



wwPDB EM Validation Summary Report ⓘ

Mar 20, 2026 – 02:43 PM UTC

PDB ID : 8WO5 / pdb_00008wo5
EMDB ID : EMD-37679
Title : Cryo-EM structure of the intact flagellar motor-hook complex in the CCW state
Authors : Tan, J.X.; Zhang, L.; Zhou, Y.; Zhu, Y.Q.
Deposited on : 2023-10-06
Resolution : 7.40 Å (reported)
Based on initial models : ?, .

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 ⓘ 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.dev132
MolProbity : **FAILED**
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : **NOT EXECUTED**
MapQ : **FAILED**
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

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 7.40 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 15 unique types of molecules in this entry. The entry contains 578432 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 Flagellar basal-body rod protein FlgG.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	0	248	Total	C	N	O	S	0	0
			1866	1154	327	379	6		
1	1	252	Total	C	N	O	S	0	0
			1894	1172	331	385	6		
1	2	260	Total	C	N	O	S	0	0
			1949	1202	341	400	6		
1	3	260	Total	C	N	O	S	0	0
			1949	1202	341	400	6		
1	4	260	Total	C	N	O	S	0	0
			1949	1202	341	400	6		
1	5	260	Total	C	N	O	S	0	0
			1949	1202	341	400	6		
1	6	260	Total	C	N	O	S	0	0
			1949	1202	341	400	6		
1	7	260	Total	C	N	O	S	0	0
			1949	1202	341	400	6		
1	8	260	Total	C	N	O	S	0	0
			1949	1202	341	400	6		
1	9	260	Total	C	N	O	S	0	0
			1949	1202	341	400	6		
1	AF	254	Total	C	N	O	S	0	0
			1903	1175	334	389	5		
1	AG	255	Total	C	N	O	S	0	0
			1911	1181	335	390	5		
1	AH	256	Total	C	N	O	S	0	0
			1919	1186	336	391	6		
1	AI	254	Total	C	N	O	S	0	0
			1903	1175	334	389	5		
1	AJ	255	Total	C	N	O	S	0	0
			1911	1181	335	390	5		
1	AK	243	Total	C	N	O	S	0	0
			1823	1127	318	373	5		
1	AL	248	Total	C	N	O	S	0	0
			1866	1154	327	379	6		

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Mol	Chain	Residues	Atoms					AltConf	Trace
1	AM	248	Total	C	N	O	S	0	0
			1866	1154	327	379	6		
1	AN	248	Total	C	N	O	S	0	0
			1866	1154	327	379	6		
1	ZA	260	Total	C	N	O	S	0	0
			1949	1202	341	400	6		
1	ZB	260	Total	C	N	O	S	0	0
			1949	1202	341	400	6		
1	ZC	260	Total	C	N	O	S	0	0
			1949	1202	341	400	6		
1	ZD	260	Total	C	N	O	S	0	0
			1949	1202	341	400	6		
1	ZE	260	Total	C	N	O	S	0	0
			1949	1202	341	400	6		

- Molecule 2 is a protein called Flagellar L-ring protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	A	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	B	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	C	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	D	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	E	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	F	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	G	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	H	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	I	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	J	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	K	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	L	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		

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Mol	Chain	Residues	Atoms					AltConf	Trace
2	M	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	N	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	O	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	P	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	Q	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	R	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	S	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	T	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	U	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	V	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	W	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	X	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	Y	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		
2	Z	211	Total	C	N	O	S	0	0
			1580	985	282	309	4		

- Molecule 3 is a protein called Flagellar basal body rod protein FlgB.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	A0	123	Total	C	N	O	S	0	0
			950	588	172	185	5		
3	A6	134	Total	C	N	O	S	0	0
			1030	633	189	203	5		
3	A7	121	Total	C	N	O	S	0	0
			942	583	172	182	5		
3	A8	125	Total	C	N	O	S	0	0
			967	598	177	187	5		
3	A9	127	Total	C	N	O	S	0	0
			982	606	182	189	5		

- Molecule 4 is a protein called Flagellar hook-basal body complex protein FliE.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	A1	91	Total	C	N	O	S	0	0
			672	415	121	129	7		
4	A2	93	Total	C	N	O	S	0	0
			686	424	123	132	7		
4	A3	93	Total	C	N	O	S	0	0
			686	424	123	132	7		
4	A4	93	Total	C	N	O	S	0	0
			686	424	123	132	7		
4	A5	92	Total	C	N	O	S	0	0
			679	420	122	130	7		
4	Az	59	Total	C	N	O	S	0	0
			429	265	74	83	7		

