Full wwPDB EM Validation Report ⓘ

Aug 17, 2024 – 09:53 pm BST

PDB ID	:	9F45
EMDB ID	:	EMD-50184
Title	:	cryo-EM structure of human LST2 bound to human mTOR complex 1
Authors	:	Craigie, L.M.; Maier, T.
Deposited on	:	2024-04-26
Resolution	:	3.74 Å(reported)
Based on initial model	:	7PEB

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

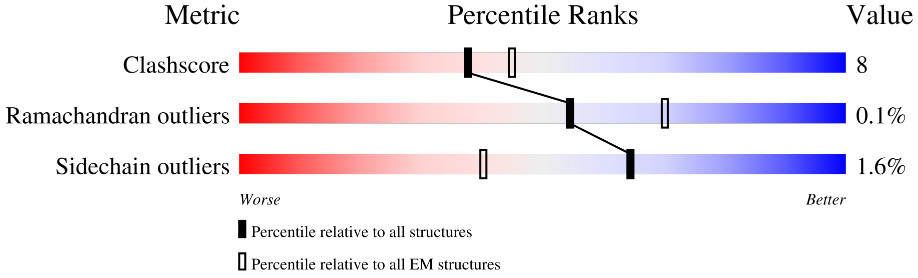
EMDB validation analysis	:	0.0.1.dev92
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1 Overall quality at a glance ⓘ

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

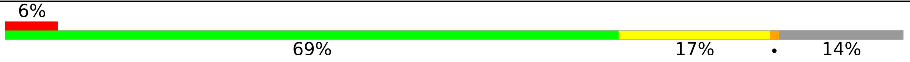
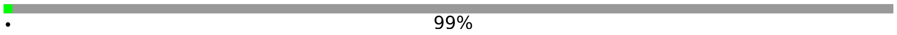
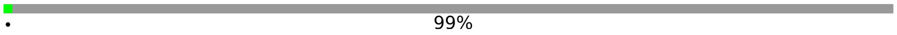
The reported resolution of this entry is 3.74 Å.

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	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	2549	
1	B	2549	
2	C	326	
2	D	326	
3	E	1363	
3	F	1363	
4	G	887	
4	H	887	

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 56848 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 Serine/threonine-protein kinase mTOR.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	2192	Total 17467	C 11158	N 3060	O 3137	S 112	0	0
1	B	2192	Total 17467	C 11158	N 3060	O 3137	S 112	0	0

- Molecule 2 is a protein called Target of rapamycin complex subunit LST8.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	317	Total 2456	C 1526	N 436	O 476	S 18	0	0
2	D	317	Total 2456	C 1526	N 436	O 476	S 18	0	0

- Molecule 3 is a protein called Regulatory-associated protein of mTOR.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	E	1052	Total 8385	C 5361	N 1450	O 1518	S 56	0	0
3	F	1052	Total 8385	C 5361	N 1450	O 1518	S 56	0	0

There are 56 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	-27	HIS	-	expression tag	UNP Q8N122
E	-26	HIS	-	expression tag	UNP Q8N122
E	-25	HIS	-	expression tag	UNP Q8N122
E	-24	HIS	-	expression tag	UNP Q8N122
E	-23	HIS	-	expression tag	UNP Q8N122
E	-22	HIS	-	expression tag	UNP Q8N122
E	-21	HIS	-	expression tag	UNP Q8N122
E	-20	HIS	-	expression tag	UNP Q8N122
E	-19	HIS	-	expression tag	UNP Q8N122

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Chain	Residue	Modelled	Actual	Comment	Reference
E	-18	HIS	-	expression tag	UNP Q8N122
E	-17	GLU	-	expression tag	UNP Q8N122
E	-16	GLN	-	expression tag	UNP Q8N122
E	-15	LYS	-	expression tag	UNP Q8N122
E	-14	LEU	-	expression tag	UNP Q8N122
E	-13	ILE	-	expression tag	UNP Q8N122
E	-12	SER	-	expression tag	UNP Q8N122
E	-11	GLU	-	expression tag	UNP Q8N122
E	-10	GLU	-	expression tag	UNP Q8N122
E	-9	ASP	-	expression tag	UNP Q8N122
E	-8	LEU	-	expression tag	UNP Q8N122
E	-7	ASP	-	expression tag	UNP Q8N122
E	-6	TYR	-	expression tag	UNP Q8N122
E	-5	LYS	-	expression tag	UNP Q8N122
E	-4	ASP	-	expression tag	UNP Q8N122
E	-3	ASP	-	expression tag	UNP Q8N122
E	-2	ASP	-	expression tag	UNP Q8N122
E	-1	ASP	-	expression tag	UNP Q8N122
E	0	LYS	-	expression tag	UNP Q8N122
F	-27	HIS	-	expression tag	UNP Q8N122
F	-26	HIS	-	expression tag	UNP Q8N122
F	-25	HIS	-	expression tag	UNP Q8N122
F	-24	HIS	-	expression tag	UNP Q8N122
F	-23	HIS	-	expression tag	UNP Q8N122
F	-22	HIS	-	expression tag	UNP Q8N122
F	-21	HIS	-	expression tag	UNP Q8N122
F	-20	HIS	-	expression tag	UNP Q8N122
F	-19	HIS	-	expression tag	UNP Q8N122
F	-18	HIS	-	expression tag	UNP Q8N122
F	-17	GLU	-	expression tag	UNP Q8N122
F	-16	GLN	-	expression tag	UNP Q8N122
F	-15	LYS	-	expression tag	UNP Q8N122
F	-14	LEU	-	expression tag	UNP Q8N122
F	-13	ILE	-	expression tag	UNP Q8N122
F	-12	SER	-	expression tag	UNP Q8N122
F	-11	GLU	-	expression tag	UNP Q8N122
F	-10	GLU	-	expression tag	UNP Q8N122
F	-9	ASP	-	expression tag	UNP Q8N122
F	-8	LEU	-	expression tag	UNP Q8N122
F	-7	ASP	-	expression tag	UNP Q8N122
F	-6	TYR	-	expression tag	UNP Q8N122
F	-5	LYS	-	expression tag	UNP Q8N122

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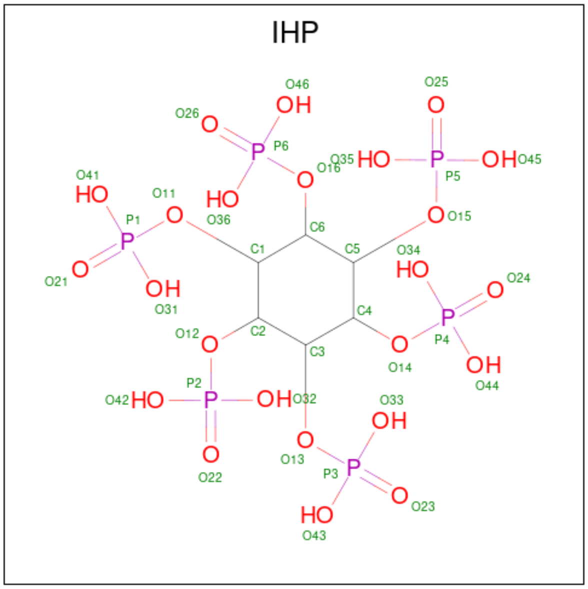
Chain	Residue	Modelled	Actual	Comment	Reference
F	-4	ASP	-	expression tag	UNP Q8N122
F	-3	ASP	-	expression tag	UNP Q8N122
F	-2	ASP	-	expression tag	UNP Q8N122
F	-1	ASP	-	expression tag	UNP Q8N122
F	0	LYS	-	expression tag	UNP Q8N122

- Molecule 4 is a protein called Lateral signaling target protein 2 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	G	9	Total 80	C 52	N 12	O 15	S 1	0	0
4	H	9	Total 80	C 52	N 12	O 15	S 1	0	0

- Molecule 5 is INOSITOL HEXAKISPHOSPHATE (three-letter code: IHP) (formula: $C_6H_{18}O_{24}P_6$) (labeled as "Ligand of Interest" by depositor).



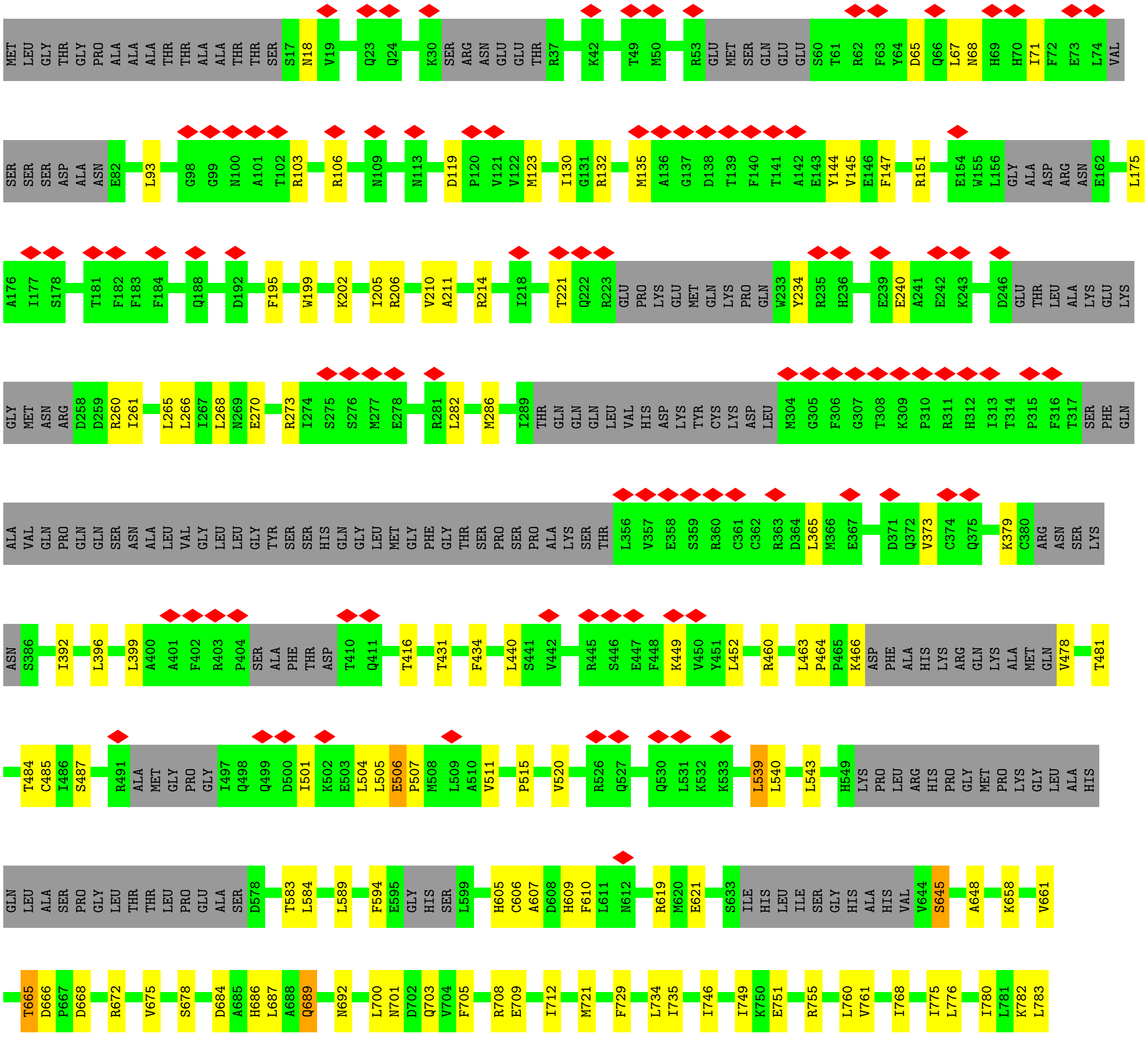
Mol	Chain	Residues	Atoms				AltConf
5	A	1	Total 36	C 6	O 24	P 6	0
5	B	1	Total 36	C 6	O 24	P 6	0

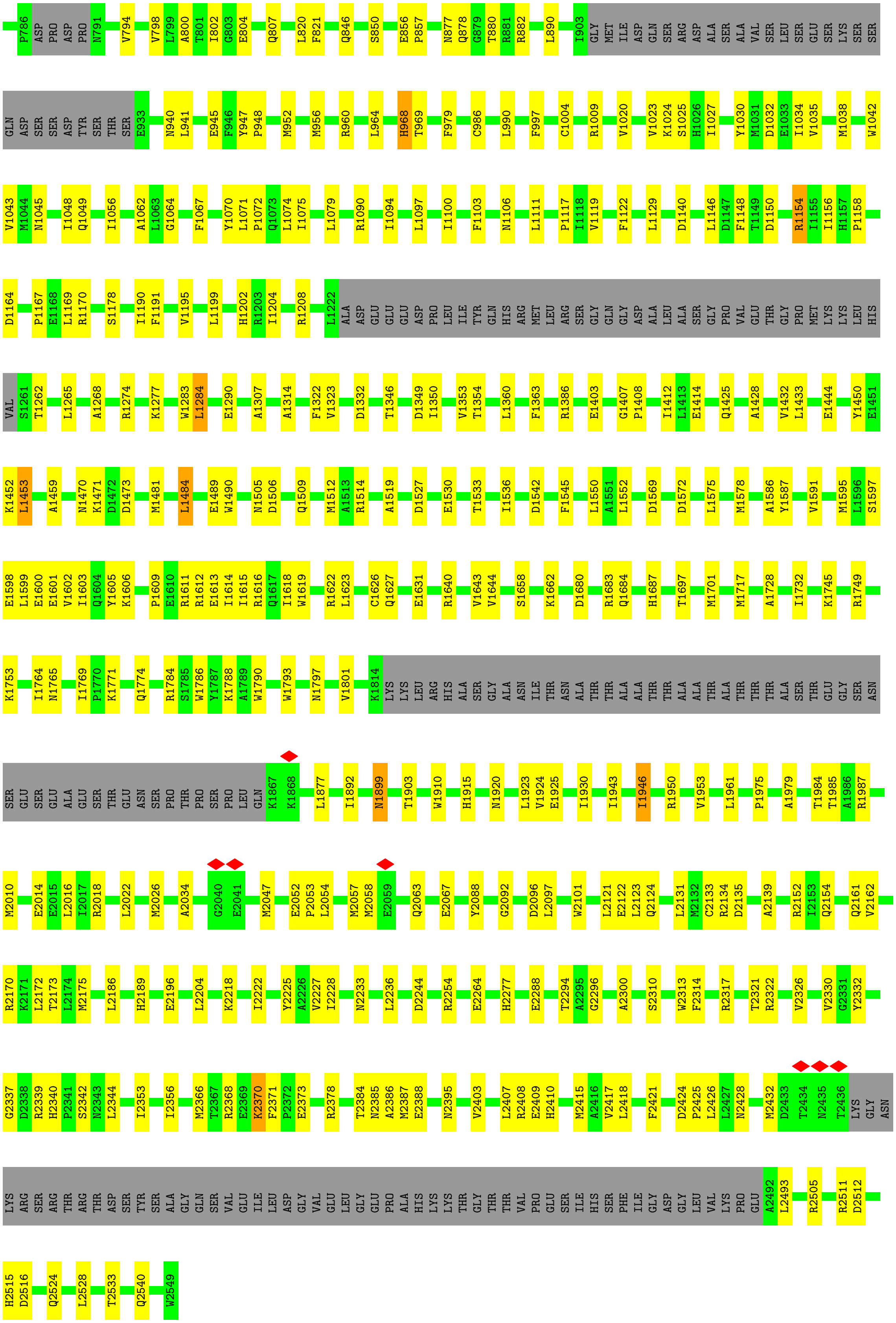
3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: Serine/threonine-protein kinase mTOR

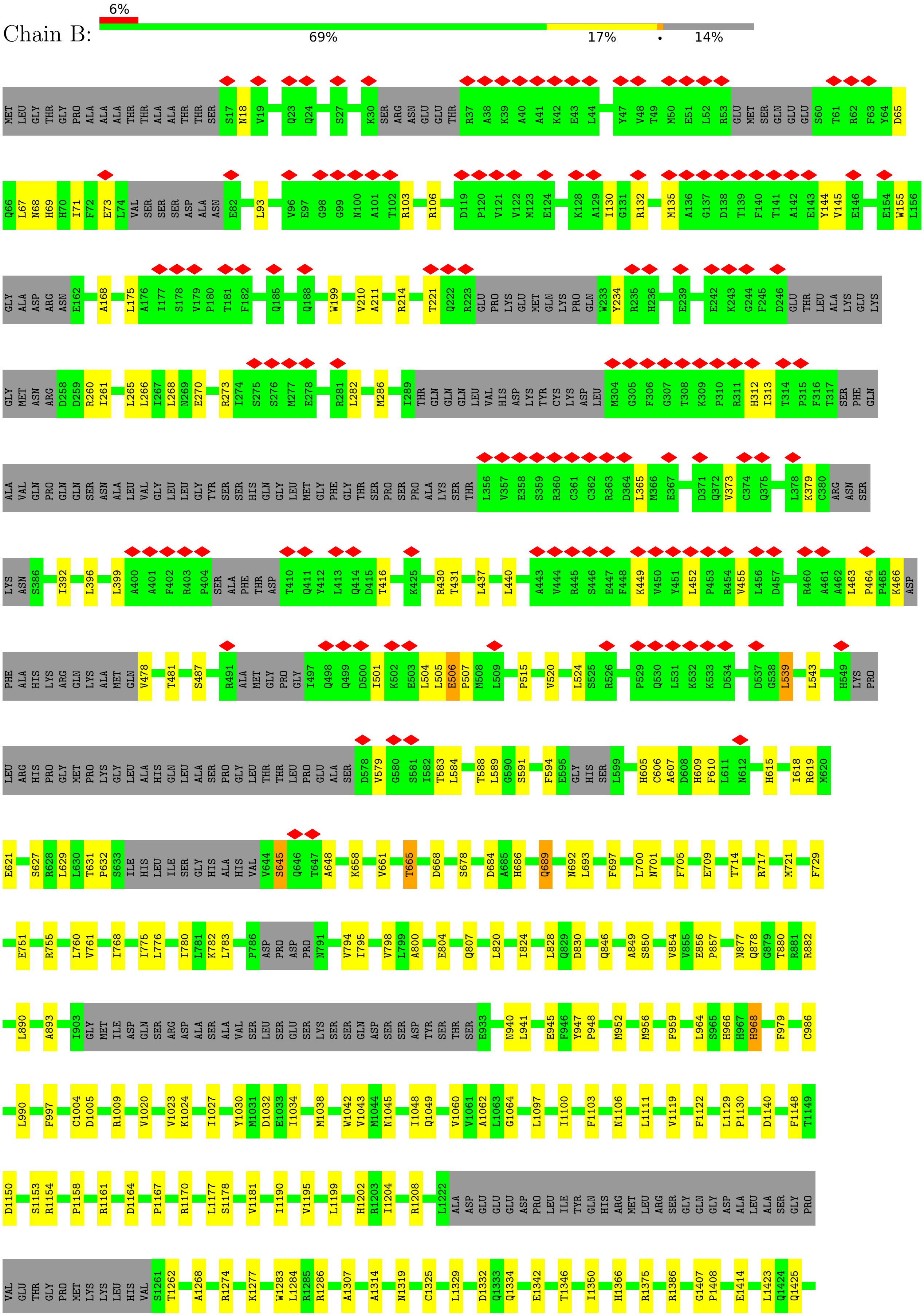
Chain A:

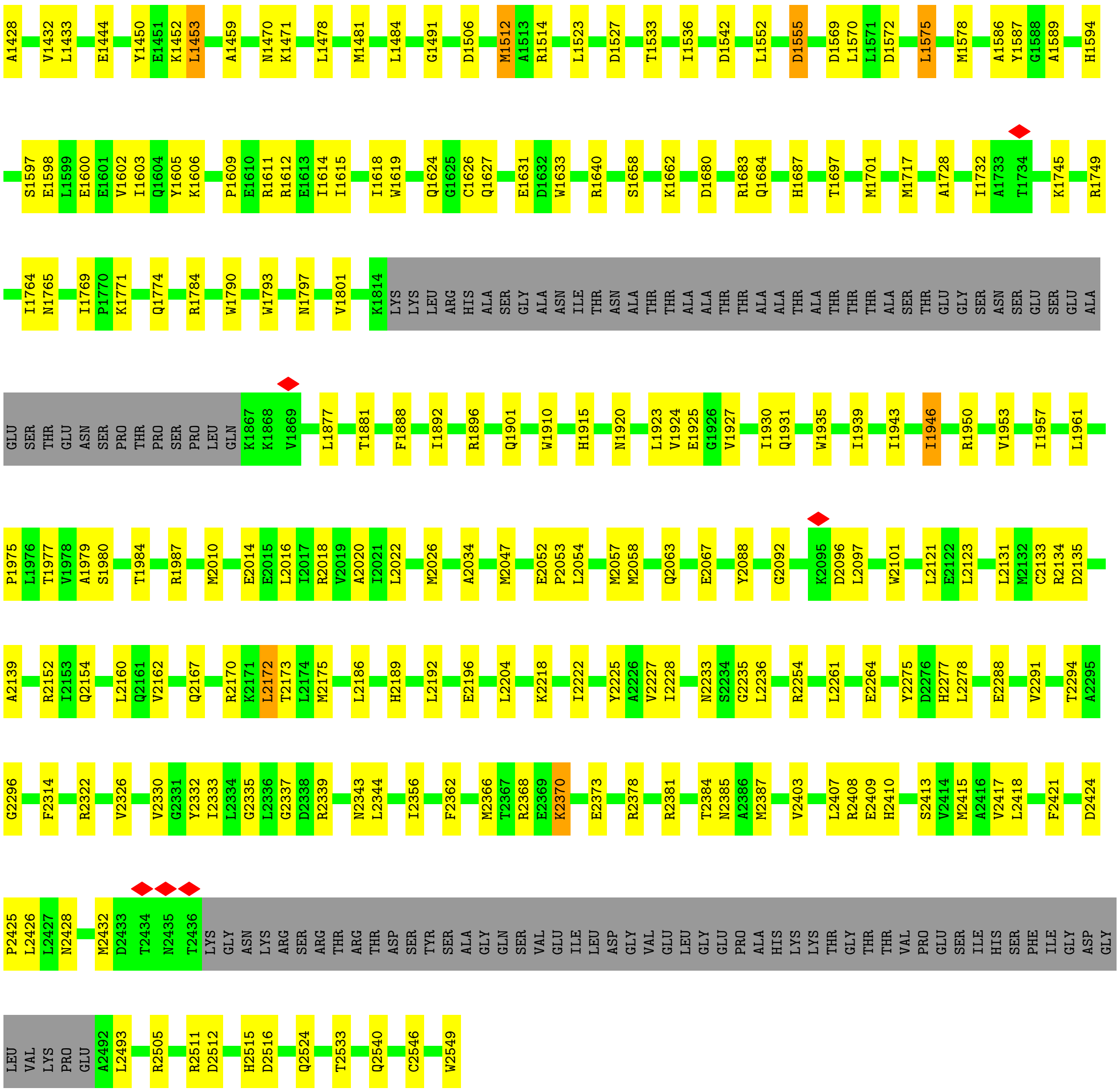




- Molecule 1: Serine/threonine-protein kinase mTOR

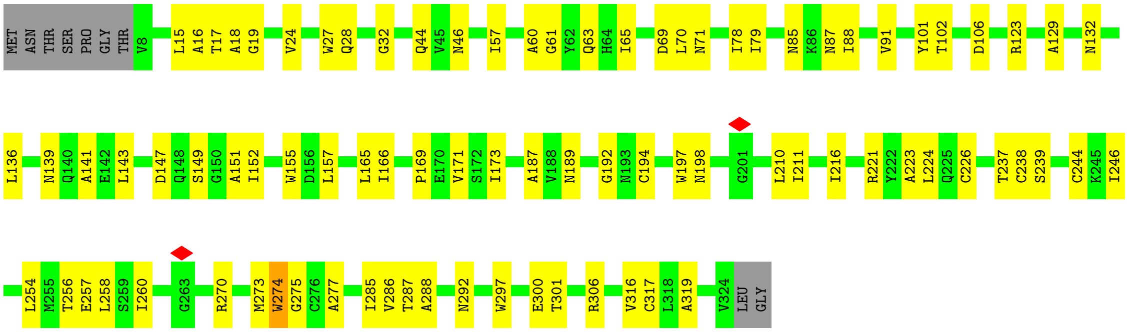
Chain B:


