W O R L D W I D E

wwPDB

P R O T E I N   D A T A   B A N K

Full wwPDB EM Validation Report ⓘ

Dec 14, 2024 – 02:40 PM EST

PDB ID	:	9C67
EMDB ID	:	EMD-45241
Title	:	cryoEM structure of CRISPR associated effector, CARF-Adenosine deaminase 1, Cad1, in apo form
Authors	:	Majumder, P.; Patel, D.J.
Deposited on	:	2024-06-07
Resolution	:	3.60 Å(reported)
Based on initial model	:	.

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

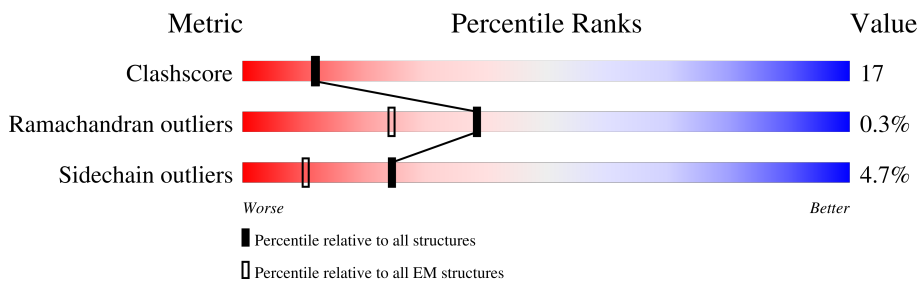|		
EMDB validation analysis	:	0.0.1.dev113
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.40

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 3.60 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.

Metric	Percentile Ranks	Value
Clashscore		17
Ramachandran outliers		0.3%
Sidechain outliers		4.7%

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	600	61% 35% • •
1	B	600	50% 38% • 10%
1	C	600	61% 35% • •
1	D	600	55% 32% • 10%
1	E	600	61% 36% • •
1	F	600	56% 31% • 10%

WORLDWIDE wwPDB PROTEIN DATA BANK

2 Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 26783 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 Adenosine deaminase domain-containing protein.

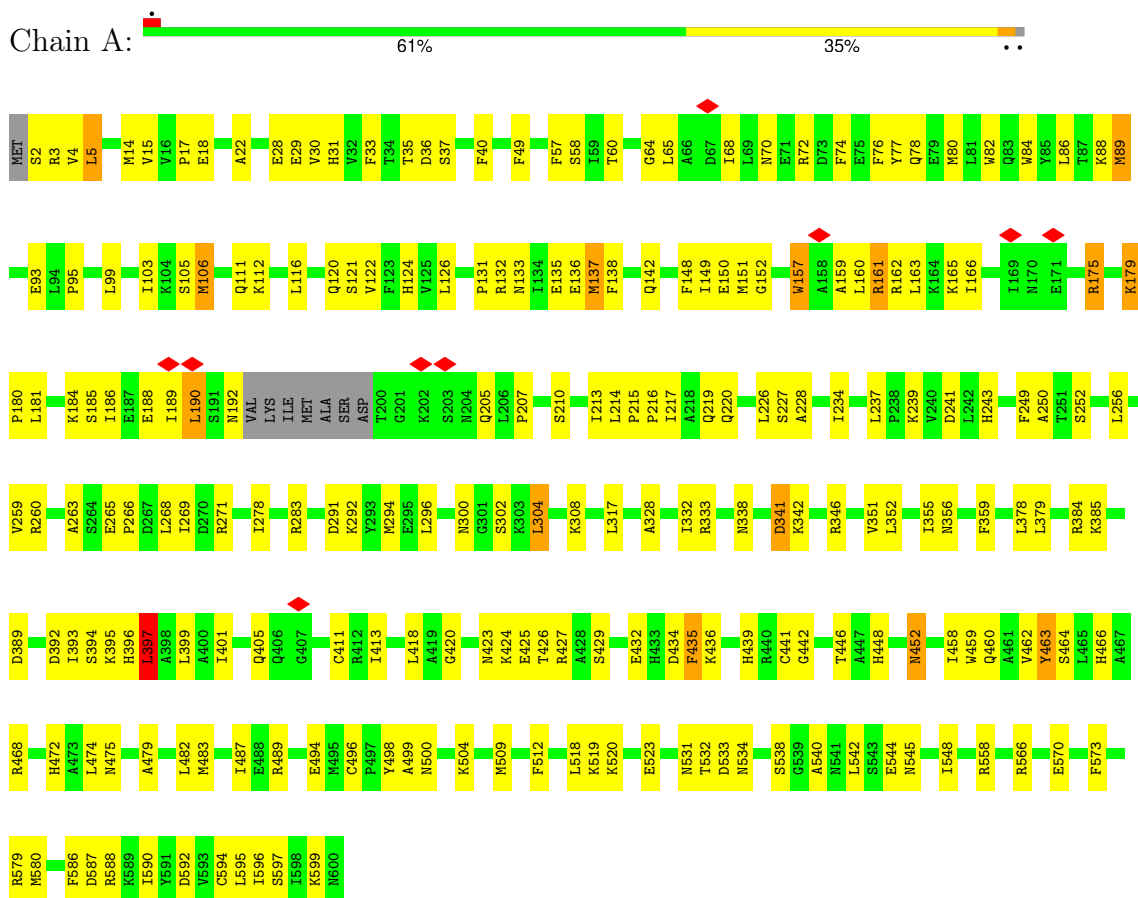| Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	592	Total	C	N	O	S	0	0
			4666	2973	804	863	26		
1	B	540	Total	C	N	O	S	0	0
			4268	2722	734	786	26		
1	C	590	Total	C	N	O	S	0	0
			4654	2967	801	860	26		
1	D	538	Total	C	N	O	S	0	0
			4254	2714	732	783	25		
1	E	593	Total	C	N	O	S	0	0
			4674	2978	805	864	27		
1	F	539	Total	C	N	O	S	0	0
			4261	2718	733	784	26		

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

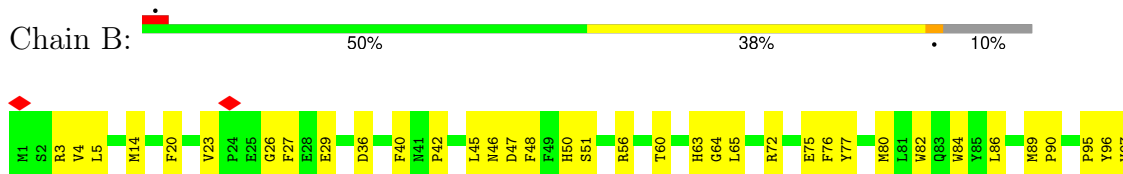| Mol	Chain	Residues	Atoms		AltConf
2	A	1	Total	Mg	0
			1	1	
2	B	1	Total	Mg	0
			1	1	
2	C	1	Total	Mg	0
			1	1	
2	D	1	Total	Mg	0
			1	1	
2	E	1	Total	Mg	0
			1	1	
2	F	1	Total	Mg	0
			1	1	

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.

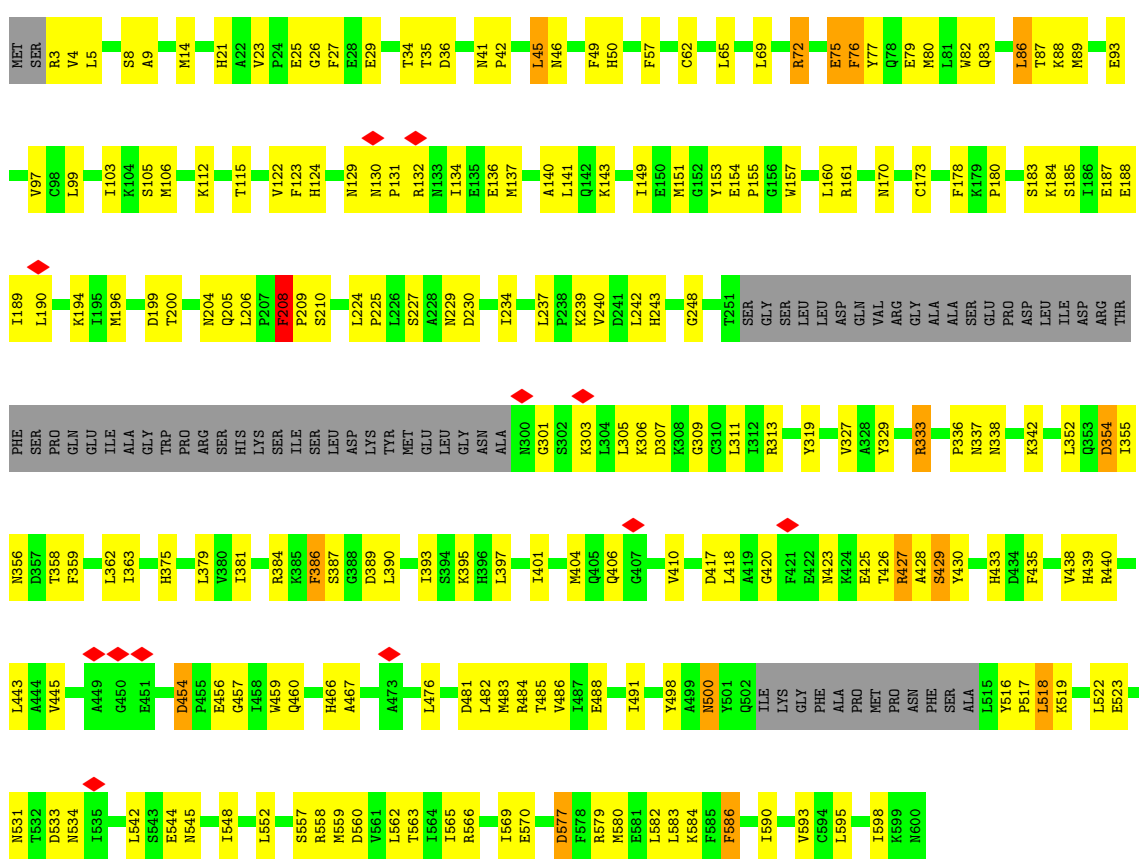• Molecule 1: Adenosine deaminase domain-containing protein

Chain A:
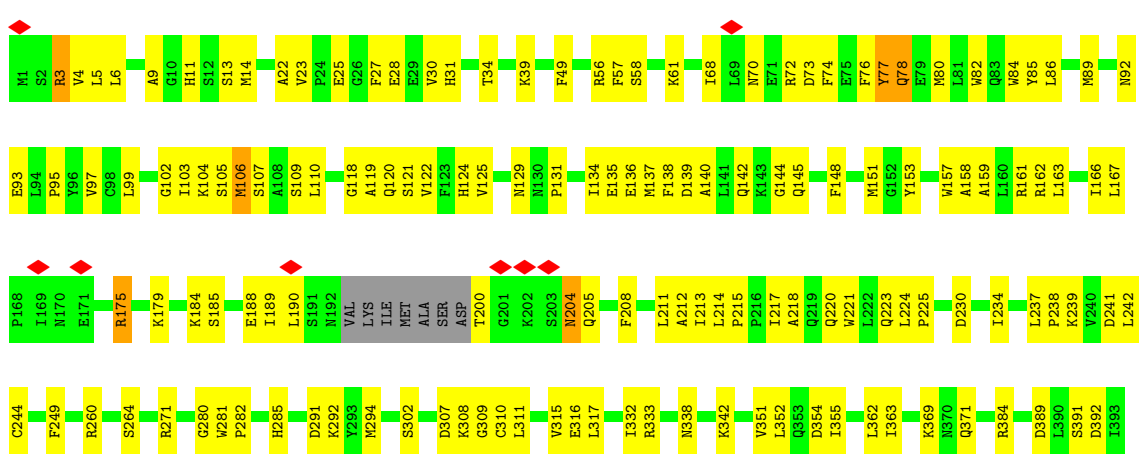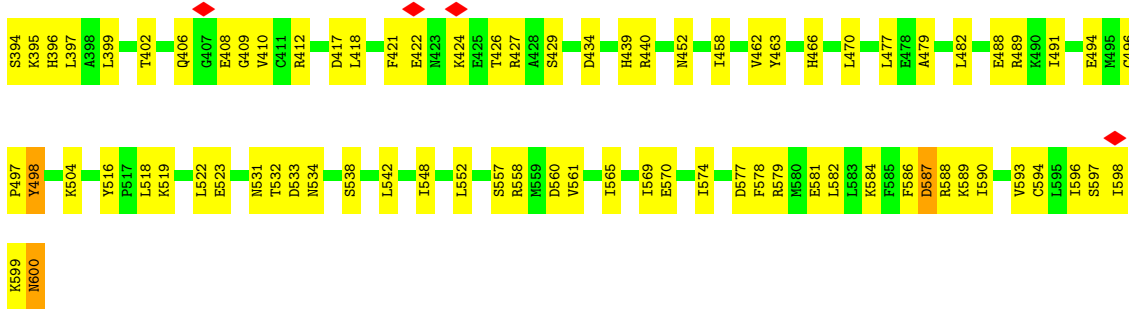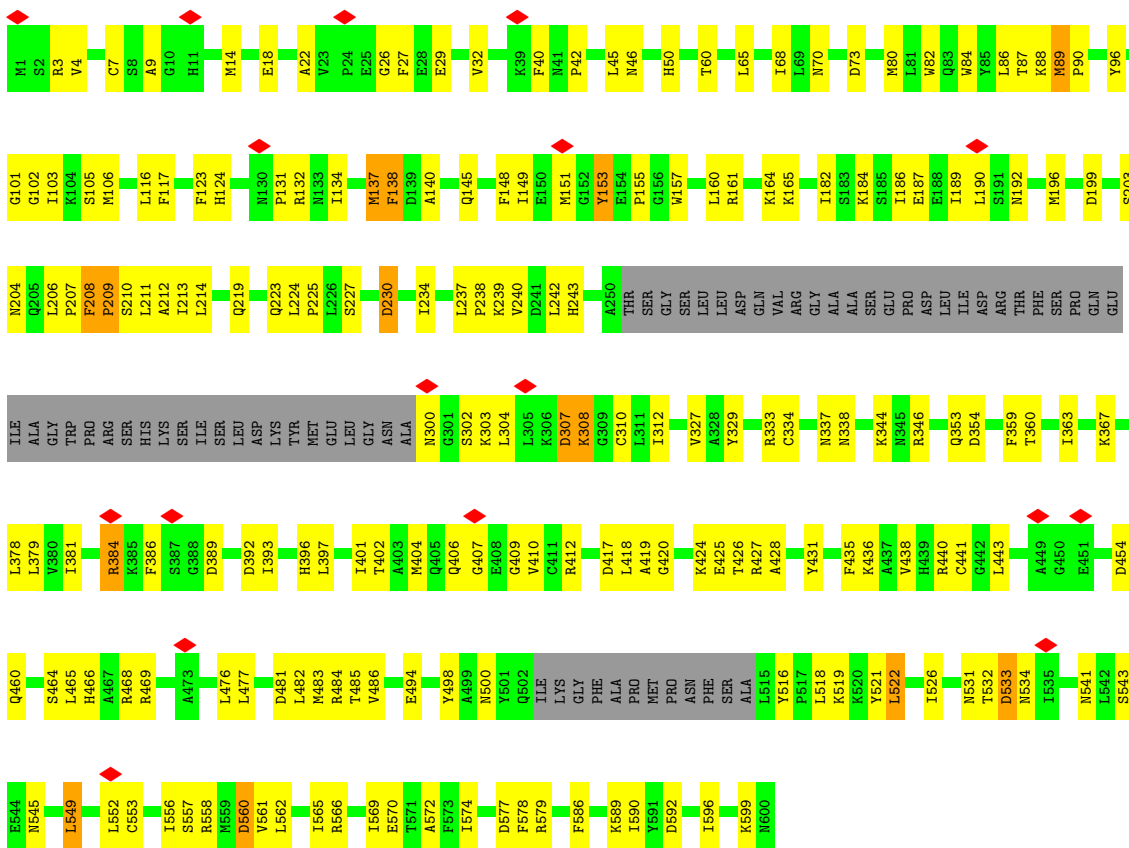

• Molecule 1: Adenosine deaminase domain-containing protein

Chain B:

• Molecule 1: Adenosine deaminase domain-containing protein

Chain C:

61%   35%

D577 F578 R579 M580 E581 K584 D587 R588 K589 V593 C594 L595 I596 S597 I598 K599 N600

• Molecule 1: Adenosine deaminase domain-containing protein

Chain D:

55%　　　　　　　　　　32%　　　　　　•　10%

MET SER R3 V4 L5 S8 A9 M14 H21 A22 V23 P24 E25 G26 F27 E28 E29 T34 T35 D36 N41 P42 L45 N46 F49 H50 F57 C62 L65 L69 R72 E75 F76 Y77 Q78 E79 M80 L81 W82 Q83 L86 T87 K88 M89 E93

V97 C98 L99 I103 K104 S105 M106 K112 T115 V122 F123 H124 N129 N130 P131 R132 N133 I134 E135 E136 M137 A140 L141 Q142 K143 I149 E150 M151 G152 Y153 E154 P155 G156 W157 L160 R161 N170 C173 F178 K179 P180 S183 K184 S185 I186 E187 E188

I189 L190 K194 I195 M196 D199 T200 N204 Q205 L206 P207 F208 P209 S210 L224 P225 L226 S227 A228 N229 D230 I234 L237 P238 K239 V240 D241 L242 H243 G248 T251 SER GLY SER LEU ASP GLN VAL ARG GLY ALA ALA SER GLU PRO ASP LEU ILE ASP ARG THR

PHE SER PRO GLN GLU ILE ALA GLY TRP PRO ARG SER HIS LYS SER ILE SER LEU ASP LYS TYR MET GLU LEU GLY ASN N300 G301 S302 K303 L304 L305 K306 D307 K308 G309 C310 L311 I312 R313 Y319 V327 A328 Y329 R333 P336 M337 N338 K342 L352 Q353 D354 I355

N356 D357 T358 F359 L362 I363 H375 L379 V380 I381 R384 K385 F386 S387 G388 D389 L390 I393 S394 K395 H396 L397 I401 M404 Q405 Q406 G407 V410 D417 L418 A419 G420 F421 E422 N423 K424 E425 T426 R427 A428 S429 Y430 H433 D434 F435 V438 H439 R440

