Full wwPDB EM Validation Report

Jul 9, 2025 – 08:25 PM JST

PDB ID	:	9LA1 / pdb_00009la1
EMDB ID	:	EMD-62916
Title	:	Arabidopsis GORK WT4
Authors	:	Yamanashi, T.; Kume, T.; Sekido, N.; Muraoka, Y.; Yokoyama, T.; Tanaka, Y.; Uozumi, N.
Deposited on	:	2025-01-01
Resolution	:	3.15 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:

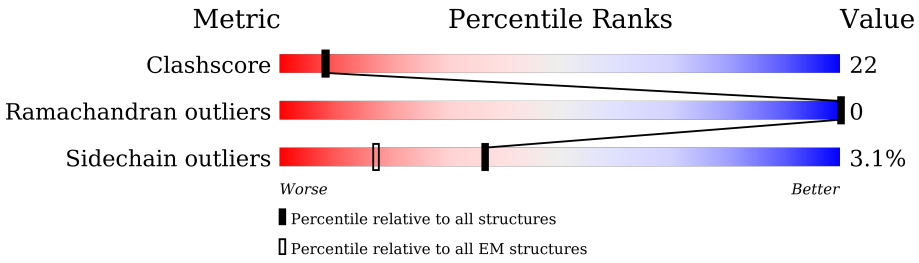
EMDB validation analysis	:	0.0.1.dev118
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline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

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 3.15 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

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	834	11% 43% 36% • 19%
1	B	834	9% 45% 35% • 19%
1	C	834	9% 47% 33% • 19%
1	D	834	9% 42% 38% • 19%

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 21940 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 Potassium channel GORK.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	676	Total	C	N	O	S	0	0
			5486	3559	914	988	25		
1	B	676	Total	C	N	O	S	0	0
			5486	3559	914	988	25		
1	C	676	Total	C	N	O	S	0	0
			5486	3559	914	988	25		
1	D	675	Total	C	N	O	S	0	0
			5482	3557	913	987	25		

There are 60 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-7	MET	-	initiating methionine	UNP Q94A76
A	-6	ASP	-	expression tag	UNP Q94A76
A	-5	TYR	-	expression tag	UNP Q94A76
A	-4	LYS	-	expression tag	UNP Q94A76
A	-3	ASP	-	expression tag	UNP Q94A76
A	-2	ASP	-	expression tag	UNP Q94A76
A	-1	ASP	-	expression tag	UNP Q94A76
A	0	ASP	-	expression tag	UNP Q94A76
A	1	LYS	-	expression tag	UNP Q94A76
A	821	HIS	-	expression tag	UNP Q94A76
A	822	HIS	-	expression tag	UNP Q94A76
A	823	HIS	-	expression tag	UNP Q94A76
A	824	HIS	-	expression tag	UNP Q94A76
A	825	HIS	-	expression tag	UNP Q94A76
A	826	HIS	-	expression tag	UNP Q94A76
B	-7	MET	-	initiating methionine	UNP Q94A76
B	-6	ASP	-	expression tag	UNP Q94A76
B	-5	TYR	-	expression tag	UNP Q94A76
B	-4	LYS	-	expression tag	UNP Q94A76
B	-3	ASP	-	expression tag	UNP Q94A76
B	-2	ASP	-	expression tag	UNP Q94A76
B	-1	ASP	-	expression tag	UNP Q94A76

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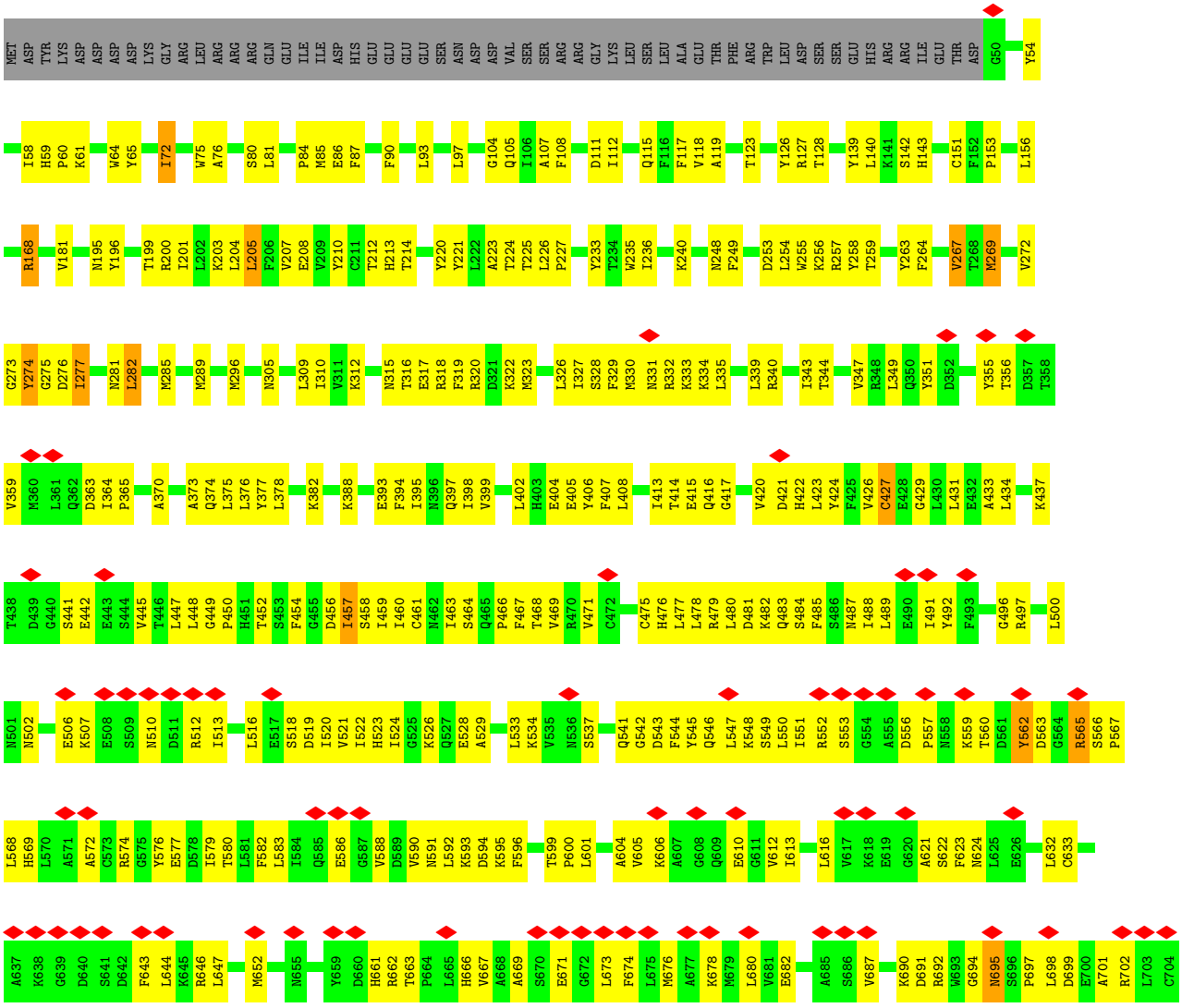
Chain	Residue	Modelled	Actual	Comment	Reference
B	0	ASP	-	expression tag	UNP Q94A76
B	1	LYS	-	expression tag	UNP Q94A76
B	821	HIS	-	expression tag	UNP Q94A76
B	822	HIS	-	expression tag	UNP Q94A76
B	823	HIS	-	expression tag	UNP Q94A76
B	824	HIS	-	expression tag	UNP Q94A76
B	825	HIS	-	expression tag	UNP Q94A76
B	826	HIS	-	expression tag	UNP Q94A76
C	-7	MET	-	initiating methionine	UNP Q94A76
C	-6	ASP	-	expression tag	UNP Q94A76
C	-5	TYR	-	expression tag	UNP Q94A76
C	-4	LYS	-	expression tag	UNP Q94A76
C	-3	ASP	-	expression tag	UNP Q94A76
C	-2	ASP	-	expression tag	UNP Q94A76
C	-1	ASP	-	expression tag	UNP Q94A76
C	0	ASP	-	expression tag	UNP Q94A76
C	1	LYS	-	expression tag	UNP Q94A76
C	821	HIS	-	expression tag	UNP Q94A76
C	822	HIS	-	expression tag	UNP Q94A76
C	823	HIS	-	expression tag	UNP Q94A76
C	824	HIS	-	expression tag	UNP Q94A76
C	825	HIS	-	expression tag	UNP Q94A76
C	826	HIS	-	expression tag	UNP Q94A76
D	-7	MET	-	initiating methionine	UNP Q94A76
D	-6	ASP	-	expression tag	UNP Q94A76
D	-5	TYR	-	expression tag	UNP Q94A76
D	-4	LYS	-	expression tag	UNP Q94A76
D	-3	ASP	-	expression tag	UNP Q94A76
D	-2	ASP	-	expression tag	UNP Q94A76
D	-1	ASP	-	expression tag	UNP Q94A76
D	0	ASP	-	expression tag	UNP Q94A76
D	1	LYS	-	expression tag	UNP Q94A76
D	821	HIS	-	expression tag	UNP Q94A76
D	822	HIS	-	expression tag	UNP Q94A76
D	823	HIS	-	expression tag	UNP Q94A76
D	824	HIS	-	expression tag	UNP Q94A76
D	825	HIS	-	expression tag	UNP Q94A76
D	826	HIS	-	expression tag	UNP Q94A76

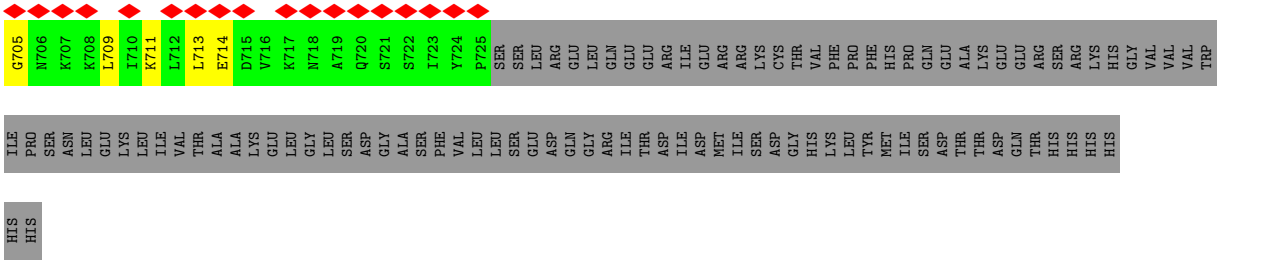
3 Residue-property plots (i)

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: Potassium channel GORK

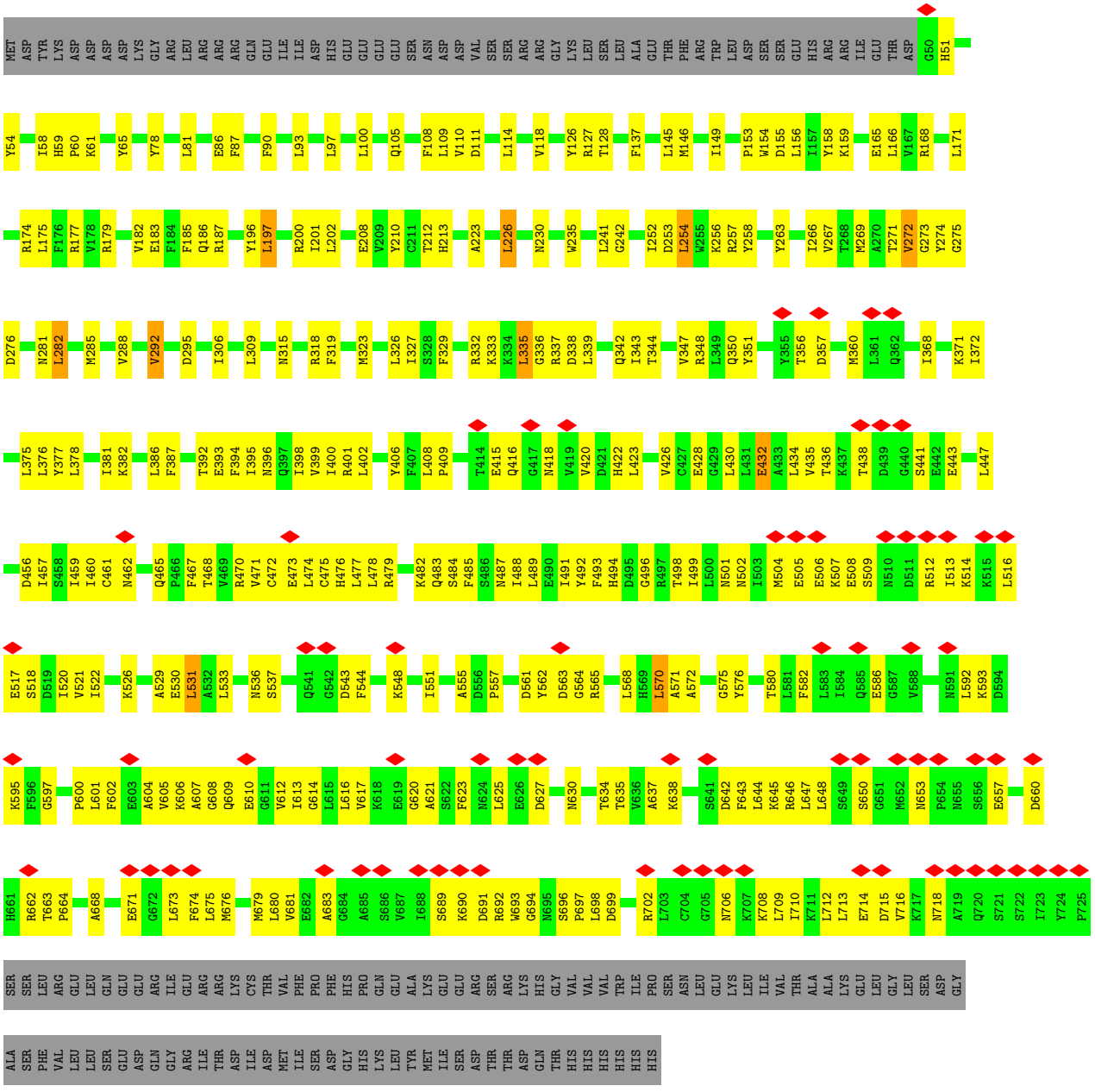
Chain A:





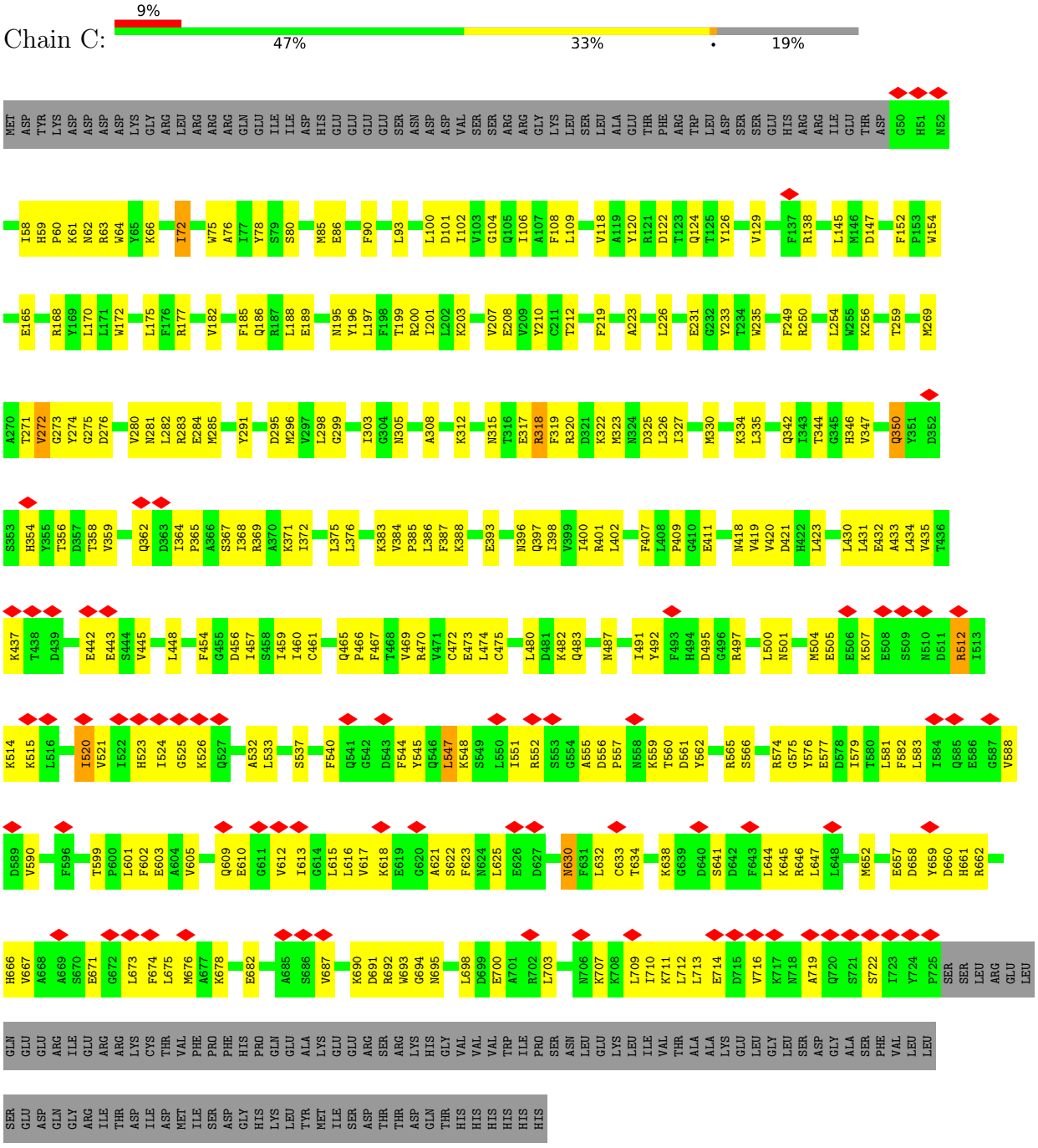
• Molecule 1: Potassium channel GORK

Chain B:



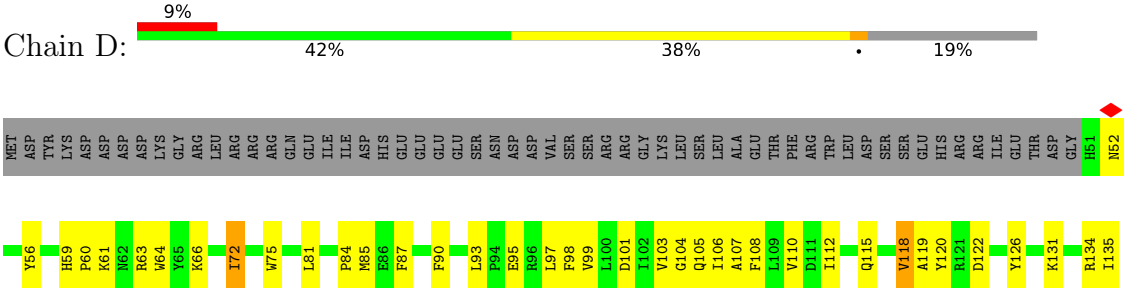
• Molecule 1: Potassium channel GORK

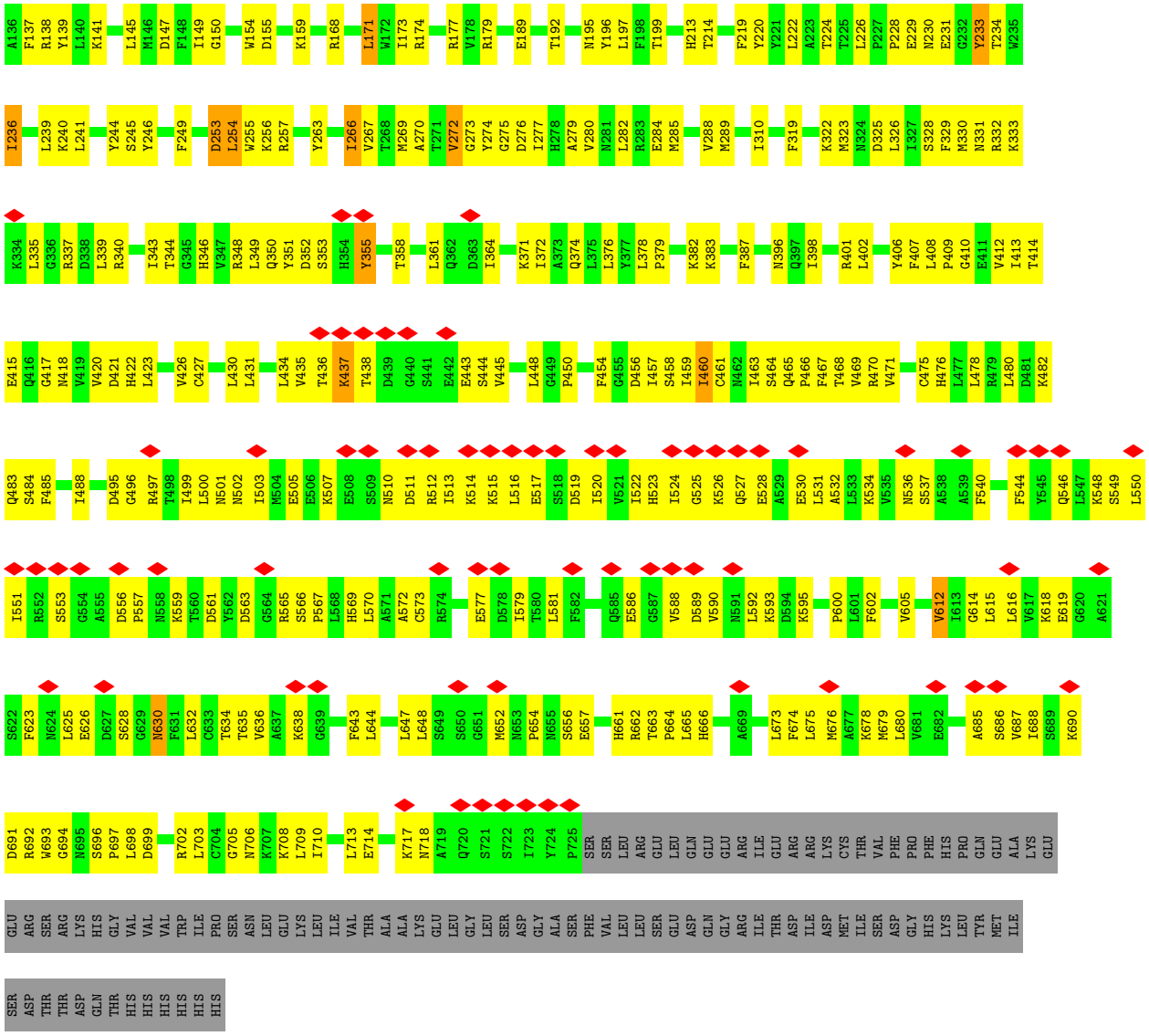
Chain C:



• Molecule 1: Potassium channel GORK

Chain D:




A136 F137 R138 Y139 L140 K141 L145 M146 D147 F148 I149 G150 W154 D155 K159 R168 L171 W172 I173 R174 R177 V178 R179 E189 T192 N195 Y196 L197 F198 T199 H213 T214 F219 Y220 Y221 L222 A223 T224 T225 L226 P227 P228 E229 N230 E231 G232 Y233 T234 W235
I236 L239 K240 L241 Y244 S245 Y246 F249 D253 L254 W255 K256 R257 Y263 I266 V267 T268 M269 A270 T271 V272 G273 Y274 G275 D276 I277 H278 A279 V280 N281 L282 R283 E284 M285 V288 M289 I310 F319 K322 M323 N324 D325 L326 I327 S328 F329 M330 N331 R332 K333
K334 L335 G336 R337 D338 L339 R340 I343 T344 G345 H346 V347 R348 L349 Q350 Y351 D352 S353 H354 Y355 T358 L361 Q362 D363 I364 K371 I372 A373 Q374 L375 L376 Y377 L378 P379 K382 K383 F387 N396 Q397 I398 R401 L402 Y406 F407 L408 P409 G410 E411 V412 I413 T414
E415 Q416 G417 N418 V419 V420 D421 H422 L423 V426 C427 L430 L431 L434 V435 T436 K437 T438 D439 G440 S441 E442 E443 S444 V445 L448 G449 P450 F454 C455 D456 I457 S458 I459 I460 C461 M462 I463 S464 Q465 P466 F467 T468 V469 R470 V471 C475 H476 L477 L478 R479 L480 D481 K482
Q483 S484 F485 I488 D495 G496 R497 T498 I499 L500 N501 N502 I503 N504 E505 E506 K507 E508 S509 N510 D511 R512 I513 K514 K515 L516 E517 S518 D519 I520 V521 I522 H523 I524 G525 K526 Q527 E528 A529 E530 L531 A532 L533 K534 V535 N536 S537 A538 A539 F540 F544 Y545 Q546 L547 K548 S549 L550
I551 R552 S553 G554 A555 D556 P557 N558 K559 T560 D561 Y562 D563 G564 R565 S566 P567 L568 H569 L570 A571 A572 C573 R574 E577 D578 I579 T580 L581 F582 Q585 E586 G587 V588 D589 V590 N591 L592 K593 D594 K595 P600 L601 F602 V605 V612 I613 G614 L615 L616 V617 K618 E619 G620 A621
S622 F623 M624 L625 E626 D627 S628 G629 N630 F631 L632 C633 T634 T635 V636 A637 K638 G639 F643 L644 L647 L648 S649 S650 G651 M652 N653 P654 N655 S656 E657 H661 R662 T663 P664 L665 H666 A669 L673 F674 L675 M676 A677 K678 M679 L680 V681 E682 A685 S686 V687 I688 S689 K690
D691 R692 W693 G694 N695 S696 P697 L698 D699 R702 L703 C704 G705 N706 K707 K708 L709 I710 L713 E714 K717 N718 A719 Q720 S721 S722 I723 Y724 P725 SER SER LEU ARG GLU LEU GLN GLU GLU ARG ILE GLU ARG ARG LYS CYS THR VAL PHE PRO PHE HIS PRO GLN GLU ALA LYS GLU
GLU ARG SER ARG LYS HIS GLY VAL VAL TRP ILE PRO SER ASN LEU GLU LYS LEU ILE VAL THR ALA ALA LYS GLU LEU GLY LEU SER ASP GLY ALA SER PHE VAL LEU LEU SER GLU ASP GLN GLY ARG ILE THR ASP ILE ASP MET ILE SER ASP GLY HIS LYS LEU TYR MET ILE
SER ASP THR THR ASP GLN THR HIS HIS HIS HIS HIS HIS

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	24520	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	JEOL CRYO ARM 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.637	Depositor
Minimum map value	-0.341	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.018	Depositor
Recommended contour level	0.08	Depositor
Map size (Å)	315.19998, 315.19998, 315.19998	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.7879999, 0.7879999, 0.7879999	Depositor

5 Model quality

5.1 Standard geometry

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	0.34	0/5615	0.52	0/7596
1	B	0.29	0/5615	0.47	0/7596
1	C	0.36	0/5615	0.57	0/7596
1	D	0.45	0/5611	0.63	0/7591
All	All	0.36	0/22456	0.55	0/30379

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5486	0	5502	267	0
1	B	5486	0	5502	249	0
1	C	5486	0	5502	243	0
1	D	5482	0	5499	268	0
All	All	21940	0	22005	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 22.

