Full wwPDB EM Validation Report ⓘ

Jun 10, 2025 – 08:31 PM JST

PDB ID	:	7CXM / pdb_00007cxm
EMDB ID	:	EMD-30492
Title	:	Architecture of a SARS-CoV-2 mini replication and transcription complex
Authors	:	Yan, L.; Zhang, Y.; Ge, J.; Zheng, L.; Gao, Y.; Wang, T.; Jia, Z.; Wang, H.; Huang, Y.; Li, M.; Wang, Q.; Rao, Z.; Lou, Z.
Deposited on	:	2020-09-02
Resolution	:	2.90 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:

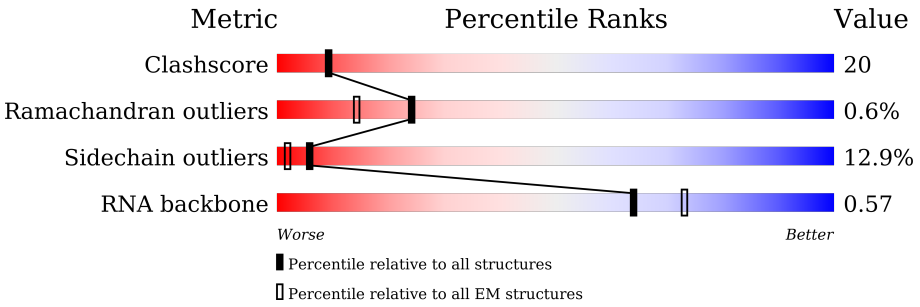
EMDB validation analysis	:	0.0.1.dev118
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.43.1

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.90 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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	942	70% 22% 5% • •
2	B	198	6% 56% 31% 6% • 6%
2	D	198	• 54% 31% 9% • 6%
3	C	83	61% 23% • 13%
4	I	25	40% 52% 8%
5	J	58	28% 17% 55%
6	L	6	33% 83% 17%

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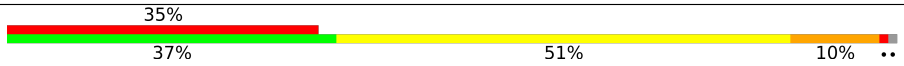
Mol	Chain	Length	Quality of chain
7	E	601	
7	F	601	

2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 21295 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 RNA-directed RNA polymerase.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	926	Total	C	N	O	S	0	0
			7458	4763	1252	1389	54		

There are 11 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	910	ASN	ASP	engineered mutation	UNP P0DTD1
A	933	HIS	-	expression tag	UNP P0DTD1
A	934	HIS	-	expression tag	UNP P0DTD1
A	935	HIS	-	expression tag	UNP P0DTD1
A	936	HIS	-	expression tag	UNP P0DTD1
A	937	HIS	-	expression tag	UNP P0DTD1
A	938	HIS	-	expression tag	UNP P0DTD1
A	939	HIS	-	expression tag	UNP P0DTD1
A	940	HIS	-	expression tag	UNP P0DTD1
A	941	HIS	-	expression tag	UNP P0DTD1
A	942	HIS	-	expression tag	UNP P0DTD1

- Molecule 2 is a protein called Non-structural protein 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	187	Total	C	N	O	S	0	0
			1396	872	240	273	11		
2	D	186	Total	C	N	O	S	0	0
			1414	889	242	272	11		

- Molecule 3 is a protein called Non-structural protein 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	72	Total	C	N	O	S	0	0
			553	349	91	107	6		

- Molecule 4 is a RNA chain called RNA (25-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
4	I	25	Total 545	C 242	N 105	O 173	P 25	0	0

- Molecule 5 is a RNA chain called RNA (26-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
5	J	26	Total 545	C 244	N 92	O 183	P 26	0	0

- Molecule 6 is a RNA chain called RNA (5'-R(P*UP*UP*UP*UP*UP*U)-3').

Mol	Chain	Residues	Atoms					AltConf	Trace
6	L	6	Total 128	C 58	N 24	O 40	P 6	0	0

- Molecule 7 is a protein called Helicase.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	F	596	Total 4630	C 2940	N 787	O 869	S 34	0	0
7	E	596	Total 4618	C 2935	N 781	O 869	S 33	0	0

- Molecule 8 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

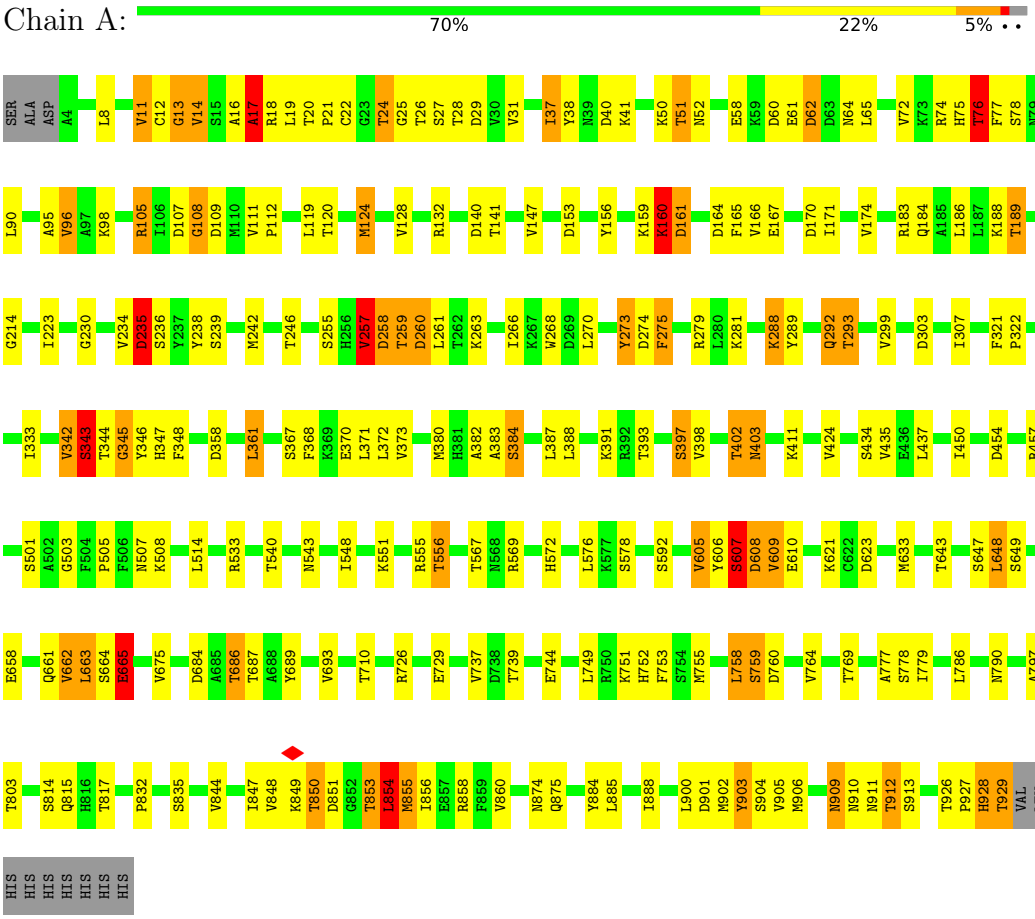
Mol	Chain	Residues	Atoms		AltConf
8	A	2	Total 2	Zn 2	0
8	F	3	Total 3	Zn 3	0
8	E	3	Total 3	Zn 3	0

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.

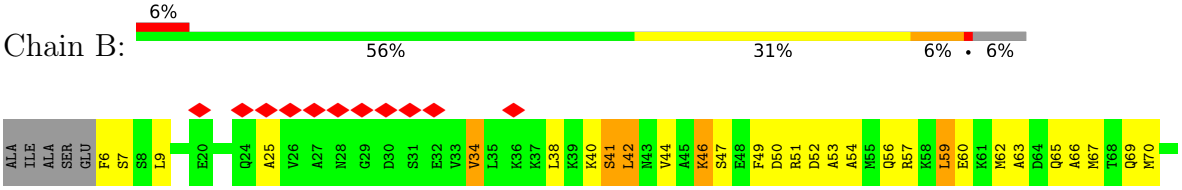
• Molecule 1: RNA-directed RNA polymerase

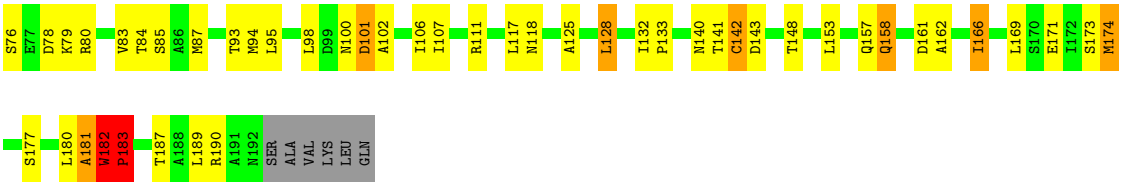
Chain A:



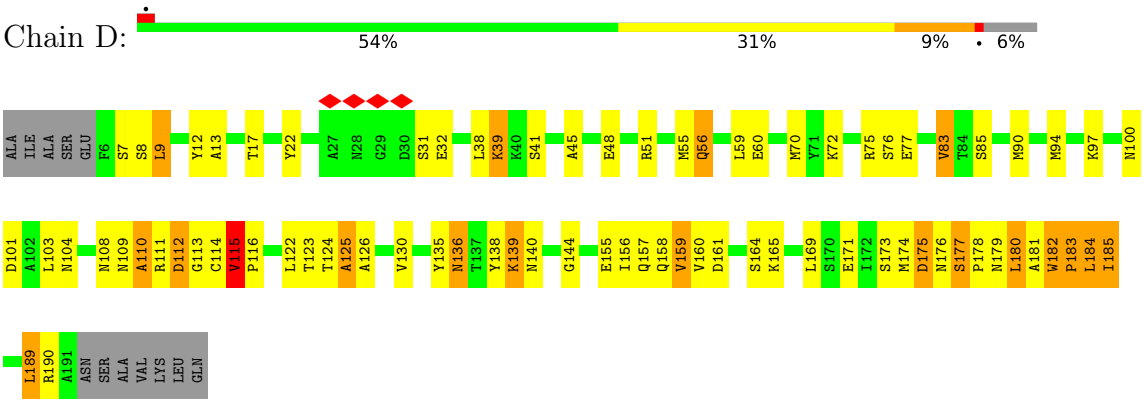
• Molecule 2: Non-structural protein 8

Chain B:

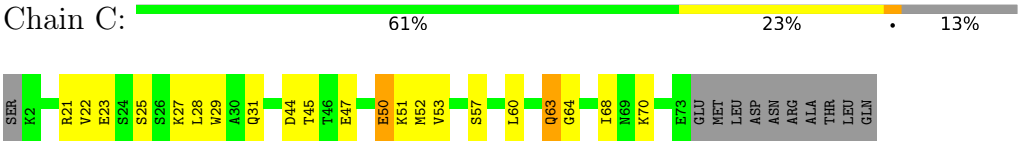




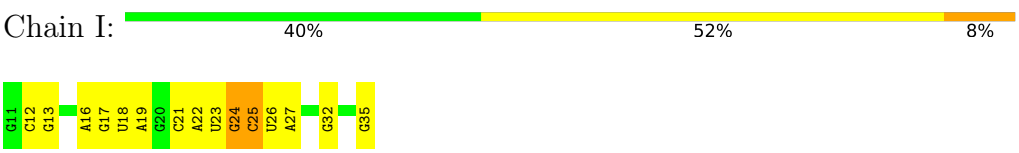
• Molecule 2: Non-structural protein 8



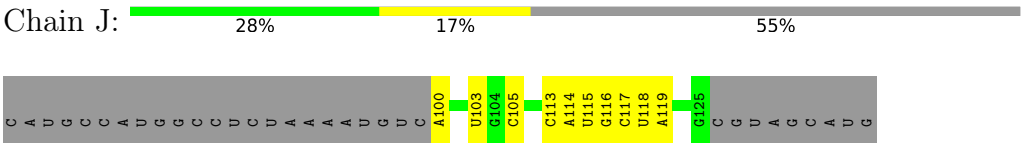
• Molecule 3: Non-structural protein 7



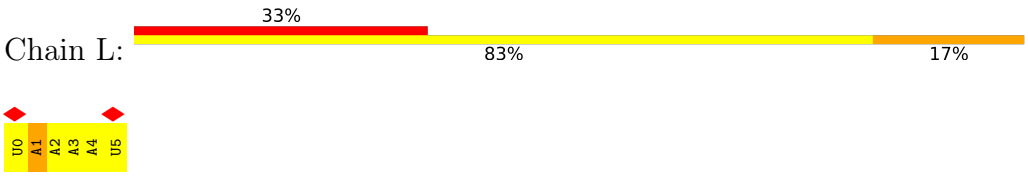
• Molecule 4: RNA (25-MER)



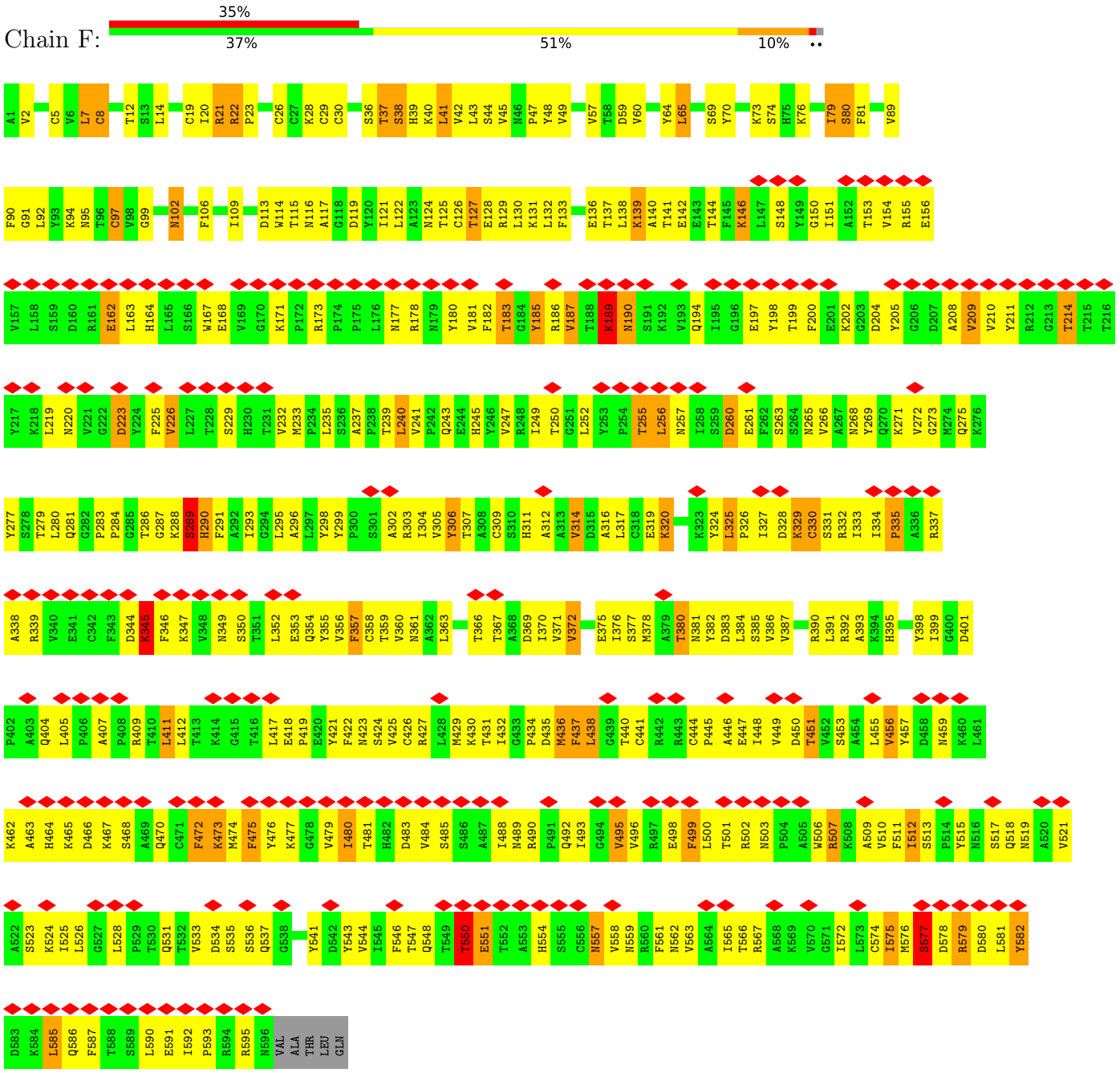
• Molecule 5: RNA (26-MER)



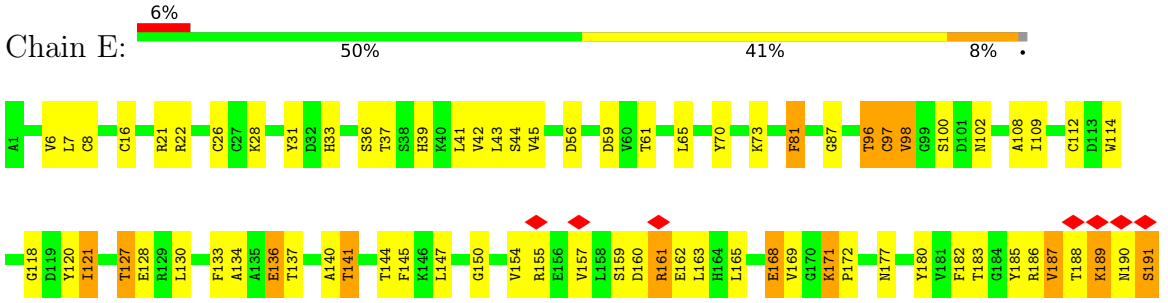
• Molecule 6: RNA (5'-R(P*UP*UP*UP*UP*UP*U)-3')

