Full wwPDB EM Validation Report ⓘ

Jun 4, 2026 – 02:16 PM EDT

PDB ID	:	9YRP / pdb_00009yrp
EMDB ID	:	EMD-73373
Title	:	Full-length human VPS13C in complex with calmodulin from the CryoEM composite map
Authors	:	Li, D.; Reinisch, K.M.
Deposited on	:	2025-10-16
Resolution	:	4.13 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:

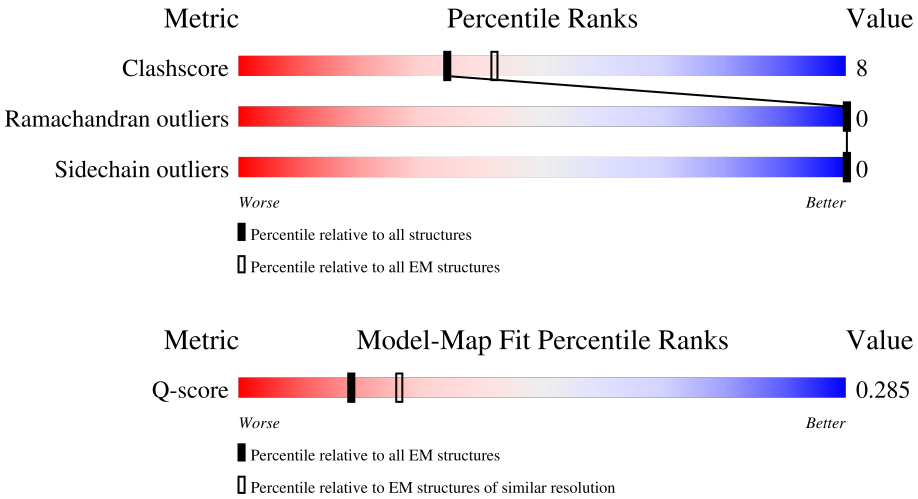
EMDB validation analysis	:	0.0.1.dev132
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

1 Overall quality at a glance

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

The reported resolution of this entry is 4.13 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	5607 (3.63 - 4.63)

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	149	52% 91% 8%
2	B	3777	15% 64% 14% 22%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 24677 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 Calmodulin-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	148	Total	C	N	O	S	0	0
			1166	714	188	255	9		

- Molecule 2 is a protein called Intermembrane lipid transfer protein VPS13C.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	2944	Total	C	N	O	S	0	0
			23511	15092	3941	4364	114		

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	3754	LEU	-	expression tag	UNP Q709C8
B	3755	GLU	-	expression tag	UNP Q709C8
B	3756	ASP	-	expression tag	UNP Q709C8
B	3757	TYR	-	expression tag	UNP Q709C8
B	3758	LYS	-	expression tag	UNP Q709C8
B	3759	ASP	-	expression tag	UNP Q709C8
B	3760	HIS	-	expression tag	UNP Q709C8
B	3761	ASP	-	expression tag	UNP Q709C8
B	3762	GLY	-	expression tag	UNP Q709C8
B	3763	ASP	-	expression tag	UNP Q709C8
B	3764	TYR	-	expression tag	UNP Q709C8
B	3765	LYS	-	expression tag	UNP Q709C8
B	3766	ASP	-	expression tag	UNP Q709C8
B	3767	HIS	-	expression tag	UNP Q709C8
B	3768	ASP	-	expression tag	UNP Q709C8
B	3769	ILE	-	expression tag	UNP Q709C8
B	3770	ASP	-	expression tag	UNP Q709C8
B	3771	TYR	-	expression tag	UNP Q709C8
B	3772	LYS	-	expression tag	UNP Q709C8
B	3773	ASP	-	expression tag	UNP Q709C8
B	3774	ASP	-	expression tag	UNP Q709C8

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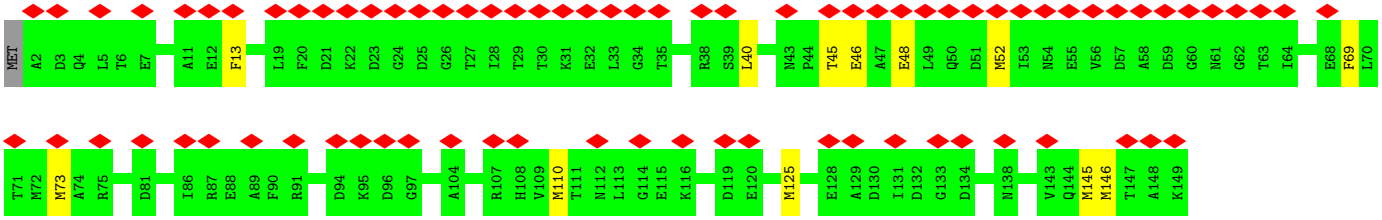
Chain	Residue	Modelled	Actual	Comment	Reference
B	3775	ASP	-	expression tag	UNP Q709C8
B	3776	ASP	-	expression tag	UNP Q709C8
B	3777	LYS	-	expression tag	UNP Q709C8

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.

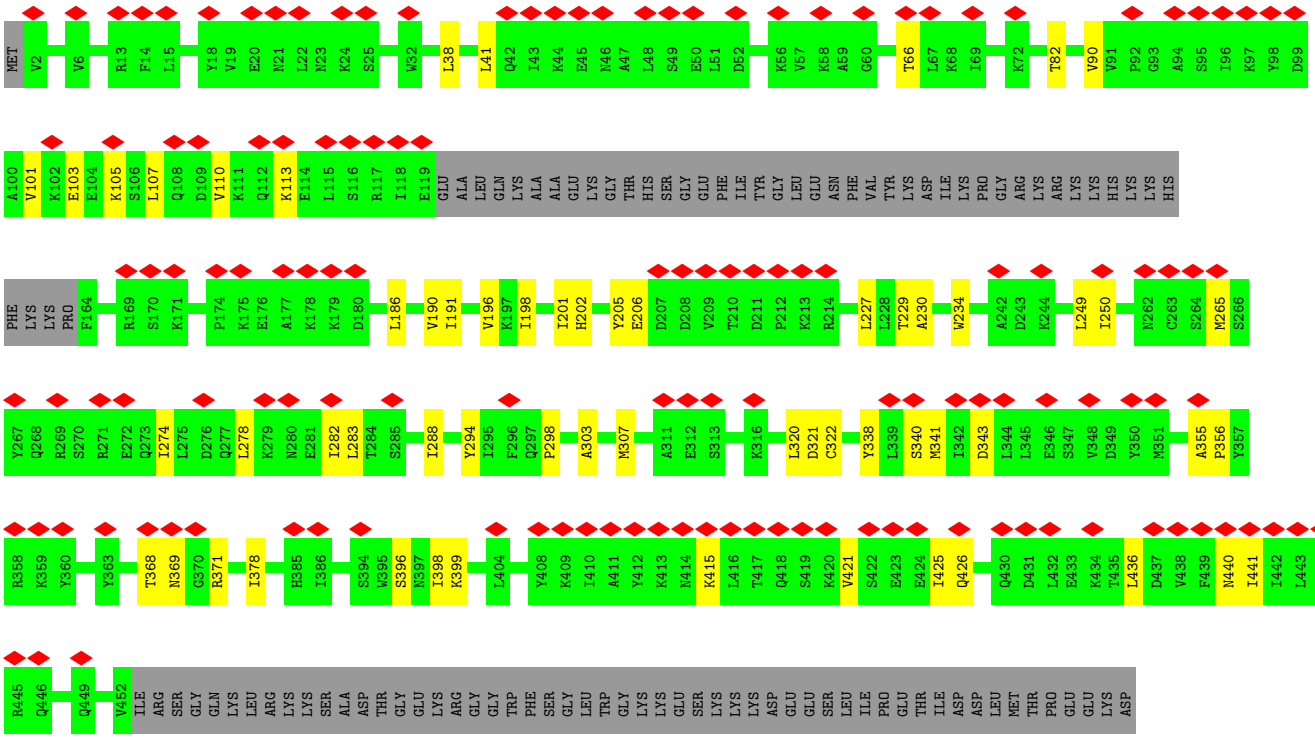
• Molecule 1: Calmodulin-1

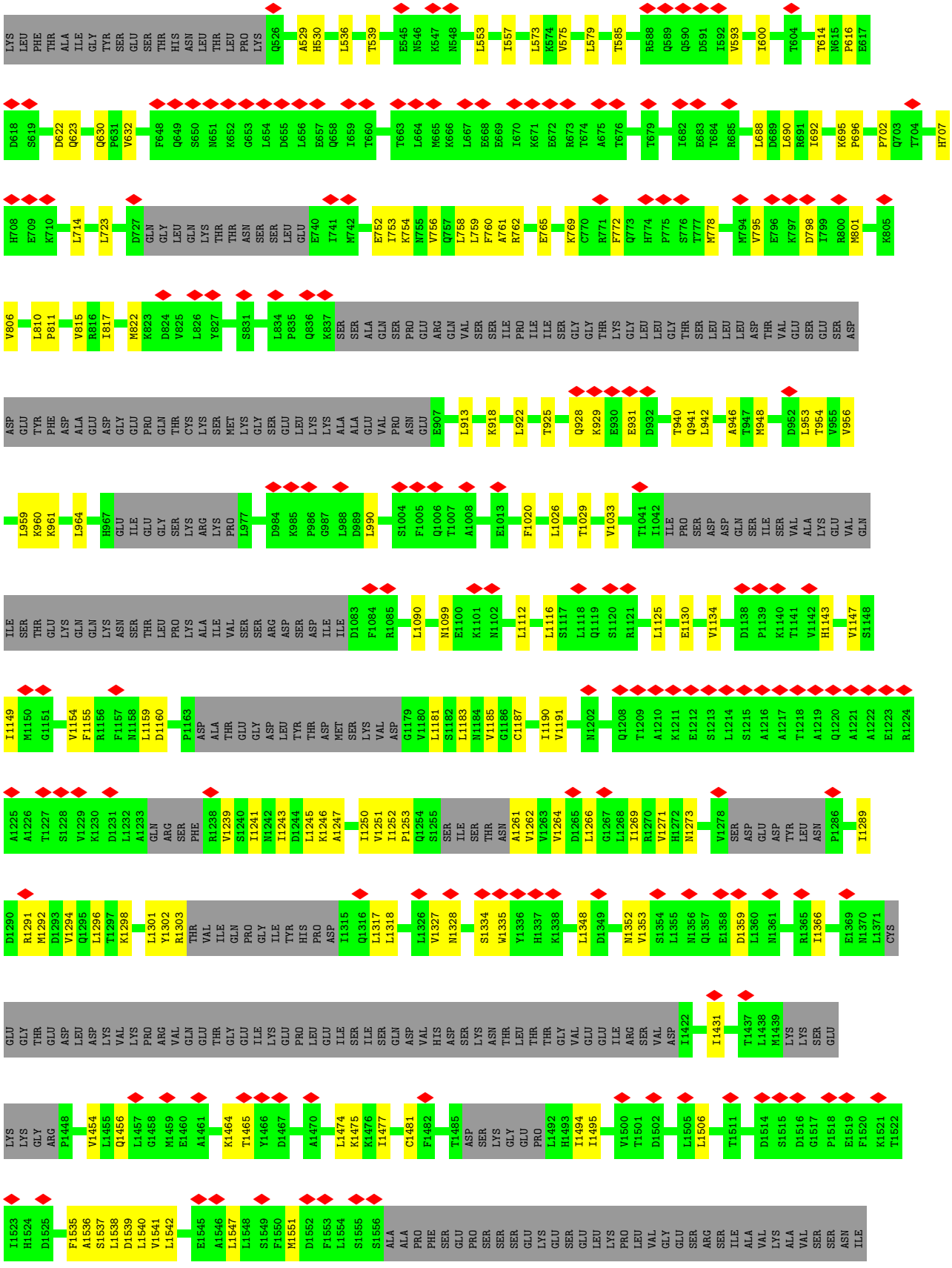
Chain A:

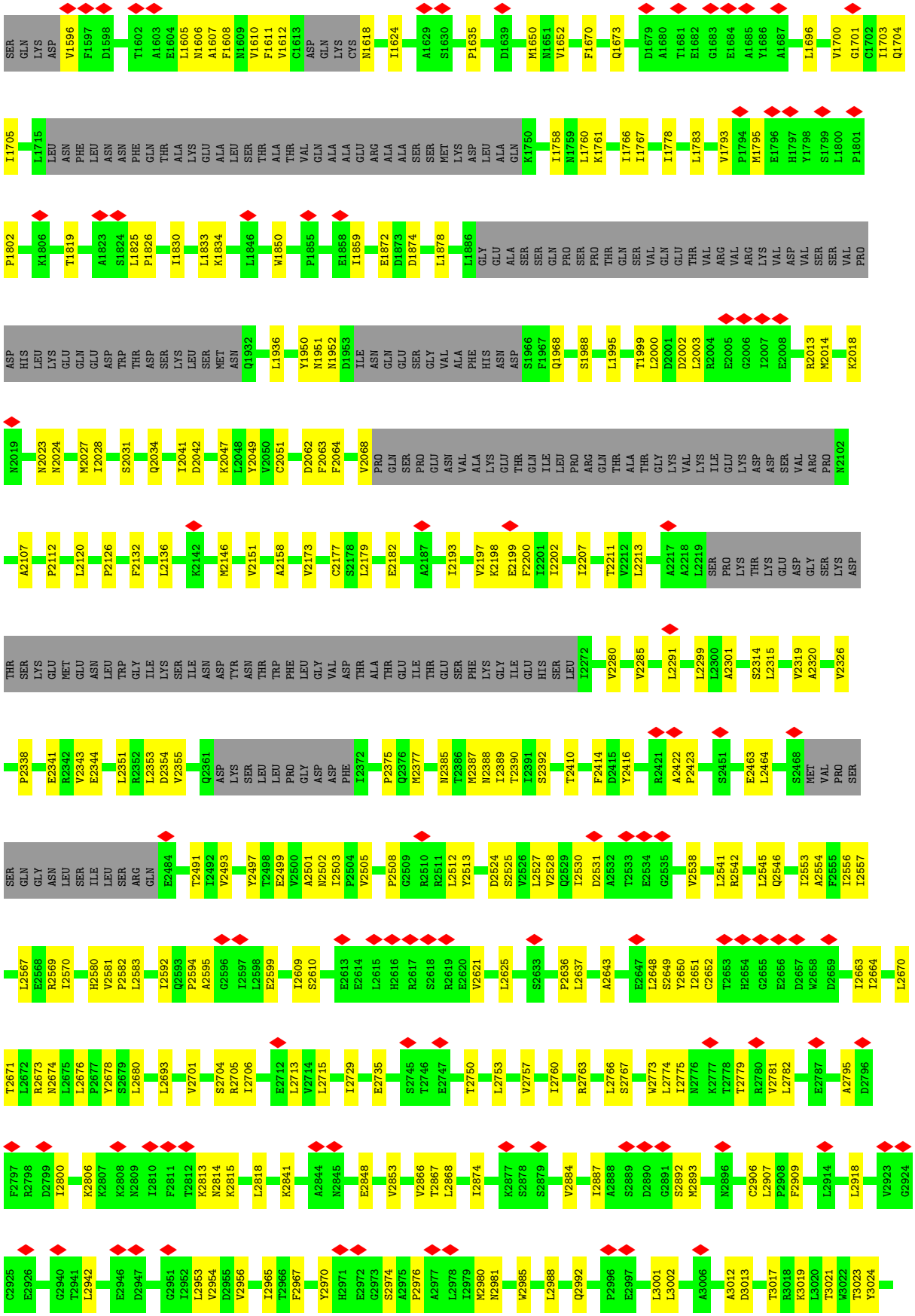


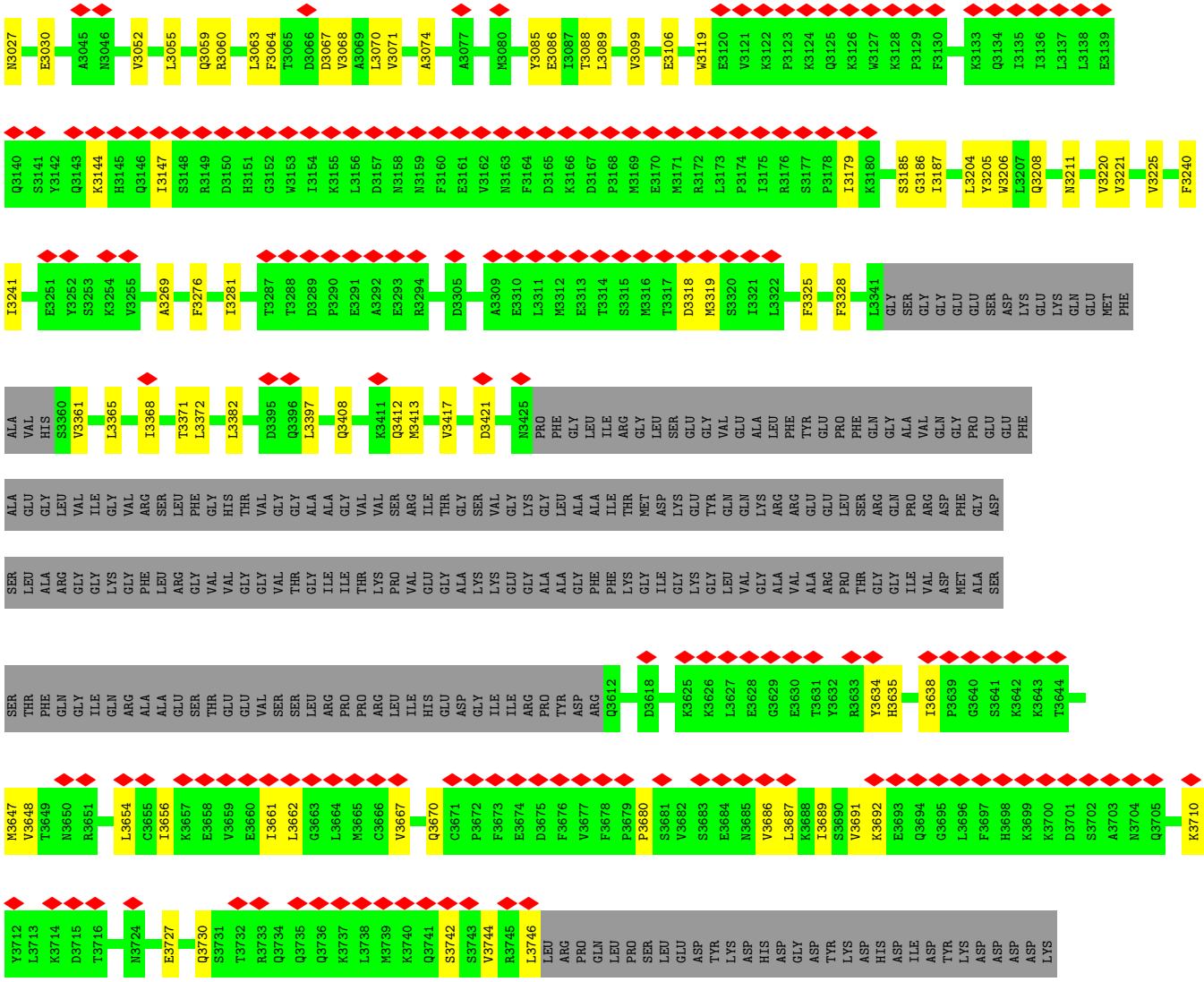
• Molecule 2: Intermembrane lipid transfer protein VPS13C

Chain B:




LYS LEU PHE THR ALA ILE GLY TYR SER GLU SER THR HIS ASN LEU THR LEU PRO LYS Q526 A529 H530 L536 T539 E545 N546 K547 N548 L553 I557 L573 K574 V575 L579 T585 R588 Q589 Q590 D591 I592 V593 I600 T604 T614 N615 P616 E617
D618 S619 D622 Q623 Q630 P631 V632 F648 Q649 S650 N651 K652 G653 L654 D655 L656 E657 Q658 I659 T660 T663 L664 M665 K666 L667 E668 E669 I670 K671 E672 R673 T674 A675 T676 T679 I682 E683 T684 R685 L688 D689 L690 R691 I692 K695 P696 P702 Q703 T704 H707
H708 E709 K710 L714 L723 D727 GLN GLY LEU GLN LYS THR THR ASN SER LEU GLU E740 I741 M742 E752 I753 K764 N755 V756 Q757 L758 L759 F760 A761 R762 E765 K769 C770 R771 F772 Q773 H774 P775 S776 T777 M778 M794 V795 E796 K797 D798 I799 R800 M801 K805
V806 L810 P811 V815 R816 I817 M822 K823 D824 V825 L826 Y827 S831 L834 P835 Q836 K837 SER SER ALA GLN SER PRO GLU ARG GLN VAL SER SER ILE PRO ILE ILE SER GLY GLY THR LYS GLY LEU LEU GLY THR SER LEU LEU LEU ASP THR VAL GLU SER GLU SER ASP
ASP GLU TYR PHE ASP ALA GLU ASP GLY GLU PRO GLN THR CYS LYS SER MET LYS GLY SER GLU LEU LYS LYS ALA GLU VAL PRO ASN GLU E907 L913 K918 L922 T925 Q928 K929 E930 E931 D932 T940 Q941 L942 A946 T947 M948 D952 L953 T954 V955 V956
L959 K960 K961 L964 H967 GLU ILE GLU GLY SER LYS ARG LYS PRO L977 D984 K985 P986 G987 L988 D989 L990 S1004 F1005 Q1006 T1007 A1008 E1013 F1020 L1026 T1029 V1033 T1041 I1042 ILE PRO SER ASP ASP GLN SER ILE SER VAL ALA LYS GLU VAL GLN
ILE SER THR GLU LYS GLN GLN LYS ASN SER THR LEU PRO LYS ALA ILE VAL SER SER ARG ASP SER ASP ILE ILE D1083 F1084 R1085 L1090 N1099 E1100 K1101 N1102 L1112 L1116 S1117 L1118 Q1119 S1120 R1121 L1125 E1130 V1134 D1138 P1139 K1140 T1141 V1142 H1143 V1147 S1148
I1149 M1150 G1151 V1154 F1155 R1156 F1157 N1158 L1159 D1160 P1163 ASP ALA THR GLU GLY ASP LEU TYR THR ASP MET SER LYS VAL ASP G1179 V1180 L1181 S1182 L1183 N1184 V1185 G1186 C1187 I1190 V1191 N1202 Q1208 T1209 A1210 K1211 E1212 S1213 L1214 S1215 A1216 A1217 T1218 A1219 Q1220 A1221 A1222 E1223 R1224
A1225 A1226 T1227 S1228 V1229 K1230 D1231 L1232 A1233 GLN ARG SER PHE R1238 V1239 S1240 I1241 N1242 I1243 D1244 L1245 K1246 A1247 I1250 V1251 I1252 P1253 Q1254 S1255 SER ILE SER THR ASN A1261 V1262 V1263 V1264 D1265 L1266 G1267 L1268 I1269 R1270 V1271 H1272 N1273 V1278 SER ASP GLU ASP TYR LEU ASN P1286 I1289
D1290 R1291 M1292 D1293 V1294 Q1295 L1296 T1297 K1298 L1301 Y1302 R1303 THR VAL ILE GLN PRO GLY ILE TYR HIS PRO ASP I1315 Q1316 L1317 L1318 L1326 V1327 N1328 S1334 W1335 Y1336 H1337 K1338 L1348 D1349 N1352 V1353 S1354 L1355 N1356 Q1357 E1358 D1359 L1360 N1361 R1365 I1366 E1369 N1370 L1371 CYS
GLU GLY THR GLU ASP LEU ASP LYS VAL LYS PRO ARG VAL GLN GLU THR GLY GLU GLU ILE LYS GLU PRO LEU GLU ILE SER ILE SER GLN ASP VAL HIS ASP SER LYS ASN THR LEU THR THR GLY VAL GLU GLU ILE ARG SER VAL ASP I1422 I1431 T1437 L1438 M1439 LYS LYS SER GLU
LYS LYS GLY ARG P1448 V1454 L1455 Q1456 L1457 G1458 M1459 E1460 A1461 K1464 T1465 Y1466 D1467 A1470 L1474 K1475 K1476 I1477 C1481 F1482 T1485 ASP SER LYS GLY GLU PRO L1492 H1493 I1494 I1495 V1500 T1501 D1502 L1505 L1506 T1511 D1514 S1515 D1516 G1517 P1518 E1519 F1520 K1521 T1522
I1523 H1524 D1525 F1535 A1536 S1537 L1538 D1539 L1540 V1541 L1542 E1545 A1546 L1547 L1548 S1549 F1550 M1551 D1552 F1553 L1554 S1555 S1556 ALA ALA PRO PHE SER GLU PRO SER SER SER GLU LYS GLU SER GLU LEU LYS PRO LEU VAL GLY GLU SER ARG SER ILE ALA VAL LYS ALA VAL SER SER ASN ILE




