



wwPDB EM Validation Summary Report ⓘ

Nov 10, 2024 – 06:45 PM EST

PDB ID : 7MUS
EMDB ID : EMD-24020
Title : Reconstruction of the Legionella pneumophila Dot/Icm T4SS 3DVA Map 2
Authors : Sheedlo, M.J.; Durie, C.L.; Swanson, M.; Lacy, D.B.; Ohi, M.D.
Deposited on : 2021-05-14
Resolution : 4.60 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:

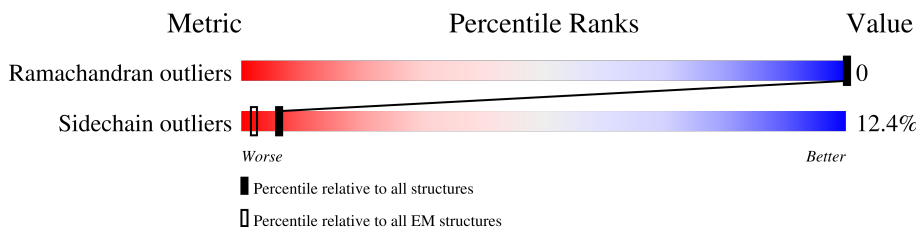
EMDB validation analysis : 0.0.1.dev113
MolProbity : 4.02b-467
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.39

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 4.60 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.



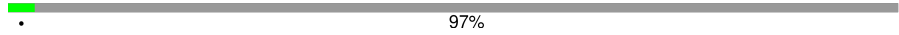

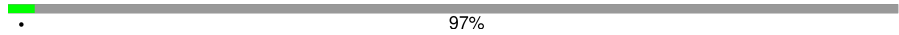

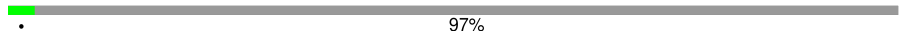

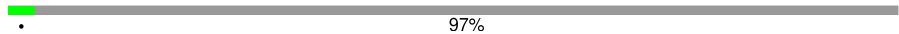

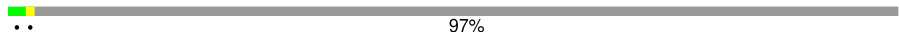

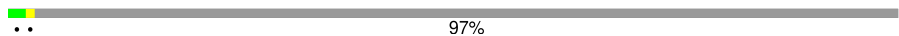

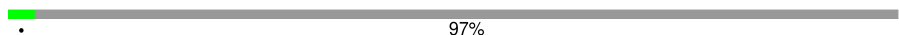
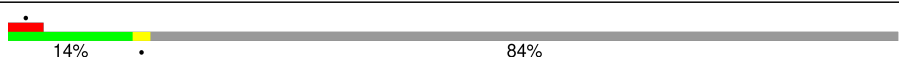
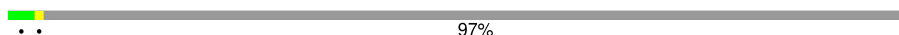
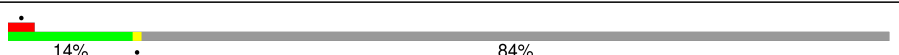
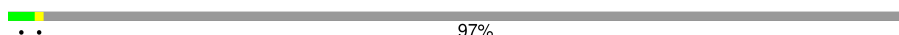



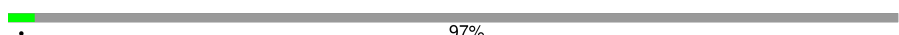
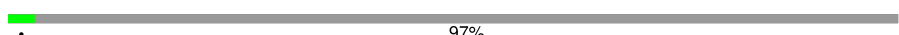

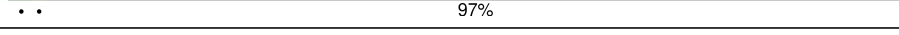
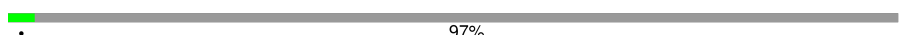
Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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 ≥ 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	AG	1048	14% 84%
1	Ag	1048	97%
1	BG	1048	14% 84%
1	Bg	1048	97%
1	CG	1048	14% 84%
1	Cg	1048	97%
1	DG	1048	14% 84%
1	Dg	1048	97%
1	EG	1048	14% 84%

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Mol	Chain	Length	Quality of chain
1	Eg	1048	 97%
1	FG	1048	 84%
1	Fg	1048	 97%
1	GG	1048	 84%
1	Gg	1048	 97%
1	HG	1048	 84%
1	Hg	1048	 97%
1	IG	1048	 84%
1	Ig	1048	 97%
1	JG	1048	 84%
1	Jg	1048	 97%
1	KG	1048	 84%
1	Kg	1048	 97%
1	LG	1048	 84%
1	Lg	1048	 97%
1	MG	1048	 84%
1	Mg	1048	 97%
1	NG	1048	 84%
1	OG	1048	 84%
1	PG	1048	 84%
1	VG	1048	 97%
1	WG	1048	 97%
1	XG	1048	 97%
1	YG	1048	 97%
1	ZG	1048	 97%

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Mol	Chain	Length	Quality of chain		
2	AD	163	75%	10%	14%
2	Ad	163	74%	10%	16%
2	BD	163	77%	9%	14%
2	Bd	163	78%	6%	16%
2	CD	163	74%	12%	14%
2	Cd	163	77%	7%	16%
2	DD	163	80%	6%	14%
2	Dd	163	77%	7%	16%
2	ED	163	78%	8%	14%
2	Ed	163	77%	7%	16%
2	FD	163	77%	9%	14%
2	Fd	163	75%	9%	16%
2	GD	163	77%	9%	14%
2	Gd	163	76%	8%	16%
2	HD	163	79%	7%	14%
2	Hd	163	75%	9%	16%
2	ID	163	76%	10%	14%
2	Id	163	74%	10%	16%
2	JD	163	77%	9%	14%
2	Jd	163	74%	10%	16%
2	KD	163	82%	•	14%
2	Kd	163	76%	8%	16%
2	LD	163	76%	10%	14%
2	Ld	163	76%	8%	16%
2	MD	163	77%	9%	14%












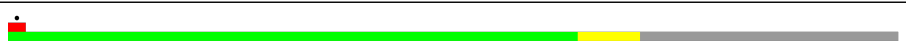




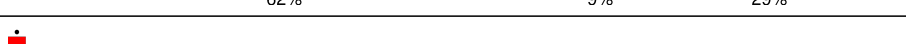
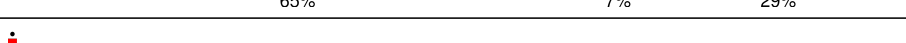



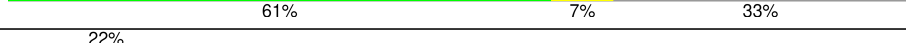



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Mol	Chain	Length	Quality of chain	
2	Md	163		
3	AF	269		
3	Af	269		
3	BF	269		
3	Bf	269		
3	CF	269		
3	Cf	269		
3	DF	269		
3	Df	269		
3	EF	269		
3	Ef	269		
3	FF	269		
3	Ff	269		
3	GF	269		
3	Gf	269		
3	HF	269		
3	Hf	269		
3	IF	269		
3	If	269		
3	JF	269		
3	Jf	269		
3	KF	269		
3	Kf	269		
3	LF	269		
3	Lf	269		




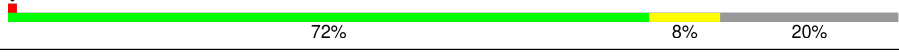
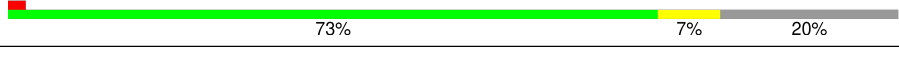



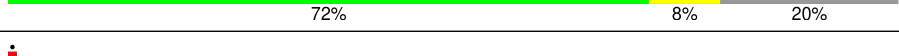
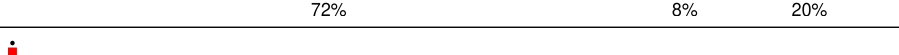
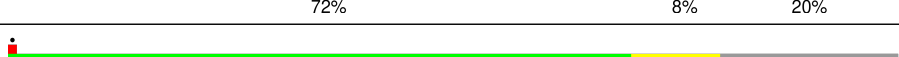
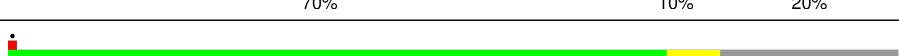

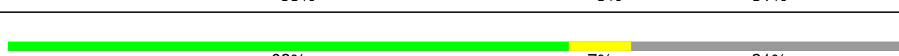
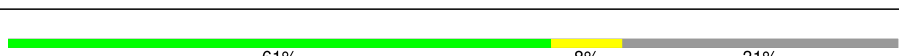
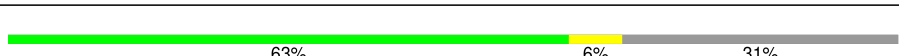





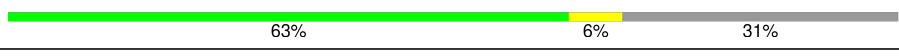

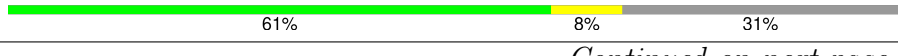

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Mol	Chain	Length	Quality of chain
3	MF	269	
3	Mf	269	
3	VF	269	
3	WF	269	
3	XF	269	
3	YF	269	
3	ZF	269	
4	AH	361	
4	BH	361	
4	CH	361	
4	DH	361	
4	EH	361	
4	FH	361	
4	GH	361	
4	HH	361	
4	IH	361	
4	JH	361	
4	KH	361	
4	LH	361	
4	MH	361	
4	VH	361	
4	WH	361	
4	XH	361	
4	YH	361	
4	ZH	361	

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Mol	Chain	Length	Quality of chain
5	AK	189	 70% 10% 20%
5	BK	189	 70% 10% 20%
5	CK	189	 70% 10% 20%
5	DK	189	 72% 8% 20%
5	EK	189	 73% 7% 20%
5	FK	189	 72% 7% 20%
5	GK	189	 71% 8% 20%
5	HK	189	 71% 9% 20%
5	IK	189	 72% 8% 20%
5	JK	189	 72% 8% 20%
5	KK	189	 72% 8% 20%
5	LK	189	 70% 10% 20%
5	MK	189	 74% 6% 20%
6	AL	249	 65% 5% 31%
6	BL	249	 63% 7% 31%
6	CL	249	 61% 8% 31%
6	DL	249	 63% 6% 31%
6	EL	249	 61% 8% 31%
6	FL	249	 65% 0% 31%
6	GL	249	 63% 6% 31%
6	HL	249	 64% 5% 31%
6	IL	249	 64% 5% 31%
6	JL	249	 63% 6% 31%
6	KL	249	 64% 6% 31%
6	LL	249	 61% 8% 31%

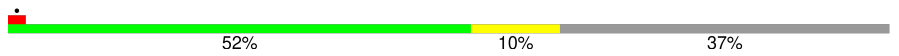

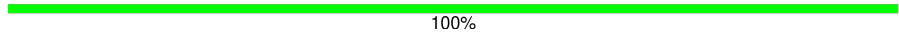


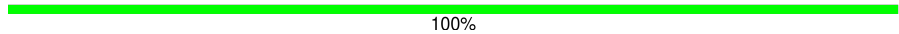

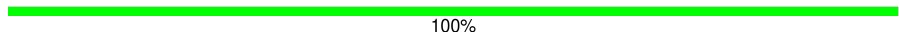
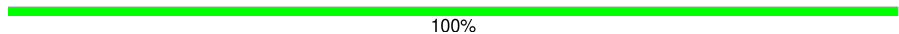




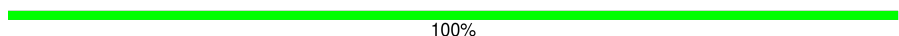
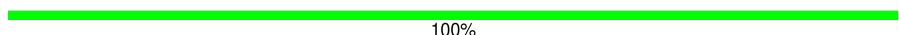


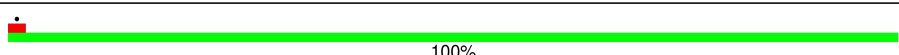
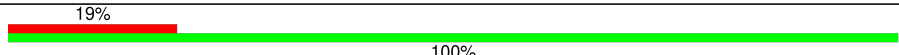
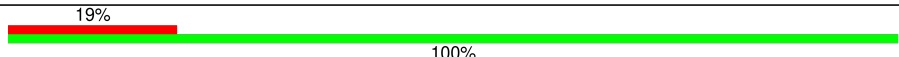
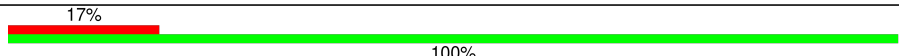
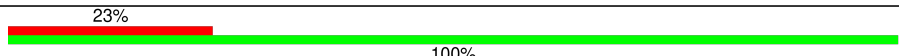
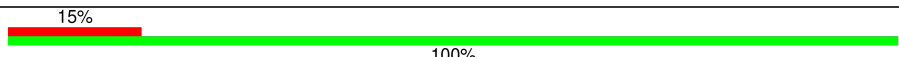
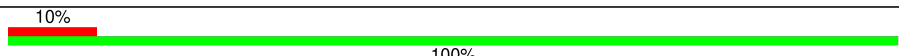
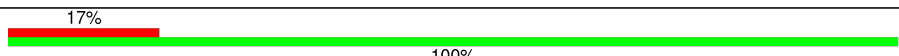
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Mol	Chain	Length	Quality of chain
6	ML	249	63% 6% 31%
7	AM	320	57% 8% 35%
7	BM	320	58% 7% 35%
7	CM	320	58% 7% 35%
7	DM	320	57% 8% 35%
7	EM	320	58% 7% 35%
7	FM	320	58% 7% 35%
7	GM	320	57% 8% 35%
7	HM	320	58% 7% 35%
7	IM	320	58% 8% 35%
7	JM	320	55% 10% 35%
7	KM	320	58% 7% 35%
7	LM	320	58% 8% 35%
7	MM	320	58% 7% 35%
8	AN	124	56% 6% 37%
8	BN	124	58% 5% 37%
8	CN	124	56% 7% 37%
8	DN	124	60% 7% 37%
8	EN	124	56% 7% 37%
8	FN	124	54% 9% 37%
8	GN	124	57% 6% 37%
8	HN	124	56% 7% 37%
8	IN	124	54% 9% 37%
8	JN	124	57% 6% 37%
8	KN	124	52% 10% 37%

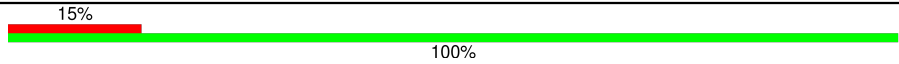
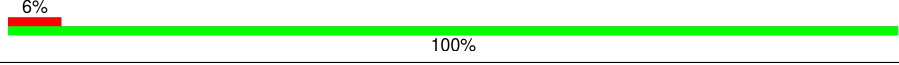
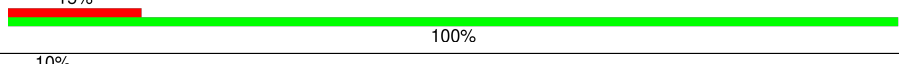
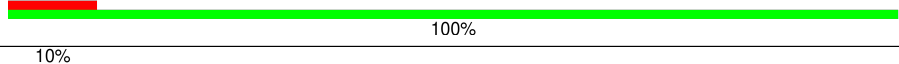
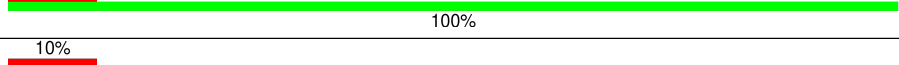
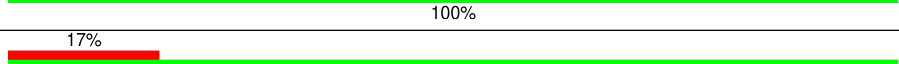
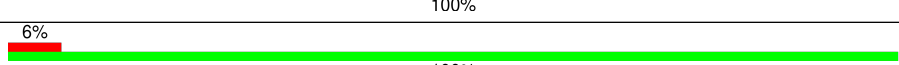
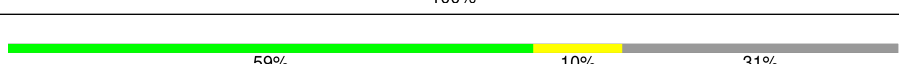
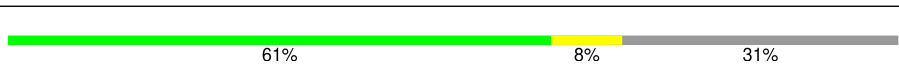
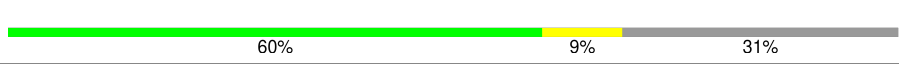

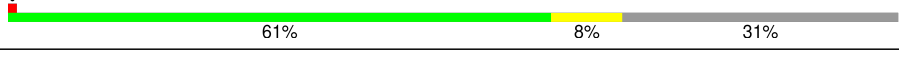
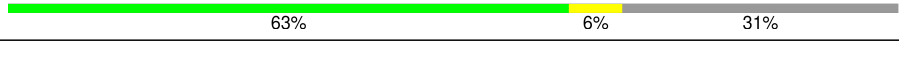

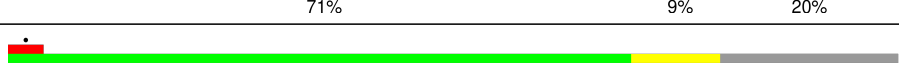






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Mol	Chain	Length	Quality of chain
8	LN	124	 52% 10% 37%
8	MN	124	 53% 10% 37%
9	AU	9	 100%
9	BU	9	 100%
9	CU	9	 100%
9	DU	9	 100%
9	EU	9	 100%
9	FU	9	 100%
9	GU	9	 100%
9	HU	9	 100%
9	IU	9	 100%
9	JU	9	 100%
9	KU	9	 100%
9	LU	9	 100%
9	MU	9	 100%
10	AX	48	 15% 100%
10	BX	48	 21% 100%
10	CX	48	 100%
10	DX	48	 19% 100%
10	EX	48	 19% 100%
10	FX	48	 17% 100%
10	GX	48	 23% 100%
10	HX	48	 15% 100%
10	IX	48	 10% 100%
10	JX	48	 17% 100%

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Mol	Chain	Length	Quality of chain
10	KX	48	 15% 100%
10	LX	48	 6% 100%
10	MX	48	 15% 100%
10	VX	48	 10% 100%
10	WX	48	 10% 100%
10	XX	48	 10% 100%
10	YX	48	 17% 100%
10	ZX	48	 6% 100%
11	AC	303	 59% 10% 31%
11	BC	303	 61% 8% 31%
11	CC	303	 60% 9% 31%
11	DC	303	 71% 10% 20%
11	EC	303	 61% 8% 31%
11	FC	303	 63% 6% 31%
11	GC	303	 62% 7% 31%
11	HC	303	 71% 9% 20%
11	IC	303	 70% 10% 20%
11	JC	303	 64% 5% 31%
11	KC	303	 63% 6% 31%
11	LC	303	 72% 8% 20%
11	MC	303	 71% 10% 20%

2 Entry composition i

There are 11 unique types of molecules in this entry. The entry contains 192370 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 IcmE protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	AG	165	1229	780	203	242	4	0	0
1	Gg	34	276	168	47	60	1	0	0
1	Hg	34	276	168	47	60	1	0	0
1	Bg	34	276	168	47	60	1	0	0
1	BG	165	1229	780	203	242	4	0	0
1	Ig	34	276	168	47	60	1	0	0
1	Jg	34	276	168	47	60	1	0	0
1	CG	165	1229	780	203	242	4	0	0
1	Kg	34	276	168	47	60	1	0	0
1	Ag	34	276	168	47	60	1	0	0
1	Lg	34	276	168	47	60	1	0	0
1	DG	165	1229	780	203	242	4	0	0
1	Cg	34	276	168	47	60	1	0	0
1	Mg	34	276	168	47	60	1	0	0
1	VG	34	276	168	47	60	1	0	0
1	WG	34	276	168	47	60	1	0	0
1	XG	34	276	168	47	60	1	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
1	EG	165	Total	C	N	O	S	0	0
			1229	780	203	242	4		
1	YG	34	Total	C	N	O	S	0	0
			276	168	47	60	1		
1	ZG	34	Total	C	N	O	S	0	0
			276	168	47	60	1		
1	FG	165	Total	C	N	O	S	0	0
			1229	780	203	242	4		
1	Dg	34	Total	C	N	O	S	0	0
			276	168	47	60	1		
1	GG	165	Total	C	N	O	S	0	0
			1229	780	203	242	4		
1	Eg	34	Total	C	N	O	S	0	0
			276	168	47	60	1		
1	Fg	34	Total	C	N	O	S	0	0
			276	168	47	60	1		
1	HG	165	Total	C	N	O	S	0	0
			1229	780	203	242	4		
1	IG	165	Total	C	N	O	S	0	0
			1229	780	203	242	4		
1	JG	165	Total	C	N	O	S	0	0
			1229	780	203	242	4		
1	KG	165	Total	C	N	O	S	0	0
			1229	780	203	242	4		
1	LG	165	Total	C	N	O	S	0	0
			1229	780	203	242	4		
1	MG	165	Total	C	N	O	S	0	0
			1229	780	203	242	4		
1	NG	165	Total	C	N	O	S	0	0
			1229	780	203	242	4		
1	OG	165	Total	C	N	O	S	0	0
			1229	780	203	242	4		
1	PG	165	Total	C	N	O	S	0	0
			1229	780	203	242	4		

