

# wwPDB EM Validation Summary Report (i)

#### Jul 9, 2025 – 02:42 PM EDT

PDB ID : 9E0P / pdb\_00009e0p EMDB ID : EMD-47365 Title : M. smegmatis methylated 70S ribosome structure Authors : Nandi, S.; Conn, G.L. Deposited on : 2024-10-18 Resolution : 3.17 Å(reported) Based on initial model : 5ZEB

This is a wwPDB EM Validation Summary 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 (i) 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 (i)) were used in the production of this report:

EMDB validation analysis	:	0.0.1.dev118
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber $(2001)$
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

# 1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.17 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	$egin{array}{c} { m Whole \ archive} \ (\#{ m Entries}) \end{array}$	${f EM} {f structures} \ (\#{f Entries})$
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq=3, 2, 1$  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 EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain	
1	1	61	84%	13% • •
2	2	75	40% 72% 13%	• 12%
3	3	57	88%	7% 5%
4	4	55	<b>6</b> 9% 22%	9%
5	5	47	81%	15% •
6	6	64	86%	12% •
7	7	37	86%	14%

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Conti	nued fron	n previous	page	
Mol	Chain	Length	Quality of chain	
8	8	24	79%	17% •
9	А	3120	63% 29%	7% •
10	В	118	• 57% 31%	11% •
11	С	278	88%	10% •
12	D	217	86%	12% ••
13	Е	215	5% 89%	7% •
14	F	187	83%	13% •
15	G	179		11% •
16	Н	151	48% 93%	7%•
17	Ι	174	66% 62% 9% •	28%
18	J	142	93% 	14% 6%
19	K	147	<b>●</b> 96%	•
20	L	122	<b>●</b> 87%	12% •
21	М	147	90%	8% •
22	Ν	138	89%	8% •
23	Ο	174	60% 7%	33%
24	Р	127	83%	17% •
25	Q	113	86%	14%
26	R	129	81%	16% •
27	S	103	• 89%	10% •
28	Т	153	67% 8%	25%
29	U	100	86%	8% 6%
30	V	105	10% 84%	7% • 8%
31	W	215	• 78%	10% 13%
32	X	88	€ 83%	10% 7%

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Mol	Chain	Length	Quality of chain	
33	Υ	64	<b>•</b> 83%	16% •
34	Ζ	77	75% 5% •	18%
35	a	1528	<b>6</b> 1% 30%	7% •
36	b	277	79% 79%	18%
37	с	275	31% 69% 7%	24%
38	d	201	86%	13%
39	е	214	83%	9% 7%
40	f	96	90%	10%
41	g	156	94%	6%
42	h	132	86%	13% •
43	i	150	<u>9%</u> 73% 11%	16%
44	j	101	38% 60% 34%	••
45	k	138	79% 6%	6 15%
46	1	124	80%	19% •
47	m	124	80%	14% 6%
48	n	61	41% 82%	15% • •
49	0	89	91%	7% •
50	р	156	68% •	28%
51	q	98	81%	13% 6%
52	r	84	67% 10%	24%
53	S	93	<del>40 /0</del> 68% 16%	16%
54	t	86	90%	8% •
55	u	33	85%	12% •

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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
35	OMC	a	1392	-	-	Х	-



# 2 Entry composition (i)

There are 56 unique types of molecules in this entry. The entry contains 148821 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 Large ribosomal subunit protein uL30.

Mol	Chain	Residues		Aton	ns	AltConf	Trace	
1	1	60	Total 483	C 298	N 97	0 88	0	0

• Molecule 2 is a protein called Large ribosomal subunit protein bL31.

Mol	Chain	Residues		Ato	$\mathbf{ms}$	AltConf	Trace		
2	2	66	Total	С	Ν	0	$\mathbf{S}$	0	0
_	-	00	510	316	93	96	5		

• Molecule 3 is a protein called Large ribosomal subunit protein bL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	3	54	Total 423	C 260	N 93	0 69	S 1	0	0

• Molecule 4 is a protein called Large ribosomal subunit protein bL33A.

Mol	Chain	Residues		Atc	$\mathbf{ms}$	AltConf	Trace		
4	4	50	Total 416	C 254	N 86	O 72	${f S}{4}$	0	0

• Molecule 5 is a protein called Large ribosomal subunit protein bL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	5	45	Total 372	C 222	N 06	O 53	S 1	0	0
			314		90	55	T		

• Molecule 6 is a protein called Large ribosomal subunit protein bL35.

Mol	Chain	Residues	Atoms				AltConf	Trace
6	6	63	Total 502	C 302	N 115	O 85	0	0



• Molecule 7 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues		Atc	$\mathbf{ms}$	AltConf	Trace		
7	7	37	Total 298	C 181	N 66	0 46	S 5	0	0

• Molecule 8 is a protein called 50S ribosomal protein bL37.

Mol	Chain	Residues		Atom	ıs	AltConf	Trace	
8	8	23	Total 189	C 111	N 50	O 28	0	0

• Molecule 9 is a RNA chain called 23S rRNA.

Mol	Chain	Residues			Atoms			AltConf	Trace
9	А	3102	Total 66624	C 29695	N 12253	O 21574	Р 3102	0	0

• Molecule 10 is a RNA chain called 5S rRNA.

Mol	Chain	Residues		A	AltConf	Trace			
10	В	117	Total 2501	C 1116	N 462	O 806	Р 117	0	0

• Molecule 11 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues		Ate	AltConf	Trace			
11	С	273	Total 2097	C 1290	N 435	O 368	$\frac{S}{4}$	0	0

• Molecule 12 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	D	214	Total 1587	C 982	N 310	O 290	${S \atop 5}$	0	0

• Molecule 13 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues		At	oms			AltConf	Trace
13	Е	207	Total 1548	C 955	N 292	O 299	${ m S} { m 2}$	0	0

• Molecule 14 is a protein called Large ribosomal subunit protein uL5.



Mol	Chain	Residues		At	oms	AltConf	Trace		
14	F	181	Total 1437	C 903	N 269	O 259	S 6	0	0

• Molecule 15 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues		At	oms	AltConf	Trace		
15	G	176	Total 1348	C 845	N 249	O 253	S 1	0	0

• Molecule 16 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues		At	oms	AltConf	Trace		
16	Н	151	Total 1018	C 635	N 188	0 194	S 1	0	0

• Molecule 17 is a protein called Large ribosomal subunit protein uL10.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	Ι	126	Total 918	C 580	N 156	O 180	S 2	0	0

• Molecule 18 is a protein called Large ribosomal subunit protein uL11.

Mol	Chain	Residues		At	oms			AltConf	Trace
18	J	133	Total 990	C 625	N 175	0 187	${ m S} { m 3}$	0	0

• Molecule 19 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues		At	oms			AltConf	Trace
19	K	147	Total 1138	С 727	N 208	O 201	${ m S} { m 2}$	0	0

• Molecule 20 is a protein called Large ribosomal subunit protein uL14.

Mol	Chain	Residues		At	oms	AltConf	Trace		
20	L	121	Total 930	C 580	N 178	O 169	${ m S} { m 3}$	0	0

• Molecule 21 is a protein called Large ribosomal subunit protein uL15.



Mol	Chain	Residues		At	oms			AltConf	Trace
21	М	145	Total 1078	C 676	N 205	O 194	${ m S} { m 3}$	0	0

• Molecule 22 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues		At	oms	AltConf	Trace		
22	Ν	134	Total 1074	C 680	N 211	0 181	${S \over 2}$	0	0

• Molecule 23 is a protein called Large ribosomal subunit protein bL17.

Mol	Chain	Residues		At	AltConf	Trace			
23	Ο	117	Total 919	C 577	N 178	0 162	$\begin{array}{c} \mathrm{S} \\ \mathrm{2} \end{array}$	0	0

• Molecule 24 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues		Ato	ms	AltConf	Trace	
24	Р	126	Total 956	C 586	N 199	0 171	0	0

• Molecule 25 is a protein called Large ribosomal subunit protein bL19.

Mol	Chain	Residues		At	AltConf	Trace			
25	Q	113	Total 907	C 570	N 171	0 165	S 1	0	0

• Molecule 26 is a protein called Large ribosomal subunit protein bL20.