N3027 E3030 A3045 N3046 V3052 L3055 Q3059 R3060 L3063 F3064 T3065 D3066 D3067 V3068 A3069 L3070 V3071 A3074 A3077 M3080 Y3085 E3086 I3087 T3088 L3089 V3099 E3106 W3119 E3120 V3121 K3122 P3123 K3124 Q3125 K3126 W3127 K3128 P3129 F3130 K3133 Q3134 I3135 I3136 L3137 L3138 E3139
Q3140 S3141 Y3142 Q3143 K3144 H3145 Q3146 I3147 S3148 R3149 D3150 H3151 G3152 W3153 I3154 K3155 L3156 D3157 N3158 N3159 F3160 E3161 V3162 N3163 F3164 D3165 K3166 D3167 P3168 M3169 E3170 M3171 R3172 L3173 P3174 I3175 R3176 S3177 P3178 I3179 K3180 S3185 G3186 I3187 L3204 Y3205 W3206 L3207 Q3208 N3211 V3220 V3221 V3225 F3240
I3241 E3251 Y3252 S3253 K3254 V3255 A3269 F3276 I3281 T3287 T3288 D3289 P3290 E3291 A3292 E3293 R3294 D3305 A3309 E3310 L3311 M3312 E3313 T3314 S3315 M3316 T3317 D3318 M3319 S3320 I3321 L3322 F3325 F3328 L3341 GLY SER GLY GLY GLU GLU SER ASP LYS GLU LYS GLN GLU MET PHE
ALA VAL HIS S3360 V3361 L3365 I3368 T3371 L3372 L3382 D3395 Q3396 L3397 Q3408 K3411 Q3412 M3413 V3417 D3421 N3425 PRO PHE GLY LEU ILE ARG GLY LEU SER GLU GLY VAL GLU ALA LEU PHE TYR GLU PRO PHE GLN GLY ALA VAL GLN GLY GLY PRO GLU GLU PHE
ALA GLU GLY LEU VAL ILE GLY VAL ARG SER LEU PHE GLY HIS THR VAL GLY GLY ALA ALA GLY VAL VAL SER ARG ILE THR GLY SER VAL GLY LYS GLY LEU ALA ALA ILE THR MET ASP LYS GLU TYR GLN GLN LYS ARG ARG GLU GLU LEU SER ARG GLN PRO ARG ASP PHE GLY ASP
SER LEU ALA ARG GLY GLY LYS GLY PHE LEU ARG GLY VAL VAL GLY GLY VAL THR GLY ILE ILE THR LYS PRO VAL GLU GLY ALA LYS LYS GLU GLY GLY ALA ALA GLY PHE PHE LYS GLY ILE GLY LYS GLY LEU VAL GLY ALA VAL ALA ARG PRO THR GLY GLY ILE VAL ASP MET ALA SER
SER THR PHE GLN GLY ILE GLN ARG ALA ALA GLU SER THR GLU GLU VAL SER SER LEU ARG PRO PRO ARG LEU ILE HIS GLU ASP GLY ILE ILE ARG PRO TYR ASP ARG Q3612 D3618 K3625 K3626 L3627 E3628 G3629 E3630 T3631 Y3632 R3633 Y3634 H3635 I3638 P3639 G3640 S3641 K3642 K3643 T3644
M3647 V3648 T3649 N3650 R3651 L3654 C3655 I3656 K3657 E3658 V3659 E3660 I3661 L3662 G3663 L3664 M3665 C3666 V3667 Q3670 C3671 P3672 F3673 E3674 D3675 F3676 V3677 F3678 P3679 P3680 S3681 V3682 S3683 E3684 N3685 V3686 L3687 K3688 I3689 S3690 V3691 K3692 E3693 Q3694 G3695 L3696 F3697 H3698 K3699 K3700 D3701 S3702 A3703 N3704 Q3705 K3710 V3711
Y3712 L3713 K3714 D3715 T3716 N3724 E3727 Q3730 S3731 T3732 R3733 Q3734 Q3735 Q3736 K3737 L3738 M3739 K3740 Q3741 S3742 S3743 V3744 R3745 L3746 LEU ARG PRO GLN LEU PRO SER LEU GLU ASP TYR LYS ASP HIS ASP GLY ASP TYR LYS ASP HIS ASP ILE ASP TYR LYS ASP ASP ASP ASP ASP LYS

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	392473	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	43	Depositor
Minimum defocus (nm)	2000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	4.408	Depositor
Minimum map value	-0.447	Depositor
Average map value	0.005	Depositor
Map value standard deviation	0.034	Depositor
Recommended contour level	0.4	Depositor
Map size (Å)	546.816, 546.816, 546.816	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.4239999, 1.4239999, 1.4239999	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	0.13	0/1178	0.28	0/1580
2	B	0.16	0/23945	0.35	0/32390
All	All	0.16	0/25123	0.35	0/33970

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	1166	0	1093	10	0
2	B	23511	0	24031	394	0
All	All	24677	0	25124	401	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 8.

