Full wwPDB EM Validation Report

Jun 29, 2026 – 10:33 AM EDT

PDB ID	:	9OFN / pdb_00009ofn
EMDB ID	:	EMD-70438
Title	:	Enterobacter FliC filament
Authors	:	Fernandez, I.S.
Deposited on	:	2025-04-30
Resolution	:	3.60 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 ⓘ symbol.

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

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

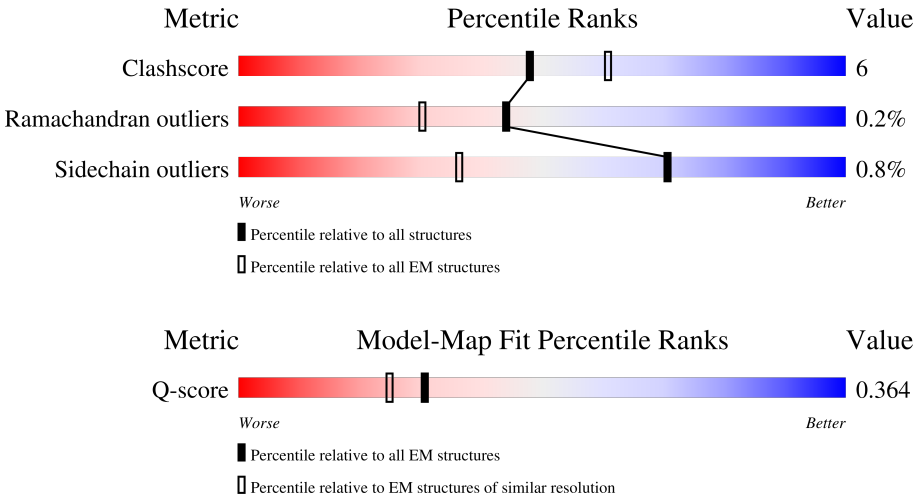
EMDB validation analysis	:	0.0.1.dev133
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.50

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	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	12797 (3.10 - 4.10)

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	1	482	20% 89% 11%
1	2	482	16% 86% 13%
1	3	482	18% 86% 14%
1	4	482	22% 89% 11%

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Mol	Chain	Length	Quality of chain
1	5	482	14% 84% 16%
1	6	482	21% 88% 12%
1	7	482	22% 91% 9%
1	8	482	17% 86% 14%
1	9	482	20% 85% 14%
1	a	482	16% 93% 7%
1	b	482	11% 88% 11%
1	c	482	21% 87% 13%
1	d	482	16% 85% 14%
1	e	482	21% 88% 11%
1	f	482	11% 91% 9%
1	g	482	13% 87% 12%
1	h	482	15% 89% 11%
1	i	482	15% 90% 10%
1	j	482	13% 88% 11%
1	k	482	13% 89% 11%
1	l	482	24% 90% 10%
1	m	482	14% 87% 13%
1	n	482	54% 81% 18%

2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 80454 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 FliC.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	2	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	3	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	4	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	5	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	6	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	7	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	8	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	9	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	a	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	b	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	c	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	d	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	e	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	f	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	g	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	h	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		

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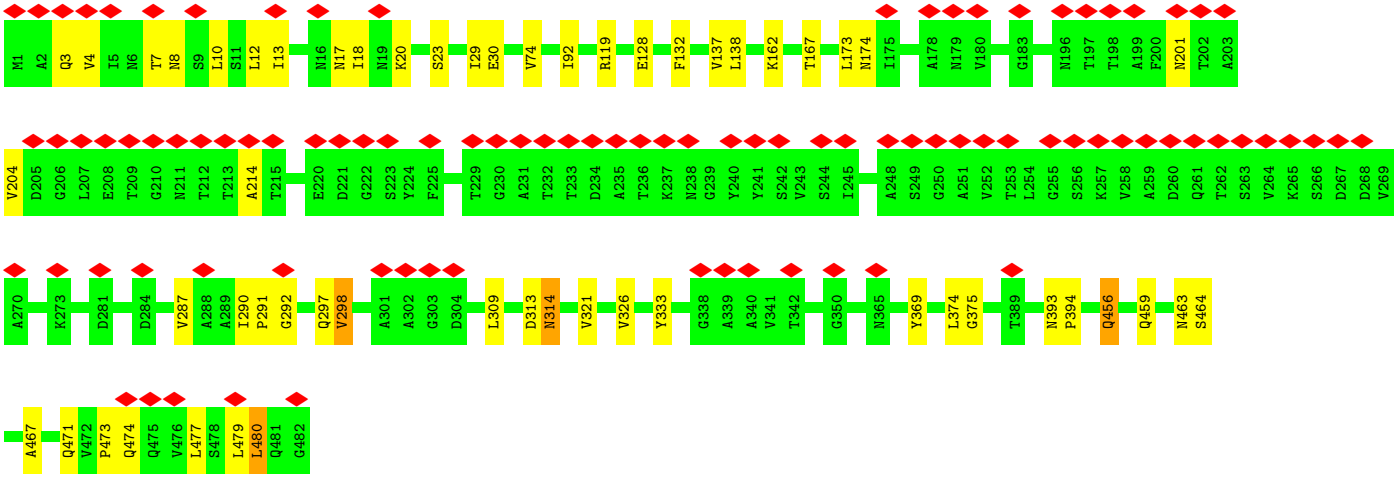
Mol	Chain	Residues	Atoms					AltConf	Trace
1	i	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	j	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	k	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	l	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	m	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		
1	n	482	Total	C	N	O	S	0	0
			3498	2116	612	765	5		

3 Residue-property plots (i)

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.

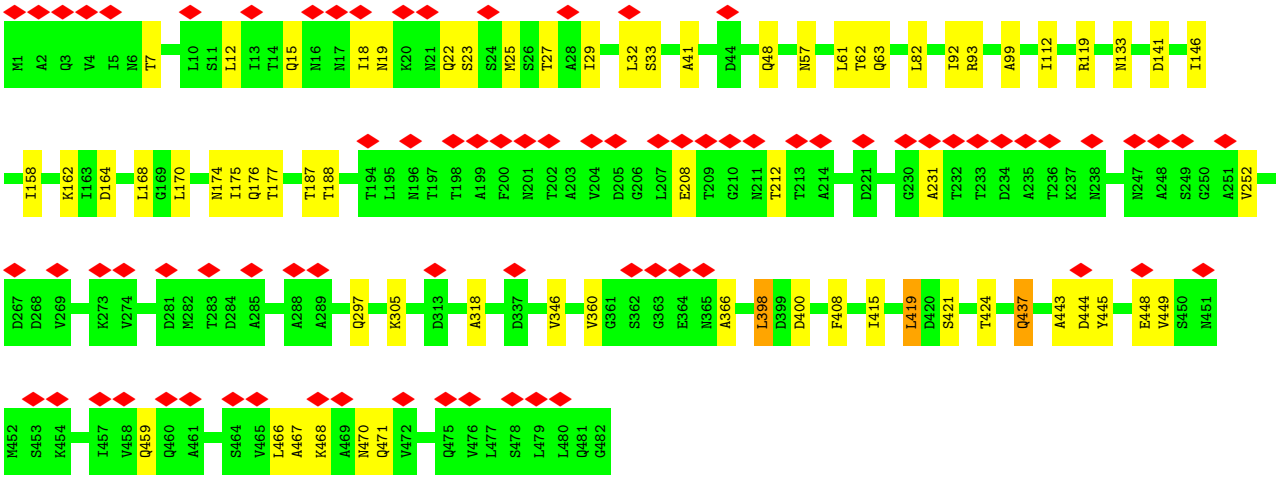
- Molecule 1: FliC

Chain 1:



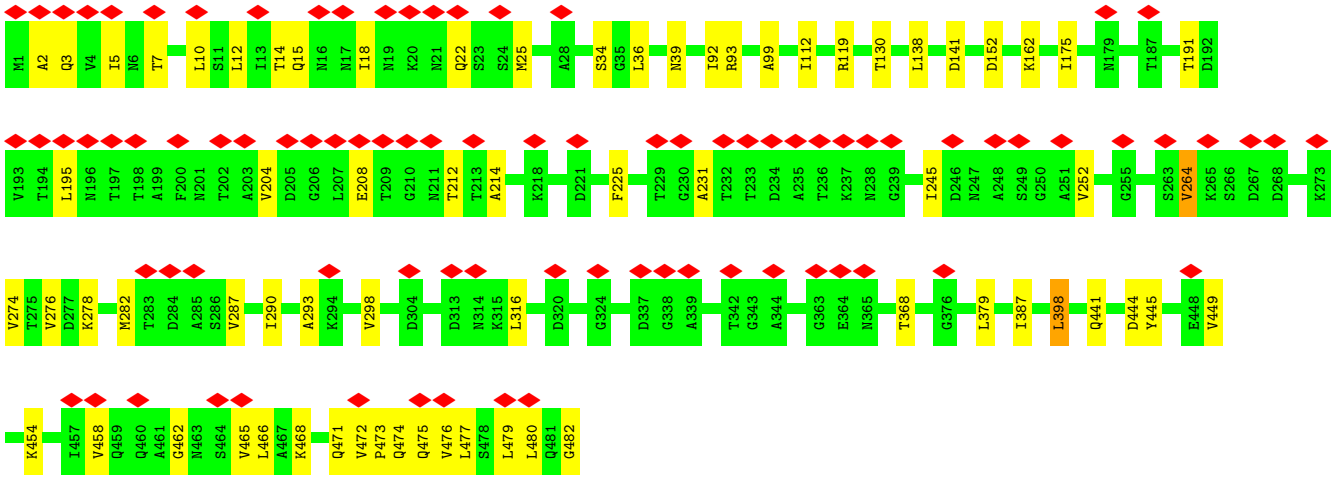
- Molecule 1: FliC

Chain 2:



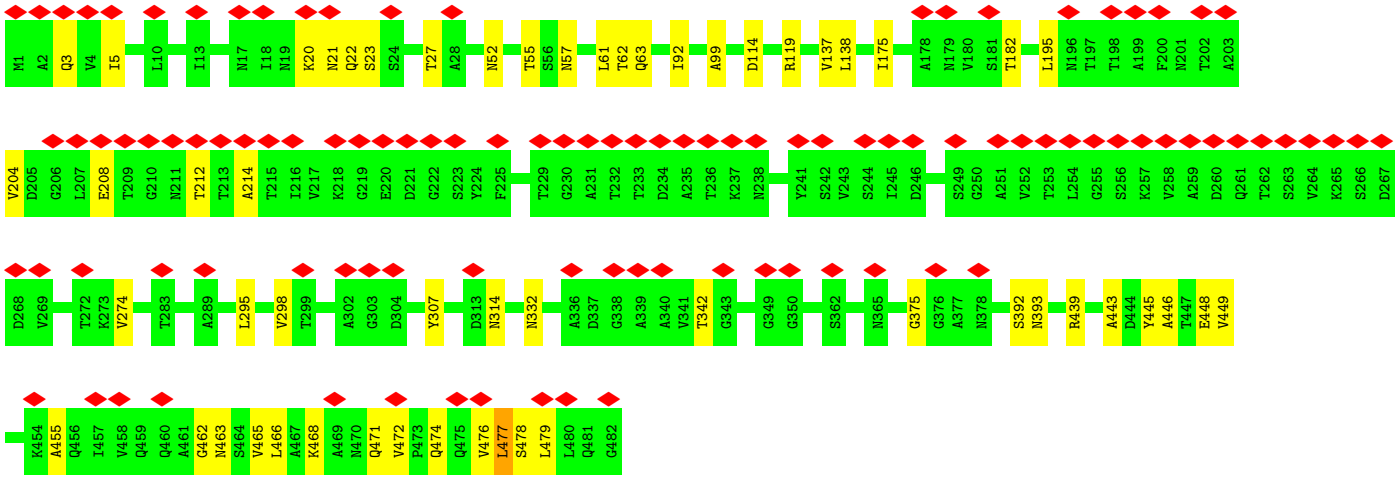
- Molecule 1: FliC

Chain 3:



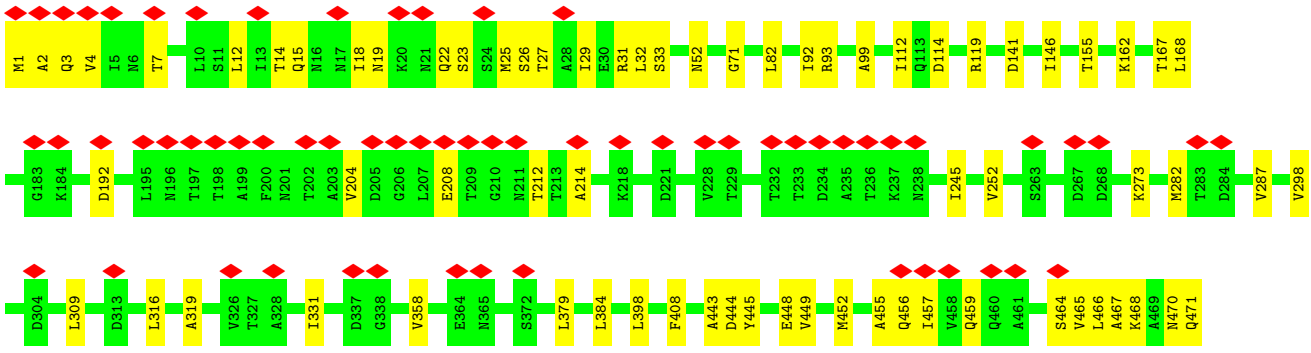
• Molecule 1: FliC

Chain 4:



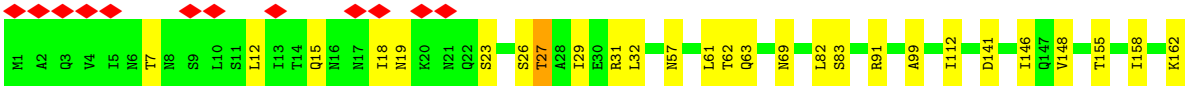
• Molecule 1: FliC

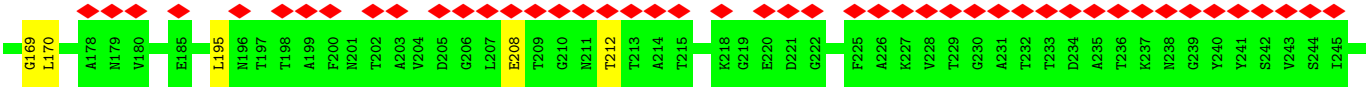
Chain 5:

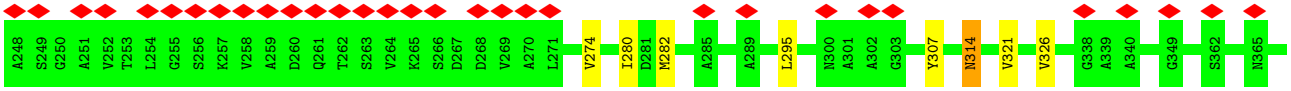


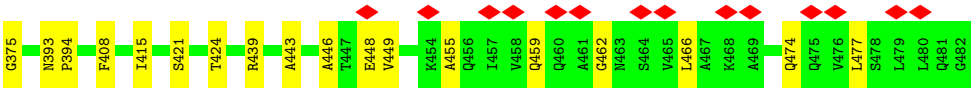
• Molecule 1: FliC

Chain 6:



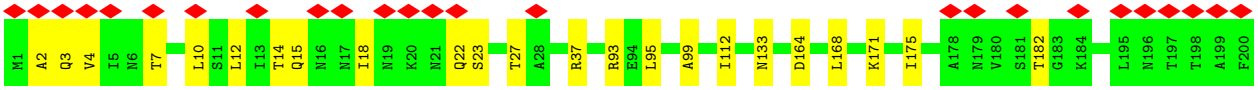


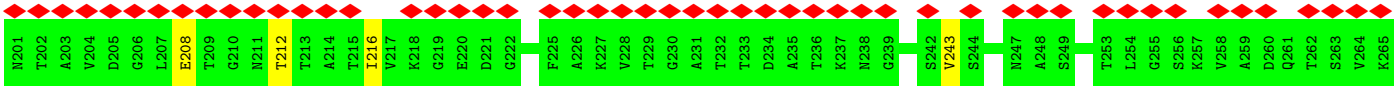


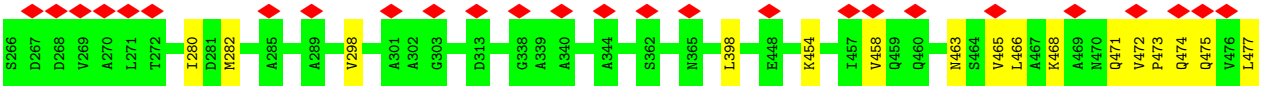


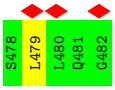
• Molecule 1: FliC

Chain 7:



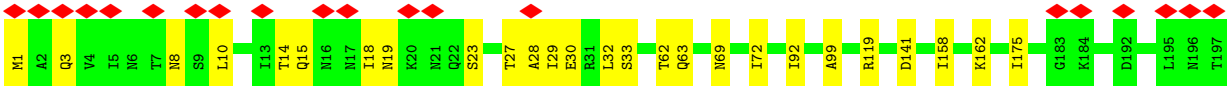


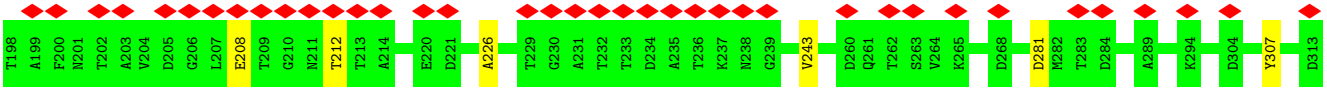


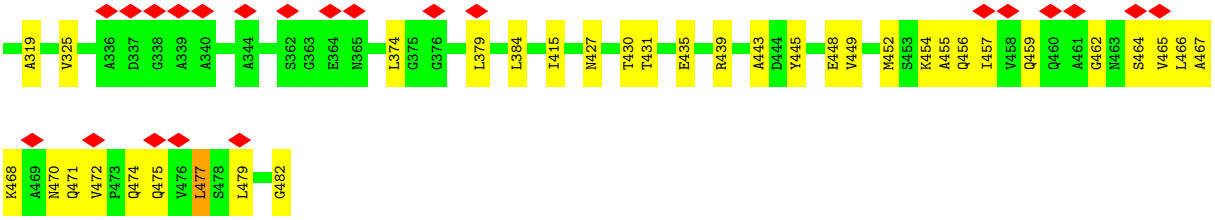


• Molecule 1: FliC

Chain 8:

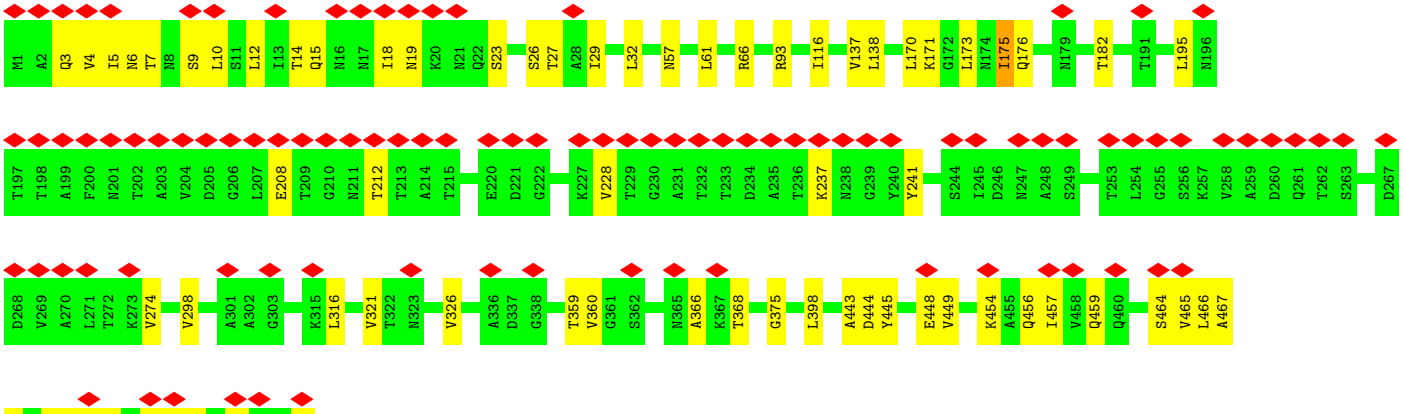






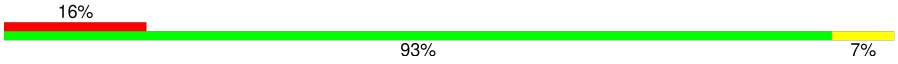
• Molecule 1: FliC

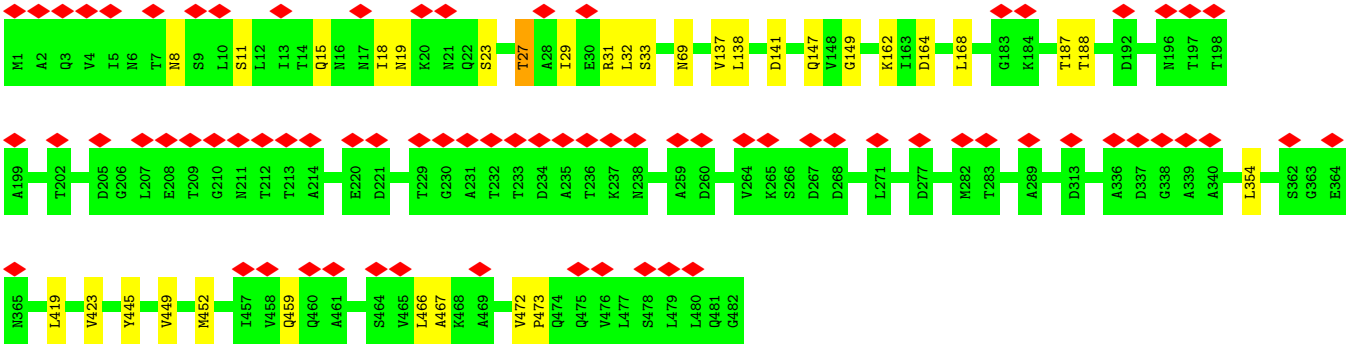
Chain 9:



• Molecule 1: FliC

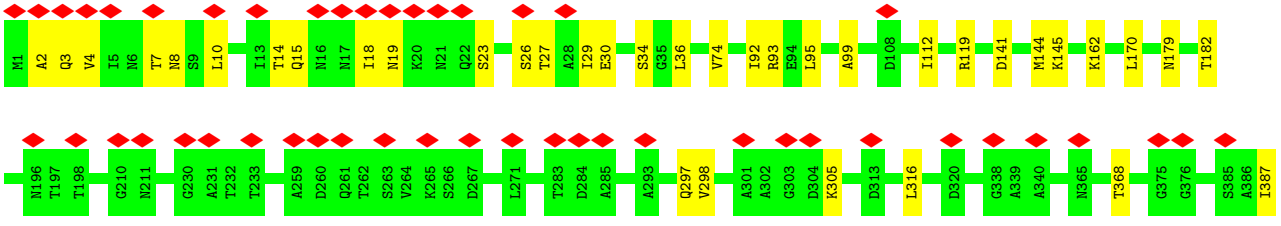
Chain a:





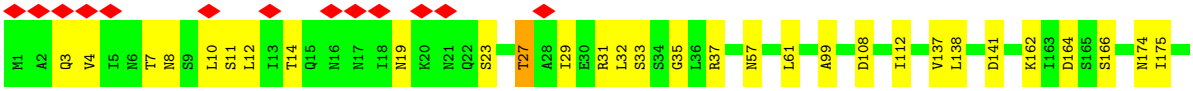
• Molecule 1: FliC

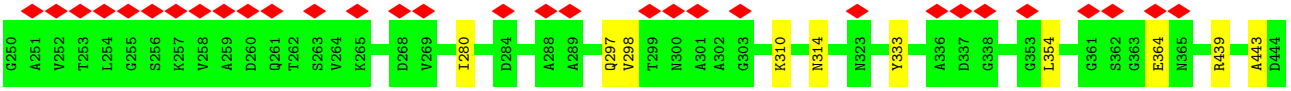
Chain b:



• Molecule 1: FliC

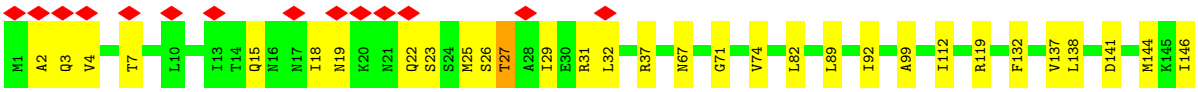
Chain c:

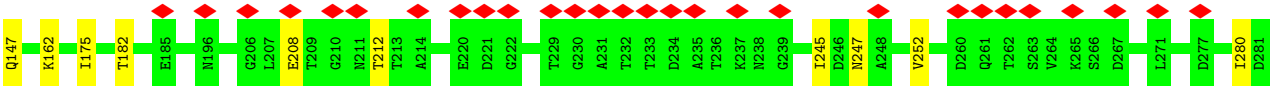


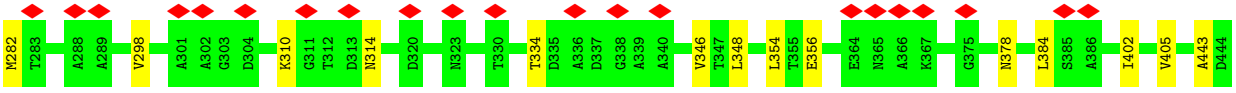


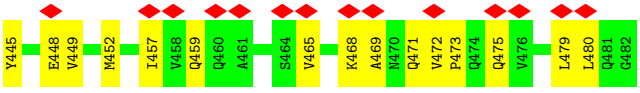
• Molecule 1: FliC

Chain d:



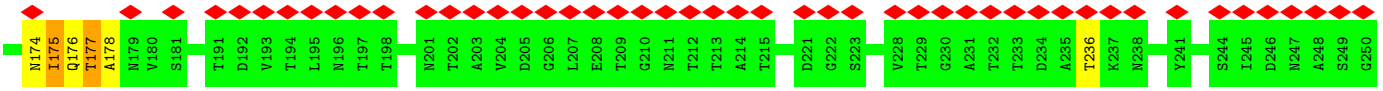


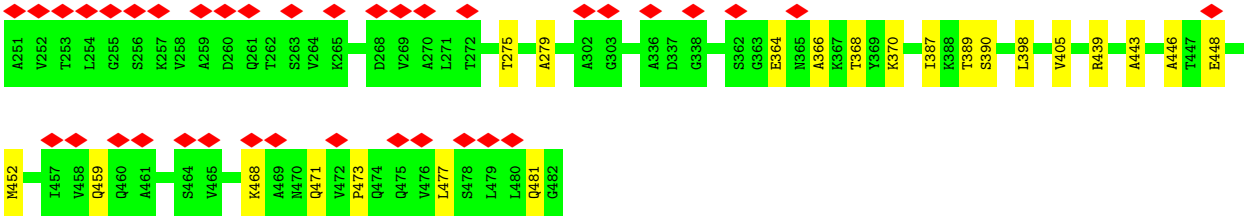




• Molecule 1: FliC

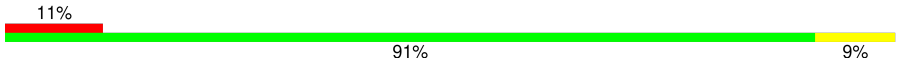
Chain e:

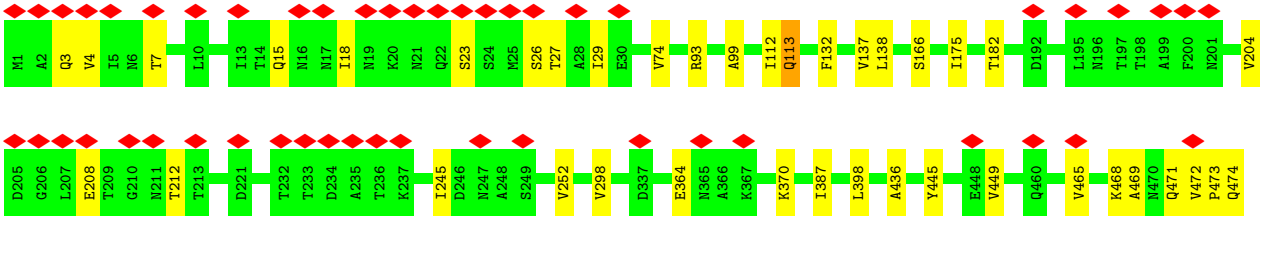




• Molecule 1: FliC

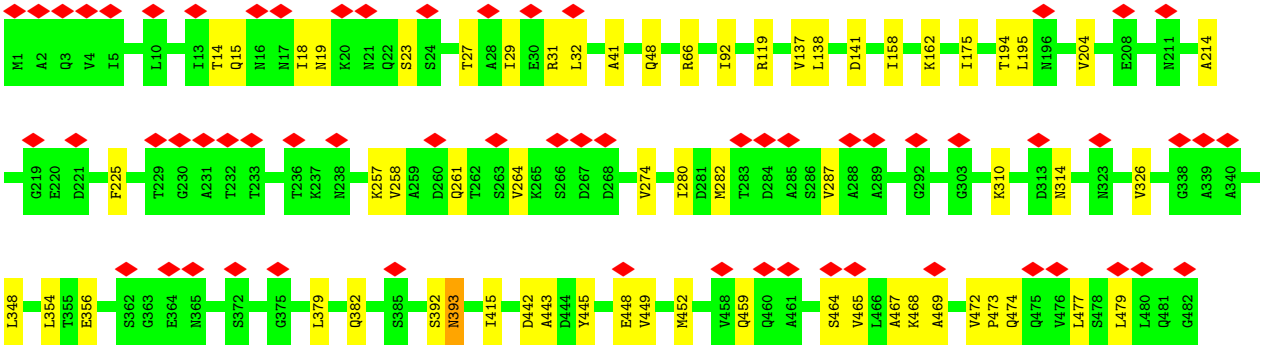
Chain f:





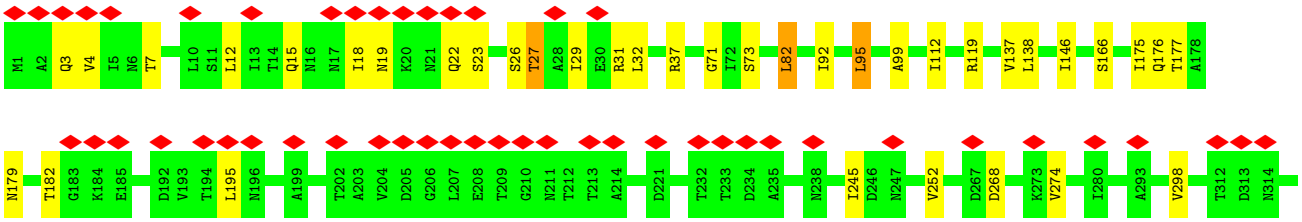
• Molecule 1: FliC

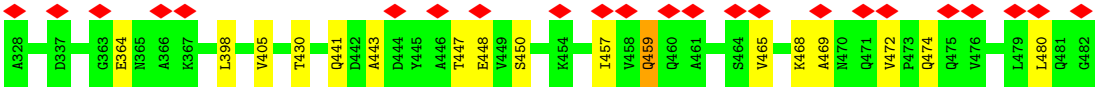
Chain g:



• Molecule 1: FliC

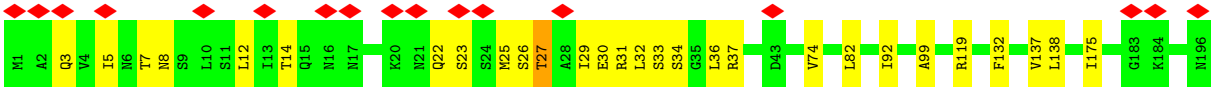
Chain h:

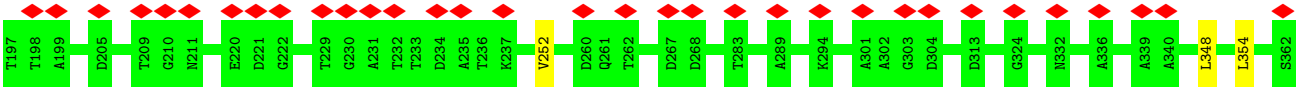


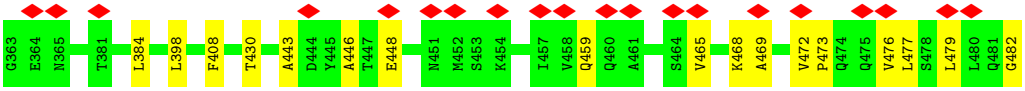


• Molecule 1: FliC

Chain i:

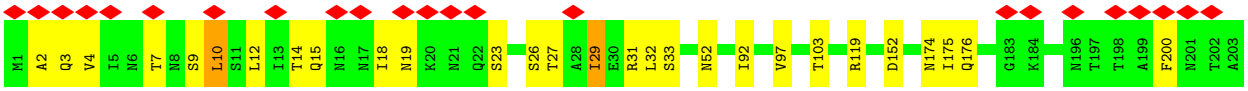


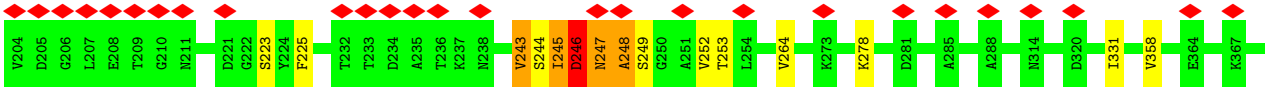




• Molecule 1: FliC

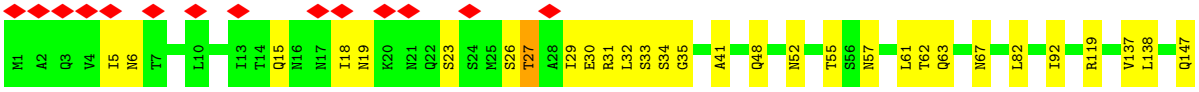
Chain j:

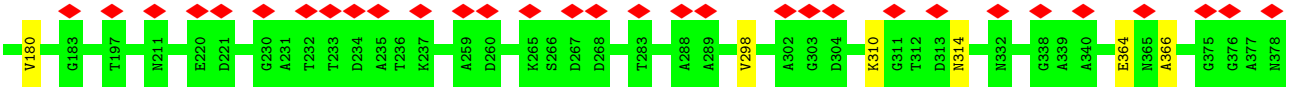


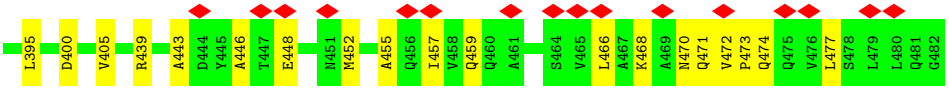


• Molecule 1: FliC

Chain k:

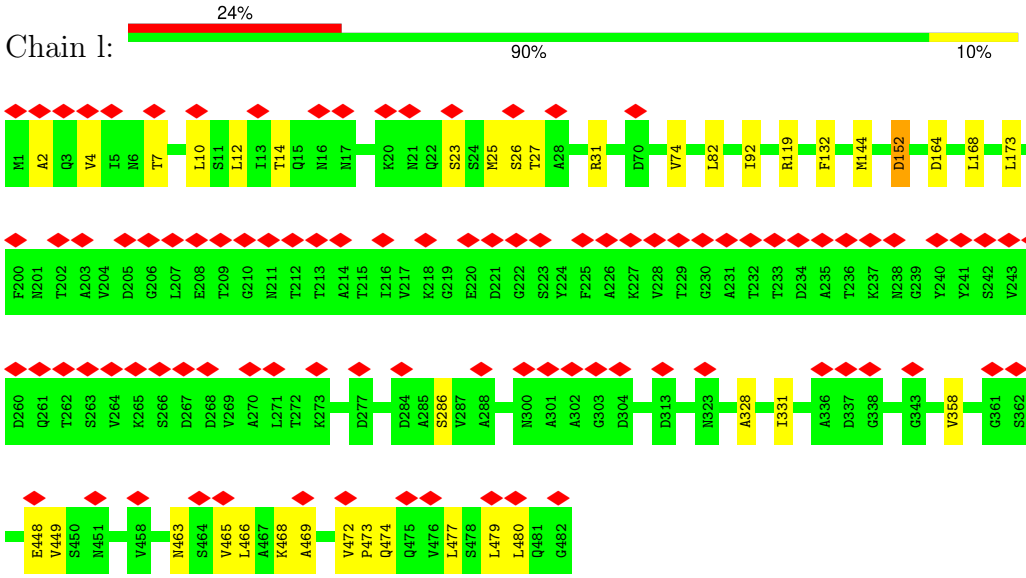






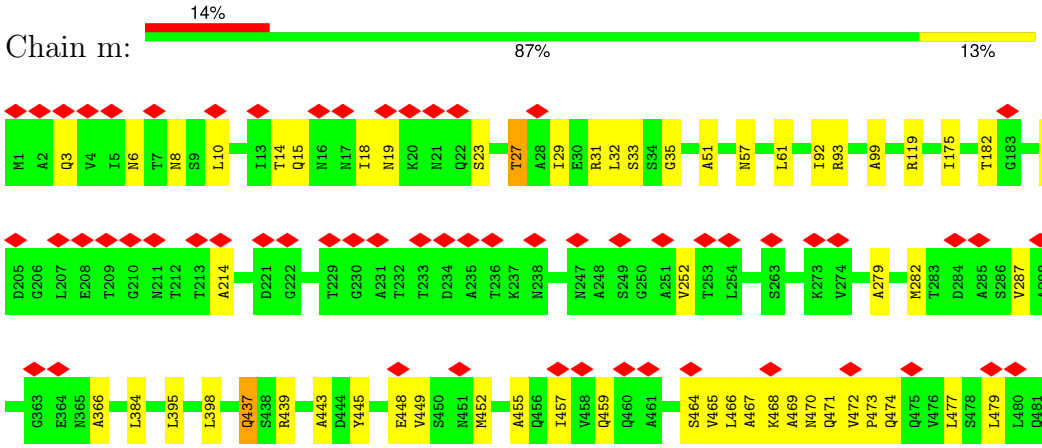
• Molecule 1: FliC

Chain l:



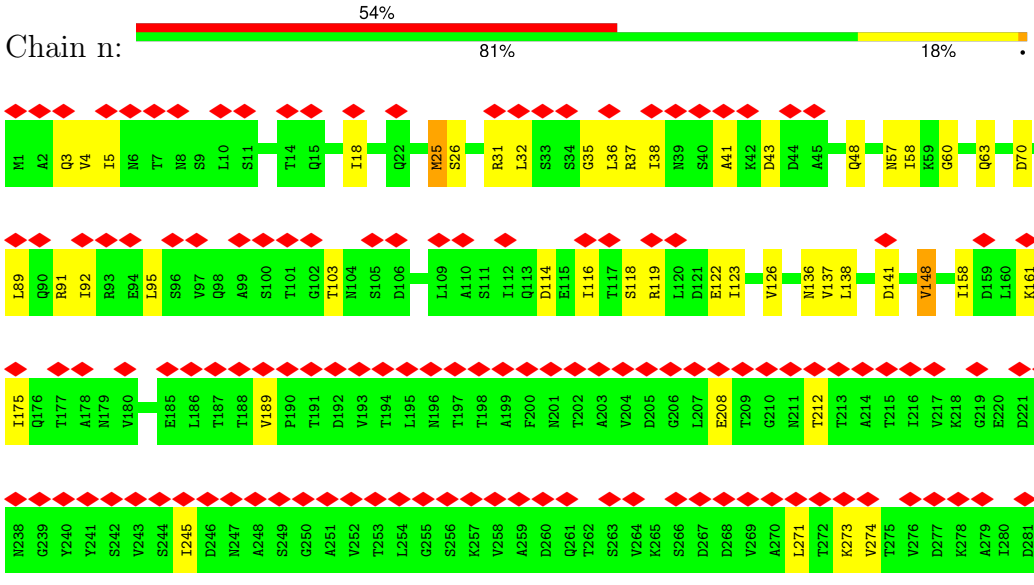
• Molecule 1: FliC

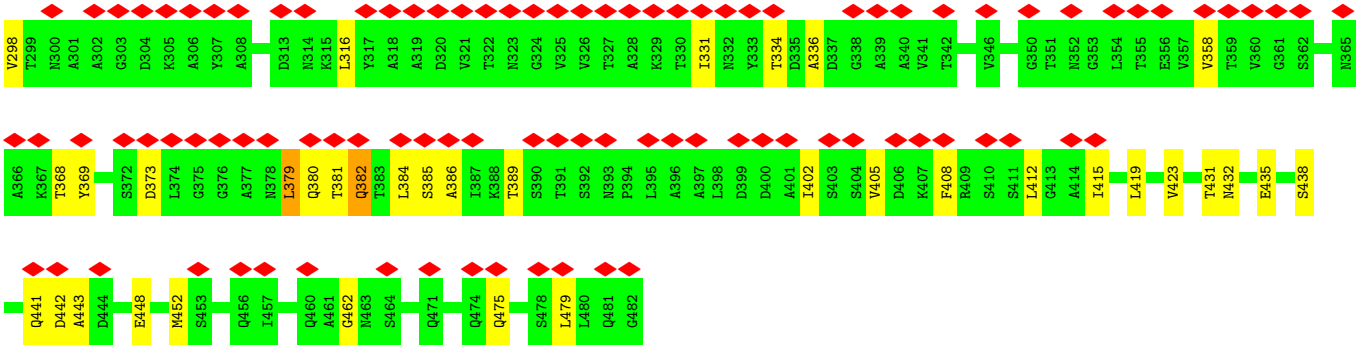
Chain m:



• Molecule 1: FliC

Chain n:




V298 T299 N300 A301 A302 G303 D304 K305 A306 Y307 A308 D313 N314 K315 L316 Y317 A318 A319 D320 V321 T322 N323 G324 V325 V326 T327 A328 K329 T330 I331 N332 Y333 T334 D335 A336 D337 G338 A339 A340 V341 T342 V346 G350 T351 N352 G353 L354 T355 E356 V357 V358 T359 V360 G361 S362 N365
A366 K367 T368 Y369 S372 D373 L374 G375 G376 A377 N378 L379 Q380 T381 Q382 T383 L384 S385 A386 I387 K388 T389 S390 T391 S392 N393 P394 L395 A396 A397 L398 D399 D400 A401 I402 S403 S404 V405 D406 K407 F408 R409 S410 S411 L412 G413 A414 I415 L419 V423 T431 N432 E435 S438
Q441 D442 A443 D444 E448 M452 S453 Q456 I457 Q460 A461 G462 M463 S464 Q471 Q474 Q475 S478 L479 L480 Q481 G482

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	HELICAL	Depositor
Imposed symmetry	HELICAL, twist=-33°, rise=24.35 Å, axial sym=C1	Depositor
Number of segments used	47000	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.124	Depositor
Minimum map value	-0.092	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.016	Depositor
Map size (Å)	506.4, 506.4, 506.4	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.688, 1.688, 1.688	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	1	0.45	0/3513	0.91	0/4768
1	2	0.45	0/3515	0.91	0/4774
1	3	0.45	0/3515	0.91	0/4774
1	4	0.44	0/3515	0.91	0/4774
1	5	0.45	0/3515	0.92	0/4774
1	6	0.45	0/3515	0.91	0/4774
1	7	0.45	0/3515	0.91	0/4774
1	8	0.45	0/3515	0.93	0/4774
1	9	0.45	0/3515	0.91	0/4774
1	a	0.46	0/3515	0.92	0/4774
1	b	0.45	0/3515	0.93	1/4774 (0.0%)
1	c	0.45	0/3515	0.93	2/4774 (0.0%)
1	d	0.45	0/3515	0.92	0/4774
1	e	0.45	0/3515	0.92	0/4774
1	f	0.45	0/3515	0.92	0/4774
1	g	0.45	0/3515	0.93	0/4774
1	h	0.45	0/3515	0.91	0/4774
1	i	0.45	0/3515	0.92	0/4774
1	j	0.45	0/3515	0.91	1/4774 (0.0%)
1	k	0.45	0/3515	0.94	0/4774
1	l	0.45	0/3515	0.91	0/4774
1	m	0.45	0/3515	0.92	0/4774
1	n	0.47	0/3515	0.94	0/4774
All	All	0.45	0/80843	0.92	4/109796 (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	m	0	1

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	b	441	GLN	CB-CA-C	5.42	118.50	109.56
1	j	246	ASP	CA-CB-CG	5.29	117.89	112.60
1	c	471	GLN	CA-C-N	5.13	123.47	120.24
1	c	471	GLN	C-N-CA	5.13	123.47	120.24

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	m	6	ASN	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1	3498	0	3486	42	0
1	2	3498	0	3488	51	0
1	3	3498	0	3488	49	0
1	4	3498	0	3488	42	0
1	5	3498	0	3488	66	0
1	6	3498	0	3488	43	0
1	7	3498	0	3488	42	0
1	8	3498	0	3488	64	0
1	9	3498	0	3488	65	0
1	a	3498	0	3488	32	0
1	b	3498	0	3488	44	0
1	c	3498	0	3488	58	0
1	d	3498	0	3488	57	0
1	e	3498	0	3488	43	0
1	f	3498	0	3488	35	0
1	g	3498	0	3488	49	0
1	h	3498	0	3488	46	0
1	i	3498	0	3488	43	0
1	j	3498	0	3488	66	0
1	k	3498	0	3488	42	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	l	3498	0	3488	39	0
1	m	3498	0	3488	55	0
1	n	3498	0	3488	80	0
All	All	80454	0	80222	948	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 6.