6%
69%
17%
•
14%
MET LEU GLY THR GLY PRO ALA ALA ALA THR THR ALA ALA THR THR SER S17 N18 V19 Q23 Q24 S27 K30 SER ARG ASN GLU GLU THR R37 A38 K39 A40 A41 K42 E43 L44 Y47 V48 T49 M50 E51 L52 R53 GLU MET SER GLN GLU GLU S60 T61 R62 F63 Y64 D65
Q66 L67 N68 H69 H70 I71 F72 E73 L74 VAL SER SER SER ASP ALA ASN E82 L93 V96 E97 G98 G99 N100 A101 T102 R103 R106 D119 P120 V121 V122 M123 E124 K128 A129 I130 G131 R132 M135 A136 G137 D138 T139 F140 T141 A142 E143 Y144 V145 E146 E154 W155 L156
GLY ALA ASP ARG ASN E162 A168 L175 A176 I177 S178 V179 P180 T181 F182 Q185 Q188 W199 V210 A211 R214 T221 Q222 R223 GLU PRO LYS GLU MET GLN LYS PRO GLN W233 Y234 R235 H236 E239 E242 K243 G244 F245 D246 GLU THR LEU ALA LYS GLU LYS
GLY MET ASN ARG D258 D259 R260 I261 L265 L266 I267 L268 N269 E270 R273 I274 S275 S276 M277 E278 R281 L282 M286 I289 THR GLN GLN GLN LEU VAL HIS ASP LYS TYR CYS LYS ASP LEU M304 G305 F306 G307 T308 K309 P310 R311 H312 I313 T314 P315 F316 T317 SER PHE GLN
ALA VAL GLN PRO GLN GLN SER ASN ALA LEU VAL GLY LEU LEU GLY TYR SER SER HIS GLN GLY LEU MET GLY PHE GLY THR SER PRO SER PRO ALA LYS SER THR L356 V357 E358 S359 R360 C361 C362 R363 D364 L365 M366 E367 D371 Q372 V373 C374 Q375 L378 K379 C380 ARG ASN SER
LYS ASN S386 I392 L396 L399 A400 A401 F402 R403 P404 SER ALA PHE THR ASP T410 Q411 Y412 L413 Q414 D415 T416 K425 R430 T431 L437 L440 A443 V444 R445 S446 E447 F448 K449 V450 Y451 L452 P453 R454 V455 L456 D457 R460 A461 A462 L463 P464 P465 K466 ASP
PHE ALA HIS LYS ARG GLN LYS ALA MET GLN V478 T481 S487 R491 ALA MET GLY PRO GLY I497 Q498 Q499 D500 I501 K502 E503 L504 L505 E506 P507 M508 L509 P515 V520 L524 S525 R526 P529 Q530 L531 K532 K533 D534 D537 G538 L539 L543 H549 LYS PRO
LEU ARG HIS PRO GLY MET PRO LYS GLY LEU ALA HIS GLN LEU ALA SER PRO GLY LEU THR THR LEU PRO GLU ALA SER D578 V579 G580 S581 I582 T583 L584 T588 L589 G590 S591 F594 E595 GLY HIS SER L599 H605 C606 A607 D608 H609 F610 L611 N612 H615 I618 R619 M620
E621 S627 R628 L629 L630 T631 P632 S633 ILE HIS LEU ILE SER GLY HIS ALA HIS VAL V644 S645 Q646 T647 A648 K658 V661 T665 D668 S678 D684 A685 H686 Q689 N692 L693 F697 L700 N701 F705 E709 T714 R717 M721 F729
E751 R755 L760 V761 I768 I775 L776 I780 L781 K782 L783 P786 ASP PRO ASP PRO N791 V794 I795 V798 L799 A800 E804 Q807 L820 I824 L828 Q829 D830 Q846 A849 S850 V854 V855 E856 P857 N877 Q878 G879 T880 R881 R882
L890 A893 I903 GLY MET ILE ASP GLN SER ARG ASP ALA SER ALA VAL SER LEU SER GLU SER LYS SER SER GLN ASP SER SER ASP TYR SER THR SER E933 N940 L941 E945 F946 Y947 P948 M952 M956 F959 L964 S965 H966 H967 H968 F979 C986
L990 F997 C1004 D1005 R1009 V1020 V1023 K1024 I1027 Y1030 M1031 D1032 E1033 I1034 M1038 W1042 V1043 M1044 N1045 I1048 Q1049 V1060 V1061 A1062 L1063 G1064 L1097 I1100 F1103 N1106 L1111 V1119 F1122 L1129 P1130 D1140 F1148 T1149
D1150 S1153 R1154 P1158 R1161 D1164 P1167 R1170 L1177 S1178 V1181 I1190 V1195 L1199 H1202 R1203 I1204 R1208 L1222 ALA ASP GLU GLU GLU ASP PRO LEU ILE TYR GLN HIS ARG MET LEU ARG SER GLY GLN GLY ASP ALA LEU ALA SER GLY PRO
VAL GLU THR GLY PRO MET LYS LYS LEU HIS VAL S1261 T1262 A1268 R1274 K1277 W1283 L1284 R1285 R1286 A1307 A1314 N1319 C1325 L1329 D1332 Q1333 Q1334 E1342 T1346 I1350 H1366 R1375 R1386 G1407 P1408 E1414 L1423 Q1424 Q1425



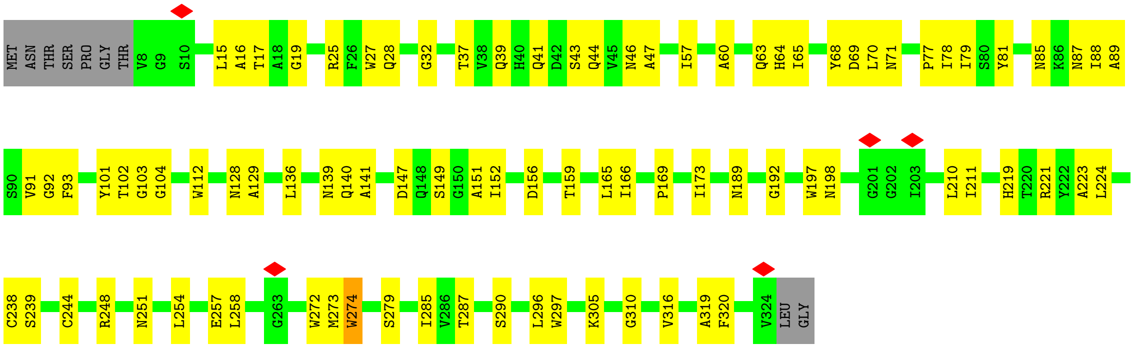
- Molecule 2: Target of rapamycin complex subunit LST8

Chain C:



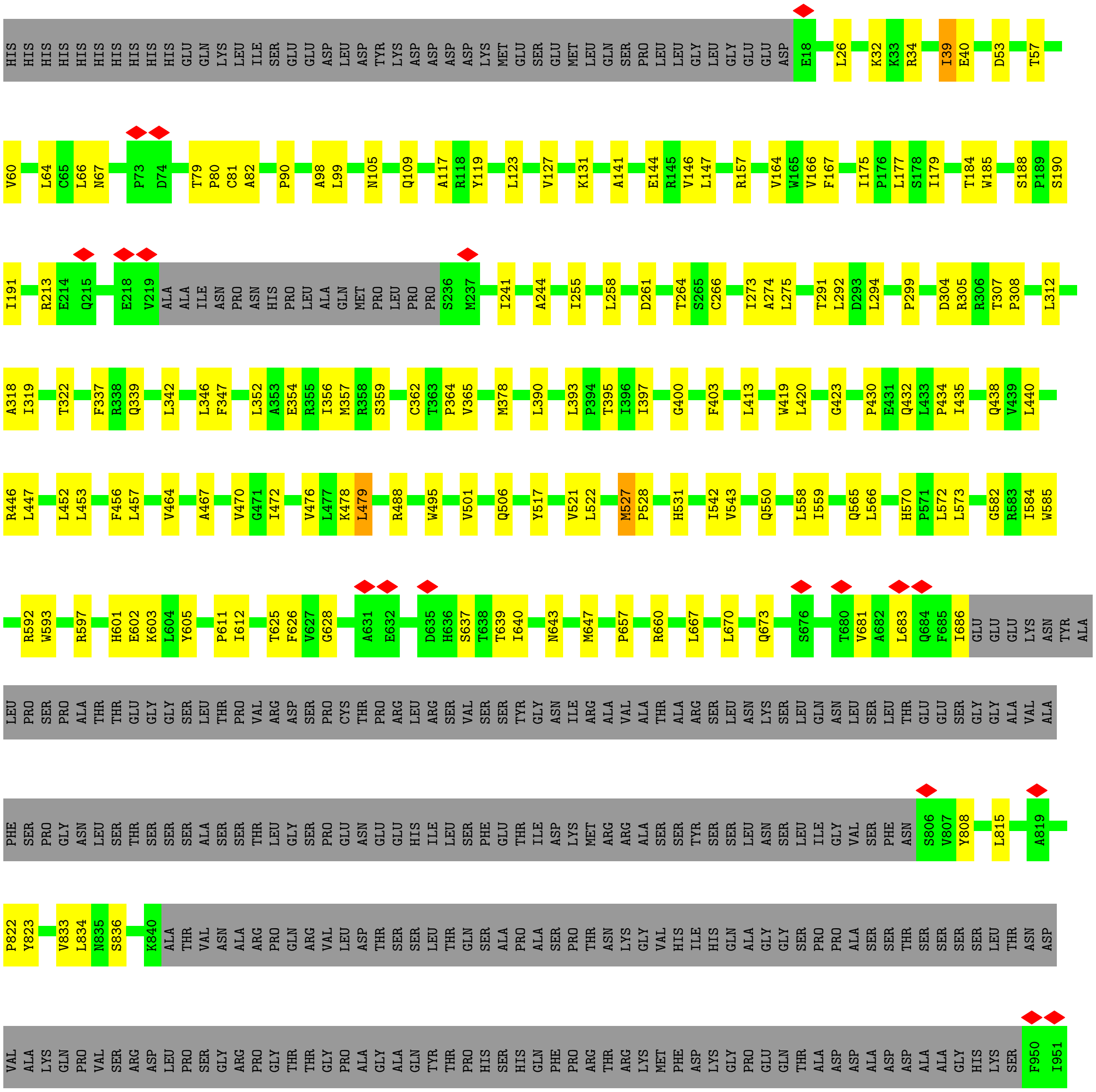
- Molecule 2: Target of rapamycin complex subunit LST8

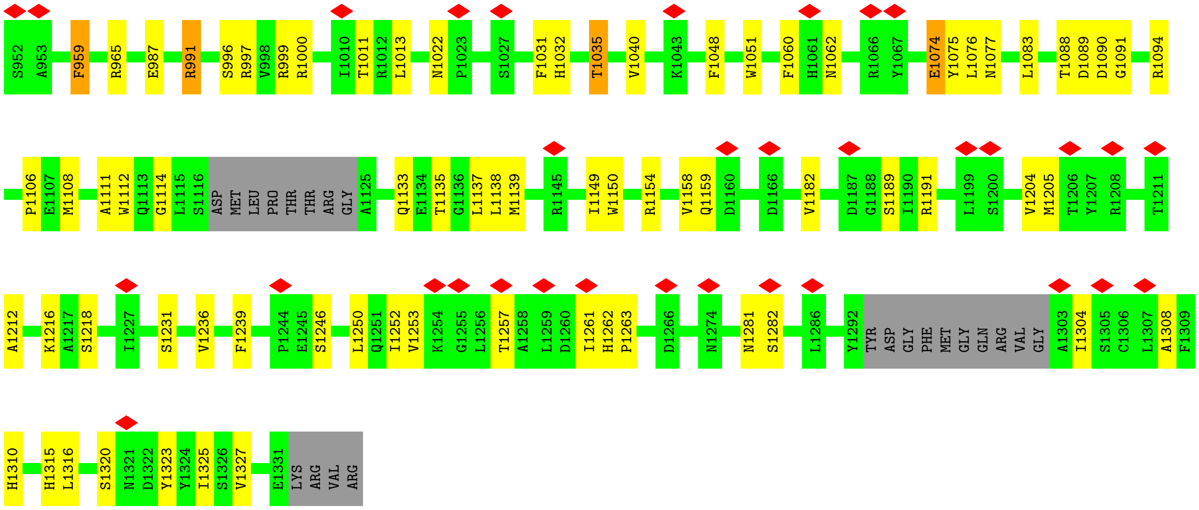
Chain D:



- Molecule 3: Regulatory-associated protein of mTOR

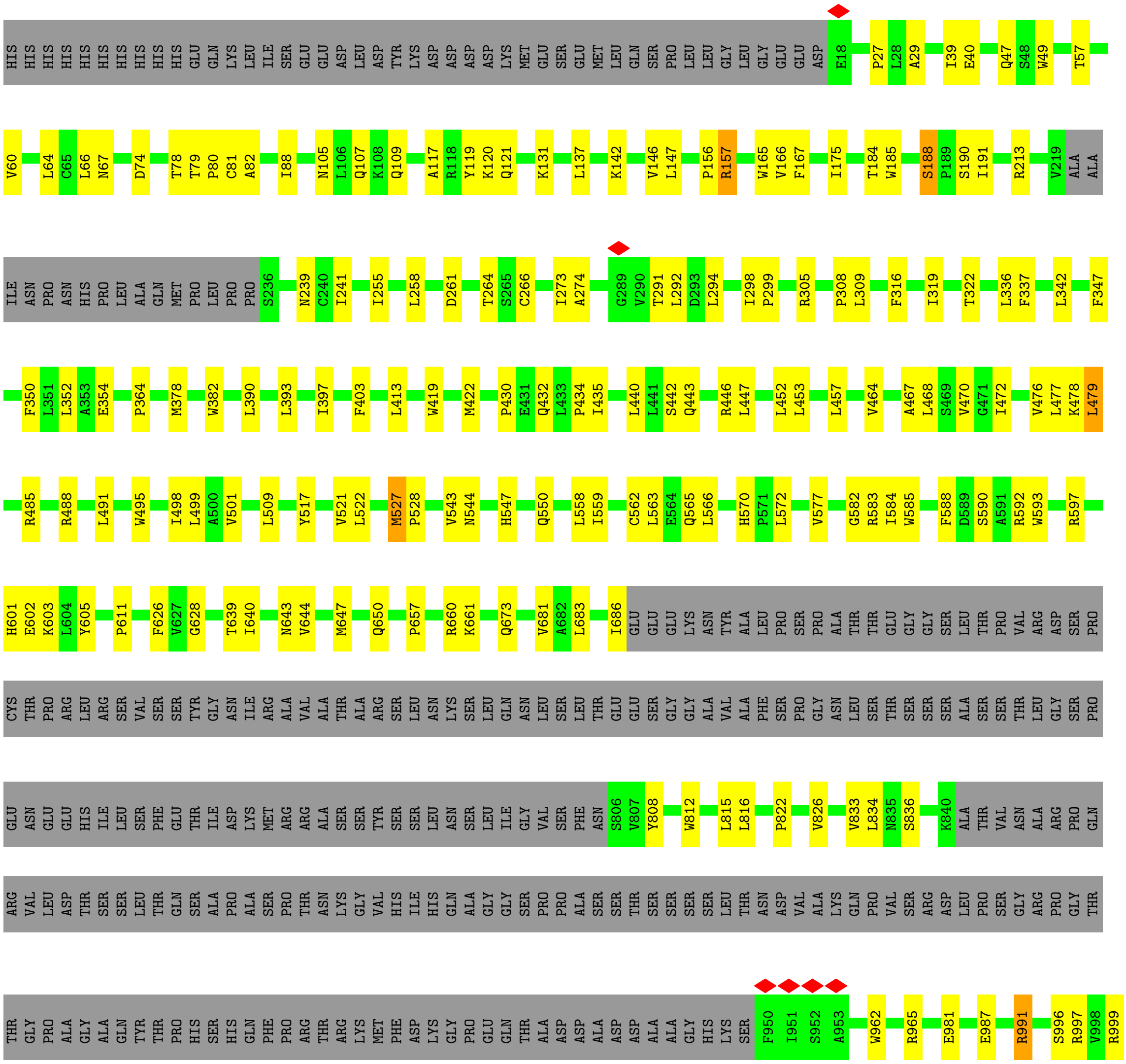
Chain E:

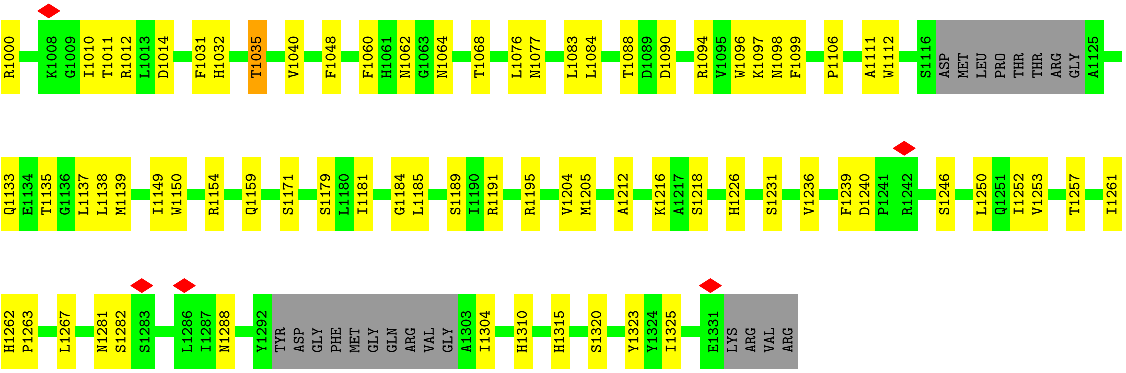




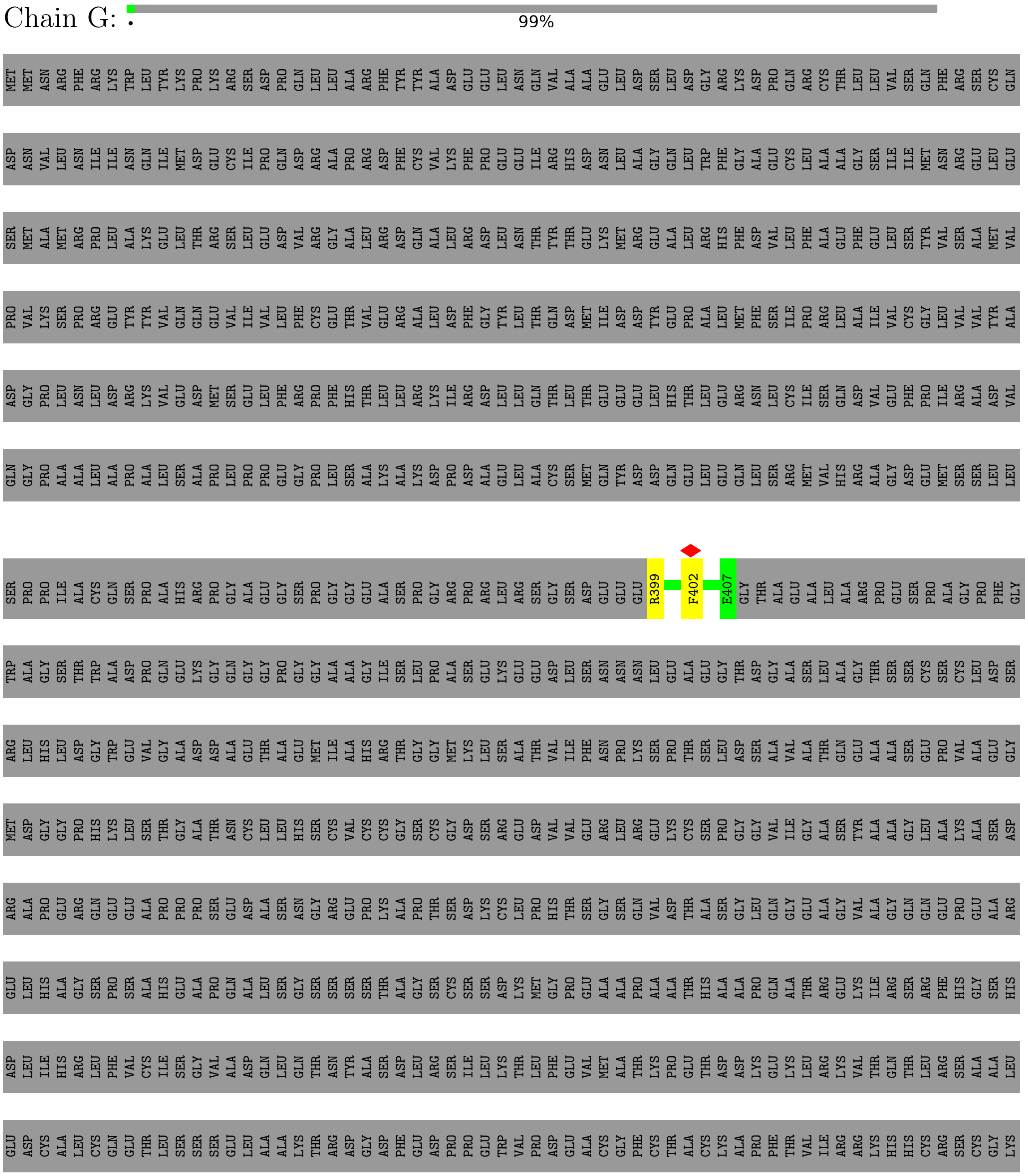
- Molecule 3: Regulatory-associated protein of mTOR

