WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB EM Validation Report (i)

Jun 25, 2025 – 02:50 pm BST

PDB ID	:	7P5V / pdb_00007p5v
EMDB ID	:	EMD-13202
Title	:	Structure of homomeric LRRC8A Volume-Regulated Anion Channel in complex with synthetic nanobody Sb1
Authors	:	Deneka, D.; Rutz, S.; Sawicka, M.
Deposited on	:	2021-07-15
Resolution	:	3.06 Å(reported)

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 (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references (i)) were used in the production of this report:

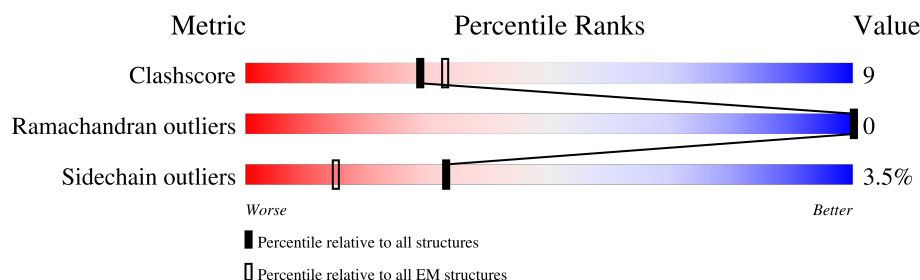|		
EMDB validation analysis	:	0.0.1.dev118
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline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

1   Overall quality at a glance ⓘ

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

The reported resolution of this entry is 3.06 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	Percentile Ranks	Value
Clashscore		9
Ramachandran outliers		0
Sidechain outliers		3.5%

Worse ... *Better*

▮ Percentile relative to all structures

▯ Percentile relative to all EM structures

Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
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 <=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	A	810	8% — 64% 23% • 11%
1	B	810	5% — 67% 22% • 10%
1	C	810	8% — 66% 21% • 11%
1	D	810	• — 69% 20% • 10%
1	E	810	7% — 65% 22% • 11%
1	F	810	5% — 67% 22% • 10%
2	G	144	39% — 60% 19% 21%
2	H	144	32% — 56% 22% • 21%

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Mol	Chain	Length	Quality of chain
2	I	144	40% 60% 19% 21%
2	J	144	33% 62% 16% • 21%
2	K	144	41% 56% 23% • 21%
2	L	144	28% 61% 16% • 21%

2 Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 41274 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 Volume-regulated anion channel subunit LRRC8A.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	718	Total	C	N	O	S	0	0
			5922	3853	997	1047	25		
1	B	732	Total	C	N	O	S	0	0
			6030	3916	1018	1071	25		
1	C	718	Total	C	N	O	S	0	0
			5922	3853	997	1047	25		
1	D	732	Total	C	N	O	S	0	0
			6030	3916	1018	1071	25		
1	E	718	Total	C	N	O	S	0	0
			5922	3853	997	1047	25		
1	F	732	Total	C	N	O	S	0	0
			6030	3916	1018	1071	25		

There are 96 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MET	-	initiating methionine	UNP Q80WG5
A	2	ILE	-	expression tag	UNP Q80WG5
A	3	PRO	-	expression tag	UNP Q80WG5
A	4	VAL	-	expression tag	UNP Q80WG5
A	5	THR	-	expression tag	UNP Q80WG5
A	6	GLU	-	expression tag	UNP Q80WG5
A	7	LEU	-	expression tag	UNP Q80WG5
A	8	ARG	-	expression tag	UNP Q80WG5
A	9	TYR	-	expression tag	UNP Q80WG5
A	10	PHE	-	expression tag	UNP Q80WG5
A	11	ALA	-	expression tag	UNP Q80WG5
A	12	ASP	-	expression tag	UNP Q80WG5
A	13	THR	-	expression tag	UNP Q80WG5
A	14	GLN	-	expression tag	UNP Q80WG5
A	809	GLN	-	expression tag	UNP Q80WG5
A	810	ALA	-	expression tag	UNP Q80WG5
B	1	MET	-	initiating methionine	UNP Q80WG5
B	2	ILE	-	expression tag	UNP Q80WG5

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Chain	Residue	Modelled	Actual	Comment	Reference
B	3	PRO	-	expression tag	UNP Q80WG5
B	4	VAL	-	expression tag	UNP Q80WG5
B	5	THR	-	expression tag	UNP Q80WG5
B	6	GLU	-	expression tag	UNP Q80WG5
B	7	LEU	-	expression tag	UNP Q80WG5
B	8	ARG	-	expression tag	UNP Q80WG5
B	9	TYR	-	expression tag	UNP Q80WG5
B	10	PHE	-	expression tag	UNP Q80WG5
B	11	ALA	-	expression tag	UNP Q80WG5
B	12	ASP	-	expression tag	UNP Q80WG5
B	13	THR	-	expression tag	UNP Q80WG5
B	14	GLN	-	expression tag	UNP Q80WG5
B	809	GLN	-	expression tag	UNP Q80WG5
B	810	ALA	-	expression tag	UNP Q80WG5
C	1	MET	-	initiating methionine	UNP Q80WG5
C	2	ILE	-	expression tag	UNP Q80WG5
C	3	PRO	-	expression tag	UNP Q80WG5
C	4	VAL	-	expression tag	UNP Q80WG5
C	5	THR	-	expression tag	UNP Q80WG5
C	6	GLU	-	expression tag	UNP Q80WG5
C	7	LEU	-	expression tag	UNP Q80WG5
C	8	ARG	-	expression tag	UNP Q80WG5
C	9	TYR	-	expression tag	UNP Q80WG5
C	10	PHE	-	expression tag	UNP Q80WG5
C	11	ALA	-	expression tag	UNP Q80WG5
C	12	ASP	-	expression tag	UNP Q80WG5
C	13	THR	-	expression tag	UNP Q80WG5
C	14	GLN	-	expression tag	UNP Q80WG5
C	809	GLN	-	expression tag	UNP Q80WG5
C	810	ALA	-	expression tag	UNP Q80WG5
D	1	MET	-	initiating methionine	UNP Q80WG5
D	2	ILE	-	expression tag	UNP Q80WG5
D	3	PRO	-	expression tag	UNP Q80WG5
D	4	VAL	-	expression tag	UNP Q80WG5
D	5	THR	-	expression tag	UNP Q80WG5
D	6	GLU	-	expression tag	UNP Q80WG5
D	7	LEU	-	expression tag	UNP Q80WG5
D	8	ARG	-	expression tag	UNP Q80WG5
D	9	TYR	-	expression tag	UNP Q80WG5
D	10	PHE	-	expression tag	UNP Q80WG5
D	11	ALA	-	expression tag	UNP Q80WG5
D	12	ASP	-	expression tag	UNP Q80WG5

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Chain	Residue	Modelled	Actual	Comment	Reference
D	13	THR	-	expression tag	UNP Q80WG5
D	14	GLN	-	expression tag	UNP Q80WG5
D	809	GLN	-	expression tag	UNP Q80WG5
D	810	ALA	-	expression tag	UNP Q80WG5
E	1	MET	-	initiating methionine	UNP Q80WG5
E	2	ILE	-	expression tag	UNP Q80WG5
E	3	PRO	-	expression tag	UNP Q80WG5
E	4	VAL	-	expression tag	UNP Q80WG5
E	5	THR	-	expression tag	UNP Q80WG5
E	6	GLU	-	expression tag	UNP Q80WG5
E	7	LEU	-	expression tag	UNP Q80WG5
E	8	ARG	-	expression tag	UNP Q80WG5
E	9	TYR	-	expression tag	UNP Q80WG5
E	10	PHE	-	expression tag	UNP Q80WG5
E	11	ALA	-	expression tag	UNP Q80WG5
E	12	ASP	-	expression tag	UNP Q80WG5
E	13	THR	-	expression tag	UNP Q80WG5
E	14	GLN	-	expression tag	UNP Q80WG5
E	809	GLN	-	expression tag	UNP Q80WG5
E	810	ALA	-	expression tag	UNP Q80WG5
F	1	MET	-	initiating methionine	UNP Q80WG5
F	2	ILE	-	expression tag	UNP Q80WG5
F	3	PRO	-	expression tag	UNP Q80WG5
F	4	VAL	-	expression tag	UNP Q80WG5
F	5	THR	-	expression tag	UNP Q80WG5
F	6	GLU	-	expression tag	UNP Q80WG5
F	7	LEU	-	expression tag	UNP Q80WG5
F	8	ARG	-	expression tag	UNP Q80WG5
F	9	TYR	-	expression tag	UNP Q80WG5
F	10	PHE	-	expression tag	UNP Q80WG5
F	11	ALA	-	expression tag	UNP Q80WG5
F	12	ASP	-	expression tag	UNP Q80WG5
F	13	THR	-	expression tag	UNP Q80WG5
F	14	GLN	-	expression tag	UNP Q80WG5
F	809	GLN	-	expression tag	UNP Q80WG5
F	810	ALA	-	expression tag	UNP Q80WG5

- Molecule 2 is a protein called Synthetic nanobody Sb1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	G	114	903	575	152	172	4	0	0

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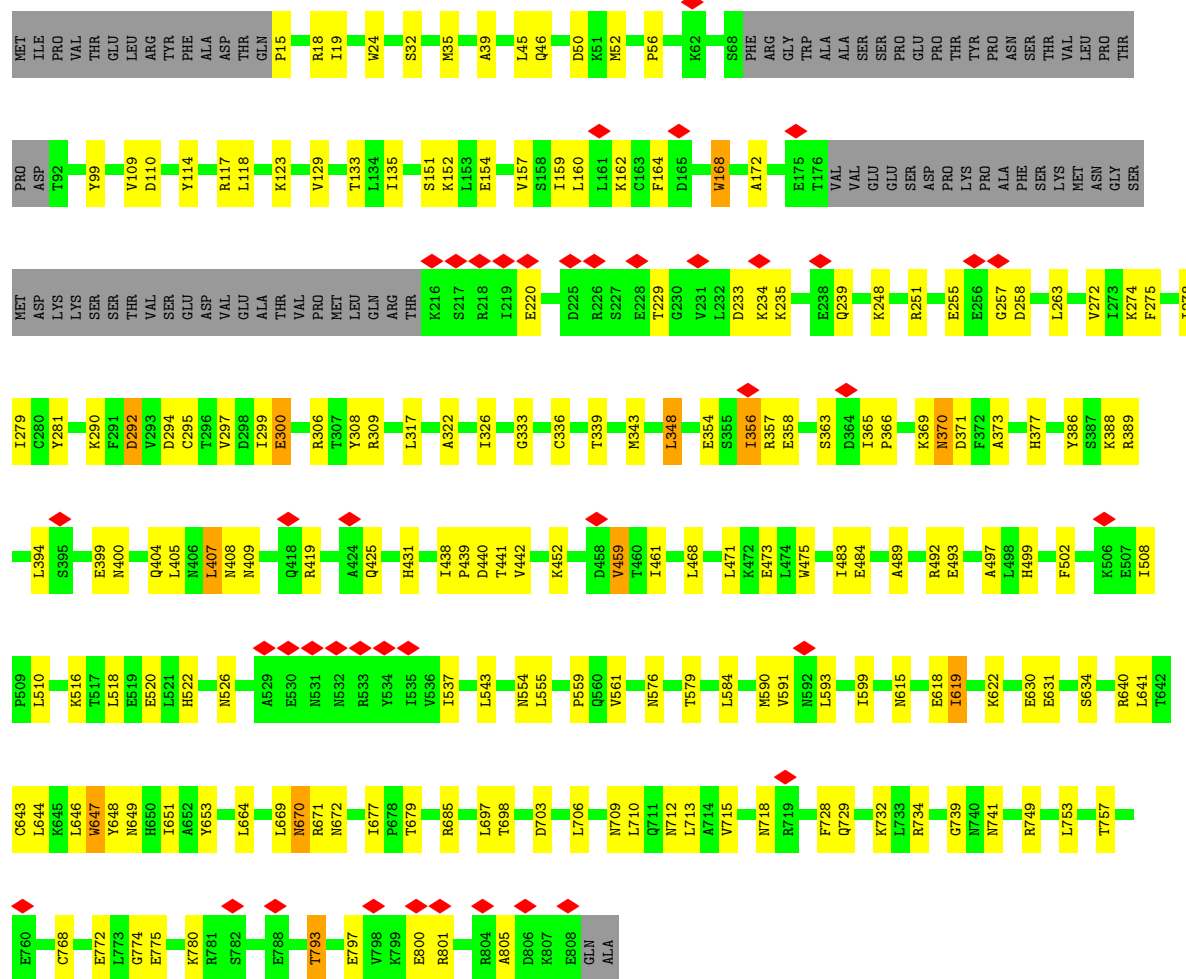| Mol	Chain	Residues	Atoms					AltConf	Trace
2	H	114	Total	C	N	O	S	0	0
			903	575	152	172	4		
2	I	114	Total	C	N	O	S	0	0
			903	575	152	172	4		
2	J	114	Total	C	N	O	S	0	0
			903	575	152	172	4		
2	K	114	Total	C	N	O	S	0	0
			903	575	152	172	4		
2	L	114	Total	C	N	O	S	0	0
			903	575	152	172	4		

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.
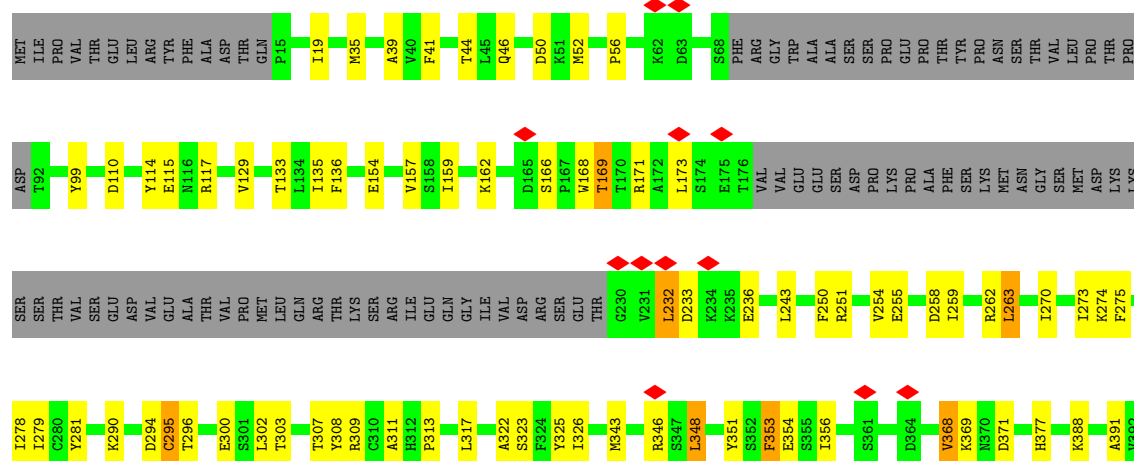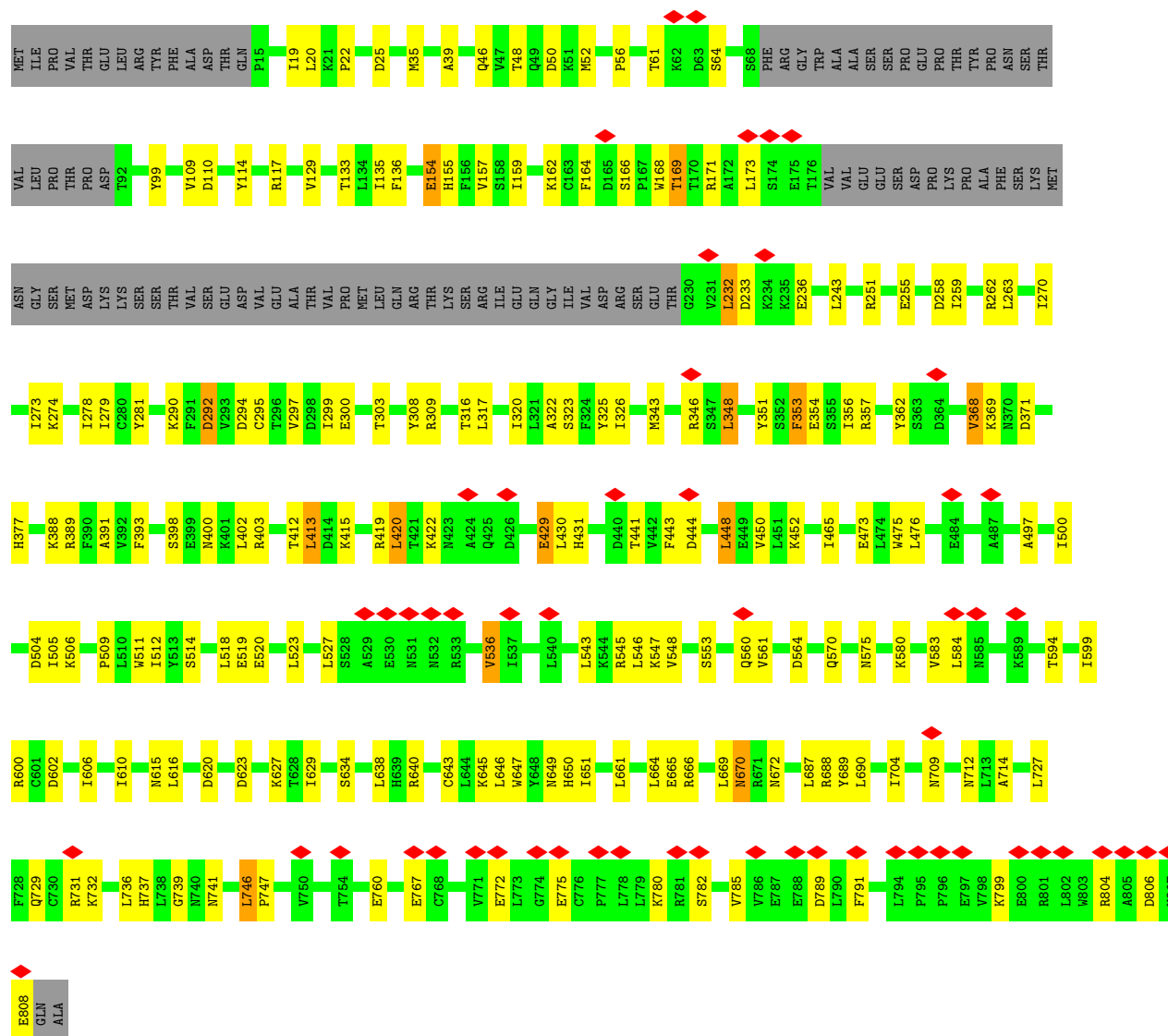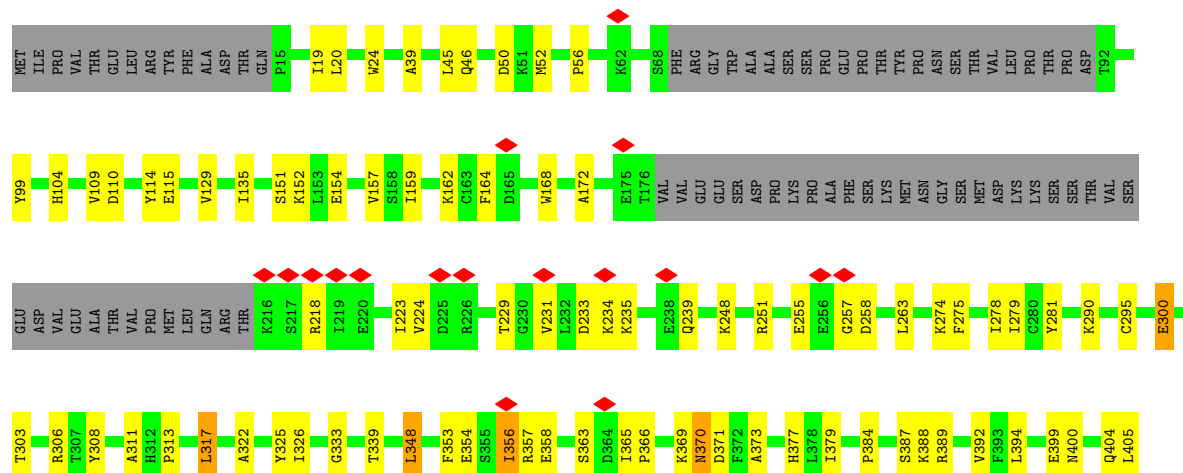
• Molecule 1: Volume-regulated anion channel subunit LRRC8A