All (948) 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:j:246:ASP:HB3	1:n:382:GLN:N	1.86	0.89
1:j:245:ILE:N	1:n:384:LEU:HB2	1.87	0.88
1:1:137:VAL:HG23	1:1:138:LEU:HD12	1.59	0.85
1:j:472:VAL:HG21	1:m:29:ILE:HD11	1.59	0.85
1:2:29:ILE:HD11	1:m:472:VAL:HG21	1.57	0.84
1:h:472:VAL:HG21	1:j:29:ILE:HD11	1.60	0.84
1:k:180:VAL:HG13	1:k:298:VAL:HG23	1.58	0.83
1:1:7:THR:HG22	1:1:12:LEU:HD11	1.60	0.82
1:c:472:VAL:HG21	1:e:29:ILE:HD11	1.61	0.82
1:1:459:GLN:HE22	1:l:479:LEU:HG	1.46	0.81
1:d:472:VAL:HG21	1:g:29:ILE:HD11	1.63	0.81
1:9:472:VAL:HG21	1:c:29:ILE:HD11	1.63	0.80
1:2:459:GLN:HE22	1:m:479:LEU:HG	1.47	0.79
1:i:472:VAL:HG21	1:k:29:ILE:HD11	1.64	0.78
1:k:443:ALA:HB1	1:k:448:GLU:HG3	1.65	0.78
1:4:472:VAL:HG21	1:6:29:ILE:HD11	1.65	0.78
1:g:472:VAL:HG21	1:i:29:ILE:HD11	1.65	0.78
1:c:8:ASN:HD21	1:c:10:LEU:HD12	1.48	0.77
1:c:479:LEU:HG	1:e:459:GLN:HE22	1.50	0.77
1:j:245:ILE:HG22	1:n:379:LEU:HD21	1.67	0.76
1:4:479:LEU:HG	1:6:459:GLN:HE22	1.48	0.76
1:5:15:GLN:HA	1:5:18:ILE:HD12	1.68	0.76
1:2:443:ALA:HB1	1:2:448:GLU:HG3	1.68	0.75
1:i:92:ILE:HD11	1:i:119:ARG:HB2	1.68	0.75
1:5:468:LYS:O	1:5:471:GLN:HG2	1.87	0.74
1:n:118:SER:O	1:n:122:GLU:HG3	1.88	0.74
1:n:443:ALA:HB1	1:n:448:GLU:CD	2.13	0.74
1:m:443:ALA:HB1	1:m:448:GLU:HG3	1.70	0.73
1:j:479:LEU:HG	1:m:459:GLN:HE22	1.54	0.73
1:4:92:ILE:HD11	1:4:119:ARG:HB2	1.71	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:l:23:SER:O	1:l:27:THR:OG1	2.08	0.72
1:1:30:GLU:HB3	1:l:10:LEU:HD22	1.70	0.71
1:6:443:ALA:HB1	1:6:448:GLU:HG3	1.72	0.71
1:1:479:LEU:HD23	1:4:466:LEU:HD22	1.72	0.71
1:5:99:ALA:HB2	1:5:112:ILE:HD13	1.72	0.71
1:6:23:SER:O	1:6:27:THR:OG1	2.09	0.71
1:d:37:ARG:HB2	1:d:443:ALA:HB2	1.73	0.71
1:d:479:LEU:HG	1:g:459:GLN:HE22	1.55	0.71
1:8:445:TYR:O	1:8:449:VAL:HG23	1.91	0.70
1:4:472:VAL:HG21	1:6:29:ILE:CD1	2.20	0.70
1:d:465:VAL:HG21	1:g:32:LEU:HB3	1.74	0.69
1:m:15:GLN:HA	1:m:18:ILE:HD12	1.74	0.69
1:j:15:GLN:HA	1:j:18:ILE:HD12	1.73	0.69
1:l:74:VAL:HG11	1:l:144:MET:HE1	1.74	0.69
1:5:472:VAL:HG21	1:8:29:ILE:CD1	2.23	0.69
1:3:472:VAL:HG21	1:5:29:ILE:CD1	2.23	0.69
1:j:465:VAL:O	1:j:469:ALA:N	2.25	0.69
1:n:37:ARG:HB2	1:n:443:ALA:HB2	1.75	0.69
1:5:472:VAL:HG21	1:8:29:ILE:HD11	1.73	0.68
1:9:472:VAL:HG21	1:c:29:ILE:CD1	2.23	0.68
1:1:456:GLN:O	1:1:459:GLN:HB3	1.93	0.68
1:3:282:MET:HE3	1:3:287:VAL:HG11	1.75	0.68
1:b:465:VAL:HG21	1:d:32:LEU:HB3	1.75	0.68
1:e:23:SER:O	1:e:27:THR:OG1	2.10	0.68
1:m:437:GLN:HE21	1:m:437:GLN:HA	1.59	0.68
1:g:472:VAL:HG21	1:i:29:ILE:CD1	2.23	0.68
1:8:472:VAL:HG21	1:a:29:ILE:CD1	2.24	0.68
1:2:29:ILE:CD1	1:m:472:VAL:HG21	2.24	0.68
1:n:38:ILE:HG23	1:n:43:ASP:HB2	1.75	0.68
1:3:472:VAL:HG21	1:5:29:ILE:HD11	1.74	0.68
1:8:443:ALA:HB1	1:8:448:GLU:HG3	1.76	0.68
1:h:472:VAL:HG21	1:j:29:ILE:CD1	2.23	0.68
1:2:32:LEU:HB3	1:m:465:VAL:HG21	1.76	0.67
1:g:15:GLN:HA	1:g:18:ILE:HD12	1.76	0.67
1:f:113:GLN:HA	1:f:113:GLN:HE21	1.59	0.67
1:1:473:PRO:HB2	1:m:457:ILE:HD13	1.77	0.67
1:2:93:ARG:HA	1:2:398:LEU:HD23	1.75	0.67
1:d:15:GLN:HA	1:d:18:ILE:HD12	1.77	0.67
1:i:472:VAL:HG21	1:k:29:ILE:CD1	2.25	0.67
1:2:23:SER:O	1:2:27:THR:OG1	2.13	0.66
1:j:443:ALA:HB1	1:j:448:GLU:HG3	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:j:472:VAL:HG21	1:m:29:ILE:CD1	2.24	0.66
1:9:182:THR:HG22	1:9:298:VAL:HG12	1.77	0.66
1:b:10:LEU:O	1:b:14:THR:OG1	2.14	0.66
1:c:472:VAL:HG21	1:e:29:ILE:CD1	2.25	0.66
1:5:92:ILE:HG22	1:5:398:LEU:HD21	1.77	0.66
1:9:116:ILE:HD12	1:9:175:ILE:CD1	2.26	0.66
1:9:359:THR:HG22	1:9:368:THR:HG22	1.77	0.66
1:c:23:SER:O	1:c:27:THR:OG1	2.14	0.66
1:b:15:GLN:HA	1:b:18:ILE:HD12	1.78	0.65
1:9:15:GLN:HA	1:9:18:ILE:HD12	1.79	0.65
1:d:472:VAL:HG21	1:g:29:ILE:CD1	2.27	0.65
1:9:468:LYS:O	1:9:471:GLN:HG2	1.95	0.65
1:i:443:ALA:HB1	1:i:448:GLU:HG3	1.77	0.65
1:h:92:ILE:HG22	1:h:398:LEU:HD21	1.76	0.65
1:h:23:SER:O	1:h:27:THR:OG1	2.15	0.65
1:9:195:LEU:HD21	1:9:274:VAL:HG13	1.80	0.64
1:5:92:ILE:HD11	1:5:119:ARG:HB2	1.79	0.64
1:3:191:THR:HG22	1:3:278:LYS:HG2	1.78	0.64
1:8:15:GLN:HA	1:8:18:ILE:HD12	1.80	0.64
1:b:472:VAL:HG21	1:d:29:ILE:CD1	2.27	0.64
1:3:99:ALA:HB2	1:3:112:ILE:HD13	1.79	0.64
1:e:176:GLN:O	1:e:178:ALA:N	2.31	0.64
1:g:465:VAL:HG21	1:i:32:LEU:HB3	1.80	0.64
1:3:290:ILE:HG23	1:3:293:ALA:HB2	1.80	0.64
1:d:443:ALA:HB1	1:d:448:GLU:HG3	1.80	0.63
1:9:465:VAL:HG21	1:c:32:LEU:HB3	1.80	0.63
1:e:15:GLN:HA	1:e:18:ILE:HD12	1.79	0.63
1:l:10:LEU:O	1:l:14:THR:OG1	2.16	0.63
1:9:464:SER:O	1:9:467:ALA:HB3	1.99	0.63
1:6:280:ILE:HD12	1:6:282:MET:HE2	1.81	0.63
1:n:85:ILE:HD12	1:n:123:ILE:HG23	1.79	0.63
1:i:465:VAL:O	1:i:469:ALA:N	2.32	0.63
1:j:243:VAL:HG23	1:n:384:LEU:C	2.24	0.63
1:m:8:ASN:HD21	1:m:10:LEU:HD12	1.64	0.63
1:m:297:GLN:HE21	1:m:305:LYS:CE	2.12	0.63
1:4:474:GLN:N	1:4:474:GLN:OE1	2.31	0.62
1:5:298:VAL:HG11	1:5:316:LEU:HD23	1.81	0.62
1:1:463:ASN:HD21	1:l:479:LEU:HD23	1.62	0.62
1:k:23:SER:O	1:k:27:THR:OG1	2.16	0.62
1:4:443:ALA:HB1	1:4:448:GLU:HG3	1.81	0.62
1:c:8:ASN:O	1:c:12:LEU:HG	1.98	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:92:ILE:HD11	1:b:119:ARG:HB2	1.82	0.62
1:f:479:LEU:HD21	1:h:459:GLN:HE22	1.63	0.62
1:i:465:VAL:HG21	1:k:32:LEU:HB3	1.82	0.62
1:5:23:SER:O	1:5:27:THR:OG1	2.15	0.61
1:8:472:VAL:HG21	1:a:29:ILE:HD11	1.81	0.61
1:9:445:TYR:O	1:9:449:VAL:HG23	1.99	0.61
1:9:475:GLN:HB3	1:c:459:GLN:HE21	1.65	0.61
1:j:23:SER:O	1:j:27:THR:OG1	2.18	0.61
1:2:318:ALA:HB3	1:2:346:VAL:HG13	1.82	0.61
1:h:166:SER:O	1:h:364:GLU:OE2	2.17	0.61
1:m:297:GLN:HE21	1:m:305:LYS:HE2	1.65	0.61
1:7:93:ARG:HA	1:7:398:LEU:HD23	1.82	0.61
1:b:465:VAL:O	1:b:469:ALA:N	2.32	0.61
1:c:465:VAL:O	1:c:469:ALA:N	2.32	0.61
1:9:23:SER:O	1:9:27:THR:OG1	2.19	0.61
1:h:92:ILE:HD11	1:h:119:ARG:HB2	1.83	0.61
1:9:4:VAL:O	1:9:7:THR:O	2.19	0.60
1:f:23:SER:O	1:f:27:THR:OG1	2.18	0.60
1:a:18:ILE:HD13	1:a:466:LEU:HD22	1.82	0.60
1:g:474:GLN:N	1:g:474:GLN:OE1	2.34	0.60
1:m:31:ARG:O	1:m:35:GLY:N	2.33	0.60
1:7:472:VAL:HG21	1:9:29:ILE:CD1	2.31	0.60
1:b:182:THR:HG22	1:b:298:VAL:HG12	1.82	0.60
1:k:15:GLN:HA	1:k:18:ILE:HD12	1.83	0.60
1:i:92:ILE:HG22	1:i:398:LEU:HD21	1.84	0.60
1:m:23:SER:O	1:m:27:THR:OG1	2.18	0.60
1:n:116:ILE:HD12	1:n:175:ILE:HD13	1.82	0.60
1:f:465:VAL:O	1:f:469:ALA:N	2.34	0.60
1:e:176:GLN:O	1:e:177:THR:C	2.44	0.60
1:c:8:ASN:ND2	1:c:10:LEU:HD12	2.14	0.60
1:a:452:MET:HE3	1:a:452:MET:O	2.02	0.59
1:1:18:ILE:HG23	1:l:479:LEU:HD22	1.84	0.59
1:8:439:ARG:HD2	1:a:69:ASN:HB3	1.85	0.59
1:k:92:ILE:HD11	1:k:119:ARG:HB2	1.83	0.59
1:l:443:ALA:HB1	1:l:448:GLU:HG3	1.84	0.59
1:f:15:GLN:HA	1:f:18:ILE:HD12	1.84	0.59
1:j:2:ALA:HB2	1:k:439:ARG:HH12	1.66	0.59
1:2:15:GLN:HA	1:2:18:ILE:HD12	1.85	0.59
1:3:92:ILE:HD11	1:3:119:ARG:HB2	1.85	0.59
1:5:479:LEU:CD1	1:8:459:GLN:HE22	2.15	0.59
1:e:452:MET:HE3	1:e:452:MET:O	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:4:465:VAL:HG21	1:6:32:LEU:HB3	1.85	0.59
1:f:472:VAL:HG21	1:h:29:ILE:CD1	2.33	0.59
1:e:370:LYS:HG3	1:e:387:ILE:HD11	1.83	0.58
1:j:10:LEU:O	1:j:14:THR:OG1	2.20	0.58
1:j:480:LEU:HD22	1:k:446:ALA:HB2	1.84	0.58
1:g:443:ALA:HB1	1:g:448:GLU:HG3	1.84	0.58
1:9:443:ALA:HB1	1:9:448:GLU:HG3	1.85	0.58
1:c:137:VAL:HG23	1:c:138:LEU:HD13	1.85	0.58
1:h:465:VAL:O	1:h:469:ALA:N	2.36	0.58
1:4:23:SER:O	1:4:27:THR:OG1	2.16	0.58
1:a:15:GLN:HA	1:a:18:ILE:HD12	1.84	0.58
1:c:14:THR:HG23	1:e:33:SER:HB2	1.86	0.58
1:h:99:ALA:HB2	1:h:112:ILE:HD13	1.85	0.58
1:1:297:GLN:O	1:1:298:VAL:HG22	2.03	0.58
1:5:464:SER:O	1:5:467:ALA:HB3	2.04	0.58
1:k:57:ASN:O	1:k:61:LEU:HG	2.04	0.58
1:1:137:VAL:HG23	1:1:138:LEU:CD1	2.32	0.58
1:8:23:SER:O	1:8:27:THR:OG1	2.21	0.58
1:e:443:ALA:HB1	1:e:448:GLU:HG3	1.83	0.58
1:5:93:ARG:HA	1:5:398:LEU:HD23	1.86	0.58
1:m:57:ASN:O	1:m:61:LEU:HG	2.04	0.58
1:7:465:VAL:HG21	1:9:32:LEU:HB3	1.86	0.58
1:8:477:LEU:C	1:8:477:LEU:HD12	2.29	0.57
1:b:93:ARG:HA	1:b:398:LEU:HD23	1.87	0.57
1:2:141:ASP:OD1	1:2:162:LYS:N	2.36	0.57
1:5:14:THR:HG23	1:8:33:SER:HB2	1.87	0.57
1:j:246:ASP:OD1	1:n:380:GLN:N	2.37	0.57
1:n:31:ARG:NE	1:n:37:ARG:O	2.37	0.57
1:l:465:VAL:O	1:l:469:ALA:N	2.33	0.57
1:d:468:LYS:O	1:d:472:VAL:HG23	2.05	0.57
1:1:474:GLN:O	1:1:477:LEU:HG	2.05	0.57
1:3:468:LYS:O	1:3:471:GLN:HG2	2.04	0.57
1:3:473:PRO:O	1:3:477:LEU:HG	2.05	0.57
1:8:475:GLN:HB3	1:a:459:GLN:HE21	1.70	0.57
1:k:452:MET:HE3	1:k:452:MET:O	2.03	0.57
1:7:468:LYS:O	1:7:472:VAL:HG23	2.04	0.57
1:8:465:VAL:HG21	1:a:32:LEU:HB3	1.85	0.57
1:j:245:ILE:HG22	1:n:379:LEU:CD2	2.34	0.57
1:7:2:ALA:HB2	1:8:439:ARG:NH1	2.20	0.56
1:a:23:SER:O	1:a:27:THR:OG1	2.22	0.56
1:f:99:ALA:HB2	1:f:112:ILE:HD13	1.85	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:170:LEU:HD21	1:2:398:LEU:HD12	1.86	0.56
1:5:204:VAL:HG21	1:5:214:ALA:HB2	1.87	0.56
1:b:474:GLN:N	1:b:474:GLN:OE1	2.38	0.56
1:g:468:LYS:O	1:g:472:VAL:HG23	2.05	0.56
1:g:479:LEU:HG	1:i:459:GLN:HE22	1.71	0.56
1:n:25:MET:HG3	1:n:26:SER:N	2.20	0.56
1:2:437:GLN:HE21	1:2:437:GLN:HA	1.71	0.56
1:j:245:ILE:CA	1:n:384:LEU:HB2	2.34	0.56
1:l:173:LEU:HD12	1:l:391:THR:HG21	1.86	0.56
1:6:15:GLN:HA	1:6:18:ILE:HD12	1.87	0.56
1:7:23:SER:O	1:7:27:THR:OG1	2.20	0.56
1:j:225:PHE:HA	1:n:385:SER:HB3	1.87	0.56
1:i:482:GLY:O	1:k:466:LEU:HB3	2.06	0.56
1:9:466:LEU:O	1:9:470:ASN:OD1	2.24	0.56
1:d:457:ILE:HG12	1:f:477:LEU:HD11	1.88	0.56
1:d:23:SER:O	1:d:26:SER:OG	2.19	0.56
1:j:245:ILE:HG13	1:n:384:LEU:CB	2.36	0.56
1:9:14:THR:HG23	1:c:33:SER:HB2	1.87	0.56
1:g:354:LEU:H	1:g:354:LEU:HD23	1.70	0.56
1:i:22:GLN:HA	1:i:25:MET:HG2	1.87	0.56
1:5:282:MET:HG3	1:5:287:VAL:HG11	1.88	0.55
1:e:174:ASN:CG	1:e:390:SER:HA	2.31	0.55
1:c:443:ALA:HB1	1:c:448:GLU:HG3	1.88	0.55
1:m:468:LYS:O	1:m:472:VAL:HG23	2.06	0.55
1:b:297:GLN:HE21	1:b:305:LYS:HE2	1.71	0.55
1:g:137:VAL:HG23	1:g:138:LEU:HD13	1.87	0.55
1:l:473:PRO:O	1:l:477:LEU:HD23	2.05	0.55
1:n:37:ARG:CB	1:n:443:ALA:HB2	2.35	0.55
1:4:462:GLY:O	1:4:466:LEU:HB2	2.06	0.55
1:c:465:VAL:HG21	1:e:32:LEU:HB3	1.87	0.55
1:n:91:ARG:HG2	1:n:119:ARG:CZ	2.37	0.55
1:1:92:ILE:HD11	1:1:119:ARG:HB2	1.89	0.55
1:c:7:THR:CG2	1:c:12:LEU:HD11	2.37	0.55
1:i:479:LEU:HD11	1:k:459:GLN:HG2	1.89	0.55
1:1:459:GLN:NE2	1:l:479:LEU:HG	2.19	0.55
1:b:464:SER:O	1:b:467:ALA:HB3	2.07	0.55
1:e:368:THR:HG21	1:e:389:THR:HG21	1.88	0.55
1:j:331:ILE:HD11	1:j:358:VAL:HG21	1.89	0.55
1:n:419:LEU:O	1:n:423:VAL:HG23	2.07	0.55
1:e:443:ALA:HB1	1:e:448:GLU:CG	2.36	0.55
1:f:465:VAL:HG21	1:h:32:LEU:HB3	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:174:ASN:C	1:2:174:ASN:OD1	2.50	0.55
1:4:21:ASN:ND2	1:4:455:ALA:O	2.31	0.54
1:8:32:LEU:HD21	1:8:449:VAL:HG23	1.88	0.54
1:a:18:ILE:CD1	1:a:466:LEU:HD22	2.37	0.54
1:j:200:PHE:CB	1:j:252:VAL:HG13	2.37	0.54
1:l:152:ASP:OD1	1:m:395:LEU:HB2	2.08	0.54
1:b:472:VAL:HG21	1:d:29:ILE:HD13	1.89	0.54
1:2:360:VAL:O	1:2:366:ALA:HA	2.08	0.54
1:9:15:GLN:HA	1:9:18:ILE:HB	1.90	0.54
1:h:182:THR:HG22	1:h:298:VAL:HG12	1.88	0.54
1:j:246:ASP:HB3	1:n:381:THR:C	2.32	0.54
1:j:468:LYS:O	1:j:472:VAL:HG23	2.07	0.54
1:i:7:THR:CG2	1:i:12:LEU:HD11	2.37	0.54
1:m:10:LEU:O	1:m:14:THR:OG1	2.19	0.54
1:h:175:ILE:O	1:h:177:THR:N	2.41	0.54
1:1:287:VAL:HG23	1:1:309:LEU:HD11	1.90	0.54
1:d:348:LEU:HD12	1:d:354:LEU:HA	1.90	0.54
1:3:7:THR:CG2	1:3:12:LEU:HD11	2.37	0.54
1:8:175:ILE:C	1:8:175:ILE:HD12	2.32	0.53
1:8:468:LYS:O	1:8:471:GLN:HG2	2.07	0.53
1:g:23:SER:O	1:g:27:THR:OG1	2.26	0.53
1:1:3:GLN:HG2	1:4:22:GLN:HE22	1.73	0.53
1:2:33:SER:HB2	1:m:14:THR:HG23	1.90	0.53
1:9:321:VAL:HG12	1:9:326:VAL:HG22	1.90	0.53
1:m:99:ALA:HB1	1:m:175:ILE:HD13	1.91	0.53
1:d:32:LEU:HD11	1:d:449:VAL:HG22	1.90	0.53
1:f:166:SER:O	1:f:364:GLU:OE2	2.26	0.53
1:l:82:LEU:HD11	1:l:408:PHE:CD2	2.43	0.53
1:n:384:LEU:HD23	1:n:386:ALA:N	2.23	0.53
1:5:141:ASP:OD1	1:5:162:LYS:N	2.40	0.53
1:b:479:LEU:CD1	1:d:459:GLN:HE22	2.21	0.53
1:d:23:SER:O	1:d:27:THR:OG1	2.27	0.53
1:c:174:ASN:OD1	1:c:175:ILE:N	2.42	0.53
1:h:137:VAL:HG23	1:h:138:LEU:HG	1.89	0.53
1:n:368:THR:HB	1:n:389:THR:HG21	1.91	0.53
1:d:475:GLN:HE22	1:g:452:MET:HE1	1.74	0.53
1:j:465:VAL:HG21	1:m:32:LEU:HB3	1.90	0.53
1:8:226:ALA:HB2	1:8:243:VAL:HG11	1.91	0.53
1:c:445:TYR:O	1:c:449:VAL:HG23	2.08	0.53
1:i:3:GLN:NE2	1:k:19:ASN:O	2.41	0.53
1:g:464:SER:O	1:g:467:ALA:HB3	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:m:93:ARG:HA	1:m:398:LEU:HD23	1.90	0.53
1:n:122:GLU:O	1:n:126:VAL:HG23	2.09	0.53
1:2:297:GLN:HE21	1:2:305:LYS:CE	2.22	0.53
1:b:4:VAL:O	1:b:7:THR:O	2.27	0.52
1:3:7:THR:HG22	1:3:12:LEU:HD11	1.90	0.52
1:6:82:LEU:HD11	1:6:408:PHE:CD2	2.45	0.52
1:8:69:ASN:O	1:8:72:ILE:HG22	2.09	0.52
1:i:23:SER:O	1:i:27:THR:OG1	2.25	0.52
1:3:276:VAL:HG23	1:3:278:LYS:HD3	1.91	0.52
1:k:82:LEU:HD12	1:k:405:VAL:HG13	1.91	0.52
1:l:445:TYR:O	1:l:449:VAL:HG23	2.09	0.52
1:l:2:ALA:HB2	1:m:439:ARG:NH1	2.24	0.52
1:5:208:GLU:HB3	1:5:212:THR:HG23	1.92	0.52
1:4:204:VAL:HG21	1:4:214:ALA:HB2	1.92	0.52
1:7:3:GLN:NE2	1:9:19:ASN:O	2.43	0.52
1:8:479:LEU:HG	1:a:459:GLN:HE22	1.75	0.52
1:c:31:ARG:O	1:c:35:GLY:N	2.42	0.52
1:m:465:VAL:O	1:m:469:ALA:N	2.38	0.52
1:4:392:SER:O	1:4:393:ASN:C	2.52	0.52
1:d:465:VAL:O	1:d:469:ALA:N	2.41	0.52
1:7:472:VAL:HG21	1:9:29:ILE:HD11	1.92	0.51
1:8:92:ILE:HD11	1:8:119:ARG:HB2	1.91	0.51
1:l:474:GLN:OE1	1:l:474:GLN:N	2.42	0.51
1:m:204:VAL:HG21	1:m:214:ALA:HB2	1.92	0.51
1:3:462:GLY:O	1:3:466:LEU:HB2	2.10	0.51
1:5:331:ILE:HD11	1:5:358:VAL:HG21	1.90	0.51
1:7:468:LYS:HA	1:7:471:GLN:HE21	1.75	0.51
1:b:468:LYS:O	1:b:472:VAL:HG23	2.09	0.51
1:n:18:ILE:HD11	1:n:462:GLY:C	2.35	0.51
1:e:93:ARG:HA	1:e:398:LEU:HD23	1.92	0.51
1:4:445:TYR:O	1:4:449:VAL:HG23	2.11	0.51
1:7:2:ALA:HB3	1:8:435:GLU:OE1	2.10	0.51
1:8:3:GLN:NE2	1:a:19:ASN:O	2.44	0.51
1:b:23:SER:O	1:b:27:THR:OG1	2.23	0.51
1:c:4:VAL:HG23	1:c:7:THR:O	2.10	0.51
1:l:7:THR:HG22	1:l:12:LEU:HD11	1.92	0.51
1:l:164:ASP:O	1:l:168:LEU:HD12	2.11	0.51
1:5:3:GLN:NE2	1:8:19:ASN:O	2.43	0.51
1:5:82:LEU:HD11	1:5:408:PHE:CD2	2.46	0.51
1:8:464:SER:O	1:8:467:ALA:HB3	2.11	0.51
1:8:465:VAL:HG11	1:a:33:SER:N	2.25	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:9:360:VAL:O	1:9:366:ALA:HA	2.10	0.51
1:c:3:GLN:NE2	1:e:19:ASN:O	2.43	0.51
1:i:5:ILE:HD11	1:i:476:VAL:HG12	1.93	0.51
1:j:174:ASN:OD1	1:j:176:GLN:HG2	2.10	0.51
1:n:336:ALA:N	1:n:379:LEU:HD13	2.25	0.51
1:1:321:VAL:HG12	1:1:326:VAL:HG12	1.93	0.51
1:4:477:LEU:HD23	1:4:478:SER:N	2.24	0.51
1:f:436:ALA:HB2	1:h:73:SER:OG	2.11	0.51
1:i:26:SER:HA	1:i:29:ILE:HD12	1.93	0.51
1:m:99:ALA:CB	1:m:175:ILE:HD13	2.41	0.51
1:2:174:ASN:OD1	1:2:175:ILE:N	2.43	0.51
1:4:182:THR:HG22	1:4:298:VAL:HG12	1.93	0.51
1:b:170:LEU:HD12	1:b:170:LEU:N	2.26	0.51
1:i:14:THR:HG23	1:k:33:SER:HB2	1.93	0.51
1:j:245:ILE:HG13	1:n:384:LEU:HB3	1.92	0.51
1:k:457:ILE:HG12	1:m:477:LEU:HD11	1.92	0.51
1:n:89:LEU:HD22	1:n:402:ILE:HG12	1.93	0.51
1:n:443:ALA:HB1	1:n:448:GLU:CG	2.41	0.51
1:3:208:GLU:HB3	1:3:212:THR:HG23	1.92	0.51
1:4:468:LYS:O	1:4:472:VAL:HG23	2.11	0.51
1:b:480:LEU:HD22	1:c:446:ALA:HB2	1.93	0.51
1:g:465:VAL:O	1:g:469:ALA:N	2.39	0.51
1:5:23:SER:O	1:5:26:SER:OG	2.25	0.51
1:3:474:GLN:OE1	1:3:474:GLN:N	2.44	0.51
1:b:298:VAL:HG11	1:b:316:LEU:HD23	1.92	0.51
1:l:7:THR:CG2	1:l:12:LEU:HD11	2.41	0.51
1:2:22:GLN:HA	1:2:25:MET:HG2	1.93	0.50
1:5:245:ILE:HD13	1:5:252:VAL:HG23	1.94	0.50
1:g:392:SER:O	1:g:393:ASN:C	2.53	0.50
1:j:223:SER:HB2	1:n:386:ALA:HB3	1.93	0.50
1:8:479:LEU:CD1	1:a:459:GLN:HE22	2.24	0.50
1:f:472:VAL:HG21	1:h:29:ILE:HD11	1.93	0.50
1:l:177:THR:HG21	1:l:390:SER:OG	2.10	0.50
1:m:445:TYR:O	1:m:449:VAL:HG23	2.12	0.50
1:2:62:THR:O	1:2:63:GLN:C	2.55	0.50
1:n:384:LEU:HD23	1:n:385:SER:N	2.27	0.50
1:2:19:ASN:O	1:m:3:GLN:NE2	2.44	0.50
1:5:473:PRO:O	1:5:477:LEU:HG	2.11	0.50
1:c:472:VAL:N	1:c:473:PRO:HD2	2.27	0.50
1:e:26:SER:HA	1:e:29:ILE:HD12	1.94	0.50
1:f:137:VAL:HG23	1:f:138:LEU:HG	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:465:VAL:HG11	1:8:33:SER:N	2.26	0.50
1:5:22:GLN:HA	1:5:25:MET:HE2	1.94	0.50
1:9:170:LEU:HD21	1:9:398:LEU:HD23	1.93	0.50
1:a:141:ASP:OD1	1:a:162:LYS:N	2.42	0.50
1:b:95:LEU:HG	1:b:112:ILE:HG23	1.94	0.50
1:j:245:ILE:H	1:n:384:LEU:HD12	1.75	0.50
1:b:463:ASN:O	1:b:466:LEU:HB3	2.12	0.50
1:e:82:LEU:HD12	1:e:405:VAL:HG13	1.94	0.50
1:n:245:ILE:HD12	1:n:274:VAL:HG21	1.94	0.50
1:n:298:VAL:HG11	1:n:316:LEU:HD23	1.93	0.50
1:1:474:GLN:HA	1:1:477:LEU:HD23	1.94	0.49
1:5:443:ALA:HB1	1:5:448:GLU:HG3	1.94	0.49
1:8:1:MET:HE1	1:8:10:LEU:HD21	1.94	0.49
1:h:468:LYS:O	1:h:472:VAL:HG23	2.12	0.49
1:j:475:GLN:HE22	1:m:452:MET:HE1	1.75	0.49
1:n:369:TYR:CG	1:n:384:LEU:HD11	2.45	0.49
1:2:187:THR:HG23	1:2:188:THR:HG23	1.93	0.49
1:2:297:GLN:HE21	1:2:305:LYS:HE2	1.77	0.49
1:5:456:GLN:HA	1:5:459:GLN:HB3	1.94	0.49
1:3:480:LEU:HD22	1:4:446:ALA:HB2	1.94	0.49
1:6:195:LEU:HD21	1:6:274:VAL:HG13	1.94	0.49
1:9:7:THR:CG2	1:9:12:LEU:HD11	2.42	0.49
1:c:216:ILE:HD11	1:c:224:TYR:HB3	1.93	0.49
1:e:30:GLU:HA	1:e:33:SER:OG	2.12	0.49
1:g:41:ALA:HA	1:g:48:GLN:OE1	2.12	0.49
1:6:208:GLU:HB3	1:6:212:THR:HG23	1.94	0.49
1:7:479:LEU:HG	1:9:459:GLN:HE22	1.76	0.49
1:d:22:GLN:HA	1:d:25:MET:HE2	1.95	0.49
1:g:158:ILE:HG12	1:g:415:ILE:HG21	1.94	0.49
1:g:195:LEU:HD21	1:g:274:VAL:HG13	1.94	0.49
1:b:99:ALA:HB2	1:b:112:ILE:HD13	1.94	0.49
1:c:464:SER:O	1:c:467:ALA:HB3	2.12	0.49
1:j:245:ILE:H	1:n:384:LEU:HB2	1.76	0.49
1:m:175:ILE:HD12	1:m:175:ILE:C	2.37	0.49
1:1:204:VAL:HG21	1:1:214:ALA:HB3	1.95	0.49
1:f:3:GLN:NE2	1:h:19:ASN:O	2.45	0.49
1:l:27:THR:HG22	1:l:31:ARG:NE	2.28	0.49
1:m:468:LYS:HA	1:m:471:GLN:HG2	1.94	0.49
1:5:457:ILE:HG12	1:7:477:LEU:HD11	1.95	0.49
1:7:473:PRO:O	1:7:477:LEU:HG	2.12	0.49
1:d:2:ALA:HB2	1:e:439:ARG:HH12	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:d:465:VAL:CG2	1:g:32:LEU:HB3	2.41	0.49
1:2:146:ILE:HD12	1:2:146:ILE:N	2.27	0.49
1:2:468:LYS:HA	1:2:471:GLN:HG2	1.93	0.49
1:d:137:VAL:HG23	1:d:138:LEU:HG	1.94	0.49
1:f:468:LYS:O	1:f:472:VAL:HG23	2.13	0.49
1:2:158:ILE:HG12	1:2:415:ILE:HG21	1.95	0.49
1:b:445:TYR:O	1:b:449:VAL:HG23	2.13	0.49
1:f:445:TYR:O	1:f:449:VAL:HG23	2.12	0.49
1:i:31:ARG:HA	1:i:36:LEU:O	2.13	0.49
1:n:384:LEU:HD23	1:n:385:SER:C	2.37	0.49
1:2:82:LEU:HD11	1:2:408:PHE:CD2	2.48	0.49
1:j:244:SER:HA	1:n:384:LEU:HD12	1.93	0.49
1:l:4:VAL:HG23	1:l:7:THR:O	2.13	0.49
1:i:37:ARG:HB2	1:i:443:ALA:HB2	1.95	0.48
1:5:2:ALA:HB2	1:6:439:ARG:NH1	2.27	0.48
1:5:468:LYS:O	1:5:472:VAL:HG23	2.13	0.48
1:c:57:ASN:O	1:c:61:LEU:HG	2.13	0.48
1:4:99:ALA:HB1	1:4:175:ILE:HD13	1.94	0.48
1:d:445:TYR:O	1:d:449:VAL:HG23	2.13	0.48
1:e:166:SER:HA	1:e:364:GLU:OE2	2.13	0.48
1:i:30:GLU:HA	1:i:33:SER:OG	2.13	0.48
1:n:432:ASN:HA	1:n:435:GLU:CD	2.37	0.48
1:a:8:ASN:O	1:a:11:SER:OG	2.32	0.48
1:3:195:LEU:HD21	1:3:274:VAL:HG13	1.95	0.48
1:3:465:VAL:HG21	1:5:32:LEU:HB3	1.95	0.48
1:6:99:ALA:HB2	1:6:112:ILE:HD13	1.96	0.48
1:b:472:VAL:HG21	1:d:29:ILE:HD11	1.95	0.48
1:g:310:LYS:HE3	1:g:314:ASN:HA	1.94	0.48
1:c:37:ARG:HB2	1:c:443:ALA:HB2	1.96	0.48
1:d:82:LEU:HD12	1:d:405:VAL:HG13	1.95	0.48
1:n:82:LEU:HD11	1:n:408:PHE:CE2	2.47	0.48
1:3:93:ARG:HA	1:3:398:LEU:HD23	1.94	0.48
1:6:141:ASP:OD1	1:6:162:LYS:N	2.44	0.48
1:7:475:GLN:HB3	1:9:459:GLN:HE21	1.78	0.48
1:n:82:LEU:HD12	1:n:412:LEU:HD12	1.96	0.48
1:n:475:GLN:O	1:n:479:LEU:HG	2.14	0.48
1:1:8:ASN:HD21	1:1:10:LEU:HD12	1.77	0.48
1:6:421:SER:O	1:6:424:THR:HG22	2.13	0.48
1:9:3:GLN:NE2	1:c:19:ASN:O	2.45	0.48
1:h:4:VAL:HG23	1:h:7:THR:O	2.14	0.48
1:1:374:LEU:HD23	1:1:374:LEU:O	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:468:LYS:O	1:2:471:GLN:HG2	2.13	0.48
1:3:3:GLN:NE2	1:5:19:ASN:O	2.46	0.48
1:8:374:LEU:HD11	1:8:379:LEU:HD21	1.96	0.48
1:9:472:VAL:N	1:9:473:PRO:HD2	2.28	0.48
1:c:182:THR:HG22	1:c:298:VAL:HG12	1.95	0.48
1:d:182:THR:HG22	1:d:298:VAL:HG12	1.96	0.48
1:f:113:GLN:HE21	1:f:113:GLN:CA	2.26	0.48
1:i:472:VAL:N	1:i:473:PRO:HD2	2.27	0.48
1:k:470:ASN:O	1:k:474:GLN:NE2	2.44	0.48
1:4:439:ARG:HD2	1:6:69:ASN:HB3	1.95	0.48
1:5:379:LEU:HD22	1:5:384:LEU:HD11	1.96	0.48
1:7:208:GLU:HB3	1:7:212:THR:HG23	1.96	0.48
1:8:454:LYS:HA	1:8:457:ILE:HD12	1.95	0.48
1:b:170:LEU:HD11	1:b:401:ALA:HB2	1.96	0.48
1:h:480:LEU:HD22	1:i:446:ALA:HB2	1.94	0.48
1:2:99:ALA:HB3	1:2:175:ILE:HD12	1.96	0.47
1:3:225:PHE:CE2	1:3:264:VAL:HG12	2.49	0.47
1:6:18:ILE:HD13	1:6:466:LEU:HD22	1.96	0.47
1:9:5:ILE:HD13	1:9:477:LEU:CD2	2.44	0.47
1:1:467:ALA:O	1:1:471:GLN:NE2	2.46	0.47
1:3:14:THR:HG23	1:5:33:SER:HB2	1.94	0.47
1:3:36:LEU:HD22	1:3:441:GLN:HG2	1.96	0.47
1:5:1:MET:HE1	1:8:30:GLU:OE1	2.13	0.47
1:a:187:THR:HG23	1:a:188:THR:HG23	1.97	0.47
1:j:243:VAL:HG23	1:n:384:LEU:CA	2.44	0.47
1:7:133:ASN:O	1:7:133:ASN:ND2	2.47	0.47
1:1:29:ILE:CD1	1:l:472:VAL:HG21	2.45	0.47
1:4:57:ASN:O	1:4:61:LEU:HG	2.14	0.47
1:6:91:ARG:HG3	1:6:91:ARG:HH11	1.78	0.47
1:8:452:MET:O	1:8:455:ALA:HB3	2.14	0.47
1:b:4:VAL:HG23	1:b:7:THR:O	2.14	0.47
1:j:27:THR:HG22	1:j:31:ARG:NE	2.28	0.47
1:3:482:GLY:O	1:5:466:LEU:HD23	2.15	0.47
1:9:5:ILE:HD11	1:9:476:VAL:HG12	1.96	0.47
1:h:15:GLN:HA	1:h:18:ILE:HD12	1.97	0.47
1:1:480:LEU:HD21	1:2:445:TYR:HB3	1.96	0.47