Chain F:

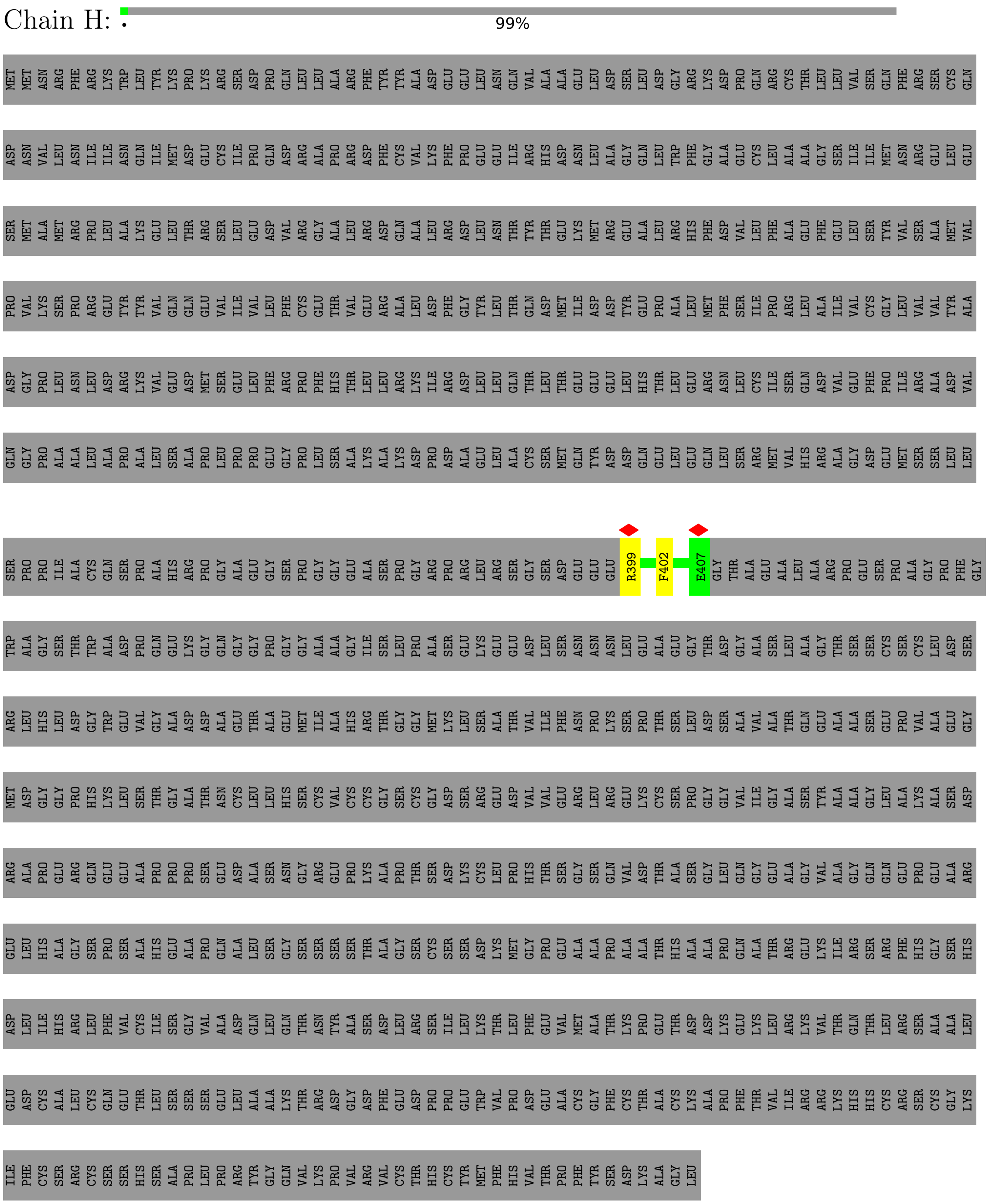




- Molecule 4: Lateral signaling target protein 2 homolog



- Molecule 4: Lateral signaling target protein 2 homolog



4 Experimental information ⓘ

Property	**Value**	**Source**
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	272762	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	43	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	61.816	Depositor
Minimum map value	-20.377	Depositor
Average map value	-0.002	Depositor
Map value standard deviation	1.017	Depositor
Recommended contour level	8.0	Depositor
Map size (Å)	670.72, 670.72, 670.72	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.31, 1.31, 1.31	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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	0.25	0/17814	0.45	0/24116
1	B	0.25	0/17814	0.45	0/24116
2	C	0.25	0/2514	0.48	0/3426
2	D	0.25	0/2514	0.48	0/3426
3	E	0.24	0/8585	0.46	0/11680
3	F	0.24	0/8585	0.46	0/11680
4	G	0.28	0/81	0.56	0/107
4	H	0.27	0/81	0.55	0/107
All	All	0.25	0/57988	0.45	0/78658

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	17467	0	17553	274	0
1	B	17467	0	17553	268	0
2	C	2456	0	2341	52	0
2	D	2456	0	2341	54	0
3	E	8385	0	8375	137	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	F	8385	0	8375	149	0
4	G	80	0	71	2	0
4	H	80	0	71	2	0
5	A	36	0	6	1	0
5	B	36	0	6	1	0
All	All	56848	0	56692	918	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 (918) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1943:ILE:HA	1:B:1946:ILE:HD13	1.59	0.83
1:A:1943:ILE:HA	1:A:1946:ILE:HD13	1.63	0.81
3:E:39:ILE:HD11	3:E:959:PHE:HA	1.63	0.80
1:A:1793:TRP:O	1:A:1797:ASN:ND2	2.19	0.75
1:B:751:GLU:HB2	1:B:794:VAL:HG22	1.68	0.74
3:F:660:ARG:NH2	3:F:1111:ALA:O	2.21	0.74
1:B:1042:TRP:HE1	1:B:1049:GLN:HG2	1.53	0.73
1:A:1943:ILE:HD12	1:A:1975:PRO:HB2	1.68	0.72
2:D:274:TRP:HE1	2:D:316:VAL:HA	1.54	0.72
1:A:2139:ALA:HA	1:A:2152:ARG:HA	1.72	0.72
1:A:689:GLN:HE22	3:F:419:TRP:HA	1.55	0.71
1:B:2222:ILE:HD11	1:B:2330:VAL:HG21	1.73	0.71
2:C:166:ILE:HD11	2:C:169:PRO:HA	1.72	0.71
2:C:194:CYS:HB3	2:C:216:ILE:HB	1.71	0.71
1:B:2337:GLY:O	1:B:2339:ARG:NH1	2.24	0.70
3:E:1252:ILE:HG22	3:E:1253:VAL:HG23	1.73	0.70
1:B:2277:HIS:O	2:D:87:ASN:ND2	2.21	0.69
2:D:19:GLY:HA2	2:D:316:VAL:HG22	1.73	0.69
2:C:63:GLN:HG2	2:C:85:ASN:HA	1.75	0.69
2:D:63:GLN:HG2	2:D:85:ASN:HA	1.73	0.69
3:E:413:LEU:HD12	3:E:452:LEU:HD12	1.75	0.69
3:F:628:GLY:O	3:F:673:GLN:NE2	2.26	0.69
1:A:2408:ARG:NH2	1:A:2524:GLN:OE1	2.26	0.69
3:E:660:ARG:NH2	3:E:1111:ALA:O	2.25	0.69
1:A:2222:ILE:HD11	1:A:2330:VAL:HG21	1.76	0.68
1:B:2170:ARG:HB2	1:B:2186:LEU:HB2	1.75	0.68
1:A:487:SER:HB3	1:A:520:VAL:HG13	1.75	0.68
1:B:689:GLN:HE22	3:E:419:TRP:HA	1.57	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:19:GLY:HA2	2:C:316:VAL:HG22	1.75	0.68
1:B:782:LYS:HD2	1:B:798:VAL:HG21	1.75	0.68
1:A:751:GLU:HB2	1:A:794:VAL:HG22	1.76	0.67
1:A:782:LYS:HD2	1:A:798:VAL:HG21	1.75	0.67
3:F:1212:ALA:HB3	3:F:1231:SER:HB2	1.75	0.67
1:A:1987:ARG:HH22	1:A:2426:LEU:HD11	1.58	0.67
1:B:68:ASN:HD21	1:B:93:LEU:HD12	1.60	0.67
2:D:101:TYR:HE2	2:D:136:LEU:HD13	1.60	0.67
1:B:686:HIS:O	1:B:692:ASN:ND2	2.28	0.66
2:C:275:GLY:HA3	2:C:288:ALA:H	1.60	0.66
3:E:184:THR:OG1	3:E:213:ARG:NH2	2.28	0.66
3:F:1252:ILE:HG22	3:F:1253:VAL:HG23	1.76	0.66
2:C:17:THR:HB	2:C:27:TRP:HE1	1.60	0.66
2:C:246:ILE:HD12	2:C:256:THR:HB	1.76	0.66
1:A:878:GLN:NE2	1:A:1572:ASP:OD2	2.28	0.66
1:B:1307:ALA:HB1	1:B:1314:ALA:HB2	1.78	0.66
1:A:1178:SER:OG	1:A:1208:ARG:NH2	2.28	0.65
1:B:487:SER:HB3	1:B:520:VAL:HG13	1.77	0.65
1:B:2218:LYS:O	1:B:2322:ARG:NH1	2.29	0.65
3:F:639:THR:O	3:F:643:ASN:ND2	2.27	0.65
2:D:198:ASN:HB2	2:D:211:ILE:HB	1.77	0.65
1:B:2204:LEU:HD22	1:B:2417:VAL:HG21	1.79	0.65
1:B:2332:TYR:OH	1:B:2512:ASP:OD2	2.15	0.65
1:B:1987:ARG:HH22	1:B:2426:LEU:HD11	1.61	0.65
3:F:1310:HIS:HB2	3:F:1315:HIS:HB2	1.79	0.65
3:E:1218:SER:HB3	3:E:1261:ILE:HD12	1.78	0.65
3:F:592:ARG:NH1	3:F:626:PHE:O	2.29	0.65
3:E:440:LEU:HD12	3:E:472:ILE:HD11	1.78	0.65
1:A:2332:TYR:OH	1:A:2512:ASP:OD2	2.15	0.65
3:E:1236:VAL:HB	3:E:1250:LEU:HB2	1.77	0.64
1:B:583:THR:HG23	1:B:621:GLU:HG3	1.78	0.64
1:B:2288:GLU:OE1	2:D:221:ARG:NH2	2.29	0.64
1:B:65:ASP:OD2	1:B:106:ARG:NH1	2.30	0.64
3:F:184:THR:OG1	3:F:213:ARG:NH2	2.26	0.64
1:A:1274:ARG:HH21	1:A:1283:TRP:HD1	1.46	0.64
1:B:2162:VAL:HG22	1:B:2170:ARG:HG3	1.80	0.64
1:A:1268:ALA:O	1:A:1283:TRP:NE1	2.29	0.64
2:D:166:ILE:HD11	2:D:169:PRO:HA	1.78	0.64
3:E:488:ARG:HD2	3:E:521:VAL:HG22	1.78	0.63
1:A:68:ASN:HD21	1:A:93:LEU:HD12	1.63	0.63
1:A:2018:ARG:NH1	1:A:2067:GLU:OE2	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2254:ARG:NH2	1:B:2264:GLU:OE2	2.30	0.63
1:B:2408:ARG:NH2	1:B:2524:GLN:OE1	2.32	0.63
2:C:91:VAL:HG12	2:C:102:THR:HG22	1.80	0.63
2:D:46:ASN:N	2:D:60:ALA:O	2.25	0.63
1:A:583:THR:HG23	1:A:621:GLU:HG3	1.80	0.63
1:B:1425:GLN:HG3	1:B:2314:PHE:HZ	1.63	0.63
1:B:1697:THR:O	1:B:1701:MET:HG3	1.98	0.63
3:E:40:GLU:O	3:E:965:ARG:NH2	2.32	0.63
3:F:1236:VAL:HB	3:F:1250:LEU:HB2	1.79	0.63
3:E:592:ARG:NH1	3:E:626:PHE:O	2.32	0.62
1:B:506:GLU:HG3	1:B:507:PRO:HD3	1.82	0.62
1:A:1307:ALA:HB1	1:A:1314:ALA:HB2	1.81	0.62
1:A:661:VAL:O	1:A:665:THR:OG1	2.15	0.62
1:A:2337:GLY:O	1:A:2339:ARG:NH1	2.33	0.62
1:B:2018:ARG:NH1	1:B:2067:GLU:OE2	2.33	0.61
1:A:2170:ARG:HB2	1:A:2186:LEU:HB2	1.81	0.61
3:F:464:VAL:HB	3:F:501:VAL:HG21	1.82	0.61
1:A:2254:ARG:NH2	1:A:2264:GLU:OE2	2.31	0.61
2:C:198:ASN:HB2	2:C:211:ILE:HB	1.82	0.61
1:A:686:HIS:O	1:A:692:ASN:ND2	2.32	0.61
2:C:147:ASP:OD2	2:C:149:SER:OG	2.16	0.61
3:F:1083:LEU:HD23	3:F:1097:LYS:HD3	1.82	0.61
1:B:1915:HIS:HB3	1:B:1950:ARG:HD3	1.83	0.61
1:A:65:ASP:OD2	1:A:106:ARG:NH1	2.32	0.61
3:E:432:GLN:HG3	3:E:435:ILE:HD12	1.81	0.61
1:B:2016:LEU:HD12	1:B:2186:LEU:HD21	1.83	0.61
2:C:152:ILE:N	2:C:165:LEU:O	2.33	0.61
1:A:1444:GLU:N	1:A:1444:GLU:OE1	2.34	0.61
1:A:2052:GLU:HG3	1:A:2053:PRO:HD3	1.82	0.61
1:A:1190:ILE:HG23	1:B:661:VAL:HG23	1.83	0.60
3:E:639:THR:O	3:E:643:ASN:ND2	2.28	0.60
1:A:214:ARG:HE	1:A:273:ARG:HH22	1.49	0.60
1:A:1346:THR:HA	1:A:1386:ARG:HH21	1.66	0.60
1:A:776:LEU:HD11	1:A:820:LEU:HD21	1.82	0.60
1:B:1024:LYS:HA	1:B:1062:ALA:HB1	1.82	0.60
1:A:1552:LEU:O	1:A:1606:LYS:NZ	2.34	0.60
1:B:893:ALA:H	1:B:1594:HIS:HD2	1.49	0.60
3:F:305:ARG:NH2	4:H:402:PHE:O	2.34	0.60
3:F:1040:VAL:HG21	3:F:1325:ILE:HD13	1.84	0.60
3:F:266:CYS:HA	3:F:273:ILE:HG21	1.83	0.60
3:E:266:CYS:HA	3:E:273:ILE:HG21	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2288:GLU:OE1	2:C:221:ARG:NH2	2.35	0.59
3:F:611:PRO:HB3	3:F:1154:ARG:HE	1.68	0.59
1:B:1478:LEU:HA	1:B:1481:MET:HE2	1.85	0.59
1:A:2016:LEU:HD12	1:A:2186:LEU:HD21	1.85	0.59
1:B:1943:ILE:HD12	1:B:1975:PRO:HB2	1.85	0.59
2:D:285:ILE:HG23	2:D:297:TRP:HB2	1.85	0.59
1:B:1552:LEU:O	1:B:1606:LYS:NZ	2.35	0.59
3:F:27:PRO:O	3:F:1133:GLN:NE2	2.36	0.59
1:A:2133:CYS:O	1:A:2134:ARG:NE	2.36	0.59
3:E:305:ARG:NH2	4:G:402:PHE:O	2.36	0.59
3:E:1062:ASN:O	3:E:1094:ARG:NH1	2.36	0.59
3:F:1032:HIS:CG	3:F:1035:THR:HG22	2.38	0.59
1:A:701:ASN:O	1:B:1153:SER:OG	2.20	0.59
1:B:661:VAL:O	1:B:665:THR:OG1	2.19	0.59
2:D:147:ASP:OD2	2:D:149:SER:OG	2.20	0.59
1:B:396:LEU:HB3	1:B:416:THR:HG23	1.85	0.58
1:A:210:VAL:HG21	1:A:266:LEU:HD13	1.86	0.58
3:F:432:GLN:HG3	3:F:435:ILE:HD12	1.85	0.58
3:F:1149:ILE:HD12	3:F:1159:GLN:HB2	1.84	0.58
1:A:2277:HIS:O	2:C:87:ASN:ND2	2.27	0.58
3:F:1084:LEU:HB3	3:F:1096:TRP:HB2	1.85	0.58
1:A:1425:GLN:HG3	1:A:2314:PHE:HZ	1.68	0.58
1:B:145:VAL:HG13	1:B:175:LEU:HD13	1.85	0.58
1:B:1764:ILE:HG23	1:B:1769:ILE:HD11	1.86	0.58
2:C:69:ASP:HB2	2:C:78:ILE:HD11	1.85	0.58
1:A:1167:PRO:HA	1:A:1170:ARG:HG3	1.85	0.58
1:B:776:LEU:HD11	1:B:820:LEU:HD21	1.84	0.58
2:C:57:ILE:HB	2:C:70:LEU:HD21	1.86	0.58
1:A:145:VAL:HG13	1:A:175:LEU:HD13	1.86	0.58
3:F:390:LEU:HA	3:F:393:LEU:HD13	1.84	0.58
1:B:1167:PRO:HA	1:B:1170:ARG:HG3	1.86	0.57
3:F:413:LEU:HD12	3:F:452:LEU:HD12	1.85	0.57
1:B:1119:VAL:HA	1:B:1122:PHE:CE2	2.39	0.57
3:E:26:LEU:HD22	3:E:1133:GLN:HG3	1.85	0.57
1:A:211:ALA:HA	1:A:214:ARG:HD3	1.86	0.57
1:A:2162:VAL:HG22	1:A:2170:ARG:HG3	1.86	0.57
1:B:606:CYS:HA	1:B:609:HIS:HB2	1.85	0.57
1:B:990:LEU:HD21	1:B:1023:VAL:HG21	1.86	0.57
3:E:657:PRO:HB3	3:E:660:ARG:HH21	1.69	0.57
1:A:1470:ASN:ND2	1:A:1471:LYS:O	2.37	0.57
1:A:1481:MET:HE1	1:A:1512:MET:HG2	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1470:ASN:ND2	1:B:1471:LYS:O	2.38	0.57
1:B:1444:GLU:OE1	1:B:1444:GLU:N	2.36	0.57
2:D:91:VAL:HG12	2:D:102:THR:HG22	1.84	0.57
1:B:2133:CYS:O	1:B:2134:ARG:NE	2.36	0.57
3:F:1236:VAL:N	3:F:1250:LEU:O	2.38	0.57
1:A:65:ASP:OD1	1:A:103:ARG:NH1	2.37	0.57
1:B:1701:MET:HE1	1:B:1717:MET:HA	1.85	0.57
1:B:2052:GLU:HG3	1:B:2053:PRO:HD3	1.87	0.57
3:F:1262:HIS:HD2	3:F:1263:PRO:HD2	1.70	0.57
3:F:446:ARG:HD2	3:F:479:LEU:HD11	1.87	0.57
3:F:1062:ASN:O	3:F:1094:ARG:NH1	2.38	0.57
3:E:611:PRO:HB3	3:E:1154:ARG:HE	1.68	0.56
1:A:619:ARG:NH2	1:A:668:ASP:OD2	2.35	0.56
2:D:296:LEU:O	2:D:305:LYS:N	2.38	0.56
3:E:1236:VAL:N	3:E:1250:LEU:O	2.35	0.56
1:A:1626:CYS:SG	1:A:1627:GLN:N	2.77	0.56
1:B:2189:HIS:HA	1:B:2233:ASN:HB3	1.86	0.56
3:E:657:PRO:HA	3:E:660:ARG:HE	1.70	0.56
3:F:1181:ILE:HD11	3:F:1195:ARG:HH11	1.70	0.56
1:A:396:LEU:HB3	1:A:416:THR:HG23	1.87	0.56
1:A:1284:LEU:HD12	1:A:1353:VAL:HG22	1.87	0.56
3:E:1032:HIS:CG	3:E:1035:THR:HG22	2.40	0.56
1:A:1024:LYS:HA	1:A:1062:ALA:HB1	1.87	0.56
1:B:210:VAL:HG21	1:B:266:LEU:HD13	1.87	0.56
1:B:1064:GLY:O	1:B:1106:ASN:ND2	2.25	0.56
3:E:815:LEU:HB3	3:E:834:LEU:HD21	1.87	0.56
1:A:703:GLN:OE1	1:B:1161:ARG:NH2	2.37	0.56
1:A:2204:LEU:HD22	1:A:2417:VAL:HG21	1.87	0.56
2:C:173:ILE:HD11	2:C:187:ALA:HB1	1.86	0.56
1:A:701:ASN:O	1:B:1154:ARG:HG3	2.06	0.56
1:B:2034:ALA:HB1	1:B:2047:MET:HG2	1.88	0.56
1:A:990:LEU:HD21	1:A:1023:VAL:HG21	1.88	0.55
1:B:211:ALA:HA	1:B:214:ARG:HD3	1.86	0.55
1:B:2409:GLU:OE2	1:B:2410:HIS:NE2	2.40	0.55
1:B:964:LEU:HG	1:B:968:HIS:CE1	2.40	0.55
1:B:1004:CYS:O	1:B:1009:ARG:NH2	2.38	0.55
3:F:1281:ASN:OD1	3:F:1282:SER:N	2.38	0.55
3:F:660:ARG:HH12	3:F:1112:TRP:HA	1.71	0.55
1:A:2368:ARG:NH1	1:A:2370:LYS:O	2.40	0.55
1:B:1425:GLN:HG3	1:B:2314:PHE:CZ	2.42	0.55
1:B:1728:ALA:O	1:B:1732:ILE:HG13	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2135:ASP:OD2	1:B:2154:GLN:NE2	2.39	0.55
1:B:1045:ASN:HD22	1:B:1048:ILE:HG13	1.72	0.55
3:F:1226:HIS:ND1	3:F:1240:ASP:OD1	2.40	0.55
1:A:607:ALA:HA	1:A:610:PHE:CE2	2.42	0.55
1:A:1506:ASP:N	1:A:1506:ASP:OD1	2.40	0.55
1:B:1268:ALA:O	1:B:1283:TRP:NE1	2.37	0.55
1:B:431:THR:HG23	1:B:481:THR:HG21	1.88	0.55
1:A:780:ILE:HD13	1:A:783:LEU:HD12	1.89	0.54
3:E:667:LEU:HD23	3:E:815:LEU:HG	1.89	0.54
3:E:1149:ILE:HD12	3:E:1159:GLN:HB2	1.88	0.54
1:A:2189:HIS:HA	1:A:2233:ASN:HB3	1.90	0.54
1:A:2296:GLY:O	1:A:2385:ASN:ND2	2.40	0.54
1:B:214:ARG:HE	1:B:273:ARG:HH22	1.56	0.54
1:B:607:ALA:HA	1:B:610:PHE:CE2	2.42	0.54
2:C:46:ASN:ND2	2:C:61:GLY:O	2.41	0.54
1:A:1892:ILE:HG21	1:A:1930:ILE:HD11	1.88	0.54
2:C:129:ALA:HB3	2:C:147:ASP:HB2	1.90	0.54
1:A:1004:CYS:O	1:A:1009:ARG:NH2	2.36	0.54
3:E:997:ARG:HE	3:E:1000:ARG:HD3	1.72	0.54
1:A:2326:VAL:HG22	1:A:2403:VAL:HG21	1.89	0.54
1:A:2511:ARG:NH2	1:A:2515:HIS:O	2.41	0.54
1:A:705:PHE:HA	1:A:708:ARG:HD3	1.89	0.54
1:A:1728:ALA:O	1:A:1732:ILE:HG13	2.07	0.54
1:B:65:ASP:OD1	1:B:103:ARG:NH1	2.41	0.54
1:B:877:ASN:HB3	1:B:880:THR:HG22	1.90	0.54
2:D:254:LEU:HD21	2:D:257:GLU:HB2	1.90	0.54
3:E:1216:LYS:HE3	3:E:1218:SER:HB2	1.91	0.54
1:A:396:LEU:HD13	1:A:416:THR:HA	1.90	0.53
1:A:1119:VAL:HA	1:A:1122:PHE:CE2	2.43	0.53
3:F:1135:THR:HG23	3:F:1137:LEU:H	1.73	0.53
1:A:877:ASN:HB3	1:A:880:THR:HG22	1.90	0.53
1:B:396:LEU:HD13	1:B:416:THR:HA	1.90	0.53
3:E:191:ILE:HG22	3:E:241:ILE:HB	1.90	0.53
1:A:210:VAL:O	1:A:214:ARG:HG3	2.09	0.53
1:A:506:GLU:HG3	1:A:507:PRO:HD3	1.91	0.53
1:A:1764:ILE:HG23	1:A:1769:ILE:HD11	1.90	0.53
1:A:661:VAL:HG23	1:B:1190:ILE:HG23	1.91	0.53
1:A:1129:LEU:HD22	1:A:1169:LEU:HD21	1.89	0.53
1:A:1514:ARG:NH1	1:A:1542:ASP:OD2	2.42	0.53
1:B:2196:GLU:HA	1:B:2227:VAL:HG21	1.90	0.53
3:E:299:PRO:HD3	3:E:397:ILE:HD11	1.91	0.53

