WORLDWIDE PDB

PROTEIN DATA BANK

Full wwPDB EM Validation Report (i)

Dec 2, 2025 – 12:35 PM EST

PDB ID	:	9OFD / pdb_00009ofd
EMDB ID	:	EMD-70429
Title	:	CryoEM structure of Cad1 bound with cA4 and ATP, hexamer with one intact dimer
Authors	:	Zhao, Y.; Li, H.
Deposited on	:	2025-04-29
Resolution	:	2.86 Å(reported)

The following versions of software and data (see references (i)) were used in the production of this report:
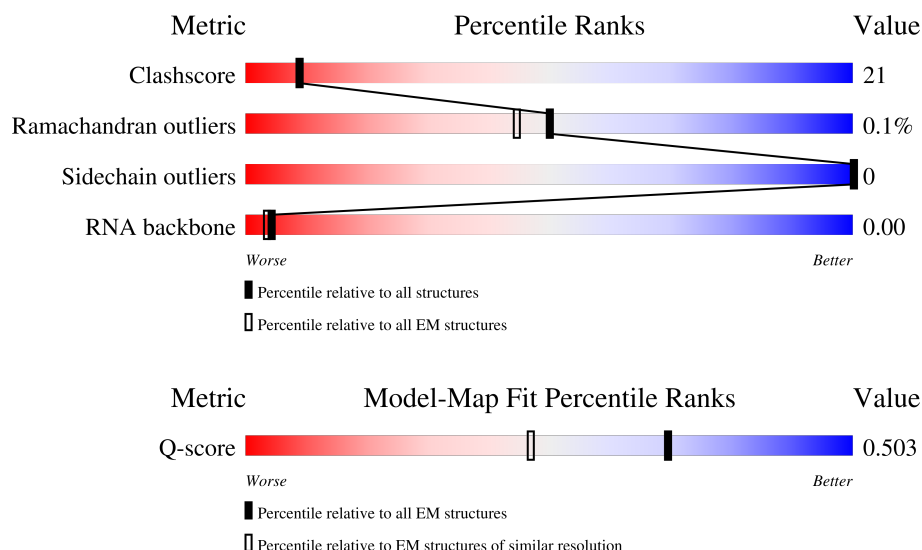
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

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 2.86 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.
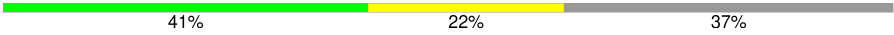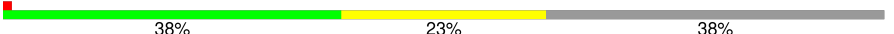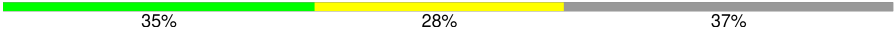
Metric	Percentile Ranks	Value
Clashscore		21
Ramachandran outliers		0.1%
Sidechain outliers		0
RNA backbone		0.00

Worse   *Better*

▌Percentile relative to all structures

◻ Percentile relative to all EM structures

Metric	Model-Map Fit Percentile Ranks	Value
Q-score		0.503

Worse   *Better*

▌Percentile relative to all EM structures

◻ Percentile relative to EM structures of similar resolution

Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	12017 (2.36 - 3.36)

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	625	7% 59% 38% •
1	B	625	7% 60% 37% •
1	G	625	42% 21% 37%

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Mol	Chain	Length	Quality of chain
1	H	625	41% 22% 37%
1	K	625	38% 23% 38%
1	L	625	35% 28% 37%
2	C	2	50% 50%
2	D	2	50% 50%

2   Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 22054 atoms, of which 72 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.
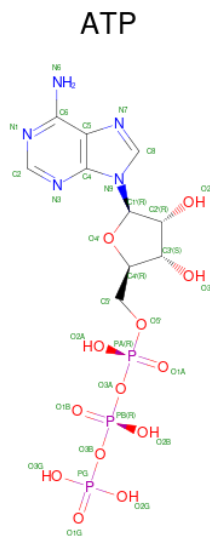
- Molecule 1 is a protein called CRISPR-associated ring nuclease and adenosine deaminase, subunit A.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	604	Total	C	N	O	S	1	0
			4745	3008	862	855	20		
1	B	603	Total	C	N	O	S	1	0
			4735	3003	860	851	21		
1	G	394	Total	C	N	O	S	1	0
			3077	1944	562	560	11		
1	H	393	Total	C	N	O	S	0	0
			3054	1928	558	557	11		
1	K	386	Total	C	N	O	S	1	0
			3015	1909	548	548	10		
1	L	393	Total	C	N	O	S	1	0
			3068	1939	560	558	11		

- Molecule 2 is a RNA chain called cA4 cleavage product, A2>P.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	2	Total	C	N	O	P	0	0
			44	20	10	12	2		
2	D	2	Total	C	N	O	P	0	0
			44	20	10	12	2		

- Molecule 3 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).

ATP

Mol	Chain	Residues	Atoms						AltConf
3	A	1	Total	C	H	N	O	P	0
			43	10	12	5	13	3	
3	B	1	Total	C	H	N	O	P	0
			43	10	12	5	13	3	
3	G	1	Total	C	H	N	O	P	0
			43	10	12	5	13	3	
3	H	1	Total	C	H	N	O	P	0
			43	10	12	5	13	3	
3	K	1	Total	C	H	N	O	P	0
			43	10	12	5	13	3	
3	L	1	Total	C	H	N	O	P	0
			43	10	12	5	13	3	

- Molecule 4 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
4	A	1	Total	Zn	0
			1	1	
4	B	1	Total	Zn	0
			1	1	
4	G	1	Total	Zn	0
			1	1	
4	H	1	Total	Zn	0
			1	1	
4	K	1	Total	Zn	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
4	L	1	Total 1	Zn 1	0

- Molecule 5 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
5	H	1	Total 1	Mg 1	0
5	K	1	Total 1	Mg 1	0

- Molecule 6 is water.

Mol	Chain	Residues	Atoms		AltConf
6	G	1	Total 1	O 1	0
6	H	1	Total 1	O 1	0
6	K	1	Total 1	O 1	0
6	L	3	Total 3	O 3	0

3   Residue-property plots ⓘ

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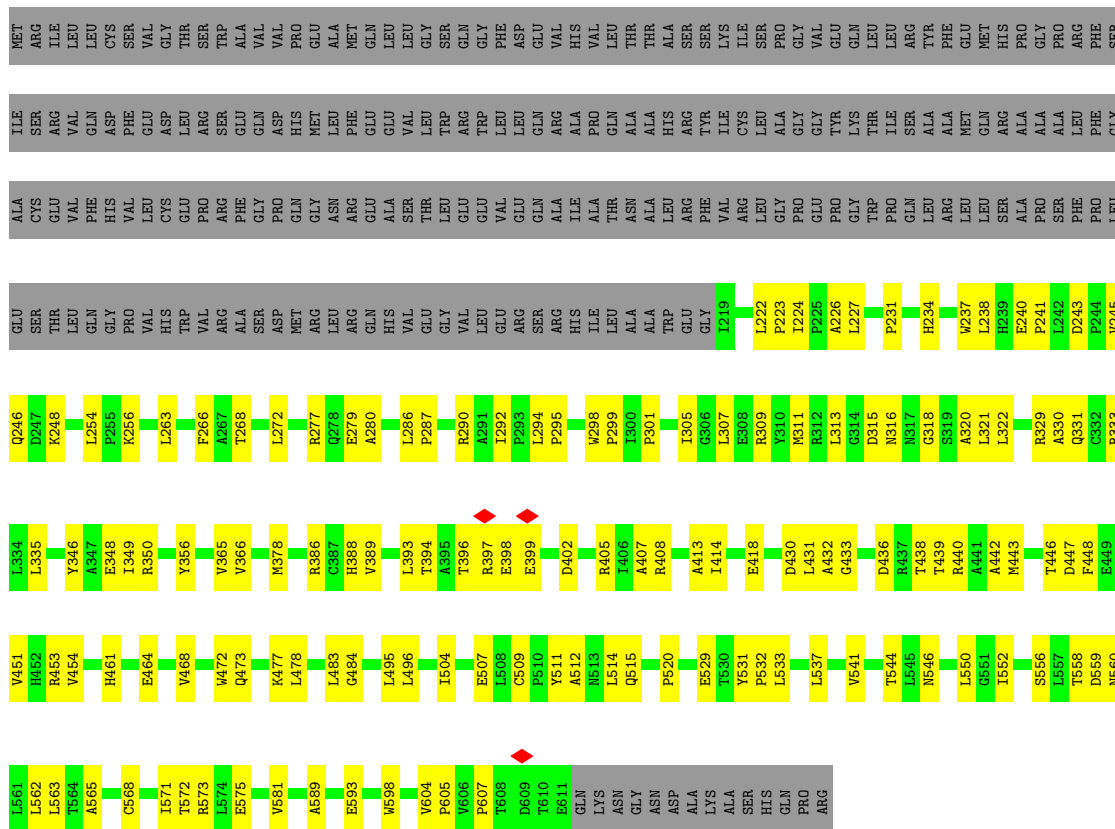
- Molecule 1: CRISPR-associated ring nuclease and adenosine deaminase, subunit A

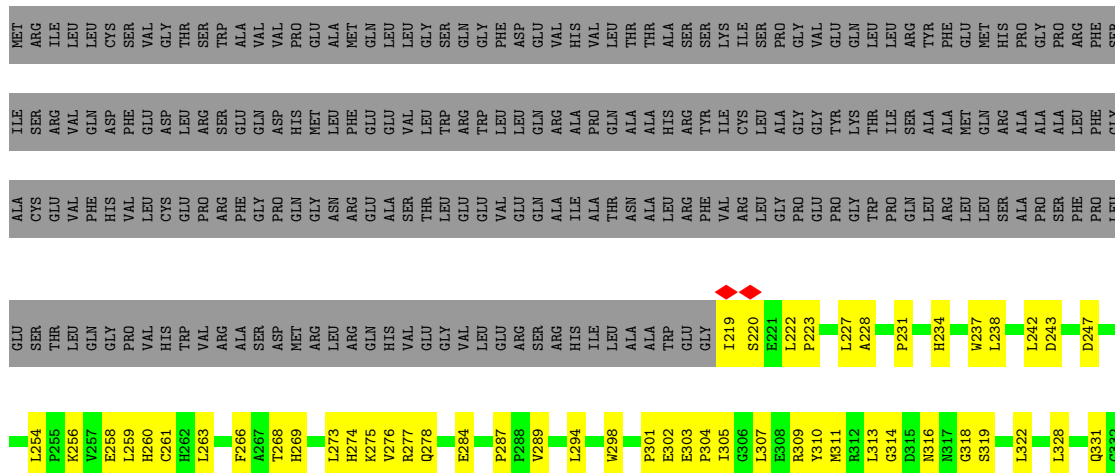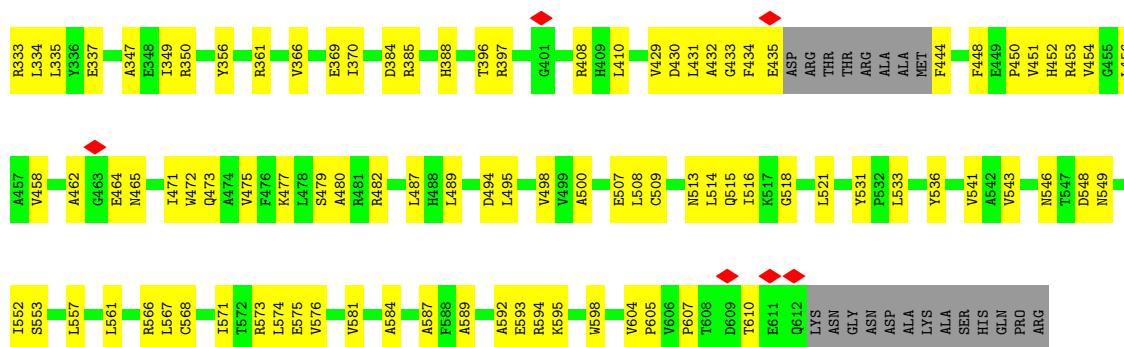- Molecule 1: CRISPR-associated ring nuclease and adenosine deaminase, subunit A

• Molecule 1: CRISPR-associated ring nuclease and adenosine deaminase, subunit A

• Molecule 1: CRISPR-associated ring nuclease and adenosine deaminase, subunit A

Chain H:

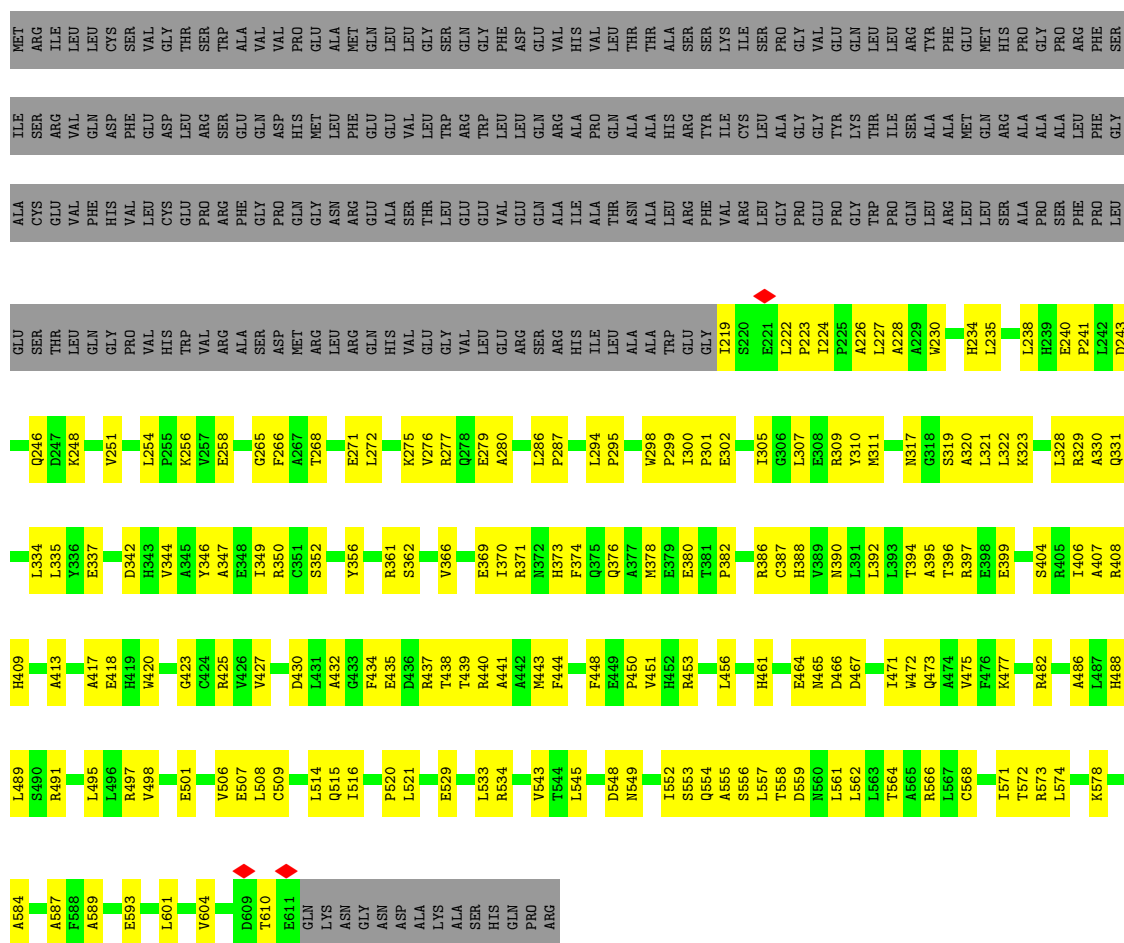• Molecule 1: CRISPR-associated ring nuclease and adenosine deaminase, subunit A

Chain K:

R333 L334 L335 Y336 E337 A347 E348 I349 R350 Y356 R361 V366 E369 I370 D384 R385 H388 T396 R397 G401 R408 H409 L410 V429 D430 L431 A432 G433 F434 E435 ASP ARG THR THR ARG ALA ALA MET F444 F448 E449 P450 V451 H452 R453 V454 G465 L456

A457 V458 A462 G463 E464 N465 I471 W472 Q473 A474 V475 F476 K477 L478 S479 A480 R481 R482 L487 H488 L489 D494 L495 V498 V499 A500 E507 L508 C509 N513 L514 Q515 I516 K517 G518 L521 Y531 P532 L533 Y536 V541 A542 V543 N546 I547 D548 N549

I552 S553 L557 L561 R566 L567 C568 I571 T572 R573 L574 E575 V576 V581 A584 A587 F588 A589 A592 E593 R594 K595 W598 V604 P605 V606 P607 T608 D609 T610 E611 Q612 LYS ASN GLY ASN ASP LYS ALA LYS SER HIS GLN PRO ARG

• Molecule 1: CRISPR-associated ring nuclease and adenosine deaminase, subunit A

Chain L:

| | 35% | 28% | 37% |

MET ARG ILE LEU LEU CYS SER SER VAL GLY THR SER TRP ALA VAL VAL PRO GLU ALA MET GLN LEU LEU GLY SER GLN GLY PHE ASP VAL GLU VAL HIS VAL LEU LEU THR ALA SER SER LYS ILE SER PRO GLY VAL GLU GLN LEU LEU ARG TYR PHE GLU MET HIS PRO GLY PRO ARG PHE SER

ILE SER ARG VAL GLN ASP PHE GLU ASP LEU ARG SER GLU GLN ASP HIS MET LEU PHE GLU GLU VAL LEU TRP ARG TRP LEU LEU GLN ARG ALA ALA HIS ARG VAL ILE CYS SER LEU ALA GLY GLY TYR LYS THR ILE SER SER ALA ALA MET GLN ARG ALA ALA ALA LEU PHE GLY

ALA CYS GLU VAL VAL PHE HIS VAL LEU CYS GLU PRO GLU ARG PHE GLY PRO GLN GLY ILE ASN ARG GLU GLU ALA SER THR ALA LEU GLU GLU VAL GLU GLN ALA ILE ALA THR ASN ALA LEU ARG PHE VAL ARG LEU GLY PRO GLU PRO GLY TRP PRO GLN LEU ARG LEU LEU SER ALA PRO SER PHE PRO LEU

GLU SER THR LEU GLN GLY PRO VAL HIS TRP VAL ALA ALA SER ASP MET ARG LEU ARG GLN HIS VAL GLU GLY VAL LEU GLU GLU ARG SER ARG HIS ILE LEU LEU ALA ALA TRP GLU GLY I219 S220 E221 L222 P223 I224 P225 A226 L227 A228 A229 W230 H234 L235 L238 H239 E240 P241 L242 D243

Q246 D247 K248 V251 L254 P255 K256 V257 E258 G265 F266 A267 T268 E271 L272 K275 V276 R277 Q278 E279 A280 L286 P287 L294 P295 W298 P299 I300 P301 E302 I305 G306 L307 E308 R309 Y310 M311 N317 G318 S319 A320 L321 L322 K323 L328 R329 A330 Q331

L334 L335 Y336 E337 D342 H343 V344 A345 Y346 A347 E348 I349 R350 C351 S352 Y356 R361 S362 V366 E369 I370 R371 N372 H373 F374 Q375 Q376 A377 M378 E379 E380 T381 P382 R386 C387 H388 V389 N390 L391 L392 L393 T394 A395 T396 R397 E398 E399 S404 R405 I406 A407 R408

H409 A413 A417 E418 H419 W420 G423 C424 R425 V426 V427 D430 L431 A432 G433 F434 E435 D436 R437 T438 T439 R440 A441 A442 M443 F444 F448 E449 P450 V451 H452 R453 L456 H461 E464 N465 D466 D467 I471 W472 Q473 A474 V475 F476 K477 R482 A486 L487 H488

L489 S490 R491 L495 L496 R497 V498 E501 V506 E507 L508 C509 L514 Q515 I516 P520 L521 E529 L533 R534 V543 T544 L545 D548 N549 I552 S553 Q554 A555 S556 L557 T558 D559 N560 L561 L562 L563 T564 A565 R566 L567 C568 I571 T572 R573 L574 K578

A584 A587 F588 A589 E593 L601 V604 D609 T610 E611 GLN LYS ASN GLY ASN ASP ALA LYS ALA LYS SER HIS GLN PRO ARG

• Molecule 2: cA4 cleavage product, A2>P

Chain C:

| 50% | 50% |

A707 A708

• Molecule 2: cA4 cleavage product, A2>P

Chain D:

A709 A710

4　Experimental information　ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	165680	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	60	Depositor
Minimum defocus (nm)	820	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 QUANTUM (4k x 4k)	Depositor
Maximum map value	1.699	Depositor
Minimum map value	-1.042	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.041	Depositor
Recommended contour level	0.12	Depositor
Map size (Å)	318.72, 318.72, 318.72	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.83, 0.83, 0.83	Depositor

5   Model quality ⓘ

5.1   Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: ATP, ZN, A23, MG

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	0.10	0/4866	0.25	0/6630
1	B	0.10	0/4856	0.25	0/6616
1	G	0.12	0/3153	0.30	0/4304
1	H	0.10	0/3128	0.29	0/4269
1	K	0.12	0/3090	0.35	0/4218
1	L	0.13	0/3144	0.34	0/4292
2	C	0.22	0/21	0.61	0/31
2	D	0.10	0/21	0.20	0/31
All	All	0.11	0/22279	0.29	0/30391

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	G	0	1
1	K	0	1
All	All	0	2

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	G	464	GLU	Peptide
1	K	298	TRP	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4745	0	4699	219	0
1	B	4735	0	4693	206	0
1	G	3077	0	3053	103	0
1	H	3054	0	3036	113	0
1	K	3015	0	2989	130	0
1	L	3068	0	3045	146	0
2	C	44	0	20	4	0
2	D	44	0	22	5	0
3	A	31	12	12	0	0
3	B	31	12	12	2	0
3	G	31	12	12	4	0
3	H	31	12	12	2	0
3	K	31	12	12	0	0
3	L	31	12	12	2	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
4	G	1	0	0	0	0
4	H	1	0	0	0	0
4	K	1	0	0	0	0
4	L	1	0	0	0	0
5	H	1	0	0	0	0
5	K	1	0	0	0	0
6	G	1	0	0	1	0
6	H	1	0	0	0	0
6	K	1	0	0	0	0
6	L	3	0	0	3	0
All	All	21982	72	21629	896	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 21.