1:3:5:ILE:HD11	1:3:476:VAL:HG12	1.96	0.47
1:5:4:VAL:HG23	1:5:7:THR:O	2.15	0.47
1:8:28:ALA:HB1	1:8:452:MET:HB2	1.97	0.47
1:d:468:LYS:O	1:d:471:GLN:HG2	2.15	0.47
1:h:71:GLY:HA3	1:h:146:ILE:HD13	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:j:97:VAL:HG11	1:n:60:GLY:HA2	1.97	0.47
1:3:10:LEU:O	1:3:14:THR:OG1	2.28	0.47
1:6:393:ASN:N	1:6:394:PRO:HD3	2.30	0.47
1:7:95:LEU:HG	1:7:112:ILE:HG23	1.96	0.47
1:7:474:GLN:HA	1:7:477:LEU:HD12	1.97	0.47
1:8:99:ALA:HB1	1:8:175:ILE:HD13	1.96	0.47
1:9:5:ILE:HD13	1:9:477:LEU:HD21	1.97	0.47
1:b:26:SER:HA	1:b:29:ILE:HD12	1.96	0.47
1:h:245:ILE:HD12	1:h:252:VAL:HG12	1.96	0.47
1:j:225:PHE:CD2	1:j:264:VAL:HG13	2.50	0.47
1:j:480:LEU:HD22	1:k:446:ALA:CB	2.45	0.47
1:3:2:ALA:HB2	1:4:439:ARG:NH1	2.29	0.47
1:3:93:ARG:HG2	1:3:93:ARG:HH11	1.80	0.47
1:7:18:ILE:O	1:7:22:GLN:HB2	2.15	0.47
1:8:307:TYR:O	1:8:319:ALA:HB3	2.14	0.47
1:i:465:VAL:CG2	1:k:32:LEU:HB3	2.45	0.47
1:j:243:VAL:HG23	1:n:384:LEU:HA	1.97	0.47
1:3:212:THR:HG22	1:3:231:ALA:HB2	1.95	0.47
1:8:465:VAL:CG2	1:a:32:LEU:HB3	2.45	0.47
1:c:175:ILE:HD12	1:c:175:ILE:C	2.40	0.47
1:e:477:LEU:O	1:e:481:GLN:OE1	2.32	0.47
1:m:455:ALA:O	1:m:459:GLN:HB3	2.14	0.47
1:1:313:ASP:O	1:1:314:ASN:CB	2.63	0.47
1:3:18:ILE:O	1:3:22:GLN:HB2	2.15	0.47
1:7:93:ARG:HH11	1:7:93:ARG:HG2	1.80	0.47
1:9:454:LYS:HA	1:9:457:ILE:HD12	1.97	0.47
1:b:465:VAL:CG2	1:d:32:LEU:HB3	2.44	0.47
1:f:474:GLN:CD	1:f:474:GLN:N	2.73	0.47
1:h:7:THR:CG2	1:h:12:LEU:HD11	2.45	0.47
1:i:468:LYS:O	1:i:472:VAL:HG23	2.15	0.47
1:4:463:ASN:O	1:4:466:LEU:HB3	2.15	0.46
1:5:12:LEU:HA	1:5:15:GLN:HG2	1.97	0.46
1:5:27:THR:HG22	1:5:31:ARG:NE	2.30	0.46
1:7:99:ALA:HB2	1:7:112:ILE:HG21	1.96	0.46
1:c:472:VAL:O	1:c:473:PRO:C	2.57	0.46
1:e:275:THR:HG23	1:e:275:THR:O	2.15	0.46
1:j:474:GLN:N	1:j:474:GLN:CD	2.73	0.46
1:2:99:ALA:CB	1:2:175:ILE:HD12	2.44	0.46
1:b:297:GLN:HE21	1:b:305:LYS:CE	2.27	0.46
1:j:9:SER:O	1:j:10:LEU:C	2.57	0.46
1:j:465:VAL:CG2	1:m:32:LEU:HB3	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:170:LEU:HD21	1:2:398:LEU:CD1	2.45	0.46
1:5:452:MET:O	1:5:455:ALA:HB3	2.16	0.46
1:6:7:THR:CG2	1:6:12:LEU:HD11	2.45	0.46
1:8:14:THR:HG23	1:a:33:SER:HB2	1.97	0.46
1:f:4:VAL:HG23	1:f:7:THR:O	2.15	0.46
1:j:175:ILE:C	1:j:175:ILE:HD12	2.41	0.46
1:k:23:SER:C	1:k:26:SER:HG	2.23	0.46
1:k:137:VAL:HG23	1:k:138:LEU:HG	1.96	0.46
1:k:310:LYS:HE3	1:k:314:ASN:HA	1.97	0.46
1:6:295:LEU:HD11	1:6:307:TYR:HB3	1.97	0.46
1:8:8:ASN:HD21	1:8:10:LEU:HD12	1.80	0.46
1:8:427:ASN:O	1:8:430:THR:HG22	2.15	0.46
1:b:3:GLN:NE2	1:d:19:ASN:O	2.48	0.46
1:d:3:GLN:NE2	1:g:19:ASN:O	2.48	0.46
1:d:27:THR:HG22	1:d:31:ARG:NE	2.31	0.46
1:d:89:LEU:HD23	1:d:402:ILE:HD13	1.98	0.46
1:h:465:VAL:HG21	1:j:32:LEU:HB3	1.97	0.46
1:3:444:ASP:O	1:3:445:TYR:C	2.58	0.46
1:h:18:ILE:O	1:h:22:GLN:N	2.42	0.46
1:5:32:LEU:HD21	1:5:449:VAL:HG23	1.98	0.46
1:6:169:GLY:C	1:6:170:LEU:HD12	2.39	0.46
1:9:93:ARG:HA	1:9:398:LEU:HD13	1.98	0.46
1:9:116:ILE:HD12	1:9:175:ILE:HD13	1.95	0.46
1:9:465:VAL:CG2	1:c:32:LEU:HB3	2.44	0.46
1:e:27:THR:HG22	1:e:31:ARG:NE	2.31	0.46
1:e:175:ILE:N	1:e:175:ILE:HD12	2.31	0.46
1:j:246:ASP:HA	1:n:379:LEU:HA	1.96	0.46
1:j:472:VAL:N	1:j:473:PRO:CD	2.79	0.46
1:l:92:ILE:HG22	1:l:398:LEU:HD21	1.98	0.46
1:l:468:LYS:O	1:l:472:VAL:HG23	2.16	0.46
1:4:3:GLN:NE2	1:6:19:ASN:O	2.49	0.46
1:4:92:ILE:HD11	1:4:119:ARG:CB	2.41	0.46
1:8:456:GLN:HA	1:8:459:GLN:HB3	1.96	0.46
1:d:472:VAL:N	1:d:473:PRO:HD2	2.31	0.46
1:g:258:VAL:O	1:g:261:GLN:NE2	2.49	0.46
1:l:463:ASN:O	1:l:466:LEU:HB3	2.15	0.46
1:m:51:ALA:HA	1:m:437:GLN:HE22	1.81	0.46
1:m:472:VAL:N	1:m:473:PRO:CD	2.79	0.46
1:j:223:SER:CB	1:n:386:ALA:HB3	2.46	0.46
1:k:52:ASN:O	1:k:55:THR:OG1	2.34	0.46
1:l:92:ILE:HD11	1:l:119:ARG:HB2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:m:282:MET:HE3	1:m:287:VAL:HG11	1.97	0.46
1:n:158:ILE:HG12	1:n:415:ILE:HG21	1.96	0.46
1:1:74:VAL:HG22	1:1:132:PHE:CD1	2.51	0.46
1:5:482:GLY:O	1:8:466:LEU:HD23	2.16	0.46
1:8:15:GLN:HA	1:8:18:ILE:HB	1.97	0.46
1:d:99:ALA:HB1	1:d:175:ILE:HD12	1.97	0.46
1:i:384:LEU:HD23	1:i:384:LEU:H	1.81	0.46
1:k:41:ALA:HA	1:k:48:GLN:OE1	2.15	0.46
1:n:432:ASN:O	1:n:435:GLU:HB2	2.16	0.46
1:5:444:ASP:O	1:5:445:TYR:C	2.58	0.46
1:8:62:THR:O	1:8:63:GLN:C	2.58	0.46
1:9:170:LEU:O	1:9:171:LYS:C	2.58	0.46
1:c:208:GLU:HB3	1:c:212:THR:HG23	1.98	0.46
1:g:379:LEU:O	1:g:379:LEU:HD23	2.16	0.46
1:h:27:THR:HG22	1:h:31:ARG:NE	2.31	0.46
1:j:103:THR:HG21	1:n:70:ASP:HB3	1.98	0.46
1:n:208:GLU:HB3	1:n:212:THR:HG23	1.98	0.46
1:3:141:ASP:OD1	1:3:162:LYS:N	2.48	0.45
1:f:479:LEU:HD22	1:h:18:ILE:HD13	1.98	0.45
1:m:360:VAL:O	1:m:366:ALA:HA	2.15	0.45
1:4:52:ASN:O	1:4:55:THR:OG1	2.34	0.45
1:b:30:GLU:O	1:b:34:SER:N	2.47	0.45
1:b:475:GLN:HE22	1:d:452:MET:HE1	1.82	0.45
1:h:26:SER:HA	1:h:29:ILE:HD12	1.98	0.45
1:n:405:VAL:HG22	1:n:405:VAL:O	2.16	0.45
1:3:22:GLN:HA	1:3:25:MET:HE2	1.98	0.45
1:4:175:ILE:C	1:4:175:ILE:HD12	2.41	0.45
1:5:465:VAL:CG2	1:8:32:LEU:HB3	2.47	0.45
1:7:12:LEU:HD12	1:8:431:THR:HG23	1.98	0.45
1:c:141:ASP:OD1	1:c:162:LYS:N	2.46	0.45
1:g:280:ILE:HG23	1:g:326:VAL:HG23	1.98	0.45
1:m:188:THR:HG22	1:m:279:ALA:HA	1.98	0.45
1:n:271:LEU:HD11	1:n:273:LYS:HE2	1.98	0.45
1:4:195:LEU:HD21	1:4:274:VAL:HG13	1.97	0.45
1:7:15:GLN:HA	1:7:18:ILE:HB	1.99	0.45
1:9:208:GLU:HB3	1:9:212:THR:HG23	1.98	0.45
1:g:445:TYR:O	1:g:449:VAL:HG23	2.16	0.45
1:i:23:SER:O	1:i:26:SER:OG	2.34	0.45
1:j:465:VAL:HG11	1:m:33:SER:N	2.31	0.45
1:l:444:ASP:O	1:l:445:TYR:C	2.60	0.45
1:3:298:VAL:HG11	1:3:316:LEU:HD13	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:468:LYS:O	1:3:472:VAL:HG23	2.17	0.45
1:7:472:VAL:O	1:7:475:GLN:HB2	2.17	0.45
1:9:479:LEU:HG	1:c:459:GLN:HE22	1.81	0.45
1:b:93:ARG:HG2	1:b:93:ARG:HH11	1.81	0.45
1:e:57:ASN:O	1:e:61:LEU:HG	2.17	0.45
1:e:62:THR:O	1:e:63:GLN:C	2.58	0.45
1:g:204:VAL:HG21	1:g:214:ALA:HB2	1.97	0.45
1:j:445:TYR:O	1:j:449:VAL:HG23	2.16	0.45
1:1:13:ILE:O	1:1:17:ASN:ND2	2.50	0.45
1:2:92:ILE:HD11	1:2:119:ARG:HB2	1.98	0.45
1:6:82:LEU:O	1:6:83:SER:C	2.60	0.45
1:6:146:ILE:O	1:6:155:THR:HA	2.17	0.45
1:d:71:GLY:HA3	1:d:146:ILE:HD13	1.97	0.45
1:f:370:LYS:HE3	1:f:387:ILE:HD11	1.98	0.45
1:h:457:ILE:HD13	1:n:5:ILE:CG2	2.46	0.45
1:j:245:ILE:CB	1:n:384:LEU:HB2	2.46	0.45
1:3:479:LEU:CD1	1:5:459:GLN:HE22	2.29	0.45
1:k:30:GLU:O	1:k:34:SER:OG	2.35	0.45
1:1:4:VAL:HG22	1:1:7:THR:O	2.17	0.45
1:2:7:THR:CG2	1:2:12:LEU:HD11	2.46	0.45
1:5:71:GLY:HA3	1:5:146:ILE:HD13	1.99	0.45
1:g:14:THR:HG23	1:i:33:SER:HB2	1.98	0.45
1:j:26:SER:HA	1:j:29:ILE:HD12	1.99	0.45
1:n:438:SER:HA	1:n:442:ASP:HB2	1.99	0.45
1:7:99:ALA:HB2	1:7:112:ILE:HD13	1.98	0.45
1:9:228:VAL:HG21	1:9:241:TYR:CE1	2.52	0.45
1:c:465:VAL:CG2	1:e:32:LEU:HB3	2.47	0.45
1:e:41:ALA:HA	1:e:48:GLN:OE1	2.16	0.45
1:f:175:ILE:HD12	1:f:175:ILE:C	2.42	0.45
1:j:468:LYS:O	1:j:471:GLN:HG2	2.16	0.45
1:l:331:ILE:HD11	1:l:358:VAL:HG21	1.99	0.45
1:n:331:ILE:HD11	1:n:358:VAL:HG21	1.99	0.45
1:1:4:VAL:HG13	1:1:4:VAL:O	2.17	0.45
1:2:22:GLN:HG3	1:2:25:MET:HE3	1.99	0.45
1:4:5:ILE:HD11	1:4:476:VAL:HG12	1.98	0.45
1:9:173:LEU:C	1:9:173:LEU:HD23	2.41	0.45
1:c:27:THR:HG22	1:c:31:ARG:NE	2.31	0.45
1:c:195:LEU:HD11	1:c:216:ILE:HG21	1.99	0.45
1:h:480:LEU:HD22	1:i:446:ALA:CB	2.46	0.45
1:7:2:ALA:HB2	1:8:439:ARG:CZ	2.47	0.44
1:9:5:ILE:C	1:9:7:THR:N	2.75	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:d:74:VAL:HG21	1:d:144:MET:HE1	1.99	0.44
1:d:479:LEU:HG	1:g:459:GLN:NE2	2.29	0.44
1:f:208:GLU:HB3	1:f:212:THR:HG23	1.99	0.44
1:l:25:MET:HG3	1:n:3:GLN:HE22	1.82	0.44
1:2:32:LEU:HB3	1:m:465:VAL:CG2	2.45	0.44
1:2:164:ASP:O	1:2:168:LEU:HB2	2.16	0.44
1:6:26:SER:HA	1:6:29:ILE:HD12	2.00	0.44
1:8:474:GLN:O	1:8:477:LEU:HG	2.18	0.44
1:9:9:SER:O	1:9:10:LEU:C	2.60	0.44
1:d:92:ILE:HD11	1:d:119:ARG:HB2	1.98	0.44
1:d:280:ILE:HD12	1:d:282:MET:HE2	1.99	0.44
1:g:27:THR:HG22	1:g:31:ARG:NE	2.32	0.44
1:g:474:GLN:N	1:g:474:GLN:CD	2.75	0.44
1:k:26:SER:HA	1:k:29:ILE:HD12	1.99	0.44
1:m:27:THR:HG22	1:m:31:ARG:NE	2.31	0.44
1:1:477:LEU:C	1:1:477:LEU:HD12	2.42	0.44
1:3:445:TYR:O	1:3:449:VAL:HG23	2.16	0.44
1:3:479:LEU:HD12	1:5:459:GLN:HE22	1.82	0.44
1:8:141:ASP:OD1	1:8:162:LYS:N	2.49	0.44
1:f:26:SER:HA	1:f:29:ILE:HD12	1.99	0.44
1:g:175:ILE:C	1:g:175:ILE:HD12	2.43	0.44
1:i:8:ASN:O	1:i:12:LEU:HG	2.18	0.44
1:8:466:LEU:O	1:8:470:ASN:ND2	2.50	0.44
1:a:164:ASP:O	1:a:168:LEU:HB2	2.17	0.44
1:b:36:LEU:HD13	1:b:441:GLN:HE21	1.82	0.44
1:c:32:LEU:HD11	1:c:449:VAL:CG2	2.48	0.44
1:d:25:MET:O	1:d:26:SER:C	2.60	0.44
1:d:99:ALA:HB2	1:d:112:ILE:HD13	1.99	0.44
1:h:474:GLN:N	1:h:474:GLN:CD	2.75	0.44
1:i:473:PRO:O	1:i:477:LEU:HG	2.17	0.44
1:2:15:GLN:HA	1:2:18:ILE:HB	1.99	0.44
1:8:208:GLU:HB3	1:8:212:THR:HG23	1.99	0.44
1:c:354:LEU:N	1:c:354:LEU:HD12	2.33	0.44
1:d:37:ARG:HH22	1:g:66:ARG:NH1	2.15	0.44
1:k:67:ASN:HD22	1:k:147:GLN:HB3	1.82	0.44
1:5:309:LEU:HG	1:5:319:ALA:HB2	1.99	0.44
1:n:82:LEU:HD12	1:n:412:LEU:CD1	2.48	0.44
1:2:57:ASN:O	1:2:61:LEU:HG	2.17	0.44
1:4:208:GLU:HB3	1:4:212:THR:HG23	1.99	0.44
1:6:321:VAL:HG12	1:6:326:VAL:HG22	1.99	0.44
1:9:479:LEU:CD1	1:c:459:GLN:HE22	2.31	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:354:LEU:N	1:a:354:LEU:HD12	2.32	0.44
1:c:14:THR:CG2	1:e:33:SER:HB2	2.47	0.44
1:d:74:VAL:HG22	1:d:132:PHE:CE1	2.53	0.44
1:i:30:GLU:O	1:i:34:SER:OG	2.34	0.44
1:j:479:LEU:HG	1:m:459:GLN:NE2	2.27	0.44
1:l:74:VAL:HG22	1:l:132:PHE:CD1	2.53	0.44
1:1:314:ASN:O	1:1:314:ASN:ND2	2.50	0.44
1:3:15:GLN:HA	1:3:18:ILE:HD12	2.00	0.44
1:3:245:ILE:HD13	1:3:252:VAL:HG23	2.00	0.44
1:5:480:LEU:HD22	1:6:446:ALA:HB2	1.99	0.44
1:7:168:LEU:C	1:7:168:LEU:HD12	2.43	0.44
1:k:18:ILE:CD1	1:k:466:LEU:HD22	2.48	0.44
1:n:32:LEU:HD12	1:n:452:MET:HE2	1.99	0.44
1:4:295:LEU:HD11	1:4:307:TYR:HB3	1.99	0.44
1:9:465:VAL:HG11	1:c:33:SER:N	2.33	0.44
1:e:98:GLN:O	1:e:101:THR:HG22	2.18	0.44
1:g:137:VAL:HG23	1:g:138:LEU:CD1	2.48	0.44
1:j:457:ILE:HG23	1:l:477:LEU:HD21	2.00	0.44
1:7:472:VAL:HG21	1:9:29:ILE:HD13	2.00	0.43
1:8:474:GLN:CD	1:8:474:GLN:N	2.76	0.43
1:b:2:ALA:HB2	1:c:439:ARG:NH1	2.32	0.43
1:c:479:LEU:HD22	1:e:18:ILE:HD13	1.99	0.43
1:h:443:ALA:HB1	1:h:448:GLU:HG3	1.99	0.43
1:1:393:ASN:N	1:1:394:PRO:CD	2.81	0.43
1:4:20:LYS:O	1:4:23:SER:OG	2.26	0.43
1:5:7:THR:CG2	1:5:12:LEU:HD11	2.47	0.43
1:7:472:VAL:N	1:7:473:PRO:HD2	2.33	0.43
1:c:108:ASP:O	1:c:112:ILE:HD12	2.17	0.43
1:e:236:THR:HG21	1:g:194:THR:HG21	2.00	0.43
1:g:465:VAL:CG2	1:i:32:LEU:HB3	2.48	0.43
1:i:7:THR:HG21	1:i:12:LEU:HD11	1.99	0.43
1:4:465:VAL:CG2	1:6:32:LEU:HB3	2.45	0.43
1:9:32:LEU:HD21	1:9:449:VAL:HG23	1.99	0.43
1:a:11:SER:O	1:a:15:GLN:HG2	2.18	0.43
1:d:141:ASP:OD1	1:d:162:LYS:N	2.51	0.43
1:i:472:VAL:O	1:i:473:PRO:C	2.61	0.43
1:n:91:ARG:NH2	1:n:95:LEU:HD21	2.33	0.43
1:5:475:GLN:HE22	1:8:452:MET:HE1	1.83	0.43
1:e:468:LYS:O	1:e:471:GLN:HG2	2.19	0.43
1:f:93:ARG:HA	1:f:398:LEU:HD23	2.01	0.43
1:a:472:VAL:N	1:a:473:PRO:CD	2.81	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:f:74:VAL:HG22	1:f:132:PHE:CE1	2.54	0.43
1:f:472:VAL:HG21	1:h:29:ILE:HD13	1.99	0.43
1:h:99:ALA:HB2	1:h:112:ILE:CD1	2.47	0.43
1:j:4:VAL:HG23	1:j:7:THR:O	2.19	0.43
1:k:364:GLU:C	1:k:366:ALA:H	2.24	0.43
1:n:158:ILE:CD1	1:n:415:ILE:HG21	2.48	0.43
1:7:454:LYS:O	1:7:458:VAL:HG23	2.18	0.43
1:g:141:ASP:OD1	1:g:162:LYS:N	2.48	0.43
1:2:208:GLU:HB3	1:2:212:THR:HG23	2.01	0.43
1:9:475:GLN:HE22	1:c:452:MET:HE1	1.84	0.43
1:f:182:THR:HG22	1:f:298:VAL:HG12	2.00	0.43
1:k:31:ARG:O	1:k:35:GLY:N	2.49	0.43
1:4:5:ILE:HD11	1:4:476:VAL:CG1	2.48	0.43
1:7:4:VAL:O	1:7:7:THR:O	2.37	0.43
1:b:141:ASP:OD1	1:b:162:LYS:N	2.48	0.43
1:f:472:VAL:N	1:f:473:PRO:CD	2.82	0.43
1:g:92:ILE:HD11	1:g:119:ARG:HB2	2.01	0.43
1:4:468:LYS:HA	1:4:471:GLN:HG3	2.00	0.43
1:5:445:TYR:O	1:5:449:VAL:HG23	2.18	0.43
1:6:57:ASN:O	1:6:61:LEU:HG	2.18	0.43
1:9:482:GLY:O	1:c:466:LEU:HB3	2.18	0.43
1:b:8:ASN:HD21	1:b:10:LEU:HD12	1.83	0.43
1:6:462:GLY:O	1:6:466:LEU:CB	2.67	0.43
1:7:164:ASP:O	1:7:168:LEU:HG	2.18	0.43
1:k:474:GLN:OE1	1:k:474:GLN:N	2.52	0.43
1:5:465:VAL:HG21	1:8:32:LEU:HB3	2.00	0.42
1:7:182:THR:HG22	1:7:298:VAL:HG12	2.01	0.42
1:b:472:VAL:O	1:b:473:PRO:C	2.62	0.42
1:m:474:GLN:N	1:m:474:GLN:CD	2.76	0.42
1:1:313:ASP:O	1:1:314:ASN:HB3	2.18	0.42
1:4:137:VAL:HG23	1:4:138:LEU:CD1	2.48	0.42
1:6:32:LEU:HD21	1:6:449:VAL:HG23	2.00	0.42
1:6:474:GLN:HA	1:6:477:LEU:HD12	2.01	0.42
1:d:310:LYS:HE3	1:d:314:ASN:HA	2.01	0.42
1:g:348:LEU:HD12	1:g:354:LEU:HA	2.01	0.42
1:h:95:LEU:HD13	1:h:95:LEU:HA	1.92	0.42
1:m:464:SER:O	1:m:467:ALA:HB3	2.19	0.42
1:n:89:LEU:HD23	1:n:89:LEU:O	2.19	0.42
1:8:462:GLY:O	1:8:466:LEU:HB2	2.19	0.42
1:c:99:ALA:CB	1:c:175:ILE:HD13	2.49	0.42
1:d:4:VAL:HG23	1:d:7:THR:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:d:346:VAL:HG11	1:d:356:GLU:HB2	2.00	0.42
1:h:195:LEU:HD21	1:h:274:VAL:HG13	2.01	0.42
1:i:82:LEU:HD11	1:i:408:PHE:CD2	2.54	0.42
1:4:62:THR:O	1:4:63:GLN:C	2.62	0.42
1:9:316:LEU:HD12	1:9:316:LEU:N	2.33	0.42
1:m:466:LEU:O	1:m:470:ASN:ND2	2.52	0.42
1:n:334:THR:O	1:n:379:LEU:HD12	2.18	0.42
1:3:175:ILE:HG13	1:3:175:ILE:O	2.19	0.42
1:5:93:ARG:HH11	1:5:93:ARG:HG2	1.84	0.42
1:8:158:ILE:HG12	1:8:415:ILE:HG21	2.02	0.42
1:a:445:TYR:O	1:a:449:VAL:HG23	2.19	0.42
1:f:204:VAL:O	1:f:212:THR:OG1	2.31	0.42
1:i:26:SER:O	1:i:30:GLU:HG2	2.20	0.42
1:1:291:PRO:HB2	1:1:292:GLY:CA	2.50	0.42
1:3:204:VAL:HG21	1:3:214:ALA:HB2	2.02	0.42
1:8:482:GLY:O	1:a:466:LEU:HD23	2.20	0.42
1:b:15:GLN:O	1:b:19:ASN:ND2	2.52	0.42
1:b:74:VAL:HG11	1:b:144:MET:HE1	2.02	0.42
1:c:186:LEU:HD11	1:c:297:GLN:HB2	2.02	0.42
1:i:137:VAL:HG23	1:i:138:LEU:HG	2.01	0.42
1:j:253:THR:HG23	1:n:382:GLN:HG2	2.01	0.42
1:k:472:VAL:N	1:k:473:PRO:CD	2.83	0.42
1:n:118:SER:O	1:n:122:GLU:CG	2.62	0.42
1:2:444:ASP:O	1:2:445:TYR:C	2.63	0.42
1:3:368:THR:O	1:3:387:ILE:HG22	2.19	0.42
1:9:468:LYS:O	1:9:472:VAL:HG23	2.19	0.42
1:d:457:ILE:HD11	1:f:473:PRO:HB3	2.02	0.42
1:h:465:VAL:HG11	1:j:33:SER:N	2.35	0.42
1:k:473:PRO:O	1:k:477:LEU:HG	2.19	0.42
1:l:26:SER:HB3	1:n:3:GLN:HE21	1.84	0.42
1:n:35:GLY:O	1:n:36:LEU:HD23	2.18	0.42
1:2:175:ILE:O	1:2:177:THR:N	2.53	0.42
1:4:462:GLY:O	1:4:466:LEU:CB	2.67	0.42
1:6:62:THR:O	1:6:63:GLN:C	2.63	0.42
1:6:158:ILE:HG12	1:6:415:ILE:HG21	2.01	0.42
1:9:137:VAL:HG23	1:9:138:LEU:HG	2.02	0.42
1:j:247:ASN:HB3	1:j:278:LYS:HG2	2.02	0.42
1:2:99:ALA:HB2	1:2:112:ILE:HD13	2.01	0.42
1:2:421:SER:O	1:2:424:THR:HG22	2.20	0.42
1:4:332:ASN:OD1	1:4:342:THR:HG23	2.20	0.42
1:j:92:ILE:HD11	1:j:119:ARG:HB2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:n:141:ASP:HA	1:n:161:LYS:HA	2.00	0.42
1:1:464:SER:O	1:1:467:ALA:HB3	2.19	0.42
1:3:475:GLN:HB3	1:5:459:GLN:HE21	1.83	0.42
1:4:477:LEU:HD23	1:4:477:LEU:C	2.45	0.42
1:6:27:THR:HG22	1:6:31:ARG:NE	2.35	0.42
1:h:23:SER:O	1:h:26:SER:OG	2.37	0.42
1:h:37:ARG:HB3	1:h:441:GLN:O	2.20	0.42
1:h:447:THR:O	1:h:450:SER:OG	2.29	0.42
1:i:74:VAL:HG22	1:i:132:PHE:CE1	2.55	0.42
1:j:12:LEU:HA	1:j:15:GLN:HG2	2.01	0.42
1:j:248:ALA:O	1:j:249:SER:C	2.62	0.42
1:k:468:LYS:HA	1:k:471:GLN:HG2	2.00	0.42
1:l:286:SER:HB2	1:l:328:ALA:HB3	2.02	0.42
1:n:57:ASN:O	1:n:58:ILE:C	2.63	0.42
1:n:91:ARG:O	1:n:95:LEU:HD23	2.20	0.42
1:n:92:ILE:HD11	1:n:119:ARG:HB2	2.02	0.42
1:7:37:ARG:NH2	1:9:66:ARG:HH22	2.17	0.41
1:8:482:GLY:OXT	1:a:467:ALA:N	2.52	0.41
1:9:57:ASN:O	1:9:61:LEU:HG	2.20	0.41
1:b:368:THR:O	1:b:387:ILE:HG22	2.20	0.41
1:c:310:LYS:HE3	1:c:314:ASN:HA	2.02	0.41
1:c:439:ARG:HD2	1:e:69:ASN:HB3	2.02	0.41
1:j:152:ASP:OD2	1:k:395:LEU:HD12	2.20	0.41
1:j:200:PHE:HB3	1:j:252:VAL:HG13	2.02	0.41
1:3:152:ASP:HB3	1:4:314:ASN:HD22	1.86	0.41
1:3:454:LYS:O	1:3:458:VAL:HG23	2.20	0.41
1:7:216:ILE:HD11	1:7:243:VAL:HG21	2.02	0.41
1:9:237:LYS:O	1:9:241:TYR:OH	2.27	0.41
1:a:137:VAL:HG23	1:a:138:LEU:HG	2.02	0.41
1:d:31:ARG:HG2	1:d:37:ARG:HA	2.02	0.41
1:d:480:LEU:HD22	1:e:446:ALA:HB2	2.01	0.41
1:3:379:LEU:C	1:3:379:LEU:HD12	2.45	0.41
1:d:334:THR:HB	1:d:378:ASN:HA	2.02	0.41
1:i:99:ALA:CB	1:i:175:ILE:HD12	2.51	0.41
1:k:5:ILE:O	1:k:6:ASN:C	2.62	0.41
1:m:182:THR:HG22	1:m:298:VAL:HG12	2.02	0.41
1:n:148:VAL:HG22	1:n:148:VAL:O	2.20	0.41
1:n:431:THR:O	1:n:435:GLU:HG3	2.20	0.41
1:1:290:ILE:HD12	1:1:290:ILE:H	1.85	0.41
1:5:27:THR:O	1:5:31:ARG:HG3	2.21	0.41
1:7:37:ARG:HH21	1:9:66:ARG:HH22	1.69	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:7:479:LEU:HG	1:9:459:GLN:NE2	2.36	0.41
1:8:479:LEU:CG	1:a:459:GLN:HE22	2.33	0.41
1:9:4:VAL:HG23	1:9:7:THR:O	2.20	0.41
1:e:7:THR:CG2	1:e:12:LEU:HD11	2.51	0.41
1:m:472:VAL:N	1:m:473:PRO:HD2	2.36	0.41
1:2:32:LEU:HD21	1:2:449:VAL:HG23	2.02	0.41
1:2:133:ASN:ND2	1:2:133:ASN:O	2.52	0.41
1:7:10:LEU:O	1:7:14:THR:OG1	2.31	0.41
1:c:11:SER:O	1:c:14:THR:HB	2.21	0.41
1:f:370:LYS:NZ	1:g:257:LYS:O	2.53	0.41
1:h:3:GLN:NE2	1:j:19:ASN:O	2.54	0.41
1:k:62:THR:O	1:k:63:GLN:C	2.63	0.41
1:m:8:ASN:ND2	1:m:10:LEU:HD12	2.33	0.41
1:1:173:LEU:HD12	1:1:173:LEU:HA	1.98	0.41
1:5:455:ALA:O	1:5:459:GLN:CB	2.68	0.41
1:6:18:ILE:CD1	1:6:466:LEU:HD22	2.50	0.41
1:6:455:ALA:O	1:6:459:GLN:HB3	2.20	0.41
1:9:6:ASN:O	1:9:7:THR:OG1	2.30	0.41
1:9:12:LEU:HA	1:9:15:GLN:HG2	2.02	0.41
1:e:156:ILE:HG22	1:e:157:GLU:N	2.36	0.41
1:k:30:GLU:HA	1:k:33:SER:OG	2.21	0.41
1:m:92:ILE:HD11	1:m:119:ARG:HB2	2.03	0.41
1:n:82:LEU:HD11	1:n:408:PHE:CD2	2.55	0.41
1:2:419:LEU:HD13	1:2:419:LEU:HA	1.97	0.41
1:5:4:VAL:O	1:5:7:THR:O	2.39	0.41
1:6:314:ASN:C	1:6:314:ASN:HD22	2.29	0.41
1:7:14:THR:HG22	1:7:18:ILE:HD12	2.02	0.41
1:c:195:LEU:CD1	1:c:216:ILE:HG21	2.50	0.41
1:d:245:ILE:HD13	1:d:252:VAL:HG23	2.02	0.41
1:e:171:LYS:HB2	1:e:364:GLU:OE2	2.21	0.41
1:1:369:TYR:HB2	1:1:374:LEU:HD12	2.02	0.41
1:b:472:VAL:N	1:b:473:PRO:HD2	2.35	0.41
1:g:225:PHE:CE2	1:g:264:VAL:HG23	2.56	0.41
1:n:41:ALA:HA	1:n:48:GLN:HE22	1.84	0.41
1:n:76:GLN:OE1	1:n:77:THR:N	2.54	0.41
1:1:162:LYS:O	1:1:167:THR:HG21	2.21	0.41
1:1:463:ASN:ND2	1:l:479:LEU:HD23	2.33	0.41
1:2:41:ALA:HB2	1:2:48:GLN:HE22	1.85	0.41
1:2:41:ALA:CB	1:2:48:GLN:HE22	2.34	0.41
1:5:99:ALA:HB2	1:5:112:ILE:CD1	2.47	0.41
1:5:162:LYS:O	1:5:167:THR:HG21	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:192:ASP:OD1	1:5:273:LYS:HB3	2.21	0.41
1:6:393:ASN:N	1:6:394:PRO:CD	2.83	0.41
1:7:463:ASN:O	1:7:466:LEU:HB3	2.21	0.41
1:e:279:ALA:HB3	1:g:382:GLN:OE1	2.21	0.41
1:f:245:ILE:HD12	1:f:252:VAL:HG12	2.03	0.41
1:h:37:ARG:HB2	1:h:443:ALA:HB2	2.02	0.41
1:n:137:VAL:HG23	1:n:138:LEU:HG	2.03	0.41
1:5:146:ILE:O	1:5:155:THR:HA	2.21	0.41
1:5:480:LEU:HD22	1:6:446:ALA:CB	2.51	0.41
1:8:281:ASP:HB3	1:8:325:VAL:HA	2.02	0.41
1:a:419:LEU:O	1:a:423:VAL:HG23	2.21	0.41
1:e:473:PRO:O	1:e:477:LEU:HG	2.21	0.41
1:h:82:LEU:HD12	1:h:405:VAL:HG13	2.03	0.41
1:i:348:LEU:HD12	1:i:354:LEU:HA	2.03	0.41
1:l:480:LEU:HB3	1:m:445:TYR:HB2	2.03	0.41
1:3:130:THR:HG21	1:3:138:LEU:HD12	2.03	0.40
1:9:23:SER:C	1:9:26:SER:HG	2.28	0.40
1:a:27:THR:HG22	1:a:31:ARG:NE	2.35	0.40
1:a:147:GLN:NE2	1:a:149:GLY:O	2.46	0.40
1:b:473:PRO:O	1:b:477:LEU:HG	2.22	0.40
1:d:67:ASN:HD22	1:d:147:GLN:HB3	1.85	0.40
1:e:364:GLU:C	1:e:366:ALA:N	2.79	0.40
1:g:473:PRO:O	1:g:477:LEU:HG	2.20	0.40
1:k:452:MET:O	1:k:455:ALA:HB3	2.21	0.40
1:1:333:TYR:CG	1:1:374:LEU:HD21	2.57	0.40
1:6:27:THR:O	1:6:31:ARG:HG3	2.20	0.40
1:7:175:ILE:C	1:7:175:ILE:HD12	2.46	0.40
1:8:468:LYS:O	1:8:472:VAL:HG23	2.22	0.40
1:9:456:GLN:HA	1:9:459:GLN:HB3	2.03	0.40
1:g:474:GLN:HA	1:g:477:LEU:HD12	2.02	0.40
1:k:26:SER:O	1:k:30:GLU:HG2	2.20	0.40
1:l:152:ASP:OD1	1:l:152:ASP:N	2.55	0.40
1:n:164:ASP:OD1	1:n:166:SER:N	2.54	0.40
1:2:466:LEU:O	1:2:467:ALA:C	2.64	0.40
1:3:34:SER:CB	1:3:39:ASN:HD21	2.35	0.40
1:8:472:VAL:HG21	1:a:29:ILE:HD13	2.01	0.40
1:f:479:LEU:CD2	1:h:459:GLN:HE22	2.31	0.40
1:l:463:ASN:HA	1:l:466:LEU:HB3	2.03	0.40
1:m:201:ASN:HA	1:m:204:VAL:HG12	2.04	0.40
1:2:212:THR:HG22	1:2:231:ALA:HB2	2.02	0.40
1:5:466:LEU:O	1:5:470:ASN:ND2	2.48	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:7:280:ILE:HD12	1:7:282:MET:HE1	2.01	0.40
1:8:470:ASN:N	1:8:470:ASN:HD22	2.20	0.40
1:b:316:LEU:HD12	1:b:316:LEU:N	2.36	0.40
1:c:164:ASP:C	1:c:166:SER:H	2.30	0.40
1:d:457:ILE:HD11	1:f:473:PRO:CB	2.51	0.40
1:j:3:GLN:NE2	1:m:19:ASN:O	2.54	0.40
1:1:20:LYS:O	1:1:23:SER:OG	2.35	0.40
1:2:466:LEU:O	1:2:470:ASN:OD1	2.40	0.40
1:6:148:VAL:HG23	1:6:148:VAL:O	2.22	0.40
1:9:444:ASP:O	1:9:445:TYR:C	2.63	0.40
1:9:479:LEU:HG	1:c:459:GLN:NE2	2.36	0.40
1:d:208:GLU:HB3	1:d:212:THR:HG23	2.03	0.40
1:g:282:MET:SD	1:g:287:VAL:HG11	2.62	0.40
1:g:348:LEU:HD12	1:g:354:LEU:C	2.47	0.40
1:h:99:ALA:HB3	1:h:175:ILE:HD12	2.03	0.40
1:n:37:ARG:HB3	1:n:441:GLN:O	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	1	476/482 (99%)	442 (93%)	31 (6%)	3 (1%)	21 54
1	2	480/482 (100%)	449 (94%)	30 (6%)	1 (0%)	43 72
1	3	480/482 (100%)	463 (96%)	16 (3%)	1 (0%)	43 72
1	4	480/482 (100%)	459 (96%)	20 (4%)	1 (0%)	43 72
1	5	480/482 (100%)	455 (95%)	25 (5%)	0	100 100
1	6	480/482 (100%)	455 (95%)	24 (5%)	1 (0%)	43 72
1	7	480/482 (100%)	459 (96%)	20 (4%)	1 (0%)	43 72

