



wwPDB EM Validation Summary Report ⓘ

Mar 25, 2026 – 03:03 AM UTC

PDB ID : 9IJJ / pdb_00009ijj
EMDB ID : EMD-60633
Title : In situ structure of the central apparatus in mouse sperm axoneme.
Authors : Zhu, Y.; Yin, G.; Sun, F.
Deposited on : 2024-06-23
Resolution : 7.70 Å(reported)

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 7.70 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 [i](#)

There are 45 unique types of molecules in this entry. The entry contains 1637265 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 Spermatogenesis-associated protein 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	b	182	Total	C	N	O	S	0	0
			1509	976	264	265	4		
1	a	182	Total	C	N	O	S	0	0
			1509	976	264	265	4		
1	W	182	Total	C	N	O	S	0	0
			1509	976	264	265	4		
1	X	182	Total	C	N	O	S	0	0
			1509	976	264	265	4		
1	Y	182	Total	C	N	O	S	0	0
			1509	976	264	265	4		
1	Z	182	Total	C	N	O	S	0	0
			1509	976	264	265	4		

- Molecule 2 is a protein called Kinesin-like protein KIF9.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	c	497	Total	C	N	O	S	0	0
			4014	2514	707	775	18		
2	d	568	Total	C	N	O	S	0	0
			4578	2866	808	882	22		
2	e	497	Total	C	N	O	S	0	0
			4014	2514	707	775	18		
2	f	497	Total	C	N	O	S	0	0
			4014	2514	707	775	18		
2	g	568	Total	C	N	O	S	0	0
			4578	2866	808	882	22		

- Molecule 3 is a protein called Cilia- and flagella-associated protein 65.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	h	1444	Total	C	N	O	S	0	0
			11503	7440	1925	2075	63		
3	i	1444	Total	C	N	O	S	0	0
			11503	7440	1925	2075	63		

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Mol	Chain	Residues	Atoms					AltConf	Trace
3	j	1444	Total	C	N	O	S	0	0
			11503	7440	1925	2075	63		

- Molecule 4 is a protein called Cilia- and flagella-associated protein 70.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	k	859	Total	C	N	O	S	0	0
			6859	4410	1126	1288	35		
4	n	874	Total	C	N	O	S	0	0
			6979	4486	1145	1313	35		
4	o	859	Total	C	N	O	S	0	0
			6859	4410	1126	1288	35		
4	p	874	Total	C	N	O	S	0	0
			6979	4486	1145	1313	35		
4	m	859	Total	C	N	O	S	0	0
			6859	4410	1126	1288	35		
4	l	874	Total	C	N	O	S	0	0
			6979	4486	1145	1313	35		

- Molecule 5 is a protein called Protein FAM228B.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	q	203	Total	C	N	O	S	0	0
			1723	1096	302	315	10		
5	r	203	Total	C	N	O	S	0	0
			1723	1096	302	315	10		
5	s	203	Total	C	N	O	S	0	0
			1723	1096	302	315	10		

- Molecule 6 is a protein called Cilia- and flagella-associated protein 20.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	t	184	Total	C	N	O	S	0	0
			1532	984	268	273	7		
6	u	184	Total	C	N	O	S	0	0
			1532	984	268	273	7		

- Molecule 7 is a protein called MYCBP-associated protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	v	157	Total	C	N	O	S	0	0
			1313	837	237	235	4		

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Mol	Chain	Residues	Atoms					AltConf	Trace
7	w	157	Total	C	N	O	S	0	0
			1313	837	237	235	4		

- Molecule 8 is a protein called Cilia and flagella associated protein 46.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	A	1764	Total	C	N	O	S	0	0
			14212	9068	2424	2625	95		
8	B	1246	Total	C	N	O	S	0	0
			10003	6388	1691	1860	64		