- Molecule 5 is a protein called Flagellar basal-body rod protein FlgF.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	AA	248	Total	C	N	O	S	0	0
			1804	1106	324	367	7		
5	AB	249	Total	C	N	O	S	0	0
			1812	1111	325	368	8		
5	AC	250	Total	C	N	O	S	0	0
			1820	1116	326	369	9		
5	AD	250	Total	C	N	O	S	0	0
			1820	1116	326	369	9		
5	AE	249	Total	C	N	O	S	0	0
			1812	1111	325	368	8		

- Molecule 6 is a protein called Flagellar M-ring protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	AO	164	Total	C	N	O	S	0	0
			1275	776	237	259	3		
6	AP	164	Total	C	N	O	S	0	0
			1275	776	237	259	3		
6	AQ	164	Total	C	N	O	S	0	0
			1275	776	237	259	3		
6	AR	164	Total	C	N	O	S	0	0
			1275	776	237	259	3		
6	AS	164	Total	C	N	O	S	0	0
			1275	776	237	259	3		
6	AT	164	Total	C	N	O	S	0	0
			1275	776	237	259	3		

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Mol	Chain	Residues	Atoms					AltConf	Trace
6	AU	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	AV	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	AW	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	AX	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	AY	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	AZ	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	Aa	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	Ac	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	Ad	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	Ae	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	Af	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	Ag	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	Ah	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	Ai	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	Aj	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	Ak	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	Al	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	Am	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	An	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	Ao	164	Total 1275	C 776	N 237	O 259	S 3	0	0
6	Ap	164	Total 1275	C 776	N 237	O 259	S 3	0	0

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Mol	Chain	Residues	Atoms				AltConf	Trace
6	BG	13	Total 81	C 50	N 15	O 16	0	0
6	BH	16	Total 103	C 64	N 19	O 20	0	0
6	BI	20	Total 133	C 83	N 23	O 27	0	0
6	BJ	16	Total 103	C 64	N 19	O 20	0	0
6	BK	21	Total 140	C 88	N 24	O 28	0	0
6	BL	16	Total 103	C 64	N 19	O 20	0	0
6	BM	21	Total 140	C 88	N 24	O 28	0	0
6	BN	16	Total 103	C 64	N 19	O 20	0	0
6	BO	20	Total 133	C 83	N 23	O 27	0	0
6	BP	16	Total 103	C 64	N 19	O 20	0	0
6	BQ	21	Total 140	C 88	N 24	O 28	0	0
6	BR	164	Total 1275	C 776	N 237	O 259 S 3	0	0
6	BS	164	Total 1275	C 776	N 237	O 259 S 3	0	0
6	BT	164	Total 1275	C 776	N 237	O 259 S 3	0	0
6	BU	164	Total 1275	C 776	N 237	O 259 S 3	0	0
6	BV	164	Total 1275	C 776	N 237	O 259 S 3	0	0
6	BW	164	Total 1275	C 776	N 237	O 259 S 3	0	0
6	BX	164	Total 1275	C 776	N 237	O 259 S 3	0	0
6	UI	155	Total 1172	C 733	N 211	O 226 S 2	0	0
6	UJ	155	Total 1172	C 733	N 211	O 226 S 2	0	0
6	UK	155	Total 1172	C 733	N 211	O 226 S 2	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
6	UL	155	Total	C	N	O	S	0	0
			1172	733	211	226	2		
6	UM	155	Total	C	N	O	S	0	0
			1172	733	211	226	2		
6	UN	155	Total	C	N	O	S	0	0
			1172	733	211	226	2		
6	UO	155	Total	C	N	O	S	0	0
			1172	733	211	226	2		
6	UP	155	Total	C	N	O	S	0	0
			1172	733	211	226	2		
6	WA	113	Total	C	N	O	S	0	0
			849	534	148	166	1		
6	WB	111	Total	C	N	O	S	0	0
			836	526	146	163	1		
6	WC	108	Total	C	N	O	S	0	0
			812	510	142	159	1		
6	WD	110	Total	C	N	O	S	0	0
			827	522	144	160	1		
6	WE	112	Total	C	N	O	S	0	0
			843	531	147	164	1		
6	WF	111	Total	C	N	O	S	0	0
			834	526	145	162	1		
6	WG	112	Total	C	N	O	S	0	0
			843	531	147	164	1		
6	WH	95	Total	C	N	O	S	0	0
			703	439	126	137	1		
6	WI	95	Total	C	N	O	S	0	0
			703	439	126	137	1		
6	WJ	99	Total	C	N	O	S	0	0
			737	462	131	143	1		
6	WK	98	Total	C	N	O	S	0	0
			729	456	130	142	1		
6	WL	85	Total	C	N	O	S	0	0
			622	389	110	122	1		
6	WM	82	Total	C	N	O	S	0	0
			596	372	107	116	1		
6	WN	84	Total	C	N	O	S	0	0
			611	380	109	121	1		
6	WO	96	Total	C	N	O	S	0	0
			714	448	127	138	1		
6	WP	100	Total	C	N	O	S	0	0
			741	464	132	144	1		