- Molecule 2 is a protein called DotD.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	GD	140	Total	C	N	O	S	0	0
			1086	692	185	206	3		
2	Gd	137	Total	C	N	O	S	0	0
			1058	672	182	202	2		

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	HD	140	1086	692	185	206	3	0	0
2	Dd	137	1058	672	182	202	2	0	0
2	Hd	137	1058	672	182	202	2	0	0
2	ID	140	1086	692	185	206	3	0	0
2	Id	137	1058	672	182	202	2	0	0
2	JD	140	1086	692	185	206	3	0	0
2	Jd	137	1058	672	182	202	2	0	0
2	KD	140	1086	692	185	206	3	0	0
2	Kd	137	1058	672	182	202	2	0	0
2	LD	140	1086	692	185	206	3	0	0
2	CD	140	1086	692	185	206	3	0	0
2	Ld	137	1058	672	182	202	2	0	0
2	MD	140	1086	692	185	206	3	0	0
2	Md	137	1058	672	182	202	2	0	0
2	AD	140	1086	692	185	206	3	0	0
2	Ad	137	1058	672	182	202	2	0	0
2	BD	140	1086	692	185	206	3	0	0
2	Bd	137	1058	672	182	202	2	0	0
2	ED	140	1086	692	185	206	3	0	0
2	Cd	137	1058	672	182	202	2	0	0
2	DD	140	1086	692	185	206	3	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
2	Ed	137	Total	C	N	O	S	0	0
			1058	672	182	202	2		
2	FD	140	Total	C	N	O	S	0	0
			1086	692	185	206	3		
2	Fd	137	Total	C	N	O	S	0	0
			1058	672	182	202	2		

- Molecule 3 is a protein called DotF.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	GF	63	Total	C	N	O	S	0	0
			483	308	84	90	1		
3	Gf	59	Total	C	N	O	S	0	0
			449	290	77	81	1		
3	HF	63	Total	C	N	O	S	0	0
			483	308	84	90	1		
3	Hf	59	Total	C	N	O	S	0	0
			449	290	77	81	1		
3	IF	63	Total	C	N	O	S	0	0
			483	308	84	90	1		
3	If	59	Total	C	N	O	S	0	0
			449	290	77	81	1		
3	JF	63	Total	C	N	O	S	0	0
			483	308	84	90	1		
3	Jf	59	Total	C	N	O	S	0	0
			449	290	77	81	1		
3	KF	63	Total	C	N	O	S	0	0
			483	308	84	90	1		
3	Kf	59	Total	C	N	O	S	0	0
			449	290	77	81	1		
3	LF	63	Total	C	N	O	S	0	0
			483	308	84	90	1		
3	Lf	59	Total	C	N	O	S	0	0
			449	290	77	81	1		
3	MF	63	Total	C	N	O	S	0	0
			483	308	84	90	1		
3	Df	59	Total	C	N	O	S	0	0
			449	290	77	81	1		
3	Mf	59	Total	C	N	O	S	0	0
			449	290	77	81	1		
3	VF	63	Total	C	N	O	S	0	0
			483	308	84	90	1		

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Mol	Chain	Residues	Atoms					AltConf	Trace
3	WF	63	Total 483	C 308	N 84	O 90	S 1	0	0
3	XF	63	Total 483	C 308	N 84	O 90	S 1	0	0
3	CF	63	Total 483	C 308	N 84	O 90	S 1	0	0
3	YF	63	Total 483	C 308	N 84	O 90	S 1	0	0
3	ZF	63	Total 483	C 308	N 84	O 90	S 1	0	0
3	Af	59	Total 449	C 290	N 77	O 81	S 1	0	0
3	BF	63	Total 483	C 308	N 84	O 90	S 1	0	0
3	Bf	59	Total 449	C 290	N 77	O 81	S 1	0	0
3	Cf	59	Total 449	C 290	N 77	O 81	S 1	0	0
3	DF	63	Total 483	C 308	N 84	O 90	S 1	0	0
3	EF	63	Total 483	C 308	N 84	O 90	S 1	0	0
3	Ef	59	Total 449	C 290	N 77	O 81	S 1	0	0
3	FF	63	Total 483	C 308	N 84	O 90	S 1	0	0
3	Ff	59	Total 449	C 290	N 77	O 81	S 1	0	0
3	AF	63	Total 483	C 308	N 84	O 90	S 1	0	0

- Molecule 4 is a protein called Type IV secretion protein IcmK.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	GH	258	Total 1983	C 1268	N 336	O 371	S 8	0	0
4	HH	258	Total 1983	C 1268	N 336	O 371	S 8	0	0
4	IH	258	Total 1983	C 1268	N 336	O 371	S 8	0	0
4	JH	258	Total 1983	C 1268	N 336	O 371	S 8	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
4	AH	258	Total	C	N	O	S	0	0
			1983	1268	336	371	8		
4	KH	258	Total	C	N	O	S	0	0
			1983	1268	336	371	8		
4	LH	258	Total	C	N	O	S	0	0
			1983	1268	336	371	8		
4	MH	258	Total	C	N	O	S	0	0
			1983	1268	336	371	8		
4	VH	243	Total	C	N	O	S	0	0
			1875	1201	319	348	7		
4	WH	243	Total	C	N	O	S	0	0
			1875	1201	319	348	7		
4	XH	243	Total	C	N	O	S	0	0
			1875	1201	319	348	7		
4	YH	243	Total	C	N	O	S	0	0
			1875	1201	319	348	7		
4	ZH	243	Total	C	N	O	S	0	0
			1875	1201	319	348	7		
4	BH	258	Total	C	N	O	S	0	0
			1983	1268	336	371	8		
4	CH	258	Total	C	N	O	S	0	0
			1983	1268	336	371	8		
4	DH	258	Total	C	N	O	S	0	0
			1983	1268	336	371	8		
4	EH	258	Total	C	N	O	S	0	0
			1983	1268	336	371	8		
4	FH	258	Total	C	N	O	S	0	0
			1983	1268	336	371	8		

- Molecule 5 is a protein called Inner membrane lipoprotein YiaD.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	GK	151	Total	C	N	O	S	0	0
			1175	747	209	215	4		
5	HK	151	Total	C	N	O	S	0	0
			1175	747	209	215	4		
5	IK	151	Total	C	N	O	S	0	0
			1175	747	209	215	4		
5	JK	151	Total	C	N	O	S	0	0
			1175	747	209	215	4		
5	KK	151	Total	C	N	O	S	0	0
			1175	747	209	215	4		

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Mol	Chain	Residues	Atoms					AltConf	Trace
5	LK	151	Total	C	N	O	S	0	0
			1175	747	209	215	4		
5	AK	151	Total	C	N	O	S	0	0
			1175	747	209	215	4		
5	MK	151	Total	C	N	O	S	0	0
			1175	747	209	215	4		
5	BK	151	Total	C	N	O	S	0	0
			1175	747	209	215	4		
5	CK	151	Total	C	N	O	S	0	0
			1175	747	209	215	4		
5	DK	151	Total	C	N	O	S	0	0
			1175	747	209	215	4		
5	EK	151	Total	C	N	O	S	0	0
			1175	747	209	215	4		
5	FK	151	Total	C	N	O	S	0	0
			1175	747	209	215	4		

- Molecule 6 is a protein called Outer membrane protein, OmpA family protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	GL	173	Total	C	N	O	S	0	0
			1388	877	253	253	5		
6	HL	173	Total	C	N	O	S	0	0
			1388	877	253	253	5		
6	IL	173	Total	C	N	O	S	0	0
			1388	877	253	253	5		
6	JL	173	Total	C	N	O	S	0	0
			1388	877	253	253	5		
6	KL	173	Total	C	N	O	S	0	0
			1388	877	253	253	5		
6	LL	173	Total	C	N	O	S	0	0
			1388	877	253	253	5		
6	ML	173	Total	C	N	O	S	0	0
			1388	877	253	253	5		
6	AL	173	Total	C	N	O	S	0	0
			1388	877	253	253	5		
6	BL	173	Total	C	N	O	S	0	0
			1388	877	253	253	5		
6	CL	173	Total	C	N	O	S	0	0
			1388	877	253	253	5		
6	DL	173	Total	C	N	O	S	0	0
			1388	877	253	253	5		

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Mol	Chain	Residues	Atoms					AltConf	Trace
6	EL	173	Total	C	N	O	S	0	0
			1388	877	253	253	5		
6	FL	173	Total	C	N	O	S	0	0
			1388	877	253	253	5		

- Molecule 7 is a protein called DUF2807 domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	GM	208	Total	C	N	O	S	0	0
			1650	1046	293	308	3		
7	HM	208	Total	C	N	O	S	0	0
			1650	1046	293	308	3		
7	IM	208	Total	C	N	O	S	0	0
			1650	1046	293	308	3		
7	JM	208	Total	C	N	O	S	0	0
			1650	1046	293	308	3		
7	KM	208	Total	C	N	O	S	0	0
			1650	1046	293	308	3		
7	LM	208	Total	C	N	O	S	0	0
			1650	1046	293	308	3		
7	MM	208	Total	C	N	O	S	0	0
			1650	1046	293	308	3		
7	AM	208	Total	C	N	O	S	0	0
			1650	1046	293	308	3		
7	BM	208	Total	C	N	O	S	0	0
			1650	1046	293	308	3		
7	CM	208	Total	C	N	O	S	0	0
			1650	1046	293	308	3		
7	DM	208	Total	C	N	O	S	0	0
			1650	1046	293	308	3		
7	EM	208	Total	C	N	O	S	0	0
			1650	1046	293	308	3		
7	FM	208	Total	C	N	O	S	0	0
			1650	1046	293	308	3		

- Molecule 8 is a protein called Neurogenic locus notch.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	GN	78	Total	C	N	O	S	0	0
			582	357	99	113	13		
8	HN	78	Total	C	N	O	S	0	0
			582	357	99	113	13		

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Mol	Chain	Residues	Atoms					AltConf	Trace
8	IN	78	Total	C	N	O	S	0	0
			582	357	99	113	13		
8	JN	78	Total	C	N	O	S	0	0
			582	357	99	113	13		
8	KN	78	Total	C	N	O	S	0	0
			582	357	99	113	13		
8	LN	78	Total	C	N	O	S	0	0
			582	357	99	113	13		
8	MN	78	Total	C	N	O	S	0	0
			582	357	99	113	13		
8	AN	78	Total	C	N	O	S	0	0
			582	357	99	113	13		
8	BN	78	Total	C	N	O	S	0	0
			582	357	99	113	13		
8	CN	78	Total	C	N	O	S	0	0
			582	357	99	113	13		
8	DN	78	Total	C	N	O	S	0	0
			582	357	99	113	13		
8	EN	78	Total	C	N	O	S	0	0
			582	357	99	113	13		
8	FN	78	Total	C	N	O	S	0	0
			582	357	99	113	13		

- Molecule 9 is a protein called Unknown protein fragment.

Mol	Chain	Residues	Atoms				AltConf	Trace
9	GU	9	Total	C	N	O	0	0
			45	27	9	9		
9	HU	9	Total	C	N	O	0	0
			45	27	9	9		
9	IU	9	Total	C	N	O	0	0
			45	27	9	9		
9	JU	9	Total	C	N	O	0	0
			45	27	9	9		
9	KU	9	Total	C	N	O	0	0
			45	27	9	9		
9	LU	9	Total	C	N	O	0	0
			45	27	9	9		
9	MU	9	Total	C	N	O	0	0
			45	27	9	9		
9	AU	9	Total	C	N	O	0	0
			45	27	9	9		

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Mol	Chain	Residues	Atoms				AltConf	Trace
9	BU	9	Total	C	N	O	0	0
			45	27	9	9		
9	CU	9	Total	C	N	O	0	0
			45	27	9	9		
9	DU	9	Total	C	N	O	0	0
			45	27	9	9		
9	EU	9	Total	C	N	O	0	0
			45	27	9	9		
9	FU	9	Total	C	N	O	0	0
			45	27	9	9		

- Molecule 10 is a protein called Unknown protein fragment.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	GX	48	Total	C	N	O	0	0
			240	144	48	48		
10	HX	48	Total	C	N	O	0	0
			240	144	48	48		
10	IX	48	Total	C	N	O	0	0
			240	144	48	48		
10	JX	48	Total	C	N	O	0	0
			240	144	48	48		
10	KX	48	Total	C	N	O	0	0
			240	144	48	48		
10	LX	48	Total	C	N	O	0	0
			240	144	48	48		
10	MX	48	Total	C	N	O	0	0
			240	144	48	48		
10	VX	48	Total	C	N	O	0	0
			240	144	48	48		
10	WX	48	Total	C	N	O	0	0
			240	144	48	48		
10	XX	48	Total	C	N	O	0	0
			240	144	48	48		
10	YX	48	Total	C	N	O	0	0
			240	144	48	48		
10	ZX	48	Total	C	N	O	0	0
			240	144	48	48		
10	AX	48	Total	C	N	O	0	0
			240	144	48	48		
10	BX	48	Total	C	N	O	0	0
			240	144	48	48		

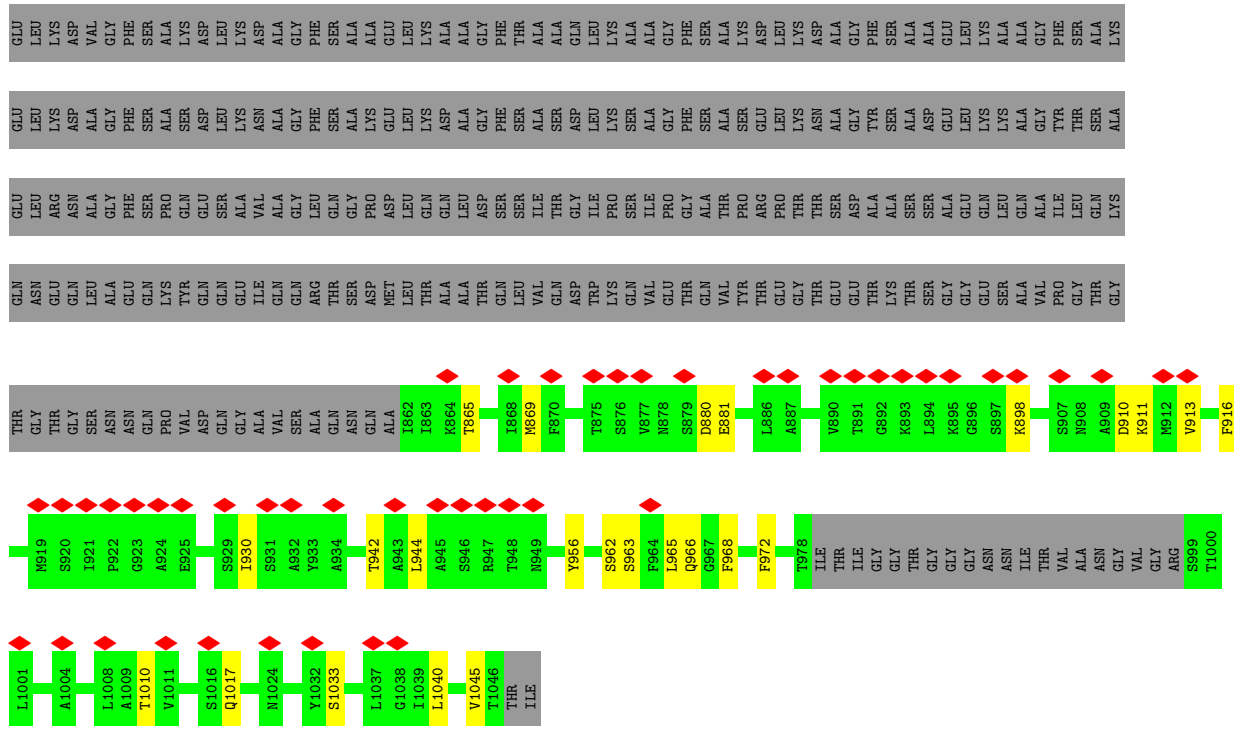
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Mol	Chain	Residues	Atoms				AltConf	Trace
10	CX	48	Total	C	N	O	0	0
			240	144	48	48		
10	DX	48	Total	C	N	O	0	0
			240	144	48	48		
10	EX	48	Total	C	N	O	0	0
			240	144	48	48		
10	FX	48	Total	C	N	O	0	0
			240	144	48	48		

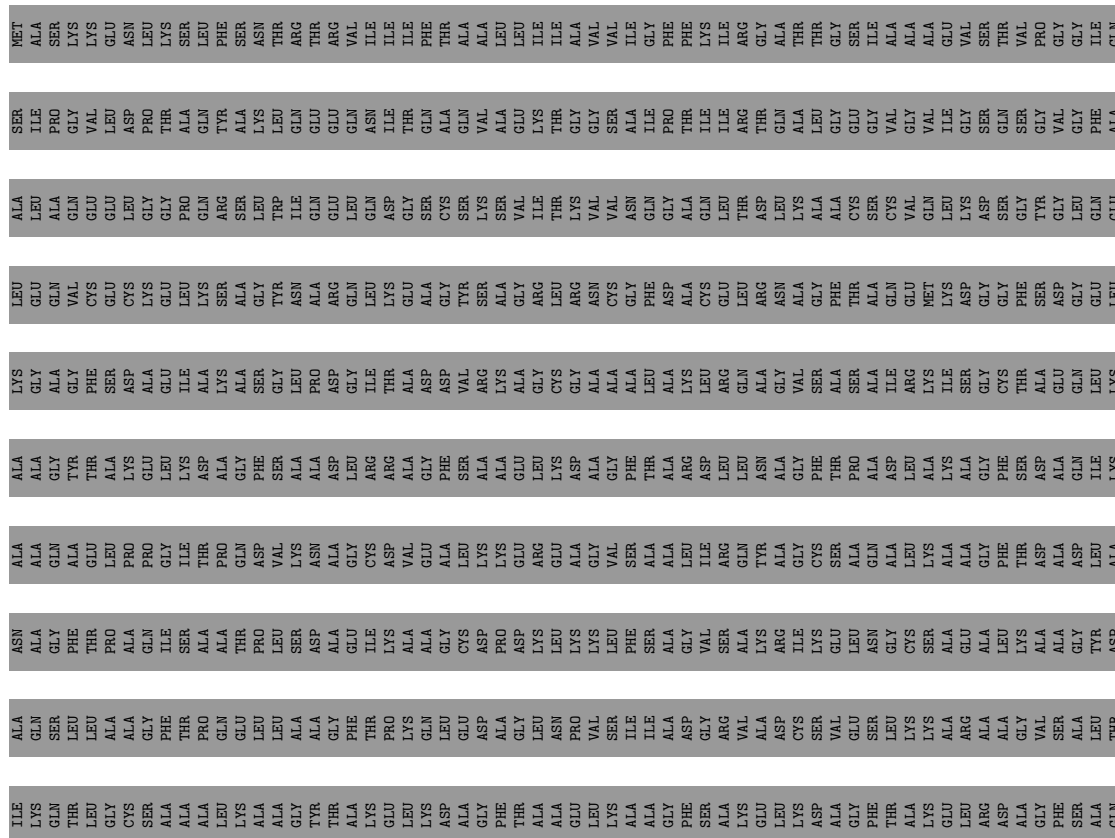
- Molecule 11 is a protein called DotC.