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	8	480/482 (100%)	466 (97%)	14 (3%)	0	100	100
1	9	480/482 (100%)	452 (94%)	26 (5%)	2 (0%)	30	61
1	a	480/482 (100%)	455 (95%)	25 (5%)	0	100	100
1	b	480/482 (100%)	458 (95%)	22 (5%)	0	100	100
1	c	480/482 (100%)	457 (95%)	23 (5%)	0	100	100
1	d	480/482 (100%)	454 (95%)	26 (5%)	0	100	100
1	e	480/482 (100%)	451 (94%)	28 (6%)	1 (0%)	43	72
1	f	480/482 (100%)	456 (95%)	24 (5%)	0	100	100
1	g	480/482 (100%)	462 (96%)	17 (4%)	1 (0%)	43	72
1	h	480/482 (100%)	457 (95%)	20 (4%)	3 (1%)	21	54
1	i	480/482 (100%)	461 (96%)	19 (4%)	0	100	100
1	j	480/482 (100%)	451 (94%)	25 (5%)	4 (1%)	16	49
1	k	480/482 (100%)	459 (96%)	21 (4%)	0	100	100
1	l	480/482 (100%)	463 (96%)	17 (4%)	0	100	100
1	m	480/482 (100%)	463 (96%)	17 (4%)	0	100	100
1	n	480/482 (100%)	437 (91%)	40 (8%)	3 (1%)	21	54
All	All	11036/11086 (100%)	10484 (95%)	530 (5%)	22 (0%)	44	72

