



Full wwPDB EM Validation Report ⓘ

Apr 28, 2024 – 01:56 am BST

PDB ID : 4V3M
EMDB ID : EMD-2795
Title : Membrane bound pleurotolysin prepore (TMH2 helix lock) trapped with engineered disulphide cross-link
Authors : Lukoyanova, N.; Kondos, S.C.; Farabella, I.; Law, R.H.P.; Reboul, C.F.; Caradoc-Davies, T.T.; Spicer, B.A.; Kleifeld, O.; Perugini, M.; Ekkel, S.; Hatfaludi, T.; Oliver, K.; Hotze, E.M.; Tweten, R.K.; Whisstock, J.C.; Topf, M.; Dunstone, M.A.; Saibil, H.R.
Deposited on : 2014-10-20
Resolution : 17.00 Å (reported)
Based on initial model : 4OEB

This is a Full wwPDB EM Validation 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.dev92
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

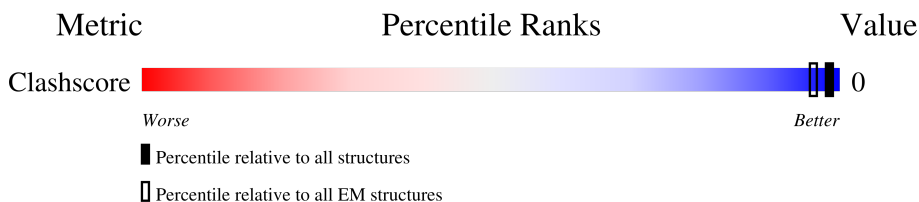
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

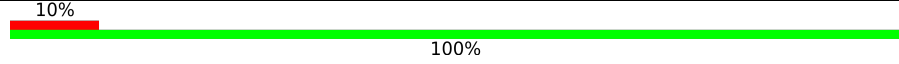
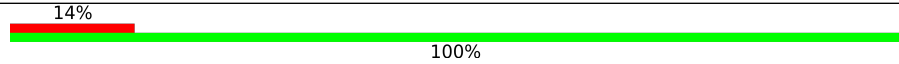
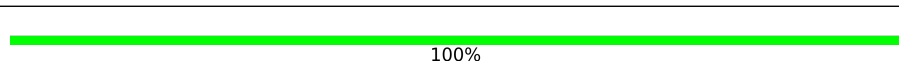
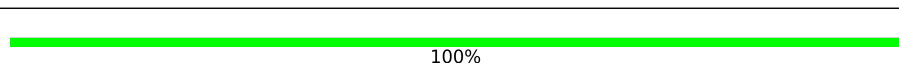
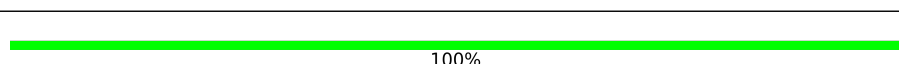
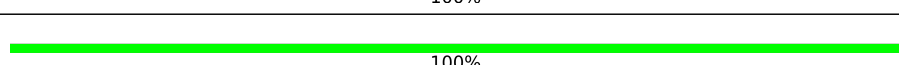
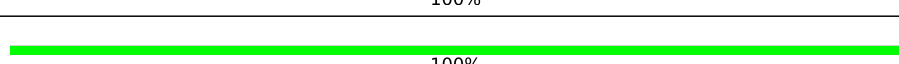
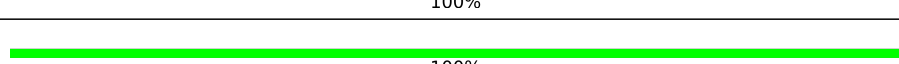
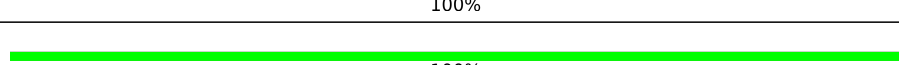
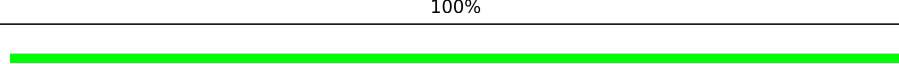
The reported resolution of this entry is 17.00 Å.

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.


















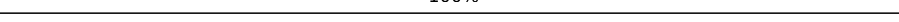
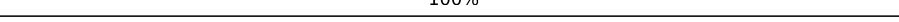
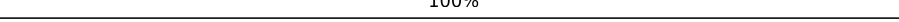
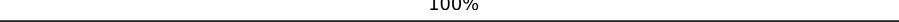
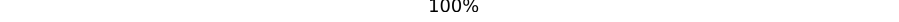
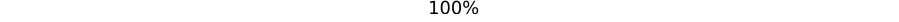
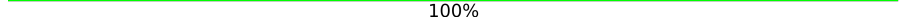
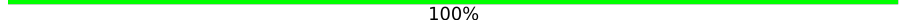


Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297

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	1-A	135	 10% 100%
1	1-B	135	 14% 100%
1	10-A	135	 100%
1	10-B	135	 100%
1	11-A	135	 100%
1	11-B	135	 100%
1	12-A	135	 100%
1	12-B	135	 100%
1	13-A	135	 100%
1	13-B	135	 100%


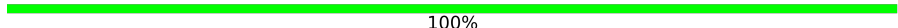
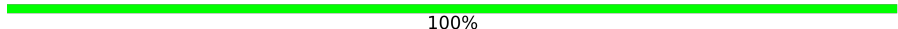
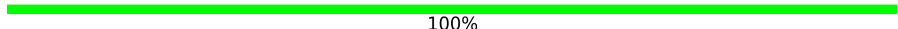
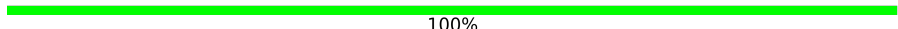




















Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	14-A	135	 100%
1	14-B	135	 100%
1	15-A	135	 100%
1	15-B	135	 100%
1	16-A	135	 100%
1	16-B	135	 100%
1	17-A	135	 100%
1	17-B	135	 100%
1	18-A	135	 100%
1	18-B	135	 100%
1	19-A	135	 100%
1	19-B	135	 100%
1	2-A	135	 100%
1	2-B	135	 100%
1	20-A	135	 100%
1	20-B	135	 100%
1	3-A	135	 100%
1	3-B	135	 100%
1	4-A	135	 100%
1	4-B	135	 100%
1	5-A	135	 100%
1	5-B	135	 100%
1	6-A	135	 100%
1	6-B	135	 100%
1	7-A	135	 100%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	7-B	135	 100%
1	8-A	135	 100%
1	8-B	135	 100%
1	9-A	135	 100%
1	9-B	135	 100%
2	1-C	523	 5% 74% 26%
2	10-C	523	 74% 26%
2	11-C	523	 74% 26%
2	12-C	523	 74% 26%
2	13-C	523	 74% 26%
2	14-C	523	 74% 26%
2	15-C	523	 74% 26%
2	16-C	523	 74% 26%
2	17-C	523	 74% 26%
2	18-C	523	 74% 26%
2	19-C	523	 74% 26%
2	2-C	523	 74% 26%
2	20-C	523	 74% 26%
2	3-C	523	 74% 26%
2	4-C	523	 74% 26%
2	5-C	523	 74% 26%
2	6-C	523	 74% 26%
2	7-C	523	 74% 26%
2	8-C	523	 74% 26%
2	9-C	523	 74% 26%

2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 13160 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 PLEUROTOLYSIN A.