• Molecule 1: Volume-regulated anion channel subunit LRRC8A

Chain B:

5%

67% 22% • 10%

MET ILE PRO VAL THR GLU LEU LEU ARG TYR PHE ALA ASP THR GLN P15 R18 I19 W24 S32 M35 A39 L45 Q46 D50 K51 M52 P56 K62 S68 PHE ARG GLY TRP ALA ALA SER SER PRO GLU PRO THR TYR PRO ASN SER THR VAL LEU PRO THR

PRO ASP T92 Y99 V109 D110 Y114 R117 L118 K123 V129 T133 L134 I135 S151 K152 L153 E154 V157 S158 I159 L160 L161 K162 C163 F164 D165 W168 A172 E175 T176 VAL VAL GLU GLU SER ASP PRO LYS PRO ALA PHE SER LYS MET ASN GLY SER

MET ASP LYS SER SER VAL SER VAL ASP VAL ALA THR VAL PRO MET LEU GLN ARG THR K216 S217 R218 I219 E220 D225 R226 S227 E228 T229 G230 V231 L232 D233 K234 K235 E238 Q239 K248 R251 E255 E256 G257 D258 L263 V272 I273 K274 F275 I278

I279 C280 Y281 K290 F291 D292 V293 D294 C295 T296 V297 D298 I299 E300 R306 T307 Y308 R309 L317 A322 I326 G333 C336 T339 M343 L348 E354 S355 I356 R357 E358 S363 D364 I365 P366 K369 N370 D371 F372 A373 H377 Y386 S387 K388 R389

L394 S395 E399 N400 Q404 L405 N406 L407 N408 N409 Q418 R419 A424 Q425 H431 I438 P439 D440 T441 V442 K452 D458 V459 T460 I461 L468 L471 K472 E473 L474 W475 I483 E484 A489 R492 E493 A497 L498 H499 F502 K506 E507 I508

P509 L510 K516 T517 L518 E519 E520 L521 H522 N526 A529 E530 N531 N532 R533 Y534 I535 V536 I537 L543 N554 L555 P559 Q560 V561 N576 T579 L584 M590 V591 N592 L593 I599 N615 E618 I619 K622 E630 E631 S634 R640 L641 T642

C643 L644 K645 L646 W647 Y648 N649 H650 I651 A652 Y653 L664 L669 N670 R671 N672 I677 P678 T679 R685 L697 T698 D703 L706 N709 L710 Q711 N712 L713 A714 V715 R718 R719 F728 Q729 K732 L733 R734 G739 N740 N741 R749 L753 T757

E760 C768 E772 L773 G774 E775 K780 R781 S782 E788 T793 E797 V798 K799 E800 R801 R804 A805 D806 K807 E808 GLN ALA

● Molecule 1: Volume-regulated anion channel subunit LRRC8A

Chain C:

8%

66% 21% • 11%

MET ILE PRO VAL THR GLU LEU ARG TYR PHE ALA ASP THR GLN P15 I19 M35 A39 V40 F41 T44 L45 Q46 D50 K51 M52 P56 K62 D63 S68 PHE ARG GLY TRP ALA ALA SER SER PRO GLU PRO THR TYR PRO ASN SER THR VAL LEU PRO THR PRO

ASP T92 Y99 D110 Y114 E115 N116 R117 V129 T133 L134 I135 F136 E154 V157 S158 I159 K162 D165 S166 P167 W168 T169 T170 R171 A172 L173 S174 E175 T176 VAL VAL GLU GLU SER ASP PRO LYS PRO ALA PHE SER LYS MET ASN GLY SER MET ASP LYS LYS

SER SER THR VAL SER GLU ASP VAL GLU ALA THR VAL PRO MET LEU GLN ARG THR LYS SER ARG ILE GLU GLN GLY ILE LEU VAL ASP ARG SER GLU THR G230 V231 L232 D233 K234 K235 E236 L243 F250 R251 V254 E255 D258 I259 R262 L263 I270 I273 K274 F275

I278 I279 C280 Y281 K290 D294 C295 T296 E300 S301 L302 T303 T307 Y308 R309 C310 A311 H312 P313 L317 A322 S323 F324 Y325 I326 M343 R346 S347 L348 Y351 S352 F353 E354 S355 I356 S361 D364 V368 K369 N370 D371 H377 K388 A391 V392

• Molecule 1: Volume-regulated anion channel subunit LRRC8A

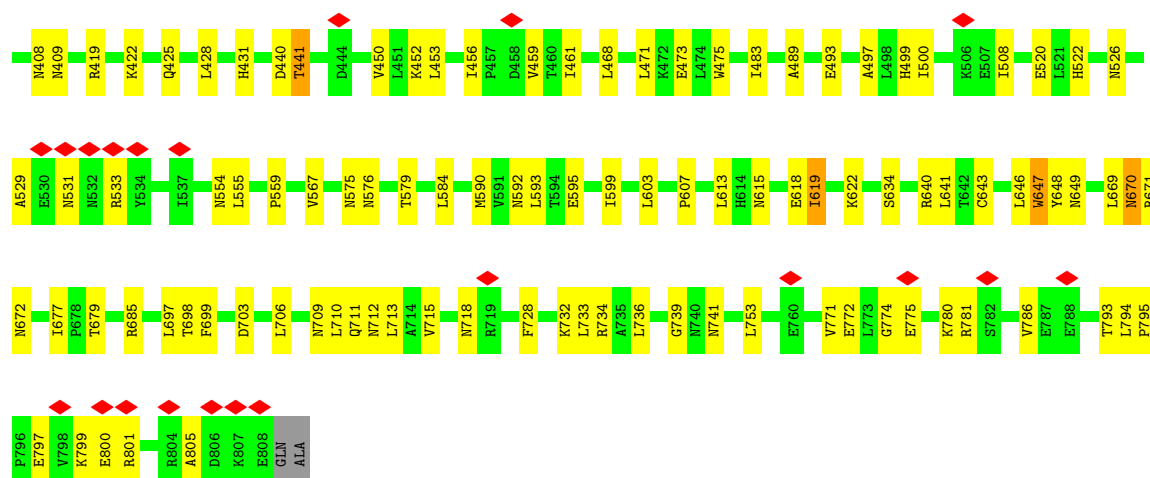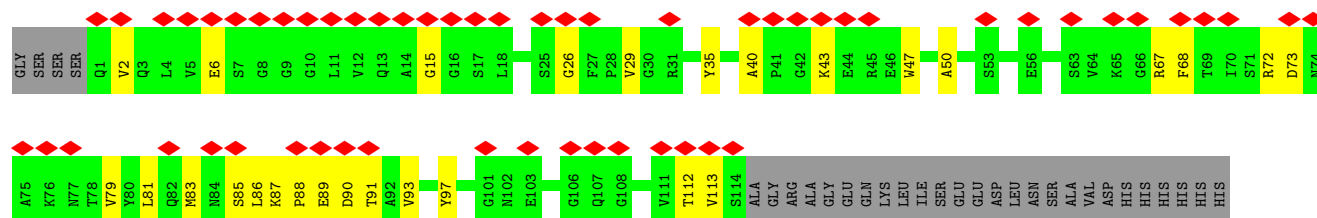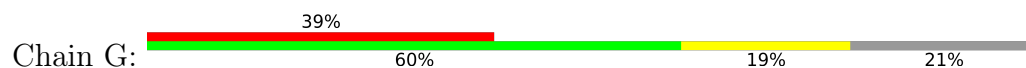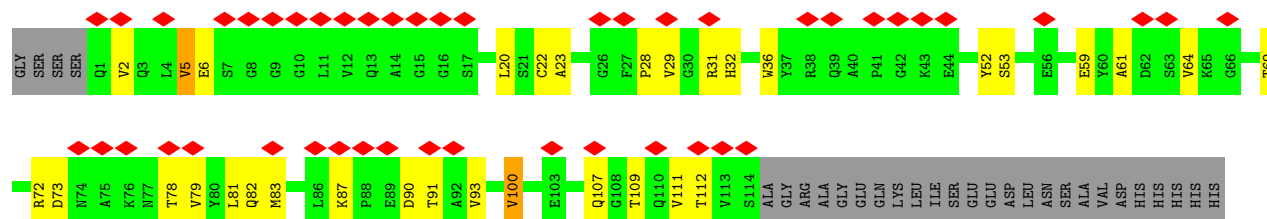• Molecule 1: Volume-regulated anion channel subunit LRRC8A

• Molecule 1: Volume-regulated anion channel subunit LRRC8A

Chain F:

• Molecule 2: Synthetic nanobody Sb1
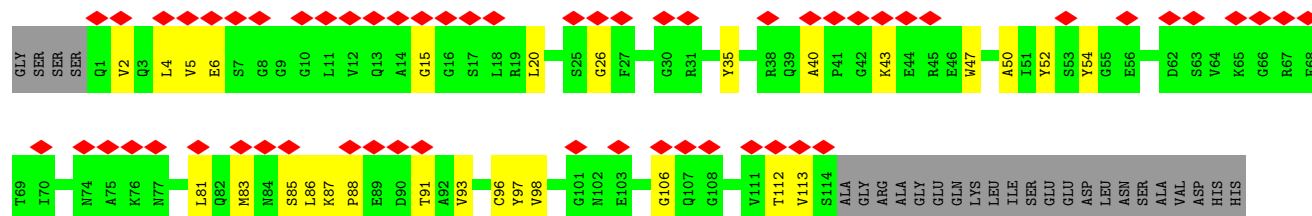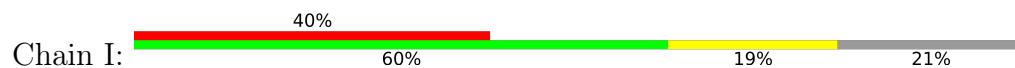

• Molecule 2: Synthetic nanobody Sb1

• Molecule 2: Synthetic nanobody Sb1

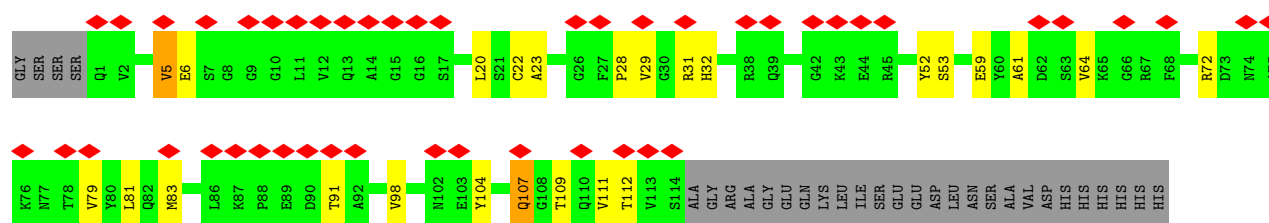HIS HIS HIS HIS

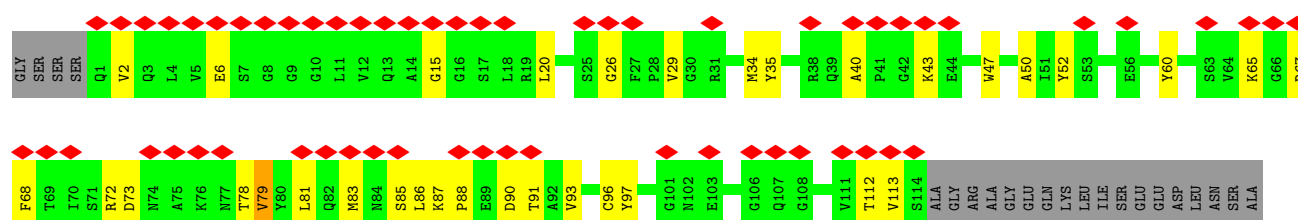• Molecule 2: Synthetic nanobody Sb1
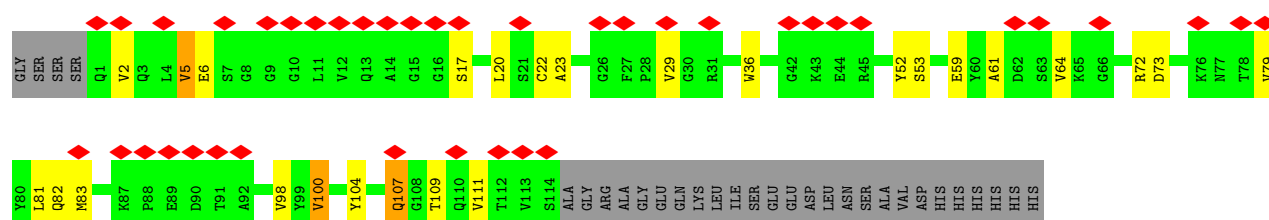
Chain J:

33%

62%   16% ·   21%

GLY SER SER SER Q1 V2 V5 E6 S7 G8 G9 G10 L11 V12 Q13 A14 G15 G16 S17 L20 S21 C22 A23 G26 F27 P28 V29 G30 R31 H32 R38 Q39 G42 K43 E44 R45 Y52 S53 E59 Y60 A61 D62 S63 V64 K65 G66 R67 F68 R72 D73 N74 A75

K76 N77 T78 V79 Y80 L81 Q82 M83 L86 K87 P88 E89 D90 T91 A92 V98 N102 E103 Y104 Q107 G108 T109 Q110 V111 T112 V113 S114 ALA GLY ARG ALA GLY GLU GLN LYS LEU ILE SER GLU GLU ASP LEU ASN SER ALA VAL ASP HIS HIS HIS HIS HIS HIS

• Molecule 2: Synthetic nanobody Sb1

Chain K:

41%

56%   23% ·   21%

GLY SER SER SER Q1 V2 Q3 L4 V5 E6 S7 G8 G9 G10 L11 V12 Q13 A14 G15 G16 S17 L18 R19 L20 S25 G26 F27 P28 V29 G30 R31 M34 Y35 R38 Q39 A40 P41 G42 K43 E44 W47 A50 I51 Y52 S53 E56 Y60 S63 V64 K65 G66 R67

F68 T69 I70 S71 R72 D73 N74 A75 K76 N77 T78 V79 Y80 L81 Q82 M83 N84 S85 L86 K87 P88 E89 D90 T91 A92 V93 C96 Y97 G101 N102 E103 G106 Q107 G108 V111 T112 V113 S114 ALA GLY ARG ALA GLY GLU GLN LYS LEU ILE SER GLU GLU ASP LEU ASN SER ALA

VAL ASP HIS HIS HIS HIS HIS HIS

• Molecule 2: Synthetic nanobody Sb1

Chain L:

28%

61%   16% ·   21%

GLY SER SER SER Q1 V2 Q3 L4 V5 E6 S7 G8 G9 G10 L11 V12 Q13 A14 G15 G16 S17 L20 S21 C22 A23 G26 F27 P28 V29 G30 R31 W36 G42 K43 E44 R45 Y52 S53 E59 Y60 A61 D62 S63 V64 K65 G66 R72 D73 K76 N77 T78 V79

Y80 L81 Q82 M83 K87 P88 E89 D90 T91 A92 V98 V99 V100 Y104 Q107 G108 T109 Q110 V111 T112 V113 S114 ALA GLY ARG ALA GLY GLU GLN LYS LEU ILE SER GLU GLU ASP LEU ASN SER ALA VAL ASP HIS HIS HIS HIS HIS HIS

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	59962	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 $(e^-/\text{Å}^2)$	67	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.257	Depositor
Minimum map value	-0.105	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.004	Depositor
Recommended contour level	0.025	Depositor
Map size (Å)	437.47202, 437.47202, 437.47202	wwPDB
Map dimensions	336, 336, 336	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.302, 1.302, 1.302	Depositor

5   Model quality ⓘ

5.1   Standard geometry ⓘ

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	A	0.17	0/6055	0.31	0/8207
1	B	0.17	0/6163	0.31	0/8352
1	C	0.17	0/6055	0.30	0/8207
1	D	0.17	0/6163	0.31	0/8352
1	E	0.17	0/6055	0.30	0/8207
1	F	0.17	0/6163	0.30	0/8352
2	G	0.09	0/927	0.24	0/1258
2	H	0.10	0/927	0.25	0/1258
2	I	0.08	0/927	0.23	0/1258
2	J	0.10	0/927	0.25	0/1258
2	K	0.08	0/927	0.23	0/1258
2	L	0.10	0/927	0.26	0/1258
All	All	0.16	0/42216	0.30	0/57225

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 ⓘ

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	A	5922	0	6081	121	0
1	B	6030	0	6184	112	0
1	C	5922	0	6081	113	0
1	D	6030	0	6184	100	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	E	5922	0	6081	115	0
1	F	6030	0	6184	111	0
2	G	903	0	852	16	0
2	H	903	0	852	23	0
2	I	903	0	852	16	0
2	J	903	0	852	16	0
2	K	903	0	852	22	0
2	L	903	0	852	18	0
All	All	41274	0	41907	766	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 9.