Mol	Chain	Residues		Ato	$\mathbf{ms}$	AltConf	Trace	
26	R	124	Total 988	C 613	N 203	0 172	0	0

• Molecule 27 is a protein called Large ribosomal subunit protein bL21.

Mol	Chain	Residues		Ato	ms	AltConf	Trace	
27	S	102	Total 768	C 487	N 140	0 141	0	0

• Molecule 28 is a protein called Large ribosomal subunit protein uL22.



Mol	Chain	Residues		Ato	ms		AltConf	Trace
28	Т	114	Total 873	C 543	N 171	O 159	0	0

• Molecule 29 is a protein called Large ribosomal subunit protein uL23.

Mol	Chain	Residues		Ato	ms	AltConf	Trace	
29	U	94	Total 739	C 469	N 135	O 135	0	0

• Molecule 30 is a protein called Large ribosomal subunit protein uL24.

Mol	Chain	Residues		At	oms	AltConf	Trace		
30	V	97	Total 731	C 456	N 137	0 136	$\begin{array}{c} \mathrm{S} \\ \mathrm{2} \end{array}$	0	0

• Molecule 31 is a protein called Large ribosomal subunit protein bL25.

Mol	Chain	Residues		Ato	ms	AltConf	Trace	
31	W	188	Total 1407	C 869	N 251	O 287	0	0

• Molecule 32 is a protein called Large ribosomal subunit protein bL27.

Mol	Chain	Residues		Ato	ms	AltConf	Trace	
32	Х	82	Total 604	C 372	N 127	O 105	0	0

• Molecule 33 is a protein called Large ribosomal subunit protein bL28.

			Au	JIIIS	AltConf	Trace		
33 Y	63	Total 470	C 283	N 103	0 80	$\mathbf{S}_{\mathbf{A}}$	0	0

• Molecule 34 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues		At	oms	AltConf	Trace		
34	Z	63	Total 527	C 322	N 102	O 102	${f S}$ 1	0	0

• Molecule 35 is a RNA chain called 16S rRNA.



Mol	Chain	Residues		1	Atoms			AltConf	Trace
35	a	1506	Total 32342	C 14405	N 5921	O 10510	Р 1506	0	0

• Molecule 36 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues		Ate	AltConf	Trace			
36	b	228	Total 1793	C 1132	N 322	O 330	S 9	0	0

• Molecule 37 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues		Ate	oms			AltConf	Trace
37	с	210	Total 1672	C 1043	N 324	O 300	$\frac{S}{5}$	0	0

• Molecule 38 is a protein called Small ribosomal subunit protein uS4.

Mol	Chain	Residues		Ate			AltConf	Trace	
38	d	200	Total 1641	C 1028	N 316	O 295	${ m S} { m 2}$	0	0

• Molecule 39 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues		At	oms			AltConf	Trace
39	е	198	Total 1433	C 885	N 282	0 262	S 4	0	0

• Molecule 40 is a protein called Small ribosomal subunit protein bS6.

Mol	Chain	Residues		At	oms			AltConf	Trace
40	f	96	Total 771	C 486	N 138	0 145	${ m S} { m 2}$	0	0

• Molecule 41 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues		At	oms	AltConf	Trace		
41	g	156	Total 1240	C 773	N 242	0 222	${ m S} { m 3}$	0	0

• Molecule 42 is a protein called Small ribosomal subunit protein uS8.



Mol	Chain	Residues		At	oms	AltConf	Trace		
42	h	130	Total 1003	C 629	N 188	0 185	S 1	0	0

• Molecule 43 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues		Ato	ms	AltConf	Trace	
43	i	126	Total 994	C 630	N 194	O 170	0	0

• Molecule 44 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues		At	oms	AltConf	Trace		
44	j	97	Total 775	C 488	N 143	0 141	${f S}\ 3$	0	0

• Molecule 45 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues		At	oms	AltConf	Trace		
45	k	117	Total 871	C 539	N 173	0 158	S 1	0	0

• Molecule 46 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues		At	oms			AltConf	Trace
46	1	122	Total 958	С 594	N 197	0 165	$\begin{array}{c} \mathrm{S} \\ \mathrm{2} \end{array}$	0	0

• Molecule 47 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues		At	oms			AltConf	Trace
47	m	116	Total 935	C 572	N 191	O 169	${ m S} { m 3}$	0	0

• Molecule 48 is a protein called Small ribosomal subunit protein uS14B.

Mol	Chain	Residues		Atc	$\mathbf{ms}$	AltConf	Trace		
48	n	60	Total 477	C 302	N 97	O 73	${f S}{5}$	0	0

• Molecule 49 is a protein called Small ribosomal subunit protein uS15.



Mol	Chain	Residues		Ato	ms		AltConf	Trace
49	0	87	Total 709	C 443	N 143	O 123	0	0

• Molecule 50 is a protein called Small ribosomal subunit protein bS16.

Mol	Chain	Residues		Ato	ms	AltConf	Trace	
50	р	113	Total 891	C 570	N 162	O 159	0	0

• Molecule 51 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues		At	oms	AltConf	Trace		
51	q	92	Total 730	C 458	N 138	0 132	$\begin{array}{c} \mathrm{S} \\ \mathrm{2} \end{array}$	0	0

• Molecule 52 is a protein called Small ribosomal subunit protein bS18B.

Mol	Chain	Residues		Ate	oms			AltConf	Trace
52	r	64	Total 512	C 319	N 102	O 88	${ m S} { m 3}$	0	0

• Molecule 53 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues		At	oms			AltConf	Trace
53	s	78	Total 630	C 405	N 117	0 107	S 1	0	0

• Molecule 54 is a protein called Small ribosomal subunit protein bS20.

Mol	Chain	Residues		Ato	$\mathbf{ms}$	AltConf	Trace	
54	t	84	Total 655	C 399	N 138	0 118	0	0

• Molecule 55 is a protein called Conserved domain protein.

Mol	Chain	Residues	Atoms			AltConf	Trace		
55	u	32	Total 280	C 172	N 71	O 36	S 1	0	0

• Molecule 56 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).



Mol	Chain	Residues	Atoms	AltConf
56	2	1	Total Mg 1 1	0
56	3	1	Total Mg 1 1	0
56	А	109	Total         Mg           109         109	0
56	В	3	Total Mg 3 3	0
56	D	1	Total Mg 1 1	0
56	a	23	TotalMg2323	0
56	j	1	Total Mg 1 1	0