Mol	Chain	Residues	Atoms		AltConf	Trace
1	1-A	135	Total 135	C 135	0	135
1	2-A	135	Total 135	C 135	0	135
1	3-A	135	Total 135	C 135	0	135
1	4-A	135	Total 135	C 135	0	135
1	5-A	135	Total 135	C 135	0	135
1	6-A	135	Total 135	C 135	0	135
1	7-A	135	Total 135	C 135	0	135
1	8-A	135	Total 135	C 135	0	135
1	9-A	135	Total 135	C 135	0	135
1	10-A	135	Total 135	C 135	0	135
1	11-A	135	Total 135	C 135	0	135
1	12-A	135	Total 135	C 135	0	135
1	13-A	135	Total 135	C 135	0	135
1	14-A	135	Total 135	C 135	0	135
1	15-A	135	Total 135	C 135	0	135
1	16-A	135	Total 135	C 135	0	135
1	17-A	135	Total 135	C 135	0	135

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf	Trace
1	18-A	135	Total C 135 135	0	135
1	19-A	135	Total C 135 135	0	135
1	20-A	135	Total C 135 135	0	135
1	1-B	135	Total C 135 135	0	135
1	2-B	135	Total C 135 135	0	135
1	3-B	135	Total C 135 135	0	135
1	4-B	135	Total C 135 135	0	135
1	5-B	135	Total C 135 135	0	135
1	6-B	135	Total C 135 135	0	135
1	7-B	135	Total C 135 135	0	135
1	8-B	135	Total C 135 135	0	135
1	9-B	135	Total C 135 135	0	135
1	10-B	135	Total C 135 135	0	135
1	11-B	135	Total C 135 135	0	135
1	12-B	135	Total C 135 135	0	135
1	13-B	135	Total C 135 135	0	135
1	14-B	135	Total C 135 135	0	135
1	15-B	135	Total C 135 135	0	135
1	16-B	135	Total C 135 135	0	135
1	17-B	135	Total C 135 135	0	135
1	18-B	135	Total C 135 135	0	135

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf	Trace
1	19-B	135	Total C 135 135	0	135
1	20-B	135	Total C 135 135	0	135

- Molecule 2 is a protein called PLEUROTOLYSIN B.

Mol	Chain	Residues	Atoms	AltConf	Trace
2	1-C	388	Total C 388 388	0	388
2	2-C	388	Total C 388 388	0	388
2	3-C	388	Total C 388 388	0	388
2	4-C	388	Total C 388 388	0	388
2	5-C	388	Total C 388 388	0	388
2	6-C	388	Total C 388 388	0	388
2	7-C	388	Total C 388 388	0	388
2	8-C	388	Total C 388 388	0	388
2	9-C	388	Total C 388 388	0	388
2	10-C	388	Total C 388 388	0	388
2	11-C	388	Total C 388 388	0	388
2	12-C	388	Total C 388 388	0	388
2	13-C	388	Total C 388 388	0	388
2	14-C	388	Total C 388 388	0	388
2	15-C	388	Total C 388 388	0	388
2	16-C	388	Total C 388 388	0	388
2	17-C	388	Total C 388 388	0	388

Continued on next page...

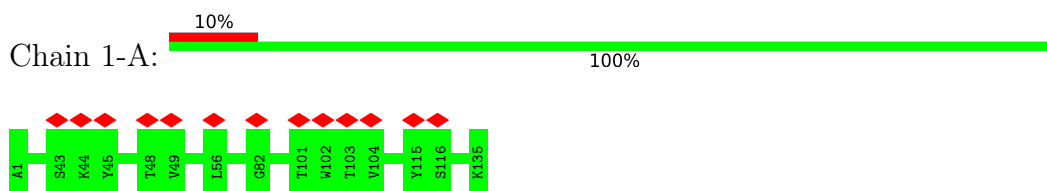
Continued from previous page...

Mol	Chain	Residues	Atoms		AltConf	Trace
2	18-C	388	Total 388	C 388	0	388
2	19-C	388	Total 388	C 388	0	388
2	20-C	388	Total 388	C 388	0	388

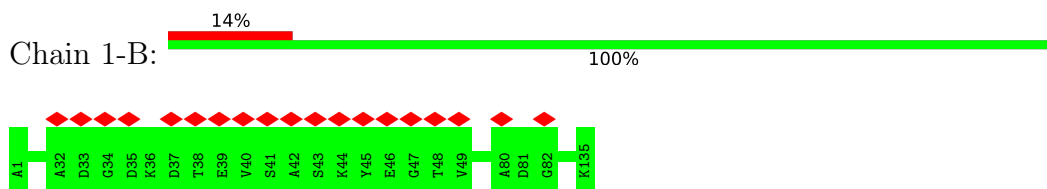
3 Residue-property plots

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

- Molecule 1: PLEUROTOLYSIN A



- Molecule 1: PLEUROTOLYSIN A



- Molecule 1: PLEUROTOLYSIN A



There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A



There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A



There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A



There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 4-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 4-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 5-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 5-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 6-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 6-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 7-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 7-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 8-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 8-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 9-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 9-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 10-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 10-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 11-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 11-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 12-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 12-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 13-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 13-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 14-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 14-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 15-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 15-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 16-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 16-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 17-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 17-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 18-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 18-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 19-A:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 19-B:  100%

There are no outlier residues recorded for this chain.

- Molecule 1: PLEUROTOLYSIN A

Chain 20-A:  100%


There are no outlier residues recorded for this chain.

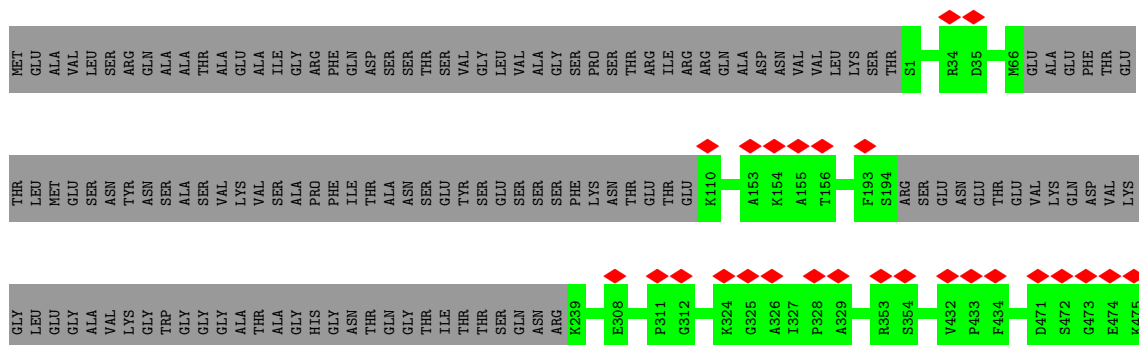
- Molecule 1: PLEUROTOLYSIN A

Chain 20-B:  100%


There are no outlier residues recorded for this chain.