L443 A444 V445 A449 G450 E451 D454 P455 E456 G457 I458 W459 Q460 H466 A467 A473 L476 D481 L482 M483 R484 T485 V486 I487 E488 I491 Y498 A499 N500 Y501 Q502 ILE LYS GLY PHE ALA PRO MET PRO ASN PHE SER ALA L515 Y516 P517 L518 K519 L522 E523

N531 T532 D533 N534 I535 L542 S543 E544 N545 I548 L552 S557 R558 M559 D560 V561 L562 T563 I564 I565 R566 I569 E570 D577 F578 R579 M580 E581 L582 L583 K584 F585 F586 I590 V593 C594 L595 I598 K599 N600

• Molecule 1: Adenosine deaminase domain-containing protein

Chain E:

61%　　　　　　　　　　36%　　　　•　•

M1 S2 R3 V4 L5 L6 A9 G10 H11 S12 S13 M14 A22 V23 P24 E25 G26 F27 E28 E29 V30 H31 T34 K39 F49 R56 F57 S58 K61 I68 L69 N70 E71 R72 D73 F74 E75 F76 Y77 Q78 E79 M80 L81 W82 Q83 W84 Y85 L86 M89 N92

E93 L94 P95 Y96 V97 C98 L99 G102 I103 K104 S105 S107 A108 S109 L110 G118 A119 Q120 S121 V122 F123 H124 V125 N129 N130 P131 I134 E135 E136 M137 F138 D139 A140 L141 Q142 K143 G144 Q145 F148 M151 G152 Y153 W157 A158 A159 L160 R161 R162 L163 I166 L167

P168 I169 N170 E171 R175 K179 K184 S185 E188 I189 L190 S191 N192 VAL LYS ILE MET ALA SER ASP T200 G201 K202 S203 N204 Q205 F208 L211 A212 I213 L214 P215 P216 I217 A218 Q219 Q220 W221 L222 Q223 L224 P225 D230 I234 L237 P238 K239 V240 D241 L242 H243

C244 F249 R260 S264 R271 G280 W281 P282 H285 D291 K292 Y293 M294 S302 D307 K308 G309 C310 L311 V315 E316 L317 I332 R333 N338 K342 V351 L352 Q353 D354 I355 L362 I363 K369 N370 Q371 R384 D389 L390 S391 D392 I393

• Molecule 1: Adenosine deaminase domain-containing protein

Chain F:

56%   31%   10%

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	110836	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	53	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.371	Depositor
Minimum map value	-0.134	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.013	Depositor
Recommended contour level	0.0591	Depositor
Map size (Å)	340.48, 340.48, 340.48	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.064, 1.064, 1.064	Depositor

5　Model quality ⓘ

5.1　Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: MG

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	0.26	0/4770	0.54	2/6462 (0.0%)
1	B	0.27	0/4359	0.57	2/5902 (0.0%)
1	C	0.25	0/4758	0.53	2/6446 (0.0%)
1	D	0.26	0/4345	0.56	4/5884 (0.1%)
1	E	0.26	0/4778	0.51	0/6472
1	F	0.25	0/4352	0.52	1/5892 (0.0%)
All	All	0.26	0/27362	0.54	11/37058 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	D	0	1
1	F	0	1
All	All	0	2

There are no bond length outliers.

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	207	PRO	CA-N-CD	-10.61	96.65	111.50
1	D	86	LEU	CA-CB-CG	6.92	131.21	115.30
1	C	81	LEU	CA-CB-CG	6.42	130.07	115.30
1	D	89	MET	CA-CB-CG	6.16	123.78	113.30
1	A	397	LEU	CA-CB-CG	6.01	129.13	115.30
1	B	211	LEU	CA-CB-CG	5.95	128.99	115.30
1	A	5	LEU	CA-CB-CG	5.72	128.46	115.30
1	D	454	ASP	CB-CG-OD1	5.29	123.06	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	F	206	LEU	CA-CB-CG	5.24	127.35	115.30
1	D	354	ASP	CB-CG-OD1	5.16	122.94	118.30
1	C	405	GLN	CA-CB-CG	5.00	124.41	113.40

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	D	208	PHE	Peptide
1	F	89	MET	Peptide

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	4666	0	4635	162	0
1	B	4268	0	4256	186	0
1	C	4654	0	4623	159	0
1	D	4254	0	4239	149	0
1	E	4674	0	4647	178	0
1	F	4261	0	4249	136	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
2	E	1	0	0	0	0
2	F	1	0	0	0	0
All	All	26783	0	26649	914	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 17.