# 3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Large ribosomal subunit protein uL30





Chain 6:	86%	12% •
MET P2 R13 R13 R24 H31 H31	<b>R</b> 47 M 59 <b>G</b> 64 <b>G</b> 64 <b>G</b> 64	
• Molecule 7: 50	0S ribosomal protein L36	
Chain 7:	86%	14%
M1 K8 K11 K13 K13 K13 K13 K13 K13 K13 K13 K13	2	
• Molecule 8: 50	OS ribosomal protein bL37	
Chain 8:	79%	17% •
MET A2 R4 R4 P10 P10 P10 R21 R21	a de la companya de	
• Molecule 9: 23	- 3S rRNA	
Chain A:	63%	29% 7% •
U 42 17 15 15 16 16 12 122 122 122	242 026 026 026 032 033 033 033 032 032 045 045 066 065 066 065 066 072 072 072 072 072 072	A88 A88 A88 G94 G96 G96 G96 G96 G14 A115 A115 A115 A115 C125 C125 C125 C125
A131 6145 6145 7159 A159 0161 0161 A164 A165 A166 A166	4107 6175 6175 6175 6176 6191 6191 6191 6191 7195 7202 7203 7215 7209 6218 6218 6218 7212 7223 7223 7223 7223 7223 7223 7223	A227 A228 0229 0233 0233 A233 A233 0248 0248 0248 0248 0248 0248 0248 0264 A251 A255 A255 A255 A255 A255 A255 A255
A265 A272 A272 C274 C275 C275 C275 C275 C276 C274 C274 C274 C274 C274 C274 C274 C274	V285 A287 A287 A287 C295 C297 C295 G305 G305 G305 G305 G305 G305 G305 G30	A322 C3233 A326 C3233 A326 C3235 C3355 C3355 C3355 C3355 C3355 C3355 C3355 C3355 C3355 C3355 C3355 C3355 C3355 C3355 C3355 C3355 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C
		•
U357 0358 0358 0358 03562 0366 0363 0363 0365 0365 0365 0365	0370 0379 0379 0339 03 03 03 03 03 03 03 03 03 03	A428 6434 6437 04337 0446 0446 0446 0446 0446 0446 0446 044
6460 A465 6467 6467 6468 6468 6468 6469 6472 C473 C473 6474	A479 4465 4466 4466 4469 4469 4499 6499 649	A555 6538 6538 6539 6541 6541 6544 6544 6544 6545 6551 0554 6551 6555 6555 6555 6555 6555 6555 6
A565 A566 A566 A5667 A566 C569 C569 C570 C576 C576 C578 A577	A5 /	46 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
U658 U658 U665 U661 U661 A663 A665 A665 A666 B666 U666	6669 4670 6672 6672 6673 10674 6679 6679 6683 6684 6683 6684 6683 6689 6689 6689 6689 6700 7706 6710 7706 7706 7706 7710 7710	UT15 UT15 UT16 UT16 UT22 UT22 UT22 UT22 UT22 UT22 UT22 UT2
0.741 6742 6743 474 A75 A756 A756 6758 A759 6758 0759 0759 U750	C765 C765 C768 C768 C776 C773 C773 C774 C774 C774 C776 C776 C776 C778 C776 C778 C778 C778	C813 A814 A820 A820 6822 6823 6823 6823 6823 6823 6844 C845 C844 C845 C844 C845 C845 C845



A858 G860 G860 G860 G865 G865 G865 G865 G865 G865 G865 G865
C964 U965 0971 0971 0971 0971 0972 0974 0974 0974 0974 0974 0981 0977 0977 0981 0981 0981 0981 0981 0981 0981 0981
61049         61049           610560         61055           61057         61055           61056         61055           61056         61056           61056         61056           61067         61067           61071         61077           61077         61077           61077         61077           61077         61077           61078         61077           61099         61077           61093         61077           61093         61093           61094         61077           61095         61093           61104         61104           61105         61104           61106         61103           61113         61113           61114         61113           61115         61113           61113         61113           61113         61113           61113         61113           61113         61112           61112         61112           61129         61128
C1130 C1137 C1136 A1138 A1138 A1138 A1144 A1146 A1146 A1146 A1146 A1146 A1166 A1166 A1166 A1166 A1166 A1166 A1166 A1166 A1166 A1166 A1166 C1197 C1197 C1197 C1196 A1186 C1196 C1196 A1186 C1196 C1196 C1196 C1197 C1196 C1196 C1196 C1196 C1196 C1196 C1196 C1196 C1196 C1196 C1196 C1197 C1197 C1196 C1196 C1196 C1196 C1197 C1197 C1196 C1196 C1196 C1196 C1196 C1197 C1197 C1196 C1196 C1196 C1196 C1196 C1196 C1196 C1197 C1197 C1196 C1197 C1197 C1196 C1196 C1197 C1197 C1197 C1197 C1196 C1196 C1197 C1196 C1196 C1196 C1196 C1196 C1197 C1196 C1106 C1196 C196 C
U1212 M1213 M1214 M1214 M1215 M1225 C1225 C1225 C1226 C1226 C1226 C1228 M1226 C1228 C12888 C1288 C1288 C1288 C1288 C1288 C1288 C12888 C1288 C1288 C1288 C128
U1338           1344           1344           1344           1345           1345           1345           1345           1345           1345           1345           1345           1345           1345           1345           1345           1345           1356           1357           1356           1356           1356           1356           1356           1357
CI 466 AI 467 AI 468 AI 468 AI 468 AI 468 AI 475 CI 466 AI 475 CI 481 AI 498 AI 498 AI 498 AI 498 AI 498 AI 498 CI 481 AI 498 AI 498 CI 481 CI 508 AI 500 AI 500
C1567           A1569           A1569           C1570           C1571           C1572           C1574           C1575           C1576           C1577           C1577           C1576           C1577           C1576           C1577           C1576           C1577           C1577           C1577           C1587           C1587           C1587           C1587           C1587           C1587           C1588           C1594           C1595           C1595 </td
A1640 V1641 A1648 A1648 C1649 C1668 C1672 C1672 A1676 A1676 A1676 A1676 A1698 C1693 C1693 A1716 A1731 A1731 A1733 A1778 A17778 A1778 A1778 A1778 A1778 A1778 A17778 A1778 A1778 A17778 A17778 A17778 A17778 A1778 A17778 A1778 A1778 A17778 A1778 A1778 A17778 A17778 A17778 A17778 A17778 A17778 A17778 A17778 A17778 A17778 A17778 A17778 A17778 A17778 A17778 A17778 A17788 A17888 A17788 A17788 A17788 A17788 A17788 A17788 A17788 A17788 A17788 A177888 A17788 A17788 A17788 A17788 A177888 A177888 A177888 A177888 A177888 A177888 A177888 A177888 A177888 A1778888 A177888 A1778888 A177888 A177888888 A1778888888 A17788888888 A1778888888888
A1787 A1787 A1789 A1799 A1799 A1799 A1799 C1797 C1797 C1797 C1896 G1804 A1806 C1846 A1862 A1866 A1866 A1866 A1866 C1888 A1866 C1888 A1866 C1889 A1866 C1889 A1866 C1889 C1888 A1886 C1889 C1889 C1889 C1893 C1833 C1893
U1932           01933           01933           01933           01933           01933           01933           01933           01933           01933           01939           01939           01939           01939           01939           01939           01939           01939           01940           01940           01940           01951           01981           01982           01982           01982           01983           01984           01985           01982           01982           01982           01982           01983           01984           01985           02015           02026           02021           02025           02026           02033           02040           02033           02040           02040           02040           02040           02040 </td
U2044 U2044 A2046 A2046 A2046 C2047 C2048 C2048 C2048 C2048 C2048 C2048 C2048 C2048 C2058 C
C2144 C2145 A2146 C2146 C2146 C2148 C2148 C2148 C2153 C2153 C2153 C2154 C2153 C2156 C2166 C2166 C2166 C2166 C2166 C2166 C2166 C2166 C2186 C2186 C2186 C2186 C2195 C2195 C2195 C2195 C2196 C2195 C2215 C2225 C2255 C2255 C2255 C2255
A2221 C2233 A2233 A2233 A2233 A2233 A2233 C2243 C2244 A2254 C2244 A2255 C2244 A2255 C2244 A2255 C2244 A2255 C2244 A2255 C2244 A2255 C2244 A2255 C2244 A2255 C2244 A2255 C2244 A2255 C2244 A2255 C2244 A2255 C2244 A2255 C2244 A2255 C2244 C2244 A2255 C2244 C2245 C2245 C2245 C2245 C2245 C2245 C2245 C2245 C2246 C2245 C2267 C2267 C2267 C2267 C2267 C2267 C2267 C2267 C2266 C2
WORLDWIDE PROTEIN DATA BANK