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Atom-1	**Atom-2**	**Interatomic distance (Å)**	**Clash overlap (Å)**
3:E:667:LEU:HA	3:E:670:LEU:HD12	1.89	0.53
1:B:1178:SER:OG	1:B:1208:ARG:NH2	2.38	0.53
1:B:1631:GLU:OE1	1:B:1631:GLU:N	2.41	0.53
1:B:2139:ALA:HA	1:B:2152:ARG:HA	1.89	0.53
3:F:563:LEU:HG	3:F:603:LYS:HD2	1.90	0.53
1:A:2432:MET:HE1	1:A:2493:LEU:HA	1.91	0.53
1:B:2154:GLN:HB3	1:B:2175:MET:HG3	1.91	0.53
3:E:628:GLY:O	3:E:673:GLN:NE2	2.41	0.53
3:F:81:CYS:SG	3:F:82:ALA:N	2.82	0.53
1:A:2264:GLU:HG3	1:A:2294:THR:HG21	1.89	0.53
1:B:1433:LEU:HD22	1:B:1453:LEU:HD13	1.89	0.53
1:B:1481:MET:HE1	1:B:1512:MET:HG2	1.90	0.53
1:B:1506:ASP:OD1	1:B:1506:ASP:N	2.41	0.53
1:B:1600:GLU:O	1:B:1603:ILE:HG12	2.09	0.53
1:A:964:LEU:HG	1:A:968:HIS:CE1	2.44	0.52
1:B:850:SER:HA	1:B:1611:ARG:HH22	1.73	0.52
2:D:224:LEU:HG	2:D:274:TRP:HE3	1.74	0.52
3:E:81:CYS:SG	3:E:82:ALA:N	2.82	0.52
1:A:1064:GLY:O	1:A:1106:ASN:ND2	2.28	0.52
1:B:210:VAL:O	1:B:214:ARG:HG3	2.09	0.52
1:B:1658:SER:OG	1:B:1662:LYS:NZ	2.43	0.52
3:F:299:PRO:HD3	3:F:397:ILE:HD11	1.91	0.52
1:A:449:LYS:HA	1:A:452:LEU:HG	1.92	0.52
3:E:464:VAL:HB	3:E:501:VAL:HG21	1.90	0.52
3:E:1304:ILE:HA	3:E:1320:SER:HA	1.91	0.52
3:F:1076:LEU:HB2	3:F:1083:LEU:HB2	1.92	0.52
1:B:130:ILE:HG23	1:B:144:TYR:HE2	1.74	0.52
2:D:57:ILE:HB	2:D:70:LEU:HD21	1.90	0.52
2:D:102:THR:OG1	2:D:112:TRP:NE1	2.34	0.52
3:F:559:ILE:HD11	3:F:584:ILE:HG21	1.92	0.52
1:A:1111:LEU:HD21	1:A:1148:PHE:CE2	2.44	0.52
1:B:132:ARG:HA	1:B:135:MET:HG2	1.91	0.52
1:B:430:ARG:HH21	1:B:478:VAL:HG11	1.75	0.52
1:B:2418:LEU:HD23	1:B:2421:PHE:HE2	1.75	0.52
1:B:2432:MET:HE1	1:B:2493:LEU:HA	1.92	0.52
2:C:78:ILE:HG22	2:C:79:ILE:HG12	1.90	0.52
2:D:25:ARG:HG2	2:D:37:THR:HG22	1.91	0.52
1:B:1277:LYS:HA	1:B:1350:ILE:HD13	1.91	0.52
1:B:1745:LYS:HE3	1:B:1749:ARG:HE	1.75	0.52
1:B:2160:LEU:HD22	1:B:2172:LEU:HA	1.92	0.52
2:D:173:ILE:HA	2:D:189:ASN:HA	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:390:LEU:HA	3:E:393:LEU:HD13	1.92	0.52
3:E:559:ILE:HD11	3:E:584:ILE:HG21	1.92	0.52
2:C:44:GLN:NE2	2:C:46:ASN:OD1	2.38	0.51
2:D:89:ALA:N	2:D:103:GLY:O	2.41	0.51
3:F:815:LEU:HB3	3:F:834:LEU:HD21	1.92	0.51
1:A:1277:LYS:HA	1:A:1350:ILE:HD13	1.91	0.51
1:A:1684:GLN:HB3	1:A:1687:HIS:HB3	1.92	0.51
1:A:1425:GLN:HG3	1:A:2314:PHE:CZ	2.45	0.51
2:D:244:CYS:HB3	2:D:258:LEU:HB2	1.92	0.51
2:D:244:CYS:HB2	2:D:273:MET:SD	2.50	0.51
1:B:1793:TRP:O	1:B:1797:ASN:ND2	2.38	0.51
1:B:2384:THR:HA	1:B:2387:MET:HE3	1.92	0.51
3:E:105:ASN:O	3:E:109:GLN:HG2	2.10	0.51
3:E:605:TYR:CD1	3:E:647:MET:HG2	2.45	0.51
3:F:1088:THR:OG1	3:F:1090:ASP:OD1	2.24	0.51
1:B:1658:SER:OG	5:B:2601:IHP:O32	2.29	0.51
1:A:130:ILE:HG23	1:A:144:TYR:HE2	1.76	0.51
2:C:123:ARG:NH1	2:C:157:LEU:O	2.36	0.51
3:F:447:LEU:H	3:F:447:LEU:HD23	1.74	0.51
2:D:78:ILE:HG22	2:D:79:ILE:HG12	1.91	0.51
2:D:192:GLY:HA2	2:D:223:ALA:HB2	1.93	0.51
1:A:882:ARG:NH2	1:A:1569:ASP:OD2	2.44	0.51
1:B:449:LYS:HA	1:B:452:LEU:HG	1.92	0.51
1:B:1527:ASP:OD1	1:B:1527:ASP:N	2.42	0.51
3:F:602:GLU:HA	3:F:605:TYR:CD2	2.46	0.51
1:A:2010:MET:O	1:A:2014:GLU:HG2	2.11	0.51
1:A:606:CYS:HA	1:A:609:HIS:HB2	1.92	0.51
1:A:890:LEU:HD12	1:A:1597:SER:HB2	1.93	0.51
1:A:2415:MET:HE1	1:A:2505:ARG:HA	1.92	0.51
1:A:1658:SER:OG	5:A:2601:IHP:O32	2.27	0.50
1:B:1984:THR:HG23	1:B:1987:ARG:HB3	1.93	0.50
1:B:2511:ARG:NH2	1:B:2515:HIS:O	2.44	0.50
1:A:2088:TYR:O	1:A:2092:GLY:N	2.43	0.50
1:B:645:SER:HB2	1:B:648:ALA:HB3	1.94	0.50
2:D:17:THR:HB	2:D:27:TRP:HE1	1.76	0.50
1:B:882:ARG:NH2	1:B:1569:ASP:OD2	2.45	0.50
2:D:152:ILE:N	2:D:165:LEU:O	2.38	0.50
3:E:566:LEU:HD23	3:E:603:LYS:HG2	1.93	0.50
3:E:1076:LEU:HB2	3:E:1083:LEU:HB2	1.93	0.50
3:F:1138:LEU:O	3:F:1150:TRP:N	2.44	0.50
1:A:1164:ASP:OD1	1:A:1202:HIS:NE2	2.28	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1626:CYS:SG	1:B:1627:GLN:N	2.84	0.50
1:A:850:SER:HA	1:A:1611:ARG:HH22	1.76	0.50
1:A:2154:GLN:HB3	1:A:2175:MET:HG3	1.92	0.50
3:E:32:LYS:HZ1	3:E:34:ARG:HH12	1.58	0.50
3:E:1135:THR:HG23	3:E:1137:LEU:H	1.76	0.50
3:F:292:LEU:HD12	3:F:292:LEU:H	1.77	0.50
1:B:1414:GLU:OE2	1:B:1452:LYS:NZ	2.30	0.50
3:F:74:ASP:HB3	3:F:157:ARG:HH21	1.76	0.50
1:A:1042:TRP:HE1	1:A:1049:GLN:HG2	1.77	0.50
1:A:1745:LYS:HE3	1:A:1749:ARG:HE	1.77	0.50
1:A:1428:ALA:O	1:A:1432:VAL:HG23	2.12	0.50
1:B:221:THR:OG1	1:B:234:TYR:OH	2.25	0.50
1:B:689:GLN:NE2	3:E:419:TRP:HA	2.26	0.50
1:B:1332:ASP:OD1	1:B:1332:ASP:N	2.45	0.50
3:E:527:MET:HG3	3:E:528:PRO:HD2	1.94	0.50
2:C:106:ASP:OD1	2:C:106:ASP:N	2.38	0.49
1:A:689:GLN:OE1	3:F:422:MET:HB2	2.12	0.49
1:B:1170:ARG:HH11	1:B:1204:ILE:HD11	1.76	0.49
3:E:322:THR:HA	3:E:434:PRO:HG3	1.94	0.49
3:F:107:GLN:OE1	3:F:121:GLN:NE2	2.46	0.49
3:F:605:TYR:CD1	3:F:647:MET:HG2	2.47	0.49
1:B:2054:LEU:O	1:B:2058:MET:HG2	2.12	0.49
2:D:129:ALA:HB3	2:D:147:ASP:HB2	1.93	0.49
1:A:940:ASN:HB2	1:A:941:LEU:HD12	1.93	0.49
3:E:478:LYS:HE2	4:G:399:ARG:HH22	1.77	0.49
3:F:1216:LYS:HE3	3:F:1218:SER:HB2	1.95	0.49
1:B:266:LEU:O	1:B:270:GLU:HG2	2.13	0.49
1:A:1450:TYR:HB2	1:A:1459:ALA:HB2	1.95	0.49
3:E:1077:ASN:OD1	3:E:1133:GLN:NE2	2.45	0.49
1:B:1329:LEU:HB2	1:B:1334:GLN:HG3	1.95	0.49
2:D:147:ASP:OD1	2:D:151:ALA:N	2.45	0.49
3:E:60:VAL:HG13	3:E:147:LEU:HD22	1.93	0.49
3:E:1060:PHE:CZ	3:E:1106:PRO:HB3	2.48	0.49
3:F:1239:PHE:CE1	3:F:1246:SER:HB3	2.48	0.49
3:E:64:LEU:HD23	3:E:66:LEU:HD11	1.94	0.49
1:A:132:ARG:HA	1:A:135:MET:HG2	1.95	0.48
1:A:396:LEU:HA	1:A:399:LEU:HD12	1.95	0.48
1:B:466:LYS:HZ1	1:B:478:VAL:N	2.11	0.48
3:F:1304:ILE:HA	3:F:1320:SER:HA	1.95	0.48
1:A:761:VAL:HA	1:A:768:ILE:HD12	1.95	0.48
1:A:1072:PRO:HA	1:A:1075:ILE:HD12	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1896:ARG:NH1	1:B:1931:GLN:OE1	2.46	0.48
1:B:2192:LEU:HD12	1:B:2235:GLY:HA3	1.94	0.48
2:C:287:THR:HB	2:C:297:TRP:HE1	1.77	0.48
3:F:60:VAL:HG13	3:F:147:LEU:HD22	1.95	0.48
3:F:166:VAL:HG23	3:F:175:ILE:HG13	1.95	0.48
3:F:1077:ASN:OD1	3:F:1133:GLN:NE2	2.46	0.48
1:A:539:LEU:HD22	1:A:594:PHE:HE1	1.78	0.48
1:B:2123:LEU:HB3	1:B:2131:LEU:HB2	1.95	0.48
3:E:602:GLU:HA	3:E:605:TYR:CD2	2.48	0.48
3:F:105:ASN:O	3:F:109:GLN:HG2	2.13	0.48
3:F:191:ILE:HG22	3:F:241:ILE:HB	1.93	0.48
3:F:354:GLU:HA	3:F:364:PRO:HG2	1.94	0.48
3:F:566:LEU:HD23	3:F:603:LYS:HG2	1.95	0.48
1:A:1470:ASN:ND2	1:A:1473:ASP:OD2	2.41	0.48
1:A:1598:GLU:O	1:A:1602:VAL:HG23	2.12	0.48
1:B:1514:ARG:NH1	1:B:1542:ASP:OD2	2.45	0.48
1:B:1901:GLN:HG3	1:B:2413:SER:HA	1.94	0.48
1:A:1195:VAL:O	1:A:1199:LEU:HG	2.14	0.48
1:B:2512:ASP:N	1:B:2512:ASP:OD1	2.47	0.48
2:D:28:GLN:O	2:D:32:GLY:N	2.47	0.48
3:F:478:LYS:HE2	4:H:399:ARG:HH22	1.79	0.48
1:A:687:LEU:HD12	1:A:692:ASN:HB3	1.94	0.48
1:A:2135:ASP:OD2	1:A:2154:GLN:NE2	2.44	0.48
1:B:1598:GLU:O	1:B:1602:VAL:HG23	2.14	0.48
1:B:1892:ILE:HG21	1:B:1930:ILE:HD11	1.96	0.48
2:C:254:LEU:HD21	2:C:257:GLU:HB2	1.96	0.48
3:E:318:ALA:HA	3:E:438:GLN:HG3	1.96	0.48
3:E:1040:VAL:HG21	3:E:1325:ILE:HD13	1.94	0.48
1:A:1910:TRP:NE1	1:A:1953:VAL:HG13	2.29	0.48
1:B:760:LEU:HG	1:B:768:ILE:HD11	1.96	0.48
1:B:2225:TYR:CE2	1:B:2356:ILE:HG22	2.48	0.48
3:E:1212:ALA:HB3	3:E:1231:SER:HB2	1.95	0.48
3:F:522:LEU:O	3:F:565:GLN:NE2	2.46	0.48
2:D:69:ASP:HB2	2:D:78:ILE:HD11	1.96	0.48
3:F:308:PRO:HG3	3:F:403:PHE:CD1	2.49	0.48
1:A:515:PRO:HD3	1:A:584:LEU:HD11	1.96	0.48
1:A:705:PHE:HZ	1:A:755:ARG:HB3	1.79	0.48
1:A:2366:MET:HG2	1:A:2373:GLU:O	2.14	0.48
1:A:2512:ASP:OD1	1:A:2512:ASP:N	2.46	0.48
1:B:940:ASN:HB2	1:B:941:LEU:HD12	1.96	0.48
1:B:1346:THR:HA	1:B:1386:ARG:HH21	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2254:ARG:NH1	1:B:2261:LEU:O	2.46	0.48
2:C:147:ASP:OD1	2:C:151:ALA:N	2.47	0.48
1:A:1349:ASP:OD1	1:A:1354:THR:OG1	2.24	0.48
1:A:1984:THR:HG23	1:A:1987:ARG:HB3	1.96	0.48
3:E:1189:SER:OG	3:E:1191:ARG:NH1	2.47	0.48
3:F:67:ASN:HB2	3:F:167:PHE:HZ	1.78	0.48
3:F:543:VAL:HB	3:F:550:GLN:HG2	1.95	0.48
1:B:2088:TYR:O	1:B:2092:GLY:N	2.45	0.47
3:E:1281:ASN:OD1	3:E:1282:SER:N	2.43	0.47
1:A:266:LEU:O	1:A:270:GLU:HG2	2.14	0.47
1:A:1527:ASP:N	1:A:1527:ASP:OD1	2.45	0.47
1:A:1601:GLU:OE2	1:A:1622:ARG:NH2	2.42	0.47
3:F:681:VAL:HG21	3:F:808:TYR:HB2	1.96	0.47
1:A:1587:TYR:OH	1:A:1626:CYS:SG	2.72	0.47
1:B:1199:LEU:HD22	1:B:1204:ILE:HB	1.95	0.47
1:B:1450:TYR:HB2	1:B:1459:ALA:HB2	1.95	0.47
2:D:279:SER:HA	2:D:320:PHE:CE2	2.49	0.47
3:F:488:ARG:HD2	3:F:521:VAL:HG22	1.96	0.47
1:B:890:LEU:HD12	1:B:1597:SER:HB2	1.96	0.47
1:B:968:HIS:NE2	1:B:1004:CYS:SG	2.87	0.47
1:B:1119:VAL:HG13	1:B:1158:PRO:HG2	1.96	0.47
1:B:1274:ARG:NH2	1:B:1286:ARG:HH22	2.12	0.47
1:B:2063:GLN:N	1:B:2067:GLU:OE1	2.45	0.47
3:F:40:GLU:HG3	3:F:965:ARG:HH22	1.78	0.47
1:A:1484:LEU:HD12	1:A:1489:GLU:HB2	1.97	0.47
1:A:1600:GLU:O	1:A:1603:ILE:HG12	2.15	0.47
1:B:952:MET:O	1:B:956:MET:HG2	2.14	0.47
3:F:601:HIS:CD2	3:F:640:ILE:HD11	2.50	0.47
1:A:1765:ASN:O	1:A:1769:ILE:HG12	2.15	0.47
1:A:2409:GLU:OE2	1:A:2410:HIS:NE2	2.47	0.47
1:B:1598:GLU:OE2	1:B:1640:ARG:NE	2.43	0.47
1:B:2415:MET:HE3	1:B:2505:ARG:HG3	1.97	0.47
2:C:223:ALA:HA	2:C:239:SER:HA	1.97	0.47
2:D:89:ALA:H	2:D:104:GLY:HA2	1.80	0.47
1:A:431:THR:HG23	1:A:481:THR:HG21	1.95	0.47
1:A:1605:TYR:CZ	1:A:1612:ARG:HD2	2.49	0.47
1:A:2054:LEU:O	1:A:2058:MET:HG2	2.14	0.47
1:A:2421:PHE:HA	1:A:2424:ASP:HB2	1.96	0.47
1:B:2022:LEU:HD11	1:B:2121:LEU:HD21	1.97	0.47
1:B:2296:GLY:O	1:B:2385:ASN:ND2	2.47	0.47
2:C:224:LEU:HG	2:C:274:TRP:HB3	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:67:ASN:HB2	3:E:167:PHE:HZ	1.79	0.47
3:E:255:ILE:HG23	3:E:258:LEU:HB2	1.97	0.47
3:E:354:GLU:HA	3:E:364:PRO:HG2	1.96	0.47
3:E:1138:LEU:O	3:E:1150:TRP:N	2.47	0.47
3:F:188:SER:HB2	3:F:239:ASN:HD22	1.80	0.47
3:F:527:MET:HG3	3:F:528:PRO:HD2	1.96	0.47
1:A:373:VAL:HA	1:A:392:ILE:HD13	1.97	0.47
1:A:800:ALA:O	1:A:804:GLU:HG2	2.14	0.47
1:A:1680:ASP:HB2	1:A:1683:ARG:HG2	1.96	0.47
2:C:46:ASN:N	2:C:60:ALA:O	2.24	0.47
1:B:1569:ASP:HA	1:B:1572:ASP:OD2	2.15	0.47
1:A:1119:VAL:HG13	1:A:1158:PRO:HG2	1.97	0.47
1:A:1701:MET:HE1	1:A:1717:MET:HA	1.96	0.47
1:B:2326:VAL:HG22	1:B:2403:VAL:HG21	1.96	0.47
1:B:2333:ILE:HD12	1:B:2407:LEU:HD13	1.96	0.47
1:B:2421:PHE:HA	1:B:2424:ASP:HB2	1.97	0.47
3:E:683:LEU:HD23	3:E:686:ILE:HD12	1.97	0.47
3:F:64:LEU:HD23	3:F:66:LEU:HD11	1.97	0.47
3:F:440:LEU:HD12	3:F:472:ILE:HD11	1.96	0.47
1:A:1915:HIS:HB3	1:A:1950:ARG:HD3	1.96	0.46
1:A:2384:THR:HA	1:A:2387:MET:HE3	1.97	0.46
1:B:627:SER:HB2	1:B:678:SER:HB2	1.97	0.46
1:B:1765:ASN:O	1:B:1769:ILE:HG12	2.14	0.46
2:C:316:VAL:HG23	2:C:317:CYS:SG	2.55	0.46
3:E:164:VAL:O	3:E:177:LEU:N	2.47	0.46
3:E:1051:TRP:HB3	3:E:1327:VAL:HG21	1.96	0.46
1:A:1697:THR:O	1:A:1701:MET:HG3	2.15	0.46
1:A:1910:TRP:CD1	1:A:1923:LEU:HD13	2.50	0.46
1:A:2225:TYR:CE2	1:A:2356:ILE:HG22	2.50	0.46
1:B:437:LEU:HD21	1:B:455:VAL:HG22	1.98	0.46
3:E:64:LEU:HB3	3:E:66:LEU:HG	1.97	0.46
3:E:1074:GLU:OE1	3:E:1075:TYR:N	2.48	0.46
3:F:588:PHE:CE2	3:F:590:SER:HB3	2.50	0.46
3:F:1064:ASN:ND2	3:F:1068:THR:OG1	2.45	0.46
1:A:1154:ARG:HG3	1:B:701:ASN:O	2.15	0.46
1:A:2121:LEU:HD13	1:A:2162:VAL:HG21	1.97	0.46
1:B:1771:LYS:O	1:B:1774:GLN:HG2	2.16	0.46
1:B:1920:ASN:O	1:B:1924:VAL:HG13	2.15	0.46
3:F:255:ILE:HG23	3:F:258:LEU:HB2	1.97	0.46
1:A:645:SER:HB2	1:A:648:ALA:HB3	1.97	0.46
1:A:1414:GLU:OE2	1:A:1452:LYS:NZ	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1784:ARG:HD3	1:A:1790:TRP:HZ2	1.80	0.46
1:B:282:LEU:O	1:B:286:MET:HG2	2.15	0.46
1:B:2425:PRO:HA	1:B:2428:ASN:OD1	2.15	0.46
2:C:18:ALA:HB2	2:C:24:VAL:HA	1.97	0.46
3:E:291:THR:HG23	3:E:294:LEU:H	1.80	0.46
3:E:446:ARG:HD2	3:E:479:LEU:HD11	1.96	0.46
3:F:47:GLN:HB3	3:F:49:TRP:CD1	2.50	0.46
3:F:558:LEU:HD23	3:F:584:ILE:HD11	1.96	0.46
3:F:987:GLU:HG2	3:F:991:ARG:NE	2.31	0.46
1:A:1045:ASN:HD22	1:A:1048:ILE:HG13	1.80	0.46
1:B:1100:ILE:HA	1:B:1103:PHE:CD2	2.50	0.46
1:B:1587:TYR:OH	1:B:1626:CYS:SG	2.74	0.46
2:C:285:ILE:HG23	2:C:297:TRP:HB2	1.98	0.46
2:D:92:GLY:N	2:D:101:TYR:O	2.27	0.46
2:D:156:ASP:OD2	2:D:159:THR:N	2.40	0.46
3:F:996:SER:HA	3:F:999:ARG:HE	1.80	0.46
1:B:1935:TRP:O	1:B:1939:ILE:HG13	2.16	0.46
3:E:99:LEU:HG	3:E:123:LEU:HD13	1.97	0.46
1:A:952:MET:O	1:A:956:MET:HG2	2.15	0.46
1:B:619:ARG:NH2	1:B:668:ASP:OD2	2.42	0.46
1:B:979:PHE:CD2	1:B:986:CYS:HB2	2.51	0.46
2:C:16:ALA:HB3	2:C:319:ALA:HB3	1.96	0.46
1:A:268:LEU:HD13	1:A:365:LEU:HA	1.97	0.46
1:A:2034:ALA:HB1	1:A:2047:MET:HG2	1.98	0.46
1:A:2196:GLU:HA	1:A:2227:VAL:HG21	1.97	0.46
1:A:416:THR:HG21	1:A:440:LEU:HD21	1.98	0.46
1:B:373:VAL:HA	1:B:392:ILE:HD13	1.97	0.46
1:B:693:LEU:HG	1:B:697:PHE:CZ	2.51	0.46
3:E:67:ASN:HB2	3:E:167:PHE:CZ	2.51	0.46
3:E:166:VAL:HG23	3:E:175:ILE:HG13	1.98	0.46
3:E:244:ALA:HB3	3:E:365:VAL:HB	1.96	0.46
3:E:582:GLY:HA2	3:E:585:TRP:NE1	2.31	0.46
1:B:67:LEU:O	1:B:71:ILE:HG13	2.16	0.46
1:B:1024:LYS:HE2	1:B:1024:LYS:HB3	1.82	0.46
1:B:2010:MET:O	1:B:2014:GLU:HG2	2.16	0.46
2:C:197:TRP:HB3	2:C:210:LEU:HB3	1.97	0.46
1:A:2063:GLN:N	1:A:2067:GLU:OE1	2.49	0.45
1:B:1605:TYR:CZ	1:B:1612:ARG:HD2	2.51	0.45
1:B:2368:ARG:NH1	1:B:2370:LYS:O	2.49	0.45
1:A:807:GLN:NE2	1:A:846:GLN:OE1	2.47	0.45
1:A:2418:LEU:HD23	1:A:2421:PHE:HE2	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1877:LEU:O	1:B:1881:THR:OG1	2.23	0.45
1:B:1946:ILE:HD11	1:B:1961:LEU:HD11	1.98	0.45
3:E:356:ILE:O	3:E:359:SER:OG	2.31	0.45
3:E:660:ARG:HH12	3:E:1112:TRP:HA	1.80	0.45
3:E:1239:PHE:CE1	3:E:1246:SER:HB3	2.52	0.45
3:F:822:PRO:HB2	3:F:1111:ALA:HB1	1.97	0.45
1:A:199:TRP:HA	1:A:206:ARG:HH21	1.80	0.45
1:A:689:GLN:NE2	3:F:419:TRP:HA	2.28	0.45
1:A:1035:VAL:HG21	1:A:1070:TYR:HB3	1.98	0.45
1:B:1342:GLU:OE2	1:B:1375:ARG:N	2.48	0.45
3:F:1218:SER:HB3	3:F:1261:ILE:HD12	1.97	0.45
1:B:947:TYR:HB2	1:B:948:PRO:HD3	1.97	0.45
2:C:244:CYS:HB3	2:C:258:LEU:HB2	1.98	0.45
3:F:261:ASP:OD2	3:F:264:THR:HB	2.15	0.45
3:F:833:VAL:O	3:F:836:SER:OG	2.27	0.45
1:B:539:LEU:HD22	1:B:594:PHE:HE1	1.82	0.45
1:B:1020:VAL:HG22	1:B:1027:ILE:HG12	1.98	0.45
2:D:43:SER:HB3	2:D:64:HIS:CE1	2.52	0.45
1:A:1043:VAL:HG23	1:A:1045:ASN:H	1.82	0.45
1:B:416:THR:HG21	1:B:440:LEU:HD21	1.97	0.45
1:B:1611:ARG:HG3	1:B:1615:ILE:HG12	1.97	0.45
1:B:1684:GLN:HB3	1:B:1687:HIS:HB3	1.99	0.45
3:F:57:THR:HG21	3:F:342:LEU:HD23	1.98	0.45
3:F:997:ARG:HE	3:F:1000:ARG:HD3	1.80	0.45
1:A:1079:LEU:HD13	1:A:1117:PRO:HG3	1.99	0.45
1:B:1043:VAL:HG23	1:B:1045:ASN:H	1.82	0.45
1:B:1555:ASP:N	1:B:1555:ASP:OD1	2.49	0.45
3:E:822:PRO:HB2	3:E:1111:ALA:HB1	1.98	0.45
3:F:1060:PHE:HZ	3:F:1099:PHE:HA	1.82	0.45
1:A:466:LYS:HZ1	1:A:478:VAL:N	2.15	0.45
1:B:155:TRP:CE3	1:B:168:ALA:HB2	2.52	0.45
1:B:539:LEU:HD23	1:B:543:LEU:HD13	1.99	0.45
3:E:453:LEU:O	3:E:457:LEU:HG	2.16	0.45
3:F:322:THR:HA	3:F:434:PRO:HG3	1.98	0.45
3:F:499:LEU:HD21	3:F:509:LEU:HD11	1.98	0.45
3:F:544:ASN:HA	3:F:583:ARG:HD2	1.98	0.45
1:B:221:THR:HG1	1:B:234:TYR:HH	1.62	0.45
1:B:705:PHE:HZ	1:B:755:ARG:HB3	1.82	0.45
1:B:849:ALA:HB2	1:B:890:LEU:HD21	1.99	0.45
1:B:945:GLU:OE1	1:B:945:GLU:N	2.44	0.45
3:E:447:LEU:HD23	3:E:447:LEU:H	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:705:PHE:O	1:A:709:GLU:HG3	2.16	0.45
1:A:2310:SER:HA	1:A:2313:TRP:HB3	1.98	0.45
1:B:800:ALA:O	1:B:804:GLU:HG2	2.17	0.45
1:B:878:GLN:NE2	1:B:1572:ASP:OD2	2.50	0.45
1:A:689:GLN:HE21	1:A:689:GLN:HA	1.83	0.44
1:A:1578:MET:HB3	1:A:1586:ALA:HA	1.98	0.44
2:D:43:SER:OG	2:D:44:GLN:N	2.49	0.44
3:E:53:ASP:OD1	3:E:339:GLN:NE2	2.50	0.44
3:E:395:THR:O	3:E:400:GLY:N	2.38	0.44
3:E:467:ALA:O	3:E:470:VAL:HG12	2.17	0.44
3:F:1012:ARG:HB3	3:F:1288:ASN:HD21	1.82	0.44
1:A:195:PHE:CD2	1:A:240:GLU:HG3	2.52	0.44
1:A:540:LEU:HD21	1:A:594:PHE:HB3	1.99	0.44
1:A:684:ASP:OD1	1:A:721:MET:HG3	2.17	0.44
3:F:67:ASN:HB2	3:F:167:PHE:CZ	2.52	0.44
1:B:1927:VAL:HA	1:B:1930:ILE:HG22	1.98	0.44
2:D:69:ASP:OD1	2:D:71:ASN:ND2	2.49	0.44
3:E:274:ALA:HB2	3:E:352:LEU:HD21	2.00	0.44
3:E:488:ARG:HG2	3:E:517:TYR:OH	2.17	0.44
3:E:1091:GLY:O	3:E:1114:GLY:N	2.35	0.44
3:F:453:LEU:O	3:F:457:LEU:HG	2.17	0.44
3:F:1031:PHE:HD2	3:F:1310:HIS:HA	1.83	0.44
1:A:1591:VAL:O	1:A:1595:MET:HG3	2.16	0.44
1:A:1946:ILE:HD11	1:A:1961:LEU:HD11	1.99	0.44
1:B:1428:ALA:O	1:B:1432:VAL:HG23	2.17	0.44
3:F:479:LEU:HB3	3:F:491:LEU:HD11	1.99	0.44
1:A:221:THR:OG1	1:A:234:TYR:OH	2.25	0.44
1:A:1032:ASP:OD1	1:A:1032:ASP:N	2.50	0.44
1:A:1199:LEU:HD22	1:A:1204:ILE:HB	1.99	0.44
2:D:16:ALA:HB3	2:D:319:ALA:HB3	2.00	0.44
3:F:582:GLY:HA2	3:F:585:TRP:NE1	2.32	0.44
1:A:947:TYR:HB2	1:A:948:PRO:HD3	1.98	0.44
1:A:979:PHE:CD2	1:A:986:CYS:HB2	2.52	0.44
2:D:287:THR:HB	2:D:297:TRP:HE1	1.81	0.44
3:E:79:THR:HB	3:E:80:PRO:HD3	1.99	0.44
3:E:146:VAL:H	3:E:190:SER:HA	1.82	0.44
3:F:499:LEU:HD13	3:F:499:LEU:HA	1.86	0.44
1:A:1484:LEU:HD13	1:A:1484:LEU:HA	1.89	0.44
2:C:65:ILE:HD11	2:C:88:ILE:HG12	1.99	0.44
2:D:65:ILE:HB	2:D:81:TYR:HB2	2.00	0.44
3:E:337:PHE:CZ	3:E:347:PHE:HB3	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:570:HIS:CE1	3:F:572:LEU:HB3	2.53	0.44
1:A:282:LEU:O	1:A:286:MET:HG2	2.18	0.44
1:A:968:HIS:NE2	1:A:1004:CYS:SG	2.91	0.44
1:A:1643:VAL:HG23	1:A:1644:VAL:HG23	2.00	0.44
1:B:1030:TYR:O	1:B:1034:ILE:HG13	2.18	0.44
1:B:1164:ASP:OD1	1:B:1202:HIS:NE2	2.28	0.44
1:B:1325:CYS:O	1:B:1329:LEU:HG	2.17	0.44
2:C:139:ASN:ND2	2:C:141:ALA:HB3	2.33	0.44
3:E:261:ASP:OD2	3:E:264:THR:HB	2.18	0.44
3:E:1310:HIS:HB2	3:E:1315:HIS:HB2	1.99	0.44
3:F:146:VAL:H	3:F:190:SER:HA	1.83	0.44
1:A:543:LEU:HD23	1:A:589:LEU:HD13	2.00	0.44
1:B:807:GLN:NE2	1:B:846:GLN:OE1	2.51	0.44
1:B:1111:LEU:HD21	1:B:1148:PHE:CE2	2.53	0.44
1:B:1910:TRP:NE1	1:B:1953:VAL:HG13	2.32	0.44
1:B:2339:ARG:HH21	1:B:2343:ASN:HB3	1.83	0.44
2:D:248:ARG:HD2	2:D:251:ASN:HB3	2.00	0.44
3:E:681:VAL:HG21	3:E:808:TYR:HB2	1.99	0.44
3:F:347:PHE:HA	3:F:350:PHE:HB3	2.00	0.44
3:F:1060:PHE:CZ	3:F:1106:PRO:HB3	2.52	0.44
1:A:484:THR:O	1:A:487:SER:OG	2.27	0.43
1:A:802:ILE:HD13	1:A:820:LEU:HD11	2.00	0.43
1:B:261:ILE:O	1:B:265:LEU:HG	2.18	0.43
1:B:589:LEU:HG	1:B:629:LEU:HD11	2.00	0.43
1:B:1045:ASN:ND2	1:B:1048:ILE:HG13	2.33	0.43
1:B:1491:GLY:HA2	1:B:1523:LEU:HD11	1.99	0.43
1:B:1801:VAL:HG13	1:B:1877:LEU:HD22	2.00	0.43
2:C:28:GLN:O	2:C:32:GLY:N	2.48	0.43
2:D:65:ILE:HD11	2:D:88:ILE:HG21	2.00	0.43
3:F:467:ALA:O	3:F:470:VAL:HG12	2.18	0.43
1:A:658:LYS:O	1:A:661:VAL:HG12	2.17	0.43
1:A:666:ASP:O	1:A:672:ARG:NE	2.45	0.43
1:A:1024:LYS:HG3	1:A:1025:SER:H	1.83	0.43
1:A:1490:TRP:CE3	1:A:1519:ALA:HA	2.54	0.43
1:A:1605:TYR:CE2	1:A:1612:ARG:HD2	2.54	0.43
1:A:1946:ILE:HA	1:A:1946:ILE:HD12	1.78	0.43
1:B:700:LEU:HD13	1:B:729:PHE:HE2	1.83	0.43
1:B:1533:THR:HA	1:B:1536:ILE:HG13	1.99	0.43
1:B:1979:ALA:HB1	1:B:1987:ARG:HD2	2.00	0.43
3:E:1089:ASP:N	3:E:1089:ASP:OD1	2.51	0.43
3:E:1158:VAL:HG12	3:E:1159:GLN:HG3	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:1048:PHE:HE2	3:F:1060:PHE:CE2	2.36	0.43
3:E:57:THR:HG21	3:E:342:LEU:HD23	2.00	0.43
3:E:528:PRO:HG2	3:E:531:HIS:ND1	2.33	0.43
3:F:419:TRP:CZ2	3:F:430:PRO:HD3	2.53	0.43
3:F:661:LYS:HB2	3:F:826:VAL:HG22	2.01	0.43
1:A:1623:LEU:HB2	1:A:1640:ARG:HH22	1.84	0.43
1:A:1786:TRP:CE2	1:A:1788:LYS:HB2	2.53	0.43
1:A:2122:GLU:HG2	1:A:2124:GLN:HG2	2.00	0.43
1:B:854:VAL:O	1:B:856:GLU:N	2.48	0.43
1:B:1034:ILE:HG22	1:B:1038:MET:SD	2.58	0.43
1:B:1195:VAL:O	1:B:1199:LEU:HG	2.19	0.43
1:B:1910:TRP:CD1	1:B:1923:LEU:HD13	2.53	0.43
3:E:40:GLU:HG3	3:E:965:ARG:HH22	1.82	0.43
3:E:131:LYS:HD3	3:E:185:TRP:CD1	2.53	0.43
3:E:292:LEU:HD12	3:E:292:LEU:H	1.82	0.43
3:F:337:PHE:CZ	3:F:347:PHE:HB3	2.54	0.43
1:A:67:LEU:O	1:A:71:ILE:HG13	2.18	0.43
1:A:434:PHE:HB3	1:A:485:CYS:SG	2.59	0.43
1:A:945:GLU:OE1	1:A:945:GLU:N	2.49	0.43
1:A:1332:ASP:OD1	1:A:1332:ASP:N	2.44	0.43
1:A:1598:GLU:OE2	1:A:1640:ARG:NE	2.49	0.43
1:A:1771:LYS:O	1:A:1774:GLN:HG2	2.18	0.43
1:A:1910:TRP:HA	1:A:1923:LEU:HD11	2.01	0.43
2:D:25:ARG:NH1	2:D:310:GLY:O	2.51	0.43
2:D:197:TRP:HB3	2:D:210:LEU:HB3	2.00	0.43
3:E:127:VAL:HG23	3:E:175:ILE:HD12	2.01	0.43
3:E:601:HIS:CD2	3:E:640:ILE:HD11	2.54	0.43
3:F:74:ASP:HB3	3:F:157:ARG:NH2	2.34	0.43
1:A:645:SER:OG	3:F:981:GLU:HB2	2.18	0.43
1:A:2123:LEU:HB3	1:A:2131:LEU:HB2	2.01	0.43
1:A:2321:THR:HG21	1:A:2395:ASN:HB2	2.00	0.43
1:B:396:LEU:HA	1:B:399:LEU:HD12	1.99	0.43
1:B:1627:GLN:O	1:B:1633:TRP:NE1	2.43	0.43
1:B:1680:ASP:HB2	1:B:1683:ARG:HG2	2.01	0.43
1:A:221:THR:HG1	1:A:234:TYR:HH	1.58	0.43
1:A:1067:PHE:HB3	1:A:1106:ASN:ND2	2.33	0.43
1:B:705:PHE:O	1:B:709:GLU:HG3	2.19	0.43
1:B:1614:ILE:O	1:B:1618:ILE:HG13	2.19	0.43
3:E:1088:THR:OG1	3:E:1090:ASP:OD1	2.24	0.43
3:E:1204:VAL:HG12	3:E:1205:MET:HG2	2.00	0.43
3:E:1262:HIS:HD2	3:E:1263:PRO:HD2	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:683:LEU:HD23	3:F:686:ILE:HD12	2.00	0.43
3:F:1189:SER:OG	3:F:1191:ARG:NH1	2.51	0.43
1:A:675:VAL:O	1:A:678:SER:OG	2.29	0.43
1:A:700:LEU:HD13	1:A:729:PHE:HE2	1.83	0.43
1:B:1032:ASP:N	1:B:1032:ASP:OD1	2.52	0.43
1:B:2339:ARG:NH2	1:B:2343:ASN:HB3	2.34	0.43
3:E:440:LEU:HD23	3:E:440:LEU:HA	1.87	0.43
3:E:558:LEU:HD23	3:E:584:ILE:HD11	1.99	0.43
3:F:47:GLN:HB3	3:F:49:TRP:HD1	1.84	0.43
3:F:79:THR:HB	3:F:80:PRO:HD3	2.01	0.43
3:F:88:ILE:HD11	3:F:105:ASN:HD22	1.82	0.43
3:F:156:PRO:HG2	3:F:165:TRP:CG	2.54	0.43
3:F:1048:PHE:CE2	3:F:1099:PHE:HB2	2.54	0.43
1:A:214:ARG:HG2	1:A:270:GLU:CD	2.39	0.43
1:A:1530:GLU:HA	1:A:1550:LEU:HD11	2.01	0.43
1:A:1619:TRP:HB3	1:A:1640:ARG:CZ	2.49	0.43
1:A:2022:LEU:HD11	1:A:2121:LEU:HD21	2.00	0.43
1:B:824:ILE:O	1:B:828:LEU:HB2	2.18	0.43
3:F:39:ILE:HD12	3:F:962:TRP:CG	2.54	0.43
1:A:712:ILE:HD11	1:A:760:LEU:HD13	2.01	0.43
1:A:1056:ILE:HD11	1:A:1074:LEU:HD13	2.00	0.43
1:A:1609:PRO:HA	1:A:1612:ARG:NE	2.33	0.43
1:A:2097:LEU:HG	1:A:2101:TRP:CD1	2.54	0.43
1:B:2020:ALA:O	1:B:2170:ARG:NH1	2.52	0.43
2:C:143:LEU:HD23	2:C:155:TRP:HE3	1.84	0.43
2:D:238:CYS:HB3	2:D:273:MET:O	2.19	0.43
3:E:823:TYR:HA	3:E:1108:MET:HE1	2.01	0.43
3:F:274:ALA:HB2	3:F:352:LEU:HD21	2.01	0.43
3:F:1010:ILE:HG21	3:F:1267:LEU:HD11	2.01	0.43
1:A:2407:LEU:HD23	1:A:2407:LEU:HA	1.85	0.42
1:B:780:ILE:HD13	1:B:783:LEU:HD12	2.01	0.42
1:B:1575:LEU:HG	1:B:1589:ALA:HB1	2.01	0.42
1:B:1888:PHE:O	1:B:1892:ILE:HG13	2.19	0.42
3:E:833:VAL:O	3:E:836:SER:OG	2.27	0.42
3:F:308:PRO:HG3	3:F:403:PHE:CG	2.53	0.42
1:A:1100:ILE:HA	1:A:1103:PHE:CD2	2.54	0.42
1:A:2131:LEU:O	1:A:2134:ARG:NH2	2.52	0.42
1:B:1274:ARG:HH21	1:B:1283:TRP:HD1	1.66	0.42
3:F:1179:SER:HB3	3:F:1195:ARG:HG2	2.01	0.42
1:A:1979:ALA:HB1	1:A:1987:ARG:HD2	2.01	0.42
1:B:658:LYS:O	1:B:661:VAL:HG12	2.19	0.42