All (914) 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)
1:B:211:LEU:HD12	1:B:212:ALA:H	1.33	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:160:LEU:HD11	1:D:189:ILE:HG21	1.57	0.87
1:E:584:LYS:HD3	1:F:204:ASN:HD22	1.39	0.87
1:E:162:ARG:HE	1:E:599:LYS:HD3	1.38	0.85
1:D:404:MET:HG2	1:D:443:LEU:HD21	1.56	0.85
1:F:404:MET:HG2	1:F:443:LEU:HD21	1.60	0.81
1:A:384:ARG:NH1	1:A:426:THR:O	2.13	0.80
1:E:131:PRO:HB3	1:E:136:GLU:HB3	1.63	0.79
1:D:124:HIS:HB2	1:D:149:ILE:HB	1.64	0.78
1:E:99:LEU:HB3	1:E:110:LEU:HD22	1.66	0.78
1:C:181:LEU:HD13	1:C:184:LYS:HZ1	1.48	0.77
1:E:86:LEU:HA	1:E:161:ARG:HH22	1.49	0.77
1:C:204:ASN:HD22	1:D:584:LYS:HB2	1.50	0.76
1:F:384:ARG:HH11	1:F:419:ALA:HB1	1.51	0.75
1:B:155:PRO:O	1:B:161:ARG:NH2	2.20	0.75
1:D:208:PHE:CD2	1:D:209:PRO:HD3	2.23	0.74
1:D:225:PRO:HA	1:D:557:SER:HA	1.70	0.74
1:A:106:MET:HE2	1:A:106:MET:H	1.51	0.73
1:D:132:ARG:N	1:D:136:GLU:OE2	2.17	0.73
1:E:234:ILE:O	1:E:239:LYS:NZ	2.21	0.73
1:B:496:CYS:O	1:B:500:ASN:ND2	2.22	0.72
1:A:185:SER:OG	1:A:220:GLN:NE2	2.20	0.72
1:A:234:ILE:O	1:A:239:LYS:NZ	2.21	0.72
1:B:29:GLU:HG3	1:B:56:ARG:HB2	1.71	0.72
1:D:311:LEU:HD11	1:D:355:ILE:HD11	1.71	0.72
1:E:157:TRP:CZ3	1:E:218:ALA:HB2	2.25	0.72
1:D:93:GLU:OE1	1:D:93:GLU:N	2.19	0.71
1:E:95:PRO:HD2	1:E:119:ALA:HA	1.71	0.71
1:B:188:GLU:O	1:B:192:ASN:ND2	2.24	0.71
1:B:122:VAL:HG22	1:B:152:GLY:HA3	1.73	0.70
1:B:486:VAL:HG23	1:B:491:ILE:HG13	1.73	0.70
1:E:458:ILE:HD12	1:E:458:ILE:H	1.56	0.70
1:D:243:HIS:N	1:D:531:ASN:OD1	2.24	0.70
1:B:135:GLU:N	1:B:135:GLU:OE1	2.20	0.70
1:C:353:GLN:NE2	1:C:406:GLN:OE1	2.24	0.70
1:C:584:LYS:HD3	1:D:205:GLN:HA	1.74	0.70
1:B:331:GLU:OE1	1:B:469:ARG:NH2	2.23	0.70
1:E:421:PHE:O	1:E:426:THR:OG1	2.10	0.69
1:A:189:ILE:HG21	1:B:155:PRO:HD3	1.75	0.69
1:A:439:HIS:HE1	1:A:466:HIS:HB2	1.58	0.68
1:B:4:VAL:HG12	1:B:29:GLU:HB2	1.74	0.68
1:B:162:ARG:NH2	1:B:588:ARG:O	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:213:ILE:HG21	1:F:196:MET:HG2	1.74	0.68
1:F:234:ILE:HA	1:F:237:LEU:HD12	1.75	0.68
1:B:460:GLN:O	1:B:464:SER:OG	2.10	0.68
1:C:213:ILE:HG21	1:D:196:MET:HG3	1.75	0.68
1:A:427:ARG:HG3	1:A:429:SER:H	1.58	0.67
1:B:211:LEU:HD13	1:B:214:LEU:HD23	1.76	0.67
1:B:586:PHE:O	1:B:590:ILE:HG12	1.95	0.67
1:A:479:ALA:HB1	1:A:482:LEU:HD23	1.77	0.67
1:C:463:TYR:O	1:D:466:HIS:NE2	2.28	0.67
1:D:234:ILE:O	1:D:239:LYS:NZ	2.26	0.67
1:E:406:GLN:NE2	1:E:408:GLU:O	2.26	0.67
1:D:234:ILE:HA	1:D:237:LEU:HD12	1.77	0.66
1:B:234:ILE:O	1:B:239:LYS:NZ	2.28	0.66
1:B:303:LYS:HE3	1:B:304:LEU:HB2	1.78	0.66
1:C:458:ILE:HD12	1:C:458:ILE:H	1.59	0.66
1:F:428:ALA:HB1	1:F:465:LEU:HD11	1.76	0.66
1:D:130:ASN:O	1:D:132:ARG:NH1	2.29	0.66
1:E:488:GLU:O	1:F:468:ARG:NH2	2.26	0.66
1:B:243:HIS:HD2	1:B:533:ASP:HA	1.61	0.66
1:B:471:GLY:HA2	1:B:494:GLU:HB2	1.76	0.66
1:B:500:ASN:ND2	1:B:516:TYR:OH	2.29	0.66
1:C:588:ARG:HB2	1:D:204:ASN:HB3	1.78	0.66
1:D:397:LEU:O	1:D:401:ILE:HG13	1.96	0.65
1:E:184:LYS:NZ	1:E:188:GLU:OE1	2.29	0.65
1:C:307:ASP:HB3	1:C:310:CYS:HB2	1.78	0.65
1:E:3:ARG:NH1	1:E:28:GLU:OE1	2.30	0.65
1:E:23:VAL:HG12	1:E:25:GLU:H	1.62	0.65
1:B:469:ARG:HD3	1:B:571:THR:HG22	1.77	0.65
1:B:384:ARG:HB2	1:B:420:GLY:HA3	1.79	0.65
1:C:209:PRO:HG2	1:D:206:LEU:O	1.97	0.65
1:F:418:LEU:HD23	1:F:465:LEU:HD13	1.79	0.65
1:A:74:PHE:HE1	1:A:105:SER:HB2	1.61	0.65
1:A:243:HIS:N	1:A:531:ASN:OD1	2.30	0.64
1:F:7:CYS:HB2	1:F:32:VAL:HG22	1.79	0.64
1:C:456:GLU:O	1:C:460:GLN:NE2	2.30	0.64
1:F:344:LYS:HB2	1:F:346:ARG:HG3	1.80	0.63
1:C:234:ILE:O	1:C:239:LYS:NZ	2.28	0.63
1:A:188:GLU:O	1:A:192:ASN:ND2	2.31	0.63
1:C:3:ARG:NH2	1:C:26:GLY:O	2.31	0.63
1:A:570:GLU:O	1:A:579:ARG:NH2	2.32	0.63
1:C:392:ASP:O	1:C:396:HIS:ND1	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:46:ASN:O	1:D:50:HIS:ND1	2.32	0.63
1:E:479:ALA:HB1	1:E:482:LEU:HD23	1.79	0.63
1:F:397:LEU:HD12	1:F:438:VAL:HG11	1.81	0.63
1:D:208:PHE:HD2	1:D:209:PRO:HD3	1.63	0.63
1:F:242:LEU:HB2	1:F:531:ASN:HD21	1.64	0.63
1:F:427:ARG:NH2	1:F:454:ASP:OD1	2.27	0.63
1:F:392:ASP:O	1:F:396:HIS:ND1	2.24	0.62
1:F:533:ASP:OD2	1:F:534:ASN:ND2	2.31	0.62
1:B:404:MET:HG2	1:B:443:LEU:HD21	1.80	0.62
1:C:204:ASN:HD21	1:D:580:MET:HG3	1.63	0.62
1:A:441:CYS:O	1:B:484:ARG:NH2	2.32	0.62
1:D:586:PHE:O	1:D:590:ILE:HG12	1.99	0.62
1:B:188:GLU:HG2	1:B:192:ASN:HD21	1.65	0.62
1:A:241:ASP:OD2	1:A:532:THR:OG1	2.17	0.62
1:A:534:ASN:O	1:A:538:SER:OG	2.14	0.62
1:D:21:HIS:ND1	1:D:21:HIS:O	2.33	0.62
1:E:494:GLU:HB2	1:E:531:ASN:HD22	1.64	0.62
1:B:201:GLY:O	1:B:204:ASN:ND2	2.33	0.62
1:A:214:LEU:HD12	1:A:215:PRO:HD2	1.82	0.61
1:B:391:SER:HB3	1:E:440:ARG:HG3	1.83	0.61
1:B:311:LEU:HD11	1:B:355:ILE:HD11	1.80	0.61
1:E:208:PHE:HB3	1:E:587:ASP:HB2	1.82	0.61
1:F:207:PRO:HG3	1:F:212:ALA:HB2	1.81	0.61
1:C:402:THR:HA	1:C:405:GLN:NE2	2.15	0.61
1:E:264:SER:N	1:E:307:ASP:OD2	2.33	0.61
1:B:65:LEU:HD21	1:B:76:PHE:HD2	1.65	0.61
1:C:185:SER:O	1:C:220:GLN:NE2	2.32	0.61
1:C:574:ILE:HD12	1:C:578:PHE:HD2	1.65	0.61
1:E:534:ASN:O	1:E:538:SER:OG	2.14	0.61
1:A:458:ILE:HD12	1:A:458:ILE:H	1.65	0.61
1:C:409:GLY:O	1:C:412:ARG:NH2	2.34	0.61
1:D:518:LEU:O	1:D:522:LEU:HD22	2.01	0.61
1:E:392:ASP:O	1:E:396:HIS:ND1	2.34	0.61
1:B:319:TYR:HE2	1:B:374:CYS:HB3	1.66	0.61
1:F:225:PRO:HA	1:F:557:SER:HA	1.83	0.61
1:A:131:PRO:HG2	1:A:137:MET:HB3	1.82	0.61
1:C:182:ILE:HD12	1:C:182:ILE:H	1.65	0.61
1:E:221:TRP:HA	1:E:224:LEU:HD23	1.83	0.60
1:F:469:ARG:NE	1:F:494:GLU:OE2	2.27	0.60
1:C:203:SER:OG	1:D:584:LYS:NZ	2.34	0.60
1:A:460:GLN:O	1:A:464:SER:OG	2.18	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:221:TRP:HA	1:C:224:LEU:HD23	1.82	0.60
1:F:541:ASN:ND2	1:F:543:SER:OG	2.34	0.60
1:A:458:ILE:O	1:A:462:VAL:HG12	2.02	0.60
1:A:588:ARG:NH1	1:A:592:ASP:OD1	2.35	0.60
1:B:333:ARG:HG3	1:B:379:LEU:HB2	1.84	0.60
1:E:157:TRP:HZ3	1:E:218:ALA:HB2	1.65	0.60
1:A:249:PHE:HE2	1:A:317:LEU:HB3	1.67	0.60
1:E:153:TYR:HD2	1:F:190:LEU:HD21	1.67	0.60
1:F:209:PRO:HG2	1:F:210:SER:H	1.65	0.60
1:B:359:PHE:O	1:B:363:ILE:HG22	2.02	0.60
1:A:392:ASP:O	1:A:396:HIS:ND1	2.35	0.60
1:B:308:LYS:NZ	1:B:354:ASP:OD2	2.35	0.60
1:C:106:MET:SD	1:C:106:MET:N	2.65	0.60
1:A:4:VAL:HG22	1:A:29:GLU:HB2	1.83	0.60
1:B:249:PHE:CE2	1:B:317:LEU:HG	2.38	0.59
1:F:240:VAL:HG21	1:F:569:ILE:HG22	1.83	0.59
1:A:162:ARG:HA	1:A:165:LYS:HG2	1.84	0.59
1:B:211:LEU:CD1	1:B:212:ALA:H	2.10	0.59
1:C:481:ASP:N	1:C:481:ASP:OD1	2.34	0.59
1:D:397:LEU:HD12	1:D:438:VAL:HG21	1.82	0.59
1:F:549:LEU:HA	1:F:552:LEU:HB3	1.85	0.59
1:A:150:GLU:HG2	1:A:152:GLY:H	1.67	0.59
1:B:72:ARG:HH22	1:B:175:ARG:HE	1.51	0.59
1:D:570:GLU:O	1:D:579:ARG:NH2	2.36	0.59
1:F:46:ASN:O	1:F:50:HIS:ND1	2.32	0.59
1:D:519:LYS:O	1:D:523:GLU:HG2	2.03	0.59
1:E:129:ASN:ND2	1:E:136:GLU:OE2	2.35	0.59
1:E:389:ASP:OD1	1:E:391:SER:OG	2.21	0.59
1:C:23:VAL:HG12	1:C:26:GLY:H	1.68	0.59
1:D:134:ILE:HA	1:D:137:MET:HG2	1.83	0.59
1:A:308:LYS:HD2	1:A:346:ARG:HH12	1.68	0.59
1:B:131:PRO:HB3	1:B:136:GLU:HG3	1.83	0.59
1:A:596:ILE:HG23	1:A:599:LYS:HD2	1.84	0.58
1:B:242:LEU:HB2	1:B:531:ASN:HD21	1.68	0.58
1:C:401:ILE:HG22	1:C:405:GLN:HE22	1.68	0.58
1:E:587:ASP:OD1	1:E:588:ARG:N	2.36	0.58
1:F:155:PRO:O	1:F:161:ARG:NH2	2.35	0.58
1:C:570:GLU:O	1:C:579:ARG:NH2	2.37	0.58
1:D:97:VAL:HB	1:D:122:VAL:HG12	1.85	0.58
1:D:381:ILE:HA	1:D:417:ASP:HB3	1.84	0.58
1:D:476:LEU:HD21	1:D:486:VAL:HG11	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:463:TYR:HE1	1:B:466:HIS:CG	2.22	0.58
1:E:489:ARG:NH1	1:F:466:HIS:O	2.33	0.58
1:F:208:PHE:CD2	1:F:209:PRO:HD3	2.38	0.58
1:C:593:VAL:O	1:C:597:SER:OG	2.20	0.58
1:D:205:GLN:CD	1:D:206:LEU:H	2.06	0.58
1:C:163:LEU:HA	1:C:166:ILE:HG13	1.86	0.58
1:B:63:HIS:O	1:B:175:ARG:NH2	2.34	0.58
1:B:469:ARG:NH1	1:B:494:GLU:OE2	2.37	0.58
1:B:427:ARG:HG2	1:B:430:TYR:HE1	1.69	0.58
1:E:93:GLU:OE2	1:E:93:GLU:N	2.37	0.58
1:E:161:ARG:HB2	1:E:599:LYS:NZ	2.19	0.58
1:E:570:GLU:O	1:E:579:ARG:NH2	2.36	0.58
1:B:3:ARG:NH1	1:B:26:GLY:O	2.37	0.57
1:C:249:PHE:HE2	1:C:317:LEU:HB3	1.69	0.57
1:C:534:ASN:O	1:C:538:SER:OG	2.15	0.57
1:E:70:ASN:HD21	1:E:72:ARG:HG2	1.69	0.57
1:E:588:ARG:HD3	1:F:203:SER:HB2	1.85	0.57
1:E:185:SER:O	1:E:189:ILE:HG13	2.04	0.57
1:A:213:ILE:HD11	1:B:212:ALA:HB1	1.87	0.57
1:C:294:MET:SD	1:C:294:MET:N	2.78	0.57
1:C:432:GLU:O	1:C:436:LYS:NZ	2.37	0.57
1:D:548:ILE:O	1:D:552:LEU:HB3	2.04	0.57
1:B:224:LEU:HB2	1:B:558:ARG:HH12	1.69	0.57
1:C:161:ARG:HG2	1:C:599:LYS:HE3	1.85	0.57
1:C:182:ILE:O	1:C:186:ILE:HG12	2.05	0.57
1:C:6:LEU:HB3	1:C:84:TRP:HH2	1.69	0.57
1:F:22:ALA:HB3	1:F:27:PHE:HE2	1.68	0.57
1:A:234:ILE:HD13	1:A:237:LEU:HD12	1.86	0.57
1:A:241:ASP:HB2	1:A:542:LEU:HD22	1.87	0.57
1:D:577:ASP:N	1:D:577:ASP:OD1	2.35	0.56
1:A:160:LEU:HA	1:A:599:LYS:HA	1.88	0.56
1:B:481:ASP:OD1	1:B:484:ARG:NH2	2.38	0.56
1:C:85:TYR:OH	1:C:118:GLY:O	2.22	0.56
1:E:363:ILE:HD11	1:E:410:VAL:HG23	1.86	0.56
1:F:165:LYS:HB3	1:F:596:ILE:HD11	1.86	0.56
1:A:189:ILE:HG22	1:A:190:LEU:HG	1.86	0.56
1:F:333:ARG:HG3	1:F:379:LEU:HB2	1.86	0.56
1:B:353:GLN:OE1	1:B:406:GLN:NE2	2.38	0.56
1:B:542:LEU:O	1:B:546:LEU:HD12	2.04	0.56
1:C:132:ARG:O	1:C:132:ARG:NH1	2.32	0.56
1:D:454:ASP:OD1	1:D:457:GLY:N	2.32	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:250:ALA:O	1:A:300:ASN:ND2	2.34	0.56
1:C:77:TYR:HE2	1:C:106:MET:HB3	1.70	0.56
1:F:65:LEU:HD21	1:F:68:ILE:HA	1.87	0.56
1:A:95:PRO:O	1:A:120:GLN:N	2.38	0.56
1:A:332:ILE:O	1:A:379:LEU:N	2.39	0.56
1:B:245:HIS:HD2	1:B:534:ASN:HD21	1.53	0.56
1:E:574:ILE:HD12	1:E:578:PHE:HD2	1.71	0.56
1:F:132:ARG:O	1:F:132:ARG:NH1	2.38	0.56
1:A:384:ARG:HB2	1:A:426:THR:HG22	1.88	0.56
1:C:427:ARG:NH1	1:C:454:ASP:OD1	2.39	0.56
1:E:249:PHE:HE2	1:E:317:LEU:HB3	1.70	0.56
1:C:246:LEU:HD22	1:C:334:CYS:HA	1.88	0.56
1:C:391:SER:HB3	1:F:440:ARG:HG3	1.88	0.56
1:D:384:ARG:HB2	1:D:420:GLY:HA3	1.86	0.56
1:A:266:PRO:O	1:A:271:ARG:NH2	2.39	0.55
1:F:476:LEU:HG	1:F:483:MET:SD	2.46	0.55
1:B:4:VAL:HG23	1:B:95:PRO:HB3	1.88	0.55
1:C:100:SER:OG	1:C:125:VAL:N	2.32	0.55
1:F:3:ARG:NH2	1:F:26:GLY:O	2.35	0.55
1:D:445:VAL:HG23	1:D:467:ALA:HA	1.89	0.55
1:F:353:GLN:NE2	1:F:406:GLN:OE1	2.38	0.55
1:F:397:LEU:O	1:F:401:ILE:HD12	2.06	0.55
1:A:448:HIS:O	1:A:448:HIS:ND1	2.40	0.55
1:B:319:TYR:CD1	1:B:362:LEU:HB3	2.42	0.55
1:C:147:HIS:NE2	1:D:69:LEU:O	2.39	0.55
1:E:316:GLU:HG2	1:E:362:LEU:HD11	1.88	0.55
1:F:208:PHE:CD1	1:F:566:ARG:HB2	2.42	0.55
1:C:352:LEU:HD13	1:C:399:LEU:HD11	1.88	0.55
1:E:494:GLU:OE2	1:E:494:GLU:N	2.37	0.55
1:B:65:LEU:HD21	1:B:76:PHE:CD2	2.42	0.55
1:B:243:HIS:CD2	1:B:533:ASP:HA	2.41	0.55
1:C:103:ILE:HG12	1:C:106:MET:SD	2.47	0.55
1:D:427:ARG:HG3	1:D:429:SER:H	1.72	0.55
1:A:263:ALA:HB3	1:A:269:ILE:HD11	1.89	0.55
1:B:126:LEU:HB2	1:B:149:ILE:HD11	1.87	0.55
1:C:17:PRO:HD3	1:C:45:LEU:HD21	1.89	0.55
1:F:460:GLN:O	1:F:464:SER:OG	2.17	0.55
1:C:288:ILE:HD11	1:C:292:LYS:HE3	1.89	0.54
1:D:566:ARG:NE	1:D:570:GLU:OE2	2.39	0.54
1:F:103:ILE:HG13	1:F:105:SER:H	1.72	0.54
1:B:226:LEU:HB3	1:B:558:ARG:HG3	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:407:GLY:O	1:F:412:ARG:NH1	2.39	0.54
1:A:2:SER:OG	1:A:3:ARG:N	2.39	0.54
1:C:234:ILE:HD11	1:C:546:LEU:HB3	1.90	0.54
1:C:286:LYS:NZ	1:C:287:SER:O	2.40	0.54
1:D:518:LEU:HD23	1:D:519:LYS:H	1.73	0.54
1:E:409:GLY:O	1:E:412:ARG:NH2	2.40	0.54
1:F:418:LEU:HD11	1:F:435:PHE:CE1	2.43	0.54
1:B:207:PRO:HD2	1:B:207:PRO:O	2.06	0.54
1:C:29:GLU:HG3	1:C:56:ARG:HB3	1.89	0.54
1:C:380:VAL:HG21	1:C:400:ALA:HB2	1.90	0.54
1:F:424:LYS:HG3	1:F:426:THR:HG23	1.87	0.54
1:A:190:LEU:HD11	1:B:155:PRO:HA	1.90	0.54
1:B:45:LEU:H	1:B:45:LEU:HD23	1.72	0.54
1:E:384:ARG:NH1	1:E:426:THR:O	2.40	0.54
1:F:577:ASP:OD1	1:F:578:PHE:N	2.41	0.54
1:E:4:VAL:HG13	1:E:31:HIS:HD2	1.73	0.54
1:E:280:GLY:HA3	1:E:285:HIS:HE1	1.73	0.54
1:B:96:TYR:HB3	1:B:123:PHE:HE2	1.73	0.54
1:F:302:SER:OG	1:F:338:ASN:O	2.20	0.54
1:D:4:VAL:HG22	1:D:29:GLU:HB2	1.90	0.53
1:B:124:HIS:N	1:B:149:ILE:O	2.30	0.53
1:F:9:ALA:HA	1:F:101:GLY:HA3	1.89	0.53
1:F:300:ASN:HA	1:F:304:LEU:HD23	1.88	0.53
1:A:566:ARG:NH2	1:A:570:GLU:OE1	2.31	0.53
1:B:311:LEU:HD21	1:B:355:ILE:HG12	1.88	0.53
1:F:308:LYS:O	1:F:312:ILE:HG12	2.08	0.53
1:F:384:ARG:HA	1:F:420:GLY:HA2	1.89	0.53
1:E:80:MET:N	1:E:80:MET:SD	2.82	0.53
1:F:209:PRO:HG3	1:F:590:ILE:HD11	1.91	0.53
1:B:86:LEU:HD21	1:B:164:LYS:HA	1.91	0.53
1:B:577:ASP:O	1:B:581:GLU:HG2	2.07	0.53
1:C:116:LEU:HD11	1:C:182:ILE:HG21	1.90	0.53
1:D:23:VAL:HG12	1:D:26:GLY:H	1.74	0.53
1:E:214:LEU:HD21	1:E:594:CYS:SG	2.48	0.53
1:E:311:LEU:HD21	1:E:351:VAL:HG13	1.91	0.53
1:A:566:ARG:HH22	1:B:208:PHE:HZ	1.57	0.53
1:C:18:GLU:HB3	1:C:125:VAL:HG11	1.90	0.53
1:C:76:PHE:HD1	1:C:175:ARG:HB3	1.72	0.53
1:D:333:ARG:HG3	1:D:379:LEU:HB2	1.91	0.53
1:D:423:ASN:HB3	1:D:426:THR:HG23	1.91	0.53
1:A:189:ILE:HG12	1:A:220:GLN:HG2	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:237:LEU:O	1:C:239:LYS:NZ	2.40	0.53
1:E:14:MET:HE3	1:E:134:ILE:HD13	1.90	0.53
1:A:35:THR:HG23	1:A:37:SER:H	1.74	0.53
1:B:46:ASN:O	1:B:50:HIS:ND1	2.40	0.53
1:B:249:PHE:CE1	1:B:535:ILE:HD11	2.44	0.53
1:B:519:LYS:O	1:B:523:GLU:HG2	2.08	0.53
1:A:283:ARG:HH12	1:A:548:ILE:HD11	1.75	0.52
1:B:476:LEU:HD21	1:B:486:VAL:HG11	1.91	0.52
1:D:99:LEU:HD22	1:D:124:HIS:NE2	2.24	0.52
1:E:427:ARG:HG3	1:E:429:SER:H	1.73	0.52
1:C:434:ASP:OD2	1:C:434:ASP:N	2.43	0.52
1:D:5:LEU:HD13	1:D:27:PHE:CE2	2.45	0.52
1:D:363:ILE:HG21	1:D:410:VAL:HG11	1.91	0.52
1:D:590:ILE:HA	1:D:593:VAL:HG12	1.91	0.52
1:E:352:LEU:HD13	1:E:399:LEU:HD11	1.91	0.52
1:F:116:LEU:HD21	1:F:186:ILE:HG13	1.91	0.52
1:F:482:LEU:HA	1:F:485:THR:HG22	1.92	0.52
1:B:497:PRO:HD2	1:B:545:ASN:ND2	2.23	0.52