All (22) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	e	177	THR
1	1	298	VAL
1	2	176	GLN
1	6	375	GLY
1	1	314	ASN
1	7	171	LYS
1	h	176	GLN
1	j	10	LEU
1	j	248	ALA
1	n	136	ASN
1	h	179	ASN
1	h	268	ASP
1	n	382	GLN
1	4	375	GLY
1	9	176	GLN

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Mol	Chain	Res	Type
1	j	247	ASN
1	3	264	VAL
1	1	375	GLY
1	9	375	GLY
1	g	393	ASN
1	j	29	ILE
1	n	148	VAL

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	1	387/387 (100%)	382 (99%)	5 (1%)	61 72
1	2	387/387 (100%)	382 (99%)	5 (1%)	61 72
1	3	387/387 (100%)	386 (100%)	1 (0%)	86 83
1	4	387/387 (100%)	385 (100%)	2 (0%)	81 80
1	5	387/387 (100%)	384 (99%)	3 (1%)	73 77
1	6	387/387 (100%)	385 (100%)	2 (0%)	81 80
1	7	387/387 (100%)	387 (100%)	0	100 100
1	8	387/387 (100%)	385 (100%)	2 (0%)	81 80
1	9	387/387 (100%)	386 (100%)	1 (0%)	86 83
1	a	387/387 (100%)	386 (100%)	1 (0%)	86 83
1	b	387/387 (100%)	383 (99%)	4 (1%)	68 75
1	c	387/387 (100%)	383 (99%)	4 (1%)	68 75
1	d	387/387 (100%)	384 (99%)	3 (1%)	73 77
1	e	387/387 (100%)	385 (100%)	2 (0%)	81 80
1	f	387/387 (100%)	385 (100%)	2 (0%)	81 80
1	g	387/387 (100%)	385 (100%)	2 (0%)	81 80
1	h	387/387 (100%)	382 (99%)	5 (1%)	61 72
1	i	387/387 (100%)	384 (99%)	3 (1%)	73 77

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	j	387/387 (100%)	383 (99%)	4 (1%)	68 75
1	k	387/387 (100%)	385 (100%)	2 (0%)	81 80
1	l	387/387 (100%)	385 (100%)	2 (0%)	81 80
1	m	387/387 (100%)	383 (99%)	4 (1%)	68 75
1	n	387/387 (100%)	378 (98%)	9 (2%)	44 64
All	All	8901/8901 (100%)	8833 (99%)	68 (1%)	70 77

All (68) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	1	128	GLU
1	1	174	ASN
1	1	201	ASN
1	1	456	GLN
1	1	480	LEU
1	2	252	VAL
1	2	398	LEU
1	2	400	ASP
1	2	419	LEU
1	2	437	GLN
1	3	398	LEU
1	4	114	ASP
1	4	477	LEU
1	5	52	ASN
1	5	114	ASP
1	5	168	LEU
1	6	27	THR
1	6	314	ASN
1	8	384	LEU
1	8	477	LEU
1	9	175	ILE
1	a	27	THR
1	b	145	LYS
1	b	179	ASN
1	b	398	LEU
1	b	463	ASN
1	c	27	THR
1	c	280	ILE
1	c	333	TYR
1	c	364	GLU

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Mol	Chain	Res	Type
1	d	27	THR
1	d	247	ASN
1	d	384	LEU
1	e	27	THR
1	e	175	ILE
1	f	113	GLN
1	f	471	GLN
1	g	356	GLU
1	g	442	ASP
1	h	27	THR
1	h	82	LEU
1	h	95	LEU
1	h	430	THR
1	h	459	GLN
1	i	27	THR
1	i	252	VAL
1	i	430	THR
1	j	52	ASN
1	j	243	VAL
1	j	245	ILE
1	j	246	ASP
1	k	27	THR
1	k	400	ASP
1	l	152	ASP
1	l	252	VAL
1	m	27	THR
1	m	252	VAL
1	m	384	LEU
1	m	437	GLN
1	n	4	VAL
1	n	25	MET
1	n	63	GLN
1	n	103	THR
1	n	114	ASP
1	n	173	LEU
1	n	189	VAL
1	n	373	ASP
1	n	379	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (178) such sidechains are listed below:

Mol	Chain	Res	Type
1	1	17	ASN
1	1	131	GLN
1	1	201	ASN
1	1	314	ASN
1	1	378	ASN
1	1	393	ASN
1	1	416	GLN
1	1	459	GLN
1	1	463	ASN
1	1	481	GLN
1	2	22	GLN
1	2	48	GLN
1	2	98	GLN
1	2	179	ASN
1	2	297	GLN
1	2	380	GLN
1	2	393	ASN
1	2	437	GLN
1	2	470	ASN
1	3	39	ASN
1	3	86	ASN
1	3	131	GLN
1	4	22	GLN
1	4	76	GLN
1	4	86	ASN
1	4	104	ASN
1	4	416	GLN
1	4	432	ASN
1	4	456	GLN
1	5	6	ASN
1	5	39	ASN
1	5	52	ASN
1	5	63	GLN
1	5	133	ASN
1	5	380	GLN
1	5	428	ASN
1	5	437	GLN
1	6	39	ASN
1	6	52	ASN
1	6	86	ASN
1	6	104	ASN
1	6	176	GLN
1	6	179	ASN