Chain O:	60%	7%	33%	
MET P2 R9 L24 T37	E38 P39 P39 P44 F44 F44 F44 F44 F49 F43 F85 F85 F85 F85 F85 F85 F85	A117 E118 THR THR THR THR GLU ALA ALA ALA ALA	ARG ALA ALA ALA ALA SER CLN CLN LYS	ARD GLU ARG ARG ARG ARG ARG ARD ARA ARA ARLA ARLA ARLA ARLA ARLA AR
ALA GLU GLU GLU VAL GLU GLU THR	THR ALA PRO ALA CLU CLU CLU CLU ALA ALA ALA ALA ALA ALA VIL VAL			
• Molecule	24: Large ribosomal subu	unit protein uL18		
Chain P:	83	%		17% •
MET A2 R14 N16 N16 A17 R18 R18	L25 K27 K27 R26 R37 R37 R37 R37 R42 S43 S43 S43 R42 R37 I173 I173 I173 C57 R71	1.5 E98 199 V100 G105 G105 R112 K126 K126 K126		
• Molecule	25: Large ribosomal subu	nit protein bL19		
Chain Q:		86%		14%
M1 N2 D5 R13 G22	D23 N26 N26 N26 N26 N26 N26 N26 N26 N26 N26	1997 118 118		
• Molecule	26: Large ribosomal subu	nit protein bL20		
Chain R:	819	%		16% •
MET A2 R14 C23 C23 L31	K32 K33 K33 K53 K56 K56 K56 K58 K58 K58 K78 K78 K78 K78	V90 D91 K92 K92 K93 K93 V100 V100 K114 R114 R114 R114 R125 GLY	ALA	
• Molecule	27: Large ribosomal subu	nit protein bL21		
Chain S:		89%		10% •
MET A2 K12 Q13 K26	V 43 V 48 D54 H76 K81 K81 K103			
• Molecule	28: Large ribosomal subu	unit protein uL22		
Chain T:	67%		8% 2	25%
MET SER THR VAL THR EG F7 P8	R18 R18 R15 R25 R48 R95 R95 R95 R95 R95 R96 R96 R96 R99 R99 R99	P <mark>119</mark> LYS GLN CLY GLY GLY ALA ALA ALA ALA ALA ARG ARG	SER ARG ALA GLN GLY SER LYS ALA	ALA ALA THR LYS LYS SER ALA GLU CVS GLU GLY
SER GLU				
• Molecule	29: Large ribosomal subu	unit protein uL23		
Chain U:		86%		8% 6%

W O R L D W I D E PROTEIN DATA BANK











• Molecule 36: Small ribosomal subunit protein uS2



• Molecule 39: Small ribosomal subunit protein uS5





• Molecule 40: Small ribosomal subunit protein bS6

Chain f:	90%	10%
M1 74 130 163 163 163 163 163 183 183 883	88 4 89 6 7 1 4 80 7 1 4	
• Molecule 41: Small ri	ibosomal subunit protein uS	7
Chain g:	94%	6%
M1 D15 V18 V27 V27 V27 C56 C55 C55 C55	N68 K70 E74 E74 E74 K79 K79 K79 E80 E90 K111 K111 K111 K111 K112 S128	G130         L131         G132         A145         N148         N148         N156
• Molecule 42: Small ri	ibosomal subunit protein uS	8
Chain h:	86%	13% •
MET 11HR 11HR 14 114 115 114 115 115 115 115 114 115 115	R50 151 151 151 151 151 151 155 155 155 1	
• Molecule 43: Small ri	ibosomal subunit protein uS	9
Chain i:	73%	11% 16%
MET THR ASP VAL THR GLU CLU VAL VAL VAL THR THR SER SER SER SER ALO ARO ANO	CLU PRO VAL ILLE ARG ARG V29 RAO RAO RAO RAO RAO RAO RAO RAO RAO RAO	646 647 652 652 652 652 853 076 076 076 078 078 078 078 078 078 078 078 078 078
K120 A121 L124 T125 R125 R126 R129 A130 T131 K134 R150 R150		
• Molecule 44: Small ri	ibosomal subunit protein uS	10
Chain j:	60%	34% ••



MET ALA GLN GLN GLN R G R R R R R 16 N R I 10 M 14 M 14	H15 E16 A17 A17 A17 A17 A17 A17 B18 B18 K24 K24 K24 K24 K24 K24 K29 K29 K29 K29 K29 K29 K25 K23 K23 K23 K23 K23 K23 K23 K23 K23 K23	A34 335 V37 V37 V37 C38 R46 N44 V48 V48 V48 S54 S54 K57	D60 861 862 863 865 865 765 865 865 865 867
K71 K72 L73 L74 L76 L76 L76 L77 D76 P79 P79 P78 P78 R180 K82 K82	V84 D85 A86 A86 A86 B91 C92 P93 A94 P93 A94 P93 P93 P97 P97 P97 P97 P97 P97 P97 P97		
• Molecule 45: Smal	ll ribosomal subunit protein uS1	11	
Chain k:	79%	6% 15%	I
MET ALA ALA GLN GLN LYS GLY GLY ALA ALA ALA ALA ALA ALA ALA CLYS GLN	LYS THR ARG ARG ARG CLU M37 M37 M37 M37 M37 M37 N49 V50 V50 V50 V50 V121 T123	V 138	
• Molecule 46: Smal	ll ribosomal subunit protein uS1	12	
Chain l:	80%	19% •	I
MET P2 13 13 13 13 13 13 13 13 13 13 13 13 13	R50 R54 R54 R54 R54 R54 R56 R17 R114 R114 S115 S115	K123	
• Molecule 47: Smal	ll ribosomal subunit protein uS1	13	
Chain m:	80%	14% 6%	
MET A2 B3 C6 C6 C24 C24 C24 C24 C24 C24 C24 C24 C24 C24	133 144 144 148 148 148 148 148 148 148 158 158 156 156 156	662 NG3 NG3 NG3 NG3 G66 G68 C85 C85 C85 C85 C85 C85 C85 C85 C85 C8	Y87 R93 R108 R110 R110 P113 ALA ▲
GLY LYS LYS ALA ARG			
• Molecule 48: Smal	ll ribosomal subunit protein uS1	14B	
Chain n:	41% 82%	15% •	
MET A2 K4 A5 A5 C6 A10 A10 A10 K12 K12	R13 F16 F16 V117 V21 V22 C27 C27 C27 C27 C27 C27 C27 C27 C27 C	M47 1552 850 850 850 850	
• Molecule 49: Smal	ll ribosomal subunit protein uS1	15	
Chain o:	040/	70/	
	91%	/ % •	
MET A2 28 42 139 142 139 142 156 156 156 156	RGE ARG		
• Molecule 50: Smal	ll ribosomal subunit protein bS1	16	
Chain p:	68%	• 28%	I





# 4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	443500	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE	Depositor
	CORRECTION	
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{\AA}^2)$	52.51	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.079	Depositor
Minimum map value	-0.012	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.014	Depositor
Map size (Å)	427.6, 427.6, 427.6	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.069, 1.069, 1.069	Depositor



# 5 Model quality (i)

## 5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: MG, OMC

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).

Mal	Chain	Bo	ond lengths	Bond angles5RMSZ $\# Z  > 5$	
	Chain	RMSZ	# Z  > 5		
1	1	0.08	0/486	0.25	0/651
2	2	0.15	0/520	0.29	0/698
3	3	0.11	0/427	0.23	0/572
4	4	0.14	0/424	0.32	0/567
5	5	0.12	0/375	0.33	0/493
6	6	0.09	0/507	0.30	0/672
7	7	0.14	0/302	0.31	0/401
8	8	0.11	0/191	0.24	0/247
9	А	0.09	1/74575~(0.0%)	0.21	0/116352
10	В	0.09	0/2797	0.20	0/4357
11	С	0.10	0/2140	0.26	0/2879
12	D	0.09	0/1609	0.23	0/2165
13	Ε	0.09	0/1571	0.26	0/2125
14	F	0.10	0/1459	0.31	0/1962
15	G	0.09	0/1369	0.22	0/1848
16	Н	0.10	0/1027	0.22	0/1398
17	Ι	0.11	0/925	0.26	0/1246
18	J	0.09	0/1006	0.23	0/1364
19	Κ	0.10	0/1165	0.22	0/1578
20	L	0.10	0/938	0.27	0/1257
21	М	0.09	0/1091	0.23	0/1457
22	Ν	0.10	0/1100	0.26	0/1482
23	0	0.09	0/936	0.27	0/1256
24	Р	0.10	0/966	0.21	0/1298
25	Q	0.11	0/921	0.25	0/1236
26	R	0.10	0/1000	0.23	0/1341
27	S	0.07	0/778	0.21	0/1048
28	Т	0.10	0/887	0.30	0/1204
29	U	0.09	0/749	0.25	0/1006
30	V	0.14	0/737	0.30	0/987
31	W	0.08	0/1422	0.24	0/1941
32	Х	0.10	0/613	0.32	0/821