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:A:491:ILE:HG23	1:D:483:GLN:HG2	1.48	0.92
1:D:361:LEU:HA	1:D:364:ILE:HD12	1.51	0.92
1:A:335:LEU:HD12	1:A:339:LEU:HD22	1.53	0.91
1:A:610:GLU:HA	1:A:613:ILE:HB	1.57	0.87
1:B:462:ASN:HB2	1:B:518:SER:HB3	1.57	0.85
1:B:402:LEU:HD13	1:B:478:LEU:HD13	1.60	0.83
1:B:460:ILE:HA	1:B:520:ILE:HD11	1.60	0.83
1:B:108:PHE:O	1:B:111:ASP:HB3	1.78	0.82
1:D:687:VAL:HB	1:D:717:LYS:HB2	1.63	0.79
1:A:330:MET:HE3	1:A:340:ARG:HD2	1.65	0.78
1:A:427:CYS:HG	1:A:476:HIS:HD1	1.29	0.78
1:D:674:PHE:HA	1:D:709:LEU:HD21	1.67	0.77
1:A:485:PHE:HA	1:A:488:ILE:HD12	1.65	0.77
1:B:59:HIS:HD2	1:B:61:LYS:HB3	1.48	0.77
1:C:605:VAL:HG23	1:C:646:ARG:HB3	1.65	0.77
1:B:197:LEU:H	1:B:197:LEU:HD23	1.50	0.76
1:D:556:ASP:HB3	1:D:559:LYS:HB2	1.67	0.76
1:A:289:MET:HA	1:D:266:ILE:HG21	1.68	0.76
1:B:537:SER:HB3	1:C:533:LEU:HD11	1.68	0.75
1:B:402:LEU:HB3	1:B:478:LEU:HD22	1.68	0.75
1:D:409:PRO:HA	1:D:471:VAL:HG12	1.69	0.74
1:C:575:GLY:HA2	1:C:612:VAL:HG21	1.69	0.74
1:D:690:LYS:HE2	1:D:696:SER:HB3	1.69	0.74
1:D:90:PHE:O	1:D:168:ARG:NH2	2.20	0.74
1:B:434:LEU:HD12	1:B:470:ARG:HE	1.52	0.73
1:B:580:THR:HG21	1:B:612:VAL:HG22	1.69	0.73
1:C:434:LEU:HB3	1:C:442:GLU:HB3	1.70	0.73
1:D:120:TYR:HD1	1:D:135:ILE:HG22	1.53	0.73
1:B:637:ALA:HB2	1:C:659:TYR:HB3	1.71	0.73
1:B:491:ILE:HG12	1:C:483:GLN:HE21	1.54	0.73
1:B:274:TYR:O	1:D:275:GLY:HA3	1.88	0.73
1:D:60:PRO:HD3	1:D:119:ALA:HB3	1.70	0.72
1:D:688:ILE:HG22	1:D:717:LYS:HE3	1.70	0.72
1:D:138:ARG:HA	1:D:141:LYS:HE3	1.70	0.72
1:D:687:VAL:HG11	1:D:713:LEU:HB3	1.70	0.72
1:B:376:LEU:HD11	1:C:335:LEU:HD11	1.70	0.72
1:B:401:ARG:HD2	1:B:488:ILE:HD11	1.70	0.72
1:C:659:TYR:O	1:C:692:ARG:NH2	2.23	0.72
1:A:424:TYR:HB3	1:A:477:LEU:HD23	1.70	0.71
1:B:197:LEU:HD12	1:B:309:LEU:HA	1.72	0.71
1:B:571:ALA:HB1	1:B:580:THR:HG22	1.73	0.71
1:A:524:ILE:O	1:A:528:GLU:HG3	1.89	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:520:ILE:HA	1:A:523:HIS:HD2	1.56	0.71
1:B:87:PHE:HA	1:B:168:ARG:HH12	1.56	0.70
1:B:273:GLY:HA3	1:C:272:VAL:O	1.91	0.70
1:A:272:VAL:O	1:C:273:GLY:HA3	1.92	0.70
1:D:326:LEU:HB3	1:D:330:MET:HE3	1.73	0.70
1:B:395:ILE:O	1:B:399:VAL:HG23	1.92	0.70
1:C:551:ILE:HB	1:C:552:ARG:HH21	1.57	0.70
1:D:569:HIS:NE2	1:D:592:LEU:O	2.22	0.69
1:A:431:LEU:HD23	1:A:471:VAL:HA	1.73	0.69
1:D:507:LYS:HG3	1:D:514:LYS:HA	1.74	0.69
1:D:93:LEU:HD22	1:D:97:LEU:HD12	1.74	0.69
1:C:551:ILE:HG12	1:C:555:ALA:HB3	1.74	0.69
1:A:112:ILE:HG23	1:A:139:TYR:HE2	1.58	0.69
1:B:256:LYS:HA	1:D:282:LEU:HD21	1.75	0.69
1:A:484:SER:O	1:A:488:ILE:HG13	1.93	0.68
1:B:271:THR:HA	1:C:272:VAL:HG13	1.74	0.68
1:C:58:ILE:HB	1:C:118:VAL:HG22	1.74	0.68
1:D:402:LEU:HD13	1:D:478:LEU:HD23	1.75	0.68
1:B:267:VAL:HG13	1:B:272:VAL:HG22	1.76	0.68
1:B:430:LEU:HD11	1:B:447:LEU:HB3	1.74	0.68
1:B:179:ARG:O	1:B:183:GLU:HG2	1.94	0.68
1:A:520:ILE:O	1:A:524:ILE:HG13	1.94	0.67
1:A:423:LEU:HB2	1:A:459:ILE:HD12	1.75	0.67
1:C:548:LYS:HA	1:C:552:ARG:HH22	1.59	0.67
1:A:376:LEU:HD21	1:D:333:LYS:HB3	1.75	0.67
1:B:692:ARG:HH12	1:C:662:ARG:HH12	1.43	0.67
1:D:507:LYS:HD2	1:D:517:GLU:HA	1.76	0.67
1:A:643:PHE:HA	1:A:646:ARG:HE	1.59	0.67
1:A:497:ARG:NH2	1:A:528:GLU:OE2	2.27	0.66
1:B:145:LEU:O	1:B:149:ILE:HG13	1.95	0.66
1:C:124:GLN:CD	1:C:124:GLN:H	2.03	0.66
1:C:660:ASP:HA	1:C:692:ARG:HH21	1.59	0.66
1:A:213:HIS:ND1	1:A:258:TYR:OH	2.28	0.66
1:A:323:MET:HE1	1:A:344:THR:HG22	1.78	0.66
1:C:610:GLU:N	1:C:610:GLU:OE1	2.29	0.66
1:D:431:LEU:HD23	1:D:471:VAL:HA	1.78	0.66
1:B:241:LEU:HD21	1:B:276:ASP:HB2	1.78	0.65
1:A:377:TYR:HB2	1:A:399:VAL:HG13	1.78	0.65
1:B:105:GLN:OE1	1:B:177:ARG:NH2	2.25	0.65
1:C:411:GLU:N	1:C:411:GLU:OE1	2.30	0.65
1:C:465:GLN:NE2	1:C:467:PHE:O	2.28	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:407:PHE:HB2	1:C:475:CYS:SG	2.37	0.65
1:C:695:ASN:HD21	1:C:703:LEU:HD11	1.60	0.65
1:B:59:HIS:CD2	1:B:61:LYS:HB3	2.32	0.65
1:B:78:TYR:OH	1:B:100:LEU:HD21	1.97	0.65
1:B:396:ASN:O	1:B:400:ILE:HG13	1.97	0.65
1:B:533:LEU:HD21	1:C:537:SER:HB2	1.77	0.65
1:C:623:PHE:HB3	1:C:625:LEU:HG	1.79	0.65
1:A:599:THR:HG21	1:A:624:ASN:HD22	1.61	0.64
1:A:691:ASP:OD2	1:A:695:ASN:ND2	2.30	0.64
1:B:155:ASP:O	1:B:159:LYS:HG2	1.97	0.64
1:A:395:ILE:O	1:A:399:VAL:HG23	1.97	0.64
1:B:690:LYS:HB3	1:B:694:GLY:HA2	1.80	0.64
1:A:273:GLY:HA3	1:D:272:VAL:O	1.97	0.64
1:D:561:ASP:OD1	1:D:565:ARG:N	2.31	0.64
1:D:699:ASP:HA	1:D:702:ARG:HD2	1.79	0.64
1:A:378:LEU:HD11	1:A:382:LYS:HE3	1.79	0.64
1:B:501:ASN:O	1:B:505:GLU:HB2	1.98	0.64
1:D:634:THR:HG22	1:D:638:LYS:HE3	1.79	0.64
1:B:485:PHE:O	1:B:489:LEU:HD23	1.97	0.64
1:C:560:THR:HA	1:C:566:SER:HA	1.79	0.63
1:C:610:GLU:HA	1:C:613:ILE:HD12	1.80	0.63
1:B:406:TYR:CE1	1:B:476:HIS:HB2	2.33	0.63
1:D:698:LEU:HD22	1:D:717:LYS:HD3	1.80	0.63
1:C:557:PRO:HG3	1:C:588:VAL:HG22	1.81	0.63
1:B:572:ALA:HA	1:B:612:VAL:HG11	1.79	0.63
1:A:393:GLU:O	1:A:397:GLN:HG3	1.98	0.63
1:B:426:VAL:HG22	1:B:477:LEU:HD23	1.81	0.63
1:B:657:GLU:HA	1:B:663:THR:HA	1.81	0.63
1:B:196:TYR:HB2	1:C:320:ARG:HE	1.64	0.63
1:B:673:LEU:HD13	1:B:676:MET:HE2	1.81	0.63
1:C:548:LYS:HA	1:C:552:ARG:NH2	2.14	0.63
1:D:519:ASP:O	1:D:523:HIS:ND1	2.32	0.62
1:A:500:LEU:HD11	1:A:521:VAL:HG13	1.80	0.62
1:D:636:VAL:HG12	1:D:673:LEU:HD12	1.81	0.62
1:C:398:ILE:HG23	1:C:480:LEU:HD22	1.81	0.62
1:B:368:ILE:HA	1:B:371:LYS:HZ2	1.63	0.62
1:B:459:ILE:HG23	1:B:482:LYS:HG3	1.81	0.62
1:C:334:LYS:HE3	1:C:334:LYS:HA	1.80	0.62
1:C:712:LEU:O	1:C:716:VAL:HG23	1.99	0.62
1:A:84:PRO:HG2	1:A:214:THR:HG22	1.80	0.62
1:D:145:LEU:O	1:D:149:ILE:HG13	1.99	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:572:ALA:HA	1:A:612:VAL:HG21	1.82	0.62
1:B:630:ASN:O	1:B:634:THR:HG23	2.00	0.62
1:C:315:ASN:HA	1:C:318:ARG:HG3	1.81	0.62
1:A:90:PHE:HZ	1:A:254:LEU:HD22	1.64	0.62
1:A:556:ASP:HB3	1:A:559:LYS:HG2	1.81	0.62
1:D:115:GLN:HB2	1:D:139:TYR:CE2	2.35	0.62
1:B:664:PRO:HB2	1:B:680:LEU:HD11	1.81	0.62
1:C:185:PHE:HB3	1:C:203:LYS:HE2	1.81	0.62
1:A:60:PRO:HD3	1:A:119:ALA:HB3	1.81	0.61
1:B:344:THR:O	1:B:348:ARG:HG2	1.99	0.61
1:C:658:ASP:OD1	1:C:662:ARG:N	2.21	0.61
1:A:373:ALA:HB1	1:A:399:VAL:HG12	1.82	0.61
1:B:275:GLY:HA3	1:C:274:TYR:O	2.01	0.61
1:D:196:TYR:HD1	1:D:197:LEU:HD22	1.66	0.61
1:D:350:GLN:HG2	1:D:355:TYR:HE1	1.65	0.61
1:D:572:ALA:HB1	1:D:616:LEU:HD11	1.82	0.61
1:A:420:VAL:HG13	1:A:459:ILE:HG13	1.82	0.61
1:A:669:ALA:HA	1:A:709:LEU:HD21	1.82	0.61
1:D:423:LEU:HD12	1:D:459:ILE:HD12	1.83	0.61
1:C:676:MET:HE2	1:C:676:MET:HA	1.83	0.61
1:B:657:GLU:HG2	1:B:663:THR:HG22	1.83	0.61
1:D:460:ILE:HD12	1:D:503:ILE:HD11	1.82	0.61
1:B:327:ILE:HG21	1:D:192:THR:HG21	1.83	0.60
1:D:687:VAL:HG13	1:D:697:PRO:HB2	1.82	0.60
1:A:562:TYR:HD2	1:D:537:SER:HA	1.67	0.60
1:A:394:PHE:O	1:A:398:ILE:HG22	2.01	0.60
1:B:252:ILE:O	1:B:257:ARG:NH1	2.34	0.60
1:B:456:ASP:OD1	1:B:457:ILE:N	2.34	0.60
1:D:319:PHE:HA	1:D:322:LYS:CE	2.31	0.60
1:B:282:LEU:HD21	1:C:256:LYS:HA	1.84	0.60
1:A:319:PHE:HB2	1:A:351:TYR:CD2	2.36	0.59
1:D:495:ASP:O	1:D:499:ILE:HG13	2.02	0.59
1:C:492:TYR:HB3	1:C:495:ASP:HB2	1.82	0.59
1:C:605:VAL:O	1:C:646:ARG:NH1	2.35	0.59
1:A:427:CYS:SG	1:A:476:HIS:ND1	2.67	0.59
1:A:80:SER:HB2	1:A:210:TYR:OH	2.01	0.59
1:A:457:ILE:HG21	1:A:512:ARG:NH2	2.17	0.59
1:C:385:PRO:HA	1:C:388:LYS:HG2	1.84	0.59
1:B:572:ALA:HB1	1:B:604:ALA:HB2	1.82	0.59
1:C:299:GLY:O	1:C:303:ILE:HD12	2.02	0.59
1:D:565:ARG:HA	1:D:569:HIS:ND1	2.17	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:507:LYS:HG3	1:A:512:ARG:HB3	1.84	0.59
1:D:337:ARG:HA	1:D:340:ARG:HD2	1.82	0.59
1:A:563:ASP:HA	1:A:595:LYS:HE3	1.84	0.59
1:A:59:HIS:HE1	1:A:61:LYS:HD3	1.66	0.59
1:A:256:LYS:HA	1:C:282:LEU:HD11	1.85	0.59
1:C:691:ASP:OD1	1:C:692:ARG:N	2.36	0.59
1:A:565:ARG:HD3	1:A:569:HIS:CG	2.38	0.59
1:B:698:LEU:HD13	1:B:713:LEU:HB2	1.84	0.59
1:A:331:ASN:OD1	1:A:340:ARG:NH1	2.36	0.58
1:A:355:TYR:HA	1:D:332:ARG:HH22	1.68	0.58
1:B:377:TYR:HB2	1:B:399:VAL:HG13	1.84	0.58
1:B:601:LEU:HD21	1:B:650:SER:HB3	1.85	0.58
1:C:520:ILE:O	1:C:523:HIS:ND1	2.36	0.58
1:D:569:HIS:HD2	1:D:600:PRO:HG3	1.68	0.58
1:A:394:PHE:HA	1:A:397:GLN:NE2	2.17	0.58
1:A:547:LEU:O	1:A:551:ILE:HG12	2.02	0.58
1:D:339:LEU:O	1:D:343:ILE:HG13	2.03	0.58
1:A:377:TYR:HB2	1:A:399:VAL:CG1	2.32	0.58
1:A:463:ILE:HG21	1:A:513:ILE:HG13	1.83	0.58
1:A:376:LEU:HD11	1:D:333:LYS:HG3	1.86	0.58
1:C:319:PHE:HA	1:C:322:LYS:HE3	1.85	0.58
1:A:388:LYS:HB3	1:A:502:ASN:HD21	1.67	0.58
1:C:59:HIS:HD2	1:C:60:PRO:HD2	1.69	0.58
1:C:577:GLU:OE1	1:C:577:GLU:N	2.25	0.58
1:D:569:HIS:CD2	1:D:600:PRO:HG3	2.38	0.58
1:D:632:LEU:HD23	1:D:647:LEU:HD12	1.85	0.58
1:D:644:LEU:O	1:D:648:LEU:HG	2.04	0.58
1:D:236:ILE:HG12	1:D:249:PHE:HB3	1.86	0.58
1:D:323:MET:HE1	1:D:344:THR:HG22	1.85	0.58
1:A:126:TYR:OH	1:D:352:ASP:OD2	2.21	0.58
1:B:415:GLU:N	1:B:415:GLU:OE2	2.37	0.58
1:C:500:LEU:HD22	1:C:520:ILE:HB	1.86	0.58
1:A:65:TYR:CE2	1:A:118:VAL:HG21	2.39	0.58
1:B:185:PHE:HE1	1:B:202:LEU:HG	1.69	0.58
1:C:609:GLN:O	1:C:613:ILE:HG13	2.04	0.58
1:A:422:HIS:CD2	1:A:479:ARG:HD2	2.38	0.57
1:C:197:LEU:O	1:C:201:ILE:HG13	2.04	0.57
1:C:456:ASP:O	1:C:460:ILE:HG22	2.04	0.57
1:A:569:HIS:CE1	1:A:600:PRO:HG3	2.39	0.57
1:B:319:PHE:HE1	1:B:323:MET:HE2	1.69	0.57
1:B:498:THR:O	1:B:502:ASN:ND2	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:106:ILE:HG13	1:D:107:ALA:N	2.18	0.57
1:C:356:THR:O	1:C:359:VAL:HG12	2.04	0.57
1:B:517:GLU:H	1:B:521:VAL:HB	1.69	0.57
1:B:642:ASP:HA	1:B:645:LYS:HE2	1.87	0.57
1:D:632:LEU:O	1:D:636:VAL:HG23	2.04	0.57
1:A:522:ILE:H	1:A:522:ILE:HD12	1.69	0.57
1:D:231:GLU:HA	1:D:234:THR:HG23	1.87	0.57
1:C:445:VAL:O	1:C:512:ARG:NH2	2.38	0.57
1:C:226:LEU:O	1:C:250:ARG:NH2	2.34	0.57
1:C:507:LYS:HG2	1:C:514:LYS:HD2	1.86	0.57
1:D:414:THR:OG1	1:D:465:GLN:NE2	2.35	0.57
1:A:437:LYS:HD2	1:A:441:SER:HB3	1.86	0.57
1:B:81:LEU:O	1:B:213:HIS:NE2	2.38	0.57
1:B:536:ASN:ND2	1:B:561:ASP:HB3	2.20	0.57
1:C:698:LEU:HD13	1:C:713:LEU:HB2	1.85	0.57
1:D:219:PHE:HA	1:D:222:LEU:HD12	1.87	0.57
1:A:111:ASP:O	1:A:115:GLN:HG2	2.05	0.56
1:C:674:PHE:HA	1:C:709:LEU:HD13	1.87	0.56
1:D:625:LEU:HB2	1:D:628:SER:HB3	1.87	0.56
1:A:203:LYS:O	1:A:207:VAL:HG23	2.04	0.56
1:A:590:VAL:HB	1:A:621:ALA:HB2	1.85	0.56
1:C:325:ASP:OD2	1:C:326:LEU:N	2.38	0.56
1:B:487:ASN:O	1:B:491:ILE:HG13	2.05	0.56
1:C:644:LEU:HD13	1:C:676:MET:SD	2.46	0.56
1:D:106:ILE:O	1:D:110:VAL:HG23	2.06	0.56
1:A:370:ALA:O	1:A:374:GLN:HG3	2.06	0.56
1:C:437:LYS:HE2	1:C:443:GLU:HG3	1.86	0.56
1:C:658:ASP:OD1	1:C:661:HIS:N	2.39	0.56
1:D:427:CYS:HB2	1:D:476:HIS:O	2.06	0.56
1:D:675:LEU:O	1:D:679:MET:HG3	2.06	0.56
1:A:481:ASP:HB3	1:A:484:SER:OG	2.06	0.56
1:D:435:VAL:HG13	1:D:443:GLU:HB3	1.88	0.56
1:B:59:HIS:HE1	1:B:128:THR:HG21	1.70	0.56
1:A:421:ASP:HA	1:A:482:LYS:HE3	1.88	0.55
1:A:520:ILE:HA	1:A:523:HIS:CD2	2.37	0.55
1:D:417:GLY:H	1:D:465:GLN:HB3	1.71	0.55
1:D:532:ALA:HB2	1:D:559:LYS:HD3	1.88	0.55
1:B:526:LYS:O	1:B:530:GLU:HG2	2.05	0.55
1:C:551:ILE:HB	1:C:552:ARG:NH2	2.22	0.55
1:D:379:PRO:C	1:D:383:LYS:HZ1	2.14	0.55
1:A:81:LEU:O	1:A:213:HIS:NE2	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:568:LEU:HD11	1:B:616:LEU:HD21	1.87	0.55
1:B:662:ARG:HG3	1:B:691:ASP:HB2	1.86	0.55
1:B:676:MET:HA	1:B:679:MET:CE	2.36	0.55
1:B:692:ARG:NH1	1:C:662:ARG:HH12	2.04	0.55
1:C:203:LYS:O	1:C:207:VAL:HG12	2.06	0.55
1:C:641:SER:O	1:C:645:LYS:HG3	2.06	0.55
1:D:457:ILE:H	1:D:457:ILE:HD12	1.70	0.55
1:A:568:LEU:HD13	1:A:588:VAL:HB	1.88	0.55
1:D:374:GLN:NE2	1:D:396:ASN:OD1	2.40	0.55
1:D:407:PHE:HB2	1:D:475:CYS:SG	2.46	0.55
1:D:434:LEU:H	1:D:434:LEU:HD23	1.70	0.55
1:D:497:ARG:HG2	1:D:527:GLN:OE1	2.05	0.55
1:D:698:LEU:HD21	1:D:714:GLU:HG2	1.88	0.55
1:C:457:ILE:O	1:C:461:CYS:HB2	2.05	0.55
1:D:344:THR:O	1:D:348:ARG:HG3	2.06	0.55
1:D:630:ASN:OD1	1:D:630:ASN:N	2.38	0.55
1:A:449:GLY:O	1:A:452:THR:HG22	2.06	0.55
1:D:654:PRO:HB2	1:D:685:ALA:HB2	1.86	0.55
1:A:305:ASN:OD1	1:D:310:ILE:HD13	2.07	0.55
1:A:316:THR:O	1:A:320:ARG:HG2	2.07	0.55
1:A:378:LEU:HD12	1:A:382:LYS:HG3	1.88	0.55
1:A:413:ILE:HG22	1:A:414:THR:HG23	1.88	0.55
1:A:663:THR:H	1:A:666:HIS:HB2	1.71	0.55
1:D:435:VAL:HB	1:D:467:PHE:HB3	1.87	0.55
1:D:563:ASP:HA	1:D:595:LYS:HD2	1.88	0.55
1:B:372:ILE:O	1:B:376:LEU:HD13	2.07	0.55
1:B:576:TYR:O	1:B:580:THR:HG23	2.07	0.55
1:B:699:ASP:HA	1:B:702:ARG:HD2	1.89	0.55
1:C:59:HIS:HB3	1:C:62:ASN:HB2	1.89	0.55
1:C:346:HIS:HE2	1:C:411:GLU:HG2	1.72	0.55
1:D:484:SER:O	1:D:488:ILE:HG13	2.07	0.55
1:D:510:ASN:HB3	1:D:513:ILE:HG12	1.88	0.54
1:A:466:PRO:HG2	1:A:467:PHE:CD2	2.42	0.54
1:A:255:TRP:O	1:A:259:THR:OG1	2.21	0.54
1:A:633:CYS:HB3	1:A:667:VAL:HG21	1.88	0.54
1:A:662:ARG:HG2	1:A:691:ASP:HB3	1.89	0.54
1:A:507:LYS:HE3	1:A:507:LYS:HA	1.88	0.54
1:B:398:ILE:O	1:B:402:LEU:HG	2.08	0.54
1:C:707:LYS:O	1:C:711:LYS:HG3	2.07	0.54
1:D:690:LYS:HB3	1:D:694:GLY:HA2	1.90	0.54
1:A:460:ILE:HG23	1:A:520:ILE:HD11	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:507:LYS:HD3	1:A:512:ARG:NH2	2.22	0.54
1:B:333:LYS:HB3	1:D:376:LEU:HD21	1.88	0.54
1:B:323:MET:O	1:B:327:ILE:HG12	2.07	0.54
1:D:189:GLU:HA	1:D:199:THR:HG21	1.89	0.54
1:B:602:PHE:CD2	1:B:625:LEU:HD21	2.43	0.54
1:C:602:PHE:HA	1:C:605:VAL:HG12	1.89	0.54
1:D:401:ARG:HD2	1:D:488:ILE:HD11	1.88	0.54
1:B:509:SER:HA	1:B:513:ILE:HD13	1.90	0.54
1:D:150:GLY:O	1:D:177:ARG:NH2	2.41	0.54
1:A:516:LEU:HD22	1:A:521:VAL:HG11	1.90	0.54
1:B:604:ALA:O	1:B:608:GLY:N	2.40	0.54
1:A:272:VAL:HG13	1:C:271:THR:HA	1.90	0.54
1:A:365:PRO:HD3	1:D:346:HIS:CE1	2.43	0.54
1:A:632:LEU:HD21	1:A:652:MET:SD	2.48	0.54
1:D:233:TYR:HD1	1:D:280:VAL:HG12	1.73	0.54
1:D:349:LEU:HD22	1:D:408:LEU:HD23	1.89	0.54
1:C:692:ARG:HG3	1:C:693:TRP:CE3	2.43	0.53
1:C:323:MET:HE1	1:C:344:THR:HG22	1.90	0.53
1:C:497:ARG:NH2	1:C:526:LYS:O	2.41	0.53
1:C:540:PHE:CE2	1:C:574:ARG:HD3	2.44	0.53
1:D:108:PHE:CE2	1:D:177:ARG:HD3	2.43	0.53
1:D:612:VAL:HA	1:D:615:LEU:HD12	1.90	0.53
1:B:126:TYR:CE1	1:C:474:LEU:HD22	2.44	0.53
1:C:61:LYS:HG2	1:C:66:LYS:HZ3	1.73	0.53
1:C:145:LEU:HD23	1:C:145:LEU:H	1.73	0.53
1:D:520:ILE:O	1:D:524:ILE:HG13	2.08	0.53
1:B:93:LEU:HD22	1:B:97:LEU:HD12	1.90	0.53
1:A:562:TYR:O	1:A:563:ASP:C	2.51	0.53
1:B:565:ARG:NH1	1:B:565:ARG:HB2	2.24	0.53