1:E:217:ILE:O	1:E:220:GLN:NE2	2.42	0.52
1:F:4:VAL:HA	1:F:29:GLU:HB3	1.91	0.52
1:A:135:GLU:OE2	1:A:135:GLU:N	2.31	0.52
1:B:521:TYR:HB3	1:B:528:VAL:HG21	1.91	0.52
1:E:78:GLN:OE1	1:E:109:SER:OG	2.23	0.52
1:C:392:ASP:HA	1:C:395:LYS:HG3	1.91	0.52
1:A:468:ARG:HH12	1:B:489:ARG:CZ	2.22	0.52
1:D:242:LEU:N	1:D:531:ASN:OD1	2.42	0.52
1:F:165:LYS:NZ	1:F:592:ASP:OD2	2.43	0.52
1:C:332:ILE:O	1:C:379:LEU:N	2.43	0.52
1:D:185:SER:O	1:D:188:GLU:HG3	2.10	0.52
1:A:459:TRP:HB2	1:A:482:LEU:HD11	1.92	0.52
1:C:460:GLN:O	1:C:464:SER:OG	2.27	0.52
1:D:227:SER:OG	1:D:229:ASN:OD1	2.28	0.52
1:E:244:CYS:HB3	1:E:332:ILE:HD12	1.92	0.52
1:B:574:ILE:HG13	1:B:579:ARG:HB2	1.92	0.52
1:D:481:ASP:O	1:D:485:THR:HG23	2.10	0.52
1:E:56:ARG:HH12	1:E:58:SER:HB3	1.75	0.52
1:C:139:ASP:HA	1:C:142:GLN:HB2	1.92	0.51
1:D:65:LEU:HD11	1:D:76:PHE:HB3	1.92	0.51
1:C:440:ARG:HA	1:D:459:TRP:CZ2	2.45	0.51
1:C:302:SER:OG	1:C:338:ASN:O	2.26	0.51
1:D:189:ILE:HG13	1:D:190:LEU:N	2.24	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:241:ASP:OD2	1:E:532:THR:OG1	2.22	0.51
1:A:116:LEU:HD23	1:A:157:TRP:HE1	1.75	0.51
1:A:256:LEU:HD21	1:A:260:ARG:NH1	2.25	0.51
1:A:418:LEU:HD12	1:A:435:PHE:HE1	1.75	0.51
1:B:242:LEU:N	1:B:531:ASN:OD1	2.43	0.51
1:B:402:THR:HG21	1:E:402:THR:HG21	1.91	0.51
1:B:428:ALA:HB1	1:B:465:LEU:HD13	1.92	0.51
1:C:209:PRO:HG3	1:D:208:PHE:O	2.09	0.51
1:E:140:ALA:O	1:E:144:GLY:N	2.43	0.51
1:A:439:HIS:CE1	1:A:466:HIS:HB2	2.42	0.51
1:D:423:ASN:H	1:D:426:THR:HG1	1.56	0.51
1:F:208:PHE:HE1	1:F:566:ARG:HD3	1.75	0.51
1:F:561:VAL:HG23	1:F:562:LEU:HD12	1.93	0.51
1:C:89:MET:HB3	1:C:95:PRO:HG3	1.93	0.51
1:E:217:ILE:HD12	1:E:220:GLN:HE21	1.76	0.51
1:A:151:MET:SD	1:A:151:MET:N	2.75	0.51
1:B:249:PHE:HE2	1:B:317:LEU:HG	1.74	0.51
1:C:180:PRO:HB2	1:C:183:SER:HB3	1.93	0.51
1:C:242:LEU:H	1:C:531:ASN:ND2	2.09	0.51
1:E:294:MET:SD	1:E:294:MET:N	2.84	0.51
1:A:401:ILE:HD11	1:D:395:LYS:HD2	1.92	0.51
1:B:154:GLU:HG2	1:B:156:GLY:H	1.76	0.51
1:D:456:GLU:H	1:D:456:GLU:CD	2.14	0.51
1:E:30:VAL:HG11	1:E:49:PHE:CE2	2.45	0.51
1:B:497:PRO:HB2	1:B:548:ILE:HD11	1.92	0.51
1:B:518:LEU:O	1:B:522:LEU:HG	2.11	0.51
1:D:45:LEU:HD12	1:D:45:LEU:H	1.76	0.51
1:D:307:ASP:OD1	1:D:307:ASP:N	2.44	0.51
1:D:115:THR:HA	1:D:154:GLU:HG2	1.92	0.50
1:D:225:PRO:O	1:D:558:ARG:NH1	2.44	0.50
1:E:584:LYS:HD3	1:F:204:ASN:ND2	2.18	0.50
1:A:189:ILE:HD13	1:B:155:PRO:HD3	1.92	0.50
1:E:516:TYR:HD2	1:E:552:LEU:HD12	1.75	0.50
1:A:111:GLN:NE2	1:B:111:GLN:HG2	2.26	0.50
1:C:574:ILE:HD12	1:C:578:PHE:CD2	2.47	0.50
1:A:351:VAL:O	1:A:355:ILE:HG22	2.12	0.50
1:D:129:ASN:ND2	1:D:131:PRO:HG3	2.25	0.50
1:E:561:VAL:O	1:E:565:ILE:HG12	2.11	0.50
1:F:481:ASP:OD1	1:F:484:ARG:NH2	2.44	0.50
1:B:354:ASP:O	1:B:358:THR:HG22	2.12	0.50
1:D:476:LEU:HG	1:D:483:MET:SD	2.51	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:559:MET:O	1:D:563:THR:HG23	2.11	0.50
1:E:188:GLU:HG3	1:E:220:GLN:OE1	2.11	0.50
1:A:378:LEU:HB2	1:A:413:ILE:HD13	1.93	0.50
1:A:468:ARG:HB3	1:A:573:PHE:HE1	1.76	0.50
1:B:476:LEU:HG	1:B:483:MET:SD	2.52	0.50
1:C:561:VAL:O	1:C:565:ILE:HG12	2.11	0.50
1:B:124:HIS:HB2	1:B:149:ILE:HB	1.93	0.50
1:D:336:PRO:HG3	1:D:352:LEU:HD13	1.94	0.50
1:E:212:ALA:HB1	1:F:213:ILE:HD11	1.94	0.50
1:D:418:LEU:HD21	1:D:435:PHE:CZ	2.47	0.50
1:E:582:LEU:O	1:E:586:PHE:HB2	2.11	0.50
1:A:384:ARG:HH11	1:A:426:THR:HB	1.77	0.49
1:A:474:LEU:HD21	1:A:500:ASN:HD22	1.75	0.49
1:A:496:CYS:SG	1:A:533:ASP:HB2	2.52	0.49
1:A:29:GLU:HB3	1:A:31:HIS:HE1	1.76	0.49
1:A:520:LYS:HA	1:A:523:GLU:OE1	2.12	0.49
1:E:280:GLY:HA3	1:E:285:HIS:CE1	2.47	0.49
1:C:79:GLU:HG3	1:C:80:MET:SD	2.51	0.49
1:C:484:ARG:HG2	1:C:488:GLU:OE2	2.12	0.49
1:D:484:ARG:O	1:D:488:GLU:HG3	2.13	0.49
1:D:566:ARG:O	1:D:570:GLU:HG2	2.11	0.49
1:A:180:PRO:O	1:A:184:LYS:NZ	2.35	0.49
1:D:319:TYR:CE1	1:D:362:LEU:HB3	2.48	0.49
1:F:211:LEU:HD13	1:F:214:LEU:HD12	1.94	0.49
1:C:159:ALA:C	1:C:599:LYS:HG3	2.33	0.49
1:F:208:PHE:CE1	1:F:566:ARG:HD3	2.48	0.49
1:F:363:ILE:HG21	1:F:410:VAL:HG21	1.93	0.49
1:D:80:MET:SD	1:D:80:MET:N	2.86	0.49
1:E:5:LEU:HD11	1:E:27:PHE:HD2	1.77	0.49
1:E:214:LEU:HD12	1:E:214:LEU:H	1.77	0.49
1:B:4:VAL:HG21	1:B:90:PRO:HG3	1.95	0.49
1:D:531:ASN:O	1:D:545:ASN:ND2	2.46	0.49
1:E:188:GLU:HB2	1:E:224:LEU:HD21	1.95	0.49
1:E:307:ASP:OD1	1:E:309:GLY:N	2.45	0.49
1:F:424:LYS:O	1:F:427:ARG:HD2	2.12	0.49
1:C:189:ILE:HD13	1:D:155:PRO:HG3	1.95	0.49
1:A:111:GLN:HE22	1:B:111:GLN:HG2	1.78	0.49
1:A:423:ASN:O	1:A:425:GLU:N	2.46	0.49
1:B:590:ILE:HA	1:B:593:VAL:HG12	1.95	0.49
1:C:214:LEU:HD12	1:C:214:LEU:H	1.78	0.49
1:E:22:ALA:HB3	1:E:27:PHE:CZ	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:185:SER:O	1:E:188:GLU:HG2	2.12	0.49
1:E:394:SER:HA	1:E:397:LEU:HD12	1.95	0.49
1:B:427:ARG:NH2	1:B:456:GLU:OE2	2.46	0.48
1:C:458:ILE:O	1:C:462:VAL:HG12	2.13	0.48
1:E:161:ARG:HB2	1:E:599:LYS:HZ2	1.78	0.48
1:F:566:ARG:O	1:F:570:GLU:HB2	2.13	0.48
1:A:111:GLN:OE1	1:B:111:GLN:NE2	2.46	0.48
1:B:211:LEU:O	1:B:213:ILE:HG12	2.13	0.48
1:B:325:ASP:OD2	1:B:541:ASN:ND2	2.46	0.48
1:C:5:LEU:HD11	1:C:30:VAL:HG22	1.95	0.48
1:E:243:HIS:HD2	1:E:533:ASP:HA	1.78	0.48
1:F:367:LYS:HE3	1:F:367:LYS:HB2	1.61	0.48
1:A:216:PRO:HD3	1:B:157:TRP:CZ2	2.48	0.48
1:B:251:THR:HG21	1:B:537:ILE:HG12	1.95	0.48
1:B:346:ARG:HH21	1:B:351:VAL:HG22	1.78	0.48
1:C:77:TYR:CE2	1:C:106:MET:HB3	2.48	0.48
1:C:496:CYS:SG	1:C:533:ASP:HB2	2.53	0.48
1:C:589:LYS:O	1:C:593:VAL:HG23	2.12	0.48
1:A:384:ARG:NH2	1:A:418:LEU:HD23	2.27	0.48
1:A:423:ASN:ND2	1:A:452:ASN:O	2.46	0.48
1:E:237:LEU:O	1:E:239:LYS:NZ	2.37	0.48
1:A:509:MET:HB2	1:A:512:PHE:HB2	1.95	0.48
1:C:123:PHE:HB3	1:C:150:GLU:HG2	1.94	0.48
1:E:241:ASP:HB2	1:E:542:LEU:HD22	1.94	0.48
1:B:80:MET:SD	1:B:80:MET:N	2.86	0.48
1:D:481:ASP:OD1	1:D:484:ARG:NH1	2.47	0.48
1:D:486:VAL:HG23	1:D:491:ILE:HB	1.95	0.48
1:A:3:ARG:HB2	1:A:28:GLU:HB2	1.94	0.48
1:A:82:TRP:HZ2	1:A:112:LYS:HZ3	1.58	0.48
1:B:115:THR:HA	1:B:154:GLU:OE2	2.13	0.48
1:C:177:ASN:OD1	1:C:177:ASN:N	2.46	0.48
1:F:70:ASN:ND2	1:F:73:ASP:OD2	2.41	0.48
1:F:566:ARG:HE	1:F:570:GLU:HG2	1.78	0.48
1:B:103:ILE:HG12	1:B:106:MET:CE	2.42	0.48
1:B:238:PRO:HG3	1:B:589:LYS:HG2	1.95	0.48
1:C:402:THR:HG21	1:F:402:THR:OG1	2.13	0.48
1:B:337:ASN:OD1	1:B:338:ASN:N	2.46	0.48
1:E:565:ILE:O	1:E:569:ILE:HG12	2.14	0.48
1:A:78:GLN:HG2	1:B:151:MET:HE3	1.95	0.48
1:A:342:LYS:NZ	1:D:406:GLN:O	2.47	0.48
1:D:103:ILE:HG12	1:D:106:MET:CE	2.44	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:497:PRO:HA	1:E:516:TYR:OH	2.13	0.48
1:A:86:LEU:HA	1:A:89:MET:HE1	1.96	0.47
1:B:42:PRO:HA	1:B:45:LEU:HD21	1.96	0.47
1:B:86:LEU:HA	1:B:89:MET:HG2	1.96	0.47
1:C:520:LYS:HA	1:C:523:GLU:HG3	1.96	0.47
1:D:354:ASP:O	1:D:358:THR:HG22	2.14	0.47
1:E:23:VAL:HB	1:E:27:PHE:HE1	1.78	0.47
1:E:82:TRP:O	1:E:86:LEU:HD23	2.13	0.47
1:E:217:ILE:HD12	1:E:220:GLN:NE2	2.29	0.47
1:C:82:TRP:HE1	1:C:112:LYS:HZ1	1.61	0.47
1:E:225:PRO:HA	1:E:557:SER:HA	1.96	0.47
1:F:18:GLU:HB3	1:F:148:PHE:CZ	2.49	0.47
1:F:42:PRO:O	1:F:46:ASN:HB2	2.14	0.47
1:F:230:ASP:O	1:F:234:ILE:HG12	2.15	0.47
1:A:5:LEU:HD12	1:A:30:VAL:HG13	1.96	0.47
1:A:64:GLY:O	1:A:65:LEU:HD23	2.14	0.47
1:A:392:ASP:HA	1:A:395:LYS:HE2	1.95	0.47
1:B:48:PHE:O	1:B:51:SER:OG	2.21	0.47
1:C:266:PRO:HA	1:C:269:ILE:HG12	1.96	0.47
1:A:227:SER:OG	1:A:228:ALA:N	2.46	0.47
1:B:184:LYS:O	1:B:187:GLU:HG3	2.14	0.47
1:C:127:ALA:HB2	1:C:146:ILE:HG12	1.95	0.47
1:C:210:SER:HB3	1:C:587:ASP:OD1	2.14	0.47
1:D:569:ILE:HD12	1:D:582:LEU:HG	1.97	0.47
1:E:95:PRO:O	1:E:120:GLN:N	2.47	0.47
1:E:99:LEU:HG	1:E:124:HIS:CE1	2.49	0.47
1:F:227:SER:OG	1:F:230:ASP:OD1	2.28	0.47
1:D:9:ALA:HB3	1:D:34:THR:HB	1.97	0.47
1:D:122:VAL:HG23	1:D:151:MET:HB3	1.97	0.47
1:D:425:GLU:HA	1:D:427:ARG:HH21	1.80	0.47
1:E:384:ARG:HG2	1:E:426:THR:HB	1.97	0.47
1:F:96:TYR:HD2	1:F:123:PHE:HE2	1.63	0.47
1:A:31:HIS:HB3	1:A:88:LYS:HD3	1.97	0.47
1:B:392:ASP:HA	1:B:395:LYS:HE3	1.97	0.47
1:C:45:LEU:HB3	1:C:57:PHE:CZ	2.50	0.47
1:C:250:ALA:O	1:C:300:ASN:ND2	2.44	0.47
1:C:517:PRO:HA	1:C:520:LYS:HE2	1.96	0.47
1:D:131:PRO:HB2	1:D:137:MET:CE	2.44	0.47
1:E:103:ILE:HG12	1:E:106:MET:CE	2.44	0.47
1:E:369:LYS:HB2	1:E:371:GLN:HG3	1.95	0.47
1:A:14:MET:O	1:A:17:PRO:HD2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:397:LEU:O	1:A:401:ILE:HG22	2.13	0.47
1:B:165:LYS:HB2	1:B:596:ILE:HD11	1.96	0.47
1:B:315:VAL:HG13	1:B:359:PHE:CE1	2.49	0.47
1:B:435:PHE:HB3	1:B:439:HIS:CE1	2.50	0.47
1:B:479:ALA:HB1	1:B:482:LEU:HD23	1.96	0.47
1:B:482:LEU:O	1:B:486:VAL:HG12	2.14	0.47
1:E:211:LEU:HD12	1:E:214:LEU:HD11	1.96	0.47
1:E:352:LEU:O	1:E:355:ILE:HG22	2.14	0.47
1:E:494:GLU:HB2	1:E:531:ASN:ND2	2.29	0.47
1:A:249:PHE:CE2	1:A:317:LEU:HB3	2.49	0.47
1:B:72:ARG:O	1:B:75:GLU:HG3	2.15	0.47
1:B:160:LEU:HA	1:B:163:LEU:HD23	1.97	0.47
1:C:352:LEU:O	1:C:355:ILE:HG22	2.15	0.47
1:C:484:ARG:O	1:C:488:GLU:HG2	2.14	0.47
1:E:5:LEU:HB2	1:E:30:VAL:HA	1.97	0.47
1:E:439:HIS:CE1	1:E:466:HIS:HB2	2.49	0.47
1:F:384:ARG:HE	1:F:384:ARG:HB3	1.43	0.47
1:F:238:PRO:HD3	1:F:589:LYS:HD2	1.97	0.47
1:F:393:ILE:O	1:F:397:LEU:HD23	2.15	0.47
1:B:330:ALA:HB3	1:B:376:VAL:HG22	1.98	0.47
1:D:384:ARG:NH2	1:D:418:LEU:O	2.44	0.47
1:E:89:MET:HG2	1:E:161:ARG:CZ	2.45	0.47
1:E:519:LYS:O	1:E:523:GLU:HG3	2.14	0.47
1:A:217:ILE:O	1:A:220:GLN:HG3	2.13	0.46
1:B:36:ASP:OD2	1:B:64:GLY:N	2.40	0.46
1:B:86:LEU:HD12	1:B:117:PHE:HE1	1.80	0.46
1:C:315:VAL:HG21	1:C:355:ILE:HG13	1.98	0.46
1:C:463:TYR:CZ	1:D:439:HIS:HB3	2.50	0.46
1:D:393:ILE:O	1:D:397:LEU:HD23	2.15	0.46
1:F:82:TRP:HB3	1:F:182:ILE:HG21	1.96	0.46
1:A:163:LEU:HA	1:A:166:ILE:HG22	1.96	0.46
1:C:393:ILE:O	1:C:397:LEU:HG	2.14	0.46
1:E:215:PRO:HB2	1:E:217:ILE:HG22	1.96	0.46
1:A:592:ASP:O	1:A:596:ILE:HD12	2.15	0.46
1:B:322:LEU:HA	1:B:322:LEU:HD23	1.79	0.46
1:C:115:THR:HA	1:C:154:GLU:CD	2.36	0.46
1:E:167:LEU:HD22	1:E:179:LYS:HD3	1.97	0.46
1:C:577:ASP:O	1:C:581:GLU:HG2	2.16	0.46
1:B:86:LEU:HD12	1:B:117:PHE:CE1	2.51	0.46
1:E:282:PRO:HB2	1:E:498:TYR:CE1	2.50	0.46
1:F:84:TRP:O	1:F:87:THR:HG22	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:186:ILE:HA	1:A:189:ILE:HG13	1.97	0.46
1:A:291:ASP:OD1	1:A:292:LYS:N	2.48	0.46
1:A:328:ALA:HB3	1:A:586:PHE:CZ	2.50	0.46
1:B:477:LEU:HD12	1:B:483:MET:HE1	1.97	0.46
1:C:341:ASP:N	1:C:346:ARG:O	2.45	0.46
1:C:441:CYS:SG	1:C:442:GLY:N	2.88	0.46
1:D:208:PHE:O	1:D:210:SER:N	2.44	0.46
1:E:166:ILE:HD11	1:E:600:ASN:HA	1.97	0.46
1:E:392:ASP:HA	1:E:395:LYS:HE2	1.97	0.46
1:B:204:ASN:OD1	1:B:205:GLN:N	2.42	0.46
1:C:30:VAL:HG21	1:C:49:PHE:CE1	2.51	0.46
1:D:103:ILE:HG12	1:D:106:MET:HE3	1.98	0.46
1:F:337:ASN:OD1	1:F:338:ASN:N	2.48	0.46
1:A:302:SER:HB3	1:A:338:ASN:HB3	1.98	0.46
1:A:394:SER:O	1:A:397:LEU:HD12	2.16	0.46
1:B:99:LEU:HB3	1:B:124:HIS:CE1	2.51	0.46
1:B:137:MET:H	1:B:137:MET:HG2	1.54	0.46
1:D:423:ASN:N	1:D:426:THR:OG1	2.39	0.46
1:B:392:ASP:O	1:B:396:HIS:ND1	2.49	0.46
1:C:402:THR:HA	1:C:405:GLN:HE21	1.81	0.46
1:A:474:LEU:HD11	1:A:500:ASN:HB3	1.98	0.46
1:C:3:ARG:NH2	1:C:25:GLU:OE1	2.43	0.46
1:C:241:ASP:HB2	1:C:542:LEU:HD22	1.98	0.46
1:D:208:PHE:CE2	1:D:562:LEU:HB3	2.51	0.46
1:D:230:ASP:O	1:D:234:ILE:HG12	2.16	0.46
1:E:308:LYS:NZ	1:E:354:ASP:OD2	2.46	0.46
1:B:319:TYR:HD1	1:B:362:LEU:HB3	1.80	0.45
1:C:137:MET:HA	1:C:140:ALA:HB3	1.99	0.45
1:C:459:TRP:CZ2	1:D:440:ARG:HD2	2.51	0.45
1:E:11:HIS:HE1	1:E:103:ILE:HG22	1.82	0.45
1:E:577:ASP:O	1:E:581:GLU:HG2	2.17	0.45
1:A:124:HIS:N	1:A:149:ILE:O	2.44	0.45
1:C:65:LEU:HD11	1:C:73:ASP:HB3	1.99	0.45
1:C:565:ILE:O	1:C:569:ILE:HG12	2.16	0.45
1:D:82:TRP:HZ2	1:D:112:LYS:HG2	1.81	0.45
1:D:482:LEU:O	1:D:486:VAL:HG12	2.17	0.45
1:E:315:VAL:HG21	1:E:355:ILE:HG13	1.98	0.45
1:E:589:LYS:O	1:E:593:VAL:HG23	2.16	0.45
1:A:385:LYS:HD3	1:A:385:LYS:HA	1.61	0.45
1:B:519:LYS:HB3	1:B:520:LYS:HZ2	1.80	0.45
1:E:188:GLU:HB2	1:E:224:LEU:HD11	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:291:ASP:OD1	1:E:292:LYS:N	2.48	0.45
1:E:518:LEU:O	1:E:522:LEU:HD22	2.16	0.45
1:B:3:ARG:HH22	1:B:23:VAL:HG11	1.81	0.45
1:B:36:ASP:OD1	1:B:36:ASP:N	2.39	0.45
1:B:47:ASP:HA	1:B:50:HIS:HB2	1.99	0.45
1:B:162:ARG:HH22	1:B:591:TYR:HB3	1.81	0.45
1:B:397:LEU:HD12	1:B:438:VAL:HB	1.99	0.45
1:C:264:SER:N	1:C:307:ASP:OD2	2.47	0.45
1:D:386:PHE:HB3	1:D:387:SER:H	1.58	0.45
1:E:6:LEU:HB3	1:E:84:TRP:HH2	1.80	0.45
1:E:74:PHE:HZ	1:F:151:MET:HE2	1.80	0.45
1:E:184:LYS:NZ	1:E:188:GLU:HB3	2.32	0.45
1:F:199:ASP:O	1:F:203:SER:OG	2.30	0.45
1:F:240:VAL:HG22	1:F:329:TYR:HB3	1.98	0.45
1:B:162:ARG:HD3	1:B:588:ARG:HE	1.80	0.45
1:B:242:LEU:HB3	1:B:469:ARG:NH1	2.31	0.45
1:B:450:GLY:HA3	1:B:473:ALA:H	1.81	0.45
1:C:14:MET:C	1:C:17:PRO:HD2	2.37	0.45
1:C:30:VAL:O	1:C:31:HIS:ND1	2.49	0.45
1:C:179:LYS:HA	1:C:179:LYS:HD2	1.75	0.45
1:E:162:ARG:H	1:E:599:LYS:HG2	1.82	0.45
1:A:78:GLN:HE22	1:A:112:LYS:HE2	1.81	0.45
1:A:265:GLU:OE1	1:A:268:LEU:N	2.50	0.45
1:A:420:GLY:HA3	1:A:426:THR:HB	1.98	0.45
1:D:337:ASN:OD1	1:D:338:ASN:N	2.50	0.45
1:E:439:HIS:HE1	1:E:466:HIS:HB2	1.80	0.45
1:F:308:LYS:NZ	1:F:346:ARG:HH12	2.14	0.45
1:F:441:CYS:SG	1:F:443:LEU:HD23	2.56	0.45
1:A:179:LYS:HB2	1:A:181:LEU:HG	1.99	0.45
1:A:590:ILE:HD12	1:A:590:ILE:HA	1.80	0.45
1:B:82:TRP:HB3	1:B:182:ILE:HG21	1.98	0.45
1:E:213:ILE:HD11	1:F:212:ALA:O	2.17	0.45
1:F:140:ALA:HB1	1:F:145:GLN:HB3	1.98	0.45
1:F:531:ASN:O	1:F:545:ASN:ND2	2.49	0.45
1:B:533:ASP:OD2	1:B:534:ASN:ND2	2.45	0.45
1:D:301:GLY:O	1:D:305:LEU:HB2	2.16	0.45
1:F:519:LYS:O	1:F:522:LEU:HD12	2.17	0.45
1:A:2:SER:HB3	1:A:93:GLU:OE2	2.17	0.45
1:A:595:LEU:HD23	1:A:595:LEU:HA	1.78	0.45
1:C:159:ALA:HB3	1:C:595:LEU:O	2.17	0.45