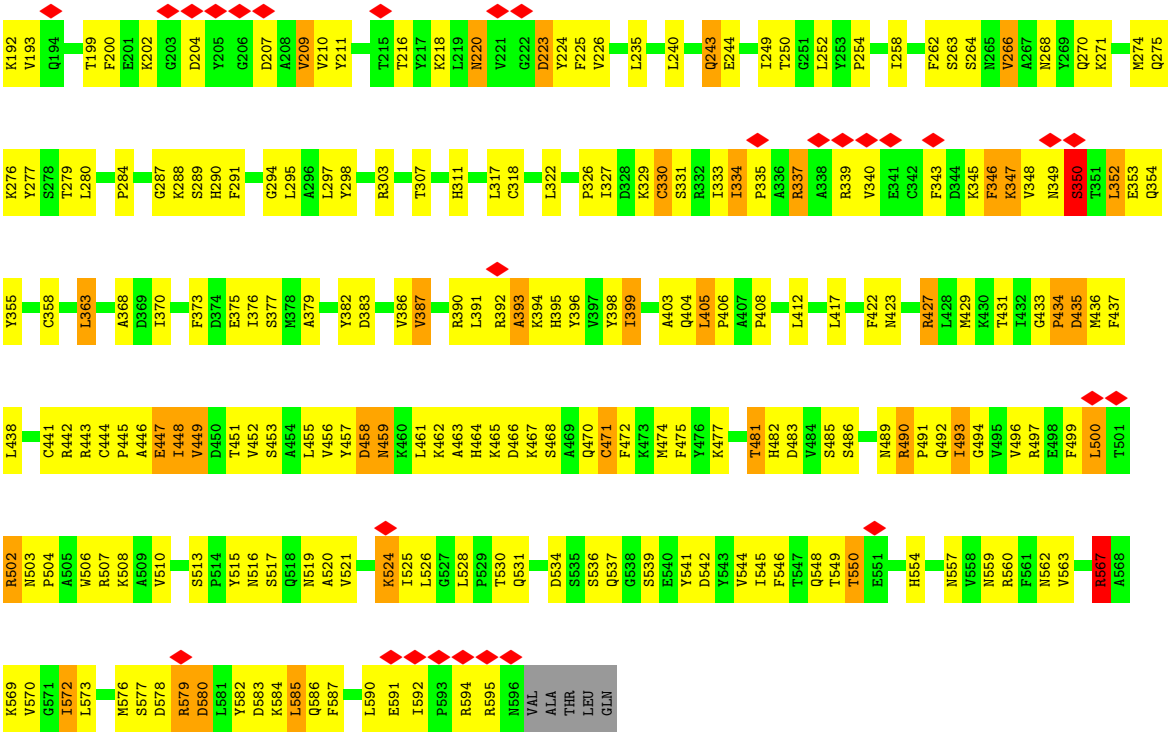


• Molecule 7: Helicase



• Molecule 7: Helicase




K192 V193 Q194 T199 F200 E201 K202 G203 D204 Y205 G206 D207 A208 V209 V210 Y211 T215 T216 Y217 K218 L219 N220 V221 G222 D223 Y224 F225 V226 L235 L240 Q243 E244 I249 T250 G251 L252 Y253 P254 I258 F262 S263 S264 N265 V266 A267 N268 Y269 Q270 K271 M274 Q275
K276 Y277 S278 T279 L280 P284 G287 K288 S289 H290 F291 G294 L295 A296 L297 Y298 R303 T307 H311 L317 C318 L322 P326 I327 D328 K329 G330 S331 R332 I333 I334 P335 A336 R337 A338 R339 V340 E341 C342 F343 D344 K345 F346 K347 V348 N349 S350 T351 L352 E353 Q354
Y355 C358 L363 A368 D369 I370 F373 D374 E375 I376 S377 M378 A379 Y382 D383 V386 V387 R390 L391 R392 A393 K394 H395 Y396 V397 Y398 I399 A403 Q404 L405 P406 A407 P408 L412 L417 F422 N423 R427 L428 M429 K430 T431 I432 G433 P434 D435 M436 F437
L438 C441 R442 R443 C444 P445 A446 E447 I448 V449 D450 T451 V452 S453 A454 L455 V456 Y457 D458 N459 K460 L461 K462 A463 H464 K465 D466 K467 S468 A469 Q470 C471 F472 K473 M474 F475 Y476 K477 T481 H482 D483 V484 S485 S486 N489 R490 P491 Q492 I493 G494 V495 V496 R497 E498 F499 L500 T501
R502 N503 P504 A505 W506 R507 K508 A509 V510 S513 P514 Y515 N516 S517 Q518 N519 A520 V521 K524 I525 L526 G527 L528 P529 T530 Q531 D534 S535 S536 Q537 G538 S539 E540 Y541 D542 Y543 V544 I545 F546 T547 Q548 T549 T550 E551 H554 N557 V558 N559 R560 F561 N562 V563 R567 A568
K569 V570 G571 I572 L573 M576 S577 D578 R579 D580 L581 Y582 D583 K584 L585 Q586 F587 L590 E591 I592 P593 R594 R595 N596 VAL ALA THR LEU GLN

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	384727	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI POLARA 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	2.006	Depositor
Minimum map value	-0.890	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.046	Depositor
Recommended contour level	0.25	Depositor
Map size (Å)	367.36, 367.36, 367.36	wwPDB
Map dimensions	448, 448, 448	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.82, 0.82, 0.82	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.74	19/7647 (0.2%)	1.06	84/10379 (0.8%)
2	B	0.47	2/1414 (0.1%)	1.10	19/1922 (1.0%)
2	D	0.68	4/1433 (0.3%)	1.31	28/1944 (1.4%)
3	C	0.40	0/556	0.72	3/749 (0.4%)
4	I	0.28	0/611	0.29	0/953
5	J	0.31	0/606	0.28	0/940
6	L	0.13	0/143	0.23	0/220
7	E	0.26	0/4722	0.96	31/6430 (0.5%)
7	F	0.23	0/4734	0.96	41/6443 (0.6%)
All	All	0.52	25/21866 (0.1%)	1.00	206/29980 (0.7%)

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	A	0	1
7	F	0	1
All	All	0	2

All (25) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	343	SER	CA-C	-7.61	1.42	1.52
1	A	348	PHE	C-O	-7.30	1.15	1.23
1	A	342	VAL	C-O	-7.09	1.16	1.23
1	A	346	TYR	C-O	-7.02	1.15	1.23
2	D	109	ASN	CA-C	-6.75	1.44	1.52
1	A	343	SER	C-O	-6.69	1.16	1.23
1	A	347	HIS	C-O	-6.63	1.16	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	927	PRO	CA-C	-6.49	1.46	1.53
1	A	273	TYR	CA-C	-6.23	1.45	1.52
2	D	182	TRP	C-N	-6.20	1.28	1.33
1	A	665	GLU	C-O	-6.13	1.17	1.23
1	A	853	THR	C-O	-6.11	1.16	1.24
1	A	95	ALA	C-O	-6.00	1.15	1.23
1	A	260	ASP	CA-C	-5.95	1.45	1.52
2	B	181	ALA	C-O	-5.94	1.16	1.23
2	D	115	VAL	C-O	-5.75	1.17	1.24
1	A	345	GLY	C-O	-5.62	1.16	1.23
1	A	663	LEU	C-O	-5.59	1.17	1.24
1	A	275	PHE	C-O	-5.53	1.16	1.23
1	A	50	LYS	CA-C	-5.45	1.46	1.52
2	D	109	ASN	N-CA	-5.38	1.40	1.46
1	A	609	VAL	CA-CB	-5.35	1.47	1.55
1	A	96	VAL	C-O	-5.33	1.17	1.24
1	A	273	TYR	C-O	-5.14	1.16	1.24
2	B	183	PRO	C-O	-5.07	1.17	1.24

All (206) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	E	458	ASP	N-CA-C	-21.53	78.65	110.52
7	F	36	SER	N-CA-C	20.45	140.69	114.31
2	B	142	CYS	N-CA-C	-19.53	74.01	107.80
1	A	344	THR	N-CA-C	-19.04	79.88	109.96
2	D	126	ALA	N-CA-CB	-18.21	85.25	110.38
1	A	904	SER	N-CA-C	18.10	133.20	112.93
7	F	189	LYS	N-CA-C	-17.94	88.08	112.12
1	A	664	SER	N-CA-C	-17.77	79.76	108.55
2	D	125	ALA	N-CA-C	17.53	139.14	113.02
7	E	347	LYS	N-CA-CB	16.82	137.99	111.24
1	A	398	VAL	N-CA-C	16.18	125.63	110.42
1	A	648	LEU	N-CA-C	15.49	128.16	111.28
7	E	458	ASP	CB-CA-C	15.45	136.87	109.83
1	A	608	ASP	N-CA-C	-15.42	83.03	108.32
2	D	125	ALA	CB-CA-C	-15.28	84.76	110.44
7	F	21	ARG	N-CA-C	-15.15	84.03	108.73
7	E	191	SER	N-CA-C	14.62	131.52	111.92
1	A	344	THR	CB-CA-C	14.36	139.85	112.43
1	A	346	TYR	CB-CA-C	-14.12	87.30	109.89
1	A	384	SER	N-CA-C	13.97	128.57	112.93

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	E	346	PHE	N-CA-C	13.87	140.35	110.80
1	A	904	SER	N-CA-CB	-13.80	91.51	110.56
7	F	36	SER	CB-CA-C	-12.94	87.28	109.02
1	A	345	GLY	N-CA-C	12.89	143.74	113.18
7	E	459	ASN	N-CA-CB	-12.80	88.85	110.49
7	E	443	ARG	N-CA-C	12.61	127.51	111.24
1	A	346	TYR	N-CA-C	12.51	128.73	109.96
1	A	235	ASP	N-CA-C	12.51	124.91	111.28
1	A	665	GLU	N-CA-CB	12.30	132.23	111.57
1	A	403	ASN	N-CA-C	12.11	127.61	113.19
7	F	189	LYS	CB-CA-C	11.99	131.16	111.26
2	B	182	TRP	N-CA-C	11.93	136.18	109.81
2	D	182	TRP	N-CA-C	11.78	135.85	109.81
2	B	174	MET	N-CA-C	11.62	125.30	111.82
1	A	397	SER	CB-CA-C	-11.56	90.92	110.22
7	E	392	ARG	N-CA-C	-11.40	91.55	109.23
2	D	179	ASN	N-CA-C	11.40	127.37	113.23
7	E	567	ARG	N-CA-C	11.23	124.87	112.97
2	B	141	THR	N-CA-C	11.19	127.64	113.55
7	E	434	PRO	N-CA-C	-10.85	94.01	111.15
1	A	643	THR	N-CA-C	-10.64	99.89	113.72
1	A	903	TYR	N-CA-C	-10.63	94.51	110.14
2	D	183	PRO	N-CA-C	-10.58	92.86	110.21
7	E	442	ARG	CB-CA-C	10.57	126.15	109.03
7	F	37	THR	N-CA-C	-10.51	93.30	108.96
7	E	443	ARG	N-CA-CB	-10.38	94.80	110.07
2	D	185	ILE	N-CA-CB	-10.37	100.01	112.35
7	F	345	LYS	N-CA-CB	-10.29	95.48	110.40
1	A	609	VAL	N-CA-C	-10.24	92.57	108.44
2	D	109	ASN	N-CA-C	-10.19	99.87	110.97
1	A	50	LYS	CB-CA-C	-10.17	93.79	110.77
2	B	143	ASP	N-CA-C	-10.17	91.77	109.06
2	B	42	LEU	N-CA-C	-10.16	101.20	114.31
1	A	51	THR	N-CA-CB	-10.14	96.84	111.54
7	F	350	SER	N-CA-CB	-10.10	95.75	110.40
1	A	797	ALA	N-CA-C	10.08	123.51	111.82
1	A	398	VAL	N-CA-CB	-10.03	99.32	110.65
7	F	345	LYS	N-CA-C	9.97	126.11	113.55
1	A	41	LYS	N-CA-C	9.92	126.32	112.04
1	A	51	THR	N-CA-C	9.73	124.98	111.56
2	B	142	CYS	N-CA-CB	9.70	126.03	110.90
7	E	393	ALA	N-CA-CB	9.65	126.03	110.97

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	F	350	SER	N-CA-C	9.64	125.70	113.55
1	A	81	GLN	CB-CA-C	-9.64	89.84	109.99
2	B	142	CYS	CB-CA-C	9.52	124.52	110.62
7	F	37	THR	N-CA-CB	9.45	126.49	111.56
7	F	480	ILE	CB-CA-C	-9.45	100.03	111.08
2	D	9	LEU	N-CA-C	-9.44	92.66	109.09
7	F	190	ASN	N-CA-CB	-9.36	94.59	110.50
2	D	184	LEU	CB-CA-C	-9.28	93.85	110.36
1	A	119	LEU	CB-CA-C	-9.19	94.01	110.36
7	F	499	PHE	N-CA-C	9.17	125.10	113.55
1	A	82	HIS	N-CA-C	-9.15	101.25	111.14
7	F	456	VAL	N-CA-C	-9.15	103.94	111.81
1	A	397	SER	N-CA-C	9.12	123.45	108.96
2	D	85	SER	N-CA-CB	-8.92	97.53	110.65
2	D	156	ILE	CB-CA-C	-8.91	99.39	111.33
7	E	392	ARG	CB-CA-C	8.87	129.26	109.56
1	A	850	THR	N-CA-C	-8.84	96.79	109.96
1	A	41	LYS	N-CA-CB	-8.84	96.50	110.19
1	A	384	SER	N-CA-CB	-8.74	98.50	110.56
1	A	292	GLN	N-CA-C	-8.71	95.47	108.79
7	F	551	GLU	N-CA-C	8.67	125.34	113.37
1	A	40	ASP	CB-CA-C	8.65	126.46	110.11
1	A	257	VAL	N-CA-C	8.45	126.92	109.34
1	A	107	ASP	N-CA-C	8.41	124.43	111.56
1	A	608	ASP	CB-CA-C	8.40	124.09	109.89
1	A	928	HIS	N-CA-C	-8.38	93.71	108.13
3	C	64	GLY	N-CA-C	8.27	124.58	113.99
1	A	402	THR	CB-CA-C	-8.24	95.03	111.17
7	F	437	PHE	N-CA-CB	8.10	123.69	110.32
1	A	292	GLN	CB-CA-C	8.10	125.68	110.62
1	A	383	ALA	CB-CA-C	8.03	125.29	110.11
7	F	289	SER	CB-CA-C	-8.03	94.44	110.42
7	F	330	CYS	CB-CA-C	-7.91	100.91	111.82
7	E	526	LEU	CB-CA-C	-7.89	96.86	109.80
1	A	853	THR	N-CA-C	-7.89	103.64	113.18
2	B	41	SER	CB-CA-C	-7.84	96.37	109.55
1	A	929	THR	N-CA-CB	7.84	124.83	111.50
7	E	434	PRO	CB-CA-C	7.80	121.47	111.56
7	F	349	ASN	CB-CA-C	7.79	123.47	109.29
7	F	550	THR	CB-CA-C	-7.78	96.04	111.60
1	A	120	THR	N-CA-CB	-7.72	98.50	110.46
3	C	63	GLN	N-CA-C	7.58	122.25	112.92