1:C:195:ASN:OD1	1:C:196:TYR:N	2.41	0.53
1:C:544:PHE:HB2	1:C:548:LYS:HZ3	1.74	0.53
1:D:415:GLU:HG3	1:D:418:ASN:HB2	1.91	0.53
1:A:565:ARG:HB2	1:A:569:HIS:CE1	2.43	0.53
1:B:368:ILE:HA	1:B:371:LYS:NZ	2.23	0.53
1:A:249:PHE:O	1:A:257:ARG:HD3	2.09	0.53
1:B:386:LEU:HD11	1:B:499:ILE:HG23	1.91	0.53
1:C:675:LEU:O	1:C:678:LYS:HG2	2.07	0.53
1:D:420:VAL:HG21	1:D:458:SER:HB3	1.90	0.53
1:B:226:LEU:HD12	1:B:230:ASN:HB2	1.90	0.53
1:B:551:ILE:HD12	1:B:582:PHE:CE2	2.43	0.53
1:B:660:ASP:HA	1:B:692:ARG:NH2	2.23	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:253:ASP:OD2	1:A:254:LEU:N	2.42	0.53
1:A:574:ARG:NE	1:A:574:ARG:HA	2.22	0.53
1:B:343:ILE:HD11	1:D:372:ILE:HD11	1.91	0.53
1:A:485:PHE:O	1:A:489:LEU:HD23	2.09	0.52
1:A:661:HIS:HD2	1:A:692:ARG:HB2	1.73	0.52
1:C:532:ALA:HB2	1:C:559:LYS:HB3	1.91	0.52
1:A:76:ALA:HA	1:A:108:PHE:HZ	1.74	0.52
1:B:461:CYS:HA	1:B:517:GLU:HB3	1.90	0.52
1:B:606:LYS:HA	1:B:643:PHE:CZ	2.44	0.52
1:B:623:PHE:HB3	1:B:625:LEU:HG	1.90	0.52
1:C:420:VAL:HG13	1:C:459:ILE:HD12	1.92	0.52
1:D:406:TYR:HA	1:D:475:CYS:O	2.09	0.52
1:D:593:LYS:NZ	1:D:626:GLU:OE1	2.43	0.52
1:A:698:LEU:HD13	1:A:713:LEU:HB2	1.91	0.52
1:D:228:PRO:HA	1:D:231:GLU:HB3	1.90	0.52
1:B:59:HIS:CG	1:B:60:PRO:HD2	2.45	0.52
1:B:197:LEU:H	1:B:197:LEU:CD2	2.22	0.52
1:B:544:PHE:CE1	1:B:548:LYS:HE3	2.45	0.52
1:C:387:PHE:HE2	1:C:398:ILE:HG21	1.74	0.52
1:A:80:SER:O	1:A:210:TYR:OH	2.26	0.52
1:D:643:PHE:CE1	1:D:647:LEU:HD21	2.44	0.52
1:C:386:LEU:HG	1:C:387:PHE:CE1	2.44	0.52
1:D:675:LEU:HA	1:D:678:LYS:HE3	1.92	0.52
1:A:275:GLY:HA2	1:D:274:TYR:HB3	1.92	0.52
1:A:397:GLN:HG2	1:A:492:TYR:CD1	2.45	0.52
1:B:714:GLU:O	1:B:718:ASN:ND2	2.43	0.52
1:C:182:VAL:O	1:C:186:GLN:HG3	2.09	0.52
1:C:459:ILE:HD11	1:C:482:LYS:HG3	1.91	0.52
1:A:285:MET:O	1:A:289:MET:HG3	2.10	0.52
1:A:264:PHE:HD1	1:A:277:ILE:HB	1.75	0.51
1:A:330:MET:CE	1:A:340:ARG:HD2	2.37	0.51
1:A:572:ALA:HB1	1:A:604:ALA:HB2	1.92	0.51
1:B:483:GLN:NE2	1:B:487:ASN:OD1	2.43	0.51
1:B:536:ASN:HD22	1:B:561:ASP:HB3	1.75	0.51
1:D:222:LEU:HD13	1:D:284:GLU:HA	1.91	0.51
1:A:674:PHE:HA	1:A:709:LEU:HD13	1.92	0.51
1:D:698:LEU:CD2	1:D:717:LYS:HD3	2.40	0.51
1:D:643:PHE:O	1:D:647:LEU:HG	2.11	0.51
1:C:421:ASP:OD1	1:C:421:ASP:N	2.34	0.51
1:A:457:ILE:HG13	1:A:461:CYS:SG	2.50	0.51
1:B:393:GLU:OE2	1:B:393:GLU:N	2.23	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:58:ILE:HG12	1:A:117:PHE:O	2.10	0.51
1:A:414:THR:O	1:A:468:THR:HG23	2.11	0.51
1:B:274:TYR:HE2	1:D:288:VAL:HG11	1.76	0.51
1:C:354:HIS:O	1:C:358:THR:HG23	2.11	0.51
1:A:281:ASN:O	1:A:285:MET:HG3	2.11	0.51
1:C:707:LYS:HA	1:C:710:ILE:HD12	1.92	0.51
1:D:426:VAL:HG12	1:D:450:PRO:HA	1.91	0.51
1:A:335:LEU:HD11	1:C:372:ILE:HG23	1.93	0.51
1:B:420:VAL:HG23	1:B:465:GLN:HB2	1.92	0.51
1:D:267:VAL:HA	1:D:272:VAL:HG13	1.93	0.51
1:D:87:PHE:O	1:D:168:ARG:NH2	2.30	0.50
1:D:101:ASP:O	1:D:105:GLN:HG2	2.11	0.50
1:A:545:TYR:CE2	1:D:522:ILE:HD13	2.47	0.50
1:A:711:LYS:HE3	1:A:711:LYS:HA	1.92	0.50
1:B:498:THR:HG22	1:B:502:ASN:HD21	1.75	0.50
1:B:570:LEU:HD21	1:C:562:TYR:CD1	2.45	0.50
1:D:350:GLN:HG2	1:D:355:TYR:CE1	2.45	0.50
1:D:698:LEU:HD11	1:D:714:GLU:HG3	1.93	0.50
1:A:434:LEU:HD23	1:A:442:GLU:HB2	1.93	0.50
1:B:642:ASP:OD1	1:B:646:ARG:NE	2.44	0.50
1:C:364:ILE:HG22	1:C:369:ARG:HG3	1.94	0.50
1:D:522:ILE:O	1:D:526:LYS:HG3	2.12	0.50
1:D:570:LEU:O	1:D:573:CYS:HB3	2.12	0.50
1:B:368:ILE:O	1:B:372:ILE:HG13	2.11	0.50
1:B:423:LEU:HB2	1:B:459:ILE:HD12	1.93	0.50
1:A:356:THR:O	1:A:359:VAL:HG12	2.11	0.50
1:B:681:VAL:HG11	1:B:716:VAL:HG21	1.93	0.50
1:C:359:VAL:O	1:C:362:GLN:HG2	2.11	0.50
1:C:634:THR:HG22	1:C:638:LYS:HZ2	1.76	0.50
1:D:168:ARG:O	1:D:171:LEU:HB2	2.11	0.50
1:D:358:THR:O	1:D:361:LEU:HB2	2.12	0.50
1:D:443:GLU:HG3	1:D:444:SER:H	1.77	0.50
1:D:623:PHE:HB2	1:D:652:MET:HE3	1.92	0.50
1:B:660:ASP:OD1	1:C:662:ARG:NH1	2.45	0.50
1:C:602:PHE:HA	1:C:605:VAL:CG1	2.42	0.50
1:B:531:LEU:HD21	1:B:555:ALA:HB1	1.94	0.50
1:A:691:ASP:OD1	1:A:694:GLY:N	2.44	0.50
1:A:90:PHE:CZ	1:A:254:LEU:HD22	2.45	0.49
1:A:565:ARG:H	1:A:565:ARG:HD2	1.77	0.49
1:B:183:GLU:O	1:B:187:ARG:HG3	2.12	0.49
1:B:266:ILE:HG21	1:D:289:MET:HA	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:329:PHE:HA	1:B:332:ARG:HE	1.77	0.49
1:B:432:GLU:HB3	1:B:472:CYS:SG	2.52	0.49
1:D:378:LEU:O	1:D:382:LYS:HG2	2.12	0.49
1:A:226:LEU:HD22	1:A:227:PRO:HD2	1.94	0.49
1:C:524:ILE:HG13	1:C:525:GLY:N	2.27	0.49
1:A:483:GLN:O	1:A:487:ASN:ND2	2.46	0.49
1:B:434:LEU:HA	1:B:443:GLU:O	2.12	0.49
1:B:592:LEU:O	1:B:600:PRO:HD3	2.12	0.49
1:D:507:LYS:HA	1:D:513:ILE:HG13	1.93	0.49
1:A:562:TYR:O	1:A:562:TYR:HD1	1.94	0.49
1:B:61:LYS:HD2	1:B:61:LYS:O	2.12	0.49
1:C:556:ASP:OD1	1:C:557:PRO:HD2	2.13	0.49
1:C:630:ASN:N	1:C:630:ASN:OD1	2.44	0.49
1:C:698:LEU:HD21	1:C:714:GLU:OE2	2.13	0.49
1:D:233:TYR:CD1	1:D:280:VAL:HG12	2.47	0.49
1:A:220:TYR:O	1:A:224:THR:HG23	2.12	0.49
1:B:635:THR:HA	1:B:638:LYS:HD2	1.93	0.49
1:B:158:TYR:CE1	1:B:168:ARG:HD3	2.47	0.49
1:A:671:GLU:HB3	1:A:673:LEU:HG	1.93	0.49
1:B:689:SER:O	1:B:696:SER:HA	2.13	0.49
1:C:364:ILE:HG23	1:C:368:ILE:HB	1.94	0.49
1:A:330:MET:HB3	1:A:340:ARG:HD3	1.94	0.49
1:A:349:LEU:HD11	1:A:406:TYR:HB2	1.94	0.49
1:C:552:ARG:NH2	1:C:582:PHE:CZ	2.81	0.49
1:B:564:GLY:HA3	1:B:595:LYS:HG3	1.94	0.49
1:C:561:ASP:OD1	1:C:565:ARG:N	2.45	0.49
1:C:605:VAL:HG23	1:C:646:ARG:CB	2.41	0.49
1:D:346:HIS:NE2	1:D:406:TYR:O	2.46	0.49
1:A:507:LYS:HB2	1:A:510:ASN:HA	1.95	0.49
1:B:281:ASN:O	1:B:285:MET:HG3	2.13	0.49
1:D:331:ASN:HA	1:D:340:ARG:HH22	1.77	0.49
1:D:663:THR:O	1:D:666:HIS:HB2	2.13	0.49
1:D:692:ARG:HB3	1:D:693:TRP:CE3	2.47	0.49
1:A:269:MET:SD	1:C:296:MET:HE1	2.52	0.48
1:C:223:ALA:HB2	1:C:235:TRP:NE1	2.28	0.48
1:D:525:GLY:HA2	1:D:528:GLU:HG2	1.95	0.48
1:D:590:VAL:HG22	1:D:619:GLU:HG3	1.95	0.48
1:A:142:SER:O	1:A:143:HIS:HB2	2.12	0.48
1:A:544:PHE:CD1	1:A:579:ILE:HG12	2.48	0.48
1:C:601:LEU:HB2	1:C:621:ALA:HB3	1.95	0.48
1:A:223:ALA:HB2	1:A:235:TRP:NE1	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:522:ILE:O	1:A:526:LYS:HG3	2.13	0.48
1:C:281:ASN:HB3	1:C:283:ARG:HG2	1.94	0.48
1:C:327:ILE:HA	1:C:330:MET:HE3	1.95	0.48
1:C:423:LEU:HD13	1:C:456:ASP:HB2	1.95	0.48
1:D:131:LYS:HB3	1:D:134:ARG:HG2	1.96	0.48
1:D:665:LEU:HD21	1:D:680:LEU:HB2	1.94	0.48
1:B:562:TYR:HB3	1:C:540:PHE:HD1	1.78	0.48
1:C:62:ASN:ND2	1:C:64:TRP:HB2	2.28	0.48
1:D:154:TRP:HB2	1:D:174:ARG:HH22	1.79	0.48
1:D:602:PHE:CD1	1:D:625:LEU:HD11	2.48	0.48
1:B:110:VAL:O	1:B:114:LEU:N	2.34	0.48
1:B:208:GLU:O	1:B:212:THR:HG23	2.12	0.48
1:C:707:LYS:NZ	1:D:702:ARG:O	2.23	0.48
1:D:329:PHE:HA	1:D:332:ARG:HH11	1.79	0.48
1:D:434:LEU:HA	1:D:445:VAL:HG12	1.96	0.48
1:D:456:ASP:O	1:D:457:ILE:C	2.56	0.48
1:B:285:MET:HE3	1:C:259:THR:HG22	1.95	0.48
1:B:409:PRO:HA	1:B:471:VAL:HG12	1.95	0.48
1:C:212:THR:HG22	1:C:291:TYR:OH	2.13	0.48
1:C:548:LYS:HD3	1:C:552:ARG:HH22	1.78	0.48
1:C:712:LEU:HD12	1:C:712:LEU:HA	1.66	0.48
1:D:241:LEU:HB2	1:D:246:TYR:HE1	1.78	0.48
1:B:401:ARG:HD3	1:B:484:SER:HB3	1.96	0.48
1:B:409:PRO:HG3	1:B:473:GLU:C	2.39	0.48
1:C:78:TYR:OH	1:C:100:LEU:HD21	2.13	0.48
1:C:432:GLU:HG3	1:C:470:ARG:HB3	1.95	0.48
1:D:155:ASP:OD1	1:D:159:LYS:NZ	2.47	0.48
1:D:319:PHE:HA	1:D:322:LYS:HE2	1.95	0.48
1:D:536:ASN:HD22	1:D:561:ASP:HB3	1.79	0.48
1:A:201:ILE:HD12	1:A:309:LEU:HD13	1.96	0.48
1:A:320:ARG:NH2	1:C:189:GLU:O	2.47	0.48
1:A:461:CYS:C	1:A:518:SER:HB2	2.38	0.48
1:C:409:PRO:HG3	1:C:473:GLU:C	2.39	0.48
1:D:417:GLY:HA2	1:D:464:SER:HB2	1.96	0.48
1:A:601:LEU:O	1:A:605:VAL:HG23	2.14	0.48
1:B:551:ILE:HD12	1:B:582:PHE:HE2	1.78	0.48
1:C:76:ALA:HA	1:C:108:PHE:HZ	1.77	0.48
1:C:430:LEU:O	1:C:472:CYS:HB2	2.13	0.48
1:C:671:GLU:HA	1:D:708:LYS:NZ	2.29	0.48
1:B:333:LYS:HB2	1:B:335:LEU:HD13	1.96	0.48
1:D:195:ASN:OD1	1:D:196:TYR:N	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:213:HIS:ND1	1:B:258:TYR:OH	2.39	0.47
1:C:219:PHE:HE1	1:C:284:GLU:HB3	1.79	0.47
1:C:386:LEU:HG	1:C:387:PHE:CD1	2.49	0.47
1:A:335:LEU:HD12	1:A:339:LEU:CD2	2.36	0.47
1:B:242:GLY:HA3	1:D:280:VAL:HG11	1.96	0.47
1:D:511:ASP:O	1:D:514:LYS:HB3	2.14	0.47
1:B:109:LEU:O	1:B:110:VAL:HB	2.14	0.47
1:A:335:LEU:HD13	1:C:375:LEU:HD22	1.95	0.47
1:A:415:GLU:OE2	1:A:415:GLU:N	2.47	0.47
1:B:59:HIS:CE1	1:B:128:THR:HG21	2.49	0.47
1:A:329:PHE:CE2	1:C:358:THR:HB	2.50	0.47
1:D:398:ILE:O	1:D:402:LEU:HG	2.13	0.47
1:A:199:THR:HG22	1:A:203:LYS:HE2	1.97	0.47
1:B:368:ILE:HD13	1:C:342:GLN:HB3	1.95	0.47
1:B:401:ARG:CD	1:B:488:ILE:HD11	2.43	0.47
1:B:499:ILE:HA	1:B:502:ASN:HD22	1.77	0.47
1:B:504:MET:HA	1:B:508:GLU:HA	1.96	0.47
1:C:72:ILE:HA	1:C:72:ILE:HD12	1.70	0.47
1:C:90:PHE:CE2	1:C:254:LEU:HD13	2.50	0.47
1:A:333:LYS:HD2	1:C:376:LEU:HD21	1.96	0.47
1:A:375:LEU:HD23	1:D:335:LEU:HD22	1.96	0.47
1:A:458:SER:HA	1:A:463:ILE:HG12	1.97	0.47
1:A:481:ASP:O	1:A:484:SER:HB2	2.14	0.47
1:B:489:LEU:HD12	1:B:496:GLY:HA2	1.95	0.47
1:B:601:LEU:HD21	1:B:650:SER:CB	2.45	0.47
1:C:397:GLN:O	1:C:401:ARG:HG2	2.15	0.47
1:D:122:ASP:O	1:D:126:TYR:N	2.47	0.47
1:D:413:ILE:HG22	1:D:414:THR:HG23	1.97	0.47
1:D:657:GLU:HB3	1:D:661:HIS:HA	1.95	0.47
1:A:334:LYS:HD2	1:A:334:LYS:C	2.40	0.47
1:B:165:GLU:CD	1:B:168:ARG:HE	2.23	0.47
1:B:409:PRO:HG3	1:B:474:LEU:N	2.29	0.47
1:C:208:GLU:O	1:C:212:THR:HG23	2.15	0.47
1:D:266:ILE:HD13	1:D:266:ILE:HA	1.75	0.47
1:D:412:VAL:HG12	1:D:470:ARG:HG2	1.96	0.47
1:D:557:PRO:HB2	1:D:588:VAL:HG22	1.97	0.47
1:A:427:CYS:HG	1:A:476:HIS:CG	2.29	0.47
1:A:644:LEU:HD21	1:A:680:LEU:HD21	1.96	0.47
1:D:379:PRO:O	1:D:383:LYS:NZ	2.45	0.47
1:A:488:ILE:HG23	1:A:492:TYR:CD2	2.49	0.47
1:A:678:LYS:O	1:A:682:GLU:HG3	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:252:ILE:HG21	1:B:256:LYS:HD2	1.97	0.47
1:B:484:SER:O	1:B:488:ILE:HG13	2.15	0.47
1:B:529:ALA:O	1:B:533:LEU:HD13	2.14	0.47
1:A:75:TRP:CH2	1:A:104:GLY:HA2	2.50	0.46
1:B:408:LEU:HD23	1:B:409:PRO:HD2	1.97	0.46
1:D:226:LEU:HG	1:D:230:ASN:HB3	1.97	0.46
1:D:674:PHE:CE1	1:D:678:LYS:HE2	2.49	0.46
1:B:660:ASP:HA	1:B:692:ARG:HH21	1.81	0.46
1:D:112:ILE:HG12	1:D:139:TYR:OH	2.14	0.46
1:D:270:ALA:HB3	1:D:272:VAL:HG12	1.96	0.46
1:D:431:LEU:HD21	1:D:471:VAL:HG22	1.97	0.46
1:D:461:CYS:HB3	1:D:463:ILE:HG12	1.95	0.46
1:D:614:GLY:O	1:D:618:LYS:HG2	2.15	0.46
1:A:574:ARG:HB3	1:A:576:TYR:CZ	2.50	0.46
1:B:393:GLU:H	1:B:393:GLU:CD	2.17	0.46
1:A:59:HIS:CG	1:A:60:PRO:HD2	2.49	0.46
1:A:426:VAL:HG12	1:A:450:PRO:HA	1.96	0.46
1:B:381:ILE:HG13	1:B:402:LEU:HD11	1.96	0.46
1:C:500:LEU:O	1:C:504:MET:HG2	2.15	0.46
1:A:326:LEU:O	1:A:330:MET:HG3	2.16	0.46
1:A:591:ASN:OD1	1:A:622:SER:N	2.23	0.46
1:B:623:PHE:HE2	1:B:650:SER:HB2	1.81	0.46
1:D:59:HIS:CG	1:D:60:PRO:HD2	2.51	0.46
1:A:489:LEU:HD11	1:A:496:GLY:HA3	1.97	0.46
1:B:158:TYR:CZ	1:B:168:ARG:HD3	2.51	0.46
1:B:339:LEU:HA	1:B:342:GLN:HG2	1.98	0.46
1:B:616:LEU:O	1:B:620:GLY:N	2.48	0.46
1:C:456:ASP:O	1:C:459:ILE:HG22	2.16	0.46
1:C:514:LYS:HG2	1:C:515:LYS:O	2.16	0.46
1:C:521:VAL:HA	1:C:524:ILE:HG12	1.97	0.46
1:D:430:LEU:HD12	1:D:431:LEU:N	2.30	0.46
1:C:269:MET:HE2	1:C:269:MET:HB3	1.75	0.46
1:C:384:VAL:HG12	1:C:386:LEU:HB3	1.97	0.46
1:D:63:ARG:HA	1:D:66:LYS:HZ3	1.81	0.46
1:D:549:SER:O	1:D:553:SER:OG	2.27	0.46
1:A:205:LEU:HD12	1:A:205:LEU:HA	1.80	0.46
1:A:533:LEU:HD11	1:D:537:SER:HB2	1.97	0.46
1:A:576:TYR:CD2	1:A:579:ILE:HD12	2.51	0.46
1:B:336:GLY:O	1:B:337:ARG:C	2.59	0.46
1:B:551:ILE:HD13	1:B:557:PRO:HG3	1.96	0.46
1:D:254:LEU:HG	1:D:255:TRP:N	2.28	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:279:ALA:HB1	1:D:284:GLU:HB3	1.96	0.46
1:D:414:THR:O	1:D:468:THR:HA	2.15	0.46
1:A:64:TRP:HA	1:A:64:TRP:CE3	2.51	0.46
1:A:208:GLU:O	1:A:212:THR:HG23	2.16	0.46
1:A:507:LYS:HD3	1:A:512:ARG:HH21	1.81	0.46
1:B:87:PHE:O	1:B:168:ARG:NH2	2.45	0.46
1:B:394:PHE:O	1:B:398:ILE:HG12	2.16	0.46
1:B:428:GLU:HB3	1:B:476:HIS:HB3	1.97	0.46
1:B:575:GLY:HA2	1:B:612:VAL:HG21	1.98	0.46
1:C:188:LEU:HD12	1:C:188:LEU:HA	1.75	0.46
1:C:387:PHE:CE2	1:C:398:ILE:HG21	2.50	0.46
1:A:105:GLN:HB2	1:A:151:CYS:SG	2.56	0.46
1:A:402:LEU:HD22	1:A:478:LEU:HB3	1.97	0.46
1:A:574:ARG:HB3	1:A:576:TYR:CE1	2.51	0.46
1:A:676:MET:O	1:A:680:LEU:HG	2.15	0.46
1:C:185:PHE:O	1:C:189:GLU:HG3	2.16	0.46
1:C:196:TYR:O	1:C:199:THR:OG1	2.27	0.46
1:D:570:LEU:HD12	1:D:570:LEU:H	1.81	0.46
1:A:577:GLU:HA	1:A:580:THR:HB	1.98	0.45
1:B:171:LEU:O	1:B:174:ARG:HB2	2.16	0.45
1:B:601:LEU:HD12	1:B:621:ALA:HB1	1.97	0.45
1:A:519:ASP:HB3	1:A:523:HIS:NE2	2.31	0.45
1:A:695:ASN:HD21	1:D:693:TRP:HE1	1.65	0.45
1:C:75:TRP:HE1	1:C:104:GLY:HA2	1.81	0.45
1:C:601:LEU:O	1:C:605:VAL:HG12	2.16	0.45
1:A:330:MET:SD	1:A:343:ILE:HD12	2.56	0.45
1:A:417:GLY:C	1:A:464:SER:HB2	2.42	0.45
1:B:644:LEU:HA	1:B:647:LEU:HD12	1.97	0.45
1:D:326:LEU:HD23	1:D:326:LEU:HA	1.79	0.45
1:D:458:SER:HB2	1:D:466:PRO:HD3	1.99	0.45
1:D:519:ASP:HA	1:D:522:ILE:HD12	1.98	0.45
1:A:329:PHE:CD2	1:C:358:THR:HB	2.50	0.45
1:A:632:LEU:HD11	1:A:652:MET:HG2	1.98	0.45
1:C:407:PHE:HB2	1:C:475:CYS:HG	1.79	0.45
1:C:633:CYS:HB3	1:C:667:VAL:HG21	1.98	0.45
1:D:115:GLN:HA	1:D:115:GLN:NE2	2.32	0.45
1:D:241:LEU:HD21	1:D:276:ASP:HB2	1.99	0.45
1:D:371:LYS:HB3	1:D:371:LYS:HE3	1.65	0.45
1:D:531:LEU:HD11	1:D:550:LEU:HD22	1.99	0.45
1:A:433:ALA:HB3	1:A:445:VAL:HB	1.97	0.45
1:B:614:GLY:HA2	1:B:617:VAL:HG22	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:120:TYR:CD1	1:C:138:ARG:HD3	2.52	0.45
1:B:90:PHE:CZ	1:B:254:LEU:HD13	2.52	0.45
1:B:253:ASP:OD1	1:B:253:ASP:N	2.49	0.45
1:C:86:GLU:HG3	1:C:93:LEU:HD23	1.99	0.45
1:C:398:ILE:O	1:C:402:LEU:HG	2.16	0.45
1:C:409:PRO:HG3	1:C:474:LEU:N	2.31	0.45
1:D:154:TRP:HB2	1:D:174:ARG:NH2	2.32	0.45
1:B:269:MET:HE2	1:B:269:MET:HB3	1.89	0.45
1:B:607:ALA:HB1	1:B:609:GLN:HE21	1.81	0.45
1:D:387:PHE:HE2	1:D:398:ILE:HG21	1.80	0.45
1:D:551:ILE:HG21	1:D:586:GLU:HG3	1.98	0.45
1:D:589:ASP:HB3	1:D:592:LEU:HB2	1.99	0.45
1:D:626:GLU:OE1	1:D:626:GLU:N	2.50	0.45
1:A:72:ILE:HD13	1:A:72:ILE:HA	1.65	0.45
1:A:240:LYS:O	1:A:240:LYS:HD3	2.17	0.45
1:A:322:LYS:HD3	1:A:351:TYR:OH	2.16	0.45
1:B:471:VAL:HG13	1:B:475:CYS:SG	2.57	0.45
1:B:712:LEU:O	1:B:716:VAL:HG23	2.16	0.45
1:C:431:LEU:HB2	1:C:448:LEU:HB2	1.97	0.45