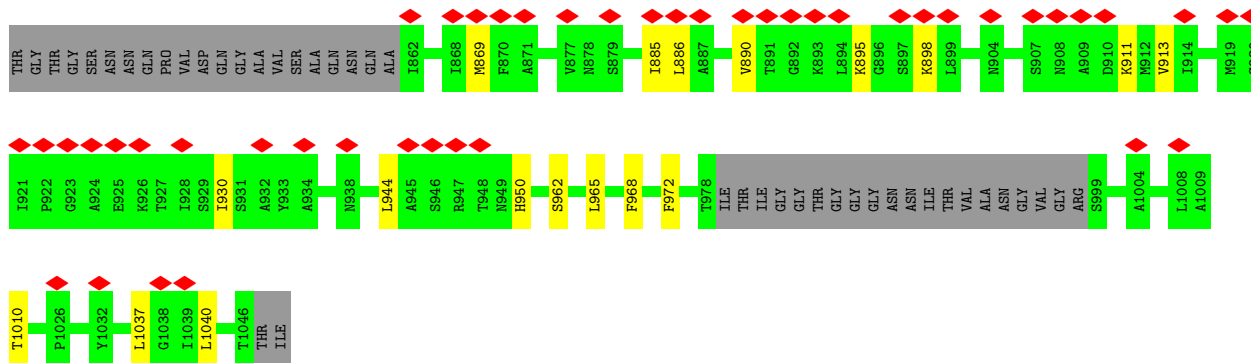
Mol	Chain	Residues	Atoms					AltConf	Trace
11	CC	209	Total	C	N	O	S	0	0
			1667	1061	292	309	5		
11	EC	209	Total	C	N	O	S	0	0
			1667	1061	292	309	5		
11	FC	209	Total	C	N	O	S	0	0
			1667	1061	292	309	5		
11	DC	243	Total	C	N	O	S	0	0
			1921	1216	340	357	8		
11	GC	209	Total	C	N	O	S	0	0
			1667	1061	292	309	5		
11	HC	243	Total	C	N	O	S	0	0
			1921	1216	340	357	8		
11	MC	243	Total	C	N	O	S	0	0
			1921	1216	340	357	8		
11	JC	209	Total	C	N	O	S	0	0
			1667	1061	292	309	5		
11	KC	209	Total	C	N	O	S	0	0
			1667	1061	292	309	5		
11	LC	243	Total	C	N	O	S	0	0
			1921	1216	340	357	8		
11	AC	209	Total	C	N	O	S	0	0
			1667	1061	292	309	5		
11	BC	209	Total	C	N	O	S	0	0
			1667	1061	292	309	5		
11	IC	243	Total	C	N	O	S	0	0
			1921	1216	340	357	8		



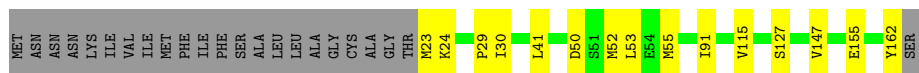
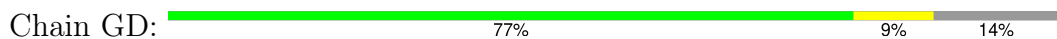
● Molecule 1: IcmE protein

Chain Eg: 97%

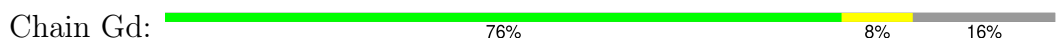




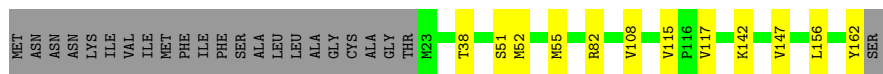
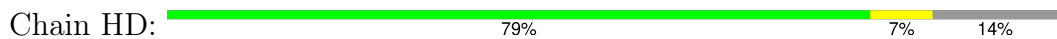
● Molecule 2: DotD



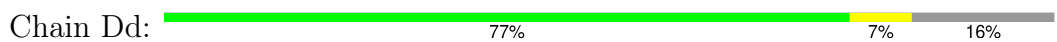
● Molecule 2: DotD



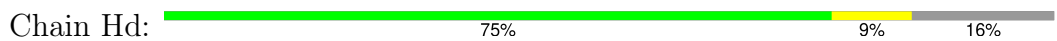
● Molecule 2: DotD



● Molecule 2: DotD



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● Molecule 2: DotD

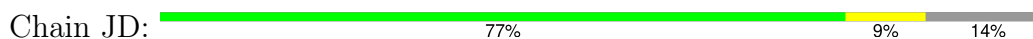




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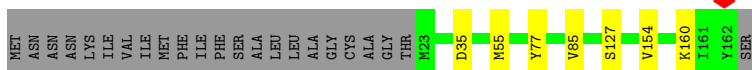
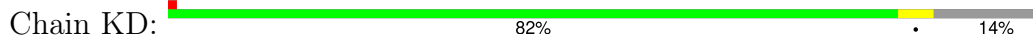
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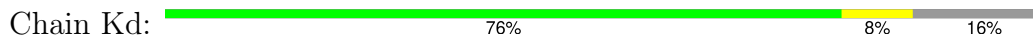
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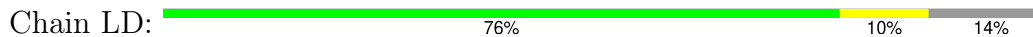
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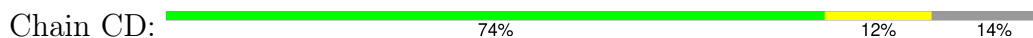
● Molecule 2: DotD



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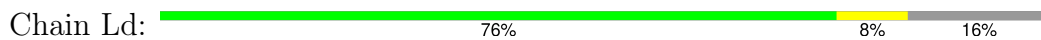


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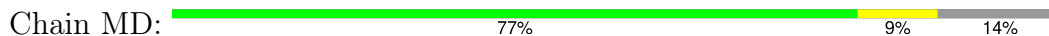




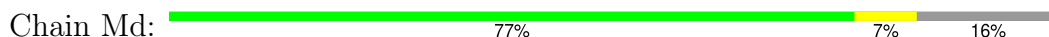
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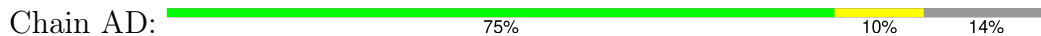
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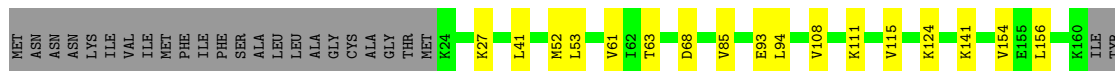
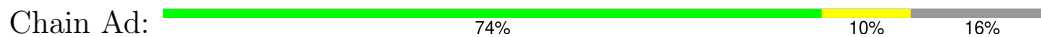
● Molecule 2: DotD



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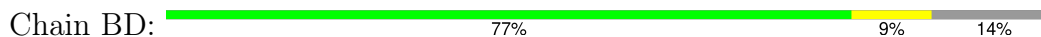


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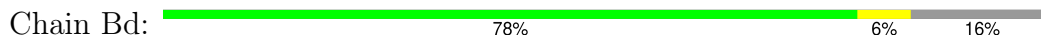


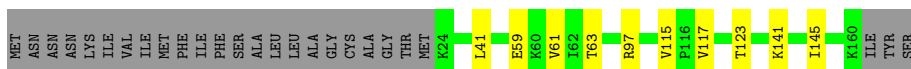
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● Molecule 2: DotD

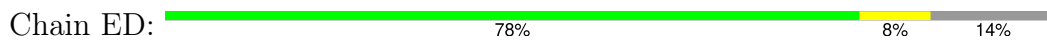


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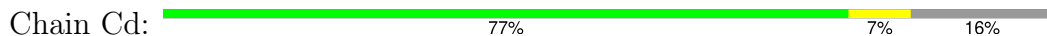




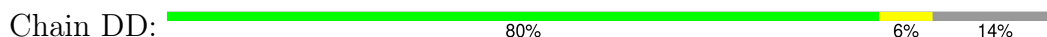
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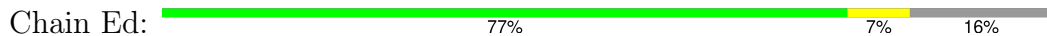
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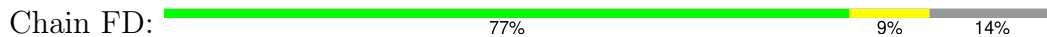
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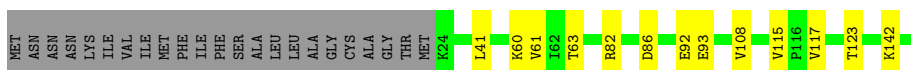
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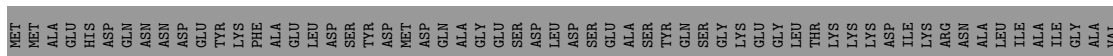
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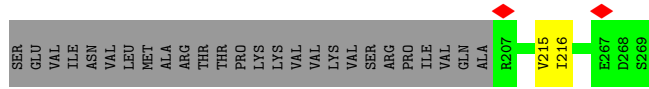


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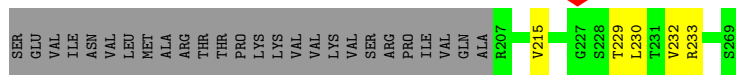
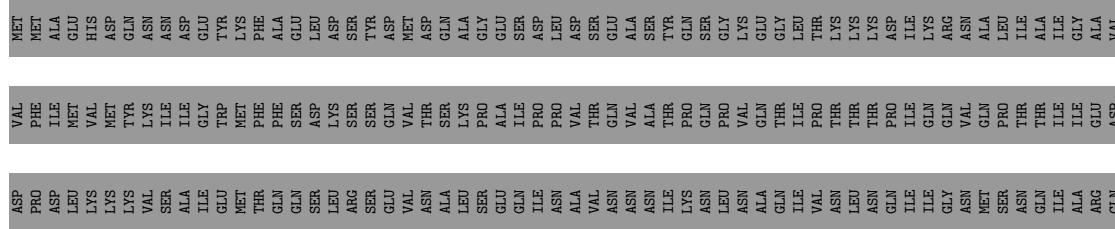


● Molecule 3: DotF

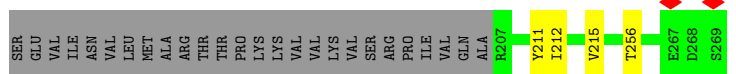
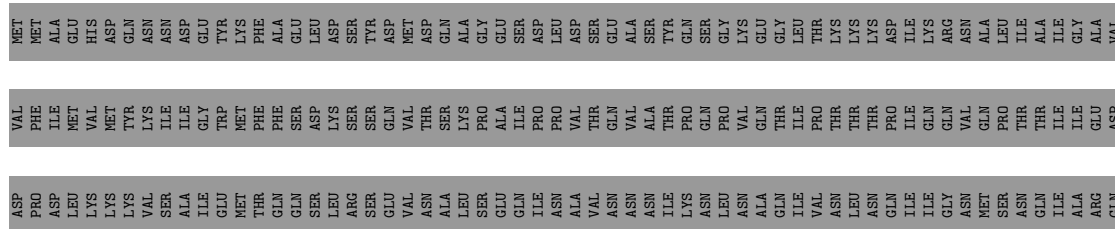




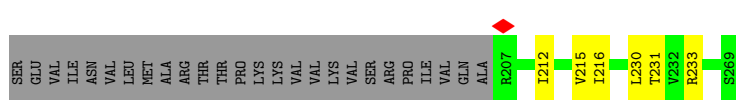
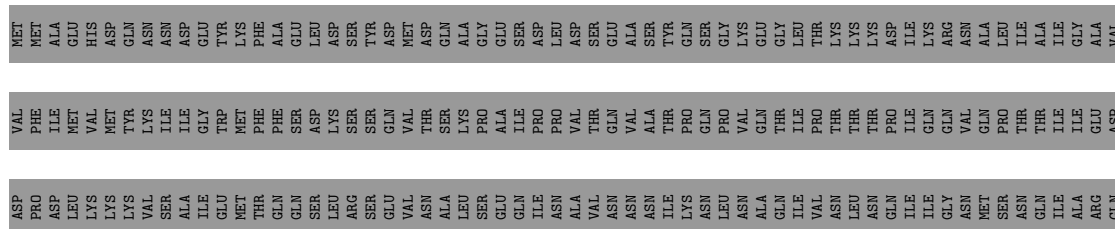
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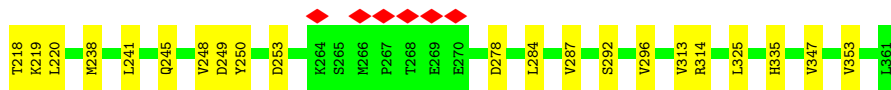
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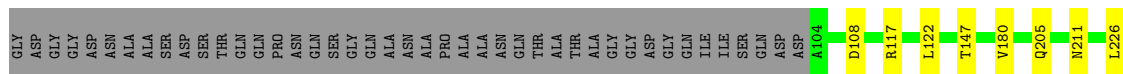
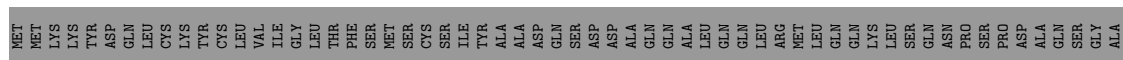
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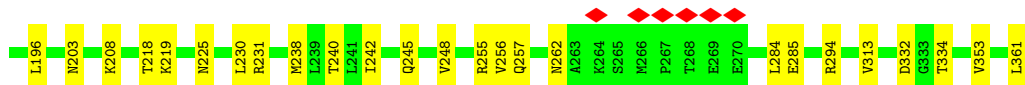
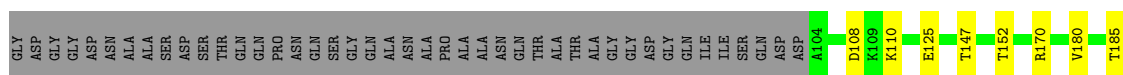
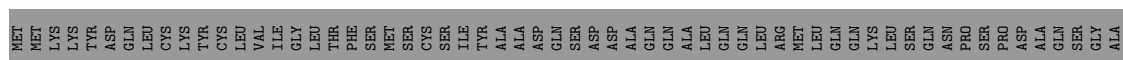
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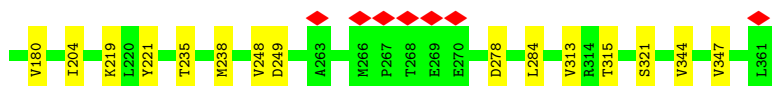
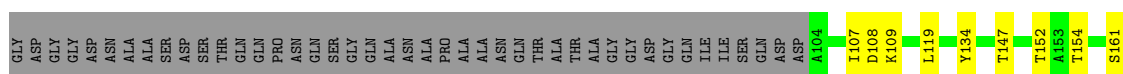
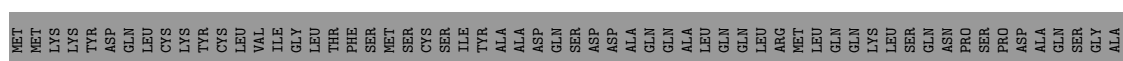
• Molecule 4: Type IV secretion protein IcmK



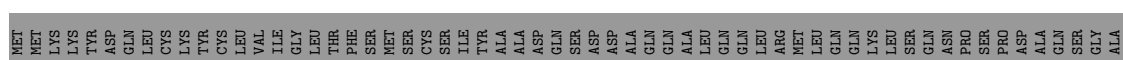
• Molecule 4: Type IV secretion protein IcmK

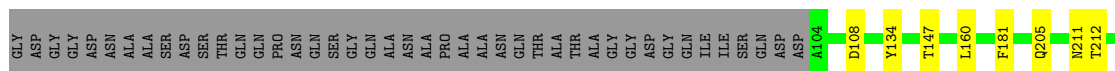


• Molecule 4: Type IV secretion protein IcmK

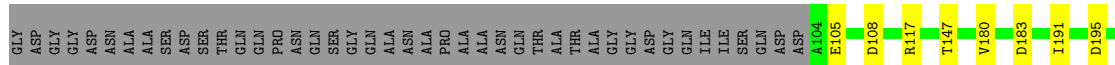
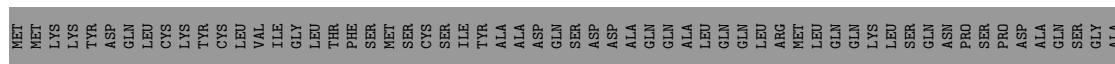


• Molecule 4: Type IV secretion protein IcmK

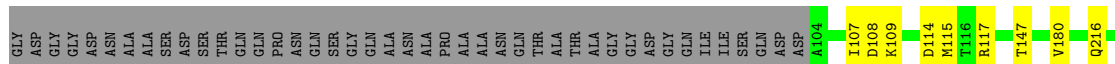
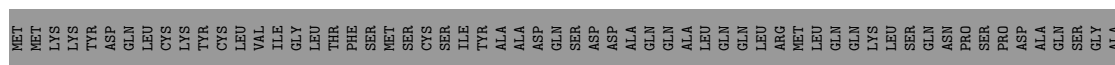




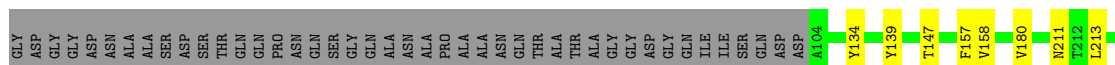
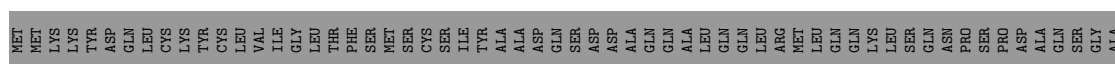
• Molecule 4: Type IV secretion protein IcmK



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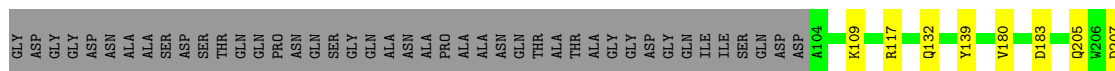


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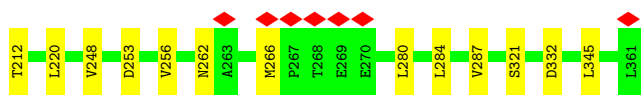
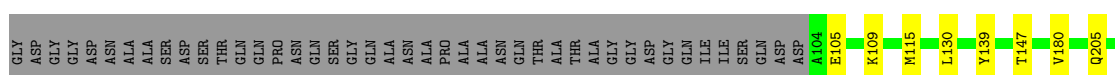
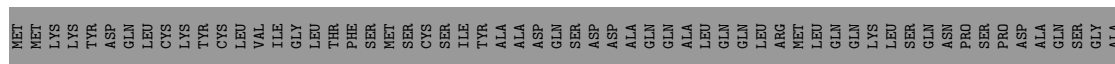


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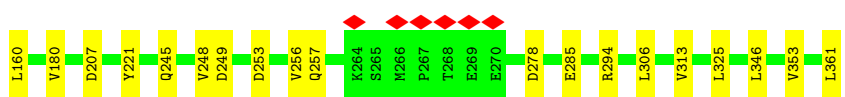
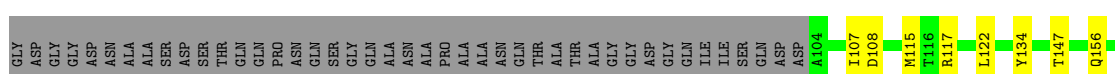
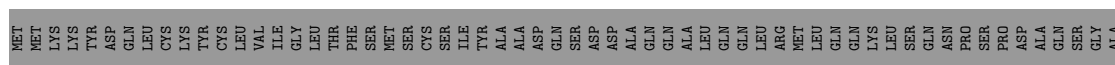




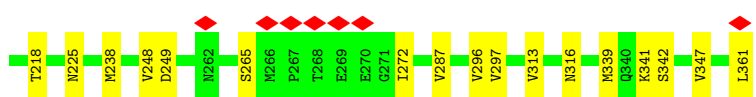
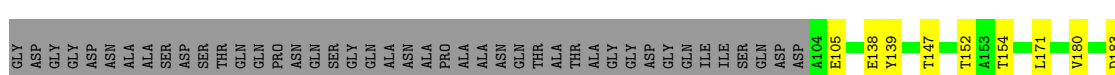
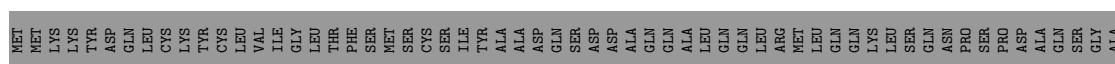
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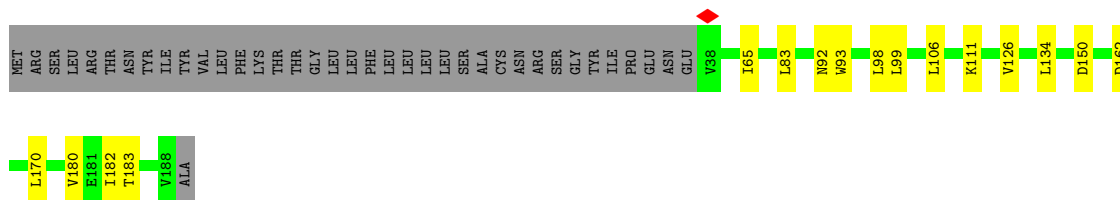


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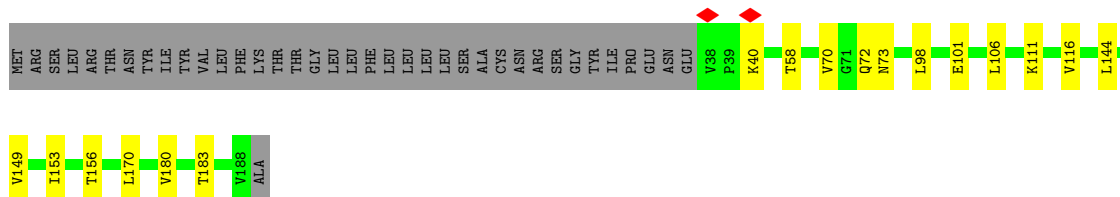