All (766) 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:G:83:MET:HB3	2:G:86:LEU:HD21	1.62	0.81
1:E:634:SER:HG	2:K:52:TYR:HH	1.28	0.81
2:K:83:MET:HB3	2:K:86:LEU:HD21	1.61	0.80
1:C:35:MET:HE2	1:C:133:THR:HG22	1.70	0.74
1:C:351:TYR:HB3	1:C:368:VAL:HG23	1.69	0.73
1:E:135:ILE:HG12	1:E:274:LYS:HZ3	1.54	0.73
1:C:643:CYS:SG	1:C:666:ARG:NH1	2.62	0.73
1:E:643:CYS:SG	1:E:666:ARG:NH1	2.62	0.73
1:E:429:GLU:HG3	1:E:452:LYS:HE3	1.71	0.73
1:B:164:PHE:O	1:B:389:ARG:NH1	2.21	0.72
1:B:405:LEU:O	1:B:409:ASN:ND2	2.23	0.72
1:E:419:ARG:NH1	1:E:431:HIS:O	2.23	0.72
1:E:473:GLU:HG2	1:E:497:ALA:HB3	1.72	0.72
1:D:164:PHE:O	1:D:389:ARG:NH1	2.24	0.71
1:A:35:MET:HE2	1:A:133:THR:HG22	1.72	0.70
2:I:83:MET:HB3	2:I:86:LEU:HD21	1.71	0.70
1:F:164:PHE:O	1:F:389:ARG:NH1	2.24	0.69
1:D:258:ASP:H	1:D:371:ASP:HB2	1.57	0.69
1:A:343:MET:HA	1:A:348:LEU:HD11	1.76	0.68
1:A:643:CYS:SG	1:A:666:ARG:NH1	2.66	0.68
1:D:618:GLU:HG3	1:D:643:CYS:HB3	1.74	0.68
1:A:429:GLU:HG3	1:A:452:LYS:HE3	1.75	0.68
1:C:294:ASP:OD1	1:C:309:ARG:NH1	2.27	0.68
2:J:52:TYR:O	2:J:72:ARG:NH2	2.26	0.68
1:E:351:TYR:HB3	1:E:368:VAL:HG23	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:2:VAL:HA	2:I:26:GLY:HA3	1.76	0.67
1:A:294:ASP:OD1	1:A:309:ARG:NH1	2.28	0.67
2:L:52:TYR:O	2:L:72:ARG:NH2	2.27	0.67
1:C:473:GLU:HG2	1:C:497:ALA:HB3	1.77	0.66
1:F:255:GLU:HG3	1:F:369:LYS:HB2	1.78	0.66
2:G:2:VAL:HA	2:G:26:GLY:HA3	1.77	0.66
1:C:429:GLU:HG3	1:C:452:LYS:HE3	1.77	0.66
1:C:419:ARG:NH1	1:C:431:HIS:O	2.28	0.66
2:H:20:LEU:HB2	2:H:81:LEU:HB3	1.79	0.65
1:A:729:GLN:OE1	1:A:731:ARG:NH2	2.30	0.65
1:E:615:ASN:HA	1:E:640:ARG:HE	1.61	0.65
1:A:473:GLU:HG2	1:A:497:ALA:HB3	1.77	0.65
1:B:300:GLU:OE2	1:B:306:ARG:NH1	2.29	0.64
1:C:343:MET:HA	1:C:348:LEU:HD11	1.79	0.64
1:F:300:GLU:OE2	1:F:306:ARG:NH1	2.30	0.64
1:F:619:ILE:HG22	1:F:641:LEU:HD11	1.80	0.64
1:D:118:LEU:HD23	1:D:123:LYS:HG3	1.80	0.64
1:E:343:MET:HA	1:E:348:LEU:HD11	1.79	0.64
2:H:52:TYR:O	2:H:72:ARG:NH2	2.30	0.64
1:B:618:GLU:HG3	1:B:643:CYS:HB3	1.78	0.64
1:B:438:ILE:HG13	1:B:459:VAL:HG21	1.79	0.63
1:F:357:ARG:NH1	1:F:365:ILE:O	2.31	0.63
1:B:619:ILE:HG22	1:B:641:LEU:HD11	1.80	0.63
1:C:634:SER:HG	2:I:52:TYR:HH	1.37	0.63
1:F:618:GLU:HG3	1:F:643:CYS:HB3	1.81	0.63
1:B:373:ALA:O	1:B:377:HIS:ND1	2.32	0.63
1:F:452:LYS:HA	1:F:475:TRP:HB2	1.81	0.62
1:A:292:ASP:OD1	1:A:292:ASP:N	2.32	0.62
1:B:255:GLU:HG3	1:B:369:LYS:HB2	1.80	0.62
1:A:135:ILE:HG12	1:A:274:LYS:HZ2	1.65	0.62
1:D:373:ALA:O	1:D:377:HIS:ND1	2.30	0.62
1:F:405:LEU:O	1:F:409:ASN:ND2	2.27	0.62
1:A:705:GLY:O	1:A:708:GLN:NE2	2.33	0.62
1:B:258:ASP:H	1:B:371:ASP:HB2	1.65	0.62
1:B:357:ARG:NH1	1:B:365:ILE:O	2.33	0.62
1:E:429:GLU:HB2	1:E:450:VAL:HB	1.82	0.61
1:B:292:ASP:OD1	1:B:292:ASP:N	2.33	0.61
1:C:259:ILE:N	1:C:371:ASP:OD2	2.30	0.61
1:A:669:LEU:O	1:A:672:ASN:ND2	2.33	0.61
1:F:774:GLY:O	1:F:801:ARG:NH2	2.32	0.61
1:B:712:ASN:OD1	1:B:734:ARG:NH2	2.32	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:5:VAL:HG13	2:J:23:ALA:HB3	1.82	0.61
2:J:29:VAL:O	2:J:72:ARG:NH1	2.34	0.61
1:B:408:ASN:ND2	1:B:440:ASP:OD2	2.30	0.61
1:D:438:ILE:HG13	1:D:459:VAL:HG21	1.83	0.61
1:A:102:ASP:OD1	1:A:105:GLN:NE2	2.20	0.61
1:E:412:THR:HG23	1:E:415:LYS:H	1.66	0.61
2:H:20:LEU:HD22	2:H:81:LEU:HD23	1.81	0.61
1:A:258:ASP:O	1:A:262:ARG:NH1	2.34	0.60
1:D:473:GLU:HG2	1:D:497:ALA:HB3	1.83	0.60
2:H:29:VAL:HG22	2:H:72:ARG:HD2	1.84	0.60
1:A:52:MET:HG3	1:A:114:TYR:HD2	1.66	0.60
1:D:615:ASN:OD1	1:D:640:ARG:NH2	2.35	0.60
1:A:351:TYR:HB3	1:A:368:VAL:HG23	1.84	0.60
1:B:739:GLY:O	1:B:741:ASN:ND2	2.34	0.60
1:E:258:ASP:H	1:E:371:ASP:HB2	1.67	0.60
1:F:712:ASN:OD1	1:F:734:ARG:NH2	2.33	0.60
2:K:67:ARG:NH2	2:K:90:ASP:OD2	2.35	0.60
1:C:429:GLU:HB2	1:C:450:VAL:HB	1.82	0.60
1:F:373:ALA:O	1:F:377:HIS:ND1	2.33	0.60
1:C:135:ILE:HG12	1:C:274:LYS:HZ3	1.67	0.60
2:L:5:VAL:HG13	2:L:23:ALA:HB3	1.84	0.60
1:C:709:ASN:HA	1:C:732:LYS:HD2	1.83	0.60
1:D:45:LEU:HD21	1:D:317:LEU:HD13	1.84	0.60
1:C:412:THR:HG23	1:C:415:LYS:H	1.67	0.60
1:D:39:ALA:HB2	1:D:129:VAL:HG12	1.84	0.60
1:E:452:LYS:HA	1:E:475:TRP:HB2	1.84	0.59
1:F:739:GLY:O	1:F:741:ASN:ND2	2.35	0.59
1:B:39:ALA:HB2	1:B:129:VAL:HG12	1.82	0.59
1:D:255:GLU:HG3	1:D:369:LYS:HB2	1.82	0.59
1:C:504:ASP:OD1	1:C:505:ILE:N	2.35	0.59
1:F:251:ARG:HD2	1:F:394:LEU:HD11	1.84	0.59
2:J:53:SER:HA	2:J:72:ARG:HH22	1.67	0.59
1:A:419:ARG:NH1	1:A:431:HIS:O	2.34	0.59
1:B:461:ILE:HB	1:B:483:ILE:HG13	1.85	0.59
1:C:615:ASN:HA	1:C:640:ARG:HE	1.66	0.59
2:H:29:VAL:O	2:H:72:ARG:NH1	2.36	0.59
1:D:357:ARG:NH1	1:D:365:ILE:O	2.35	0.59
1:F:39:ALA:HB2	1:F:129:VAL:HG12	1.85	0.59
1:C:669:LEU:O	1:C:672:ASN:ND2	2.36	0.59
1:E:669:LEU:O	1:E:672:ASN:ND2	2.36	0.59
2:J:61:ALA:HB3	2:J:64:VAL:HG22	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:91:THR:HG23	2:K:112:THR:HA	1.85	0.59
1:D:677:ILE:HD11	1:D:697:LEU:HD13	1.85	0.58
1:F:45:LEU:HD21	1:F:317:LEU:HD13	1.86	0.58
1:D:408:ASN:ND2	1:D:440:ASP:OD2	2.36	0.58
1:E:35:MET:HE2	1:E:133:THR:HG22	1.85	0.58
1:E:117:ARG:HG2	1:E:295:CYS:HA	1.86	0.58
2:I:35:TYR:HB2	2:I:97:TYR:HB3	1.85	0.58
1:A:560:GLN:NE2	1:A:564:ASP:OD2	2.37	0.58
1:C:46:GLN:O	1:C:50:ASP:HB3	2.03	0.58
1:C:135:ILE:HG23	1:C:274:LYS:HZ2	1.68	0.58
1:D:46:GLN:O	1:D:50:ASP:HB3	2.03	0.58
1:F:258:ASP:H	1:F:371:ASP:HB2	1.68	0.58
2:H:61:ALA:HB3	2:H:64:VAL:HG22	1.85	0.58
1:B:370:ASN:OD1	1:B:370:ASN:N	2.32	0.58
1:F:370:ASN:OD1	1:F:370:ASN:N	2.36	0.58
1:B:46:GLN:O	1:B:50:ASP:HB3	2.04	0.58
2:L:6:GLU:O	2:L:107:GLN:NE2	2.37	0.58
2:H:5:VAL:HG13	2:H:23:ALA:HB3	1.86	0.57
2:L:20:LEU:HB2	2:L:81:LEU:HB3	1.87	0.57
1:A:629:ILE:HD13	1:A:651:ILE:HD13	1.86	0.57
1:C:646:LEU:O	1:C:649:ASN:ND2	2.35	0.57
1:D:52:MET:HG3	1:D:114:TYR:HD2	1.68	0.57
1:F:473:GLU:HG2	1:F:497:ALA:HB3	1.86	0.57
1:D:303:THR:HG1	1:D:308:TYR:HH	1.52	0.57
1:F:258:ASP:HB2	1:F:370:ASN:HD22	1.68	0.57
1:A:435:LEU:HB2	1:A:456:ILE:HD13	1.86	0.57
1:D:405:LEU:O	1:D:409:ASN:ND2	2.29	0.57
1:D:739:GLY:O	1:D:741:ASN:ND2	2.37	0.57
1:E:560:GLN:NE2	1:E:564:ASP:OD2	2.37	0.57
2:J:20:LEU:HB2	2:J:81:LEU:HB3	1.85	0.57
2:J:32:HIS:O	2:J:72:ARG:NH1	2.37	0.57
2:L:20:LEU:HD22	2:L:81:LEU:HD23	1.86	0.57
1:E:255:GLU:HG2	1:E:369:LYS:HB2	1.86	0.57
2:L:61:ALA:HB3	2:L:64:VAL:HG22	1.85	0.57
1:A:412:THR:HG23	1:A:415:LYS:H	1.70	0.57
2:I:20:LEU:HD12	2:I:81:LEU:HD23	1.87	0.56
1:D:258:ASP:HB2	1:D:370:ASN:HD22	1.69	0.56
1:D:619:ILE:HG22	1:D:641:LEU:HD11	1.86	0.56
1:E:519:GLU:HG2	1:E:545:ARG:HG3	1.86	0.56
1:A:615:ASN:HA	1:A:640:ARG:HE	1.71	0.56
1:C:19:ILE:HD11	1:C:157:VAL:HG23	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:509:PRO:HB2	1:C:512:ILE:HG23	1.87	0.56
1:F:567:VAL:O	1:F:592:ASN:ND2	2.38	0.56
2:H:2:VAL:HG21	2:H:100:VAL:HG21	1.88	0.56
2:H:53:SER:HA	2:H:72:ARG:HH22	1.70	0.56
1:A:19:ILE:HD11	1:A:157:VAL:HG23	1.87	0.56
1:A:169:THR:HG23	1:A:393:PHE:HE1	1.70	0.56
1:D:630:GLU:OE2	1:D:653:TYR:OH	2.19	0.56
1:E:714:ALA:HA	1:E:737:HIS:HB2	1.86	0.56
2:K:85:SER:O	2:K:87:LYS:NZ	2.38	0.56
1:D:452:LYS:HA	1:D:475:TRP:HB2	1.88	0.56
1:E:509:PRO:HB2	1:E:512:ILE:HG23	1.88	0.56
1:F:615:ASN:OD1	1:F:640:ARG:NH2	2.39	0.56
1:F:646:LEU:O	1:F:649:ASN:ND2	2.39	0.56
1:E:804:ARG:HH12	1:E:808:GLU:HB3	1.71	0.56
1:B:630:GLU:OE2	1:B:653:TYR:OH	2.18	0.55
1:C:629:ILE:HD13	1:C:651:ILE:HD13	1.87	0.55
1:C:714:ALA:HA	1:C:737:HIS:HB2	1.88	0.55
1:F:46:GLN:O	1:F:50:ASP:HB3	2.06	0.55
1:E:19:ILE:HD11	1:E:157:VAL:HG23	1.88	0.55
1:A:714:ALA:HA	1:A:737:HIS:HB2	1.89	0.55
1:C:166:SER:O	1:C:169:THR:OG1	2.24	0.55
1:C:760:GLU:HA	1:C:785:VAL:HB	1.87	0.55
2:L:29:VAL:HG22	2:L:72:ARG:HD2	1.89	0.55
1:A:166:SER:O	1:A:169:THR:OG1	2.23	0.55
1:B:322:ALA:O	1:B:326:ILE:HG23	2.06	0.55
1:E:129:VAL:O	1:E:133:THR:HG23	2.06	0.55
2:H:22:CYS:HB3	2:H:79:VAL:HB	1.88	0.55
1:A:789:ASP:N	1:A:789:ASP:OD1	2.39	0.55
2:H:6:GLU:O	2:H:107:GLN:NE2	2.40	0.55
1:A:117:ARG:HG2	1:A:295:CYS:HA	1.89	0.55
2:G:35:TYR:HB2	2:G:97:TYR:HB3	1.88	0.55
1:E:258:ASP:O	1:E:262:ARG:NH1	2.39	0.55
1:F:251:ARG:HH22	1:F:366:PRO:HG2	1.72	0.55
1:A:39:ALA:HB2	1:A:129:VAL:HG12	1.88	0.54
1:E:162:LYS:HG3	1:E:243:LEU:HD11	1.90	0.54
1:E:164:PHE:O	1:E:389:ARG:NH1	2.40	0.54
1:B:576:ASN:HB3	1:B:579:THR:HB	1.88	0.54
1:D:322:ALA:O	1:D:326:ILE:HG23	2.07	0.54
1:D:710:LEU:HD21	1:D:713:LEU:HB2	1.89	0.54
1:C:452:LYS:HA	1:C:475:TRP:HB2	1.89	0.54
1:B:251:ARG:HH22	1:B:366:PRO:HG2	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:251:ARG:HD2	1:D:394:LEU:HD11	1.88	0.54
1:E:629:ILE:HD13	1:E:651:ILE:HD13	1.90	0.54
1:E:729:GLN:OE1	1:E:731:ARG:NH2	2.40	0.54
2:K:2:VAL:HA	2:K:26:GLY:HA3	1.90	0.54
1:A:429:GLU:HB2	1:A:450:VAL:HB	1.90	0.54
1:E:606:ILE:HG23	1:E:610:ILE:HD12	1.90	0.54
1:B:258:ASP:HB2	1:B:370:ASN:HD22	1.73	0.53
1:C:258:ASP:H	1:C:371:ASP:HB2	1.70	0.53
1:E:166:SER:O	1:E:169:THR:OG1	2.26	0.53
1:F:709:ASN:HA	1:F:732:LYS:HD2	1.89	0.53
2:J:83:MET:HE1	2:J:111:VAL:HG11	1.90	0.53
2:I:88:PRO:HA	2:I:113:VAL:HB	1.89	0.53
1:C:258:ASP:O	1:C:262:ARG:NH1	2.41	0.53
1:F:576:ASN:HB3	1:F:579:THR:HB	1.91	0.53
1:A:259:ILE:N	1:A:371:ASP:OD2	2.32	0.53
1:C:804:ARG:HH12	1:C:808:GLU:HB3	1.72	0.53
1:D:712:ASN:OD1	1:D:734:ARG:NH2	2.41	0.53
1:E:168:TRP:HH2	1:E:398:SER:HB2	1.73	0.53
1:F:419:ARG:NH1	1:F:431:HIS:O	2.40	0.53
1:A:316:THR:OG1	1:F:115:GLU:OE2	2.26	0.53
1:C:162:LYS:HG3	1:C:243:LEU:HD11	1.91	0.53
1:D:370:ASN:OD1	1:D:370:ASN:N	2.33	0.53
1:A:162:LYS:HG3	1:A:243:LEU:HD11	1.91	0.53
1:D:599:ILE:HG13	1:D:622:LYS:HB3	1.89	0.53
1:A:258:ASP:H	1:A:371:ASP:HB2	1.74	0.53
1:D:356:ILE:HD12	1:D:388:LYS:HG2	1.90	0.53
1:D:646:LEU:O	1:D:649:ASN:ND2	2.42	0.53
2:H:83:MET:HE1	2:H:111:VAL:HG11	1.91	0.53
2:I:85:SER:O	2:I:87:LYS:NZ	2.41	0.53
1:A:102:ASP:OD1	1:A:102:ASP:N	2.38	0.52
1:A:400:ASN:OD1	1:A:403:ARG:NH1	2.40	0.52
1:E:789:ASP:OD1	1:E:789:ASP:N	2.41	0.52
1:B:452:LYS:HA	1:B:475:TRP:HB2	1.91	0.52
1:B:709:ASN:HA	1:B:732:LYS:HD2	1.90	0.52
1:C:39:ALA:HB2	1:C:129:VAL:HG12	1.90	0.52
1:E:580:LYS:HA	1:E:602:ASP:HB3	1.92	0.52
1:F:322:ALA:O	1:F:326:ILE:HG23	2.09	0.52
1:A:168:TRP:HH2	1:A:398:SER:HB2	1.75	0.52
1:B:647:TRP:HE3	1:B:670:ASN:HD21	1.57	0.52
1:E:46:GLN:O	1:E:50:ASP:HB3	2.10	0.52
1:B:670:ASN:OD1	1:B:670:ASN:N	2.33	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:519:GLU:HG2	1:C:545:ARG:HG3	1.90	0.52
1:D:251:ARG:HH12	1:D:366:PRO:HG2	1.74	0.52
1:F:677:ILE:HD11	1:F:697:LEU:HD13	1.91	0.52
1:F:647:TRP:HE3	1:F:670:ASN:HD21	1.58	0.52
2:G:91:THR:HG23	2:G:112:THR:HA	1.91	0.52
1:B:646:LEU:O	1:B:649:ASN:ND2	2.42	0.52
1:C:129:VAL:O	1:C:133:THR:HG23	2.10	0.52
1:E:520:GLU:HG2	1:E:548:VAL:HB	1.92	0.52
1:A:61:THR:O	1:A:64:SER:OG	2.26	0.51
1:C:168:TRP:HH2	1:C:398:SER:HB2	1.75	0.51
1:E:292:ASP:OD1	1:E:292:ASP:N	2.41	0.51
1:E:616:LEU:HB3	1:E:638:LEU:HD23	1.93	0.51
1:E:767:GLU:OE2	1:F:732:LYS:NZ	2.41	0.51
1:C:420:LEU:HD12	1:C:430:LEU:HD13	1.93	0.51
1:E:39:ALA:HB2	1:E:129:VAL:HG12	1.92	0.51
1:E:322:ALA:O	1:E:326:ILE:HG23	2.10	0.51
1:E:413:LEU:HD11	1:E:444:ASP:HB3	1.93	0.51
1:E:400:ASN:OD1	1:E:403:ARG:NH1	2.39	0.51
2:J:28:PRO:HB2	2:J:31:ARG:HD3	1.92	0.51
1:E:61:THR:O	1:E:64:SER:OG	2.23	0.51
1:E:168:TRP:CH2	1:E:398:SER:HB2	2.46	0.51
1:F:408:ASN:ND2	1:F:440:ASP:OD2	2.43	0.51
1:F:590:MET:HE3	1:F:593:LEU:HD22	1.93	0.51
1:C:594:THR:HA	1:C:616:LEU:HA	1.92	0.50
1:D:777:PRO:HB2	1:D:778:LEU:HD12	1.92	0.50
