Full wwPDB EM Validation Report ⓘ

Jun 25, 2024 – 10:31 AM JST

PDB ID	:	8JXM
EMDB ID	:	EMD-36705
Title	:	Human 3-methylcrotonyl-CoA carboxylase in BCCP-H2 state with MCoA
Authors	:	Liu, D.S.; Su, J.Y.; Tian, X.Y.
Deposited on	:	2023-06-30
Resolution	:	3.49 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:

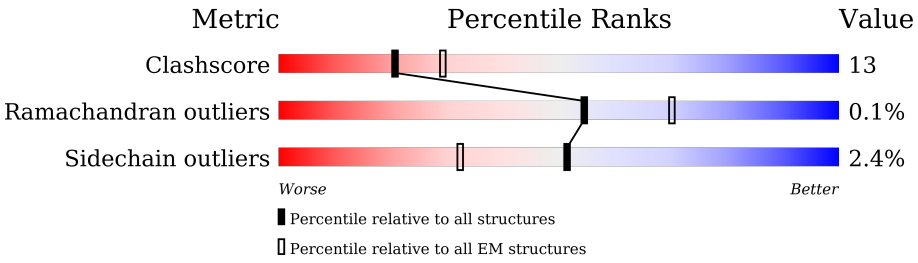
EMDB validation analysis	:	0.0.1.dev92
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (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 3.49 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	563	76% 19% .
1	C	563	73% 19% 8%
1	E	563	77% 17% 7%
1	H	563	72% 19% . 8%
1	J	563	75% 17% 7%
1	K	563	78% 18% .
2	B	725	52% 48% 26% 25%
2	F	725	61% 68% 15% 16%

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Mol	Chain	Length	Quality of chain
2	G	725	56% 68% 16% 16%
2	I	725	61% 67% 15% 16%
2	L	725	52% 49% 25% 25%
2	M	725	56% 68% 15% 16%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	BTI	C	601	-	-	X	-
4	BTI	H	601	-	-	X	-

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 51993 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 Methylcrotonoyl-CoA carboxylase beta chain, mitochondrial.

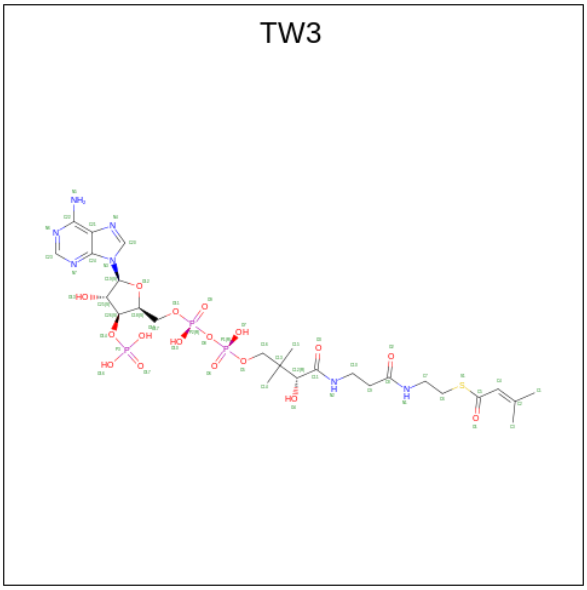
Mol	Chain	Residues	Atoms					AltConf	Trace
1	K	541	Total	C	N	O	S	0	0
			4154	2633	726	776	19		
1	A	541	Total	C	N	O	S	0	0
			4154	2633	726	776	19		
1	C	520	Total	C	N	O	S	0	0
			4006	2538	704	745	19		
1	H	520	Total	C	N	O	S	0	0
			4006	2538	704	745	19		
1	E	524	Total	C	N	O	S	0	0
			4038	2562	708	749	19		
1	J	522	Total	C	N	O	S	0	0
			4025	2553	706	747	19		

- Molecule 2 is a protein called Methylcrotonoyl-CoA carboxylase subunit alpha, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	L	541	Total	C	N	O	S	0	0
			4192	2646	730	790	26		
2	B	541	Total	C	N	O	S	0	0
			4192	2646	730	790	26		
2	F	607	Total	C	N	O	S	0	0
			4703	2961	821	892	29		
2	G	607	Total	C	N	O	S	0	0
			4703	2961	821	892	29		
2	I	607	Total	C	N	O	S	0	0
			4703	2961	821	892	29		
2	M	607	Total	C	N	O	S	0	0
			4703	2961	821	892	29		

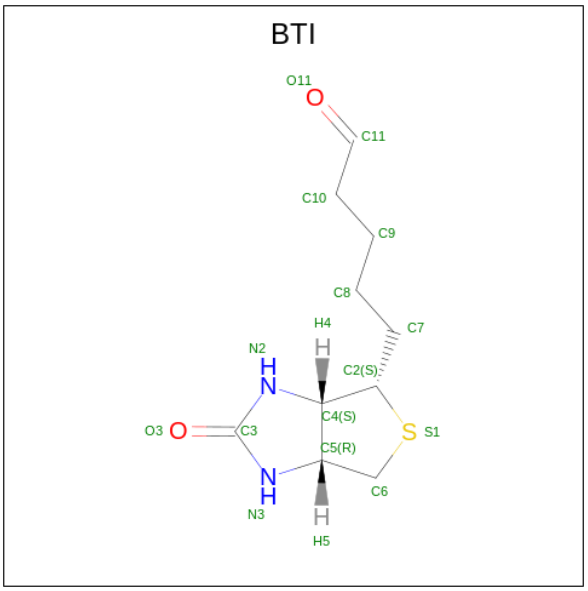
- Molecule 3 is {S}-[2-[3-[[(2 {R})-4-[[[(2 {S},3 {S},4 {S},5 {S})-5-(6-aminopurin-9-yl)-4-oxidanyl-3-phosphonooxy-oxolan-2-yl]methoxy-oxidanyl-phosphoryl]oxy-oxidanyl-phosphoryl]oxy-3,3-dimethyl-2-oxidanyl-butanoyl]amino]propanoylamino]ethyl] 3-methylbut-2-enethioate (three-letter code: TW3) (formula: $C_{26}H_{42}N_7O_{17}P_3S$) (labeled as "Ligand of Interest" by

depositor).



Mol	Chain	Residues	Atoms						AltConf
3	K	1	Total	C	N	O	P	S	0
			54	26	7	17	3	1	
3	A	1	Total	C	N	O	P	S	0
			54	26	7	17	3	1	
3	C	1	Total	C	N	O	P	S	0
			54	26	7	17	3	1	
3	H	1	Total	C	N	O	P	S	0
			54	26	7	17	3	1	
3	E	1	Total	C	N	O	P	S	0
			54	26	7	17	3	1	
3	J	1	Total	C	N	O	P	S	0
			54	26	7	17	3	1	

- Molecule 4 is 5-(HEXAHYDRO-2-OXO-1H-THIENO[3,4-D]IMIDAZOL-6-YL)PENTANAL (three-letter code: BTI) (formula: $C_{10}H_{16}N_2O_2S$).



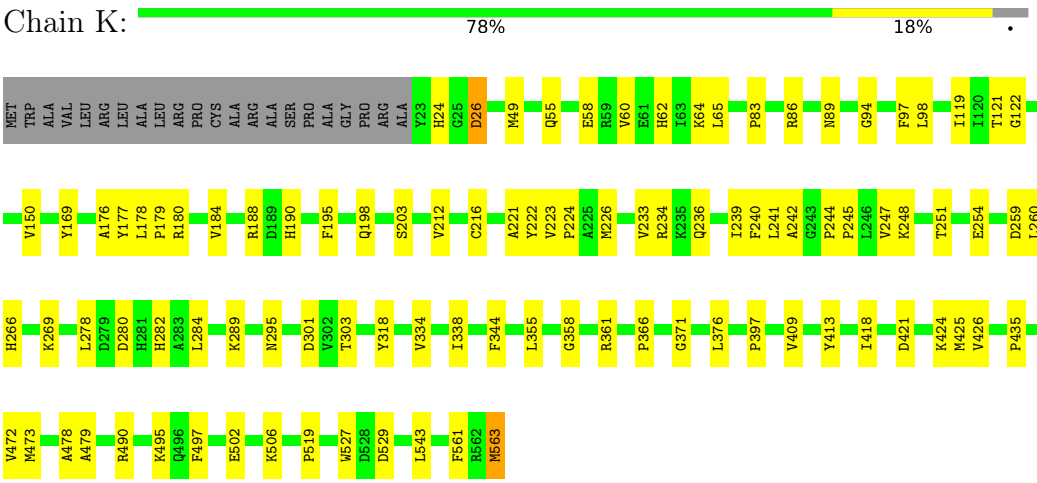
Mol	Chain	Residues	Atoms					AltConf
4	C	1	Total	C	N	O	S	0
			15	10	2	2	1	
4	F	1	Total	C	N	O	S	0
			15	10	2	2	1	
4	G	1	Total	C	N	O	S	0
			15	10	2	2	1	
4	H	1	Total	C	N	O	S	0
			15	10	2	2	1	
4	I	1	Total	C	N	O	S	0
			15	10	2	2	1	
4	M	1	Total	C	N	O	S	0
			15	10	2	2	1	

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.

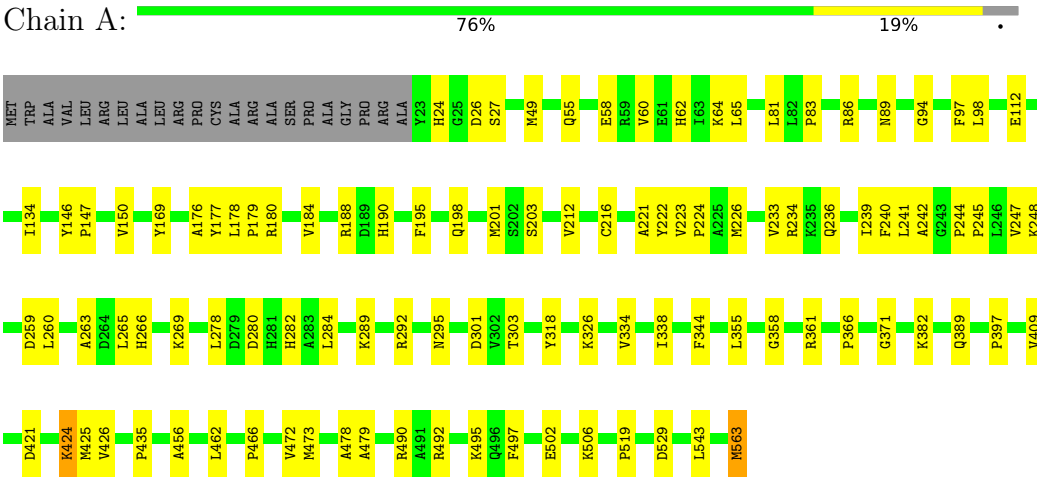
• Molecule 1: Methylcrotonoyl-CoA carboxylase beta chain, mitochondrial

Chain K:



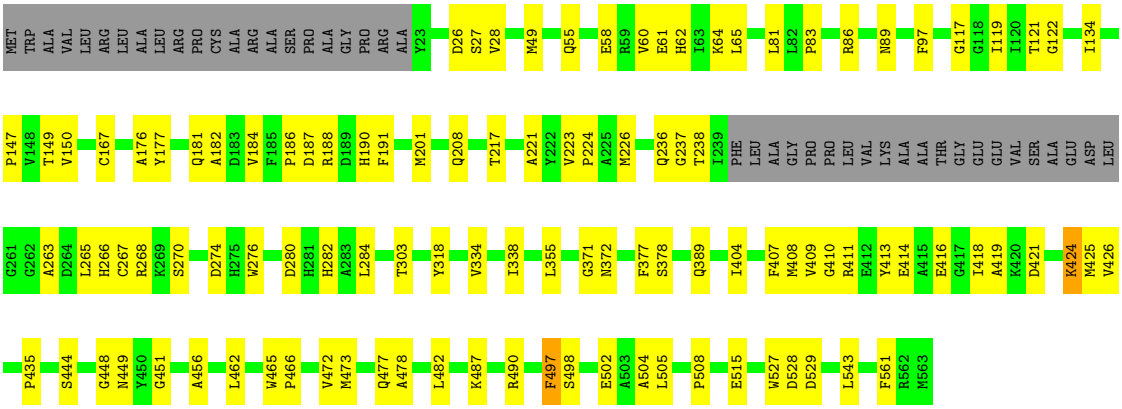
• Molecule 1: Methylcrotonoyl-CoA carboxylase beta chain, mitochondrial

Chain A:



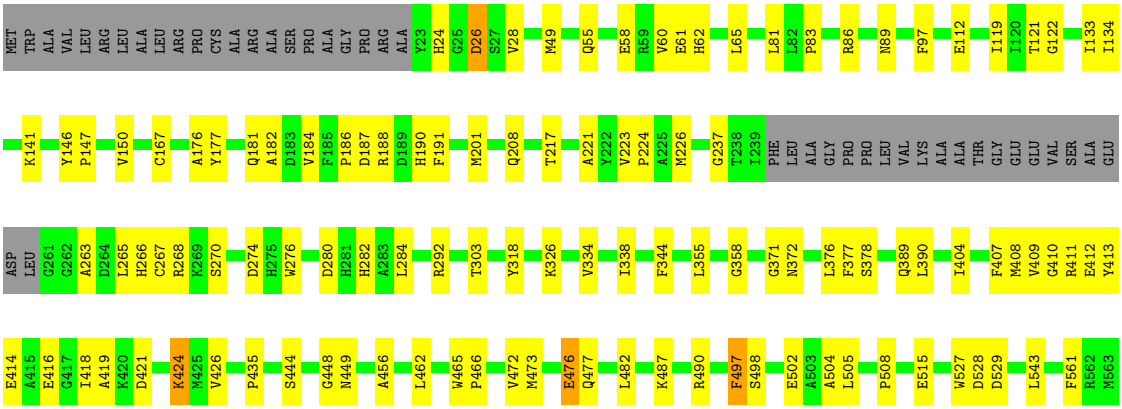
• Molecule 1: Methylcrotonoyl-CoA carboxylase beta chain, mitochondrial

Chain C:



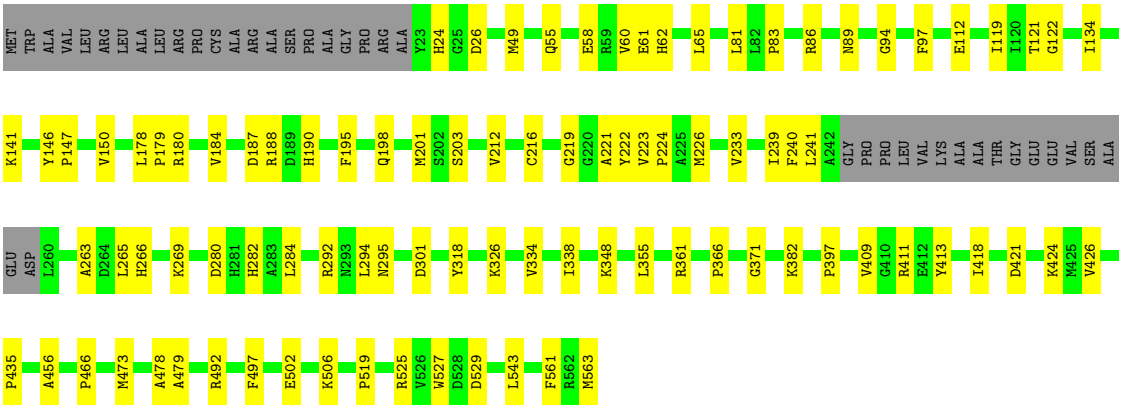
• Molecule 1: Methylcrotonoyl-CoA carboxylase beta chain, mitochondrial

Chain H:



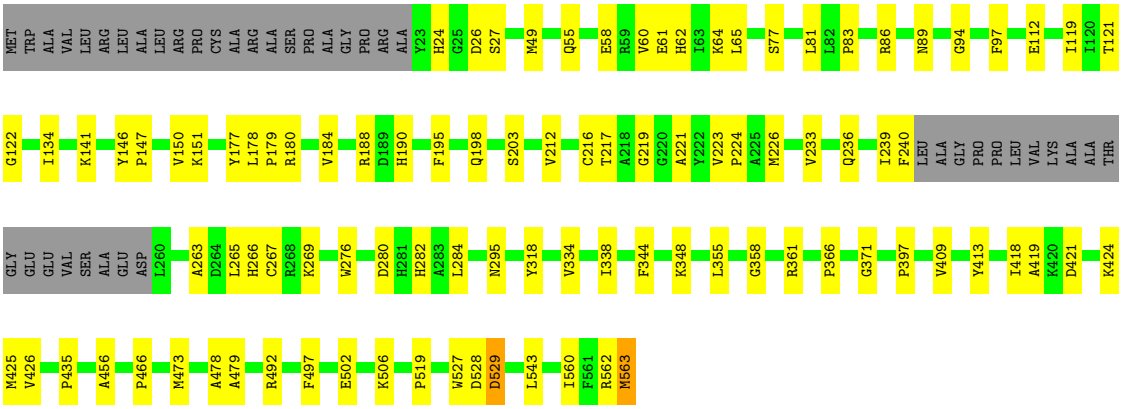
• Molecule 1: Methylcrotonoyl-CoA carboxylase beta chain, mitochondrial

Chain E:



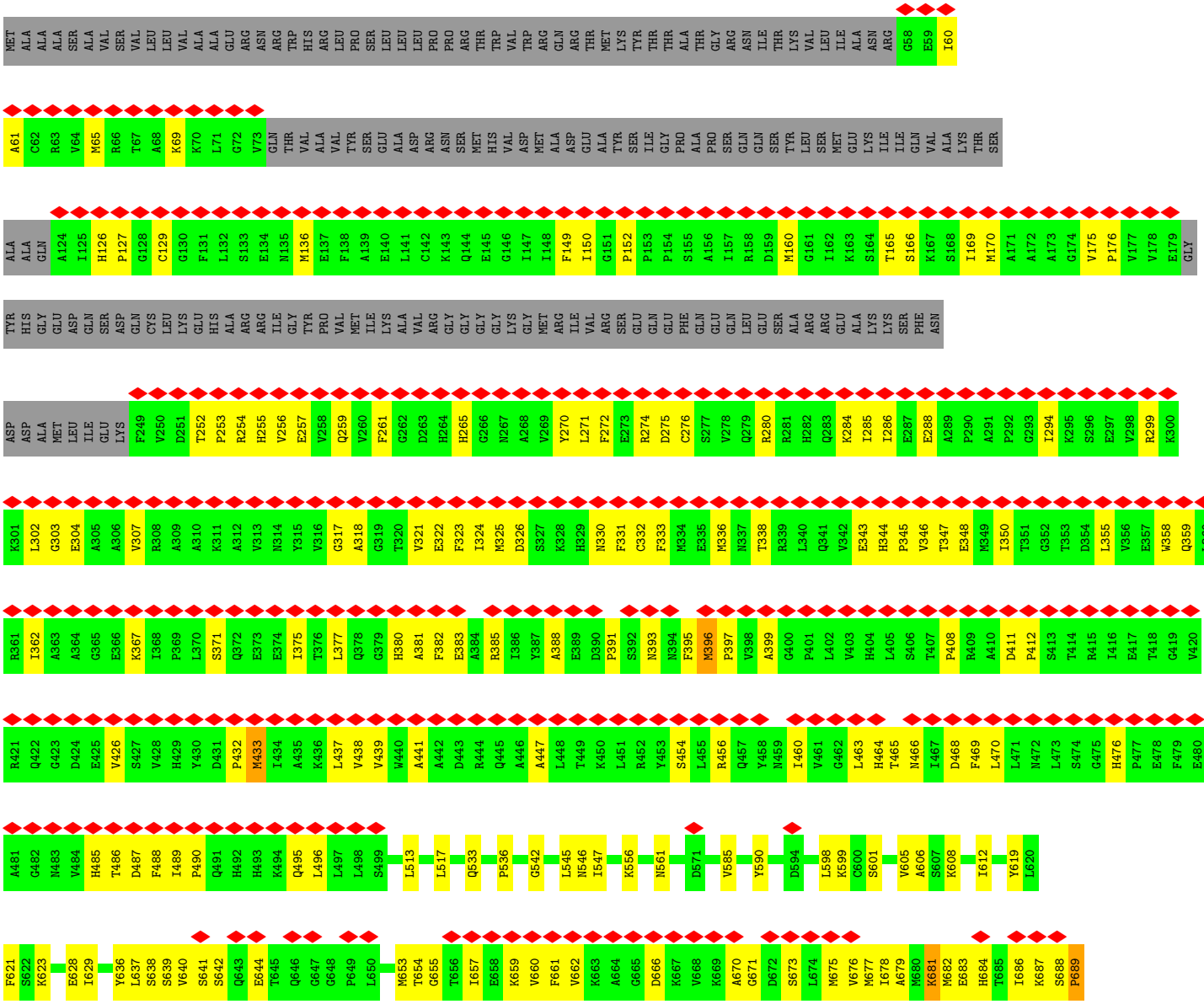
• Molecule 1: Methylcrotonoyl-CoA carboxylase beta chain, mitochondrial

Chain J:



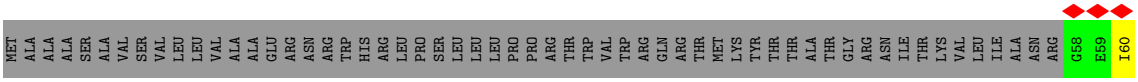
• Molecule 2: Methylcrotonoyl-CoA carboxylase subunit alpha, mitochondrial

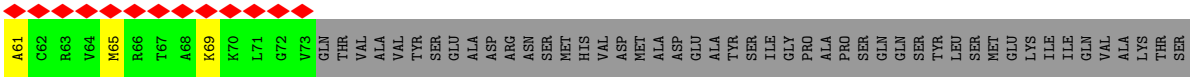
Chain L:

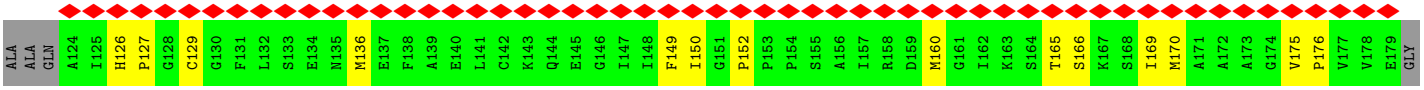


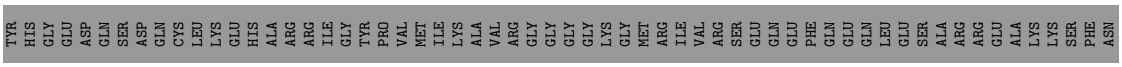
• Molecule 2: Methylcrotonoyl-CoA carboxylase subunit alpha, mitochondrial

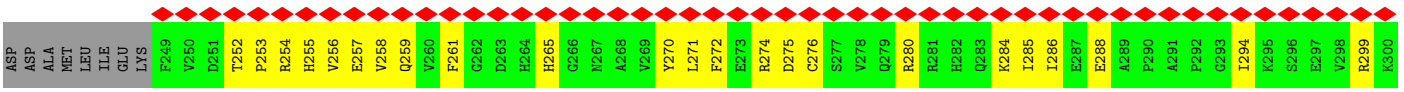
Chain B:

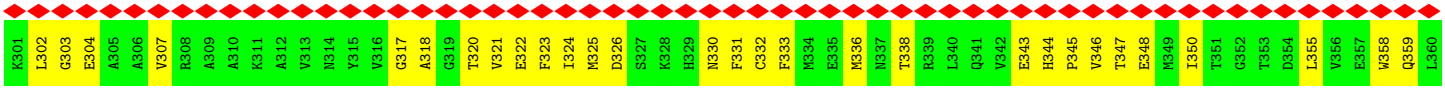


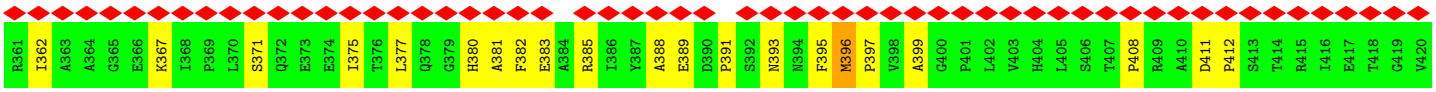


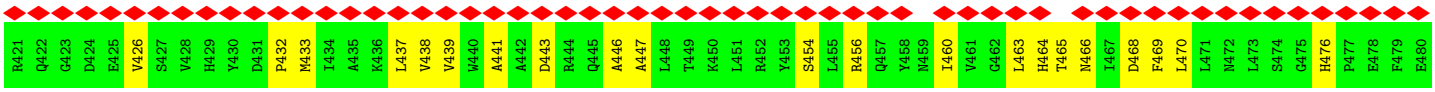


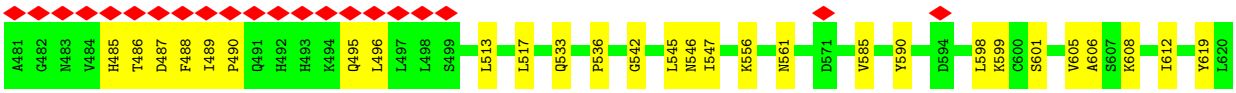


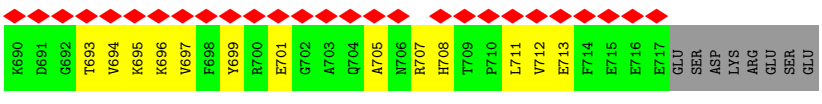






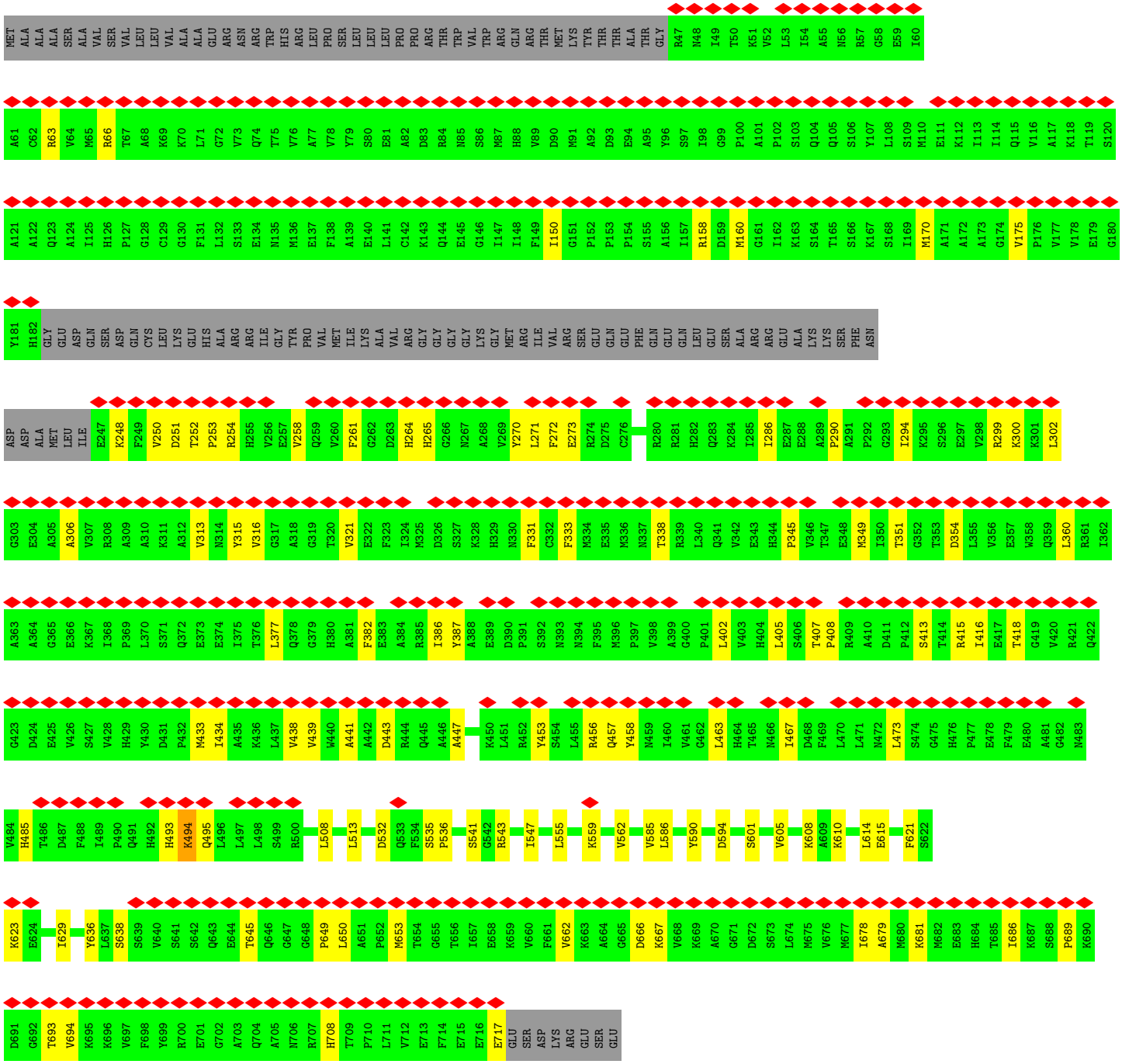






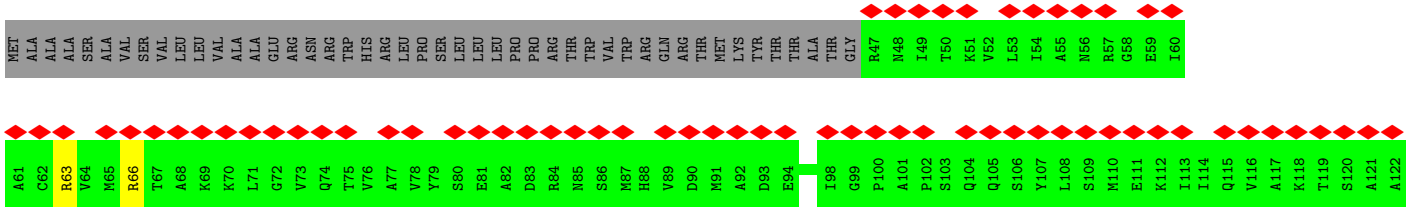
• Molecule 2: Methylcrotonoyl-CoA carboxylase subunit alpha, mitochondrial