1:C:418:LEU:HD11	1:C:431:TYR:HD2	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:155:PRO:O	1:D:161:ARG:NH1	2.50	0.45
1:E:85:TYR:OH	1:E:118:GLY:O	2.34	0.45
1:E:140:ALA:HB1	1:E:145:GLN:HB3	1.99	0.45
1:F:22:ALA:HB3	1:F:27:PHE:CE2	2.51	0.45
1:A:161:ARG:HG2	1:A:599:LYS:HE3	1.99	0.45
1:A:214:LEU:HD23	1:A:219:GLN:HG2	1.97	0.45
1:B:154:GLU:HG2	1:B:156:GLY:N	2.32	0.45
1:E:302:SER:OG	1:E:338:ASN:O	2.34	0.45
1:F:381:ILE:HA	1:F:417:ASP:HB3	1.99	0.45
1:C:259:VAL:HA	1:C:313:ARG:HG2	1.98	0.44
1:D:516:TYR:HD2	1:D:518:LEU:HD22	1.83	0.44
1:E:23:VAL:HB	1:E:27:PHE:CE1	2.51	0.44
1:F:307:ASP:OD2	1:F:310:CYS:N	2.42	0.44
1:C:22:ALA:HB3	1:C:27:PHE:HZ	1.82	0.44
1:D:199:ASP:OD1	1:D:200:THR:N	2.48	0.44
1:E:3:ARG:NH2	1:E:25:GLU:OE2	2.50	0.44
1:E:151:MET:SD	1:E:151:MET:N	2.74	0.44
1:F:303:LYS:HD3	1:F:304:LEU:HD13	1.99	0.44
1:C:384:ARG:HB2	1:C:420:GLY:HA3	1.99	0.44
1:D:157:TRP:CD1	1:D:160:LEU:HD12	2.52	0.44
1:C:22:ALA:HA	1:C:148:PHE:CE2	2.52	0.44
1:C:201:GLY:O	1:C:205:GLN:HG2	2.17	0.44
1:C:356:ASN:ND2	1:C:411:CYS:O	2.50	0.44
1:E:4:VAL:HG13	1:E:31:HIS:CD2	2.51	0.44
1:E:184:LYS:HZ3	1:E:188:GLU:HB3	1.82	0.44
1:E:190:LEU:HD11	1:F:155:PRO:HA	2.00	0.44
1:E:586:PHE:CD1	1:E:590:ILE:HD11	2.52	0.44
1:F:219:GLN:O	1:F:223:GLN:HG2	2.18	0.44
1:F:378:LEU:O	1:F:379:LEU:HD23	2.17	0.44
1:A:99:LEU:HD13	1:A:111:GLN:HB2	2.00	0.44
1:A:260:ARG:HE	1:A:304:LEU:HD11	1.82	0.44
1:B:566:ARG:NE	1:B:570:GLU:OE2	2.49	0.44
1:C:501:TYR:HE1	1:C:509:MET:HG3	1.83	0.44
1:D:194:LYS:HD2	1:D:194:LYS:HA	1.65	0.44
1:A:22:ALA:HA	1:A:148:PHE:CZ	2.53	0.44
1:B:184:LYS:HA	1:B:184:LYS:HD2	1.83	0.44
1:B:531:ASN:O	1:B:545:ASN:ND2	2.50	0.44
1:C:157:TRP:CE3	1:C:160:LEU:HD22	2.53	0.44
1:A:103:ILE:HG12	1:A:106:MET:CE	2.48	0.44
1:A:489:ARG:HD3	1:B:468:ARG:HD2	2.00	0.44
1:A:594:CYS:HA	1:A:597:SER:HB3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:127:ALA:HB1	1:B:131:PRO:HD3	2.00	0.44
1:C:15:VAL:HG21	1:C:100:SER:HB2	2.00	0.44
1:C:384:ARG:HD3	1:C:420:GLY:HA3	1.99	0.44
1:C:516:TYR:CD1	1:C:518:LEU:HB2	2.53	0.44
1:D:5:LEU:HD12	1:D:5:LEU:HA	1.85	0.44
1:D:72:ARG:O	1:D:75:GLU:HG3	2.16	0.44
1:D:83:GLN:HA	1:D:86:LEU:HG	1.99	0.44
1:F:392:ASP:OD1	1:F:392:ASP:N	2.50	0.44
1:F:565:ILE:O	1:F:569:ILE:HG23	2.18	0.44
1:A:252:SER:HA	1:A:256:LEU:HD13	2.00	0.44
1:A:518:LEU:HD12	1:A:518:LEU:HA	1.75	0.44
1:C:207:PRO:O	1:C:211:LEU:HD12	2.17	0.44
1:C:210:SER:HB2	1:D:206:LEU:HD12	1.98	0.44
1:C:246:LEU:HD23	1:C:247:GLY:N	2.33	0.44
1:D:170:ASN:HB3	1:D:173:CYS:HB3	1.98	0.44
1:D:544:GLU:O	1:D:548:ILE:HG12	2.18	0.44
1:A:68:ILE:HG21	1:A:106:MET:SD	2.58	0.44
1:A:259:VAL:HG23	1:A:317:LEU:HD22	2.00	0.44
1:A:278:ILE:HD11	1:A:296:LEU:HD21	2.00	0.44
1:A:432:GLU:O	1:A:436:LYS:HG2	2.17	0.44
1:B:245:HIS:HD2	1:B:534:ASN:ND2	2.16	0.44
1:C:246:LEU:HD23	1:C:247:GLY:H	1.81	0.44
1:C:574:ILE:HD11	1:C:579:ARG:HA	1.99	0.44
1:D:157:TRP:HB2	1:D:160:LEU:HB2	2.00	0.44
1:D:319:TYR:CD1	1:D:362:LEU:HB3	2.53	0.44
1:E:342:LYS:HD3	1:E:342:LYS:HA	1.78	0.44
1:E:422:GLU:O	1:E:422:GLU:HG2	2.18	0.44
1:E:593:VAL:O	1:E:597:SER:HB3	2.18	0.44
1:F:60:THR:O	1:F:60:THR:OG1	2.35	0.44
1:F:556:ILE:HD11	1:F:560:ASP:HB2	2.00	0.44
1:B:5:LEU:HD11	1:B:123:PHE:HZ	1.82	0.43
1:D:500:ASN:OD1	1:D:516:TYR:OH	2.18	0.43
1:F:131:PRO:HB2	1:F:137:MET:HG3	1.99	0.43
1:C:221:TRP:CE2	1:C:598:ILE:HG12	2.54	0.43
1:C:333:ARG:HB3	1:C:381:ILE:HD11	2.00	0.43
1:D:129:ASN:HD21	1:D:131:PRO:HG3	1.81	0.43
1:E:417:ASP:OD2	1:E:418:LEU:N	2.51	0.43
1:F:157:TRP:HB2	1:F:160:LEU:HB2	2.00	0.43
1:B:173:CYS:SG	1:B:178:PHE:HB2	2.58	0.43
1:B:459:TRP:CD1	1:B:463:TYR:HD2	2.36	0.43
1:D:35:THR:HA	1:D:62:CYS:HB3	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:519:LYS:O	1:A:523:GLU:HG3	2.18	0.43
1:B:97:VAL:HG21	1:B:110:LEU:HD11	2.00	0.43
1:F:132:ARG:HA	1:F:132:ARG:HD2	1.91	0.43
1:F:184:LYS:O	1:F:187:GLU:HG3	2.18	0.43
1:B:188:GLU:HG3	1:B:215:PRO:HG3	1.98	0.43
1:B:237:LEU:O	1:B:239:LYS:NZ	2.39	0.43
1:B:535:ILE:HG13	1:B:536:GLY:N	2.32	0.43
1:D:41:ASN:HA	1:D:42:PRO:HD3	1.89	0.43
1:D:131:PRO:HB3	1:D:136:GLU:OE1	2.19	0.43
1:D:565:ILE:O	1:D:569:ILE:HG22	2.17	0.43
1:E:598:ILE:O	1:E:598:ILE:HG12	2.19	0.43
1:F:86:LEU:HA	1:F:89:MET:SD	2.59	0.43
1:F:243:HIS:CD2	1:F:533:ASP:HA	2.54	0.43
1:A:76:PHE:CD2	1:A:175:ARG:HB3	2.53	0.43
1:B:540:ALA:HB1	1:B:544:GLU:HB2	2.00	0.43
1:D:77:TYR:OH	1:D:106:MET:HB2	2.19	0.43
1:D:375:HIS:CE1	1:D:410:VAL:HG22	2.53	0.43
1:D:417:ASP:OD1	1:D:418:LEU:N	2.52	0.43
1:F:431:TYR:HB2	1:F:435:PHE:HE2	1.83	0.43
1:F:477:LEU:HD23	1:F:483:MET:HE1	1.99	0.43
1:A:60:THR:HG21	1:A:84:TRP:CD1	2.53	0.43
1:A:133:ASN:OD1	1:A:136:GLU:HB2	2.18	0.43
1:A:389:ASP:OD1	1:D:440:ARG:NH2	2.51	0.43
1:B:450:GLY:HA3	1:B:472:HIS:HB3	2.01	0.43
1:B:588:ARG:HB3	1:B:588:ARG:NH1	2.33	0.43
1:C:206:LEU:HA	1:C:559:MET:HE3	2.00	0.43
1:C:282:PRO:HB3	1:C:538:SER:O	2.19	0.43
1:C:327:VAL:O	1:C:374:CYS:HB3	2.17	0.43
1:E:135:GLU:OE1	1:E:139:ASP:HB2	2.18	0.43
1:D:248:GLY:HA3	1:D:534:ASN:ND2	2.33	0.43
1:D:428:ALA:HB3	1:D:460:GLN:HG3	2.01	0.43
1:F:224:LEU:O	1:F:558:ARG:HG3	2.19	0.43
1:A:131:PRO:HB3	1:A:136:GLU:HB3	2.01	0.43
1:E:76:PHE:CD1	1:E:175:ARG:HB3	2.53	0.43
1:E:504:LYS:HE3	1:E:504:LYS:HB3	1.83	0.43
1:F:80:MET:SD	1:F:80:MET:N	2.91	0.43
1:F:149:ILE:HD13	1:F:149:ILE:HA	1.83	0.43
1:B:427:ARG:HG3	1:B:429:SER:H	1.83	0.43
1:C:5:LEU:HD23	1:C:27:PHE:CD2	2.54	0.43
1:C:384:ARG:NE	1:C:426:THR:OG1	2.43	0.43
1:D:184:LYS:O	1:D:187:GLU:HG3	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:13:SER:OG	1:E:39:LYS:NZ	2.50	0.43
1:E:159:ALA:HB3	1:E:596:ILE:HA	2.00	0.43
1:E:162:ARG:NH1	1:E:600:ASN:HB3	2.34	0.43
1:E:260:ARG:HD3	1:E:271:ARG:HG2	2.00	0.43
1:E:384:ARG:HB3	1:E:421:PHE:HD2	1.84	0.43
1:E:518:LEU:HD12	1:E:518:LEU:HA	1.81	0.43
1:C:417:ASP:OD1	1:C:418:LEU:N	2.52	0.42
1:D:239:LYS:HD2	1:D:542:LEU:HD22	2.00	0.42
1:F:124:HIS:N	1:F:149:ILE:O	2.52	0.42
1:D:595:LEU:HD12	1:D:598:ILE:HD11	2.01	0.42
1:E:99:LEU:HD12	1:E:107:SER:HB2	2.01	0.42
1:E:125:VAL:HG22	1:E:148:PHE:CZ	2.53	0.42
1:F:103:ILE:O	1:F:106:MET:HE3	2.19	0.42
1:A:237:LEU:O	1:A:239:LYS:NZ	2.42	0.42
1:B:14:MET:CE	1:B:137:MET:HE2	2.49	0.42
1:B:99:LEU:HD22	1:B:124:HIS:CE1	2.54	0.42
1:C:249:PHE:CE2	1:C:317:LEU:HB3	2.51	0.42
1:D:103:ILE:HG13	1:D:105:SER:H	1.83	0.42
1:D:240:VAL:HG22	1:D:329:TYR:HB3	2.00	0.42
1:E:242:LEU:HB2	1:E:531:ASN:HD21	1.83	0.42
1:B:60:THR:HG21	1:B:84:TRP:CD1	2.55	0.42
1:B:183:SER:HA	1:B:186:ILE:HG12	2.01	0.42
1:B:406:GLN:O	1:E:342:LYS:NZ	2.41	0.42
1:C:214:LEU:HD21	1:C:594:CYS:SG	2.60	0.42
1:C:469:ARG:HG3	1:C:573:PHE:CZ	2.54	0.42
1:D:359:PHE:O	1:D:363:ILE:HG12	2.19	0.42
1:E:104:LYS:NZ	1:F:102:GLY:O	2.36	0.42
1:E:237:LEU:HD23	1:E:238:PRO:HD2	2.01	0.42
1:A:33:PHE:HB2	1:A:84:TRP:CZ2	2.54	0.42
1:A:82:TRP:O	1:A:86:LEU:HD23	2.19	0.42
1:A:210:SER:HB3	1:A:587:ASP:OD1	2.19	0.42
1:B:381:ILE:HA	1:B:417:ASP:HB3	2.01	0.42
1:C:22:ALA:HB3	1:C:27:PHE:CZ	2.55	0.42
1:C:153:TYR:HE2	1:D:194:LYS:HD3	1.85	0.42
1:E:200:THR:O	1:E:205:GLN:NE2	2.51	0.42
1:F:572:ALA:O	1:F:579:ARG:NH2	2.52	0.42
1:A:138:PHE:O	1:A:142:GLN:HG2	2.20	0.42
1:B:244:CYS:HA	1:B:533:ASP:O	2.20	0.42
1:C:267:ASP:N	1:C:267:ASP:OD1	2.52	0.42
1:D:239:LYS:HB2	1:D:327:VAL:HG22	2.02	0.42
1:E:6:LEU:HB3	1:E:84:TRP:CH2	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:384:ARG:HB3	1:E:421:PHE:CD2	2.55	0.42
1:F:239:LYS:HB2	1:F:327:VAL:HG12	2.01	0.42
1:A:352:LEU:HD13	1:A:399:LEU:HD11	2.00	0.42
1:A:392:ASP:OD1	1:A:393:ILE:N	2.52	0.42
1:B:336:PRO:HG2	1:B:399:LEU:HD21	2.02	0.42
1:F:532:THR:HA	1:F:545:ASN:ND2	2.35	0.42
1:A:205:GLN:O	1:A:207:PRO:HD3	2.20	0.42
1:B:386:PHE:HA	1:B:390:LEU:HD21	2.02	0.42
1:B:440:ARG:HD2	1:B:440:ARG:HA	1.74	0.42
1:C:215:PRO:HB2	1:C:217:ILE:HG22	2.02	0.42
1:E:9:ALA:HA	1:E:102:GLY:N	2.34	0.42
1:F:518:LEU:HA	1:F:521:TYR:HB2	2.02	0.42
1:A:243:HIS:HA	1:A:333:ARG:NH1	2.35	0.42
1:A:532:THR:HA	1:A:545:ASN:ND2	2.35	0.42
1:A:587:ASP:O	1:A:590:ILE:HG22	2.20	0.42
1:C:580:MET:O	1:C:584:LYS:HG3	2.20	0.42
1:E:6:LEU:HB2	1:E:97:VAL:HG23	2.02	0.42
1:E:122:VAL:HG13	1:E:151:MET:SD	2.60	0.42
1:F:409:GLY:O	1:F:412:ARG:NH2	2.50	0.42
1:A:70:ASN:O	1:A:74:PHE:N	2.51	0.42
1:A:122:VAL:HG13	1:A:151:MET:SD	2.60	0.42
1:F:160:LEU:HD21	1:F:189:ILE:HG13	2.02	0.42
1:A:494:GLU:H	1:A:494:GLU:HG3	1.70	0.41
1:B:20:PHE:HA	1:B:27:PHE:CE2	2.55	0.41
1:C:149:ILE:HD13	1:C:149:ILE:HA	1.92	0.41
1:F:521:TYR:CG	1:F:526:ILE:HD12	2.55	0.41
1:A:341:ASP:N	1:A:346:ARG:O	2.41	0.41
1:A:580:MET:SD	1:A:580:MET:N	2.93	0.41
1:B:162:ARG:NH2	1:B:591:TYR:HB3	2.35	0.41
1:C:97:VAL:HG13	1:C:122:VAL:HG23	2.02	0.41
1:D:87:THR:HG23	1:D:88:LYS:HG2	2.02	0.41
1:D:180:PRO:HB2	1:D:183:SER:OG	2.21	0.41
1:E:223:GLN:H	1:E:223:GLN:HG2	1.73	0.41
1:F:134:ILE:O	1:F:138:PHE:HB2	2.20	0.41
1:A:496:CYS:HB2	1:A:499:ALA:HB3	2.02	0.41
1:B:103:ILE:HG12	1:B:106:MET:HE3	2.02	0.41
1:C:288:ILE:HG22	1:C:502:GLN:O	2.21	0.41
1:C:415:GLY:HA2	1:C:443:LEU:HD22	2.02	0.41
1:E:422:GLU:OE2	1:E:452:ASN:N	2.39	0.41
1:F:238:PRO:HG3	1:F:589:LYS:HB3	2.01	0.41
1:A:103:ILE:HG12	1:A:106:MET:HE1	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:226:LEU:HA	1:A:558:ARG:HE	1.86	0.41
1:A:504:LYS:HB2	1:A:504:LYS:HE3	1.72	0.41
1:B:230:ASP:O	1:B:234:ILE:HG12	2.20	0.41
1:B:421:PHE:O	1:B:426:THR:OG1	2.39	0.41
1:D:21:HIS:CG	1:D:141:LEU:HD11	2.56	0.41
1:E:138:PHE:O	1:E:142:GLN:HG2	2.21	0.41
1:E:281:TRP:CG	1:E:282:PRO:HA	2.56	0.41
1:F:599:LYS:HA	1:F:599:LYS:HD2	1.82	0.41
1:A:333:ARG:NH2	1:A:446:THR:OG1	2.54	0.41
1:B:326:ASN:HA	1:B:372:PHE:HE2	1.84	0.41
1:C:17:PRO:HG3	1:C:48:PHE:CD2	2.56	0.41
1:C:441:CYS:O	1:D:484:ARG:NH1	2.54	0.41
1:E:34:THR:O	1:E:61:LYS:HA	2.21	0.41
1:E:68:ILE:HD11	1:E:77:TYR:CD1	2.55	0.41
1:F:86:LEU:HD11	1:F:164:LYS:HA	2.03	0.41
1:F:574:ILE:HB	1:F:578:PHE:HD2	1.86	0.41
1:A:291:ASP:HA	1:A:294:MET:SD	2.60	0.41
1:A:405:GLN:O	1:D:342:LYS:NZ	2.54	0.41
1:A:542:LEU:HD12	1:A:542:LEU:HA	1.89	0.41
1:B:182:ILE:O	1:B:186:ILE:HG23	2.19	0.41
1:B:526:ILE:H	1:B:526:ILE:HG13	1.61	0.41
1:C:588:ARG:HD2	1:C:588:ARG:HA	1.87	0.41
1:E:92:ASN:OD1	1:E:92:ASN:C	2.58	0.41
1:E:211:LEU:HD12	1:E:211:LEU:HA	1.90	0.41
1:F:192:ASN:ND2	1:F:214:LEU:O	2.53	0.41
1:A:30:VAL:HG21	1:A:49:PHE:CZ	2.56	0.41
1:A:159:ALA:HB1	1:A:599:LYS:HD2	2.03	0.41
1:D:140:ALA:HA	1:D:143:LYS:HD2	2.02	0.41
1:E:72:ARG:HG3	1:E:73:ASP:N	2.36	0.41
1:E:230:ASP:OD1	1:E:558:ARG:NE	2.51	0.41
1:E:466:HIS:CD2	1:E:466:HIS:N	2.89	0.41
1:E:557:SER:N	1:E:560:ASP:OD1	2.43	0.41
1:A:207:PRO:HB3	1:A:566:ARG:HG2	2.03	0.41
1:A:356:ASN:ND2	1:A:411:CYS:O	2.54	0.41
1:B:183:SER:O	1:B:186:ILE:HG12	2.21	0.41
1:B:310:CYS:O	1:B:313:ARG:HG2	2.20	0.41
1:B:385:LYS:NZ	1:B:387:SER:OG	2.51	0.41
1:B:519:LYS:HB3	1:B:520:LYS:NZ	2.35	0.41
1:C:221:TRP:NE1	1:C:598:ILE:HG12	2.36	0.41
1:D:309:GLY:O	1:D:313:ARG:HG2	2.21	0.41
1:D:516:TYR:HA	1:D:517:PRO:HD3	1.94	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:157:TRP:CD1	1:E:158:ALA:N	2.89	0.41
1:E:238:PRO:HB2	1:E:586:PHE:CE2	2.56	0.41
1:E:307:ASP:HB3	1:E:310:CYS:HB2	2.02	0.41
1:E:548:ILE:HD12	1:E:548:ILE:HA	1.94	0.41
1:F:14:MET:SD	1:F:137:MET:HG2	2.61	0.41
1:F:334:CYS:O	1:F:381:ILE:HG22	2.21	0.41
1:F:386:PHE:CZ	1:F:426:THR:HG22	2.56	0.41
1:B:418:LEU:HD21	1:B:435:PHE:CE1	2.56	0.41
1:D:3:ARG:NH1	1:D:25:GLU:OE1	2.54	0.41
1:E:11:HIS:CE1	1:E:103:ILE:HG22	2.56	0.41
1:E:163:LEU:HD13	1:E:166:ILE:HD12	2.03	0.41
1:E:190:LEU:HB2	1:F:153:TYR:CZ	2.55	0.41
1:A:540:ALA:HA	1:A:544:GLU:OE2	2.21	0.40
1:B:220:GLN:O	1:B:224:LEU:HG	2.21	0.40
1:B:466:HIS:O	1:B:468:ARG:HD3	2.21	0.40
1:B:566:ARG:O	1:B:569:ILE:HG22	2.20	0.40
1:C:189:ILE:HG21	1:D:155:PRO:HB3	2.02	0.40
1:E:161:ARG:NE	1:E:161:ARG:HA	2.36	0.40
1:E:204:ASN:O	1:E:204:ASN:ND2	2.54	0.40
1:E:243:HIS:HA	1:E:333:ARG:NH1	2.36	0.40
1:A:76:PHE:O	1:A:80:MET:HE2	2.21	0.40
1:A:292:LYS:O	1:A:296:LEU:HD23	2.20	0.40
1:A:442:GLY:HA3	1:B:484:ARG:HH21	1.86	0.40
1:A:483:MET:O	1:A:487:ILE:HD12	2.21	0.40
1:B:96:TYR:HB3	1:B:123:PHE:CE2	2.56	0.40
1:B:301:GLY:O	1:B:305:LEU:HB2	2.20	0.40
1:C:162:ARG:HA	1:C:165:LYS:NZ	2.35	0.40
1:C:233:TRP:CE2	1:C:237:LEU:HD21	2.57	0.40
1:C:237:LEU:HD23	1:C:593:VAL:HG11	2.03	0.40
1:D:79:GLU:HG2	1:D:80:MET:HE1	2.02	0.40
1:E:106:MET:CE	1:E:106:MET:H	2.34	0.40
1:E:458:ILE:O	1:E:462:VAL:HG12	2.20	0.40
1:B:77:TYR:OH	1:B:106:MET:HB2	2.21	0.40
1:B:542:LEU:O	1:B:545:ASN:HB2	2.21	0.40
1:E:105:SER:HB3	1:E:106:MET:HE1	2.03	0.40
1:F:360:THR:HG23	1:F:410:VAL:HG12	2.02	0.40
1:A:588:ARG:NE	1:B:203:SER:OG	2.53	0.40
1:B:138:PHE:O	1:B:141:LEU:HG	2.21	0.40
1:B:544:GLU:HA	1:B:547:LEU:HB3	2.03	0.40
1:F:425:GLU:O	1:F:427:ARG:HG2	2.22	0.40
1:F:483:MET:O	1:F:486:VAL:HG12	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:15:VAL:O	1:A:18:GLU:HG2	2.22	0.40
1:A:439:HIS:HE1	1:A:466:HIS:CB	2.30	0.40
1:C:404:MET:HE2	1:C:441:CYS:HB2	2.03	0.40
1:C:422:GLU:OE2	1:C:451:GLU:N	2.54	0.40
1:D:49:PHE:CD2	1:D:57:PHE:HB2	2.56	0.40
1:D:224:LEU:O	1:D:558:ARG:HG3	2.21	0.40
1:D:457:GLY:O	1:D:460:GLN:HG2	2.21	0.40
1:D:569:ILE:HD11	1:D:583:LEU:HD22	2.04	0.40
1:E:470:LEU:HD13	1:E:491:ILE:HG21	2.04	0.40
1:F:60:THR:HG21	1:F:84:TRP:HE1	1.85	0.40
1:F:243:HIS:HB3	1:F:531:ASN:HB3	2.04	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	588/600 (98%)	560 (95%)	26 (4%)	2 (0%)	37	67
1	B	534/600 (89%)	506 (95%)	24 (4%)	4 (1%)	19	53
1	C	586/600 (98%)	558 (95%)	28 (5%)	0	100	100
1	D	532/600 (89%)	506 (95%)	25 (5%)	1 (0%)	44	73
1	E	589/600 (98%)	553 (94%)	36 (6%)	0	100	100
1	F	533/600 (89%)	506 (95%)	24 (4%)	3 (1%)	22	55
All	All	3362/3600 (93%)	3189 (95%)	163 (5%)	10 (0%)	38	67