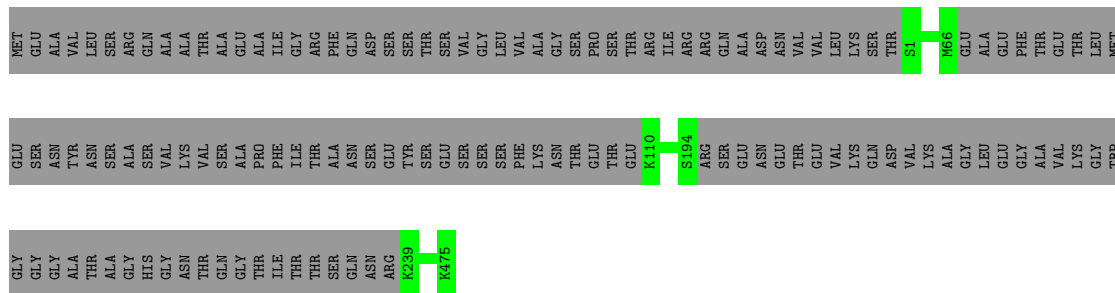
- Molecule 2: PLEUROTOLYSIN B

Chain 1-C:  5% 74% 26%

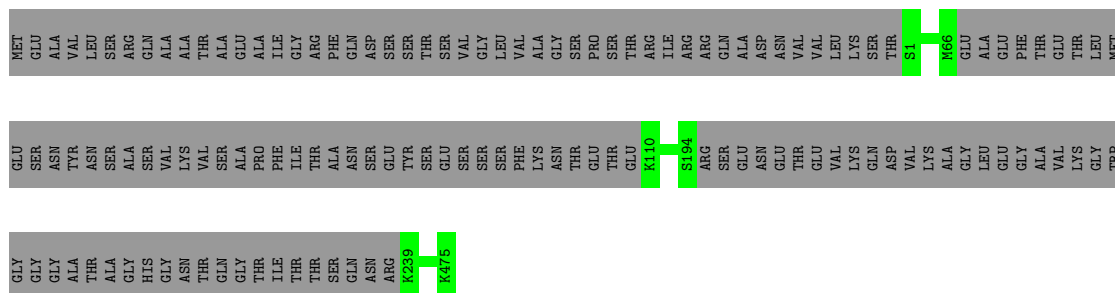
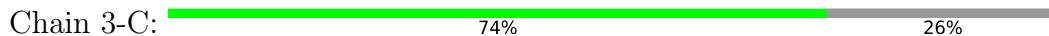


- Molecule 2: PLEUROTOLYSIN B

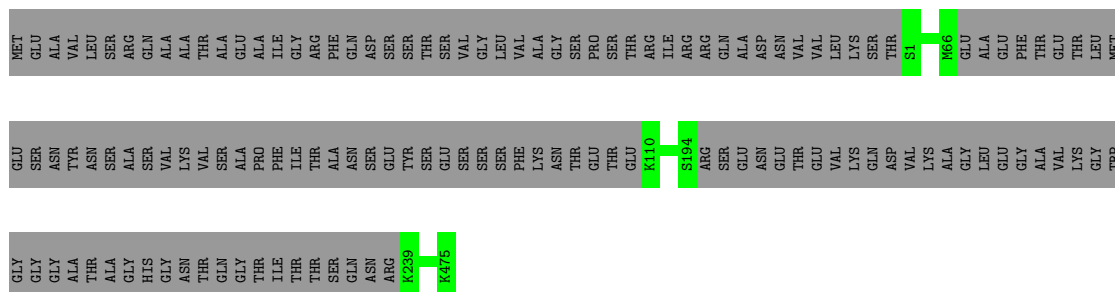
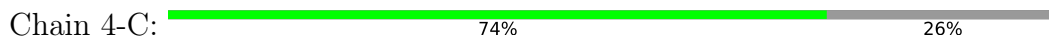
Chain 2-C:  74% 26%



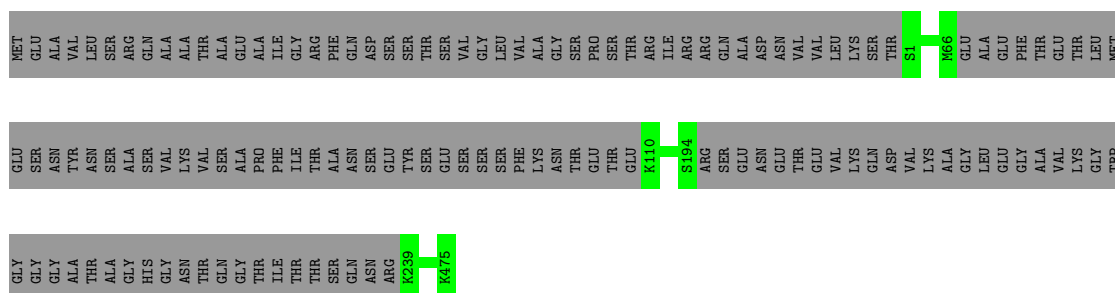
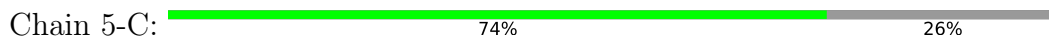
• Molecule 2: PLEUROTOLYSIN B



• Molecule 2: PLEUROTOLYSIN B




• Molecule 2: PLEUROTOLYSIN B



• Molecule 2: PLEUROTOLYSIN B

GLY
GLY
GLY
ALA
THR
ALA
GLY
HIS
GLY
ASN
THR
GLN
GLY
THR
ILE
THR
SER
GLN
ASN
ARG
K239
K475

• Molecule 2: PLEUROTOLYSIN B


Chain 14-C:  74% 26%

MET
GLU
ALA
VAL
LEU
SER
ARG
GLN
ALA
THR
VAL
SER
ALA
GLY
THR
VAL
SER
ALA
GLY
THR
ILE
GLY
ARG
PHE
GLN
ASP
SER
GLU
TYR
SER
THR
SER
VAL
SER
GLY
LEU
VAL
PHE
VAL
LYS
ALA
GLY
SER
THR
GLU
THR
SER
THR
GLU
ARG
ILE
ARG
ARG
GLN
ALA
ASP
ASN
GLU
THR
VAL
VAL
LEU
LYS
SER
THR
S1
H66

GLU
SER
ASN
TYR
ASN
SER
ALA
SER
VAL
VAL
SER
ALA
PRO
PHE
ILE
THR
ARG
THR
ALA
GLN
ASP
SER
GLU
TYR
SER
THR
SER
VAL
SER
SER
LEU
VAL
PHE
VAL
LYS
ALA
GLY
SER
THR
GLU
THR
SER
THR
GLU
K110
S194
ARG