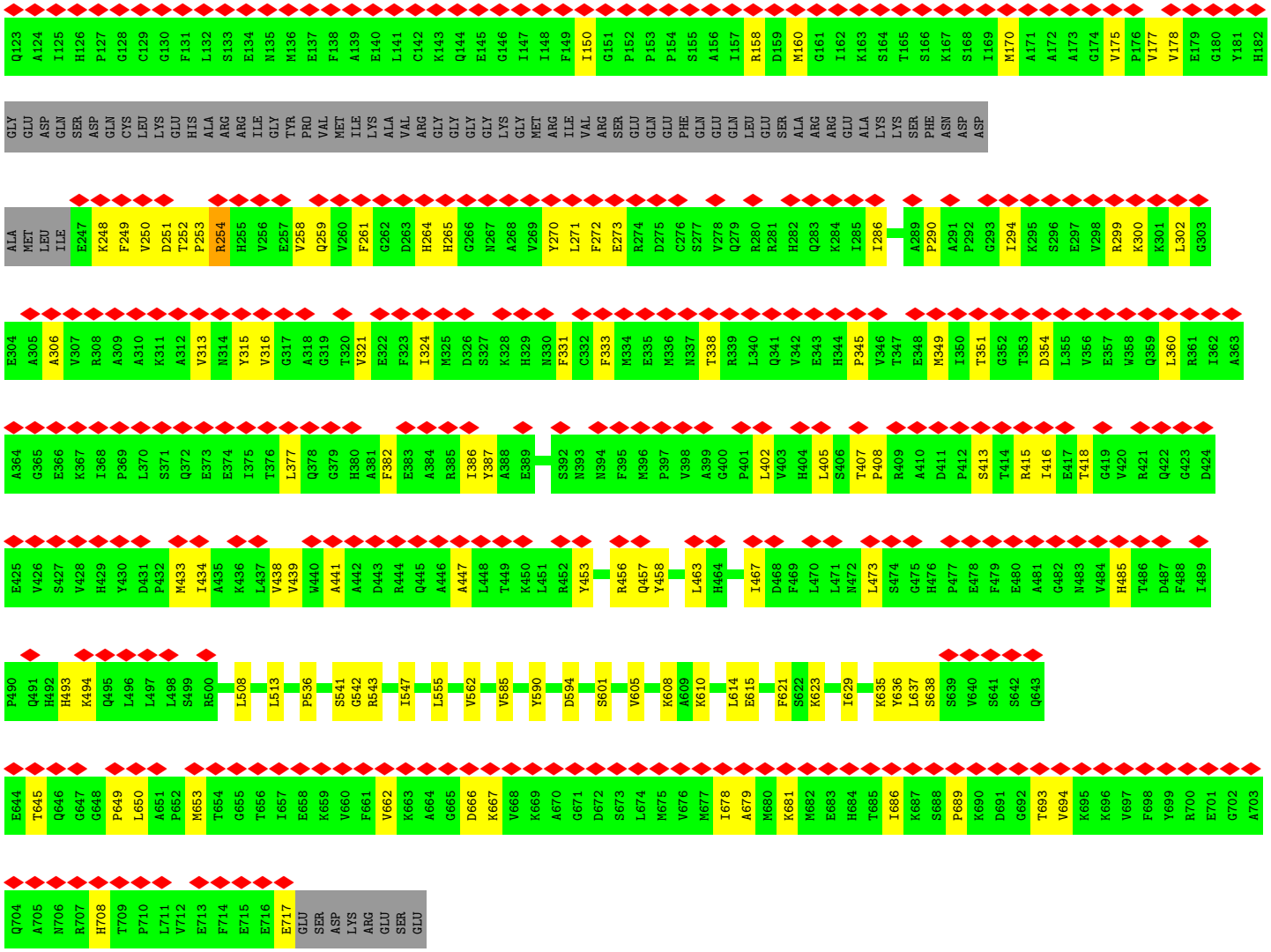
Chain F:



• Molecule 2: Methylcrotonoyl-CoA carboxylase subunit alpha, mitochondrial

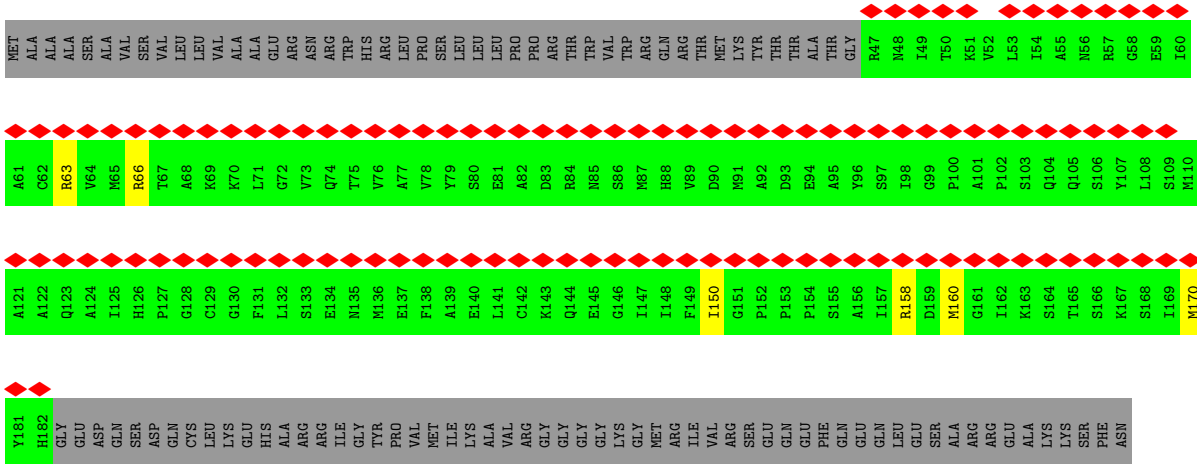
Chain G:

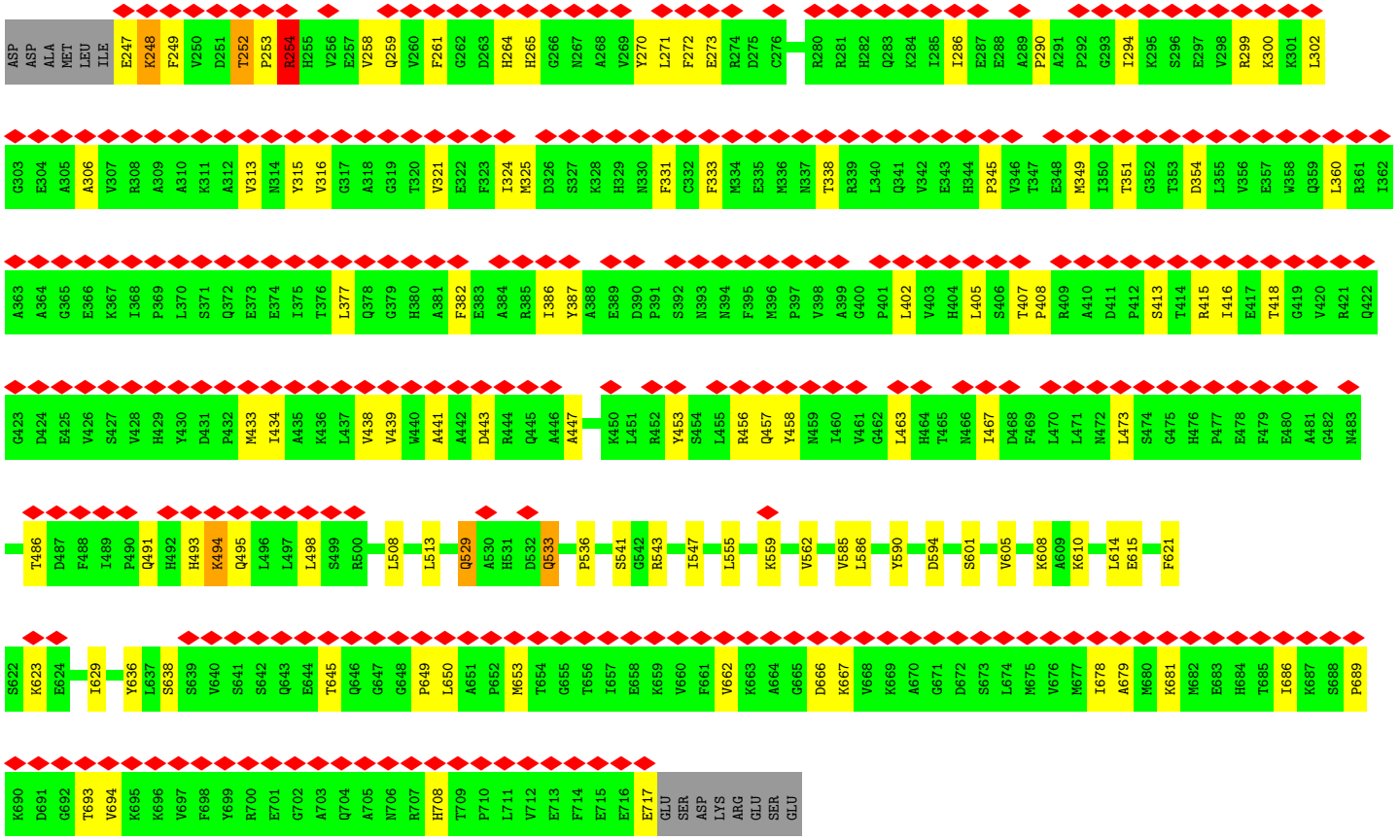




• Molecule 2: Methylcrotonoyl-CoA carboxylase subunit alpha, mitochondrial

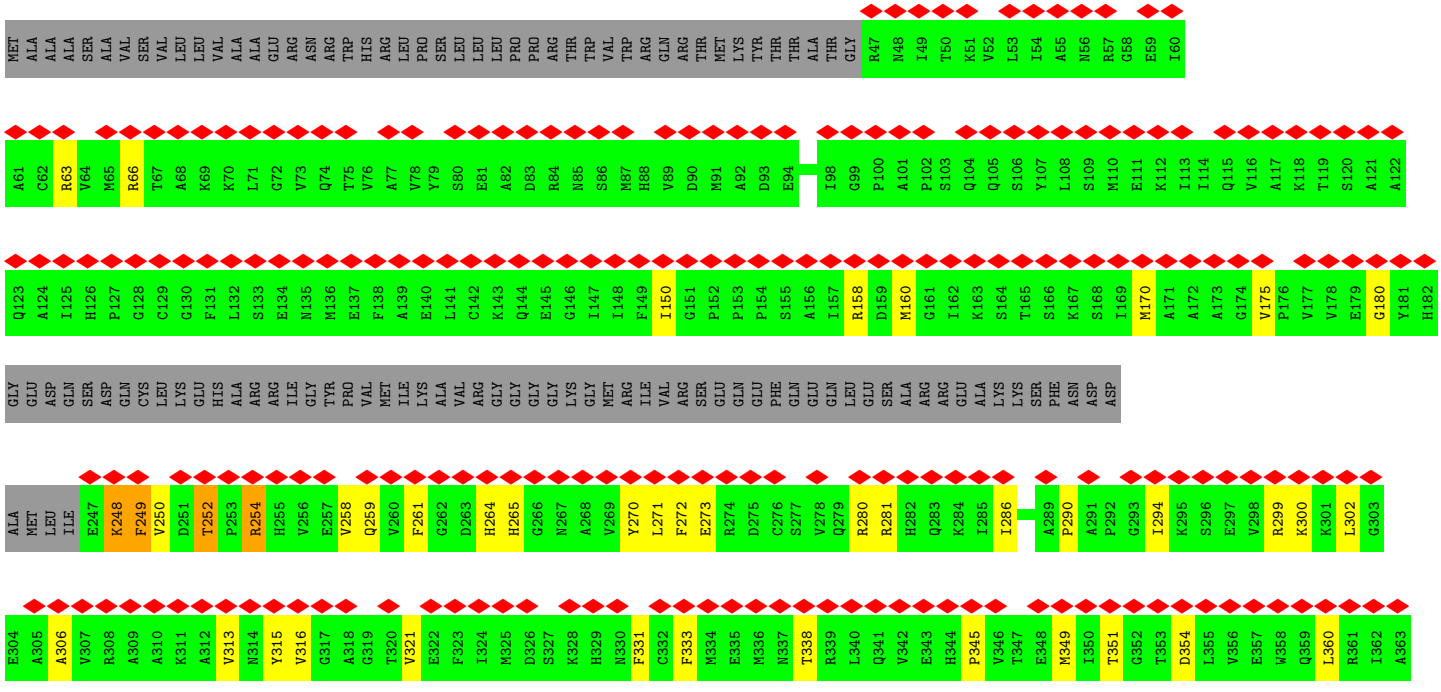
Chain I:

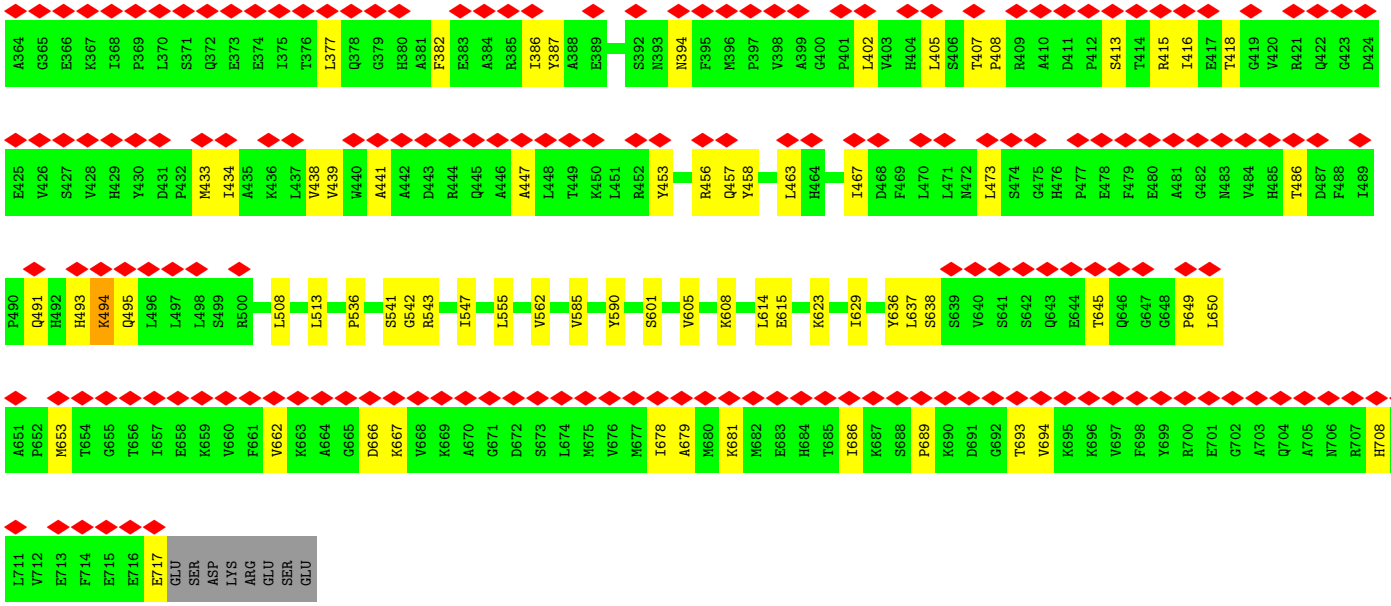




• Molecule 2: Methylcrotonoyl-CoA carboxylase subunit alpha, mitochondrial

Chain M:




A364 G365 E366 K367 I368 P369 L370 S371 Q372 E373 E374 I375 T376 L377 Q378 G379 H380 A381 F382 E383 A384 R385 I386 Y387 A388 E389 S392 N393 N394 F395 M396 P397 V398 A399 G400 P401 L402 V403 H404 L405 S406 T407 P408 R409 A410 D411 P412 S413 T414 R415 I416 E417 T418 G419 V420 R421 Q422 G423 D424
E425 V426 S427 V428 H429 Y430 D431 P432 M433 I434 A435 K436 L437 V438 V439 W440 A441 A442 D443 R444 Q445 A446 A447 L448 T449 K450 L451 R452 Y453 R456 Q457 Y458 L463 H464 I467 D468 F469 L470 L471 N472 L473 S474 G475 H476 P477 E478 F479 E480 A481 G482 N483 V484 H485 T486 D487 F488 I489
P490 Q491 H492 H493 K494 Q495 L496 L497 L498 S499 R500 L508 L513 P536 S541 G542 R543 I547 L555 V562 V585 Y590 S601 V605 K608 L614 E615 K623 I629 Y636 L637 S638 S639 V640 S641 S642 Q643 E644 T645 Q646 G647 G648 P649 L650
A651 P652 M653 T654 G655 T656 I657 E658 K659 V660 P661 V662 K663 A664 G665 D666 K667 V668 K669 A670 G671 D672 S673 L674 M675 V676 M677 I678 A679 M680 K681 M682 E683 H684 T685 I686 K687 S688 P689 K690 D691 G692 T693 V694 K695 K696 V697 F698 Y699 R700 E701 G702 A703 Q704 A705 N706 R707 H708 T709 P710
L711 V712 E713 F714 E715 E716 E717 GLU SER ASP LYS ARG GLU SER GLU

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	44531	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.782	Depositor
Minimum map value	-0.224	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.030	Depositor
Recommended contour level	0.09	Depositor
Map size (Å)	349.2, 349.2, 349.2	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.97, 0.97, 0.97	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: BTI, TW3

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	0.36	1/4239 (0.0%)	0.51	0/5731
1	C	0.41	1/4087 (0.0%)	0.56	0/5521
1	E	0.36	1/4120 (0.0%)	0.51	0/5566
1	H	0.41	1/4087 (0.0%)	0.56	0/5521
1	J	0.36	1/4107 (0.0%)	0.51	0/5548
1	K	0.36	1/4239 (0.0%)	0.51	0/5731
2	B	0.27	0/4273	0.46	0/5771
2	F	0.55	0/4793	0.73	2/6476 (0.0%)
2	G	0.54	0/4793	0.73	2/6476 (0.0%)
2	I	0.55	0/4793	0.73	2/6476 (0.0%)
2	L	0.27	1/4273 (0.0%)	0.46	0/5771
2	M	0.55	0/4793	0.73	2/6476 (0.0%)
All	All	0.43	7/52597 (0.0%)	0.60	8/71064 (0.0%)

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	435	PRO	N-CD	5.26	1.55	1.47
1	K	435	PRO	N-CD	5.25	1.55	1.47
1	H	435	PRO	N-CD	5.22	1.55	1.47
1	C	435	PRO	N-CD	5.21	1.55	1.47
1	E	435	PRO	N-CD	5.21	1.55	1.47
1	J	435	PRO	N-CD	5.21	1.55	1.47
2	L	689	PRO	N-CD	5.04	1.54	1.47

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	F	158	ARG	NE-CZ-NH2	-5.83	117.38	120.30
2	I	158	ARG	NE-CZ-NH2	-5.83	117.38	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	M	158	ARG	NE-CZ-NH2	-5.78	117.41	120.30
2	G	158	ARG	NE-CZ-NH2	-5.78	117.41	120.30
2	I	66	ARG	NE-CZ-NH1	5.52	123.06	120.30
2	M	66	ARG	NE-CZ-NH1	5.46	123.03	120.30
2	F	66	ARG	NE-CZ-NH1	5.45	123.02	120.30
2	G	66	ARG	NE-CZ-NH1	5.38	122.99	120.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4154	0	4130	147	0
1	C	4006	0	3982	133	0
1	E	4038	0	4018	122	0
1	H	4006	0	3982	138	0
1	J	4025	0	4002	124	0
1	K	4154	0	4130	134	0
2	B	4192	0	4199	223	0
2	F	4703	0	4703	88	0
2	G	4703	0	4703	90	0
2	I	4703	0	4703	95	0
2	L	4192	0	4199	223	0
2	M	4703	0	4703	91	0
3	A	54	0	0	2	0
3	C	54	0	0	6	0
3	E	54	0	0	4	0
3	H	54	0	0	7	0
3	J	54	0	0	5	0
3	K	54	0	0	2	0
4	C	15	0	16	7	0
4	F	15	0	15	3	0
4	G	15	0	15	3	0
4	H	15	0	16	9	0
4	I	15	0	15	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	M	15	0	15	3	0
All	All	51993	0	51546	1383	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 13.

All (1383) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:278:LEU:HD11	2:B:641:SER:CB	1.30	1.61
1:K:278:LEU:HD11	2:L:641:SER:CB	1.30	1.56
2:F:681:LYS:NZ	4:F:801:BTI:C11	1.71	1.54
2:M:681:LYS:NZ	4:M:801:BTI:C11	1.71	1.53
2:G:681:LYS:NZ	4:G:801:BTI:C11	1.71	1.52
1:A:278:LEU:CD1	2:B:641:SER:HB3	1.38	1.52
1:K:278:LEU:CD1	2:L:641:SER:HB3	1.38	1.49
2:I:681:LYS:NZ	4:I:801:BTI:C11	1.71	1.47
2:B:681:LYS:NZ	4:C:601:BTI:C11	1.81	1.44
2:L:681:LYS:NZ	4:H:601:BTI:C11	1.81	1.42
2:L:681:LYS:NZ	4:H:601:BTI:H11	1.28	1.41
1:E:241:LEU:HD13	1:J:419:ALA:CB	1.53	1.38
2:B:681:LYS:HZ1	4:C:601:BTI:C11	1.33	1.37
2:B:681:LYS:NZ	4:C:601:BTI:H11	0.95	1.26
1:E:241:LEU:HD22	1:J:419:ALA:N	1.50	1.24
1:K:426:VAL:HG11	1:C:226:MET:HE3	1.26	1.17
1:C:217:THR:HG21	3:C:602:TW3:C14	1.74	1.16
1:H:217:THR:HG21	3:H:602:TW3:C14	1.74	1.16
2:B:662:VAL:HG21	2:B:694:VAL:HG11	1.26	1.15
2:B:348:GLU:HG2	2:B:355:LEU:HD13	1.15	1.14
1:A:226:MET:HE1	1:H:426:VAL:HG11	1.31	1.12
2:L:662:VAL:HG21	2:L:694:VAL:HG11	1.26	1.12
1:A:426:VAL:CG1	1:H:226:MET:HE1	1.79	1.12
1:E:426:VAL:HG11	1:J:226:MET:HE1	1.24	1.12
1:E:226:MET:HE1	1:J:426:VAL:HG11	1.23	1.12
2:L:348:GLU:HG2	2:L:355:LEU:HD13	1.15	1.11
1:A:426:VAL:HG11	1:H:226:MET:HE1	1.17	1.09
1:E:241:LEU:HD13	1:J:419:ALA:HB2	1.16	1.08
1:H:217:THR:CG2	3:H:602:TW3:C14	2.32	1.07
1:A:247:VAL:HG22	1:H:409:VAL:CG1	1.84	1.07
1:K:247:VAL:HG22	1:C:409:VAL:CG1	1.84	1.07
1:C:217:THR:CG2	3:C:602:TW3:C14	2.32	1.07