1:F:235:LYS:O	1:F:239:GLN:HG2	2.11	0.50
1:A:520:GLU:HG2	1:A:548:VAL:HB	1.93	0.50
1:C:171:ARG:HE	1:C:232:LEU:HD11	1.76	0.50
1:C:278:ILE:HA	1:C:281:TYR:CD2	2.47	0.50
1:D:647:TRP:HE3	1:D:670:ASN:HD21	1.57	0.50
1:A:646:LEU:O	1:A:649:ASN:ND2	2.37	0.50
1:A:616:LEU:HB3	1:A:638:LEU:HD23	1.94	0.50
1:A:46:GLN:O	1:A:50:ASP:HB3	2.11	0.50
1:A:583:VAL:HG23	1:A:584:LEU:H	1.77	0.50
1:E:518:LEU:HB3	1:E:543:LEU:HD22	1.94	0.50
1:F:400:ASN:O	1:F:404:GLN:HG2	2.12	0.50
1:A:600:ARG:HG2	1:A:623:ASP:HB3	1.93	0.50
1:C:789:ASP:OD1	1:C:789:ASP:N	2.43	0.50
1:B:634:SER:OG	2:H:59:GLU:OE2	2.23	0.50
1:A:505:ILE:HD12	1:A:536:VAL:HG11	1.94	0.49
1:B:251:ARG:HD2	1:B:394:LEU:HD11	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:526:ASN:OD1	1:B:554:ASN:ND2	2.45	0.49
1:C:580:LYS:HA	1:C:602:ASP:HB3	1.93	0.49
1:D:452:LYS:HG2	1:D:475:TRP:CG	2.46	0.49
1:A:760:GLU:HA	1:A:785:VAL:HB	1.93	0.49
1:A:322:ALA:O	1:A:326:ILE:HG23	2.12	0.49
1:B:135:ILE:HG12	1:B:274:LYS:HZ2	1.78	0.49
1:B:400:ASN:O	1:B:404:GLN:HG2	2.12	0.49
1:B:473:GLU:HG2	1:B:497:ALA:HB3	1.93	0.49
1:C:117:ARG:HG2	1:C:295:CYS:HA	1.94	0.49
1:D:251:ARG:HH22	1:D:366:PRO:HG2	1.77	0.49
1:E:52:MET:HG3	1:E:114:TYR:HD2	1.78	0.49
1:A:509:PRO:HB2	1:A:512:ILE:HG23	1.94	0.49
1:A:804:ARG:HH12	1:A:808:GLU:HB3	1.77	0.49
1:D:518:LEU:HD23	1:D:543:LEU:HD13	1.93	0.49
1:E:22:PRO:HD2	1:E:25:ASP:HB2	1.94	0.49
2:G:85:SER:O	2:G:87:LYS:NZ	2.45	0.49
1:B:677:ILE:HD11	1:B:697:LEU:HD13	1.94	0.49
1:D:526:ASN:OD1	1:D:554:ASN:ND2	2.44	0.49
1:E:746:LEU:HD23	1:E:747:PRO:HD2	1.95	0.49
2:I:91:THR:HG23	2:I:112:THR:HA	1.94	0.49
2:K:20:LEU:HD12	2:K:81:LEU:HD23	1.93	0.49
1:E:171:ARG:HE	1:E:232:LEU:HD11	1.77	0.49
1:F:647:TRP:O	1:F:649:ASN:ND2	2.45	0.49
1:A:666:ARG:HG2	1:A:689:TYR:HB2	1.94	0.49
1:B:647:TRP:O	1:B:649:ASN:ND2	2.46	0.49
1:D:154:GLU:HA	1:D:157:VAL:HG12	1.95	0.49
2:J:22:CYS:HB3	2:J:79:VAL:HB	1.94	0.49
1:D:135:ILE:HG23	1:D:274:LYS:HZ3	1.77	0.49
1:E:450:VAL:HG22	1:E:473:GLU:HB2	1.95	0.49
1:A:171:ARG:HE	1:A:232:LEU:HD11	1.78	0.49
1:A:356:ILE:HD12	1:A:388:LYS:HA	1.95	0.49
1:E:666:ARG:HG2	1:E:689:TYR:HB2	1.94	0.49
1:F:154:GLU:HA	1:F:157:VAL:HG12	1.95	0.49
2:G:68:PHE:HB3	2:G:81:LEU:HD11	1.94	0.49
1:A:353:PHE:CE1	1:A:391:ALA:HB2	2.47	0.48
1:D:348:LEU:HD23	1:D:348:LEU:H	1.77	0.48
1:E:583:VAL:HG23	1:E:584:LEU:H	1.78	0.48
2:K:29:VAL:O	2:K:72:ARG:NH1	2.46	0.48
1:A:726:GLU:OE1	1:A:726:GLU:N	2.40	0.48
1:B:343:MET:HG3	1:B:348:LEU:HD21	1.95	0.48
1:E:760:GLU:HA	1:E:785:VAL:HB	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:278:ILE:HA	1:A:281:TYR:CD2	2.49	0.48
1:A:709:ASN:HA	1:A:732:LYS:HD2	1.94	0.48
1:B:295:CYS:HB2	1:B:297:VAL:HG13	1.95	0.48
1:C:413:LEU:HD11	1:C:444:ASP:HB3	1.95	0.48
1:C:606:ILE:HG23	1:C:610:ILE:HD12	1.95	0.48
1:D:303:THR:OG1	1:D:308:TYR:OH	2.24	0.48
1:A:452:LYS:HA	1:A:475:TRP:HB2	1.94	0.48
1:A:606:ILE:HG23	1:A:610:ILE:HD12	1.96	0.48
1:B:407:LEU:HD11	1:B:439:PRO:HG3	1.95	0.48
1:C:168:TRP:CH2	1:C:398:SER:HB2	2.47	0.48
1:C:450:VAL:HG22	1:C:473:GLU:HB2	1.96	0.48
1:C:547:LYS:HD2	1:C:570:GLN:HG3	1.94	0.48
2:G:15:GLY:N	2:G:86:LEU:O	2.41	0.48
2:J:29:VAL:HG22	2:J:72:ARG:HD2	1.94	0.48
1:A:519:GLU:HA	1:A:546:LEU:HA	1.95	0.48
1:B:251:ARG:HH12	1:B:366:PRO:HG2	1.78	0.48
2:L:98:VAL:HG12	2:L:104:TYR:HB2	1.95	0.48
1:A:323:SER:O	1:A:326:ILE:HG12	2.14	0.48
1:B:555:LEU:O	1:B:576:ASN:ND2	2.47	0.48
1:C:169:THR:HG23	1:C:393:PHE:HE2	1.79	0.48
1:E:348:LEU:HB3	1:E:377:HIS:ND1	2.29	0.48
1:E:504:ASP:OD1	1:E:505:ILE:N	2.44	0.48
1:B:475:TRP:HA	1:B:499:HIS:HB2	1.96	0.48
2:K:60:TYR:HB2	2:K:65:LYS:HG3	1.96	0.48
1:B:15:PRO:O	1:B:18:ARG:NH1	2.46	0.48
1:B:118:LEU:HD23	1:B:123:LYS:HG3	1.96	0.48
1:B:520:GLU:OE2	1:B:522:HIS:NE2	2.45	0.48
1:D:400:ASN:O	1:D:404:GLN:HG2	2.14	0.48
1:C:518:LEU:HB3	1:C:543:LEU:HD22	1.95	0.48
1:F:526:ASN:OD1	1:F:554:ASN:ND2	2.47	0.48
1:F:599:ILE:HG13	1:F:622:LYS:HB3	1.95	0.48
2:G:29:VAL:O	2:G:72:ARG:NH1	2.47	0.48
2:G:47:TRP:HE1	2:G:50:ALA:HB2	1.79	0.48
2:J:20:LEU:HD22	2:J:81:LEU:HD23	1.95	0.48
1:B:357:ARG:HD2	1:B:363:SER:HA	1.95	0.48
1:D:475:TRP:HA	1:D:499:HIS:HB2	1.96	0.48
1:E:353:PHE:CE1	1:E:391:ALA:HB2	2.49	0.48
2:I:6:GLU:OE1	2:I:6:GLU:N	2.46	0.48
1:B:774:GLY:O	1:B:801:ARG:NH2	2.47	0.47
1:F:278:ILE:HA	1:F:281:TYR:CD2	2.48	0.47
1:B:599:ILE:HG13	1:B:622:LYS:HB3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:615:ASN:OD1	1:B:640:ARG:NH2	2.47	0.47
1:C:670:ASN:OD1	1:C:670:ASN:N	2.42	0.47
1:D:647:TRP:O	1:D:649:ASN:ND2	2.47	0.47
1:E:504:ASP:OD2	1:E:506:LYS:NZ	2.45	0.47
1:E:646:LEU:O	1:E:649:ASN:ND2	2.38	0.47
2:J:6:GLU:O	2:J:107:GLN:NE2	2.47	0.47
1:A:168:TRP:CH2	1:A:398:SER:HB2	2.49	0.47
1:C:346:ARG:HB3	1:C:348:LEU:HG	1.97	0.47
1:F:19:ILE:HD11	1:F:157:VAL:HG23	1.95	0.47
1:A:151:SER:O	1:A:154:GLU:HG3	2.15	0.47
1:A:395:SER:OG	1:A:398:SER:OG	2.32	0.47
1:A:459:VAL:HG23	1:A:481:ALA:HA	1.96	0.47
1:A:665:GLU:HA	1:A:687:LEU:HA	1.96	0.47
1:B:555:LEU:HD13	1:B:559:PRO:HD3	1.96	0.47
1:C:661:LEU:HB3	1:C:664:LEU:HG	1.96	0.47
1:D:272:VAL:HG22	1:D:336:CYS:HB3	1.96	0.47
1:E:169:THR:HG23	1:E:393:PHE:CE2	2.49	0.47
1:E:505:ILE:HD12	1:E:536:VAL:HG11	1.97	0.47
1:F:698:THR:HG23	1:F:699:PHE:HD1	1.79	0.47
1:A:169:THR:HG23	1:A:393:PHE:CE1	2.48	0.47
1:C:233:ASP:O	1:C:236:GLU:HG3	2.14	0.47
1:C:323:SER:O	1:C:326:ILE:HG12	2.14	0.47
1:C:746:LEU:HD23	1:C:747:PRO:HD2	1.97	0.47
1:D:450:VAL:HG22	1:D:473:GLU:HB2	1.95	0.47
1:A:519:GLU:HG2	1:A:545:ARG:HG3	1.97	0.47
1:A:524:THR:HG23	1:A:552:LYS:HD3	1.97	0.47
1:B:272:VAL:HG22	1:B:336:CYS:HB3	1.97	0.47
1:C:505:ILE:HD12	1:C:536:VAL:HG11	1.95	0.47
1:C:666:ARG:HG2	1:C:689:TYR:HB2	1.97	0.47
1:C:782:SER:N	1:C:806:ASP:OD2	2.37	0.47
1:D:19:ILE:HD11	1:D:157:VAL:HG23	1.95	0.47
1:D:431:HIS:HA	1:D:452:LYS:HB2	1.96	0.47
1:E:547:LYS:HD2	1:E:570:GLN:HG3	1.96	0.47
1:E:687:LEU:HD21	1:E:690:LEU:HD13	1.96	0.47
1:F:356:ILE:HD12	1:F:388:LYS:HG2	1.96	0.47
1:F:450:VAL:HG22	1:F:473:GLU:HB2	1.96	0.47
1:F:555:LEU:HD13	1:F:559:PRO:HD3	1.96	0.47
1:F:711:GLN:OE1	1:F:734:ARG:NE	2.38	0.47
2:G:6:GLU:OE1	2:G:6:GLU:N	2.48	0.47
2:L:29:VAL:O	2:L:72:ARG:NH1	2.48	0.47
1:C:739:GLY:O	1:C:741:ASN:ND2	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:278:ILE:HA	1:D:281:TYR:CD2	2.50	0.47
1:E:661:LEU:HB3	1:E:664:LEU:HG	1.97	0.47
1:C:136:PHE:CE1	1:C:274:LYS:HE3	2.50	0.47
1:E:278:ILE:HA	1:E:281:TYR:CD2	2.49	0.47
1:E:346:ARG:HB3	1:E:348:LEU:HG	1.97	0.47
1:F:303:THR:HG1	1:F:308:TYR:HH	1.59	0.47
2:G:67:ARG:NH2	2:G:90:ASP:OD2	2.47	0.47
1:F:218:ARG:HG2	1:F:223:ILE:HB	1.97	0.47
1:F:290:LYS:HB2	1:F:290:LYS:HE3	1.70	0.47
1:F:733:LEU:HD21	1:F:736:LEU:HD21	1.97	0.47
2:K:35:TYR:HB2	2:K:97:TYR:HB3	1.97	0.47
1:A:129:VAL:O	1:A:133:THR:HG23	2.15	0.46
1:A:368:VAL:HG21	1:A:376:LEU:HD12	1.96	0.46
1:A:450:VAL:HG22	1:A:473:GLU:HB2	1.97	0.46
1:B:591:VAL:O	1:B:615:ASN:ND2	2.39	0.46
1:E:154:GLU:HA	1:E:157:VAL:HG12	1.97	0.46
1:E:356:ILE:HD13	1:E:391:ALA:HB3	1.97	0.46
1:E:665:GLU:OE1	1:E:688:ARG:NE	2.37	0.46
1:F:772:GLU:O	1:F:775:GLU:HG2	2.15	0.46
2:H:32:HIS:O	2:H:72:ARG:NH1	2.48	0.46
1:C:665:GLU:HA	1:C:687:LEU:HA	1.96	0.46
1:D:709:ASN:HA	1:D:732:LYS:HD2	1.96	0.46
1:F:452:LYS:HG2	1:F:475:TRP:CG	2.50	0.46
1:F:771:VAL:HG23	1:F:795:PRO:HG2	1.97	0.46
2:K:68:PHE:HB3	2:K:81:LEU:HD11	1.97	0.46
1:C:685:ARG:HE	1:C:706:LEU:HB3	1.80	0.46
1:D:38:ILE:HD11	1:D:325:TYR:HD1	1.81	0.46
1:F:168:TRP:CZ3	1:F:172:ALA:HB2	2.50	0.46
2:H:91:THR:HG23	2:H:112:THR:HA	1.98	0.46
2:I:4:LEU:HD11	2:I:98:VAL:HG12	1.97	0.46
1:A:661:LEU:HB3	1:A:664:LEU:HG	1.97	0.46
1:B:154:GLU:HA	1:B:157:VAL:HG12	1.98	0.46
2:I:15:GLY:HA2	2:I:85:SER:HA	1.97	0.46
1:A:580:LYS:HA	1:A:602:ASP:HB3	1.98	0.46
1:A:594:THR:HA	1:A:616:LEU:HA	1.97	0.46
1:A:622:LYS:HB2	1:A:647:TRP:NE1	2.30	0.46
1:D:159:ILE:HA	1:D:162:LYS:HG2	1.98	0.46
1:E:739:GLY:O	1:E:741:ASN:ND2	2.49	0.46
2:K:15:GLY:HA2	2:K:85:SER:HA	1.97	0.46
1:A:233:ASP:O	1:A:236:GLU:HG3	2.16	0.46
1:B:19:ILE:HD11	1:B:157:VAL:HG23	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:56:PRO:HG2	1:B:99:TYR:CD1	2.51	0.46
1:D:168:TRP:CZ3	1:D:172:ALA:HB2	2.51	0.46
1:E:294:ASP:OD1	1:E:309:ARG:NH1	2.47	0.46
2:K:47:TRP:HE1	2:K:50:ALA:HB2	1.79	0.46
2:L:73:ASP:OD1	2:L:73:ASP:N	2.48	0.46
1:A:566:GLY:HA2	1:A:569:LEU:HD12	1.97	0.46
1:A:782:SER:N	1:A:806:ASP:OD2	2.47	0.46
1:C:583:VAL:HG23	1:C:584:LEU:H	1.81	0.46
1:C:627:LYS:HG2	1:C:650:HIS:HB2	1.98	0.46
2:K:73:ASP:OD1	2:K:78:THR:OG1	2.28	0.46
1:B:46:GLN:NE2	1:B:114:TYR:OH	2.48	0.46
2:I:96:CYS:O	2:I:106:GLY:N	2.48	0.46
2:K:6:GLU:OE2	2:K:96:CYS:N	2.43	0.46
1:E:357:ARG:HB2	1:E:362:TYR:O	2.16	0.46
1:F:489:ALA:O	1:F:493:GLU:HG2	2.16	0.46
2:I:47:TRP:HE1	2:I:50:ALA:HB2	1.81	0.46
1:A:511:TRP:O	1:A:514:SER:OG	2.31	0.46
1:B:168:TRP:CZ3	1:B:172:ALA:HB2	2.51	0.46
1:B:590:MET:HE3	1:B:593:LEU:HD22	1.98	0.46
1:D:537:ILE:HG13	1:D:561:VAL:HG11	1.98	0.46
1:F:520:GLU:OE2	1:F:522:HIS:NE2	2.46	0.46
1:F:595:GLU:HG2	1:F:618:GLU:HB2	1.97	0.46
2:J:98:VAL:HG12	2:J:104:TYR:HB2	1.98	0.46
2:K:6:GLU:N	2:K:6:GLU:OE1	2.48	0.46
1:B:152:LYS:NZ	1:B:257:GLY:HA3	2.30	0.45
1:B:729:GLN:OE1	1:B:749:ARG:NH2	2.41	0.45
1:C:243:LEU:HD23	1:C:393:PHE:CZ	2.52	0.45
1:C:251:ARG:O	1:C:255:GLU:HB2	2.15	0.45
1:E:159:ILE:O	1:E:162:LYS:HG2	2.17	0.45
2:K:88:PRO:HA	2:K:113:VAL:HB	1.97	0.45
1:E:243:LEU:HD23	1:E:393:PHE:CZ	2.50	0.45
1:E:323:SER:O	1:E:326:ILE:HG12	2.14	0.45
1:A:56:PRO:HG2	1:A:99:TYR:CD1	2.51	0.45
1:B:278:ILE:HA	1:B:281:TYR:CD2	2.51	0.45
1:E:233:ASP:O	1:E:236:GLU:HG3	2.15	0.45
1:A:504:ASP:OD1	1:A:505:ILE:N	2.45	0.45
1:D:634:SER:OG	2:J:59:GLU:OE2	2.25	0.45
1:E:511:TRP:O	1:E:514:SER:OG	2.29	0.45
1:F:461:ILE:HB	1:F:483:ILE:HG13	1.98	0.45
1:A:173:LEU:O	1:A:176:THR:OG1	2.34	0.45
1:A:611:PHE:CE1	1:A:634:SER:HB2	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:537:ILE:HG13	1:B:561:VAL:HG11	1.98	0.45
1:B:710:LEU:HD21	1:B:713:LEU:HB2	1.99	0.45
1:D:290:LYS:HB2	1:D:290:LYS:HE3	1.68	0.45
1:D:555:LEU:HD13	1:D:559:PRO:HD3	1.97	0.45
1:E:154:GLU:HG3	1:E:155:HIS:N	2.32	0.45
1:C:543:LEU:HD13	1:C:546:LEU:HD13	1.98	0.45
1:C:780:LYS:HD2	1:C:806:ASP:HA	1.98	0.45
1:A:159:ILE:O	1:A:162:LYS:HG2	2.17	0.45
1:A:546:LEU:HB3	1:A:568:HIS:HE1	1.82	0.45
1:B:499:HIS:NE2	1:B:522:HIS:HD2	2.14	0.45
1:C:356:ILE:HD12	1:C:388:LYS:HA	1.99	0.45
1:F:248:LYS:NZ	1:F:399:GLU:OE2	2.36	0.45
1:F:669:LEU:O	1:F:672:ASN:ND2	2.50	0.45
1:A:543:LEU:HD13	1:A:546:LEU:HD13	1.99	0.45
1:A:547:LYS:HD2	1:A:570:GLN:HG3	1.99	0.45
1:F:431:HIS:HA	1:F:452:LYS:HB2	1.99	0.45
1:B:159:ILE:HA	1:B:162:LYS:HG2	1.99	0.45
1:B:772:GLU:O	1:B:775:GLU:HG2	2.17	0.45
1:F:24:TRP:CG	1:F:339:THR:HG1	2.34	0.45
1:B:492:ARG:NH2	1:B:516:LYS:HD2	2.32	0.45
1:C:500:ILE:HB	1:C:523:LEU:HD23	1.98	0.45
1:C:605:ARG:HD2	2:I:54:TYR:CZ	2.52	0.45
1:D:495:LEU:HD23	1:D:515:LEU:HD13	1.97	0.45
1:D:715:VAL:O	1:D:718:ASN:ND2	2.50	0.45
2:L:53:SER:HA	2:L:72:ARG:HH22	1.82	0.45
1:A:348:LEU:HB3	1:A:377:HIS:ND1	2.32	0.44
1:C:772:GLU:O	1:C:775:GLU:HG2	2.17	0.44
1:D:771:VAL:HG23	1:D:795:PRO:HG2	1.99	0.44
1:E:782:SER:N	1:E:806:ASP:OD2	2.42	0.44
2:I:40:ALA:HB3	2:I:43:LYS:HD2	1.99	0.44
1:C:290:LYS:HE3	1:C:290:LYS:HB2	1.69	0.44
1:C:461:ILE:HB	1:C:483:ILE:HG13	1.99	0.44
1:D:772:GLU:O	1:D:775:GLU:HG2	2.17	0.44
1:F:159:ILE:HA	1:F:162:LYS:HG2	1.99	0.44
1:F:425:GLN:N	1:F:425:GLN:OE1	2.50	0.44
2:G:88:PRO:HA	2:G:113:VAL:HB	2.00	0.44