1:C:461:CYS:SG	1:C:520:ILE:HD13	2.57	0.45
1:C:601:LEU:HD23	1:C:623:PHE:CE2	2.52	0.45
1:C:641:SER:HB2	1:C:645:LYS:NZ	2.31	0.45
1:D:196:TYR:CD1	1:D:197:LEU:HD22	2.51	0.45
1:A:690:LYS:HB3	1:A:694:GLY:HA2	1.99	0.45
1:B:492:TYR:HB3	1:B:494:HIS:CE1	2.51	0.45
1:C:233:TYR:CD1	1:C:280:VAL:HG12	2.52	0.45
1:D:85:MET:HE2	1:D:85:MET:HB2	1.78	0.45
1:A:195:ASN:OD1	1:A:196:TYR:N	2.50	0.44
1:A:285:MET:HE3	1:D:241:LEU:HD12	1.98	0.44
1:A:454:PHE:CE2	1:A:469:VAL:HG21	2.52	0.44
1:A:506:GLU:HG2	1:A:507:LYS:HD2	1.99	0.44
1:C:433:ALA:O	1:C:445:VAL:N	2.49	0.44
1:C:520:ILE:H	1:C:520:ILE:HG12	1.49	0.44
1:A:226:LEU:HD23	1:A:226:LEU:HA	1.84	0.44
1:A:349:LEU:HD22	1:A:408:LEU:HG	1.99	0.44
1:B:100:LEU:C	1:B:100:LEU:HD23	2.43	0.44
1:B:288:VAL:O	1:B:292:VAL:HB	2.17	0.44
1:B:593:LYS:HD2	1:B:597:GLY:HA2	1.99	0.44
1:C:576:TYR:HB2	1:C:579:ILE:HG22	1.97	0.44
1:C:581:LEU:HD23	1:C:615:LEU:HD11	2.00	0.44
1:A:605:VAL:HA	1:A:613:ILE:HD11	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:166:LEU:HD13	1:B:166:LEU:HA	1.84	0.44
1:B:506:GLU:OE1	1:B:507:LYS:HD3	2.18	0.44
1:B:648:LEU:HD13	1:B:683:ALA:HB2	1.99	0.44
1:C:275:GLY:O	1:C:276:ASP:C	2.60	0.44
1:D:61:LYS:O	1:D:61:LYS:HG3	2.18	0.44
1:A:72:ILE:HD11	1:A:107:ALA:O	2.18	0.44
1:A:326:LEU:HD12	1:A:347:VAL:HG21	1.98	0.44
1:A:537:SER:O	1:A:541:GLN:HG2	2.17	0.44
1:B:241:LEU:HD23	1:B:241:LEU:HA	1.78	0.44
1:B:516:LEU:HB3	1:B:522:ILE:HG12	1.99	0.44
1:B:709:LEU:O	1:B:713:LEU:HG	2.18	0.44
1:A:545:TYR:CE2	1:A:546:GLN:NE2	2.82	0.44
1:A:644:LEU:HA	1:A:647:LEU:HD12	1.98	0.44
1:B:196:TYR:CD2	1:C:320:ARG:HG3	2.53	0.44
1:B:493:PHE:CE1	1:B:531:LEU:HD22	2.52	0.44
1:B:689:SER:O	1:B:697:PRO:HD3	2.17	0.44
1:C:583:LEU:CD2	1:C:588:VAL:HG21	2.47	0.44
1:C:601:LEU:HD22	1:C:621:ALA:O	2.17	0.44
1:D:431:LEU:HB2	1:D:448:LEU:HB2	2.00	0.44
1:B:387:PHE:HD1	1:B:499:ILE:HD11	1.83	0.44
1:B:516:LEU:HD22	1:B:522:ILE:HA	2.00	0.44
1:D:520:ILE:HD12	1:D:520:ILE:HA	1.82	0.44
1:A:701:ALA:O	1:A:705:GLY:N	2.44	0.44
1:C:396:ASN:O	1:C:400:ILE:HG13	2.18	0.44
1:D:81:LEU:O	1:D:213:HIS:NE2	2.51	0.44
1:D:353:SER:C	1:D:355:TYR:H	2.26	0.44
1:D:515:LYS:HD2	1:D:516:LEU:HG	2.00	0.44
1:A:233:TYR:CE1	1:D:244:TYR:HB3	2.53	0.44
1:A:328:SER:O	1:A:332:ARG:HG2	2.18	0.44
1:B:605:VAL:HG11	1:B:647:LEU:HD23	1.98	0.44
1:C:487:ASN:O	1:C:491:ILE:HG13	2.18	0.44
1:D:353:SER:C	1:D:355:TYR:N	2.76	0.44
1:D:618:LYS:HA	1:D:618:LYS:HD3	1.86	0.44
1:A:431:LEU:HB2	1:A:448:LEU:HB2	2.00	0.44
1:A:461:CYS:O	1:A:518:SER:HB2	2.18	0.44
1:B:149:ILE:HG22	1:B:154:TRP:HZ2	1.81	0.44
1:C:719:ALA:O	1:C:722:SER:OG	2.32	0.44
1:A:221:TYR:O	1:A:225:THR:HG23	2.18	0.43
1:A:274:TYR:O	1:C:275:GLY:CA	2.66	0.43
1:A:310:ILE:HD13	1:C:305:ASN:ND2	2.33	0.43
1:A:699:ASP:HA	1:A:702:ARG:HD2	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:601:LEU:HD11	1:C:617:VAL:HG23	1.99	0.43
1:D:437:LYS:HG2	1:D:438:THR:H	1.83	0.43
1:D:566:SER:HB2	1:D:567:PRO:HD2	2.00	0.43
1:A:87:PHE:O	1:A:168:ARG:NH1	2.45	0.43
1:A:542:GLY:HA2	1:A:576:TYR:CE2	2.53	0.43
1:B:315:ASN:OD1	1:B:318:ARG:NH1	2.51	0.43
1:D:52:ASN:OD1	1:D:52:ASN:O	2.37	0.43
1:D:239:LEU:HD11	1:D:241:LEU:HG	2.00	0.43
1:D:398:ILE:HG23	1:D:480:LEU:HD22	2.00	0.43
1:A:105:GLN:HE22	1:A:153:PRO:HB3	1.82	0.43
1:A:204:LEU:HA	1:A:204:LEU:HD13	1.69	0.43
1:A:529:ALA:O	1:A:533:LEU:HG	2.18	0.43
1:B:182:VAL:O	1:B:186:GLN:HG3	2.17	0.43
1:C:393:GLU:O	1:C:397:GLN:HG2	2.18	0.43
1:D:139:TYR:CD1	1:D:139:TYR:C	2.96	0.43
1:D:398:ILE:HD13	1:D:488:ILE:HD12	1.99	0.43
1:A:429:GLY:HA3	1:A:475:CYS:HA	2.00	0.43
1:A:466:PRO:HA	1:C:545:TYR:CE1	2.53	0.43
1:A:583:LEU:HA	1:A:586:GLU:HG3	2.01	0.43
1:B:153:PRO:HB2	1:B:156:LEU:HD23	2.01	0.43
1:C:308:ALA:O	1:C:312:LYS:HG2	2.18	0.43
1:D:75:TRP:CZ3	1:D:104:GLY:HA2	2.53	0.43
1:A:153:PRO:HB2	1:A:156:LEU:HD23	2.00	0.43
1:C:387:PHE:CE2	1:C:398:ILE:HG13	2.53	0.43
1:C:615:LEU:O	1:C:618:LYS:HB2	2.17	0.43
1:C:657:GLU:HB3	1:C:661:HIS:HA	2.00	0.43
1:D:512:ARG:HA	1:D:512:ARG:HD3	1.63	0.43
1:D:686:SER:OG	1:D:688:ILE:HG13	2.18	0.43
1:A:687:VAL:O	1:A:697:PRO:HD2	2.19	0.43
1:C:175:LEU:HG	1:C:210:TYR:OH	2.18	0.43
1:C:632:LEU:HD23	1:C:647:LEU:HD13	2.01	0.43
1:D:263:TYR:O	1:D:267:VAL:HG13	2.18	0.43
1:D:413:ILE:HB	1:D:469:VAL:HB	2.00	0.43
1:D:421:ASP:O	1:D:422:HIS:ND1	2.51	0.43
1:D:676:MET:O	1:D:680:LEU:HD12	2.19	0.43
1:A:623:PHE:CE1	1:A:652:MET:HB2	2.54	0.43
1:B:223:ALA:HB2	1:B:235:TRP:NE1	2.33	0.43
1:B:282:LEU:HD12	1:B:285:MET:HE2	2.00	0.43
1:B:378:LEU:HD13	1:B:399:VAL:HG21	2.01	0.43
1:B:491:ILE:HG23	1:C:483:GLN:NE2	2.34	0.43
1:C:435:VAL:HG23	1:C:467:PHE:HB3	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:423:LEU:HD13	1:D:485:PHE:CD2	2.54	0.43
1:D:590:VAL:CG2	1:D:619:GLU:HG3	2.49	0.43
1:A:274:TYR:CD1	1:C:273:GLY:HA2	2.54	0.43
1:A:463:ILE:HG21	1:A:513:ILE:CG1	2.49	0.43
1:B:671:GLU:HB2	1:B:673:LEU:HG	1.99	0.43
1:C:575:GLY:CA	1:C:612:VAL:HG21	2.46	0.43
1:C:666:HIS:CD2	1:C:700:GLU:HG3	2.54	0.43
1:D:220:TYR:O	1:D:224:THR:HG23	2.19	0.43
1:D:706:ASN:O	1:D:710:ILE:HG13	2.18	0.43
1:A:323:MET:HE2	1:A:327:ILE:HG12	2.01	0.43
1:B:570:LEU:HD21	1:C:562:TYR:CE1	2.53	0.43
1:C:197:LEU:HD23	1:C:200:ARG:NH2	2.34	0.43
1:D:699:ASP:O	1:D:703:LEU:HG	2.18	0.43
1:A:75:TRP:CZ3	1:A:104:GLY:HA2	2.53	0.43
1:A:282:LEU:HD21	1:D:256:LYS:HA	2.01	0.43
1:B:127:ARG:HG2	1:B:127:ARG:HH11	1.83	0.43
1:C:170:LEU:HD23	1:C:170:LEU:HA	1.72	0.43
1:C:385:PRO:HA	1:C:388:LYS:CG	2.49	0.43
1:C:418:ASN:OD1	1:C:419:VAL:N	2.51	0.43
1:A:592:LEU:O	1:A:600:PRO:HD3	2.19	0.42
1:A:593:LYS:HB3	1:A:599:THR:HG22	2.01	0.42
1:A:623:PHE:HE1	1:A:652:MET:HA	1.83	0.42
1:A:674:PHE:O	1:A:678:LYS:HB2	2.18	0.42
1:B:338:ASP:O	1:B:342:GLN:HG2	2.18	0.42
1:D:426:VAL:CG2	1:D:431:LEU:HD12	2.49	0.42
1:A:263:TYR:O	1:A:267:VAL:HB	2.19	0.42
1:A:317:GLU:HG2	1:C:196:TYR:CE2	2.54	0.42
1:B:357:ASP:HA	1:B:360:MET:HB2	2.02	0.42
1:B:422:HIS:HB3	1:B:479:ARG:HG3	2.01	0.42
1:B:660:ASP:OD1	1:B:692:ARG:NH2	2.51	0.42
1:C:466:PRO:HG2	1:C:467:PHE:CE2	2.54	0.42
1:C:671:GLU:HG2	1:C:673:LEU:HG	2.00	0.42
1:D:713:LEU:O	1:D:717:LYS:HB3	2.20	0.42
1:A:86:GLU:HG3	1:A:93:LEU:HD21	2.01	0.42
1:A:296:MET:HE2	1:A:296:MET:HB3	1.78	0.42
1:A:329:PHE:CD1	1:A:329:PHE:C	2.96	0.42
1:A:534:LYS:HA	1:A:534:LYS:HD3	1.90	0.42
1:A:548:LYS:HG2	1:A:582:PHE:CE2	2.54	0.42
1:B:175:LEU:HD22	1:B:210:TYR:OH	2.18	0.42
1:B:565:ARG:HB2	1:B:565:ARG:CZ	2.48	0.42
1:C:671:GLU:HA	1:D:708:LYS:HZ2	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:601:LEU:HD12	1:A:616:LEU:HB3	2.01	0.42
1:A:647:LEU:HB3	1:A:652:MET:SD	2.59	0.42
1:B:201:ILE:HG13	1:B:306:ILE:HG12	2.01	0.42
1:B:402:LEU:HD22	1:B:478:LEU:HB3	2.02	0.42
1:B:507:LYS:H	1:B:507:LYS:HG2	1.61	0.42
1:C:108:PHE:CZ	1:C:177:ARG:HD3	2.55	0.42
1:C:120:TYR:CE2	1:C:129:VAL:HB	2.55	0.42
1:C:152:PHE:O	1:C:154:TRP:N	2.53	0.42
1:C:678:LYS:O	1:C:682:GLU:HG2	2.19	0.42
1:D:420:VAL:O	1:D:482:LYS:HD2	2.18	0.42
1:D:544:PHE:CD1	1:D:579:ILE:HG12	2.54	0.42
1:A:236:ILE:HG12	1:A:249:PHE:HB2	2.01	0.42
1:A:256:LYS:HE2	1:C:282:LEU:HG	2.00	0.42
1:B:93:LEU:HD23	1:B:93:LEU:HA	1.88	0.42
1:B:580:THR:HG21	1:B:612:VAL:CG2	2.43	0.42
1:C:102:ILE:O	1:C:106:ILE:HG13	2.20	0.42
1:C:501:ASN:O	1:C:505:GLU:HG3	2.20	0.42
1:D:635:THR:HA	1:D:638:LYS:HD2	2.02	0.42
1:A:605:VAL:HG12	1:A:643:PHE:HE1	1.84	0.42
1:C:165:GLU:OE2	1:C:168:ARG:NE	2.46	0.42
1:C:365:PRO:HD2	1:C:368:ILE:HD12	2.00	0.42
1:D:93:LEU:HD23	1:D:93:LEU:HA	1.84	0.42
1:D:118:VAL:O	1:D:135:ILE:HD12	2.20	0.42
1:D:267:VAL:HB	1:D:273:GLY:H	1.84	0.42
1:A:315:ASN:HA	1:A:318:ARG:HE	1.83	0.42
1:A:402:LEU:HD13	1:A:478:LEU:HG	2.02	0.42
1:A:420:VAL:CG1	1:A:459:ILE:HG13	2.47	0.42
1:A:623:PHE:CD1	1:A:652:MET:HE3	2.54	0.42
1:B:126:TYR:CD1	1:C:474:LEU:HD22	2.54	0.42
1:B:416:GLN:HG3	1:B:468:THR:OG1	2.19	0.42
1:B:435:VAL:HG22	1:B:467:PHE:HB3	2.01	0.42
1:C:365:PRO:HB2	1:C:368:ILE:HG13	2.02	0.42
1:C:544:PHE:O	1:C:547:LEU:HG	2.20	0.42
1:D:454:PHE:CD2	1:D:469:VAL:HG21	2.54	0.42
1:B:274:TYR:O	1:D:275:GLY:CA	2.63	0.42
1:C:226:LEU:HD23	1:C:226:LEU:HA	1.84	0.42
1:A:323:MET:CE	1:A:344:THR:HG22	2.49	0.42
1:B:109:LEU:C	1:B:111:ASP:H	2.27	0.42
1:C:63:ARG:O	1:C:63:ARG:NH1	2.52	0.42
1:C:483:GLN:OE1	1:C:483:GLN:HA	2.19	0.42
1:C:540:PHE:HE2	1:C:574:ARG:HD3	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:601:LEU:HD12	1:C:616:LEU:HB2	2.02	0.42
1:D:231:GLU:HB2	1:D:249:PHE:CE1	2.55	0.42
1:A:463:ILE:HG21	1:A:513:ILE:CD1	2.50	0.42
1:A:534:LYS:HD2	1:D:530:GLU:OE2	2.20	0.42
1:B:693:TRP:HE1	1:C:693:TRP:NE1	2.18	0.42
1:C:80:SER:HB2	1:C:210:TYR:OH	2.20	0.42
1:C:557:PRO:CG	1:C:588:VAL:HG22	2.48	0.42
1:D:666:HIS:CE1	1:D:697:PRO:HD3	2.55	0.42
1:D:99:VAL:O	1:D:103:VAL:HG23	2.19	0.41
1:D:714:GLU:O	1:D:718:ASN:ND2	2.53	0.41
1:A:397:GLN:C	1:A:397:GLN:OE1	2.63	0.41
1:A:416:GLN:HB2	1:C:545:TYR:OH	2.19	0.41
1:A:488:ILE:HG13	1:A:488:ILE:H	1.67	0.41
1:B:197:LEU:O	1:B:200:ARG:HB3	2.20	0.41
1:B:483:GLN:HE21	1:B:487:ASN:CG	2.27	0.41
1:B:675:LEU:O	1:B:679:MET:HE2	2.20	0.41
1:B:706:ASN:O	1:B:710:ILE:HG13	2.20	0.41
1:C:367:SER:O	1:C:371:LYS:HG3	2.20	0.41
1:C:590:VAL:HG12	1:C:621:ALA:HB2	2.02	0.41
1:D:72:ILE:HD13	1:D:72:ILE:HA	1.78	0.41
1:D:173:ILE:HD13	1:D:173:ILE:HA	1.83	0.41
1:A:456:ASP:O	1:A:460:ILE:HG13	2.20	0.41
1:C:269:MET:HA	1:C:295:ASP:OD2	2.19	0.41
1:C:281:ASN:O	1:C:285:MET:HG3	2.19	0.41
1:C:435:VAL:HG23	1:C:445:VAL:HG21	2.02	0.41
1:C:599:THR:O	1:C:603:GLU:HG2	2.20	0.41
1:D:137:PHE:O	1:D:141:LYS:HG3	2.21	0.41
1:A:58:ILE:HG13	1:A:118:VAL:HG23	2.03	0.41
1:A:274:TYR:CE1	1:C:273:GLY:HA2	2.55	0.41
1:A:407:PHE:HB2	1:A:475:CYS:SG	2.59	0.41
1:B:197:LEU:HD22	1:C:317:GLU:OE2	2.20	0.41
1:B:634:THR:O	1:B:638:LYS:HG3	2.20	0.41
1:D:410:GLY:HA2	1:D:470:ARG:HH22	1.85	0.41
1:A:698:LEU:HD21	1:A:714:GLU:HG2	2.02	0.41
1:B:347:VAL:O	1:B:350:GLN:HG3	2.21	0.41
1:A:315:ASN:N	1:A:318:ARG:HH21	2.17	0.41
1:A:363:ASP:O	1:A:364:ILE:HD13	2.19	0.41
1:A:407:PHE:CZ	1:A:413:ILE:HD11	2.55	0.41
1:A:480:LEU:HD21	1:A:488:ILE:CD1	2.51	0.41
1:B:356:THR:O	1:B:360:MET:HG2	2.20	0.41
1:B:674:PHE:CD1	1:B:708:LYS:HG3	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:715:ASP:HA	1:B:718:ASN:HD22	1.86	0.41
1:C:347:VAL:O	1:C:350:GLN:HG2	2.20	0.41
1:C:690:LYS:HG3	1:C:694:GLY:O	2.21	0.41
1:D:325:ASP:O	1:D:328:SER:OG	2.35	0.41
1:D:577:GLU:O	1:D:581:LEU:HD13	2.19	0.41
1:D:623:PHE:HB3	1:D:625:LEU:HG	2.02	0.41
1:A:127:ARG:HD2	1:A:128:THR:N	2.35	0.41
1:A:200:ARG:HE	1:A:200:ARG:HB3	1.78	0.41
1:A:460:ILE:HG13	1:A:460:ILE:H	1.61	0.41
1:A:484:SER:O	1:A:485:PHE:C	2.62	0.41
1:A:545:TYR:HE2	1:D:522:ILE:HD13	1.86	0.41
1:B:59:HIS:ND1	1:B:60:PRO:HD2	2.35	0.41
1:B:382:LYS:NZ	1:B:392:THR:HG22	2.36	0.41
1:C:85:MET:HE3	1:C:85:MET:HB2	1.86	0.41
1:C:326:LEU:HD23	1:C:326:LEU:HA	1.88	0.41
1:D:98:PHE:C	1:D:98:PHE:CD2	2.99	0.41
1:D:544:PHE:O	1:D:548:LYS:HG3	2.20	0.41
1:A:566:SER:OG	1:A:569:HIS:ND1	2.44	0.41
1:B:326:LEU:HD12	1:B:347:VAL:HG21	2.01	0.41
1:B:653:ASN:HD22	1:B:683:ALA:HB3	1.86	0.41
1:C:172:TRP:O	1:C:175:LEU:HB2	2.20	0.41
1:D:546:GLN:O	1:D:550:LEU:HG	2.20	0.41
1:A:550:LEU:HA	1:A:553:SER:HB2	2.02	0.41
1:A:557:PRO:O	1:A:567:PRO:HD2	2.21	0.41
1:A:565:ARG:HD2	1:A:566:SER:H	1.86	0.41
1:A:594:ASP:C	1:A:596:PHE:H	2.29	0.41
1:B:65:TYR:CZ	1:B:118:VAL:HG21	2.55	0.41
1:B:86:GLU:HA	1:B:90:PHE:HD2	1.86	0.41
1:B:377:TYR:HB2	1:B:399:VAL:CG1	2.49	0.41
1:B:706:ASN:OD1	1:B:708:LYS:HG2	2.21	0.41
1:C:231:GLU:HG2	1:C:249:PHE:HE2	1.86	0.41
1:D:84:PRO:HG2	1:D:214:THR:HG22	2.03	0.41
1:D:95:GLU:O	1:D:98:PHE:HB2	2.20	0.41
1:D:269:MET:HE2	1:D:269:MET:HB3	1.99	0.41
1:D:605:VAL:HG21	1:D:623:PHE:HE1	1.86	0.41
1:D:664:PRO:HB2	1:D:680:LEU:CD2	2.51	0.41
1:D:687:VAL:O	1:D:696:SER:HB2	2.20	0.41
1:D:698:LEU:HD21	1:D:714:GLU:CG	2.50	0.41
1:A:606:LYS:HA	1:A:643:PHE:CE1	2.56	0.41
1:B:436:THR:HA	1:B:441:SER:O	2.21	0.41
1:B:493:PHE:CD1	1:B:493:PHE:C	2.99	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:627:ASP:OD1	1:B:630:ASN:HB2	2.20	0.41
1:C:548:LYS:HB3	1:C:552:ARG:HH12	1.85	0.41
1:C:615:LEU:HD23	1:C:615:LEU:HA	1.82	0.41
1:C:623:PHE:CD1	1:C:652:MET:HG2	2.55	0.41
1:D:662:ARG:HG2	1:D:691:ASP:HB2	2.03	0.41
1:A:404:GLU:C	1:A:405:GLU:HG2	2.47	0.40
1:A:463:ILE:HD13	1:A:513:ILE:HG13	2.03	0.40
1:B:610:GLU:HA	1:B:613:ILE:HB	2.03	0.40
1:C:687:VAL:HG13	1:C:698:LEU:HB2	2.03	0.40
1:D:253:ASP:O	1:D:257:ARG:HD3	2.21	0.40
1:D:319:PHE:O	1:D:322:LYS:HG2	2.21	0.40
1:D:499:ILE:HA	1:D:502:ASN:OD1	2.20	0.40
1:D:501:ASN:O	1:D:505:GLU:HG3	2.21	0.40
1:A:549:SER:HA	1:A:552:ARG:HD2	2.02	0.40
1:A:560:THR:HG22	1:A:565:ARG:O	2.21	0.40
1:B:263:TYR:CD2	1:D:285:MET:HG2	2.57	0.40
1:B:375:LEU:HD12	1:B:375:LEU:HA	1.85	0.40
1:C:208:GLU:HG3	1:C:298:LEU:HD21	2.02	0.40
1:D:147:ASP:OD2	1:D:179:ARG:NH2	2.37	0.40
1:D:279:ALA:HB2	1:D:288:VAL:HG21	2.02	0.40
1:D:339:LEU:HD12	1:D:339:LEU:HA	1.92	0.40
1:D:561:ASP:OD2	1:D:565:ARG:HB2	2.21	0.40
1:A:340:ARG:O	1:A:344:THR:HG23	2.21	0.40
1:A:543:ASP:OD2	1:A:546:GLN:HG2	2.22	0.40
1:B:582:PHE:O	1:B:586:GLU:HG2	2.21	0.40
1:B:668:ALA:HB1	1:B:673:LEU:HB2	2.04	0.40
1:C:122:ASP:O	1:C:126:TYR:N	2.54	0.40
1:C:599:THR:HG21	1:C:622:SER:O	2.21	0.40
1:D:496:GLY:O	1:D:500:LEU:HG	2.22	0.40
1:D:534:LYS:HB3	1:D:534:LYS:HE2	1.85	0.40
1:D:540:PHE:HB2	1:D:570:LEU:HD23	2.03	0.40
1:D:656:SER:O	1:D:664:PRO:HD3	2.21	0.40
1:B:418:ASN:O	1:B:465:GLN:N	2.45	0.40
1:B:514:LYS:HE2	1:B:514:LYS:HB3	1.85	0.40
1:B:533:LEU:CD2	1:C:537:SER:HB2	2.46	0.40
1:B:561:ASP:CG	1:B:563:ASP:H	2.30	0.40
1:C:454:PHE:CD2	1:C:469:VAL:HG21	2.55	0.40
1:D:387:PHE:CE2	1:D:398:ILE:HG21	2.56	0.40
1:D:665:LEU:CD2	1:D:680:LEU:HB2	2.52	0.40
1:A:85:MET:HE3	1:A:85:MET:HB2	1.74	0.40
1:B:145:LEU:HG	1:B:146:MET:CE	2.52	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:329:PHE:HE2	1:D:372:ILE:HD13	1.86	0.40
1:B:488:ILE:O	1:B:491:ILE:HB	2.22	0.40
1:B:543:ASP:OD2	1:C:523:HIS:HA	2.22	0.40
1:C:707:LYS:HE3	1:D:705:GLY:HA3	2.03	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	674/834 (81%)	641 (95%)	33 (5%)	0	100	100
1	B	674/834 (81%)	648 (96%)	26 (4%)	0	100	100
1	C	674/834 (81%)	647 (96%)	27 (4%)	0	100	100
1	D	673/834 (81%)	638 (95%)	35 (5%)	0	100	100
All	All	2695/3336 (81%)	2574 (96%)	121 (4%)	0	100	100