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:272:PHE:CE1	2:L:377:LEU:HD23	1.89	1.06
2:B:272:PHE:CE1	2:B:377:LEU:HD23	1.89	1.06
2:L:681:LYS:HZ1	4:H:601:BTI:C11	1.53	1.06
1:E:426:VAL:HG11	1:J:226:MET:CE	1.87	1.05
1:K:241:LEU:HD13	1:C:419:ALA:HB2	1.39	1.05
1:A:241:LEU:HD13	1:H:419:ALA:HB2	1.39	1.04
1:K:247:VAL:HG22	1:C:409:VAL:HG12	1.38	1.02
1:A:241:LEU:HD13	1:H:419:ALA:CB	1.89	1.02
1:E:226:MET:CE	1:J:426:VAL:HG11	1.87	1.02
1:E:241:LEU:CD1	1:J:419:ALA:HB2	1.88	1.02
1:A:247:VAL:HG22	1:H:409:VAL:HG12	1.38	1.00
1:K:241:LEU:HD13	1:C:419:ALA:CB	1.90	1.00
2:L:276:CYS:SG	2:L:284:LYS:HG2	2.02	1.00
2:B:276:CYS:SG	2:B:284:LYS:HG2	2.02	1.00
1:K:426:VAL:CG1	1:C:226:MET:CE	2.40	0.99
1:A:226:MET:CE	1:H:426:VAL:HG11	1.92	0.99
1:E:241:LEU:HD22	1:J:419:ALA:CA	1.93	0.99
2:G:636:TYR:CB	1:J:282:HIS:CD2	2.47	0.98
1:A:426:VAL:CG1	1:H:226:MET:CE	2.41	0.97
2:M:636:TYR:CB	1:E:282:HIS:CD2	2.47	0.97
1:E:241:LEU:HD13	1:J:419:ALA:HB1	1.46	0.97
2:L:681:LYS:HZ2	4:H:601:BTI:C11	1.58	0.97
1:K:426:VAL:CG1	1:C:226:MET:HE3	1.94	0.96
2:B:411:ASP:CG	2:B:412:PRO:HD2	1.87	0.95
2:L:411:ASP:CG	2:L:412:PRO:HD2	1.87	0.94
2:B:304:GLU:O	2:B:307:VAL:HG12	1.68	0.93
2:L:304:GLU:O	2:L:307:VAL:HG12	1.68	0.93
2:B:681:LYS:HZ2	4:C:601:BTI:H11	1.30	0.93
1:E:241:LEU:CD1	1:J:419:ALA:CB	2.45	0.92
1:E:226:MET:HE1	1:J:426:VAL:CG1	1.99	0.91
1:E:426:VAL:CG1	1:J:226:MET:CE	2.49	0.91
1:E:426:VAL:CG1	1:J:226:MET:HE1	2.01	0.91
1:H:282:HIS:CD2	2:I:636:TYR:CB	2.54	0.91
2:G:636:TYR:HB2	1:J:282:HIS:CD2	2.06	0.91
2:M:170:MET:HG3	2:M:333:PHE:CZ	2.07	0.91
2:F:681:LYS:HZ2	4:F:801:BTI:C11	1.63	0.90
2:G:170:MET:HG3	2:G:333:PHE:CZ	2.06	0.90
2:F:170:MET:HG3	2:F:333:PHE:CZ	2.06	0.90
1:H:201:MET:HE1	1:H:208:GLN:HE22	1.34	0.90
1:C:282:HIS:CD2	2:F:636:TYR:CB	2.54	0.90
2:M:636:TYR:HB2	1:E:282:HIS:CD2	2.06	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:226:MET:CE	1:J:426:VAL:CG1	2.49	0.89
2:L:411:ASP:OD1	2:L:412:PRO:HD2	1.73	0.89
2:I:170:MET:HG3	2:I:333:PHE:CZ	2.06	0.89
1:A:239:ILE:HB	1:A:266:HIS:CE1	2.08	0.89
2:I:681:LYS:HZ2	4:I:801:BTI:C11	1.56	0.88
1:J:265:LEU:CD2	1:J:266:HIS:CD2	2.56	0.88
1:K:426:VAL:HG11	1:C:226:MET:CE	2.02	0.88
1:K:147:PRO:O	1:K:150:VAL:HG12	1.73	0.88
1:A:147:PRO:O	1:A:150:VAL:HG12	1.73	0.88
1:K:265:LEU:CD2	1:K:266:HIS:CD2	2.56	0.88
1:A:265:LEU:CD2	1:A:266:HIS:CD2	2.56	0.88
1:J:147:PRO:O	1:J:150:VAL:HG12	1.73	0.88
2:B:411:ASP:OD1	2:B:412:PRO:HD2	1.73	0.88
1:E:265:LEU:CD2	1:E:266:HIS:CD2	2.56	0.88
2:I:387:TYR:CE1	2:I:433:MET:HG2	2.09	0.88
1:H:282:HIS:CD2	2:I:636:TYR:HB2	2.09	0.88
1:E:239:ILE:HB	1:E:266:HIS:CE1	2.08	0.88
2:M:387:TYR:CE1	2:M:433:MET:HG2	2.09	0.87
2:G:681:LYS:HZ2	4:G:801:BTI:C11	1.56	0.87
2:M:681:LYS:HZ2	4:M:801:BTI:C11	1.86	0.87
1:J:239:ILE:HB	1:J:266:HIS:CE1	2.08	0.87
1:K:239:ILE:HB	1:K:266:HIS:CE1	2.08	0.87
1:H:147:PRO:O	1:H:150:VAL:HG12	1.73	0.87
1:E:147:PRO:O	1:E:150:VAL:HG12	1.73	0.87
2:G:387:TYR:CE1	2:G:433:MET:HG2	2.09	0.87
2:G:636:TYR:CG	1:J:282:HIS:CD2	2.63	0.87
2:M:636:TYR:CG	1:E:282:HIS:CD2	2.63	0.87
1:J:265:LEU:CD2	1:J:266:HIS:HD2	1.88	0.87
1:K:265:LEU:CD2	1:K:266:HIS:HD2	1.88	0.87
2:F:387:TYR:CE1	2:F:433:MET:HG2	2.09	0.87
2:B:675:MET:CE	2:B:711:LEU:HB3	2.04	0.86
1:C:147:PRO:O	1:C:150:VAL:HG12	1.73	0.86
1:E:265:LEU:CD2	1:E:266:HIS:HD2	1.88	0.86
1:C:282:HIS:CD2	2:F:636:TYR:HB2	2.09	0.86
2:I:306:ALA:HB1	2:I:321:VAL:HG21	1.57	0.86
1:C:201:MET:HE1	1:C:208:GLN:HE22	1.38	0.86
2:F:253:PRO:HB2	2:F:485:HIS:HB2	1.57	0.86
2:G:306:ALA:HB1	2:G:321:VAL:HG21	1.57	0.86
2:L:675:MET:CE	2:L:711:LEU:HB3	2.04	0.86
2:F:306:ALA:HB1	2:F:321:VAL:HG21	1.57	0.86
1:A:265:LEU:CD2	1:A:266:HIS:HD2	1.88	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:377:LEU:O	2:B:377:LEU:HD12	1.77	0.85
1:A:426:VAL:HG11	1:H:226:MET:CE	2.02	0.85
2:B:662:VAL:CG2	2:B:694:VAL:HG21	2.06	0.85
1:A:226:MET:HE1	1:H:426:VAL:CG1	2.06	0.85
2:B:252:THR:HB	2:B:326:ASP:HB3	1.58	0.85
2:L:662:VAL:CG2	2:L:694:VAL:HG21	2.07	0.84
1:A:242:ALA:HB3	1:H:409:VAL:HG11	1.59	0.84
1:K:242:ALA:HB3	1:C:409:VAL:CG1	2.08	0.84
1:J:265:LEU:HD23	1:J:266:HIS:HD2	1.43	0.84
1:A:226:MET:CE	1:H:426:VAL:CG1	2.55	0.83
2:M:306:ALA:HB1	2:M:321:VAL:HG21	1.57	0.83
1:K:426:VAL:CG1	1:C:226:MET:HE1	2.07	0.83
2:L:377:LEU:O	2:L:377:LEU:HD12	1.77	0.83
2:L:252:THR:HB	2:L:326:ASP:HB3	1.58	0.83
2:L:662:VAL:HG22	2:L:694:VAL:HG21	1.60	0.83
1:A:242:ALA:HB3	1:H:409:VAL:CG1	2.08	0.83
1:A:265:LEU:HD23	1:A:266:HIS:HD2	1.43	0.83
1:K:242:ALA:HB3	1:C:409:VAL:HG11	1.59	0.83
1:K:265:LEU:HD23	1:K:266:HIS:HD2	1.43	0.82
1:A:178:LEU:HD12	1:H:482:LEU:CD2	2.09	0.82
2:B:675:MET:HE1	2:B:711:LEU:HB3	1.60	0.82
2:B:681:LYS:HZ3	4:C:601:BTI:H11	1.44	0.82
2:M:636:TYR:CG	1:E:282:HIS:HD2	1.97	0.82
1:K:178:LEU:HD12	1:C:482:LEU:CD2	2.08	0.82
2:B:662:VAL:HG22	2:B:694:VAL:HG21	1.60	0.82
1:K:426:VAL:HG12	1:C:226:MET:HE1	1.62	0.81
1:C:404:ILE:CD1	1:C:448:GLY:C	2.49	0.81
1:H:404:ILE:CD1	1:H:448:GLY:C	2.48	0.81
2:L:681:LYS:HZ1	4:H:601:BTI:H11	0.92	0.81
2:G:636:TYR:CG	1:J:282:HIS:HD2	1.97	0.81
1:E:265:LEU:HD23	1:E:266:HIS:HD2	1.43	0.80
1:A:382:LYS:HG2	1:A:424:LYS:NZ	1.95	0.80
1:H:372:ASN:OD1	1:H:404:ILE:CG2	2.30	0.80
1:C:372:ASN:OD1	1:C:404:ILE:CG2	2.30	0.80
1:K:278:LEU:CG	2:L:641:SER:HB3	2.12	0.80
1:E:241:LEU:CD2	1:J:419:ALA:N	2.41	0.80
2:L:675:MET:HE1	2:L:711:LEU:HB3	1.63	0.80
2:I:681:LYS:NZ	4:I:801:BTI:C10	2.45	0.79
1:A:282:HIS:CD2	2:B:636:TYR:CB	2.66	0.79
2:B:681:LYS:HZ2	4:C:601:BTI:C11	1.85	0.79
1:J:265:LEU:HD23	1:J:266:HIS:CD2	2.18	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:681:LYS:NZ	4:G:801:BTI:C10	2.45	0.79
2:F:681:LYS:NZ	4:F:801:BTI:C10	2.45	0.79
2:M:175:VAL:HG12	2:M:333:PHE:HB2	1.65	0.79
2:M:681:LYS:NZ	4:M:801:BTI:C10	2.45	0.79
1:A:278:LEU:CG	2:B:641:SER:HB3	2.12	0.78
1:K:278:LEU:HD11	2:L:641:SER:OG	1.83	0.78
1:K:282:HIS:CD2	2:L:636:TYR:CB	2.66	0.78
1:A:278:LEU:HD11	2:B:641:SER:OG	1.83	0.78
1:C:282:HIS:CD2	2:F:636:TYR:CG	2.72	0.78
1:E:265:LEU:HD23	1:E:266:HIS:CD2	2.18	0.78
2:M:175:VAL:CG1	2:M:333:PHE:HB2	2.13	0.78
1:A:426:VAL:HG12	1:H:226:MET:CE	2.14	0.78
2:B:276:CYS:SG	2:B:284:LYS:CG	2.71	0.78
2:L:662:VAL:CG2	2:L:694:VAL:HG11	2.11	0.77
2:I:175:VAL:CG1	2:I:333:PHE:HB2	2.13	0.77
1:K:265:LEU:HD23	1:K:266:HIS:CD2	2.18	0.77
1:H:282:HIS:CD2	2:I:636:TYR:CG	2.72	0.77
2:L:276:CYS:SG	2:L:284:LYS:CG	2.71	0.77
1:A:178:LEU:HD12	1:H:482:LEU:HD21	1.66	0.77
2:M:650:LEU:HB3	2:M:708:HIS:HA	1.68	0.76
1:A:563:MET:OXT	1:E:382:LYS:HB3	1.85	0.76
2:I:650:LEU:HB3	2:I:708:HIS:HA	1.67	0.76
1:K:178:LEU:HD12	1:C:482:LEU:HD21	1.65	0.76
2:B:411:ASP:CG	2:B:412:PRO:CD	2.54	0.76
2:L:659:LYS:HA	2:L:701:GLU:HG2	1.67	0.76
1:A:265:LEU:HD23	1:A:266:HIS:CD2	2.18	0.76
2:I:175:VAL:HG12	2:I:333:PHE:HB2	1.65	0.76
2:F:650:LEU:HB3	2:F:708:HIS:HA	1.68	0.76
1:K:426:VAL:HG12	1:C:226:MET:CE	2.13	0.76
2:B:662:VAL:CG2	2:B:694:VAL:HG11	2.11	0.76
1:A:278:LEU:CD1	2:B:641:SER:CB	2.22	0.76
1:A:282:HIS:CD2	2:B:636:TYR:HB2	2.21	0.75
2:G:650:LEU:HB3	2:G:708:HIS:HA	1.68	0.75
2:L:411:ASP:CG	2:L:412:PRO:CD	2.54	0.75
1:J:239:ILE:O	1:J:266:HIS:CE1	2.40	0.75
1:H:217:THR:HG23	3:H:602:TW3:C14	2.15	0.75
1:K:239:ILE:O	1:K:266:HIS:CE1	2.40	0.74
1:C:404:ILE:HD12	1:C:448:GLY:C	2.08	0.74
2:F:457:GLN:HE22	2:F:623:LYS:HG2	1.53	0.74
2:B:259:GLN:HB3	2:B:271:LEU:HB2	1.69	0.74
2:B:411:ASP:OD1	2:B:412:PRO:CD	2.36	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:239:ILE:O	1:E:266:HIS:CE1	2.40	0.74
1:K:282:HIS:CD2	2:L:636:TYR:HB2	2.21	0.74
2:L:411:ASP:OD1	2:L:412:PRO:CD	2.36	0.74
1:A:239:ILE:O	1:A:266:HIS:CE1	2.40	0.74
2:B:275:ASP:HB3	2:B:288:GLU:HG3	1.69	0.74
2:I:457:GLN:HE22	2:I:623:LYS:HG2	1.53	0.74
2:B:659:LYS:HA	2:B:701:GLU:HG2	1.67	0.73
2:M:457:GLN:HE22	2:M:623:LYS:HG2	1.53	0.73
1:E:426:VAL:CG1	1:J:226:MET:HE2	2.18	0.73
1:H:404:ILE:HD12	1:H:448:GLY:C	2.08	0.73
2:G:457:GLN:HE22	2:G:623:LYS:HG2	1.53	0.73
1:C:282:HIS:HD2	2:F:636:TYR:CG	2.07	0.73
2:L:275:ASP:HB3	2:L:288:GLU:HG3	1.69	0.72
2:B:397:PRO:HB3	2:B:432:PRO:HG3	1.71	0.72
1:C:217:THR:HG23	3:C:602:TW3:C14	2.16	0.72
2:L:259:GLN:HB3	2:L:271:LEU:HB2	1.70	0.72
1:E:241:LEU:CG	1:J:419:ALA:HB2	2.19	0.72
2:B:695:LYS:N	2:B:713:GLU:O	2.22	0.72
1:E:241:LEU:CD2	1:J:419:ALA:CA	2.68	0.72
1:H:282:HIS:HD2	2:I:636:TYR:CG	2.07	0.72
2:L:695:LYS:N	2:L:713:GLU:O	2.22	0.71
2:L:397:PRO:HB3	2:L:432:PRO:HG3	1.71	0.71
2:M:387:TYR:CE1	2:M:433:MET:CG	2.74	0.71
1:C:267:CYS:SG	1:C:276:TRP:HD1	2.14	0.70
2:F:387:TYR:CE1	2:F:433:MET:CG	2.74	0.70
2:M:453:TYR:HE1	2:M:623:LYS:HD3	1.56	0.70
1:E:226:MET:HE2	1:J:426:VAL:CG1	2.21	0.70
2:I:387:TYR:CE1	2:I:433:MET:CG	2.74	0.70
1:C:465:TRP:HB3	1:C:466:PRO:HD2	1.74	0.70
1:C:184:VAL:O	1:C:190:HIS:HB3	1.92	0.70
2:F:453:TYR:HE1	2:F:623:LYS:HD3	1.56	0.70
2:G:387:TYR:CE1	2:G:433:MET:CG	2.74	0.70
2:G:453:TYR:HE1	2:G:623:LYS:HD3	1.56	0.70
1:A:247:VAL:HG22	1:H:409:VAL:HG11	1.72	0.69
1:K:278:LEU:CD1	2:L:641:SER:CB	2.22	0.69
1:H:465:TRP:HB3	1:H:466:PRO:HD2	1.74	0.69
1:J:219:GLY:CA	3:J:601:TW3:C1	2.70	0.69
1:A:221:ALA:O	1:A:224:PRO:HD2	1.93	0.69
1:H:184:VAL:O	1:H:190:HIS:HB3	1.92	0.69
2:M:614:LEU:HG	2:M:615:GLU:HG2	1.76	0.68
2:I:453:TYR:HE1	2:I:623:LYS:HD3	1.56	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:221:ALA:O	1:J:224:PRO:HD2	1.93	0.68
1:E:219:GLY:CA	3:E:601:TW3:C1	2.70	0.68
2:G:614:LEU:HG	2:G:615:GLU:HG2	1.75	0.68
1:K:221:ALA:O	1:K:224:PRO:HD2	1.93	0.68
2:I:170:MET:HG3	2:I:333:PHE:CE2	2.29	0.68
2:I:614:LEU:HG	2:I:615:GLU:HG2	1.75	0.67
2:M:170:MET:HG3	2:M:333:PHE:CE2	2.29	0.67
1:E:221:ALA:O	1:E:224:PRO:HD2	1.93	0.67
2:F:614:LEU:HG	2:F:615:GLU:HG2	1.75	0.67
2:F:170:MET:HG3	2:F:333:PHE:CE2	2.29	0.67
2:G:170:MET:HG3	2:G:333:PHE:CE2	2.29	0.67
2:I:662:VAL:HG21	2:I:694:VAL:HG21	1.77	0.67
2:M:662:VAL:HG21	2:M:694:VAL:HG21	1.77	0.67
2:B:323:PHE:HB3	2:B:331:PHE:HB2	1.77	0.67
2:L:681:LYS:HZ2	4:H:601:BTI:H11	1.19	0.66
2:G:662:VAL:HG21	2:G:694:VAL:HG21	1.77	0.66
1:E:421:ASP:HA	1:E:424:LYS:HD2	1.77	0.66
2:B:662:VAL:HG21	2:B:694:VAL:CG1	2.16	0.66
2:F:662:VAL:HG21	2:F:694:VAL:HG21	1.77	0.66
2:B:325:MET:HA	2:B:330:ASN:O	1.96	0.66
1:C:237:GLY:O	1:C:263:ALA:HB2	1.96	0.66
2:L:255:HIS:HD1	2:L:276:CYS:HB3	1.61	0.66
1:E:241:LEU:HB2	1:J:419:ALA:HB2	1.77	0.66
1:K:247:VAL:HG22	1:C:409:VAL:HG11	1.72	0.66
2:M:513:LEU:HD22	2:M:585:VAL:HG12	1.77	0.66
1:A:239:ILE:CB	1:A:266:HIS:CE1	2.79	0.66
2:B:252:THR:HA	2:B:326:ASP:HA	1.78	0.66
2:B:681:LYS:HZ3	4:C:601:BTI:C11	2.02	0.66
1:A:282:HIS:CD2	2:B:636:TYR:CG	2.83	0.66
1:K:147:PRO:O	1:K:150:VAL:CG1	2.45	0.66
1:K:241:LEU:HD13	1:C:419:ALA:HB1	1.78	0.66
2:L:253:PRO:HB2	2:L:486:THR:H	1.61	0.66
1:C:147:PRO:O	1:C:150:VAL:CG1	2.44	0.66
2:F:513:LEU:HD22	2:F:585:VAL:HG12	1.77	0.66
1:H:409:VAL:HG21	4:H:601:BTI:HN3	1.60	0.66
1:E:184:VAL:O	1:E:190:HIS:HB3	1.96	0.66
2:I:150:ILE:HD13	2:I:360:LEU:HD23	1.78	0.65
1:J:147:PRO:O	1:J:150:VAL:CG1	2.45	0.65
1:K:184:VAL:O	1:K:190:HIS:HB3	1.96	0.65
1:K:265:LEU:HD22	1:K:266:HIS:CD2	2.32	0.65
2:L:286:ILE:HD11	2:L:470:LEU:HD22	1.79	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:147:PRO:O	1:H:150:VAL:CG1	2.44	0.65
2:L:323:PHE:HB3	2:L:331:PHE:HB2	1.77	0.65
2:L:325:MET:HA	2:L:330:ASN:O	1.96	0.65
2:B:255:HIS:HD1	2:B:276:CYS:HB3	1.60	0.65
2:B:286:ILE:HD11	2:B:470:LEU:HD22	1.79	0.65
1:E:265:LEU:HD22	1:E:266:HIS:CD2	2.32	0.65
1:A:184:VAL:O	1:A:190:HIS:HB3	1.96	0.65
2:F:150:ILE:HD13	2:F:360:LEU:HD23	1.78	0.65
2:I:513:LEU:HD22	2:I:585:VAL:HG12	1.77	0.65
1:J:239:ILE:CB	1:J:266:HIS:CE1	2.79	0.65
2:L:662:VAL:HG21	2:L:694:VAL:CG1	2.16	0.65
1:J:184:VAL:O	1:J:190:HIS:HB3	1.96	0.65
1:K:239:ILE:CB	1:K:266:HIS:CE1	2.79	0.65
1:C:421:ASP:HA	1:C:424:LYS:HD2	1.78	0.65
2:M:150:ILE:HD13	2:M:360:LEU:HD23	1.78	0.65
2:B:253:PRO:HB2	2:B:486:THR:H	1.61	0.65
1:C:372:ASN:OD1	1:C:404:ILE:HG23	1.96	0.65
2:G:513:LEU:HD22	2:G:585:VAL:HG12	1.77	0.65
1:A:426:VAL:CG1	1:H:226:MET:HE2	2.25	0.65
2:B:304:GLU:O	2:B:307:VAL:CG1	2.44	0.65
2:G:150:ILE:HD13	2:G:360:LEU:HD23	1.78	0.65
1:K:282:HIS:CD2	2:L:636:TYR:CG	2.83	0.64
2:L:304:GLU:O	2:L:307:VAL:CG1	2.44	0.64
1:A:241:LEU:HD13	1:H:419:ALA:HB1	1.76	0.64
1:E:239:ILE:CB	1:E:266:HIS:CE1	2.79	0.64
1:A:226:MET:HE2	1:H:426:VAL:CG1	2.25	0.64
2:L:252:THR:HA	2:L:326:ASP:HA	1.78	0.64
2:M:272:PHE:CD1	2:M:299:ARG:NH2	2.66	0.64
1:J:224:PRO:HG3	1:J:239:ILE:HD11	1.80	0.64
2:F:272:PHE:CD1	2:F:299:ARG:NH2	2.66	0.64
1:H:372:ASN:OD1	1:H:404:ILE:HG23	1.96	0.64
2:L:280:ARG:HB2	2:L:489:ILE:CD1	2.27	0.64
1:C:167:CYS:SG	1:C:201:MET:HE1	2.38	0.64
1:C:201:MET:CE	1:C:208:GLN:HE22	2.09	0.64
1:E:224:PRO:HG3	1:E:239:ILE:HD11	1.80	0.64
1:K:247:VAL:CG2	1:C:409:VAL:CG1	2.72	0.63
1:A:382:LYS:HG2	1:A:424:LYS:HZ2	1.62	0.63
2:I:272:PHE:CD1	2:I:299:ARG:NH2	2.66	0.63
2:L:324:ILE:N	2:L:332:CYS:O	2.30	0.63
1:A:212:VAL:HG21	1:A:239:ILE:HD11	1.81	0.63
1:A:224:PRO:HG3	1:A:239:ILE:CD1	2.29	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:160:MET:HE3	2:B:338:THR:HG23	1.79	0.63
1:J:265:LEU:HD22	1:J:266:HIS:CD2	2.32	0.63
1:K:224:PRO:HG3	1:K:239:ILE:HD11	1.80	0.63
1:A:265:LEU:HD22	1:A:266:HIS:CD2	2.32	0.63
2:B:280:ARG:HB2	2:B:489:ILE:CD1	2.27	0.63
2:G:272:PHE:CD1	2:G:299:ARG:NH2	2.66	0.63
1:A:147:PRO:O	1:A:150:VAL:CG1	2.45	0.63
1:E:147:PRO:O	1:E:150:VAL:CG1	2.44	0.63
1:J:224:PRO:HG3	1:J:239:ILE:CD1	2.29	0.63
1:K:259:ASP:HB3	1:C:411:ARG:CZ	2.29	0.63
2:B:324:ILE:N	2:B:332:CYS:O	2.29	0.63
1:E:241:LEU:CB	1:J:419:ALA:HB2	2.29	0.63
1:A:278:LEU:HD21	2:B:641:SER:CB	2.29	0.63
2:B:317:GLY:HA2	2:B:362:ILE:HD13	1.81	0.63
1:K:224:PRO:HG3	1:K:239:ILE:CD1	2.29	0.62
2:L:317:GLY:HA2	2:L:362:ILE:HD13	1.81	0.62
1:E:241:LEU:HD22	1:J:419:ALA:H	1.53	0.62
2:B:660:VAL:HG23	2:B:675:MET:CG	2.30	0.62
2:G:170:MET:HG3	2:G:333:PHE:CE1	2.35	0.62
1:E:212:VAL:HG21	1:E:239:ILE:HD11	1.81	0.62
2:L:660:VAL:HG23	2:L:675:MET:CG	2.30	0.62
1:A:224:PRO:HG3	1:A:239:ILE:HD11	1.80	0.62
1:A:259:ASP:HB3	1:H:411:ARG:CZ	2.29	0.62
2:B:660:VAL:HA	2:B:675:MET:HG2	1.80	0.62
1:E:224:PRO:HG3	1:E:239:ILE:CD1	2.29	0.62
1:K:222:TYR:CE1	1:K:241:LEU:HD11	2.35	0.62
1:K:242:ALA:CB	1:C:409:VAL:HG11	2.29	0.62
1:K:278:LEU:HD21	2:L:641:SER:CB	2.29	0.62
2:L:660:VAL:HA	2:L:675:MET:HG2	1.80	0.62
1:K:195:PHE:HB3	1:K:226:MET:SD	2.40	0.62
1:J:219:GLY:HA3	3:J:601:TW3:C1	2.30	0.62
1:K:212:VAL:HG21	1:K:239:ILE:HD11	1.81	0.61
2:B:343:GLU:O	2:B:346:VAL:HG22	2.00	0.61
1:E:219:GLY:HA3	3:E:601:TW3:C1	2.30	0.61
1:A:242:ALA:CB	1:H:409:VAL:HG11	2.30	0.61
1:E:49:MET:HG2	1:E:318:TYR:CD1	2.35	0.61
1:J:212:VAL:HG21	1:J:239:ILE:HD11	1.81	0.61
1:C:404:ILE:HD12	1:C:448:GLY:HA3	1.82	0.61
2:L:285:ILE:O	2:L:286:ILE:HD13	2.01	0.61
1:A:195:PHE:HB3	1:A:226:MET:SD	2.40	0.61
1:A:222:TYR:CE1	1:A:241:LEU:HD11	2.35	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:276:CYS:SG	2:B:284:LYS:CD	2.89	0.61
1:H:201:MET:HE1	1:H:208:GLN:NE2	2.12	0.61
1:J:195:PHE:HB3	1:J:226:MET:SD	2.40	0.61
2:B:285:ILE:O	2:B:286:ILE:HD13	2.01	0.61
2:F:170:MET:HG3	2:F:333:PHE:CE1	2.35	0.61
1:H:49:MET:HG2	1:H:318:TYR:CD1	2.36	0.61
1:E:222:TYR:CE1	1:E:241:LEU:HD11	2.35	0.61
2:F:508:LEU:HD13	2:F:562:VAL:HG11	1.83	0.61
2:M:170:MET:HG3	2:M:333:PHE:CE1	2.35	0.61
1:K:49:MET:HG2	1:K:318:TYR:CD1	2.36	0.61
1:E:195:PHE:HB3	1:E:226:MET:SD	2.40	0.61
2:B:348:GLU:CG	2:B:355:LEU:HD13	2.09	0.61
2:L:348:GLU:CG	2:L:355:LEU:HD13	2.09	0.61
2:B:681:LYS:HE2	1:C:477:GLN:HG3	1.82	0.61
2:I:170:MET:HG3	2:I:333:PHE:CE1	2.35	0.61
1:C:267:CYS:HG	1:C:276:TRP:HD1	1.48	0.61
1:J:49:MET:HG2	1:J:318:TYR:CD1	2.35	0.61
2:L:160:MET:HE3	2:L:338:THR:HG23	1.82	0.60
2:F:541:SER:HB2	2:F:543:ARG:HG3	1.83	0.60
2:G:416:ILE:HG22	2:G:418:THR:HG22	1.83	0.60
2:M:541:SER:HB2	2:M:543:ARG:HG3	1.83	0.60
1:A:49:MET:HG2	1:A:318:TYR:CD1	2.35	0.60
1:H:404:ILE:HD12	1:H:448:GLY:HA3	1.82	0.60
2:M:508:LEU:HD13	2:M:562:VAL:HG11	1.83	0.60
2:L:276:CYS:SG	2:L:284:LYS:CD	2.89	0.60
1:C:60:VAL:HG12	2:F:547:ILE:HG23	1.83	0.60
2:G:508:LEU:HD13	2:G:562:VAL:HG11	1.83	0.60
1:H:267:CYS:HG	1:H:276:TRP:HD1	1.49	0.60
2:M:416:ILE:HG22	2:M:418:THR:HG22	1.83	0.60
1:C:49:MET:HG2	1:C:318:TYR:CD1	2.36	0.60
1:H:201:MET:CE	1:H:208:GLN:HE22	2.09	0.60
1:H:543:LEU:HD23	2:I:536:PRO:HB2	1.84	0.60
2:I:508:LEU:HD13	2:I:562:VAL:HG11	1.83	0.60
1:H:60:VAL:HG12	2:I:547:ILE:HG23	1.83	0.60
1:C:404:ILE:HD12	1:C:448:GLY:CA	2.32	0.60
2:G:541:SER:HB2	2:G:543:ARG:HG3	1.82	0.60
1:H:421:ASP:HA	1:H:424:LYS:HD2	1.84	0.60
1:J:239:ILE:O	1:J:266:HIS:HE1	1.85	0.60
2:B:533:GLN:N	2:B:533:GLN:OE1	2.35	0.60
2:L:533:GLN:N	2:L:533:GLN:OE1	2.35	0.59
2:M:536:PRO:HB2	1:E:543:LEU:HD23	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:239:ILE:O	1:A:266:HIS:HE1	1.85	0.59
2:B:678:ILE:HG22	2:B:683:GLU:HG2	1.84	0.59
1:C:404:ILE:CD1	1:C:449:ASN:N	2.65	0.59
1:C:543:LEU:CD2	2:F:536:PRO:HB2	2.32	0.59
1:E:426:VAL:HG12	1:J:226:MET:HE2	1.84	0.59
1:A:282:HIS:HD2	2:B:636:TYR:CG	2.21	0.59
1:C:187:ASP:HB3	1:C:190:HIS:HB2	1.85	0.59
1:H:543:LEU:CD2	2:I:536:PRO:HB2	2.32	0.59
1:H:404:ILE:HD12	1:H:448:GLY:CA	2.32	0.59
1:K:278:LEU:HD11	2:L:641:SER:HB3	0.61	0.59
2:L:343:GLU:O	2:L:346:VAL:HG22	2.00	0.59
2:B:160:MET:SD	2:B:336:MET:O	2.61	0.59
2:F:160:MET:HB2	2:F:338:THR:HG21	1.85	0.59
1:H:404:ILE:CD1	1:H:449:ASN:N	2.65	0.59
2:I:416:ILE:HG22	2:I:418:THR:HG22	1.83	0.59
2:F:416:ILE:HG22	2:F:418:THR:HG22	1.83	0.59
2:I:272:PHE:CD1	2:I:299:ARG:CZ	2.86	0.59
2:I:160:MET:HB2	2:I:338:THR:HG21	1.85	0.59
2:I:541:SER:HB2	2:I:543:ARG:HG3	1.82	0.59
1:A:216:CYS:SG	1:A:239:ILE:HA	2.43	0.59
1:K:239:ILE:HB	1:K:266:HIS:HE1	1.68	0.58
2:G:636:TYR:CD1	1:J:282:HIS:HD2	2.20	0.58
2:M:272:PHE:CD1	2:M:299:ARG:CZ	2.86	0.58
2:G:649:PRO:HD3	2:G:689:PRO:HD3	1.85	0.58
2:M:649:PRO:HD3	2:M:689:PRO:HD3	1.85	0.58
1:C:372:ASN:OD1	1:C:404:ILE:HG22	2.03	0.58
1:E:216:CYS:SG	1:E:239:ILE:HA	2.43	0.58
2:L:660:VAL:HG23	2:L:675:MET:HG2	1.86	0.58
2:L:678:ILE:HG22	2:L:683:GLU:HG2	1.84	0.58
1:A:242:ALA:HB3	1:H:409:VAL:HG13	1.85	0.58
2:B:359:GLN:O	2:B:362:ILE:HG13	2.04	0.58
1:C:543:LEU:HD23	2:F:536:PRO:HB2	1.84	0.58
2:G:536:PRO:HB2	1:J:543:LEU:HD23	1.84	0.58
2:M:160:MET:HB2	2:M:338:THR:HG21	1.85	0.58
2:L:160:MET:SD	2:L:336:MET:O	2.61	0.58
2:L:348:GLU:HG2	2:L:355:LEU:CD1	2.10	0.58
2:F:649:PRO:HD3	2:F:689:PRO:HD3	1.85	0.58
1:H:187:ASP:HB3	1:H:190:HIS:HB2	1.85	0.58
1:K:216:CYS:SG	1:K:239:ILE:HA	2.43	0.58
1:A:247:VAL:CG2	1:H:409:VAL:CG1	2.72	0.58
2:F:272:PHE:CD1	2:F:299:ARG:CZ	2.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:239:ILE:HB	1:E:266:HIS:HE1	1.68	0.58
1:K:282:HIS:HD2	2:L:636:TYR:CG	2.21	0.58
2:L:456:ARG:HD3	2:L:623:LYS:O	2.04	0.58
1:A:382:LYS:HG2	1:A:424:LYS:HZ1	1.69	0.58
2:M:636:TYR:CD1	1:E:282:HIS:HD2	2.20	0.58
2:L:359:GLN:O	2:L:362:ILE:HG13	2.04	0.58
2:B:456:ARG:HD3	2:B:623:LYS:O	2.04	0.58
2:G:272:PHE:CD1	2:G:299:ARG:CZ	2.86	0.58
2:M:536:PRO:HB2	1:E:543:LEU:CD2	2.34	0.58
2:L:653:MET:O	2:L:677:MET:HE2	2.04	0.57
2:G:536:PRO:HB2	1:J:543:LEU:CD2	2.34	0.57
2:M:636:TYR:HB3	1:E:282:HIS:CD2	2.39	0.57
1:J:216:CYS:SG	1:J:239:ILE:HA	2.43	0.57
1:J:239:ILE:HB	1:J:266:HIS:HE1	1.68	0.57
1:K:233:VAL:O	1:K:263:ALA:HB2	2.04	0.57
2:L:285:ILE:C	2:L:286:ILE:HD13	2.24	0.57
1:A:278:LEU:HD11	2:B:641:SER:HB3	0.61	0.57
1:A:426:VAL:HG12	1:H:226:MET:HE2	1.82	0.57
1:K:176:ALA:O	3:K:601:TW3:N5	2.37	0.57
2:G:160:MET:HB2	2:G:338:THR:HG21	1.85	0.57
2:I:649:PRO:HD3	2:I:689:PRO:HD3	1.85	0.57
1:A:176:ALA:O	3:A:601:TW3:N5	2.37	0.57
2:G:636:TYR:HB2	1:J:282:HIS:NE2	2.20	0.57
1:C:490:ARG:HD2	1:C:497:PHE:HB2	1.87	0.57
1:H:490:ARG:HD2	1:H:497:PHE:HB2	1.87	0.57
2:B:285:ILE:C	2:B:286:ILE:HD13	2.24	0.57
1:C:410:GLY:O	1:C:414:GLU:HG2	2.05	0.57
1:K:242:ALA:HB3	1:C:409:VAL:HG13	1.85	0.57
1:A:233:VAL:O	1:A:263:ALA:HB2	2.04	0.57
1:A:239:ILE:HB	1:A:266:HIS:HE1	1.68	0.57
2:L:294:ILE:HB	2:L:299:ARG:NH2	2.20	0.57
2:F:272:PHE:HD1	2:F:299:ARG:NE	2.03	0.57
2:F:299:ARG:HH22	2:F:377:LEU:HD22	1.70	0.57
2:G:299:ARG:HH22	2:G:377:LEU:HD22	1.70	0.57
1:J:233:VAL:O	1:J:263:ALA:HB2	2.04	0.57
1:A:244:PRO:HB2	1:A:245:PRO:HD3	1.86	0.56
2:I:272:PHE:HD1	2:I:299:ARG:NE	2.03	0.56
2:L:662:VAL:HG11	2:L:712:VAL:CG2	2.36	0.56
1:A:64:LYS:HD2	2:B:547:ILE:HG21	1.87	0.56
1:H:167:CYS:SG	1:H:201:MET:CE	2.93	0.56
1:E:239:ILE:O	1:E:266:HIS:HE1	1.85	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:276:CYS:HG	2:L:284:LYS:HG2	1.70	0.56