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Mol	Chain	Residues	Atoms					AltConf	Trace
6	WQ	111	Total 834	C 526	N 145	O 162	S 1	0	0
6	WR	111	Total 834	C 526	N 145	O 162	S 1	0	0
6	WS	111	Total 834	C 526	N 145	O 162	S 1	0	0
6	WT	111	Total 834	C 526	N 145	O 162	S 1	0	0
6	WU	112	Total 843	C 531	N 147	O 164	S 1	0	0
6	WV	110	Total 827	C 521	N 144	O 161	S 1	0	0
6	WW	111	Total 834	C 526	N 145	O 162	S 1	0	0
6	C3	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	C7	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	DE	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	DK	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	DR	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	DX	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Dd	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Dj	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Dp	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Dv	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	D2	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	D8	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	B6	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	EF	27	Total 224	C 135	N 44	O 42	S 3	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
6	EL	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	ER	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	EX	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Bb	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Bh	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Bn	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Bt	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Bz	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	CB	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	CH	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	CN	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	CT	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	CZ	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Cf	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Cl	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Cr	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Cx	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Eb	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	Eh	27	Total 224	C 135	N 44	O 42	S 3	0	0
6	En	27	Total 224	C 135	N 44	O 42	S 3	0	0

- Molecule 7 is a protein called Flagellar biosynthetic protein FliQ.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	Ab	89	Total	C	N	O	S	0	0
			670	449	100	114	7		
7	Aq	89	Total	C	N	O	S	0	0
			670	449	100	114	7		
7	Ar	89	Total	C	N	O	S	0	0
			670	449	100	114	7		
7	As	89	Total	C	N	O	S	0	0
			670	449	100	114	7		

- Molecule 8 is a protein called Flagellar biosynthetic protein FliR.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	At	253	Total	C	N	O	S	0	0
			1945	1305	307	318	15		

- Molecule 9 is a protein called Flagellar biosynthetic protein FliP.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	Au	207	Total	C	N	O	S	0	0
			1605	1072	249	272	12		
9	Av	209	Total	C	N	O	S	0	0
			1626	1086	252	276	12		
9	Aw	208	Total	C	N	O	S	0	0
			1614	1077	251	274	12		
9	Ax	208	Total	C	N	O	S	0	0
			1614	1077	251	274	12		
9	Ay	209	Total	C	N	O	S	0	0
			1623	1084	251	276	12		

- Molecule 10 is a protein called Flagellar basal-body rod protein FlgC.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	BA	133	Total	C	N	O	S	0	0
			969	604	167	193	5		
10	BB	132	Total	C	N	O	S	0	0
			964	601	166	192	5		
10	BC	133	Total	C	N	O	S	0	0
			969	604	167	193	5		
10	BD	133	Total	C	N	O	S	0	0
			969	604	167	193	5		
10	BE	131	Total	C	N	O	S	0	0
			956	595	165	191	5		

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Mol	Chain	Residues	Atoms					AltConf	Trace
10	BF	133	Total	C	N	O	S	0	0
			969	604	167	193	5		

- Molecule 11 is a protein called Flagellar hook protein FlgE.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	ZF	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZG	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZH	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZI	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZJ	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZK	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZL	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZM	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZN	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZO	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZP	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZQ	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZR	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZS	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZT	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZU	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZV	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZW	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		

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Mol	Chain	Residues	Atoms					AltConf	Trace
11	ZX	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZY	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	ZZ	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	Za	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	Zb	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	Zc	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	Zd	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	Ze	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	Zf	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	Zg	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		
11	Zh	401	Total	C	N	O	S	0	0
			2947	1814	507	618	8		

- Molecule 12 is a protein called Flagellar P-ring protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	a	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	b	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	c	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	d	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	e	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	f	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	g	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	h	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		