- Molecule 9 is a protein called Cilia- and flagella-associated protein 74.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	C	974	Total	C	N	O	S	0	0
			7752	4956	1335	1426	35		
9	D	304	Total	C	N	O	S	0	0
			2529	1543	505	471	10		
9	E	488	Total	C	N	O	S	0	0
			3814	2471	618	706	19		

- Molecule 10 is a protein called Coiled-coil domain containing 180.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	F	1048	Total	C	N	O	S	0	0
			8741	5538	1506	1648	49		
10	G	493	Total	C	N	O	S	0	0
			4117	2597	725	770	25		

- Molecule 11 is a protein called Cilia- and flagella-associated protein 54.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	H	2700	Total	C	N	O	S	0	0
			21709	13992	3633	3951	133		
11	I	895	Total	C	N	O	S	0	0
			7165	4599	1208	1312	46		

- Molecule 12 is a protein called Cilia- and flagella-associated protein 221.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	L	230	Total	C	N	O	S	0	0
			1866	1212	312	334	8		

- Molecule 13 is a protein called Leucine rich repeat containing 72.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	M	181	Total	C	N	O	S	0	0
			1507	973	265	264	5		

- Molecule 14 is a protein called Deleted in lung and esophageal cancer 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	O	1299	Total	C	N	O	S	0	0
			10182	6526	1710	1887	59		
14	P	591	Total	C	N	O	S	0	0
			4660	2960	803	871	26		

- Molecule 15 is a protein called Sperm-associated antigen 16 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	Q	454	Total	C	N	O	S	0	0
			3594	2271	634	666	23		
15	R	456	Total	C	N	O	S	0	0
			3608	2279	636	670	23		
15	S	454	Total	C	N	O	S	0	0
			3594	2271	634	666	23		
15	T	456	Total	C	N	O	S	0	0
			3608	2279	636	670	23		
15	U	454	Total	C	N	O	S	0	0
			3594	2271	634	666	23		
15	V	456	Total	C	N	O	S	0	0
			3608	2279	636	670	23		

- Molecule 16 is a protein called Sperm-associated antigen 17.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	x	1112	Total	C	N	O	S	0	0
			8949	5724	1486	1694	45		
16	y	1121	Total	C	N	O	S	0	0
			9047	5792	1500	1710	45		
16	z	1121	Total	C	N	O	S	0	0
			9047	5792	1500	1710	45		

- Molecule 17 is a protein called Tubulin beta-4B chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	Ab	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Ad	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Af	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Ah	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Aj	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Bb	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Bd	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Bf	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Bh	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Bj	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Cb	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Cd	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Cf	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Ch	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Cj	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Db	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Dd	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Df	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Dh	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Dj	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Eb	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Ed	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		

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Mol	Chain	Residues	Atoms					AltConf	Trace
17	Ef	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Eh	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Ej	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Fb	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Fd	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Ff	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Fh	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Fj	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Gb	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Gd	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Gf	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Gh	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Gj	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Hb	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Hd	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Hf	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Hh	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Hj	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Ib	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Id	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	If	432	Total 3391	C 2129	N 580	O 656	S 26	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
17	Ih	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Ij	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Jb	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Jd	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Jf	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Jh	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Jj	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Kb	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Kd	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Kf	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Kh	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Kj	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Lb	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Ld	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Lf	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Lh	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Lj	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Mb	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Md	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Mf	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Mh	432	Total 3391	C 2129	N 580	O 656	S 26	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
17	Mj	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	An	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Ap	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Ar	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	At	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Av	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Bn	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Bp	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Br	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Bt	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Bv	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Cn	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Cp	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Cr	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Ct	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Cv	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Dn	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Dp	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Dr	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Dt	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Dv	432	Total 3391	C 2129	N 580	O 656	S 26	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
17	En	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Ep	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Er	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Et	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Ev	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Fp	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Fr	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Ft	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Fv	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Fn	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Gp	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Gr	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Gt	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Gv	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Gn	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Hp	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Hr	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Ht	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Hv	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Hn	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Ip	432	Total 3391	C 2129	N 580	O 656	S 26	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
17	Ir	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	It	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Iv	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	In	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Jp	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Jr	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Jt	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Jv	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Jn	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Kn	432	Total 3390	C 2129	N 579	O 656	S 26	0	0
17	Kp	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Kr	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Kt	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Kv	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Ln	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Lp	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Lr	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Lt	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Lv	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Mn	432	Total 3391	C 2129	N 580	O 656	S 26	0	0
17	Mp	432	Total 3391	C 2129	N 580	O 656	S 26	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
17	Mr	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Mt	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		
17	Mv	432	Total	C	N	O	S	0	0
			3391	2129	580	656	26		