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Atom-1	**Atom-2**	**Interatomic distance (Å)**	**Clash overlap (Å)**
1:B:1177:LEU:O	1:B:1181:VAL:HG23	2.18	0.42
1:B:2097:LEU:HG	1:B:2101:TRP:CD1	2.54	0.42
2:D:39:GLN:HB3	2:D:41:GLN:HE22	1.85	0.42
2:D:147:ASP:O	2:D:173:ILE:HG22	2.19	0.42
2:D:219:HIS:CG	2:D:239:SER:HG	2.36	0.42
3:E:996:SER:HA	3:E:999:ARG:HE	1.85	0.42
3:E:1031:PHE:HD2	3:E:1310:HIS:HA	1.85	0.42
1:A:1122:PHE:CZ	1:A:1158:PRO:HB2	2.55	0.42
1:A:1156:ILE:HD13	1:A:1191:PHE:CG	2.55	0.42
1:A:1505:ASN:O	1:A:1509:GLN:N	2.44	0.42
1:B:69:HIS:NE2	1:B:73:GLU:OE2	2.53	0.42
1:B:768:ILE:HG23	1:B:775:ILE:HD12	2.01	0.42
1:B:1605:TYR:CE2	1:B:1612:ARG:HD2	2.55	0.42
1:B:1977:THR:O	1:B:1980:SER:OG	2.32	0.42
2:C:192:GLY:HA2	2:C:223:ALA:HB2	2.01	0.42
3:E:117:ALA:HB3	3:E:119:TYR:CE1	2.55	0.42
3:F:442:SER:O	3:F:446:ARG:HB2	2.19	0.42
3:F:468:LEU:HD21	3:F:498:ILE:HD12	2.02	0.42
3:F:657:PRO:HA	3:F:660:ARG:HE	1.83	0.42
1:A:1631:GLU:OE1	1:A:1631:GLU:N	2.41	0.42
1:B:579:VAL:HG13	1:B:618:ILE:HD11	2.00	0.42
1:B:2275:TYR:HA	1:B:2278:LEU:HG	2.02	0.42
1:B:2344:LEU:HD21	1:B:2378:ARG:HD3	2.00	0.42
2:D:47:ALA:HB3	2:D:60:ALA:HB3	2.01	0.42
3:F:582:GLY:HA2	3:F:585:TRP:CE2	2.55	0.42
1:A:261:ILE:O	1:A:265:LEU:HG	2.19	0.42
1:A:1020:VAL:HG22	1:A:1027:ILE:HG12	2.02	0.42
1:A:2317:ARG:NH2	1:A:2388:GLU:HG3	2.34	0.42
1:B:501:ILE:HD11	1:B:524:LEU:HD11	2.01	0.42
1:B:2022:LEU:O	1:B:2026:MET:HG3	2.20	0.42
2:D:136:LEU:HD21	2:D:140:GLN:OE1	2.19	0.42
3:E:90:PRO:HA	3:E:98:ALA:HB1	2.02	0.42
3:F:291:THR:HG23	3:F:294:LEU:H	1.84	0.42
3:F:476:VAL:HG13	3:F:495:TRP:CZ2	2.55	0.42
1:A:147:PHE:CE2	1:A:151:ARG:HD2	2.54	0.42
1:A:463:LEU:N	1:A:464:PRO:HD2	2.34	0.42
1:A:1801:VAL:HG13	1:A:1877:LEU:HD22	2.01	0.42
1:B:214:ARG:HG2	1:B:270:GLU:CD	2.40	0.42
1:B:312:HIS:CD2	1:B:313:ILE:HG12	2.54	0.42
1:B:684:ASP:OD1	1:B:721:MET:HG3	2.20	0.42
1:B:2167:GLN:HB3	1:B:2189:HIS:HE1	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:640:ILE:O	3:F:644:VAL:HG23	2.20	0.42
1:A:1265:LEU:N	1:A:1290:GLU:OE2	2.53	0.42
3:E:308:PRO:HG3	3:E:403:PHE:CG	2.55	0.42
3:F:485:ARG:HA	3:F:488:ARG:HG3	2.02	0.42
1:A:746:ILE:HD12	1:A:749:ILE:HD12	2.01	0.42
1:A:1027:ILE:HD12	1:A:1027:ILE:HA	1.94	0.42
1:A:2244:ASP:OD1	1:A:2244:ASP:N	2.53	0.42
3:F:316:PHE:HB2	3:F:382:TRP:CZ3	2.55	0.42
3:F:488:ARG:HG2	3:F:517:TYR:OH	2.20	0.42
3:F:1097:LYS:HD2	3:F:1098:ASN:H	1.84	0.42
1:A:460:ARG:HH21	1:A:504:LEU:HD21	1.84	0.42
1:A:735:ILE:HD13	1:A:735:ILE:HA	1.95	0.42
1:B:761:VAL:HA	1:B:768:ILE:HD12	2.01	0.42
1:B:1060:VAL:HG11	1:B:1103:PHE:CE1	2.55	0.42
3:E:141:ALA:HB1	3:E:144:GLU:HB2	2.01	0.42
3:E:357:MET:HB3	3:E:362:CYS:HB2	2.01	0.42
3:E:522:LEU:O	3:E:565:GLN:NE2	2.52	0.42
3:E:987:GLU:HG2	3:E:991:ARG:NE	2.34	0.42
1:B:1784:ARG:O	1:B:1790:TRP:NE1	2.51	0.41
2:C:274:TRP:CZ2	2:C:316:VAL:HG12	2.55	0.41
2:D:272:TRP:N	2:D:290:SER:HB3	2.35	0.41
3:E:1048:PHE:HE2	3:E:1060:PHE:CE2	2.37	0.41
1:A:501:ILE:O	1:A:505:LEU:HG	2.19	0.41
1:B:268:LEU:HD13	1:B:365:LEU:HA	2.02	0.41
1:B:515:PRO:HD3	1:B:584:LEU:HD11	2.02	0.41
1:B:1005:ASP:HA	1:B:1009:ARG:HH21	1.85	0.41
1:B:1953:VAL:O	1:B:1957:ILE:HG13	2.19	0.41
1:B:2167:GLN:HB3	1:B:2189:HIS:CE1	2.54	0.41
2:C:226:CYS:SG	2:C:237:THR:HG23	2.60	0.41
3:E:593:TRP:O	3:E:597:ARG:HG3	2.21	0.41
3:E:1308:ALA:O	3:E:1316:LEU:HD12	2.20	0.41
3:F:131:LYS:HD3	3:F:185:TRP:CE2	2.55	0.41
1:A:1611:ARG:HG3	1:A:1615:ILE:HG12	2.01	0.41
1:A:2300:ALA:HB2	1:A:2386:ALA:HA	2.02	0.41
1:B:463:LEU:N	1:B:464:PRO:HD2	2.35	0.41
2:C:173:ILE:HA	2:C:189:ASN:HA	2.02	0.41
3:E:476:VAL:HG13	3:E:495:TRP:CZ2	2.54	0.41
1:A:507:PRO:O	1:A:511:VAL:HG23	2.21	0.41
1:A:1658:SER:OG	1:A:1662:LYS:NZ	2.53	0.41
1:B:199:TRP:HE3	1:B:260:ARG:HG2	1.84	0.41
1:B:1319:ASN:OD1	1:B:1319:ASN:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1386:ARG:HD3	1:B:1386:ARG:HA	1.75	0.41
1:B:1609:PRO:HA	1:B:1612:ARG:NE	2.35	0.41
3:E:319:ILE:HG23	3:E:378:MET:HG3	2.03	0.41
3:E:419:TRP:O	3:E:423:GLY:N	2.53	0.41
3:E:570:HIS:CE1	3:E:572:LEU:HB3	2.56	0.41
3:F:120:LYS:HD2	3:F:137:LEU:HD21	2.01	0.41
1:B:504:LEU:O	1:B:507:PRO:HD2	2.20	0.41
1:B:2228:ILE:HB	1:B:2236:LEU:HB3	2.02	0.41
2:C:69:ASP:OD1	2:C:71:ASN:ND2	2.53	0.41
2:C:300:GLU:HG2	2:C:301:THR:HG23	2.03	0.41
3:E:543:VAL:HB	3:E:550:GLN:HG2	2.02	0.41
1:A:202:LYS:HG3	1:A:205:ILE:HD12	2.02	0.41
1:A:1045:ASN:ND2	1:A:1048:ILE:HG13	2.35	0.41
1:A:1745:LYS:HE3	1:A:1749:ARG:NE	2.35	0.41
1:A:1899:ASN:O	1:A:1903:THR:OG1	2.32	0.41
3:E:420:LEU:HD21	3:E:456:PHE:HD1	1.86	0.41
3:E:452:LEU:HD23	3:E:452:LEU:HA	1.91	0.41
3:F:477:LEU:HA	3:F:495:TRP:HZ2	1.85	0.41
1:A:1071:LEU:N	1:A:1072:PRO:HD2	2.35	0.41
3:E:506:GLN:NE2	3:E:542:ILE:O	2.50	0.41
3:E:570:HIS:HB3	3:E:573:LEU:HB3	2.03	0.41
1:A:1090:ARG:O	1:A:1094:ILE:HG13	2.19	0.41
1:B:2264:GLU:HG3	1:B:2294:THR:HG21	2.02	0.41
3:F:64:LEU:HB3	3:F:66:LEU:HG	2.02	0.41
3:F:647:MET:O	3:F:650:GLN:HG3	2.21	0.41
1:A:119:ASP:O	1:A:123:MET:HG3	2.21	0.41
1:A:504:LEU:O	1:A:507:PRO:HD2	2.21	0.41
1:A:1322:PHE:CD1	1:A:1360:LEU:HD11	2.56	0.41
1:A:1323:VAL:HG21	1:A:1363:PHE:HE2	1.86	0.41
1:A:1433:LEU:HD22	1:A:1453:LEU:HD13	2.02	0.41
1:A:1545:PHE:CZ	1:A:1595:MET:HE2	2.56	0.41
1:A:2022:LEU:O	1:A:2026:MET:HG3	2.20	0.41
1:A:2332:TYR:CZ	1:A:2528:LEU:HD21	2.55	0.41
1:A:2516:ASP:OD1	1:A:2516:ASP:N	2.54	0.41
1:B:155:TRP:HE3	1:B:168:ALA:HB2	1.86	0.41
1:B:830:ASP:N	1:B:830:ASP:OD1	2.54	0.41
1:B:2335:GLY:O	1:B:2362:PHE:N	2.53	0.41
1:B:2366:MET:HG2	1:B:2373:GLU:O	2.21	0.41
1:B:2516:ASP:OD1	1:B:2516:ASP:N	2.53	0.41
2:C:15:LEU:HA	2:C:319:ALA:O	2.21	0.41
2:C:32:GLY:HA3	2:C:306:ARG:NH2	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:65:ILE:HD11	2:C:88:ILE:HG21	2.02	0.41
2:C:238:CYS:HB3	2:C:273:MET:O	2.20	0.41
2:C:260:ILE:O	2:C:270:ARG:NH1	2.54	0.41
3:E:582:GLY:HA2	3:E:585:TRP:CE2	2.56	0.41
3:F:78:THR:O	3:F:81:CYS:HB3	2.21	0.41
3:F:298:ILE:HD13	3:F:309:LEU:HD13	2.02	0.41
3:F:443:GLN:OE1	3:F:446:ARG:NH2	2.49	0.41
3:F:562:CYS:HB3	3:F:577:VAL:HG13	2.03	0.41
3:F:593:TRP:O	3:F:597:ARG:HG3	2.21	0.41
1:A:199:TRP:HE3	1:A:260:ARG:HG2	1.85	0.41
1:A:1920:ASN:O	1:A:1924:VAL:HG13	2.20	0.41
1:A:2353:ILE:HD13	1:A:2353:ILE:HA	1.98	0.41
1:A:2425:PRO:HA	1:A:2428:ASN:OD1	2.21	0.41
1:B:1423:LEU:HD12	1:B:1423:LEU:HA	1.87	0.41
2:D:139:ASN:ND2	2:D:141:ALA:HB3	2.35	0.41
3:E:308:PRO:HG3	3:E:403:PHE:CD1	2.56	0.41
3:F:142:LYS:HE3	3:F:142:LYS:HB2	1.95	0.41
1:A:1030:TYR:O	1:A:1034:ILE:HG13	2.21	0.40
1:A:1613:GLU:HG3	1:A:1616:ARG:NH2	2.36	0.40
1:A:2344:LEU:HD21	1:A:2378:ARG:HD3	2.03	0.40
1:B:631:THR:HB	1:B:632:PRO:HD3	2.03	0.40
1:B:714:THR:HG23	1:B:717:ARG:NH2	2.36	0.40
1:B:856:GLU:N	1:B:857:PRO:HD2	2.36	0.40
1:B:2546:CYS:HB3	1:B:2549:TRP:HB2	2.04	0.40
2:C:171:VAL:HG21	2:C:189:ASN:HD22	1.85	0.40
2:D:68:TYR:HE1	2:D:77:PRO:HG3	1.86	0.40
3:E:346:LEU:HD23	3:E:346:LEU:HA	1.90	0.40
3:F:29:ALA:N	3:F:1077:ASN:HD21	2.19	0.40
1:A:734:LEU:HD21	1:A:775:ILE:HD11	2.03	0.40
1:A:1034:ILE:HG22	1:A:1038:MET:SD	2.61	0.40
1:A:1533:THR:HA	1:A:1536:ILE:HG13	2.04	0.40
1:A:2228:ILE:HB	1:A:2236:LEU:HB3	2.02	0.40
1:A:2340:HIS:CE1	1:A:2342:SER:HB3	2.56	0.40
1:B:214:ARG:HG2	1:B:270:GLU:OE1	2.21	0.40
1:B:501:ILE:O	1:B:505:LEU:HG	2.21	0.40
1:B:1129:LEU:N	1:B:1130:PRO:HD2	2.37	0.40
1:B:2291:VAL:HG13	1:B:2381:ARG:HE	1.87	0.40
1:B:2339:ARG:O	1:B:2378:ARG:HD2	2.21	0.40
3:E:164:VAL:HG23	3:E:179:ILE:HD11	2.02	0.40
3:F:1185:LEU:HD11	3:F:1191:ARG:HD3	2.03	0.40
3:F:1204:VAL:HG12	3:F:1205:MET:HG2	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1146:LEU:HD13	1:A:1146:LEU:HA	1.91	0.40
1:A:1403:GLU:HG2	1:A:1412:ILE:HD11	2.02	0.40
1:A:1614:ILE:O	1:A:1618:ILE:HG13	2.21	0.40
1:A:1753:LYS:HD3	1:A:1753:LYS:HA	1.86	0.40
1:B:783:LEU:HD23	1:B:795:ILE:HD11	2.02	0.40
2:C:101:TYR:HE2	2:C:136:LEU:HD13	1.86	0.40
2:C:277:ALA:HB3	2:C:286:VAL:HB	2.04	0.40
3:E:611:PRO:HG2	3:E:612:ILE:HD12	2.03	0.40
3:E:637:SER:HA	3:E:640:ILE:HG22	2.02	0.40
3:F:117:ALA:HB3	3:F:119:TYR:CE1	2.56	0.40
3:F:258:LEU:HD23	3:F:258:LEU:HA	1.94	0.40
1:A:856:GLU:N	1:A:857:PRO:HD2	2.36	0.40
1:A:1407:GLY:HA2	1:A:1408:PRO:HD3	1.95	0.40
1:A:1599:LEU:O	1:A:1603:ILE:HG23	2.21	0.40
1:B:588:THR:O	1:B:591:SER:OG	2.34	0.40
1:B:615:HIS:HB2	1:B:618:ILE:HB	2.03	0.40
1:B:1407:GLY:HA2	1:B:1408:PRO:HD3	1.97	0.40
1:B:1578:MET:HB3	1:B:1586:ALA:HA	2.03	0.40
2:D:15:LEU:HD22	2:D:27:TRP:HB2	2.03	0.40
3:E:275:LEU:HD21	3:E:312:LEU:HD13	2.03	0.40
3:F:457:LEU:HD22	3:F:464:VAL:HG22	2.04	0.40
3:F:812:TRP:CZ3	3:F:816:LEU:HD11	2.55	0.40
1:A:2218:LYS:O	1:A:2322:ARG:NH1	2.55	0.40
1:B:959:PHE:O	1:B:964:LEU:HD22	2.21	0.40
1:B:1619:TRP:HB3	1:B:1640:ARG:CZ	2.51	0.40
3:E:304:ASP:O	3:E:307:THR:OG1	2.27	0.40
3:E:419:TRP:CZ2	3:E:430:PRO:HD3	2.56	0.40
3:F:319:ILE:HG23	3:F:378:MET:HG3	2.04	0.40
3:F:1171:SER:O	3:F:1184:GLY:N	2.51	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	2150/2549 (84%)	2101 (98%)	47 (2%)	2 (0%)	51	83
1	B	2150/2549 (84%)	2101 (98%)	47 (2%)	2 (0%)	51	83
2	C	315/326 (97%)	304 (96%)	11 (4%)	0	100	100
2	D	315/326 (97%)	303 (96%)	12 (4%)	0	100	100
3	E	1040/1363 (76%)	1004 (96%)	36 (4%)	0	100	100
3	F	1040/1363 (76%)	1009 (97%)	31 (3%)	0	100	100
4	G	7/887 (1%)	6 (86%)	1 (14%)	0	100	100
4	H	7/887 (1%)	7 (100%)	0	0	100	100
All	All	7024/10250 (68%)	6835 (97%)	185 (3%)	4 (0%)	54	83