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	258	ASP	CA-C-N	7.56	135.98	121.54
1	A	258	ASP	C-N-CA	7.56	135.98	121.54
1	A	50	LYS	N-CA-C	7.56	120.38	108.67
2	D	8	SER	N-CA-C	-7.55	94.21	108.17
1	A	234	VAL	N-CA-C	7.51	119.35	112.29
1	A	383	ALA	N-CA-C	-7.50	102.03	112.45
7	F	499	PHE	N-CA-CB	-7.48	99.55	110.40
7	F	436	MET	CB-CA-C	7.48	125.31	110.42
7	E	435	ASP	N-CA-C	-7.45	105.07	112.97
1	A	663	LEU	N-CA-CB	-7.43	100.63	110.88
7	F	436	MET	N-CA-C	-7.41	95.02	110.80
2	D	158	GLN	CB-CA-C	7.38	120.67	110.34
7	F	79	ILE	N-CA-C	7.37	118.44	106.72
7	E	189	LYS	CA-C-N	7.33	134.89	121.70
7	E	189	LYS	C-N-CA	7.33	134.89	121.70
1	A	665	GLU	N-CA-C	-7.31	97.03	108.14
1	A	107	ASP	CB-CA-C	-7.26	97.46	111.03
2	D	157	GLN	N-CA-C	7.25	123.26	113.97
7	F	8	CYS	N-CA-CB	-7.18	101.50	110.98
7	E	474	MET	N-CA-C	-7.15	97.58	108.67
1	A	346	TYR	N-CA-CB	-7.14	99.21	109.85
2	D	181	ALA	N-CA-C	-7.12	98.90	109.15
1	A	288	LYS	N-CA-C	-7.09	104.26	113.12
1	A	293	THR	N-CA-C	-7.03	98.22	109.76
7	E	455	LEU	N-CA-C	7.03	122.41	113.55
7	F	344	ASP	CB-CA-C	6.99	120.03	109.13
2	D	110	ALA	N-CA-C	6.97	121.40	112.34
2	B	7	SER	N-CA-C	6.92	121.55	111.02
7	E	346	PHE	CB-CA-C	-6.92	96.65	110.42
1	A	16	ALA	N-CA-C	6.89	120.55	108.56
1	A	647	SER	N-CA-C	-6.81	100.38	110.46
7	F	579	ARG	CB-CA-C	6.81	119.89	109.34
1	A	647	SER	CB-CA-C	-6.68	98.89	110.45
2	B	6	PHE	CB-CA-C	6.67	122.77	110.10
7	E	393	ALA	N-CA-C	-6.64	99.47	108.24
7	F	557	ASN	N-CA-C	-6.58	99.67	109.15
1	A	753	PHE	N-CA-CB	-6.57	100.65	110.90
2	D	111	ARG	N-CA-C	-6.57	102.77	111.24
7	F	22	ARG	N-CA-CB	-6.55	98.71	110.37
7	F	290	HIS	N-CA-C	-6.55	102.61	112.04
1	A	609	VAL	N-CA-CB	6.50	125.32	112.00
1	A	140	ASP	N-CA-C	-6.49	104.05	112.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	903	TYR	CB-CA-C	-6.46	98.86	110.36
2	B	183	PRO	N-CA-C	-6.36	99.36	112.47
2	D	114	CYS	N-CA-C	-6.36	94.40	107.70
2	D	159	VAL	N-CA-C	-6.31	99.31	108.89
2	D	179	ASN	N-CA-CB	-6.30	100.62	110.44
7	E	347	LYS	N-CA-C	-6.25	99.01	108.52
2	D	156	ILE	N-CA-C	6.23	117.06	108.84
7	F	455	LEU	N-CA-C	6.21	119.25	111.24
1	A	81	GLN	N-CA-C	6.18	120.55	112.89
2	B	173	SER	CB-CA-C	-6.15	99.41	110.36
1	A	927	PRO	CB-CA-C	-6.08	102.79	112.27
2	B	141	THR	CB-CA-C	-6.04	99.97	109.34
7	F	79	ILE	CB-CA-C	-6.03	104.02	111.32
2	B	46	LYS	N-CA-C	6.00	120.67	113.23
2	D	157	GLN	N-CA-CB	-5.97	102.37	110.67
2	D	178	PRO	CB-CA-C	5.96	121.39	111.56
1	A	437	LEU	N-CA-C	5.94	117.88	108.67
7	F	7	LEU	CB-CA-C	5.94	119.36	109.56
1	A	108	GLY	N-CA-C	-5.93	99.12	113.18
1	A	96	VAL	N-CA-C	-5.88	97.11	109.34
2	D	83	VAL	CB-CA-C	-5.85	102.63	112.16
7	E	524	LYS	N-CA-C	5.84	118.78	111.24
1	A	120	THR	N-CA-C	5.84	119.10	110.46
7	F	580	ASP	N-CA-CB	-5.82	102.57	110.95
7	E	524	LYS	CB-CA-C	-5.81	101.28	110.86
7	E	567	ARG	N-CA-CB	-5.81	102.40	110.65
7	F	480	ILE	N-CA-C	5.80	117.12	108.54
1	A	662	VAL	CB-CA-C	5.78	116.43	110.70
1	A	759	SER	N-CA-C	-5.75	99.43	108.63
1	A	12	CYS	CA-CB-SG	-5.74	101.20	114.40
1	A	403	ASN	N-CA-CB	-5.71	100.38	110.42
2	B	7	SER	N-CA-CB	-5.69	99.68	111.00
7	F	558	VAL	N-CA-C	-5.69	103.82	111.44
7	E	334	ILE	N-CA-CB	5.67	119.16	111.21
7	F	330	CYS	N-CA-C	5.65	119.07	107.37
1	A	911	ASN	N-CA-C	-5.64	98.03	108.24
7	E	525	ILE	N-CA-C	-5.64	98.31	107.28
7	F	481	THR	N-CA-C	5.63	118.34	109.39
2	B	143	ASP	N-CA-CB	5.62	121.20	111.13
1	A	927	PRO	N-CA-C	5.56	128.09	112.92
7	F	189	LYS	CA-C-N	5.51	131.62	121.70
7	F	189	LYS	C-N-CA	5.51	131.62	121.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	182	TRP	CA-C-N	-5.41	113.08	119.84
2	B	182	TRP	C-N-CA	-5.41	113.08	119.84
1	A	382	ALA	CB-CA-C	-5.40	99.20	109.95
1	A	17	ALA	N-CA-CB	-5.39	102.49	110.90
1	A	255	SER	N-CA-C	-5.37	103.63	111.30
2	D	185	ILE	N-CA-C	5.36	116.15	106.61
1	A	259	THR	N-CA-CB	5.35	119.54	110.49
3	C	25	SER	N-CA-CB	-5.31	102.21	110.87
1	A	345	GLY	CA-C-N	5.25	128.30	120.95
1	A	345	GLY	C-N-CA	5.25	128.30	120.95
1	A	368	PHE	N-CA-C	5.23	117.39	111.11
1	A	777	ALA	CB-CA-C	5.21	120.35	109.68
7	E	455	LEU	CB-CA-C	-5.20	101.28	109.34
2	D	184	LEU	CA-C-N	-5.16	116.56	123.17
2	D	184	LEU	C-N-CA	-5.16	116.56	123.17
7	E	258	ILE	N-CA-C	5.12	115.47	107.99
1	A	854	LEU	N-CA-C	-5.08	106.49	113.30
1	A	29	ASP	N-CA-CB	-5.04	102.56	110.77

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	17	ALA	Peptide
7	F	189	LYS	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	A	7458	0	7193	150	0
2	B	1396	0	1365	50	0
2	D	1414	0	1416	51	0
3	C	553	0	585	11	0
4	I	545	0	272	20	0
5	J	545	0	281	10	0
6	L	128	0	65	4	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	E	4618	0	4564	225	0
7	F	4630	0	4585	324	0
8	A	2	0	0	0	0
8	E	3	0	0	0	0
8	F	3	0	0	0	0
All	All	21295	0	20326	822	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 20.