1:C:167:CYS:SG	1:C:201:MET:CE	2.93	0.56
1:H:167:CYS:SG	1:H:201:MET:HE1	2.46	0.56
2:M:299:ARG:HH22	2:M:377:LEU:HD22	1.70	0.56
1:K:244:PRO:HB2	1:K:245:PRO:HD3	1.86	0.56
2:L:371:SER:O	2:L:375:ILE:HG13	2.06	0.56
2:B:371:SER:O	2:B:375:ILE:HG13	2.05	0.56
2:B:660:VAL:HG23	2:B:675:MET:HG2	1.85	0.56
1:K:64:LYS:HD2	2:L:547:ILE:HG21	1.87	0.56
2:L:653:MET:O	2:L:677:MET:CE	2.54	0.56
2:B:61:ALA:O	2:B:65:MET:HG3	2.06	0.56
2:M:272:PHE:HD1	2:M:299:ARG:NE	2.03	0.56
1:E:233:VAL:O	1:E:263:ALA:HB2	2.04	0.56
1:E:241:LEU:CD2	1:J:419:ALA:HA	2.35	0.56
1:H:410:GLY:O	1:H:414:GLU:HG2	2.05	0.56
1:K:178:LEU:HD12	1:C:482:LEU:HD23	1.85	0.56
1:A:239:ILE:CB	1:A:266:HIS:HE1	2.18	0.56
2:B:662:VAL:HG11	2:B:712:VAL:CG2	2.35	0.56
1:H:372:ASN:OD1	1:H:404:ILE:HG22	2.03	0.56
2:L:655:GLY:HA3	2:L:679:ALA:HB2	1.87	0.56
1:A:543:LEU:CD2	2:B:536:PRO:HB2	2.36	0.56
2:I:299:ARG:HH22	2:I:377:LEU:HD22	1.70	0.56
1:K:239:ILE:O	1:K:266:HIS:HE1	1.85	0.56
1:K:278:LEU:CD2	2:L:641:SER:HB3	2.36	0.56
1:K:543:LEU:CD2	2:L:536:PRO:HB2	2.36	0.56
2:L:61:ALA:O	2:L:65:MET:HG3	2.05	0.56
2:B:655:GLY:HA3	2:B:679:ALA:HB2	1.87	0.56
2:G:272:PHE:HD1	2:G:299:ARG:NE	2.03	0.56
2:B:288:GLU:HB3	2:B:382:PHE:CE1	2.41	0.55
2:B:294:ILE:HB	2:B:299:ARG:NH2	2.20	0.55
2:M:180:GLY:HA3	2:M:249:PHE:HA	1.87	0.55
1:E:226:MET:HE2	1:J:426:VAL:HG12	1.87	0.55
1:J:239:ILE:CB	1:J:266:HIS:HE1	2.19	0.55
2:L:288:GLU:HB3	2:L:382:PHE:CE1	2.41	0.55
2:B:653:MET:O	2:B:677:MET:CE	2.54	0.55
2:B:659:LYS:HA	2:B:701:GLU:CG	2.36	0.55
1:C:372:ASN:CG	1:C:404:ILE:HG22	2.27	0.55
2:B:321:VAL:HG22	2:B:336:MET:SD	2.47	0.55
1:H:372:ASN:CG	1:H:404:ILE:HG22	2.27	0.55
2:L:65:MET:O	2:L:69:LYS:HG2	2.06	0.55
2:L:662:VAL:HG11	2:L:712:VAL:HG22	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:347:THR:HA	2:B:350:ILE:HG12	1.88	0.55
1:H:266:HIS:HA	1:H:270:SER:HB2	1.87	0.55
2:L:321:VAL:HG22	2:L:336:MET:SD	2.47	0.55
2:B:152:PRO:HG3	2:B:338:THR:CB	2.37	0.55
2:L:344:HIS:O	2:L:347:THR:HG22	2.07	0.55
2:L:347:THR:HA	2:L:350:ILE:HG12	1.88	0.55
1:A:178:LEU:HD12	1:H:482:LEU:HD23	1.86	0.55
2:B:65:MET:O	2:B:69:LYS:HG2	2.06	0.55
1:C:282:HIS:HD2	2:F:636:TYR:CD1	2.25	0.55
2:M:636:TYR:HB2	1:E:282:HIS:NE2	2.20	0.55
1:K:239:ILE:CB	1:K:266:HIS:HE1	2.19	0.55
2:L:265:HIS:CD2	2:L:367:LYS:HG2	2.42	0.55
1:E:226:MET:CE	1:J:426:VAL:HG12	2.36	0.55
2:B:265:HIS:CD2	2:B:367:LYS:HG2	2.42	0.55
2:B:380:HIS:N	2:B:441:ALA:O	2.35	0.55
2:B:628:GLU:O	2:B:629:ILE:HD13	2.06	0.55
2:B:662:VAL:HG11	2:B:712:VAL:HG22	1.88	0.55
2:L:160:MET:CE	2:L:338:THR:HG23	2.37	0.54
2:L:272:PHE:HD1	2:L:299:ARG:HD3	1.72	0.54
2:L:628:GLU:O	2:L:629:ILE:HD13	2.06	0.54
1:A:278:LEU:CD2	2:B:641:SER:HB3	2.36	0.54
1:H:462:LEU:O	1:H:529:ASP:HB2	2.07	0.54
1:K:178:LEU:HB2	1:K:179:PRO:HD3	1.89	0.54
1:E:239:ILE:CB	1:E:266:HIS:HE1	2.19	0.54
2:L:152:PRO:HG3	2:L:338:THR:CB	2.37	0.54
1:C:426:VAL:HG22	1:C:451:GLY:HA2	1.88	0.54
1:J:421:ASP:HA	1:J:424:LYS:HD2	1.89	0.54
2:L:468:ASP:N	2:L:468:ASP:OD1	2.41	0.54
2:B:272:PHE:HD1	2:B:299:ARG:HD3	1.72	0.54
1:A:178:LEU:HB2	1:A:179:PRO:HD3	1.90	0.54
2:B:160:MET:CE	2:B:338:THR:HG23	2.37	0.54
2:F:402:LEU:HD13	2:F:405:LEU:HD22	1.90	0.54
1:K:177:TYR:HA	3:K:601:TW3:N5	2.23	0.54
1:A:278:LEU:CG	2:B:641:SER:CB	2.80	0.54
2:B:270:TYR:CD2	2:B:303:GLY:HA3	2.43	0.54
2:B:276:CYS:HG	2:B:284:LYS:HG2	1.69	0.54
1:A:177:TYR:HA	3:A:601:TW3:N5	2.22	0.54
1:K:278:LEU:CG	2:L:641:SER:CB	2.80	0.54
2:B:274:ARG:HD2	2:B:346:VAL:CG2	2.38	0.54
2:B:653:MET:HA	2:B:707:ARG:HD2	1.90	0.54
1:J:178:LEU:HB2	1:J:179:PRO:HD3	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:479:ALA:HB1	1:J:506:LYS:HG2	1.90	0.54
2:L:270:TYR:CD2	2:L:303:GLY:HA3	2.43	0.54
2:B:468:ASP:N	2:B:468:ASP:OD1	2.41	0.54
1:C:462:LEU:O	1:C:529:ASP:HB2	2.08	0.54
2:L:678:ILE:CG2	2:L:683:GLU:HG2	2.38	0.54
2:L:681:LYS:HZ3	4:H:601:BTI:C11	2.11	0.54
1:E:426:VAL:HG12	1:J:226:MET:CE	2.36	0.54
1:K:479:ALA:HB1	1:K:506:LYS:HG2	1.90	0.53
1:H:282:HIS:HD2	2:I:636:TYR:CD1	2.25	0.53
2:M:547:ILE:HG22	1:E:61:GLU:OE2	2.08	0.53
1:E:497:PHE:CE2	1:E:502:GLU:HG2	2.43	0.53
1:A:479:ALA:HB1	1:A:506:LYS:HG2	1.90	0.53
2:B:127:PRO:HG3	2:B:149:PHE:CZ	2.44	0.53
2:B:276:CYS:SG	2:B:284:LYS:HD2	2.49	0.53
2:B:344:HIS:O	2:B:347:THR:HG22	2.07	0.53
2:G:402:LEU:HD13	2:G:405:LEU:HD22	1.90	0.53
2:G:547:ILE:HG22	1:J:61:GLU:OE2	2.08	0.53
2:L:127:PRO:HG3	2:L:149:PHE:CZ	2.43	0.53
2:L:274:ARG:HD2	2:L:346:VAL:CG2	2.38	0.53
2:B:60:ILE:HG12	2:B:129:CYS:H	1.73	0.53
2:I:653:MET:HE2	2:I:679:ALA:HB1	1.91	0.53
2:M:402:LEU:HD13	2:M:405:LEU:HD22	1.90	0.53
2:B:348:GLU:HG2	2:B:355:LEU:CD1	2.10	0.53
2:B:487:ASP:C	2:B:490:PRO:HD2	2.29	0.53
2:B:678:ILE:CG2	2:B:683:GLU:HG2	2.38	0.53
2:F:649:PRO:HB2	2:F:686:ILE:HG23	1.91	0.53
2:F:653:MET:HE2	2:F:679:ALA:HB1	1.91	0.53
1:K:497:PHE:CE2	1:K:502:GLU:HG2	2.43	0.53
1:A:497:PHE:CE2	1:A:502:GLU:HG2	2.44	0.53
2:M:649:PRO:HB2	2:M:686:ILE:HG23	1.90	0.53
1:A:195:PHE:HB3	1:A:226:MET:HE1	1.91	0.53
1:H:472:VAL:HG13	1:H:473:MET:HG2	1.91	0.53
2:I:402:LEU:HD13	2:I:405:LEU:HD22	1.90	0.53
1:E:456:ALA:HA	1:J:188:ARG:HA	1.90	0.53
2:L:653:MET:HA	2:L:707:ARG:HD2	1.89	0.53
1:C:377:PHE:CE2	1:C:408:MET:HG2	2.43	0.53
1:H:505:LEU:O	1:H:508:PRO:HD2	2.08	0.53
1:J:239:ILE:CA	1:J:266:HIS:HE1	2.22	0.53
2:B:441:ALA:HB3	2:B:447:ALA:HB2	1.91	0.53
1:H:377:PHE:CE2	1:H:408:MET:HG2	2.43	0.53
1:E:178:LEU:HB2	1:E:179:PRO:HD3	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:479:ALA:HB1	1:E:506:LYS:HG2	1.90	0.53
2:B:469:PHE:CE1	2:B:496:LEU:HD13	2.44	0.53
2:B:666:ASP:O	2:B:693:THR:HG23	2.09	0.53
1:E:188:ARG:HA	1:J:456:ALA:HA	1.90	0.53
2:L:441:ALA:HB3	2:L:447:ALA:HB2	1.91	0.53
2:G:636:TYR:HB3	1:J:282:HIS:CD2	2.39	0.53
1:H:267:CYS:SG	1:H:276:TRP:HD1	2.32	0.53
2:I:594:ASP:OD1	2:I:594:ASP:N	2.39	0.53
2:M:249:PHE:HB2	2:M:252:THR:HB	1.91	0.53
2:L:469:PHE:CE1	2:L:496:LEU:HD13	2.44	0.52
1:A:260:LEU:HD12	1:H:411:ARG:HA	1.92	0.52
2:B:285:ILE:HG22	2:B:286:ILE:CD1	2.39	0.52
1:E:239:ILE:CA	1:E:266:HIS:HE1	2.22	0.52
1:J:497:PHE:CE2	1:J:502:GLU:HG2	2.44	0.52
2:L:284:LYS:HD2	2:L:343:GLU:OE2	2.09	0.52
1:C:472:VAL:HG13	1:C:473:MET:HG2	1.91	0.52
2:M:653:MET:HE2	2:M:679:ALA:HB1	1.91	0.52
1:E:195:PHE:HB3	1:E:226:MET:HE1	1.90	0.52
2:L:487:ASP:C	2:L:490:PRO:HD2	2.29	0.52
2:L:619:TYR:CD1	2:L:628:GLU:HG2	2.45	0.52
1:C:505:LEU:O	1:C:508:PRO:HD2	2.08	0.52
2:L:285:ILE:HG22	2:L:286:ILE:CD1	2.39	0.52
1:K:239:ILE:CA	1:K:266:HIS:HE1	2.22	0.52
2:L:285:ILE:CG2	2:L:470:LEU:HD21	2.40	0.52
2:L:666:ASP:O	2:L:693:THR:HG23	2.09	0.52
2:G:653:MET:HE2	2:G:679:ALA:HB1	1.91	0.52
2:I:649:PRO:HB2	2:I:686:ILE:HG23	1.90	0.52
1:E:241:LEU:HD13	1:J:419:ALA:CA	2.34	0.52
1:J:195:PHE:HB3	1:J:226:MET:HE1	1.90	0.52
1:K:260:LEU:HD12	1:C:411:ARG:HA	1.91	0.52
2:B:653:MET:HG3	2:B:679:ALA:HB3	1.92	0.52
1:H:176:ALA:O	3:H:602:TW3:N5	2.43	0.52
2:L:60:ILE:HG12	2:L:129:CYS:H	1.73	0.52
2:L:659:LYS:HA	2:L:701:GLU:CG	2.37	0.52
2:B:284:LYS:HD2	2:B:343:GLU:OE2	2.09	0.52
2:M:175:VAL:HG12	2:M:333:PHE:CB	2.39	0.52
1:E:241:LEU:HD22	1:J:419:ALA:CB	2.40	0.52
2:L:639:SER:O	2:L:642:SER:OG	2.26	0.52
2:L:653:MET:HG3	2:L:679:ALA:HB3	1.92	0.52
1:C:61:GLU:OE2	2:F:547:ILE:HG22	2.10	0.52
1:C:268:ARG:HH22	1:C:276:TRP:HE1	1.58	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:649:PRO:HB2	2:G:686:ILE:HG23	1.90	0.52
1:A:265:LEU:HA	1:A:269:LYS:CE	2.40	0.52
2:B:254:ARG:HB2	2:B:325:MET:O	2.10	0.52
2:B:388:ALA:HB3	2:B:432:PRO:HB2	1.92	0.52
1:C:201:MET:HE1	1:C:208:GLN:NE2	2.18	0.52
2:I:273:GLU:HG2	2:I:299:ARG:CD	2.40	0.52
1:K:456:ALA:HA	1:C:188:ARG:HA	1.92	0.52
2:L:276:CYS:SG	2:L:284:LYS:HD2	2.49	0.52
1:H:119:ILE:HD11	1:H:134:ILE:HG22	1.92	0.52
1:H:141:LYS:NZ	3:H:602:TW3:O15	2.35	0.52
2:M:273:GLU:HG2	2:M:299:ARG:CD	2.40	0.52
2:M:513:LEU:HD22	2:M:585:VAL:CG1	2.40	0.52
1:A:239:ILE:CA	1:A:266:HIS:HE1	2.22	0.51
2:B:619:TYR:CD1	2:B:628:GLU:HG2	2.44	0.51
2:L:380:HIS:N	2:L:441:ALA:O	2.35	0.51
2:L:388:ALA:HB3	2:L:432:PRO:HB2	1.92	0.51
2:B:170:MET:CE	2:B:175:VAL:HG21	2.41	0.51
1:C:266:HIS:HA	1:C:270:SER:HB2	1.91	0.51
2:F:513:LEU:HD22	2:F:585:VAL:CG1	2.40	0.51
1:E:265:LEU:HA	1:E:269:LYS:CE	2.40	0.51
2:L:324:ILE:O	2:L:331:PHE:HA	2.11	0.51
2:G:273:GLU:HG2	2:G:299:ARG:CD	2.40	0.51
2:M:456:ARG:HD3	2:M:623:LYS:O	2.11	0.51
1:C:176:ALA:O	3:C:602:TW3:N5	2.43	0.51
2:G:286:ILE:HD12	2:G:473:LEU:HD22	1.93	0.51
2:I:456:ARG:HD3	2:I:623:LYS:O	2.11	0.51
2:L:513:LEU:HD22	2:L:585:VAL:HG12	1.93	0.51
2:B:285:ILE:CG2	2:B:470:LEU:HD21	2.40	0.51
2:F:273:GLU:HG2	2:F:299:ARG:CD	2.40	0.51
1:J:265:LEU:HA	1:J:269:LYS:CE	2.40	0.51
1:A:543:LEU:HD23	2:B:536:PRO:HB2	1.93	0.51
2:B:272:PHE:CD1	2:B:377:LEU:HD23	2.44	0.51
1:C:119:ILE:HD11	1:C:134:ILE:HG22	1.92	0.51
2:G:456:ARG:HD3	2:G:623:LYS:O	2.11	0.51
2:M:547:ILE:HG23	1:E:60:VAL:HG12	1.92	0.51
2:L:675:MET:HE1	2:L:711:LEU:HD23	1.92	0.51
2:L:681:LYS:HE2	1:H:477:GLN:HE21	1.75	0.51
1:E:119:ILE:HD11	1:E:134:ILE:HG22	1.92	0.51
1:A:119:ILE:HD11	1:A:134:ILE:HG22	1.92	0.51
1:K:265:LEU:HA	1:K:269:LYS:CE	2.40	0.51
1:H:268:ARG:HH22	1:H:276:TRP:HE1	1.58	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:119:ILE:HD11	1:K:134:ILE:HG22	1.92	0.51
2:B:655:GLY:HA3	2:B:679:ALA:CB	2.41	0.51
1:C:223:VAL:HB	1:C:224:PRO:HD3	1.93	0.51
1:J:265:LEU:HA	1:J:269:LYS:HE2	1.93	0.51
2:B:513:LEU:HD22	2:B:585:VAL:HG12	1.93	0.50
2:B:653:MET:O	2:B:677:MET:HE1	2.11	0.50
1:K:241:LEU:CD1	1:C:419:ALA:HB2	2.28	0.50
1:A:265:LEU:HA	1:A:269:LYS:HE2	1.93	0.50
2:F:273:GLU:OE2	2:F:294:ILE:HG21	2.12	0.50
2:F:286:ILE:HD12	2:F:473:LEU:HD22	1.93	0.50
2:I:513:LEU:HD22	2:I:585:VAL:CG1	2.40	0.50
2:M:273:GLU:OE2	2:M:294:ILE:HG21	2.12	0.50
1:E:265:LEU:HA	1:E:269:LYS:HE2	1.93	0.50
2:F:456:ARG:HD3	2:F:623:LYS:O	2.11	0.50
2:G:408:PRO:O	2:G:416:ILE:HD11	2.12	0.50
2:M:286:ILE:HD12	2:M:473:LEU:HD22	1.93	0.50
2:L:304:GLU:C	2:L:307:VAL:HG12	2.31	0.50
2:L:670:ALA:HA	2:L:688:SER:HB3	1.93	0.50
1:A:456:ALA:HA	1:H:188:ARG:HA	1.92	0.50
2:B:324:ILE:O	2:B:331:PHE:HA	2.11	0.50
2:B:670:ALA:HA	2:B:688:SER:HB3	1.93	0.50
2:F:408:PRO:O	2:F:416:ILE:HD11	2.12	0.50
2:G:273:GLU:CD	2:G:294:ILE:HD12	2.32	0.50
2:G:547:ILE:HG23	1:J:60:VAL:HG12	1.93	0.50
2:I:272:PHE:HD1	2:I:299:ARG:CZ	2.25	0.50
2:I:286:ILE:HD12	2:I:473:LEU:HD22	1.93	0.50
2:L:254:ARG:HB2	2:L:325:MET:O	2.10	0.50
2:L:256:VAL:O	2:L:323:PHE:N	2.30	0.50
2:L:590:TYR:OH	2:L:608:LYS:HD3	2.11	0.50
1:A:226:MET:HE2	1:H:426:VAL:HG12	1.92	0.50
1:A:259:ASP:HB3	1:H:411:ARG:NH2	2.25	0.50
2:L:285:ILE:HG22	2:L:286:ILE:HD13	1.93	0.50
2:L:653:MET:HA	2:L:707:ARG:CD	2.42	0.50
2:M:272:PHE:HD1	2:M:299:ARG:CZ	2.25	0.50
2:B:304:GLU:C	2:B:307:VAL:HG12	2.31	0.50
1:H:223:VAL:HB	1:H:224:PRO:HD3	1.94	0.50
1:K:178:LEU:CD1	1:C:482:LEU:HD21	2.39	0.50
1:K:239:ILE:HB	1:K:266:HIS:ND1	2.27	0.50
1:K:259:ASP:HB3	1:C:411:ARG:NH2	2.26	0.50
1:K:543:LEU:HD23	2:L:536:PRO:HB2	1.93	0.50
2:L:170:MET:CE	2:L:175:VAL:HG21	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:657:ILE:HD12	2:B:699:TYR:HB3	1.94	0.50
2:B:675:MET:HE3	2:B:711:LEU:CD2	2.42	0.50
1:C:177:TYR:HA	3:C:602:TW3:N5	2.27	0.50
1:H:61:GLU:OE2	2:I:547:ILE:HG22	2.10	0.50
2:B:345:PRO:HB2	2:B:438:VAL:HG21	1.94	0.50
2:F:349:MET:SD	2:F:415:ARG:HD3	2.52	0.50
2:B:590:TYR:OH	2:B:608:LYS:HD3	2.11	0.49
2:M:717:GLU:O	2:M:717:GLU:HG2	2.12	0.49
1:J:119:ILE:HD11	1:J:134:ILE:HG22	1.92	0.49
2:G:513:LEU:HD22	2:G:585:VAL:CG1	2.40	0.49
1:H:498:SER:O	1:H:502:GLU:HG3	2.13	0.49
2:M:349:MET:SD	2:M:415:ARG:HD3	2.52	0.49
1:K:334:VAL:O	1:K:338:ILE:HG23	2.13	0.49
2:L:655:GLY:HA3	2:L:679:ALA:CB	2.41	0.49
2:B:653:MET:HA	2:B:707:ARG:CD	2.42	0.49
2:F:717:GLU:O	2:F:717:GLU:HG2	2.12	0.49
2:G:349:MET:SD	2:G:415:ARG:HD3	2.52	0.49
2:I:273:GLU:CD	2:I:294:ILE:HD12	2.32	0.49
1:K:265:LEU:HA	1:K:269:LYS:HE2	1.93	0.49
2:G:273:GLU:OE2	2:G:294:ILE:HG21	2.12	0.49
2:I:349:MET:SD	2:I:415:ARG:HD3	2.52	0.49
2:G:717:GLU:O	2:G:717:GLU:HG2	2.12	0.49
1:H:177:TYR:HA	3:H:602:TW3:N5	2.27	0.49
2:M:273:GLU:CD	2:M:294:ILE:HD12	2.32	0.49
1:E:141:LYS:NZ	3:E:601:TW3:O15	2.42	0.49
2:L:345:PRO:HB2	2:L:438:VAL:HG21	1.94	0.49
2:L:657:ILE:HD12	2:L:699:TYR:HB3	1.94	0.49
1:C:378:SER:HB3	1:C:421:ASP:OD2	2.12	0.49
2:F:273:GLU:CD	2:F:294:ILE:HD12	2.32	0.49
2:G:272:PHE:HD1	2:G:299:ARG:CZ	2.25	0.49
1:E:239:ILE:HB	1:E:266:HIS:ND1	2.27	0.49
1:J:239:ILE:HB	1:J:266:HIS:ND1	2.27	0.49
2:L:675:MET:HE2	2:L:711:LEU:HB3	1.91	0.49
1:A:239:ILE:HB	1:A:266:HIS:ND1	2.27	0.49
1:H:334:VAL:O	1:H:338:ILE:HG23	2.13	0.49
2:B:272:PHE:CZ	2:B:377:LEU:HB3	2.48	0.49
1:H:378:SER:HB3	1:H:421:ASP:OD2	2.12	0.49
1:E:334:VAL:O	1:E:338:ILE:HG23	2.13	0.49
1:C:498:SER:O	1:C:502:GLU:HG3	2.13	0.49
2:F:253:PRO:HB2	2:F:485:HIS:CB	2.38	0.49
2:I:273:GLU:OE2	2:I:294:ILE:HG21	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:334:VAL:O	1:A:338:ILE:HG23	2.13	0.49
2:B:399:ALA:HB1	2:B:426:VAL:O	2.13	0.49
2:I:408:PRO:O	2:I:416:ILE:HD11	2.12	0.49
1:K:303:THR:HG23	1:E:295:ASN:OD1	2.13	0.48
2:L:408:PRO:HG3	2:L:454:SER:HB3	1.95	0.48
2:L:590:TYR:HE1	2:L:599:LYS:HB2	1.78	0.48
2:B:285:ILE:HG22	2:B:286:ILE:HD13	1.93	0.48
2:F:272:PHE:HD1	2:F:299:ARG:CZ	2.25	0.48
2:F:273:GLU:OE2	2:F:294:ILE:HD12	2.13	0.48
1:J:141:LYS:NZ	3:J:601:TW3:O15	2.42	0.48
2:B:382:PHE:O	2:B:438:VAL:HA	2.13	0.48
1:C:416:GLU:OE2	1:C:416:GLU:HA	2.13	0.48
1:K:55:GLN:O	1:K:58:GLU:HG2	2.14	0.48
2:L:382:PHE:O	2:L:438:VAL:HA	2.13	0.48
2:L:383:GLU:HG3	2:L:438:VAL:HG22	1.94	0.48
2:B:590:TYR:HE1	2:B:599:LYS:HB2	1.78	0.48
2:I:717:GLU:HG2	2:I:717:GLU:O	2.12	0.48
2:M:273:GLU:OE2	2:M:294:ILE:HD12	2.13	0.48
2:M:408:PRO:O	2:M:416:ILE:HD11	2.12	0.48
1:K:278:LEU:CD2	2:L:641:SER:CB	2.92	0.48
2:B:176:PRO:HB2	2:B:332:CYS:HA	1.95	0.48
2:B:383:GLU:HG3	2:B:438:VAL:HG22	1.94	0.48
1:C:55:GLN:O	1:C:58:GLU:HG2	2.14	0.48
1:C:334:VAL:O	1:C:338:ILE:HG23	2.13	0.48
1:H:416:GLU:OE2	1:H:416:GLU:HA	2.13	0.48
1:J:269:LYS:HE3	1:J:269:LYS:HB2	1.62	0.48
1:J:334:VAL:O	1:J:338:ILE:HG23	2.13	0.48
1:K:421:ASP:HA	1:K:424:LYS:HD2	1.94	0.48
1:H:55:GLN:O	1:H:58:GLU:HG2	2.14	0.48
1:A:278:LEU:CD2	2:B:641:SER:CB	2.92	0.48
2:G:273:GLU:OE2	2:G:294:ILE:HD12	2.13	0.48
1:J:366:PRO:O	1:J:397:PRO:HG2	2.14	0.48
2:I:273:GLU:OE2	2:I:294:ILE:HD12	2.13	0.48
1:E:221:ALA:C	1:E:224:PRO:HD2	2.34	0.48
2:L:272:PHE:CZ	2:L:377:LEU:HB3	2.48	0.48
2:L:272:PHE:CD1	2:L:377:LEU:HD23	2.44	0.48
1:A:366:PRO:O	1:A:397:PRO:HG2	2.14	0.48
2:M:160:MET:HB2	2:M:338:THR:CG2	2.44	0.48
2:B:408:PRO:HG3	2:B:454:SER:HB3	1.95	0.48
2:I:601:SER:HA	2:I:605:VAL:O	2.14	0.48
1:J:89:ASN:HB2	1:J:284:LEU:HD13	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:221:ALA:C	1:K:224:PRO:HD2	2.34	0.47
2:L:165:THR:O	2:L:169:ILE:HG13	2.14	0.47
2:B:639:SER:OG	2:B:642:SER:OG	2.27	0.47
2:G:160:MET:HB2	2:G:338:THR:CG2	2.44	0.47
1:H:89:ASN:HB2	1:H:284:LEU:HD13	1.96	0.47
1:H:237:GLY:O	1:H:263:ALA:HB2	2.14	0.47
2:I:160:MET:HB2	2:I:338:THR:CG2	2.44	0.47
2:I:175:VAL:HG12	2:I:333:PHE:CB	2.39	0.47
1:J:221:ALA:C	1:J:224:PRO:HD2	2.34	0.47
1:K:366:PRO:O	1:K:397:PRO:CG	2.62	0.47
2:L:654:THR:HA	2:L:705:ALA:O	2.15	0.47
1:A:55:GLN:O	1:A:58:GLU:HG2	2.14	0.47
1:A:178:LEU:CD1	1:H:482:LEU:CD2	2.88	0.47
2:B:165:THR:O	2:B:169:ILE:HG13	2.14	0.47
1:C:473:MET:HG3	1:C:478:ALA:HB2	1.96	0.47
2:G:601:SER:HA	2:G:605:VAL:O	2.14	0.47
1:E:366:PRO:O	1:E:397:PRO:HG2	2.14	0.47
1:J:366:PRO:O	1:J:397:PRO:CG	2.62	0.47
1:K:60:VAL:HG11	2:L:546:ASN:HB2	1.96	0.47
1:A:60:VAL:HG11	2:B:546:ASN:HB2	1.96	0.47
1:A:303:THR:HG23	1:J:295:ASN:OD1	2.14	0.47
2:B:326:ASP:OD1	2:B:326:ASP:N	2.47	0.47
2:B:675:MET:CE	2:B:711:LEU:HD23	2.44	0.47
1:H:112:GLU:OE1	1:H:146:TYR:OH	2.21	0.47
1:E:89:ASN:HB2	1:E:284:LEU:HD13	1.96	0.47
1:J:55:GLN:O	1:J:58:GLU:HG2	2.14	0.47
2:L:377:LEU:HD12	2:L:377:LEU:C	2.35	0.47
2:L:399:ALA:HB1	2:L:426:VAL:O	2.13	0.47
2:B:601:SER:HA	2:B:605:VAL:O	2.15	0.47
1:H:404:ILE:HD13	1:H:448:GLY:O	2.15	0.47
2:I:63:ARG:NH2	2:I:354:ASP:OD1	2.40	0.47
2:M:601:SER:HA	2:M:605:VAL:O	2.14	0.47
1:K:234:ARG:NH2	2:L:644:GLU:OE1	2.46	0.47
1:A:248:LYS:NZ	1:A:254:GLU:HB2	2.30	0.47
1:A:366:PRO:O	1:A:397:PRO:CG	2.62	0.47
1:E:55:GLN:O	1:E:58:GLU:HG2	2.14	0.47
1:K:366:PRO:O	1:K:397:PRO:HG2	2.14	0.47
2:L:176:PRO:HB2	2:L:332:CYS:HA	1.95	0.47
2:B:346:VAL:CG1	2:B:383:GLU:HB2	2.45	0.47
2:B:487:ASP:OD1	2:B:490:PRO:HG2	2.15	0.47
2:B:654:THR:HA	2:B:705:ALA:O	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:63:ARG:NH2	2:F:354:ASP:OD1	2.40	0.47
2:F:601:SER:HA	2:F:605:VAL:O	2.14	0.47
2:L:272:PHE:CE2	2:L:377:LEU:HB3	2.50	0.47
2:L:302:LEU:HD11	2:L:323:PHE:CD1	2.50	0.47
2:L:326:ASP:OD1	2:L:326:ASP:N	2.47	0.47
2:L:675:MET:CE	2:L:711:LEU:HD23	2.44	0.47
2:G:413:SER:O	2:G:439:VAL:HA	2.15	0.47
1:K:89:ASN:HB2	1:K:284:LEU:HD13	1.96	0.47
1:K:248:LYS:NZ	1:K:254:GLU:HB2	2.30	0.47
1:K:282:HIS:HD2	2:L:636:TYR:CD2	2.33	0.47
2:L:346:VAL:CG1	2:L:383:GLU:HB2	2.45	0.47
1:A:94:GLY:O	2:B:542:GLY:N	2.48	0.47
2:B:653:MET:O	2:B:677:MET:HE2	2.15	0.47
2:M:63:ARG:NH2	2:M:354:ASP:OD1	2.40	0.47
2:M:653:MET:HE3	2:M:653:MET:HB3	1.74	0.47
2:L:671:GLY:HA2	2:L:687:LYS:HB3	1.97	0.47
2:B:393:ASN:HB2	2:B:396:MET:HG2	1.97	0.47
2:B:687:LYS:HE2	2:B:687:LYS:HA	1.97	0.47
1:C:267:CYS:SG	1:C:276:TRP:CD1	3.02	0.47
1:C:404:ILE:HD13	1:C:448:GLY:O	2.15	0.47
2:I:253:PRO:HB3	2:I:486:THR:OG1	2.15	0.47
1:K:94:GLY:O	2:L:542:GLY:N	2.48	0.46
1:K:216:CYS:SG	1:K:239:ILE:HG12	2.55	0.46
2:L:687:LYS:HE2	2:L:687:LYS:HA	1.97	0.46
1:C:60:VAL:CG1	2:F:547:ILE:HG23	2.43	0.46
1:J:563:MET:H	1:J:563:MET:HG3	1.43	0.46
2:L:160:MET:HE1	2:L:338:THR:CG2	2.45	0.46
2:L:393:ASN:HB2	2:L:396:MET:HG2	1.97	0.46
1:A:89:ASN:HB2	1:A:284:LEU:HD13	1.96	0.46
1:A:234:ARG:NH2	2:B:644:GLU:OE1	2.46	0.46
1:A:282:HIS:HD2	2:B:636:TYR:CD2	2.32	0.46
2:B:259:GLN:HE21	2:B:261:PHE:HE1	1.63	0.46
2:F:160:MET:HB2	2:F:338:THR:CG2	2.44	0.46
2:F:273:GLU:HG2	2:F:299:ARG:HD3	1.97	0.46
1:K:472:VAL:HG12	1:C:181:GLN:OE1	2.16	0.46
2:L:259:GLN:HE21	2:L:261:PHE:HE1	1.63	0.46
1:A:221:ALA:C	1:A:224:PRO:HD2	2.34	0.46
2:B:256:VAL:O	2:B:323:PHE:N	2.30	0.46
2:M:413:SER:O	2:M:439:VAL:HA	2.15	0.46
1:E:366:PRO:O	1:E:397:PRO:CG	2.63	0.46
2:L:344:HIS:CG	2:L:345:PRO:HD3	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:601:SER:HA	2:L:605:VAL:O	2.15	0.46
2:L:660:VAL:HG22	2:L:662:VAL:H	1.80	0.46
1:A:236:GLN:H	1:A:236:GLN:HG3	1.58	0.46
2:B:377:LEU:HD12	2:B:377:LEU:C	2.35	0.46
2:F:413:SER:O	2:F:439:VAL:HA	2.15	0.46
2:G:254:ARG:HB3	2:G:485:HIS:HA	1.97	0.46
1:H:404:ILE:HD13	1:H:448:GLY:C	2.34	0.46
2:I:434:ILE:HD11	2:I:463:LEU:HD11	1.98	0.46
2:M:273:GLU:HG2	2:M:299:ARG:HD3	1.97	0.46
1:E:216:CYS:SG	1:E:239:ILE:HG12	2.55	0.46
1:J:216:CYS:SG	1:J:239:ILE:HG12	2.55	0.46
1:C:282:HIS:NE2	2:F:636:TYR:HB2	2.30	0.46
2:F:434:ILE:HD11	2:F:463:LEU:HD11	1.98	0.46
2:F:559:LYS:HB2	2:F:559:LYS:HE2	1.74	0.46
2:G:253:PRO:O	2:G:485:HIS:HB2	2.15	0.46
1:H:490:ARG:HD2	1:H:497:PHE:CB	2.46	0.46
2:L:487:ASP:OD1	2:L:490:PRO:HG2	2.15	0.46
1:A:472:VAL:HG12	1:H:181:GLN:OE1	2.15	0.46
2:B:302:LEU:HD11	2:B:323:PHE:CD1	2.50	0.46
1:C:89:ASN:HB2	1:C:284:LEU:HD13	1.96	0.46
1:C:274:ASP:OD1	1:J:348:LYS:HE3	2.15	0.46
1:H:60:VAL:CG1	2:I:547:ILE:HG23	2.43	0.46
1:K:295:ASN:OD1	1:H:303:THR:HG23	2.16	0.46
2:L:359:GLN:HA	2:L:362:ILE:HG12	1.98	0.46
2:L:556:LYS:HG3	2:L:561:ASN:OD1	2.16	0.46
1:A:226:MET:CE	1:H:426:VAL:HG12	2.42	0.46
1:A:260:LEU:CD1	1:H:411:ARG:HA	2.46	0.46
2:B:272:PHE:CE2	2:B:377:LEU:HB3	2.50	0.46
2:B:660:VAL:HG22	2:B:662:VAL:H	1.80	0.46
1:C:497:PHE:CZ	1:C:502:GLU:HG2	2.51	0.46
1:H:274:ASP:OD1	1:E:348:LYS:HE3	2.16	0.46
2:B:160:MET:CE	2:B:338:THR:CG2	2.94	0.46
2:G:678:ILE:O	2:G:678:ILE:HG13	2.16	0.46
1:H:497:PHE:CZ	1:H:502:GLU:HG2	2.51	0.46
2:I:413:SER:O	2:I:439:VAL:HA	2.15	0.46
2:M:494:LYS:HE2	2:M:494:LYS:HB3	1.51	0.46
1:K:426:VAL:CB	1:C:226:MET:HE1	2.46	0.46
2:B:344:HIS:CG	2:B:345:PRO:HD3	2.50	0.46
2:B:359:GLN:HA	2:B:362:ILE:HG12	1.98	0.46
2:G:273:GLU:HG2	2:G:299:ARG:HD3	1.97	0.46
2:L:639:SER:OG	2:L:642:SER:OG	2.27	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:201:MET:HB2	1:A:201:MET:HE2	1.73	0.46
1:A:421:ASP:HA	1:A:424:LYS:HD3	1.97	0.46
1:C:413:TYR:O	1:C:418:ILE:HG22	2.16	0.46
2:G:150:ILE:HD13	2:G:360:LEU:CD2	2.46	0.46
2:I:273:GLU:HG2	2:I:299:ARG:HD3	1.97	0.46
2:I:302:LEU:HA	2:I:331:PHE:CZ	2.51	0.46