GLY
GLY
GLY
THR
ALA
GLY
HIS
GLY
ASN
THR
GLN
GLY
THR
ILE
THR
SER
GLN
ASN
ARG
K239
K475

• Molecule 2: PLEUROTOLYSIN B


Chain 15-C:  74% 26%

MET
GLU
ALA
VAL
LEU
SER
ARG
GLN
ALA
THR
VAL
SER
ALA
GLY
THR
VAL
SER
ALA
PRO
PHE
ILE
THR
ARG
THR
ALA
GLN
ASP
SER
GLU
TYR
SER
THR
SER
VAL
SER
SER
LEU
VAL
PHE
VAL
LYS
ALA
GLY
SER
THR
GLU
THR
SER
THR
GLU
K110
S194
ARG

GLU
SER
ASN
TYR
ASN
SER
ALA
SER
VAL
VAL
SER
ALA
PRO
PHE
ILE
THR
ARG
THR
ALA
GLN
ASP
SER
GLU
TYR
SER
THR
SER
VAL
SER
SER
LEU
VAL
PHE
VAL
LYS
ALA
GLY
SER
THR
GLU
THR
SER
THR
GLU
K110
S194
ARG

GLY
GLY
GLY
THR
ALA
GLY
HIS
GLY
ASN
THR
GLN
GLY
THR
ILE
THR
SER
GLN
ASN
ARG
K239
K475

• Molecule 2: PLEUROTOLYSIN B


Chain 16-C:  74% 26%

MET
GLU
ALA
VAL
LEU
SER
ARG
GLN
ALA
THR
VAL
SER
ALA
GLY
THR
VAL
SER
ALA
PRO
PHE
ILE
THR
ARG
THR
ALA
GLN
ASP
SER
GLU
TYR
SER
THR
SER
VAL
SER
SER
LEU
VAL
PHE
VAL
LYS
ALA
GLY
SER
THR
GLU
THR
SER
THR
GLU
K110
S194
ARG

GLU
SER
ASN
TYR
ASN
SER
ALA
SER
VAL
VAL
SER
ALA
PRO
PHE
ILE
THR
ARG
THR
ALA
GLN
ASP
SER
GLU
TYR
SER
THR
SER
VAL
SER
SER
LEU
VAL
PHE
VAL
LYS
ALA
GLY
SER
THR
GLU
THR
SER
THR
GLU
K110
S194
ARG

GLY
GLY
GLY
THR
ALA
GLY
HIS
GLY
ASN
THR
GLN
GLY
THR
ILE
THR
SER
GLN
ASN
ARG
K239
K475

• Molecule 2: PLEUROTOLYSIN B

Chain 17-C:  74% 26%

MET
GLU
ALA
VAL
LEU
SER
ARG
GLN
ALA
THR
VAL
SER
ALA
GLY
THR
VAL
SER
ALA
PRO
PHE
ILE
THR
ARG
THR
ALA
GLN
ASP
SER
GLU
TYR
SER
THR
SER
VAL
SER
SER
LEU
VAL
PHE
VAL
LYS
ALA
GLY
SER
THR
GLU
THR
SER
THR
GLU
K110
S194
ARG

GLU	SER	ASN	TYR	ASN	ASN	ALA	SER	VAL	LYS	VAL	SER	ALA	PRO	PHE	ILE	THR	THR	ALA	ASN	SER	GLU	TYR	SER	GLU	SER	SER	SER	PHE	LYS	ASN	THR	GLU	THR	THR	GLU	K110	S194	ARG	SER	GLU	ASN	ASN	GLU	THR	VAL	VAL	GLN	ASP	VAL	VAL	LYS	ALA	GLY	LEU	GLU	GLY	GLY	VAL	VAL	LYS	TRP
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-------------	-------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

GLY	GLY	GLY	ALA	THR	GLY	HIS	GLN	ASN	THR	THR	GLN	GLY	THR	THR	ILE	THR	THR	SER	GLN	ASN	SER	K239	K475
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-------------	-------------

• Molecule 2: PLEUROTOLYSIN B

Chain 18-C: 74% 26%

MET	GLU	ALA	VAL	LEU	SER	ARG	GLN	ALA	ALA	THR	THR	ALA	ALA	ALA	ILE	ILE	THR	THR	PHE	GLN	ASP	SER	GLU	SER	VAL	GLY	LEU	VAL	VAL	ALA	GLY	SER	PRO	THR	THR	THR	GLU	K110	S194	ARG	ARG	GLN	ALA	ASP	ASN	GLU	THR	VAL	VAL	LEU	LYS	SER	GLN	THR	S1	H66	GLU	ALA	LEU	GLU	GLY	PHE	THR	GLU	THR	LEU	TRP
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-------------	-------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----------	------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

GLU	SER	ASN	TYR	ASN	ALA	SER	VAL	LYS	VAL	SER	ALA	PRO	PHE	ILE	THR	THR	ALA	ASN	SER	GLU	TYR	SER	GLU	SER	SER	SER	PHE	LYS	ASN	THR	GLU	THR	THR	GLU	K110	S194	ARG	SER	GLU	ASN	ASN	GLU	THR	VAL	VAL	LEU	VAL	GLN	SER	GLN	THR	S1	H66	GLY	LEU	GLU	GLY	GLY	ALA	VAL	VAL	LYS	GLY	LEU	TRP
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-------------	-------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----------	------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

GLY	GLY	GLY	ALA	THR	GLY	HIS	GLN	ASN	THR	THR	GLN	GLY	THR	THR	ILE	THR	THR	SER	GLN	ASN	SER	K239	K475
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-------------	-------------

• Molecule 2: PLEUROTOLYSIN B

Chain 19-C: 74% 26%

MET	GLU	ALA	VAL	LEU	SER	ARG	GLN	ALA	ALA	THR	THR	ALA	ALA	ALA	ILE	ILE	THR	THR	PHE	GLN	ASP	SER	GLU	SER	VAL	GLY	LEU	VAL	VAL	ALA	GLY	SER	PRO	THR	THR	THR	GLU	K110	S194	ARG	ARG	GLN	ALA	ASP	ASN	GLU	THR	VAL	VAL	LEU	LYS	SER	GLN	THR	S1	H66	GLU	ALA	LEU	GLU	GLY	PHE	THR	GLU	THR	LEU	TRP
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-------------	-------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----------	------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

GLU	SER	ASN	TYR	ASN	ALA	SER	VAL	LYS	VAL	SER	ALA	PRO	PHE	ILE	THR	THR	ALA	ASN	SER	GLU	TYR	SER	GLU	SER	SER	SER	PHE	LYS	ASN	THR	GLU	THR	THR	GLU	K110	S194	ARG	SER	GLU	ASN	ASN	GLU	THR	VAL	VAL	LEU	VAL	GLN	SER	GLN	THR	S1	H66	GLY	LEU	GLU	GLY	GLY	ALA	VAL	VAL	LYS	GLY	LEU	TRP
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-------------	-------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----------	------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

GLY	GLY	GLY	ALA	THR	GLY	HIS	GLN	ASN	THR	THR	GLN	GLY	THR	THR	ILE	THR	THR	SER	GLN	ASN	SER	K239	K475
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-------------	-------------