2:H:87:LYS:N	2:H:90:ASP:OD2	2.39	0.44
1:E:169:THR:HG23	1:E:393:PHE:HE2	1.83	0.44
1:F:152:LYS:NZ	1:F:257:GLY:HA3	2.33	0.44
2:K:15:GLY:N	2:K:86:LEU:O	2.49	0.44
1:A:704:ILE:HD13	1:A:727:LEU:HD13	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:746:LEU:HD23	1:A:747:PRO:HD2	1.99	0.44
1:B:354:GLU:O	1:B:358:GLU:HB2	2.18	0.44
1:E:627:LYS:HG2	1:E:650:HIS:HB2	2.00	0.44
1:C:56:PRO:HG2	1:C:99:TYR:CD1	2.53	0.44
1:C:443:PHE:CE1	1:C:465:ILE:HG22	2.53	0.44
1:D:669:LEU:O	1:D:672:ASN:ND2	2.50	0.44
1:E:791:PHE:CE2	1:E:799:LYS:HE3	2.52	0.44
2:H:73:ASP:N	2:H:73:ASP:OD1	2.50	0.44
2:H:73:ASP:OD1	2:H:78:THR:OG1	2.30	0.44
1:A:518:LEU:HB3	1:A:543:LEU:HD22	2.00	0.44
1:F:135:ILE:HG12	1:F:274:LYS:HZ3	1.82	0.44
1:F:593:LEU:HD23	1:F:613:LEU:HD13	1.99	0.44
1:F:603:LEU:HD13	1:F:607:PRO:HD3	2.00	0.44
1:A:413:LEU:HD11	1:A:444:ASP:HB3	1.98	0.44
1:B:109:VAL:HG21	1:B:308:TYR:CE2	2.52	0.44
1:B:502:PHE:CE1	1:B:508:ILE:HD11	2.52	0.44
1:B:728:PHE:HA	1:B:753:LEU:HD21	1.99	0.44
1:D:663:ASN:HA	1:D:686:LYS:HD2	1.99	0.44
1:E:56:PRO:HG2	1:E:99:TYR:CD1	2.53	0.44
1:F:19:ILE:HD12	1:F:379:ILE:HD11	1.98	0.44
1:B:135:ILE:HG23	1:B:274:LYS:NZ	2.33	0.44
1:E:620:ASP:HA	1:E:645:LYS:HB2	1.99	0.44
1:A:154:GLU:HA	1:A:157:VAL:HG12	2.00	0.44
1:A:500:ILE:HB	1:A:523:LEU:HD23	1.99	0.44
1:A:622:LYS:HB2	1:A:647:TRP:HE1	1.83	0.44
1:B:24:TRP:CG	1:B:339:THR:HG1	2.36	0.44
1:B:425:GLN:N	1:B:425:GLN:OE1	2.51	0.44
1:C:353:PHE:CE1	1:C:391:ALA:HB2	2.53	0.44
1:C:590:MET:HE2	1:C:593:LEU:HD13	1.99	0.44
1:C:791:PHE:CE2	1:C:799:LYS:HE3	2.53	0.44
1:D:780:LYS:HG2	1:D:805:ALA:HB1	1.99	0.44
2:H:5:VAL:HG23	2:H:107:GLN:HG2	1.99	0.44
2:L:36:TRP:CE2	2:L:81:LEU:HB2	2.52	0.44
1:A:356:ILE:HD13	1:A:391:ALA:HB3	2.00	0.43
1:A:728:PHE:O	1:A:731:ARG:NH1	2.50	0.43
1:E:356:ILE:HD12	1:E:388:LYS:HA	2.00	0.43
1:F:251:ARG:HH12	1:F:366:PRO:HG2	1.82	0.43
2:G:15:GLY:HA2	2:G:85:SER:HA	2.00	0.43
1:D:647:TRP:CD1	1:D:647:TRP:H	2.36	0.43
1:F:56:PRO:HG2	1:F:99:TYR:CD1	2.54	0.43
1:F:468:LEU:HB3	1:F:471:LEU:HB2	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:475:TRP:HA	1:F:499:HIS:HB2	1.99	0.43
1:F:781:ARG:HH12	1:F:786:VAL:HG12	1.83	0.43
2:L:22:CYS:HB2	2:L:36:TRP:CH2	2.52	0.43
1:C:322:ALA:O	1:C:326:ILE:HG23	2.17	0.43
1:C:587:LEU:HD21	1:C:596:LEU:HD21	2.00	0.43
1:D:647:TRP:CD1	1:D:647:TRP:N	2.85	0.43
2:L:2:VAL:HG21	2:L:100:VAL:HG21	2.00	0.43
1:C:52:MET:HG3	1:C:114:TYR:HD2	1.82	0.43
1:C:348:LEU:HB3	1:C:377:HIS:ND1	2.34	0.43
1:D:56:PRO:HG2	1:D:99:TYR:CD1	2.53	0.43
1:D:248:LYS:NZ	1:D:399:GLU:OE2	2.39	0.43
1:F:647:TRP:N	1:F:647:TRP:CD1	2.85	0.43
2:K:34:MET:HE2	2:K:79:VAL:HG21	1.99	0.43
1:B:32:SER:HA	1:B:35:MET:HE2	1.99	0.43
1:B:685:ARG:HH21	1:B:706:LEU:HD13	1.83	0.43
1:B:800:GLU:OE1	1:C:688:ARG:NH1	2.49	0.43
1:D:135:ILE:HD13	1:D:274:LYS:HD3	2.00	0.43
1:D:235:LYS:O	1:D:239:GLN:HG2	2.19	0.43
1:F:129:VAL:HG13	1:F:325:TYR:CE1	2.53	0.43
2:H:69:THR:HB	2:H:82:GLN:HB3	2.00	0.43
1:B:160:LEU:HD11	1:B:386:TYR:HB3	2.01	0.43
1:B:734:ARG:O	1:B:757:THR:N	2.44	0.43
1:E:780:LYS:HD2	1:E:806:ASP:HA	2.00	0.43
1:B:647:TRP:CD1	1:B:647:TRP:N	2.86	0.43
1:B:797:GLU:HG2	1:C:688:ARG:HD3	2.01	0.43
1:C:296:THR:HG23	1:C:307:THR:HG22	2.00	0.43
1:C:452:LYS:HE2	1:C:475:TRP:CZ3	2.54	0.43
1:C:520:GLU:HG2	1:C:548:VAL:HB	1.99	0.43
1:D:115:GLU:OE2	1:E:316:THR:OG1	2.32	0.43
1:D:510:LEU:HD12	1:D:510:LEU:HA	1.83	0.43
1:E:129:VAL:HG13	1:E:325:TYR:CE1	2.54	0.43
1:F:728:PHE:HA	1:F:753:LEU:HD21	2.00	0.43
1:B:679:THR:OG1	1:B:703:ASP:OD2	2.31	0.43
1:B:780:LYS:HG2	1:B:805:ALA:HB1	1.99	0.43
1:D:670:ASN:OD1	1:D:670:ASN:N	2.34	0.43
1:B:290:LYS:HE3	1:B:290:LYS:HB2	1.76	0.43
1:B:419:ARG:NH1	1:B:431:HIS:O	2.51	0.43
1:F:685:ARG:HH21	1:F:706:LEU:HD13	1.84	0.43
1:A:698:THR:HG22	1:A:719:ARG:HB2	2.01	0.42
1:C:400:ASN:OD1	1:C:403:ARG:NH1	2.52	0.42
1:C:519:GLU:HA	1:C:546:LEU:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:87:LYS:HB3	2:G:89:GLU:OE1	2.19	0.42
1:A:173:LEU:HD13	1:A:173:LEU:HA	1.89	0.42
1:A:235:LYS:O	1:A:239:GLN:HG2	2.19	0.42
1:B:348:LEU:H	1:B:348:LEU:HD23	1.83	0.42
1:B:499:HIS:CE1	1:B:522:HIS:HD2	2.37	0.42
1:C:169:THR:HG23	1:C:393:PHE:CE2	2.53	0.42
1:C:302:LEU:HD11	1:D:309:ARG:HD3	2.01	0.42
1:C:616:LEU:HB3	1:C:638:LEU:HD23	2.00	0.42
1:D:132:HIS:HA	1:D:135:ILE:HG22	2.01	0.42
1:D:223:ILE:HA	1:D:483:ILE:O	2.18	0.42
1:D:275:PHE:CE1	1:D:333:GLY:HA3	2.54	0.42
1:F:348:LEU:HD23	1:F:348:LEU:H	1.84	0.42
1:F:679:THR:OG1	1:F:703:ASP:OD2	2.33	0.42
1:B:35:MET:HE3	1:B:133:THR:HG22	2.01	0.42
1:B:669:LEU:O	1:B:672:ASN:ND2	2.53	0.42
1:F:278:ILE:HA	1:F:281:TYR:HD2	1.84	0.42
1:F:422:LYS:HG2	1:F:428:LEU:HD23	2.01	0.42
1:B:117:ARG:HG2	1:B:295:CYS:HA	2.00	0.42
1:B:235:LYS:O	1:B:239:GLN:HG2	2.20	0.42
1:B:275:PHE:CE1	1:B:333:GLY:HA3	2.54	0.42
1:B:768:CYS:HB2	1:B:793:THR:HG21	2.01	0.42
1:C:430:LEU:HB3	1:C:448:LEU:HD21	2.02	0.42
1:C:450:VAL:HG13	1:C:473:GLU:HB2	2.01	0.42
1:F:715:VAL:O	1:F:718:ASN:ND2	2.50	0.42
1:A:270:ILE:O	1:A:273:ILE:HG13	2.19	0.42
1:A:443:PHE:CE1	1:A:465:ILE:HG22	2.55	0.42
1:B:510:LEU:HD12	1:B:510:LEU:HA	1.82	0.42
1:C:710:LEU:HG	1:C:733:LEU:HD13	2.02	0.42
1:D:531:ASN:H	1:D:533:ARG:NH2	2.16	0.42
1:E:109:VAL:HG21	1:E:308:TYR:CE2	2.54	0.42
2:H:28:PRO:HG2	2:H:31:ARG:HB2	2.01	0.42
1:A:407:LEU:HD12	1:A:407:LEU:HA	1.87	0.42
1:A:590:MET:HE2	1:A:593:LEU:HD13	2.02	0.42
1:C:115:GLU:OE2	1:D:316:THR:OG1	2.38	0.42
1:D:135:ILE:HG23	1:D:274:LYS:NZ	2.34	0.42
1:E:243:LEU:HD12	1:E:243:LEU:HA	1.85	0.42
1:E:297:VAL:HG23	1:E:299:ILE:HG12	2.01	0.42
1:E:709:ASN:HA	1:E:732:LYS:HD2	2.01	0.42
1:D:520:GLU:OE2	1:D:522:HIS:NE2	2.34	0.42
1:D:733:LEU:HD21	1:D:736:LEU:HD21	2.00	0.42
1:E:136:PHE:CE1	1:E:274:LYS:HE3	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:259:ILE:N	1:E:371:ASP:OD2	2.38	0.42
1:E:420:LEU:HD12	1:E:430:LEU:HD13	2.00	0.42
1:E:575:ASN:HA	1:E:599:ILE:O	2.20	0.42
1:F:441:THR:O	1:F:441:THR:OG1	2.38	0.42
1:B:248:LYS:NZ	1:B:399:GLU:OE2	2.40	0.42
1:B:452:LYS:HG2	1:B:475:TRP:CG	2.54	0.42
1:C:431:HIS:HA	1:C:452:LYS:HB2	2.01	0.42
1:D:147:PRO:HA	1:D:150:SER:HB3	2.00	0.42
1:D:774:GLY:O	1:D:801:ARG:NH2	2.53	0.42
1:E:303:THR:OG1	1:E:308:TYR:OH	2.30	0.42
1:F:648:TYR:CE2	1:F:671:ARG:HG3	2.55	0.42
1:A:149:THR:O	1:A:153:LEU:HG	2.20	0.42
1:B:647:TRP:CD1	1:B:647:TRP:H	2.38	0.42
1:E:600:ARG:HG2	1:E:623:ASP:HB3	2.02	0.42
1:F:384:PRO:O	1:F:387:SER:OG	2.28	0.42
1:B:52:MET:HG3	1:B:114:TYR:HD2	1.84	0.42
1:D:600:ARG:HG2	1:D:623:ASP:CB	2.50	0.42
1:F:275:PHE:CE1	1:F:333:GLY:HA3	2.55	0.42
1:F:500:ILE:HG21	1:F:508:ILE:HG12	2.02	0.42
2:J:91:THR:HG23	2:J:112:THR:HA	2.02	0.42
1:A:585:ASN:OD1	1:A:588:LYS:NZ	2.31	0.41
1:C:154:GLU:HA	1:C:157:VAL:HG12	2.01	0.41
1:F:135:ILE:HG23	1:F:274:LYS:NZ	2.35	0.41
1:F:311:ALA:O	1:F:313:PRO:HD3	2.20	0.41
1:F:780:LYS:HG2	1:F:805:ALA:HB1	2.02	0.41
2:G:73:ASP:OD1	2:G:73:ASP:N	2.53	0.41
1:A:290:LYS:HE3	1:A:290:LYS:HB2	1.66	0.41
1:A:791:PHE:CE2	1:A:799:LYS:HE3	2.54	0.41
1:B:715:VAL:O	1:B:718:ASN:ND2	2.53	0.41
1:D:233:ASP:OD1	1:D:234:LYS:N	2.54	0.41
1:E:443:PHE:CE1	1:E:465:ILE:HG22	2.55	0.41
1:F:531:ASN:H	1:F:533:ARG:NH2	2.19	0.41
2:L:22:CYS:HB3	2:L:79:VAL:HB	2.01	0.41
1:C:41:PHE:O	1:C:44:THR:HG22	2.20	0.41
1:C:311:ALA:O	1:C:313:PRO:HD3	2.20	0.41
1:D:300:GLU:CD	1:D:306:ARG:HD2	2.45	0.41
1:E:476:LEU:HB2	1:E:500:ILE:HD13	2.01	0.41
1:A:316:THR:O	1:A:320:ILE:HG12	2.20	0.41
1:A:780:LYS:HD2	1:A:806:ASP:HA	2.02	0.41
1:B:648:TYR:CE2	1:B:671:ARG:HG3	2.56	0.41
1:C:159:ILE:O	1:C:162:LYS:HG2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:575:ASN:HA	1:C:599:ILE:O	2.20	0.41
1:E:290:LYS:HB2	1:E:290:LYS:HE3	1.68	0.41
1:E:430:LEU:HB3	1:E:448:LEU:HD21	2.02	0.41
1:E:527:LEU:HG	1:E:553:SER:HB3	2.02	0.41
1:F:19:ILE:HG13	1:F:20:LEU:HD22	2.02	0.41
2:G:40:ALA:HB3	2:G:43:LYS:HD2	2.03	0.41
1:A:34:VAL:O	1:A:38:ILE:HG23	2.20	0.41
1:A:500:ILE:HG22	1:A:502:PHE:HD1	1.85	0.41
1:B:439:PRO:HB2	1:B:442:VAL:HG13	2.03	0.41
1:E:173:LEU:HD13	1:E:173:LEU:HA	1.89	0.41
1:E:251:ARG:O	1:E:255:GLU:HB2	2.21	0.41
1:E:270:ILE:O	1:E:273:ILE:HG13	2.20	0.41
1:F:529:ALA:O	1:F:533:ARG:HB3	2.20	0.41
2:H:36:TRP:CE2	2:H:81:LEU:HB2	2.55	0.41
1:A:302:LEU:HD11	1:B:309:ARG:HD3	2.02	0.41
1:D:135:ILE:HG12	1:D:274:LYS:HZ3	1.86	0.41
1:D:300:GLU:OE2	1:D:306:ARG:NH1	2.52	0.41
1:D:509:PRO:HB3	1:D:511:TRP:NE1	2.35	0.41
1:E:736:LEU:HD23	1:E:736:LEU:HA	1.90	0.41
1:F:710:LEU:HD21	1:F:713:LEU:HB2	2.02	0.41
1:A:710:LEU:HG	1:A:733:LEU:HD13	2.03	0.41
1:B:297:VAL:HG23	1:B:299:ILE:HG12	2.03	0.41
1:C:243:LEU:HD12	1:C:243:LEU:HA	1.86	0.41
1:C:255:GLU:HG2	1:C:369:LYS:HB2	2.02	0.41
1:F:109:VAL:HG21	1:F:308:TYR:CE2	2.55	0.41
1:F:151:SER:O	1:F:154:GLU:HG3	2.20	0.41
1:A:164:PHE:O	1:A:389:ARG:NH1	2.53	0.41
1:A:611:PHE:CD1	1:A:634:SER:HB2	2.56	0.41
1:A:687:LEU:HD21	1:A:690:LEU:HD13	2.02	0.41
1:D:364:ASP:HB2	1:D:397:VAL:HG23	2.03	0.41
1:F:647:TRP:CD1	1:F:647:TRP:H	2.37	0.41
1:B:468:LEU:HB3	1:B:471:LEU:HB2	2.03	0.41
1:B:489:ALA:O	1:B:493:GLU:HG2	2.21	0.41
1:B:649:ASN:HB2	1:B:651:ILE:HG13	2.03	0.41
1:C:704:ILE:HD13	1:C:727:LEU:HD13	2.02	0.41
1:D:413:LEU:HD12	1:D:413:LEU:HA	1.91	0.41
1:D:588:LYS:HE2	1:D:588:LYS:HB3	1.96	0.41
1:D:648:TYR:CE1	1:D:671:ARG:HG3	2.56	0.41
1:E:500:ILE:HB	1:E:523:LEU:HD23	2.02	0.41
1:E:594:THR:HA	1:E:616:LEU:HA	2.02	0.41
1:E:772:GLU:O	1:E:775:GLU:HG2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:233:ASP:OD1	1:F:234:LYS:N	2.54	0.41
1:F:354:GLU:O	1:F:358:GLU:HB2	2.21	0.41
1:F:357:ARG:HD2	1:F:363:SER:HA	2.01	0.41
2:L:17:SER:HB3	2:L:82:GLN:NE2	2.36	0.41
1:A:685:ARG:HE	1:A:706:LEU:HB3	1.84	0.41
1:B:233:ASP:OD1	1:B:234:LYS:N	2.54	0.41
1:B:518:LEU:HD23	1:B:543:LEU:HD13	2.02	0.41
1:F:634:SER:OG	2:L:59:GLU:OE2	2.25	0.41
1:D:502:PHE:CE1	1:D:508:ILE:HD11	2.56	0.40
2:K:40:ALA:HB3	2:K:43:LYS:HB3	2.03	0.40
1:A:377:HIS:O	1:A:381:GLN:HG2	2.21	0.40
1:A:420:LEU:HD12	1:A:430:LEU:HD13	2.03	0.40
1:A:688:ARG:HD3	1:F:797:GLU:HG2	2.03	0.40
1:C:263:LEU:HD23	1:C:263:LEU:HA	1.85	0.40
1:C:270:ILE:O	1:C:273:ILE:HG13	2.21	0.40
1:E:422:LYS:HE2	1:E:422:LYS:HB3	1.85	0.40
1:E:519:GLU:HA	1:E:546:LEU:HA	2.02	0.40
1:F:135:ILE:HD13	1:F:274:LYS:HD3	2.04	0.40
1:F:575:ASN:HA	1:F:599:ILE:O	2.20	0.40
2:K:34:MET:HG3	2:K:79:VAL:HG21	2.02	0.40
2:L:83:MET:HE1	2:L:111:VAL:HG11	2.02	0.40
1:B:294:ASP:OD1	1:B:309:ARG:NH1	2.54	0.40
1:C:303:THR:HG1	1:C:308:TYR:HH	1.63	0.40
1:D:129:VAL:HG13	1:D:325:TYR:CE1	2.56	0.40
1:D:354:GLU:O	1:D:358:GLU:HB2	2.21	0.40
1:E:316:THR:O	1:E:320:ILE:HG12	2.21	0.40
1:F:453:LEU:HD22	1:F:456:ILE:HD12	2.02	0.40
2:K:40:ALA:HB3	2:K:43:LYS:HD2	2.04	0.40
1:B:151:SER:O	1:B:154:GLU:HG3	2.20	0.40
1:C:250:PHE:CZ	1:C:254:VAL:HG21	2.57	0.40
1:C:611:PHE:CE1	1:C:634:SER:HB2	2.56	0.40
1:D:551:LEU:HD11	1:D:562:VAL:HG21	2.02	0.40
1:E:670:ASN:OD1	1:E:670:ASN:N	2.40	0.40
1:E:704:ILE:HD13	1:E:727:LEU:HD13	2.03	0.40
1:F:52:MET:HG3	1:F:114:TYR:HB2	2.04	0.40
1:F:223:ILE:HA	1:F:483:ILE:O	2.20	0.40
1:A:688:ARG:NH1	1:F:800:GLU:OE1	2.55	0.40
1:B:356:ILE:HD12	1:B:388:LYS:HG2	2.03	0.40
1:B:631:GLU:HG3	2:H:52:TYR:CE2	2.57	0.40
1:C:129:VAL:HG13	1:C:325:TYR:CE1	2.56	0.40
1:C:622:LYS:HB2	1:C:647:TRP:NE1	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:160:LEU:HD11	1:D:386:TYR:HB3	2.04	0.40
1:F:794:LEU:O	1:F:799:LYS:NZ	2.55	0.40
2:I:15:GLY:N	2:I:86:LEU:O	2.52	0.40