2:I:345:PRO:HB2	2:I:438:VAL:HG21	1.98	0.46
1:K:178:LEU:CD1	1:C:482:LEU:CD2	2.88	0.45
1:A:295:ASN:OD1	1:C:303:THR:HG23	2.16	0.45
2:B:358:TRP:O	2:B:362:ILE:HG23	2.16	0.45
2:B:556:LYS:HG3	2:B:561:ASN:OD1	2.16	0.45
1:C:280:ASP:O	1:C:284:LEU:HG	2.16	0.45
1:C:504:ALA:O	1:C:508:PRO:HD3	2.16	0.45
2:I:494:LYS:HE2	2:I:494:LYS:HB3	1.51	0.45
2:M:302:LEU:HA	2:M:331:PHE:CZ	2.51	0.45
1:J:236:GLN:H	1:J:236:GLN:HG3	1.58	0.45
1:K:280:ASP:O	1:K:284:LEU:HG	2.16	0.45
1:A:216:CYS:SG	1:A:239:ILE:HG12	2.55	0.45
2:B:463:LEU:HD12	2:B:463:LEU:C	2.37	0.45
1:A:112:GLU:OE1	1:A:146:TYR:OH	2.21	0.45
2:F:678:ILE:O	2:F:678:ILE:HG13	2.16	0.45
1:K:269:LYS:HE3	1:K:269:LYS:HB2	1.62	0.45
2:B:383:GLU:HA	2:B:437:LEU:O	2.16	0.45
2:B:675:MET:HE2	2:B:711:LEU:HB3	1.95	0.45
1:E:280:ASP:O	1:E:284:LEU:HG	2.16	0.45
1:K:195:PHE:HB3	1:K:226:MET:CE	2.47	0.45
2:B:671:GLY:HA2	2:B:687:LYS:HB3	1.97	0.45
1:C:424:LYS:HB3	1:C:424:LYS:HE3	1.63	0.45
1:H:282:HIS:NE2	2:I:636:TYR:HB2	2.30	0.45
2:I:270:TYR:OH	2:I:300:LYS:HA	2.17	0.45
2:M:434:ILE:HD11	2:M:463:LEU:HD11	1.98	0.45
2:L:160:MET:CE	2:L:338:THR:CG2	2.94	0.45
2:L:317:GLY:HA2	2:L:362:ILE:CD1	2.46	0.45
2:L:383:GLU:HA	2:L:437:LEU:O	2.16	0.45
2:B:272:PHE:HE1	2:B:377:LEU:HD23	1.70	0.45
2:M:555:LEU:HD13	2:M:629:ILE:HG21	1.99	0.45
1:E:269:LYS:HE3	1:E:269:LYS:HB2	1.62	0.45
1:J:81:LEU:N	1:J:280:ASP:OD2	2.49	0.45
2:L:359:GLN:HA	2:L:362:ILE:CG1	2.47	0.45
2:L:460:ILE:HD12	2:L:465:THR:HG21	1.99	0.45
2:G:614:LEU:HG	2:G:615:GLU:CG	2.45	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:280:ASP:O	1:H:284:LEU:HG	2.16	0.45
1:H:504:ALA:O	1:H:508:PRO:HD3	2.16	0.45
2:I:441:ALA:HB3	2:I:447:ALA:HB2	1.99	0.45
1:K:289:LYS:HD2	1:H:28:VAL:HG22	1.99	0.45
2:F:302:LEU:HA	2:F:331:PHE:CZ	2.51	0.45
2:G:302:LEU:HA	2:G:331:PHE:CZ	2.52	0.45
2:G:555:LEU:HD13	2:G:629:ILE:HG21	1.99	0.45
1:E:187:ASP:OD2	1:J:151:LYS:NZ	2.33	0.45
2:L:358:TRP:O	2:L:362:ILE:HG23	2.16	0.45
2:L:463:LEU:HD12	2:L:463:LEU:C	2.37	0.45
1:A:280:ASP:O	1:A:284:LEU:HG	2.16	0.45
2:F:594:ASP:OD1	2:F:594:ASP:N	2.39	0.45
2:I:614:LEU:HG	2:I:615:GLU:CG	2.45	0.45
1:E:195:PHE:HB3	1:E:226:MET:CE	2.47	0.45
2:B:638:SER:OG	2:B:640:VAL:HG23	2.17	0.45
1:C:60:VAL:HG12	2:F:547:ILE:CG2	2.47	0.45
1:C:490:ARG:HD2	1:C:497:PHE:CB	2.46	0.45
2:G:63:ARG:NH2	2:G:354:ASP:OD1	2.40	0.45
1:H:60:VAL:HG12	2:I:547:ILE:CG2	2.47	0.45
1:H:413:TYR:O	1:H:418:ILE:HG22	2.16	0.45
2:I:264:HIS:CE1	2:I:316:VAL:HG11	2.52	0.45
2:I:555:LEU:HD13	2:I:629:ILE:HG21	1.99	0.45
2:M:270:TYR:OH	2:M:300:LYS:HA	2.17	0.45
1:J:195:PHE:HB3	1:J:226:MET:CE	2.47	0.45
2:B:175:VAL:HG11	2:B:333:PHE:HB2	1.99	0.44
1:C:282:HIS:CD2	2:F:636:TYR:HB3	2.48	0.44
2:G:252:THR:HG23	2:G:324:ILE:HG21	1.99	0.44
2:M:453:TYR:HE1	2:M:623:LYS:CD	2.28	0.44
1:K:260:LEU:CD1	1:C:411:ARG:HA	2.46	0.44
2:B:359:GLN:HA	2:B:362:ILE:CG1	2.47	0.44
2:B:654:THR:O	2:B:679:ALA:HB1	2.17	0.44
2:F:264:HIS:CE1	2:F:316:VAL:HG11	2.52	0.44
2:G:434:ILE:HD11	2:G:463:LEU:HD11	1.98	0.44
1:H:182:ALA:O	1:H:186:PRO:HD2	2.17	0.44
2:B:487:ASP:O	2:B:490:PRO:HD2	2.18	0.44
2:F:150:ILE:HD13	2:F:360:LEU:CD2	2.46	0.44
2:M:345:PRO:HB2	2:M:438:VAL:HG21	1.98	0.44
1:J:280:ASP:O	1:J:284:LEU:HG	2.16	0.44
2:F:453:TYR:HE1	2:F:623:LYS:CD	2.28	0.44
1:H:121:THR:HG22	1:H:134:ILE:HG23	2.00	0.44
2:M:264:HIS:CE1	2:M:316:VAL:HG11	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:188:ARG:HA	1:H:456:ALA:HA	2.00	0.44
2:B:160:MET:HE1	2:B:338:THR:CG2	2.48	0.44
1:C:182:ALA:O	1:C:186:PRO:HD2	2.17	0.44
2:G:264:HIS:CE1	2:G:316:VAL:HG11	2.52	0.44
2:G:270:TYR:OH	2:G:300:LYS:HA	2.17	0.44
2:G:594:ASP:OD1	2:G:594:ASP:N	2.39	0.44
2:I:678:ILE:O	2:I:678:ILE:HG13	2.16	0.44
2:M:678:ILE:HG13	2:M:678:ILE:O	2.16	0.44
1:E:112:GLU:OE1	1:E:146:TYR:OH	2.21	0.44
1:E:121:THR:HG22	1:E:134:ILE:HG23	2.00	0.44
1:E:241:LEU:HD23	1:J:418:ILE:HB	1.98	0.44
1:J:413:TYR:HE1	1:J:418:ILE:HG13	1.82	0.44
2:L:673:SER:HA	2:L:686:ILE:O	2.17	0.44
2:L:675:MET:HE3	2:L:711:LEU:CD2	2.47	0.44
1:C:191:PHE:HE2	3:C:602:TW3:C1	2.31	0.44
1:C:236:GLN:H	1:C:236:GLN:HG3	1.58	0.44
2:F:345:PRO:HB2	2:F:438:VAL:HG21	1.98	0.44
2:F:555:LEU:HD13	2:F:629:ILE:HG21	1.99	0.44
2:L:175:VAL:HG11	2:L:333:PHE:HB2	1.99	0.44
2:L:682:MET:SD	2:L:684:HIS:NE2	2.90	0.44
1:A:195:PHE:HB3	1:A:226:MET:CE	2.47	0.44
1:A:278:LEU:HD21	2:B:641:SER:HB2	2.00	0.44
2:B:460:ILE:HD12	2:B:465:THR:HG21	1.99	0.44
2:G:653:MET:HE3	2:G:653:MET:HB3	1.77	0.44
1:A:121:THR:HG22	1:A:134:ILE:HG23	2.00	0.44
2:F:270:TYR:OH	2:F:300:LYS:HA	2.17	0.44
1:H:191:PHE:HE2	3:H:602:TW3:C1	2.31	0.44
1:H:404:ILE:HD11	1:H:449:ASN:N	2.33	0.44
2:M:614:LEU:HG	2:M:615:GLU:CG	2.46	0.44
2:L:653:MET:SD	1:H:408:MET:CE	3.06	0.44
1:A:289:LYS:HD2	1:C:28:VAL:HG22	1.99	0.44
2:B:280:ARG:HD2	2:B:395:PHE:CD1	2.53	0.44
2:B:485:HIS:CE1	2:B:488:PHE:HA	2.53	0.44
2:B:673:SER:HA	2:B:686:ILE:O	2.17	0.44
1:C:404:ILE:HD11	1:C:449:ASN:N	2.33	0.44
2:F:441:ALA:HB3	2:F:447:ALA:HB2	1.99	0.44
2:I:258:VAL:HG13	2:I:272:PHE:O	2.18	0.44
2:I:533:GLN:H	2:I:533:GLN:HG2	1.59	0.44
1:K:236:GLN:H	1:K:236:GLN:HG3	1.58	0.43
1:K:413:TYR:HE1	1:K:418:ILE:HG13	1.82	0.43
1:A:178:LEU:CD1	1:H:482:LEU:HD21	2.40	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:326:LYS:HA	1:A:326:LYS:HD3	1.80	0.43
2:B:675:MET:CE	2:B:711:LEU:CD2	2.96	0.43
1:C:389:GLN:HE22	1:H:561:PHE:H	1.65	0.43
1:C:561:PHE:H	1:H:389:GLN:HE22	1.65	0.43
2:L:160:MET:HA	2:L:166:SER:HB3	1.99	0.43
2:L:638:SER:OG	2:L:640:VAL:HG23	2.17	0.43
2:L:675:MET:CE	2:L:711:LEU:CD2	2.96	0.43
2:B:280:ARG:HD2	2:B:395:PHE:CE1	2.53	0.43
1:E:201:MET:HB2	1:E:201:MET:HE2	1.72	0.43
1:J:217:THR:O	1:J:221:ALA:N	2.48	0.43
1:K:426:VAL:HB	1:C:226:MET:HE1	2.00	0.43
2:L:255:HIS:ND1	2:L:276:CYS:HB3	2.31	0.43
2:L:280:ARG:HD2	2:L:395:PHE:CE1	2.53	0.43
2:L:654:THR:O	2:L:679:ALA:HB1	2.17	0.43
1:A:413:TYR:HE1	1:A:418:ILE:HG13	1.82	0.43
2:B:513:LEU:HD22	2:B:585:VAL:CG1	2.49	0.43
2:B:675:MET:HE1	2:B:711:LEU:HD23	1.99	0.43
1:C:121:THR:HG22	1:C:134:ILE:HG23	2.00	0.43
2:G:258:VAL:HG13	2:G:272:PHE:O	2.18	0.43
1:J:121:THR:HG22	1:J:134:ILE:HG23	2.00	0.43
2:B:653:MET:SD	1:C:408:MET:CE	3.06	0.43
2:F:667:LYS:HG2	2:F:693:THR:OG1	2.19	0.43
2:G:667:LYS:HG2	2:G:693:THR:OG1	2.19	0.43
1:H:376:LEU:HD23	1:H:376:LEU:HA	1.89	0.43
2:I:252:THR:HG23	2:I:324:ILE:HG21	1.99	0.43
2:I:662:VAL:HG23	2:I:666:ASP:HB3	2.00	0.43
1:E:466:PRO:O	1:E:519:PRO:HG2	2.19	0.43
1:E:473:MET:HG3	1:E:478:ALA:HB2	2.00	0.43
1:K:473:MET:HG3	1:K:478:ALA:HB2	2.00	0.43
2:L:280:ARG:HD2	2:L:395:PHE:CD1	2.53	0.43
2:B:675:MET:HE3	2:B:711:LEU:HD22	2.00	0.43
2:G:345:PRO:HB2	2:G:438:VAL:HG21	1.98	0.43
1:E:219:GLY:HA2	3:E:601:TW3:C1	2.48	0.43
1:J:224:PRO:CG	1:J:239:ILE:CD1	2.96	0.43
1:K:561:PHE:HB3	1:J:563:MET:HE1	2.01	0.43
2:L:274:ARG:HD2	2:L:346:VAL:HG23	1.99	0.43
2:L:433:MET:HE2	2:L:433:MET:HB2	1.80	0.43
2:L:476:HIS:NE2	2:L:495:GLN:OE1	2.52	0.43
2:L:601:SER:HA	2:L:606:ALA:HA	2.00	0.43
1:A:147:PRO:C	1:A:150:VAL:HG12	2.37	0.43
2:B:391:PRO:HA	2:B:395:PHE:CD1	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:201:MET:CE	1:C:208:GLN:NE2	2.78	0.43
2:F:258:VAL:HG13	2:F:272:PHE:O	2.18	0.43
1:E:413:TYR:HE1	1:E:418:ILE:HG13	1.82	0.43
1:J:112:GLU:OE1	1:J:146:TYR:OH	2.21	0.43
1:K:121:THR:HG22	1:K:134:ILE:HG23	2.00	0.43
2:B:317:GLY:HA2	2:B:362:ILE:CD1	2.46	0.43
2:B:601:SER:HA	2:B:606:ALA:HA	2.00	0.43
2:B:653:MET:HG3	2:B:679:ALA:CB	2.49	0.43
2:F:614:LEU:HG	2:F:615:GLU:CG	2.46	0.43
2:G:542:GLY:N	1:J:94:GLY:O	2.52	0.43
1:H:476:GLU:OE2	1:H:477:GLN:NE2	2.51	0.43
1:K:247:VAL:CG2	1:C:409:VAL:HG11	2.45	0.43
2:L:662:VAL:O	2:L:662:VAL:HG13	2.18	0.43
2:B:160:MET:HA	2:B:166:SER:HB3	1.99	0.43
2:B:381:ALA:HA	2:B:439:VAL:O	2.19	0.43
1:H:201:MET:CE	1:H:208:GLN:NE2	2.78	0.43
4:H:601:BTI:HN2	4:H:601:BTI:H72	1.71	0.43
2:I:529:GLN:H	2:I:529:GLN:HG3	1.56	0.43
2:M:150:ILE:HD13	2:M:360:LEU:CD2	2.46	0.43
1:E:147:PRO:HA	1:E:150:VAL:HG12	2.01	0.43
1:J:466:PRO:O	1:J:519:PRO:HG2	2.19	0.43
1:K:188:ARG:HA	1:C:456:ALA:HA	2.00	0.43
2:L:391:PRO:HA	2:L:395:PHE:CD1	2.54	0.43
2:L:485:HIS:CE1	2:L:488:PHE:HA	2.53	0.43
2:B:393:ASN:CB	2:B:396:MET:HG2	2.49	0.43
2:B:676:VAL:HA	2:B:684:HIS:O	2.19	0.43
2:F:653:MET:HE3	2:F:653:MET:HB3	1.73	0.43
2:M:637:LEU:HD23	2:M:637:LEU:HA	1.88	0.43
2:M:667:LYS:HG2	2:M:693:THR:OG1	2.19	0.43
1:K:563:MET:OXT	1:J:563:MET:SD	2.77	0.43
1:A:147:PRO:HA	1:A:150:VAL:HG12	2.01	0.43
1:A:473:MET:HG3	1:A:478:ALA:HB2	2.00	0.43
2:B:637:LEU:HD23	2:B:637:LEU:HA	1.84	0.43
2:B:661:PHE:HB2	2:B:673:SER:O	2.19	0.43
2:B:662:VAL:O	2:B:662:VAL:HG13	2.18	0.43
1:C:404:ILE:HG13	1:C:444:SER:HA	2.00	0.43
2:F:662:VAL:HG23	2:F:666:ASP:HB3	2.00	0.43
2:G:662:VAL:HG23	2:G:666:ASP:HB3	2.00	0.43
1:H:487:LYS:HA	1:H:497:PHE:HD2	1.84	0.43
2:M:281:ARG:HH22	2:M:394:ASN:HD21	1.67	0.43
2:M:382:PHE:O	2:M:438:VAL:HA	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:147:PRO:HA	1:K:150:VAL:HG12	2.01	0.42
2:L:487:ASP:O	2:L:490:PRO:HD2	2.18	0.42
1:A:241:LEU:CD1	1:H:419:ALA:HB2	2.27	0.42
2:B:274:ARG:HD3	2:B:347:THR:HB	2.01	0.42
1:C:81:LEU:N	1:C:280:ASP:OD2	2.49	0.42
2:M:258:VAL:HG13	2:M:272:PHE:O	2.18	0.42
2:M:273:GLU:OE1	2:M:302:LEU:CD2	2.67	0.42
2:M:441:ALA:HB3	2:M:447:ALA:HB2	2.01	0.42
1:E:223:VAL:N	1:E:224:PRO:HD2	2.34	0.42
1:J:473:MET:HG3	1:J:478:ALA:HB2	2.00	0.42
2:B:696:LYS:HG2	2:B:697:VAL:N	2.35	0.42
1:C:487:LYS:HA	1:C:497:PHE:HD2	1.84	0.42
2:I:248:LYS:HD2	2:I:248:LYS:HA	1.47	0.42
2:I:382:PHE:O	2:I:438:VAL:HA	2.19	0.42
2:I:667:LYS:HG2	2:I:693:THR:OG1	2.19	0.42
2:M:271:LEU:HD23	2:M:351:THR:HG21	2.01	0.42
2:L:253:PRO:HB2	2:L:486:THR:N	2.32	0.42
2:B:476:HIS:NE2	2:B:495:GLN:OE1	2.52	0.42
1:C:404:ILE:HD13	1:C:448:GLY:C	2.34	0.42
2:G:387:TYR:CE1	2:G:433:MET:HG3	2.54	0.42
2:I:273:GLU:OE1	2:I:302:LEU:CD2	2.67	0.42
2:I:559:LYS:HE2	2:I:559:LYS:HB2	1.74	0.42
1:K:466:PRO:O	1:K:519:PRO:HG2	2.19	0.42
2:L:393:ASN:CB	2:L:396:MET:HG2	2.49	0.42
2:L:653:MET:HG3	2:L:679:ALA:CB	2.49	0.42
2:B:517:LEU:HD12	2:B:598:LEU:CD1	2.50	0.42
2:F:273:GLU:OE1	2:F:302:LEU:CD2	2.67	0.42
2:G:386:ILE:HD12	2:G:467:ILE:HG12	2.00	0.42
2:I:254:ARG:HB2	2:I:325:MET:O	2.18	0.42
2:M:542:GLY:N	1:E:94:GLY:O	2.52	0.42
1:K:376:LEU:HD23	1:K:376:LEU:HA	1.89	0.42
2:L:411:ASP:OD2	2:L:412:PRO:HD2	2.16	0.42
2:L:517:LEU:HD12	2:L:598:LEU:CD1	2.50	0.42
2:L:659:LYS:HD3	2:L:661:PHE:CE1	2.54	0.42
2:B:274:ARG:HD2	2:B:346:VAL:HG23	1.99	0.42
2:G:382:PHE:O	2:G:438:VAL:HA	2.19	0.42
2:G:407:THR:HB	2:G:416:ILE:HD13	2.01	0.42
1:H:147:PRO:C	1:H:150:VAL:HG12	2.37	0.42
1:H:404:ILE:HG13	1:H:444:SER:HA	2.00	0.42
2:I:407:THR:HB	2:I:416:ILE:HD13	2.01	0.42
1:K:278:LEU:HD21	2:L:641:SER:HB2	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:224:PRO:CG	1:A:239:ILE:CD1	2.96	0.42
1:C:477:GLN:H	1:C:477:GLN:HG2	1.68	0.42
1:H:81:LEU:N	1:H:280:ASP:OD2	2.49	0.42
2:I:265:HIS:CD2	2:I:265:HIS:H	2.38	0.42
2:M:254:ARG:H	2:M:486:THR:H	1.67	0.42
1:J:219:GLY:HA2	3:J:601:TW3:C1	2.48	0.42
1:A:97:PHE:CZ	1:A:122:GLY:HA3	2.55	0.42
2:B:443:ASP:OD2	2:B:446:ALA:N	2.44	0.42
2:B:659:LYS:HD3	2:B:661:PHE:CE1	2.54	0.42
1:H:147:PRO:HA	1:H:150:VAL:HG12	2.01	0.42
2:M:290:PRO:HB3	2:M:299:ARG:NH1	2.35	0.42
1:K:224:PRO:CG	1:K:239:ILE:CD1	2.96	0.42
2:L:513:LEU:HD22	2:L:585:VAL:CG1	2.49	0.42
1:A:241:LEU:HD22	1:H:419:ALA:CA	2.49	0.42
1:H:97:PHE:CZ	1:H:122:GLY:HA3	2.55	0.42
1:H:326:LYS:HA	1:H:326:LYS:HD3	1.80	0.42
2:M:313:VAL:HG23	2:M:315:TYR:HB2	2.02	0.42
2:M:662:VAL:HG23	2:M:666:ASP:HB3	2.00	0.42
2:L:274:ARG:HD3	2:L:347:THR:HB	2.01	0.42
2:L:623:LYS:HE2	2:L:623:LYS:H	1.85	0.42
2:L:661:PHE:HB2	2:L:673:SER:O	2.19	0.42
2:L:696:LYS:HG2	2:L:697:VAL:N	2.35	0.42
2:B:344:HIS:O	2:B:348:GLU:HG3	2.20	0.42
2:F:265:HIS:CD2	2:F:265:HIS:H	2.38	0.42
2:F:271:LEU:HD23	2:F:351:THR:HG21	2.01	0.42
2:F:382:PHE:O	2:F:438:VAL:HA	2.19	0.42
2:F:494:LYS:H	2:F:494:LYS:HG2	1.36	0.42
2:G:453:TYR:HE1	2:G:623:LYS:CD	2.28	0.42
1:E:81:LEU:N	1:E:280:ASP:OD2	2.49	0.42
1:J:97:PHE:CZ	1:J:122:GLY:HA3	2.55	0.42
1:J:223:VAL:N	1:J:224:PRO:HD2	2.34	0.42
1:K:147:PRO:C	1:K:150:VAL:HG12	2.37	0.42
1:A:83:PRO:HA	1:A:86:ARG:HD2	2.02	0.42
1:A:179:PRO:O	1:A:180:ARG:HB2	2.20	0.42
1:A:223:VAL:N	1:A:224:PRO:HD2	2.34	0.42
2:B:463:LEU:HD12	2:B:464:HIS:O	2.20	0.42
2:G:313:VAL:HG23	2:G:315:TYR:HB2	2.02	0.42
1:H:390:LEU:HD23	1:H:390:LEU:HA	1.92	0.42
2:M:386:ILE:HD12	2:M:467:ILE:HG12	2.02	0.42
2:M:407:THR:HB	2:M:416:ILE:HD13	2.01	0.42
1:J:62:HIS:O	1:J:65:LEU:HB2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:62:HIS:O	1:K:65:LEU:HB2	2.20	0.41
2:L:676:VAL:HA	2:L:684:HIS:O	2.19	0.41
1:A:492:ARG:HD2	1:A:492:ARG:HA	1.82	0.41
1:A:563:MET:HE2	1:A:563:MET:HB2	1.80	0.41
1:C:355:LEU:HD12	1:C:371:GLY:O	2.20	0.41
2:F:386:ILE:HD12	2:F:467:ILE:HG12	2.01	0.41
2:I:150:ILE:HD13	2:I:360:LEU:CD2	2.46	0.41
1:E:147:PRO:C	1:E:150:VAL:HG12	2.37	0.41
1:E:179:PRO:O	1:E:180:ARG:HB2	2.20	0.41
1:K:223:VAL:N	1:K:224:PRO:HD2	2.34	0.41
2:L:152:PRO:HG3	2:L:338:THR:HG21	2.02	0.41
2:L:637:LEU:HD23	2:L:637:LEU:HA	1.84	0.41
1:A:278:LEU:HD21	2:B:641:SER:HB3	2.00	0.41
1:A:355:LEU:HD12	1:A:371:GLY:O	2.20	0.41
1:A:389:GLN:HE22	1:E:561:PHE:H	1.67	0.41
1:A:466:PRO:O	1:A:519:PRO:HG2	2.19	0.41
1:C:147:PRO:HA	1:C:150:VAL:HG12	2.01	0.41
2:I:453:TYR:HE1	2:I:623:LYS:CD	2.28	0.41
1:J:83:PRO:HA	1:J:86:ARG:HD2	2.02	0.41
1:K:241:LEU:HD12	1:K:241:LEU:HA	1.92	0.41
1:K:241:LEU:HD22	1:C:419:ALA:CA	2.50	0.41
1:K:265:LEU:HD23	1:K:266:HIS:N	2.35	0.41
2:B:255:HIS:ND1	2:B:276:CYS:HB3	2.31	0.41
2:B:659:LYS:HA	2:B:701:GLU:OE2	2.21	0.41
2:G:265:HIS:CD2	2:G:265:HIS:H	2.38	0.41
2:G:271:LEU:HD23	2:G:351:THR:HG21	2.01	0.41
2:G:610:LYS:HB3	2:G:621:PHE:HB2	2.02	0.41
1:H:62:HIS:O	1:H:65:LEU:HB2	2.20	0.41
2:I:290:PRO:HB3	2:I:299:ARG:NH1	2.35	0.41
1:E:65:LEU:HD23	1:E:65:LEU:HA	1.81	0.41
1:E:411:ARG:H	1:E:411:ARG:HG2	1.61	0.41
2:L:344:HIS:O	2:L:348:GLU:HG3	2.20	0.41
2:L:659:LYS:HA	2:L:701:GLU:OE2	2.20	0.41
1:A:81:LEU:N	1:A:280:ASP:OD2	2.49	0.41
2:B:682:MET:SD	2:B:684:HIS:NE2	2.90	0.41
2:F:407:THR:HB	2:F:416:ILE:HD13	2.01	0.41
2:G:259:GLN:HB3	2:G:271:LEU:HB2	2.03	0.41
2:G:290:PRO:HB3	2:G:299:ARG:NH1	2.35	0.41
2:I:386:ILE:HD12	2:I:467:ILE:HG12	2.02	0.41
2:M:259:GLN:HB3	2:M:271:LEU:HB2	2.02	0.41
1:K:65:LEU:HD23	1:K:65:LEU:HA	1.81	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:83:PRO:HA	1:K:86:ARG:HD2	2.02	0.41
1:K:97:PHE:CZ	1:K:122:GLY:HA3	2.55	0.41
1:K:179:PRO:O	1:K:180:ARG:HB2	2.20	0.41
2:L:170:MET:HE3	2:L:175:VAL:CG2	2.50	0.41
1:A:462:LEU:O	1:A:529:ASP:HB2	2.20	0.41
2:B:623:LYS:H	2:B:623:LYS:HE2	1.85	0.41
1:C:97:PHE:CZ	1:C:122:GLY:HA3	2.55	0.41
2:G:273:GLU:OE1	2:G:302:LEU:CD2	2.67	0.41
1:J:147:PRO:HA	1:J:150:VAL:HG12	2.01	0.41
1:A:265:LEU:HD23	1:A:266:HIS:N	2.35	0.41
1:A:361:ARG:NH1	1:A:366:PRO:HD3	2.36	0.41
2:B:612:ILE:HD13	2:B:621:PHE:HE2	1.86	0.41
1:C:62:HIS:O	1:C:65:LEU:HB2	2.20	0.41
2:M:265:HIS:CD2	2:M:265:HIS:H	2.38	0.41
1:E:83:PRO:HA	1:E:86:ARG:HD2	2.02	0.41
2:L:257:GLU:HA	2:L:321:VAL:O	2.20	0.41
2:L:261:PHE:CZ	2:L:318:ALA:HB2	2.56	0.41
2:L:381:ALA:HA	2:L:439:VAL:O	2.19	0.41
2:B:257:GLU:HA	2:B:322:GLU:HA	2.03	0.41
1:J:355:LEU:HD12	1:J:371:GLY:O	2.20	0.41
1:K:361:ARG:NH1	1:K:366:PRO:HD3	2.36	0.41
2:L:463:LEU:HD12	2:L:464:HIS:O	2.20	0.41
1:A:62:HIS:O	1:A:65:LEU:HB2	2.20	0.41
1:A:269:LYS:HE3	1:A:269:LYS:HB2	1.62	0.41
2:B:258:VAL:O	2:B:320:THR:HA	2.21	0.41
2:B:343:GLU:HG2	2:B:385:ARG:NH2	2.35	0.41
2:B:411:ASP:OD2	2:B:412:PRO:HD2	2.16	0.41
1:C:147:PRO:C	1:C:150:VAL:HG12	2.37	0.41
2:G:590:TYR:OH	2:G:608:LYS:HD3	2.21	0.41
2:G:637:LEU:HD23	2:G:637:LEU:HA	1.88	0.41
2:I:271:LEU:HD23	2:I:351:THR:HG21	2.01	0.41
1:E:97:PHE:CZ	1:E:122:GLY:HA3	2.55	0.41
1:E:265:LEU:HD23	1:E:266:HIS:N	2.35	0.41
1:E:355:LEU:HD12	1:E:371:GLY:O	2.20	0.41
1:J:179:PRO:O	1:J:180:ARG:HB2	2.20	0.41
1:J:221:ALA:O	1:J:224:PRO:CD	2.67	0.41
1:J:265:LEU:HD23	1:J:266:HIS:N	2.35	0.41
2:L:257:GLU:HA	2:L:322:GLU:HA	2.03	0.41
2:L:660:VAL:HG23	2:L:675:MET:HG3	2.03	0.41
1:A:426:VAL:HB	1:H:226:MET:HE2	2.03	0.41
2:B:257:GLU:HA	2:B:321:VAL:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:83:PRO:HA	1:C:86:ARG:HD2	2.02	0.41
2:F:290:PRO:HB3	2:F:299:ARG:NH1	2.35	0.41
2:F:313:VAL:HG23	2:F:315:TYR:HB2	2.02	0.41
2:F:590:TYR:OH	2:F:608:LYS:HD3	2.21	0.41
2:G:441:ALA:HB3	2:G:447:ALA:HB2	2.02	0.41
2:G:453:TYR:CE1	2:G:623:LYS:HD3	2.47	0.41
2:G:635:LYS:H	2:G:635:LYS:HG3	1.63	0.41
1:H:83:PRO:HA	1:H:86:ARG:HD2	2.02	0.41
1:H:355:LEU:HD12	1:H:371:GLY:O	2.20	0.41
2:I:590:TYR:OH	2:I:608:LYS:HD3	2.21	0.41
2:I:610:LYS:HB3	2:I:621:PHE:HB2	2.02	0.41
1:J:528:ASP:O	1:J:529:ASP:C	2.59	0.41
2:L:253:PRO:HB3	2:L:486:THR:HG22	2.03	0.41
2:L:280:ARG:HH22	2:L:466:ASN:HD22	1.69	0.41
2:L:343:GLU:HG2	2:L:385:ARG:NH2	2.36	0.41
1:A:344:PHE:CZ	1:A:358:GLY:HA3	2.56	0.41
2:B:261:PHE:CZ	2:B:318:ALA:HB2	2.56	0.41
2:B:469:PHE:CZ	2:B:496:LEU:HD13	2.55	0.41
2:I:176:PRO:O	2:I:333:PHE:HB3	2.21	0.41
2:I:586:LEU:O	2:I:586:LEU:HD12	2.21	0.41
1:J:49:MET:CG	1:J:318:TYR:CD1	3.04	0.41
1:J:267:CYS:HG	1:J:276:TRP:HD1	1.68	0.41
1:J:344:PHE:CZ	1:J:358:GLY:HA3	2.56	0.41
2:L:469:PHE:CZ	2:L:496:LEU:HD13	2.55	0.40
2:B:280:ARG:HH22	2:B:466:ASN:HD22	1.69	0.40
1:H:344:PHE:CZ	1:H:358:GLY:HA3	2.56	0.40
2:I:259:GLN:HB3	2:I:271:LEU:HB2	2.03	0.40
1:E:62:HIS:O	1:E:65:LEU:HB2	2.20	0.40
1:E:525:ARG:H	1:E:525:ARG:HG2	1.68	0.40
1:J:64:LYS:O	1:J:64:LYS:HG2	2.21	0.40
1:K:344:PHE:CZ	1:K:358:GLY:HA3	2.56	0.40
1:K:543:LEU:HD21	2:L:536:PRO:HB2	2.04	0.40
2:B:675:MET:CE	2:B:711:LEU:CB	2.89	0.40
1:C:64:LYS:O	1:C:64:LYS:HG2	2.21	0.40
1:C:117:GLY:O	1:C:149:THR:OG1	2.31	0.40
1:C:221:ALA:O	1:C:224:PRO:HD2	2.21	0.40
1:H:221:ALA:O	1:H:224:PRO:HD2	2.21	0.40
2:M:248:LYS:HA	2:M:248:LYS:HD2	1.49	0.40
1:E:326:LYS:HA	1:E:326:LYS:HD3	1.80	0.40
1:J:361:ARG:NH1	1:J:366:PRO:HD3	2.36	0.40
1:K:98:LEU:HD12	2:L:545:LEU:HD11	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:134:ILE:HD12	1:K:169:TYR:CE2	2.56	0.40
2:L:612:ILE:HD13	2:L:621:PHE:HE2	1.86	0.40
1:A:134:ILE:HD12	1:A:169:TYR:CE2	2.57	0.40
1:A:301:ASP:OD1	1:A:301:ASP:N	2.55	0.40
2:B:681:LYS:HE2	1:C:477:GLN:CG	2.49	0.40
1:C:274:ASP:HA	1:J:348:LYS:HG2	2.03	0.40
2:M:590:TYR:OH	2:M:608:LYS:HD3	2.21	0.40
1:E:224:PRO:CG	1:E:239:ILE:CD1	2.96	0.40
1:E:301:ASP:OD1	1:E:301:ASP:N	2.55	0.40
1:E:361:ARG:NH1	1:E:366:PRO:HD3	2.36	0.40
1:J:177:TYR:HA	3:J:601:TW3:N5	2.36	0.40
1:K:355:LEU:HD12	1:K:371:GLY:O	2.21	0.40
1:K:490:ARG:HB3	1:K:495:LYS:O	2.22	0.40
2:L:612:ILE:HD13	2:L:621:PHE:CE2	2.56	0.40
2:L:675:MET:HE3	2:L:711:LEU:HD22	2.04	0.40
2:L:711:LEU:HD12	2:L:711:LEU:N	2.37	0.40
1:A:221:ALA:O	1:A:224:PRO:CD	2.67	0.40
1:A:490:ARG:HB3	1:A:495:LYS:O	2.22	0.40
2:B:126:HIS:CD2	2:B:150:ILE:HG21	2.56	0.40
1:C:528:ASP:O	1:C:529:ASP:C	2.59	0.40
1:H:49:MET:CG	1:H:318:TYR:CD1	3.04	0.40
1:H:412:GLU:HG2	1:H:413:TYR:N	2.37	0.40
2:I:313:VAL:HG23	2:I:315:TYR:HB2	2.02	0.40
1:E:294:LEU:HD23	1:E:294:LEU:HA	1.95	0.40
1:E:492:ARG:HA	1:E:492:ARG:HD2	1.82	0.40
1:K:121:THR:HA	1:K:133:ILE:O	2.22	0.40
1:K:301:ASP:N	1:K:301:ASP:OD1	2.55	0.40
2:L:126:HIS:CD2	2:L:150:ILE:HG21	2.56	0.40
2:L:687:LYS:O	2:L:689:PRO:HD3	2.22	0.40
1:A:98:LEU:HD12	2:B:545:LEU:HD11	2.03	0.40
2:B:152:PRO:HG3	2:B:338:THR:HG21	2.02	0.40
2:B:389:GLU:HA	2:B:396:MET:O	2.22	0.40
2:B:612:ILE:HD13	2:B:621:PHE:CE2	2.56	0.40
2:B:650:LEU:HB3	2:B:708:HIS:HA	2.03	0.40
2:F:586:LEU:HD12	2:F:586:LEU:O	2.21	0.40
2:F:610:LYS:HB3	2:F:621:PHE:HB2	2.02	0.40
1:H:121:THR:HA	1:H:133:ILE:O	2.22	0.40
1:H:528:ASP:O	1:H:529:ASP:C	2.59	0.40
1:J:492:ARG:HA	1:J:492:ARG:HD2	1.82	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	539/563 (96%)	521 (97%)	18 (3%)	0	100	100
1	C	516/563 (92%)	502 (97%)	14 (3%)	0	100	100
1	E	520/563 (92%)	502 (96%)	17 (3%)	1 (0%)	47	81
1	H	516/563 (92%)	503 (98%)	12 (2%)	1 (0%)	47	81
1	J	518/563 (92%)	500 (96%)	17 (3%)	1 (0%)	47	81
1	K	539/563 (96%)	520 (96%)	17 (3%)	2 (0%)	34	72
2	B	535/725 (74%)	524 (98%)	11 (2%)	0	100	100
2	F	603/725 (83%)	585 (97%)	18 (3%)	0	100	100
2	G	603/725 (83%)	579 (96%)	24 (4%)	0	100	100
2	I	603/725 (83%)	584 (97%)	18 (3%)	1 (0%)	47	81
2	L	535/725 (74%)	524 (98%)	11 (2%)	0	100	100
2	M	603/725 (83%)	585 (97%)	18 (3%)	0	100	100
All	All	6630/7728 (86%)	6429 (97%)	195 (3%)	6 (0%)	54	84