Mal	Chain	Bo	Bond lengths		Bond angles
	Unam	RMSZ	# Z  > 5	RMSZ	# Z  > 5
33	Y	0.10	0/478	0.24	0/641
34	Ζ	0.10	0/530	0.26	0/708
35	a	0.08	0/36179	0.25	14/56454~(0.0%)
36	b	0.10	0/1822	0.23	0/2457
37	с	0.10	0/1696	0.27	0/2276
38	d	0.10	0/1672	0.23	0/2251
39	е	0.09	0/1449	0.25	0/1949
40	f	0.11	0/782	0.24	0/1059
41	g	0.10	0/1260	0.27	0/1701
42	h	0.08	0/1018	0.24	0/1375
43	i	0.09	0/1012	0.26	0/1362
44	j	0.14	0/789	0.37	0/1069
45	k	0.09	0/889	0.26	0/1201
46	l	0.10	0/969	0.34	0/1294
47	m	0.11	0/942	0.27	0/1260
48	n	0.11	0/488	0.28	0/650
49	0	0.09	0/718	0.27	0/963
50	р	0.10	0/908	0.25	0/1226
51	q	0.08	0/741	0.25	0/993
52	r	0.11	0/517	0.34	0/691
53	s	0.10	0/647	0.27	0/871
54	t	0.09	0/658	0.24	0/875
55	u	0.12	0/280	0.27	0/359
All	All	0.09	1/161457~(0.0%)	0.23	14/241594~(0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	А	2144	OMC	O3'-P	-11.80	1.43	1.61

The worst 5 of 14 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	$\mathbf{Observed}(^{o})$	$Ideal(^{o})$
35	a	1329	G	OP1-P-OP2	-13.54	79.00	119.60
35	a	1328	А	OP1-P-O3'	-12.37	70.89	108.00
35	a	1328	А	OP2-P-O3'	9.71	137.12	108.00
35	a	1329	G	O5'-P-OP2	-9.70	78.90	108.00
35	a	1079	G	OP2-P-O3'	-8.83	81.52	108.00

There are no chirality outliers.

There are no planarity outliers.



### 5.2 Too-close contacts (i)

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	1	483	0	513	8	0
2	2	510	0	501	9	0
3	3	423	0	463	5	0
4	4	416	0	422	8	0
5	5	372	0	406	8	0
6	6	502	0	541	7	0
7	7	298	0	322	4	0
8	8	189	0	205	5	0
9	А	66624	0	33524	642	0
10	В	2501	0	1273	40	0
11	С	2097	0	2149	25	0
12	D	1587	0	1630	20	0
13	Е	1548	0	1573	17	0
14	F	1437	0	1470	19	0
15	G	1348	0	1399	13	0
16	Н	1018	0	988	10	0
17	Ι	918	0	959	23	0
18	J	990	0	1021	16	0
19	Κ	1138	0	1178	5	0
20	L	930	0	989	11	0
21	М	1078	0	1151	9	0
22	N	1074	0	1116	8	0
23	0	919	0	959	10	0
24	Р	956	0	991	16	0
25	Q	907	0	938	10	0
26	R	988	0	1038	20	0
27	S	768	0	820	7	0
28	Т	873	0	909	10	0
29	U	739	0	785	5	0
30	V	731	0	782	12	0
31	W	1407	0	1423	14	0
32	Х	604	0	622	7	0
33	Y	470	0	484	9	0
34	Ζ	527	0	538	2	0
35	a	32342	0	16273	351	0
36	b	1793	0	1839	8	0
37	с	1672	0	1722	10	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	d	1641	0	1668	24	0
39	е	1433	0	1490	16	0
40	f	771	0	797	6	0
41	g	1240	0	1293	6	0
42	h	1003	0	1039	11	0
43	i	994	0	1050	14	0
44	j	775	0	808	47	0
45	k	871	0	885	5	0
46	1	958	0	1045	17	0
47	m	935	0	986	12	0
48	n	477	0	503	9	0
49	0	709	0	747	5	0
50	р	891	0	935	6	0
51	q	730	0	774	9	0
52	r	512	0	543	5	0
53	s	630	0	640	17	0
54	t	655	0	707	6	0
55	u	280	0	342	8	0
56	2	1	0	0	0	0
56	3	1	0	0	0	0
56	А	109	0	0	0	0
56	В	3	0	0	0	0
56	D	1	0	0	0	0
56	a	23	0	0	0	0
56	j	1	0	0	0	0
All	All	148821	0	100168	1325	0

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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 6.

The worst 5 of 1325 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)
9:A:313:G:O2'	9:A:314:G:O5'	1.83	0.96
35:a:1231:A:N6	35:a:1269:A:C6	2.34	0.95
9:A:2350:G:O2'	9:A:2351:A:O5'	1.84	0.94
9:A:1533:U:OP1	9:A:1536:A:N6	2.02	0.93
35:a:865:C:O2'	35:a:866:U:O4'	1.87	0.91

There are no symmetry-related clashes.



## 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 PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Perce	entiles
1	1	58/61~(95%)	57~(98%)	1 (2%)	0	100	100
2	2	64/75~(85%)	59~(92%)	5(8%)	0	100	100
3	3	52/57~(91%)	52 (100%)	0	0	100	100
4	4	48/55~(87%)	39 (81%)	9 (19%)	0	100	100
5	5	43/47~(92%)	42 (98%)	1 (2%)	0	100	100
6	6	61/64~(95%)	57~(93%)	4 (7%)	0	100	100
7	7	35/37~(95%)	34 (97%)	1 (3%)	0	100	100
8	8	21/24 (88%)	21 (100%)	0	0	100	100
11	С	271/278~(98%)	256 (94%)	15 (6%)	0	100	100
12	D	212/217~(98%)	204 (96%)	8 (4%)	0	100	100
13	Е	205/215~(95%)	190 (93%)	15 (7%)	0	100	100
14	F	179/187~(96%)	170 (95%)	9(5%)	0	100	100
15	G	174/179~(97%)	170 (98%)	4 (2%)	0	100	100
16	Н	149/151~(99%)	145 (97%)	4 (3%)	0	100	100
17	Ι	124/174~(71%)	116 (94%)	8 (6%)	0	100	100
18	J	131/142~(92%)	124 (95%)	7 (5%)	0	100	100
19	Κ	145/147~(99%)	139~(96%)	6 (4%)	0	100	100
20	L	119/122~(98%)	108 (91%)	11 (9%)	0	100	100
21	М	143/147~(97%)	135~(94%)	8 (6%)	0	100	100
22	Ν	132/138~(96%)	130 (98%)	2(2%)	0	100	100
23	Ο	115/174~(66%)	106 (92%)	9 (8%)	0	100	100
24	Р	124/127~(98%)	121 (98%)	3 (2%)	0	100	100
25	Q	111/113 (98%)	107 (96%)	4 (4%)	0	100	100
26	R	122/129~(95%)	121 (99%)	1 (1%)	0	100	100
27	S	100/103~(97%)	100 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Perce	ntiles
28	Т	112/153~(73%)	109~(97%)	3~(3%)	0	100	100
29	U	92/100~(92%)	84 (91%)	8~(9%)	0	100	100
30	V	93/105~(89%)	88~(95%)	5 (5%)	0	100	100
31	W	186/215~(86%)	175 (94%)	11 (6%)	0	100	100
32	Х	80/88~(91%)	70 (88%)	10 (12%)	0	100	100
33	Y	61/64~(95%)	61 (100%)	0	0	100	100
34	Ζ	61/77~(79%)	61 (100%)	0	0	100	100
36	b	226/277~(82%)	216 (96%)	10 (4%)	0	100	100
37	с	208/275~(76%)	199 (96%)	9 (4%)	0	100	100
38	d	198/201~(98%)	196 (99%)	2(1%)	0	100	100
39	е	196/214 (92%)	185 (94%)	11 (6%)	0	100	100
40	f	94/96~(98%)	90 (96%)	4 (4%)	0	100	100
41	g	154/156~(99%)	149 (97%)	5(3%)	0	100	100
42	h	128/132~(97%)	122 (95%)	6~(5%)	0	100	100
43	i	124/150~(83%)	123 (99%)	1 (1%)	0	100	100
44	j	95/101~(94%)	83 (87%)	12 (13%)	0	100	100
45	k	115/138 (83%)	109 (95%)	6~(5%)	0	100	100
46	1	120/124~(97%)	107 (89%)	13 (11%)	0	100	100
47	m	114/124~(92%)	109 (96%)	5 (4%)	0	100	100
48	n	58/61~(95%)	51 (88%)	7 (12%)	0	100	100
49	О	85/89~(96%)	83~(98%)	2(2%)	0	100	100
50	р	111/156 (71%)	106 (96%)	5 (4%)	0	100	100
51	q	90/98~(92%)	85 (94%)	5~(6%)	0	100	100
52	r	62/84~(74%)	56 (90%)	6 (10%)	0	100	100
53	S	76/93~(82%)	71 (93%)	5 (7%)	0	100	100
54	t	82/86~(95%)	81 (99%)	1 (1%)	0	100	100
55	u	30/33~(91%)	30 (100%)	0	0	100	100
All	All	5989/6653~(90%)	5702 (95%)	287 (5%)	0	100	100

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There are no Ramachandran outliers to report.