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	205	GLN

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Mol	Chain	Res	Type
1	B	206	LEU
1	F	90	PRO
1	A	424	LYS
1	B	211	LEU
1	F	209	PRO
1	A	472	HIS
1	F	533	ASP
1	B	210	SER
1	D	533	ASP

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	510/517 (99%)	483 (95%)	27 (5%)	19	48
1	B	468/517 (90%)	451 (96%)	17 (4%)	30	59
1	C	508/517 (98%)	484 (95%)	24 (5%)	22	51
1	D	466/517 (90%)	438 (94%)	28 (6%)	16	45
1	E	511/517 (99%)	494 (97%)	17 (3%)	33	61
1	F	467/517 (90%)	443 (95%)	24 (5%)	20	49
All	All	2930/3102 (94%)	2793 (95%)	137 (5%)	24	51

All (137) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	36	ASP
1	A	40	PHE
1	A	57	PHE
1	A	58	SER
1	A	72	ARG
1	A	77	TYR
1	A	89	MET
1	A	106	MET
1	A	121	SER

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Mol	Chain	Res	Type
1	A	126	LEU
1	A	132	ARG
1	A	137	MET
1	A	157	TRP
1	A	161	ARG
1	A	175	ARG
1	A	179	LYS
1	A	190	LEU
1	A	304	LEU
1	A	341	ASP
1	A	359	PHE
1	A	397	LEU
1	A	434	ASP
1	A	435	PHE
1	A	452	ASN
1	A	463	TYR
1	A	475	ASN
1	A	498	TYR
1	B	40	PHE
1	B	132	ARG
1	B	137	MET
1	B	138	PHE
1	B	151	MET
1	B	303	LYS
1	B	321	SER
1	B	333	ARG
1	B	339	TYR
1	B	421	PHE
1	B	427	ARG
1	B	431	TYR
1	B	433	HIS
1	B	500	ASN
1	B	560	ASP
1	B	586	PHE
1	B	588	ARG
1	C	47	ASP
1	C	81	LEU
1	C	91	ASP
1	C	106	MET
1	C	137	MET
1	C	210	SER
1	C	239	LYS

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Mol	Chain	Res	Type
1	C	244	CYS
1	C	246	LEU
1	C	303	LYS
1	C	326	ASN
1	C	341	ASP
1	C	346	ARG
1	C	386	PHE
1	C	427	ARG
1	C	435	PHE
1	C	440	ARG
1	C	441	CYS
1	C	463	TYR
1	C	498	TYR
1	C	509	MET
1	C	512	PHE
1	C	558	ARG
1	C	594	CYS
1	D	8	SER
1	D	14	MET
1	D	36	ASP
1	D	45	LEU
1	D	72	ARG
1	D	75	GLU
1	D	76	PHE
1	D	123	PHE
1	D	153	TYR
1	D	178	PHE
1	D	208	PHE
1	D	303	LYS
1	D	306	LYS
1	D	333	ARG
1	D	356	ASN
1	D	386	PHE
1	D	389	ASP
1	D	390	LEU
1	D	427	ARG
1	D	429	SER
1	D	430	TYR
1	D	433	HIS
1	D	498	TYR
1	D	500	ASN
1	D	518	LEU

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Mol	Chain	Res	Type
1	D	560	ASP
1	D	577	ASP
1	D	586	PHE
1	E	3	ARG
1	E	57	PHE
1	E	77	TYR
1	E	78	GLN
1	E	106	MET
1	E	121	SER
1	E	137	MET
1	E	175	ARG
1	E	204	ASN
1	E	424	LYS
1	E	434	ASP
1	E	463	TYR
1	E	477	LEU
1	E	496	CYS
1	E	498	TYR
1	E	587	ASP
1	E	600	ASN
1	F	40	PHE
1	F	45	LEU
1	F	88	LYS
1	F	117	PHE
1	F	137	MET
1	F	138	PHE
1	F	153	TYR
1	F	208	PHE
1	F	230	ASP
1	F	307	ASP
1	F	308	LYS
1	F	354	ASP
1	F	359	PHE
1	F	384	ARG
1	F	389	ASP
1	F	436	LYS
1	F	498	TYR
1	F	500	ASN
1	F	516	TYR
1	F	522	LEU
1	F	549	LEU
1	F	553	CYS

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Mol	Chain	Res	Type
1	F	560	ASP
1	F	586	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (15) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	78	GLN
1	A	220	GLN
1	B	111	GLN
1	B	192	ASN
1	B	353	GLN
1	B	406	GLN
1	B	472	HIS
1	B	500	ASN
1	B	545	ASN
1	C	129	ASN
1	C	204	ASN
1	E	70	ASN
1	E	439	HIS
1	F	204	ASN
1	F	460	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 ⓘ

Of 6 ligands modelled in this entry, 6 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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-45241. 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 ⓘ
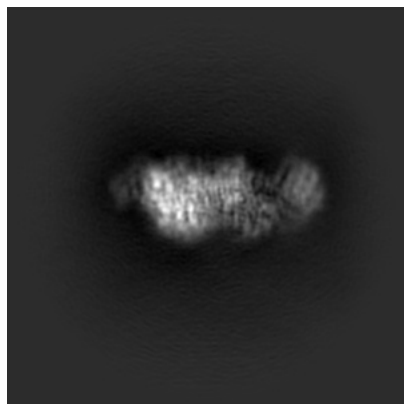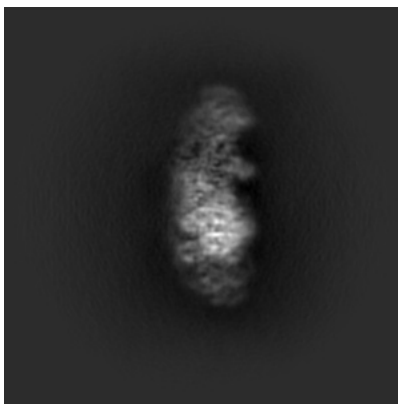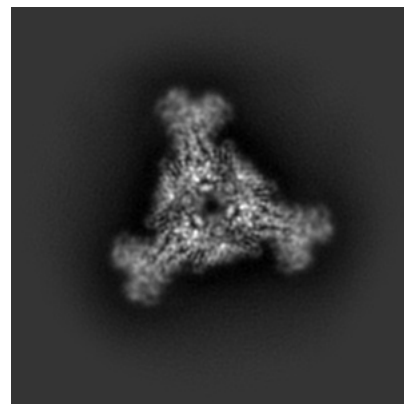
6.1.1   Primary map

X   Y   Z

6.1.2   Raw map

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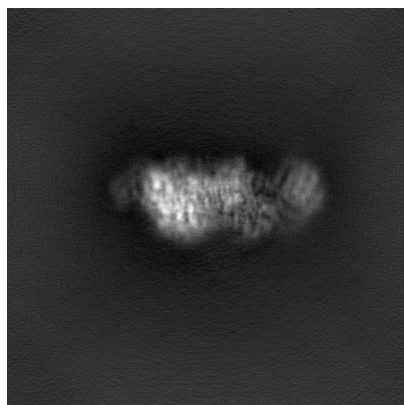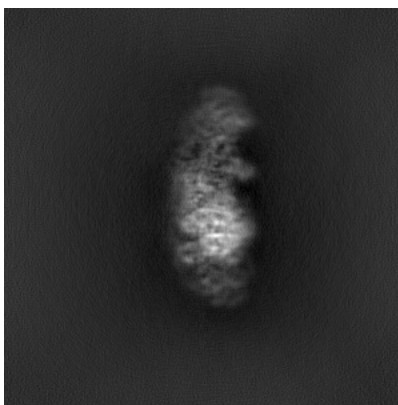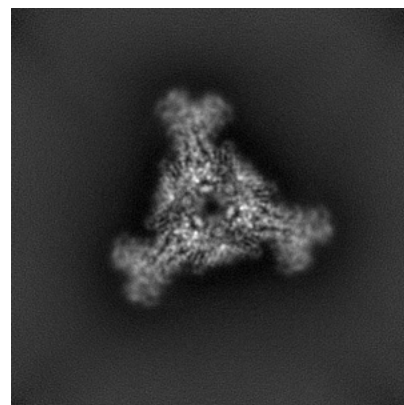
The images above show the map projected in three orthogonal directions.