There are no Ramachandran outliers to report.

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	597/743 (80%)	575 (96%)	22 (4%)	29	57
1	B	597/743 (80%)	579 (97%)	18 (3%)	36	63

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	C	597/743 (80%)	585 (98%)	12 (2%)	50 72
1	D	597/743 (80%)	575 (96%)	22 (4%)	29 57
All	All	2388/2972 (80%)	2314 (97%)	74 (3%)	37 62

All (74) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	54	TYR
1	A	72	ILE
1	A	97	LEU
1	A	123	THR
1	A	140	LEU
1	A	168	ARG
1	A	181	VAL
1	A	205	LEU
1	A	248	ASN
1	A	267	VAL
1	A	269	MET
1	A	274	TYR
1	A	276	ASP
1	A	277	ILE
1	A	282	LEU
1	A	312	LYS
1	A	427	CYS
1	A	447	LEU
1	A	457	ILE
1	A	562	TYR
1	A	565	ARG
1	A	695	ASN
1	B	51	HIS
1	B	54	TYR
1	B	58	ILE
1	B	137	PHE
1	B	197	LEU
1	B	226	LEU
1	B	254	LEU
1	B	272	VAL
1	B	282	LEU
1	B	292	VAL
1	B	295	ASP
1	B	335	LEU

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Mol	Chain	Res	Type
1	B	351	TYR
1	B	432	GLU
1	B	438	THR
1	B	512	ARG
1	B	531	LEU
1	B	570	LEU
1	C	72	ILE
1	C	101	ASP
1	C	109	LEU
1	C	147	ASP
1	C	272	VAL
1	C	318	ARG
1	C	350	GLN
1	C	383	LYS
1	C	512	ARG
1	C	520	ILE
1	C	547	LEU
1	C	630	ASN
1	D	56	TYR
1	D	64	TRP
1	D	72	ILE
1	D	118	VAL
1	D	171	LEU
1	D	229	GLU
1	D	233	TYR
1	D	236	ILE
1	D	240	LYS
1	D	245	SER
1	D	253	ASP
1	D	254	LEU
1	D	266	ILE
1	D	272	VAL
1	D	277	ILE
1	D	351	TYR
1	D	355	TYR
1	D	436	THR
1	D	437	LYS
1	D	460	ILE
1	D	612	VAL
1	D	630	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (46) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	59	HIS
1	A	105	GLN
1	A	115	GLN
1	A	186	GLN
1	A	248	ASN
1	A	346	HIS
1	A	350	GLN
1	A	487	ASN
1	A	502	ASN
1	A	523	HIS
1	A	624	ASN
1	A	695	ASN
1	B	164	HIS
1	B	451	HIS
1	B	483	GLN
1	B	502	ASN
1	B	609	GLN
1	B	718	ASN
1	C	51	HIS
1	C	59	HIS
1	C	62	ASN
1	C	105	GLN
1	C	143	HIS
1	C	451	HIS
1	C	483	GLN
1	C	502	ASN
1	C	541	GLN
1	C	546	GLN
1	C	558	ASN
1	C	624	ASN
1	C	695	ASN
1	D	52	ASN
1	D	62	ASN
1	D	115	GLN
1	D	281	ASN
1	D	305	ASN
1	D	315	ASN
1	D	374	GLN
1	D	396	ASN
1	D	418	ASN
1	D	451	HIS
1	D	536	ASN
1	D	541	GLN

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Mol	Chain	Res	Type
1	D	546	GLN
1	D	695	ASN
1	D	720	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

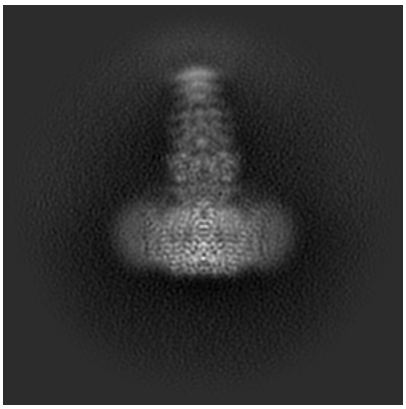
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-62916. These allow visual inspection of the internal detail of the map and identification of artifacts.