• Molecule 2: PLEUROTOLYSIN B

Chain 20-C: 74% 26%

MET	GLU	ALA	VAL	LEU	SER	ARG	GLN	ALA	ALA	THR	THR	ALA	ALA	ALA	ILE	ILE	THR	THR	PHE	GLN	ASP	SER	GLU	SER	VAL	GLY	LEU	VAL	VAL	ALA	GLY	SER	PRO	THR	THR	THR	GLU	K110	S194	ARG	ARG	GLN	ALA	ASP	ASN	GLU	THR	VAL	VAL	LEU	LYS	SER	GLN	THR	S1	H66	GLU	ALA	LEU	GLU	GLY	PHE	THR	GLU	THR	LEU	TRP
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-------------	-------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----------	------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

GLU	SER	ASN	TYR	ASN	ALA	SER	VAL	LYS	VAL	SER	ALA	PRO	PHE	ILE	THR	THR	ALA	ASN	SER	GLU	TYR	SER	GLU	SER	SER	SER	PHE	LYS	ASN	THR	GLU	THR	THR	GLU	K110	S194	ARG	SER	GLU	ASN	ASN	GLU	THR	VAL	VAL	LEU	VAL	GLN	SER	GLN	THR	S1	H66	GLY	LEU	GLU	GLY	GLY	ALA	VAL	VAL	LYS	GLY	LEU	TRP
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-------------	-------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----------	------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

GLY	GLY	GLY	ALA	THR	GLY	HIS	GLN	ASN	THR	THR	GLN	GLY	THR	THR	ILE	THR	THR	SER	GLN	ASN	SER	K239	K475
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-------------	-------------

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C13	Depositor
Number of particles used	722	Depositor
Resolution determination method	Not provided	
CTF correction method	ESTIMATED WITH CTFFIND3, THEN PHASES FLIPPED FOR EACH PARTICLE	Depositor
Microscope	FEI POLARA 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	25	Depositor
Minimum defocus (nm)	700	Depositor
Maximum defocus (nm)	3700	Depositor
Magnification	76148	Depositor
Image detector	GATAN ULTRASCAN 4000 (4k x 4k)	Depositor
Maximum map value	0.003	Depositor
Minimum map value	-0.002	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.000	Depositor
Recommended contour level	0.0002	Depositor
Map size (Å)	400.0, 400.0, 400.0	wwPDB
Map dimensions	200, 200, 200	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	2.0, 2.0, 2.0	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).

There are no protein, RNA or DNA chains available to summarize Z scores of covalent bonds and angles.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1-A	135	0	0	0	0
1	1-B	135	0	0	0	0
1	2-A	135	0	0	0	0
1	2-B	135	0	0	0	0
1	3-A	135	0	0	0	0
1	3-B	135	0	0	0	0
1	4-A	135	0	0	0	0
1	4-B	135	0	0	0	0
1	5-A	135	0	0	0	0
1	5-B	135	0	0	0	0
1	6-A	135	0	0	0	0
1	6-B	135	0	0	0	0
1	7-A	135	0	0	0	0
1	7-B	135	0	0	0	0
1	8-A	135	0	0	0	0
1	8-B	135	0	0	0	0
1	9-A	135	0	0	0	0
1	9-B	135	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	10-A	135	0	0	0	0
1	10-B	135	0	0	0	0
1	11-A	135	0	0	0	0
1	11-B	135	0	0	0	0
1	12-A	135	0	0	0	0
1	12-B	135	0	0	0	0
1	13-A	135	0	0	0	0
1	13-B	135	0	0	0	0
1	14-A	135	0	0	0	0
1	14-B	135	0	0	0	0
1	15-A	135	0	0	0	0
1	15-B	135	0	0	0	0
1	16-A	135	0	0	0	0
1	16-B	135	0	0	0	0
1	17-A	135	0	0	0	0
1	17-B	135	0	0	0	0
1	18-A	135	0	0	0	0
1	18-B	135	0	0	0	0
1	19-A	135	0	0	0	0
1	19-B	135	0	0	0	0
1	20-A	135	0	0	0	0
1	20-B	135	0	0	0	0
2	1-C	388	0	0	0	0
2	2-C	388	0	0	0	0
2	3-C	388	0	0	0	0
2	4-C	388	0	0	0	0
2	5-C	388	0	0	0	0
2	6-C	388	0	0	0	0
2	7-C	388	0	0	0	0
2	8-C	388	0	0	0	0
2	9-C	388	0	0	1	0
2	10-C	388	0	0	0	0
2	11-C	388	0	0	0	0
2	12-C	388	0	0	0	0
2	13-C	388	0	0	0	0
2	14-C	388	0	0	0	0
2	15-C	388	0	0	0	0
2	16-C	388	0	0	0	0
2	17-C	388	0	0	0	0
2	18-C	388	0	0	0	0
2	19-C	388	0	0	0	0
2	20-C	388	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	13160	0	0	1	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 0.

All (1) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:183:GLY:CA	2:C:248:GLY:CA	2.99	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

There are no protein backbone outliers to report in this entry.

5.3.2 Protein sidechains [i](#)

There are no protein residues with a non-rotameric sidechain to report in this entry.

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 monosaccharides 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](#)

There are no chain breaks in this entry.

6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-2795. 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](#)

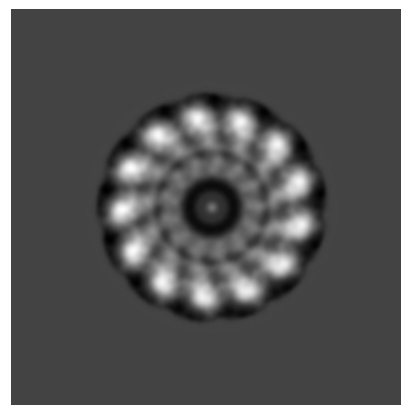
6.1.1 Primary map



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: 100



Y Index: 100



Z Index: 100

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: 114



Y Index: 80



Z Index: 104

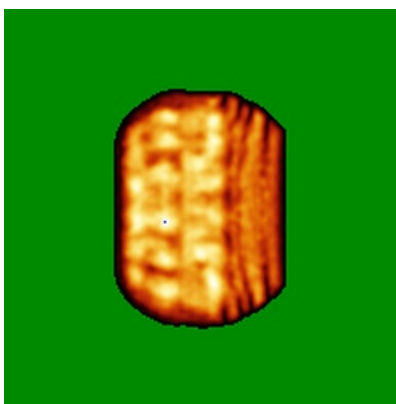
The images above show the largest variance slices of the map in three orthogonal directions.