6.2　Central slices ⓘ
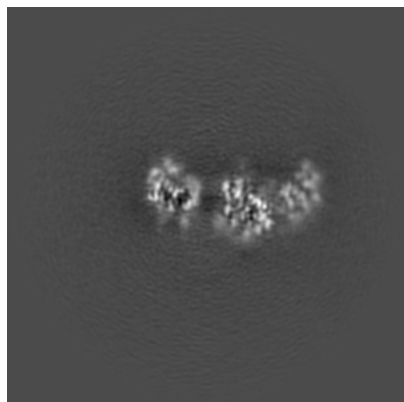
6.2.1　Primary map
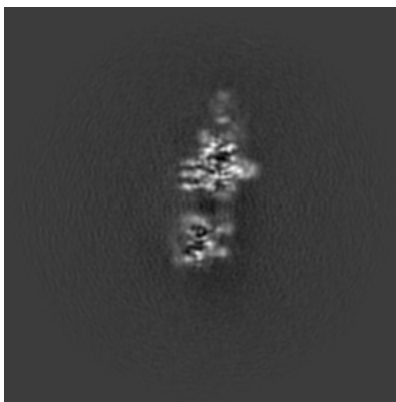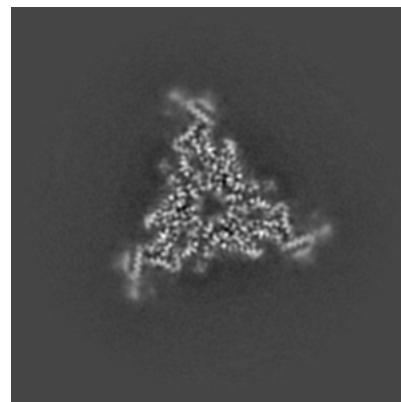
| X Index: 160 | Y Index: 160 | Z Index: 160 |

6.2.2　Raw map
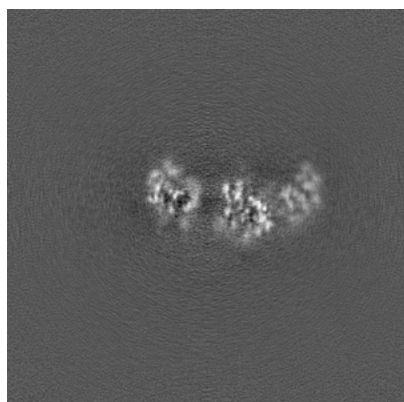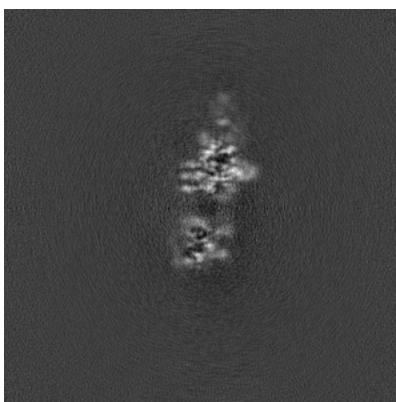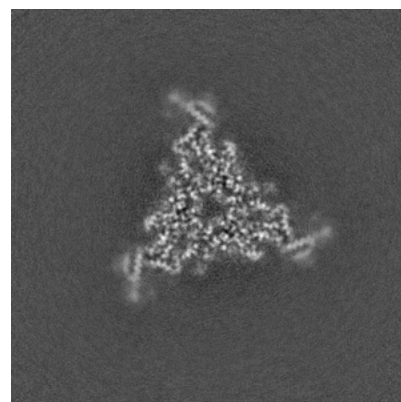
| X Index: 160 | Y Index: 160 | Z Index: 160 |

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

6.3 Largest variance slices ⓘ

6.3.1 Primary map
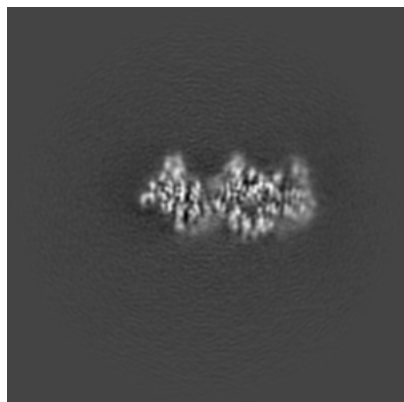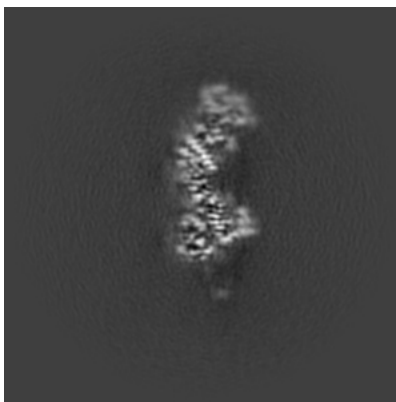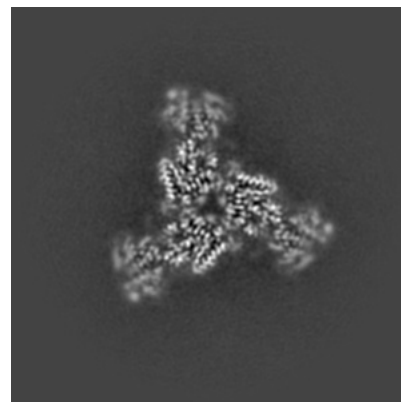
X Index: 147	Y Index: 139	Z Index: 167

6.3.2 Raw map
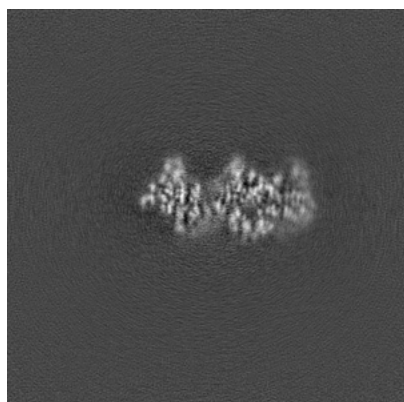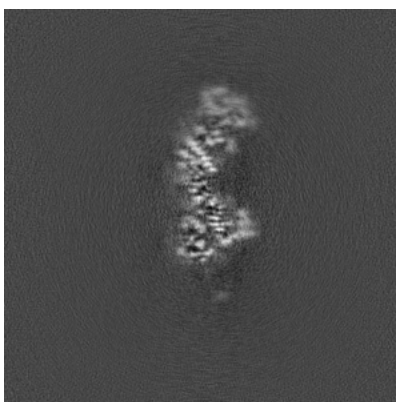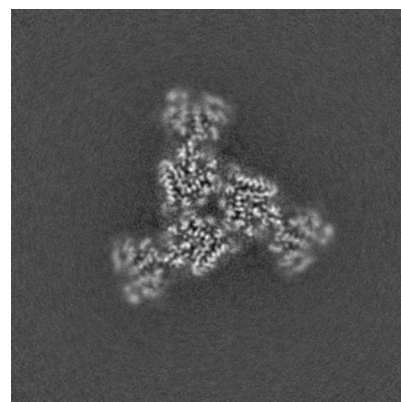
X Index: 147	Y Index: 139	Z Index: 168

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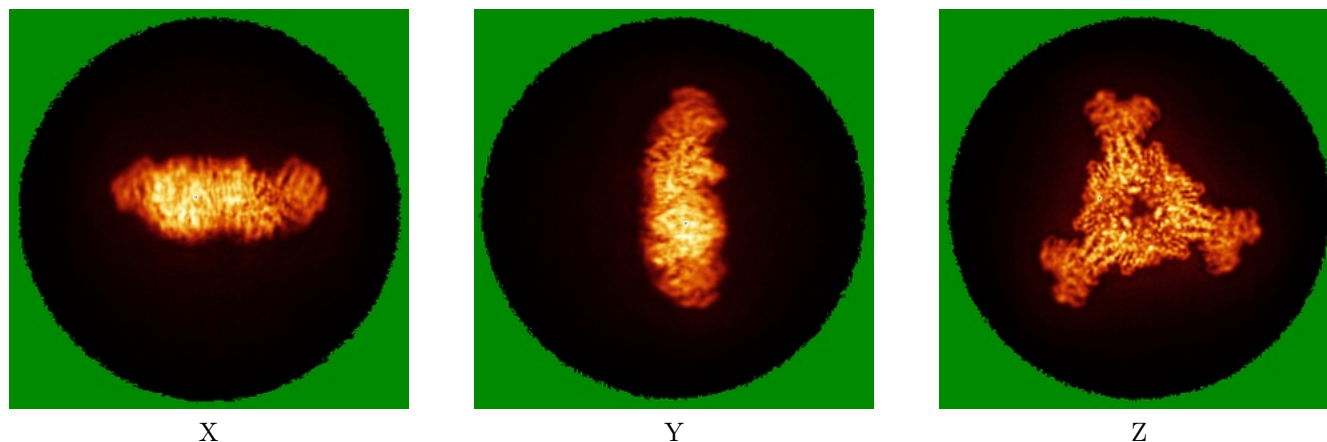
6.4.2 Raw map
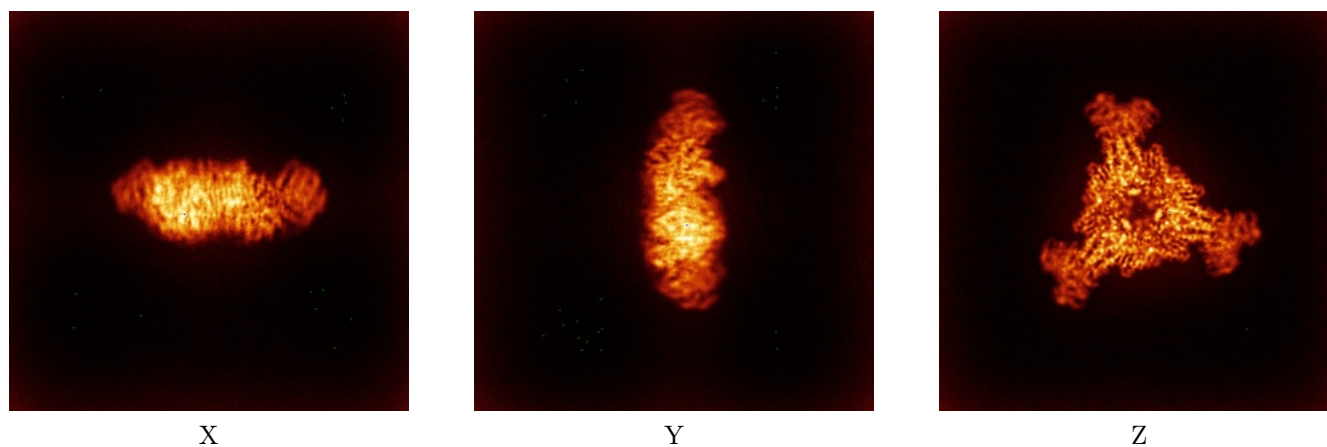
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

6.5.1 Primary map

| X | Y | Z |
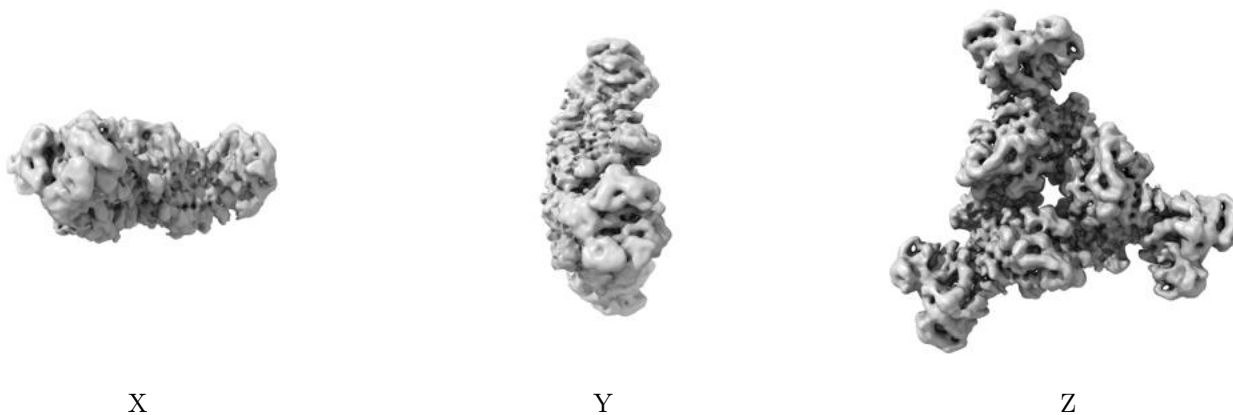
The images above show the 3D surface view of the map at the recommended contour level 0.0591. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

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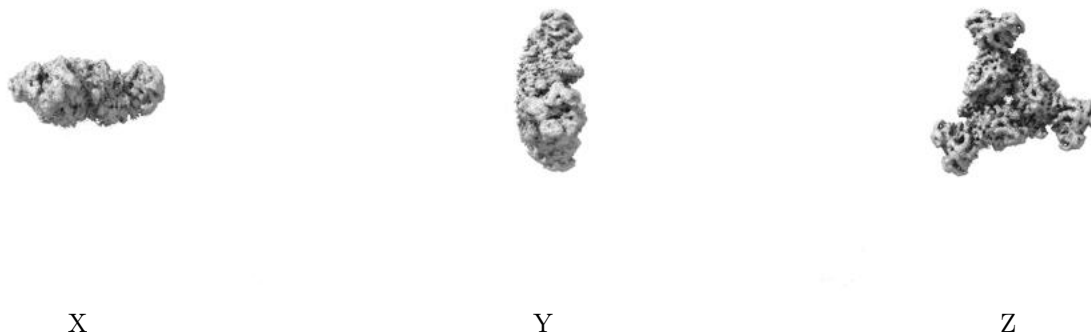
These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

6.6 Mask visualisation (i)

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

7 Map analysis ⓘ

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

7.1 Map-value distribution ⓘ
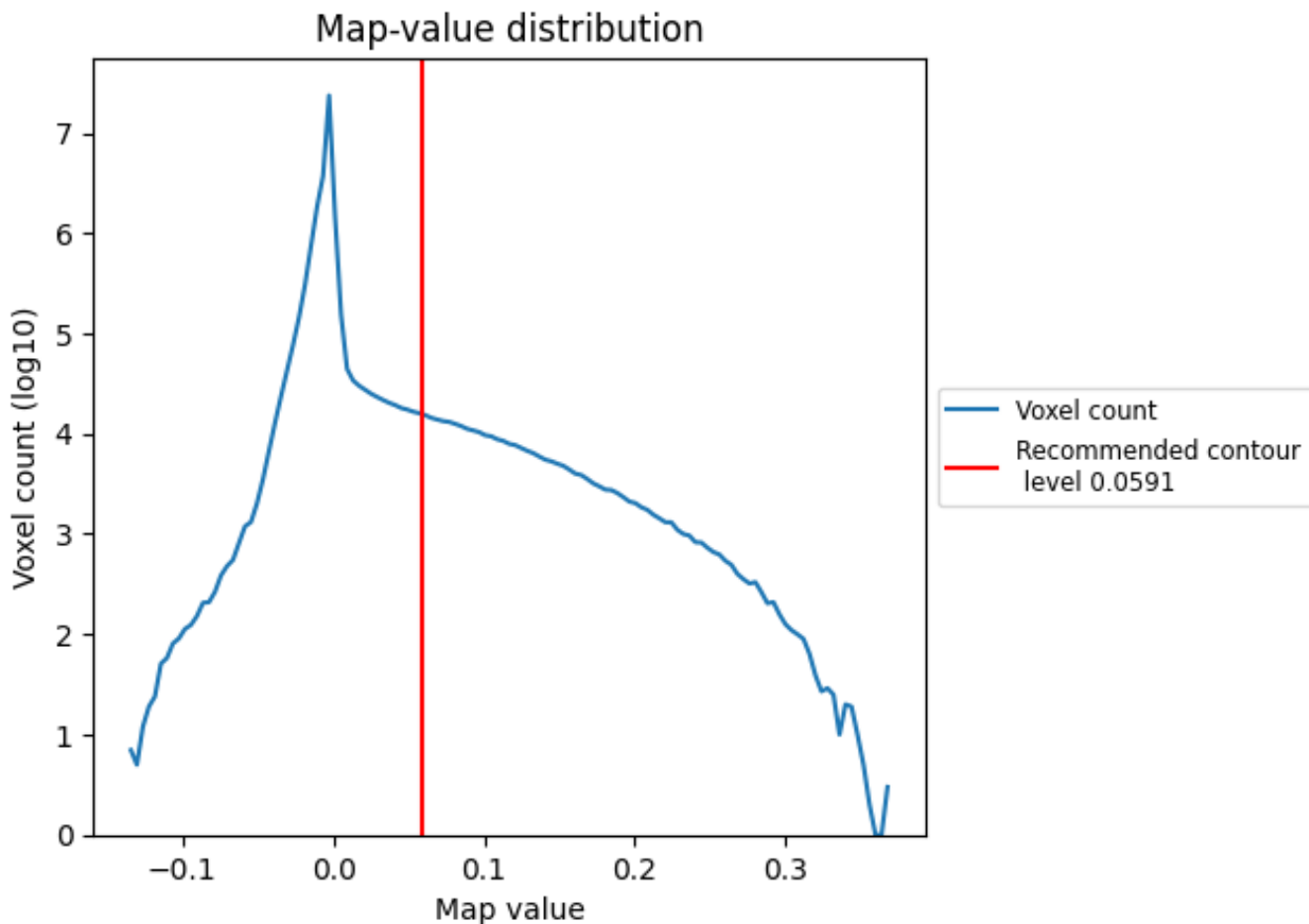
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2 Volume estimate ⓘ
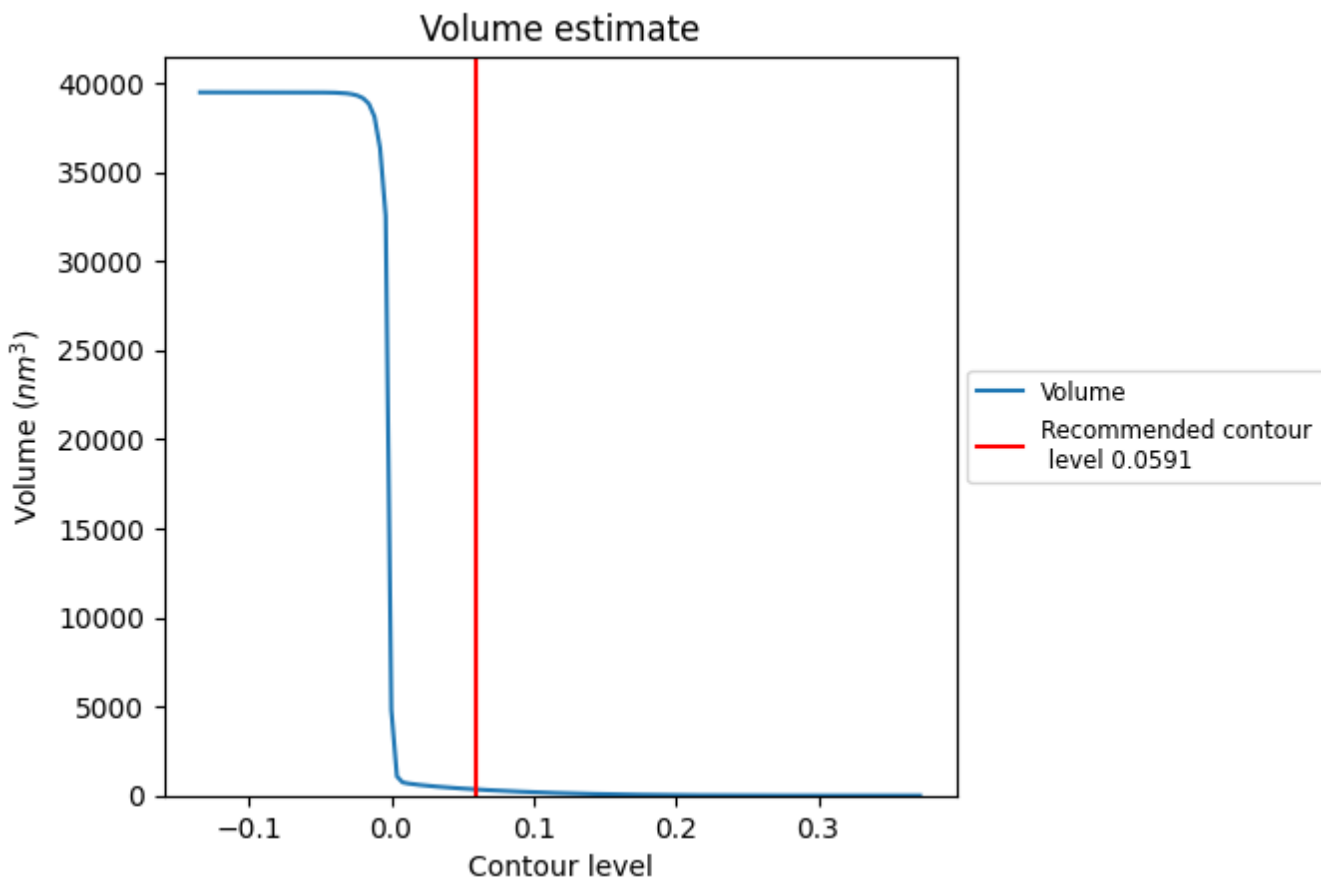
The volume at the recommended contour level is 349 nm^3; this corresponds to an approximate mass of 315 kDa.