All (822) 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:A:75:HIS:CD2	1:A:76:THR:CG2	1.84	1.58
1:A:75:HIS:CD2	1:A:76:THR:HG23	1.53	1.35
7:F:434:PRO:HB2	7:F:436:MET:O	1.22	1.30
1:A:260:ASP:OD2	1:A:263:LYS:NZ	1.71	1.22
2:D:182:TRP:HE3	2:D:182:TRP:O	1.31	1.14
7:E:8:CYS:SG	7:E:98:VAL:O	2.06	1.13
1:A:75:HIS:NE2	1:A:76:THR:CG2	2.11	1.13
1:A:75:HIS:CD2	1:A:76:THR:HG22	1.66	1.12
7:F:5:CYS:SG	7:F:26:CYS:HB3	1.93	1.07
7:E:189:LYS:HB2	7:E:190:ASN:HB2	1.38	1.04
2:B:182:TRP:HE3	2:B:182:TRP:O	1.39	1.04
7:F:189:LYS:H	7:F:190:ASN:HB2	1.13	1.04
7:F:330:CYS:O	7:F:356:VAL:HA	1.59	1.00
1:A:851:ASP:OD2	1:A:854:LEU:CD1	2.09	0.99
1:A:900:LEU:O	1:A:903:TYR:O	1.82	0.97
7:F:5:CYS:SG	7:F:26:CYS:N	2.37	0.96
7:F:19:CYS:SG	7:F:39:HIS:HE1	1.90	0.94
1:A:75:HIS:NE2	1:A:76:THR:HG21	1.81	0.94
1:A:851:ASP:OD2	1:A:854:LEU:HD11	1.66	0.94
2:D:182:TRP:O	2:D:182:TRP:CE3	2.20	0.93
2:D:180:LEU:HD22	2:D:180:LEU:H	1.35	0.90
1:A:540:THR:OG1	1:A:665:GLU:OE1	1.90	0.89
2:B:182:TRP:O	2:B:182:TRP:CE3	2.25	0.89
7:F:434:PRO:CB	7:F:436:MET:O	2.16	0.89
7:F:498:GLU:O	7:F:502:ARG:NE	2.05	0.87
7:F:5:CYS:SG	7:F:26:CYS:CB	2.62	0.87
7:F:311:HIS:HE1	7:F:334:ILE:HD11	1.39	0.86
7:F:5:CYS:SG	7:F:26:CYS:CA	2.64	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:474:MET:HA	7:F:575:ILE:HA	1.59	0.83
7:F:426:CYS:HA	7:F:429:MET:HG2	1.62	0.82
7:F:189:LYS:N	7:F:190:ASN:HB2	1.93	0.81
7:F:401:ASP:HB3	7:F:404:GLN:HB2	1.59	0.81
7:F:177:ASN:HB3	7:F:180:TYR:HB2	1.61	0.81
7:F:239:THR:HG23	7:F:240:LEU:HD23	1.62	0.80
7:E:459:ASN:ND2	7:E:459:ASN:H	1.79	0.80
1:A:909:ASN:O	1:A:909:ASN:ND2	2.14	0.80
7:E:7:LEU:HB3	7:E:100:SER:OG	1.82	0.79
7:E:96:THR:O	7:E:96:THR:HG23	1.79	0.79
7:F:330:CYS:HB2	7:F:353:GLU:HG3	1.64	0.79
1:A:75:HIS:HD2	1:A:76:THR:HG23	0.94	0.79
2:D:180:LEU:H	2:D:180:LEU:CD2	1.91	0.78
6:L:0:U:H5'	7:E:485:SER:HB3	1.64	0.78
7:F:317:LEU:HG	7:F:357:PHE:HD2	1.48	0.77
1:A:75:HIS:O	1:A:76:THR:O	2.01	0.77
2:D:125:ALA:O	2:D:189:LEU:HD23	1.84	0.77
7:F:436:MET:HE3	7:F:437:PHE:H	1.47	0.76
2:D:184:LEU:C	2:D:185:ILE:HD12	2.10	0.76
1:A:17:ALA:HB1	1:A:19:LEU:HG	1.68	0.75
7:F:330:CYS:SG	7:F:347:LYS:NZ	2.60	0.75
2:D:174:MET:SD	2:D:174:MET:N	2.60	0.75
7:E:16:CYS:SG	7:E:33:HIS:CD2	2.79	0.74
7:E:191:SER:O	7:E:191:SER:OG	1.98	0.74
7:F:284:PRO:HG2	7:F:566:THR:HG21	1.68	0.74
7:E:521:VAL:HA	7:E:524:LYS:HB2	1.67	0.74
7:E:445:PRO:HG3	7:E:570:VAL:HA	1.69	0.74
1:A:105:ARG:HA	1:A:109:ASP:O	1.88	0.74
7:F:187:VAL:CG2	7:F:189:LYS:O	2.36	0.74
7:E:544:VAL:HB	7:E:572:ILE:HG22	1.70	0.74
2:B:42:LEU:O	2:B:46:LYS:HG2	1.89	0.73
7:F:448:ILE:HD11	7:F:470:GLN:HE22	1.54	0.73
7:F:293:ILE:HG12	7:F:324:TYR:HB2	1.72	0.72
7:F:492:GLN:HG2	7:F:575:ILE:HD12	1.70	0.72
7:F:472:PHE:HB2	7:F:474:MET:HG3	1.72	0.72
7:E:477:LYS:NZ	7:E:549:THR:O	2.21	0.72
7:F:37:THR:O	7:F:40:LYS:NZ	2.21	0.72
7:F:260:ASP:O	7:F:263:SER:HB3	1.89	0.72
6:L:2:A:C6	7:E:408:PRO:HD2	2.24	0.72
1:A:235:ASP:O	1:A:239:SER:OG	2.08	0.71
1:A:851:ASP:OD2	1:A:854:LEU:HD12	1.89	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:24:THR:OG1	1:A:25:GLY:N	2.22	0.71
7:F:445:PRO:HG2	7:F:448:ILE:HG13	1.71	0.71
4:I:12:C:H2'	4:I:13:G:H8	1.55	0.71
7:E:363:LEU:O	7:E:390:ARG:NH1	2.24	0.71
7:E:578:ASP:OD1	7:E:582:TYR:N	2.23	0.70
7:F:181:VAL:HG21	7:F:339:ARG:HG2	1.72	0.70
7:E:451:THR:HG22	7:E:586:GLN:HB2	1.71	0.70
7:F:178:ARG:HH21	7:F:312:ALA:HB2	1.56	0.70
7:F:483:ASP:H	7:F:488:ILE:HD13	1.56	0.69
1:A:160:LYS:O	1:A:161:ASP:HB2	1.92	0.69
2:D:173:SER:OG	2:D:175:ASP:OD1	2.11	0.69
7:F:8:CYS:SG	7:F:99:GLY:N	2.65	0.69
7:E:503:ASN:HB3	7:E:506:TRP:HB2	1.73	0.69
7:F:448:ILE:HG23	7:F:565:ILE:HG22	1.75	0.69
7:E:582:TYR:HA	7:E:585:LEU:HB2	1.75	0.68
7:F:360:VAL:HA	7:F:363:LEU:HD12	1.75	0.68
7:E:157:VAL:HA	7:E:163:LEU:HG	1.76	0.68
7:F:316:ALA:HA	7:F:319:GLU:HB3	1.76	0.68
7:F:477:LYS:HG3	7:F:492:GLN:HB2	1.74	0.67
2:D:100:ASN:HB3	2:D:103:LEU:HD12	1.76	0.67
7:E:519:ASN:ND2	7:E:530:THR:OG1	2.28	0.67
7:F:48:TYR:OH	7:F:90:PHE:O	2.12	0.66
7:F:331:SER:H	7:F:332:ARG:CZ	2.08	0.66
1:A:910:ASN:OD1	1:A:910:ASN:N	2.28	0.66
7:F:289:SER:HB2	7:F:320:LYS:HE3	1.76	0.66
1:A:75:HIS:CG	1:A:76:THR:HG22	2.28	0.66
7:F:370:ILE:HA	7:F:395:HIS:O	1.96	0.66
7:F:381:ASN:ND2	7:F:423:ASN:OD1	2.28	0.66
7:F:329:LYS:HD3	7:F:332:ARG:HH22	1.61	0.66
1:A:60:ASP:OD1	1:A:61:GLU:N	2.28	0.66
7:F:243:GLN:HE22	7:F:277:TYR:H	1.44	0.66
2:D:125:ALA:O	2:D:189:LEU:CD2	2.44	0.66
2:B:25:ALA:HB1	2:B:34:VAL:HG13	1.76	0.65
7:F:146:LYS:HD2	7:F:229:SER:HB2	1.77	0.65
7:E:382:TYR:O	7:E:386:VAL:HG23	1.96	0.65
7:E:343:PHE:HD2	7:E:345:LYS:H	1.44	0.65
7:F:187:VAL:HG22	7:F:189:LYS:O	1.96	0.65
7:E:37:THR:HG22	7:E:39:HIS:H	1.61	0.65
7:E:470:GLN:HE21	7:E:572:ILE:HD12	1.62	0.65
2:D:185:ILE:HD12	2:D:185:ILE:N	2.12	0.65
5:J:118:U:H2'	5:J:119:A:C8	2.31	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:510:VAL:HG11	7:F:531:GLN:HB2	1.76	0.65
1:A:569:ARG:NH1	5:J:103:U:OP2	2.29	0.65
7:F:546:PHE:HB2	7:F:572:ILE:HD11	1.78	0.65
2:D:136:ASN:N	2:D:136:ASN:OD1	2.30	0.65
7:F:591:GLU:HB3	7:F:593:PRO:HD2	1.79	0.65
7:E:59:ASP:OD1	7:E:61:THR:OG1	2.15	0.64
7:E:475:PHE:HE2	7:E:492:GLN:HA	1.61	0.64
2:B:50:ASP:OD2	2:B:51:ARG:NH2	2.21	0.64
2:D:171:GLU:O	2:D:176:ASN:ND2	2.30	0.64
7:F:296:ALA:O	7:F:355:TYR:OH	2.08	0.64
2:D:22:TYR:HD2	2:D:38:LEU:HB3	1.63	0.64
7:F:557:ASN:O	7:F:561:PHE:HB2	1.98	0.64
2:D:123:THR:HG22	2:D:125:ALA:H	1.63	0.64
1:A:105:ARG:HH12	1:A:108:GLY:HA2	1.63	0.63
7:F:199:THR:O	7:F:211:TYR:HA	1.98	0.63
7:F:421:TYR:HA	7:F:427:ARG:HH21	1.63	0.63
7:E:433:GLY:O	7:E:434:PRO:C	2.41	0.63
7:E:456:VAL:HG21	7:E:562:ASN:HD22	1.64	0.63
7:F:470:GLN:HE21	7:F:572:ILE:HG22	1.62	0.63
7:E:330:CYS:SG	7:E:331:SER:N	2.71	0.63
7:F:467:LYS:HB2	7:F:468:SER:HB3	1.81	0.63
7:E:499:PHE:HE2	7:E:502:ARG:HH11	1.45	0.62
7:F:150:GLY:HA3	7:F:171:LYS:HE3	1.80	0.62
2:D:173:SER:O	2:D:177:SER:OG	2.13	0.62
7:E:515:TYR:HE2	7:E:549:THR:HG21	1.64	0.62
2:B:9:LEU:HD22	2:B:52:ASP:O	1.99	0.62
7:F:476:TYR:HB2	7:F:579:ARG:HH12	1.64	0.62
7:E:7:LEU:HD23	7:E:102:ASN:HB2	1.81	0.62
7:E:459:ASN:H	7:E:459:ASN:HD22	1.46	0.62
1:A:11:VAL:C	1:A:13:GLY:H	2.06	0.62
1:A:605:VAL:C	1:A:607:SER:H	2.07	0.62
7:F:513:SER:OG	7:F:519:ASN:ND2	2.33	0.62
2:D:104:ASN:O	2:D:108:ASN:ND2	2.27	0.62
7:F:14:LEU:HD21	7:F:91:GLY:HA3	1.82	0.62
7:F:440:THR:OG1	7:F:462:LYS:O	2.15	0.62
7:F:521:VAL:HA	7:F:524:LYS:HG2	1.80	0.62
7:F:390:ARG:HA	7:F:390:ARG:NH1	2.14	0.62
1:A:503:GLY:O	1:A:507:ASN:ND2	2.33	0.62
7:F:235:LEU:HD22	7:F:385:SER:HB2	1.82	0.62
1:A:759:SER:O	4:I:35:G:O3'	2.16	0.61
1:A:540:THR:CB	1:A:665:GLU:OE1	2.48	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:129:ARG:HA	7:F:129:ARG:NE	2.14	0.61
7:F:156:GLU:HB3	7:F:164:HIS:HB3	1.81	0.61
7:E:490:ARG:H	7:E:491:PRO:HD2	1.65	0.61
7:F:187:VAL:HG23	7:F:190:ASN:H	1.65	0.61
1:A:75:HIS:NE2	1:A:76:THR:HG22	1.95	0.61
7:E:456:VAL:HG21	7:E:562:ASN:ND2	2.16	0.61
7:E:542:ASP:HA	7:E:569:LYS:HB2	1.81	0.61
7:E:441:CYS:HB3	7:E:463:ALA:HB2	1.82	0.60
4:I:25:C:H2'	4:I:26:U:C6	2.35	0.60
7:F:548:GLN:HE22	7:F:574:CYS:HB3	1.66	0.60
1:A:11:VAL:C	1:A:13:GLY:N	2.58	0.60
7:F:268:ASN:O	7:F:271:LYS:HB2	2.00	0.60
7:F:21:ARG:HH11	7:F:136:GLU:HB2	1.66	0.60
7:F:453:SER:HB3	7:F:459:ASN:HA	1.84	0.60
7:F:339:ARG:H	7:F:339:ARG:HD2	1.65	0.60
7:F:503:ASN:HB2	7:F:506:TRP:HB2	1.82	0.60
7:E:554:HIS:O	7:E:560:ARG:NH1	2.32	0.60
7:E:189:LYS:N	7:E:190:ASN:O	2.34	0.60
7:F:286:THR:HG22	7:F:441:CYS:HA	1.83	0.59
7:E:243:GLN:OE1	7:E:275:GLN:NE2	2.32	0.59
7:E:333:ILE:HG22	7:E:334:ILE:HG13	1.84	0.59
7:F:286:THR:OG1	7:F:287:GLY:N	2.35	0.59
1:A:608:ASP:OD1	1:A:608:ASP:O	2.21	0.59
7:E:481:THR:O	7:E:481:THR:OG1	2.21	0.59
1:A:663:LEU:HG	1:A:663:LEU:O	2.01	0.59
2:D:90:MET:O	2:D:94:MET:HG3	2.02	0.59
7:F:26:CYS:N	7:F:29:CYS:SG	2.75	0.59
7:F:444:CYS:SG	7:F:449:VAL:HG23	2.43	0.59
4:I:23:U:H2'	4:I:24:G:H8	1.68	0.59
7:F:287:GLY:HA3	7:F:438:LEU:HD21	1.85	0.59
7:F:303:ARG:HA	7:F:354:GLN:HB2	1.84	0.59
7:F:334:ILE:HG23	7:F:337:ARG:H	1.68	0.59
7:F:288:LYS:C	7:F:290:HIS:H	2.10	0.59
7:E:280:LEU:HB3	7:E:399:ILE:HG22	1.85	0.59
1:A:653:TYR:O	1:A:657:ASN:ND2	2.33	0.58
2:B:59:LEU:HD23	7:F:79:ILE:HD11	1.85	0.58
5:J:118:U:H2'	5:J:119:A:H8	1.68	0.58
7:F:265:ASN:HD22	7:F:291:PHE:HA	1.68	0.58
7:E:373:PHE:HB3	7:E:398:TYR:HD1	1.68	0.58
7:E:379:ALA:O	7:E:423:ASN:ND2	2.27	0.58
1:A:855:MET:HG2	1:A:858:ARG:HD3	1.83	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:311:HIS:HA	7:F:314:VAL:HG13	1.85	0.58
7:F:404:GLN:HG2	7:F:405:LEU:HG	1.85	0.58
7:E:339:ARG:H	7:E:339:ARG:HD2	1.69	0.58
7:E:536:SER:OG	7:E:537:GLN:N	2.33	0.58
7:E:576:MET:SD	7:E:577:SER:N	2.77	0.58
3:C:68:ILE:HD12	3:C:68:ILE:H	1.69	0.58
7:F:69:SER:OG	7:F:70:TYR:N	2.34	0.58
7:F:390:ARG:HA	7:F:390:ARG:HH11	1.69	0.57
2:D:51:ARG:HH22	4:I:18:U:H4'	1.69	0.57
5:J:113:C:H2'	5:J:114:A:C8	2.38	0.57
7:E:475:PHE:CE2	7:E:492:GLN:HA	2.38	0.57
7:F:447:GLU:O	7:F:451:THR:OG1	2.20	0.57
1:A:51:THR:O	1:A:51:THR:OG1	2.22	0.57
1:A:884:TYR:O	1:A:888:ILE:HG13	2.04	0.57
7:F:484:VAL:HG22	7:F:485:SER:H	1.68	0.57
7:F:548:GLN:OE1	7:F:548:GLN:N	2.37	0.57
2:B:98:LEU:O	2:B:100:ASN:N	2.32	0.57
7:F:245:HIS:HA	7:F:275:GLN:HA	1.87	0.57
7:F:334:ILE:HD12	7:F:337:ARG:HB2	1.85	0.57
1:A:661:GLN:O	1:A:665:GLU:HG2	2.04	0.57
1:A:874:ASN:OD1	1:A:875:GLN:N	2.34	0.57
1:A:164:ASP:OD1	1:A:165:PHE:N	2.37	0.57
1:A:257:VAL:HG12	1:A:263:LYS:HD2	1.87	0.57
7:F:311:HIS:CE1	7:F:334:ILE:HD11	2.29	0.57
7:E:162:GLU:HB3	7:E:210:VAL:HG12	1.85	0.57
1:A:848:VAL:O	1:A:850:THR:N	2.34	0.57
2:B:25:ALA:HB2	2:B:38:LEU:HD12	1.86	0.57
7:F:154:VAL:H	7:F:155:ARG:HH21	1.51	0.57
7:F:511:PHE:CZ	7:F:547:THR:HG21	2.40	0.57
7:F:512:ILE:HG12	7:F:546:PHE:HA	1.85	0.57
7:E:477:LYS:HB3	7:E:489:ASN:ND2	2.20	0.57
7:F:21:ARG:O	7:F:23:PRO:HD3	2.04	0.56
7:F:44:SER:OG	7:F:45:VAL:N	2.28	0.56
7:E:472:PHE:CG	7:E:585:LEU:HD23	2.40	0.56
7:F:327:ILE:HA	7:F:328:ASP:C	2.30	0.56
7:F:474:MET:SD	7:F:576:MET:HB3	2.45	0.56
7:F:383:ASP:HA	7:F:386:VAL:HG22	1.87	0.56
7:E:447:GLU:O	7:E:451:THR:HG23	2.06	0.56
1:A:273:TYR:CD1	1:A:273:TYR:C	2.84	0.56
2:B:125:ALA:O	2:B:190:ARG:NH2	2.36	0.56
7:F:128:GLU:O	7:F:131:LYS:HB2	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:402:THR:OG1	1:A:403:ASN:N	2.39	0.56
7:E:580:ASP:N	7:E:580:ASP:OD1	2.38	0.56
1:A:928:HIS:O	1:A:929:THR:OG1	2.12	0.56
7:F:255:THR:OG1	7:F:298:TYR:O	2.20	0.56
7:F:124:ASN:HB3	7:F:427:ARG:HH22	1.69	0.56
4:I:21:C:H2'	4:I:22:A:C8	2.41	0.56
7:F:133:PHE:O	7:F:137:THR:OG1	2.17	0.56
7:F:304:ILE:HG23	7:F:370:ILE:HG23	1.88	0.56
7:F:562:ASN:OD1	7:F:566:THR:OG1	2.24	0.55
1:A:358:ASP:OD1	1:A:533:ARG:NH1	2.39	0.55
7:F:204:ASP:O	7:F:523:SER:HB3	2.06	0.55
7:F:476:TYR:CD1	7:F:577:SER:HB2	2.41	0.55
1:A:260:ASP:CB	1:A:263:LYS:HG3	2.37	0.55
7:F:288:LYS:O	7:F:290:HIS:N	2.39	0.55
7:E:144:THR:HA	7:E:147:LEU:HD13	1.87	0.55
7:F:563:VAL:O	7:F:567:ARG:NH2	2.40	0.55
1:A:153:ASP:OD1	1:A:153:ASP:N	2.39	0.55
1:A:661:GLN:C	1:A:662:VAL:CG1	2.78	0.55
7:F:309:CYS:N	7:F:375:GLU:OE1	2.38	0.55
7:F:358:CYS:SG	7:F:359:THR:N	2.79	0.55
1:A:74:ARG:HD3	1:A:111:VAL:HG11	1.89	0.55
7:E:471:CYS:HB3	7:E:590:LEU:HG	1.89	0.55
7:F:7:LEU:HD12	7:F:29:CYS:HB2	1.89	0.54
7:E:280:LEU:HB2	7:E:436:MET:SD	2.48	0.54
1:A:75:HIS:C	1:A:76:THR:O	2.50	0.54
2:B:101:ASP:OD1	2:B:101:ASP:N	2.33	0.54
3:C:21:ARG:HG2	3:C:21:ARG:HH11	1.72	0.54
7:F:499:PHE:HA	7:F:502:ARG:HB2	1.88	0.54
7:E:445:PRO:O	7:E:449:VAL:HG13	2.07	0.54
1:A:77:PHE:CD1	1:A:77:PHE:C	2.84	0.54
2:D:13:ALA:O	2:D:17:THR:HG23	2.06	0.54
7:F:367:THR:OG1	7:F:392:ARG:O	2.20	0.54
2:D:180:LEU:HD22	2:D:180:LEU:N	2.15	0.54
7:F:214:THR:HB	7:F:339:ARG:HA	1.89	0.54
7:F:377:SER:OG	7:F:405:LEU:O	2.20	0.54
7:E:133:PHE:HA	7:E:136:GLU:OE1	2.08	0.54
2:B:41:SER:O	2:B:41:SER:OG	2.26	0.54
2:B:95:LEU:HD12	2:B:95:LEU:O	2.08	0.54
7:F:200:PHE:HA	7:F:210:VAL:O	2.07	0.54
7:E:585:LEU:HG	7:E:587:PHE:CD2	2.42	0.54
7:F:114:TRP:N	7:F:119:ASP:OD2	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:265:ASN:HB3	7:F:269:TYR:CZ	2.43	0.54
2:D:51:ARG:NH2	4:I:18:U:O2'	2.40	0.54