- Molecule 18 is a protein called Tubulin alpha-3 chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	Ac	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ae	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ag	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ai	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ak	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Bc	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Be	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Bg	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Bi	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Bk	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Cc	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ce	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Cg	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ci	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ck	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Dc	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		

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Mol	Chain	Residues	Atoms					AltConf	Trace
18	De	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Dg	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Di	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Dk	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ec	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ee	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Eg	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ei	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ek	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Fa	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Fc	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Fe	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Fg	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Fi	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ga	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Gc	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ge	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Gg	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Gi	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ha	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Hc	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		

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Mol	Chain	Residues	Atoms					AltConf	Trace
18	He	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Hg	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Hi	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ia	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ic	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ie	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ig	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ii	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ja	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Jc	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Je	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Jg	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ji	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Kc	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ke	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Kg	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ki	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Kk	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Lc	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Le	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Lg	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		

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Mol	Chain	Residues	Atoms					AltConf	Trace
18	Li	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Lk	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Mc	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Me	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Mg	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Mi	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Mk	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ao	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Aq	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	As	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Au	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Aw	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Bo	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Bq	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Bs	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Bu	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Bm	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Co	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Cq	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Cs	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Cu	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		

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Mol	Chain	Residues	Atoms					AltConf	Trace
18	Cm	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Do	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Dq	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ds	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Du	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Dm	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Eo	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Eq	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Es	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Eu	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Em	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Fo	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Fq	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Fs	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Fu	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Fw	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Go	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Gq	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Gs	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Gu	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Gw	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		

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Mol	Chain	Residues	Atoms					AltConf	Trace
18	Ho	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Hq	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Hs	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Hu	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Hw	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Io	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Iq	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Is	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Iu	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Iw	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Jo	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Jq	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Js	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ju	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Jw	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ko	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Kq	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ks	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ku	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Km	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Lo	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		

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Mol	Chain	Residues	Atoms					AltConf	Trace
18	Lq	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ls	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Lu	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Lm	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Mo	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Mq	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Ms	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Mu	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		
18	Mm	439	Total	C	N	O	S	0	0
			3424	2169	582	651	22		

- Molecule 19 is a protein called Sperm-associated antigen 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	AA	461	Total	C	N	O	S	0	0
			3505	2239	597	652	17		
19	AB	501	Total	C	N	O	S	0	0
			3831	2442	658	712	19		
19	AC	477	Total	C	N	O	S	0	0
			3629	2314	625	672	18		
19	AD	507	Total	C	N	O	S	0	0
			3882	2474	665	724	19		
19	AE	507	Total	C	N	O	S	0	0
			3882	2474	665	724	19		
19	AF	507	Total	C	N	O	S	0	0
			3882	2474	665	724	19		
19	AG	507	Total	C	N	O	S	0	0
			3882	2474	665	724	19		
19	AH	507	Total	C	N	O	S	0	0
			3882	2474	665	724	19		
19	AI	507	Total	C	N	O	S	0	0
			3882	2474	665	724	19		
19	AJ	507	Total	C	N	O	S	0	0
			3882	2474	665	724	19		