• Molecule 5: Inner membrane lipoprotein YiaD

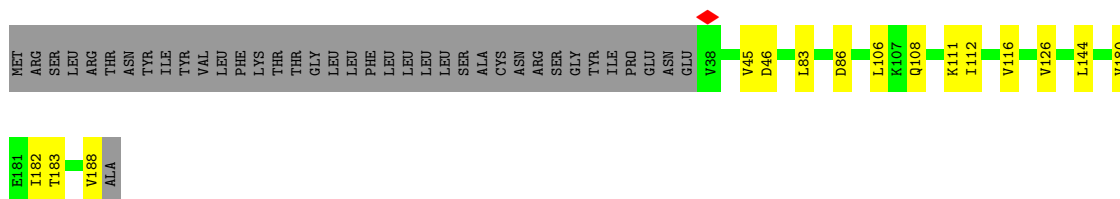




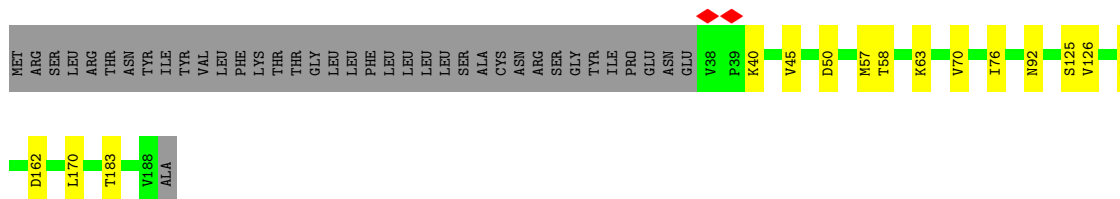
• Molecule 5: Inner membrane lipoprotein YiaD



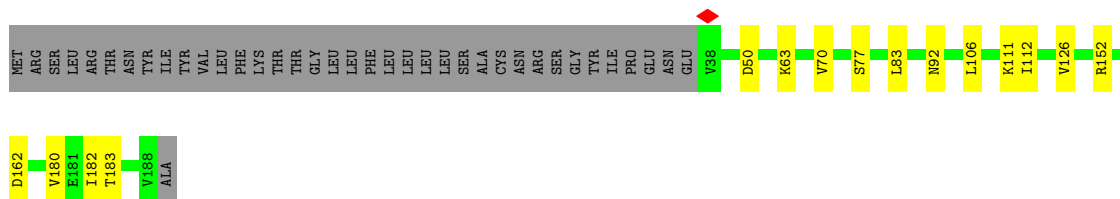
• Molecule 5: Inner membrane lipoprotein YiaD



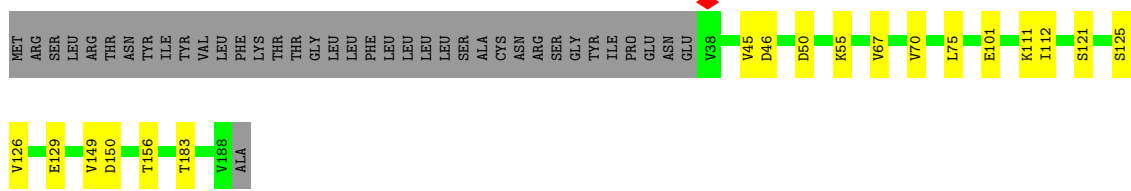
• Molecule 5: Inner membrane lipoprotein YiaD



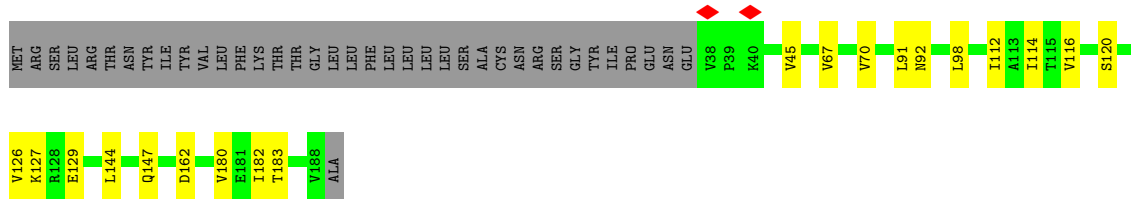
• Molecule 5: Inner membrane lipoprotein YiaD



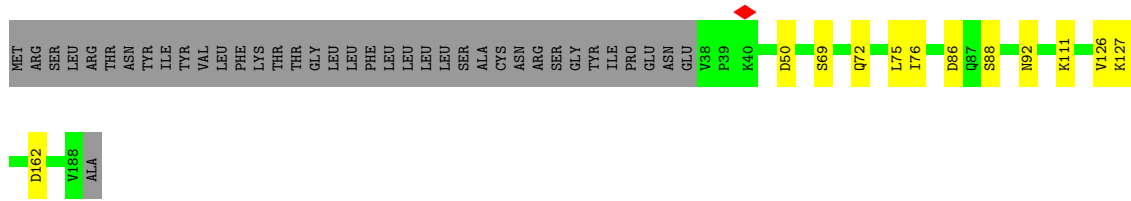
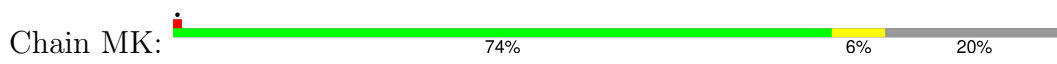
• Molecule 5: Inner membrane lipoprotein YiaD



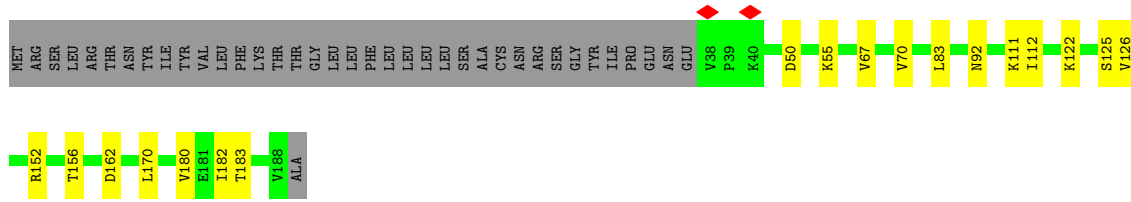
• Molecule 5: Inner membrane lipoprotein YiaD



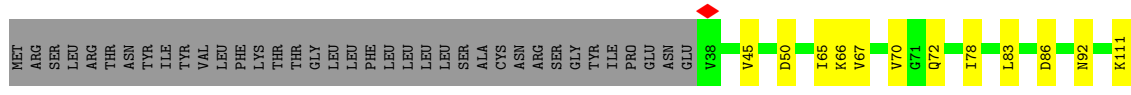
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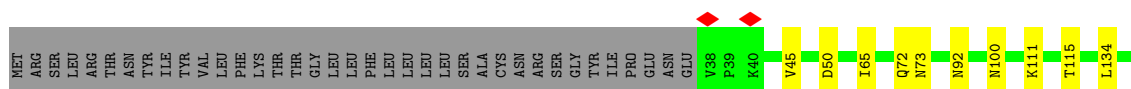


• Molecule 5: Inner membrane lipoprotein YiaD

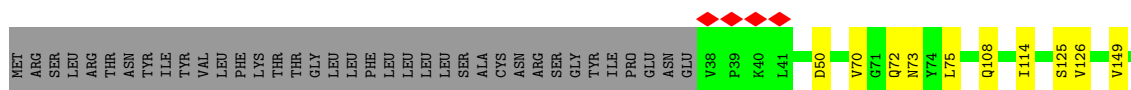
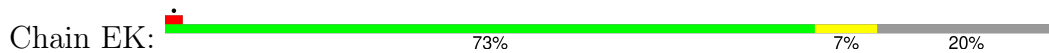




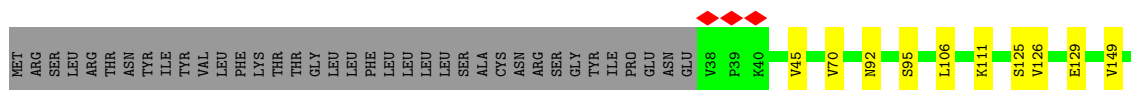
• Molecule 5: Inner membrane lipoprotein YiaD



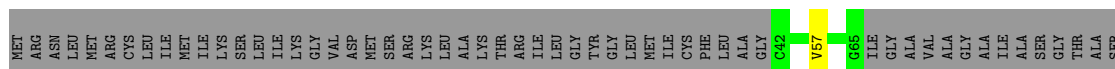
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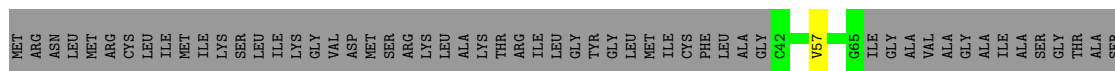


• Molecule 6: Outer membrane protein, OmpA family protein

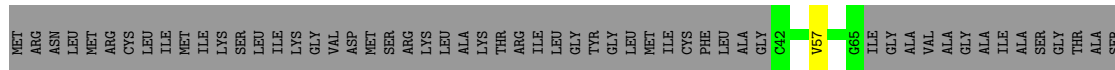


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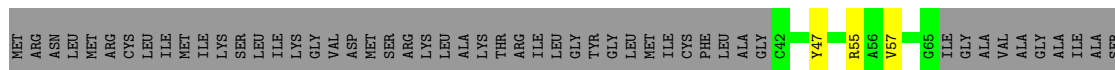




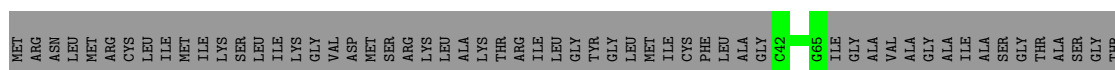
• Molecule 6: Outer membrane protein, OmpA family protein



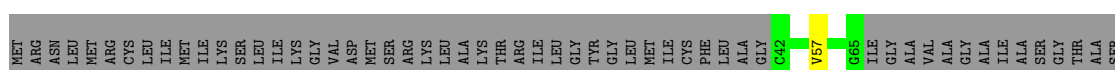
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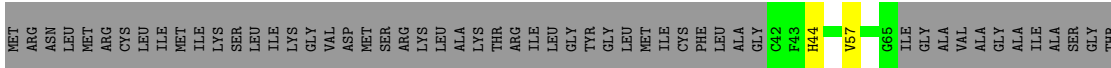


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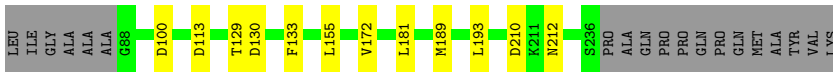
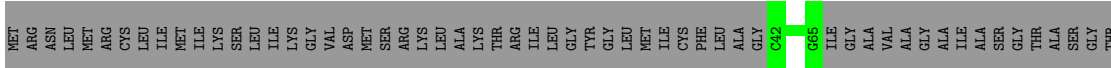


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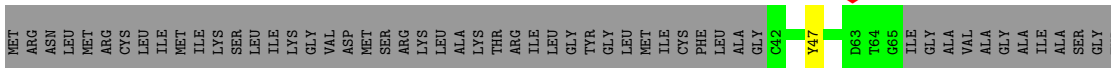
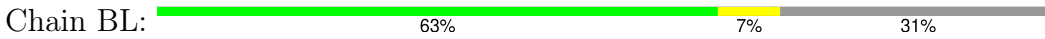




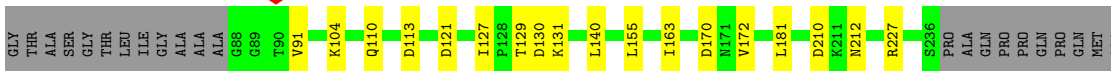
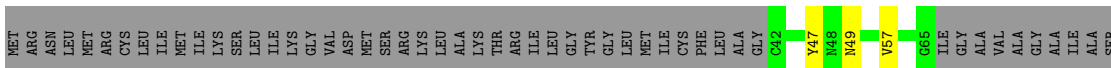
• Molecule 6: Outer membrane protein, OmpA family protein



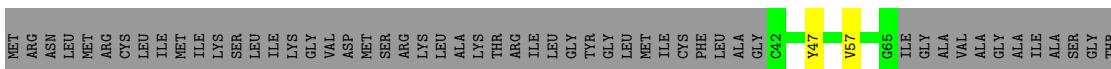
• Molecule 6: Outer membrane protein, OmpA family protein



• Molecule 6: Outer membrane protein, OmpA family protein



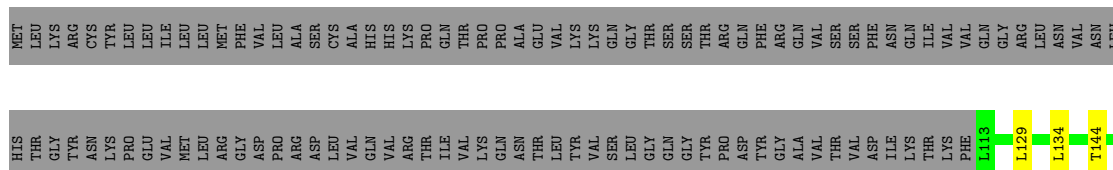
• Molecule 6: Outer membrane protein, OmpA family protein





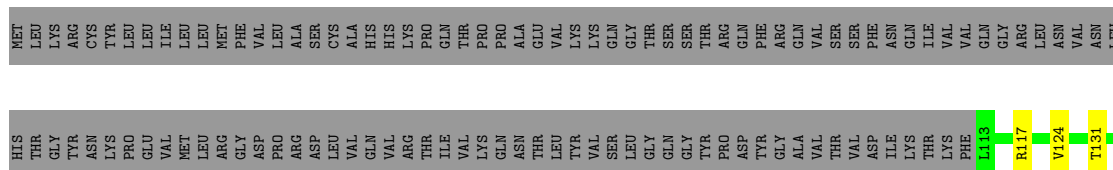
- Molecule 7: DUF2807 domain-containing protein

Chain DM: 57% 8% 35%



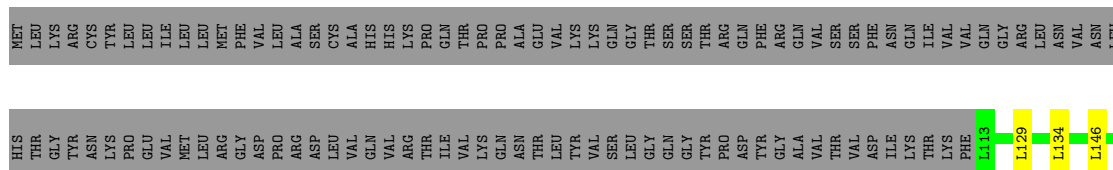
- Molecule 7: DUF2807 domain-containing protein

Chain EM: 58% 7% 35%



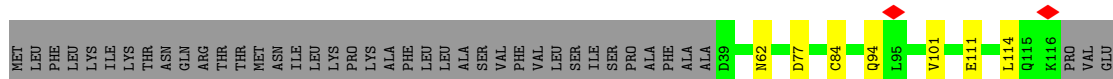
- Molecule 7: DUF2807 domain-containing protein

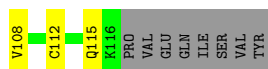
Chain FM: 58% 7% 35%



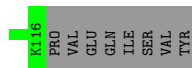
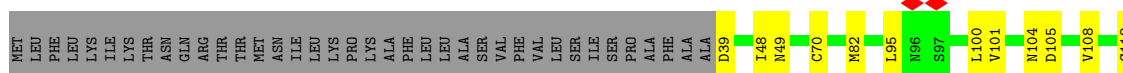
- Molecule 8: Neurogenic locus notch

Chain GN: 57% 6% 37%

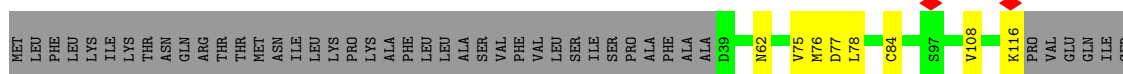




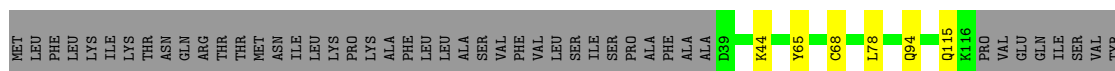
• Molecule 8: Neurogenic locus notch



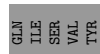
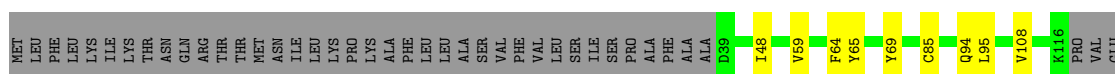
• Molecule 8: Neurogenic locus notch



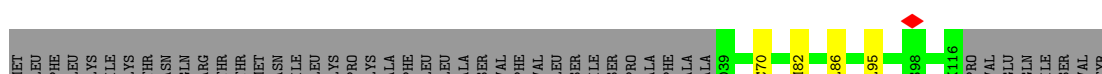
• Molecule 8: Neurogenic locus notch



• Molecule 8: Neurogenic locus notch

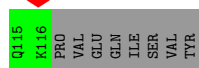
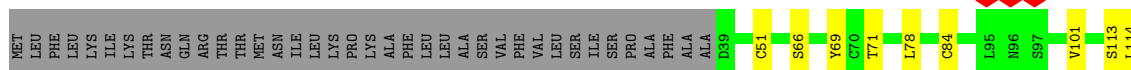


• Molecule 8: Neurogenic locus notch



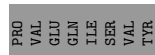
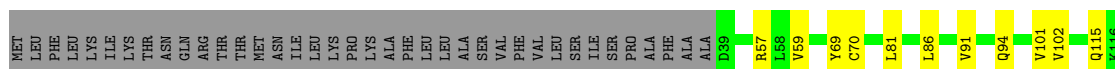
• Molecule 8: Neurogenic locus notch

Chain EN:  56% 7% 37%



- Molecule 8: Neurogenic locus notch

Chain FN:  54% 9% 37%



- Molecule 9: Unknown protein fragment

Chain GU:  100%

There are no outlier residues recorded for this chain.

- Molecule 9: Unknown protein fragment

Chain HU:  100%

There are no outlier residues recorded for this chain.

- Molecule 9: Unknown protein fragment

Chain IU:  100%

There are no outlier residues recorded for this chain.

- Molecule 9: Unknown protein fragment

Chain JU:  100%

There are no outlier residues recorded for this chain.

- Molecule 9: Unknown protein fragment

Chain KU:  100%

There are no outlier residues recorded for this chain.

- Molecule 9: Unknown protein fragment

Chain LU:  100%

There are no outlier residues recorded for this chain.

- Molecule 9: Unknown protein fragment

Chain MU:  100%

There are no outlier residues recorded for this chain.

- Molecule 9: Unknown protein fragment

Chain AU:  100%

There are no outlier residues recorded for this chain.

- Molecule 9: Unknown protein fragment

Chain BU:  100%

There are no outlier residues recorded for this chain.

- Molecule 9: Unknown protein fragment

Chain CU:  100%

There are no outlier residues recorded for this chain.

- Molecule 9: Unknown protein fragment

Chain DU:  100%

There are no outlier residues recorded for this chain.

- Molecule 9: Unknown protein fragment

Chain EU:  100%

There are no outlier residues recorded for this chain.

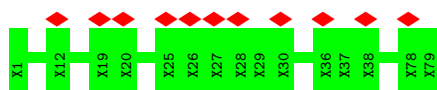
- Molecule 9: Unknown protein fragment

Chain FU:  100%

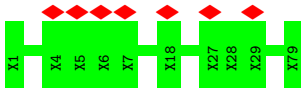
There are no outlier residues recorded for this chain.