7:F:138:LEU:O	7:F:142:GLU:HG2	2.07	0.54
7:E:44:SER:OG	7:E:45:VAL:N	2.37	0.54
1:A:844:VAL:HG11	1:A:849:LYS:CB	2.38	0.54
7:F:434:PRO:C	7:F:436:MET:H	2.16	0.54
7:F:496:VAL:HG21	7:F:511:PHE:HE2	1.72	0.54
1:A:661:GLN:C	1:A:662:VAL:HG13	2.32	0.54
7:F:347:LYS:HD3	7:F:347:LYS:H	1.73	0.54
2:D:135:TYR:O	2:D:138:TYR:N	2.41	0.53
7:E:446:ALA:O	7:E:449:VAL:HG22	2.08	0.53
1:A:109:ASP:N	1:A:109:ASP:OD1	2.41	0.53
7:F:182:PHE:HB3	7:F:225:PHE:HB3	1.90	0.53
7:F:256:LEU:HD23	7:F:256:LEU:H	1.73	0.53
7:E:477:LYS:HZ1	7:E:577:SER:H	1.54	0.53
7:E:590:LEU:HD13	7:E:594:ARG:HG2	1.91	0.53
7:F:59:ASP:OD1	7:F:60:VAL:N	2.41	0.53
7:F:515:TYR:HB2	7:F:518:GLN:HG2	1.90	0.53
7:F:559:ASN:O	7:F:563:VAL:HG23	2.08	0.53
7:F:194:GLN:NE2	7:F:197:GLU:OE2	2.42	0.53
7:F:380:THR:H	7:F:383:ASP:HB2	1.74	0.53
7:E:26:CYS:HB2	7:E:97:CYS:SG	2.48	0.53
7:F:546:PHE:O	7:F:574:CYS:HA	2.08	0.53
7:E:294:GLY:O	7:E:297:LEU:HD23	2.08	0.53
7:E:545:ILE:HA	7:E:573:LEU:HD11	1.90	0.53
2:B:133:PRO:O	2:B:182:TRP:O	2.27	0.53
2:D:112:ASP:OD1	2:D:112:ASP:N	2.42	0.53
7:F:289:SER:O	7:F:293:ILE:HG22	2.09	0.53
7:E:477:LYS:HZ3	7:E:548:GLN:HB2	1.75	0.53
6:L:1:A:O2'	7:E:534:ASP:OD2	2.19	0.52
7:E:287:GLY:H	7:E:438:LEU:HD21	1.74	0.52
1:A:609:VAL:HG12	1:A:610:GLU:N	2.23	0.52
1:A:851:ASP:OD1	2:D:75:ARG:NH2	2.36	0.52
7:F:106:PHE:HA	7:F:109:ILE:HD12	1.90	0.52
7:F:405:LEU:HD21	7:F:563:VAL:HG11	1.91	0.52
7:F:495:VAL:HG11	7:F:575:ILE:HG21	1.92	0.52
7:E:159:SER:OG	7:E:160:ASP:N	2.40	0.52
7:F:140:ALA:HA	7:F:232:VAL:HG21	1.90	0.52
7:F:304:ILE:HB	7:F:355:TYR:HD1	1.74	0.52
7:F:332:ARG:HD2	7:F:347:LYS:H	1.74	0.52
7:E:268:ASN:HD22	7:E:291:PHE:HZ	1.57	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:592:SER:HB2	5:J:105:C:H4'	1.91	0.52
7:F:547:THR:HG22	7:F:575:ILE:HD11	1.92	0.52
7:E:243:GLN:HB2	7:E:277:TYR:HE1	1.74	0.52
2:B:46:LYS:O	2:B:50:ASP:N	2.43	0.52
7:F:122:LEU:HA	7:F:125:THR:OG1	2.09	0.52
7:E:444:CYS:HB2	7:E:448:ILE:HD11	1.92	0.52
7:F:311:HIS:O	7:F:314:VAL:HG22	2.09	0.52
7:F:404:GLN:HA	7:F:563:VAL:HG21	1.91	0.52
7:F:563:VAL:HG12	7:F:567:ARG:HH22	1.73	0.52
7:E:444:CYS:SG	7:E:449:VAL:HG12	2.50	0.52
7:F:417:LEU:HD23	7:F:417:LEU:H	1.75	0.52
7:E:36:SER:O	7:E:36:SER:OG	2.24	0.52
7:E:161:ARG:HA	7:E:211:TYR:CZ	2.44	0.52
7:E:394:LYS:HG3	7:E:395:HIS:CE1	2.45	0.52
1:A:393:THR:HG21	1:A:450:ILE:HD11	1.92	0.51
4:I:23:U:H2'	4:I:24:G:C8	2.45	0.51
7:F:515:TYR:O	7:F:519:ASN:ND2	2.43	0.51
1:A:342:VAL:O	1:A:342:VAL:HG23	2.10	0.51
7:E:456:VAL:HG23	7:E:457:TYR:H	1.74	0.51
1:A:543:ASN:OD1	5:J:100:A:O2'	2.27	0.51
7:F:592:ILE:N	7:F:593:PRO:HD2	2.25	0.51
7:E:56:ASP:OD1	7:E:56:ASP:N	2.43	0.51
7:E:223:ASP:OD1	7:E:223:ASP:N	2.43	0.51
7:F:489:ASN:O	7:F:493:ILE:N	2.35	0.51
7:F:586:GLN:CD	7:F:586:GLN:H	2.17	0.51
7:E:252:LEU:HD11	7:E:370:ILE:HD11	1.92	0.51
1:A:361:LEU:HD22	1:A:361:LEU:H	1.76	0.51
2:B:66:ALA:O	2:B:69:GLN:HG3	2.11	0.51
7:E:185:TYR:HB2	7:E:224:TYR:CE1	2.46	0.51
7:E:347:LYS:HE2	7:E:350:SER:OG	2.11	0.51
7:E:472:PHE:HE1	7:E:587:PHE:HB2	1.76	0.51
7:E:580:ASP:O	7:E:584:LYS:HD3	2.11	0.51
7:E:331:SER:O	7:E:331:SER:OG	2.26	0.51
7:F:418:GLU:HG2	7:F:419:PRO:HD2	1.93	0.50
7:E:515:TYR:CE2	7:E:549:THR:HG21	2.44	0.50
7:E:472:PHE:CE1	7:E:587:PHE:HB2	2.46	0.50
7:E:502:ARG:O	7:E:504:PRO:HD3	2.12	0.50
7:F:500:LEU:HD21	7:F:528:LEU:HD22	1.93	0.50
7:F:256:LEU:O	7:F:257:ASN:OD1	2.29	0.50
7:F:288:LYS:C	7:F:290:HIS:N	2.68	0.50
7:F:303:ARG:NH2	7:F:353:GLU:O	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:407:ALA:H	7:F:409:ARG:NH2	2.09	0.50
7:F:490:ARG:HA	7:F:493:ILE:HB	1.93	0.50
2:B:102:ALA:O	2:B:106:ILE:HG23	2.12	0.50
7:F:38:SER:O	7:F:38:SER:OG	2.30	0.50
7:F:138:LEU:HD12	7:F:139:LYS:N	2.27	0.50
7:E:383:ASP:O	7:E:387:VAL:HG12	2.11	0.50
1:A:388:LEU:HD23	1:A:397:SER:HB2	1.93	0.50
7:F:124:ASN:O	7:F:131:LYS:NZ	2.45	0.50
7:F:495:VAL:HA	7:F:595:ARG:HH22	1.77	0.50
1:A:14:VAL:HG23	1:A:14:VAL:O	2.12	0.50
1:A:75:HIS:CD2	1:A:75:HIS:C	2.89	0.50
5:J:117:C:H2'	5:J:118:U:C6	2.47	0.50
2:B:161:ASP:OD1	2:B:161:ASP:N	2.44	0.49
7:F:304:ILE:HB	7:F:355:TYR:CD1	2.47	0.49
2:D:56:GLN:O	2:D:60:GLU:HB2	2.12	0.49
7:F:127:THR:O	7:F:131:LYS:N	2.39	0.49
7:F:390:ARG:C	7:F:392:ARG:HH22	2.20	0.49
7:E:303:ARG:NE	7:E:354:GLN:HA	2.26	0.49
7:F:189:LYS:H	7:F:190:ASN:CB	2.03	0.49
1:A:329:LEU:HB2	1:A:345:GLY:O	2.12	0.49
7:F:284:PRO:HD3	7:F:401:ASP:OD2	2.12	0.49
7:E:220:ASN:N	7:E:220:ASN:OD1	2.45	0.49
2:B:70:MET:HE3	7:F:92:LEU:HG	1.94	0.49
3:C:63:GLN:OE1	3:C:63:GLN:N	2.45	0.49
4:I:17:G:O6	5:J:119:A:N6	2.44	0.49
4:I:24:G:O2'	4:I:25:C:OP1	2.29	0.49
7:F:334:ILE:HG21	7:F:338:ALA:HB2	1.93	0.49
7:E:577:SER:O	7:E:579:ARG:NH2	2.40	0.49
7:E:168:GLU:HB3	7:E:171:LYS:HE2	1.93	0.49
1:A:609:VAL:HG12	1:A:610:GLU:H	1.77	0.49
7:F:39:HIS:C	7:F:40:LYS:HZ2	2.20	0.49
7:F:261:GLU:CD	7:F:261:GLU:H	2.20	0.49
7:E:490:ARG:N	7:E:491:PRO:HD2	2.27	0.49
4:I:21:C:H2'	4:I:22:A:H8	1.77	0.49
4:I:24:G:H2'	4:I:25:C:C6	2.47	0.49
7:E:262:PHE:HE1	7:E:290:HIS:CD2	2.31	0.49
7:F:446:ALA:HB3	7:F:466:ASP:HA	1.95	0.49
1:A:62:ASP:OD1	1:A:62:ASP:N	2.45	0.48
2:B:40:LYS:O	2:B:44:VAL:HG13	2.13	0.48
2:D:72:LYS:O	2:D:76:SER:HB3	2.13	0.48
7:F:187:VAL:HG23	7:F:190:ASN:N	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:477:LYS:NZ	7:E:548:GLN:HB2	2.28	0.48
4:I:12:C:H2'	4:I:13:G:C8	2.43	0.48
7:F:472:PHE:HB3	7:F:574:CYS:HB2	1.95	0.48
7:E:376:ILE:HG21	7:E:398:TYR:HB3	1.95	0.48
7:E:510:VAL:HG21	7:E:541:TYR:CD2	2.48	0.48
7:F:249:ILE:HB	7:F:252:LEU:HD13	1.95	0.48
7:E:140:ALA:O	7:E:144:THR:HG22	2.13	0.48
7:E:271:LYS:NZ	7:E:435:ASP:O	2.46	0.48
7:E:335:PRO:HG2	7:E:337:ARG:HH11	1.78	0.48
7:F:122:LEU:HA	7:F:125:THR:HG1	1.77	0.48
7:E:377:SER:O	7:E:406:PRO:HA	2.13	0.48
7:E:470:GLN:OE1	7:E:471:CYS:N	2.46	0.48
1:A:454:ASP:OD2	1:A:457:ARG:NH1	2.46	0.48
7:E:467:LYS:HE3	7:E:468:SER:HA	1.94	0.48
7:E:539:SER:H	7:E:567:ARG:HH11	1.62	0.48
7:F:79:ILE:HG23	7:F:79:ILE:O	2.14	0.48
7:F:354:GLN:HG3	7:F:355:TYR:CE1	2.48	0.48
7:E:161:ARG:O	7:E:211:TYR:CD1	2.66	0.48
7:E:490:ARG:O	7:E:493:ILE:HG22	2.14	0.48
1:A:19:LEU:HD23	1:A:19:LEU:HA	1.57	0.48
1:A:274:ASP:O	1:A:274:ASP:OD1	2.32	0.48
1:A:275:PHE:O	1:A:279:ARG:HG3	2.14	0.48
1:A:380:MET:HE2	1:A:380:MET:HB3	1.72	0.48
2:B:169:LEU:HD12	2:B:169:LEU:H	1.79	0.48
3:C:45:THR:O	3:C:45:THR:OG1	2.24	0.48
7:F:129:ARG:HG2	7:F:129:ARG:HH11	1.79	0.48
7:F:427:ARG:O	7:F:431:THR:HG22	2.14	0.48
7:F:501:THR:HB	7:F:502:ARG:NH1	2.28	0.48
7:E:177:ASN:HB2	7:E:180:TYR:CD1	2.48	0.48
1:A:77:PHE:C	1:A:77:PHE:HD1	2.22	0.48
7:F:266:VAL:HA	7:F:269:TYR:CD2	2.49	0.48
7:E:155:ARG:NH2	7:E:165:LEU:O	2.45	0.48
7:E:177:ASN:OD1	7:E:516:ASN:ND2	2.47	0.48
7:E:189:LYS:CB	7:E:190:ASN:HB2	2.27	0.48
2:D:101:ASP:OD1	2:D:101:ASP:N	2.45	0.47
2:D:175:ASP:OD1	2:D:175:ASP:N	2.47	0.47
7:F:404:GLN:HA	7:F:563:VAL:CG2	2.44	0.47
7:F:141:THR:O	7:F:144:THR:HG22	2.14	0.47
2:B:95:LEU:HD12	2:B:95:LEU:C	2.38	0.47
7:F:376:ILE:HG23	7:F:399:ILE:O	2.14	0.47
7:F:561:PHE:O	7:F:565:ILE:HG12	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:260:ASP:OD2	1:A:263:LYS:HG3	2.14	0.47
3:C:50:GLU:O	3:C:53:VAL:HG12	2.14	0.47
7:F:28:LYS:HG2	7:F:97:CYS:SG	2.55	0.47
7:F:280:LEU:HD23	7:F:399:ILE:HG12	1.96	0.47
7:E:150:GLY:N	7:E:172:PRO:O	2.40	0.47
7:E:448:ILE:HG22	7:E:587:PHE:HE1	1.79	0.47
7:F:299:TYR:O	7:F:355:TYR:OH	2.31	0.47
7:F:509:ALA:HA	7:F:543:TYR:HB2	1.96	0.47
7:E:502:ARG:HB2	7:E:595:ARG:HH21	1.80	0.47
2:B:50:ASP:O	2:B:54:ALA:HB3	2.15	0.47
7:F:14:LEU:HD13	7:F:44:SER:HB2	1.95	0.47
7:F:151:ILE:HG22	7:F:226:VAL:HG22	1.96	0.47
7:F:156:GLU:HB3	7:F:164:HIS:CB	2.44	0.47
7:F:162:GLU:HG2	7:F:208:ALA:HB1	1.96	0.47
7:F:252:LEU:HD23	7:F:299:TYR:CZ	2.50	0.47
7:F:347:LYS:HD3	7:F:347:LYS:N	2.29	0.47
7:E:202:LYS:HA	7:E:209:VAL:HG12	1.96	0.47
7:E:244:GLU:H	7:E:276:LYS:HB2	1.79	0.47
7:E:404:GLN:HE21	7:E:537:GLN:HE21	1.61	0.47
7:E:539:SER:O	7:E:567:ARG:HD3	2.15	0.47
7:E:31:TYR:CZ	7:E:87:GLY:HA2	2.50	0.47
7:E:177:ASN:HB2	7:E:180:TYR:CE1	2.50	0.47
7:F:114:TRP:HE1	7:F:141:THR:HG21	1.80	0.47
7:F:183:THR:OG1	7:F:194:GLN:OE1	2.33	0.47
7:F:249:ILE:HG22	7:F:273:GLY:HA3	1.98	0.46
7:F:303:ARG:NH2	7:F:352:LEU:O	2.32	0.46
7:E:277:TYR:HB2	7:E:396:TYR:HB2	1.96	0.46
7:E:427:ARG:O	7:E:431:THR:HG22	2.14	0.46
7:F:144:THR:O	7:F:148:SER:OG	2.30	0.46
1:A:273:TYR:CD1	1:A:273:TYR:O	2.68	0.46
1:A:288:LYS:HD3	1:A:289:TYR:CE1	2.50	0.46
2:D:115:VAL:HG23	2:D:116:PRO:O	2.15	0.46
7:E:445:PRO:HB2	7:E:448:ILE:HG23	1.98	0.46
7:E:591:GLU:HG3	7:E:592:ILE:H	1.80	0.46
7:F:256:LEU:HG	7:F:257:ASN:H	1.80	0.46
7:F:563:VAL:CG1	7:F:567:ARG:HH22	2.28	0.46
7:E:591:GLU:H	7:E:594:ARG:HB3	1.80	0.46
1:A:275:PHE:N	1:A:275:PHE:CD2	2.82	0.46
2:B:111:ARG:H	2:B:111:ARG:HD3	1.81	0.46
7:F:326:PRO:HB2	7:F:328:ASP:HB2	1.97	0.46
7:F:526:LEU:HD23	7:F:526:LEU:HA	1.84	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:109:ILE:HD13	7:E:134:ALA:HB2	1.98	0.46
1:A:326:PHE:O	2:B:118:ASN:ND2	2.49	0.46
1:A:330:VAL:HA	1:A:343:SER:HA	1.98	0.46
1:A:514:LEU:HD21	2:B:83:VAL:HG21	1.98	0.46
1:A:848:VAL:HG13	1:A:858:ARG:HD2	1.97	0.46
1:A:849:LYS:O	1:A:850:THR:C	2.57	0.46
7:F:132:LEU:HD11	7:F:235:LEU:HD22	1.97	0.46
7:F:269:TYR:CE1	7:F:295:LEU:HB3	2.51	0.46
7:E:162:GLU:OE2	7:E:162:GLU:N	2.48	0.46
1:A:605:VAL:C	1:A:607:SER:N	2.68	0.46
1:A:856:ILE:O	1:A:860:VAL:HG23	2.15	0.46
7:F:223:ASP:OD1	7:F:223:ASP:N	2.48	0.46
7:F:335:PRO:HD2	7:F:337:ARG:HG2	1.96	0.46
7:E:169:VAL:O	7:E:171:LYS:NZ	2.49	0.46
7:E:279:THR:O	7:E:436:MET:HB3	2.14	0.46
7:F:371:VAL:HG21	7:F:391:LEU:HD22	1.97	0.46
1:A:758:LEU:O	1:A:760:ASP:N	2.49	0.46
2:D:38:LEU:C	2:D:39:LYS:HZ3	2.24	0.46
7:F:41:LEU:HD22	7:F:42:VAL:H	1.79	0.46
7:F:139:LYS:HD3	7:F:382:TYR:CE2	2.51	0.46
7:F:498:GLU:O	7:F:498:GLU:HG3	2.16	0.46
7:E:288:LYS:O	7:E:290:HIS:N	2.47	0.46
1:A:654:ARG:O	1:A:658:GLU:HG3	2.16	0.46
1:A:751:LYS:HB3	1:A:752:HIS:CD2	2.51	0.46
7:F:488:ILE:HG13	7:F:521:VAL:HG21	1.98	0.46
7:F:524:LYS:HE3	7:F:524:LYS:HA	1.98	0.46
7:F:578:ASP:CG	7:F:581:LEU:HB3	2.41	0.46
7:E:270:GLN:O	7:E:274:MET:HG3	2.15	0.46
7:F:279:THR:OG1	7:F:435:ASP:OD1	2.33	0.45
7:E:120:TYR:HE2	7:E:412:LEU:HD13	1.80	0.45
7:E:502:ARG:HD2	7:E:595:ARG:HB3	1.97	0.45
7:F:332:ARG:CZ	7:F:346:PHE:HB2	2.47	0.45
7:F:419:PRO:HB2	7:F:430:LYS:NZ	2.31	0.45
7:E:477:LYS:HZ1	7:E:577:SER:N	2.14	0.45
2:D:70:MET:HE3	2:D:70:MET:HB2	1.75	0.45
2:D:177:SER:HA	2:D:180:LEU:HD21	1.25	0.45
7:F:202:LYS:HB3	7:F:202:LYS:HE3	1.69	0.45
1:A:80:TYR:CD1	1:A:112:PRO:HB2	2.50	0.45
7:F:115:THR:HA	7:F:411:LEU:O	2.17	0.45
7:F:307:THR:HA	7:F:358:CYS:O	2.15	0.45
7:F:375:GLU:HG2	7:F:378:MET:HB2	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:476:TYR:HA	7:F:577:SER:HA	1.98	0.45
7:E:28:LYS:HE3	7:E:97:CYS:O	2.16	0.45
7:E:155:ARG:HH12	7:E:207:ASP:HB2	1.81	0.45
1:A:755:MET:HG2	1:A:764:VAL:HG22	1.97	0.45
4:I:24:G:H2'	4:I:25:C:H6	1.80	0.45
7:F:473:LYS:HE3	7:F:575:ILE:HG23	1.98	0.45
1:A:37:ILE:HG13	1:A:38:TYR:N	2.32	0.45
1:A:128:VAL:O	1:A:132:ARG:HG3	2.17	0.45
1:A:197:ARG:NH1	1:A:230:GLY:O	2.50	0.45
1:A:623:ASP:OD1	1:A:623:ASP:N	2.48	0.45
1:A:912:THR:O	1:A:912:THR:OG1	2.33	0.45
3:C:44:ASP:N	3:C:44:ASP:OD1	2.50	0.45
7:F:139:LYS:HD3	7:F:382:TYR:HE2	1.81	0.45
7:F:450:ASP:OD1	7:F:451:THR:N	2.49	0.45
7:E:353:GLU:HG3	7:E:355:TYR:H	1.82	0.45
7:E:549:THR:OG1	7:E:550:THR:N	2.49	0.45
7:E:41:LEU:HD12	7:E:42:VAL:H	1.81	0.45
7:E:557:ASN:HB3	7:E:560:ARG:NH1	2.32	0.45
1:A:77:PHE:HD1	1:A:77:PHE:O	2.00	0.45
1:A:391:LYS:HB3	1:A:391:LYS:HE3	1.75	0.45
7:E:235:LEU:HD21	7:E:382:TYR:CE2	2.52	0.45
7:E:517:SER:O	7:E:521:VAL:HG23	2.16	0.45
1:A:24:THR:HG21	1:A:27:SER:OG	2.17	0.45
2:B:51:ARG:NH2	4:I:16:A:O2'	2.50	0.45
7:E:200:PHE:CD2	7:E:211:TYR:HB3	2.52	0.45
7:E:386:VAL:HG12	7:E:390:ARG:HD2	1.98	0.45
7:E:435:ASP:O	7:E:436:MET:HB2	2.16	0.45
7:E:519:ASN:ND2	7:E:531:GLN:O	2.50	0.45
2:D:122:LEU:HA	2:D:190:ARG:NH1	2.32	0.45
1:A:77:PHE:CD1	1:A:77:PHE:O	2.70	0.44
2:B:161:ASP:HB2	2:B:181:ALA:HB3	1.99	0.44
2:D:185:ILE:N	2:D:185:ILE:CD1	2.76	0.44
7:F:64:TYR:HE2	7:F:73:LYS:HB3	1.82	0.44
7:F:337:ARG:HB2	7:F:338:ALA:H	1.53	0.44
7:F:470:GLN:HB3	7:F:572:ILE:HG22	1.98	0.44