All (896) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:708:A23:O4'	2:C:708:A23:C4'	1.74	1.17

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:710:A23:O4'	2:D:710:A23:C4'	1.74	1.17
1:B:445:ALA:HB2	1:B:478:LEU:HD23	1.46	0.98
1:B:108:ILE:HG22	1:B:112:MET:HE1	1.48	0.95
1:K:322:LEU:HD11	1:K:331:GLN:HG2	1.48	0.94
1:B:34:THR:HB	1:B:63:ARG:HG2	1.53	0.90
1:A:1:MET:HE2	1:A:3:ILE:HG13	1.55	0.88
1:K:396:THR:HG22	1:K:432:ALA:HB3	1.57	0.86
1:K:397:ARG:HB3	1:K:433:GLY:HA3	1.55	0.86
1:G:443:MET:HE3	1:G:478:LEU:HD11	1.58	0.84
1:B:310:TYR:HH	1:B:553:SER:HG	1.24	0.83
1:L:417:ALA:HB2	1:L:456:LEU:HD21	1.62	0.80
1:K:435:GLU:HG2	1:K:462:ALA:HA	1.63	0.79
1:B:99:ILE:HD12	1:B:116:ALA:HB2	1.65	0.79
1:K:260:HIS:HA	1:K:350:ARG:HH12	1.49	0.78
1:A:545:LEU:HD13	1:A:564:THR:HG21	1.66	0.77
1:H:224:ILE:HB	1:H:227:LEU:HD13	1.67	0.77
1:K:350:ARG:NE	1:K:430:ASP:OD2	2.17	0.77
1:G:407:ALA:HB1	1:L:450:PRO:HB3	1.67	0.76
1:B:407:ALA:HB1	1:K:450:PRO:HB3	1.65	0.76
1:A:105:TYR:H	1:A:108:ILE:HD12	1.52	0.75
1:A:393:LEU:HD12	1:A:413:ALA:HB2	1.69	0.75
1:G:408:ARG:NE	1:L:418:GLU:OE2	2.20	0.75
1:B:77:MET:HB3	1:B:199:ARG:HH12	1.52	0.74
1:A:65:GLN:HG2	1:A:190:TRP:HE3	1.52	0.74
1:B:169:GLN:HE22	1:B:209:SER:HB2	1.52	0.74
1:H:399:GLU:HG3	1:H:438:THR:HG21	1.68	0.74
1:G:290:ARG:HH21	1:G:315:ASP:HB3	1.53	0.74
1:A:105:TYR:HB2	1:A:108:ILE:HG13	1.70	0.73
1:L:251:VAL:HG12	1:L:558:THR:HG23	1.69	0.73
1:L:396:THR:HB	1:L:432:ALA:HB3	1.70	0.72
1:K:242:LEU:HD13	1:K:576:VAL:HG21	1.70	0.72
1:A:472[B]:TRP:HZ3	1:A:477:LYS:HE2	1.54	0.72
1:K:222:LEU:HB3	1:K:227:LEU:HD12	1.71	0.72
1:B:61:ILE:O	1:B:189:HIS:N	2.21	0.72
1:G:219:ILE:HD12	1:G:222:LEU:HD12	1.71	0.71
1:K:397:ARG:HD3	1:K:434:PHE:H	1.55	0.71
1:B:361:ARG:NH2	1:B:369:GLU:OE1	2.22	0.71
1:H:468:VAL:HG13	1:H:495:LEU:HD22	1.73	0.71
1:H:414:ILE:HG23	1:H:454:VAL:HG11	1.73	0.71
1:H:397:ARG:HB2	1:H:439:THR:HG21	1.74	0.70
1:K:260:HIS:HA	1:K:350:ARG:NH1	2.05	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:268:THR:HG21	1:G:552:ILE:HG13	1.73	0.70
1:K:268:THR:HB	1:K:314:GLY:HA2	1.72	0.70
1:H:402:ASP:HB3	1:H:405:ARG:HG3	1.73	0.69
1:K:561:LEU:HD11	1:K:576:VAL:HG13	1.73	0.69
1:A:408:ARG:NE	1:H:418:GLU:OE2	2.26	0.69
1:L:545:LEU:HD12	1:L:561:LEU:HD23	1.74	0.69
1:G:292:ILE:HD11	1:G:315:ASP:HB2	1.75	0.69
1:H:397:ARG:HB3	1:H:433:GLY:HA3	1.74	0.69
1:K:310:TYR:OH	1:K:553:SER:OG	2.09	0.69
1:H:287:PRO:HG2	1:H:320:ALA:HB1	1.74	0.68
1:K:581:VAL:HG13	1:K:598:TRP:HH2	1.58	0.68
1:A:97:ARG:NH1	1:A:120:GLY:O	2.25	0.68
1:B:34:THR:N	1:B:62:SER:O	2.27	0.68
1:B:251:VAL:HG12	1:B:558:THR:HG23	1.76	0.68
1:G:430:ASP:OD1	6:G:801:HOH:O	2.11	0.67
1:B:466:ASP:HB2	1:B:491:ARG:HH22	1.58	0.67
1:A:534:ARG:NH1	1:A:570:GLY:O	2.27	0.67
1:B:466:ASP:O	1:B:491:ARG:NH2	2.28	0.67
1:B:471:ILE:HB	1:B:495:LEU:HD21	1.77	0.66
1:A:17:GLU:OE1	2:C:707:A:N6	2.27	0.66
1:G:383:GLU:OE1	1:G:383:GLU:N	2.29	0.66
1:G:279:GLU:HG2	1:G:330:ALA:HB2	1.75	0.66
1:H:520:PRO:HG3	1:H:529:GLU:HG2	1.78	0.66
1:A:4:LEU:HB3	1:A:30:VAL:HG12	1.77	0.66
1:K:453:ARG:HD2	1:L:472[B]:TRP:CE2	2.31	0.66
1:K:482:ARG:NE	1:K:507:GLU:OE2	2.27	0.66
1:K:322:LEU:HD21	1:K:331:GLN:HB2	1.77	0.66
1:L:248:LYS:HG2	1:L:562:LEU:HD13	1.76	0.66
3:L:701:ATP:O1B	6:L:801:HOH:O	2.12	0.65
1:B:74:GLN:HA	1:B:77:MET:HE3	1.78	0.65
1:K:222:LEU:HD13	1:K:227:LEU:HB2	1.77	0.65
1:K:589:ALA:HB1	1:K:593:GLU:HB3	1.78	0.65
1:L:466:ASP:HB2	1:L:491:ARG:HH22	1.61	0.65
1:A:57:PRO:HG2	1:A:59:PHE:HE1	1.62	0.65
1:B:132:ARG:HH21	1:B:155:ALA:HB2	1.60	0.65
1:B:20:GLN:HG3	1:B:151:ILE:HG23	1.78	0.64
1:A:307:LEU:HD22	1:A:464:GLU:HB3	1.79	0.64
1:G:404:SER:O	1:G:408:ARG:HD2	1.98	0.64
1:L:279:GLU:OE2	1:L:329:ARG:NH2	2.31	0.64
1:L:361:ARG:NH2	1:L:369:GLU:OE1	2.29	0.64
1:B:592:ALA:HA	1:B:595:LYS:HE3	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:256:LYS:HB3	1:L:557:LEU:HD23	1.80	0.64
1:A:556:SER:O	1:A:560:ASN:ND2	2.28	0.64
1:K:335:LEU:HD21	1:K:349:ILE:HD12	1.78	0.64
1:A:35:THR:HA	1:A:64:VAL:HG22	1.78	0.64
1:L:564:THR:O	1:L:571:ILE:HG21	1.97	0.64
1:A:19:MET:HE2	1:A:57:PRO:HG3	1.80	0.64
1:A:376:GLN:O	1:A:380:GLU:HG2	1.98	0.64
1:K:356:TYR:HB2	1:K:366:VAL:HG11	1.78	0.63
1:G:356:TYR:HB2	1:G:366:VAL:HG11	1.80	0.63
1:L:482:ARG:NE	1:L:507:GLU:OE2	2.30	0.63
1:H:399:GLU:HG3	1:H:438:THR:CG2	2.28	0.63
1:G:319:SER:OG	3:G:701:ATP:O1A	2.08	0.63
1:L:497:ARG:O	1:L:501:GLU:HG3	1.98	0.63
1:H:511:TYR:HE2	1:H:559:ASP:HB3	1.64	0.63
1:L:434:PHE:O	1:L:440:ARG:NH2	2.31	0.62
1:A:121:ALA:HB3	1:A:164:GLU:OE2	1.99	0.62
1:L:464:GLU:N	1:L:464:GLU:OE1	2.32	0.62
1:A:91:ALA:O	1:A:97:ARG:NH2	2.28	0.62
1:L:352:SER:HB2	6:L:803:HOH:O	1.99	0.62
1:L:266:PHE:HB3	1:L:331:GLN:HE21	1.64	0.62
1:A:460:VAL:HG21	1:A:474:ALA:HB1	1.82	0.61
1:A:1:MET:HE3	1:A:2:ARG:H	1.64	0.61
1:A:242:LEU:HD23	1:A:565:ALA:HB2	1.81	0.61
1:B:169:GLN:NE2	1:B:209:SER:HB2	2.15	0.61
1:K:223:PRO:HB2	1:K:581:VAL:HG11	1.81	0.61
1:H:393:LEU:HD12	1:H:413:ALA:HB2	1.81	0.61
1:K:301:PRO:HG3	1:K:515:GLN:HA	1.81	0.61
1:B:394:THR:HA	1:B:430:ASP:OD1	2.01	0.61
1:H:511:TYR:CD1	1:H:563:LEU:HD22	2.35	0.61
1:L:223:PRO:HG3	1:L:578:LYS:HG2	1.82	0.61
1:B:42:PRO:HA	1:B:45:GLU:HG2	1.83	0.61
1:H:243:ASP:OD2	1:H:246:GLN:NE2	2.33	0.61
1:K:274:HIS:O	1:K:278:GLN:N	2.33	0.61
1:K:514:LEU:HD12	1:K:567:LEU:HD21	1.82	0.61
1:L:298:TRP:HE1	1:L:554:GLN:HG3	1.66	0.61
1:G:376:GLN:O	1:G:380:GLU:HG3	2.00	0.61
1:L:302:GLU:N	1:L:302:GLU:OE1	2.30	0.61
1:A:27:PHE:O	1:A:57:PRO:HB3	2.00	0.61
1:B:246:GLN:NE2	1:B:609:ASP:OD2	2.33	0.61
1:A:31:HIS:CD2	1:A:90:ARG:HB3	2.35	0.61
1:H:295:PRO:HG2	1:H:298:TRP:CZ3	2.36	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:222:LEU:HD23	1:K:574:LEU:HD11	1.83	0.60
1:L:222:LEU:HD22	1:L:227:LEU:HG	1.82	0.60
1:L:254:LEU:HD23	1:L:604:VAL:HG23	1.84	0.60
1:L:399:GLU:HG2	1:L:439:THR:HG22	1.83	0.60
1:A:31:HIS:ND1	1:A:60:SER:OG	2.22	0.60
1:K:589:ALA:HB1	1:K:593:GLU:CB	2.31	0.60
1:L:298:TRP:NE1	1:L:554:GLN:HG3	2.15	0.60
1:B:130:GLU:N	1:B:155:ALA:O	2.22	0.60
1:G:234:HIS:CD2	1:G:610:THR:HG21	2.37	0.60
1:K:219:ILE:HD11	1:K:228:ALA:HB1	1.82	0.60
1:A:37:SER:O	1:A:63:ARG:NH2	2.34	0.60
1:B:393:LEU:HD12	1:B:413:ALA:HB2	1.82	0.60
1:L:329:ARG:HG3	1:L:373:HIS:CD2	2.37	0.60
1:A:35:THR:HA	1:A:64:VAL:CG2	2.32	0.60
1:L:300:ILE:HG23	1:L:514:LEU:HD21	1.84	0.60
1:L:356:TYR:HB2	1:L:366:VAL:HG11	1.84	0.60
1:H:223:PRO:HB2	1:H:581:VAL:HG21	1.84	0.60
1:L:545:LEU:HD13	1:L:564:THR:HG21	1.84	0.60
1:A:266:PHE:HB3	1:A:331:GLN:NE2	2.17	0.59
1:A:533:LEU:HB3	1:A:568:CYS:SG	2.41	0.59
1:L:299:PRO:O	1:L:301:PRO:HD3	2.01	0.59
1:G:292:ILE:HG21	1:G:313:LEU:HA	1.84	0.59
1:A:135:PRO:HD2	1:A:139:ARG:HH22	1.67	0.59
1:K:388:HIS:NE2	1:K:593:GLU:OE2	2.31	0.59
1:A:97:ARG:HD2	1:A:121:ALA:HB2	1.83	0.59
1:A:560:ASN:O	1:A:564:THR:HG23	2.03	0.59
1:B:237:TRP:HB2	1:B:611:GLU:HA	1.83	0.59
1:B:233:SER:OG	1:B:611:GLU:HB3	2.02	0.59
1:G:494:ASP:OD1	1:G:497:ARG:NH2	2.35	0.59
1:K:410:LEU:HD22	1:K:451:VAL:HG21	1.83	0.59
1:L:465:ASN:OD1	1:L:467:ASP:HB2	2.03	0.59
1:G:431:LEU:HD13	1:G:443:MET:SD	2.43	0.59
1:H:442:ALA:O	1:H:446:THR:OG1	2.20	0.59
1:K:307:LEU:O	1:K:311:MET:HG2	2.02	0.59
1:L:435:GLU:OE2	1:L:464:GLU:HB2	2.02	0.59
1:B:84:TRP:CZ3	1:B:199:ARG:HG2	2.38	0.59
1:B:133:PHE:HE2	1:B:149:GLN:HB3	1.68	0.59
1:G:303:GLU:HG2	1:G:304:PRO:HD2	1.84	0.59
1:G:533:LEU:HB3	1:G:568:CYS:SG	2.43	0.59
1:A:1:MET:HE2	1:A:3:ILE:CG1	2.32	0.59
1:A:57:PRO:HG2	1:A:59:PHE:CE1	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:223:PRO:HB2	1:G:581:VAL:HG21	1.85	0.58
1:G:525:GLN:N	1:G:525:GLN:OE1	2.36	0.58
1:A:458:VAL:HG23	1:A:480:ALA:HA	1.84	0.58
1:H:280:ALA:CB	1:H:286:LEU:HD21	2.33	0.58
1:A:64:VAL:CG2	1:A:67:PHE:HB3	2.34	0.58
1:K:305:ILE:HD12	1:K:309:ARG:HG2	1.85	0.58
1:L:287:PRO:HG2	1:L:320:ALA:HB1	1.84	0.58
1:A:310:TYR:CD2	1:A:516:ILE:HD11	2.38	0.58
1:B:571:ILE:HD12	1:B:575:GLU:OE1	2.04	0.58
1:H:307:LEU:HB2	1:H:464:GLU:OE2	2.03	0.58
1:A:254:LEU:HD23	1:A:605:PRO:HD2	1.86	0.58
1:B:507:GLU:HB2	1:B:546:ASN:ND2	2.19	0.58
1:K:301:PRO:CD	1:K:515:GLN:HG2	2.33	0.58
1:K:301:PRO:HD3	1:K:515:GLN:HG2	1.84	0.58
1:K:430:ASP:O	1:K:431:LEU:HD23	2.03	0.58
1:B:12:TRP:HB2	1:B:47:LEU:HG	1.86	0.57
1:B:109:SER:HA	1:B:112:MET:HE2	1.86	0.57
1:G:509:CYS:SG	1:G:548:ASP:HB2	2.44	0.57
1:L:223:PRO:HB2	1:L:224:ILE:HD12	1.86	0.57
1:L:390:ASN:HD22	1:L:427:VAL:HG11	1.68	0.57
1:A:561:LEU:O	1:A:564:THR:OG1	2.22	0.57
1:L:404:SER:O	1:L:408:ARG:HB2	2.04	0.57
1:K:508:LEU:HB3	1:K:531:TYR:OH	2.03	0.57
1:B:61:ILE:HB	1:B:188:VAL:HG12	1.86	0.57
1:G:537:LEU:HD13	1:G:575:GLU:OE1	2.03	0.57
1:A:307:LEU:CD2	1:A:464:GLU:HB3	2.35	0.57
1:A:460:VAL:HG23	1:A:480:ALA:HB2	1.86	0.57
1:B:34:THR:CB	1:B:63:ARG:HG2	2.32	0.57
1:H:227:LEU:HD11	1:H:604:VAL:HG21	1.86	0.57
1:L:266:PHE:HB3	1:L:331:GLN:NE2	2.18	0.57
1:K:472[B]:TRP:CH2	1:L:453:ARG:HA	2.39	0.57
1:L:322:LEU:HB2	1:L:356:TYR:CE1	2.40	0.57
1:L:509:CYS:SG	1:L:548:ASP:HB2	2.45	0.57
1:L:514:LEU:HD13	1:L:521:LEU:HD11	1.86	0.57
1:K:304:PRO:HG3	1:K:518:GLY:HA3	1.86	0.57
1:B:565:ALA:HA	1:B:571:ILE:CG2	2.35	0.57
1:B:132:ARG:NH2	1:B:155:ALA:HB2	2.20	0.57
1:G:449:GLU:O	1:G:453:ARG:HG2	2.05	0.57
1:H:572:THR:OG1	1:H:575:GLU:HG2	2.05	0.57
1:G:268:THR:HG21	1:G:552:ILE:CG1	2.35	0.56
1:G:442:ALA:O	1:G:446:THR:HG23	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:494:ASP:O	1:K:498:VAL:HG23	2.05	0.56
1:A:329:ARG:O	1:A:333:ARG:HG3	2.04	0.56
1:G:256:LYS:NZ	1:G:342:ASP:O	2.37	0.56
1:H:483:LEU:O	1:H:507:GLU:HG2	2.06	0.56
1:K:453:ARG:HD2	1:L:472[B]:TRP:CZ2	2.40	0.56
1:A:4:LEU:HA	1:A:98:TYR:O	2.05	0.56
1:A:20:GLN:HG3	1:A:151:ILE:HG12	1.85	0.56
1:B:36:ALA:HB2	1:B:64:VAL:O	2.06	0.56
1:L:322:LEU:HD21	1:L:331:GLN:HB2	1.86	0.56
1:L:350:ARG:HD3	1:L:430:ASP:OD2	2.06	0.56
1:A:607:PRO:HB2	1:A:610:THR:CG2	2.35	0.56
1:B:298:TRP:CZ3	1:B:301:PRO:HG3	2.40	0.56
1:L:248:LYS:HG2	1:L:562:LEU:CD1	2.35	0.56
1:A:83:LEU:HD11	1:A:112:MET:HE2	1.87	0.56
1:A:106:LYS:HE2	1:B:106:LYS:HG2	1.86	0.56
1:K:322:LEU:HD22	1:K:328:LEU:HA	1.86	0.56
1:L:322:LEU:HD22	1:L:328:LEU:HA	1.86	0.56
1:G:292:ILE:CD1	1:G:315:ASP:HB2	2.36	0.56
1:B:2:ARG:O	1:B:28:ASP:HB2	2.06	0.56
1:H:447:ASP:O	1:H:450:PRO:HD2	2.05	0.56
1:L:448:PHE:O	1:L:451:VAL:HG22	2.06	0.56
1:G:266:PHE:HB3	1:G:331:GLN:NE2	2.21	0.56
1:L:589:ALA:HB1	1:L:593:GLU:HB2	1.88	0.56
1:A:247:ASP:O	1:A:251:VAL:HG23	2.06	0.56
1:A:407:ALA:HB1	1:H:450:PRO:HB3	1.88	0.56
1:B:533:LEU:HB3	1:B:568:CYS:SG	2.46	0.56
1:G:307:LEU:HD21	1:G:397:ARG:NH2	2.20	0.56
1:H:254:LEU:HD23	1:H:605:PRO:HD2	1.88	0.56
1:K:269:HIS:CE1	1:K:294:LEU:HD21	2.41	0.56
1:K:318:GLY:O	1:K:322:LEU:HB2	2.05	0.56
1:A:311:MET:HE2	1:A:311:MET:HA	1.86	0.55
1:G:394:THR:HG23	1:G:430:ASP:OD2	2.07	0.55
1:A:40:ILE:O	1:A:44:VAL:HG23	2.07	0.55
1:G:222:LEU:HD13	1:G:227:LEU:O	2.07	0.55
1:K:237:TRP:O	1:K:573:ARG:HD2	2.07	0.55
1:A:471:ILE:CG2	1:A:495:LEU:HD21	2.37	0.55
1:B:44:VAL:HG21	1:B:63:ARG:HH11	1.71	0.55
1:B:53:MET:HE1	1:B:148:GLU:OE2	2.05	0.55
1:G:307:LEU:HD21	1:G:397:ARG:CZ	2.36	0.55
1:H:299:PRO:O	1:H:301:PRO:HD3	2.07	0.55
1:K:251:VAL:HA	1:K:254:LEU:HD12	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:396:THR:HB	1:L:432:ALA:CB	2.36	0.55
1:H:266:PHE:HB3	1:H:331:GLN:NE2	2.21	0.55
1:A:31:HIS:CE1	1:A:90:ARG:HD2	2.42	0.55
1:A:449:GLU:HG3	1:B:472[B]:TRP:CH2	2.42	0.55
1:B:4:LEU:HD23	1:B:30:VAL:HG12	1.89	0.55
1:B:329:ARG:O	1:B:333:ARG:HG2	2.06	0.55
1:H:507:GLU:HB2	1:H:546:ASN:ND2	2.22	0.55
1:K:454:VAL:HG23	1:K:456:LEU:HG	1.89	0.55
1:B:4:LEU:HB3	1:B:30:VAL:HG12	1.89	0.54
1:A:172:LEU:HD23	1:A:172:LEU:H	1.72	0.54
1:B:308:GLU:O	1:B:312:ARG:HG2	2.07	0.54
1:G:301:PRO:HD3	1:G:515:GLN:HG2	1.90	0.54
1:K:549:ASN:O	1:K:553:SER:HB2	2.07	0.54
1:A:64:VAL:HG21	1:A:67:PHE:HB3	1.89	0.54
1:A:83:LEU:HD11	1:A:112:MET:CE	2.37	0.54
1:L:366:VAL:O	1:L:370:ILE:HG13	2.08	0.54
1:A:1:MET:HE3	1:A:2:ARG:N	2.22	0.54
1:A:102:ALA:HA	1:A:126:HIS:CE1	2.43	0.54
1:B:407:ALA:CB	1:K:450:PRO:HB3	2.34	0.54
1:B:431:LEU:HB3	1:B:434:PHE:CD2	2.43	0.54
1:B:63:ARG:N	1:B:189:HIS:O	2.35	0.54
1:L:224:ILE:HG22	1:L:226:ALA:H	1.71	0.54
1:L:521:LEU:HD23	1:L:566:ARG:NH1	2.23	0.54
1:B:91:ALA:HB1	1:B:97:ARG:HE	1.72	0.54
1:G:287:PRO:HG3	1:G:320:ALA:HB1	1.89	0.54
1:H:396:THR:OG1	3:H:702:ATP:O2'	2.23	0.54
1:K:322:LEU:HD12	1:K:356:TYR:OH	2.07	0.54
1:A:41:SER:HB2	1:A:42:PRO:HD3	1.90	0.54
1:A:118:LEU:HB3	1:A:170:LEU:HD13	1.88	0.54
2:D:709:A:O2'	2:D:710:A23:OP1	2.21	0.54
1:A:117:ALA:O	1:A:166:GLY:HA2	2.08	0.54
1:A:534:ARG:HG3	1:A:568:CYS:HB3	1.89	0.54
1:B:410:LEU:HD22	1:B:451:VAL:HG11	1.89	0.54
1:B:448:PHE:O	1:B:451:VAL:HG22	2.07	0.54
1:L:549:ASN:OD1	1:L:552:ILE:HD12	2.07	0.54
1:A:19:MET:SD	1:A:30:VAL:HG11	2.48	0.54
1:A:238:LEU:HD12	1:A:573:ARG:HG3	1.90	0.54
1:B:5:LEU:HD22	1:B:86:TRP:CZ2	2.43	0.54
1:G:397:ARG:O	1:G:400:GLY:N	2.28	0.54
1:G:434:PHE:HD1	1:G:443:MET:HE1	1.74	0.53
1:H:398:GLU:CD	1:H:402:ASP:HB2	2.33	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:342:ASP:OD1	1:L:556:SER:HB2	2.08	0.53
1:K:276:VAL:HG22	1:K:334:LEU:HD12	1.90	0.53
1:L:243:ASP:HB3	1:L:246:GLN:HE21	1.73	0.53
1:L:335:LEU:HD21	1:L:349:ILE:HD11	1.91	0.53
1:A:102:ALA:HB2	1:A:127:VAL:HG12	1.89	0.53
1:A:449:GLU:O	1:A:453:ARG:HG3	2.09	0.53
1:B:468:VAL:HG12	1:B:472[A]:TRP:CD1	2.43	0.53
1:L:305:ILE:O	1:L:309:ARG:HB2	2.08	0.53
1:L:574:LEU:HD21	1:L:578:LYS:HE2	1.90	0.53
1:A:183:THR:OG1	1:A:190:TRP:HB2	2.08	0.53
1:B:44:VAL:CG1	1:B:188:VAL:HG11	2.39	0.53
1:B:28:ASP:O	1:B:57:PRO:HB3	2.08	0.53