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Mol	Chain	Res	Type
1	6	238	ASN
1	6	474	GLN
1	7	86	ASN
1	7	380	GLN
1	7	382	GLN
1	7	456	GLN
1	7	471	GLN
1	7	475	GLN
1	8	8	ASN
1	8	39	ASN
1	8	52	ASN
1	8	86	ASN
1	8	297	GLN
1	8	416	GLN
1	8	470	ASN
1	8	471	GLN
1	8	474	GLN
1	9	15	GLN
1	9	39	ASN
1	9	133	ASN
1	9	382	GLN
1	9	470	ASN
1	a	8	ASN
1	a	52	ASN
1	a	69	ASN
1	a	76	GLN
1	a	86	ASN
1	a	90	GLN
1	a	98	GLN
1	a	247	ASN
1	a	470	ASN
1	b	8	ASN
1	b	19	ASN
1	b	52	ASN
1	b	63	GLN
1	b	76	GLN
1	b	86	ASN
1	b	151	ASN
1	b	179	ASN
1	b	297	GLN
1	b	427	ASN
1	b	471	GLN

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Mol	Chain	Res	Type
1	b	475	GLN
1	b	481	GLN
1	c	8	ASN
1	c	86	ASN
1	c	113	GLN
1	c	133	ASN
1	c	380	GLN
1	c	427	ASN
1	c	441	GLN
1	c	456	GLN
1	c	471	GLN
1	c	481	GLN
1	d	6	ASN
1	d	39	ASN
1	d	52	ASN
1	d	131	GLN
1	d	151	ASN
1	d	179	ASN
1	d	201	ASN
1	d	416	GLN
1	d	437	GLN
1	e	15	GLN
1	e	22	GLN
1	e	174	ASN
1	e	380	GLN
1	e	382	GLN
1	e	481	GLN
1	f	6	ASN
1	f	17	ASN
1	f	39	ASN
1	f	131	GLN
1	f	151	ASN
1	f	179	ASN
1	f	380	GLN
1	f	481	GLN
1	g	8	ASN
1	g	86	ASN
1	g	179	ASN
1	h	8	ASN
1	h	39	ASN
1	h	52	ASN
1	h	88	ASN

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Mol	Chain	Res	Type
1	h	147	GLN
1	h	176	GLN
1	h	314	ASN
1	h	380	GLN
1	h	459	GLN
1	h	471	GLN
1	i	3	GLN
1	i	22	GLN
1	i	52	ASN
1	i	131	GLN
1	i	425	ASN
1	i	471	GLN
1	j	76	GLN
1	j	90	GLN
1	j	131	GLN
1	j	176	GLN
1	j	179	ASN
1	j	201	ASN
1	j	314	ASN
1	j	380	GLN
1	j	475	GLN
1	j	481	GLN
1	k	22	GLN
1	k	52	ASN
1	k	67	ASN
1	k	86	ASN
1	k	176	GLN
1	k	247	ASN
1	k	297	GLN
1	k	382	GLN
1	l	6	ASN
1	l	380	GLN
1	l	393	ASN
1	l	481	GLN
1	m	8	ASN
1	m	22	GLN
1	m	52	ASN
1	m	76	GLN
1	m	131	GLN
1	m	247	ASN
1	m	297	GLN
1	m	380	GLN

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Mol	Chain	Res	Type
1	m	427	ASN
1	m	437	GLN
1	m	470	ASN
1	m	475	GLN
1	m	481	GLN
1	n	3	GLN
1	n	15	GLN
1	n	176	GLN
1	n	432	ASN

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

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	1	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	1	280:ILE	C	281:ASP	N	3.60
1	1	317:TYR	C	318:ALA	N	3.08

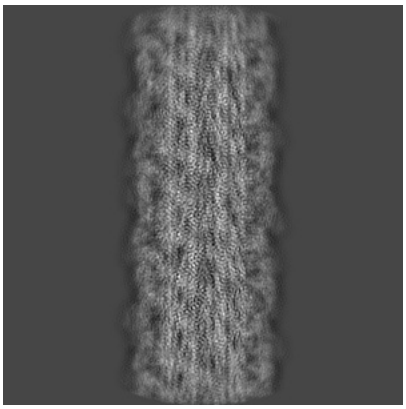
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-70438. These allow visual inspection of the internal detail of the map and identification of artifacts.

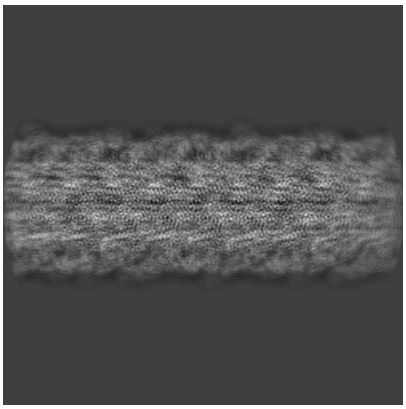
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

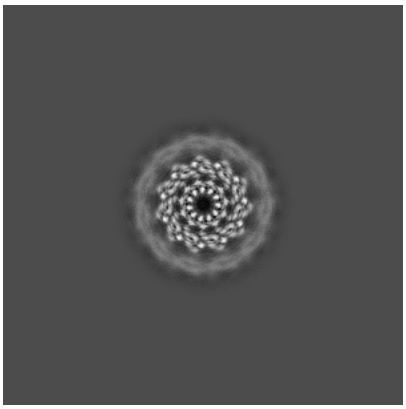
6.1.1 Primary map



X

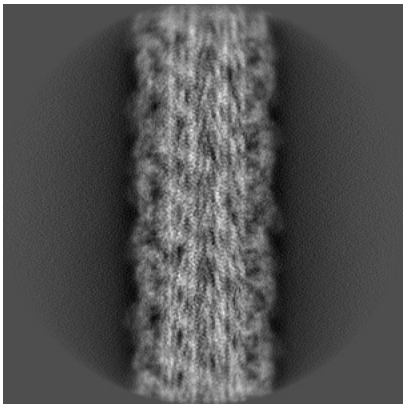


Y

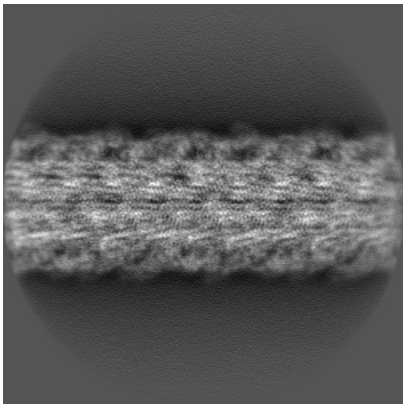


Z

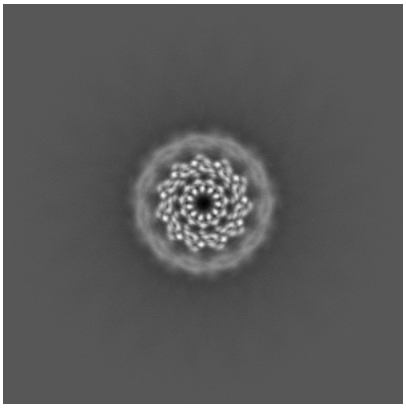
6.1.2 Raw map



X



Y

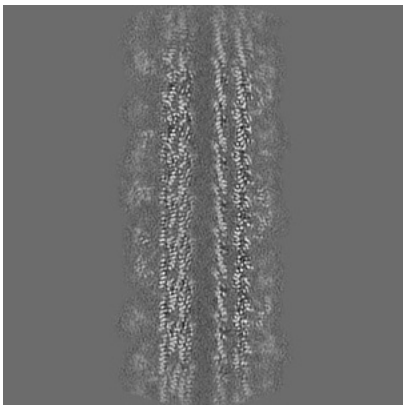


Z

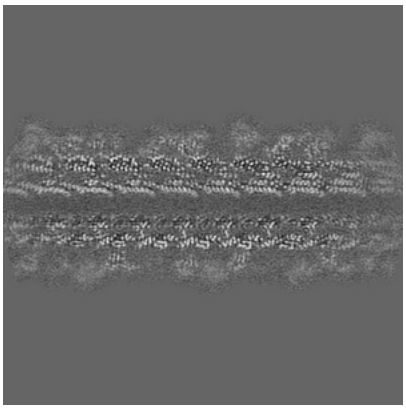
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

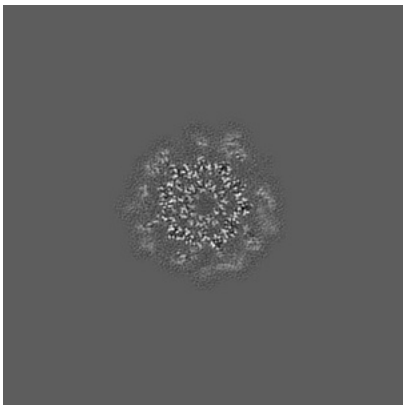
6.2.1 Primary map



X Index: 150

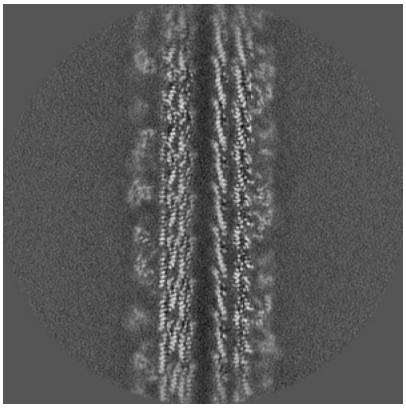


Y Index: 150

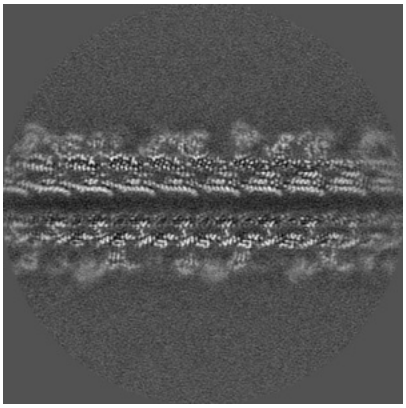


Z Index: 150

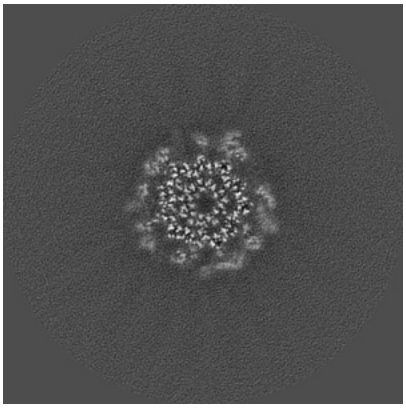
6.2.2 Raw map



X Index: 150



Y Index: 150

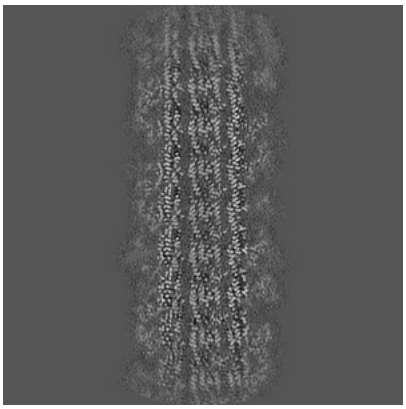


Z Index: 150

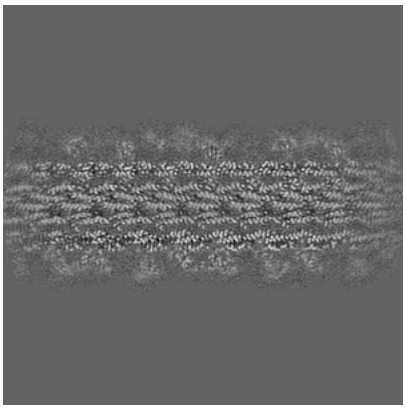
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

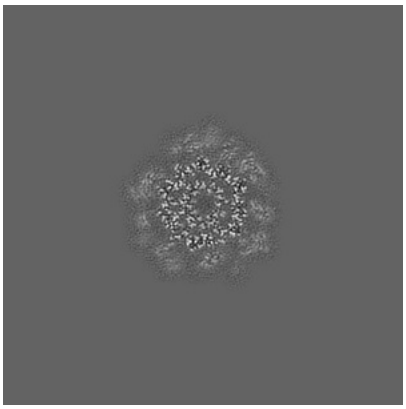
6.3.1 Primary map



X Index: 164

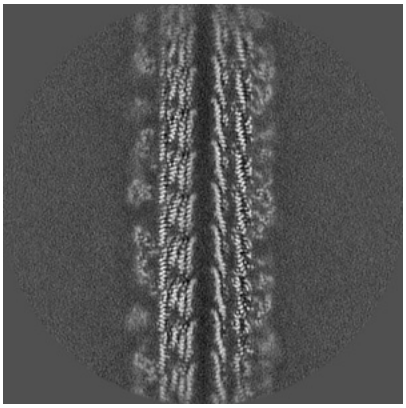


Y Index: 161

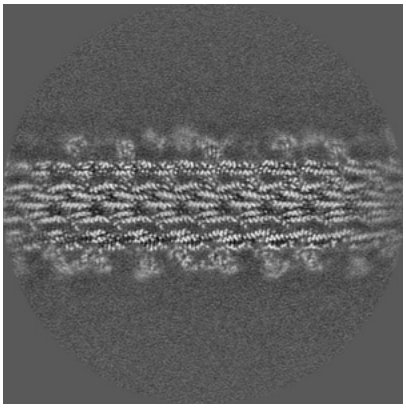


Z Index: 199

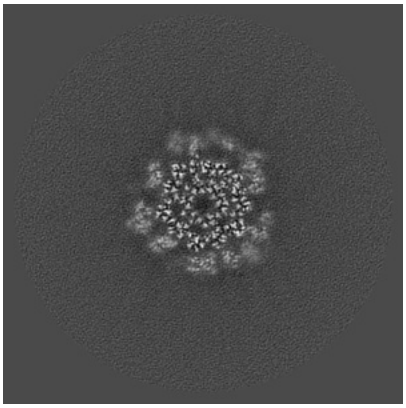
6.3.2 Raw map



X Index: 149



Y Index: 161

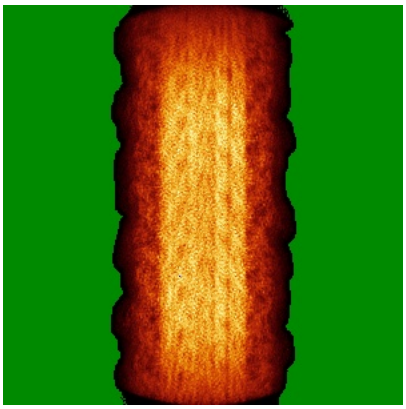


Z Index: 97

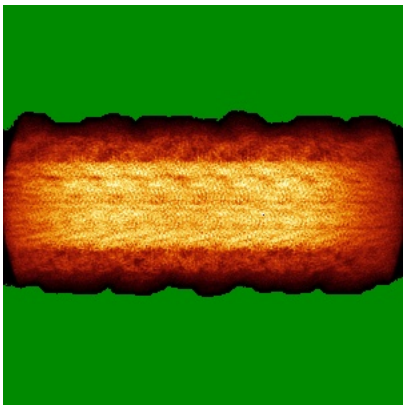
The images above show the largest variance slices of the map in three orthogonal directions.

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

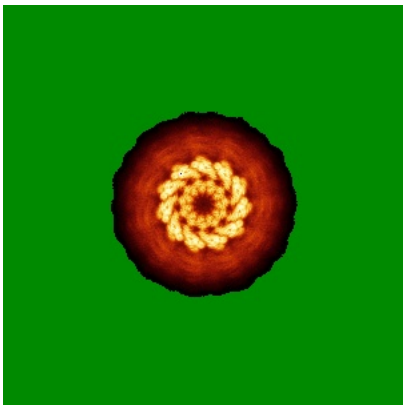
6.4.1 Primary map



X

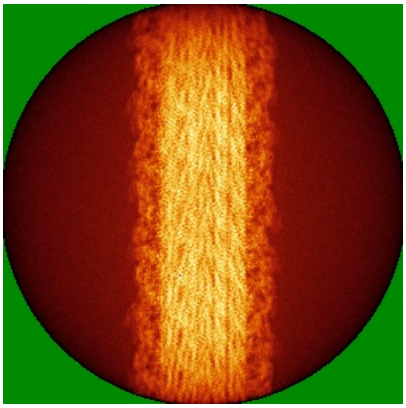


Y

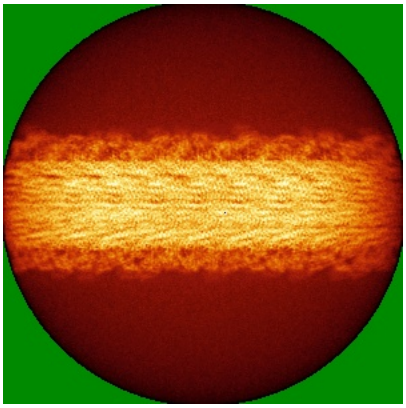


Z

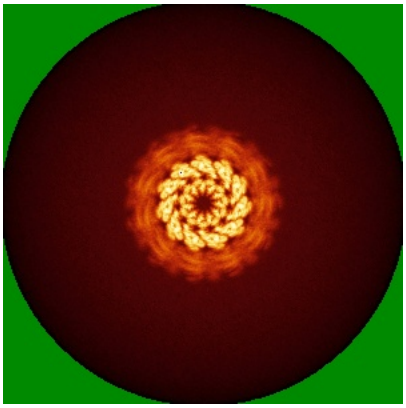
6.4.2 Raw map



X



Y

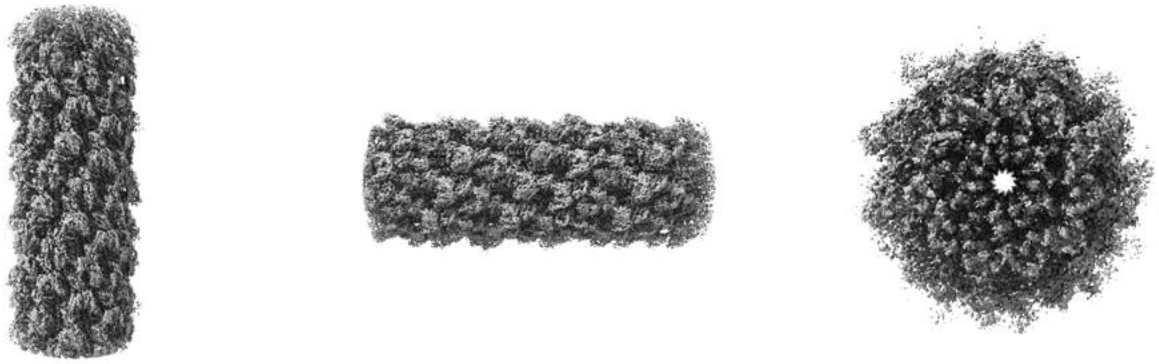


Z

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 (i)

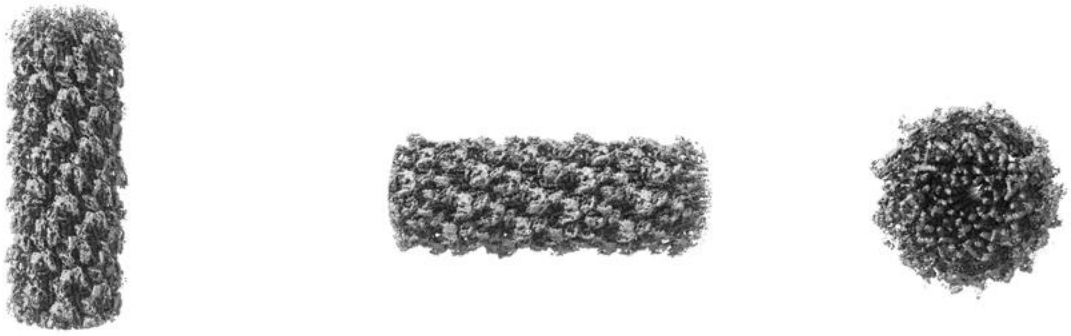
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.016. 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.