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

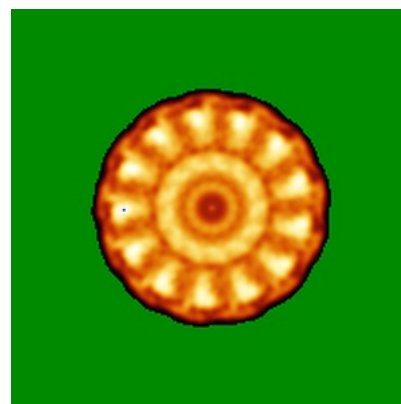
6.4.1 Primary map



X



Y

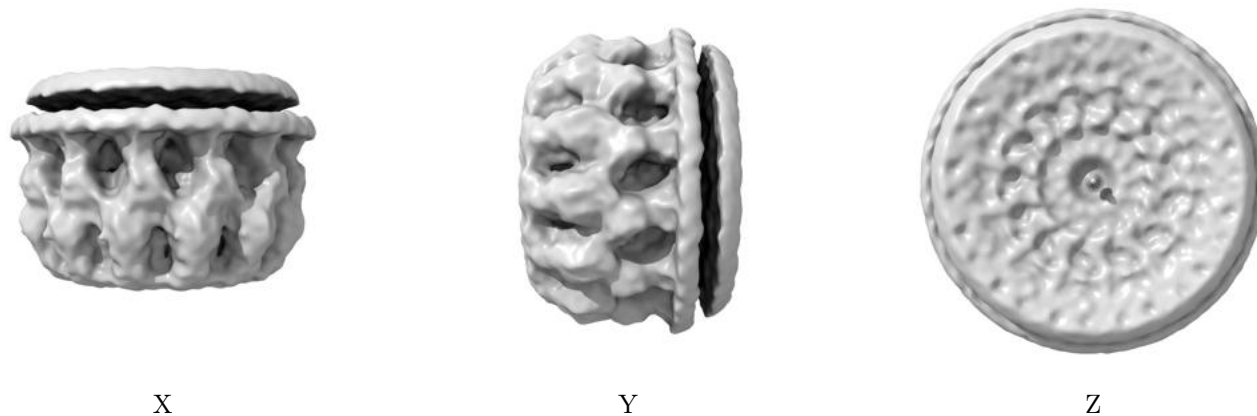


Z

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



The images above show the 3D surface view of the map at the recommended contour level 0.0002. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

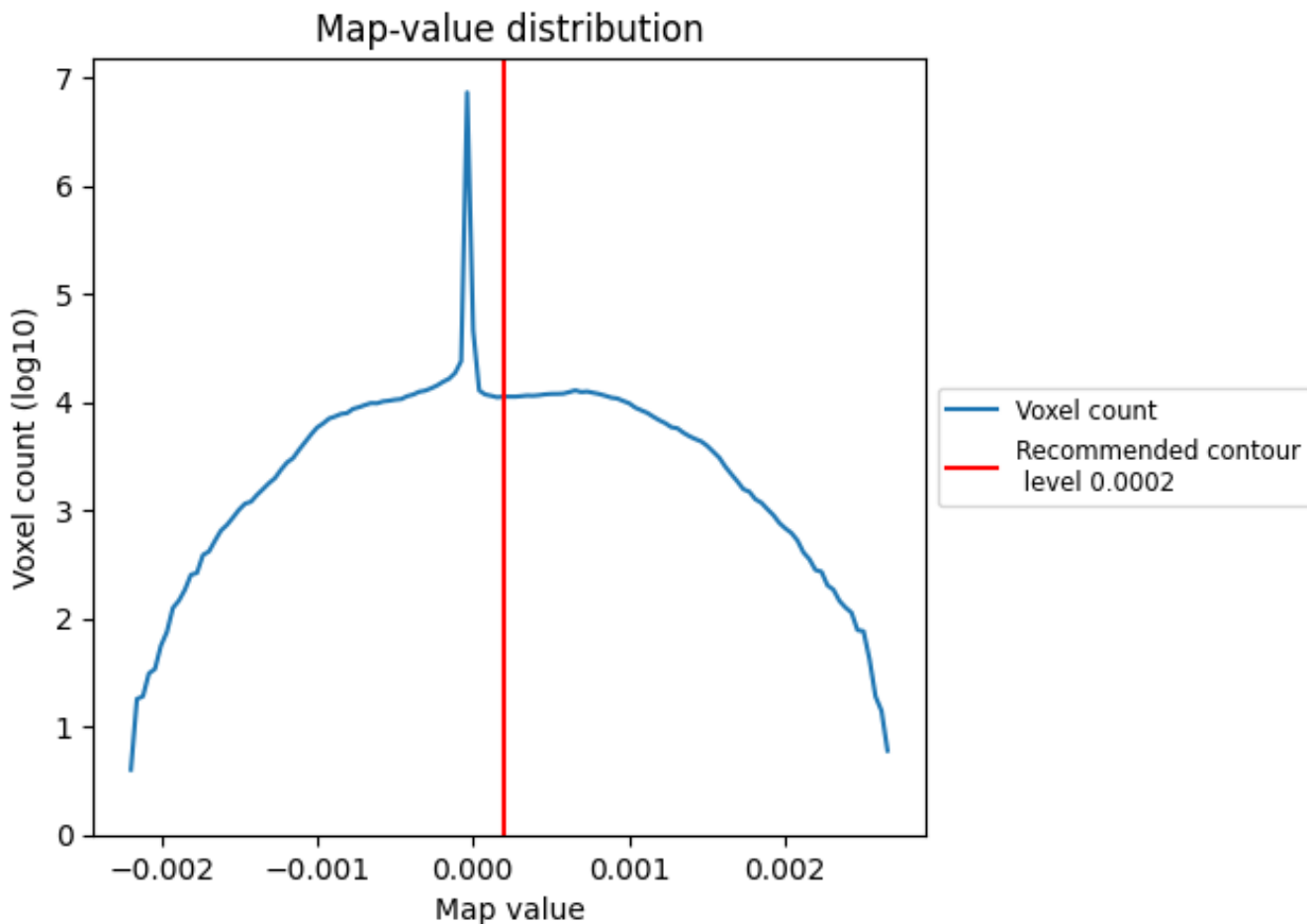
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