1:B:350:ARG:HA	1:B:392:LEU:O	2.09	0.53
1:K:220:SER:OG	1:L:226:ALA:HB2	2.09	0.53
1:A:34:THR:CG2	1:A:63:ARG:HG2	2.38	0.53
1:A:87:LEU:HD11	1:A:99:ILE:HD11	1.90	0.53
1:A:324:ASP:HB3	1:A:327:CYS:HB2	1.90	0.53
1:B:105:TYR:H	1:B:108:ILE:HD12	1.73	0.53
1:L:276:VAL:HG13	1:L:330:ALA:HB3	1.90	0.53
1:L:322:LEU:CD2	1:L:328:LEU:HA	2.39	0.53
1:H:294:LEU:HD13	1:H:298:TRP:HB2	1.90	0.53
1:L:533:LEU:HB3	1:L:568:CYS:SG	2.49	0.53
1:L:584:ALA:HB2	1:L:601:LEU:HD11	1.91	0.53
1:A:97:ARG:HD3	1:A:99:ILE:HD11	1.89	0.53
1:H:511:TYR:CE2	1:H:559:ASP:HB3	2.42	0.53
1:H:511:TYR:CE1	1:H:563:LEU:HD22	2.44	0.53
1:K:472[B]:TRP:CE2	1:K:495:LEU:HD13	2.45	0.53
1:G:472[A]:TRP:CH2	1:G:498:VAL:HG21	2.44	0.52
1:G:578:LYS:HE3	1:G:582:PHE:CZ	2.44	0.52
1:H:496:LEU:HD11	1:H:541:VAL:HG21	1.90	0.52
1:H:537:LEU:HD13	1:H:575:GLU:OE1	2.09	0.52
1:L:295:PRO:HG2	1:L:305:ILE:HG21	1.91	0.52
1:L:395:ALA:HB2	1:L:409:HIS:CD2	2.44	0.52
1:L:396:THR:HG21	3:L:701:ATP:H1'	1.91	0.52
1:L:489:LEU:HD11	1:L:495:LEU:HG	1.90	0.52
1:A:181:GLU:O	1:A:192:ARG:N	2.42	0.52
1:B:123:GLU:OE2	1:B:160:ARG:HG3	2.09	0.52
1:B:587:ALA:O	1:B:594:ARG:NH2	2.38	0.52
1:K:384:ASP:OD2	1:K:385:ARG:HG3	2.09	0.52
1:L:572:THR:HG22	1:L:574:LEU:H	1.73	0.52
1:A:21:LEU:HD13	1:A:125:PHE:CD2	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:414:ILE:HG23	1:G:454:VAL:HG11	1.90	0.52
1:B:589:ALA:HB1	1:B:593:GLU:HB2	1.92	0.52
1:G:572:THR:OG1	1:G:575:GLU:HG2	2.09	0.52
1:H:436:ASP:O	1:H:440:ARG:NH1	2.42	0.52
1:A:537:LEU:HD13	1:A:575:GLU:OE1	2.10	0.52
1:H:227:LEU:HD23	1:H:238:LEU:HD21	1.90	0.52
1:H:397:ARG:HB3	1:H:433:GLY:CA	2.39	0.52
1:K:592:ALA:O	1:K:595:LYS:HG2	2.09	0.52
1:L:222:LEU:HD11	1:L:235:LEU:HD22	1.90	0.52
1:H:311:MET:HE1	3:H:702:ATP:C8	2.45	0.52
1:K:397:ARG:HD3	1:K:434:PHE:N	2.22	0.52
1:A:17:GLU:HG2	1:A:156:LEU:CD2	2.39	0.52
1:A:85:ARG:CB	1:A:180:LEU:HD13	2.40	0.52
1:A:444:PHE:HB3	1:A:448:PHE:CE2	2.45	0.52
1:B:5:LEU:CD2	1:B:31:HIS:HB2	2.40	0.52
1:G:244:PRO:O	1:G:562:LEU:HD22	2.10	0.52
1:G:417:ALA:HB2	1:G:456:LEU:HD21	1.91	0.52
1:H:241:PRO:HA	1:H:572:THR:HA	1.92	0.52
1:K:238:LEU:HD13	1:K:574:LEU:CD1	2.40	0.52
1:G:533:LEU:HD12	1:G:543:VAL:HG11	1.91	0.52
1:L:280:ALA:CB	1:L:286:LEU:HD21	2.40	0.52
1:A:19:MET:CE	1:A:57:PRO:HG3	2.39	0.52
1:A:85:ARG:HB2	1:A:180:LEU:HD13	1.92	0.52
1:A:435:GLU:HG2	1:A:462:ALA:HA	1.91	0.52
1:A:201:HIS:O	1:A:205:VAL:HG23	2.10	0.52
1:B:84:TRP:CE3	1:B:199:ARG:HG2	2.45	0.52
1:B:223:PRO:HB2	1:B:224:ILE:HD12	1.91	0.52
1:H:307:LEU:O	1:H:311:MET:HG2	2.10	0.52
1:B:48:LEU:HD13	1:B:187:PRO:HG2	1.92	0.51
1:K:397:ARG:HB2	1:K:444:PHE:HE2	1.73	0.51
1:L:376:GLN:O	1:L:380:GLU:HG3	2.11	0.51
1:A:393:LEU:HD12	1:A:413:ALA:CB	2.39	0.51
1:B:1:MET:HB3	1:B:96:HIS:CE1	2.45	0.51
1:A:50:TYR:HA	1:A:144:LEU:HD11	1.91	0.51
1:A:572:THR:OG1	1:A:575:GLU:HG2	2.10	0.51
1:G:307:LEU:HD11	1:G:397:ARG:HH22	1.75	0.51
1:L:471:ILE:O	1:L:475:VAL:HG23	2.10	0.51
1:A:547:THR:HG23	1:A:557:LEU:HD13	1.92	0.51
1:H:224:ILE:HG22	1:H:226:ALA:H	1.75	0.51
1:A:16:PRO:HB3	1:A:50:TYR:CZ	2.46	0.51
1:A:72:SER:HB2	1:A:75:ASP:CG	2.36	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:472[A]:TRP:CE2	1:K:495:LEU:HD13	2.45	0.51
1:K:430:ASP:OD1	1:K:431:LEU:N	2.44	0.51
1:H:581:VAL:HG13	1:H:598:TRP:HH2	1.76	0.51
1:A:67:PHE:HD1	1:A:75:ASP:HB3	1.75	0.51
1:A:79:PHE:CZ	1:A:108:ILE:HG12	2.46	0.51
1:H:556:SER:O	1:H:560:ASN:ND2	2.41	0.51
1:K:429:VAL:CG2	1:K:458:VAL:HG12	2.40	0.51
1:L:394:THR:HB	6:L:803:HOH:O	2.11	0.51
1:A:494:ASP:OD2	1:K:408:ARG:NH2	2.40	0.51
1:B:4:LEU:HD12	1:B:98:TYR:O	2.11	0.51
1:B:74:GLN:HA	1:B:77:MET:CE	2.40	0.51
1:G:311:MET:HG3	1:G:397:ARG:HH12	1.75	0.51
1:B:102:ALA:HA	1:B:126:HIS:CE1	2.46	0.51
1:G:607:PRO:HB2	1:G:610:THR:CG2	2.41	0.51
1:A:397:ARG:HB2	1:A:444:PHE:HE2	1.75	0.50
1:H:254:LEU:O	1:H:256:LYS:HG3	2.12	0.50
1:A:584:ALA:HB2	1:A:601:LEU:HD11	1.93	0.50
1:B:227:LEU:HD21	1:B:238:LEU:CD2	2.41	0.50
1:B:468:VAL:HG13	1:B:495:LEU:HD22	1.93	0.50
1:H:533:LEU:HB3	1:H:568:CYS:SG	2.51	0.50
1:K:584:ALA:O	1:K:594:ARG:NH1	2.44	0.50
1:B:145:GLU:OE2	1:B:146:GLU:HG3	2.11	0.50
1:A:223:PRO:HB2	1:A:581:VAL:HG21	1.92	0.50
1:K:458:VAL:HG23	1:K:480:ALA:HA	1.94	0.50
1:L:317:ASN:OD1	1:L:321:LEU:HD23	2.12	0.50
1:A:116:ALA:HB1	1:A:164:GLU:OE2	2.12	0.50
1:B:81:GLU:OE1	1:B:199:ARG:HG3	2.11	0.50
1:L:399:GLU:HB2	1:L:406:ILE:HD11	1.94	0.50
1:A:565:ALA:HA	1:A:571:ILE:CG2	2.41	0.50
1:B:21:LEU:HA	1:B:158:PHE:CE2	2.46	0.50
1:B:201:HIS:O	1:B:205:VAL:HG23	2.12	0.50
1:G:434:PHE:CD1	1:G:443:MET:HE1	2.47	0.50
1:K:222:LEU:HD22	1:K:227:LEU:HD13	1.93	0.50
1:K:237:TRP:CD1	1:K:610:THR:HG22	2.47	0.50
1:K:487:LEU:HD11	1:K:513:ASN:ND2	2.27	0.50
1:L:334:LEU:O	1:L:337:GLU:HG3	2.11	0.50
1:L:508:LEU:HD12	1:L:543:VAL:HG11	1.94	0.50
1:A:2:ARG:HD2	1:A:22:LEU:HD21	1.94	0.50
1:B:114:ARG:O	1:B:118:LEU:HD23	2.12	0.50
1:G:487:LEU:HD11	1:G:513:ASN:CG	2.36	0.50
1:A:208:ARG:HH22	1:B:216:TRP:HE1	1.58	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:118:LEU:HD13	1:B:167:TRP:CD1	2.47	0.50
1:B:143:THR:H	1:B:146:GLU:HB2	1.77	0.50
1:B:262:HIS:HB3	3:B:701:ATP:O2A	2.12	0.50
1:K:223:PRO:HB2	1:K:581:VAL:HG21	1.94	0.50
1:K:259:LEU:H	1:K:546:ASN:ND2	2.09	0.50
1:L:254:LEU:CD2	1:L:604:VAL:HG23	2.42	0.50
1:L:307:LEU:HG	1:L:311:MET:HE3	1.94	0.50
1:A:51:PHE:HB3	1:A:59:PHE:CD2	2.46	0.49
1:B:34:THR:O	1:B:63:ARG:HA	2.12	0.49
1:H:436:ASP:HB3	1:H:439:THR:OG1	2.11	0.49
1:L:439:THR:O	1:L:443:MET:HG2	2.11	0.49
1:A:21:LEU:HD22	1:A:125:PHE:CD1	2.46	0.49
1:B:292:ILE:HD12	1:B:316:ASN:OD1	2.12	0.49
1:B:294:LEU:HD23	1:B:313:LEU:HD22	1.93	0.49
1:B:443:MET:HA	1:B:473:GLN:HB3	1.94	0.49
1:A:83:LEU:HD13	1:A:111:ALA:HB1	1.94	0.49
1:A:268:THR:HG21	1:A:552:ILE:HG12	1.93	0.49
1:B:65:GLN:HA	1:B:190:TRP:CE3	2.47	0.49
1:G:403:ARG:HA	1:G:406:ILE:HG22	1.93	0.49
1:A:86:TRP:NE1	1:A:90:ARG:HG3	2.28	0.49
1:A:181:GLU:N	1:A:192:ARG:O	2.34	0.49
1:G:290:ARG:NH2	1:G:315:ASP:HB3	2.24	0.49
1:B:584:ALA:HB2	1:B:601:LEU:HD11	1.94	0.49
1:H:350:ARG:NH1	1:H:430:ASP:OD2	2.45	0.49
1:H:439:THR:O	1:H:443:MET:HG2	2.13	0.49
1:A:15:VAL:HB	1:A:16:PRO:HD3	1.95	0.49
1:A:95:ALA:O	1:A:122:CYS:HB2	2.12	0.49
1:A:419:HIS:HE1	1:H:365:VAL:HG23	1.77	0.49
1:G:418:GLU:OE2	1:L:408:ARG:NH1	2.45	0.49
1:H:298:TRP:CZ3	1:H:301:PRO:HG3	2.48	0.49
1:B:243:ASP:HB3	1:B:246:GLN:HB3	1.95	0.49
1:K:258:GLU:OE1	1:K:557:LEU:HD13	2.12	0.49
1:L:307:LEU:HB2	1:L:464:GLU:OE2	2.12	0.49
1:B:37:SER:HB2	1:B:68:GLU:O	2.12	0.49
1:G:241:PRO:HA	1:G:572:THR:HA	1.95	0.49
1:K:333:ARG:O	1:K:337:GLU:HG2	2.13	0.49
1:A:471:ILE:HB	1:A:495:LEU:HD21	1.94	0.49
1:B:233:SER:OG	1:B:610:THR:HG22	2.12	0.49
1:B:251:VAL:CG1	1:B:558:THR:HG23	2.42	0.49
1:B:299:PRO:O	1:B:301:PRO:HD3	2.13	0.49
1:G:254:LEU:HD21	1:G:577:LEU:HD21	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:258:GLU:O	1:K:347:ALA:HA	2.13	0.49
1:A:216:TRP:HH2	1:B:228:ALA:HB3	1.79	0.48
1:B:65:GLN:HA	1:B:190:TRP:HE3	1.78	0.48
1:K:430:ASP:C	1:K:431:LEU:HD23	2.37	0.48
1:K:452:HIS:CE1	1:K:479:SER:HB2	2.48	0.48
1:L:240:GLU:HG2	1:L:241:PRO:HD2	1.95	0.48
1:A:124:VAL:HG23	1:A:164:GLU:OE2	2.13	0.48
1:B:533:LEU:CD1	1:B:543:VAL:HG11	2.43	0.48
1:K:500:ALA:HB2	1:K:541:VAL:HG23	1.96	0.48
1:K:521:LEU:HD13	1:K:566:ARG:NH2	2.27	0.48
1:K:533:LEU:HB3	1:K:568:CYS:SG	2.53	0.48
1:L:222:LEU:CD1	1:L:228:ALA:HA	2.43	0.48
1:L:437:ARG:HD2	1:L:440:ARG:NH1	2.28	0.48
1:A:106:LYS:HE2	1:B:106:LYS:CG	2.43	0.48
1:B:44:VAL:HG13	1:B:188:VAL:HG11	1.95	0.48
1:B:117:ALA:O	1:B:166:GLY:HA2	2.13	0.48
1:A:3:ILE:HA	1:A:29:GLU:O	2.14	0.48
1:A:135:PRO:HD2	1:A:139:ARG:NH2	2.27	0.48
1:A:272:LEU:O	1:A:276:VAL:HG23	2.13	0.48
1:B:97:ARG:NH1	1:B:120:GLY:O	2.46	0.48
1:B:565:ALA:HA	1:B:571:ILE:HG22	1.95	0.48
1:K:471:ILE:O	1:K:475:VAL:HG23	2.14	0.48
1:K:509:CYS:SG	1:K:548:ASP:HB2	2.53	0.48
1:G:460:VAL:HG21	1:G:474:ALA:HB1	1.95	0.48
1:H:431:LEU:HD12	1:H:478:LEU:HD13	1.96	0.48
1:L:251:VAL:CG1	1:L:558:THR:HG23	2.40	0.48
1:B:301:PRO:HD3	1:B:515:GLN:HG2	1.96	0.48
1:G:394:THR:HA	1:G:430:ASP:HB3	1.95	0.48
1:G:561:LEU:HD23	1:G:576:VAL:CG1	2.43	0.48
1:H:473:GLN:O	1:H:477:LYS:HB2	2.13	0.48
1:A:164:GLU:O	1:A:164:GLU:HG2	2.12	0.48
1:A:405:ARG:HG2	1:A:408:ARG:NH1	2.28	0.48
1:A:509:CYS:SG	1:A:548:ASP:HB2	2.54	0.48
1:L:310:TYR:CD2	1:L:516:ILE:HD11	2.49	0.48
1:A:17:GLU:HG2	1:A:156:LEU:HD22	1.94	0.48
1:A:129:CYS:HB3	1:A:140:GLU:OE1	2.13	0.48
1:A:498:VAL:HA	1:A:501:GLU:HG2	1.95	0.48
1:B:364:TRP:HA	1:B:412:LEU:HD11	1.96	0.48
1:B:489:LEU:HD23	1:B:496:LEU:HD12	1.95	0.48
1:A:33:LEU:HA	1:A:62:SER:O	2.14	0.48
1:B:4:LEU:HB2	1:B:27:PHE:CD1	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:423:GLY:O	1:L:425:ARG:HG3	2.14	0.48
1:A:5:LEU:HD23	1:A:31:HIS:HB2	1.96	0.48
1:A:243:ASP:O	1:A:247:ASP:HB2	2.14	0.48
1:H:378:MET:O	1:H:386:ARG:NE	2.46	0.48
1:K:310:TYR:HA	1:K:313:LEU:HD23	1.95	0.48
1:A:6:CYS:SG	1:A:100:CYS:HB3	2.53	0.47
1:A:50:TYR:CA	1:A:144:LEU:HD11	2.43	0.47
1:A:79:PHE:CZ	1:A:83:LEU:HD12	2.49	0.47
1:L:486:ALA:HB3	1:L:506:VAL:HG13	1.96	0.47
1:A:468:VAL:HG13	1:A:491:ARG:HH21	1.79	0.47
1:B:48:LEU:CD1	1:B:187:PRO:HG2	2.44	0.47
1:B:472[A]:TRP:CD2	1:B:495:LEU:HD13	2.49	0.47
1:B:531:TYR:CE2	1:B:533:LEU:HB2	2.49	0.47
1:G:464:GLU:O	1:G:465:ASN:HB3	2.14	0.47
1:L:488:HIS:HB3	1:L:491:ARG:NH1	2.29	0.47
1:A:196:MET:SD	1:A:199:ARG:NH1	2.87	0.47
1:H:509:CYS:HB2	1:H:512:ALA:HB3	1.97	0.47
1:A:3:ILE:HG13	1:A:29:GLU:HB3	1.96	0.47
1:A:21:LEU:HD22	1:A:125:PHE:CE1	2.50	0.47
1:A:79:PHE:HZ	1:A:108:ILE:HG23	1.79	0.47
1:B:21:LEU:HD22	1:B:125:PHE:CD1	2.50	0.47
1:K:234:HIS:HD2	1:K:607:PRO:HD2	1.79	0.47
1:L:307:LEU:HD11	1:L:311:MET:HE2	1.95	0.47
1:B:227:LEU:HD21	1:B:238:LEU:HD21	1.96	0.47
1:B:305:ILE:O	1:B:309:ARG:HD3	2.14	0.47
1:B:393:LEU:HD12	1:B:413:ALA:CA	2.44	0.47
1:A:182:SER:OG	1:A:189:HIS:HB3	2.15	0.47
1:H:393:LEU:HD12	1:H:413:ALA:CB	2.45	0.47
1:A:403:ARG:HD2	1:H:453:ARG:HD2	1.97	0.47
1:B:73:GLU:HG2	1:B:77:MET:HE2	1.96	0.47
1:G:395:ALA:O	1:G:432:ALA:HB3	2.15	0.47
1:H:305:ILE:O	1:H:309:ARG:HB2	2.15	0.47
1:K:322:LEU:CD1	1:K:331:GLN:HG2	2.32	0.47
1:K:431:LEU:HD11	1:K:448:PHE:CE2	2.49	0.47
1:L:219:ILE:HD12	1:L:228:ALA:HB1	1.97	0.47
1:L:396:THR:HG23	1:L:397:ARG:HG2	1.96	0.47
1:L:545:LEU:CD1	1:L:564:THR:HG21	2.43	0.47
1:B:430:ASP:HA	1:B:459:THR:O	2.15	0.47
1:G:310:TYR:HH	1:G:553:SER:HG	1.61	0.47
1:H:290:ARG:HG2	1:H:316:ASN:OD1	2.15	0.47
1:K:237:TRP:CH2	1:K:573:ARG:HD3	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:223:PRO:HD2	1:L:227:LEU:HD23	1.97	0.47
1:L:382:PRO:O	1:L:386:ARG:HB2	2.15	0.47
1:A:403:ARG:O	1:A:403:ARG:HD3	2.15	0.47
1:B:127:VAL:HG23	1:B:158:PHE:CE1	2.50	0.47
1:B:182:SER:OG	1:B:191:VAL:HG12	2.14	0.47
1:G:311:MET:HG3	1:G:397:ARG:NH1	2.30	0.47
1:K:242:LEU:CD1	1:K:576:VAL:HG21	2.41	0.47
1:B:77:MET:CB	1:B:199:ARG:HH12	2.24	0.47
1:B:178:PHE:CD1	1:B:198:LEU:HD13	2.50	0.47
1:B:434:PHE:O	1:B:443:MET:N	2.48	0.47
1:G:260:HIS:HA	1:G:350:ARG:HE	1.78	0.47
1:H:394:THR:HG23	1:H:432:ALA:HB3	1.97	0.47
1:A:34:THR:HG21	1:A:40:ILE:HG21	1.97	0.46
1:B:393:LEU:HD12	1:B:413:ALA:CB	2.45	0.46
1:G:298:TRP:CG	1:G:299:PRO:HA	2.50	0.46
1:H:432:ALA:HA	1:H:461:HIS:CD2	2.50	0.46
1:K:284:GLU:OE1	1:K:284:GLU:N	2.48	0.46
1:L:222:LEU:HD22	1:L:227:LEU:CD2	2.45	0.46
1:L:251:VAL:HA	1:L:254:LEU:HD12	1.96	0.46
1:B:4:LEU:HD23	1:B:30:VAL:CG1	2.46	0.46
1:G:243:ASP:O	1:G:247:ASP:HB2	2.15	0.46
1:L:473:GLN:O	1:L:477:LYS:HB2	2.16	0.46
1:B:5:LEU:HD13	1:B:86:TRP:CZ3	2.50	0.46
1:B:17:GLU:HA	1:B:156:LEU:HD21	1.96	0.46
1:B:443:MET:HA	1:B:473:GLN:CB	2.46	0.46
1:B:12:TRP:HB3	1:B:43:GLY:CA	2.46	0.46
1:G:406:ILE:O	1:G:410:LEU:HG	2.15	0.46
1:H:263:LEU:HD12	1:H:335:LEU:HD13	1.98	0.46
1:H:292:ILE:HD11	1:H:315:ASP:HB2	1.98	0.46
1:H:349:ILE:HG12	1:H:389:VAL:HG13	1.96	0.46
1:K:587:ALA:O	1:K:594:ARG:NH2	2.45	0.46
1:B:356:TYR:HB2	1:B:366:VAL:HG11	1.97	0.46
1:G:440:ARG:NH1	1:G:467:ASP:OD2	2.46	0.46
1:G:441:ALA:H	1:G:444:PHE:HD2	1.64	0.46
1:L:374:PHE:O	1:L:378:MET:HG3	2.15	0.46
1:A:308:GLU:HG2	1:A:309:ARG:N	2.29	0.46
1:A:592:ALA:O	1:A:595:LYS:HG2	2.16	0.46
1:B:37:SER:O	1:B:40:ILE:HG12	2.16	0.46
1:H:565:ALA:HA	1:H:571:ILE:HG22	1.98	0.46
1:K:238:LEU:HD13	1:K:574:LEU:HD13	1.96	0.46
1:K:238:LEU:O	1:K:573:ARG:HG2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:256:LYS:HB3	1:L:557:LEU:CD2	2.45	0.46
1:A:406:ILE:HD12	1:A:406:ILE:H	1.81	0.46
1:B:173:LEU:HD23	1:B:198:LEU:HD11	1.98	0.46
1:B:483:LEU:O	1:B:507:GLU:HG2	2.16	0.46
1:K:268:THR:HB	1:K:314:GLY:CA	2.41	0.46
1:A:33:LEU:HD11	1:A:64:VAL:HG13	1.98	0.46
1:B:273:LEU:O	1:B:277:ARG:HG3	2.16	0.46
1:H:329:ARG:O	1:H:333:ARG:HG3	2.16	0.46
1:A:50:TYR:HD2	1:A:144:LEU:HD13	1.80	0.46
1:A:305:ILE:O	1:A:309:ARG:HD3	2.16	0.46
1:B:592:ALA:O	1:B:595:LYS:HG2	2.16	0.46
1:G:529:GLU:OE1	1:G:529:GLU:N	2.46	0.46
1:H:279:GLU:OE1	1:H:330:ALA:HB2	2.16	0.46
1:A:37:SER:OG	1:A:39:LYS:HE2	2.16	0.45
1:A:100:CYS:HB2	1:A:125:PHE:CZ	2.51	0.45
1:A:294:LEU:HD23	1:A:313:LEU:HD22	1.98	0.45
1:B:128:LEU:HD13	1:B:157:ARG:CZ	2.45	0.45
1:H:448:PHE:O	1:H:451:VAL:HG22	2.17	0.45
1:L:280:ALA:HB1	1:L:286:LEU:HD21	1.99	0.45
1:L:549:ASN:HB3	1:L:552:ILE:HB	1.98	0.45
1:A:245:VAL:HG23	1:A:246:GLN:HG3	1.98	0.45
1:A:271:GLU:O	1:A:275:LYS:HG3	2.16	0.45
1:B:290:ARG:HG2	1:B:316:ASN:HD21	1.81	0.45
1:B:410:LEU:O	1:B:414:ILE:HG13	2.16	0.45
1:G:315:ASP:HA	3:G:701:ATP:O1G	2.15	0.45
1:H:322:LEU:HD12	1:H:356:TYR:CZ	2.51	0.45
1:K:222:LEU:HD13	1:K:227:LEU:CB	2.45	0.45
1:K:489:LEU:HB2	1:K:536:TYR:CZ	2.51	0.45