2:B:40:LYS:O	2:B:44:VAL:CG1	2.65	0.44
7:F:279:THR:HG22	7:F:398:TYR:HD2	1.82	0.44
7:E:186:ARG:O	7:E:192:LYS:HA	2.17	0.44
7:E:546:PHE:CE2	7:E:548:GLN:HG2	2.52	0.44
1:A:281:LYS:HB3	1:A:281:LYS:HE3	1.62	0.44
2:B:166:ILE:HD12	2:B:166:ILE:H	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:333:ILE:O	7:E:334:ILE:HG12	2.17	0.44
7:E:466:ASP:OD1	7:E:466:ASP:N	2.50	0.44
7:F:130:LEU:HD12	7:F:130:LEU:H	1.83	0.44
7:F:306:TYR:HE1	7:F:355:TYR:HB3	1.83	0.44
7:F:391:LEU:CD2	7:F:393:ALA:HB2	2.47	0.44
1:A:171:ILE:HA	1:A:174:VAL:HG12	1.99	0.44
3:C:23:GLU:HA	3:C:29:TRP:HB2	2.00	0.44
2:D:176:ASN:OD1	2:D:176:ASN:N	2.47	0.44
7:F:47:PRO:HB2	7:F:49:VAL:HG22	1.99	0.44
7:E:373:PHE:HB3	7:E:398:TYR:CD1	2.51	0.44
2:D:7:SER:O	2:D:9:LEU:N	2.51	0.44
1:A:186:LEU:O	1:A:189:THR:HG22	2.17	0.44
1:A:686:THR:O	1:A:686:THR:OG1	2.26	0.44
2:B:59:LEU:HD21	7:F:81:PHE:CD1	2.53	0.44
3:C:28:LEU:HD12	3:C:28:LEU:HA	1.80	0.44
7:F:116:ASN:HB2	7:F:119:ASP:OD1	2.17	0.44
1:A:184:GLN:O	1:A:188:LYS:HG3	2.17	0.44
1:A:798:LYS:HB2	1:A:798:LYS:HE2	1.59	0.44
7:F:64:TYR:HB2	7:F:80:SER:HB2	2.00	0.44
7:E:163:LEU:HB2	7:E:211:TYR:HE1	1.83	0.44
7:E:405:LEU:H	7:E:537:GLN:HE22	1.65	0.44
7:E:453:SER:HB3	7:E:461:LEU:HB2	2.00	0.44
1:A:268:TRP:CD1	1:A:322:PRO:HD3	2.52	0.44
1:A:371:LEU:HD23	1:A:371:LEU:HA	1.88	0.44
1:A:661:GLN:C	1:A:665:GLU:HG2	2.43	0.44
7:F:472:PHE:CG	7:F:474:MET:HE2	2.53	0.44
7:E:345:LYS:HG3	7:E:346:PHE:CD2	2.53	0.44
7:E:451:THR:HG21	7:E:587:PHE:CZ	2.53	0.44
1:A:387:LEU:HD12	1:A:388:LEU:H	1.83	0.43
2:D:161:ASP:HA	2:D:184:LEU:HD23	2.00	0.43
7:F:384:LEU:O	7:F:387:VAL:HG12	2.18	0.43
7:F:495:VAL:O	7:F:499:PHE:HB2	2.19	0.43
7:E:161:ARG:NH1	7:E:210:VAL:HB	2.32	0.43
7:E:303:ARG:NH2	7:E:352:LEU:O	2.51	0.43
7:E:403:ALA:O	7:E:559:ASN:ND2	2.51	0.43
2:B:62:MET:HA	2:B:65:GLN:HG3	1.99	0.43
3:C:47:GLU:HG3	3:C:51:LYS:HD2	2.00	0.43
7:F:185:TYR:CE1	7:F:194:GLN:HB2	2.53	0.43
7:F:272:VAL:HG11	7:F:370:ILE:HD12	2.01	0.43
7:F:330:CYS:HA	7:F:332:ARG:HH21	1.84	0.43
7:F:507:ARG:HD2	7:F:507:ARG:HA	1.85	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:449:VAL:HA	7:E:452:VAL:HG12	2.00	0.43
7:E:457:TYR:C	7:E:458:ASP:O	2.44	0.43
7:E:472:PHE:CD2	7:E:582:TYR:HB2	2.53	0.43
7:E:507:ARG:HA	7:E:507:ARG:NE	2.34	0.43
1:A:159:LYS:O	1:A:160:LYS:C	2.61	0.43
1:A:496:ASN:OD1	1:A:496:ASN:N	2.36	0.43
1:A:605:VAL:HG12	1:A:606:TYR:HD1	1.83	0.43
1:A:928:HIS:O	1:A:929:THR:CB	2.66	0.43
7:F:20:ILE:HG23	7:F:21:ARG:H	1.83	0.43
7:F:386:VAL:O	7:F:390:ARG:HG2	2.17	0.43
7:E:118:GLY:O	7:E:121:ILE:HG22	2.17	0.43
7:E:159:SER:OG	7:E:162:GLU:OE2	2.33	0.43
7:E:307:THR:HG23	7:E:363:LEU:HD11	2.00	0.43
7:E:394:LYS:HA	7:E:394:LYS:HD2	1.71	0.43
7:E:406:PRO:HB3	7:E:422:PHE:CZ	2.52	0.43
7:E:541:TYR:O	7:E:569:LYS:N	2.51	0.43
7:F:499:PHE:O	7:F:502:ARG:N	2.52	0.43
7:E:41:LEU:HD12	7:E:42:VAL:N	2.34	0.43
1:A:906:MET:HE3	1:A:906:MET:HB2	1.82	0.43
2:B:38:LEU:O	2:B:41:SER:HB3	2.19	0.43
2:B:182:TRP:CE3	2:B:182:TRP:C	2.95	0.43
7:F:186:ARG:NH1	7:F:220:ASN:HB2	2.34	0.43
7:F:235:LEU:CD2	7:F:385:SER:HB2	2.48	0.43
7:F:331:SER:H	7:F:332:ARG:NH2	2.15	0.43
7:E:182:PHE:HD2	7:E:200:PHE:CE1	2.37	0.43
7:E:459:ASN:ND2	7:E:459:ASN:N	2.58	0.43
3:C:70:LYS:HB2	3:C:70:LYS:HE2	1.54	0.43
7:F:533:VAL:HG21	7:F:563:VAL:HG12	2.00	0.43
7:E:494:GLY:HA2	7:E:497:ARG:HB2	2.01	0.43
7:E:546:PHE:HE2	7:E:548:GLN:HG2	1.84	0.43
2:B:62:MET:HE3	2:B:63:ALA:N	2.33	0.43
5:J:114:A:C6	5:J:115:U:C4	3.07	0.43
7:F:73:LYS:HA	7:F:76:LYS:HB2	2.00	0.43
7:F:95:ASN:H	7:F:95:ASN:ND2	2.17	0.43
7:F:162:GLU:HG3	7:F:209:VAL:O	2.18	0.43
2:D:45:ALA:HA	2:D:48:GLU:CD	2.44	0.43
7:F:155:ARG:HA	7:F:155:ARG:HD3	1.75	0.43
7:F:187:VAL:CG2	7:F:189:LYS:C	2.91	0.43
7:F:366:THR:O	7:F:391:LEU:HG	2.18	0.43
7:F:448:ILE:CG2	7:F:566:THR:HA	2.49	0.43
7:F:480:ILE:HD11	7:F:550:THR:HG23	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:501:THR:HB	7:F:502:ARG:CZ	2.48	0.43
7:E:134:ALA:HA	7:E:137:THR:HG22	2.01	0.43
7:E:375:GLU:N	7:E:399:ILE:O	2.51	0.43
1:A:387:LEU:HG	2:B:128:LEU:HD12	1.99	0.43
7:F:89:VAL:O	7:F:94:LYS:NZ	2.52	0.43
7:F:167:TRP:CE2	7:F:173:ARG:HG3	2.54	0.43
7:F:247:VAL:HG12	7:E:218:LYS:HG2	2.01	0.43
7:F:346:PHE:HB3	7:F:347:LYS:HD3	2.00	0.43
7:F:464:HIS:C	7:F:465:LYS:HG3	2.44	0.43
7:E:127:THR:OG1	7:E:128:GLU:N	2.52	0.43
1:A:555:ARG:HD2	1:A:555:ARG:HA	1.92	0.43
7:E:165:LEU:HD11	7:E:200:PHE:CE2	2.53	0.43
7:E:263:SER:OG	7:E:264:SER:N	2.50	0.43
7:E:445:PRO:HA	7:E:465:LYS:O	2.19	0.43
1:A:80:TYR:CD2	1:A:80:TYR:C	2.96	0.42
2:B:49:PHE:O	2:B:53:ALA:HB3	2.19	0.42
7:F:280:LEU:HD21	7:F:438:LEU:HD22	1.99	0.42
7:F:567:ARG:HG3	7:F:567:ARG:HH11	1.82	0.42
7:E:266:VAL:O	7:E:270:GLN:HG3	2.19	0.42
7:E:326:PRO:O	7:E:327:ILE:HD13	2.19	0.42
7:E:330:CYS:SG	7:E:347:LYS:HE3	2.59	0.42
7:F:22:ARG:H	7:F:22:ARG:HG2	1.43	0.42
7:F:113:ASP:O	7:F:115:THR:HG23	2.18	0.42
7:F:333:ILE:HG12	7:F:358:CYS:HA	2.01	0.42
7:F:440:THR:OG1	7:F:441:CYS:N	2.52	0.42
7:E:249:ILE:HG12	7:E:274:MET:HG2	2.01	0.42
7:E:329:LYS:HE2	7:E:345:LYS:HG2	2.00	0.42
1:A:540:THR:HB	1:A:665:GLU:OE1	2.18	0.42
4:I:26:U:H2'	4:I:27:A:H8	1.85	0.42
7:F:316:ALA:CA	7:F:319:GLU:HB3	2.47	0.42
7:F:434:PRO:C	7:F:436:MET:N	2.75	0.42
7:F:534:ASP:OD1	7:F:535:SER:N	2.52	0.42
7:E:437:PHE:HD1	7:E:438:LEU:H	1.68	0.42
7:E:508:LYS:HE3	7:E:508:LYS:HB2	1.85	0.42
1:A:505:PRO:O	1:A:508:LYS:HD2	2.19	0.42
2:D:174:MET:O	2:D:177:SER:OG	2.36	0.42
7:F:441:CYS:HB3	7:F:463:ALA:HB2	2.01	0.42
7:E:585:LEU:HG	7:E:587:PHE:HD2	1.82	0.42
7:F:293:ILE:HD11	7:F:325:LEU:HG	2.00	0.42
7:F:302:ALA:O	7:F:354:GLN:HB2	2.20	0.42
7:E:22:ARG:NH1	7:E:22:ARG:HG3	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:31:TYR:CE2	7:E:87:GLY:HA2	2.55	0.42
7:E:465:LYS:HE3	7:E:465:LYS:HB3	1.86	0.42
1:A:543:ASN:O	1:A:556:THR:OG1	2.27	0.42
2:B:80:ARG:O	2:B:84:THR:HG22	2.20	0.42
7:F:484:VAL:HG13	7:F:485:SER:N	2.35	0.42
7:E:65:LEU:N	7:E:81:PHE:O	2.48	0.42
2:D:159:VAL:CG1	2:D:184:LEU:HD13	2.49	0.42
7:F:41:LEU:HD22	7:F:42:VAL:N	2.34	0.42
7:F:235:LEU:HD23	7:F:237:ALA:N	2.35	0.42
7:F:332:ARG:HE	7:F:347:LYS:NZ	2.17	0.42
7:F:422:PHE:HB2	7:F:426:CYS:CB	2.50	0.42
7:E:585:LEU:HA	7:E:585:LEU:HD12	1.75	0.42
1:A:60:ASP:N	1:A:64:ASN:O	2.46	0.42
1:A:274:ASP:OD1	1:A:274:ASP:C	2.62	0.42
1:A:607:SER:HB3	1:A:608:ASP:H	1.56	0.42
1:A:759:SER:O	1:A:759:SER:OG	2.38	0.42
2:D:165:LYS:HB2	2:D:165:LYS:HE2	1.75	0.42
7:F:127:THR:HG22	7:F:128:GLU:H	1.84	0.42
7:F:163:LEU:HD11	7:F:219:LEU:HD11	2.02	0.42
1:A:901:ASP:OD1	1:A:902:MET:N	2.52	0.42
1:A:909:ASN:ND2	1:A:909:ASN:N	2.65	0.42
7:F:151:ILE:HG13	7:F:168:GLU:HG3	2.02	0.42
7:F:467:LYS:HB2	7:F:467:LYS:HE2	1.68	0.42
7:E:42:VAL:C	7:E:43:LEU:HD12	2.44	0.42
7:E:368:ALA:HB3	7:E:393:ALA:HB2	2.02	0.42
2:D:55:MET:HE3	2:D:56:GLN:N	2.35	0.41
7:E:114:TRP:HD1	7:E:141:THR:HG21	1.84	0.41
7:E:560:ARG:HA	7:E:563:VAL:HG22	2.02	0.41
1:A:124:MET:HB3	1:A:124:MET:HE2	1.79	0.41
1:A:156:TYR:OH	1:A:170:ASP:OD1	2.31	0.41
1:A:370:GLU:HA	1:A:373:VAL:HG22	2.01	0.41
5:J:115:U:H2'	5:J:116:G:H8	1.86	0.41
7:F:369:ASP:O	7:F:395:HIS:N	2.53	0.41
7:E:405:LEU:HD11	7:E:560:ARG:HG2	2.01	0.41
6:L:0:U:H2'	6:L:1:A:H2	1.84	0.41
7:F:219:LEU:HD13	7:F:225:PHE:CE1	2.55	0.41
7:F:305:VAL:HB	7:F:371:VAL:HG22	2.02	0.41
2:D:182:TRP:O	2:D:183:PRO:C	2.61	0.41
7:F:102:ASN:OD1	7:F:102:ASN:N	2.53	0.41
7:F:127:THR:HB	7:F:130:LEU:HD13	2.03	0.41
7:F:339:ARG:HD2	7:F:339:ARG:N	2.32	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:475:PHE:HE2	7:F:492:GLN:HA	1.85	0.41
7:F:517:SER:O	7:F:521:VAL:HG22	2.20	0.41
7:E:548:GLN:HG3	7:E:576:MET:HA	2.03	0.41
1:A:726:ARG:NH2	1:A:744:GLU:OE2	2.53	0.41
3:C:27:LYS:O	3:C:31:GLN:NE2	2.53	0.41
7:F:281:GLN:O	7:F:283:PRO:HD3	2.20	0.41
7:F:451:THR:HB	7:F:585:LEU:HG	2.02	0.41
7:F:519:ASN:O	7:F:523:SER:OG	2.24	0.41
7:F:577:SER:OG	7:F:578:ASP:N	2.53	0.41
7:E:154:VAL:HG23	7:E:223:ASP:O	2.20	0.41
1:A:65:LEU:HD23	1:A:65:LEU:HA	1.88	0.41
1:A:751:LYS:HB3	1:A:752:HIS:HD2	1.85	0.41
2:B:162:ALA:HB2	2:B:183:PRO:HD2	2.02	0.41
2:D:139:LYS:NZ	2:D:140:ASN:OD1	2.45	0.41
7:F:65:LEU:HD22	7:F:65:LEU:HA	1.86	0.41
7:F:448:ILE:HG21	7:F:566:THR:HA	2.03	0.41
1:A:238:TYR:O	1:A:242:MET:HG3	2.20	0.41
1:A:303:ASP:O	1:A:307:ILE:HG13	2.21	0.41
1:A:633:MET:HE2	1:A:633:MET:HB3	1.92	0.41
2:D:136:ASN:O	2:D:140:ASN:ND2	2.54	0.41
7:E:254:PRO:HB3	7:E:298:TYR:CE1	2.56	0.41
7:E:331:SER:OG	7:E:333:ILE:HG13	2.21	0.41
7:E:449:VAL:O	7:E:453:SER:OG	2.27	0.41
1:A:572:HIS:O	1:A:576:LEU:HG	2.21	0.41
1:A:689:TYR:O	1:A:693:VAL:HG23	2.21	0.41
1:A:858:ARG:HG2	4:I:32:G:H5'	2.03	0.41
2:B:70:MET:HE1	7:F:91:GLY:HA2	2.02	0.41
2:D:164:SER:O	2:D:164:SER:OG	2.29	0.41
7:E:182:PHE:HB2	7:E:225:PHE:HB3	2.03	0.41
1:A:19:LEU:HD23	1:A:58:GLU:HA	2.03	0.41
1:A:28:THR:HG21	1:A:52:ASN:HA	2.03	0.41
1:A:188:LYS:HD3	1:A:214:GLY:HA3	2.03	0.41
1:A:321:PHE:HB3	1:A:322:PRO:HD2	2.03	0.41
1:A:333:ILE:HG22	1:A:361:LEU:HD12	2.02	0.41
1:A:847:ILE:O	1:A:850:THR:O	2.38	0.41
2:B:59:LEU:HD22	2:B:62:MET:HE2	2.03	0.41
2:B:157:GLN:O	2:B:158:GLN:HB3	2.20	0.41
2:D:75:ARG:O	2:D:77:GLU:N	2.54	0.41
4:I:23:U:C4	4:I:24:G:N7	2.89	0.41
7:F:232:VAL:O	7:F:233:MET:HE2	2.21	0.41
7:F:243:GLN:NE2	7:F:277:TYR:O	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:280:LEU:HD13	7:F:436:MET:HG3	2.03	0.41
7:F:306:TYR:HA	7:F:372:VAL:HG22	2.02	0.41
7:F:345:LYS:HB2	7:F:345:LYS:HE2	1.71	0.41
7:F:448:ILE:O	7:F:448:ILE:HG22	2.21	0.41
7:F:474:MET:HE3	7:F:582:TYR:CD2	2.55	0.41
7:F:510:VAL:HB	7:F:544:VAL:HG12	2.03	0.41
7:F:544:VAL:O	7:F:572:ILE:HA	2.20	0.41
7:E:21:ARG:HG3	7:E:21:ARG:HH11	1.85	0.41
7:E:73:LYS:HE2	7:E:73:LYS:HB3	1.85	0.41
7:E:182:PHE:HD2	7:E:200:PHE:HE1	1.69	0.41
7:E:187:VAL:HB	7:E:192:LYS:HG2	2.02	0.41
7:E:204:ASP:OD1	7:E:204:ASP:N	2.44	0.41
7:E:345:LYS:HG3	7:E:346:PHE:CE2	2.56	0.41
7:E:405:LEU:HB2	7:E:537:GLN:OE1	2.21	0.41
7:E:417:LEU:HA	7:E:417:LEU:HD23	1.87	0.41
7:E:493:ILE:O	7:E:497:ARG:HG2	2.21	0.41
7:E:520:ALA:O	7:E:524:LYS:N	2.54	0.41
1:A:8:LEU:HD12	1:A:21:PRO:HG3	2.03	0.41
1:A:330:VAL:HG11	2:B:117:LEU:HD13	2.03	0.41
7:F:116:ASN:HB2	7:F:119:ASP:CG	2.46	0.41
7:F:186:ARG:HD3	7:F:223:ASP:CG	2.46	0.41
7:F:198:TYR:HD1	7:F:225:PHE:HE2	1.67	0.41
1:A:749:LEU:HD23	1:A:749:LEU:HA	1.83	0.40
1:A:909:ASN:HD22	1:A:909:ASN:C	2.03	0.40
2:B:38:LEU:HD23	2:B:38:LEU:HA	1.69	0.40
2:B:57:ARG:HD3	2:B:57:ARG:HA	1.81	0.40
2:B:132:ILE:HA	2:B:133:PRO:HD3	1.96	0.40
4:I:25:C:H2'	4:I:26:U:H6	1.81	0.40
7:F:357:PHE:CD1	7:F:357:PHE:N	2.89	0.40
7:F:380:THR:HA	7:F:423:ASN:HD22	1.86	0.40
7:E:108:ALA:O	7:E:112:CYS:HB3	2.21	0.40
2:B:140:ASN:OD1	2:B:140:ASN:N	2.52	0.40
2:D:97:LYS:HE3	2:D:97:LYS:HB2	1.67	0.40
7:E:486:SER:HB3	7:E:517:SER:OG	2.21	0.40
7:E:557:ASN:OD1	7:E:560:ARG:N	2.44	0.40
1:A:159:LYS:O	1:A:159:LYS:HG2	2.21	0.40
1:A:371:LEU:HB3	2:B:87:MET:SD	2.62	0.40
2:B:47:SER:O	2:B:51:ARG:HG2	2.22	0.40
2:D:9:LEU:HD21	2:D:56:GLN:HG2	2.03	0.40
4:I:18:U:H2'	4:I:19:A:C8	2.57	0.40
7:F:117:ALA:O	7:F:121:ILE:HG12	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:411:LEU:HD23	7:F:411:LEU:HA	1.76	0.40
7:E:406:PRO:HB3	7:E:422:PHE:CE2	2.57	0.40
2:D:144:GLY:O	2:D:169:LEU:HD11	2.22	0.40
7:F:5:CYS:SG	7:F:26:CYS:HA	2.58	0.40
7:F:20:ILE:HG23	7:F:21:ARG:N	2.36	0.40
7:F:79:ILE:O	7:F:79:ILE:HG13	2.20	0.40
7:F:546:PHE:HB3	7:F:574:CYS:SG	2.61	0.40
7:F:548:GLN:HG2	7:F:576:MET:HE2	2.04	0.40
7:E:268:ASN:ND2	7:E:291:PHE:CZ	2.89	0.40
7:E:284:PRO:HD3	7:E:457:TYR:OH	2.22	0.40
7:E:497:ARG:HH11	7:E:500:LEU:HD11	1.86	0.40
2:B:98:LEU:C	2:B:100:ASN:H	2.26	0.40
7:F:376:ILE:HD13	7:F:429:MET:SD	2.62	0.40
7:F:456:VAL:HG23	7:F:457:TYR:CD2	2.56	0.40
7:E:456:VAL:HG23	7:E:457:TYR:CD2	2.57	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	A	924/942 (98%)	863 (93%)	53 (6%)	8 (1%)	14	43
2	B	185/198 (93%)	168 (91%)	15 (8%)	2 (1%)	12	37
2	D	184/198 (93%)	168 (91%)	14 (8%)	2 (1%)	12	37
3	C	70/83 (84%)	67 (96%)	3 (4%)	0	100	100
7	E	594/601 (99%)	524 (88%)	69 (12%)	1 (0%)	44	73
7	F	594/601 (99%)	516 (87%)	75 (13%)	3 (0%)	25	56
All	All	2551/2623 (97%)	2306 (90%)	229 (9%)	16 (1%)	24	52