All (401) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1995:LEU:HB3	2:B:2028:ILE:HG22	1.65	0.78
2:B:1026:LEU:HD23	2:B:1026:LEU:O	1.84	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:3328:PHE:CE2	2:B:3397:LEU:HD21	2.20	0.77
2:B:2202:ILE:CG2	2:B:2285:VAL:HG12	2.14	0.77
2:B:2351:LEU:HD12	2:B:2351:LEU:O	1.86	0.74
2:B:1262:VAL:HG23	2:B:1366:ILE:HD13	1.72	0.71
2:B:1618:ASN:HB2	2:B:1652:VAL:HG11	1.73	0.71
2:B:2609:ILE:HD11	2:B:2664:ILE:HG21	1.73	0.71
2:B:1538:LEU:HD23	2:B:1608:PHE:HE2	1.54	0.70
2:B:1154:VAL:O	2:B:1185:VAL:HG23	1.91	0.70
2:B:817:ILE:HG21	2:B:822:MET:SD	2.32	0.69
2:B:3225:VAL:HG22	2:B:3269:ALA:HB2	1.75	0.69
2:B:1143:HIS:HE1	2:B:1252:ILE:HG23	1.59	0.68
2:B:1264:VAL:HG22	2:B:1301:LEU:CD1	2.24	0.68
2:B:2884:VAL:HG13	2:B:2918:LEU:HD11	1.76	0.68
2:B:3654:LEU:HD13	2:B:3670:GLN:HB3	1.77	0.67
2:B:1348:LEU:HD23	2:B:1431:ILE:HD12	1.76	0.66
2:B:1271:VAL:HG13	2:B:1294:VAL:HG22	1.78	0.65
2:B:2782:LEU:HD22	2:B:2818:LEU:HD11	1.79	0.65
2:B:3328:PHE:HE2	2:B:3397:LEU:HD21	1.61	0.64
2:B:1540:LEU:HB2	2:B:1610:VAL:HG22	1.79	0.64
2:B:557:ILE:HG23	2:B:579:LEU:HD11	1.80	0.64
2:B:1833:LEU:HD23	2:B:1834:LYS:O	1.98	0.63
2:B:3204:LEU:HD23	2:B:3205:TYR:N	2.13	0.63
2:B:2000:LEU:HD23	2:B:2000:LEU:O	2.00	0.62
2:B:2556:ILE:HD12	2:B:2599:GLU:CD	2.24	0.62
2:B:1703:ILE:HG22	2:B:1705:ILE:HD11	1.81	0.61
2:B:2285:VAL:CG2	2:B:2301:ALA:HB3	2.30	0.61
2:B:2942:LEU:HD23	2:B:2976:PRO:HD3	1.82	0.61
2:B:1159:LEU:HD23	2:B:1160:ASP:N	2.16	0.61
2:B:2285:VAL:HG22	2:B:2301:ALA:HB3	1.83	0.61
1:A:145:MET:HE1	2:B:378:ILE:HD11	1.84	0.60
2:B:2314:SER:C	2:B:2315:LEU:HD12	2.26	0.60
2:B:2014:MET:HE1	2:B:2120:LEU:HD21	1.84	0.60
2:B:2207:ILE:HD11	2:B:2416:TYR:CE1	2.37	0.59
1:A:45:THR:HG22	1:A:46:GLU:H	1.68	0.59
2:B:3382:LEU:HD23	2:B:3412:GLN:OE1	2.02	0.59
2:B:1241:ILE:HG22	2:B:1273:ASN:HB3	1.85	0.59
2:B:942:LEU:HD13	2:B:959:LEU:HD12	1.85	0.59
2:B:1538:LEU:HD23	2:B:1608:PHE:CE2	2.37	0.59
2:B:38:LEU:HD21	2:B:41:LEU:HD21	1.85	0.59
2:B:2343:VAL:HG21	2:B:2385:ASN:HB3	1.84	0.58
2:B:371:ARG:O	2:B:371:ARG:HD3	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2782:LEU:CD1	2:B:2868:LEU:HD13	2.34	0.58
2:B:573:LEU:HD21	2:B:575:VAL:HG23	1.86	0.57
2:B:1298:LYS:HD2	2:B:1298:LYS:O	2.04	0.57
2:B:2132:PHE:CD2	2:B:2151:VAL:HG13	2.40	0.57
2:B:3023:THR:HG23	2:B:3027:ASN:O	2.04	0.57
2:B:573:LEU:HB3	2:B:614:THR:HG22	1.87	0.56
2:B:1262:VAL:HG23	2:B:1366:ILE:CD1	2.34	0.56
2:B:198:ILE:HG22	2:B:201:ILE:HD11	1.89	0.56
2:B:2556:ILE:HD12	2:B:2599:GLU:OE2	2.06	0.56
2:B:1874:ASP:O	2:B:1878:LEU:HD23	2.05	0.55
2:B:191:ILE:HG21	2:B:307:MET:HE2	1.89	0.55
2:B:2197:VAL:HG11	2:B:2200:PHE:CE2	2.41	0.55
2:B:2493:VAL:HG22	2:B:2499:GLU:OE1	2.07	0.55
2:B:1269:ILE:HD11	2:B:1296:LEU:HD13	1.88	0.55
2:B:3220:VAL:HG23	2:B:3220:VAL:O	2.07	0.55
2:B:3325:PHE:CZ	2:B:3397:LEU:HD22	2.41	0.55
2:B:2463:GLU:C	2:B:2464:LEU:HD12	2.32	0.55
2:B:714:LEU:HD12	2:B:759:LEU:O	2.07	0.55
2:B:1481:CYS:HB2	2:B:1494:ILE:HD11	1.89	0.54
2:B:1541:VAL:HG22	2:B:1611:PHE:CE1	2.41	0.54
2:B:1793:VAL:HG13	2:B:1795:MET:HE1	1.88	0.54
2:B:2556:ILE:HD13	2:B:2569:ARG:HH12	1.71	0.54
2:B:2202:ILE:HG21	2:B:2285:VAL:HG12	1.87	0.54
2:B:2701:VAL:HG13	2:B:2704:SER:HB3	1.89	0.54
1:A:13:PHE:CD2	1:A:73:MET:HE3	2.42	0.54
2:B:815:VAL:HB	2:B:922:LEU:HD23	1.90	0.54
2:B:990:LEU:HD11	2:B:1020:PHE:CE1	2.43	0.54
2:B:1541:VAL:HG13	2:B:1611:PHE:CE2	2.43	0.53
2:B:196:VAL:HG12	2:B:227:LEU:HB3	1.89	0.53
2:B:2729:ILE:O	2:B:2729:ILE:HG13	2.09	0.53
2:B:2527:LEU:HD23	2:B:2542:ARG:NH2	2.24	0.53
2:B:2893:MET:HE2	2:B:2893:MET:HA	1.91	0.53
2:B:3221:VAL:HG21	2:B:3276:PHE:CE2	2.44	0.52
2:B:714:LEU:HD11	2:B:758:LEU:HD21	1.89	0.52
1:A:69:PHE:O	1:A:73:MET:HG2	2.09	0.52
2:B:2980:MET:SD	2:B:3063:LEU:HD23	2.49	0.52
2:B:806:VAL:HG23	2:B:913:LEU:HA	1.90	0.52
2:B:2674:ASN:HB2	2:B:2693:LEU:HD22	1.91	0.52
2:B:2207:ILE:HD11	2:B:2416:TYR:CD1	2.44	0.52
2:B:2554:ALA:HB3	2:B:2595:ALA:HB3	1.91	0.52
2:B:2002:ASP:C	2:B:2003:LEU:HD22	2.35	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2146:MET:HA	2:B:2146:MET:HE2	1.92	0.52
2:B:3017:THR:HG22	2:B:3019:LYS:H	1.75	0.52
2:B:3654:LEU:HD13	2:B:3670:GLN:CB	2.40	0.52
2:B:3281:ILE:HD11	2:B:3361:VAL:HG21	1.92	0.52
1:A:145:MET:CE	2:B:378:ILE:HD11	2.41	0.51
2:B:2884:VAL:CG1	2:B:2918:LEU:HD11	2.39	0.51
1:A:45:THR:HG22	1:A:46:GLU:N	2.25	0.51
2:B:3086:GLU:O	2:B:3086:GLU:HG3	2.11	0.51
1:A:146:MET:HA	1:A:146:MET:HE3	1.92	0.51
2:B:2107:ALA:HB3	2:B:2136:LEU:HB3	1.93	0.51
2:B:2670:LEU:O	2:B:2701:VAL:HG12	2.11	0.51
2:B:2988:LEU:HD21	2:B:3064:PHE:CZ	2.46	0.51
2:B:3068:VAL:O	2:B:3071:VAL:HG22	2.11	0.51
2:B:3211:ASN:HB2	2:B:3221:VAL:HG23	1.93	0.51
2:B:1318:LEU:HD13	2:B:1353:VAL:HG22	1.94	0.50
2:B:2583:LEU:O	2:B:2583:LEU:HD23	2.12	0.50
2:B:2610:SER:O	2:B:2621:VAL:HG11	2.12	0.50
2:B:3021:THR:HG22	2:B:3030:GLU:HG3	1.93	0.50
2:B:320:LEU:HD21	2:B:322:CYS:HB2	1.94	0.50
2:B:2853:VAL:HG22	2:B:2868:LEU:HD23	1.94	0.50
2:B:2853:VAL:HG22	2:B:2868:LEU:CD2	2.41	0.50
2:B:1245:LEU:HB3	2:B:1269:ILE:HB	1.93	0.50
2:B:3371:THR:HG23	2:B:3371:THR:O	2.12	0.50
2:B:1191:VAL:HA	2:B:1250:ILE:HG23	1.94	0.49
2:B:1143:HIS:CE1	2:B:1252:ILE:HG23	2.45	0.49
2:B:2042:ASP:OD1	2:B:2042:ASP:C	2.55	0.49
2:B:2299:LEU:HD21	2:B:2326:VAL:CG1	2.42	0.49
2:B:2319:VAL:HG12	2:B:2320:ALA:N	2.27	0.49
2:B:2782:LEU:HD22	2:B:2818:LEU:CD1	2.43	0.49
2:B:2942:LEU:HD22	2:B:2970:TYR:CE1	2.46	0.49
2:B:2341:GLU:OE1	2:B:2388:ASN:O	2.30	0.49
2:B:1608:PHE:HB3	2:B:1624:ILE:HG12	1.93	0.49
2:B:2706:ILE:O	2:B:2706:ILE:HG13	2.12	0.49
2:B:1317:LEU:HD21	2:B:1359:ASP:HB3	1.95	0.48
2:B:2491:THR:HG22	2:B:2501:ALA:HB1	1.95	0.48
2:B:593:VAL:O	2:B:593:VAL:HG13	2.13	0.48
2:B:1029:THR:O	2:B:1033:VAL:HG23	2.13	0.48
2:B:1704:GLN:OE1	2:B:1766:ILE:HD12	2.13	0.48
2:B:2954:VAL:HG23	2:B:2967:PHE:CE1	2.49	0.48
2:B:3055:LEU:HD11	2:B:3060:ARG:NH2	2.28	0.48
2:B:2528:VAL:HG12	2:B:2541:LEU:HD22	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:3240:PHE:O	2:B:3241:ILE:C	2.56	0.48
2:B:229:THR:HG22	2:B:230:ALA:N	2.29	0.48
2:B:1147:VAL:HG22	2:B:1190:ILE:HA	1.95	0.48
2:B:3328:PHE:CZ	2:B:3397:LEU:HD11	2.49	0.48
2:B:1243:ILE:HB	2:B:1271:VAL:HB	1.96	0.48
2:B:536:LEU:HD22	2:B:539:THR:OG1	2.14	0.48
2:B:2567:LEU:HD23	2:B:2567:LEU:H	1.77	0.48
2:B:1247:ALA:HB1	2:B:1266:LEU:HB3	1.95	0.48
2:B:1778:ILE:HD12	2:B:1819:THR:HG21	1.96	0.48
2:B:2906:CYS:C	2:B:2907:LEU:HD22	2.39	0.48
2:B:3319:MET:N	2:B:3319:MET:HE2	2.29	0.48
2:B:1950:TYR:HA	2:B:1968:GLN:HA	1.96	0.47
2:B:283:LEU:HD12	2:B:288:ILE:HA	1.96	0.47
2:B:2992:GLN:HE22	2:B:3012:ALA:H	1.61	0.47
2:B:1090:LEU:HB3	2:B:1112:LEU:HB3	1.96	0.47
2:B:234:TRP:HD1	2:B:249:LEU:HD21	1.79	0.47
2:B:3088:THR:HG22	2:B:3089:LEU:N	2.30	0.47
2:B:282:ILE:HG22	2:B:282:ILE:O	2.14	0.47
2:B:2299:LEU:HD21	2:B:2326:VAL:HG13	1.97	0.47
2:B:2513:TYR:HA	2:B:2652:CYS:HB2	1.96	0.47
2:B:2637:LEU:HD23	2:B:2637:LEU:O	2.15	0.47
2:B:2678:TYR:HB2	2:B:2715:LEU:HD11	1.96	0.47
2:B:2874:ILE:HD13	2:B:2965:ILE:HB	1.95	0.47
2:B:3635:HIS:HB3	2:B:3647:MET:HG3	1.97	0.47
2:B:695:LYS:HB3	2:B:696:PRO:CD	2.45	0.47
2:B:1261:ALA:O	2:B:1303:ARG:HA	2.15	0.47
2:B:1541:VAL:HG22	2:B:1611:PHE:CZ	2.49	0.47
2:B:338:TYR:O	2:B:341:MET:HG3	2.15	0.47
2:B:2757:VAL:HG12	2:B:2766:LEU:CD2	2.45	0.47
2:B:913:LEU:HD23	2:B:946:ALA:HB3	1.97	0.47
2:B:1029:THR:HG21	2:B:1099:ASN:CG	2.39	0.47
2:B:2527:LEU:HD23	2:B:2542:ARG:CZ	2.45	0.47
2:B:3019:LYS:HE3	2:B:3030:GLU:HB3	1.98	0.47
2:B:2512:LEU:HD11	2:B:2525:SER:HB3	1.97	0.46
2:B:3656:ILE:HD12	2:B:3667:VAL:HA	1.97	0.46
2:B:3692:LYS:HD2	2:B:3692:LYS:C	2.41	0.46
2:B:956:VAL:HG23	2:B:956:VAL:O	2.15	0.46
2:B:340:SER:O	2:B:343:ASP:OD1	2.33	0.46
2:B:2285:VAL:O	2:B:2285:VAL:HG23	2.14	0.46
2:B:2814:ASN:O	2:B:2815:LYS:HB2	2.14	0.46
2:B:3281:ILE:CD1	2:B:3361:VAL:HG21	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1539:ASP:C	2:B:1540:LEU:HD12	2.41	0.46
2:B:690:LEU:HD11	2:B:692:ILE:CG1	2.46	0.46
2:B:1181:LEU:HB2	2:B:1239:VAL:HG13	1.98	0.46
2:B:2014:MET:HE1	2:B:2120:LEU:HD11	1.97	0.46
2:B:415:LYS:NZ	2:B:421:VAL:HG13	2.31	0.46
2:B:1149:ILE:HG23	2:B:1149:ILE:O	2.16	0.46
2:B:1767:ILE:HG23	2:B:1767:ILE:O	2.16	0.46
2:B:2112:PRO:HD2	2:B:2132:PHE:O	2.16	0.46
2:B:2542:ARG:NH1	2:B:2546:GLN:HG3	2.30	0.46
2:B:2650:TYR:HA	2:B:3744:VAL:HG13	1.96	0.46
2:B:2676:LEU:HD11	2:B:2753:LEU:HD13	1.97	0.46
2:B:2781:VAL:O	2:B:2781:VAL:HG23	2.15	0.46
2:B:3067:ASP:HB2	2:B:3070:LEU:HD12	1.98	0.46
2:B:1187:CYS:HA	2:B:1246:LYS:O	2.16	0.46
2:B:2503:ILE:HG13	2:B:2503:ILE:O	2.16	0.46
2:B:2774:LEU:HD23	2:B:2866:VAL:HB	1.98	0.46
2:B:1700:VAL:HG12	2:B:1701:GLY:O	2.16	0.46
2:B:2648:LEU:HD12	2:B:2651:ILE:HD11	1.97	0.46
2:B:2200:PHE:HD2	2:B:2280:VAL:HG11	1.80	0.46
2:B:723:LEU:C	2:B:723:LEU:HD23	2.41	0.45
2:B:1154:VAL:HG12	2:B:1155:PHE:HD1	1.80	0.45
2:B:2497:TYR:OH	2:B:2583:LEU:HD22	2.15	0.45
2:B:2531:ASP:OD2	2:B:2538:VAL:HB	2.16	0.45
2:B:2592:ILE:HD11	2:B:2625:LEU:HD22	1.99	0.45
2:B:2750:THR:HG23	2:B:2806:LYS:HE2	1.98	0.45
2:B:206:GLU:HB3	2:B:265:MET:HE3	1.98	0.45
2:B:368:THR:O	2:B:369:ASN:CG	2.59	0.45
2:B:529:ALA:O	2:B:530:HIS:CG	2.70	0.45
2:B:1859:ILE:HD12	2:B:1936:LEU:HD11	1.98	0.45
2:B:2501:ALA:O	2:B:2502:ASN:OD1	2.33	0.45
2:B:2583:LEU:HD23	2:B:2583:LEU:C	2.42	0.45
2:B:2782:LEU:HD12	2:B:2868:LEU:HD13	1.98	0.45
2:B:2953:LEU:HD23	2:B:2953:LEU:H	1.81	0.45
2:B:925:THR:HG21	2:B:931:GLU:HA	1.98	0.45
2:B:1464:LYS:HG2	2:B:1465:THR:H	1.81	0.45
2:B:2014:MET:HA	2:B:2051:CYS:HB3	1.98	0.45
2:B:2291:LEU:C	2:B:2291:LEU:HD23	2.41	0.45
2:B:2524:ASP:HB3	2:B:2583:LEU:HD21	1.99	0.45
2:B:2553:ILE:HD12	2:B:2594:PRO:HB2	1.99	0.45