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	K	26	ASP
1	K	529	ASP
1	H	26	ASP
1	E	529	ASP
1	J	529	ASP
2	I	254	ARG

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	430/445 (97%)	418 (97%)	12 (3%)	43	72
1	C	415/445 (93%)	405 (98%)	10 (2%)	49	76
1	E	418/445 (94%)	409 (98%)	9 (2%)	52	78
1	H	415/445 (93%)	405 (98%)	10 (2%)	49	76
1	J	417/445 (94%)	404 (97%)	13 (3%)	40	70
1	K	430/445 (97%)	420 (98%)	10 (2%)	50	77
2	B	456/609 (75%)	452 (99%)	4 (1%)	78	90
2	F	511/609 (84%)	495 (97%)	16 (3%)	40	70
2	G	511/609 (84%)	497 (97%)	14 (3%)	44	73
2	I	511/609 (84%)	494 (97%)	17 (3%)	38	68
2	L	456/609 (75%)	452 (99%)	4 (1%)	78	90
2	M	511/609 (84%)	497 (97%)	14 (3%)	44	73
All	All	5481/6324 (87%)	5348 (98%)	133 (2%)	51	76

All (133) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	K	24	HIS
1	K	26	ASP
1	K	198	GLN
1	K	203	SER
1	K	240	PHE
1	K	251	THR
1	K	409	VAL
1	K	425	MET
1	K	527	TRP
1	K	563	MET
2	L	136	MET
2	L	396	MET
2	L	433	MET
2	L	681	LYS
1	A	24	HIS
1	A	26	ASP
1	A	27	SER
1	A	198	GLN

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Mol	Chain	Res	Type
1	A	203	SER
1	A	240	PHE
1	A	251	THR
1	A	292	ARG
1	A	409	VAL
1	A	424	LYS
1	A	425	MET
1	A	563	MET
2	B	136	MET
2	B	396	MET
2	B	433	MET
2	B	681	LYS
1	C	26	ASP
1	C	27	SER
1	C	238	THR
1	C	265	LEU
1	C	407	PHE
1	C	424	LYS
1	C	425	MET
1	C	497	PHE
1	C	515	GLU
1	C	527	TRP
2	F	175	VAL
2	F	248	LYS
2	F	250	VAL
2	F	251	ASP
2	F	252	THR
2	F	254	ARG
2	F	261	PHE
2	F	443	ASP
2	F	458	TYR
2	F	493	HIS
2	F	494	LYS
2	F	495	GLN
2	F	532	ASP
2	F	535	SER
2	F	638	SER
2	F	645	THR
2	G	175	VAL
2	G	177	VAL
2	G	178	VAL
2	G	248	LYS

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Mol	Chain	Res	Type
2	G	249	PHE
2	G	250	VAL
2	G	251	ASP
2	G	254	ARG
2	G	261	PHE
2	G	458	TYR
2	G	493	HIS
2	G	494	LYS
2	G	638	SER
2	G	645	THR
1	H	24	HIS
1	H	26	ASP
1	H	265	LEU
1	H	292	ARG
1	H	407	PHE
1	H	424	LYS
1	H	476	GLU
1	H	497	PHE
1	H	515	GLU
1	H	527	TRP
2	I	247	GLU
2	I	248	LYS
2	I	249	PHE
2	I	252	THR
2	I	254	ARG
2	I	261	PHE
2	I	443	ASP
2	I	458	TYR
2	I	491	GLN
2	I	493	HIS
2	I	494	LYS
2	I	495	GLN
2	I	498	LEU
2	I	529	GLN
2	I	533	GLN
2	I	638	SER
2	I	645	THR
2	M	248	LYS
2	M	249	PHE
2	M	250	VAL
2	M	252	THR
2	M	254	ARG

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Mol	Chain	Res	Type
2	M	261	PHE
2	M	280	ARG
2	M	458	TYR
2	M	491	GLN
2	M	493	HIS
2	M	494	LYS
2	M	495	GLN
2	M	638	SER
2	M	645	THR
1	E	24	HIS
1	E	26	ASP
1	E	198	GLN
1	E	203	SER
1	E	240	PHE
1	E	292	ARG
1	E	409	VAL
1	E	527	TRP
1	E	563	MET
1	J	24	HIS
1	J	26	ASP
1	J	27	SER
1	J	77	SER
1	J	198	GLN
1	J	203	SER
1	J	240	PHE
1	J	409	VAL
1	J	425	MET
1	J	527	TRP
1	J	560	ILE
1	J	562	ARG
1	J	563	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (44) such sidechains are listed below:

Mol	Chain	Res	Type
1	K	102	GLN
1	K	266	HIS
1	K	282	HIS
1	K	389	GLN
2	L	546	ASN
1	A	102	GLN
1	A	266	HIS

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Mol	Chain	Res	Type
1	A	282	HIS
1	A	389	GLN
2	B	546	ASN
1	C	136	ASN
1	C	208	GLN
1	C	282	HIS
1	C	389	GLN
1	C	518	ASN
2	F	259	GLN
2	F	283	GLN
2	F	429	HIS
2	F	457	GLN
2	F	493	HIS
2	G	259	GLN
2	G	283	GLN
2	G	429	HIS
2	G	457	GLN
1	H	136	ASN
1	H	208	GLN
1	H	282	HIS
1	H	389	GLN
1	H	477	GLN
1	H	518	ASN
2	I	259	GLN
2	I	283	GLN
2	I	429	HIS
2	I	457	GLN
2	I	491	GLN
2	M	259	GLN
2	M	429	HIS
2	M	457	GLN
2	M	491	GLN
1	E	266	HIS
1	E	282	HIS
1	E	389	GLN
1	J	266	HIS
1	J	282	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

12 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	$\#\|Z\| > 2$
3	TW3	A	601	-	47,56,56	0.55	0	60,83,83	1.39	5 (8%)
4	BTI	M	801	-	16,16,16	0.54	0	21,21,21	0.89	1 (4%)
4	BTI	G	801	-	16,16,16	0.54	0	21,21,21	0.90	1 (4%)
4	BTI	F	801	-	16,16,16	0.55	0	21,21,21	0.90	1 (4%)
4	BTI	C	601	-	16,16,16	1.27	1 (6%)	21,21,21	2.18	6 (28%)
3	TW3	C	602	-	47,56,56	0.55	0	60,83,83	1.41	5 (8%)
4	BTI	H	601	-	16,16,16	1.27	1 (6%)	21,21,21	2.03	7 (33%)
3	TW3	J	601	-	47,56,56	0.55	0	60,83,83	1.40	5 (8%)
4	BTI	I	801	-	16,16,16	0.53	0	21,21,21	0.91	1 (4%)
3	TW3	E	601	-	47,56,56	0.55	0	60,83,83	1.41	5 (8%)
3	TW3	K	601	-	47,56,56	0.55	0	60,83,83	1.39	5 (8%)
3	TW3	H	602	-	47,56,56	0.55	0	60,83,83	1.40	5 (8%)

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
3	TW3	A	601	-	-	13/50/71/71	0/3/3/3
4	BTI	M	801	-	-	2/5/27/27	0/2/2/2
4	BTI	G	801	-	-	2/5/27/27	0/2/2/2
4	BTI	F	801	-	-	2/5/27/27	0/2/2/2
4	BTI	C	601	-	-	4/5/27/27	0/2/2/2
3	TW3	C	602	-	-	13/50/71/71	0/3/3/3
4	BTI	H	601	-	-	4/5/27/27	0/2/2/2
3	TW3	J	601	-	-	13/50/71/71	0/3/3/3
4	BTI	I	801	-	-	2/5/27/27	0/2/2/2
3	TW3	E	601	-	-	13/50/71/71	0/3/3/3
3	TW3	K	601	-	-	13/50/71/71	0/3/3/3
3	TW3	H	602	-	-	13/50/71/71	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	C	601	BTI	C2-S1	-3.56	1.76	1.82
4	H	601	BTI	C2-S1	-3.39	1.77	1.82

All (47) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	E	601	TW3	C4-C5-S1	7.96	121.18	111.24
3	C	602	TW3	C4-C5-S1	7.96	121.17	111.24
3	J	601	TW3	C4-C5-S1	7.92	121.13	111.24
3	H	602	TW3	C4-C5-S1	7.92	121.12	111.24
3	A	601	TW3	C4-C5-S1	7.88	121.07	111.24
3	K	601	TW3	C4-C5-S1	7.88	121.07	111.24
4	C	601	BTI	C4-C2-S1	4.09	109.11	105.20
4	H	601	BTI	C2-C4-N2	-4.06	109.49	113.13
4	C	601	BTI	C6-C5-N3	-3.92	108.05	113.03
4	H	601	BTI	C6-C5-C4	3.92	112.06	108.66
4	C	601	BTI	C6-S1-C2	3.57	97.22	89.89
4	H	601	BTI	C4-C2-S1	3.49	108.53	105.20
4	C	601	BTI	C6-C5-C4	3.37	111.59	108.66
4	C	601	BTI	C5-C6-S1	3.20	109.04	106.31
3	E	601	TW3	O1-C5-C4	-3.08	121.72	125.50
3	C	602	TW3	O1-C5-C4	-3.06	121.75	125.50
3	J	601	TW3	O1-C5-C4	-3.04	121.77	125.50
3	H	602	TW3	O1-C5-C4	-3.01	121.80	125.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	K	601	TW3	O1-C5-C4	-3.01	121.81	125.50
3	A	601	TW3	O1-C5-C4	-2.99	121.83	125.50
4	C	601	BTI	C8-C7-C2	-2.99	107.80	113.86
3	H	602	TW3	O12-C19-C25	-2.92	102.66	106.93
4	H	601	BTI	C6-S1-C2	2.91	95.88	89.89
3	C	602	TW3	O12-C19-C25	-2.90	102.69	106.93
3	J	601	TW3	O12-C19-C25	-2.89	102.71	106.93
3	K	601	TW3	O12-C19-C25	-2.87	102.73	106.93
3	A	601	TW3	O12-C19-C25	-2.87	102.73	106.93
3	E	601	TW3	O12-C19-C25	-2.86	102.74	106.93
4	H	601	BTI	C8-C7-C2	-2.85	108.08	113.86
3	H	602	TW3	O1-C5-S1	-2.49	117.08	122.64
3	C	602	TW3	O1-C5-S1	-2.49	117.08	122.64
3	A	601	TW3	O1-C5-S1	-2.48	117.09	122.64
3	E	601	TW3	O1-C5-S1	-2.48	117.10	122.64
3	J	601	TW3	O1-C5-S1	-2.48	117.10	122.64
3	K	601	TW3	O1-C5-S1	-2.47	117.12	122.64
4	H	601	BTI	C6-C5-N3	-2.31	110.09	113.03
3	C	602	TW3	C21-C22-N5	2.29	123.83	120.35
3	J	601	TW3	C21-C22-N5	2.26	123.79	120.35
3	E	601	TW3	C21-C22-N5	2.26	123.78	120.35
3	H	602	TW3	C21-C22-N5	2.25	123.78	120.35
3	K	601	TW3	C21-C22-N5	2.24	123.75	120.35
4	H	601	BTI	C8-C9-C10	-2.23	104.06	113.79
3	A	601	TW3	C21-C22-N5	2.23	123.74	120.35
4	F	801	BTI	N2-C3-N3	-2.20	106.69	108.76
4	I	801	BTI	N2-C3-N3	-2.20	106.70	108.76
4	G	801	BTI	N2-C3-N3	-2.14	106.75	108.76
4	M	801	BTI	N2-C3-N3	-2.14	106.75	108.76

There are no chirality outliers.