1:L:555:ALA:HB1	1:L:559:ASP:HB2	1.99	0.45
1:A:13:ALA:C	1:A:16:PRO:HD2	2.42	0.45
1:A:81:GLU:HB2	1:A:199:ARG:HD2	1.97	0.45
1:A:209:SER:O	1:A:213:LEU:HG	2.17	0.45
1:L:305:ILE:HG12	1:L:515:GLN:O	2.16	0.45
1:L:432:ALA:HA	1:L:461:HIS:HD1	1.82	0.45
1:A:91:ALA:HB1	1:A:97:ARG:HE	1.81	0.45
1:B:181:GLU:O	1:B:181:GLU:HG2	2.16	0.45
1:G:219:ILE:HA	1:G:222:LEU:HD12	1.97	0.45
1:K:435:GLU:CG	1:K:462:ALA:HA	2.40	0.45
1:K:571:ILE:HG13	1:K:575:GLU:OE1	2.17	0.45
1:L:268:THR:HG21	1:L:552:ILE:HG13	1.97	0.45
1:L:520:PRO:HG2	1:L:529:GLU:HG3	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:216:TRP:CH2	1:B:228:ALA:HB3	2.52	0.45
1:A:533:LEU:HD12	1:A:543:VAL:HG11	1.99	0.45
1:B:1:MET:HB3	1:B:96:HIS:ND1	2.32	0.45
1:B:63:ARG:O	1:B:190:TRP:HA	2.16	0.45
1:G:231:PRO:HB2	1:G:234:HIS:ND1	2.32	0.45
1:H:245:VAL:HG13	1:H:246:GLN:CD	2.41	0.45
1:H:550:LEU:O	1:H:550:LEU:HD23	2.16	0.45
1:B:141:ALA:HB1	1:B:147:VAL:HA	1.99	0.45
1:B:494:ASP:O	1:B:498:VAL:HG23	2.16	0.45
1:H:301:PRO:CD	1:H:515:GLN:HG2	2.46	0.45
1:H:350:ARG:HD3	1:H:430:ASP:OD2	2.17	0.45
1:L:277:ARG:NH2	1:L:287:PRO:O	2.42	0.45
1:A:41:SER:O	1:A:44:VAL:HB	2.16	0.45
1:A:174:SER:HB3	1:A:176:PRO:HD2	1.98	0.45
1:B:143:THR:O	1:B:147:VAL:HG23	2.16	0.45
1:G:531:TYR:HB3	1:G:568:CYS:SG	2.57	0.45
1:G:584:ALA:HB2	1:G:601:LEU:HD11	1.99	0.45
1:K:489:LEU:HB2	1:K:536:TYR:OH	2.16	0.45
1:B:173:LEU:HD23	1:B:198:LEU:CD1	2.47	0.45
1:B:217:GLU:O	1:B:217:GLU:HG2	2.16	0.45
1:G:489:LEU:HB3	1:G:496:LEU:HD13	1.99	0.45
1:L:223:PRO:CG	1:L:578:LYS:HG2	2.46	0.45
1:G:262:HIS:HB3	3:G:701:ATP:C2'	2.47	0.45
1:G:264:GLY:N	3:G:701:ATP:O2'	2.39	0.45
1:L:508:LEU:HD12	1:L:543:VAL:CG1	2.47	0.45
1:A:97:ARG:O	1:A:122:CYS:N	2.50	0.45
1:A:254:LEU:HD23	1:A:605:PRO:CD	2.47	0.45
1:B:42:PRO:O	1:B:45:GLU:HG2	2.16	0.45
1:B:133:PHE:CE2	1:B:149:GLN:HB3	2.49	0.45
1:B:185:GLN:HB2	1:B:190:TRP:CD1	2.52	0.45
1:K:471:ILE:HB	1:K:495:LEU:HD21	1.99	0.45
1:A:5:LEU:HD22	1:A:86:TRP:CZ2	2.52	0.44
1:K:508:LEU:HD12	1:K:543:VAL:CG1	2.47	0.44
1:L:329:ARG:HB3	1:L:329:ARG:NH1	2.33	0.44
1:A:545:LEU:CD1	1:A:564:THR:HG21	2.39	0.44
1:B:128:LEU:HD13	1:B:157:ARG:NH2	2.32	0.44
1:G:393:LEU:HD12	1:G:413:ALA:HB2	1.98	0.44
1:H:504:ILE:HD12	1:H:504:ILE:H	1.82	0.44
1:A:182:SER:HA	1:A:190:TRP:O	2.18	0.44
1:G:434:PHE:O	1:G:440:ARG:NE	2.51	0.44
1:A:301:PRO:HD3	1:A:515:GLN:HG2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:472[A]:TRP:CD2	1:A:495:LEU:HD13	2.53	0.44
1:A:531:TYR:CD1	1:A:532:PRO:HD2	2.53	0.44
1:K:237:TRP:CZ3	1:K:607:PRO:HG3	2.53	0.44
1:B:73:GLU:O	1:B:77:MET:HG3	2.18	0.44
1:G:307:LEU:HA	1:G:310:TYR:HB3	1.99	0.44
1:K:243:ASP:O	1:K:247:ASP:HB2	2.17	0.44
1:L:227:LEU:HD11	1:L:238:LEU:HD11	2.00	0.44
1:L:388:HIS:CD2	1:L:593:GLU:HG2	2.53	0.44
1:B:12:TRP:NE1	1:B:142:SER:O	2.50	0.44
1:L:265:GLY:HA3	1:L:549:ASN:OD1	2.17	0.44
1:L:271:GLU:HG2	1:L:275:LYS:HE2	1.99	0.44
1:L:346:TYR:CE2	1:L:587:ALA:HB1	2.53	0.44
1:B:141:ALA:HA	1:B:146:GLU:HB3	2.00	0.44
1:B:507:GLU:HB2	1:B:546:ASN:HD21	1.82	0.44
1:G:581:VAL:HG13	1:G:598:TRP:HH2	1.83	0.44
1:K:261:CYS:HB3	1:K:349:ILE:HD13	2.00	0.44
1:A:35:THR:HB	1:A:68:GLU:HA	1.99	0.44
1:B:508:LEU:HB3	1:B:531:TYR:OH	2.17	0.44
1:G:242:LEU:CD1	1:G:573:ARG:HG2	2.47	0.44
1:H:313:LEU:HB2	1:H:552:ILE:HG23	1.99	0.44
1:H:511:TYR:HD1	1:H:563:LEU:HD22	1.81	0.44
1:K:266:PHE:HB3	1:K:331:GLN:OE1	2.18	0.44
1:L:256:LYS:CB	1:L:557:LEU:HD23	2.48	0.44
1:A:17:GLU:HB3	1:A:127:VAL:HG21	2.00	0.44
1:A:406:ILE:O	1:A:410:LEU:HG	2.18	0.44
1:A:520:PRO:HD3	1:A:529:GLU:HG3	1.99	0.44
1:B:533:LEU:HD12	1:B:543:VAL:HG11	2.00	0.44
2:D:709:A:HO2'	2:D:710:A23:P	2.40	0.44
1:H:277:ARG:CG	1:H:321:LEU:HD21	2.48	0.44
1:G:507:GLU:HB2	1:G:546:ASN:ND2	2.33	0.43
1:H:248:LYS:HA	1:H:562:LEU:HD21	2.00	0.43
1:K:273:LEU:HD11	1:K:316:ASN:O	2.18	0.43
1:B:183:THR:O	1:B:190:TRP:HB2	2.17	0.43
1:B:526:GLU:OE1	1:B:530:THR:HG21	2.18	0.43
1:H:346:TYR:CE1	1:H:348:GLU:HG3	2.53	0.43
1:H:511:TYR:CE1	1:H:563:LEU:HB2	2.53	0.43
1:A:128:LEU:HD23	2:C:707:A:H8	1.82	0.43
1:A:418:GLU:OE1	1:H:408:ARG:HD3	2.18	0.43
1:B:28:ASP:C	1:B:57:PRO:HB3	2.42	0.43
1:B:130:GLU:HB2	1:B:155:ALA:HB1	1.99	0.43
1:G:396:THR:HG22	1:G:397:ARG:N	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:514:LEU:O	1:H:514:LEU:HD12	2.17	0.43
1:L:466:ASP:HB2	1:L:491:ARG:NH2	2.32	0.43
1:A:102:ALA:CB	1:A:127:VAL:HG12	2.48	0.43
1:B:237:TRP:CH2	1:B:573:ARG:HD3	2.53	0.43
1:B:575:GLU:O	1:B:579:THR:HG23	2.17	0.43
1:H:231:PRO:HD2	1:H:234:HIS:ND1	2.33	0.43
1:H:431:LEU:CD1	1:H:478:LEU:HD13	2.48	0.43
1:K:247:ASP:O	1:K:251:VAL:HG23	2.18	0.43
1:K:366:VAL:O	1:K:370:ILE:HG13	2.18	0.43
1:K:561:LEU:CD1	1:K:576:VAL:HG13	2.46	0.43
1:B:8:VAL:HG23	1:B:32:VAL:HG13	2.00	0.43
1:B:122:CYS:O	1:B:163:PRO:HB3	2.18	0.43
1:G:472[A]:TRP:CH2	1:H:453:ARG:HA	2.54	0.43
1:K:263:LEU:HD11	1:K:331:GLN:HG3	2.01	0.43
1:G:242:LEU:HA	1:G:573:ARG:HG3	2.01	0.43
1:H:240:GLU:HB3	1:H:241:PRO:HD2	2.00	0.43
1:K:604:VAL:HG13	1:K:605:PRO:HD2	1.99	0.43
1:L:344:VAL:HG12	1:L:387:CYS:SG	2.58	0.43
1:A:196:MET:O	1:A:196:MET:HG2	2.18	0.43
1:G:473:GLN:O	1:G:477:LYS:HB2	2.18	0.43
1:A:20:GLN:HG3	1:A:151:ILE:HG23	2.00	0.43
1:G:224:ILE:HG22	1:G:226:ALA:H	1.82	0.43
1:L:234:HIS:CD2	1:L:610:THR:HG23	2.53	0.43
1:L:371:ARG:HD2	1:L:420:TRP:CE2	2.53	0.43
1:A:127:VAL:HG23	1:A:158:PHE:CE1	2.53	0.43
1:H:398:GLU:OE1	1:H:405:ARG:HD3	2.18	0.43
1:K:473:GLN:O	1:K:477:LYS:HB2	2.19	0.43
1:L:277:ARG:HG2	1:L:321:LEU:CD1	2.48	0.43
1:L:319:SER:O	1:L:323:LYS:HG3	2.18	0.43
1:L:413:ALA:HB1	1:L:456:LEU:HD13	2.00	0.43
1:A:67:PHE:CD1	1:A:75:ASP:HB3	2.54	0.43
1:B:547:THR:HG23	1:B:557:LEU:HD13	2.01	0.43
1:H:268:THR:HG21	1:H:552:ILE:CG1	2.49	0.43
1:A:170:LEU:HD22	1:A:202:VAL:HG22	2.00	0.42
1:A:364:TRP:HA	1:A:412:LEU:HD11	2.01	0.42
1:B:21:LEU:HD22	1:B:125:PHE:CG	2.54	0.42
1:B:78:LEU:O	1:B:82:VAL:HG23	2.19	0.42
1:B:398:GLU:OE1	1:B:398:GLU:N	2.47	0.42
2:D:709:A:H4'	2:D:710:A23:OP2	2.17	0.42
1:K:307:LEU:CD1	1:K:516:ILE:HD13	2.49	0.42
1:K:361:ARG:HH12	1:K:369:GLU:CD	2.27	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:298:TRP:CH2	1:L:553:SER:HA	2.53	0.42
1:L:350:ARG:HG2	1:L:392:LEU:HB2	1.99	0.42
1:A:16:PRO:CB	1:A:147:VAL:HG11	2.49	0.42
1:A:268:THR:HG21	1:A:552:ILE:CG1	2.48	0.42
1:B:290:ARG:HG2	1:B:316:ASN:ND2	2.33	0.42
1:H:468:VAL:HG12	1:H:472:TRP:CD1	2.54	0.42
1:K:410:LEU:HD22	1:K:451:VAL:CG2	2.47	0.42
1:L:222:LEU:HD22	1:L:227:LEU:CG	2.49	0.42
1:A:435:GLU:HG2	1:A:462:ALA:CB	2.49	0.42
1:B:5:LEU:HD22	1:B:86:TRP:CH2	2.54	0.42
1:K:397:ARG:HH11	1:K:434:PHE:HA	1.83	0.42
1:L:240:GLU:HB3	1:L:573:ARG:NH1	2.35	0.42
1:A:16:PRO:HB2	1:A:147:VAL:HG11	2.01	0.42
1:A:53:MET:HG2	1:A:54:HIS:CD2	2.53	0.42
1:B:240:GLU:HB2	1:B:573:ARG:NH1	2.34	0.42
1:B:428:GLY:HA2	1:B:456:LEU:HD22	2.02	0.42
1:H:256:LYS:HE2	1:H:558:THR:OG1	2.19	0.42
1:H:484:GLY:HA2	1:H:507:GLU:CG	2.50	0.42
1:K:319:SER:HA	1:K:356:TYR:HE1	1.84	0.42
1:K:431:LEU:HD21	1:K:448:PHE:CZ	2.54	0.42
1:L:298:TRP:HE1	1:L:554:GLN:HE21	1.67	0.42
1:L:472[A]:TRP:CH2	1:L:498:VAL:HG21	2.54	0.42
1:A:87:LEU:HD11	1:A:99:ILE:CD1	2.50	0.42
1:G:450:PRO:HB3	1:L:407:ALA:CB	2.50	0.42
1:A:434:PHE:CD2	1:A:478:LEU:HD21	2.55	0.42
1:A:533:LEU:CD1	1:A:543:VAL:HG11	2.49	0.42
1:B:468:VAL:HG13	1:B:495:LEU:CD2	2.49	0.42
1:G:502:ARG:HB2	1:G:504:ILE:CD1	2.50	0.42
1:H:237:TRP:CZ3	1:H:607:PRO:HG3	2.54	0.42
1:A:118:LEU:HD22	1:A:206:LEU:HD11	2.01	0.42
1:H:356:TYR:HB2	1:H:366:VAL:HG11	2.01	0.42
1:H:388:HIS:CE1	1:H:593:GLU:HG2	2.55	0.42
1:A:482:ARG:NE	1:A:507:GLU:OE2	2.49	0.42
1:B:265:GLY:HA3	1:B:549:ASN:OD1	2.19	0.42
1:H:531:TYR:CD1	1:H:532:PRO:HD2	2.55	0.42
1:K:310:TYR:CZ	1:K:552:ILE:HG22	2.55	0.42
1:A:472[B]:TRP:CZ3	1:A:477:LYS:HE2	2.44	0.42
1:B:18:ALA:N	1:B:127:VAL:HG21	2.34	0.42
1:B:108:ILE:HG22	1:B:112:MET:CE	2.34	0.42
1:A:346:TYR:CE1	1:A:587:ALA:HB1	2.55	0.42
1:B:272:LEU:HD22	1:B:334:LEU:HD13	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:310:TYR:HA	1:B:313:LEU:HD12	2.02	0.42
1:K:464:GLU:O	1:K:465:ASN:HB3	2.20	0.42
1:A:19:MET:CE	1:A:27:PHE:H	2.33	0.41
1:A:280:ALA:HB2	1:A:286:LEU:HD11	2.02	0.41
1:A:393:LEU:HD12	1:A:413:ALA:CA	2.49	0.41
1:B:85:ARG:NH1	1:B:195:ASP:O	2.52	0.41
1:B:242:LEU:HD12	1:B:247:ASP:OD2	2.20	0.41
1:H:398:GLU:HG2	1:H:402:ASP:H	1.84	0.41
1:L:243:ASP:CB	1:L:246:GLN:HE21	2.31	0.41
1:A:298:TRP:CG	1:A:299:PRO:HA	2.55	0.41
1:A:450:PRO:HB3	1:H:407:ALA:HB1	2.02	0.41
1:B:73:GLU:OE2	1:B:74:GLN:NE2	2.52	0.41
1:H:529:GLU:N	1:H:529:GLU:OE1	2.53	0.41
1:K:473:GLN:HG2	1:K:477:LYS:HG3	2.03	0.41
1:L:272:LEU:O	1:L:276:VAL:HG23	2.20	0.41
1:A:7:SER:O	1:A:103:GLY:HA3	2.21	0.41
1:B:128:LEU:O	1:B:156:LEU:HA	2.20	0.41
1:G:533:LEU:CD1	1:G:543:VAL:HG11	2.50	0.41
1:K:231:PRO:HG2	1:K:234:HIS:CE1	2.55	0.41
1:K:237:TRP:CZ3	1:K:573:ARG:HD3	2.56	0.41
1:A:320:ALA:O	1:A:321:LEU:HB2	2.20	0.41
1:A:356:TYR:HB2	1:A:366:VAL:HG11	2.02	0.41
1:B:192:ARG:HG2	1:B:193:ALA:N	2.35	0.41
1:G:557:LEU:O	1:G:561:LEU:HD13	2.20	0.41
1:L:440:ARG:HG3	1:L:444:PHE:HE2	1.85	0.41
1:A:41:SER:O	1:A:44:VAL:N	2.53	0.41
1:A:228:ALA:HB3	1:B:216:TRP:CH2	2.55	0.41
1:A:407:ALA:CB	1:H:450:PRO:HB3	2.51	0.41
1:B:234:HIS:CD2	1:B:607:PRO:HD2	2.55	0.41
1:G:436:ASP:HB3	1:G:439:THR:HB	2.01	0.41
1:L:298:TRP:HA	1:L:299:PRO:C	2.46	0.41
1:A:317:ASN:OD1	1:A:318:GLY:N	2.54	0.41
1:A:565:ALA:HA	1:A:571:ILE:HG22	2.02	0.41
1:B:6:CYS:O	1:B:32:VAL:HA	2.20	0.41
1:B:240:GLU:HB2	1:B:573:ARG:HH12	1.85	0.41
1:B:279:GLU:HG2	1:B:330:ALA:HB2	2.03	0.41
1:G:321:LEU:O	1:G:322:LEU:HB2	2.20	0.41
1:G:350:ARG:NH1	1:G:430:ASP:OD1	2.53	0.41
1:G:443:MET:HE3	1:G:478:LEU:CD1	2.40	0.41
1:G:561:LEU:HD23	1:G:576:VAL:HG13	2.03	0.41
1:K:256:LYS:HB3	1:K:557:LEU:CD2	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:275:LYS:HB3	1:K:275:LYS:HE2	1.86	0.41
1:A:381:THR:HG21	1:A:386:ARG:HA	2.02	0.41
1:B:131:PRO:HB2	1:B:138:ASN:O	2.21	0.41
1:B:257:VAL:HG22	1:B:597:LEU:HD11	2.01	0.41
1:H:222:LEU:HD13	1:H:227:LEU:HB3	2.03	0.41
1:L:230:TRP:CZ3	1:L:238:LEU:HD11	2.55	0.41
1:A:234:HIS:CD2	1:A:607:PRO:HD2	2.56	0.41
1:B:97:ARG:O	1:B:122:CYS:HB3	2.20	0.41
1:B:256:LYS:HE2	1:B:558:THR:OG1	2.21	0.41
1:B:264:GLY:HA3	3:B:701:ATP:O2B	2.21	0.41
1:B:449:GLU:N	1:B:450:PRO:HD2	2.36	0.41
1:G:436:ASP:HB3	1:G:439:THR:CB	2.51	0.41
1:H:318:GLY:O	1:H:322:LEU:HG	2.20	0.41
1:H:397:ARG:HB2	1:H:439:THR:CG2	2.47	0.41
1:K:472[B]:TRP:NE1	1:K:495:LEU:HD13	2.36	0.41
1:L:534:ARG:HG2	1:L:568:CYS:HB3	2.03	0.41
1:A:79:PHE:CE2	1:A:108:ILE:HG12	2.56	0.41
1:A:134:GLY:HA2	1:A:146:GLU:OE2	2.21	0.41
1:A:143:THR:O	1:A:147:VAL:HG23	2.21	0.41
1:A:185:GLN:O	1:A:188:VAL:HG22	2.21	0.41
1:A:419:HIS:CE1	1:H:365:VAL:HG23	2.55	0.41
1:A:471:ILE:HG22	1:A:495:LEU:HD11	2.03	0.41
1:B:132:ARG:HH22	1:B:153:THR:HB	1.86	0.41
1:B:298:TRP:CG	1:B:299:PRO:HA	2.55	0.41
1:B:322:LEU:HD22	1:B:328:LEU:HA	2.02	0.41
1:B:350:ARG:HD3	1:B:430:ASP:OD2	2.21	0.41
2:C:707:A:O5'	2:D:710:A23:O3'	2.37	0.41
1:G:512:ALA:O	1:G:516:ILE:HD12	2.21	0.41
1:G:578:LYS:HE3	1:G:582:PHE:CE2	2.56	0.41
1:H:436:ASP:OD2	1:H:438:THR:HG22	2.20	0.41
1:H:496:LEU:CD1	1:H:541:VAL:HG21	2.51	0.41
1:H:507:GLU:HA	1:H:544:THR:OG1	2.20	0.41
1:K:276:VAL:CG2	1:K:334:LEU:HD12	2.51	0.41
1:K:302:GLU:HG2	1:K:303:GLU:N	2.34	0.41
1:L:533:LEU:HD12	1:L:543:VAL:HG11	2.02	0.41
1:A:280:ALA:CB	1:A:286:LEU:HD11	2.51	0.41
1:B:48:LEU:HD21	1:B:61:ILE:HD12	2.03	0.41
1:B:100:CYS:SG	1:B:127:VAL:HG12	2.61	0.41
1:H:313:LEU:CB	1:H:552:ILE:HG23	2.50	0.41
1:H:589:ALA:HB1	1:H:593:GLU:HB2	2.03	0.41
1:L:362:SER:O	1:L:366:VAL:HG23	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:34:THR:O	1:A:63:ARG:HA	2.21	0.40
1:A:130:GLU:HG3	1:A:155:ALA:O	2.20	0.40
1:A:399:GLU:O	1:A:399:GLU:HG2	2.21	0.40
1:B:12:TRP:O	1:B:47:LEU:HD21	2.22	0.40
1:K:289:VAL:HG13	1:K:316:ASN:HD21	1.86	0.40
1:K:302:GLU:HG2	1:K:303:GLU:HG2	2.03	0.40
1:K:500:ALA:HB2	1:K:541:VAL:CG2	2.50	0.40
1:K:531:TYR:CE2	1:K:533:LEU:HB2	2.57	0.40
1:B:199:ARG:HE	1:B:199:ARG:HB3	1.74	0.40
1:G:372:ASN:O	1:G:376:GLN:HG3	2.21	0.40
1:K:322:LEU:HD21	1:K:331:GLN:CB	2.50	0.40
1:L:258:GLU:O	1:L:347:ALA:HA	2.20	0.40
1:A:403:ARG:HH11	1:H:453:ARG:HD3	1.86	0.40
1:B:484:GLY:HA2	1:B:507:GLU:HG3	2.03	0.40
1:H:237:TRP:CZ2	1:H:573:ARG:HD3	2.57	0.40
1:A:61:ILE:HB	1:A:188:VAL:HG12	2.03	0.40
1:A:435:GLU:HG2	1:A:462:ALA:CA	2.52	0.40
1:A:545:LEU:HD12	1:A:561:LEU:HD22	2.04	0.40
1:B:234:HIS:HD2	1:B:607:PRO:HD2	1.87	0.40
1:B:471:ILE:HG23	1:B:483:LEU:HD13	2.04	0.40
1:B:565:ALA:HA	1:B:571:ILE:HG21	2.02	0.40
1:G:507:GLU:HA	1:G:544:THR:OG1	2.22	0.40
1:H:266:PHE:CZ	1:H:272:LEU:HD13	2.56	0.40
1:L:399:GLU:CG	1:L:439:THR:HG22	2.49	0.40
1:A:42:PRO:HA	1:A:45:GLU:OE1	2.22	0.40
1:A:529:GLU:HG3	1:A:529:GLU:O	2.21	0.40
1:B:268:THR:HG21	1:B:552:ILE:HG13	2.03	0.40
1:B:272:LEU:HD23	1:B:272:LEU:HA	1.92	0.40
1:G:520:PRO:HG2	1:G:529:GLU:HG2	2.03	0.40
1:H:295:PRO:HG2	1:H:298:TRP:CE3	2.57	0.40
1:K:277:ARG:NH2	1:K:287:PRO:O	2.52	0.40
1:L:294:LEU:H	1:L:294:LEU:HD12	1.86	0.40
1:L:438:THR:O	1:L:441:ALA:HB3	2.20	0.40
1:L:473:GLN:O	1:L:477:LYS:N	2.49	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	601/625 (96%)	585 (97%)	15 (2%)	1 (0%)	44	63
1	B	600/625 (96%)	586 (98%)	13 (2%)	1 (0%)	44	63
1	G	393/625 (63%)	375 (95%)	17 (4%)	1 (0%)	37	55
1	H	391/625 (63%)	372 (95%)	19 (5%)	0	100	100
1	K	383/625 (61%)	361 (94%)	22 (6%)	0	100	100
1	L	392/625 (63%)	378 (96%)	14 (4%)	0	100	100
All	All	2760/3750 (74%)	2657 (96%)	100 (4%)	3 (0%)	50	69