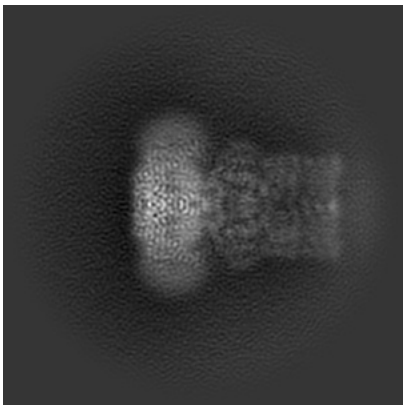
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

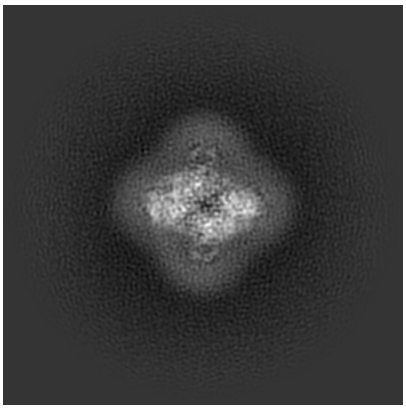
6.1.1 Primary map



X

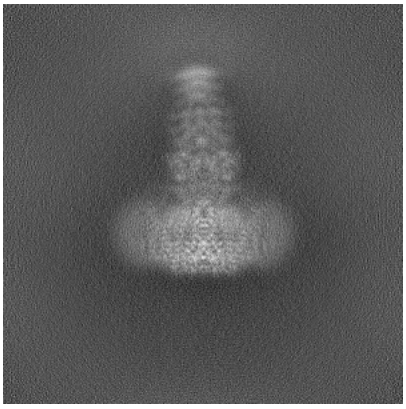


Y

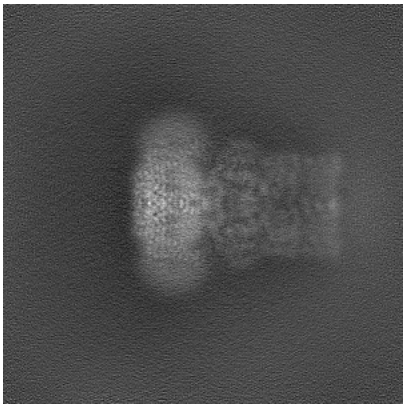


Z

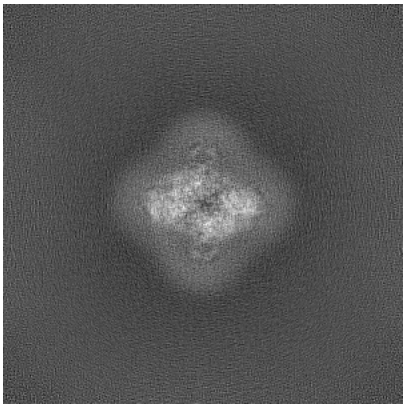
6.1.2 Raw map



X



Y

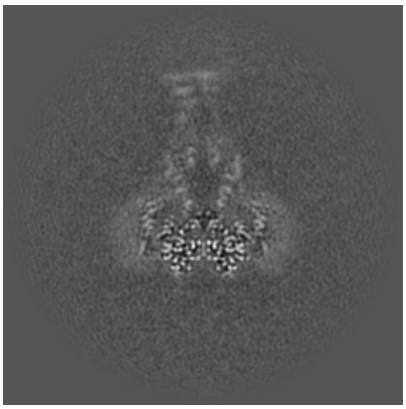


Z

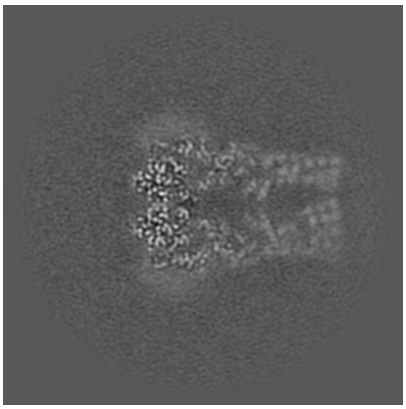
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

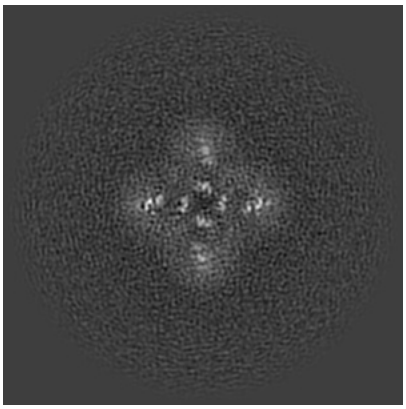
6.2.1 Primary map



X Index: 200

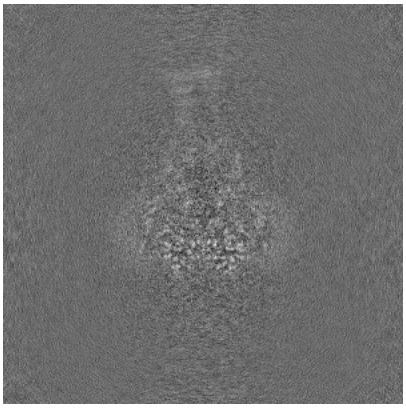


Y Index: 200

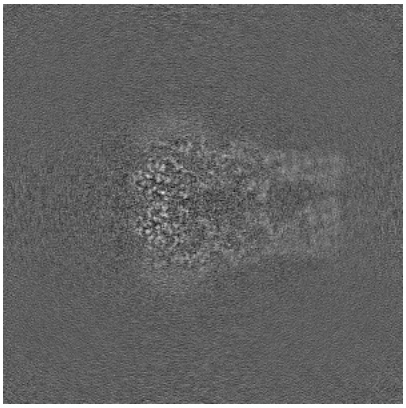


Z Index: 200

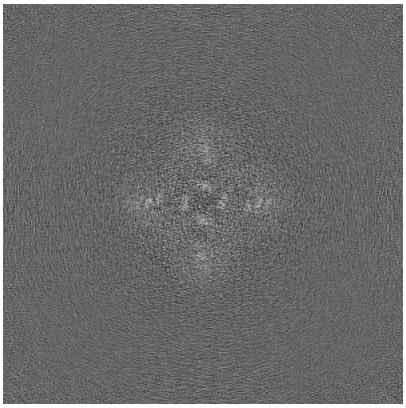
6.2.2 Raw map



X Index: 200



Y Index: 200

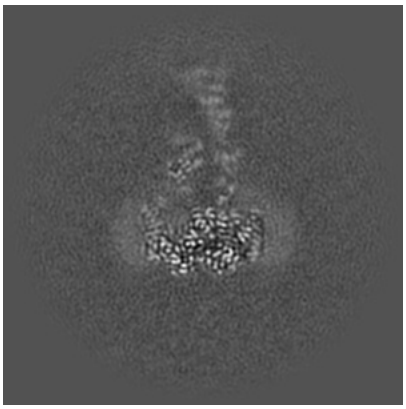


Z Index: 200

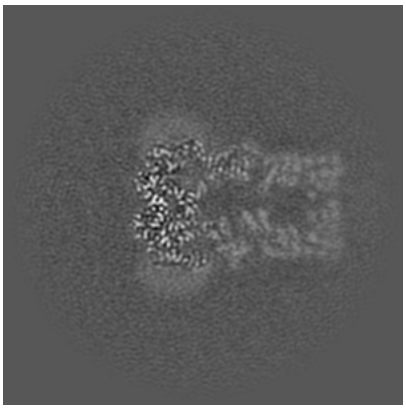
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

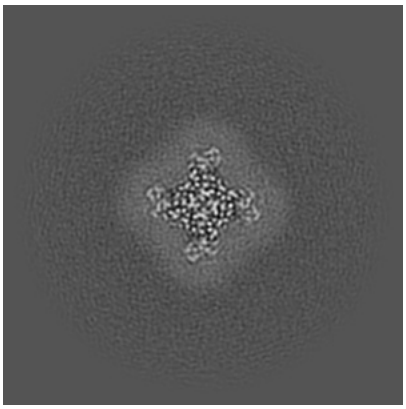
6.3.1 Primary map



X Index: 192

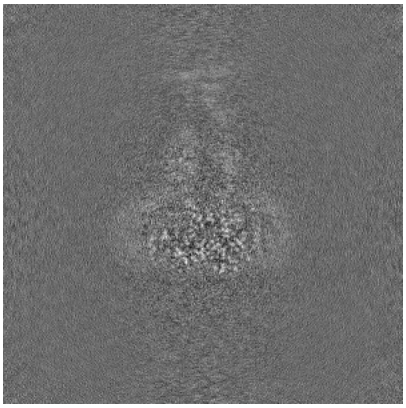


Y Index: 196

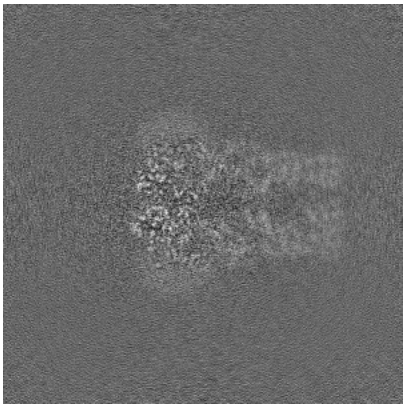


Z Index: 146

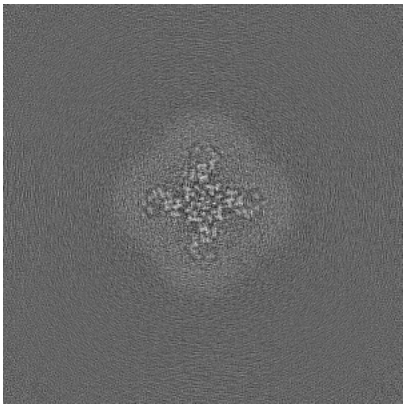
6.3.2 Raw map



X Index: 195



Y Index: 198

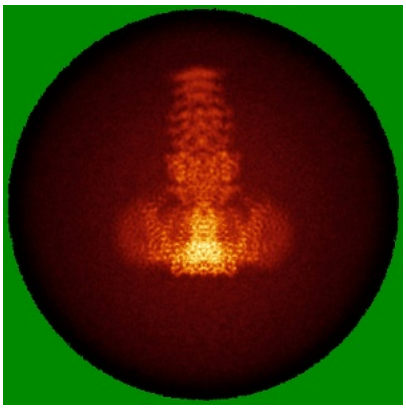


Z Index: 160

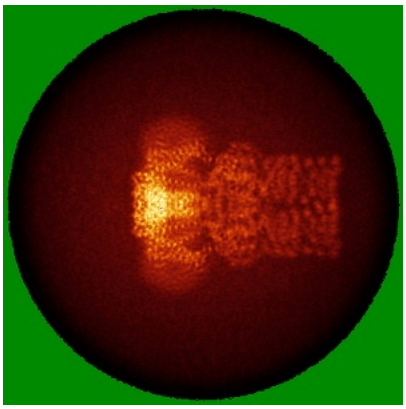
The images above show the largest variance slices of the map in three orthogonal directions.

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

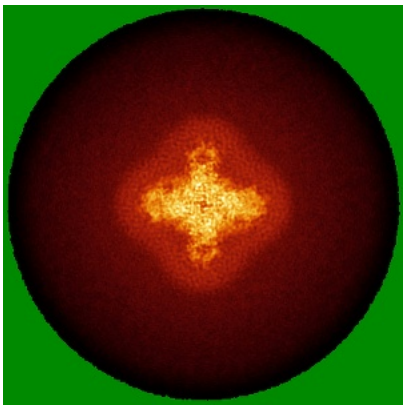
6.4.1 Primary map



X

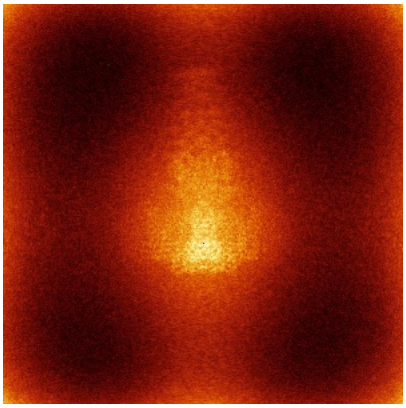


Y

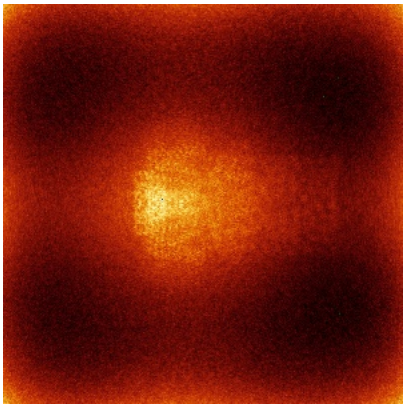


Z

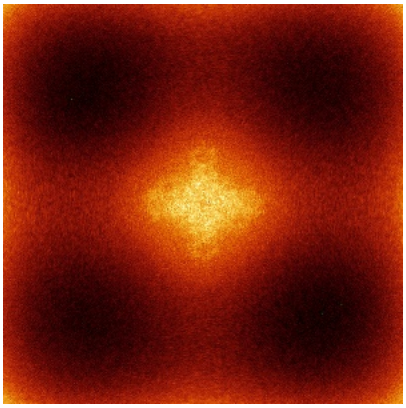
6.4.2 Raw map



X



Y

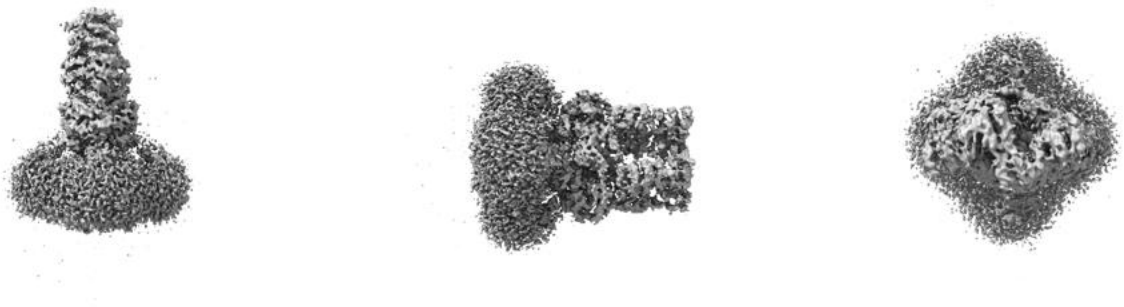


Z

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)

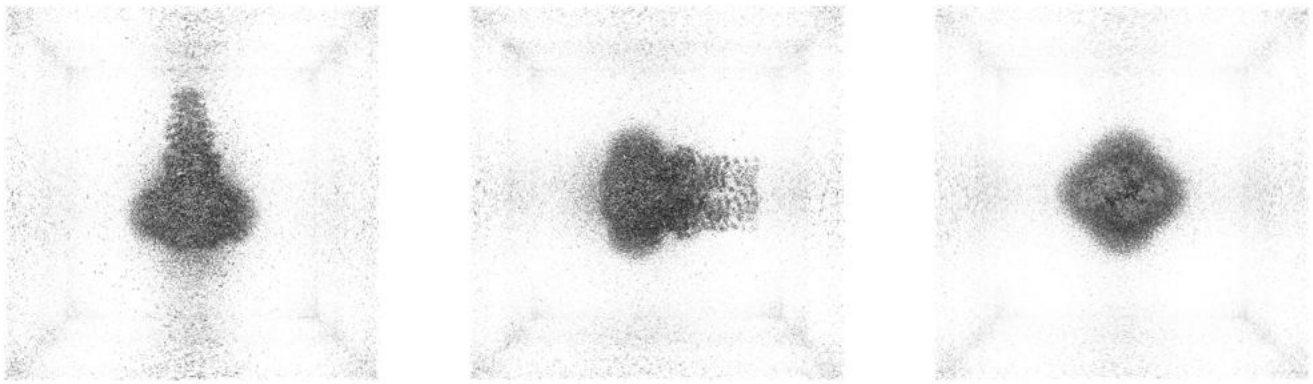
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.08. 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.

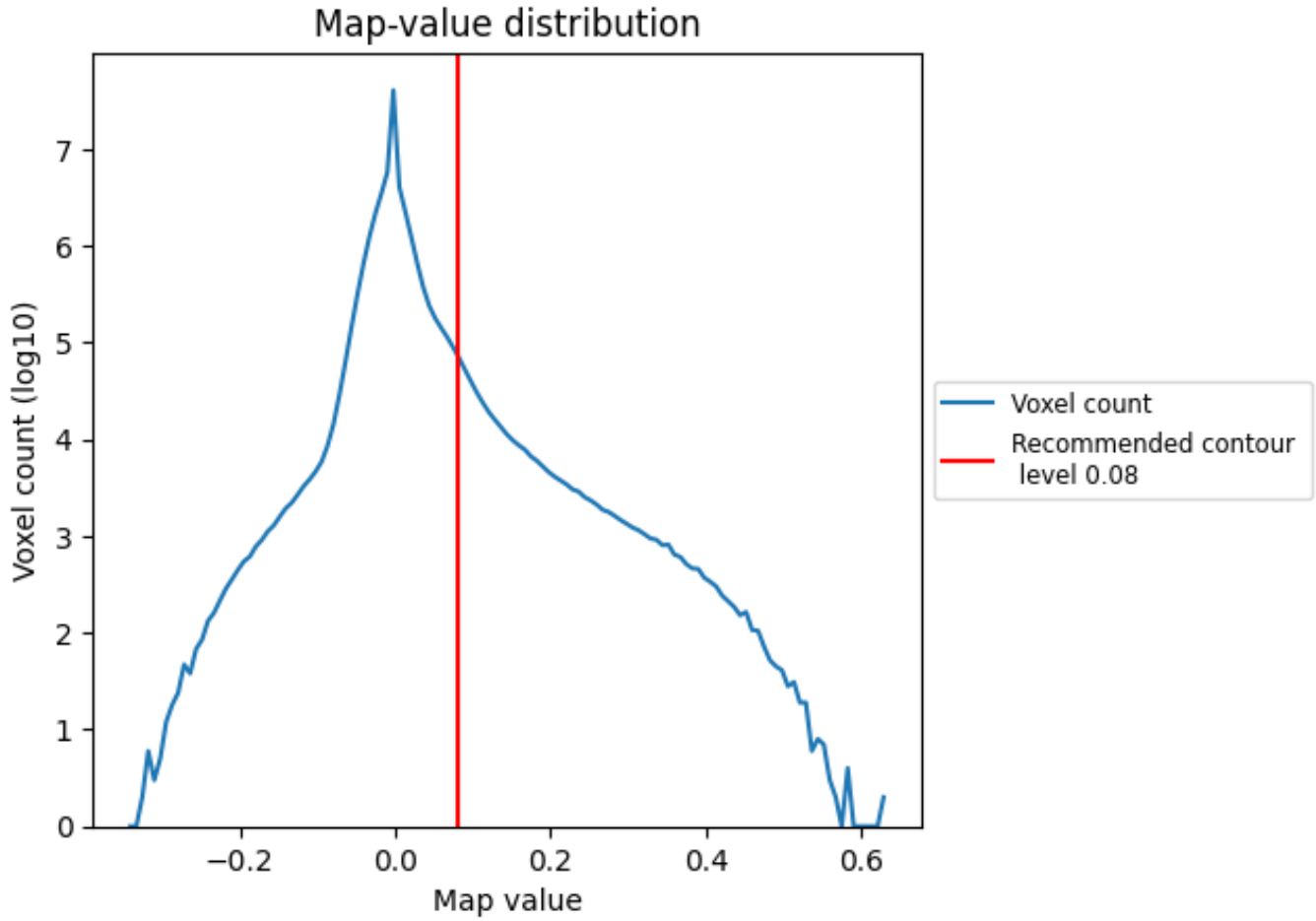
6.6 Mask visualisation (i)

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

7 Map analysis

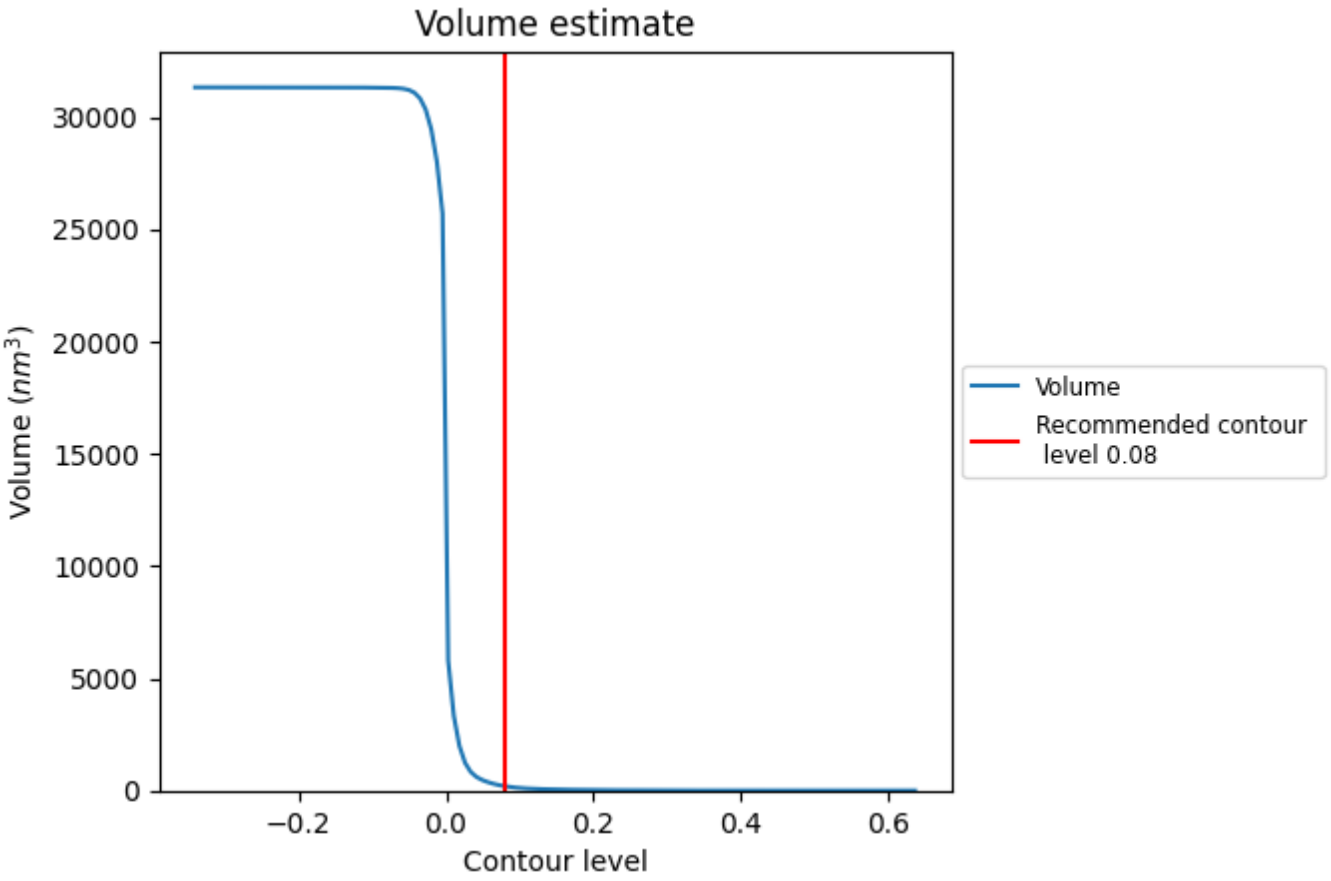
This section contains the results of statistical analysis of the map.