- Molecule 10: Unknown protein fragment

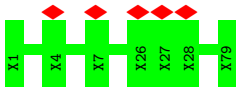
Chain GX:  23% 100%



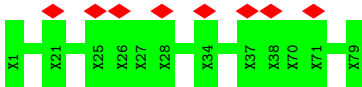
- Molecule 10: Unknown protein fragment



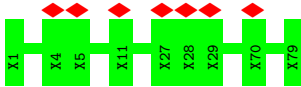
- Molecule 10: Unknown protein fragment



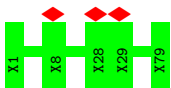
- Molecule 10: Unknown protein fragment



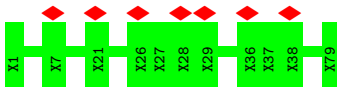
- Molecule 10: Unknown protein fragment



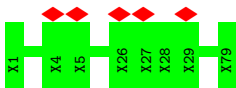
- Molecule 10: Unknown protein fragment



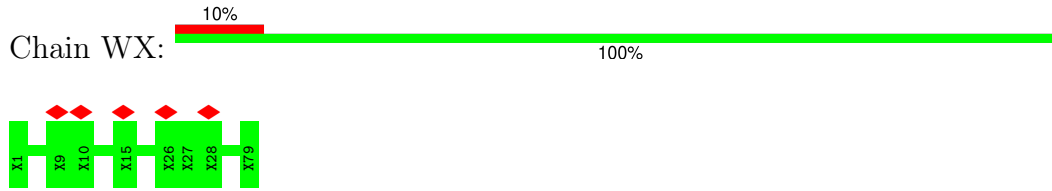
- Molecule 10: Unknown protein fragment



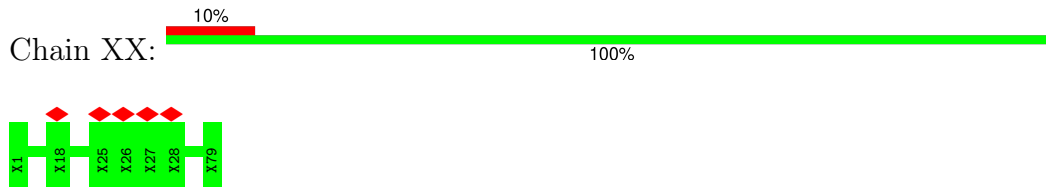
- Molecule 10: Unknown protein fragment



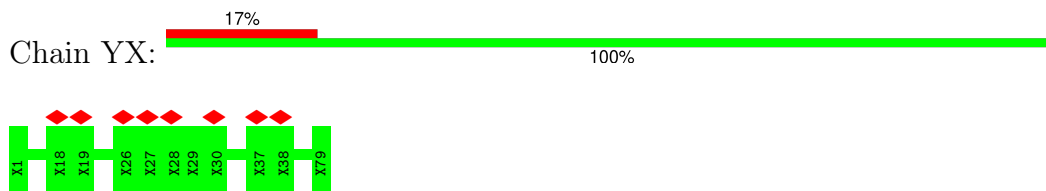
- Molecule 10: Unknown protein fragment



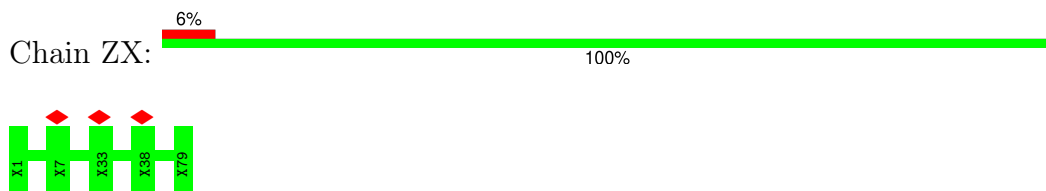
- Molecule 10: Unknown protein fragment



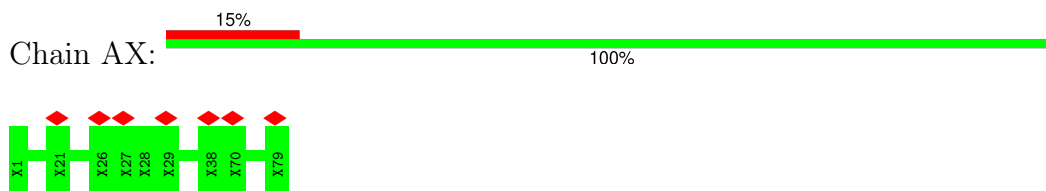
- Molecule 10: Unknown protein fragment



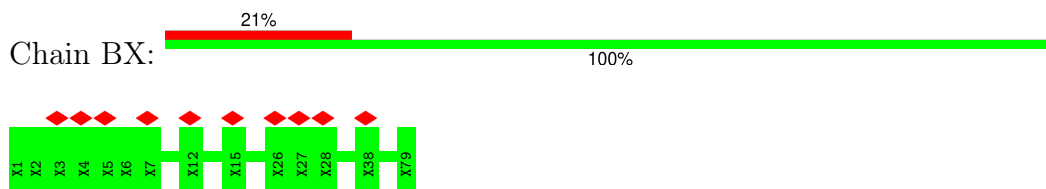
- Molecule 10: Unknown protein fragment



- Molecule 10: Unknown protein fragment

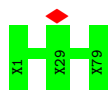


- Molecule 10: Unknown protein fragment

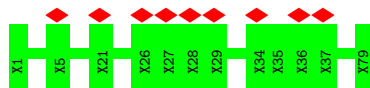


- Molecule 10: Unknown protein fragment

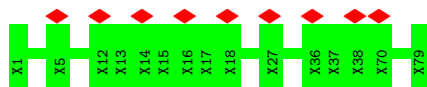




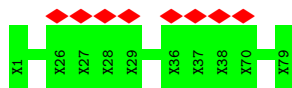
• Molecule 10: Unknown protein fragment



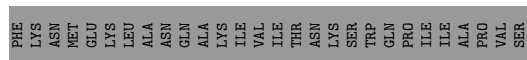
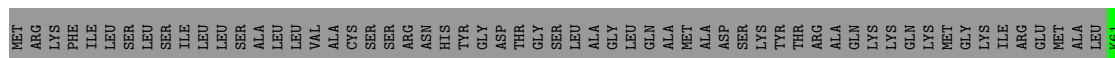
• Molecule 10: Unknown protein fragment



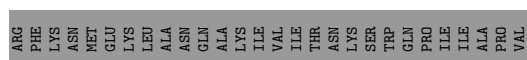
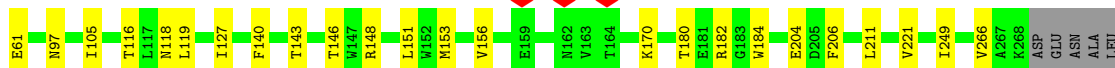
• Molecule 10: Unknown protein fragment

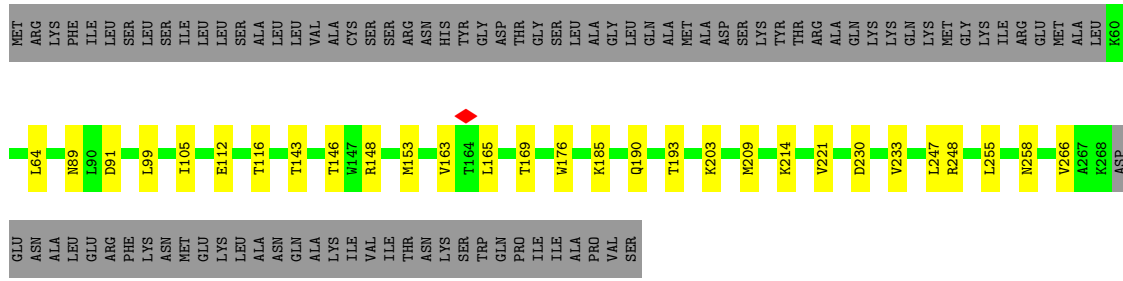


• Molecule 11: DotC

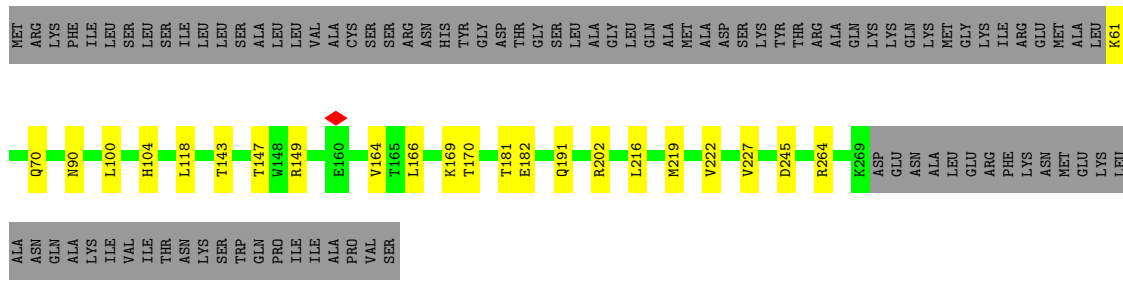


• Molecule 11: DotC

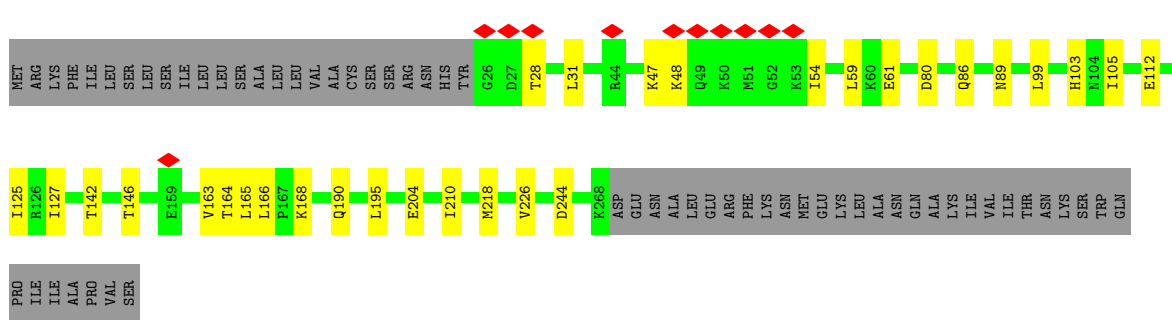




• Molecule 11: DotC



• Molecule 11: DotC



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	75959	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 ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	9.010	Depositor
Minimum map value	-4.020	Depositor
Average map value	0.091	Depositor
Map value standard deviation	0.547	Depositor
Recommended contour level	2	Depositor
Map size (Å)	561.0, 561.0, 561.0	wwPDB
Map dimensions	250, 250, 250	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	2.244, 2.244, 2.244	Depositor

5 Model quality i

5.1 Standard geometry i

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).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	AG	0.29	0/1250	0.59	1/1699 (0.1%)
1	Ag	0.26	0/278	0.51	0/377
1	BG	0.30	0/1250	0.60	1/1699 (0.1%)
1	Bg	0.29	0/278	0.49	0/377
1	CG	0.30	0/1250	0.58	1/1699 (0.1%)
1	Cg	0.28	0/278	0.46	0/377
1	DG	0.30	0/1250	0.62	1/1699 (0.1%)
1	Dg	0.27	0/278	0.45	0/377
1	EG	0.29	0/1250	0.57	1/1699 (0.1%)
1	Eg	0.27	0/278	0.48	0/377
1	FG	0.30	0/1250	0.60	1/1699 (0.1%)
1	Fg	0.27	0/278	0.50	0/377
1	GG	0.30	0/1250	0.60	1/1699 (0.1%)
1	Gg	0.29	0/278	0.47	0/377
1	HG	0.29	0/1250	0.59	1/1699 (0.1%)
1	Hg	0.29	0/278	0.50	0/377
1	IG	0.30	0/1250	0.60	1/1699 (0.1%)
1	Ig	0.30	0/278	0.50	0/377
1	JG	0.31	0/1250	0.59	0/1699
1	Jg	0.29	0/278	0.48	0/377
1	KG	0.29	0/1250	0.60	1/1699 (0.1%)
1	Kg	0.28	0/278	0.47	0/377
1	LG	0.30	0/1250	0.59	1/1699 (0.1%)
1	Lg	0.26	0/278	0.47	0/377
1	MG	0.29	0/1250	0.58	0/1699
1	Mg	0.29	0/278	0.49	0/377
1	NG	0.30	0/1250	0.59	0/1699
1	OG	0.29	0/1250	0.60	1/1699 (0.1%)
1	PG	0.30	0/1250	0.59	1/1699 (0.1%)
1	VG	0.31	0/278	0.57	0/377
1	WG	0.28	0/278	0.53	0/377
1	XG	0.28	0/278	0.54	0/377
1	YG	0.29	0/278	0.54	0/377
1	ZG	0.29	0/278	0.55	0/377

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
2	AD	0.33	0/1107	0.53	0/1502
2	Ad	0.32	0/1078	0.51	0/1463
2	BD	0.33	0/1107	0.54	0/1502
2	Bd	0.34	0/1078	0.54	0/1463
2	CD	0.34	0/1107	0.54	0/1502
2	Cd	0.31	0/1078	0.51	0/1463
2	DD	0.33	0/1107	0.55	0/1502
2	Dd	0.31	0/1078	0.50	0/1463
2	ED	0.34	0/1107	0.55	0/1502
2	Ed	0.31	0/1078	0.51	0/1463
2	FD	0.33	0/1107	0.54	0/1502
2	Fd	0.32	0/1078	0.50	0/1463
2	GD	0.33	0/1107	0.56	0/1502
2	Gd	0.32	0/1078	0.54	0/1463
2	HD	0.33	0/1107	0.56	0/1502
2	Hd	0.32	0/1078	0.49	0/1463
2	ID	0.33	0/1107	0.55	0/1502
2	Id	0.31	0/1078	0.50	0/1463
2	JD	0.34	0/1107	0.55	0/1502
2	Jd	0.33	0/1078	0.51	0/1463
2	KD	0.33	0/1107	0.56	0/1502
2	Kd	0.31	0/1078	0.53	0/1463
2	LD	0.34	0/1107	0.55	0/1502
2	Ld	0.34	0/1078	0.52	0/1463
2	MD	0.34	0/1107	0.53	0/1502
2	Md	0.31	0/1078	0.51	0/1463
3	AF	0.27	0/490	0.54	0/660
3	Af	0.29	0/456	0.53	0/615
3	BF	0.28	0/490	0.55	0/660
3	Bf	0.29	0/456	0.53	0/615
3	CF	0.28	0/490	0.55	0/660
3	Cf	0.30	0/456	0.55	0/615
3	DF	0.28	0/490	0.57	0/660
3	Df	0.30	0/456	0.53	0/615
3	EF	0.29	0/490	0.52	0/660
3	Ef	0.29	0/456	0.53	0/615
3	FF	0.28	0/490	0.56	0/660
3	Ff	0.30	0/456	0.52	0/615
3	GF	0.28	0/490	0.57	0/660
3	Gf	0.29	0/456	0.53	0/615
3	HF	0.28	0/490	0.55	0/660
3	Hf	0.28	0/456	0.52	0/615
3	IF	0.29	0/490	0.57	0/660

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
3	If	0.28	0/456	0.53	0/615
3	JF	0.27	0/490	0.56	0/660
3	Jf	0.30	0/456	0.52	0/615
3	KF	0.28	0/490	0.54	0/660
3	Kf	0.29	0/456	0.56	0/615
3	LF	0.28	0/490	0.56	0/660
3	Lf	0.30	0/456	0.53	0/615
3	MF	0.28	0/490	0.58	0/660
3	Mf	0.29	0/456	0.54	0/615
3	VF	0.28	0/490	0.53	0/660
3	WF	0.28	0/490	0.55	0/660
3	XF	0.27	0/490	0.55	0/660
3	YF	0.27	0/490	0.56	0/660
3	ZF	0.28	0/490	0.55	0/660
4	AH	0.32	0/2033	0.56	0/2775
4	BH	0.32	0/2033	0.54	0/2775
4	CH	0.31	0/2033	0.54	0/2775
4	DH	0.31	0/2033	0.52	0/2775
4	EH	0.31	0/2033	0.55	0/2775
4	FH	0.31	0/2033	0.54	0/2775
4	GH	0.32	0/2033	0.56	0/2775
4	HH	0.32	0/2033	0.53	0/2775
4	IH	0.32	0/2033	0.53	0/2775
4	JH	0.32	0/2033	0.53	0/2775
4	KH	0.32	0/2033	0.55	0/2775
4	LH	0.32	0/2033	0.56	0/2775
4	MH	0.31	0/2033	0.56	0/2775
4	VH	0.29	0/1921	0.53	0/2620
4	WH	0.28	0/1921	0.51	0/2620
4	XH	0.29	0/1921	0.54	0/2620
4	YH	0.28	0/1921	0.53	0/2620
4	ZH	0.29	0/1921	0.55	0/2620
5	AK	0.34	0/1195	0.54	0/1616
5	BK	0.35	0/1195	0.55	0/1616
5	CK	0.33	0/1195	0.55	0/1616
5	DK	0.34	0/1195	0.55	0/1616
5	EK	0.34	0/1195	0.54	0/1616
5	FK	0.34	0/1195	0.56	0/1616
5	GK	0.33	0/1195	0.56	0/1616
5	HK	0.34	0/1195	0.55	0/1616
5	IK	0.32	0/1195	0.53	0/1616
5	JK	0.33	0/1195	0.55	0/1616
5	KK	0.34	0/1195	0.54	0/1616

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
5	LK	0.32	0/1195	0.56	0/1616
5	MK	0.33	0/1195	0.56	0/1616
6	AL	0.32	0/1417	0.57	0/1912
6	BL	0.34	0/1417	0.57	0/1912
6	CL	0.34	0/1417	0.56	0/1912
6	DL	0.33	0/1417	0.56	0/1912
6	EL	0.33	0/1417	0.56	0/1912
6	FL	0.33	0/1417	0.57	0/1912
6	GL	0.33	0/1417	0.56	0/1912
6	HL	0.33	0/1417	0.57	0/1912
6	IL	0.33	0/1417	0.58	0/1912
6	JL	0.33	0/1417	0.60	0/1912
6	KL	0.33	0/1417	0.57	0/1912
6	LL	0.33	0/1417	0.57	0/1912
6	ML	0.35	0/1417	0.56	0/1912
7	AM	0.31	0/1678	0.58	0/2262
7	BM	0.31	0/1678	0.61	0/2262
7	CM	0.31	0/1678	0.60	0/2262
7	DM	0.32	0/1678	0.59	0/2262
7	EM	0.31	0/1678	0.59	0/2262
7	FM	0.31	0/1678	0.59	0/2262
7	GM	0.32	0/1678	0.58	0/2262
7	HM	0.31	0/1678	0.56	0/2262
7	IM	0.30	0/1678	0.57	0/2262
7	JM	0.32	0/1678	0.60	0/2262
7	KM	0.32	0/1678	0.58	0/2262
7	LM	0.31	0/1678	0.57	0/2262
7	MM	0.31	0/1678	0.59	0/2262
8	AN	0.34	0/593	0.55	0/799
8	BN	0.36	0/593	0.54	0/799
8	CN	0.35	0/593	0.55	0/799
8	DN	0.37	0/593	0.56	0/799
8	EN	0.35	0/593	0.52	0/799
8	FN	0.34	0/593	0.55	0/799
8	GN	0.36	0/593	0.52	0/799
8	HN	0.37	0/593	0.52	0/799
8	IN	0.35	0/593	0.53	0/799
8	JN	0.35	0/593	0.54	0/799
8	KN	0.36	0/593	0.54	0/799
8	LN	0.36	0/593	0.53	0/799
8	MN	0.32	0/593	0.52	0/799
11	AC	0.34	0/1702	0.55	0/2315
11	BC	0.33	0/1702	0.53	0/2315

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
11	CC	0.34	0/1702	0.53	0/2315
11	DC	0.33	0/1957	0.53	0/2651
11	EC	0.33	0/1702	0.53	0/2315
11	FC	0.34	0/1702	0.52	0/2315
11	GC	0.33	0/1702	0.53	0/2315
11	HC	0.33	0/1957	0.52	0/2651
11	IC	0.31	0/1957	0.54	0/2651
11	JC	0.35	0/1702	0.54	0/2315
11	KC	0.34	0/1702	0.54	0/2315
11	LC	0.34	0/1957	0.53	0/2651
11	MC	0.33	0/1957	0.53	0/2651
All	All	0.32	0/191071	0.55	13/258997 (0.0%)

There are no bond length outliers.