2:B:3106:GLU:O	2:B:3106:GLU:HG2	2.16	0.45
2:B:3689:ILE:HG22	2:B:3691:VAL:HG13	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:415:LYS:HZ3	2:B:421:VAL:HG13	1.81	0.45
2:B:954:THR:HG23	2:B:954:THR:O	2.15	0.45
2:B:1454:VAL:HG13	2:B:1477:ILE:CD1	2.46	0.45
2:B:2545:LEU:O	2:B:2581:VAL:HG22	2.17	0.45
2:B:202:HIS:HE2	2:B:278:LEU:HD22	1.81	0.45
2:B:1292:MET:N	2:B:1292:MET:HE2	2.32	0.45
2:B:2422:ALA:O	2:B:2423:PRO:C	2.60	0.45
2:B:2942:LEU:HD22	2:B:2970:TYR:CZ	2.51	0.45
2:B:1454:VAL:HG13	2:B:1474:LEU:HD11	1.98	0.45
2:B:2651:ILE:HD12	2:B:3744:VAL:O	2.17	0.45
2:B:1185:VAL:CG1	2:B:1245:LEU:HB2	2.46	0.45
2:B:1950:TYR:O	2:B:2063:PHE:CZ	2.70	0.45
2:B:2198:LYS:HG3	2:B:2199:GLU:N	2.32	0.45
2:B:2985:TRP:HB2	2:B:3024:TYR:OH	2.16	0.45
2:B:3661:ILE:HG13	2:B:3662:LEU:H	1.81	0.45
2:B:2906:CYS:O	2:B:2907:LEU:HD22	2.17	0.45
2:B:1547:LEU:O	2:B:1551:MET:HG2	2.18	0.44
2:B:2338:PRO:HB2	2:B:2341:GLU:HG3	1.99	0.44
2:B:2680:LEU:HD21	2:B:2713:LEU:HD22	1.98	0.44
2:B:3023:THR:HA	2:B:3027:ASN:O	2.17	0.44
2:B:369:ASN:OD1	2:B:369:ASN:O	2.36	0.44
2:B:573:LEU:HD23	2:B:573:LEU:C	2.43	0.44
2:B:778:MET:CG	2:B:778:MET:O	2.65	0.44
2:B:798:ASP:HB3	2:B:801:MET:HE3	1.97	0.44
2:B:2775:ILE:HD11	2:B:2867:THR:HG22	1.99	0.44
2:B:110:VAL:O	2:B:113:LYS:HG3	2.17	0.44
2:B:1761:LYS:HE3	2:B:1783:LEU:HD12	2.00	0.44
2:B:1830:ILE:HG23	2:B:1830:ILE:O	2.18	0.44
2:B:2354:ASP:OD1	2:B:2355:VAL:N	2.51	0.44
2:B:2815:LYS:HE3	2:B:3421:ASP:HB2	1.99	0.44
2:B:3206:TRP:O	2:B:3208:GLN:N	2.51	0.44
2:B:3365:LEU:HD11	2:B:3372:LEU:H	1.81	0.44
2:B:3413:MET:O	2:B:3417:VAL:HG12	2.17	0.44
2:B:3661:ILE:HG13	2:B:3662:LEU:N	2.33	0.44
2:B:2064:PHE:O	2:B:2068:VAL:HG12	2.17	0.44
2:B:2527:LEU:HD11	2:B:2648:LEU:HD22	1.99	0.44
2:B:2556:ILE:HD13	2:B:2569:ARG:NH1	2.33	0.44
2:B:753:ILE:HG22	2:B:756:VAL:CG2	2.48	0.44
2:B:1766:ILE:HG12	2:B:1778:ILE:HG12	2.00	0.44
2:B:2505:VAL:HG12	2:B:2505:VAL:O	2.17	0.44
2:B:229:THR:HG22	2:B:230:ALA:H	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:765:GLU:OE1	2:B:769:LYS:HA	2.18	0.44
2:B:795:VAL:HG12	2:B:801:MET:SD	2.57	0.44
2:B:2773:TRP:HB3	2:B:2800:ILE:HG21	2.00	0.44
2:B:191:ILE:HG21	2:B:307:MET:CE	2.47	0.43
2:B:250:ILE:HB	2:B:303:ALA:HB3	1.99	0.43
2:B:2782:LEU:HD22	2:B:2818:LEU:CG	2.48	0.43
2:B:283:LEU:HD22	2:B:298:PRO:CG	2.48	0.43
2:B:695:LYS:HB3	2:B:696:PRO:HD2	2.00	0.43
2:B:758:LEU:O	2:B:759:LEU:HD12	2.18	0.43
2:B:2782:LEU:HB3	2:B:2818:LEU:HD11	2.00	0.43
2:B:2887:ILE:HD13	2:B:2893:MET:HE1	2.00	0.43
1:A:40:LEU:HD22	2:B:398:ILE:HG23	1.99	0.43
2:B:758:LEU:C	2:B:759:LEU:HD12	2.44	0.43
2:B:2841:LYS:HG2	2:B:2848:GLU:OE2	2.19	0.43
2:B:2887:ILE:HG23	2:B:2892:SER:O	2.18	0.43
2:B:1334:SER:HG	2:B:1335:TRP:CD1	2.36	0.43
2:B:2207:ILE:HD12	2:B:2414:PHE:CE2	2.53	0.43
2:B:2158:ALA:H	2:B:2173:VAL:HG23	1.82	0.43
2:B:1454:VAL:HG13	2:B:1477:ILE:HD11	2.01	0.43
2:B:1535:PHE:HB3	2:B:1605:LEU:HA	2.01	0.43
2:B:1872:GLU:HB2	2:B:2063:PHE:CE1	2.53	0.43
2:B:3185:SER:O	2:B:3186:GLY:C	2.62	0.43
2:B:3318:ASP:C	2:B:3319:MET:HE2	2.44	0.43
2:B:355:ALA:N	2:B:356:PRO:HD2	2.33	0.43
2:B:2031:SER:O	2:B:2041:ILE:HA	2.18	0.43
2:B:2375:PRO:HB2	2:B:3085:TYR:HA	2.01	0.43
2:B:2557:ILE:O	2:B:2570:ILE:HG12	2.19	0.43
2:B:3634:TYR:O	2:B:3648:VAL:HG22	2.19	0.43
2:B:274:ILE:O	2:B:278:LEU:HG	2.19	0.43
2:B:1134:VAL:HB	2:B:1147:VAL:HB	2.01	0.43
2:B:2974:SER:N	2:B:3059:GLN:OE1	2.52	0.43
2:B:3382:LEU:HD22	2:B:3408:GLN:HB3	2.00	0.43
2:B:283:LEU:HD13	2:B:294:TYR:HE2	1.84	0.43
2:B:1650:MET:HE1	2:B:1652:VAL:HG22	2.00	0.43
2:B:2542:ARG:HD2	2:B:2580:HIS:ND1	2.34	0.43
2:B:3742:SER:O	2:B:3746:LEU:HG	2.19	0.43
2:B:752:GLU:HB3	2:B:754:LYS:HE3	2.00	0.42
2:B:1542:LEU:HD12	2:B:1612:VAL:HG22	1.99	0.42
2:B:2062:ASP:OD1	2:B:2063:PHE:N	2.51	0.42
2:B:2177:CYS:SG	2:B:2197:VAL:HG13	2.59	0.42
2:B:425:ILE:HG23	2:B:426:GLN:N	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:948:MET:HB2	2:B:953:LEU:HD13	2.02	0.42
2:B:1291:ARG:C	2:B:1292:MET:HE2	2.44	0.42
2:B:941:GLN:HB2	2:B:960:LYS:HB2	2.00	0.42
2:B:964:LEU:O	2:B:964:LEU:HG	2.19	0.42
2:B:1495:ILE:CG2	2:B:1538:LEU:HD11	2.48	0.42
2:B:2673:ARG:HB3	2:B:2767:SER:HA	2.01	0.42
2:B:600:ILE:HG22	2:B:600:ILE:O	2.19	0.42
2:B:2018:LYS:HB3	2:B:2047:LYS:HB3	2.01	0.42
2:B:2200:PHE:CD2	2:B:2280:VAL:HG11	2.54	0.42
2:B:3099:VAL:HA	2:B:3106:GLU:HA	2.02	0.42
2:B:1758:ILE:CG2	2:B:1760:LEU:HG	2.49	0.42
2:B:2636:PRO:HB2	2:B:2705:ARG:NH2	2.35	0.42
2:B:3052:VAL:HG11	2:B:3074:ALA:HB2	2.01	0.42
2:B:2501:ALA:O	2:B:2502:ASN:C	2.63	0.42
2:B:2981:ASN:HB3	2:B:3001:LEU:HD22	2.02	0.42
2:B:553:LEU:HD23	2:B:585:THR:O	2.20	0.42
2:B:1292:MET:HB2	2:B:1327:VAL:HB	2.01	0.42
2:B:1536:ALA:O	2:B:1606:ASN:HB3	2.18	0.42
2:B:1825:LEU:HG	2:B:1826:PRO:HD2	2.01	0.42
2:B:2546:GLN:HB2	2:B:2663:ILE:HG12	2.02	0.42
2:B:3365:LEU:HA	2:B:3368:ILE:HD12	2.02	0.42
2:B:3680:PRO:HB2	2:B:3687:LEU:HD11	2.01	0.42
1:A:110:MET:HE1	1:A:125:MET:SD	2.59	0.42
2:B:616:PRO:HD3	2:B:622:ASP:O	2.20	0.42
2:B:1951:ASN:HA	2:B:2063:PHE:CE1	2.55	0.42
2:B:2182:GLU:O	2:B:2193:ILE:HA	2.20	0.42
2:B:2735:GLU:HA	2:B:2757:VAL:HG22	2.01	0.42
2:B:2760:ILE:O	2:B:2760:ILE:HG13	2.20	0.42
2:B:283:LEU:HD22	2:B:298:PRO:HG2	2.01	0.42
2:B:702:PRO:HG3	2:B:707:HIS:HB2	2.00	0.42
2:B:817:ILE:HG21	2:B:822:MET:CE	2.49	0.42
2:B:928:GLN:C	2:B:929:LYS:HD3	2.44	0.42
2:B:1020:PHE:HD2	2:B:1090:LEU:HG	1.84	0.42
2:B:2202:ILE:HG23	2:B:2285:VAL:HG12	1.98	0.42
2:B:2389:ILE:HG22	2:B:2390:THR:N	2.35	0.42
2:B:2392:SER:HA	2:B:3099:VAL:O	2.20	0.42
2:B:321:ASP:OD1	2:B:321:ASP:C	2.63	0.42
2:B:369:ASN:OD1	2:B:369:ASN:C	2.62	0.42
2:B:1183:LEU:O	2:B:1243:ILE:HA	2.20	0.42
2:B:3013:ASP:OD1	2:B:3013:ASP:O	2.37	0.42
2:B:810:LEU:C	2:B:810:LEU:HD23	2.45	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2213:LEU:HD12	2:B:2410:THR:HG22	2.02	0.41
2:B:3144:LYS:HA	2:B:3147:ILE:HG12	2.02	0.41
2:B:3686:VAL:HG11	2:B:3710:LYS:HG3	2.02	0.41
2:B:227:LEU:HD13	2:B:250:ILE:HG13	2.02	0.41
2:B:234:TRP:CD1	2:B:249:LEU:HD21	2.54	0.41
2:B:2343:VAL:HG21	2:B:2385:ASN:CB	2.50	0.41
2:B:2813:LYS:HB2	2:B:2815:LYS:HZ3	1.85	0.41
2:B:2956:VAL:HG13	2:B:2956:VAL:O	2.19	0.41
2:B:3638:ILE:CD1	2:B:3711:VAL:HG13	2.50	0.41
2:B:761:ALA:HB1	2:B:772:PHE:CD1	2.55	0.41
2:B:1264:VAL:HG22	2:B:1301:LEU:HD13	2.01	0.41
2:B:1670:PHE:CB	2:B:1700:VAL:HG22	2.49	0.41
2:B:2023:ASN:OD1	2:B:2024:ASN:N	2.53	0.41
2:B:2508:PRO:HA	2:B:2530:ILE:HB	2.02	0.41
2:B:2570:ILE:HD12	2:B:2582:PRO:HD2	2.02	0.41
2:B:630:GLN:O	2:B:632:VAL:HG23	2.19	0.41
2:B:1130:GLU:C	2:B:1154:VAL:HG23	2.45	0.41
2:B:1251:VAL:HG12	2:B:1253:PRO:HD3	2.02	0.41
2:B:1318:LEU:HD12	2:B:1352:ASN:O	2.20	0.41
2:B:1537:SER:HA	2:B:1607:ALA:O	2.20	0.41
2:B:1995:LEU:O	2:B:2027:MET:N	2.53	0.41
2:B:2387:MET:HE2	2:B:2387:MET:HB3	1.99	0.41
2:B:436:LEU:HD23	2:B:441:ILE:HG13	2.02	0.41
2:B:623:GLN:O	2:B:688:LEU:HD12	2.20	0.41
2:B:1999:THR:HG22	2:B:2013:ARG:NH1	2.34	0.41
2:B:2621:VAL:HB	2:B:2643:ALA:HB3	2.03	0.41
2:B:2779:THR:O	2:B:2795:ALA:HB1	2.20	0.41
2:B:186:LEU:O	2:B:190:VAL:HG23	2.19	0.41
2:B:436:LEU:HD21	2:B:440:ASN:HB2	2.01	0.41
2:B:1872:GLU:HB3	2:B:1952:ASN:HA	2.01	0.41
2:B:940:THR:OG1	2:B:961:LYS:HB2	2.21	0.41
2:B:1190:ILE:O	2:B:1250:ILE:HG12	2.20	0.41
2:B:1474:LEU:HB3	2:B:1506:LEU:HG	2.03	0.41
2:B:1673:GLN:O	2:B:1696:LEU:HD12	2.20	0.41
2:B:1988:SER:HA	2:B:2034:GLN:O	2.20	0.41
2:B:2813:LYS:HB2	2:B:2815:LYS:NZ	2.35	0.41
2:B:3654:LEU:HD12	2:B:3656:ILE:HD11	2.03	0.41
2:B:1116:LEU:HD22	2:B:1125:LEU:HD22	2.03	0.41
2:B:1181:LEU:HD13	2:B:1239:VAL:HG11	2.01	0.41
2:B:1596:VAL:HG22	2:B:1635:PRO:HG3	2.03	0.41
2:B:2377:MET:O	2:B:3085:TYR:HB2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2649:SER:O	2:B:2650:TYR:HD1	2.04	0.41
2:B:2671:THR:HG21	2:B:2763:ARG:NH2	2.35	0.41
2:B:3328:PHE:CE2	2:B:3397:LEU:HD11	2.56	0.41
2:B:101:VAL:O	2:B:105:LYS:HD3	2.20	0.41
2:B:760:PHE:HE2	2:B:762:ARG:HE	1.68	0.41
2:B:811:PRO:O	2:B:918:LYS:HB2	2.21	0.41
2:B:1262:VAL:HG22	2:B:1303:ARG:HH12	1.85	0.41
2:B:1456:GLN:HB2	2:B:1475:LYS:CB	2.50	0.41
2:B:2049:TYR:O	2:B:2049:TYR:CG	2.73	0.41
2:B:2126:PRO:HB2	2:B:2211:THR:HG23	2.02	0.41
2:B:103:GLU:O	2:B:107:LEU:HG	2.21	0.41
2:B:396:SER:O	2:B:399:LYS:HG2	2.21	0.41
2:B:1289:ILE:HG23	2:B:1328:ASN:OD1	2.21	0.41
2:B:1778:ILE:CD1	2:B:1819:THR:HG21	2.51	0.41
2:B:2179:LEU:HD12	2:B:2179:LEU:O	2.20	0.41
2:B:2197:VAL:HB	2:B:2280:VAL:HG22	2.03	0.41
2:B:3002:LEU:HD12	2:B:3002:LEU:O	2.20	0.41
2:B:1020:PHE:CD2	2:B:1090:LEU:HG	2.56	0.40
2:B:1802:PRO:HG3	2:B:1850:TRP:CH2	2.56	0.40
2:B:3119:TRP:CE3	2:B:3179:ILE:HD12	2.56	0.40
2:B:90:VAL:HG23	2:B:205:TYR:CD1	2.56	0.40
2:B:1302:TYR:C	2:B:1303:ARG:HE	2.29	0.40
2:B:2343:VAL:HG12	2:B:2344:GLU:HG3	2.02	0.40
2:B:2351:LEU:HD12	2:B:2353:LEU:CD1	2.52	0.40
2:B:3727:GLU:HA	2:B:3730:GLN:HG2	2.03	0.40
2:B:798:ASP:HB3	2:B:801:MET:HG2	2.04	0.40
2:B:3186:GLY:O	2:B:3187:ILE:C	2.64	0.40
1:A:48:GLU:O	1:A:52:MET:HG2	2.22	0.40
2:B:66:THR:HB	2:B:82:THR:OG1	2.21	0.40
2:B:2874:ILE:HG12	2:B:2909:PHE:HB2	2.02	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	146/149 (98%)	145 (99%)	1 (1%)	0	100	100
2	B	2892/3777 (77%)	2667 (92%)	225 (8%)	0	100	100
All	All	3038/3926 (77%)	2812 (93%)	226 (7%)	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	126/127 (99%)	126 (100%)	0	100	100
2	B	2671/3385 (79%)	2671 (100%)	0	100	100
All	All	2797/3512 (80%)	2797 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (25) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	43	ASN
2	B	385	HIS
2	B	566	GLN
2	B	615	ASN
2	B	651	ASN
2	B	658	GLN
2	B	927	GLN
2	B	1119	GLN
2	B	1370	ASN
2	B	1709	HIS
2	B	2327	HIS
2	B	2348	GLN
2	B	2358	ASN

