,21,22	3.64	8 (44%)	26,30,33	2.22	5 (19%)
27	5MC	2	967	27	18,22,23	3.33	7 (38%)	26,32,35	1.06	2 (7%)
27	MA6	2	1518	27	18,26,27	1.37	2 (11%)	19,38,41	3.27	2 (10%)
27	UR3	2	1498	27	19,22,23	2.43	6 (31%)	26,32,35	1.44	2 (7%)
26	2MG	1	2445	3,26	18,26,27	2.25	6 (33%)	16,38,41	1.48	4 (25%)
26	PSU	1	2605	26	18,21,22	1.15	2 (11%)	22,30,33	1.64	4 (18%)
27	2MG	2	1207	27	18,26,27	2.35	7 (38%)	16,38,41	1.47	4 (25%)
27	2MG	2	966	27	18,26,27	2.26	7 (38%)	16,38,41	1.41	3 (18%)
26	2MG	1	1835	26	18,26,27	2.09	7 (38%)	16,38,41	1.41	4 (25%)
26	PSU	1	1917	26	18,21,22	1.02	2 (11%)	22,30,33	1.66	4 (18%)
26	6MZ	1	1618	26	18,25,26	1.77	5 (27%)	16,36,39	1.89	3 (18%)
26	OMU	1	2552	26	19,22,23	2.65	7 (36%)	26,31,34	2.10	7 (26%)
46	0TD	q	89	46	7,9,10	1.47	0	6,11,13	2.30	2 (33%)
26	1MG	1	745	26	18,26,27	2.46	5 (27%)	19,39,42	1.65	4 (21%)
26	PSU	1	746	26	18,21,22	1.09	1 (5%)	22,30,33	1.70	4 (18%)
26	G7M	1	2069	26	20,26,27	1.72	5 (25%)	17,39,42	1.31	3 (17%)
26	PSU	1	2580	58,26	18,21,22	1.31	3 (16%)	22,30,33	1.89	4 (18%)
29	PSU	5	55	29	18,21,22	1.04	1 (5%)	22,30,33	1.78	5 (22%)
26	PSU	1	2457	26	18,21,22	1.15	1 (5%)	22,30,33	2.13	5 (22%)
26	2MA	1	2503	58,26	17,25,26	2.37	5 (29%)	17,37,40	1.35	3 (17%)
29	H2U	5	20	58,29	18,21,22	3.54	3 (16%)	21,30,33	2.02	5 (23%)
27	2MG	2	1516	27	18,26,27	2.21	7 (38%)	16,38,41	1.60	4 (25%)
26	3TD	1	1915	26	18,22,23	4.49	7 (38%)	22,32,35	1.71	3 (13%)
29	8AN	5	76	58,29,59	19,24,25	5.61	8 (42%)	13,35,38	3.10	3 (23%)
26	5MU	1	1939	58,26	19,22,23	4.68	7 (36%)	28,32,35	3.87	12 (42%)
27	5MC	2	1407	27	18,22,23	3.19	7 (38%)	26,32,35	1.12	1 (3%)
26	5MC	1	1962	26	18,22,23	3.23	7 (38%)	26,32,35	1.05	2 (7%)
26	5MU	1	747	26	19,22,23	4.78	7 (36%)	28,32,35	3.41	8 (28%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
27	4OC	2	1402	27	20,23,24	2.84	8 (40%)	26,32,35	0.95	1 (3%)
26	PSU	1	1911	26	18,21,22	1.06	1 (5%)	22,30,33	1.70	4 (18%)