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 ⓘ
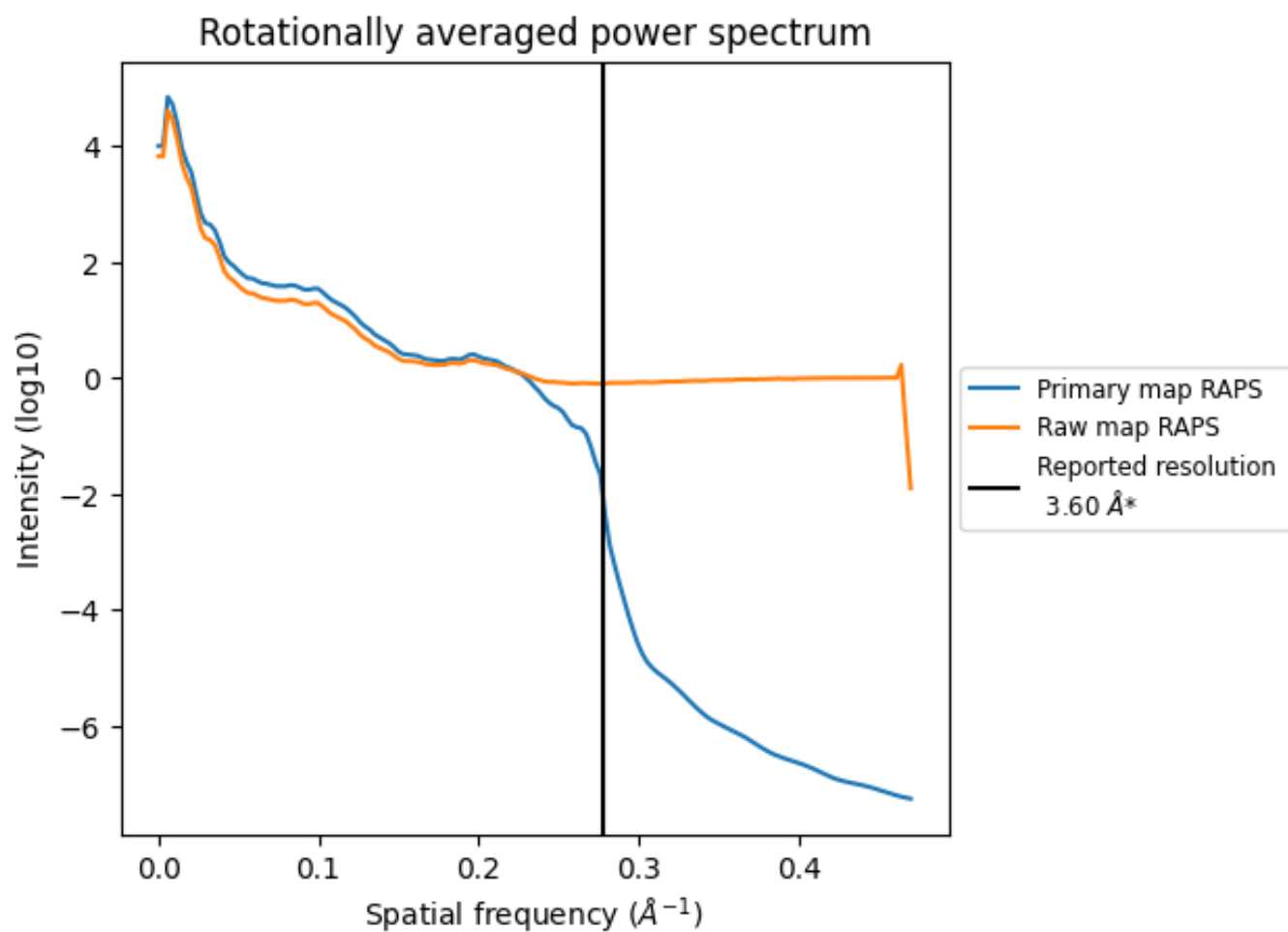
*Reported resolution corresponds to spatial frequency of 0.278 Å^{-1}

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 ⓘ
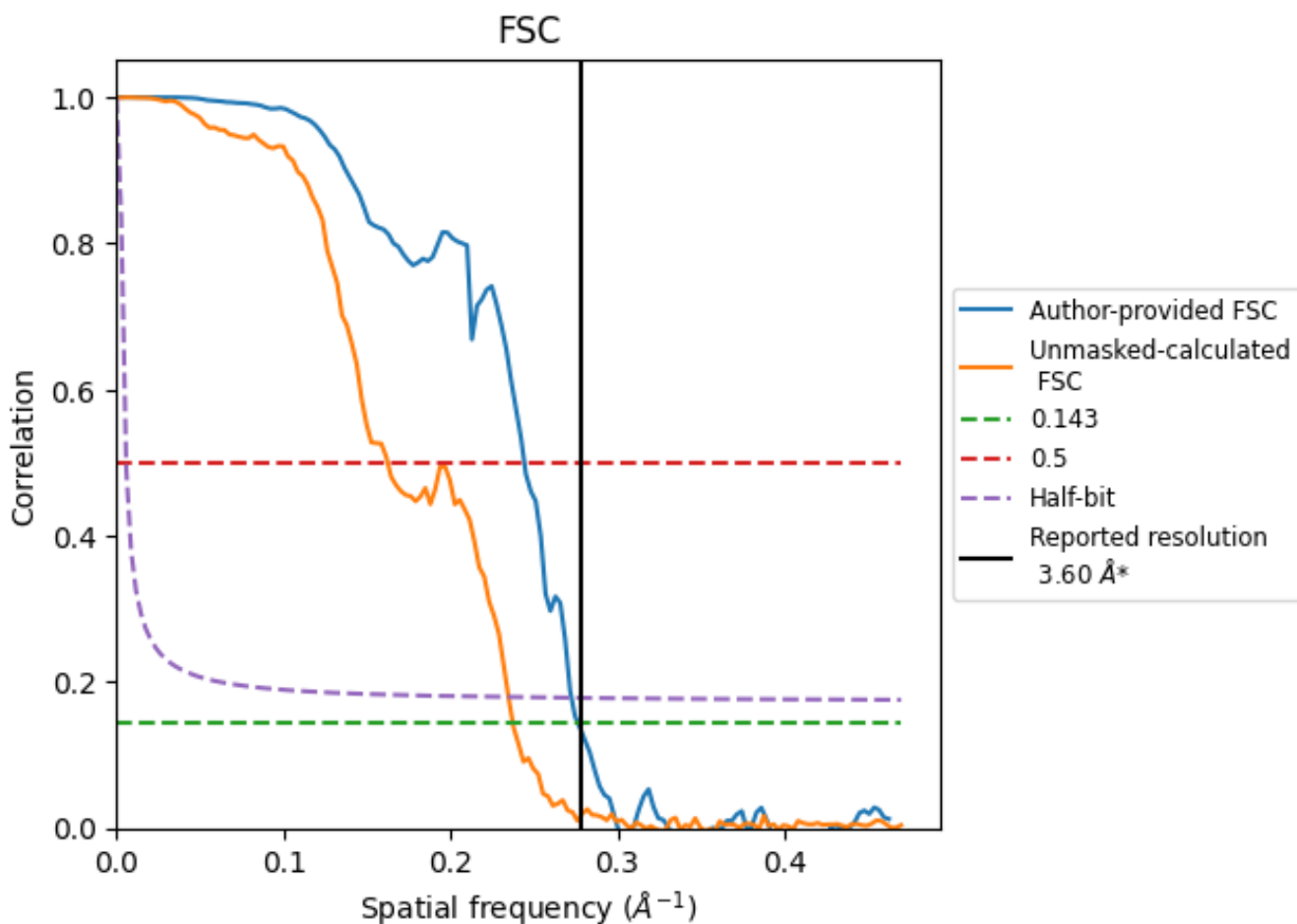
*Reported resolution corresponds to spatial frequency of 0.278 Å^{-1}

8.2 Resolution estimates ⓘ

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.60	-	-
Author-provided FSC curve	3.62	4.09	3.67
Unmasked-calculated*	4.21	6.16	4.26

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.21 differs from the reported value 3.6 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-45241 and PDB model 9C67. Per-residue inclusion information can be found in section 3 on page 4.

9.1 Map-model overlay ⓘ
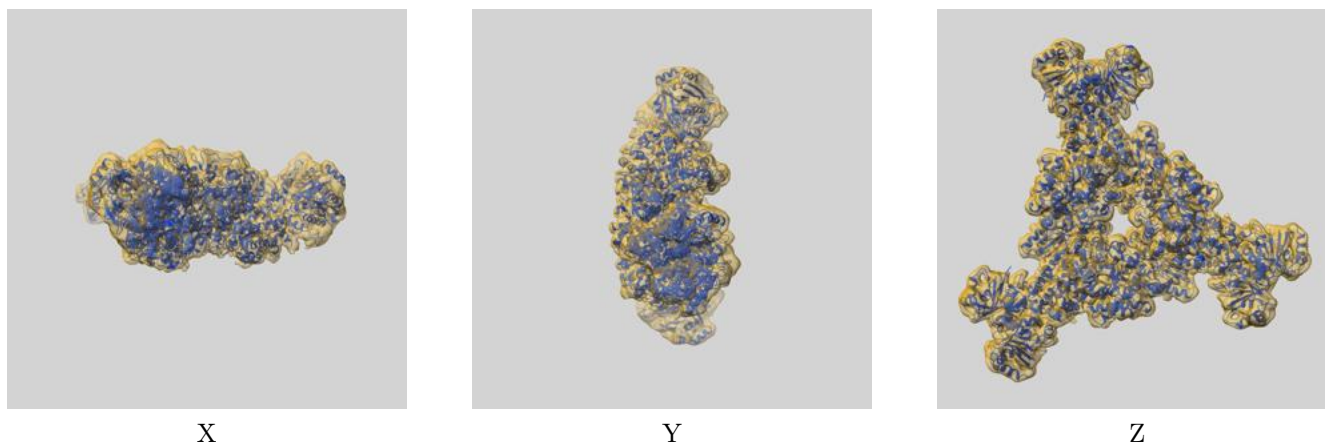
X   Y   Z

The images above show the 3D surface view of the map at the recommended contour level 0.0591 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
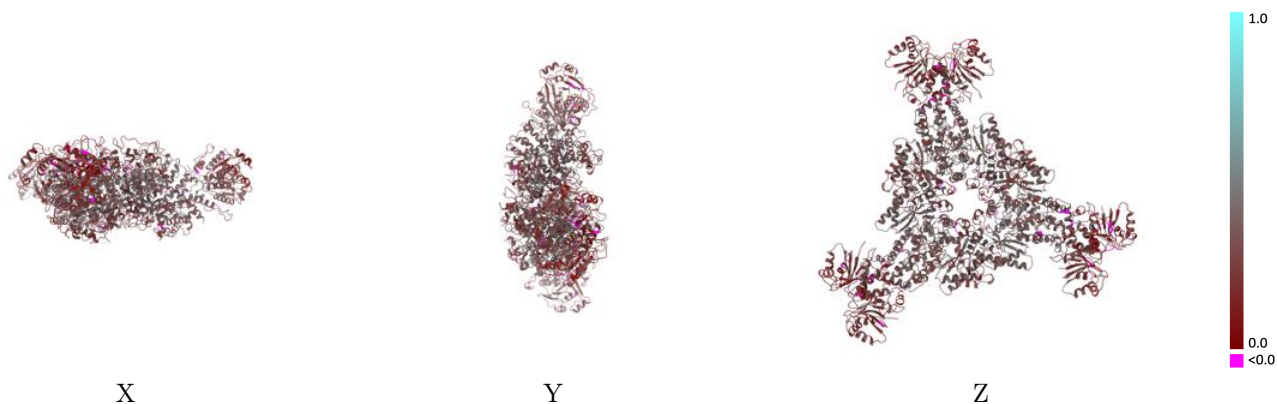
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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
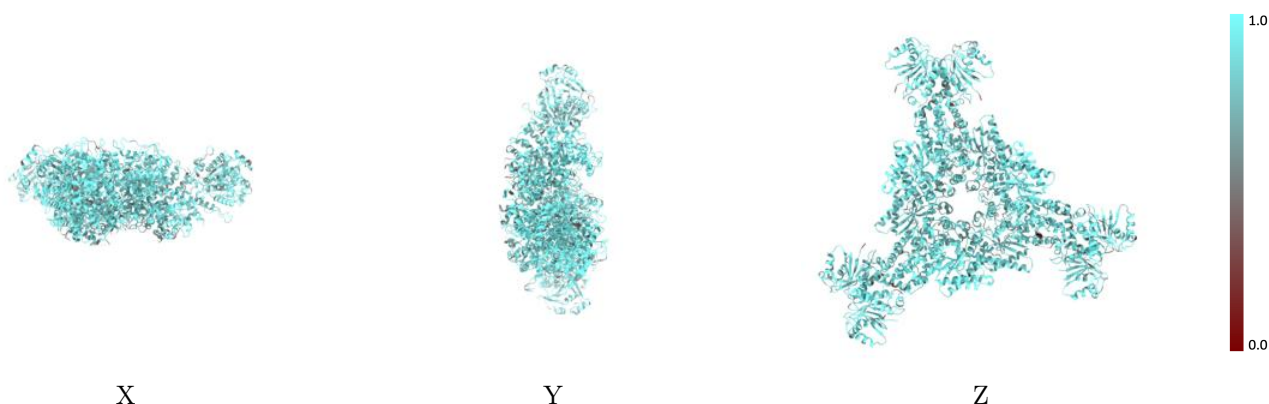
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0591).

9.4 Atom inclusion ⓘ
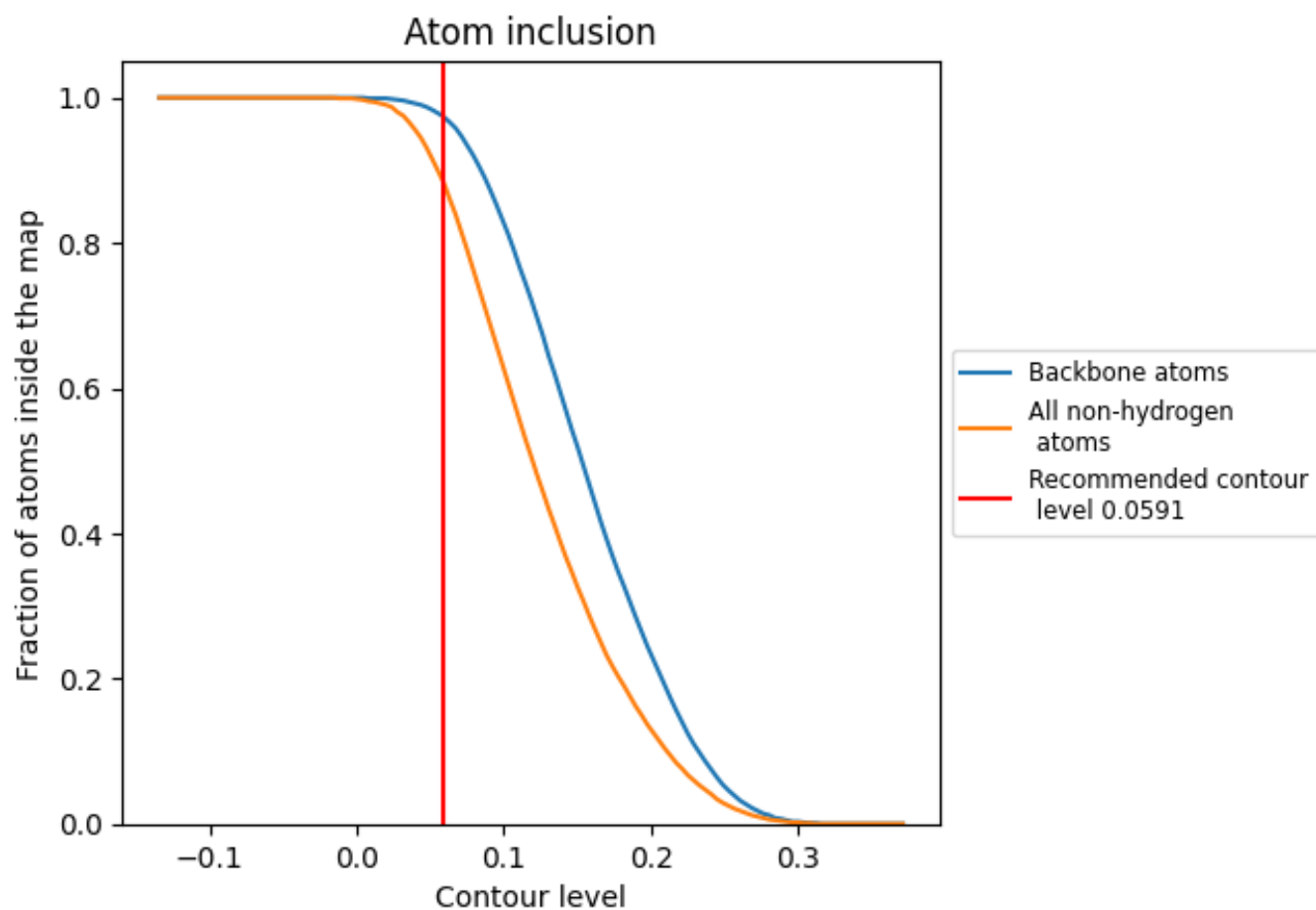
At the recommended contour level, 97% of all backbone atoms, 88% of all non-hydrogen atoms, are inside the map.

9.5　Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.0591) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8830	0.2970
A	0.9040	0.3020
B	0.8630	0.2970
C	0.8940	0.2930
D	0.8670	0.2980
E	0.9000	0.3000
F	0.8640	0.2950

1.0

0.0
<0.0