The worst 5 of 13 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	KG	1040	LEU	CA-CB-CG	6.51	130.27	115.30
1	IG	1040	LEU	CA-CB-CG	5.88	128.83	115.30
1	FG	1040	LEU	CA-CB-CG	5.83	128.71	115.30
1	GG	1040	LEU	CA-CB-CG	5.81	128.67	115.30
1	BG	1040	LEU	CA-CB-CG	5.73	128.49	115.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

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	Percentiles	
1	AG	161/1048 (15%)	154 (96%)	7 (4%)	0	100	100
1	Ag	32/1048 (3%)	32 (100%)	0	0	100	100
1	BG	161/1048 (15%)	156 (97%)	5 (3%)	0	100	100
1	Bg	32/1048 (3%)	30 (94%)	2 (6%)	0	100	100
1	CG	161/1048 (15%)	151 (94%)	10 (6%)	0	100	100
1	Cg	32/1048 (3%)	32 (100%)	0	0	100	100
1	DG	161/1048 (15%)	155 (96%)	6 (4%)	0	100	100
1	Dg	32/1048 (3%)	32 (100%)	0	0	100	100
1	EG	161/1048 (15%)	157 (98%)	4 (2%)	0	100	100
1	Eg	32/1048 (3%)	32 (100%)	0	0	100	100
1	FG	161/1048 (15%)	152 (94%)	9 (6%)	0	100	100
1	Fg	32/1048 (3%)	31 (97%)	1 (3%)	0	100	100
1	GG	161/1048 (15%)	152 (94%)	9 (6%)	0	100	100
1	Gg	32/1048 (3%)	31 (97%)	1 (3%)	0	100	100
1	HG	161/1048 (15%)	150 (93%)	11 (7%)	0	100	100
1	Hg	32/1048 (3%)	29 (91%)	3 (9%)	0	100	100
1	IG	161/1048 (15%)	152 (94%)	9 (6%)	0	100	100
1	Ig	32/1048 (3%)	31 (97%)	1 (3%)	0	100	100
1	JG	161/1048 (15%)	152 (94%)	9 (6%)	0	100	100
1	Jg	32/1048 (3%)	32 (100%)	0	0	100	100
1	KG	161/1048 (15%)	151 (94%)	10 (6%)	0	100	100
1	Kg	32/1048 (3%)	32 (100%)	0	0	100	100
1	LG	161/1048 (15%)	153 (95%)	8 (5%)	0	100	100
1	Lg	32/1048 (3%)	30 (94%)	2 (6%)	0	100	100
1	MG	161/1048 (15%)	158 (98%)	3 (2%)	0	100	100
1	Mg	32/1048 (3%)	32 (100%)	0	0	100	100
1	NG	161/1048 (15%)	154 (96%)	7 (4%)	0	100	100
1	OG	161/1048 (15%)	150 (93%)	11 (7%)	0	100	100
1	PG	161/1048 (15%)	153 (95%)	8 (5%)	0	100	100
1	VG	32/1048 (3%)	31 (97%)	1 (3%)	0	100	100
1	WG	32/1048 (3%)	31 (97%)	1 (3%)	0	100	100
1	XG	32/1048 (3%)	32 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	YG	32/1048 (3%)	32 (100%)	0	0	100	100
1	ZG	32/1048 (3%)	31 (97%)	1 (3%)	0	100	100
2	AD	138/163 (85%)	131 (95%)	7 (5%)	0	100	100
2	Ad	135/163 (83%)	131 (97%)	4 (3%)	0	100	100
2	BD	138/163 (85%)	130 (94%)	8 (6%)	0	100	100
2	Bd	135/163 (83%)	132 (98%)	3 (2%)	0	100	100
2	CD	138/163 (85%)	129 (94%)	9 (6%)	0	100	100
2	Cd	135/163 (83%)	132 (98%)	3 (2%)	0	100	100
2	DD	138/163 (85%)	131 (95%)	7 (5%)	0	100	100
2	Dd	135/163 (83%)	130 (96%)	5 (4%)	0	100	100
2	ED	138/163 (85%)	135 (98%)	3 (2%)	0	100	100
2	Ed	135/163 (83%)	125 (93%)	10 (7%)	0	100	100
2	FD	138/163 (85%)	131 (95%)	7 (5%)	0	100	100
2	Fd	135/163 (83%)	127 (94%)	8 (6%)	0	100	100
2	GD	138/163 (85%)	131 (95%)	7 (5%)	0	100	100
2	Gd	135/163 (83%)	125 (93%)	10 (7%)	0	100	100
2	HD	138/163 (85%)	133 (96%)	5 (4%)	0	100	100
2	Hd	135/163 (83%)	127 (94%)	8 (6%)	0	100	100
2	ID	138/163 (85%)	129 (94%)	9 (6%)	0	100	100
2	Id	135/163 (83%)	127 (94%)	8 (6%)	0	100	100
2	JD	138/163 (85%)	131 (95%)	7 (5%)	0	100	100
2	Jd	135/163 (83%)	131 (97%)	4 (3%)	0	100	100
2	KD	138/163 (85%)	131 (95%)	7 (5%)	0	100	100
2	Kd	135/163 (83%)	129 (96%)	6 (4%)	0	100	100
2	LD	138/163 (85%)	131 (95%)	7 (5%)	0	100	100
2	Ld	135/163 (83%)	131 (97%)	4 (3%)	0	100	100
2	MD	138/163 (85%)	130 (94%)	8 (6%)	0	100	100
2	Md	135/163 (83%)	129 (96%)	6 (4%)	0	100	100
3	AF	61/269 (23%)	55 (90%)	6 (10%)	0	100	100
3	Af	57/269 (21%)	56 (98%)	1 (2%)	0	100	100
3	BF	61/269 (23%)	59 (97%)	2 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	Bf	57/269 (21%)	55 (96%)	2 (4%)	0	100	100
3	CF	61/269 (23%)	55 (90%)	6 (10%)	0	100	100
3	Cf	57/269 (21%)	51 (90%)	6 (10%)	0	100	100
3	DF	61/269 (23%)	59 (97%)	2 (3%)	0	100	100
3	Df	57/269 (21%)	53 (93%)	4 (7%)	0	100	100
3	EF	61/269 (23%)	57 (93%)	4 (7%)	0	100	100
3	Ef	57/269 (21%)	55 (96%)	2 (4%)	0	100	100
3	FF	61/269 (23%)	59 (97%)	2 (3%)	0	100	100
3	Ff	57/269 (21%)	55 (96%)	2 (4%)	0	100	100
3	GF	61/269 (23%)	56 (92%)	5 (8%)	0	100	100
3	Gf	57/269 (21%)	50 (88%)	7 (12%)	0	100	100
3	HF	61/269 (23%)	59 (97%)	2 (3%)	0	100	100
3	Hf	57/269 (21%)	54 (95%)	3 (5%)	0	100	100
3	IF	61/269 (23%)	58 (95%)	3 (5%)	0	100	100
3	If	57/269 (21%)	54 (95%)	3 (5%)	0	100	100
3	JF	61/269 (23%)	57 (93%)	4 (7%)	0	100	100
3	Jf	57/269 (21%)	54 (95%)	3 (5%)	0	100	100
3	KF	61/269 (23%)	57 (93%)	4 (7%)	0	100	100
3	Kf	57/269 (21%)	54 (95%)	3 (5%)	0	100	100
3	LF	61/269 (23%)	59 (97%)	2 (3%)	0	100	100
3	Lf	57/269 (21%)	55 (96%)	2 (4%)	0	100	100
3	MF	61/269 (23%)	57 (93%)	4 (7%)	0	100	100
3	Mf	57/269 (21%)	55 (96%)	2 (4%)	0	100	100
3	VF	61/269 (23%)	55 (90%)	6 (10%)	0	100	100
3	WF	61/269 (23%)	58 (95%)	3 (5%)	0	100	100
3	XF	61/269 (23%)	56 (92%)	5 (8%)	0	100	100
3	YF	61/269 (23%)	59 (97%)	2 (3%)	0	100	100
3	ZF	61/269 (23%)	58 (95%)	3 (5%)	0	100	100
4	AH	256/361 (71%)	242 (94%)	14 (6%)	0	100	100
4	BH	256/361 (71%)	243 (95%)	13 (5%)	0	100	100
4	CH	256/361 (71%)	241 (94%)	15 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	DH	256/361 (71%)	237 (93%)	19 (7%)	0	100	100
4	EH	256/361 (71%)	246 (96%)	10 (4%)	0	100	100
4	FH	256/361 (71%)	248 (97%)	8 (3%)	0	100	100
4	GH	256/361 (71%)	237 (93%)	19 (7%)	0	100	100
4	HH	256/361 (71%)	240 (94%)	16 (6%)	0	100	100
4	IH	256/361 (71%)	244 (95%)	12 (5%)	0	100	100
4	JH	256/361 (71%)	239 (93%)	17 (7%)	0	100	100
4	KH	256/361 (71%)	238 (93%)	18 (7%)	0	100	100
4	LH	256/361 (71%)	238 (93%)	18 (7%)	0	100	100
4	MH	256/361 (71%)	235 (92%)	21 (8%)	0	100	100
4	VH	239/361 (66%)	229 (96%)	10 (4%)	0	100	100
4	WH	239/361 (66%)	230 (96%)	9 (4%)	0	100	100
4	XH	239/361 (66%)	229 (96%)	10 (4%)	0	100	100
4	YH	239/361 (66%)	222 (93%)	17 (7%)	0	100	100
4	ZH	239/361 (66%)	229 (96%)	10 (4%)	0	100	100
5	AK	149/189 (79%)	144 (97%)	5 (3%)	0	100	100
5	BK	149/189 (79%)	140 (94%)	9 (6%)	0	100	100
5	CK	149/189 (79%)	143 (96%)	6 (4%)	0	100	100
5	DK	149/189 (79%)	143 (96%)	6 (4%)	0	100	100
5	EK	149/189 (79%)	142 (95%)	7 (5%)	0	100	100
5	FK	149/189 (79%)	143 (96%)	6 (4%)	0	100	100
5	GK	149/189 (79%)	141 (95%)	8 (5%)	0	100	100
5	HK	149/189 (79%)	144 (97%)	5 (3%)	0	100	100
5	IK	149/189 (79%)	140 (94%)	9 (6%)	0	100	100
5	JK	149/189 (79%)	142 (95%)	7 (5%)	0	100	100
5	KK	149/189 (79%)	137 (92%)	12 (8%)	0	100	100
5	LK	149/189 (79%)	141 (95%)	8 (5%)	0	100	100
5	MK	149/189 (79%)	144 (97%)	5 (3%)	0	100	100
6	AL	169/249 (68%)	161 (95%)	8 (5%)	0	100	100
6	BL	169/249 (68%)	163 (96%)	6 (4%)	0	100	100
6	CL	169/249 (68%)	161 (95%)	8 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	DL	169/249 (68%)	160 (95%)	9 (5%)	0	100	100
6	EL	169/249 (68%)	160 (95%)	9 (5%)	0	100	100
6	FL	169/249 (68%)	161 (95%)	8 (5%)	0	100	100
6	GL	169/249 (68%)	161 (95%)	8 (5%)	0	100	100
6	HL	169/249 (68%)	163 (96%)	6 (4%)	0	100	100
6	IL	169/249 (68%)	163 (96%)	6 (4%)	0	100	100
6	JL	169/249 (68%)	161 (95%)	8 (5%)	0	100	100
6	KL	169/249 (68%)	163 (96%)	6 (4%)	0	100	100
6	LL	169/249 (68%)	159 (94%)	10 (6%)	0	100	100
6	ML	169/249 (68%)	161 (95%)	8 (5%)	0	100	100
7	AM	206/320 (64%)	187 (91%)	19 (9%)	0	100	100
7	BM	206/320 (64%)	183 (89%)	23 (11%)	0	100	100
7	CM	206/320 (64%)	185 (90%)	21 (10%)	0	100	100
7	DM	206/320 (64%)	193 (94%)	13 (6%)	0	100	100
7	EM	206/320 (64%)	191 (93%)	15 (7%)	0	100	100
7	FM	206/320 (64%)	188 (91%)	18 (9%)	0	100	100
7	GM	206/320 (64%)	186 (90%)	20 (10%)	0	100	100
7	HM	206/320 (64%)	186 (90%)	20 (10%)	0	100	100
7	IM	206/320 (64%)	188 (91%)	18 (9%)	0	100	100
7	JM	206/320 (64%)	183 (89%)	23 (11%)	0	100	100
7	KM	206/320 (64%)	191 (93%)	15 (7%)	0	100	100
7	LM	206/320 (64%)	186 (90%)	20 (10%)	0	100	100
7	MM	206/320 (64%)	181 (88%)	25 (12%)	0	100	100
8	AN	76/124 (61%)	72 (95%)	4 (5%)	0	100	100
8	BN	76/124 (61%)	72 (95%)	4 (5%)	0	100	100
8	CN	76/124 (61%)	69 (91%)	7 (9%)	0	100	100
8	DN	76/124 (61%)	68 (90%)	8 (10%)	0	100	100
8	EN	76/124 (61%)	69 (91%)	7 (9%)	0	100	100
8	FN	76/124 (61%)	67 (88%)	9 (12%)	0	100	100
8	GN	76/124 (61%)	71 (93%)	5 (7%)	0	100	100
8	HN	76/124 (61%)	71 (93%)	5 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	IN	76/124 (61%)	68 (90%)	8 (10%)	0	100	100
8	JN	76/124 (61%)	67 (88%)	9 (12%)	0	100	100
8	KN	76/124 (61%)	69 (91%)	7 (9%)	0	100	100
8	LN	76/124 (61%)	68 (90%)	8 (10%)	0	100	100
8	MN	76/124 (61%)	70 (92%)	6 (8%)	0	100	100
11	AC	207/303 (68%)	195 (94%)	12 (6%)	0	100	100
11	BC	207/303 (68%)	198 (96%)	9 (4%)	0	100	100
11	CC	207/303 (68%)	197 (95%)	10 (5%)	0	100	100
11	DC	241/303 (80%)	225 (93%)	16 (7%)	0	100	100
11	EC	207/303 (68%)	193 (93%)	14 (7%)	0	100	100
11	FC	207/303 (68%)	192 (93%)	15 (7%)	0	100	100
11	GC	207/303 (68%)	188 (91%)	19 (9%)	0	100	100
11	HC	241/303 (80%)	227 (94%)	14 (6%)	0	100	100
11	IC	241/303 (80%)	230 (95%)	11 (5%)	0	100	100
11	JC	207/303 (68%)	196 (95%)	11 (5%)	0	100	100
11	KC	207/303 (68%)	195 (94%)	12 (6%)	0	100	100
11	LC	241/303 (80%)	230 (95%)	11 (5%)	0	100	100
11	MC	241/303 (80%)	226 (94%)	15 (6%)	0	100	100
All	All	23724/70112 (34%)	22355 (94%)	1369 (6%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain 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 sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	AG	135/765 (18%)	113 (84%)	22 (16%)	2	11
1	Ag	31/765 (4%)	26 (84%)	5 (16%)	2	11
1	BG	135/765 (18%)	117 (87%)	18 (13%)	3	15

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	Bg	31/765 (4%)	25 (81%)	6 (19%)	1	7
1	CG	135/765 (18%)	118 (87%)	17 (13%)	3	16
1	Cg	31/765 (4%)	26 (84%)	5 (16%)	2	11
1	DG	135/765 (18%)	115 (85%)	20 (15%)	2	13
1	Dg	31/765 (4%)	21 (68%)	10 (32%)	0	2
1	EG	135/765 (18%)	114 (84%)	21 (16%)	2	12
1	Eg	31/765 (4%)	27 (87%)	4 (13%)	3	15
1	FG	135/765 (18%)	114 (84%)	21 (16%)	2	12
1	Fg	31/765 (4%)	27 (87%)	4 (13%)	3	15
1	GG	135/765 (18%)	112 (83%)	23 (17%)	1	10
1	Gg	31/765 (4%)	29 (94%)	2 (6%)	14	35
1	HG	135/765 (18%)	114 (84%)	21 (16%)	2	12
1	Hg	31/765 (4%)	29 (94%)	2 (6%)	14	35
1	IG	135/765 (18%)	115 (85%)	20 (15%)	2	13
1	Ig	31/765 (4%)	23 (74%)	8 (26%)	0	3
1	JG	135/765 (18%)	118 (87%)	17 (13%)	3	16
1	Jg	31/765 (4%)	23 (74%)	8 (26%)	0	3
1	KG	135/765 (18%)	116 (86%)	19 (14%)	3	14
1	Kg	31/765 (4%)	26 (84%)	5 (16%)	2	11
1	LG	135/765 (18%)	113 (84%)	22 (16%)	2	11
1	Lg	31/765 (4%)	25 (81%)	6 (19%)	1	7
1	MG	135/765 (18%)	121 (90%)	14 (10%)	5	20
1	Mg	31/765 (4%)	24 (77%)	7 (23%)	1	5
1	NG	135/765 (18%)	114 (84%)	21 (16%)	2	12
1	OG	135/765 (18%)	113 (84%)	22 (16%)	2	11
1	PG	135/765 (18%)	118 (87%)	17 (13%)	3	16
1	VG	31/765 (4%)	27 (87%)	4 (13%)	3	15
1	WG	31/765 (4%)	27 (87%)	4 (13%)	3	15
1	XG	31/765 (4%)	25 (81%)	6 (19%)	1	7
1	YG	31/765 (4%)	27 (87%)	4 (13%)	3	15
1	ZG	31/765 (4%)	25 (81%)	6 (19%)	1	7

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	AD	121/139 (87%)	104 (86%)	17 (14%)	3	14
2	Ad	118/139 (85%)	101 (86%)	17 (14%)	2	13
2	BD	121/139 (87%)	106 (88%)	15 (12%)	4	16
2	Bd	118/139 (85%)	108 (92%)	10 (8%)	8	27
2	CD	121/139 (87%)	102 (84%)	19 (16%)	2	12
2	Cd	118/139 (85%)	107 (91%)	11 (9%)	7	23
2	DD	121/139 (87%)	111 (92%)	10 (8%)	9	28
2	Dd	118/139 (85%)	106 (90%)	12 (10%)	6	21
2	ED	121/139 (87%)	108 (89%)	13 (11%)	5	19
2	Ed	118/139 (85%)	106 (90%)	12 (10%)	6	21
2	FD	121/139 (87%)	107 (88%)	14 (12%)	4	17
2	Fd	118/139 (85%)	103 (87%)	15 (13%)	3	15
2	GD	121/139 (87%)	106 (88%)	15 (12%)	4	16
2	Gd	118/139 (85%)	105 (89%)	13 (11%)	5	19
2	HD	121/139 (87%)	109 (90%)	12 (10%)	6	21
2	Hd	118/139 (85%)	104 (88%)	14 (12%)	4	17
2	ID	121/139 (87%)	105 (87%)	16 (13%)	3	15
2	Id	118/139 (85%)	101 (86%)	17 (14%)	2	13
2	JD	121/139 (87%)	107 (88%)	14 (12%)	4	17
2	Jd	118/139 (85%)	101 (86%)	17 (14%)	2	13
2	KD	121/139 (87%)	114 (94%)	7 (6%)	17	38
2	Kd	118/139 (85%)	105 (89%)	13 (11%)	5	19
2	LD	121/139 (87%)	105 (87%)	16 (13%)	3	15
2	Ld	118/139 (85%)	105 (89%)	13 (11%)	5	19
2	MD	121/139 (87%)	106 (88%)	15 (12%)	4	16
2	Md	118/139 (85%)	107 (91%)	11 (9%)	7	23
3	AF	53/237 (22%)	48 (91%)	5 (9%)	7	23
3	Af	49/237 (21%)	43 (88%)	6 (12%)	4	16
3	BF	53/237 (22%)	47 (89%)	6 (11%)	4	18
3	Bf	49/237 (21%)	42 (86%)	7 (14%)	2	13
3	CF	53/237 (22%)	48 (91%)	5 (9%)	7	23

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	Cf	49/237 (21%)	40 (82%)	9 (18%)	1	8
3	DF	53/237 (22%)	49 (92%)	4 (8%)	11	31
3	Df	49/237 (21%)	44 (90%)	5 (10%)	6	21
3	EF	53/237 (22%)	49 (92%)	4 (8%)	11	31
3	Ef	49/237 (21%)	45 (92%)	4 (8%)	9	28
3	FF	53/237 (22%)	44 (83%)	9 (17%)	1	10
3	Ff	49/237 (21%)	45 (92%)	4 (8%)	9	28
3	GF	53/237 (22%)	49 (92%)	4 (8%)	11	31
3	Gf	49/237 (21%)	46 (94%)	3 (6%)	15	37
3	HF	53/237 (22%)	46 (87%)	7 (13%)	3	15
3	Hf	49/237 (21%)	40 (82%)	9 (18%)	1	8
3	IF	53/237 (22%)	47 (89%)	6 (11%)	4	18
3	If	49/237 (21%)	42 (86%)	7 (14%)	2	13
3	JF	53/237 (22%)	51 (96%)	2 (4%)	28	49
3	Jf	49/237 (21%)	44 (90%)	5 (10%)	6	21
3	KF	53/237 (22%)	45 (85%)	8 (15%)	2	12
3	Kf	49/237 (21%)	44 (90%)	5 (10%)	6	21
3	LF	53/237 (22%)	47 (89%)	6 (11%)	4	18
3	Lf	49/237 (21%)	43 (88%)	6 (12%)	4	16
3	MF	53/237 (22%)	48 (91%)	5 (9%)	7	23
3	Mf	49/237 (21%)	44 (90%)	5 (10%)	6	21
3	VF	53/237 (22%)	45 (85%)	8 (15%)	2	12
3	WF	53/237 (22%)	51 (96%)	2 (4%)	28	49
3	XF	53/237 (22%)	51 (96%)	2 (4%)	28	49
3	YF	53/237 (22%)	49 (92%)	4 (8%)	11	31
3	ZF	53/237 (22%)	47 (89%)	6 (11%)	4	18
4	AH	220/300 (73%)	200 (91%)	20 (9%)	7	24
4	BH	220/300 (73%)	201 (91%)	19 (9%)	8	27
4	CH	220/300 (73%)	196 (89%)	24 (11%)	5	19
4	DH	220/300 (73%)	199 (90%)	21 (10%)	7	22
4	EH	220/300 (73%)	193 (88%)	27 (12%)	4	16