There are no symmetry-related clashes.

5.3　Torsion angles ⓘ

5.3.1　Protein backbone ⓘ

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	A	712/810 (88%)	687 (96%)	25 (4%)	0	100	100
1	B	726/810 (90%)	699 (96%)	27 (4%)	0	100	100
1	C	712/810 (88%)	685 (96%)	27 (4%)	0	100	100
1	D	726/810 (90%)	700 (96%)	26 (4%)	0	100	100
1	E	712/810 (88%)	687 (96%)	25 (4%)	0	100	100
1	F	726/810 (90%)	699 (96%)	27 (4%)	0	100	100
2	G	112/144 (78%)	111 (99%)	1 (1%)	0	100	100
2	H	112/144 (78%)	109 (97%)	3 (3%)	0	100	100
2	I	112/144 (78%)	109 (97%)	3 (3%)	0	100	100
2	J	112/144 (78%)	110 (98%)	2 (2%)	0	100	100
2	K	112/144 (78%)	109 (97%)	3 (3%)	0	100	100
2	L	112/144 (78%)	110 (98%)	2 (2%)	0	100	100
All	All	4986/5724 (87%)	4815 (97%)	171 (3%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains ⓘ

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	A	666/749 (89%)	641 (96%)	25 (4%)	28	55
1	B	678/749 (90%)	653 (96%)	25 (4%)	29	56
1	C	666/749 (89%)	640 (96%)	26 (4%)	27	55
1	D	678/749 (90%)	658 (97%)	20 (3%)	37	62
1	E	666/749 (89%)	639 (96%)	27 (4%)	26	53
1	F	678/749 (90%)	656 (97%)	22 (3%)	34	60
2	G	92/116 (79%)	90 (98%)	2 (2%)	47	68
2	H	92/116 (79%)	88 (96%)	4 (4%)	25	51
2	I	92/116 (79%)	90 (98%)	2 (2%)	47	68
2	J	92/116 (79%)	89 (97%)	3 (3%)	33	59
2	K	92/116 (79%)	90 (98%)	2 (2%)	47	68
2	L	92/116 (79%)	88 (96%)	4 (4%)	25	51
All	All	4584/5190 (88%)	4422 (96%)	162 (4%)	33	58

All (162) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	102	ASP
1	A	104	HIS
1	A	110	ASP
1	A	169	THR
1	A	263	LEU
1	A	279	ILE
1	A	292	ASP
1	A	295	CYS
1	A	297	VAL
1	A	300	GLU
1	A	344	LEU
1	A	348	LEU
1	A	353	PHE
1	A	354	GLU

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Mol	Chain	Res	Type
1	A	356	ILE
1	A	368	VAL
1	A	402	LEU
1	A	413	LEU
1	A	420	LEU
1	A	429	GLU
1	A	441	THR
1	A	456	ILE
1	A	460	THR
1	A	561	VAL
1	A	647	TRP
1	B	45	LEU
1	B	110	ASP
1	B	168	TRP
1	B	220	GLU
1	B	229	THR
1	B	263	LEU
1	B	279	ILE
1	B	292	ASP
1	B	300	GLU
1	B	317	LEU
1	B	348	LEU
1	B	356	ILE
1	B	370	ASN
1	B	407	LEU
1	B	441	THR
1	B	459	VAL
1	B	484	GLU
1	B	584	LEU
1	B	619	ILE
1	B	644	LEU
1	B	647	TRP
1	B	664	LEU
1	B	670	ASN
1	B	698	THR
1	B	793	THR
1	C	110	ASP
1	C	169	THR
1	C	173	LEU
1	C	232	LEU
1	C	263	LEU
1	C	275	PHE

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Mol	Chain	Res	Type
1	C	279	ILE
1	C	295	CYS
1	C	300	GLU
1	C	317	LEU
1	C	348	LEU
1	C	353	PHE
1	C	354	GLU
1	C	368	VAL
1	C	402	LEU
1	C	413	LEU
1	C	420	LEU
1	C	429	GLU
1	C	441	THR
1	C	448	LEU
1	C	456	ILE
1	C	460	THR
1	C	536	VAL
1	C	583	VAL
1	C	647	TRP
1	C	746	LEU
1	D	20	LEU
1	D	104	HIS
1	D	105	GLN
1	D	110	ASP
1	D	168	TRP
1	D	229	THR
1	D	231	VAL
1	D	236	GLU
1	D	263	LEU
1	D	275	PHE
1	D	279	ILE
1	D	297	VAL
1	D	317	LEU
1	D	356	ILE
1	D	370	ASN
1	D	441	THR
1	D	584	LEU
1	D	647	TRP
1	D	670	ASN
1	D	793	THR
1	E	20	LEU
1	E	48	THR

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Mol	Chain	Res	Type
1	E	110	ASP
1	E	154	GLU
1	E	169	THR
1	E	232	LEU
1	E	263	LEU
1	E	279	ILE
1	E	292	ASP
1	E	300	GLU
1	E	317	LEU
1	E	348	LEU
1	E	353	PHE
1	E	354	GLU
1	E	368	VAL
1	E	402	LEU
1	E	413	LEU
1	E	420	LEU
1	E	429	GLU
1	E	441	THR
1	E	448	LEU
1	E	536	VAL
1	E	561	VAL
1	E	647	TRP
1	E	670	ASN
1	E	712	ASN
1	E	746	LEU
1	F	104	HIS
1	F	110	ASP
1	F	224	VAL
1	F	229	THR
1	F	231	VAL
1	F	263	LEU
1	F	279	ILE
1	F	295	CYS
1	F	300	GLU
1	F	317	LEU
1	F	348	LEU
1	F	353	PHE
1	F	356	ILE
1	F	370	ASN
1	F	392	VAL
1	F	441	THR
1	F	459	VAL

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Mol	Chain	Res	Type
1	F	584	LEU
1	F	619	ILE
1	F	647	TRP
1	F	670	ASN
1	F	793	THR
2	G	79	VAL
2	G	93	VAL
2	H	5	VAL
2	H	93	VAL
2	H	100	VAL
2	H	109	THR
2	I	5	VAL
2	I	93	VAL
2	J	5	VAL
2	J	107	GLN
2	J	109	THR
2	K	79	VAL
2	K	93	VAL
2	L	5	VAL
2	L	100	VAL
2	L	107	GLN
2	L	109	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (43) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	104	HIS
1	A	155	HIS
1	A	568	HIS
1	A	708	GLN
1	A	709	ASN
1	A	741	ASN
1	B	478	HIS
1	B	494	ASN
1	B	554	ASN
1	B	560	GLN
1	B	624	ASN
1	B	709	ASN
1	C	119	HIS
1	C	287	HIS
1	C	381	GLN
1	C	467	GLN

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Mol	Chain	Res	Type
1	C	615	ASN
1	C	663	ASN
1	C	708	GLN
1	C	709	ASN
1	C	741	ASN
1	D	66	ASN
1	D	104	HIS
1	D	312	HIS
1	D	494	ASN
1	D	554	ASN
1	D	624	ASN
1	D	694	HIS
1	D	709	ASN
1	E	119	HIS
1	E	155	HIS
1	E	287	HIS
1	E	406	ASN
1	E	467	GLN
1	E	741	ASN
1	F	49	GLN
1	F	494	ASN
1	F	554	ASN
1	F	737	HIS
2	G	77	ASN
2	I	39	GLN
2	J	32	HIS
2	L	110	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-13202. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

6.1 Orthogonal projections ⓘ
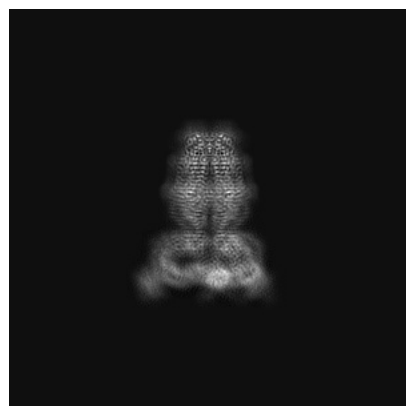
6.1.1 Primary map

X
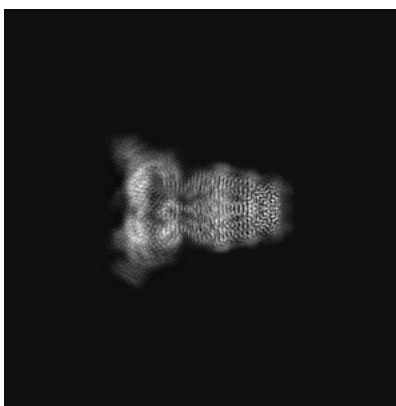
Y
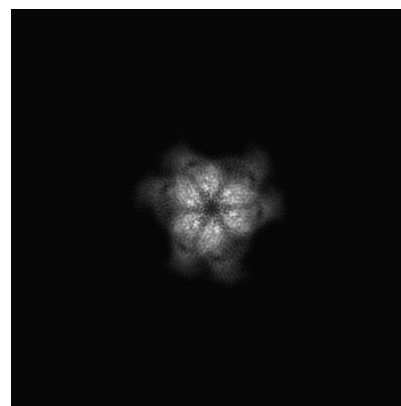
Z

6.1.2 Raw map

X

Y

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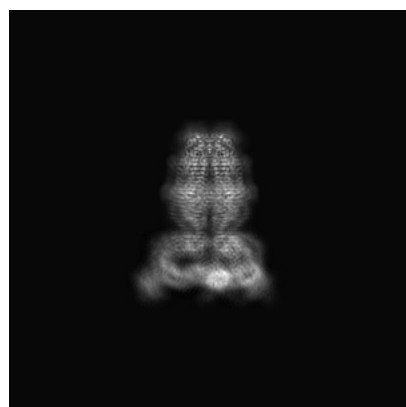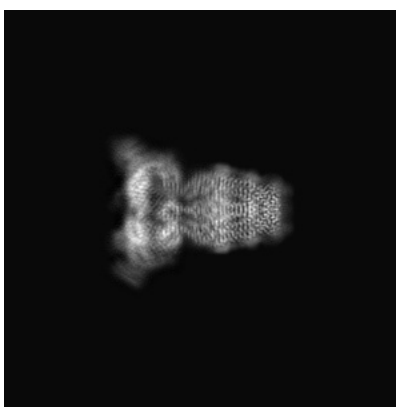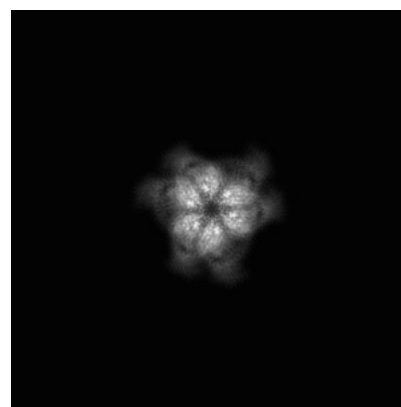
The images above show the map projected in three orthogonal directions.