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Mol	Chain	Res	Type
2	B	2522	HIS
2	B	2529	GLN
2	B	2546	GLN
2	B	2600	HIS
2	B	2719	GLN
2	B	3143	GLN
2	B	3145	HIS
2	B	3223	HIS
2	B	3301	GLN
2	B	3336	HIS
2	B	3404	HIS
2	B	3705	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

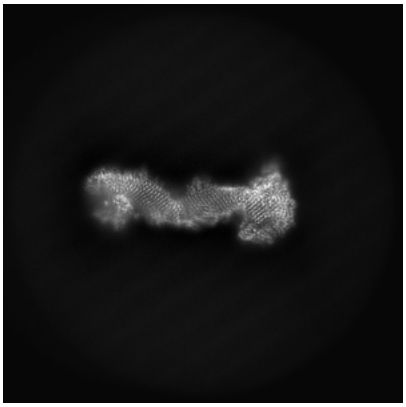
This section contains visualisations of the EMDB entry EMD-73373. These allow visual inspection of the internal detail of the map and identification of artifacts.

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.

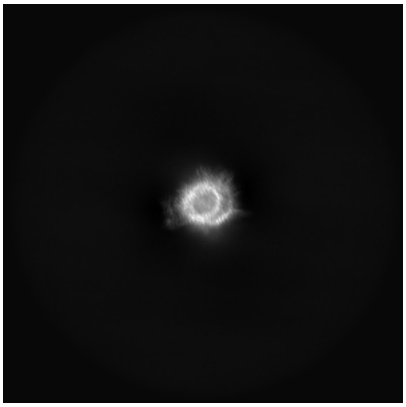
6.1 Orthogonal projections

6.1.1 Primary map

X



Y

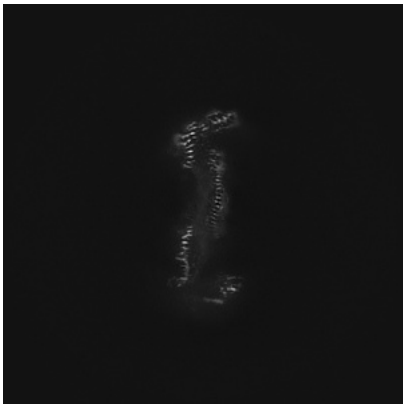


Z

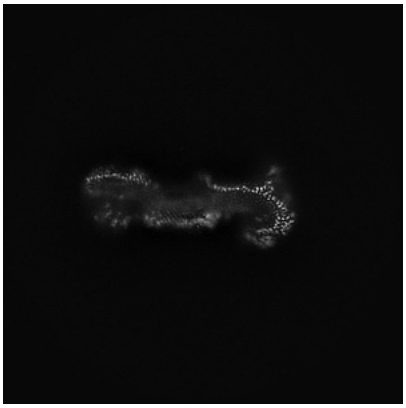
The images above show the map projected in three orthogonal directions.

6.2 Central slices

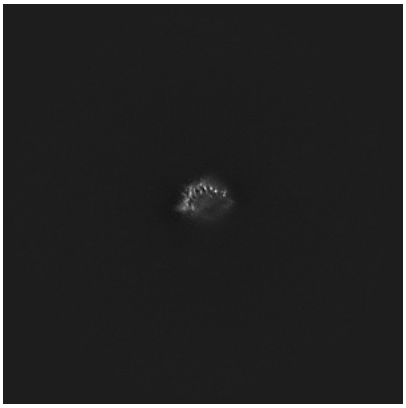
6.2.1 Primary map



X Index: 192



Y Index: 192

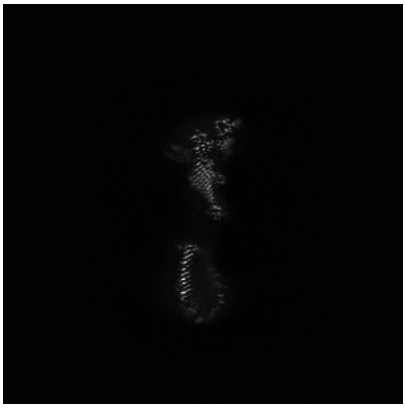


Z Index: 192

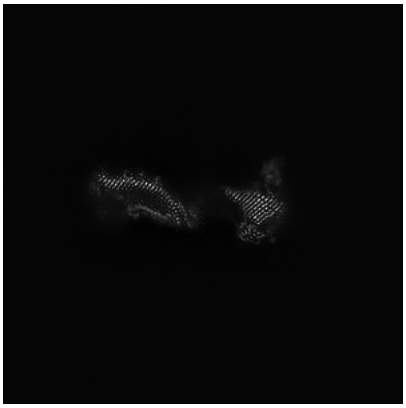
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

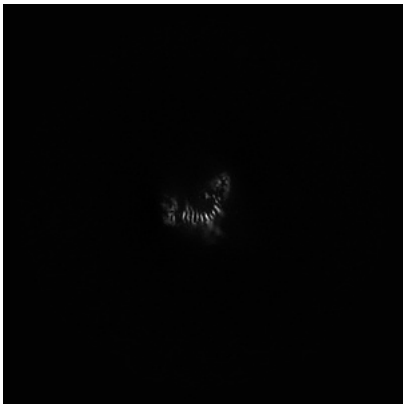
6.3.1 Primary map



X Index: 206



Y Index: 179

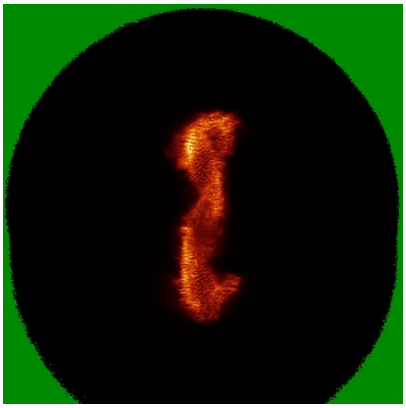


Z Index: 245

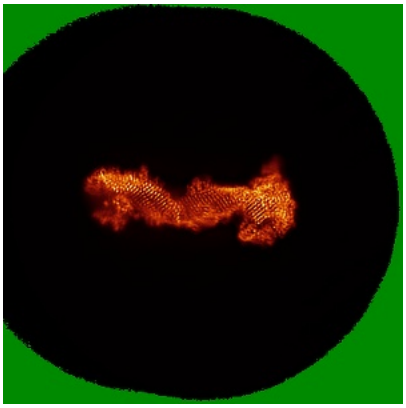
The images above show the largest variance slices of the map in three orthogonal directions.