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Mol	Chain	Residues	Atoms					AltConf	Trace
19	AK	490	Total	C	N	O	S	0	0
			3744	2387	643	695	19		
19	AL	503	Total	C	N	O	S	0	0
			3845	2449	660	717	19		
19	AM	490	Total	C	N	O	S	0	0
			3744	2387	643	695	19		
19	AN	490	Total	C	N	O	S	0	0
			3744	2387	643	695	19		
19	AO	491	Total	C	N	O	S	0	0
			3751	2392	644	696	19		
19	AP	503	Total	C	N	O	S	0	0
			3845	2449	660	717	19		
19	AQ	502	Total	C	N	O	S	0	0
			3839	2446	659	715	19		
19	AR	501	Total	C	N	O	S	0	0
			3831	2442	658	712	19		
19	AS	503	Total	C	N	O	S	0	0
			3845	2449	660	717	19		
19	AT	490	Total	C	N	O	S	0	0
			3743	2387	643	695	18		
19	AU	491	Total	C	N	O	S	0	0
			3751	2392	644	696	19		
19	AV	503	Total	C	N	O	S	0	0
			3845	2449	660	717	19		
19	AW	507	Total	C	N	O	S	0	0
			3882	2474	665	724	19		
19	AX	501	Total	C	N	O	S	0	0
			3831	2442	658	712	19		
19	AY	501	Total	C	N	O	S	0	0
			3831	2442	658	712	19		
19	AZ	501	Total	C	N	O	S	0	0
			3831	2442	658	712	19		
19	A1	501	Total	C	N	O	S	0	0
			3831	2442	658	712	19		

- Molecule 20 is a protein called Calmodulin-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	3D	149	Total	C	N	O	S	0	0
			1174	719	189	256	10		
20	3E	149	Total	C	N	O	S	0	0
			1174	719	189	256	10		

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Mol	Chain	Residues	Atoms					AltConf	Trace
20	3F	149	Total	C	N	O	S	0	0
			1174	719	189	256	10		
20	3G	149	Total	C	N	O	S	0	0
			1174	719	189	256	10		
20	3H	149	Total	C	N	O	S	0	0
			1174	719	189	256	10		
20	3I	149	Total	C	N	O	S	0	0
			1174	719	189	256	10		
20	3J	149	Total	C	N	O	S	0	0
			1174	719	189	256	10		

- Molecule 21 is a protein called Cilia- and flagella-associated protein 69.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	A2	825	Total	C	N	O	S	0	0
			6600	4231	1108	1219	42		
21	A3	825	Total	C	N	O	S	0	0
			6600	4231	1108	1219	42		
21	A4	825	Total	C	N	O	S	0	0
			6600	4231	1108	1219	42		

- Molecule 22 is a protein called Sperm acrosome-associated protein 9.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	1A	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1B	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1C	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1D	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1G	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1I	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1E	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1F	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1J	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		

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Mol	Chain	Residues	Atoms					AltConf	Trace
22	1K	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1L	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1M	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1N	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1O	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1P	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1Q	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1R	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1S	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1T	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1U	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1V	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1W	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1X	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1Y	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1Z	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1a	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1b	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1c	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1d	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2A	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		

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Mol	Chain	Residues	Atoms					AltConf	Trace
22	2D	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2B	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2C	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2F	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2E	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2G	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2H	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2I	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2J	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2K	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2L	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2M	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2N	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2O	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2P	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2Q	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2R	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2S	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2T	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2U	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	2V	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		

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Mol	Chain	Residues	Atoms					AltConf	Trace
22	1e	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1f	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1g	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1h	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1i	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1j	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		
22	1k	158	Total	C	N	O	S	0	0
			1285	807	227	240	11		

- Molecule 23 is a protein called Protein dpy-30 homolog.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	3X	59	Total	C	N	O	0	0
			471	302	81	88		
23	3Y	75	Total	C	N	O	0	0
			601	380	104	117		
23	3V	59	Total	C	N	O	0	0
			471	302	81	88		
23	3W	75	Total	C	N	O	0	0
			601	380	104	117		
23	3T	57	Total	C	N	O	0	0
			459	296	79	84		
23	3U	75	Total	C	N	O	0	0
			601	380	104	117		