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.

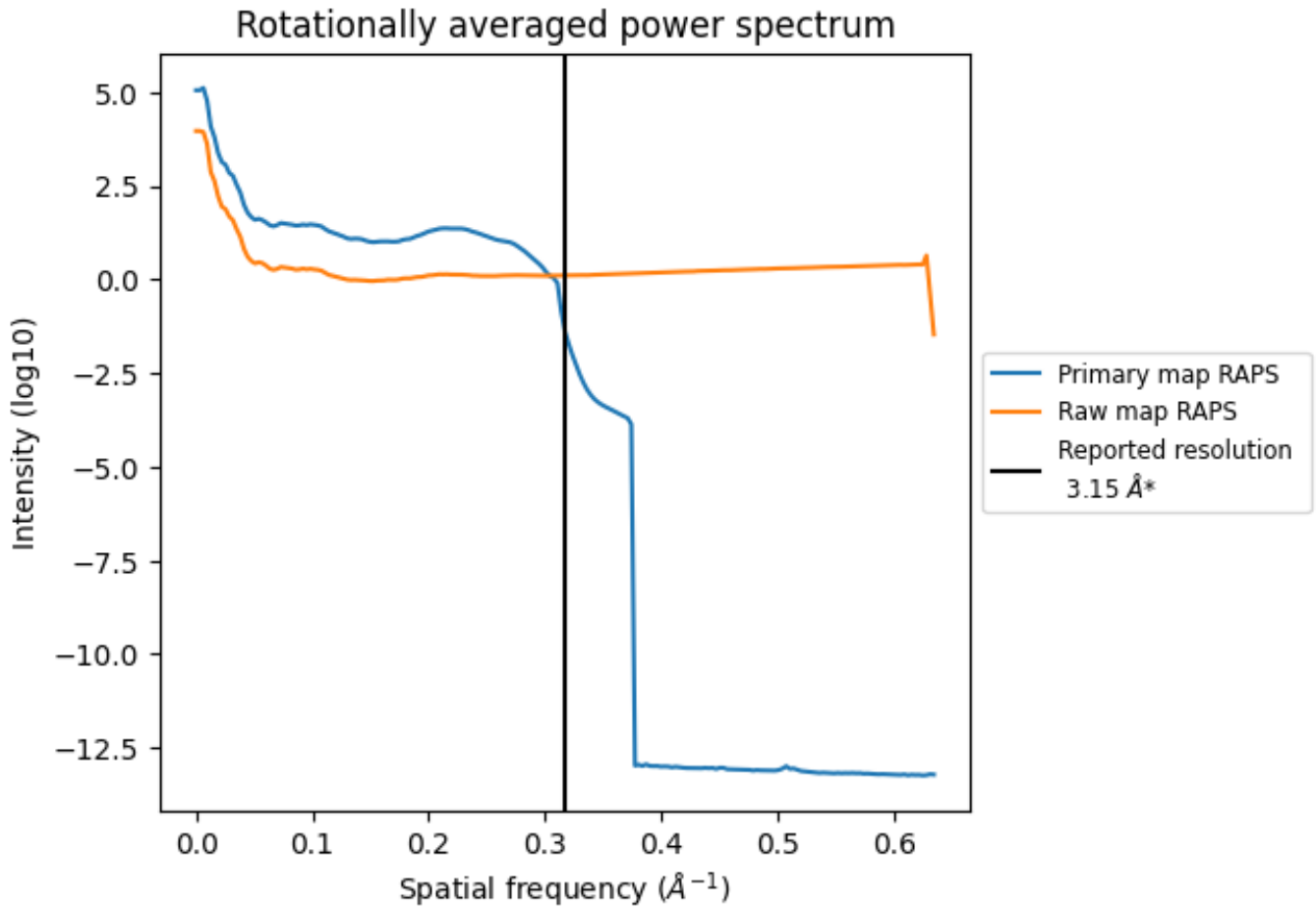
7.2 Volume estimate



The volume at the recommended contour level is 193 nm^3; this corresponds to an approximate mass of 174 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)

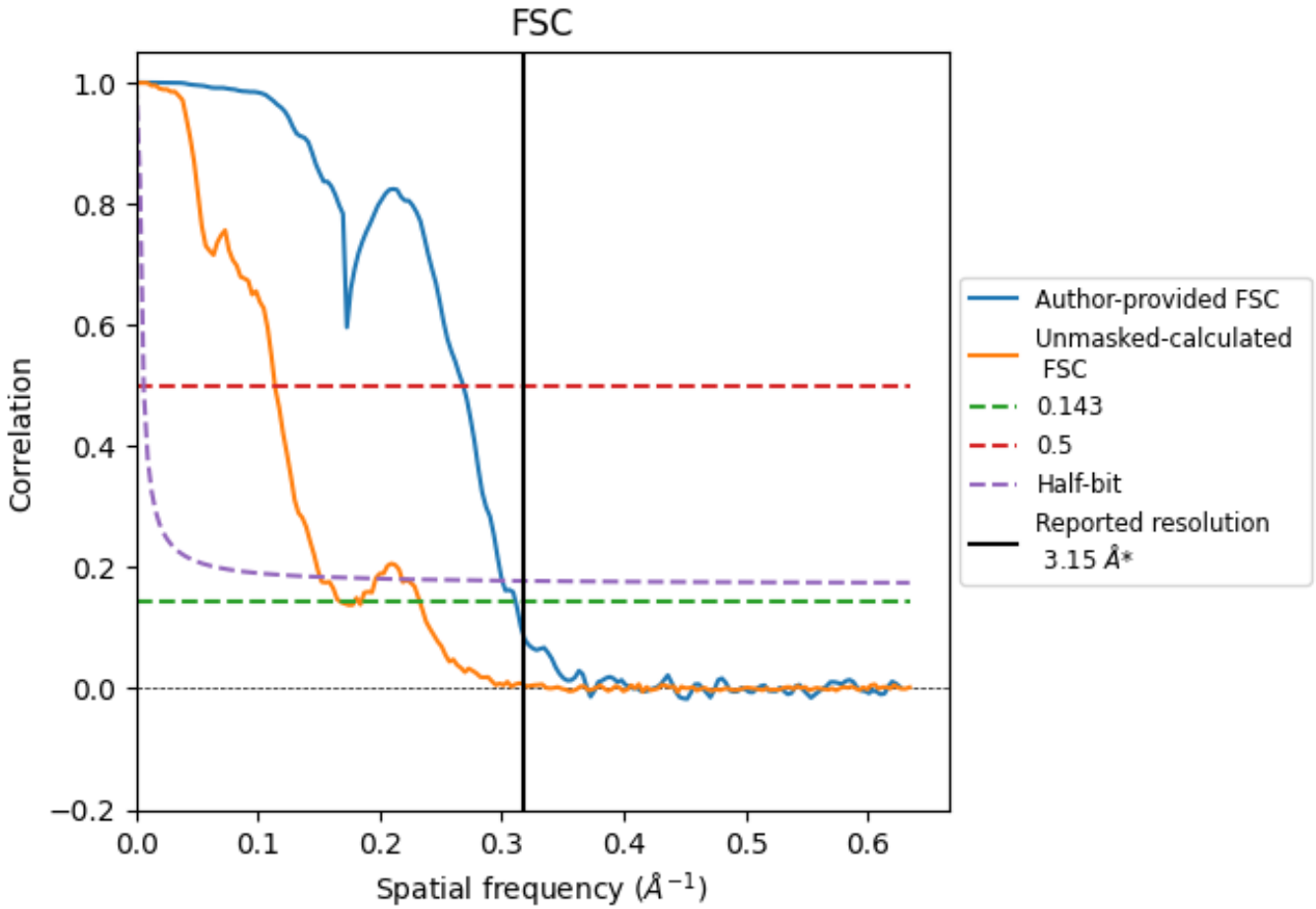


*Reported resolution corresponds to spatial frequency of 0.317 $Å^{-1}$

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 0.317 Å^{-1}

8.2 Resolution estimates (i)

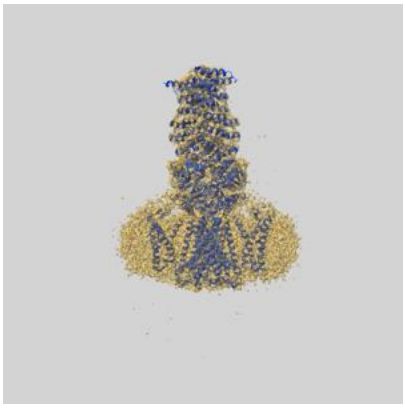
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.15	-	-
Author-provided FSC curve	3.21	3.73	3.33
Unmasked-calculated*	5.96	8.78	6.63

*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 5.96 differs from the reported value 3.15 by more than 10 %

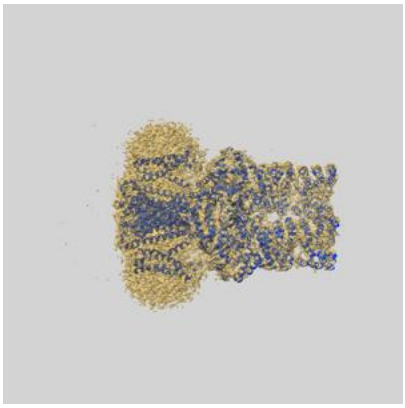
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-62916 and PDB model 9LA1. Per-residue inclusion information can be found in section 3 on page 5.

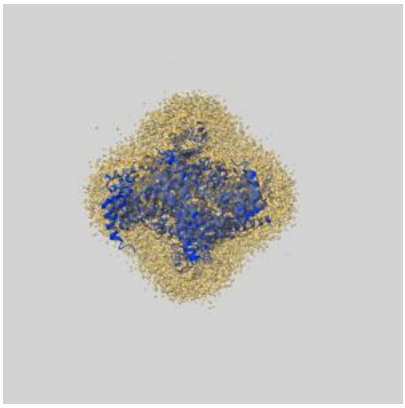
9.1 Map-model overlay



X



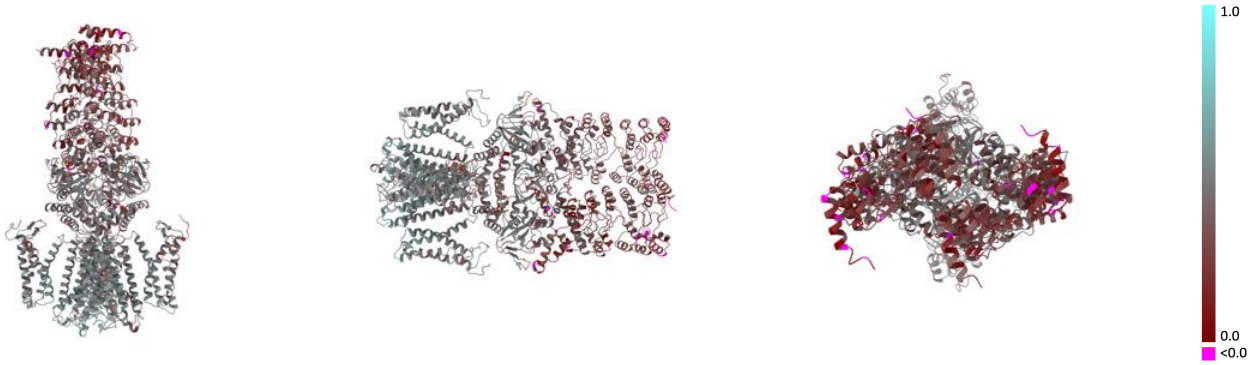
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.08 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.

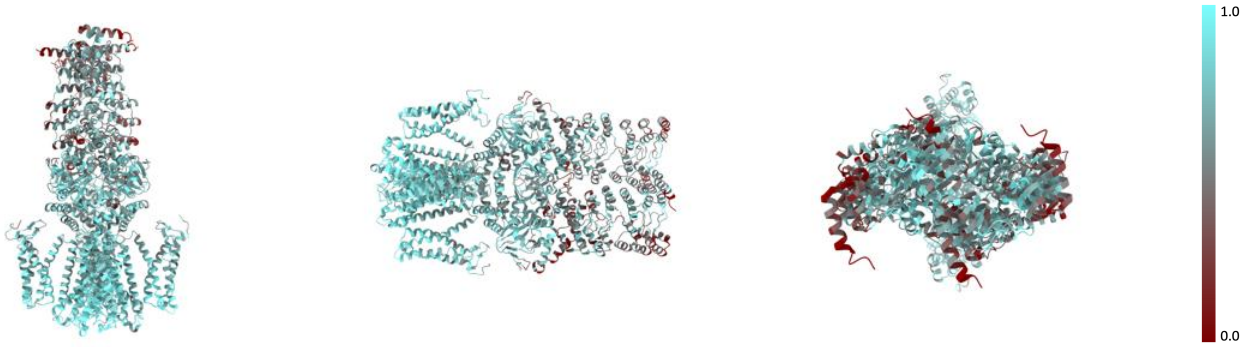
9.2 Q-score mapped to coordinate model (i)



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.

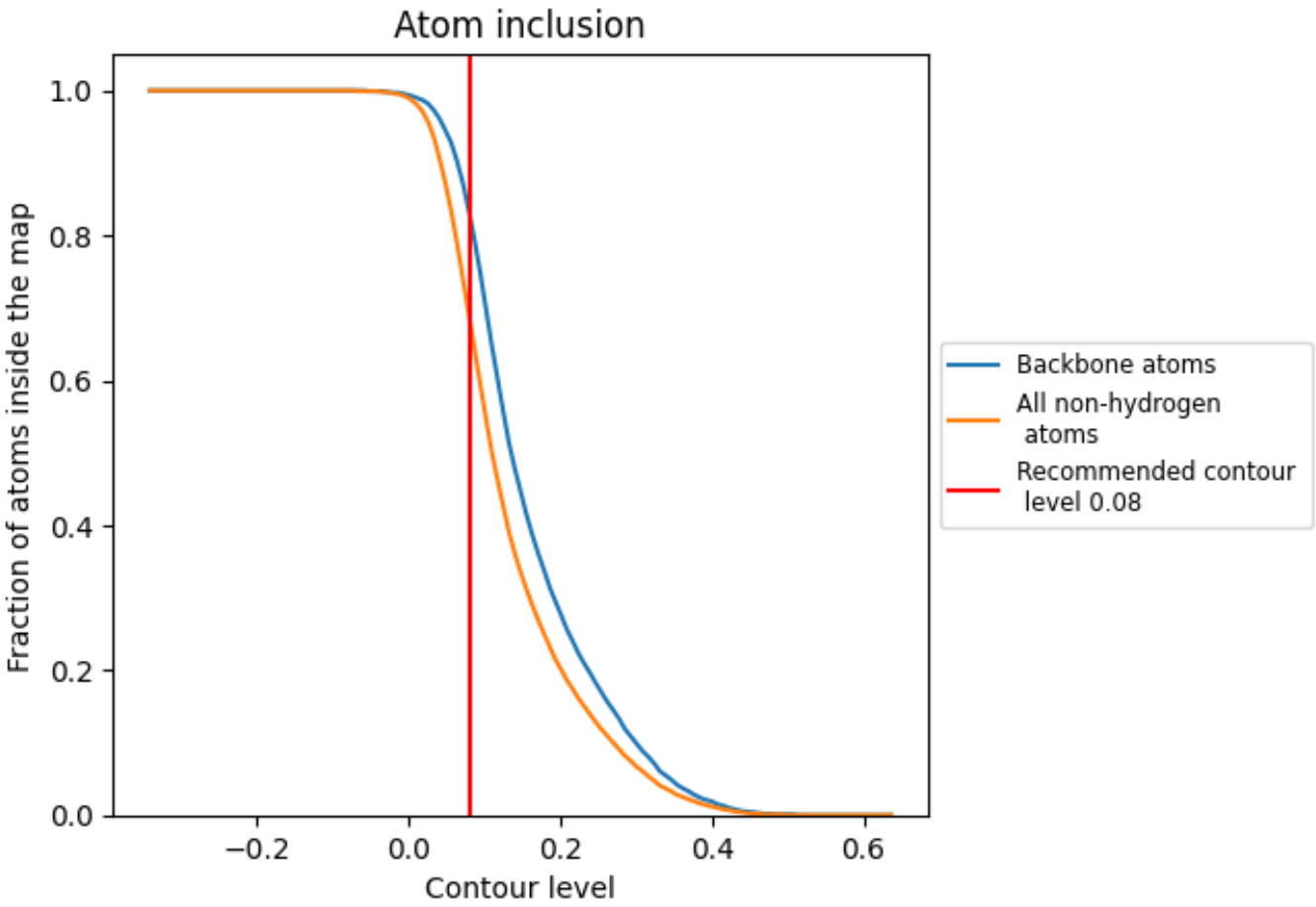
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.08).

9.4 Atom inclusion (i)



At the recommended contour level, 83% of all backbone atoms, 69% 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 (0.08) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6880	0.3920
A	0.6790	0.3900
B	0.6860	0.3890
C	0.6950	0.4060
D	0.6900	0.3820