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

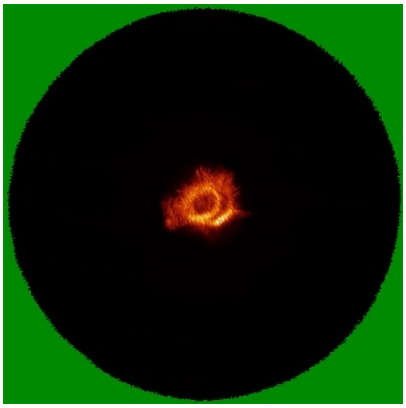
6.4.1 Primary map



X



Y

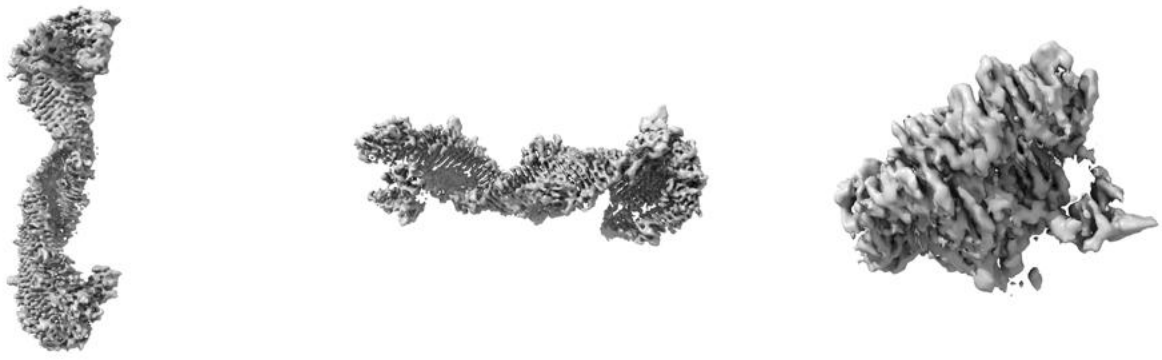


Z

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 0.4. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

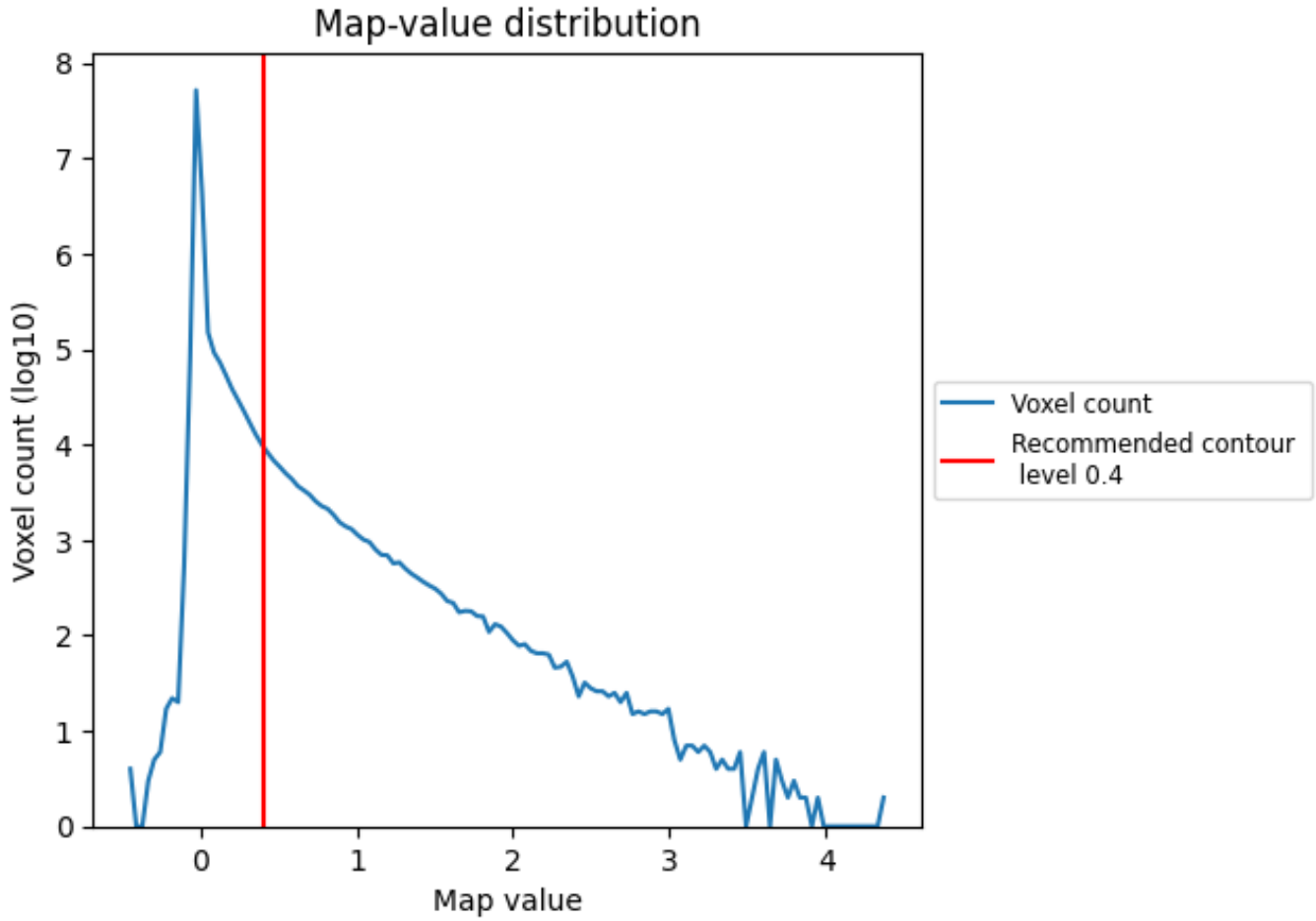
6.6 Mask visualisation (i)

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

7 Map analysis

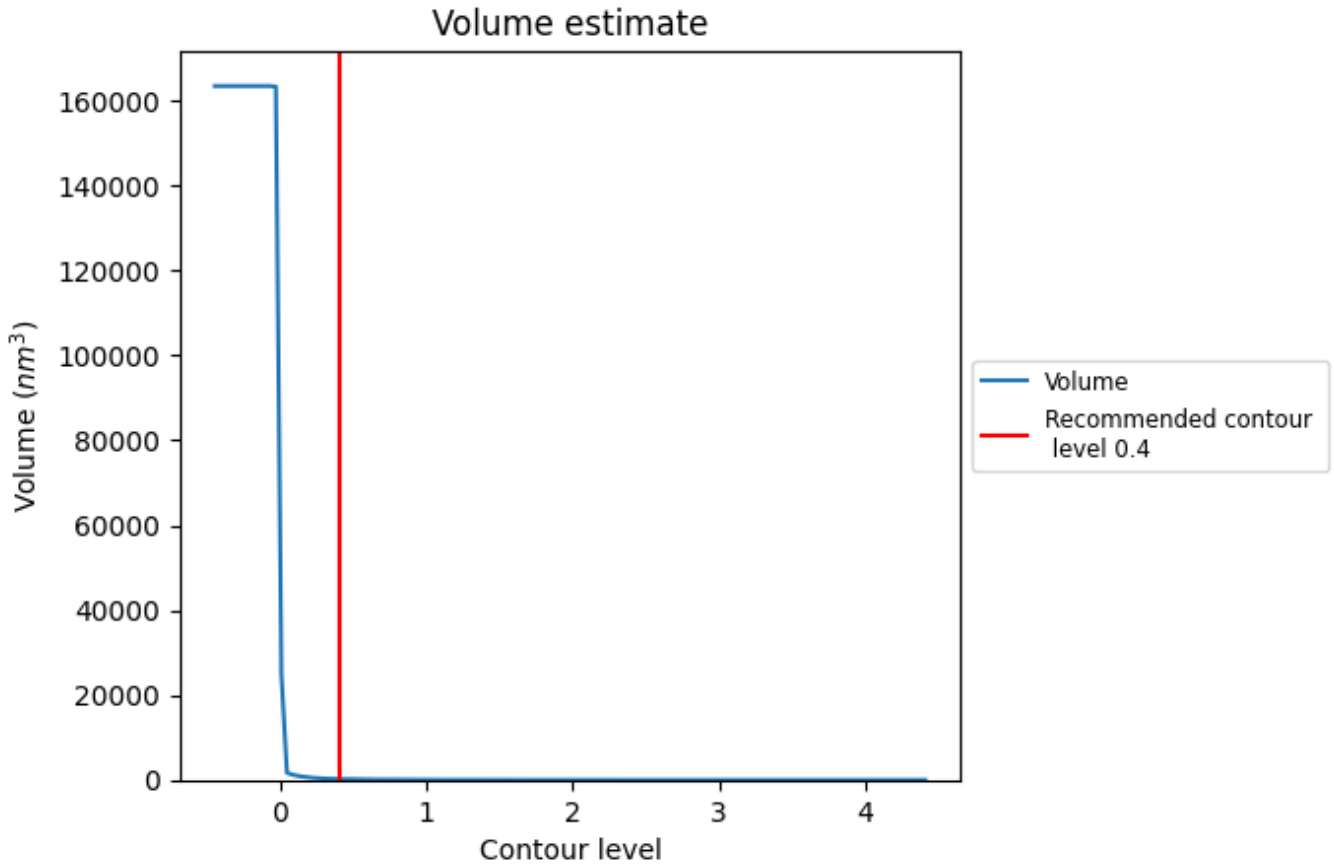
This section contains the results of statistical analysis of the map.

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.