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	FH	220/300 (73%)	194 (88%)	26 (12%)	4	17
4	GH	220/300 (73%)	191 (87%)	29 (13%)	3	15
4	HH	220/300 (73%)	198 (90%)	22 (10%)	6	21
4	IH	220/300 (73%)	187 (85%)	33 (15%)	2	12
4	JH	220/300 (73%)	196 (89%)	24 (11%)	5	19
4	KH	220/300 (73%)	191 (87%)	29 (13%)	3	15
4	LH	220/300 (73%)	195 (89%)	25 (11%)	4	17
4	MH	220/300 (73%)	194 (88%)	26 (12%)	4	17
4	VH	207/300 (69%)	183 (88%)	24 (12%)	4	17
4	WH	207/300 (69%)	183 (88%)	24 (12%)	4	17
4	XH	207/300 (69%)	176 (85%)	31 (15%)	2	12
4	YH	207/300 (69%)	177 (86%)	30 (14%)	2	13
4	ZH	207/300 (69%)	190 (92%)	17 (8%)	9	28
5	AK	129/163 (79%)	110 (85%)	19 (15%)	2	13
5	BK	129/163 (79%)	111 (86%)	18 (14%)	3	14
5	CK	129/163 (79%)	110 (85%)	19 (15%)	2	13
5	DK	129/163 (79%)	114 (88%)	15 (12%)	4	17
5	EK	129/163 (79%)	116 (90%)	13 (10%)	6	21
5	FK	129/163 (79%)	115 (89%)	14 (11%)	5	19
5	GK	129/163 (79%)	113 (88%)	16 (12%)	4	16
5	HK	129/163 (79%)	112 (87%)	17 (13%)	3	15
5	IK	129/163 (79%)	114 (88%)	15 (12%)	4	17
5	JK	129/163 (79%)	114 (88%)	15 (12%)	4	17
5	KK	129/163 (79%)	114 (88%)	15 (12%)	4	17
5	LK	129/163 (79%)	111 (86%)	18 (14%)	3	14
5	MK	129/163 (79%)	117 (91%)	12 (9%)	7	23
6	AL	148/203 (73%)	136 (92%)	12 (8%)	9	29
6	BL	148/203 (73%)	131 (88%)	17 (12%)	4	17
6	CL	148/203 (73%)	127 (86%)	21 (14%)	2	14
6	DL	148/203 (73%)	133 (90%)	15 (10%)	6	21
6	EL	148/203 (73%)	127 (86%)	21 (14%)	2	14

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
6	FL	148/203 (73%)	137 (93%)	11 (7%)	11	31
6	GL	148/203 (73%)	132 (89%)	16 (11%)	5	19
6	HL	148/203 (73%)	135 (91%)	13 (9%)	8	25
6	IL	148/203 (73%)	135 (91%)	13 (9%)	8	25
6	JL	148/203 (73%)	132 (89%)	16 (11%)	5	19
6	KL	148/203 (73%)	134 (90%)	14 (10%)	7	22
6	LL	148/203 (73%)	128 (86%)	20 (14%)	3	15
6	ML	148/203 (73%)	132 (89%)	16 (11%)	5	19
7	AM	175/276 (63%)	148 (85%)	27 (15%)	2	12
7	BM	175/276 (63%)	153 (87%)	22 (13%)	3	16
7	CM	175/276 (63%)	154 (88%)	21 (12%)	4	17
7	DM	175/276 (63%)	149 (85%)	26 (15%)	2	12
7	EM	175/276 (63%)	153 (87%)	22 (13%)	3	16
7	FM	175/276 (63%)	152 (87%)	23 (13%)	3	15
7	GM	175/276 (63%)	149 (85%)	26 (15%)	2	12
7	HM	175/276 (63%)	154 (88%)	21 (12%)	4	17
7	IM	175/276 (63%)	151 (86%)	24 (14%)	3	14
7	JM	175/276 (63%)	143 (82%)	32 (18%)	1	8
7	KM	175/276 (63%)	154 (88%)	21 (12%)	4	17
7	LM	175/276 (63%)	151 (86%)	24 (14%)	3	14
7	MM	175/276 (63%)	152 (87%)	23 (13%)	3	15
8	AN	66/107 (62%)	58 (88%)	8 (12%)	4	16
8	BN	66/107 (62%)	60 (91%)	6 (9%)	7	24
8	CN	66/107 (62%)	57 (86%)	9 (14%)	3	14
8	DN	66/107 (62%)	62 (94%)	4 (6%)	15	37
8	EN	66/107 (62%)	57 (86%)	9 (14%)	3	14
8	FN	66/107 (62%)	55 (83%)	11 (17%)	2	10
8	GN	66/107 (62%)	59 (89%)	7 (11%)	5	19
8	HN	66/107 (62%)	57 (86%)	9 (14%)	3	14
8	IN	66/107 (62%)	55 (83%)	11 (17%)	2	10
8	JN	66/107 (62%)	59 (89%)	7 (11%)	5	19

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
8	KN	66/107 (62%)	53 (80%)	13 (20%)	1	7
8	LN	66/107 (62%)	53 (80%)	13 (20%)	1	7
8	MN	66/107 (62%)	54 (82%)	12 (18%)	1	8
11	AC	178/257 (69%)	149 (84%)	29 (16%)	2	11
11	BC	178/257 (69%)	155 (87%)	23 (13%)	3	15
11	CC	178/257 (69%)	152 (85%)	26 (15%)	2	13
11	DC	203/257 (79%)	174 (86%)	29 (14%)	2	13
11	EC	178/257 (69%)	154 (86%)	24 (14%)	3	15
11	FC	178/257 (69%)	160 (90%)	18 (10%)	6	21
11	GC	178/257 (69%)	157 (88%)	21 (12%)	4	17
11	HC	203/257 (79%)	175 (86%)	28 (14%)	3	14
11	IC	203/257 (79%)	173 (85%)	30 (15%)	2	13
11	JC	178/257 (69%)	162 (91%)	16 (9%)	8	25
11	KC	178/257 (69%)	160 (90%)	18 (10%)	6	21
11	LC	203/257 (79%)	178 (88%)	25 (12%)	4	16
11	MC	203/257 (79%)	174 (86%)	29 (14%)	2	13
All	All	20484/55449 (37%)	17938 (88%)	2546 (12%)	6	16

5 of 2546 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	CL	57	VAL
1	KG	873	LEU
2	Cd	115	VAL
6	CL	47	TYR
5	EK	114	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 60 such sidechains are listed below:

Mol	Chain	Res	Type
8	AN	61	ASN
1	KG	1017	GLN
11	GC	193	ASN
1	JG	1017	GLN
8	FN	115	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
10	IX	1
10	GX	1
10	AX	1
10	ZX	1
10	CX	1
10	WX	1
10	YX	1
10	EX	1
10	MX	1
10	HX	1
10	LX	1
10	VX	1
10	BX	1
10	KX	1
10	JX	1
10	FX	1

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Mol	Chain	Number of breaks
10	DX	1
10	XX	1

The worst 5 of 18 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	IX	38:UNK	C	70:UNK	N	26.35
1	GX	38:UNK	C	70:UNK	N	25.37
1	AX	38:UNK	C	70:UNK	N	25.35
1	ZX	38:UNK	C	70:UNK	N	24.93
1	CX	38:UNK	C	70:UNK	N	24.93

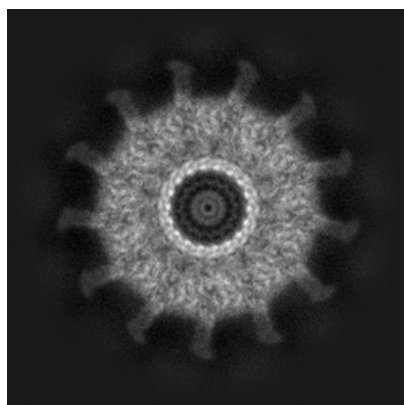
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-24020. These allow visual inspection of the internal detail of the map and identification of artifacts.

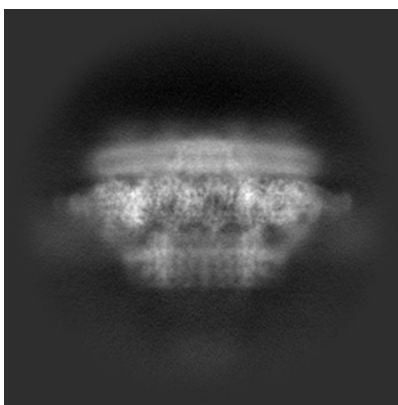
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

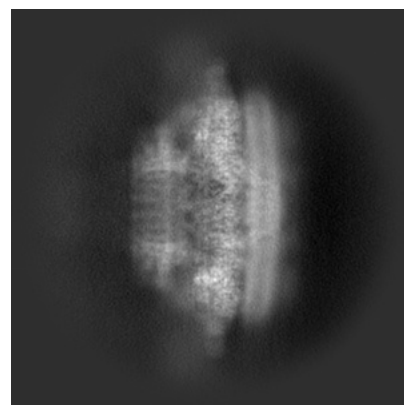
6.1.1 Primary map



X



Y

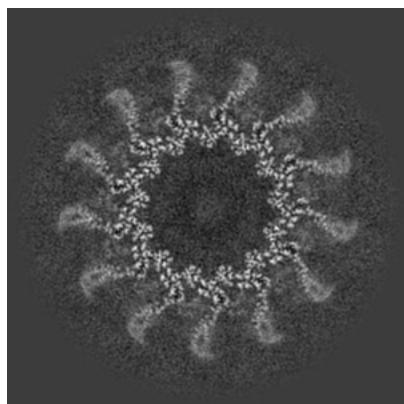


Z

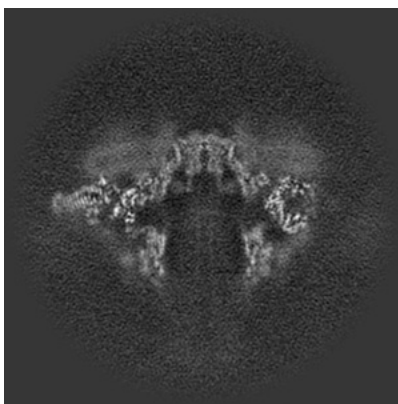
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

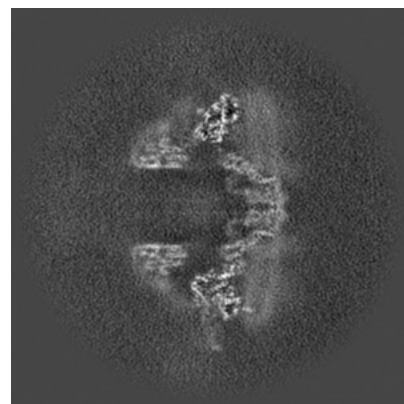
6.2.1 Primary map



X Index: 125



Y Index: 125

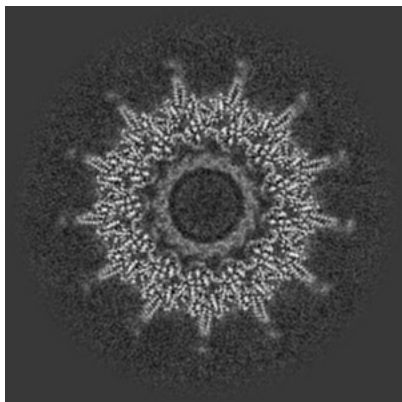


Z Index: 125

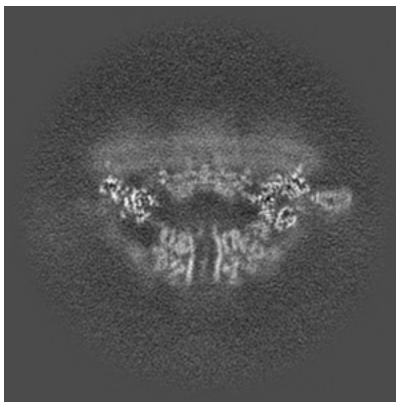
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

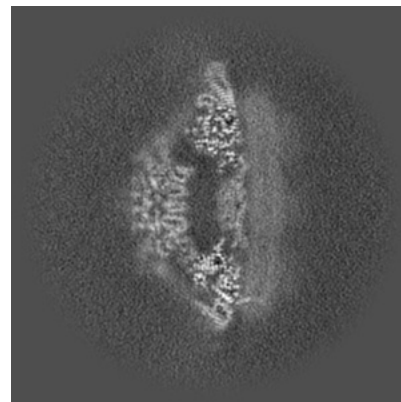
6.3.1 Primary map



X Index: 134



Y Index: 149

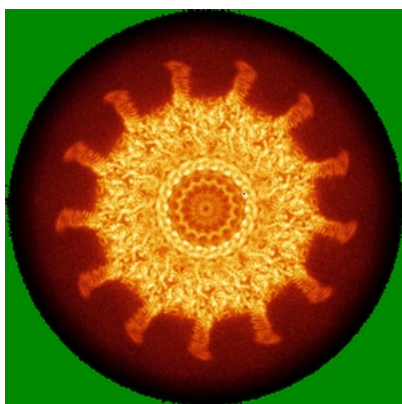


Z Index: 152

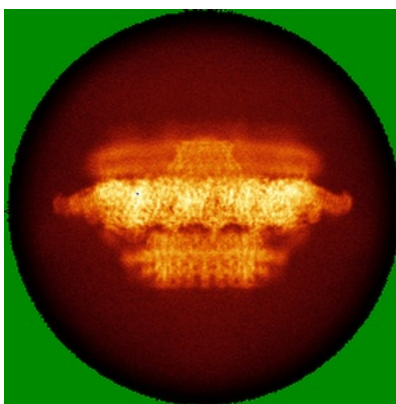
The images above show the largest variance slices of the map in three orthogonal directions.

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

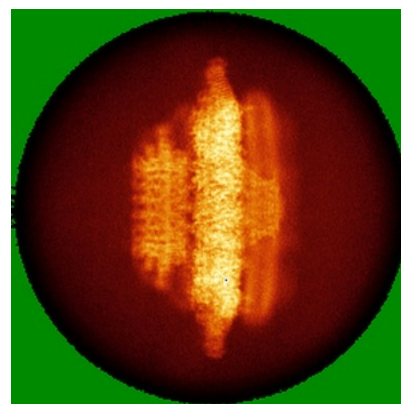
6.4.1 Primary map



X



Y



Z

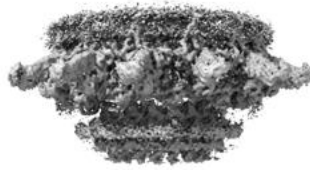
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 2.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

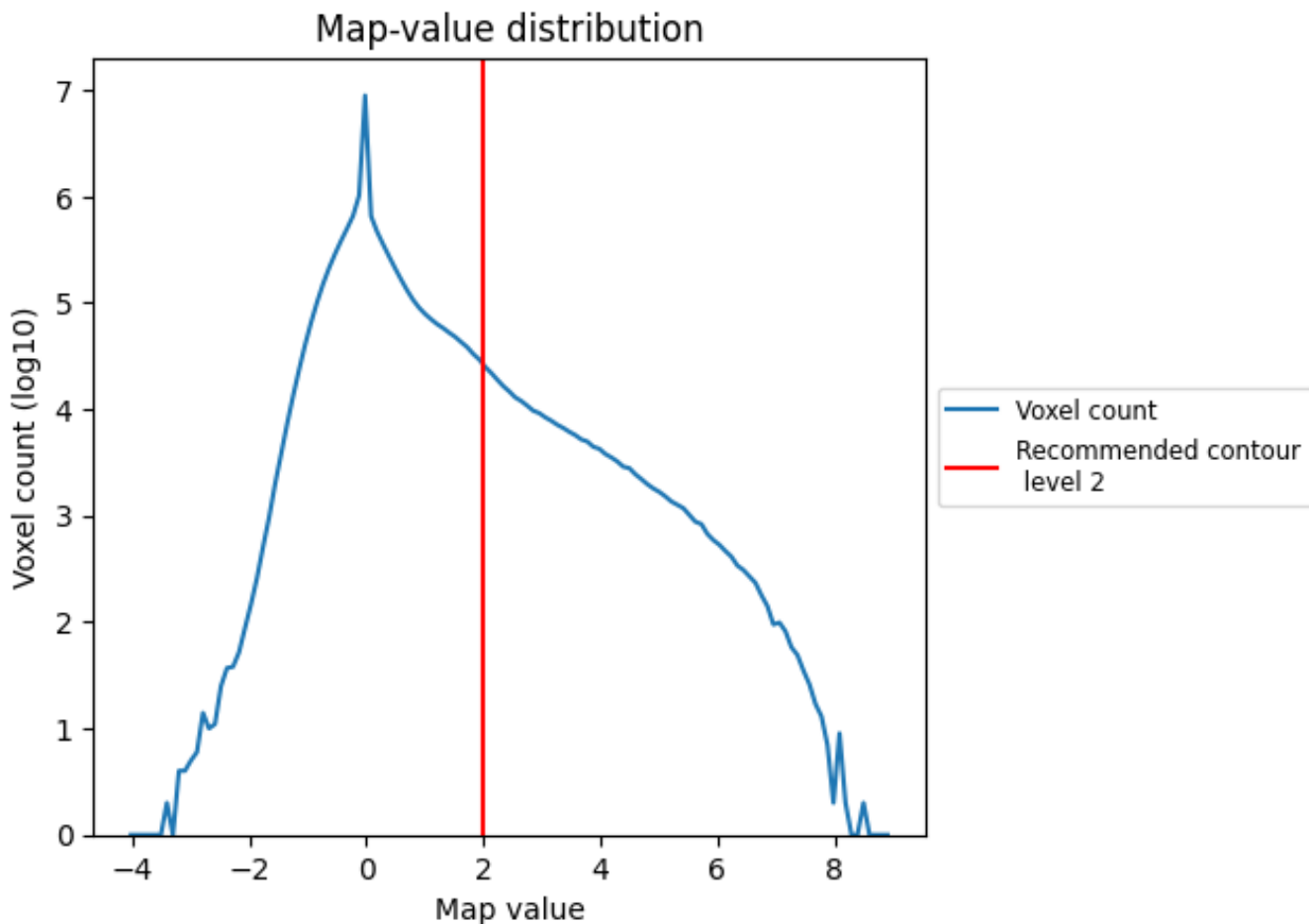
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

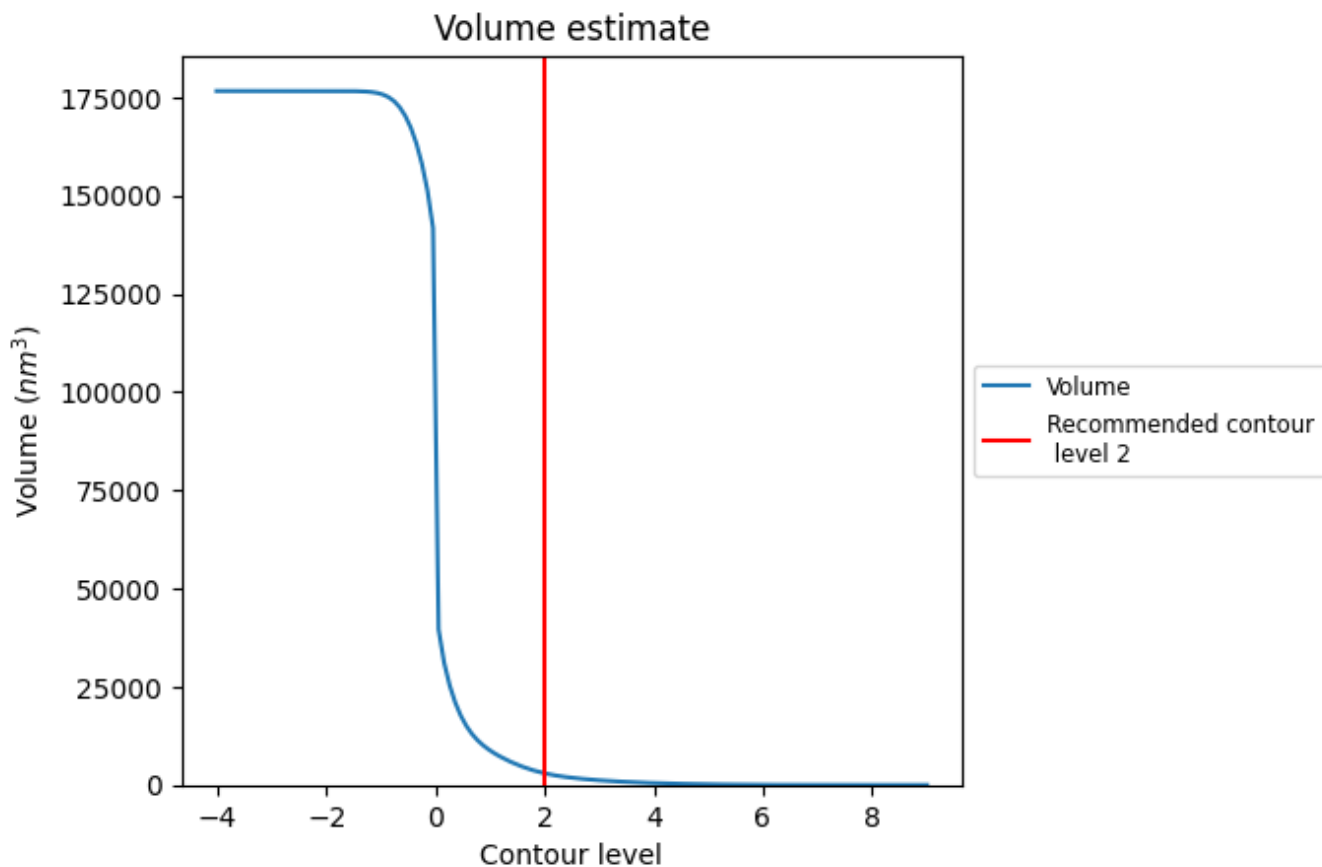
This section contains the results of statistical analysis of the map.