- Molecule 24 is a protein called Unknown1.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	3A	57	Total	C	N	O	0	0
			285	171	57	57		

- Molecule 25 is a protein called Spermatogenesis-associated protein 17.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	3B	173	Total	C	N	O	S	0	0
			1516	972	277	258	9		

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Mol	Chain	Residues	Atoms					AltConf	Trace
25	3C	173	Total	C	N	O	S	0	0
			1516	972	277	258	9		

- Molecule 26 is a protein called Cilia- and flagella-associated protein 119.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	3K	169	Total	C	N	O	S	0	0
			1389	904	231	244	10		
26	3L	147	Total	C	N	O	S	0	0
			1208	785	203	210	10		
26	3M	169	Total	C	N	O	S	0	0
			1389	904	231	244	10		
26	3N	147	Total	C	N	O	S	0	0
			1208	785	203	210	10		
26	3O	169	Total	C	N	O	S	0	0
			1389	904	231	244	10		
26	3P	147	Total	C	N	O	S	0	0
			1208	785	203	210	10		

- Molecule 27 is a protein called MORN repeat containing 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	3Q	131	Total	C	N	O	S	0	0
			1031	651	173	201	6		
27	3R	131	Total	C	N	O	S	0	0
			1031	651	173	201	6		
27	3S	131	Total	C	N	O	S	0	0
			1031	651	173	201	6		

- Molecule 28 is a protein called Unknown2.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	3Z	102	Total	C	N	O	0	0
			510	306	102	102		
28	3a	93	Total	C	N	O	0	0
			465	279	93	93		

- Molecule 29 is a protein called Unknown3.

Mol	Chain	Residues	Atoms				AltConf	Trace
29	3b	143	Total	C	N	O	0	0
			716	429	143	144		

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Mol	Chain	Residues	Atoms				AltConf	Trace
29	3c	143	Total	C	N	O	0	0
			716	429	143	144		
29	3d	143	Total	C	N	O	0	0
			716	429	143	144		

- Molecule 30 is a protein called Unknown4.

Mol	Chain	Residues	Atoms				AltConf	Trace
30	3e	54	Total	C	N	O	0	0
			270	162	54	54		

- Molecule 31 is a protein called Unknown5.

Mol	Chain	Residues	Atoms				AltConf	Trace
31	3f	18	Total	C	N	O	0	0
			90	54	18	18		

- Molecule 32 is a protein called Unknown6.

Mol	Chain	Residues	Atoms				AltConf	Trace
32	3g	47	Total	C	N	O	0	0
			235	141	47	47		

- Molecule 33 is a protein called Cilia and flagella-associated protein 47.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	4A	2796	Total	C	N	O	S	0	0
			22307	14458	3681	4057	111		
33	4B	2796	Total	C	N	O	S	0	0
			22307	14458	3681	4057	111		

- Molecule 34 is a protein called Hydrocephalus-inducing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	4G	4178	Total	C	N	O	S	0	0
			33109	21318	5466	6166	159		
34	4H	3685	Total	C	N	O	S	0	0
			29186	18773	4822	5443	148		
34	4I	3245	Total	C	N	O	S	0	0
			25730	16541	4261	4803	125		
34	4J	709	Total	C	N	O	S	0	0
			5614	3645	923	1024	22		

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Mol	Chain	Residues	Atoms					AltConf	Trace
34	4K	394	Total	C	N	O	S	0	0
			3102	2021	497	575	9		

- Molecule 35 is a protein called Germ cell-less protein-like 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	4C	422	Total	C	N	O	S	0	0
			3403	2187	561	631	24		
35	4D	422	Total	C	N	O	S	0	0
			3403	2187	561	631	24		
35	4E	422	Total	C	N	O	S	0	0
			3403	2187	561	631	24		
35	4F	422	Total	C	N	O	S	0	0
			3403	2187	561	631	24		