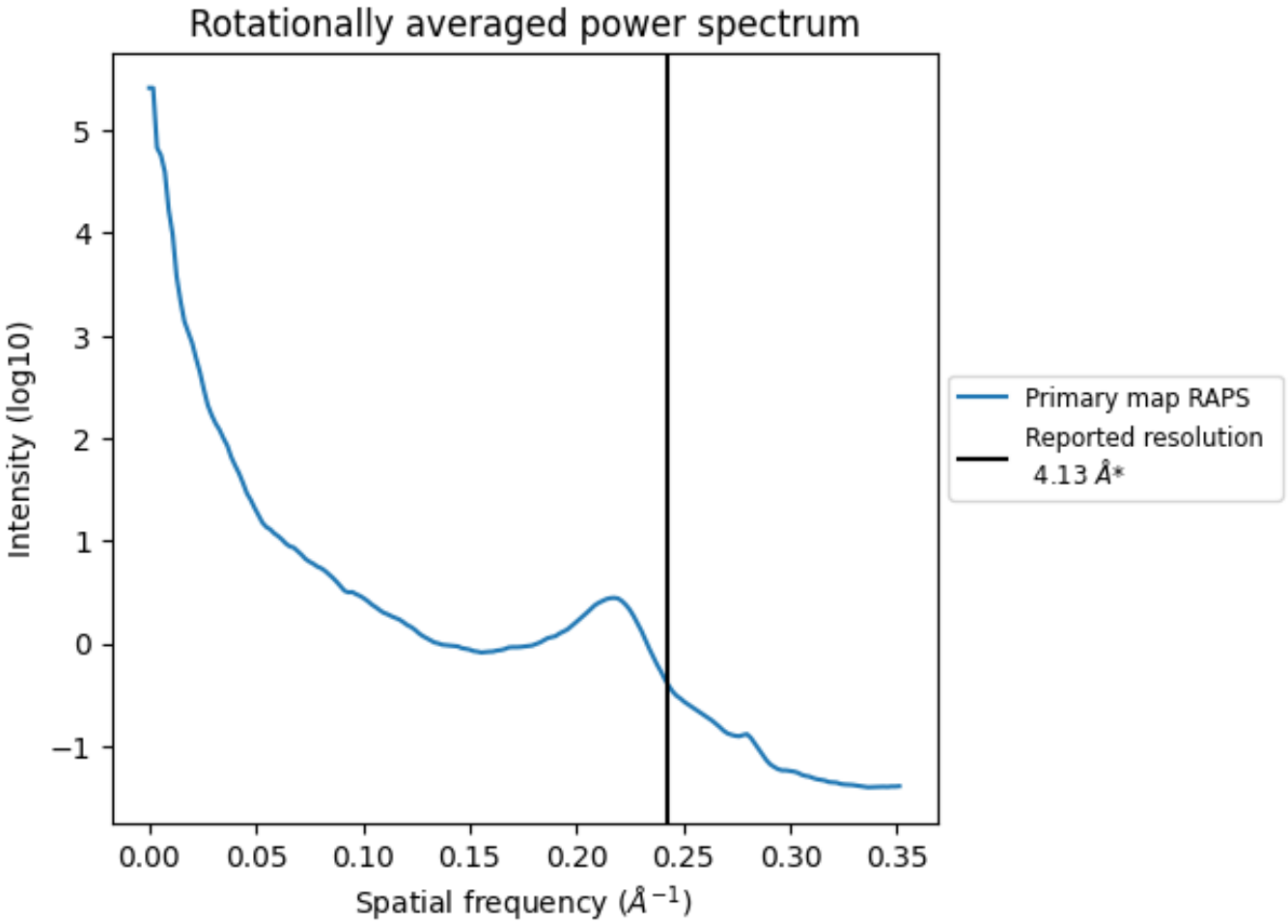
7.2 Volume estimate



The volume at the recommended contour level is 213 nm^3; this corresponds to an approximate mass of 192 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 0.242 Å^{-1}

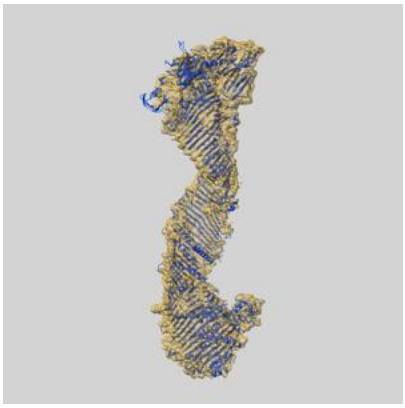
8 Fourier-Shell correlation (i)

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

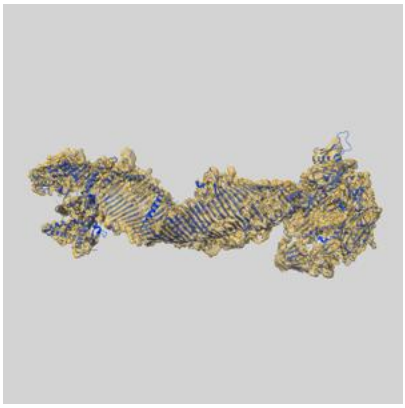
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-73373 and PDB model 9YRP. Per-residue inclusion information can be found in section 3 on page 5.

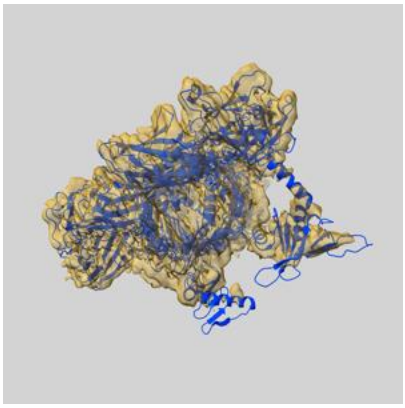
9.1 Map-model overlay



X



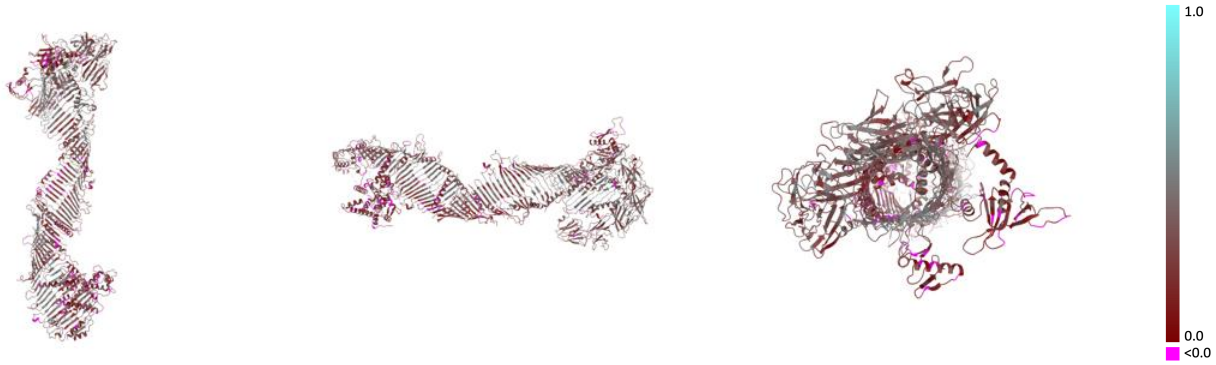
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.4 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.

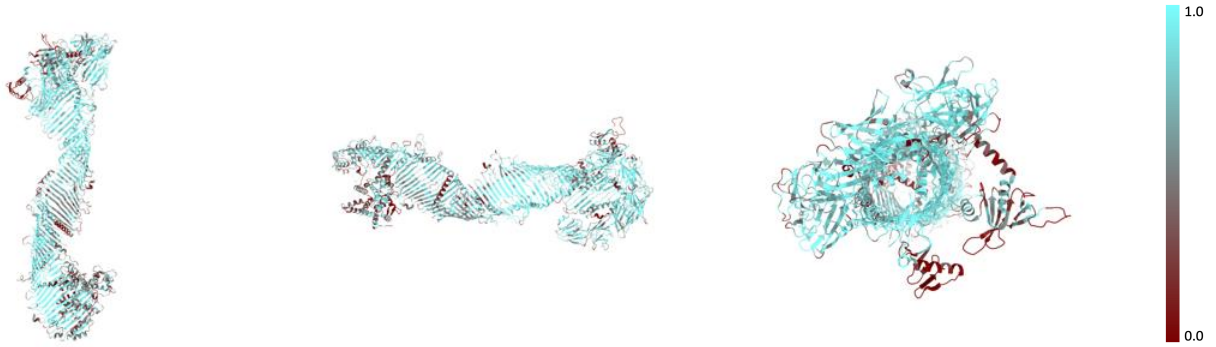
9.2 Q-score mapped to coordinate model (i)



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.

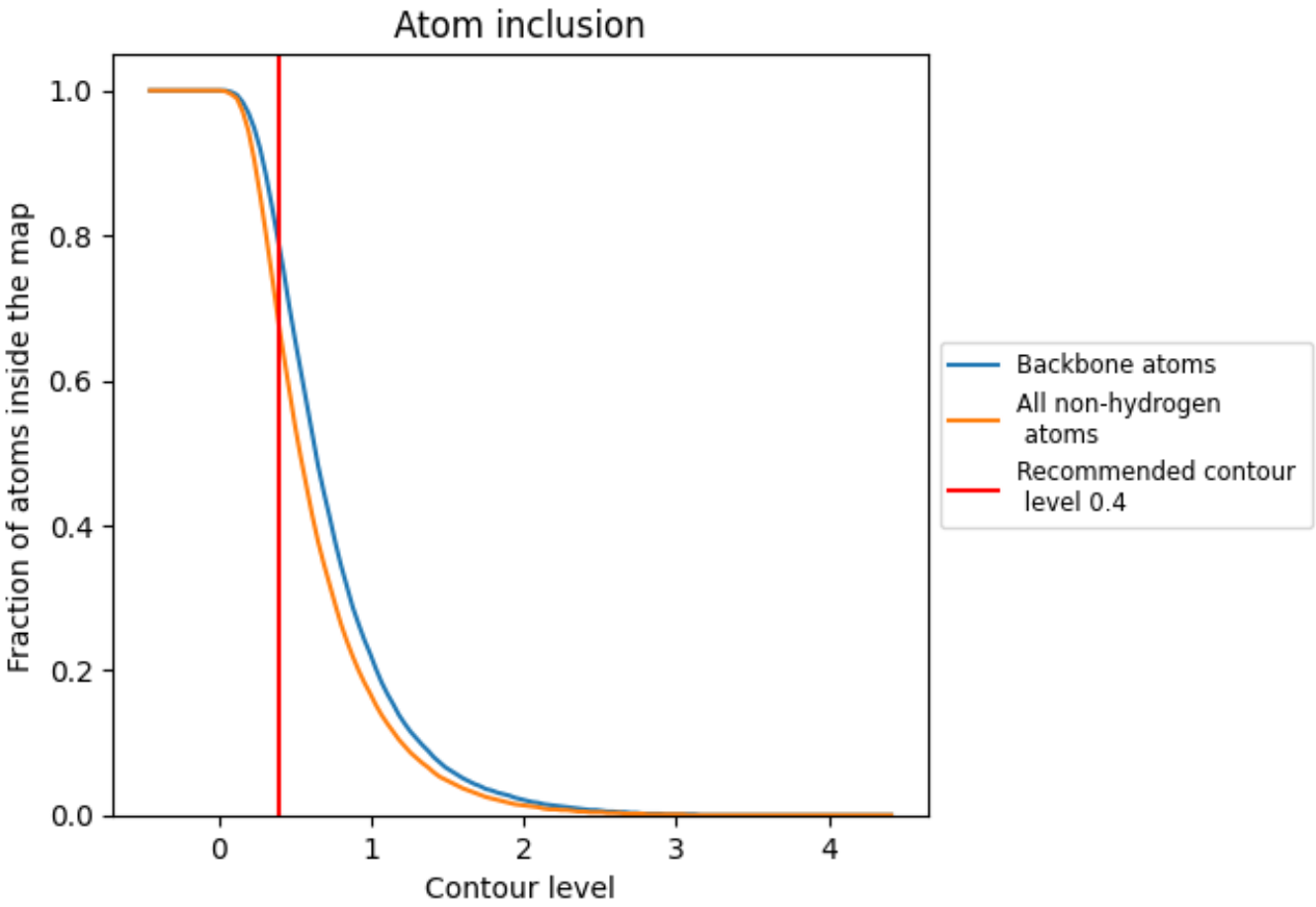
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.4).

9.4 Atom inclusion (i)



At the recommended contour level, 78% of all backbone atoms, 67% 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 (0.4) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6720	0.2850
A	0.4110	0.1850
B	0.6850	0.2900