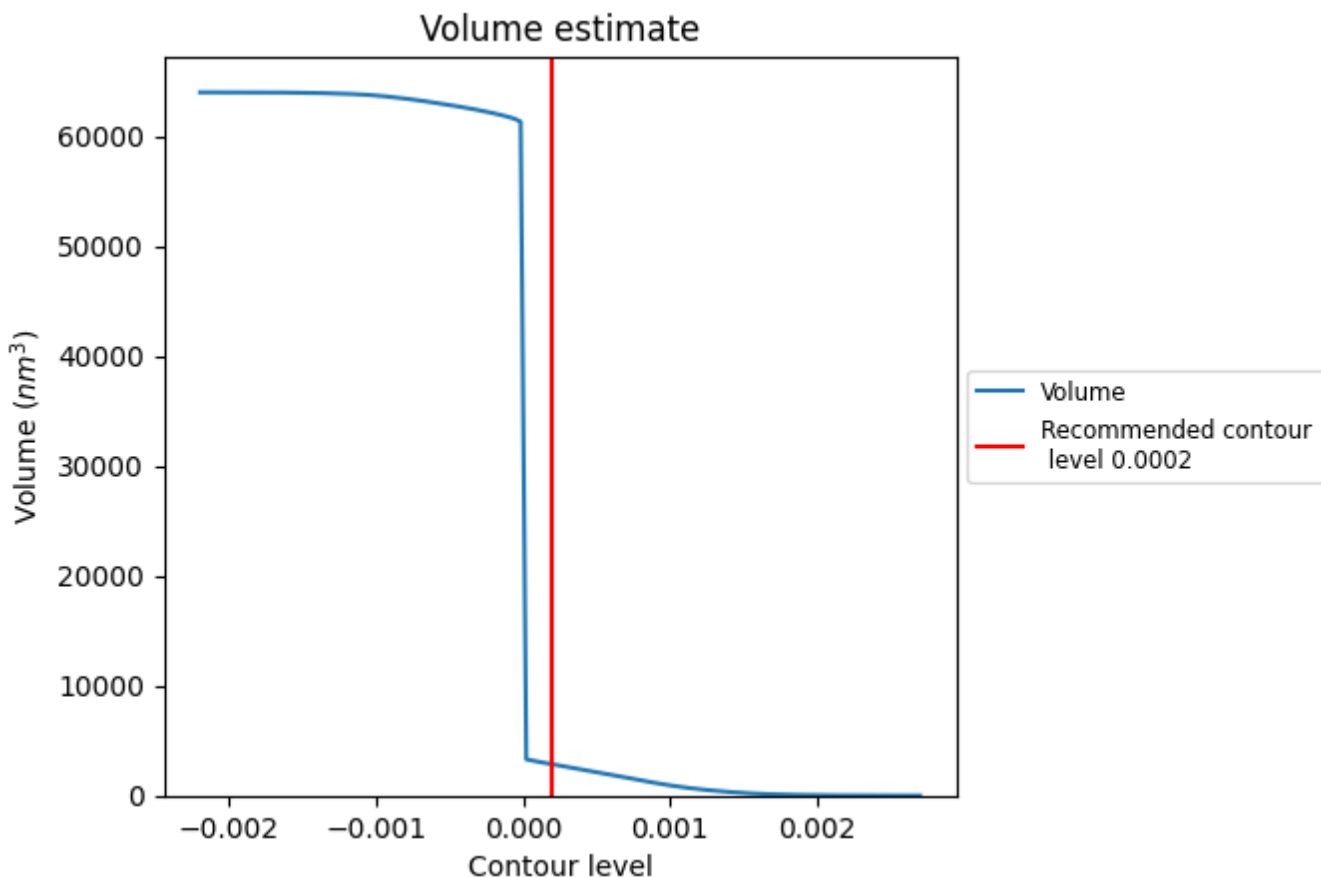
This section contains the results of statistical analysis of the map.

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.

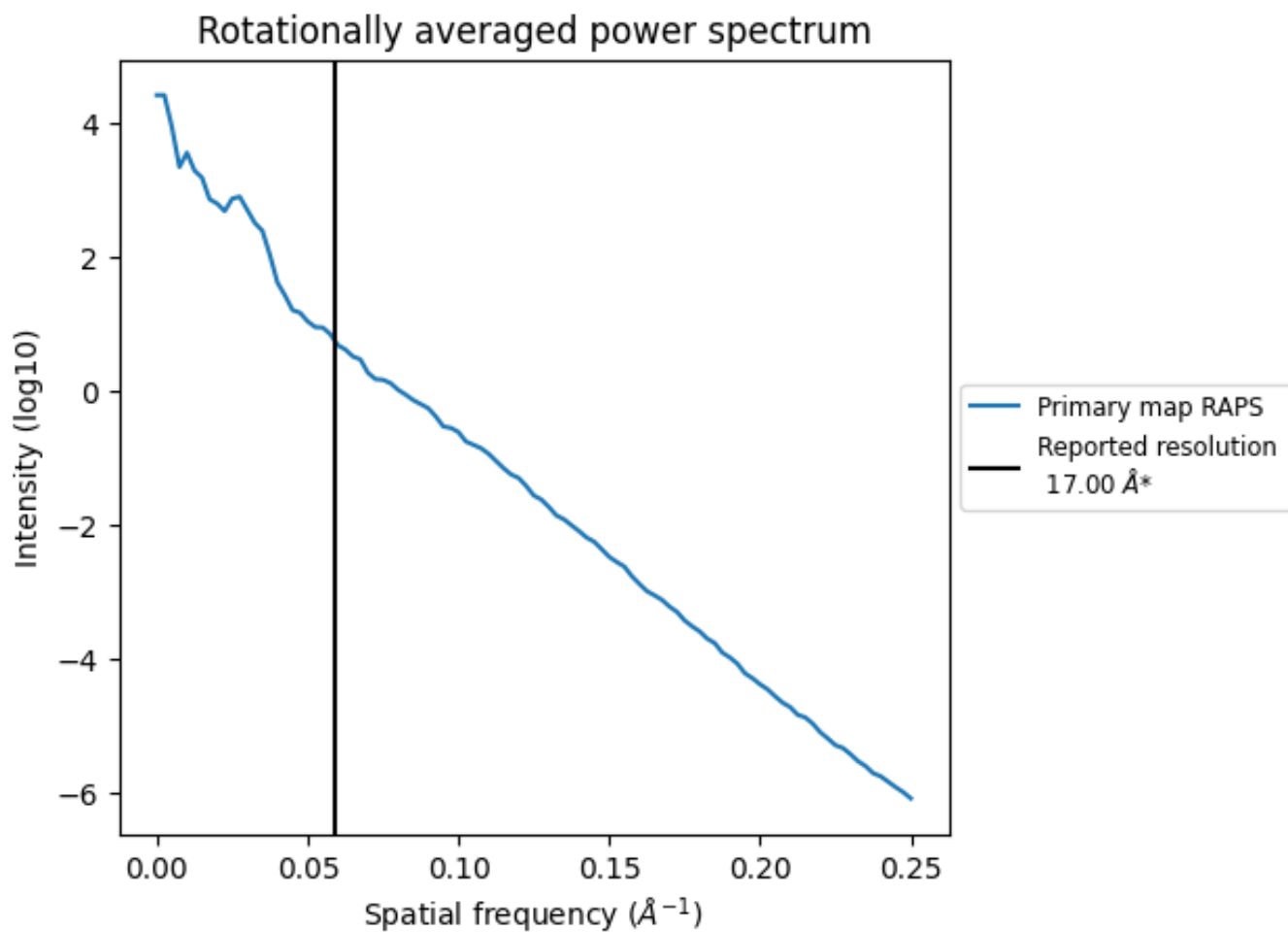
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2858 nm³; this corresponds to an approximate mass of 2582 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 0.059 Å⁻¹