All (16) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	76	THR
1	A	161	ASP
1	A	259	THR
1	A	607	SER
7	F	289	SER
1	A	13	GLY
1	A	160	LYS
2	B	182	TRP
7	F	335	PRO
7	F	577	SER
1	A	257	VAL
2	B	183	PRO
1	A	832	PRO
7	E	350	SER
2	D	110	ALA
2	D	113	GLY

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	A	817/833 (98%)	725 (89%)	92 (11%)	4 15
2	B	144/167 (86%)	119 (83%)	25 (17%)	1 5
2	D	149/167 (89%)	129 (87%)	20 (13%)	3 9
3	C	67/77 (87%)	62 (92%)	5 (8%)	11 33
7	E	512/523 (98%)	439 (86%)	73 (14%)	2 8
7	F	514/523 (98%)	445 (87%)	69 (13%)	3 9
All	All	2203/2290 (96%)	1919 (87%)	284 (13%)	6 11

All (284) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	11	VAL
1	A	14	VAL
1	A	18	ARG

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Mol	Chain	Res	Type
1	A	20	THR
1	A	22	CYS
1	A	24	THR
1	A	26	THR
1	A	31	VAL
1	A	37	ILE
1	A	62	ASP
1	A	72	VAL
1	A	76	THR
1	A	78	SER
1	A	80	TYR
1	A	90	LEU
1	A	96	VAL
1	A	98	LYS
1	A	105	ARG
1	A	124	MET
1	A	141	THR
1	A	147	VAL
1	A	160	LYS
1	A	166	VAL
1	A	167	GLU
1	A	183	ARG
1	A	189	THR
1	A	197	ARG
1	A	212	LEU
1	A	223	ILE
1	A	235	ASP
1	A	236	SER
1	A	246	THR
1	A	257	VAL
1	A	258	ASP
1	A	261	LEU
1	A	266	ILE
1	A	270	LEU
1	A	292	GLN
1	A	293	THR
1	A	299	VAL
1	A	329	LEU
1	A	343	SER
1	A	361	LEU
1	A	367	SER
1	A	372	LEU

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Mol	Chain	Res	Type
1	A	384	SER
1	A	411	LYS
1	A	424	VAL
1	A	434	SER
1	A	435	VAL
1	A	498	LEU
1	A	501	SER
1	A	548	ILE
1	A	551	LYS
1	A	556	THR
1	A	567	THR
1	A	578	SER
1	A	605	VAL
1	A	607	SER
1	A	621	LYS
1	A	648	LEU
1	A	649	SER
1	A	665	GLU
1	A	675	VAL
1	A	684	ASP
1	A	686	THR
1	A	687	THR
1	A	710	THR
1	A	729	GLU
1	A	737	VAL
1	A	739	THR
1	A	758	LEU
1	A	769	THR
1	A	778	SER
1	A	779	ILE
1	A	786	LEU
1	A	790	ASN
1	A	801	THR
1	A	803	THR
1	A	814	SER
1	A	815	GLN
1	A	817	THR
1	A	835	SER
1	A	853	THR
1	A	854	LEU
1	A	855	MET
1	A	885	LEU

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Mol	Chain	Res	Type
1	A	905	VAL
1	A	909	ASN
1	A	912	THR
1	A	913	SER
1	A	926	THR
2	B	34	VAL
2	B	56	GLN
2	B	59	LEU
2	B	60	GLU
2	B	67	MET
2	B	76	SER
2	B	78	ASP
2	B	79	LYS
2	B	85	SER
2	B	93	THR
2	B	94	MET
2	B	101	ASP
2	B	107	ILE
2	B	128	LEU
2	B	142	CYS
2	B	148	THR
2	B	153	LEU
2	B	158	GLN
2	B	166	ILE
2	B	171	GLU
2	B	174	MET
2	B	177	SER
2	B	180	LEU
2	B	187	THR
2	B	189	LEU
3	C	22	VAL
3	C	50	GLU
3	C	52	MET
3	C	57	SER
3	C	60	LEU
2	D	12	TYR
2	D	31	SER
2	D	32	GLU
2	D	39	LYS
2	D	41	SER
2	D	56	GLN
2	D	59	LEU

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Mol	Chain	Res	Type
2	D	83	VAL
2	D	112	ASP
2	D	115	VAL
2	D	124	THR
2	D	130	VAL
2	D	136	ASN
2	D	139	LYS
2	D	155	GLU
2	D	160	VAL
2	D	175	ASP
2	D	177	SER
2	D	180	LEU
2	D	189	LEU
7	F	2	VAL
7	F	12	THR
7	F	30	CYS
7	F	38	SER
7	F	41	LEU
7	F	43	LEU
7	F	57	VAL
7	F	65	LEU
7	F	74	SER
7	F	80	SER
7	F	97	CYS
7	F	102	ASN
7	F	126	CYS
7	F	127	THR
7	F	139	LYS
7	F	146	LYS
7	F	153	THR
7	F	162	GLU
7	F	183	THR
7	F	185	TYR
7	F	187	VAL
7	F	205	TYR
7	F	209	VAL
7	F	214	THR
7	F	223	ASP
7	F	226	VAL
7	F	240	LEU
7	F	241	VAL
7	F	250	THR

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Mol	Chain	Res	Type
7	F	255	THR
7	F	256	LEU
7	F	260	ASP
7	F	306	TYR
7	F	314	VAL
7	F	320	LYS
7	F	325	LEU
7	F	329	LYS
7	F	345	LYS
7	F	357	PHE
7	F	361	ASN
7	F	372	VAL
7	F	380	THR
7	F	411	LEU
7	F	412	LEU
7	F	424	SER
7	F	425	VAL
7	F	432	ILE
7	F	438	LEU
7	F	451	THR
7	F	472	PHE
7	F	473	LYS
7	F	475	PHE
7	F	479	VAL
7	F	495	VAL
7	F	507	ARG
7	F	512	ILE
7	F	525	ILE
7	F	536	SER
7	F	537	GLN
7	F	541	TYR
7	F	550	THR
7	F	551	GLU
7	F	554	HIS
7	F	575	ILE
7	F	577	SER
7	F	582	TYR
7	F	585	LEU
7	F	587	PHE
7	F	590	LEU
7	E	6	VAL
7	E	70	TYR

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Mol	Chain	Res	Type
7	E	81	PHE
7	E	96	THR
7	E	97	CYS
7	E	98	VAL
7	E	121	ILE
7	E	127	THR
7	E	130	LEU
7	E	136	GLU
7	E	141	THR
7	E	145	PHE
7	E	161	ARG
7	E	168	GLU
7	E	171	LYS
7	E	183	THR
7	E	187	VAL
7	E	188	THR
7	E	193	VAL
7	E	199	THR
7	E	209	VAL
7	E	216	THR
7	E	220	ASN
7	E	223	ASP
7	E	226	VAL
7	E	240	LEU
7	E	243	GLN
7	E	250	THR
7	E	266	VAL
7	E	289	SER
7	E	295	LEU
7	E	311	HIS
7	E	317	LEU
7	E	318	CYS
7	E	322	LEU
7	E	330	CYS
7	E	337	ARG
7	E	340	VAL
7	E	348	VAL
7	E	349	ASN
7	E	350	SER
7	E	352	LEU
7	E	358	CYS
7	E	363	LEU

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Mol	Chain	Res	Type
7	E	387	VAL
7	E	391	LEU
7	E	399	ILE
7	E	405	LEU
7	E	427	ARG
7	E	429	MET
7	E	447	GLU
7	E	448	ILE
7	E	449	VAL
7	E	462	LYS
7	E	464	HIS
7	E	471	CYS
7	E	481	THR
7	E	482	HIS
7	E	483	ASP
7	E	490	ARG
7	E	493	ILE
7	E	496	VAL
7	E	500	LEU
7	E	502	ARG
7	E	513	SER
7	E	528	LEU
7	E	550	THR
7	E	567	ARG
7	E	572	ILE
7	E	579	ARG
7	E	580	ASP
7	E	583	ASP
7	E	585	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (32) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	75	HIS
1	A	209	ASN
1	A	297	ASN
1	A	414	ASN
1	A	722	ASN
1	A	752	HIS
1	A	789	GLN
2	B	118	ASN
3	C	31	GLN

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Mol	Chain	Res	Type
3	C	34	GLN
2	D	104	ASN
7	F	33	HIS
7	F	95	ASN
7	F	311	HIS
7	F	349	ASN
7	F	381	ASN
7	F	470	GLN
7	E	9	ASN
7	E	62	GLN
7	E	124	ASN
7	E	190	ASN
7	E	243	GLN
7	E	245	HIS
7	E	275	GLN
7	E	290	HIS
7	E	311	HIS
7	E	381	ASN
7	E	388	ASN
7	E	404	GLN
7	E	459	ASN
7	E	516	ASN
7	E	519	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
4	I	24/25 (96%)	1 (4%)	1 (4%)
5	J	25/58 (43%)	0	0
6	L	5/6 (83%)	4 (80%)	0
All	All	54/89 (60%)	5 (9%)	1 (1%)

All (5) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
4	I	25	C
6	L	1	A
6	L	3	A
6	L	4	A
6	L	5	U

All (1) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
4	I	24	G

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 8 ligands modelled in this entry, 8 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 (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

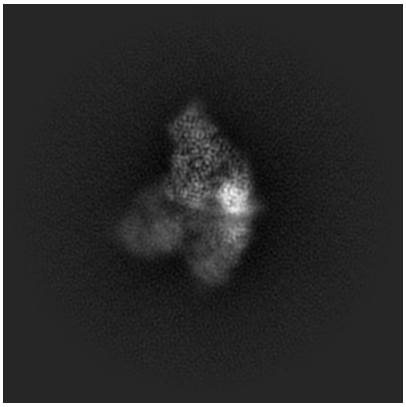
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-30492. These allow visual inspection of the internal detail of the map and identification of artifacts.

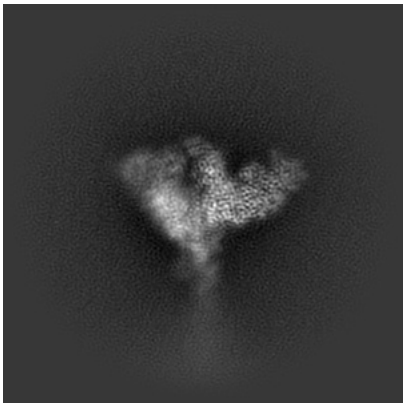
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

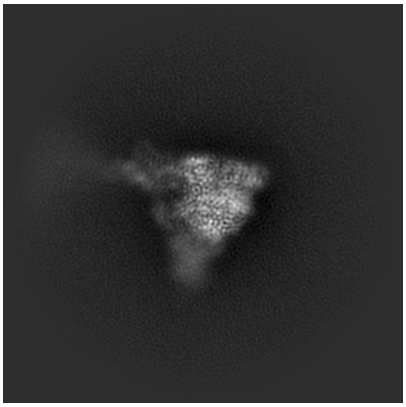
6.1.1 Primary map



X



Y

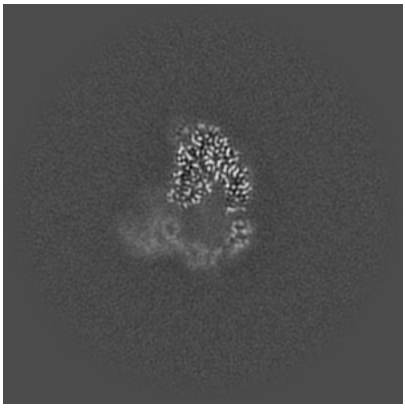


Z

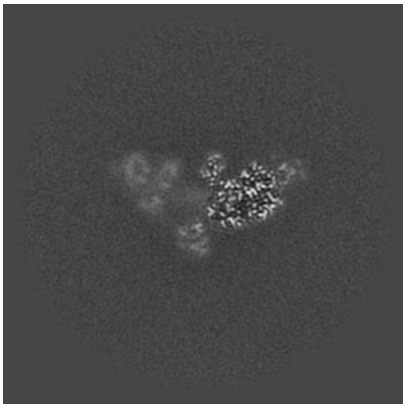
The images above show the map projected in three orthogonal directions.

6.2 Central slices

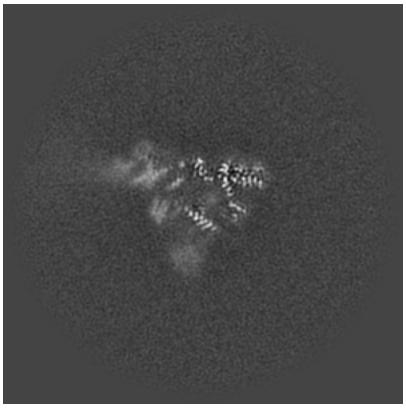
6.2.1 Primary map



X Index: 224



Y Index: 224

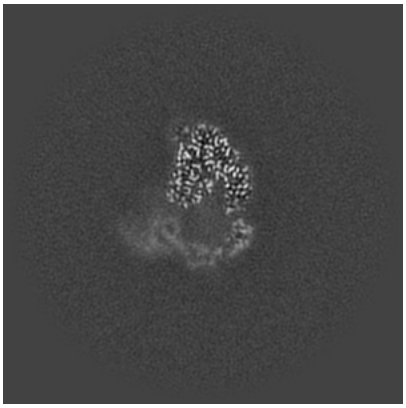


Z Index: 224

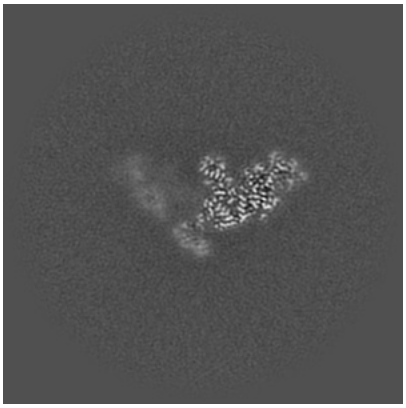
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

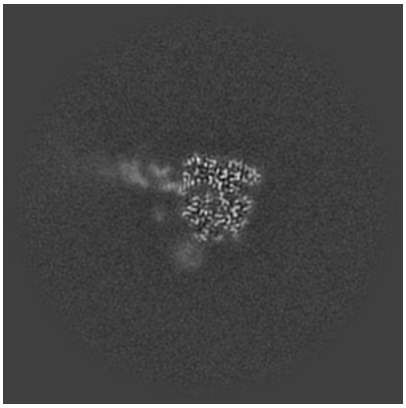
6.3.1 Primary map



X Index: 225



Y Index: 217

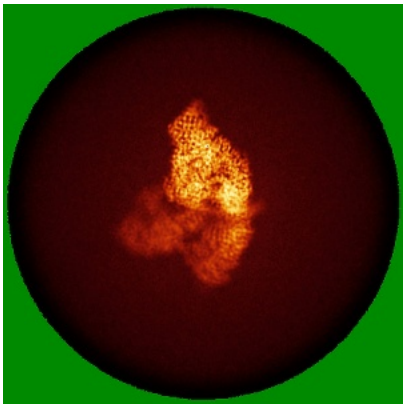


Z Index: 234

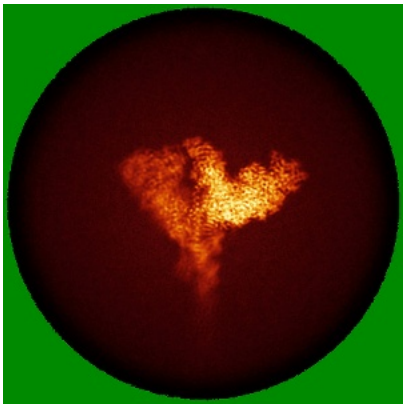
The images above show the largest variance slices of the map in three orthogonal directions.

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

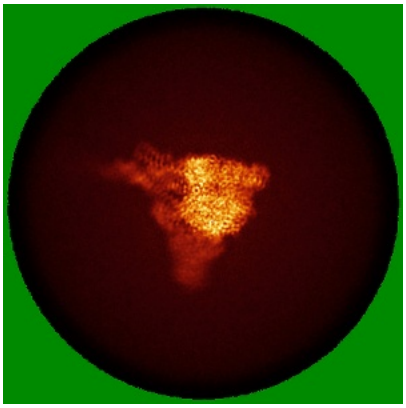
6.4.1 Primary map



X



Y



Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.25. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

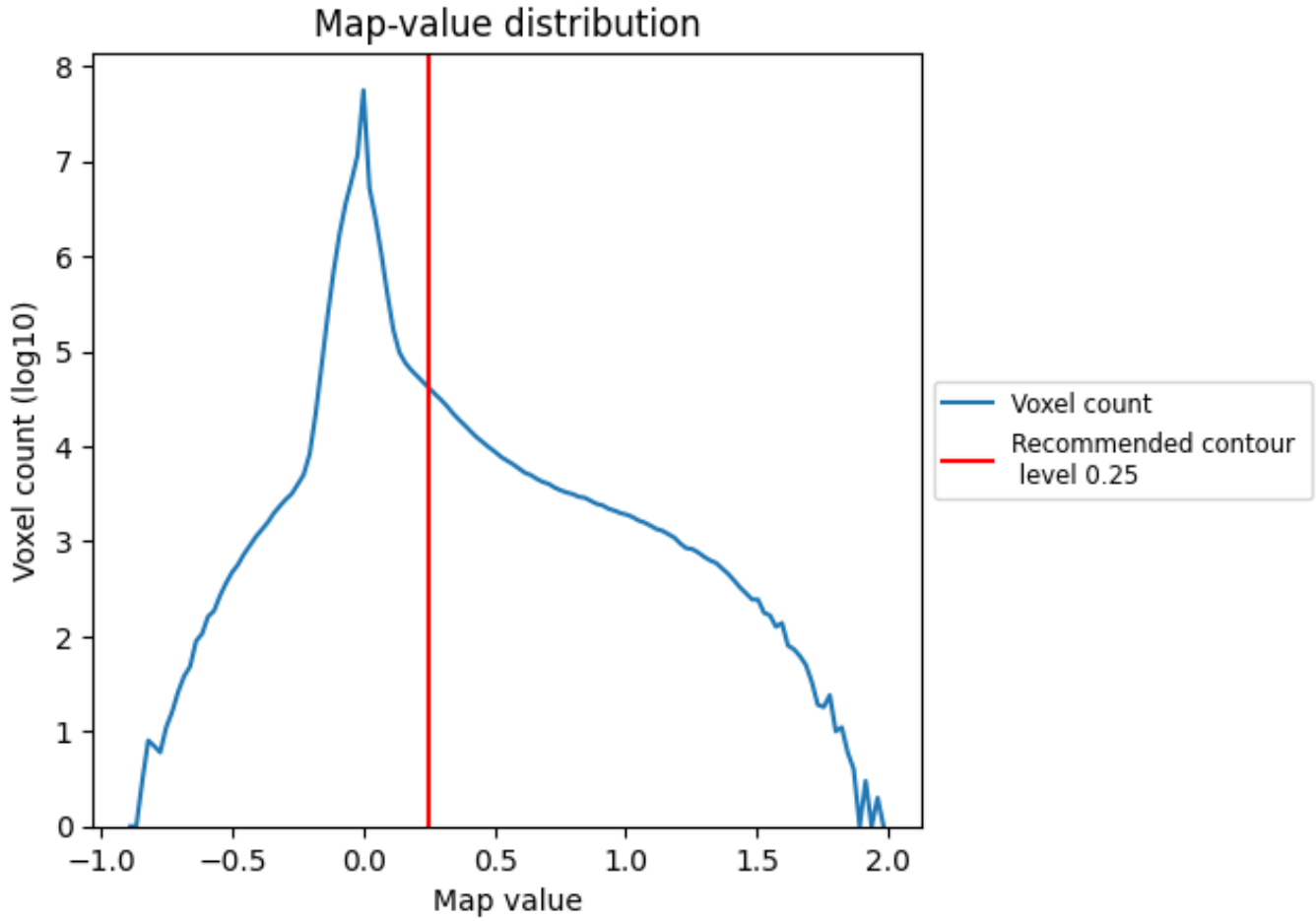
6.6 Mask visualisation (i)