All (94) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	K	601	TW3	N2-C11-C12-C13
3	K	601	TW3	N2-C11-C12-O4
3	K	601	TW3	O3-C11-C12-C13
3	K	601	TW3	O3-C11-C12-O4
3	K	601	TW3	C18-C17-O11-P2
3	K	601	TW3	C17-O11-P2-O9
3	A	601	TW3	N2-C11-C12-C13
3	A	601	TW3	N2-C11-C12-O4

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Mol	Chain	Res	Type	Atoms
3	A	601	TW3	O3-C11-C12-C13
3	A	601	TW3	O3-C11-C12-O4
3	A	601	TW3	C18-C17-O11-P2
3	A	601	TW3	C17-O11-P2-O9
3	C	602	TW3	N2-C11-C12-C13
3	C	602	TW3	N2-C11-C12-O4
3	C	602	TW3	O3-C11-C12-C13
3	C	602	TW3	O3-C11-C12-O4
3	C	602	TW3	C18-C17-O11-P2
3	C	602	TW3	C17-O11-P2-O9
3	H	602	TW3	N2-C11-C12-C13
3	H	602	TW3	N2-C11-C12-O4
3	H	602	TW3	O3-C11-C12-C13
3	H	602	TW3	O3-C11-C12-O4
3	H	602	TW3	C18-C17-O11-P2
3	H	602	TW3	C17-O11-P2-O9
3	E	601	TW3	N2-C11-C12-C13
3	E	601	TW3	N2-C11-C12-O4
3	E	601	TW3	O3-C11-C12-C13
3	E	601	TW3	O3-C11-C12-O4
3	E	601	TW3	C18-C17-O11-P2
3	E	601	TW3	C17-O11-P2-O9
3	J	601	TW3	N2-C11-C12-C13
3	J	601	TW3	N2-C11-C12-O4
3	J	601	TW3	O3-C11-C12-C13
3	J	601	TW3	O3-C11-C12-O4
3	J	601	TW3	C18-C17-O11-P2
3	J	601	TW3	C17-O11-P2-O9
4	C	601	BTI	S1-C2-C7-C8
4	C	601	BTI	C4-C2-C7-C8
4	H	601	BTI	C11-C10-C9-C8
4	H	601	BTI	S1-C2-C7-C8
4	H	601	BTI	C4-C2-C7-C8
3	K	601	TW3	C25-C26-O14-P3
3	A	601	TW3	C25-C26-O14-P3
3	C	602	TW3	C25-C26-O14-P3
3	H	602	TW3	C25-C26-O14-P3
3	E	601	TW3	C25-C26-O14-P3
3	J	601	TW3	C25-C26-O14-P3
3	K	601	TW3	O11-C17-C18-C26
3	A	601	TW3	O11-C17-C18-C26
3	C	602	TW3	O11-C17-C18-C26

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Mol	Chain	Res	Type	Atoms
3	H	602	TW3	O11-C17-C18-C26
3	E	601	TW3	O11-C17-C18-C26
3	J	601	TW3	O11-C17-C18-C26
3	K	601	TW3	C18-C26-O14-P3
3	A	601	TW3	C18-C26-O14-P3
3	C	602	TW3	C18-C26-O14-P3
3	H	602	TW3	C18-C26-O14-P3
3	E	601	TW3	C18-C26-O14-P3
3	J	601	TW3	C18-C26-O14-P3
3	K	601	TW3	O11-C17-C18-O12
3	A	601	TW3	O11-C17-C18-O12
3	C	602	TW3	O11-C17-C18-O12
3	H	602	TW3	O11-C17-C18-O12
3	E	601	TW3	O11-C17-C18-O12
3	J	601	TW3	O11-C17-C18-O12
4	C	601	BTI	C7-C8-C9-C10
4	F	801	BTI	C2-C7-C8-C9
4	G	801	BTI	C2-C7-C8-C9
4	H	601	BTI	C2-C7-C8-C9
4	I	801	BTI	C2-C7-C8-C9
4	M	801	BTI	C2-C7-C8-C9
4	C	601	BTI	C11-C10-C9-C8
4	F	801	BTI	C11-C10-C9-C8
4	G	801	BTI	C11-C10-C9-C8
4	I	801	BTI	C11-C10-C9-C8
4	M	801	BTI	C11-C10-C9-C8
3	K	601	TW3	C7-C6-S1-C5
3	A	601	TW3	C7-C6-S1-C5
3	C	602	TW3	C7-C6-S1-C5
3	H	602	TW3	C7-C6-S1-C5
3	E	601	TW3	C7-C6-S1-C5
3	J	601	TW3	C7-C6-S1-C5
3	K	601	TW3	C13-C16-O5-P1
3	A	601	TW3	C13-C16-O5-P1
3	C	602	TW3	C13-C16-O5-P1
3	H	602	TW3	C13-C16-O5-P1
3	E	601	TW3	C13-C16-O5-P1
3	J	601	TW3	C13-C16-O5-P1
3	K	601	TW3	C16-O5-P1-O6
3	A	601	TW3	C16-O5-P1-O6
3	C	602	TW3	C16-O5-P1-O6
3	H	602	TW3	C16-O5-P1-O6

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Mol	Chain	Res	Type	Atoms
3	E	601	TW3	C16-O5-P1-O6
3	J	601	TW3	C16-O5-P1-O6

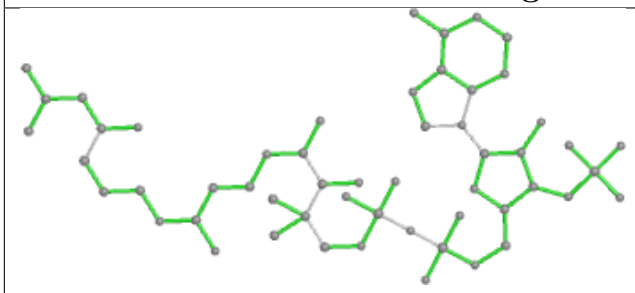
There are no ring outliers.

12 monomers are involved in 54 short contacts:

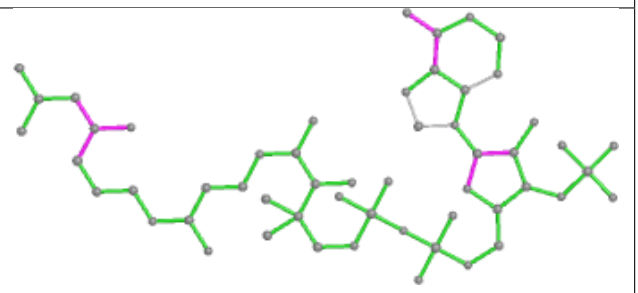
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	601	TW3	2	0
4	M	801	BTI	3	0
4	G	801	BTI	3	0
4	F	801	BTI	3	0
4	C	601	BTI	7	0
3	C	602	TW3	6	0
4	H	601	BTI	9	0
3	J	601	TW3	5	0
4	I	801	BTI	3	0
3	E	601	TW3	4	0
3	K	601	TW3	2	0
3	H	602	TW3	7	0

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.

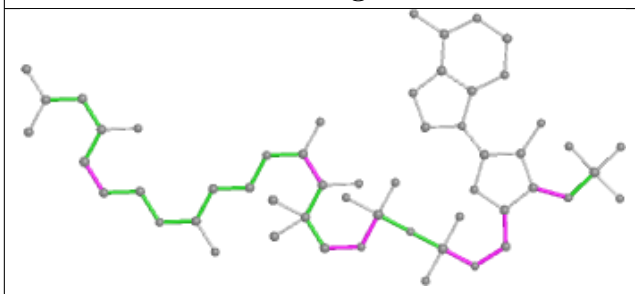
Ligand TW3 A 601



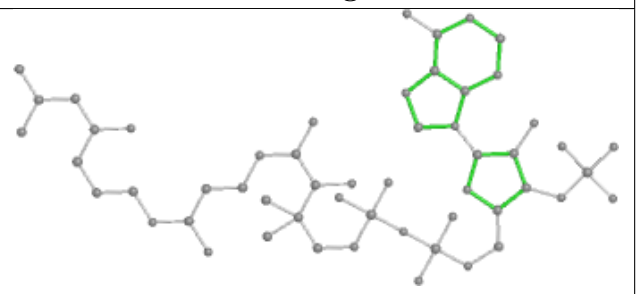
Bond lengths



Bond angles

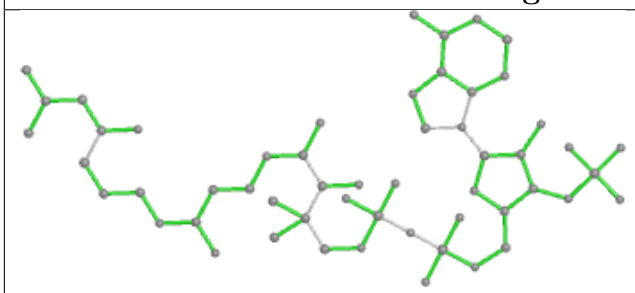


Torsions

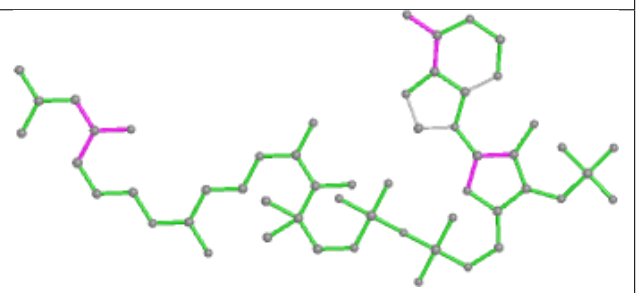


Rings

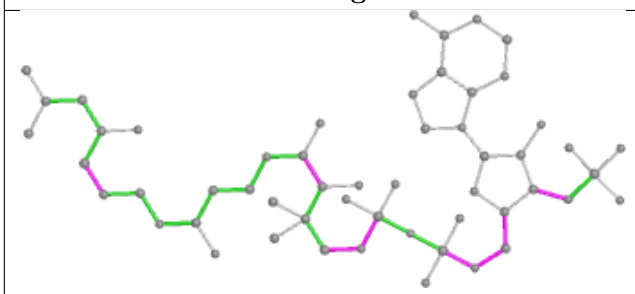
Ligand TW3 C 602



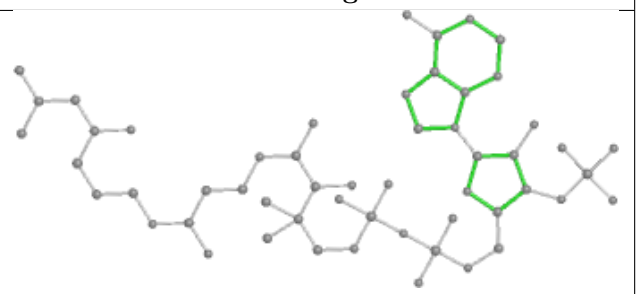
Bond lengths



Bond angles

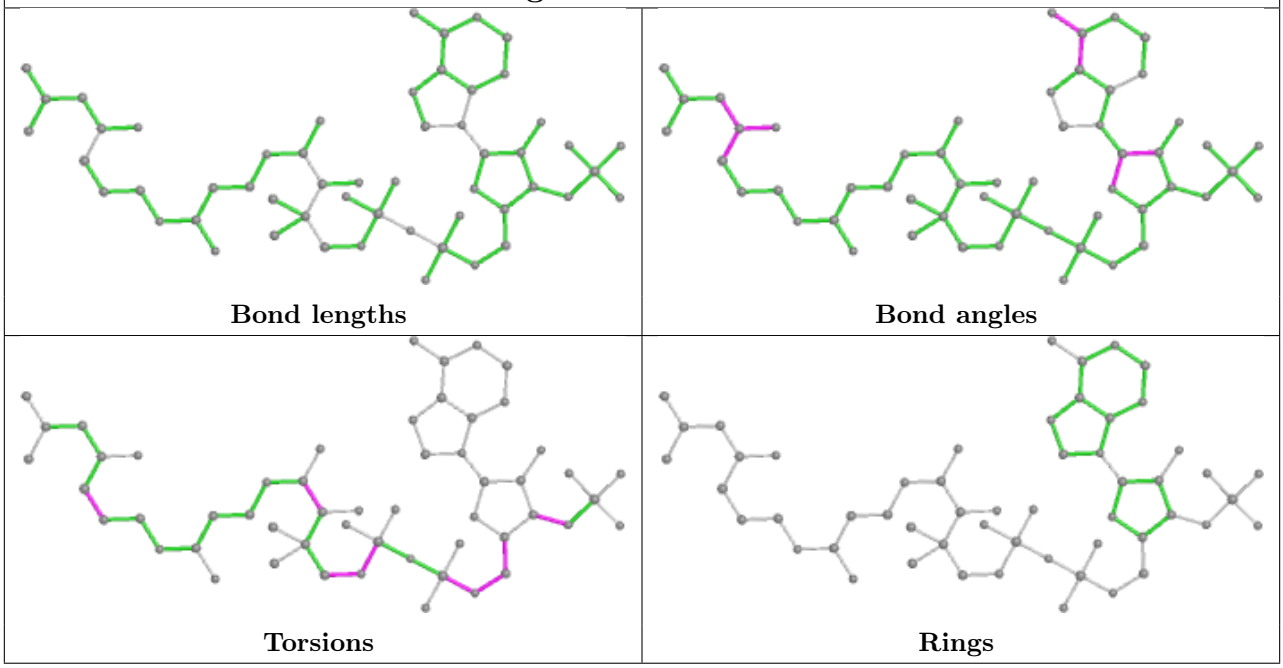


Torsions

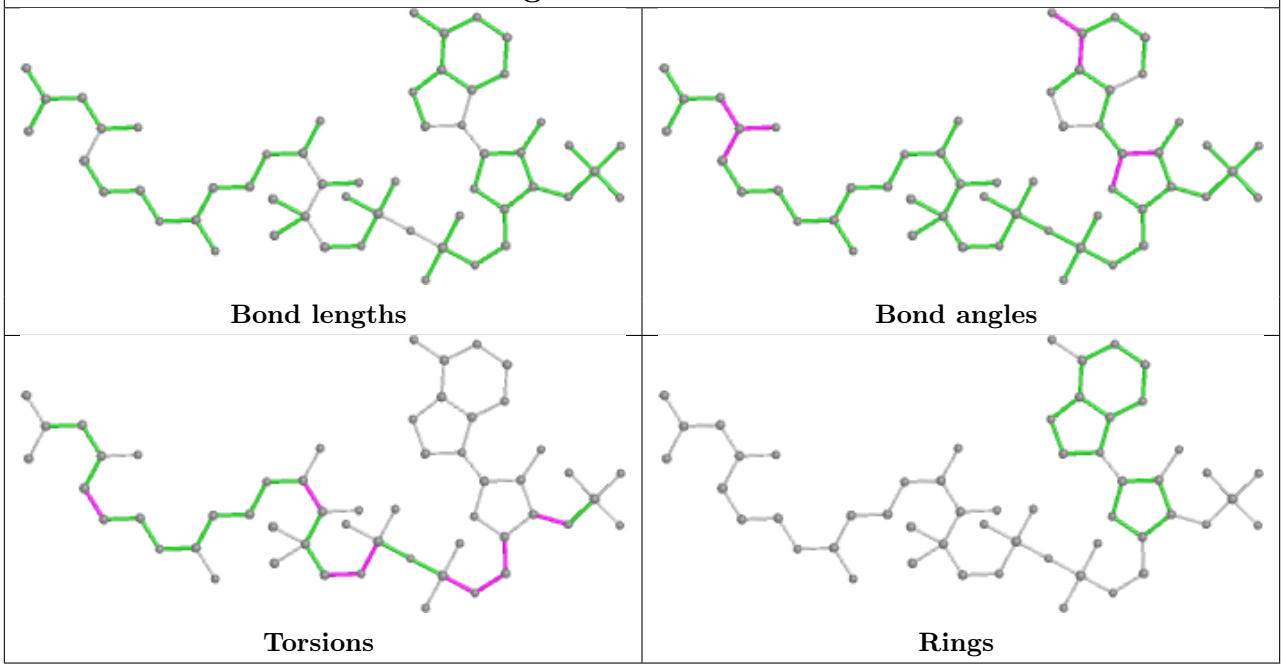


Rings

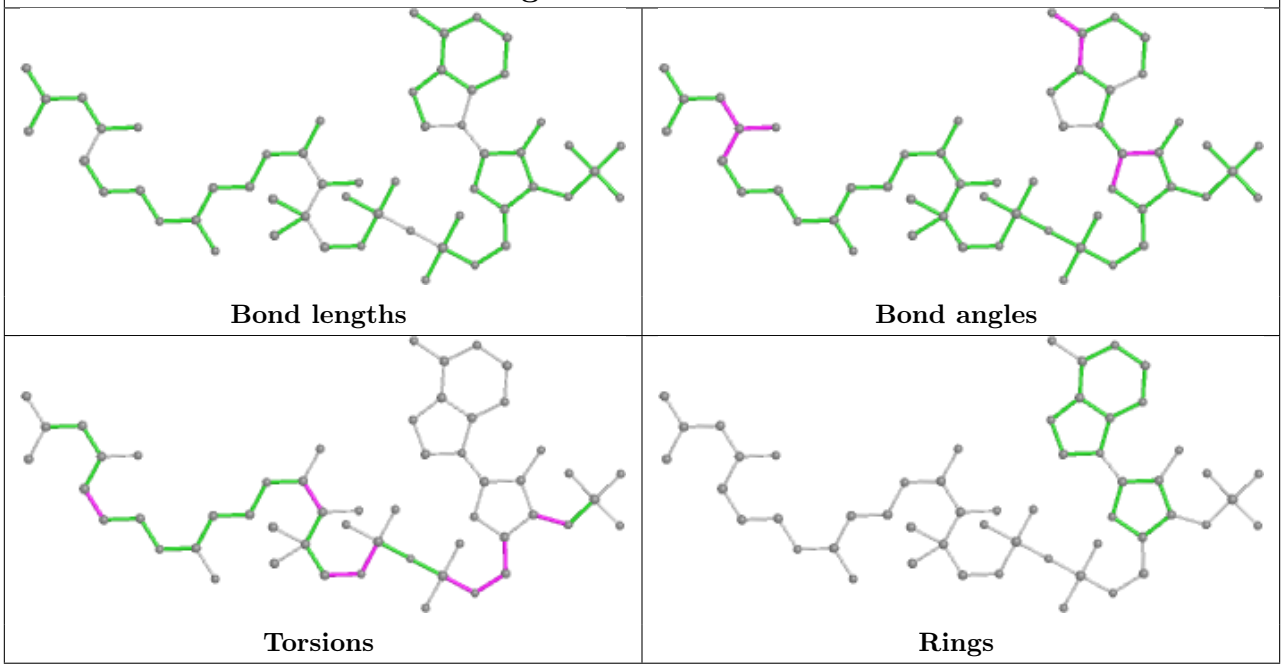
Ligand TW3 J 601



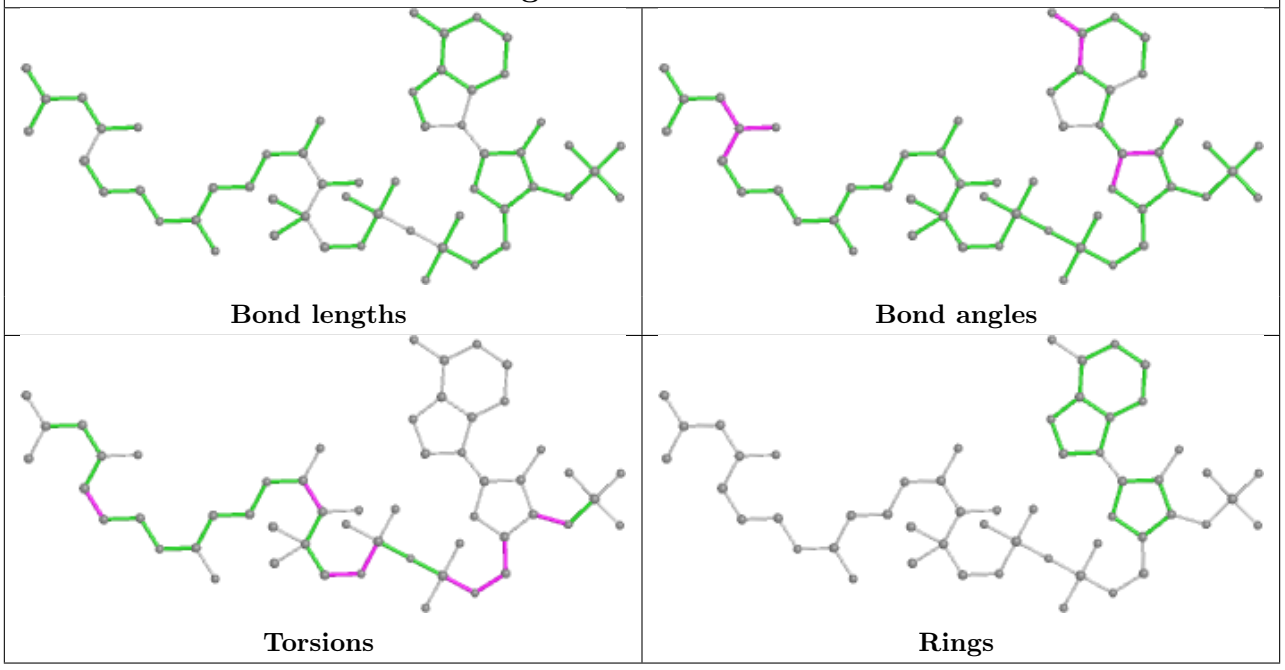
Ligand TW3 E 601



Ligand TW3 K 601



Ligand TW3 H 602



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

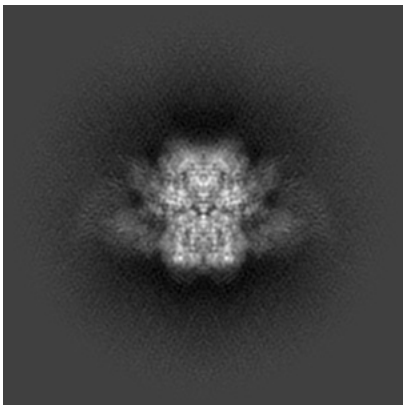
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-36705. These allow visual inspection of the internal detail of the map and identification of artifacts.

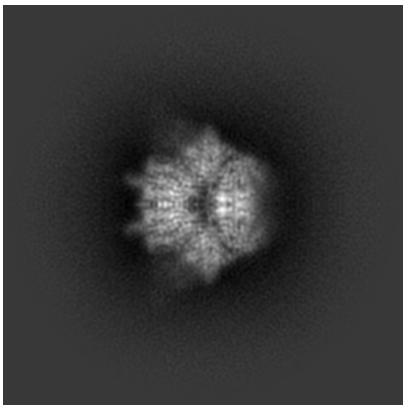
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

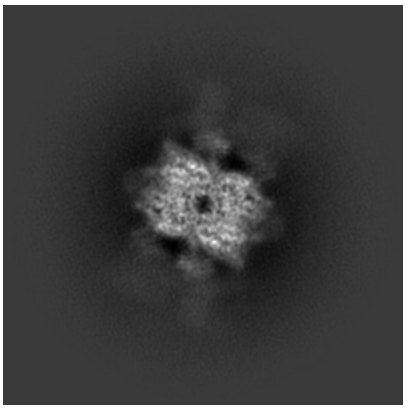
6.1.1 Primary map



X

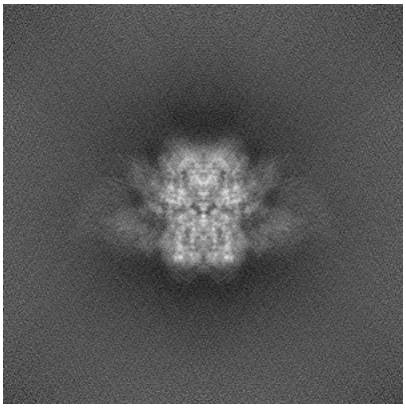


Y

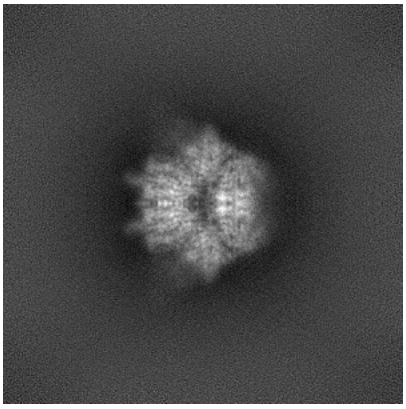


Z

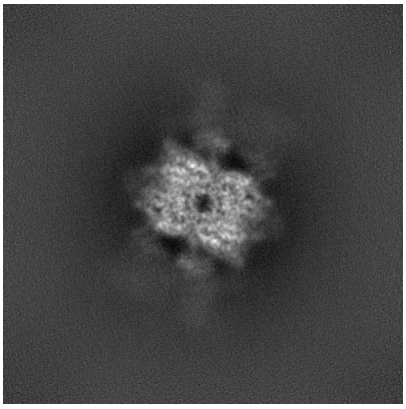
6.1.2 Raw map



X



Y

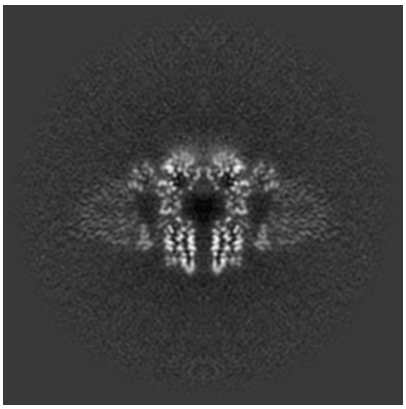


Z

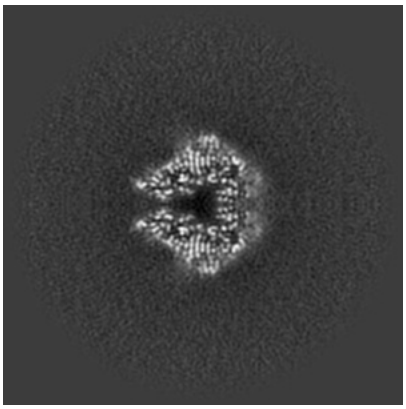
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

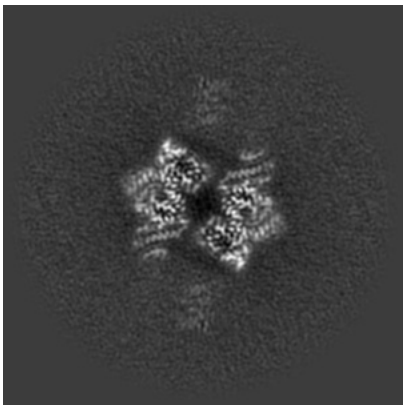
6.2.1 Primary map



X Index: 180

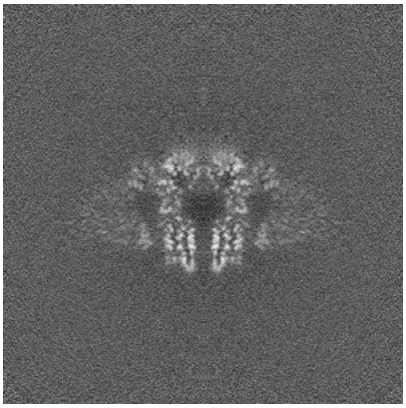


Y Index: 180

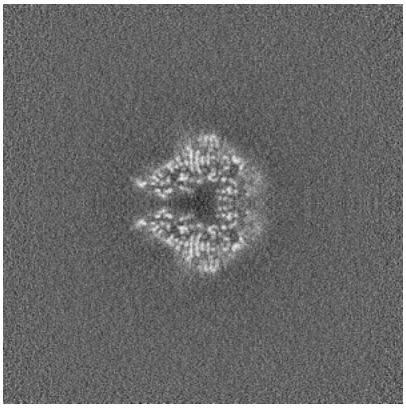


Z Index: 180

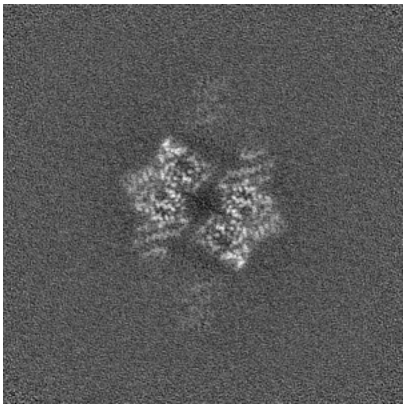
6.2.2 Raw map



X Index: 180



Y Index: 180

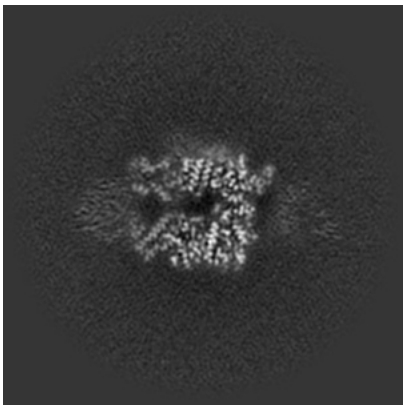


Z Index: 180

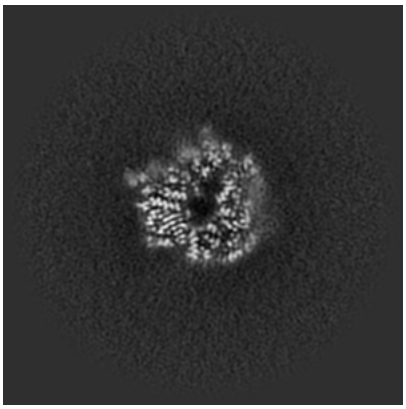
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

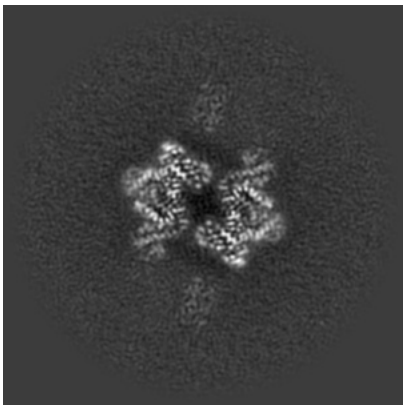
6.3.1 Primary map



X Index: 171

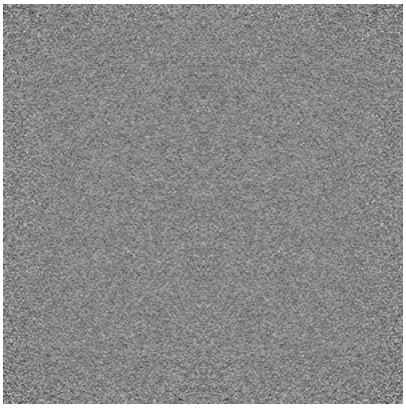


Y Index: 170

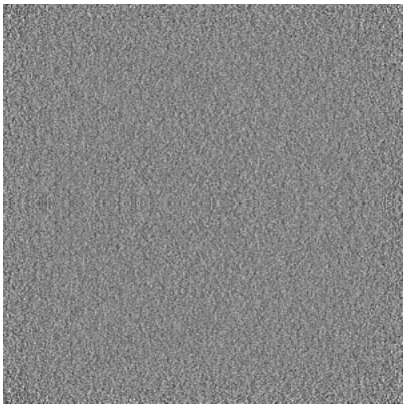


Z Index: 182

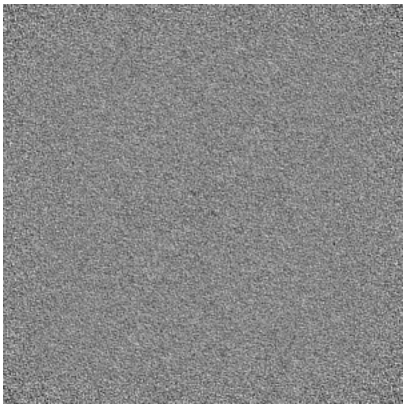
6.3.2 Raw map



X Index: 0



Y Index: 0

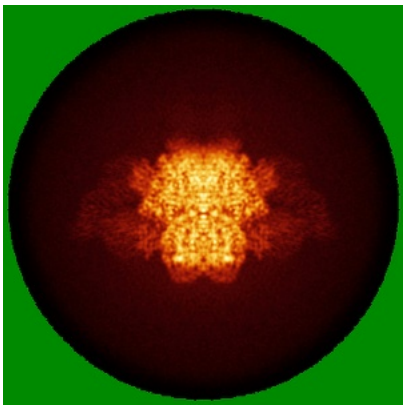


Z Index: 0

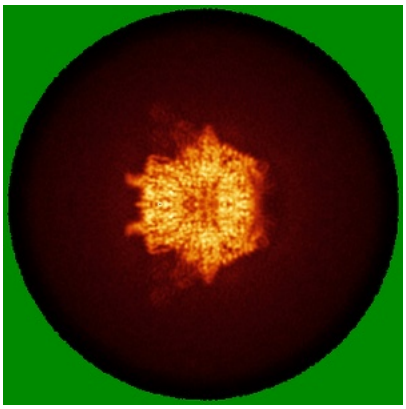
The images above show the largest variance slices of the map in three orthogonal directions.