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	379	LYS
1	B	379	LYS
1	A	18	ASN
1	B	18	ASN

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	1876/2220 (84%)	1843 (98%)	33 (2%)	59	77
1	B	1876/2220 (84%)	1845 (98%)	31 (2%)	60	79
2	C	269/276 (98%)	266 (99%)	3 (1%)	73	85
2	D	269/276 (98%)	266 (99%)	3 (1%)	73	85
3	E	928/1191 (78%)	911 (98%)	17 (2%)	59	77
3	F	928/1191 (78%)	915 (99%)	13 (1%)	67	82
4	G	9/730 (1%)	9 (100%)	0	100	100
4	H	9/730 (1%)	9 (100%)	0	100	100
All	All	6164/8834 (70%)	6064 (98%)	100 (2%)	64	79

All (100) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	506	GLU
1	A	539	LEU
1	A	605	HIS
1	A	645	SER
1	A	665	THR
1	A	689	GLN
1	A	821	PHE
1	A	960	ARG
1	A	968	HIS
1	A	969	THR
1	A	997	PHE
1	A	1097	LEU
1	A	1140	ASP
1	A	1150	ASP
1	A	1154	ARG
1	A	1262	THR
1	A	1284	LEU
1	A	1453	LEU
1	A	1484	LEU
1	A	1575	LEU
1	A	1899	ASN
1	A	1925	GLU
1	A	1946	ILE
1	A	1985	THR
1	A	2057	MET
1	A	2096	ASP
1	A	2161	GLN
1	A	2172	LEU
1	A	2173	THR
1	A	2370	LYS
1	A	2371	PHE
1	A	2533	THR
1	A	2540	GLN
1	B	506	GLU
1	B	539	LEU
1	B	605	HIS
1	B	645	SER
1	B	665	THR
1	B	689	GLN
1	B	966	HIS
1	B	968	HIS
1	B	997	PHE

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Mol	Chain	Res	Type
1	B	1097	LEU
1	B	1140	ASP
1	B	1150	ASP
1	B	1262	THR
1	B	1284	LEU
1	B	1366	HIS
1	B	1453	LEU
1	B	1484	LEU
1	B	1512	MET
1	B	1555	ASP
1	B	1570	LEU
1	B	1575	LEU
1	B	1624	GLN
1	B	1925	GLU
1	B	1946	ILE
1	B	2057	MET
1	B	2096	ASP
1	B	2172	LEU
1	B	2173	THR
1	B	2370	LYS
1	B	2533	THR
1	B	2540	GLN
2	C	132	ASN
2	C	274	TRP
2	C	292	ASN
2	D	93	PHE
2	D	128	ASN
2	D	274	TRP
3	E	39	ILE
3	E	157	ARG
3	E	188	SER
3	E	479	LEU
3	E	527	MET
3	E	625	THR
3	E	959	PHE
3	E	991	ARG
3	E	1011	THR
3	E	1013	LEU
3	E	1022	ASN
3	E	1035	THR
3	E	1074	GLU
3	E	1139	MET

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Mol	Chain	Res	Type
3	E	1182	VAL
3	E	1257	THR
3	E	1323	TYR
3	F	157	ARG
3	F	188	SER
3	F	336	LEU
3	F	479	LEU
3	F	527	MET
3	F	547	HIS
3	F	991	ARG
3	F	1011	THR
3	F	1014	ASP
3	F	1035	THR
3	F	1139	MET
3	F	1257	THR
3	F	1323	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (19) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	68	ASN
1	A	689	GLN
1	B	68	ASN
1	B	689	GLN
1	B	1045	ASN
1	B	2167	GLN
1	B	2189	HIS
2	C	71	ASN
2	D	71	ASN
3	E	107	GLN
3	E	121	GLN
3	E	151	ASN
3	E	673	GLN
3	F	107	GLN
3	F	121	GLN
3	F	673	GLN
3	F	1062	ASN
3	F	1064	ASN
3	F	1262	HIS

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 monosaccharides in this entry.