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

7 Map analysis

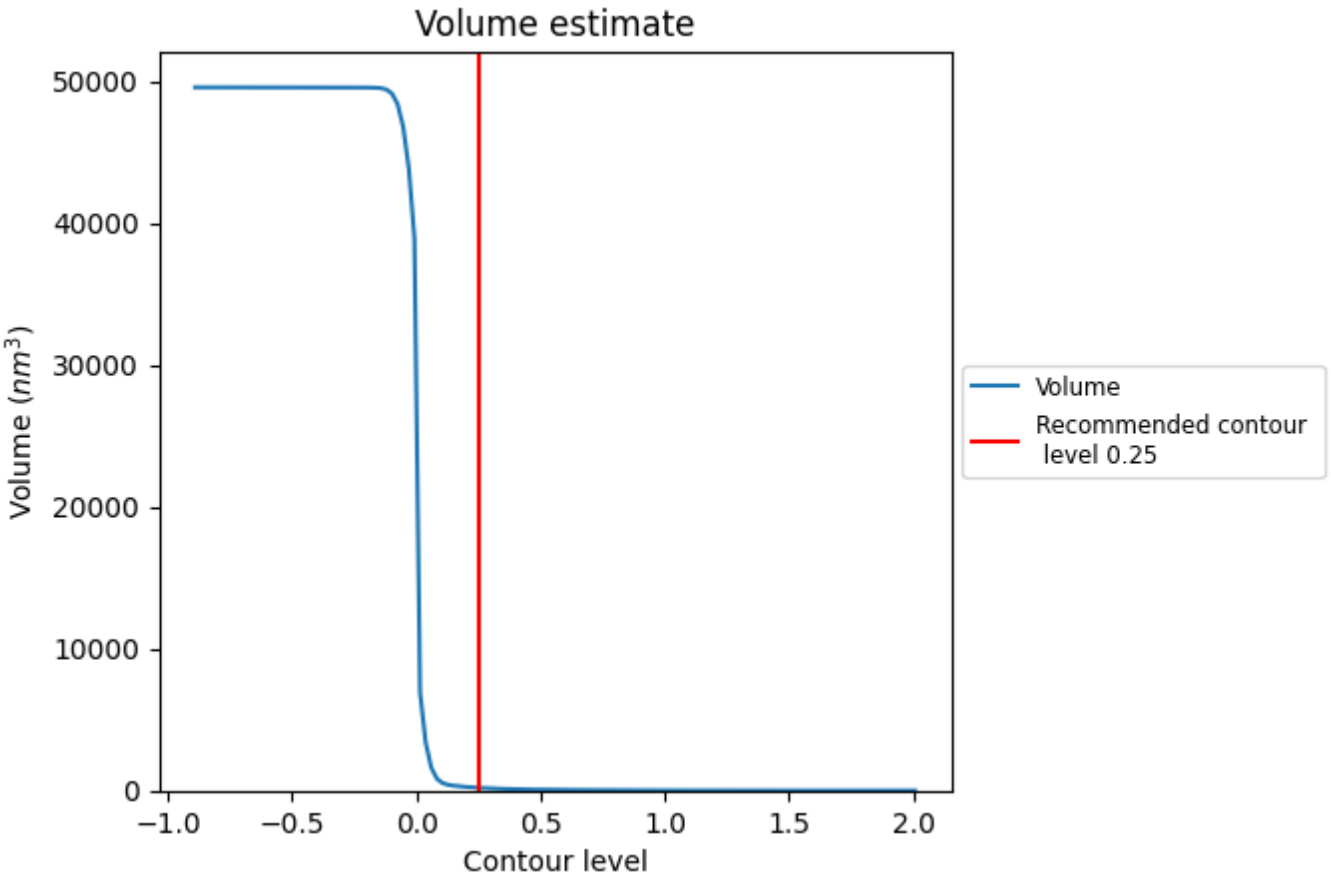
This section contains the results of statistical analysis of the map.

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.

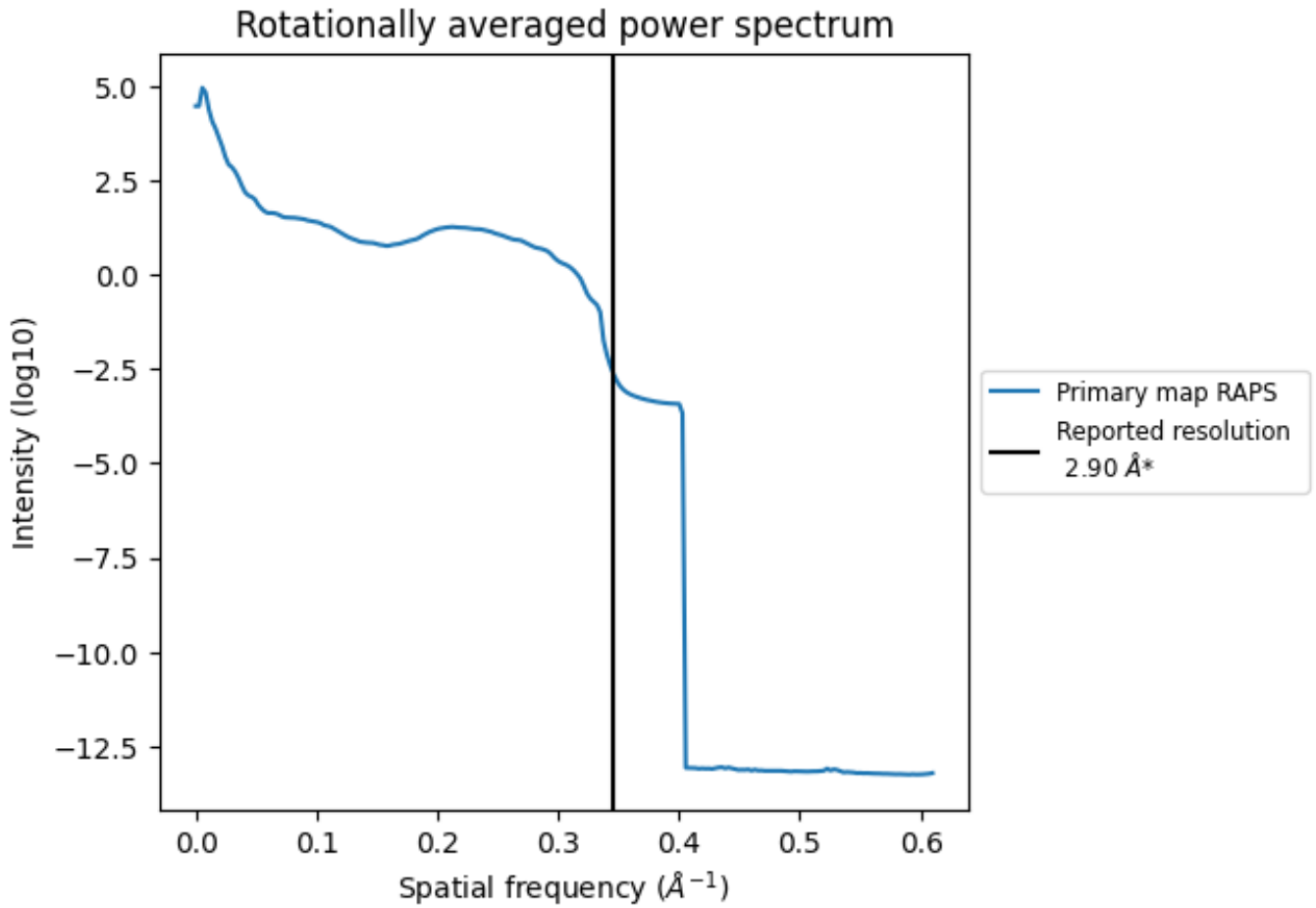
7.2 Volume estimate



The volume at the recommended contour level is 194 nm^3; this corresponds to an approximate mass of 176 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 0.345 Å^{-1}

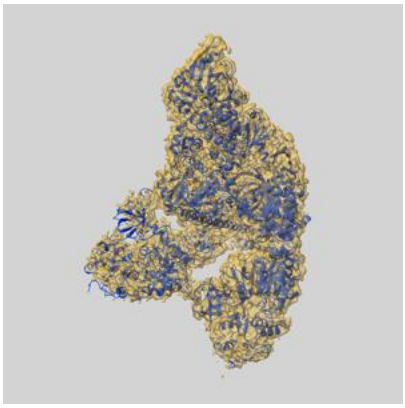
8 Fourier-Shell correlation

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

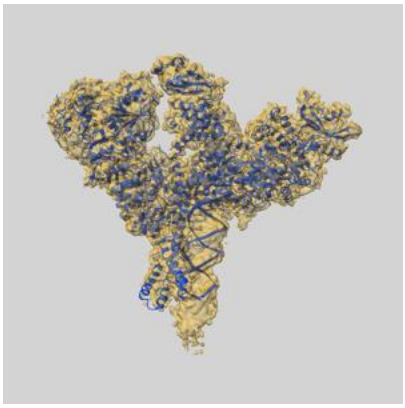
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-30492 and PDB model 7CXM. Per-residue inclusion information can be found in section 3 on page 6.

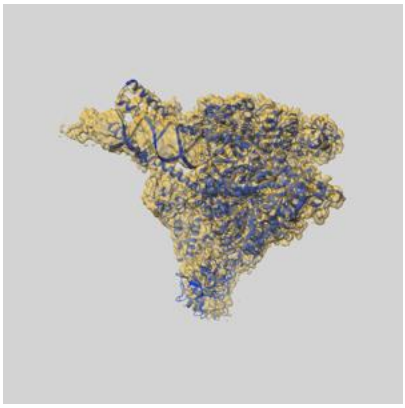
9.1 Map-model overlay



X



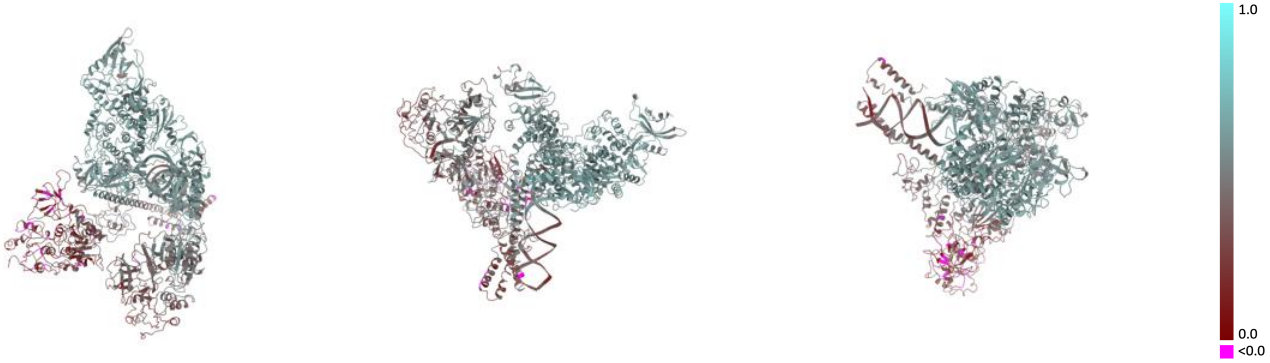
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.25 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.

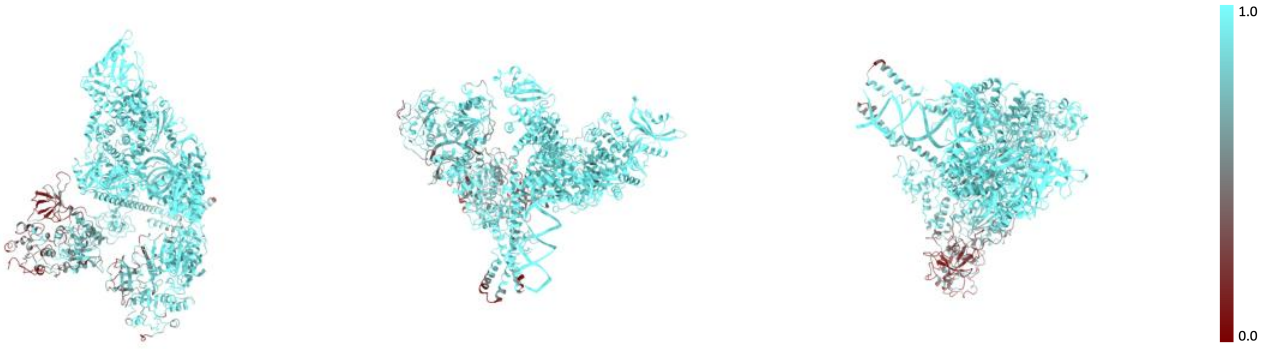
9.2 Q-score mapped to coordinate model



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.

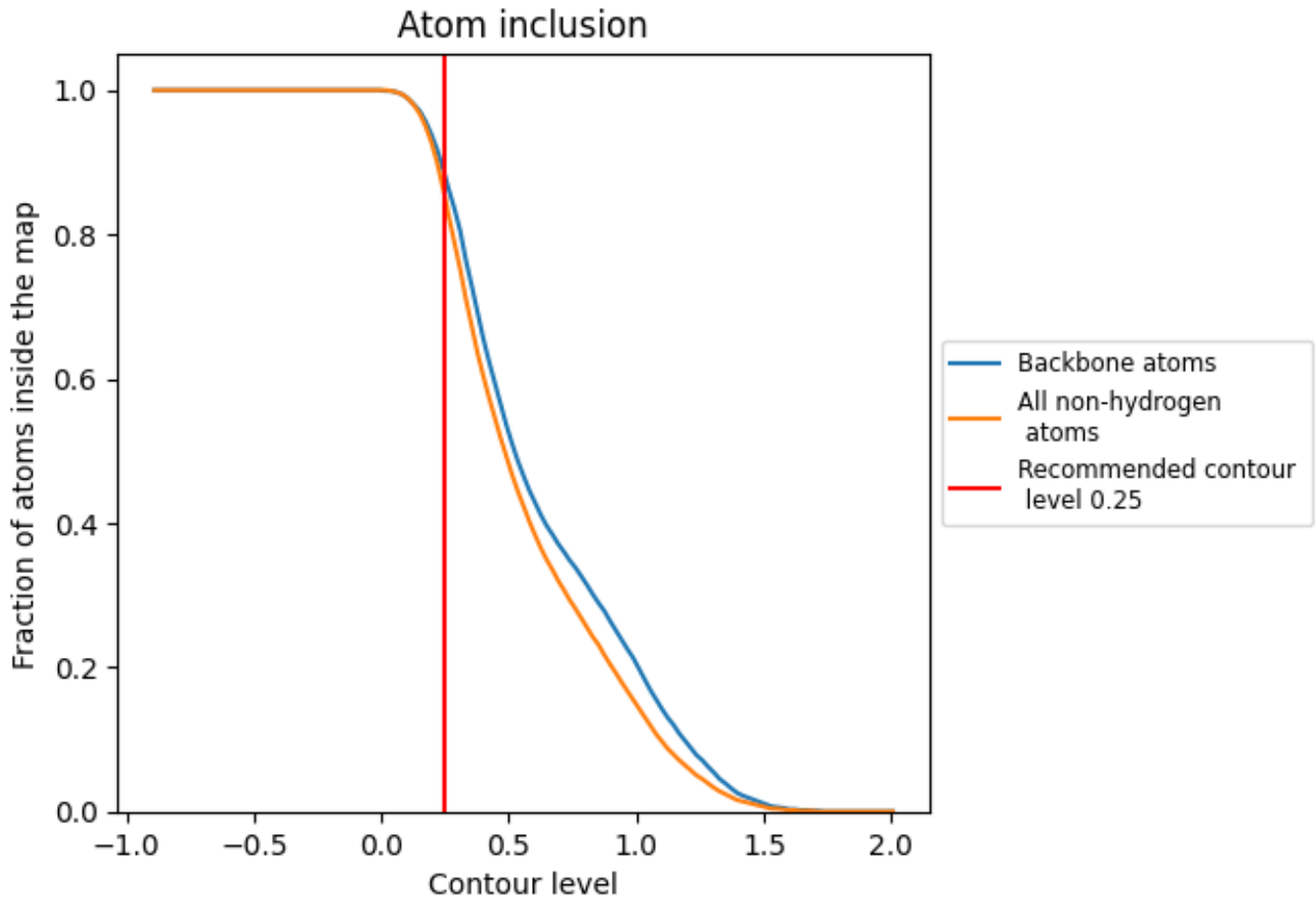
9.3 Atom inclusion mapped to coordinate model



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 (0.25).

9.4 Atom inclusion (i)



At the recommended contour level, 88% of all backbone atoms, 85% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.25) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8510	0.4610
A	0.9840	0.5870
B	0.9010	0.4860
C	0.9600	0.5650
D	0.9390	0.5040
E	0.8340	0.4250
F	0.5770	0.2670
I	0.9740	0.4270
J	0.9850	0.4670
L	0.4920	0.3520