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

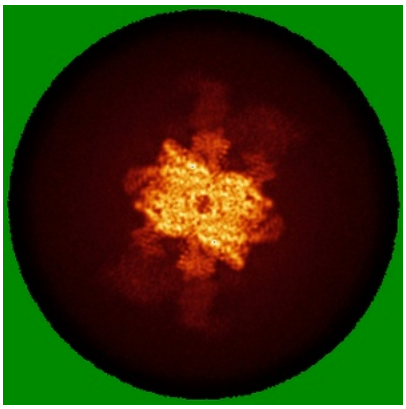
6.4.1 Primary map



X

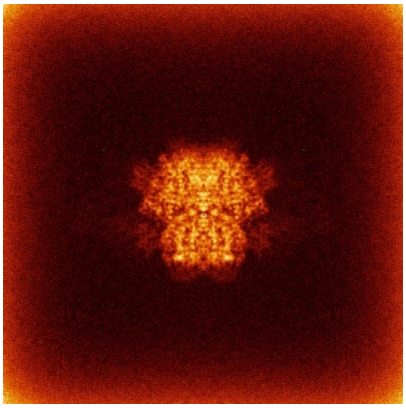


Y

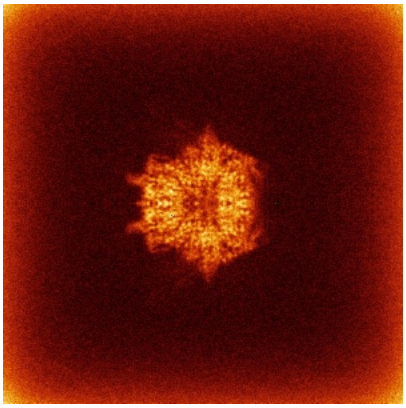


Z

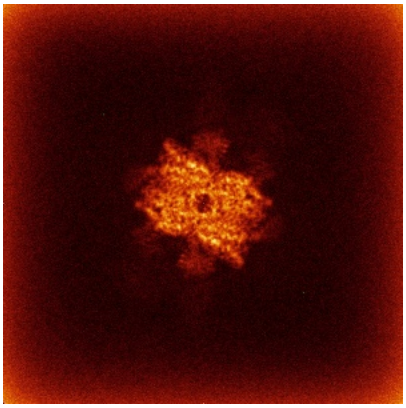
6.4.2 Raw map



X



Y

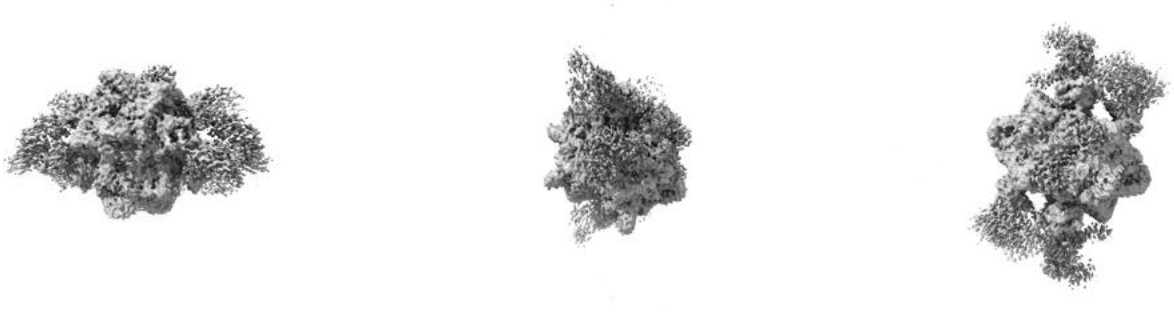


Z

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

6.5 Orthogonal surface views (i)

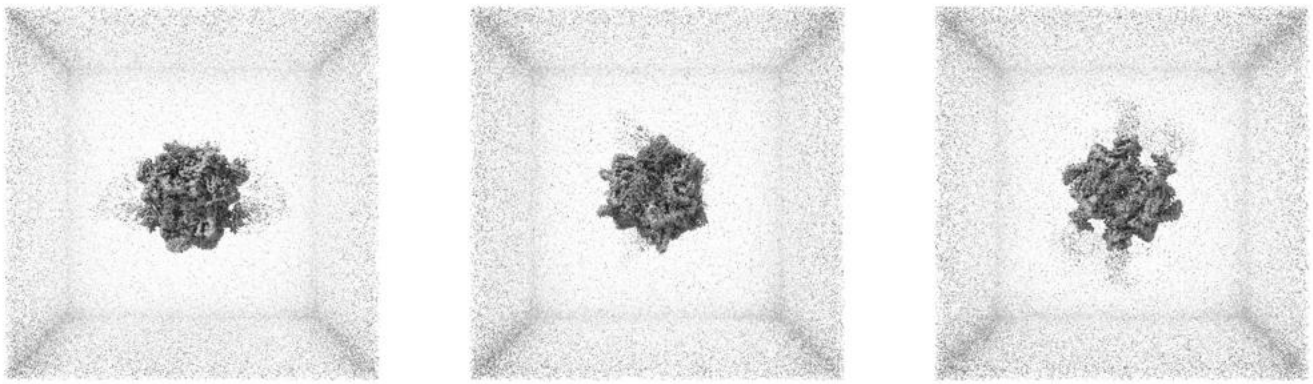
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.09. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

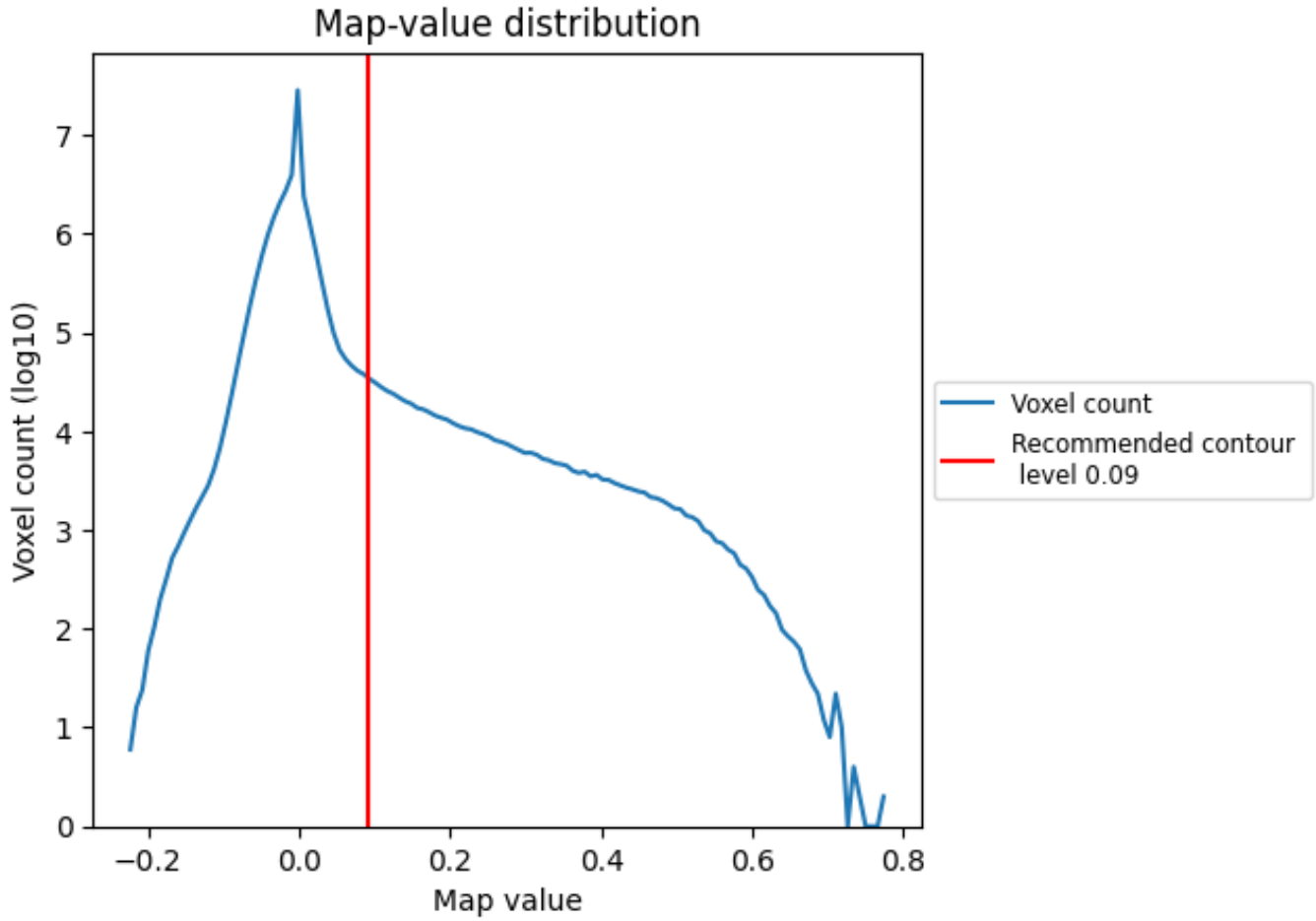
6.6 Mask visualisation (i)

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

7 Map analysis

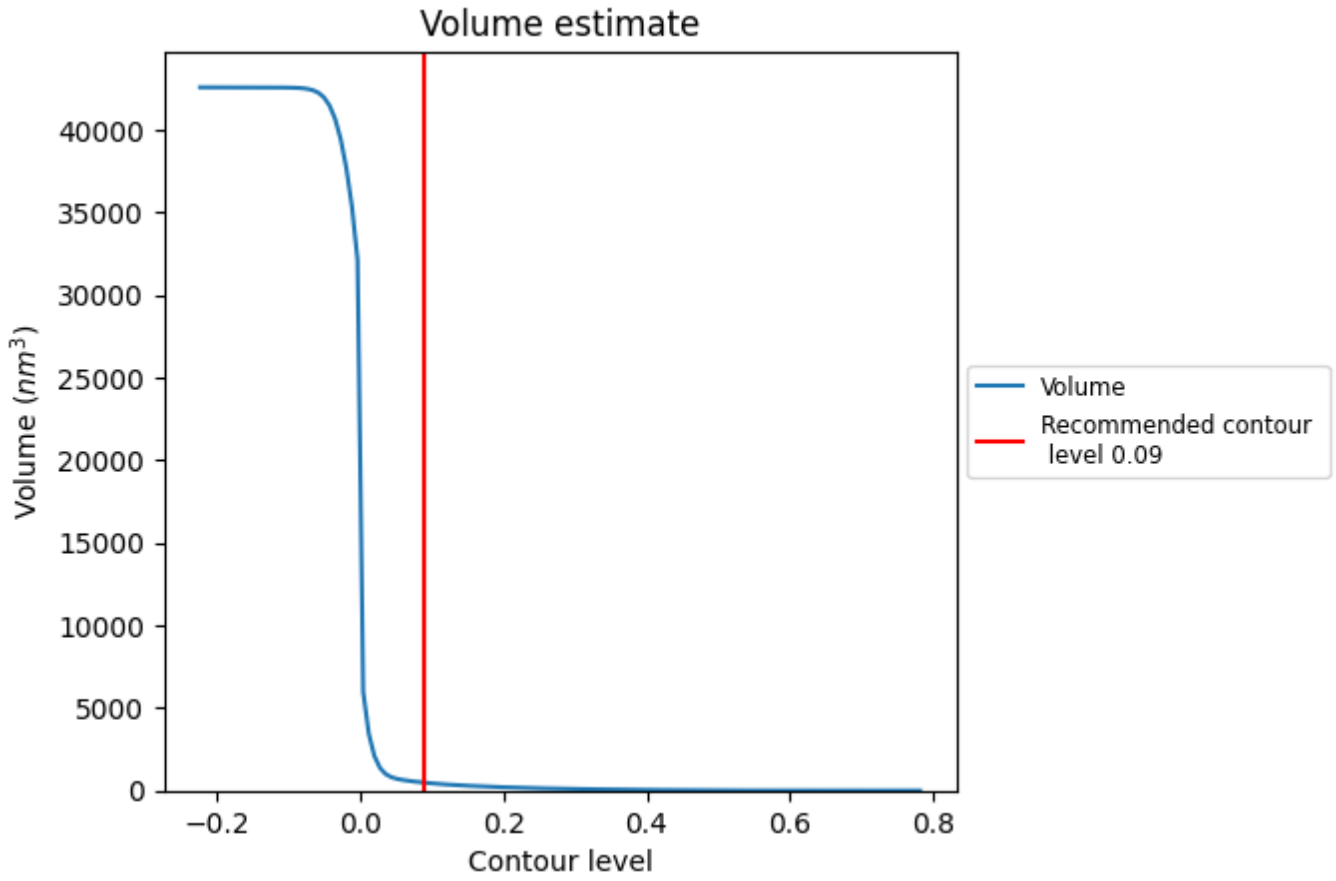
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

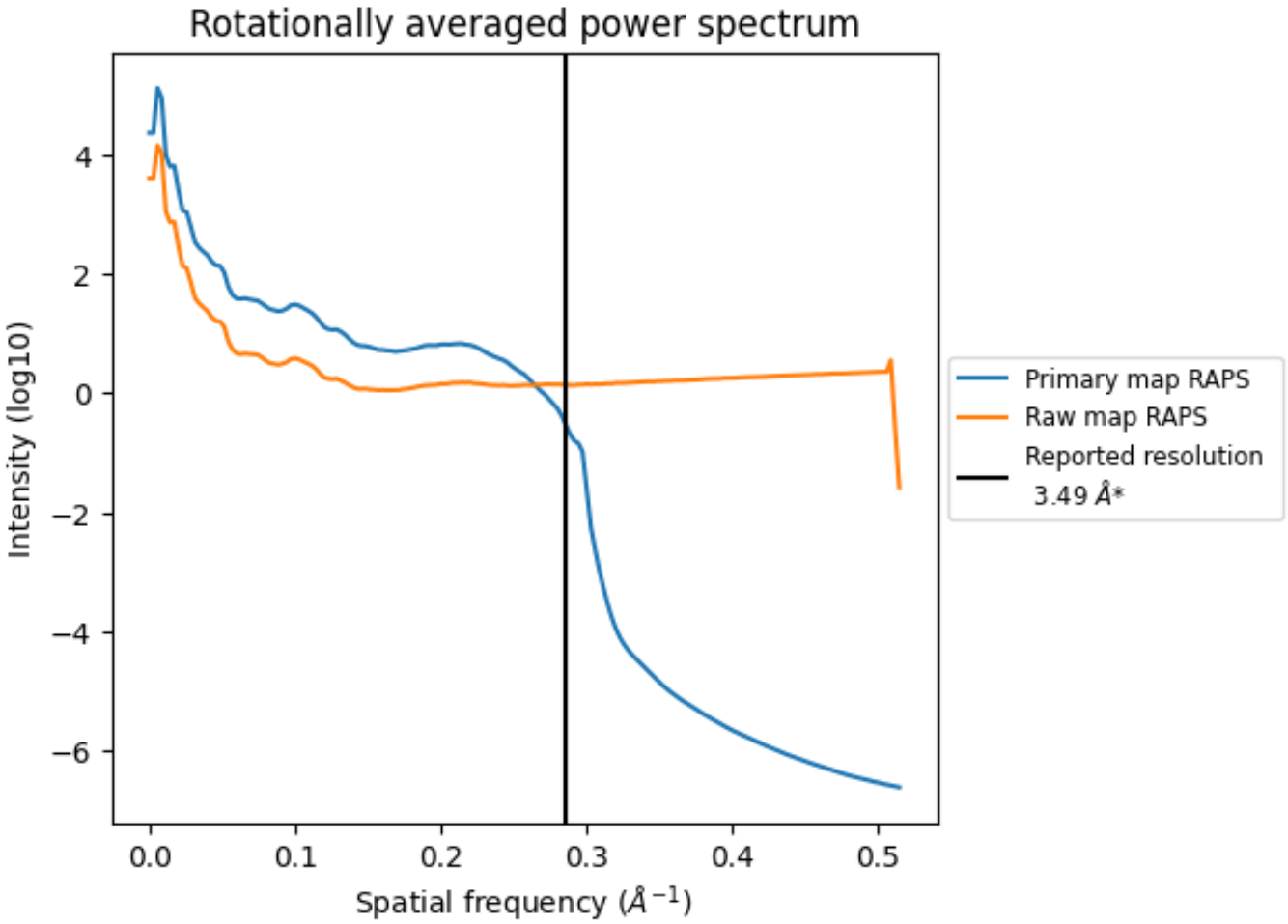
7.2 Volume estimate



The volume at the recommended contour level is 477 nm^3; this corresponds to an approximate mass of 431 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)

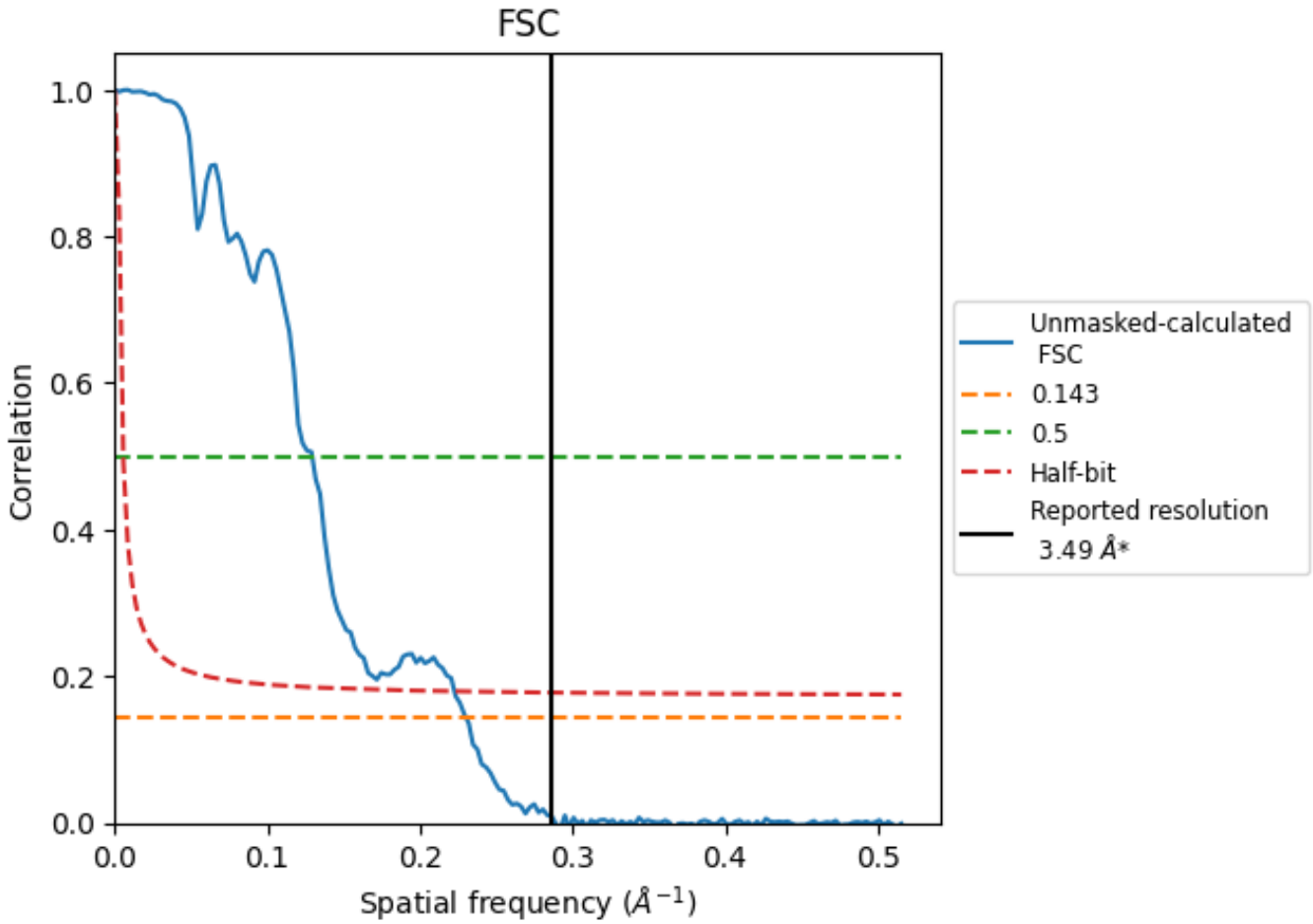


*Reported resolution corresponds to spatial frequency of 0.287 Å^{-1}

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 0.287 Å^{-1}

8.2 Resolution estimates (i)

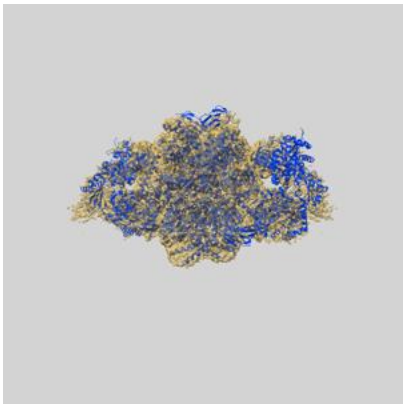
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.49	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.34	7.73	4.49

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.34 differs from the reported value 3.49 by more than 10 %

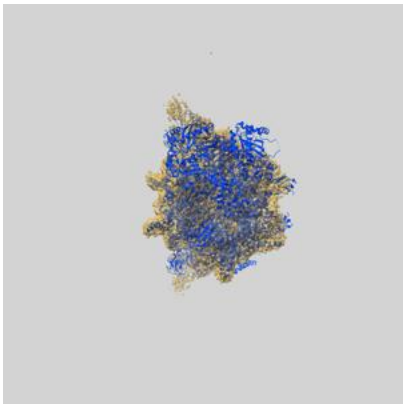
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-36705 and PDB model 8JXM. Per-residue inclusion information can be found in section 3 on page 7.

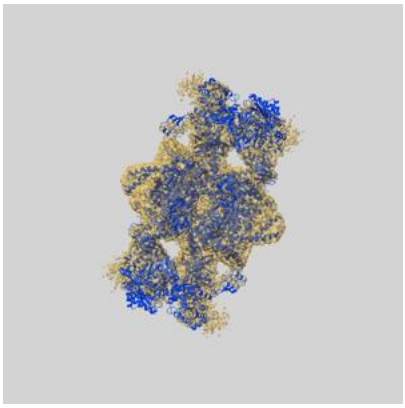
9.1 Map-model overlay



X



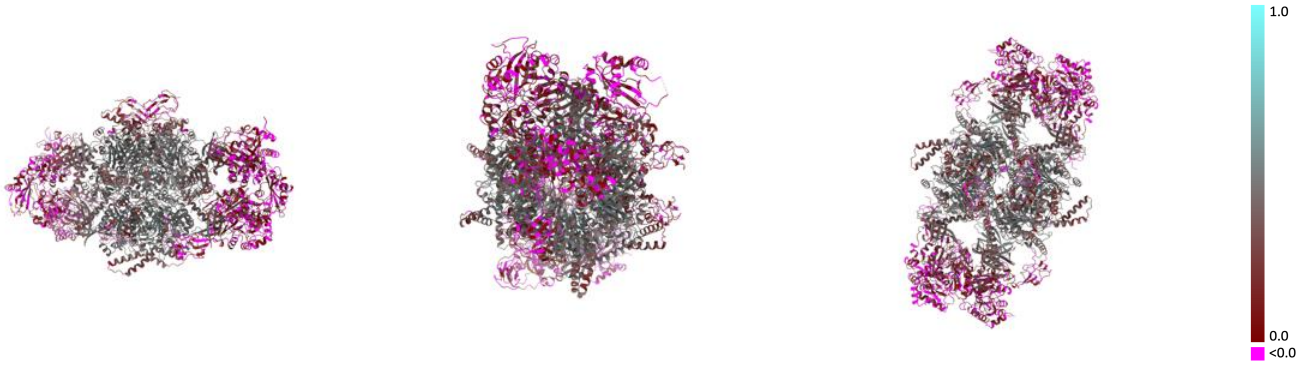
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.09 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.

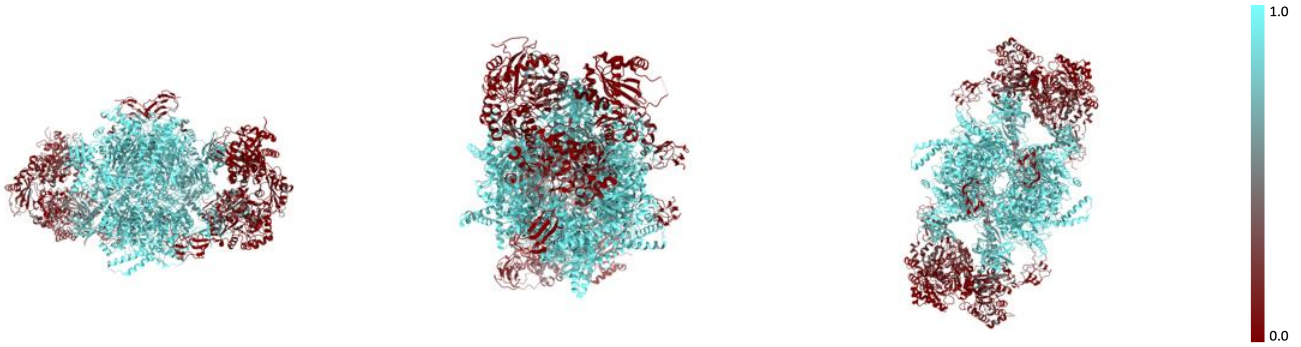
9.2 Q-score mapped to coordinate model (i)



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.

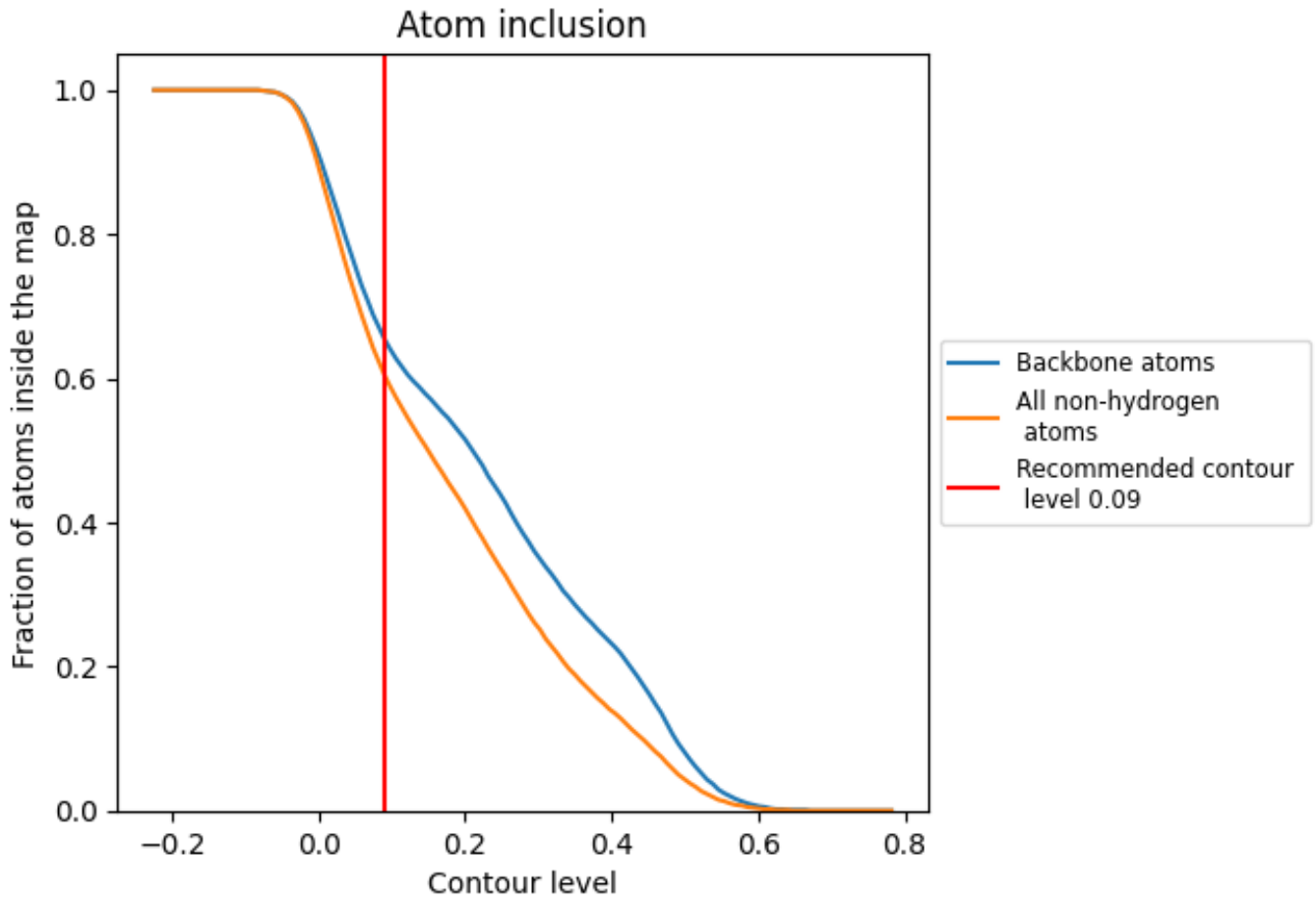
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.09).

9.4 Atom inclusion (i)



At the recommended contour level, 66% of all backbone atoms, 61% 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 (0.09) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6060	0.2890
A	0.9580	0.4320
B	0.2930	0.1610
C	0.9510	0.4320
E	0.9610	0.4420
F	0.2640	0.1550
G	0.3110	0.1530
H	0.9530	0.4310
I	0.2620	0.1540
J	0.9610	0.4430
K	0.9580	0.4330
L	0.2920	0.1600
M	0.3100	0.1510