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	321	LEU
1	B	548	ASP
1	G	548	ASP

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	496/511 (97%)	496 (100%)	0	100	100
1	B	495/511 (97%)	495 (100%)	0	100	100
1	G	320/511 (63%)	320 (100%)	0	100	100
1	H	318/511 (62%)	318 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	K	314/511 (61%)	314 (100%)	0	100	100
1	L	319/511 (62%)	319 (100%)	0	100	100
All	All	2262/3066 (74%)	2262 (100%)	0	100	100

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

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (38) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	46	GLN
1	A	54	HIS
1	A	96	HIS
1	A	200	GLN
1	A	252	GLN
1	A	513	ASN
1	A	546	ASN
1	B	89	GLN
1	B	169	GLN
1	B	246	GLN
1	B	252	GLN
1	B	269	HIS
1	B	316	ASN
1	B	422	ASN
1	B	546	ASN
1	G	252	GLN
1	G	419	HIS
1	G	513	ASN
1	G	549	ASN
1	G	603	GLN
1	H	269	HIS
1	H	368	GLN
1	H	372	ASN
1	H	388	HIS
1	H	419	HIS
1	H	452	HIS
1	H	461	HIS
1	H	485	HIS
1	H	546	ASN
1	H	549	ASN
1	K	269	HIS
1	K	488	HIS

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Mol	Chain	Res	Type
1	K	546	ASN
1	K	549	ASN
1	L	246	GLN
1	L	252	GLN
1	L	278	GLN
1	L	331	GLN

5.3.3   RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	C	1/2 (50%)	1 (100%)	0
2	D	1/2 (50%)	1 (100%)	0
All	All	2/4 (50%)	2 (100%)	0

All (2) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	C	708	A23
2	D	710	A23

There are no RNA pucker outliers to report.

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

2 non-standard protein/DNA/RNA residues 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	$\#|Z| > 2$
2	A23	D	710	2	19,28,29	4.52	7 (36%)	21,43,46	1.82	6 (28%)
2	A23	C	708	2	19,28,29	4.61	7 (36%)	21,43,46	1.58	5 (23%)

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
2	A23	D	710	2	-	1/3/35/36	0/4/4/4
2	A23	C	708	2	-	2/3/35/36	0/4/4/4

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	708	A23	O4'-C4'	13.24	1.74	1.45
2	D	710	A23	O4'-C4'	13.17	1.74	1.45
2	C	708	A23	C3'-C4'	-9.63	1.28	1.52
2	D	710	A23	C3'-C4'	-9.55	1.28	1.52
2	C	708	A23	C2'-C3'	8.65	1.71	1.53
2	D	710	A23	C2'-C3'	8.00	1.70	1.53
2	C	708	A23	PC-O1C	4.18	1.65	1.50
2	D	710	A23	PC-O1C	4.17	1.65	1.50
2	C	708	A23	C6-N6	3.70	1.47	1.34
2	D	710	A23	C6-N6	3.25	1.45	1.34
2	D	710	A23	O2'-C2'	-3.17	1.22	1.46
2	C	708	A23	O2'-C2'	-3.09	1.23	1.46
2	D	710	A23	C1'-N9	-2.74	1.43	1.49
2	C	708	A23	C1'-N9	-2.71	1.43	1.49

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	710	A23	N3-C2-N1	-4.77	122.20	128.67
2	C	708	A23	N3-C2-N1	-4.52	122.54	128.67
2	D	710	A23	C4'-O4'-C1'	-3.70	106.54	109.92
2	D	710	A23	C4-C5-N7	-2.67	106.51	109.34
2	D	710	A23	O2'-PC-O1C	-2.53	109.08	115.76
2	C	708	A23	O3'-PC-O1C	-2.51	109.13	115.76
2	C	708	A23	C4-C5-N7	-2.50	106.69	109.34
2	D	710	A23	O3'-PC-O1C	-2.48	109.20	115.76
2	C	708	A23	O2'-PC-O1C	-2.37	109.52	115.76
2	C	708	A23	C4'-O4'-C1'	-2.33	107.79	109.92
2	D	710	A23	O4'-C1'-N9	2.02	111.42	108.75

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	C	708	A23	O4'-C4'-C5'-O5'
2	C	708	A23	C3'-C4'-C5'-O5'
2	D	710	A23	C3'-C4'-C5'-O5'

There are no ring outliers.

2 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	710	A23	5	0
2	C	708	A23	1	0

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 14 ligands modelled in this entry, 8 are monoatomic - leaving 6 for Mogul analysis.

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	ATP	A	701	-	28,33,33	0.65	0	34,52,52	0.92	1 (2%)
3	ATP	H	702	5	28,33,33	0.63	0	34,52,52	1.00	2 (5%)
3	ATP	B	701	-	28,33,33	0.62	0	34,52,52	1.15	2 (5%)
3	ATP	K	701	5	28,33,33	0.64	0	34,52,52	0.93	1 (2%)
3	ATP	G	701	-	28,33,33	0.65	0	34,52,52	0.95	1 (2%)
3	ATP	L	701	-	28,33,33	0.63	0	34,52,52	1.21	3 (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	ATP	A	701	-	-	0/18/38/38	0/3/3/3
3	ATP	H	702	5	-	5/18/38/38	0/3/3/3
3	ATP	B	701	-	-	4/18/38/38	0/3/3/3
3	ATP	K	701	5	-	3/18/38/38	0/3/3/3
3	ATP	G	701	-	-	9/18/38/38	0/3/3/3
3	ATP	L	701	-	-	4/18/38/38	0/3/3/3

There are no bond length outliers.

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	L	701	ATP	C4'-O4'-C1'	-4.58	105.73	109.92
3	B	701	ATP	C4'-O4'-C1'	-3.98	106.28	109.92
3	H	702	ATP	C5-C6-N6	2.33	123.86	120.31
3	A	701	ATP	C5-C6-N6	2.32	123.84	120.31
3	B	701	ATP	C5-C6-N6	2.31	123.84	120.31
3	L	701	ATP	C5-C6-N6	2.30	123.82	120.31
3	K	701	ATP	C5-C6-N6	2.30	123.82	120.31
3	G	701	ATP	C5-C6-N6	2.27	123.77	120.31
3	L	701	ATP	O3'-C3'-C4'	-2.04	105.23	111.08
3	H	702	ATP	C4'-O4'-C1'	-2.02	108.08	109.92

There are no chirality outliers.