#### 5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent side chain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Rotameric	Outliers	Perce	ntiles
1	1	53/54~(98%)	51~(96%)	2~(4%)	28	58
2	2	57/63~(90%)	54~(95%)	3~(5%)	19	48
3	3	43/46~(94%)	43 (100%)	0	100	100
4	4	48/52~(92%)	48 (100%)	0	100	100
5	5	35/36~(97%)	35 (100%)	0	100	100
6	6	53/54~(98%)	53 (100%)	0	100	100
7	7	35/35~(100%)	35 (100%)	0	100	100
8	8	18/19~(95%)	18 (100%)	0	100	100
11	С	214/218~(98%)	211 (99%)	3 (1%)	62	81
12	D	160/163~(98%)	158 (99%)	2 (1%)	65	82
13	Е	165/173~(95%)	165 (100%)	0	100	100
14	F	150/156~(96%)	150 (100%)	0	100	100
15	G	148/150 (99%)	148 (100%)	0	100	100
16	Н	90/116~(78%)	89 (99%)	1 (1%)	70	84
17	Ι	89/120 (74%)	86 (97%)	3 (3%)	32	61
18	J	102/108~(94%)	102 (100%)	0	100	100
19	K	120/120~(100%)	120 (100%)	0	100	100
20	L	99/100~(99%)	98~(99%)	1 (1%)	73	86
21	М	112/114 (98%)	112 (100%)	0	100	100
22	Ν	112/116~(97%)	112 (100%)	0	100	100
23	Ο	96/138~(70%)	96 (100%)	0	100	100
24	Р	93/94~(99%)	92 (99%)	1 (1%)	70	84
25	Q	$100/100 \ (100\%)$	100 (100%)	0	100	100
26	R	97/99~(98%)	97 (100%)	0	100	100
27	S	82/83~(99%)	81 (99%)	1 (1%)	67	83
28	Т	90/117~(77%)	90 (100%)	0	100	100

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Continued	trom	previous	page
	J	1	1

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
29	U	82/85~(96%)	82 (100%)	0	100 100
30	V	81/86~(94%)	78~(96%)	3~(4%)	29 59
31	W	154/168~(92%)	154 (100%)	0	100 100
32	Х	59/63~(94%)	59~(100%)	0	100 100
33	Y	50/51~(98%)	50 (100%)	0	100 100
34	Z	58/66~(88%)	56~(97%)	2(3%)	32 61
36	b	191/218~(88%)	190 (100%)	1 (0%)	86 93
37	с	171/212~(81%)	171 (100%)	0	100 100
38	d	175/176~(99%)	174 (99%)	1 (1%)	84 92
39	е	139/147~(95%)	139 (100%)	0	100 100
40	f	85/85~(100%)	85 (100%)	0	100 100
41	g	132/132~(100%)	132 (100%)	0	100 100
42	h	106/108~(98%)	106 (100%)	0	100 100
43	i	102/125~(82%)	102 (100%)	0	100 100
44	j	88/90~(98%)	85 (97%)	3(3%)	32 61
45	k	91/105~(87%)	91 (100%)	0	100 100
46	1	103/105~(98%)	103 (100%)	0	100 100
47	m	99/104~(95%)	99 (100%)	0	100 100
48	n	49/50~(98%)	48 (98%)	1 (2%)	50 73
49	О	75/77~(97%)	75 (100%)	0	100 100
50	р	92/118~(78%)	92 (100%)	0	100 100
51	q	78/83~(94%)	78 (100%)	0	100 100
52	r	55/72~(76%)	55 (100%)	0	100 100
53	S	69/84~(82%)	68 (99%)	1 (1%)	62 81
54	t	69/70~(99%)	69 (100%)	0	100 100
55	u	30/31~(97%)	30 (100%)	0	100 100
All	All	4944/5355~(92%)	4915 (99%)	29 (1%)	82 92

5 of 29 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
20	L	91	ASN
48	n	59	SER
	<i>a</i>	7	

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Mol	Chain	Res	Type
30	V	43	LYS
44	j	36	VAL
27	S	26	LYS

Sometimes side chains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 30 such side chains are listed below:

Mol	Chain	Res	Type
26	R	39	GLN
48	n	11	ASN
29	U	41	GLN
52	r	61	GLN
45	k	86	HIS

#### 5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
10	В	116/118~(98%)	19~(16%)	2(1%)
35	a	1504/1528~(98%)	276 (18%)	0
9	А	3096/3120~(99%)	545 (17%)	27~(0%)
All	All	4716/4766 (98%)	840 (17%)	29 (0%)

5 of 840 RNA backbone outliers are listed below:

Mol	Chain	$\mathbf{Res}$	Type
9	А	7	U
9	А	20	G
9	А	23	G
9	А	24	G
9	А	31	U

5 of 29 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
9	А	1084	U
10	В	34	G
9	А	1264	С
9	А	2150	U
9	А	1261	А



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

2 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).

Mal	Trune	Chain	Dag	Tinle	Bo	ond leng	$\mathbf{ths}$	В	ond ang	les
IVIOI	туре	Chain	nes	LIIIK	Counts	RMSZ	# Z >2	Counts	RMSZ	# Z  > 2
35	OMC	a	1392	35	19,22,23	0.94	0	$25,\!31,\!34$	1.03	2 (8%)
9	OMC	А	2144	9	19,22,23	0.84	0	25,31,34	1.25	2 (8%)

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
35	OMC	a	1392	35	-	6/9/27/28	0/2/2/2
9	OMC	А	2144	9	-	3/9/27/28	0/2/2/2

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	$Observed(^{o})$	$Ideal(^{o})$
9	А	2144	OMC	C2'-C1'-N1	-4.04	106.57	114.24
9	А	2144	OMC	O2-C2-N3	-2.60	118.23	122.33
35	a	1392	OMC	O2-C2-N3	-2.37	118.59	122.33
35	a	1392	OMC	O4'-C1'-C2'	-2.15	102.88	106.59

There are no chirality outliers.

5 of 9 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
9	А	2144	OMC	C1'-C2'-O2'-CM2
9	А	2144	OMC	O4'-C4'-C5'-O5'
35	а	1392	OMC	C1'-C2'-O2'-CM2
35	a	1392	OMC	C4'-C5'-O5'-P

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Mol	Chain	Res	Type	Atoms
9	А	2144	OMC	C3'-C4'-C5'-O5'

There are no ring outliers.

1 monomer is involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
35	a	1392	OMC	8	0

### 5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

### 5.6 Ligand geometry (i)

Of 139 ligands modelled in this entry, 139 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

#### 5.7 Other polymers (i)

There are no such residues in this entry.

### 5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.



# 6 Map visualisation (i)

This section contains visualisations of the EMDB entry EMD-47365. These allow visual inspection of the internal detail of the map and identification of artifacts.

Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

## 6.1 Orthogonal projections (i)

#### 6.1.1 Primary map



6.1.2 Raw map



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



## 6.2 Central slices (i)

### 6.2.1 Primary map



X Index: 200



Y Index: 200



Z Index: 200

#### 6.2.2 Raw map



X Index: 200

Y Index: 200

Z Index: 200  $\,$ 

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



## 6.3 Largest variance slices (i)

### 6.3.1 Primary map



X Index: 209



Y Index: 217



Z Index: 175

#### 6.3.2 Raw map



X Index: 209

Y Index: 219



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



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

#### 6.4.1 Primary map



6.4.2 Raw map



The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.



### 6.5 Orthogonal surface views (i)

#### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.014. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

#### 6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

#### 6.6 Mask visualisation (i)

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



# 7 Map analysis (i)

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

## 7.1 Map-value distribution (i)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.



## 7.2 Volume estimate (i)



The volume at the recommended contour level is  $2250 \text{ nm}^3$ ; this corresponds to an approximate mass of 2032 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.



## 7.3 Rotationally averaged power spectrum (i)



\*Reported resolution corresponds to spatial frequency of 0.315  ${\rm \AA^{-1}}$ 



# 8 Fourier-Shell correlation (i)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

#### 8.1 FSC (i)



\*Reported resolution corresponds to spatial frequency of 0.315  $\text{\AA}^{-1}$ 



## 8.2 Resolution estimates (i)

$\mathbf{Bosolution} \text{ ostimato } (\mathbf{\hat{\lambda}})$	Estim	Estimation criterion (FSC cut-off)			
Resolution estimate (A)	0.143	0.5	Half-bit		
Reported by author	3.17	-	-		
Author-provided FSC curve	3.15	3.47	3.16		
Unmasked-calculated*	3.49	4.16	3.55		

\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.49 differs from the reported value 3.17 by more than 10 %



# 9 Map-model fit (i)

This section contains information regarding the fit between EMDB map EMD-47365 and PDB model 9E0P. Per-residue inclusion information can be found in section 3 on page 15.

## 9.1 Map-model overlay (i)



The images above show the 3D surface view of the map at the recommended contour level 0.014 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.



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



The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

#### 9.3 Atom inclusion mapped to coordinate model (i)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.014).



## 9.4 Atom inclusion (i)



At the recommended contour level, 89% of all backbone atoms, 89% of all non-hydrogen atoms, are inside the map.