5.6 Ligand geometry ⓘ

2 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
5	IHP	B	2601	-	36,36,36	0.75	1 (2%)	54,60,60	0.35	0
5	IHP	A	2601	-	36,36,36	0.75	1 (2%)	54,60,60	0.36	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	IHP	B	2601	-	-	3/30/54/54	0/1/1/1
5	IHP	A	2601	-	-	2/30/54/54	0/1/1/1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	2601	IHP	P3-O13	2.95	1.64	1.59

Continued on next page...

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	B	2601	IHP	P3-O13	2.84	1.64	1.59

There are no bond angle outliers.

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	2601	IHP	C2-O12-P2-O22
5	B	2601	IHP	C2-O12-P2-O22
5	B	2601	IHP	C3-O13-P3-O23
5	A	2601	IHP	C5-O15-P5-O35
5	B	2601	IHP	C3-O13-P3-O33

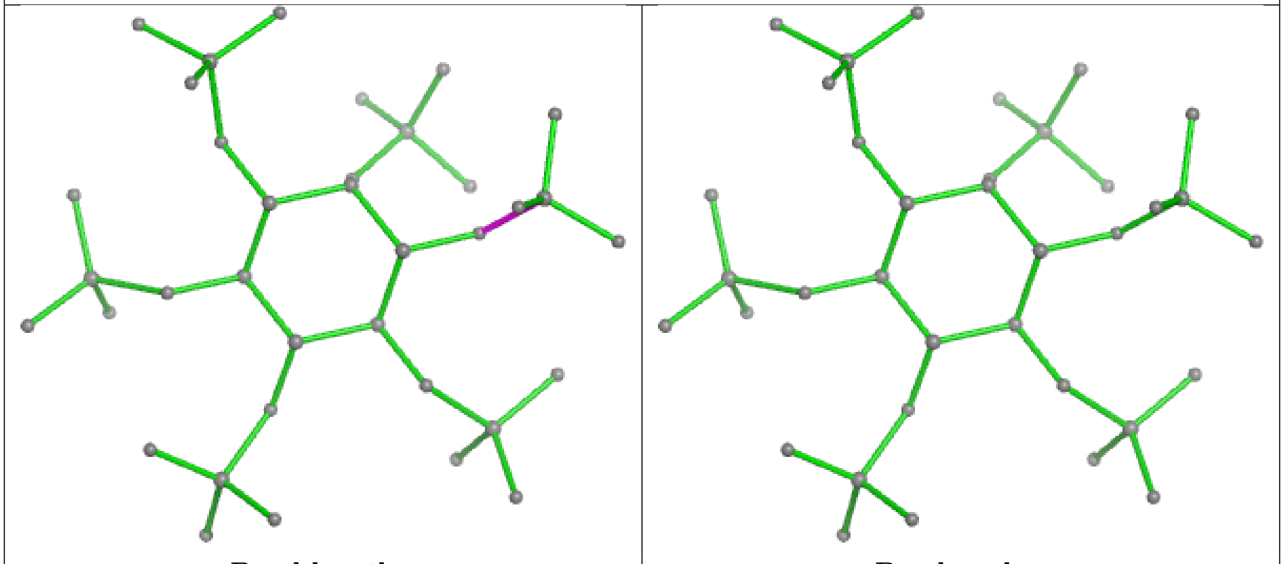
There are no ring outliers.

2 monomers are involved in 2 short contacts:

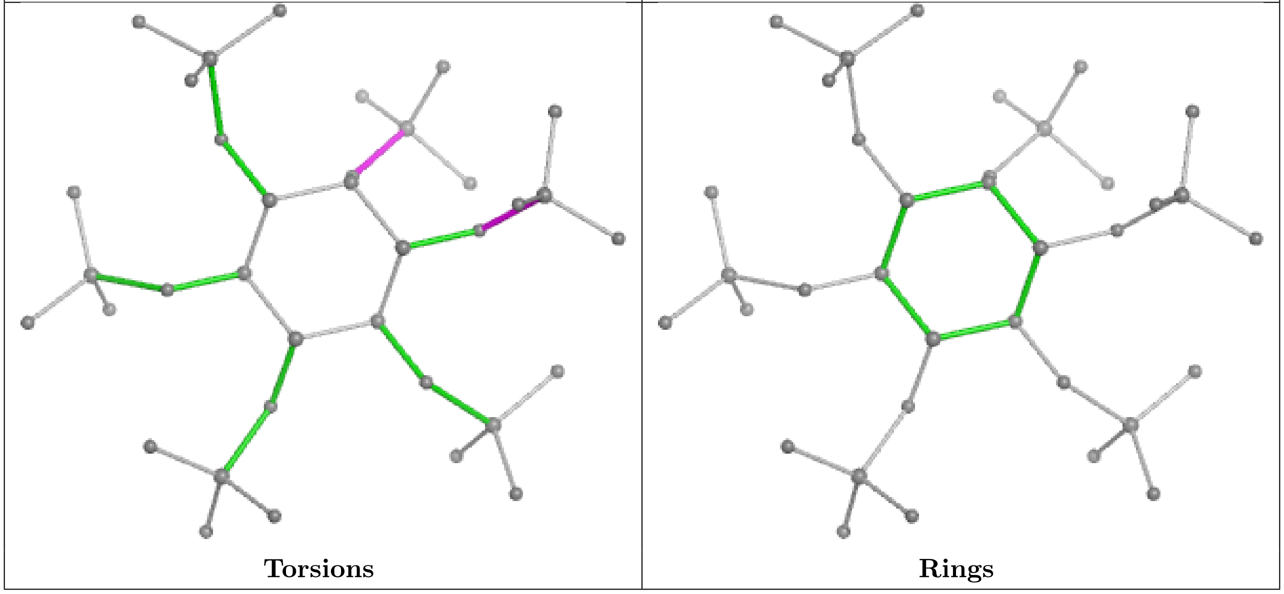
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	B	2601	IHP	1	0
5	A	2601	IHP	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand IHP B 2601

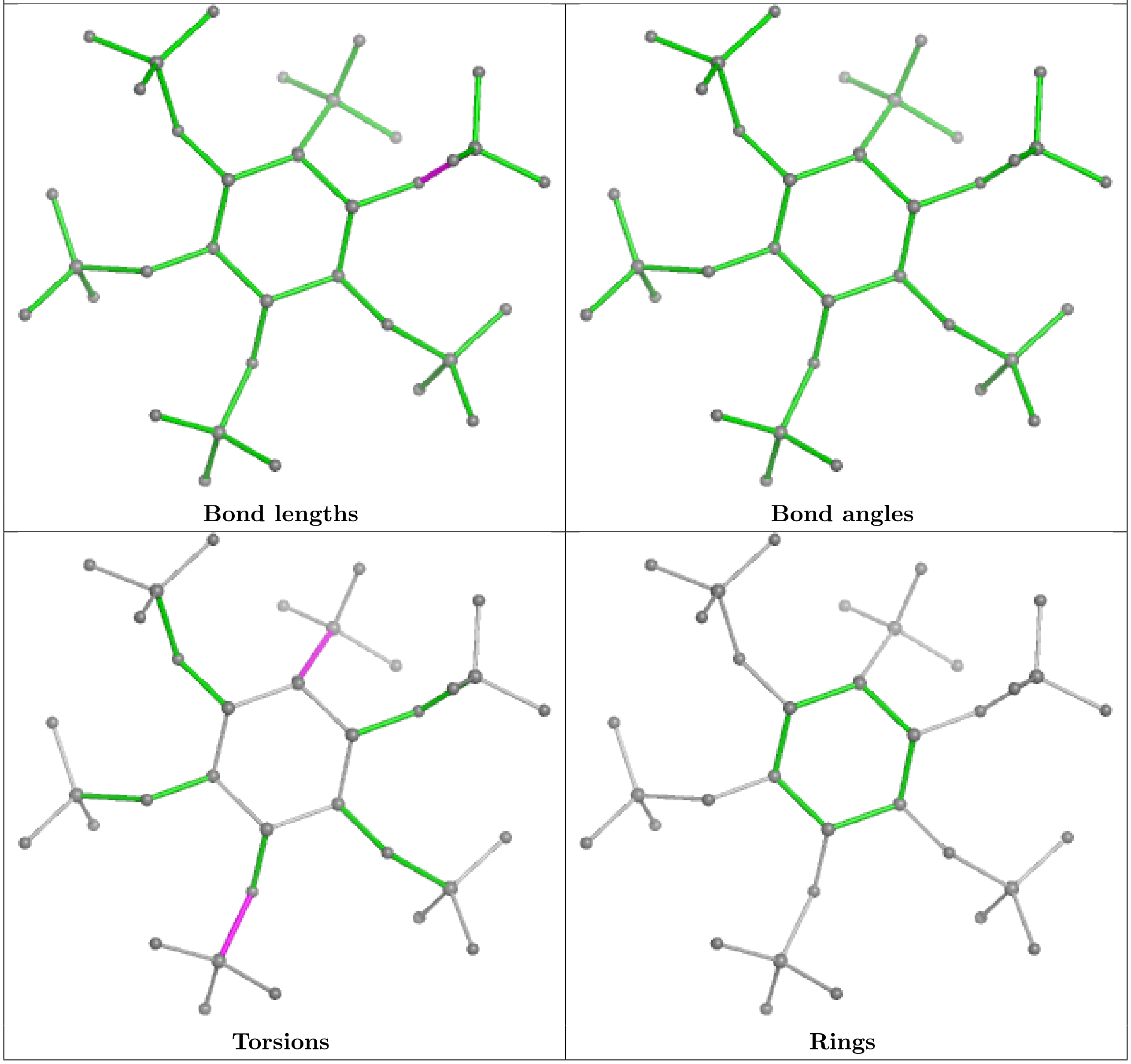


Bond lengths **Bond angles**



Torsions **Rings**

Ligand IHP A 2601



Bond lengths

Bond angles

Torsions

Rings

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.

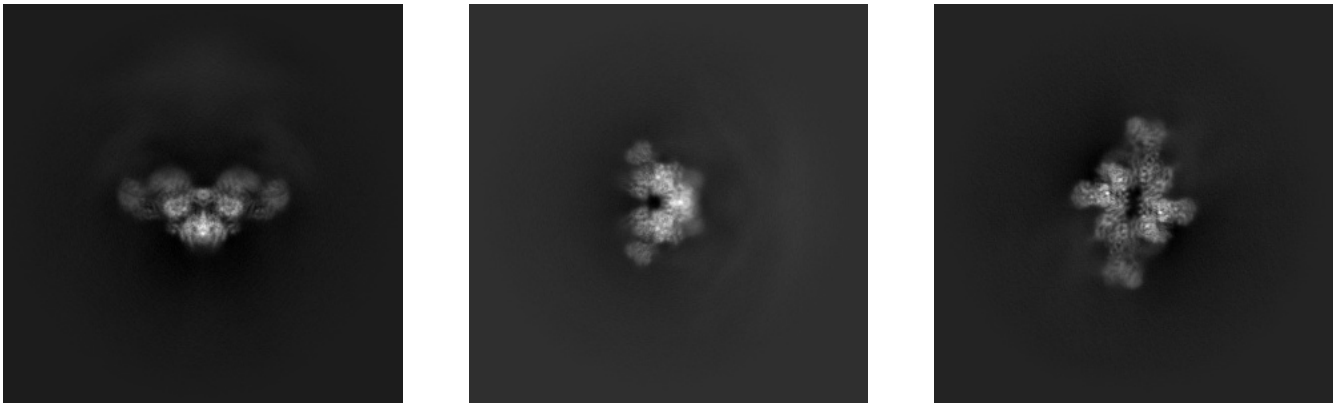
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-50184. 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

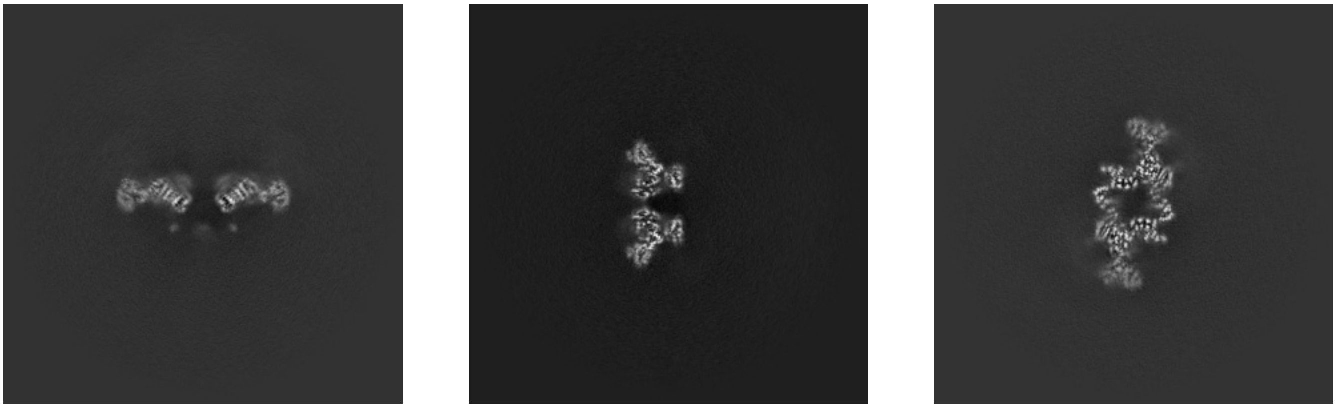


X Y Z

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

6.2 Central slices

6.2.1 Primary map

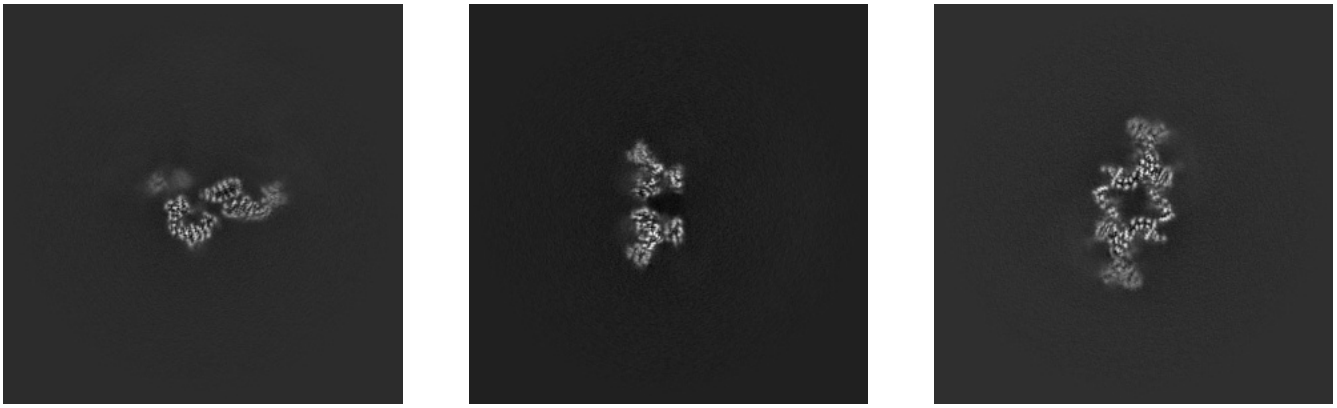


X Index: 256 Y Index: 256 Z Index: 256

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

6.3 Largest variance slices

6.3.1 Primary map

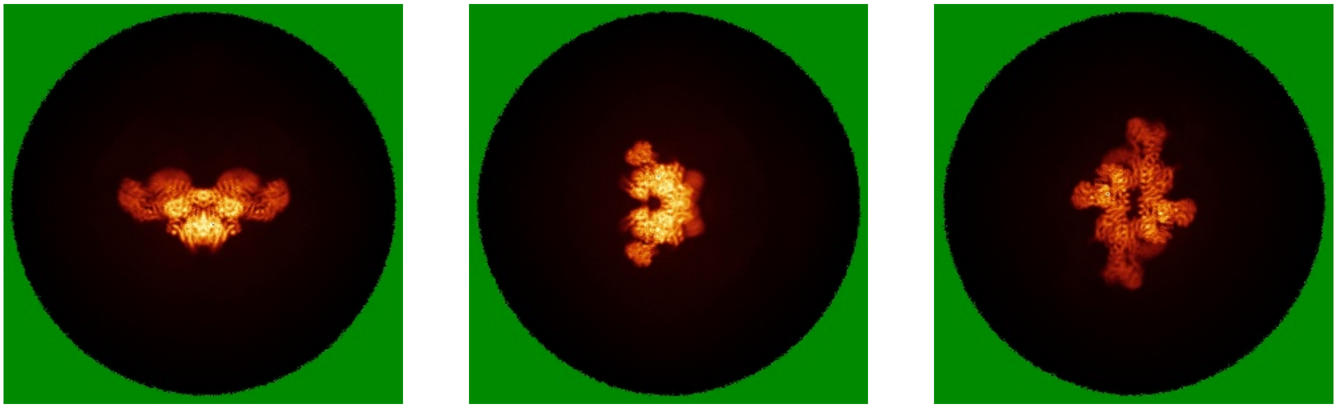


X Index: 273 Y Index: 257 Z Index: 257

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

6.4 Orthogonal standard-deviation projections (False-color)

6.4.1 Primary map



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

6.5.1 Primary map

X

Y

Z

The images above show the 3D surface view of the map at the recommended contour level 8.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