- Molecule 36 is a protein called Sperm flagellar protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	4M	1361	Total	C	N	O	S	0	0
			11139	7067	1921	2113	38		
36	4N	1361	Total	C	N	O	S	0	0
			11139	7067	1921	2113	38		
36	4L	1361	Total	C	N	O	S	0	0
			11139	7067	1921	2113	38		

- Molecule 37 is a protein called Leucine-rich repeat and guanylate kinase domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	4P	475	Total	C	N	O	S	0	0
			3840	2459	637	723	21		
37	4Q	475	Total	C	N	O	S	0	0
			3840	2459	637	723	21		
37	4O	475	Total	C	N	O	S	0	0
			3840	2459	637	723	21		

- Molecule 38 is a protein called Putative aspartate aminotransferase, cytoplasmic 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	4R	389	Total	C	N	O	S	0	0
			3082	1997	505	561	19		

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Mol	Chain	Residues	Atoms					AltConf	Trace
38	4S	388	Total	C	N	O	S	0	0
			3074	1991	504	560	19		
38	4T	389	Total	C	N	O	S	0	0
			3082	1997	505	561	19		
38	4U	388	Total	C	N	O	S	0	0
			3074	1991	504	560	19		
38	4V	389	Total	C	N	O	S	0	0
			3082	1997	505	561	19		
38	4W	389	Total	C	N	O	S	0	0
			3082	1997	505	561	19		

- Molecule 39 is a protein called Leucine-rich repeat and death domain-containing protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	4X	720	Total	C	N	O	S	0	0
			5789	3698	979	1082	30		
39	4Y	720	Total	C	N	O	S	0	0
			5789	3698	979	1082	30		

- Molecule 40 is a protein called G protein-coupled receptor kinase 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	4Z	636	Total	C	N	O	S	0	0
			5203	3311	904	948	40		

- Molecule 41 is a protein called Serine/threonine-protein phosphatase PP1-gamma catalytic subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	4a	268	Total	C	N	O	S	0	0
			2170	1396	359	397	18		

- Molecule 42 is a protein called Microtubule-associated protein 1S.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	4b	558	Total	C	N	O	S	0	0
			4236	2697	753	768	18		
42	4c	558	Total	C	N	O	S	0	0
			4236	2697	753	768	18		

- Molecule 43 is a protein called Cilia and flagella associated protein 99.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	J	158	Total	C	N	O	S	0	0
			1303	789	257	249	8		
43	K	411	Total	C	N	O	S	0	0
			3381	2136	590	633	22		
43	5A	171	Total	C	N	O	S	0	0
			1430	947	222	252	9		

- Molecule 44 is a protein called Ankyrin repeat and MYND domain-containing protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	5B	652	Total	C	N	O	S	0	0
			5147	3295	887	932	33		

- Molecule 45 is a protein called Leucine-rich repeat-containing protein 43.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	5C	463	Total	C	N	O	S	0	0
			3669	2365	615	675	14		

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

3 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, Not provided	
Number of subtomograms used	19000	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 ($e^-/\text{\AA}^2$)	117	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	5000	Depositor
Magnification	Not provided	
Image detector	GATAN K2 QUANTUM (4k 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-60633. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

5.1 Orthogonal projections

This section was not generated.

5.2 Central slices

This section was not generated.

5.3 Largest variance slices

This section was not generated.

5.4 Orthogonal standard-deviation projections (False-color)

This section was not generated.

5.5 Orthogonal surface views

This section was not generated.

5.6 Mask visualisation

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

6 Map analysis ⓘ

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

6.1 Map-value distribution ⓘ

This section was not generated.

6.2 Volume estimate versus contour level ⓘ

This section was not generated.

6.3 Rotationally averaged power spectrum ⓘ

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

7 Fourier-Shell correlation

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

8 Map-model fit

This section was not generated.