1.0

0.0 <0.0

## 9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.014) and Q-score for the entire model and for each chain.

All         0.8870         0.3720           1         0.9210         0.4740           2         0.5040         0.1460           3         0.9500         0.4830           4         0.9110         0.3850           5         0.9970         0.5070           6         0.9900         0.4520           7         0.9900         0.4590           8         0.9940         0.4960           A         0.9290         0.3500           C         0.9900         0.4590           8         0.9290         0.3500           C         0.9900         0.4990           D         0.9290         0.4540           E         0.8500         0.3870           F         0.8470         0.3290           G         0.8270         0.3920           H         0.4310         0.3210           I         0.0660         0.0320           J         0.0100         0.0950           K         0.9500         0.4860           L         0.9220         0.3920           M         0.8950         0.4110           N         0.9710	$\mathbf{Chain}$	Atom inclusion	Q-score
1 $0.9210$ $0.4740$ 2 $0.5040$ $0.1460$ 3 $0.9500$ $0.4830$ 4 $0.9110$ $0.3850$ 5 $0.9970$ $0.5070$ 6 $0.9900$ $0.4520$ 7 $0.9900$ $0.4520$ 7 $0.9900$ $0.4590$ 8 $0.9940$ $0.4960$ A $0.9290$ $0.3500$ C $0.9900$ $0.4990$ D $0.9290$ $0.4540$ E $0.8500$ $0.3870$ F $0.8470$ $0.3290$ G $0.8270$ $0.3320$ H $0.4310$ $0.3210$ I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9500$ $0.4860$ L $0.9220$ $0.3320$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ <	All	0.8870	0.3720
2         0.5040         0.1460           3         0.9500         0.4830           4         0.9110         0.3850           5         0.9970         0.5070           6         0.9900         0.4520           7         0.9900         0.4590           8         0.9940         0.4960           A         0.9420         0.4010           B         0.9290         0.3500           C         0.9900         0.4540           E         0.8500         0.3870           F         0.8470         0.3290           G         0.8270         0.3290           H         0.4310         0.3210           I         0.0660         0.0320           J         0.0100         0.0950           K         0.9500         0.4860           L         0.9220         0.3920           M         0.8950         0.4110           N         0.9710         0.4720           O         0.9440         0.4170           P         0.8600         0.3420           Q         0.9060         0.3600           R         0.9590         0.	1	0.9210	0.4740
3 $0.9500$ $0.4830$ 4 $0.9110$ $0.3850$ 5 $0.9970$ $0.5070$ 6 $0.9900$ $0.4520$ 7 $0.9900$ $0.4590$ 8 $0.9940$ $0.4960$ A $0.9420$ $0.4010$ B $0.9290$ $0.3500$ C $0.9900$ $0.4990$ D $0.9290$ $0.4540$ E $0.8500$ $0.3870$ F $0.8470$ $0.3290$ G $0.8270$ $0.3920$ H $0.4310$ $0.3210$ I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9500$ $0.4860$ L $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ <	2	0.5040	0.1460
4 $0.9110$ $0.3850$ 5 $0.9970$ $0.5070$ 6 $0.9900$ $0.4520$ 7 $0.9900$ $0.4590$ 8 $0.9940$ $0.4960$ A $0.9420$ $0.4010$ B $0.9290$ $0.3500$ C $0.9900$ $0.4990$ D $0.9290$ $0.4540$ E $0.8500$ $0.3870$ F $0.8470$ $0.3290$ G $0.8270$ $0.3290$ H $0.0100$ $0.0920$ H $0.0100$ $0.0320$ J $0.0100$ $0.0320$ J $0.0100$ $0.0320$ J $0.0100$ $0.0320$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4160$	3	0.9500	0.4830
5 $0.9970$ $0.5070$ 6 $0.9900$ $0.4520$ 7 $0.9900$ $0.4590$ 8 $0.9940$ $0.4960$ A $0.9420$ $0.4010$ B $0.9290$ $0.3500$ C $0.9900$ $0.4990$ D $0.9290$ $0.4540$ E $0.8500$ $0.3870$ F $0.8470$ $0.3290$ G $0.8270$ $0.3220$ H $0.4310$ $0.3210$ I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9500$ $0.4860$ L $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ <	4	0.9110	0.3850
6 $0.9900$ $0.4520$ 7 $0.9900$ $0.4590$ 8 $0.9940$ $0.4960$ A $0.9420$ $0.4010$ B $0.9290$ $0.3500$ C $0.9900$ $0.4990$ D $0.9290$ $0.4540$ E $0.8500$ $0.3870$ F $0.8470$ $0.3290$ G $0.8270$ $0.3220$ H $0.4310$ $0.3210$ I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9500$ $0.4860$ L $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9910$ $0.5060$ S $0.9010$ $0.5090$ T $0.9590$ $0.5060$ S $0.9010$ <	5	0.9970	0.5070
7 $0.9900$ $0.4590$ 8 $0.9940$ $0.4960$ A $0.9420$ $0.4010$ B $0.9290$ $0.3500$ C $0.9900$ $0.4990$ D $0.9290$ $0.4540$ E $0.8500$ $0.3870$ F $0.8470$ $0.3290$ G $0.8270$ $0.3290$ H $0.4310$ $0.3210$ I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4160$	6	0.9900	0.4520
8 $0.9940$ $0.4960$ A $0.9420$ $0.4010$ B $0.9290$ $0.3500$ C $0.9900$ $0.4990$ D $0.9290$ $0.4540$ E $0.8500$ $0.3870$ F $0.8470$ $0.3290$ G $0.8270$ $0.3920$ H $0.4310$ $0.3210$ I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9500$ $0.4860$ L $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4490$ Y $0.9780$ $0.5000$	7	0.9900	0.4590
A $0.9420$ $0.4010$ B $0.9290$ $0.3500$ C $0.9900$ $0.4990$ D $0.9290$ $0.4540$ E $0.8500$ $0.3870$ F $0.8470$ $0.3290$ G $0.8270$ $0.3920$ H $0.4310$ $0.3210$ I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9500$ $0.4860$ L $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4490$ Y $0.9780$ $0.5000$ Z $0.8720$ $0.4160$	8	0.9940	0.4960
B $0.9290$ $0.3500$ C $0.9900$ $0.4990$ D $0.9290$ $0.4540$ E $0.8500$ $0.3870$ F $0.8470$ $0.3290$ G $0.8270$ $0.3920$ H $0.4310$ $0.3210$ I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9500$ $0.4860$ L $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4490$ Y $0.9780$ $0.5000$ Z $0.8720$ $0.4160$	А	0.9420	0.4010
C $0.9900$ $0.4990$ D $0.9290$ $0.4540$ E $0.8500$ $0.3870$ F $0.8470$ $0.3290$ G $0.8270$ $0.3290$ H $0.4510$ $0.3210$ I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9500$ $0.4860$ L $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4740$ U $0.9990$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4490$ Y $0.9780$ $0.5000$ Z $0.8720$ $0.4160$	В	0.9290	0.3500
D $0.9290$ $0.4540$ E $0.8500$ $0.3870$ F $0.8470$ $0.3290$ G $0.8270$ $0.3920$ H $0.4310$ $0.3210$ I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9500$ $0.4860$ L $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4740$ U $0.9990$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4490$ Y $0.9780$ $0.5000$ Z $0.8720$ $0.4160$	C	0.9900	0.4990
E $0.8500$ $0.3870$ F $0.8470$ $0.3290$ G $0.8270$ $0.3920$ H $0.4310$ $0.3210$ I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9500$ $0.4860$ L $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4490$ Y $0.9780$ $0.5000$ Z $0.8720$ $0.4160$	D	0.9290	0.4540
F $0.8470$ $0.3290$ G $0.8270$ $0.3920$ H $0.4310$ $0.3210$ I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9500$ $0.4860$ L $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4490$ Y $0.9780$ $0.5000$ Z $0.8720$ $0.4160$	Ε	0.8500	0.3870
G $0.8270$ $0.3920$ H $0.4310$ $0.3210$ I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9500$ $0.4860$ L $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4740$ U $0.9990$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4490$ Y $0.9780$ $0.5000$ Z $0.8720$ $0.4160$	$\mathbf{F}$	0.8470	0.3290
H $0.4310$ $0.3210$ I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9500$ $0.4860$ L $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4740$ U $0.9090$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4490$ Y $0.9780$ $0.5000$ Z $0.8720$ $0.4160$	G	0.8270	0.3920
I $0.0660$ $0.0320$ J $0.0100$ $0.0950$ K $0.9500$ $0.4860$ L $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4740$ U $0.9090$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4490$ Y $0.9780$ $0.5000$ Z $0.8720$ $0.4160$	Н	0.4310	0.3210
J       0.0100       0.0950         K       0.9500       0.4860         L       0.9220       0.3920         M       0.8950       0.4110         N       0.9710       0.4720         O       0.9440       0.4170         P       0.8600       0.3420         Q       0.9060       0.3600         R       0.9590       0.5060         S       0.9010       0.5090         T       0.9510       0.4180         V       0.7940       0.3720         W       0.8120       0.4000         X       0.9640       0.4490         Y       0.9780       0.5000	Ι	0.0660	0.0320
K $0.9500$ $0.4860$ L $0.9220$ $0.3920$ M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4740$ U $0.9090$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4490$ Y $0.9780$ $0.5000$ Z $0.8720$ $0.4160$	J	0.0100	0.0950
L       0.9220       0.3920         M       0.8950       0.4110         N       0.9710       0.4720         O       0.9440       0.4720         P       0.8600       0.3420         Q       0.9060       0.3600         R       0.9590       0.5060         S       0.9010       0.5090         T       0.9510       0.4740         U       0.9090       0.4180         V       0.7940       0.3720         W       0.8120       0.4000         X       0.9640       0.4490         Y       0.9780       0.5000         Z       0.8720       0.4160	К	0.9500	0.4860
M $0.8950$ $0.4110$ N $0.9710$ $0.4720$ O $0.9440$ $0.4170$ P $0.8600$ $0.3420$ Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4180$ U $0.9090$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4490$ Y $0.9780$ $0.5000$ Z $0.8720$ $0.4160$	L	0.9220	0.3920
N         0.9710         0.4720           O         0.9440         0.4170           P         0.8600         0.3420           Q         0.9060         0.3600           R         0.9590         0.5060           S         0.9010         0.5090           T         0.9510         0.4740           U         0.9090         0.4180           V         0.7940         0.3720           W         0.8120         0.4000           X         0.9640         0.4490           Y         0.9780         0.5000           Z         0.8720         0.4160	М	0.8950	0.4110
O         0.9440         0.4170           P         0.8600         0.3420           Q         0.9060         0.3600           R         0.9590         0.5060           S         0.9010         0.5090           T         0.9510         0.4170           U         0.9090         0.4180           V         0.7940         0.3720           W         0.8120         0.4000           X         0.9640         0.4490           Y         0.9780         0.5000           Z         0.8720         0.4160	Ν	0.9710	0.4720
P       0.8600       0.3420         Q       0.9060       0.3600         R       0.9590       0.5060         S       0.9010       0.5090         T       0.9510       0.4740         U       0.9090       0.4180         V       0.7940       0.3720         W       0.8120       0.4000         X       0.9640       0.4490         Y       0.9780       0.5000         Z       0.8720       0.4160	О	0.9440	0.4170
Q $0.9060$ $0.3600$ R $0.9590$ $0.5060$ S $0.9010$ $0.5090$ T $0.9510$ $0.4740$ U $0.9090$ $0.4180$ V $0.7940$ $0.3720$ W $0.8120$ $0.4000$ X $0.9640$ $0.4490$ Y $0.9780$ $0.5000$ Z $0.8720$ $0.4160$	Р	0.8600	0.3420
R       0.9590       0.5060         S       0.9010       0.5090         T       0.9510       0.4740         U       0.9090       0.4180         V       0.7940       0.3720         W       0.8120       0.4000         X       0.9640       0.4490         Y       0.9780       0.5000         Z       0.8720       0.4160	Q	0.9060	0.3600
S       0.9010       0.5090         T       0.9510       0.4740         U       0.9090       0.4180         V       0.7940       0.3720         W       0.8120       0.4000         X       0.9640       0.4490         Y       0.9780       0.5000         Z       0.8720       0.4160	R	0.9590	0.5060
T     0.9510     0.4740       U     0.9090     0.4180       V     0.7940     0.3720       W     0.8120     0.4000       X     0.9640     0.4490       Y     0.9780     0.5000       Z     0.8720     0.4160	S	0.9010	0.5090
U     0.9090     0.4180       V     0.7940     0.3720       W     0.8120     0.4000       X     0.9640     0.4490       Y     0.9780     0.5000       Z     0.8720     0.4160	Т	0.9510	0.4740
V         0.7940         0.3720           W         0.8120         0.4000           X         0.9640         0.4490           Y         0.9780         0.5000           Z         0.8720         0.4160	U	0.9090	0.4180
W         0.8120         0.4000           X         0.9640         0.4490           Y         0.9780         0.5000           Z         0.8720         0.4160	V	0.7940	0.3720
X         0.9640         0.4490           Y         0.9780         0.5000           Z         0.8720         0.4160	W	0.8120	0.4000
Y         0.9780         0.5000           Z         0.8720         0.4160	Х	0.9640	0.4490
Z 0.8720 0.4160	Y	0.9780	0.5000
	Z	0.8720	0.4160

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Chain	Atom inclusion	Q-score
a	0.9290	0.3480
b	0.0370	0.0480
с	0.5200	0.2050
d	0.7340	0.3370
e	0.7740	0.3550
f	0.9020	0.4230
g	0.8150	0.2290
h	0.9330	0.4500
i	0.8220	0.1900
j	0.5280	-0.0010
k	0.9040	0.4200
1	0.9010	0.3650
m	0.7170	0.2640
n	0.4800	0.0360
0	0.9470	0.4540
р	0.7730	0.3750
q	0.9320	0.4430
r	0.9030	0.3880
S	0.3650	0.0560
t	0.9120	0.4010
u	0.9770	0.3920