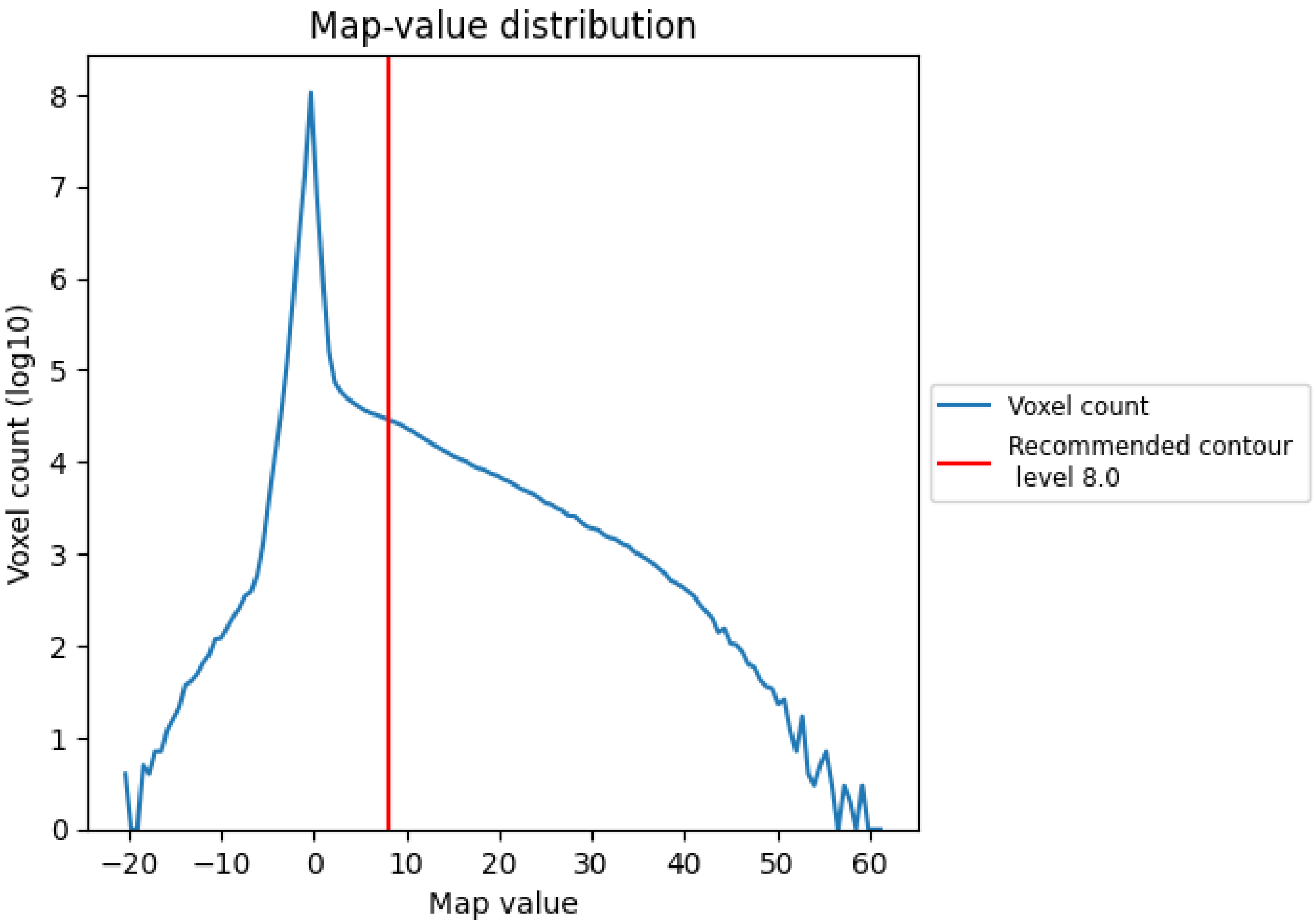
6.6 Mask visualisation

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

7 Map analysis ⓘ

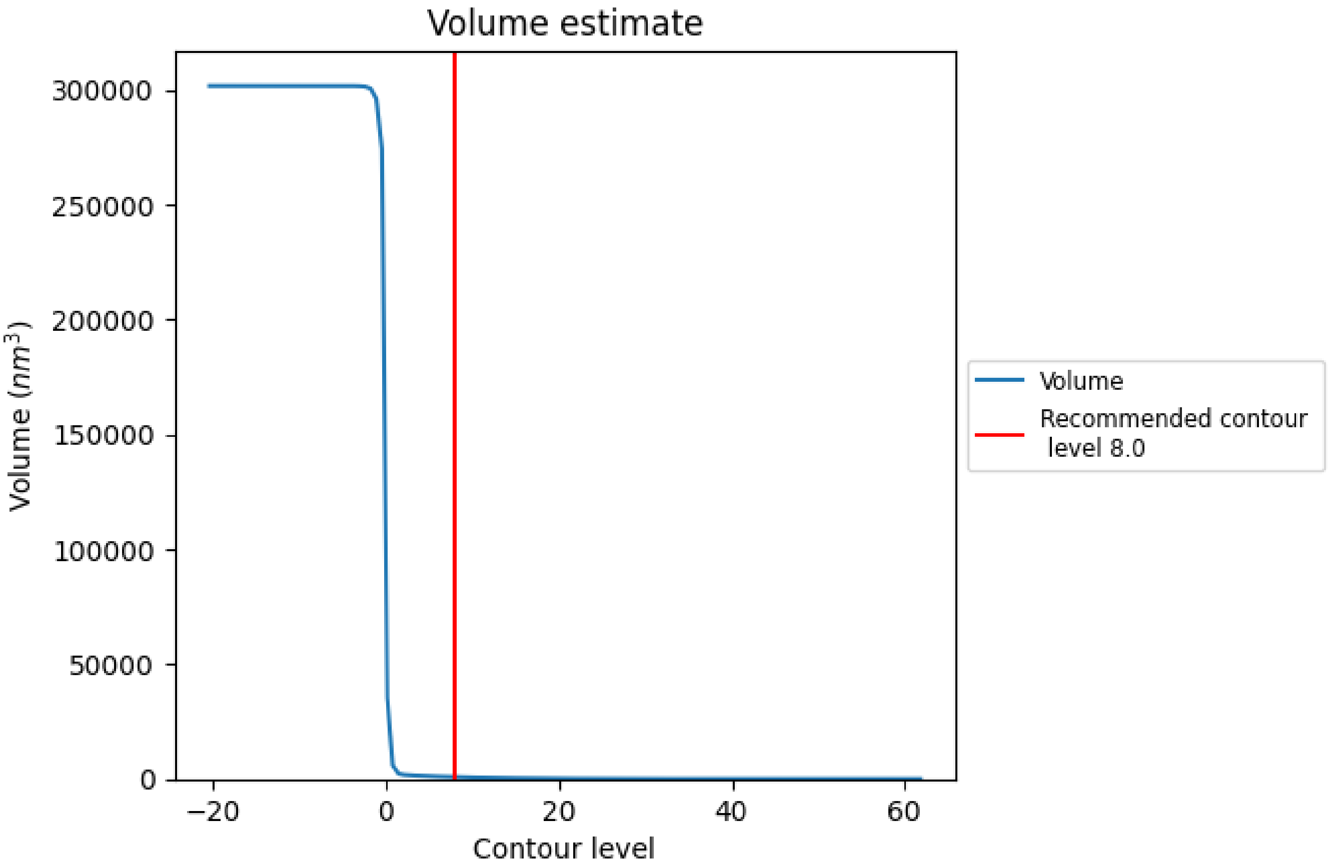
This section contains the results of statistical analysis of the map.

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.

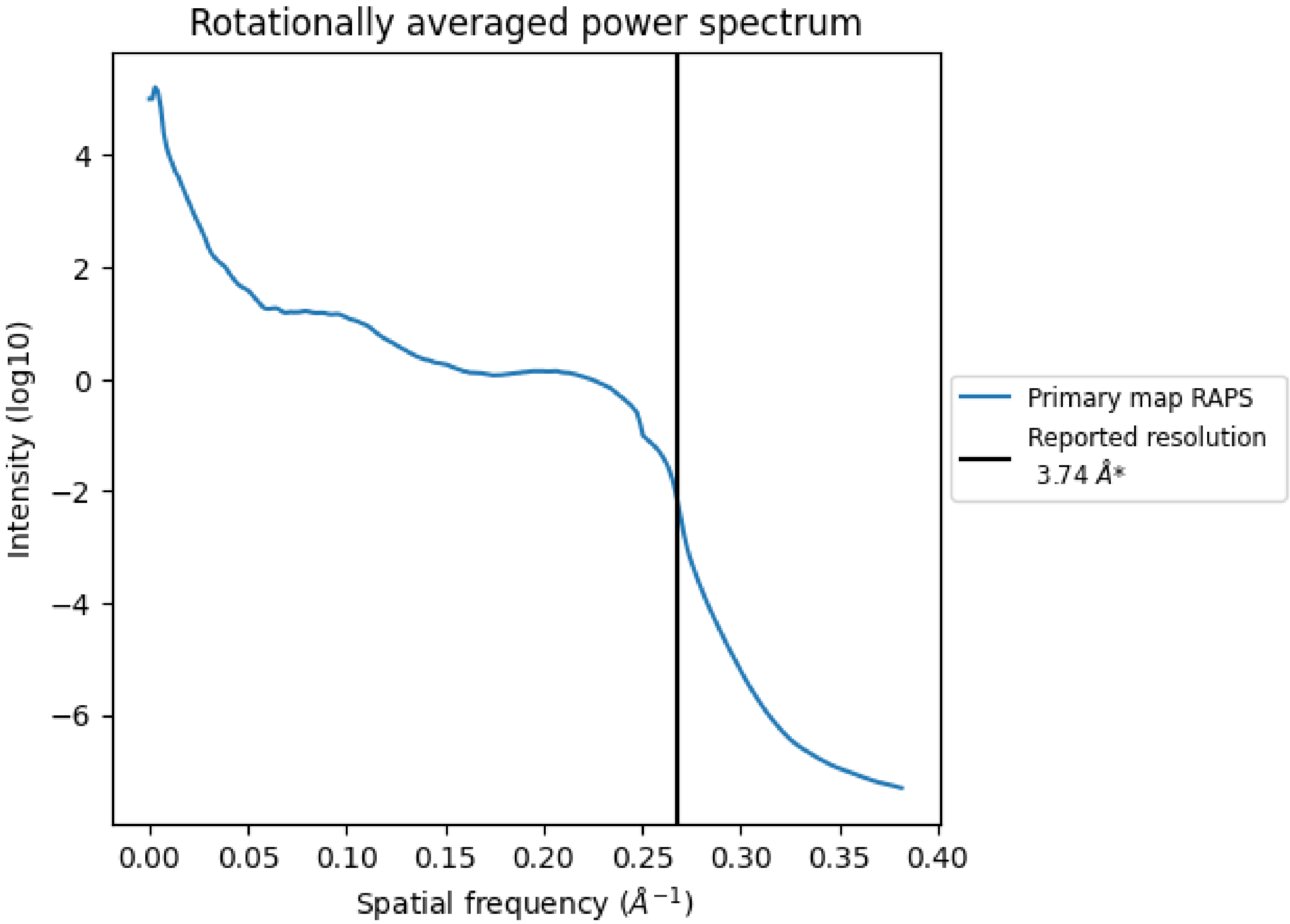
7.2 Volume estimate ⓘ



The volume at the recommended contour level is 847 nm^3; this corresponds to an approximate mass of 765 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

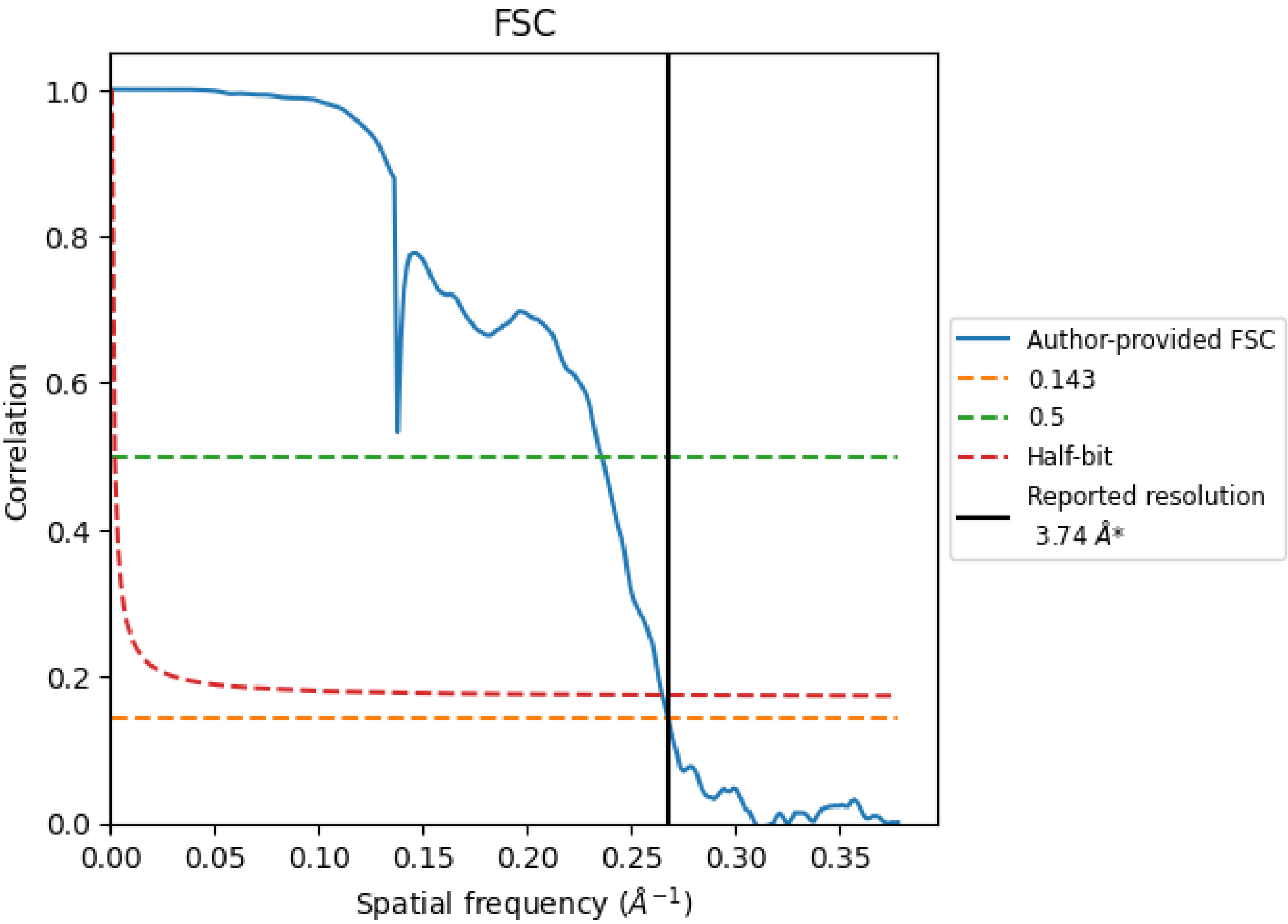


*Reported resolution corresponds to spatial frequency of 0.267 Å^{-1}

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 0.267 $\AA^{-1}$

8.2 Resolution estimates

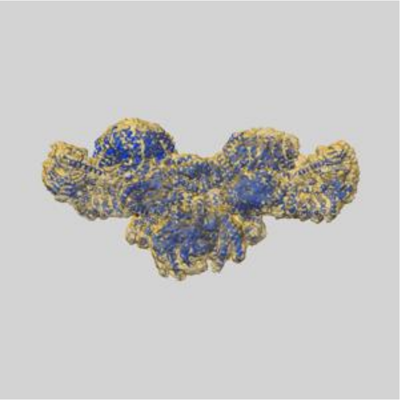
Resolution estimate (Å)	**Estimation criterion (FSC cut-off)**		
	0.143	0.5	Half-bit
Reported by author	3.74	-	-
Author-provided FSC curve	3.73	4.24	3.78
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

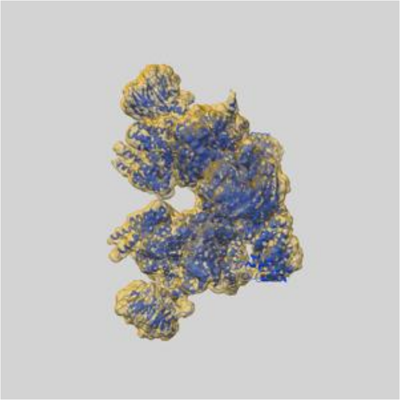
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-50184 and PDB model 9F45. Per-residue inclusion information can be found in section 3 on page 6.

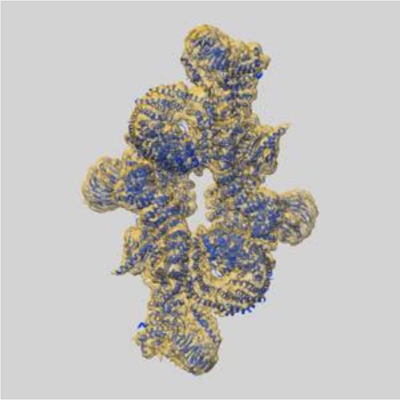
9.1 Map-model overlay



X



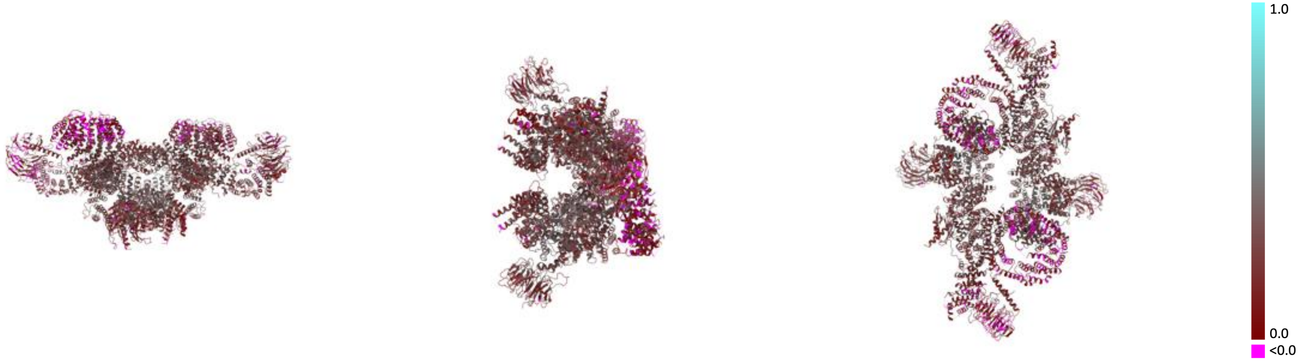
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 8.0 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.

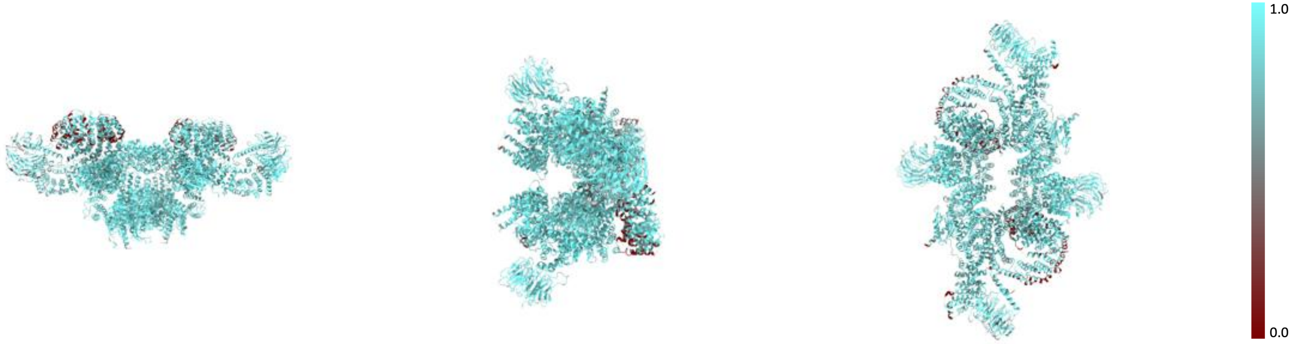
9.2 Q-score mapped to coordinate model (i)



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.

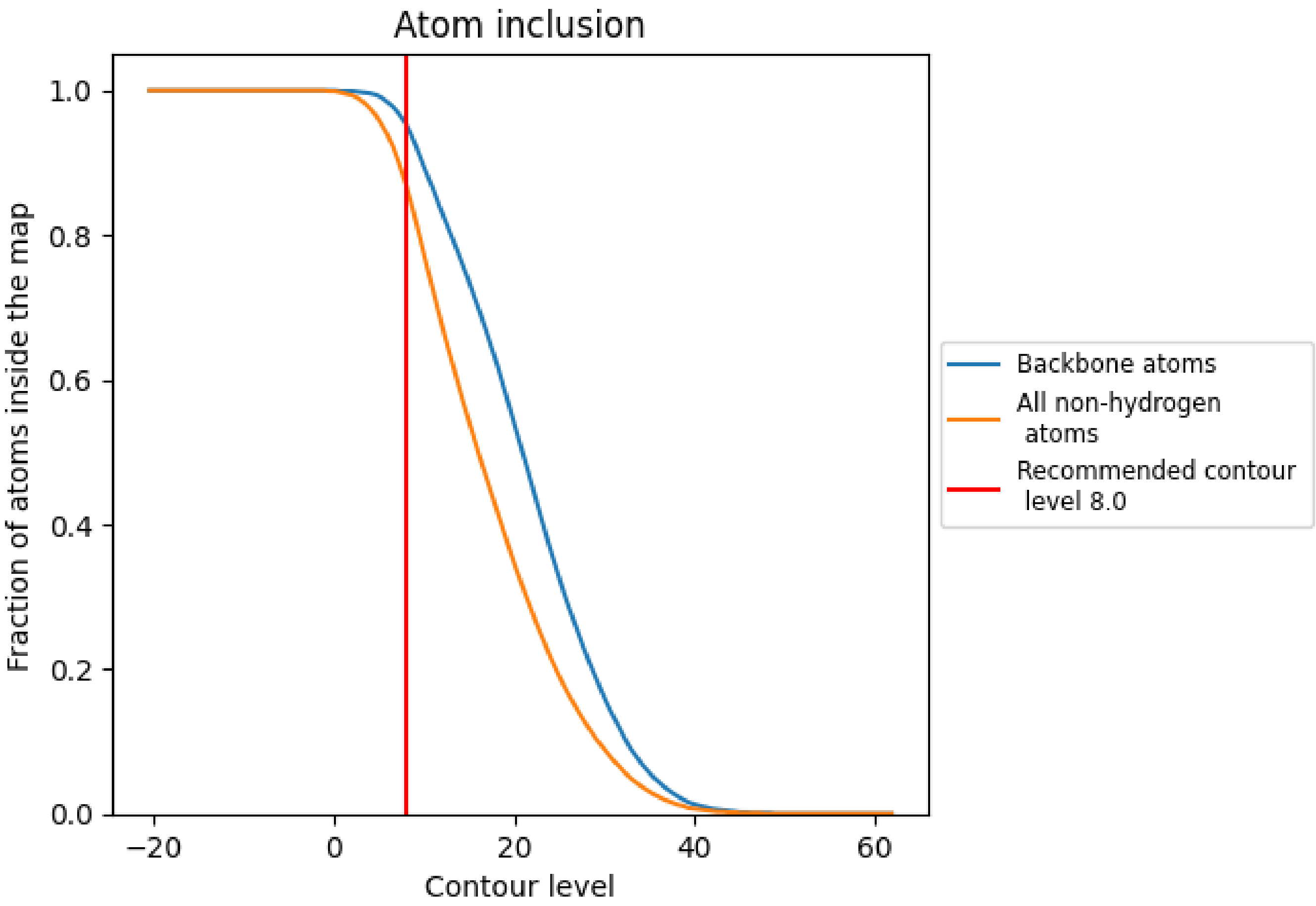
9.3 Atom inclusion mapped to coordinate model (i)



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 (8.0).

9.4 Atom inclusion ⓘ



At the recommended contour level, 95% of all backbone atoms, 87% 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 (8.0) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	🟦 0.8710	🟥 0.2520
A	🟦 0.8750	🟥 0.2690
B	🟦 0.8590	🟥 0.2580
C	🟦 0.9350	🟥 0.2550
D	🟦 0.9110	🟥 0.2170
E	🟦 0.8450	🟥 0.2090
F	🟦 0.8880	🟥 0.2570
G	🟦 0.6540	🟥 0.1090
H	🟦 0.6410	🟥 0.1990