6.2　Central slices ⓘ

6.2.1　Primary map
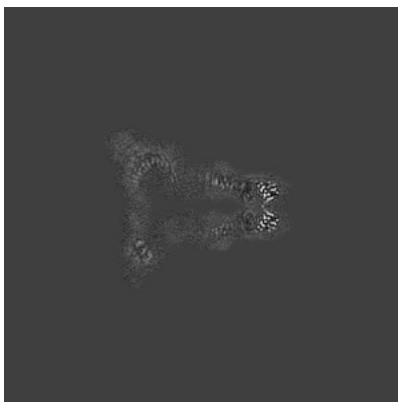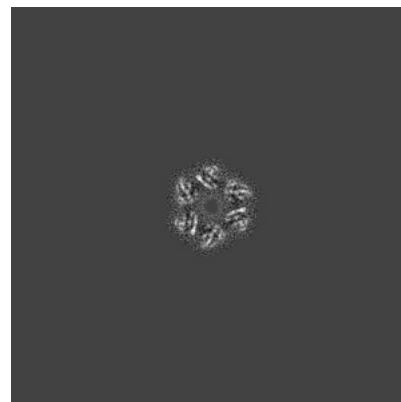
| X Index: 168 | Y Index: 168 | Z Index: 168 |

6.2.2　Raw map
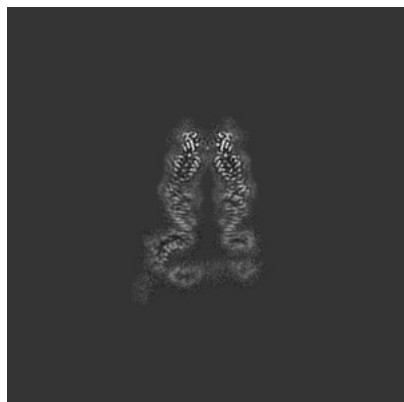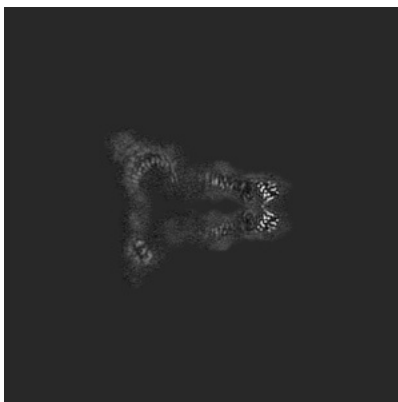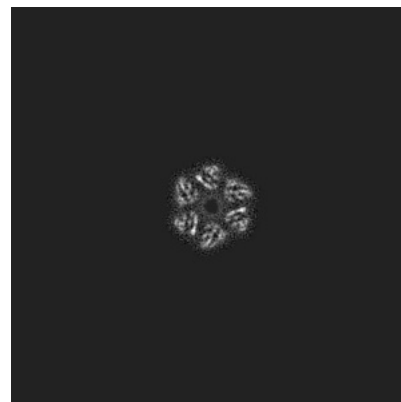
| X Index: 168 | Y Index: 168 | Z Index: 168 |

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

6.3 Largest variance slices ⓘ

6.3.1 Primary map
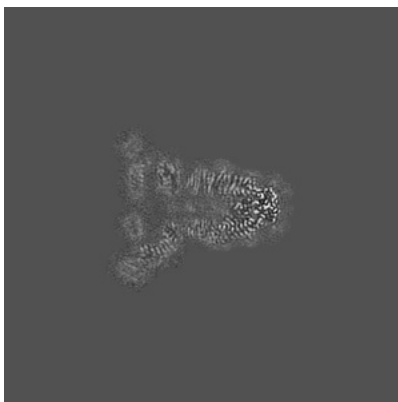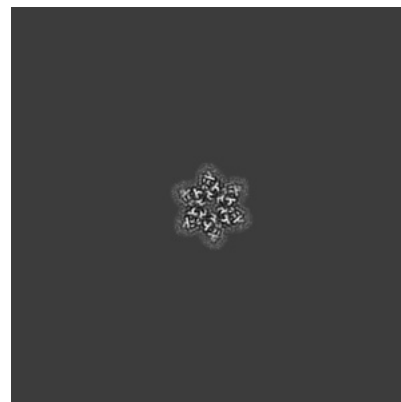
| X Index: 168 | Y Index: 181 | Z Index: 206 |

6.3.2 Raw map
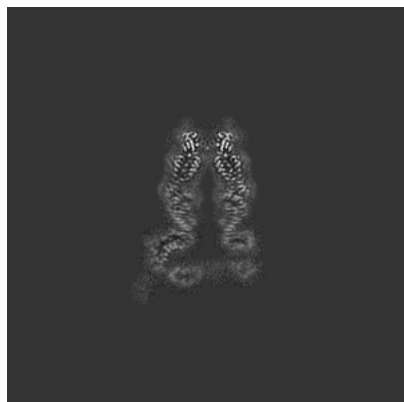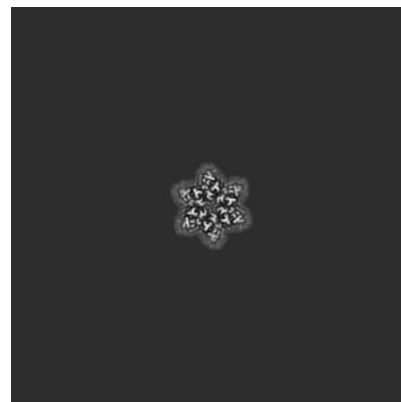
| X Index: 168 | Y Index: 181 | Z Index: 206 |

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

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

6.4.1 Primary map
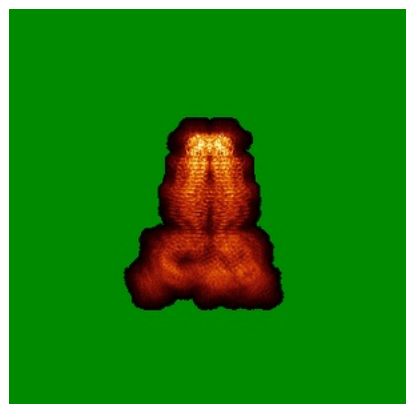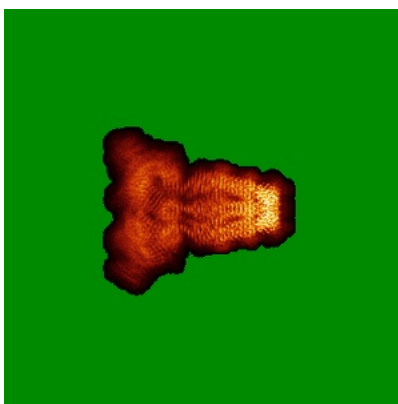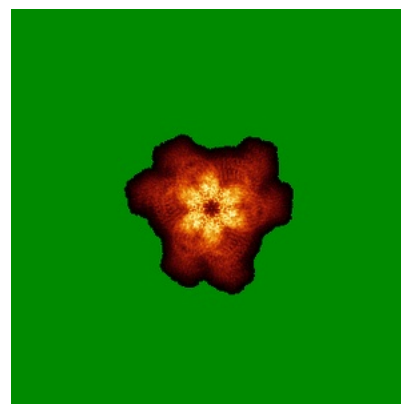
X	Y	Z

6.4.2 Raw map

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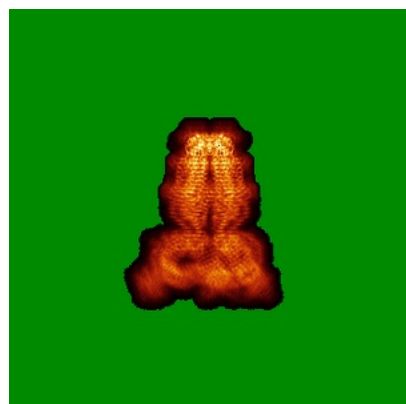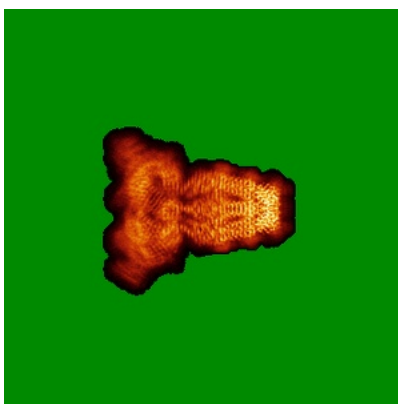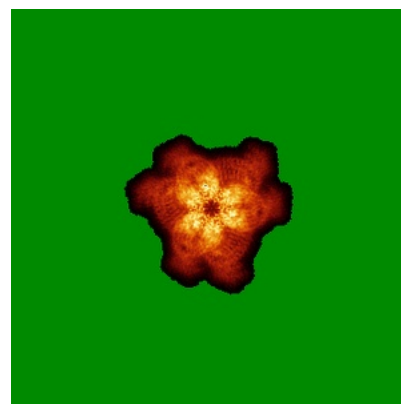
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5　Orthogonal surface views ⓘ

6.5.1　Primary map

X　　　　　　　　　　　　　Y　　　　　　　　　　　　　Z
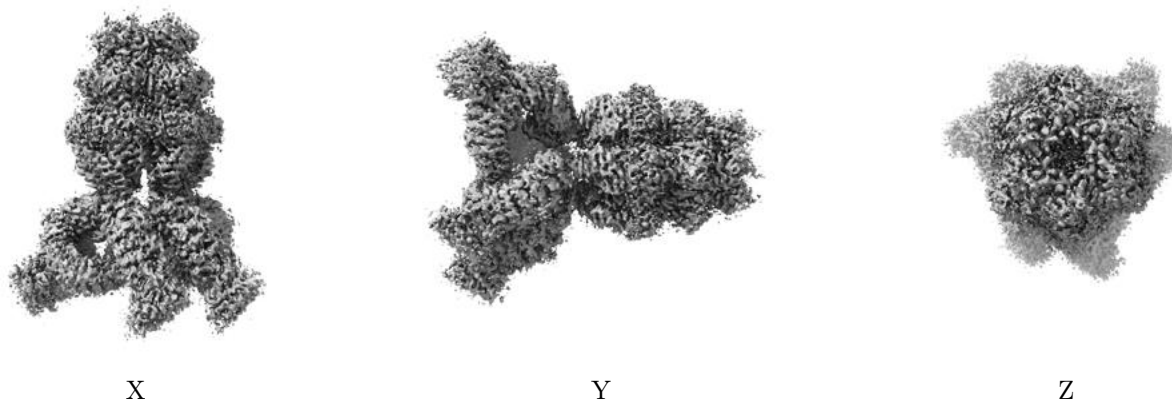
The images above show the 3D surface view of the map at the recommended contour level 0.025.
These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2　Raw map

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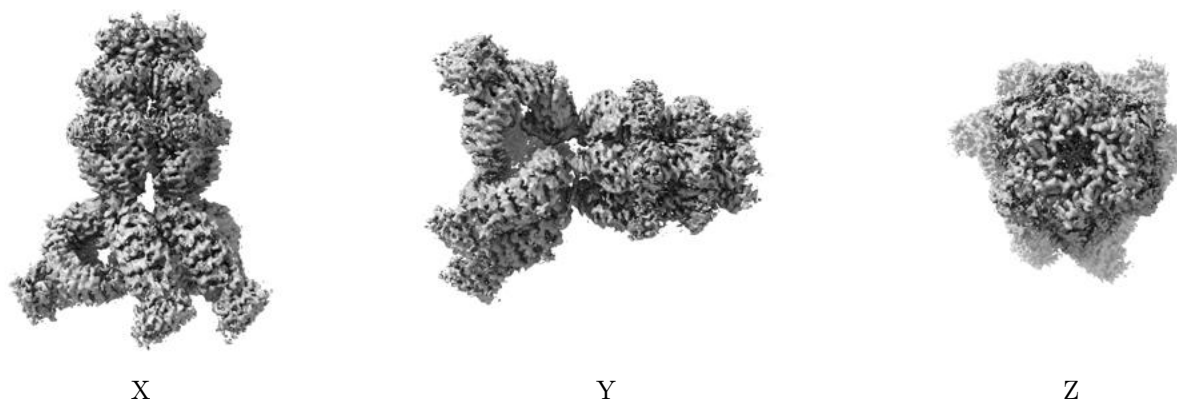
These images show the 3D surface of the raw map. The raw map's contour level was selected so
that its surface encloses the same volume as the primary map does at its recommended contour
level.

6.6　Mask visualisation ⓘ

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

A mask typically either:

- Encompasses the whole structure

- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

6.6.1　emd_13202_msk_1.map ⓘ

X　　　　　　　　　　　　　Y　　　　　　　　　　　　　Z
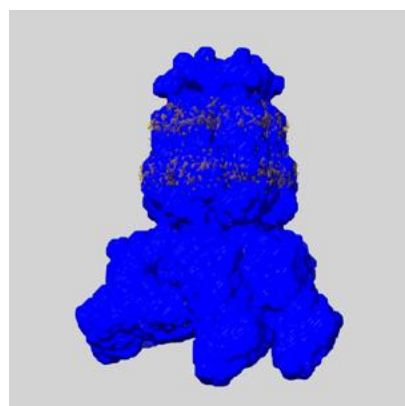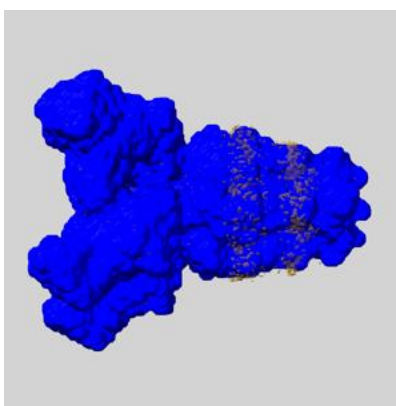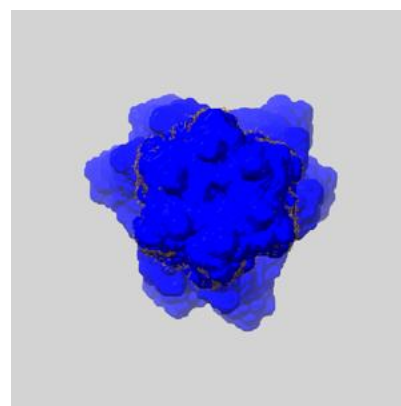
7   Map analysis ⓘ

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

7.1   Map-value distribution ⓘ

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 ⓘ
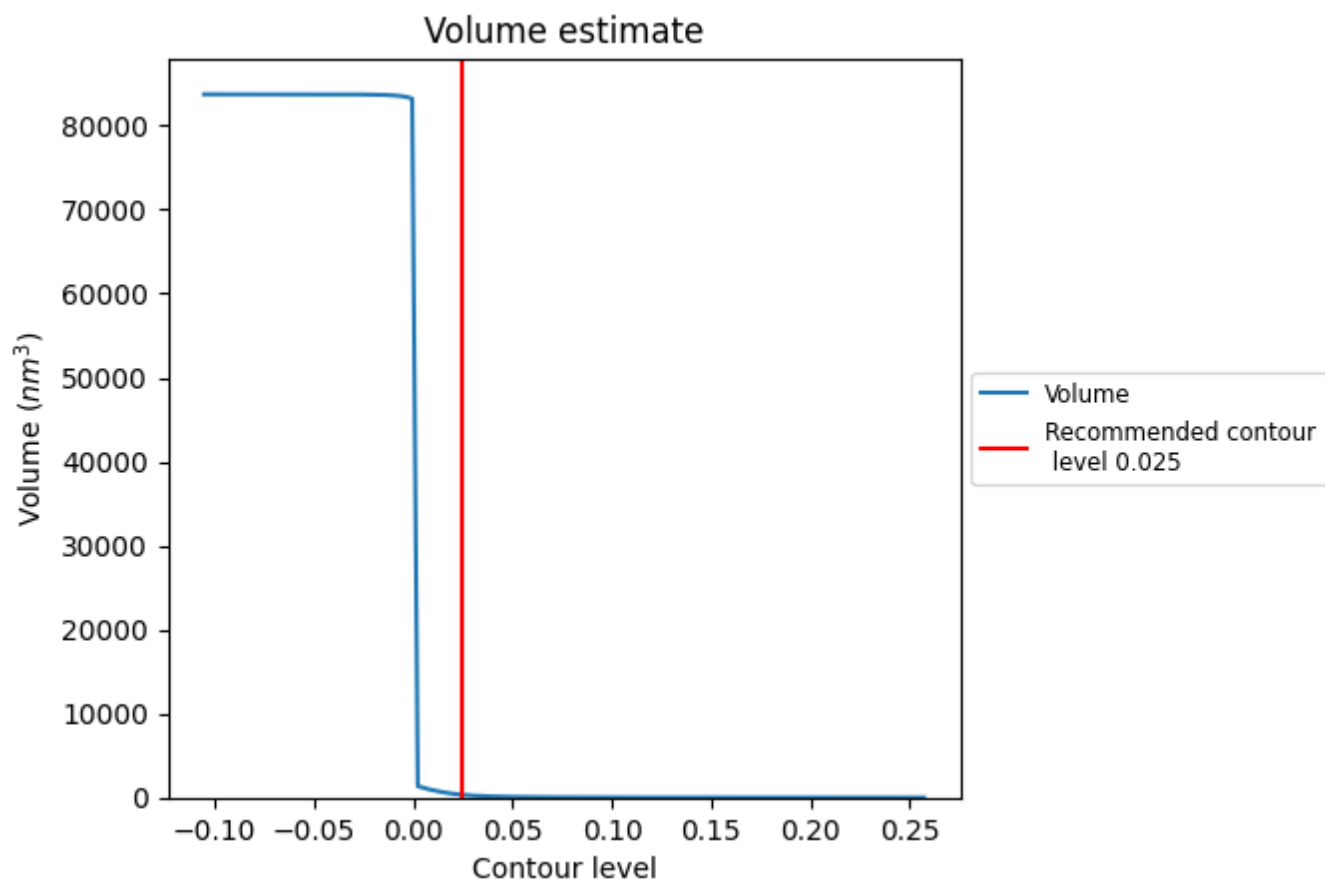
The volume at the recommended contour level is 322 nm^3; this corresponds to an approximate mass of 291 kDa.