All (25) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	701	ATP	PB-O3B-PG-O2G
3	G	701	ATP	C5'-O5'-PA-O1A
3	G	701	ATP	C5'-O5'-PA-O2A
3	G	701	ATP	C5'-O5'-PA-O3A
3	G	701	ATP	C4'-C5'-O5'-PA
3	L	701	ATP	C5'-O5'-PA-O1A
3	B	701	ATP	O4'-C4'-C5'-O5'
3	G	701	ATP	O4'-C4'-C5'-O5'
3	G	701	ATP	C3'-C4'-C5'-O5'
3	K	701	ATP	PB-O3A-PA-O1A
3	L	701	ATP	PB-O3A-PA-O5'
3	B	701	ATP	PB-O3A-PA-O1A
3	H	702	ATP	PA-O3A-PB-O2B
3	H	702	ATP	C5'-O5'-PA-O1A
3	L	701	ATP	C5'-O5'-PA-O2A

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Mol	Chain	Res	Type	Atoms
3	L	701	ATP	C5'-O5'-PA-O3A
3	G	701	ATP	PA-O3A-PB-O1B
3	H	702	ATP	PB-O3A-PA-O1A
3	H	702	ATP	PB-O3A-PA-O2A
3	K	701	ATP	PA-O3A-PB-O2B
3	G	701	ATP	PG-O3B-PB-O2B
3	G	701	ATP	PA-O3A-PB-O2B
3	K	701	ATP	PB-O3A-PA-O2A
3	H	702	ATP	PA-O3A-PB-O1B
3	B	701	ATP	C3'-C4'-C5'-O5'

There are no ring outliers.

4 monomers are involved in 10 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	H	702	ATP	2	0
3	B	701	ATP	2	0
3	G	701	ATP	4	0
3	L	701	ATP	2	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 ATP A 701

Bond lengths

Bond angles

Torsions

Rings

Ligand ATP H 702

Bond lengths

Bond angles

Torsions

Rings

Ligand ATP B 701

Bond lengths

Bond angles

Torsions

Rings

Ligand ATP K 701

Bond lengths

Bond angles

Torsions

Rings

Ligand ATP G 701

Bond lengths

Bond angles

Torsions

Rings

Ligand ATP L 701

Bond lengths   Bond angles

Torsions   Rings
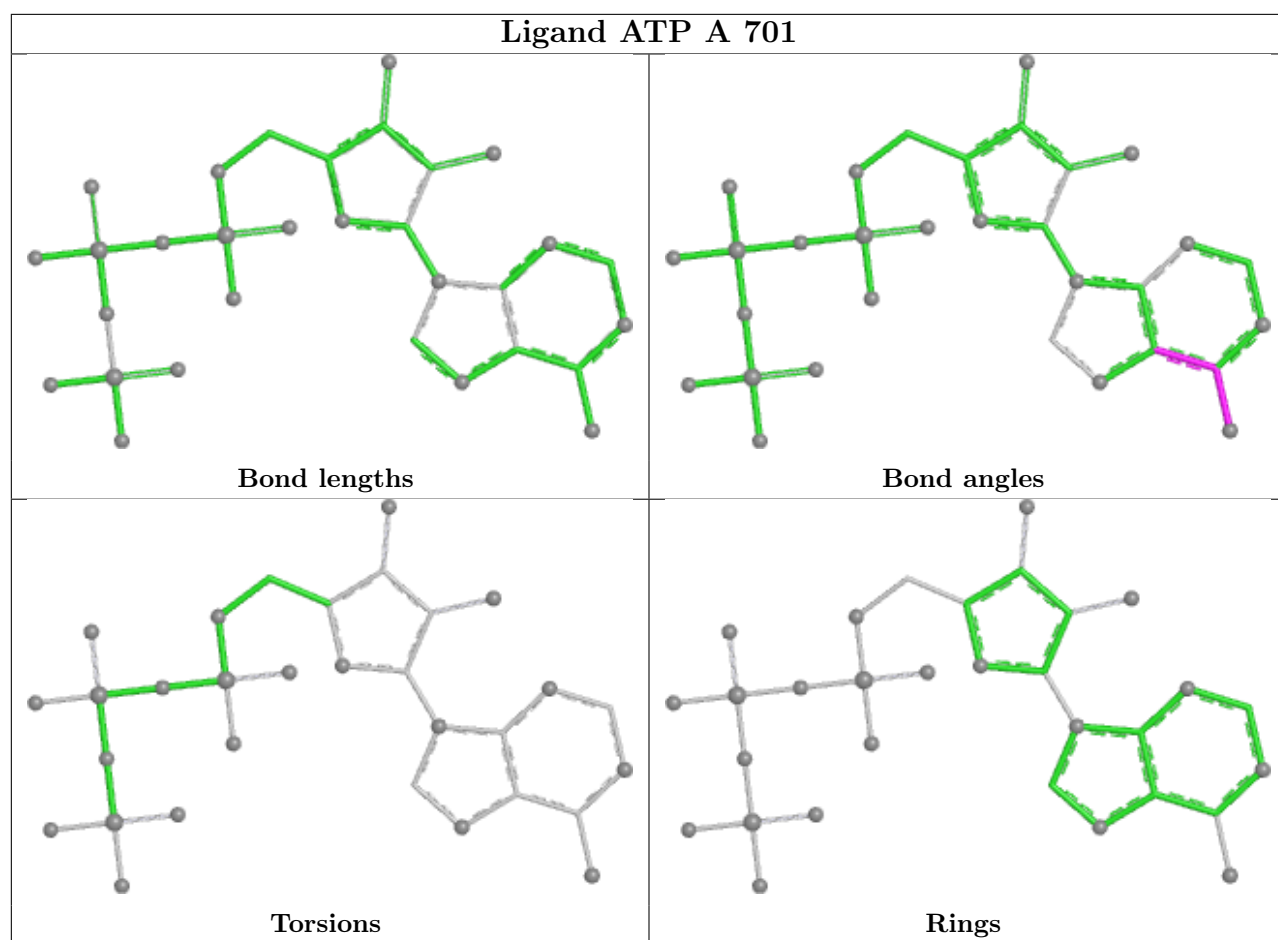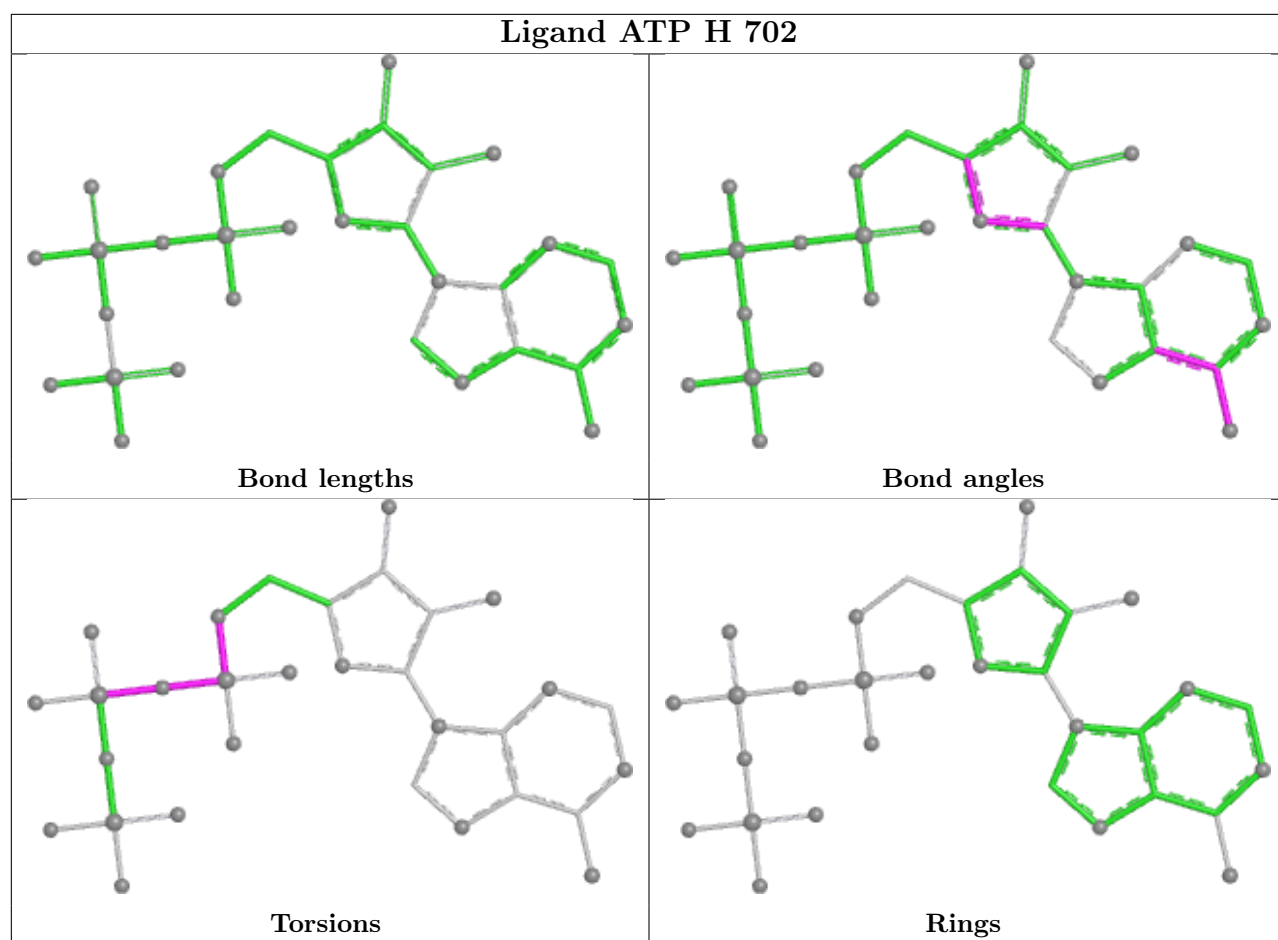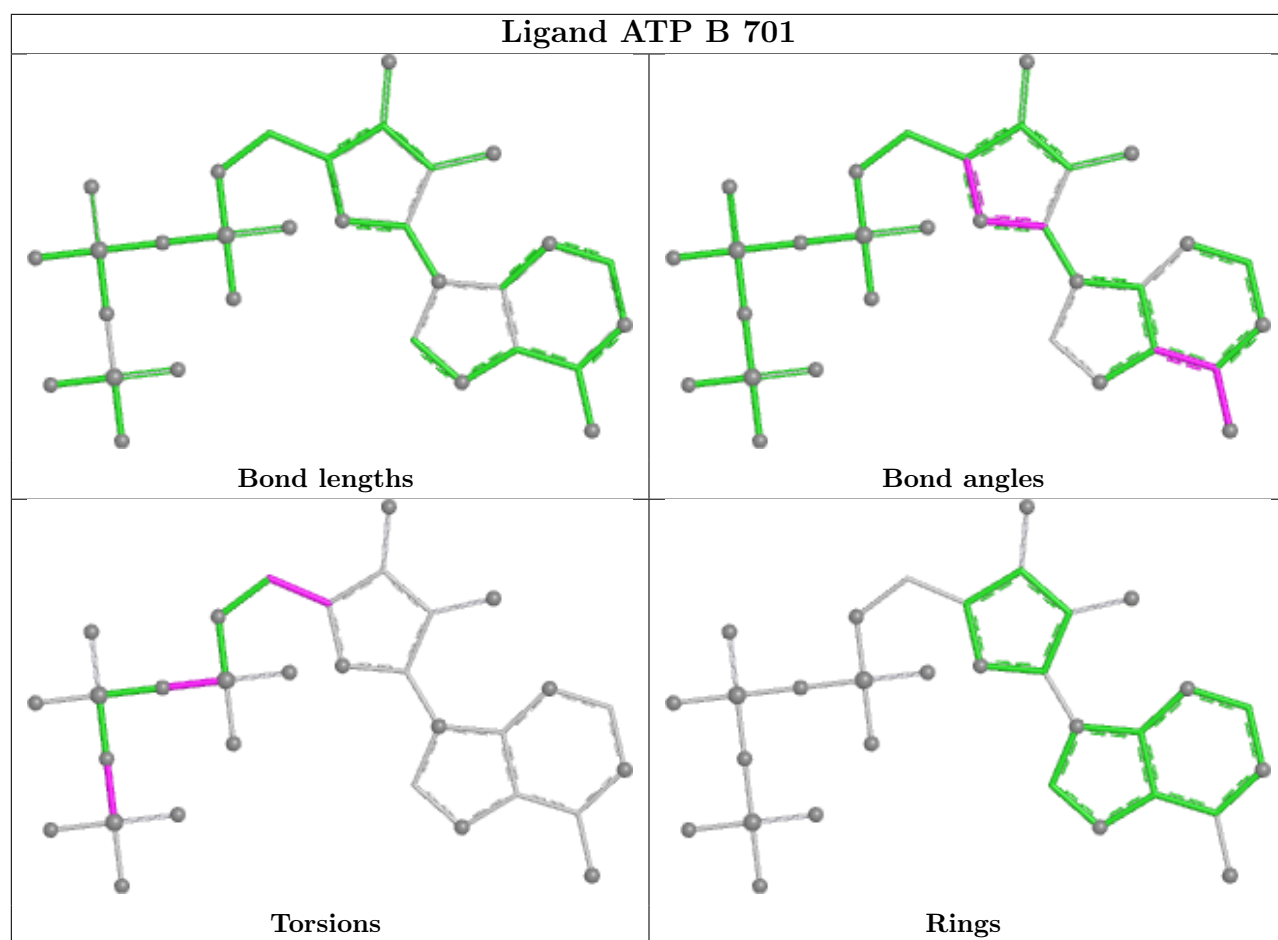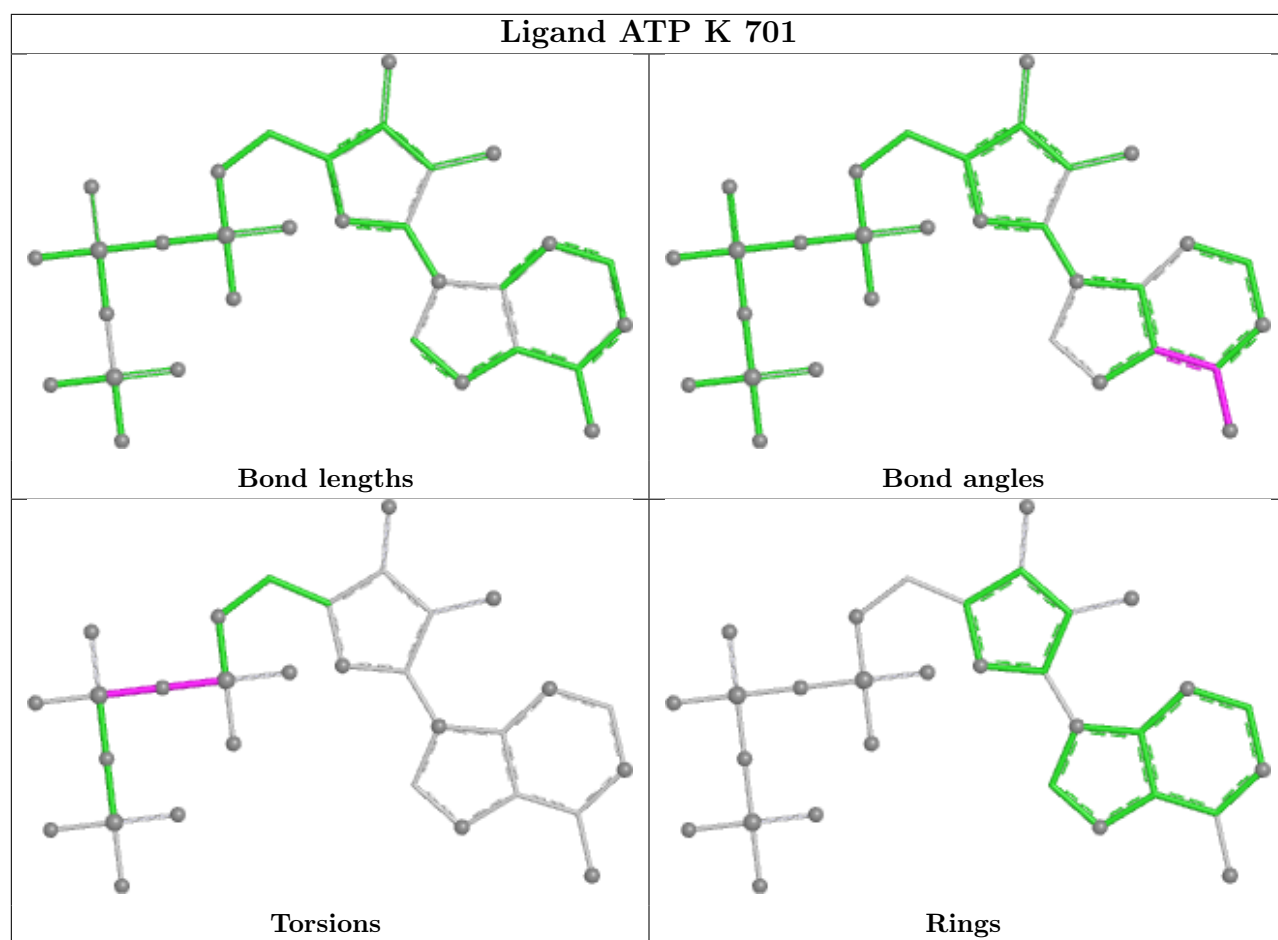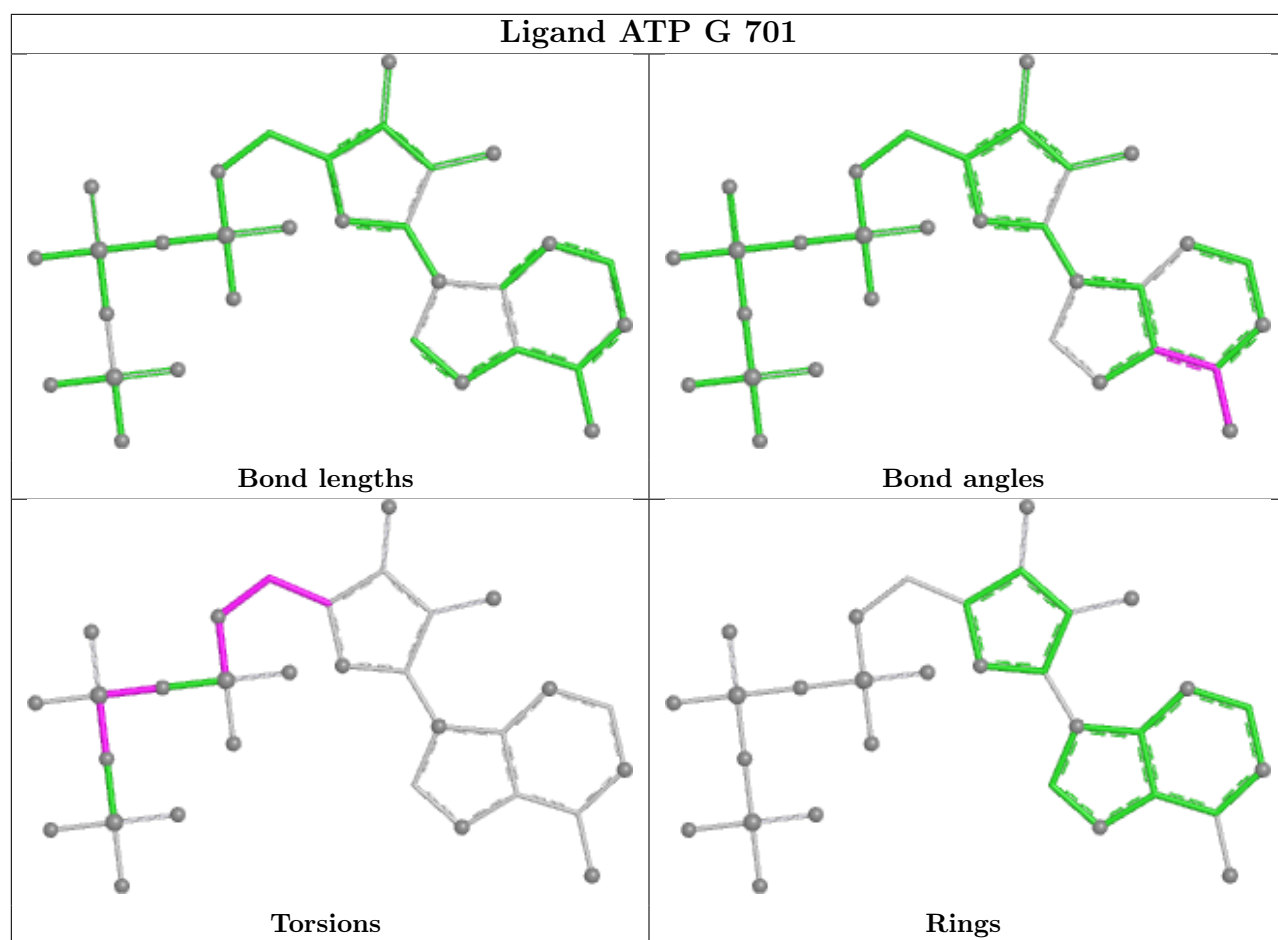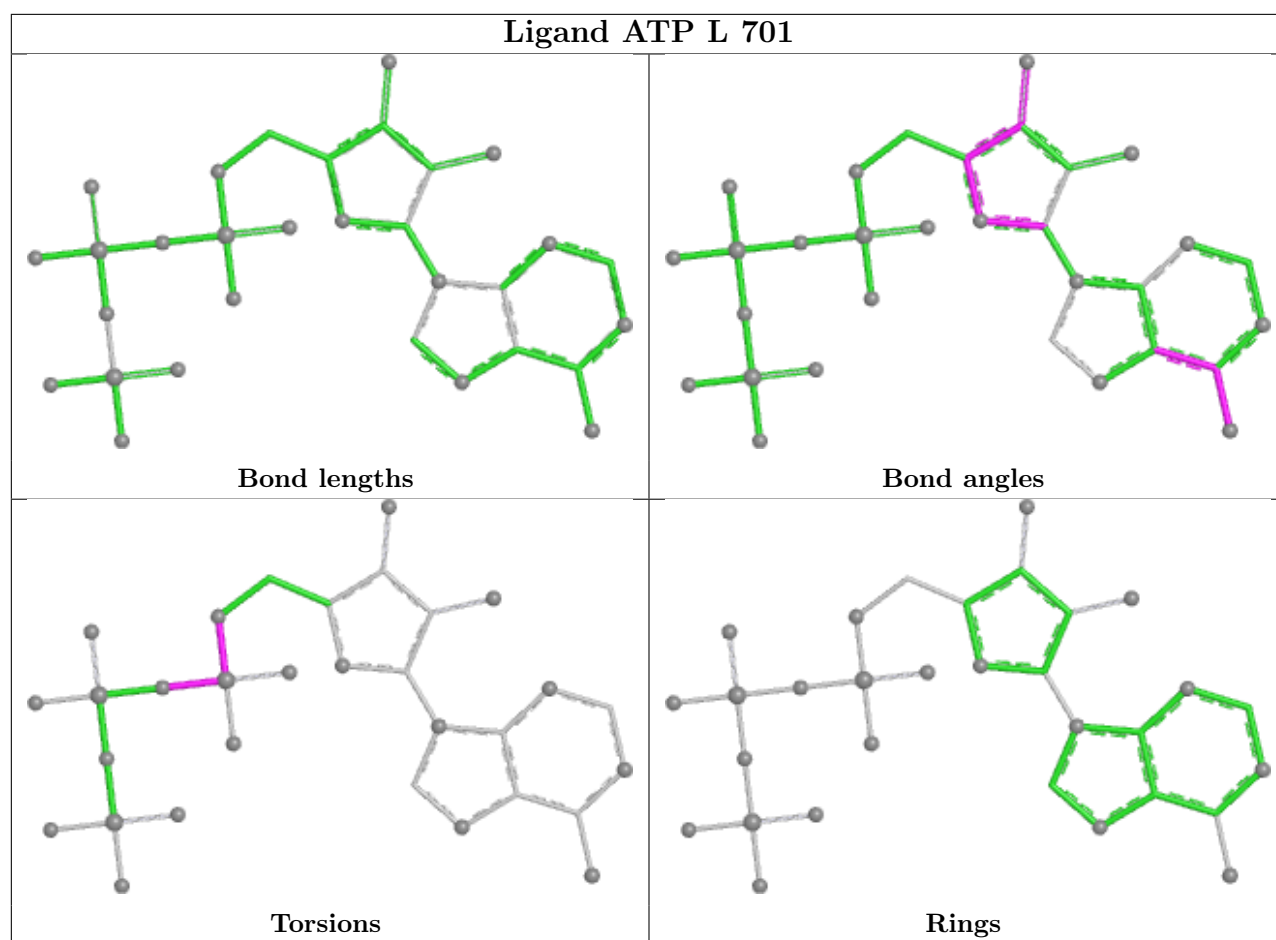
5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-70429. 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 ⓘ
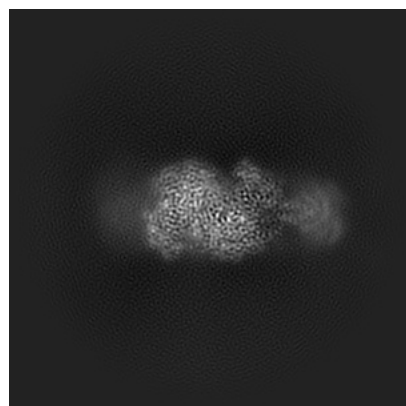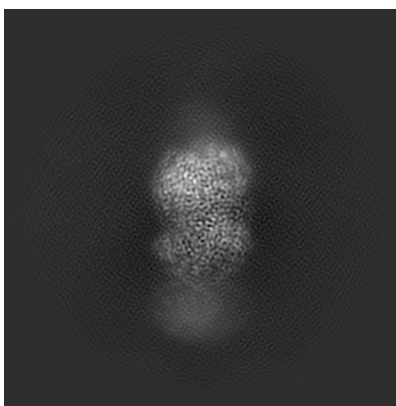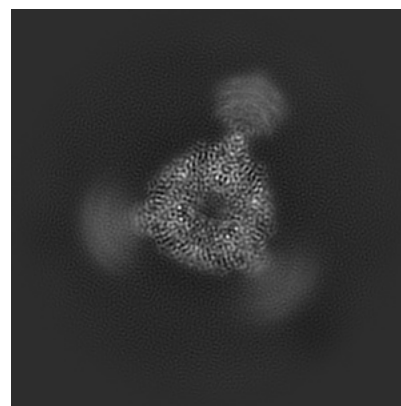
6.1.1 Primary map