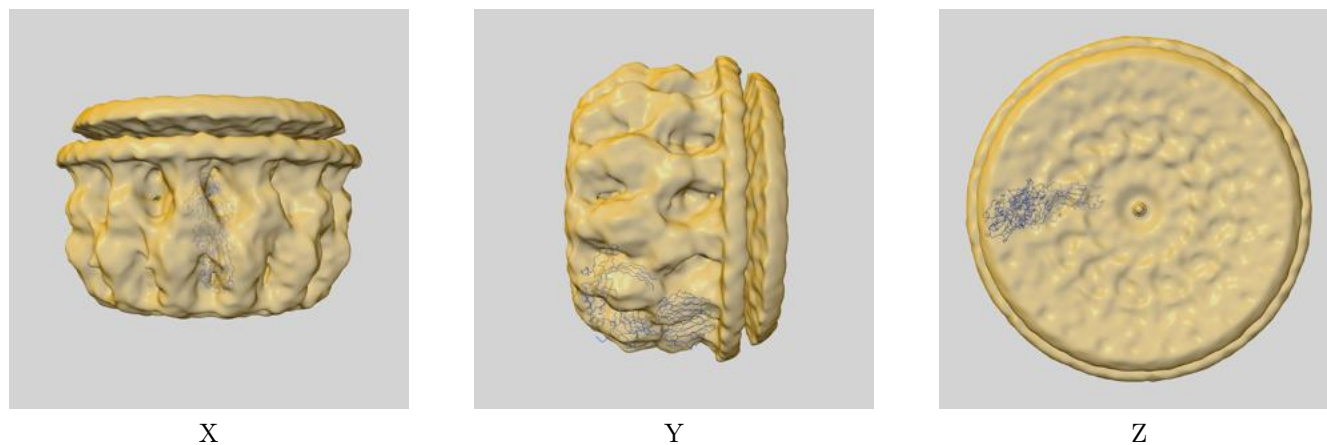
8 Fourier-Shell correlation

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-2795 and PDB model 4V3M. Per-residue inclusion information can be found in section 3 on page 9.

9.1 Map-model overlay [i](#)

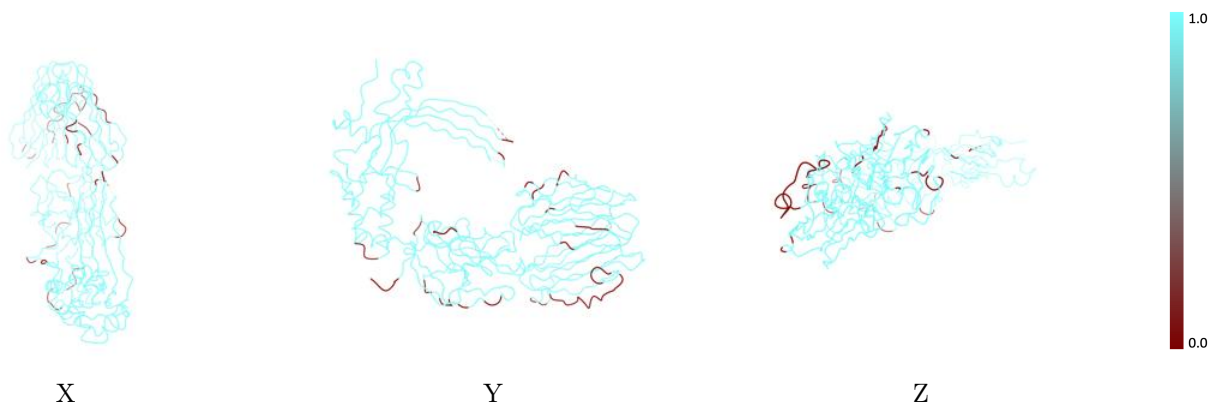


The images above show the 3D surface view of the map at the recommended contour level 0.0002 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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

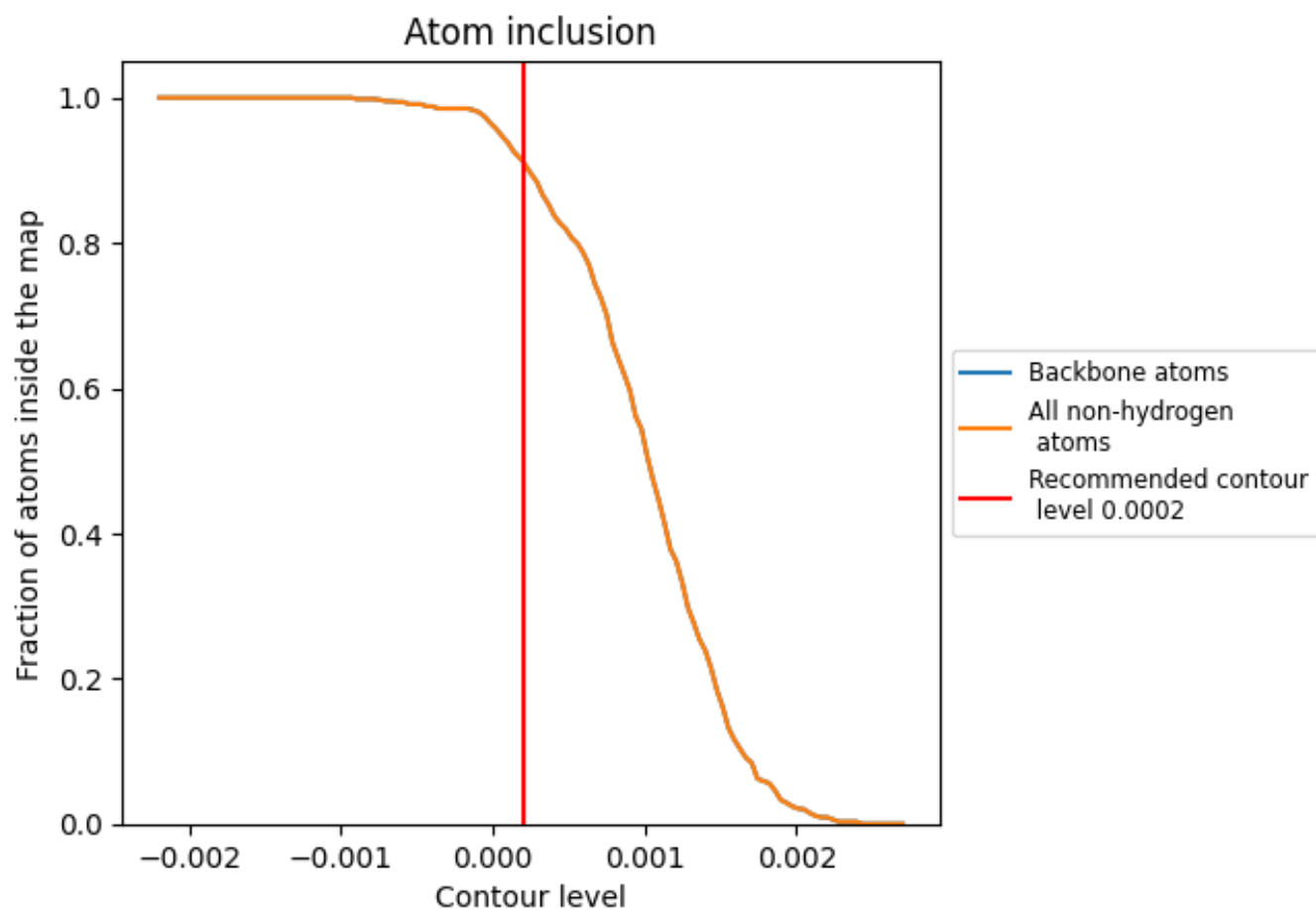
This section was not generated.

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0002).





9.4 Atom inclusion [i](#)



At the recommended contour level, 91% of all backbone atoms, 91% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.0002) and Q-score for the entire model and for each chain.

Chain	Atom inclusion
All	 0.9120
A	 0.9040
B	 0.8590
C	 0.9330