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Mol	Chain	Residues	Atoms					AltConf	Trace
12	i	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	j	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	k	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	l	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	m	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	n	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	o	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	p	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	q	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	r	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	s	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	t	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	u	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	v	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	w	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	x	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	y	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		
12	z	303	Total	C	N	O	S	0	0
			2228	1364	405	446	13		

- Molecule 13 is a protein called Flagellar motor switch protein FliN.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	C4	87	Total	C	N	O	S	0	0
			675	427	118	126	4		

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Mol	Chain	Residues	Atoms					AltConf	Trace
13	C5	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	C9	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	C0	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	DA	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	DC	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	DG	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	DH	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	DI	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	DN	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	DO	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	DP	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	DT	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	DU	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	DV	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	DZ	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Da	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Db	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Df	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Dg	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Dh	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Di	87	Total 675	C 427	N 118	O 126	S 4	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
13	Dm	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Dn	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Dr	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Ds	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Dt	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Dx	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Dy	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Dz	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	D4	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	D5	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	D6	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	D0	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	EA	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	EB	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	B0	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	B2	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	B3	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	B4	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	B8	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	B9	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	EC	87	Total 675	C 427	N 118	O 126	S 4	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
13	ED	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	EH	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	EI	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	EJ	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	EN	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	EO	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	EP	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	ET	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	EU	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	EV	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	EZ	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	BY	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	BZ	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Bd	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Be	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Bf	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Bj	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Bk	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Bl	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Bp	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Bq	87	Total 675	C 427	N 118	O 126	S 4	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
13	Br	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Bv	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Bw	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Bx	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	C1	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	C2	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	CD	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	CE	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	CF	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	CJ	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	CK	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	CL	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	CP	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	CQ	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	CR	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	CV	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	CW	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	CX	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Cb	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Cc	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Cd	87	Total 675	C 427	N 118	O 126	S 4	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
13	Ch	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Ci	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Cj	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Cn	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Co	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Cp	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Ct	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Cu	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Cv	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Cz	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Ed	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Ee	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Ef	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Ej	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Ek	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	El	87	Total 675	C 427	N 118	O 126	S 4	0	0
13	Ep	87	Total 675	C 427	N 118	O 126	S 4	0	0

- Molecule 14 is a protein called Flagellar motor switch protein FliG.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	C6	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	DB	315	Total 2462	C 1535	N 435	O 483	S 9	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
14	DD	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	DJ	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	DQ	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	DW	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Dc	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Di	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Do	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Du	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	D1	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	D7	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	B5	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	EE	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	EK	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	EQ	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	EW	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Ba	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Bg	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Bm	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Bs	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	By	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	CA	315	Total 2462	C 1535	N 435	O 483	S 9	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
14	CG	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	CM	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	CS	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	CY	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Ce	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Ck	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Cq	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Cw	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Ea	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Eg	315	Total 2462	C 1535	N 435	O 483	S 9	0	0
14	Em	315	Total 2462	C 1535	N 435	O 483	S 9	0	0

- Molecule 15 is a protein called Flagellar motor switch protein FlIM.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	C8	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	DF	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	DL	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	DM	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	DS	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	DY	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	De	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	Dk	289	Total 2341	C 1492	N 423	O 421	S 5	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
15	Dq	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	Dw	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	D3	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	D9	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	B1	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	B7	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	EG	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	EM	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	ES	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	EY	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	Bc	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	Bi	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	Bo	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	Bu	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	CC	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	CI	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	CO	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	CU	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	Ca	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	Cg	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	Cm	289	Total 2341	C 1492	N 423	O 421	S 5	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
15	Cs	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	Cy	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	Ec	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	Ei	289	Total 2341	C 1492	N 423	O 421	S 5	0	0
15	Eo	289	Total 2341	C 1492	N 423	O 421	S 5	0	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, C34	Depositor
Number of particles used	10318	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 ($e^-/\text{\AA}^2$)	41	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor

4 Model quality [i](#)

4.1 Standard geometry [i](#)

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

4.2 Too-close contacts [i](#)

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

4.3 Torsion angles [i](#)

4.3.1 Protein backbone [i](#)

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

4.3.2 Protein sidechains [i](#)

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

4.3.3 RNA [i](#)

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

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

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

4.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

4.6 Ligand geometry [i](#)

There are no ligands in this entry.

4.7 Other polymers [i](#)

There are no such residues in this entry.

4.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

5 Map visualisation

This section contains visualisations of the EMDB entry EMD-37679. 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.

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 ⓘ

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

8 Map-model fit

This section was not generated.