X   Y   Z

6.1.2 Raw map

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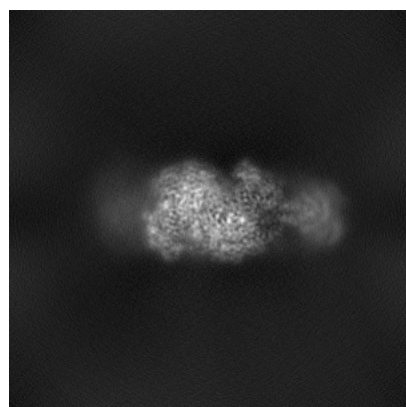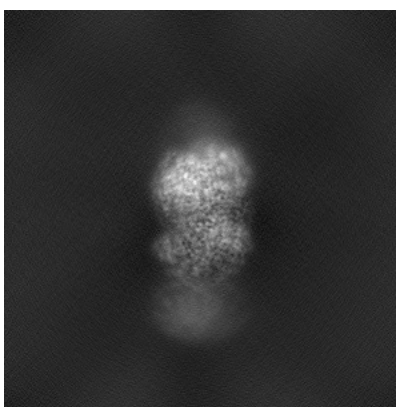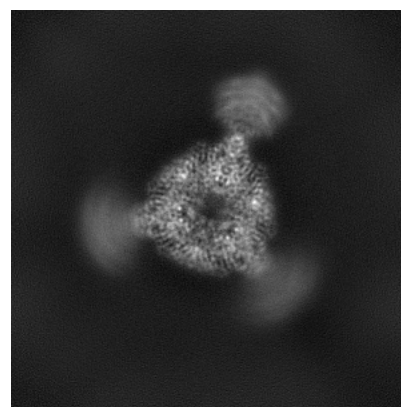
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
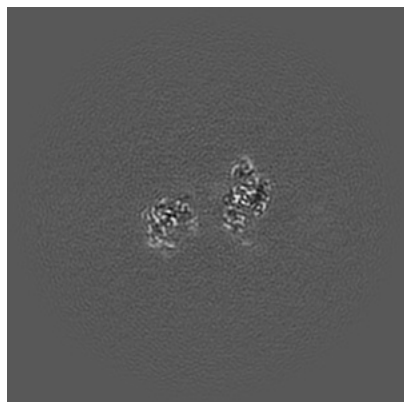
6.2.1 Primary map
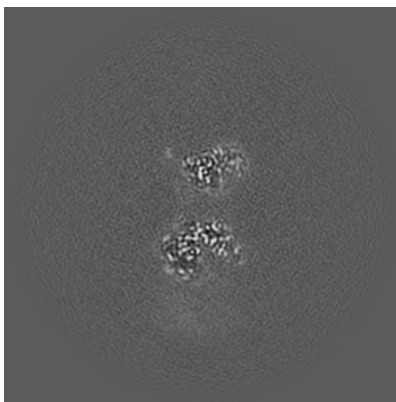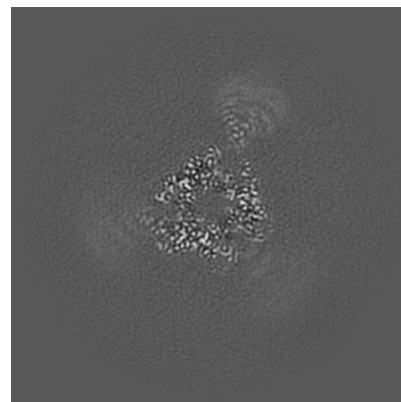
X Index: 192	Y Index: 192	Z Index: 192

6.2.2 Raw map
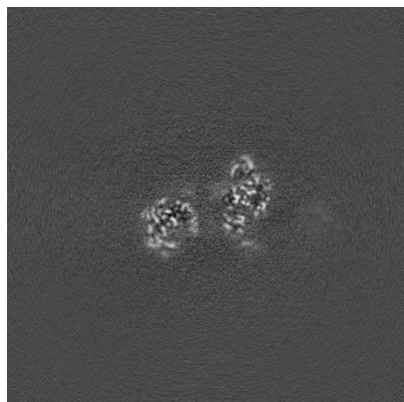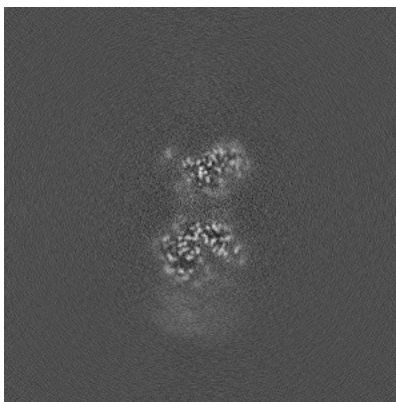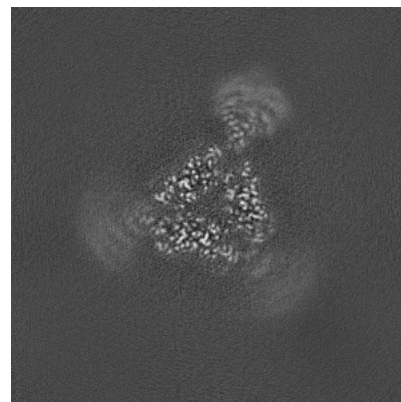
X Index: 192	Y Index: 192	Z Index: 192

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

6.3   Largest variance slices   ⓘ

6.3.1   Primary map
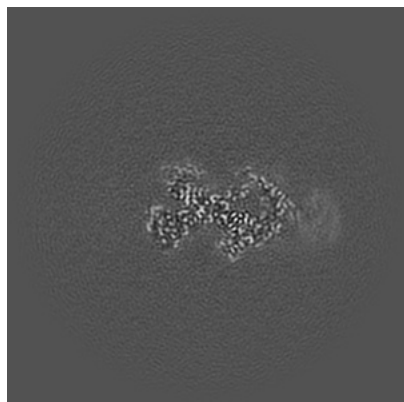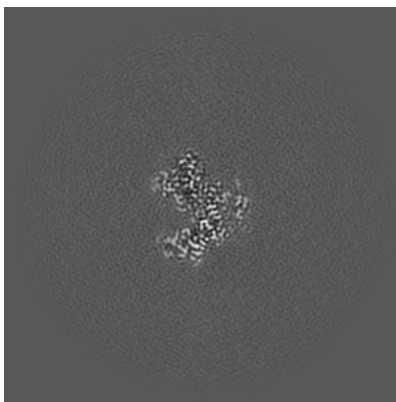
| X Index: 216 | Y Index: 220 | Z Index: 195 |
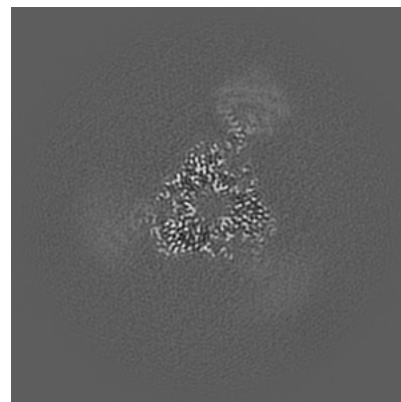
6.3.2   Raw map
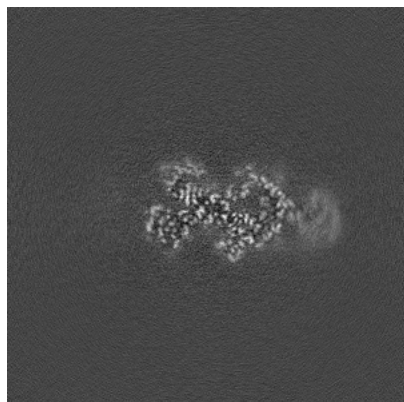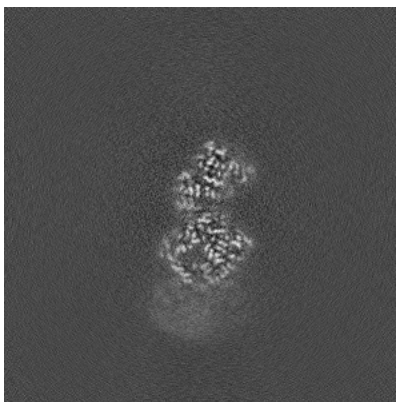
| X Index: 216 | Y Index: 179 | Z Index: 184 |
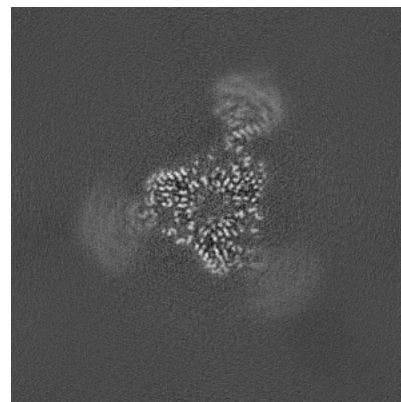
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map
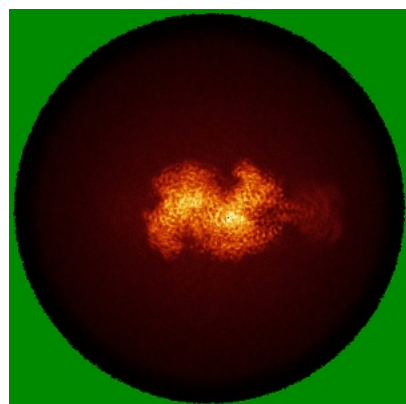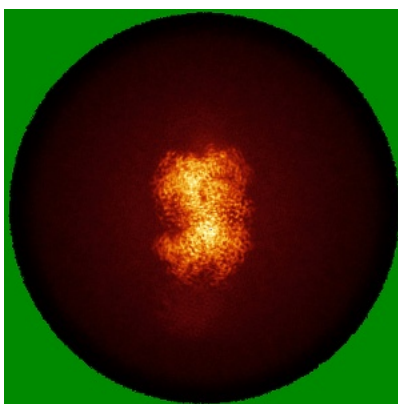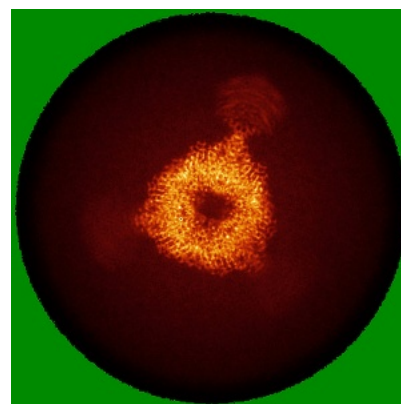
| X | Y | Z |

6.4.2 Raw map

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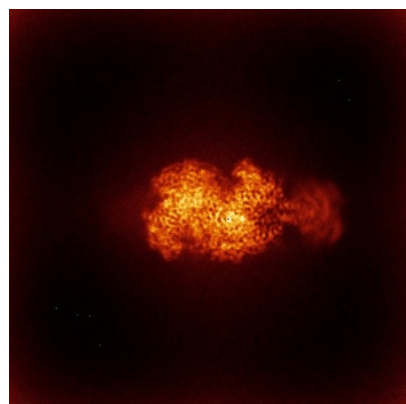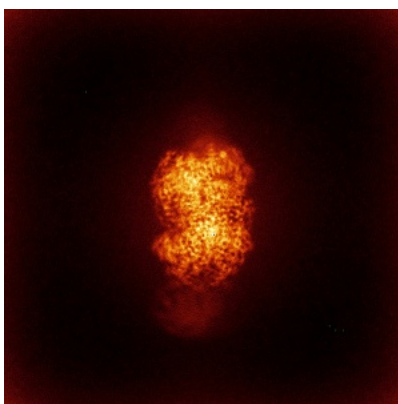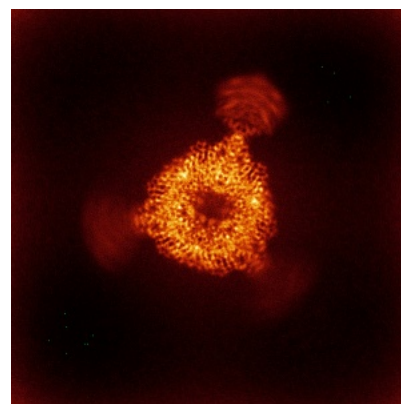
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X　　　　　　　　　　　　　　Y　　　　　　　　　　　　　　Z
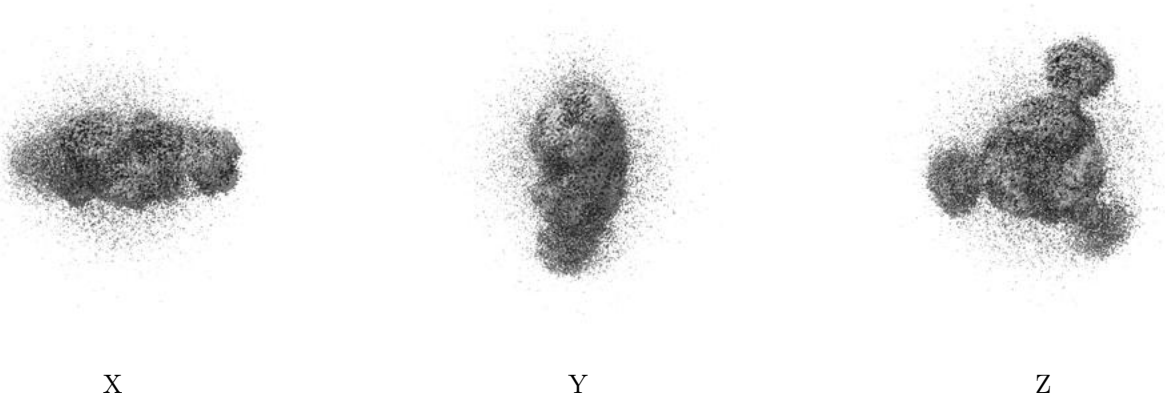
The images above show the 3D surface view of the map at the recommended contour level 0.12. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

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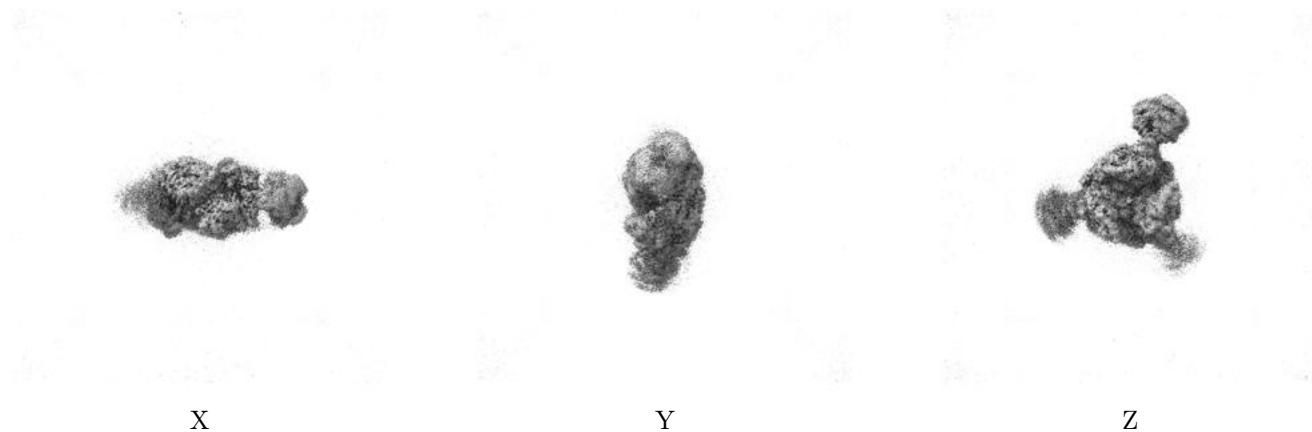
These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