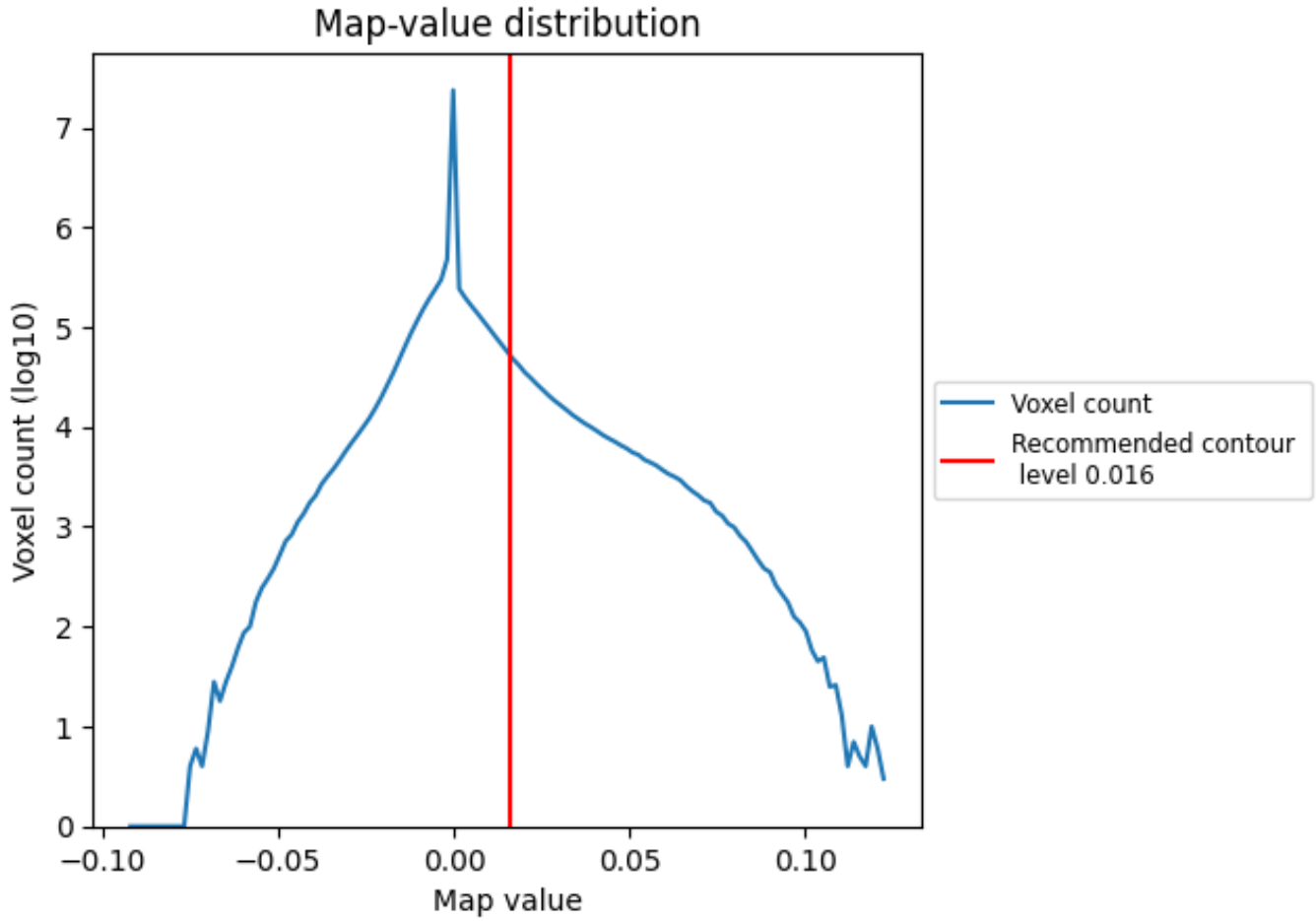
6.6 Mask visualisation (i)

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

7 Map analysis

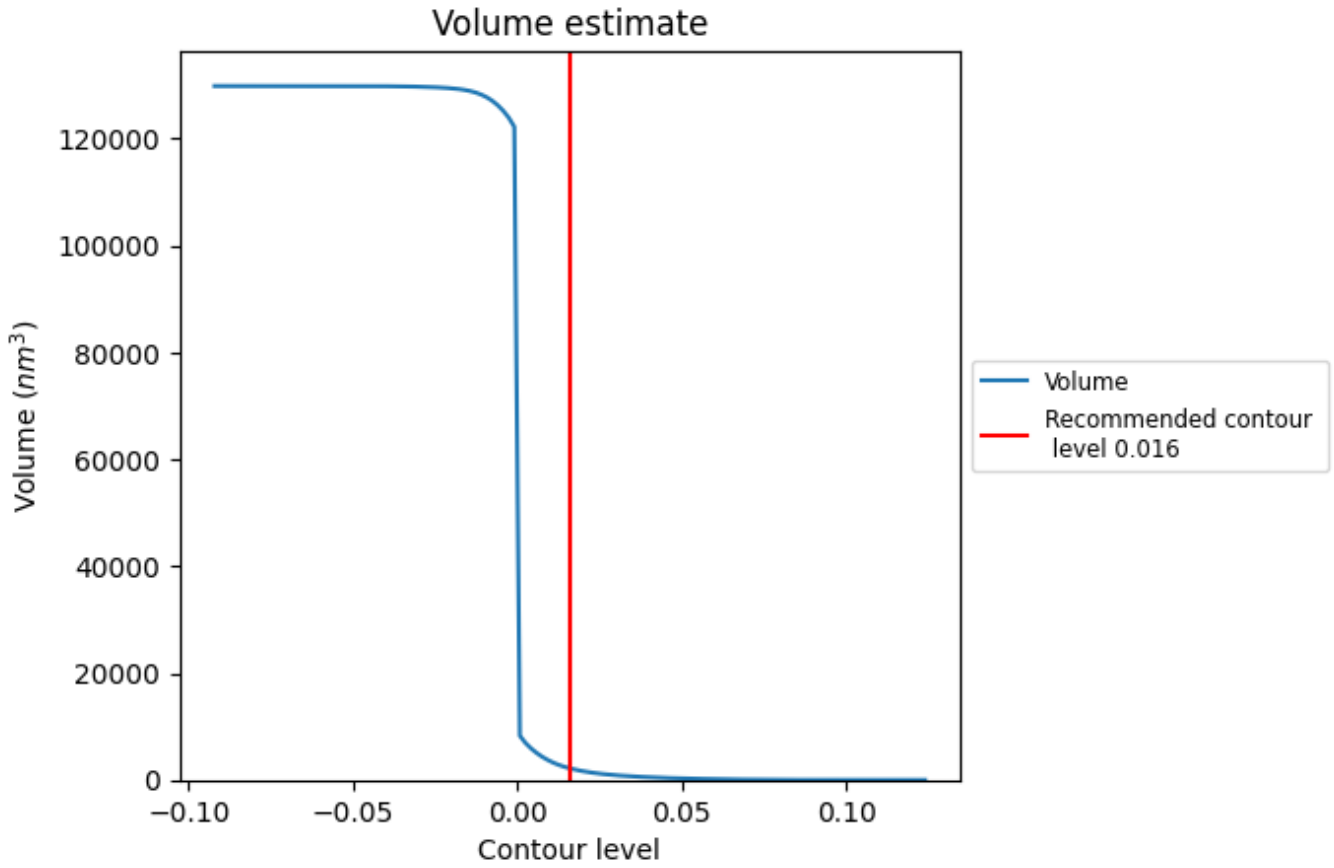
This section contains the results of statistical analysis of the map.

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.

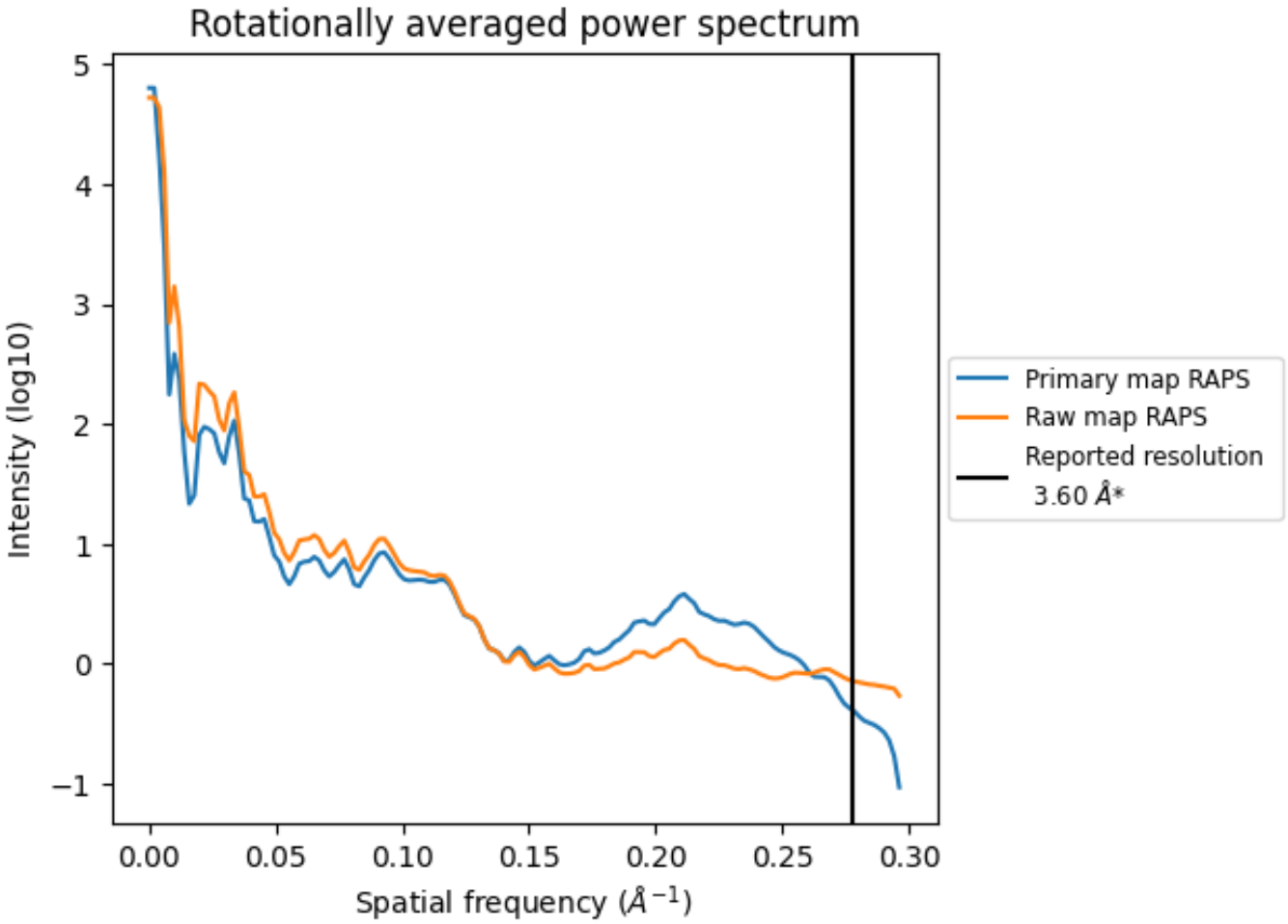
7.2 Volume estimate



The volume at the recommended contour level is 2171 nm^3; this corresponds to an approximate mass of 1961 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)

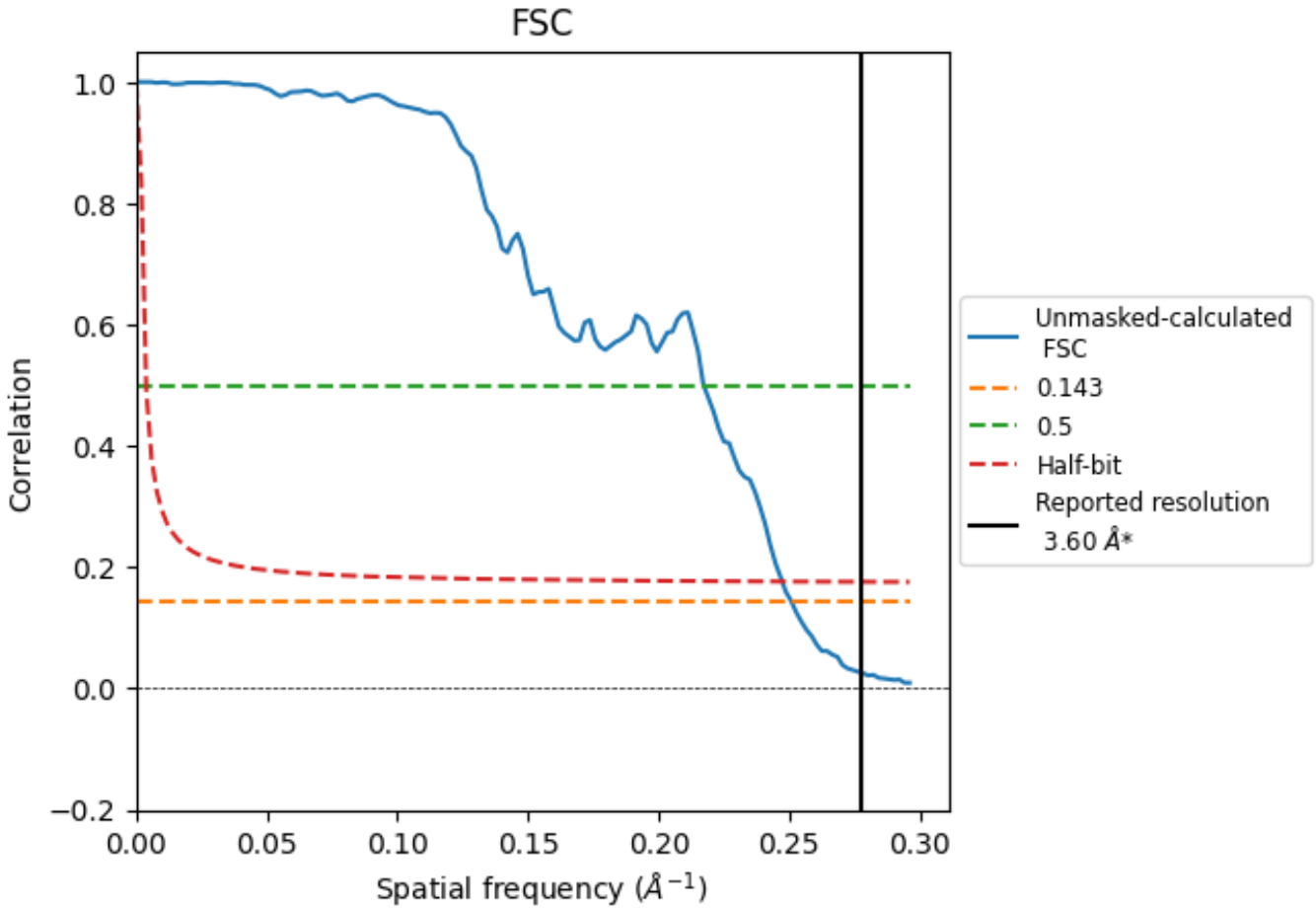


*Reported resolution corresponds to spatial frequency of 0.278 Å^{-1}

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 (i)

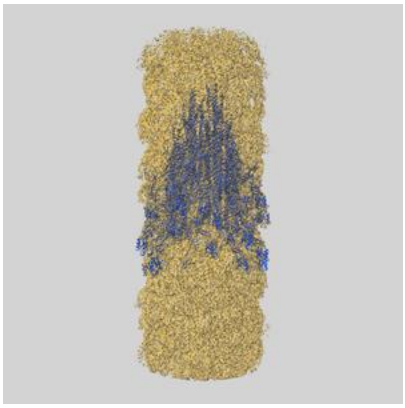
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.60	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.98	4.60	4.04

*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 3.98 differs from the reported value 3.6 by more than 10 %

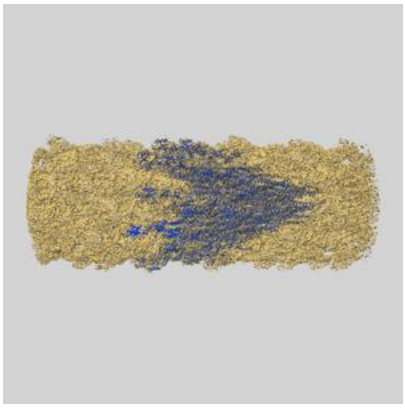
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-70438 and PDB model 9OFN. Per-residue inclusion information can be found in section 3 on page 6.

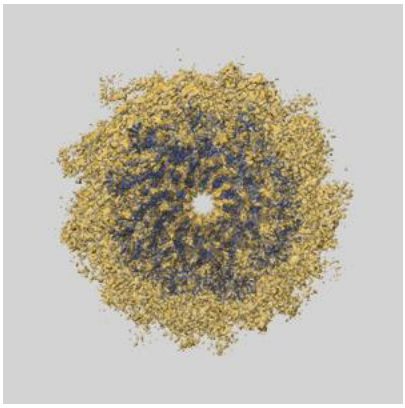
9.1 Map-model overlay



X



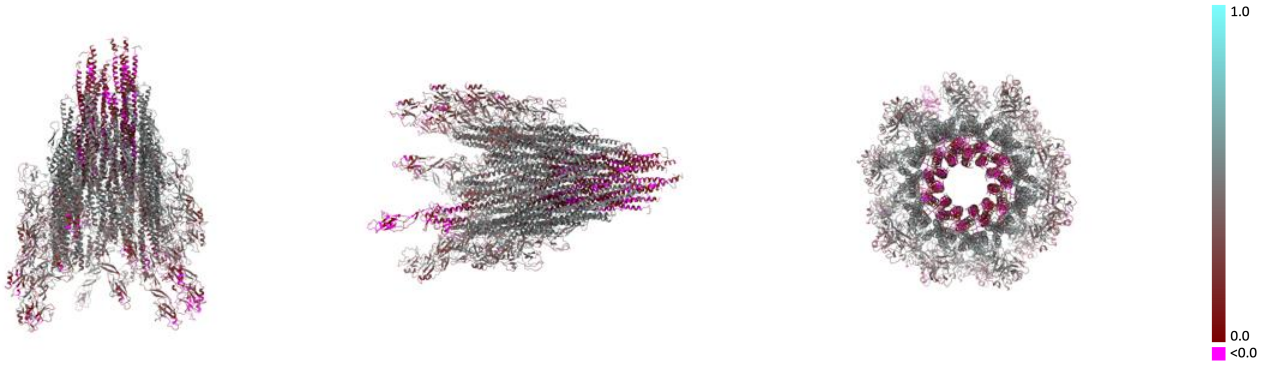
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.016 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

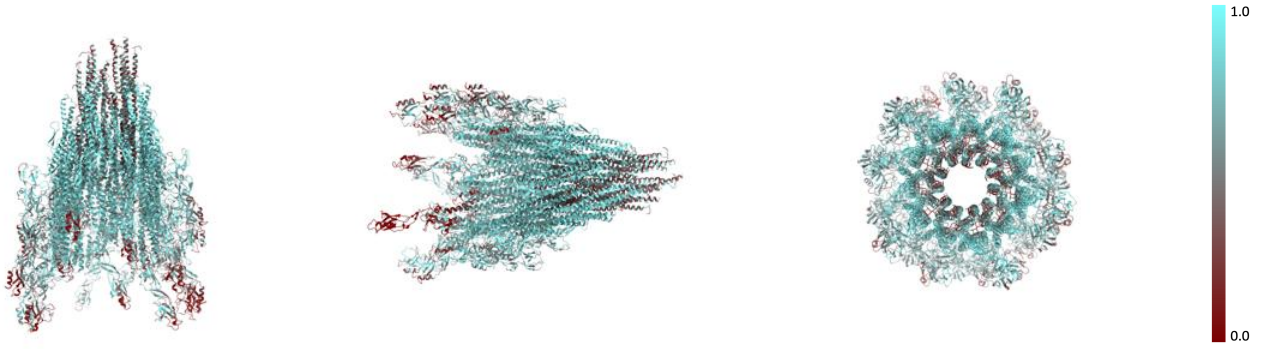
9.2 Q-score mapped to coordinate model (i)



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.

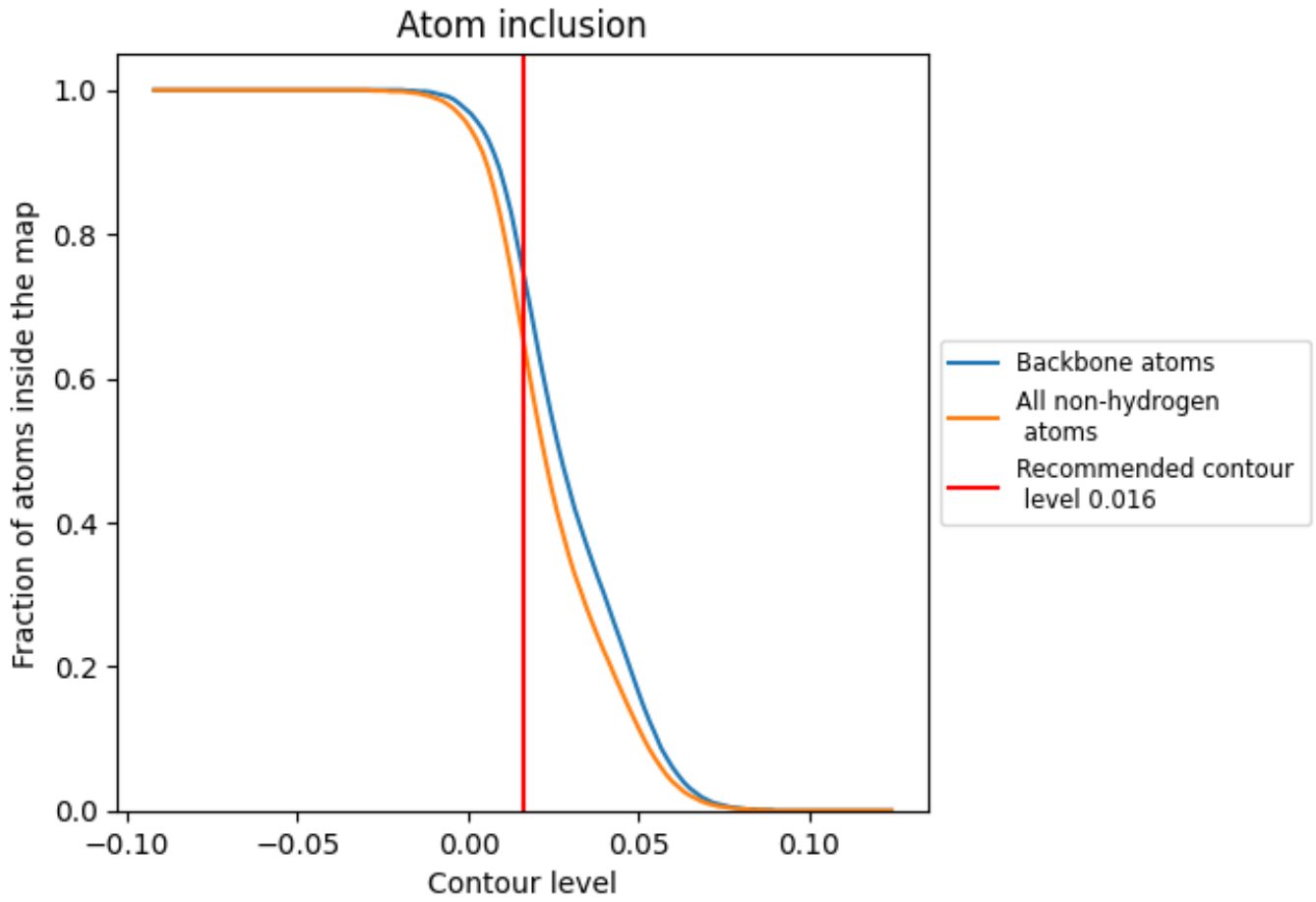
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.016).

9.4 Atom inclusion (i)



At the recommended contour level, 75% of all backbone atoms, 66% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.016) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6570	0.3640
1	0.6580	0.3750
2	0.6900	0.3830
3	0.6600	0.3510
4	0.6350	0.3470
5	0.6890	0.3740
6	0.6400	0.3550
7	0.6350	0.3520
8	0.6770	0.3720
9	0.6430	0.3530
a	0.6830	0.3940
b	0.6980	0.3950
c	0.6370	0.3540
d	0.6750	0.3810
e	0.6400	0.3580
f	0.6890	0.3840
g	0.6940	0.3910
h	0.6890	0.3880
i	0.6830	0.3830
j	0.6840	0.3880
k	0.6930	0.4000
l	0.6270	0.3550
m	0.6890	0.4010
n	0.3920	0.1390