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.

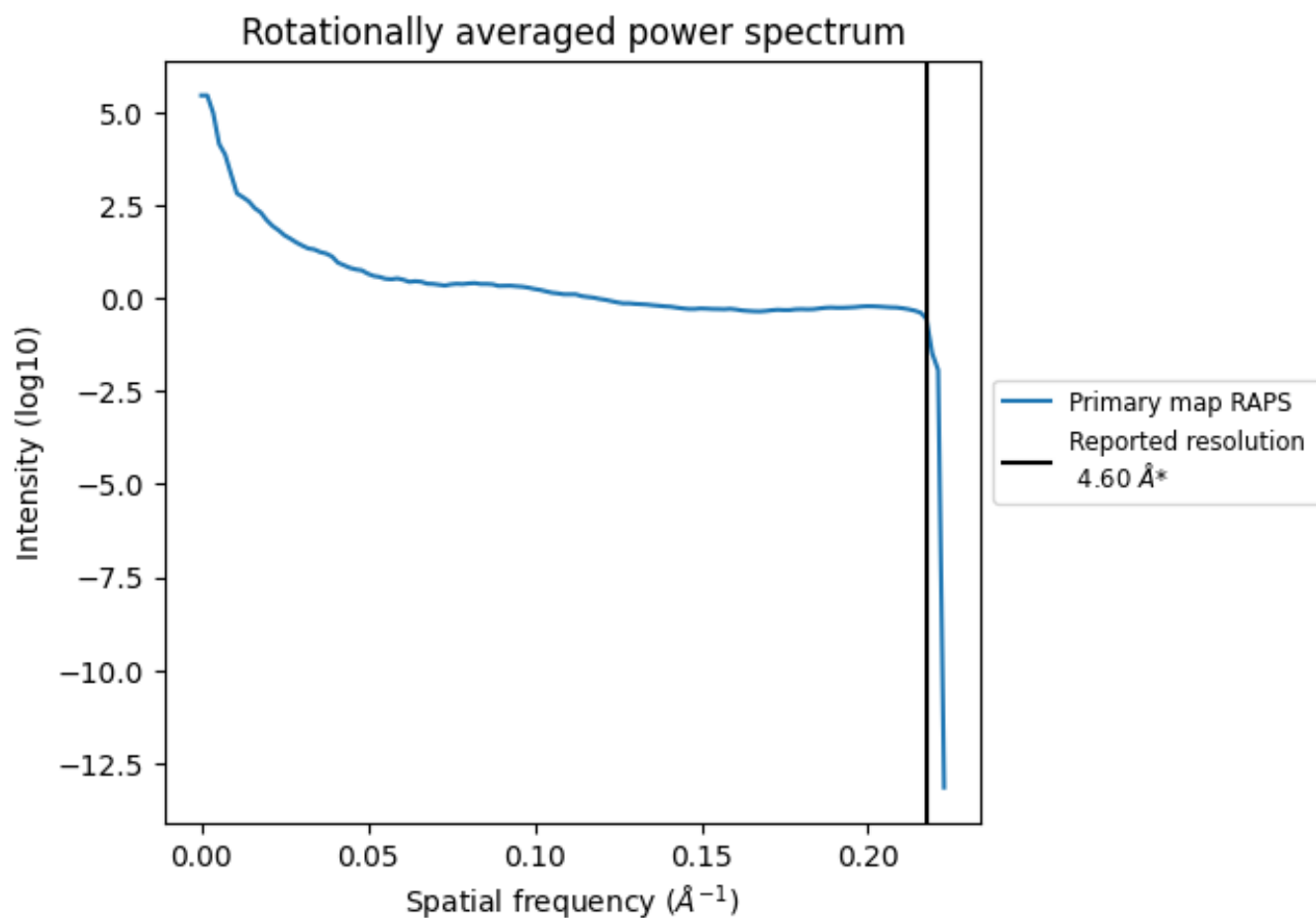
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 2956 nm³; this corresponds to an approximate mass of 2670 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 0.217 Å⁻¹

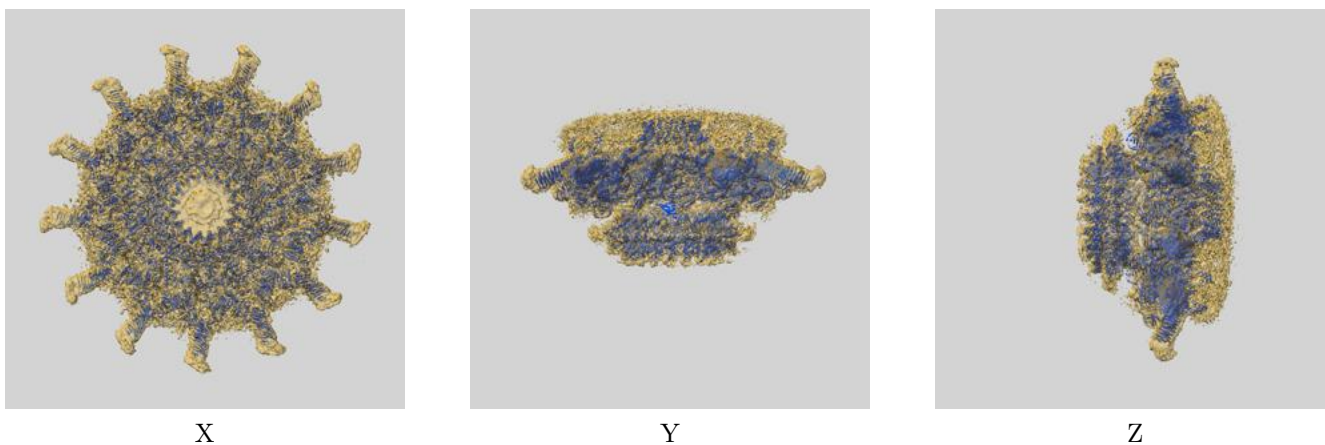
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

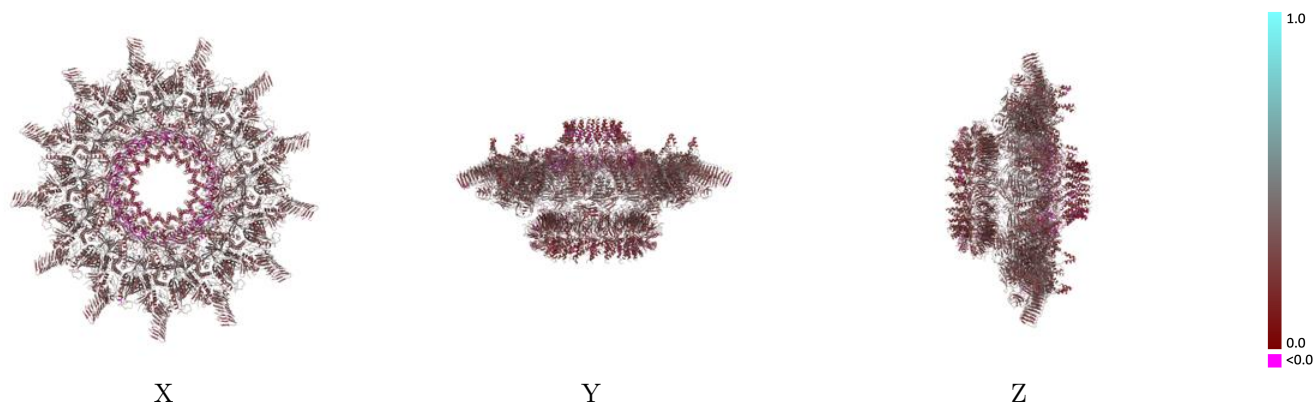
This section contains information regarding the fit between EMDB map EMD-24020 and PDB model 7MUS. Per-residue inclusion information can be found in section [3](#) on page [22](#).

9.1 Map-model overlay [i](#)



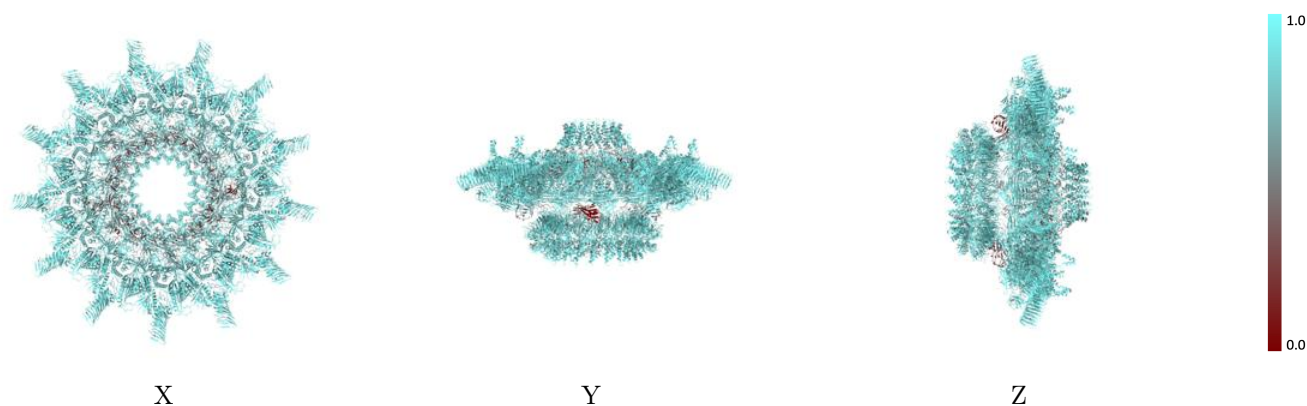
The images above show the 3D surface view of the map at the recommended contour level 2.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



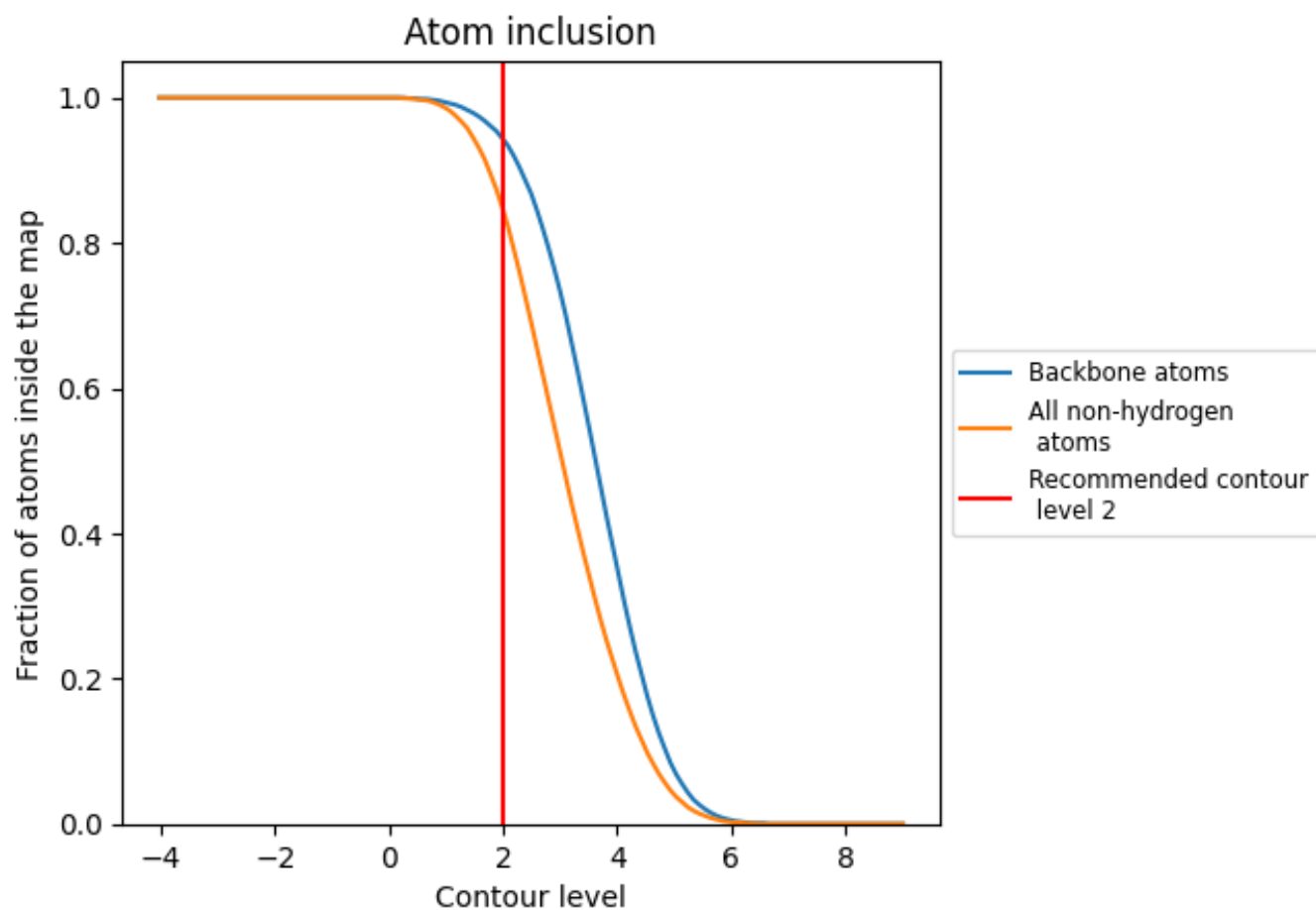
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (2).

9.4 Atom inclusion [i](#)



At the recommended contour level, 94% of all backbone atoms, 85% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary





















































































The table lists the average atom inclusion at the recommended contour level (2) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8460	0.3050
AC	0.8870	0.3340
AD	0.8840	0.3450
AF	0.8850	0.2740
AG	0.6670	0.1580
AH	0.8730	0.3080
AK	0.8900	0.3440
AL	0.8920	0.3310
AM	0.8960	0.3180
AN	0.8780	0.3560
AU	1.0000	0.4820
AX	0.7460	0.2770
Ad	0.8810	0.3330
Af	0.9160	0.3180
Ag	0.9040	0.2670
BC	0.8770	0.3380
BD	0.8730	0.3400
BF	0.8510	0.2650
BG	0.6670	0.1480
BH	0.8690	0.3090
BK	0.8840	0.3480
BL	0.8960	0.3300
BM	0.8780	0.3330
BN	0.8930	0.3620
BU	1.0000	0.5020
BX	0.7710	0.2630
Bd	0.8880	0.3350
Bf	0.8470	0.3060
Bg	0.9120	0.2750
CC	0.8740	0.3420
CD	0.8930	0.3380
CF	0.8580	0.2620
CG	0.6580	0.1580
CH	0.8700	0.3140
CK	0.8930	0.3450























































































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Chain	Atom inclusion	Q-score
CL	 0.8930	 0.3230
CM	 0.8840	 0.3280
CN	 0.8740	 0.3690
CU	 1.0000	 0.4640
CX	 0.9080	 0.3150
Cd	 0.8890	 0.3380
Cf	 0.9090	 0.3330
Cg	 0.9010	 0.2640
DC	 0.8530	 0.3270
DD	 0.8760	 0.3520
DF	 0.9090	 0.2730
DG	 0.6480	 0.1630
DH	 0.8690	 0.3050
DK	 0.8980	 0.3500
DL	 0.8920	 0.3280
DM	 0.9060	 0.3290
DN	 0.8650	 0.3550
DU	 1.0000	 0.4930
DX	 0.8210	 0.2710
Dd	 0.8850	 0.3290
Df	 0.8970	 0.3220
Dg	 0.9340	 0.2730
EC	 0.8680	 0.3290
ED	 0.8730	 0.3480
EF	 0.8900	 0.2630
EG	 0.6130	 0.1540
EH	 0.8680	 0.3130
EK	 0.8680	 0.3470
EL	 0.8980	 0.3210
EM	 0.8900	 0.3270
EN	 0.8220	 0.3610
EU	 1.0000	 0.4890
EX	 0.7750	 0.2630
Ed	 0.8740	 0.3280
Ef	 0.8880	 0.3140
Eg	 0.9080	 0.2710
FC	 0.8770	 0.3360
FD	 0.8850	 0.3540
FF	 0.8730	 0.2570
FG	 0.6140	 0.1400
FH	 0.8510	 0.3120
FK	 0.8840	 0.3530





















































































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Chain	Atom inclusion	Q-score
FL	 0.8980	 0.3280
FM	 0.8860	 0.3250
FN	 0.8990	 0.3660
FU	 0.9780	 0.4360
FX	 0.7130	 0.3110
Fd	 0.8930	 0.3350
Ff	 0.8680	 0.3000
Fg	 0.9150	 0.2540
GC	 0.8760	 0.3370
GD	 0.8920	 0.3570
GF	 0.8730	 0.2720
GG	 0.6430	 0.1470
GH	 0.8590	 0.3090
GK	 0.8930	 0.3460
GL	 0.9010	 0.3270
GM	 0.9040	 0.3290
GN	 0.8720	 0.3520
GU	 1.0000	 0.4720
GX	 0.7250	 0.2490
Gd	 0.8740	 0.3380
Gf	 0.8680	 0.3190
Gg	 0.9010	 0.2890
HC	 0.8510	 0.3210
HD	 0.8780	 0.3500
HF	 0.8640	 0.2590
HG	 0.6130	 0.1320
HH	 0.8980	 0.3230
HK	 0.8900	 0.3510
HL	 0.9120	 0.3350
HM	 0.8800	 0.3240
HN	 0.8640	 0.3590
HU	 1.0000	 0.4480
HX	 0.8290	 0.2900
Hd	 0.8860	 0.3380
Hf	 0.8750	 0.3050
Hg	 0.9010	 0.2850
IC	 0.8450	 0.3220
ID	 0.8810	 0.3400
IF	 0.8790	 0.2550
IG	 0.5900	 0.1260
IH	 0.8680	 0.3160
IK	 0.8880	 0.3510





















































































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Chain	Atom inclusion	Q-score
IL	 0.9000	 0.3280
IM	 0.8810	 0.3330
IN	 0.8200	 0.3590
IU	 1.0000	 0.4820
IX	 0.8500	 0.2470
Id	 0.8980	 0.3360
If	 0.8860	 0.2960
Ig	 0.9150	 0.2920
JC	 0.8800	 0.3360
JD	 0.8700	 0.3430
JF	 0.9000	 0.2540
JG	 0.5910	 0.1270
JH	 0.8630	 0.3200
JK	 0.8870	 0.3490
JL	 0.9040	 0.3290
JM	 0.8910	 0.3290
JN	 0.8790	 0.3670
JU	 1.0000	 0.4660
JX	 0.8120	 0.2640
Jd	 0.8730	 0.3350
Jf	 0.8700	 0.3140
Jg	 0.8900	 0.2910
KC	 0.8900	 0.3370
KD	 0.8640	 0.3500
KF	 0.8850	 0.2420
KG	 0.6190	 0.1290
KH	 0.8600	 0.3080
KK	 0.8910	 0.3510
KL	 0.9130	 0.3310
KM	 0.8880	 0.3320
KN	 0.8930	 0.3620
KU	 1.0000	 0.4740
KX	 0.7920	 0.2790
Kd	 0.8720	 0.3340
Kf	 0.8720	 0.3060
Kg	 0.9230	 0.2820
LC	 0.8540	 0.3280
LD	 0.8880	 0.3540
LF	 0.8830	 0.2480
LG	 0.6440	 0.1470
LH	 0.8510	 0.2990
LK	 0.8860	 0.3420

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Chain	Atom inclusion	Q-score
LL	 0.8940	 0.3250
LM	 0.8680	 0.3300
LN	 0.8710	 0.3570
LU	 0.9780	 0.4540
LX	 0.8710	 0.2500
Ld	 0.8890	 0.3440
Lf	 0.8520	 0.3100
Lg	 0.9300	 0.2840
MC	 0.8430	 0.3130
MD	 0.8730	 0.3530
MF	 0.8770	 0.2620
MG	 0.6900	 0.1860
MH	 0.8750	 0.3080
MK	 0.9000	 0.3540
ML	 0.9180	 0.3380
MM	 0.8960	 0.3260
MN	 0.8460	 0.3680
MU	 0.9780	 0.4600
MX	 0.8210	 0.2570
Md	 0.9020	 0.3410
Mf	 0.9000	 0.3340
Mg	 0.8970	 0.2710
NG	 0.7170	 0.1890
OG	 0.6450	 0.1520
PG	 0.6360	 0.1390
VF	 0.8850	 0.2410
VG	 0.8860	 0.2540
VH	 0.7930	 0.2830
VX	 0.8170	 0.2590
WF	 0.8980	 0.2750
WG	 0.8970	 0.2680
WH	 0.5890	 0.2720
WX	 0.8000	 0.2850
XF	 0.8390	 0.2520
XG	 0.9010	 0.2810
XH	 0.7970	 0.2930
XX	 0.8380	 0.2630
YF	 0.8490	 0.2570
YG	 0.8600	 0.2550
YH	 0.7090	 0.2860
YX	 0.7830	 0.2410
ZF	 0.8640	 0.2570

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Chain	Atom inclusion	Q-score
ZG	 0.8930	 0.2640
ZH	 0.6570	 0.2640
ZX	 0.8500	 0.2450