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
27	MA6	2	1519	27	-	0/7/29/30	0/3/3/3
26	OMC	1	2498	58,26	-	1/9/27/28	0/2/2/2
29	4OC	5	32	29	-	0/9/29/30	0/2/2/2
26	PSU	1	955	26	-	0/7/25/26	0/2/2/2
26	PSU	1	2504	26	-	0/7/25/26	0/2/2/2
26	6MZ	1	2030	26	-	2/5/27/28	0/3/3/3
26	OMG	1	2251	29,26	-	1/5/27/28	0/3/3/3
27	PSU	2	516	58,27	-	2/7/25/26	0/2/2/2
29	5MU	5	54	29	-	2/7/25/26	0/2/2/2
27	7MG	2	527	27	-	2/7/37/38	0/3/3/3
29	4SU	5	8	29	-	4/7/25/26	0/2/2/2
27	5MC	2	967	27	-	0/7/25/26	0/2/2/2
27	MA6	2	1518	27	-	0/7/29/30	0/3/3/3
27	UR3	2	1498	27	-	0/7/25/26	0/2/2/2
26	2MG	1	2445	3,26	-	2/5/27/28	0/3/3/3
26	PSU	1	2605	26	-	0/7/25/26	0/2/2/2
27	2MG	2	1207	27	-	0/5/27/28	0/3/3/3
27	2MG	2	966	27	-	2/5/27/28	0/3/3/3
26	2MG	1	1835	26	-	0/5/27/28	0/3/3/3
26	PSU	1	1917	26	-	0/7/25/26	0/2/2/2
26	6MZ	1	1618	26	-	2/5/27/28	0/3/3/3
26	OMU	1	2552	26	-	1/9/27/28	0/2/2/2
46	0TD	q	89	46	-	1/7/12/14	-
26	1MG	1	745	26	-	0/3/25/26	0/3/3/3
26	PSU	1	746	26	-	2/7/25/26	0/2/2/2
26	G7M	1	2069	26	-	1/3/25/26	0/3/3/3
26	PSU	1	2580	58,26	-	0/7/25/26	0/2/2/2
29	PSU	5	55	29	-	0/7/25/26	0/2/2/2
26	PSU	1	2457	26	-	0/7/25/26	0/2/2/2
26	2MA	1	2503	58,26	-	2/3/25/26	0/3/3/3
29	H2U	5	20	58,29	-	5/7/38/39	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
27	2MG	2	1516	27	-	0/5/27/28	0/3/3/3
26	3TD	1	1915	26	-	5/7/25/26	0/2/2/2
29	8AN	5	76	58,29,59	-	3/3/25/26	0/3/3/3
26	5MU	1	1939	58,26	-	0/7/25/26	0/2/2/2
27	5MC	2	1407	27	-	0/7/25/26	0/2/2/2
26	5MC	1	1962	26	-	0/7/25/26	0/2/2/2
26	5MU	1	747	26	-	0/7/25/26	0/2/2/2
27	4OC	2	1402	27	-	2/9/29/30	0/2/2/2
26	PSU	1	1911	26	-	0/7/25/26	0/2/2/2

The worst 5 of 200 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	76	8AN	C2'-C1'	-15.41	1.30	1.53
29	5	76	8AN	O4'-C1'	15.38	1.62	1.41
26	1	1915	3TD	C6-C5	14.20	1.51	1.35
29	5	20	H2U	C2-N1	12.18	1.53	1.35
29	5	54	5MU	C2-N1	10.92	1.56	1.38

The worst 5 of 158 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(º)	Ideal(º)
27	2	1519	MA6	N1-C6-N6	-13.54	102.81	117.06
27	2	1518	MA6	N1-C6-N6	-12.74	103.65	117.06
29	5	54	5MU	C5-C4-N3	12.27	125.79	115.31
26	1	747	5MU	C5-C4-N3	11.28	124.94	115.31
26	1	1939	5MU	C5-C4-N3	11.27	124.93	115.31

There are no chirality outliers.

5 of 42 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
27	2	516	PSU	O4'-C1'-C5-C4
27	2	516	PSU	O4'-C1'-C5-C6
29	5	20	H2U	O4'-C1'-N1-C6
46	q	89	0TD	CG-CB-SB-CSB
26	1	746	PSU	C2'-C1'-C5-C4

There are no ring outliers.

No monomer is involved in short contacts.

4.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

4.6 Ligand geometry ⓘ

Of 440 ligands modelled in this entry, 439 are monoatomic - leaving 1 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	FME	5	104	29	8,9,10	0.88	0	7,9,11	1.82	1 (14%)

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	FME	5	104	29	-	4/7/9/11	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
59	5	104	FME	CA-N-CN	4.05	129.05	122.82

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
59	5	104	FME	CB-CA-N-CN
59	5	104	FME	N-CA-CB-CG
59	5	104	FME	CB-CG-SD-CE
59	5	104	FME	CA-CB-CG-SD

There are no ring outliers.

No monomer is involved in short contacts.

4.7 Other polymers ⓘ

There are no such residues in this entry.

4.8 Polymer linkage issues ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
27	2	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	2	147:G	O3'	148:G	P	3.01
1	2	1276:G	O3'	1277:C	P	2.98

5 Map visualisation (i)

This section contains visualisations of the EMDB entry EMD-12635. 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 (i)

This section was not generated.

5.2 Central slices (i)

This section was not generated.

5.3 Largest variance slices (i)

This section was not generated.

5.4 Orthogonal standard-deviation projections (False-color) (i)

This section was not generated.

5.5 Orthogonal surface views (i)

This section was not generated.

5.6 Mask visualisation (i)

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 ⓘ

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

8 Map-model fit ⓘ

This section was not generated.