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 ⓘ
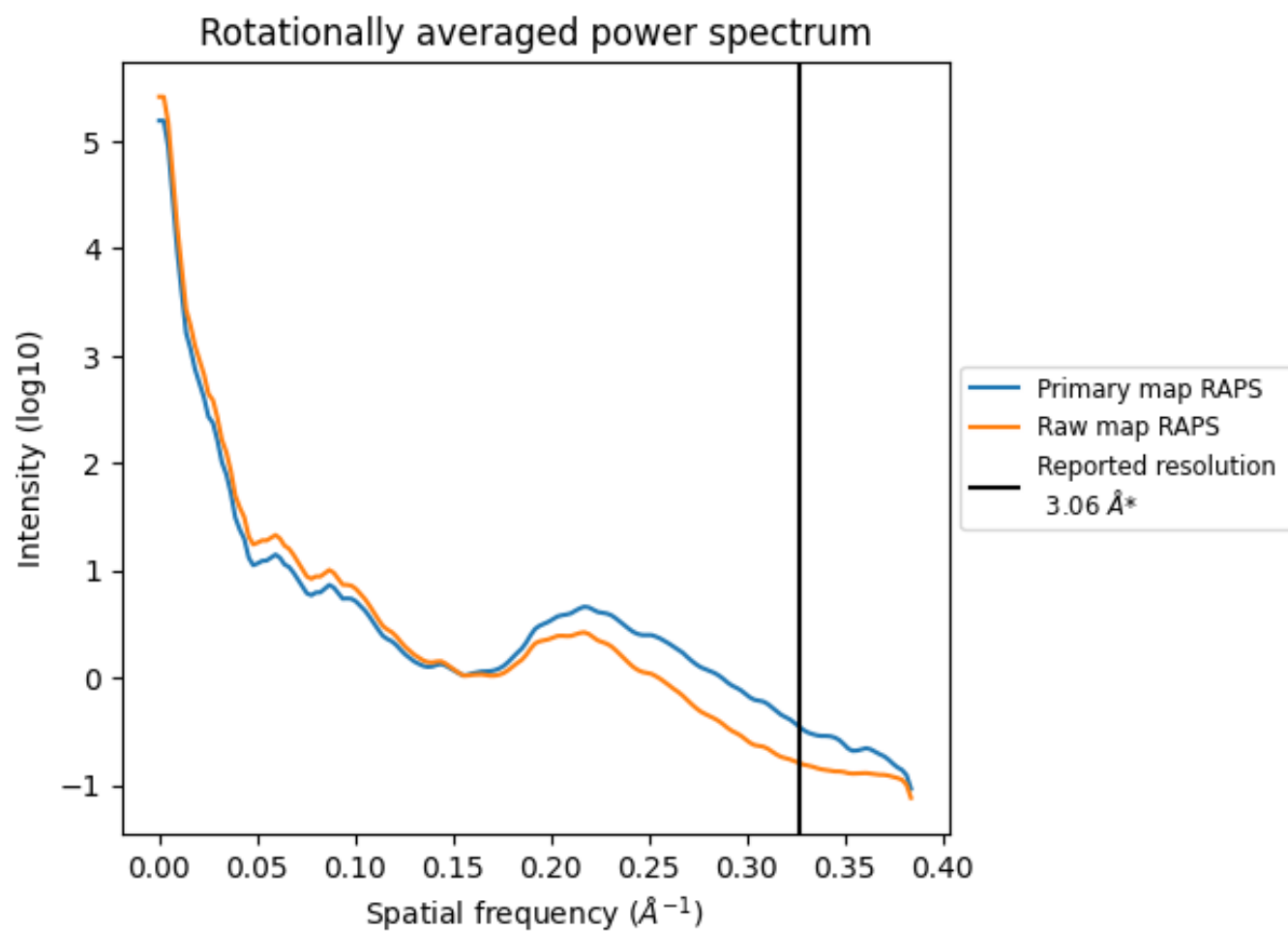
*Reported resolution corresponds to spatial frequency of 0.327 Å^{-1}

8   Fourier-Shell correlation ⓘ

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

8.1   FSC ⓘ

*Reported resolution corresponds to spatial frequency of 0.327 Å^{-1}

WORLDWIDE
wwPDB
PROTEIN DATA BANK
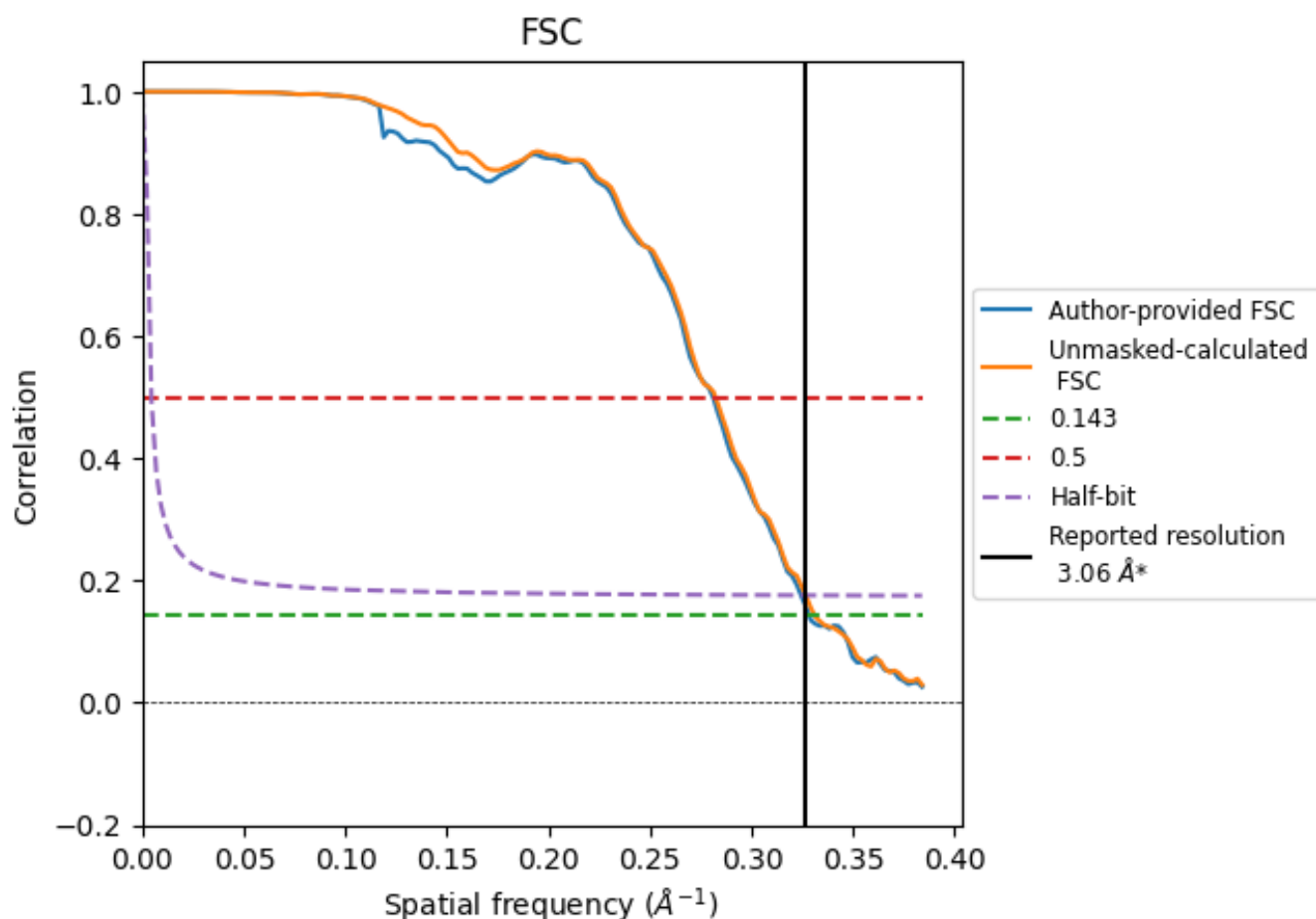
8.2　Resolution estimates　ⓘ

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.06	-	-
Author-provided FSC curve	3.05	3.56	3.08
Unmasked-calculated*	3.02	3.54	3.06

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit (i)

This section contains information regarding the fit between EMDB map EMD-13202 and PDB model 7P5V. Per-residue inclusion information can be found in section 3 on page 8.

9.1 Map-model overlay (i)

X	Y	Z
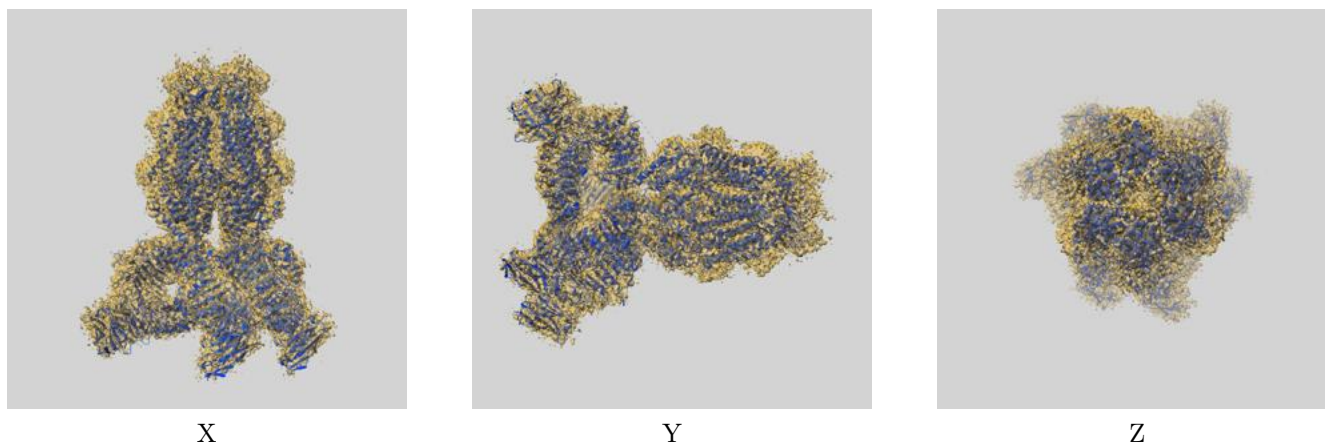
The images above show the 3D surface view of the map at the recommended contour level 0.025 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2　Q-score mapped to coordinate model ⓘ


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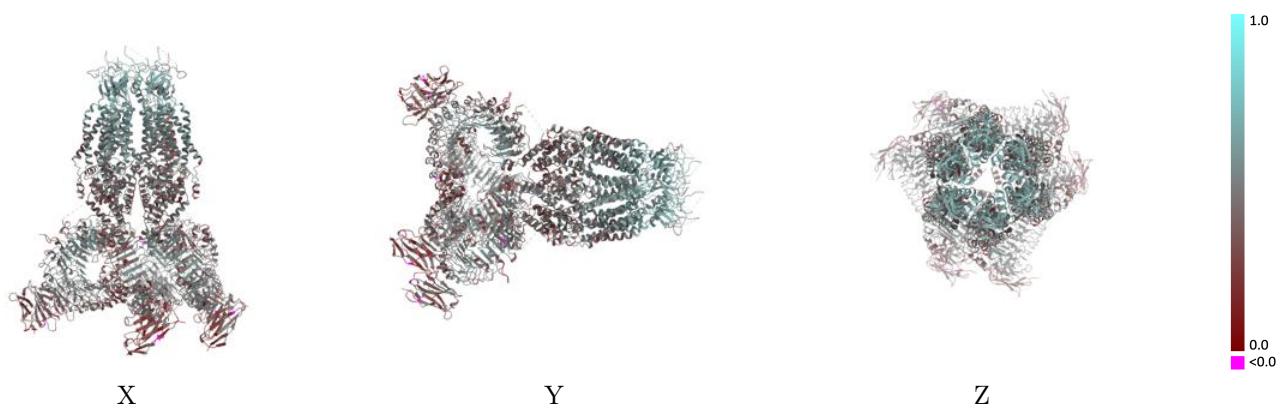
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3　Atom inclusion mapped to coordinate model ⓘ

| X | Y | Z |
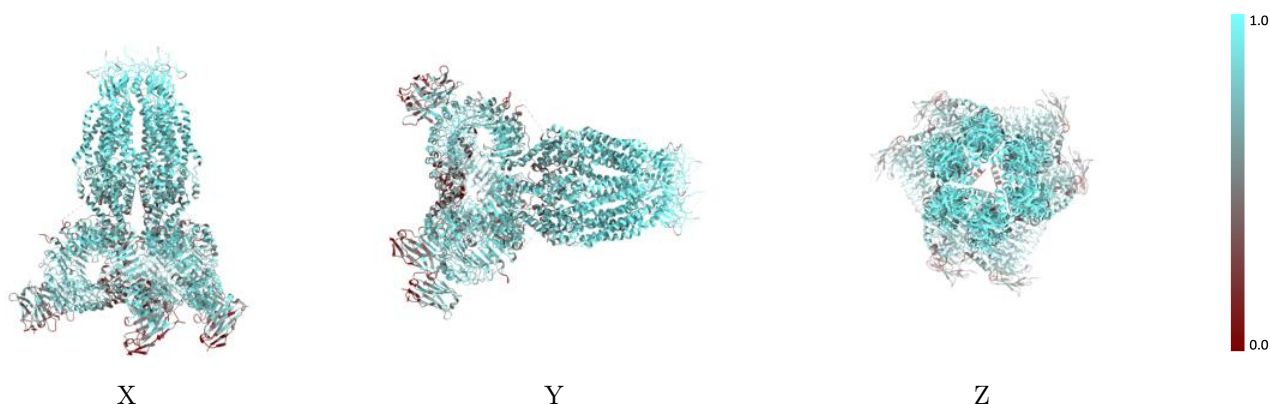
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.025).

9.4   Atom inclusion ⓘ
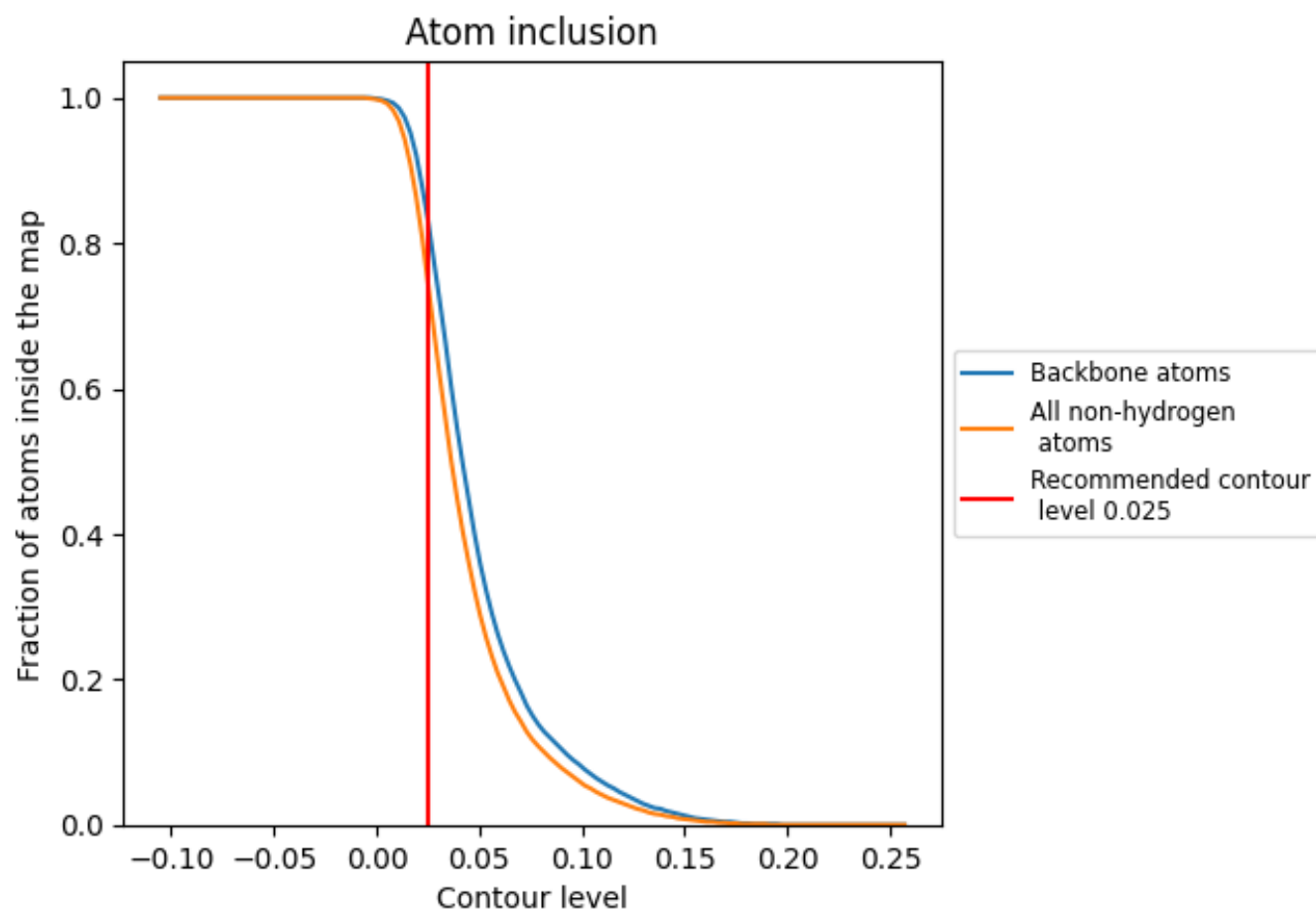
At the recommended contour level, 83% of all backbone atoms, 75% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.025) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7460	0.4520
A	0.7780	0.4680
B	0.7890	0.4730
C	0.7810	0.4690
D	0.7920	0.4740
E	0.7820	0.4690
F	0.7930	0.4730
G	0.4530	0.3130
H	0.4980	0.3410
I	0.4560	0.3030
J	0.5000	0.3490
K	0.4590	0.3060
L	0.5110	0.3480

1.0

0.0
<0.0