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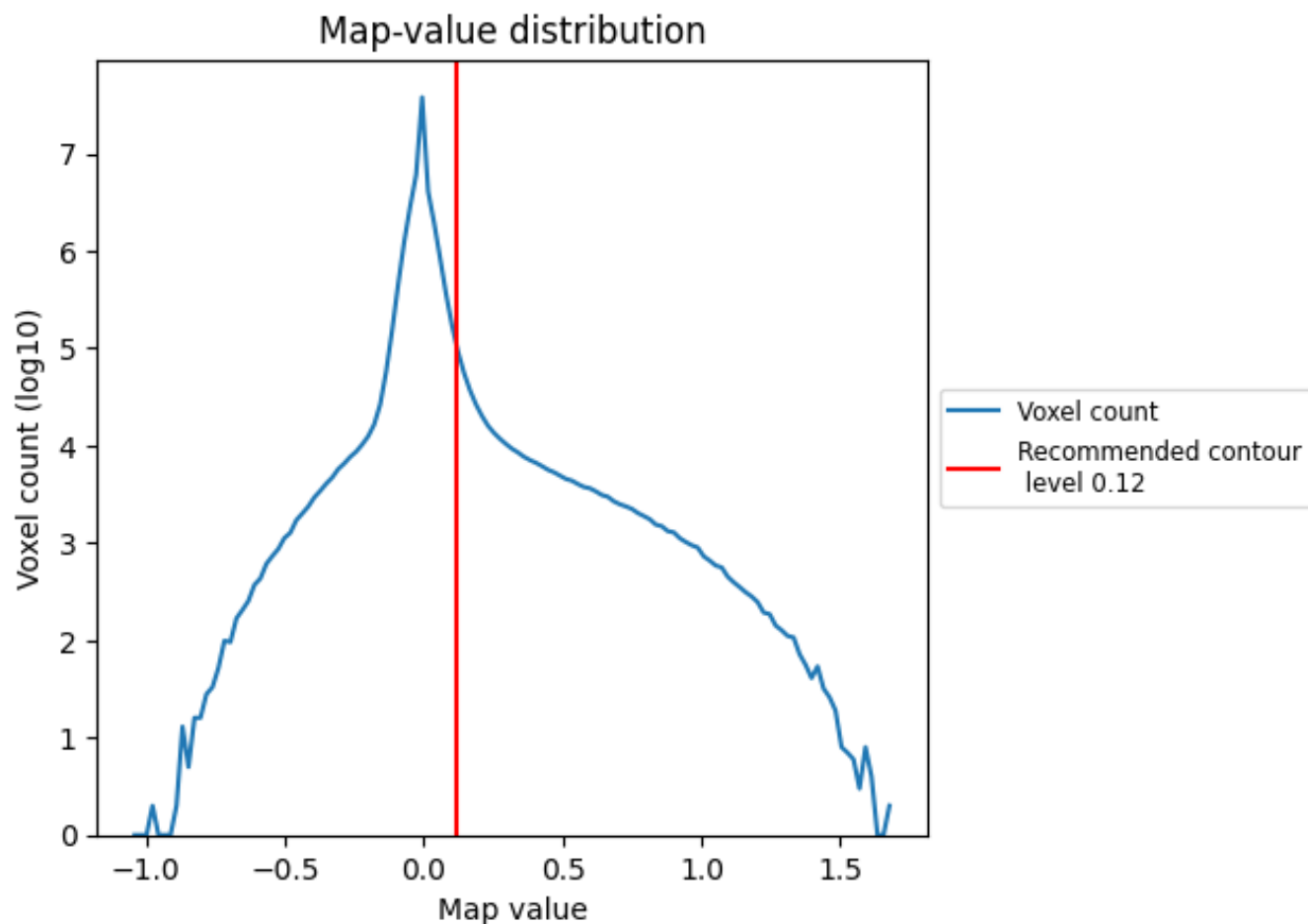
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2　Volume estimate ⓘ
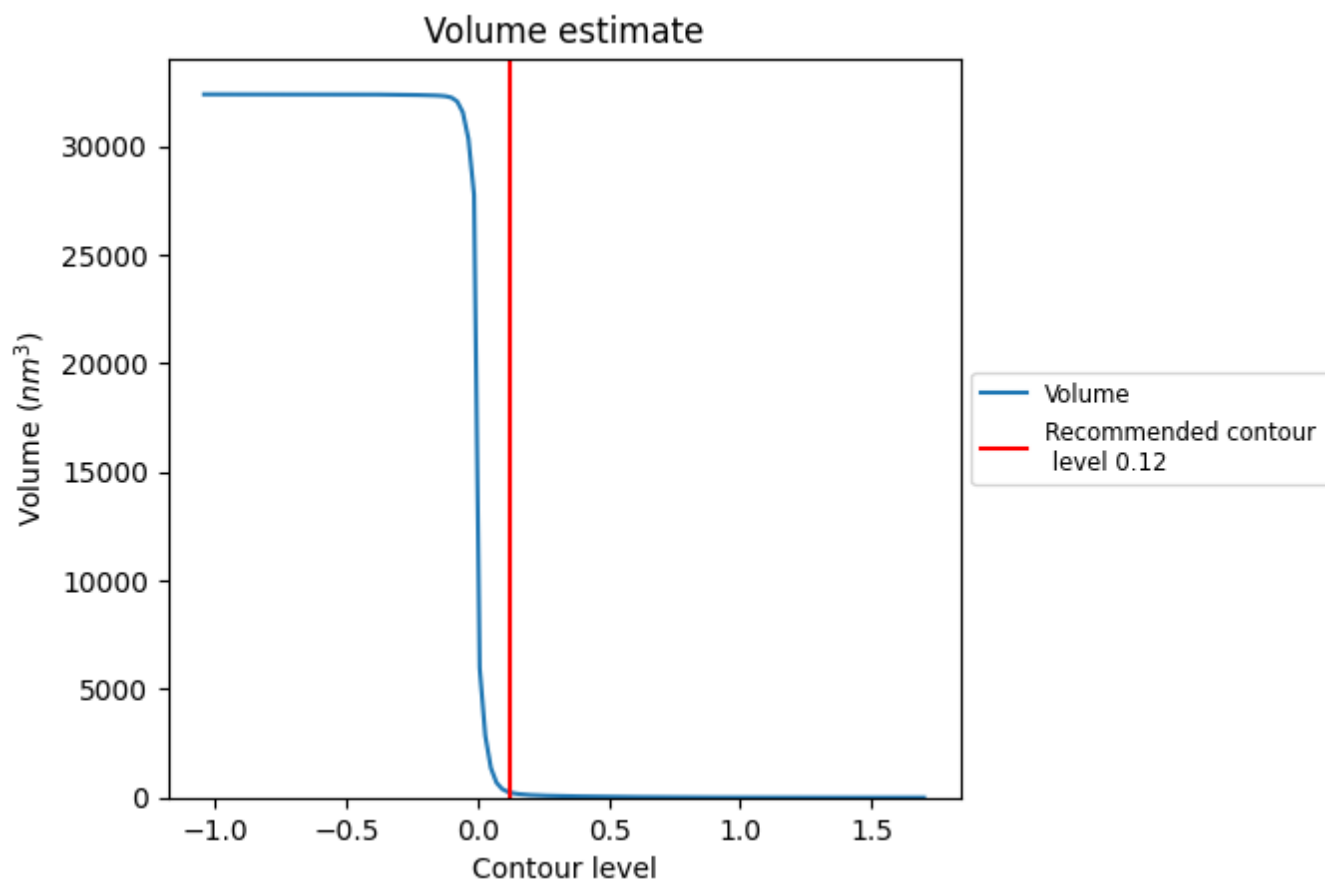
The volume at the recommended contour level is 248 nm^3; this corresponds to an approximate mass of 224 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ
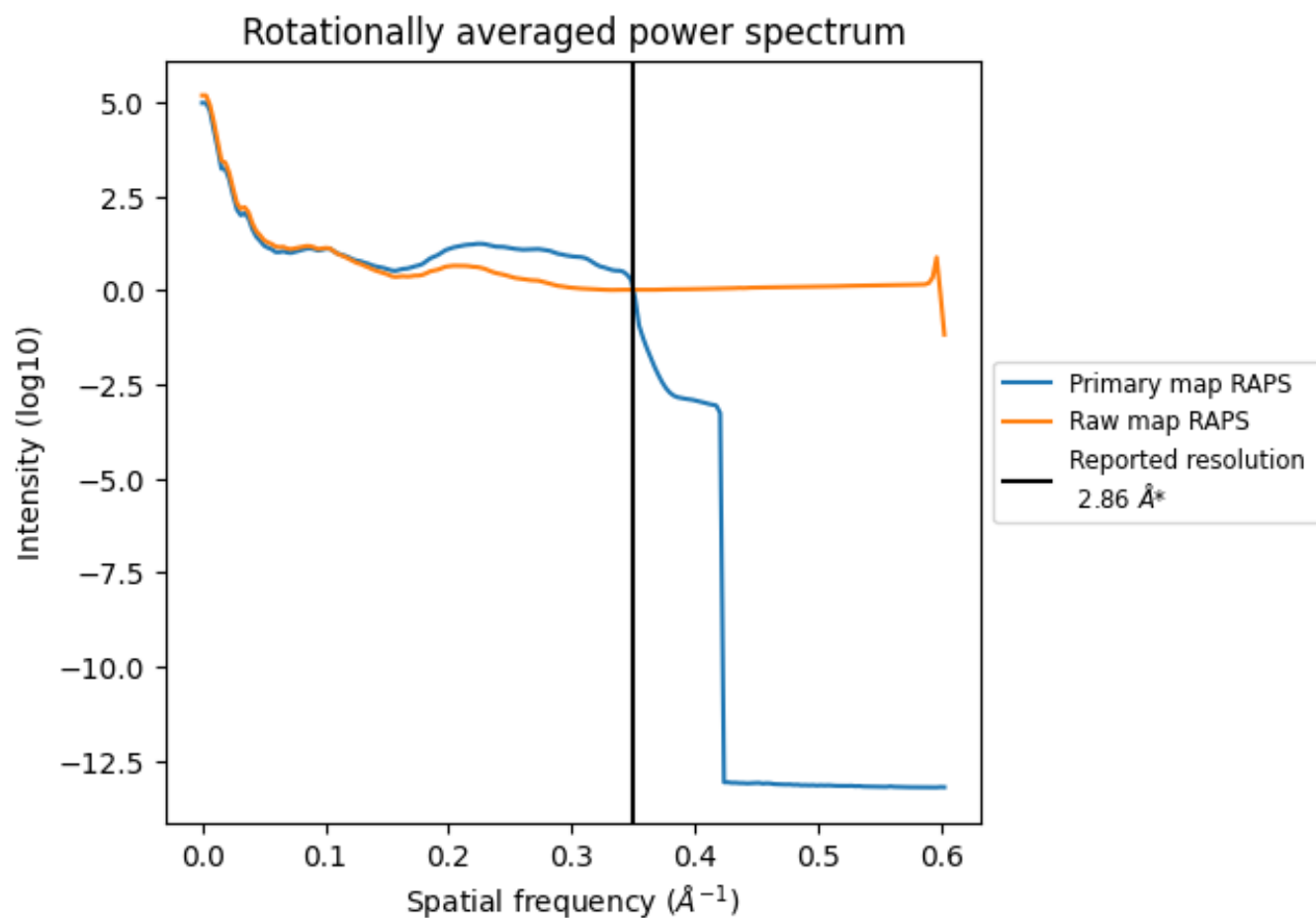
*Reported resolution corresponds to spatial frequency of 0.350 Å^{-1}

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 ⓘ
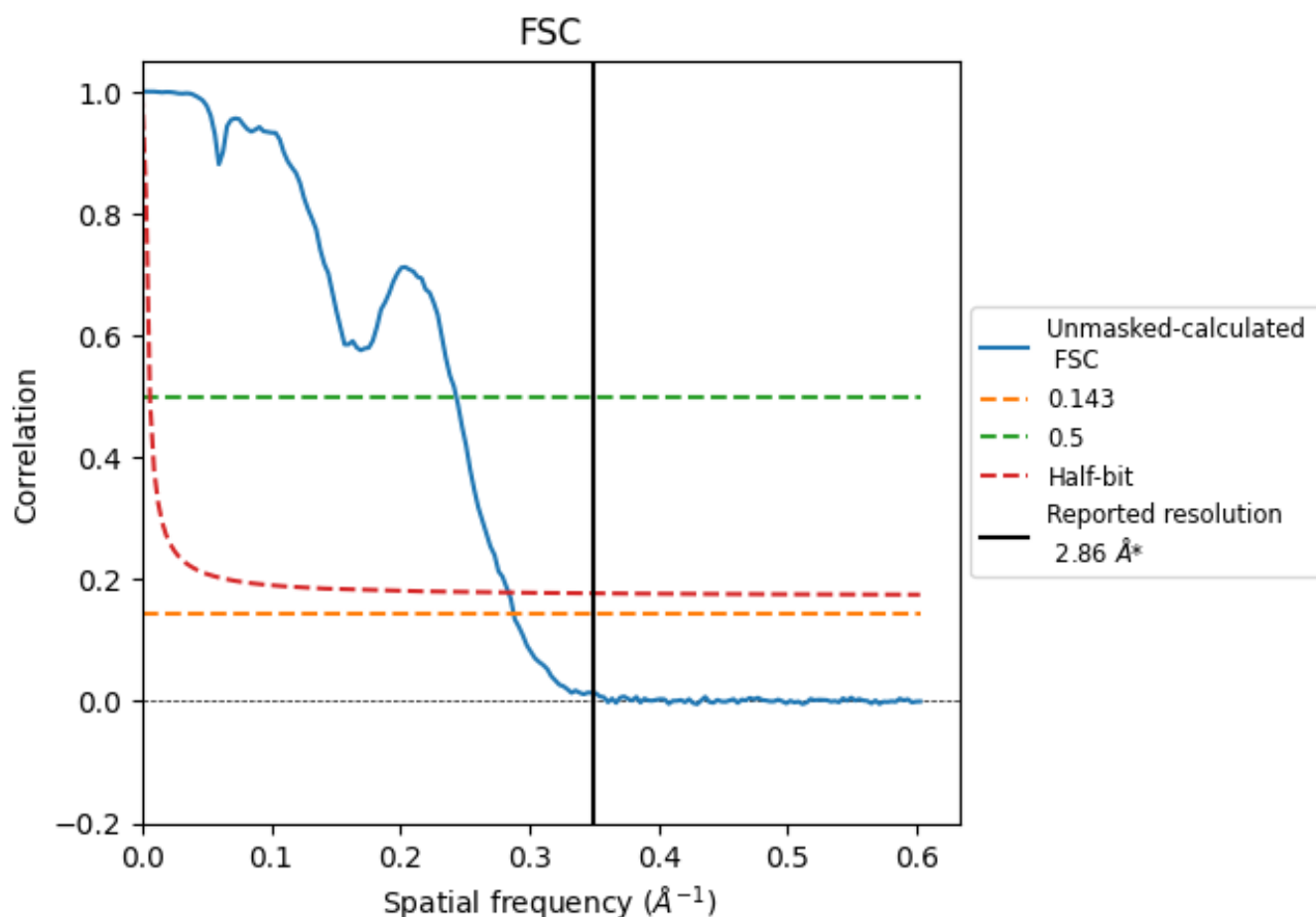
*Reported resolution corresponds to spatial frequency of 0.350 Å^{-1}

8.2 Resolution estimates ⓘ

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.86	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.47	4.11	3.52

*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 3.47 differs from the reported value 2.86 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-70429 and PDB model 9OFD. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlay ⓘ

X	Y	Z
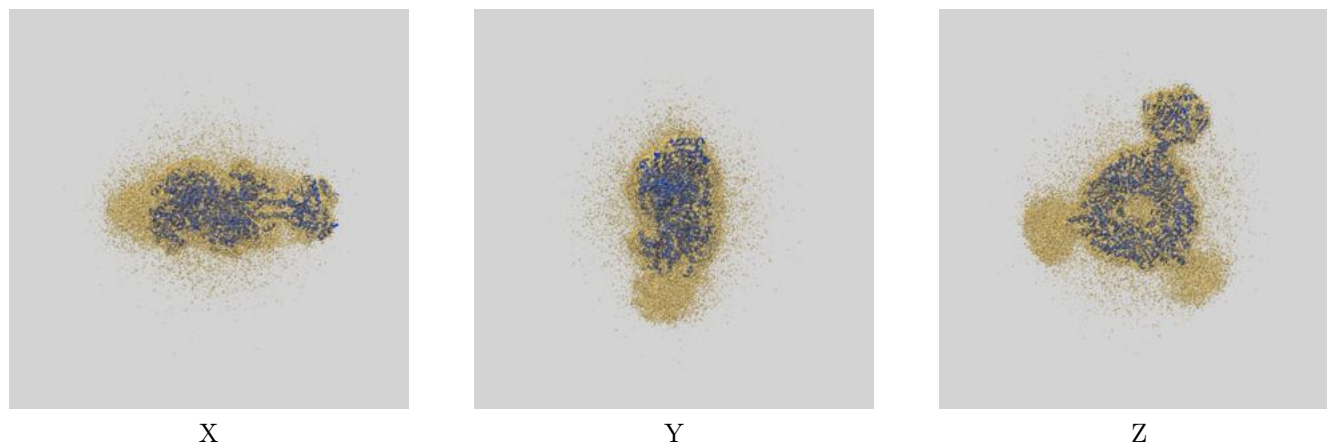
The images above show the 3D surface view of the map at the recommended contour level 0.12 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ

| X | Y | Z |
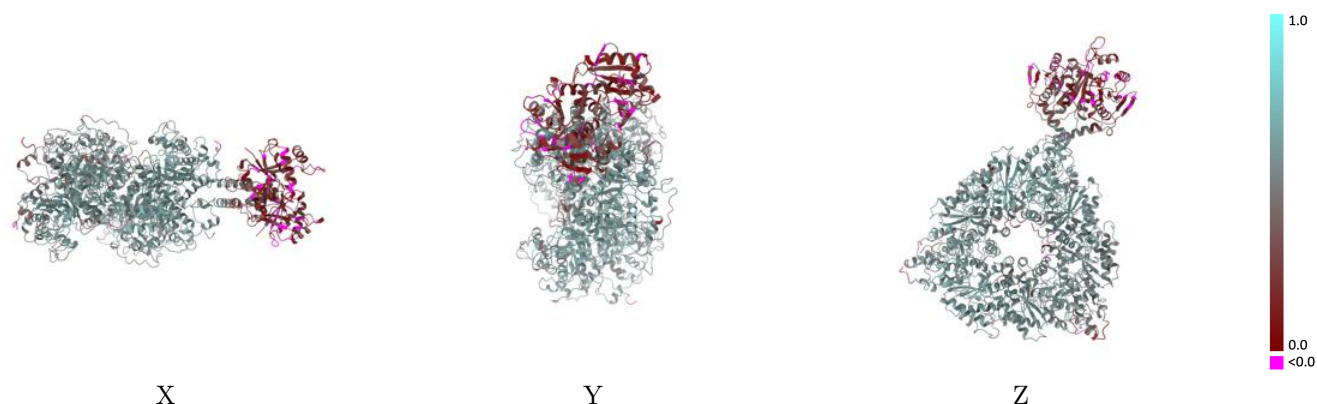
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model ⓘ

| X | Y | Z |
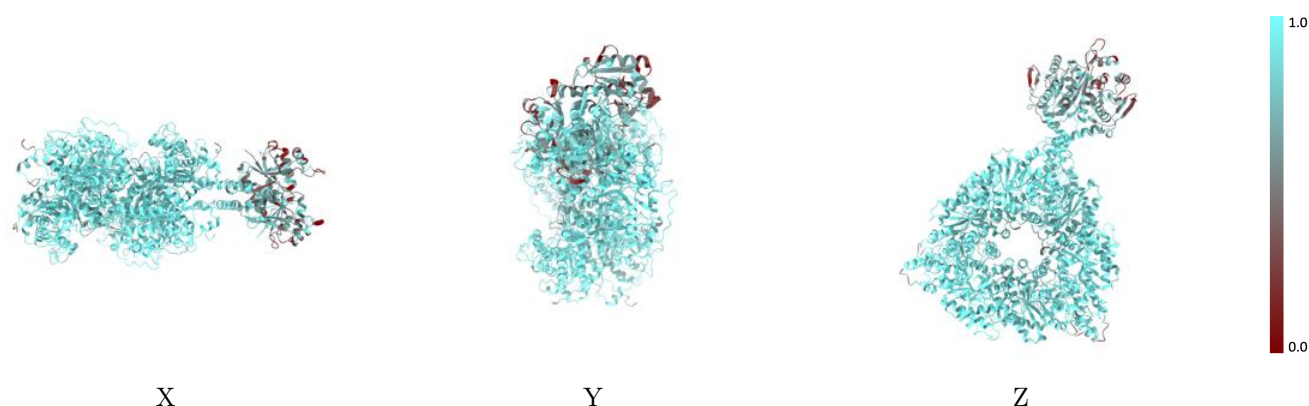
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.12).

9.4   Atom inclusion ⓘ
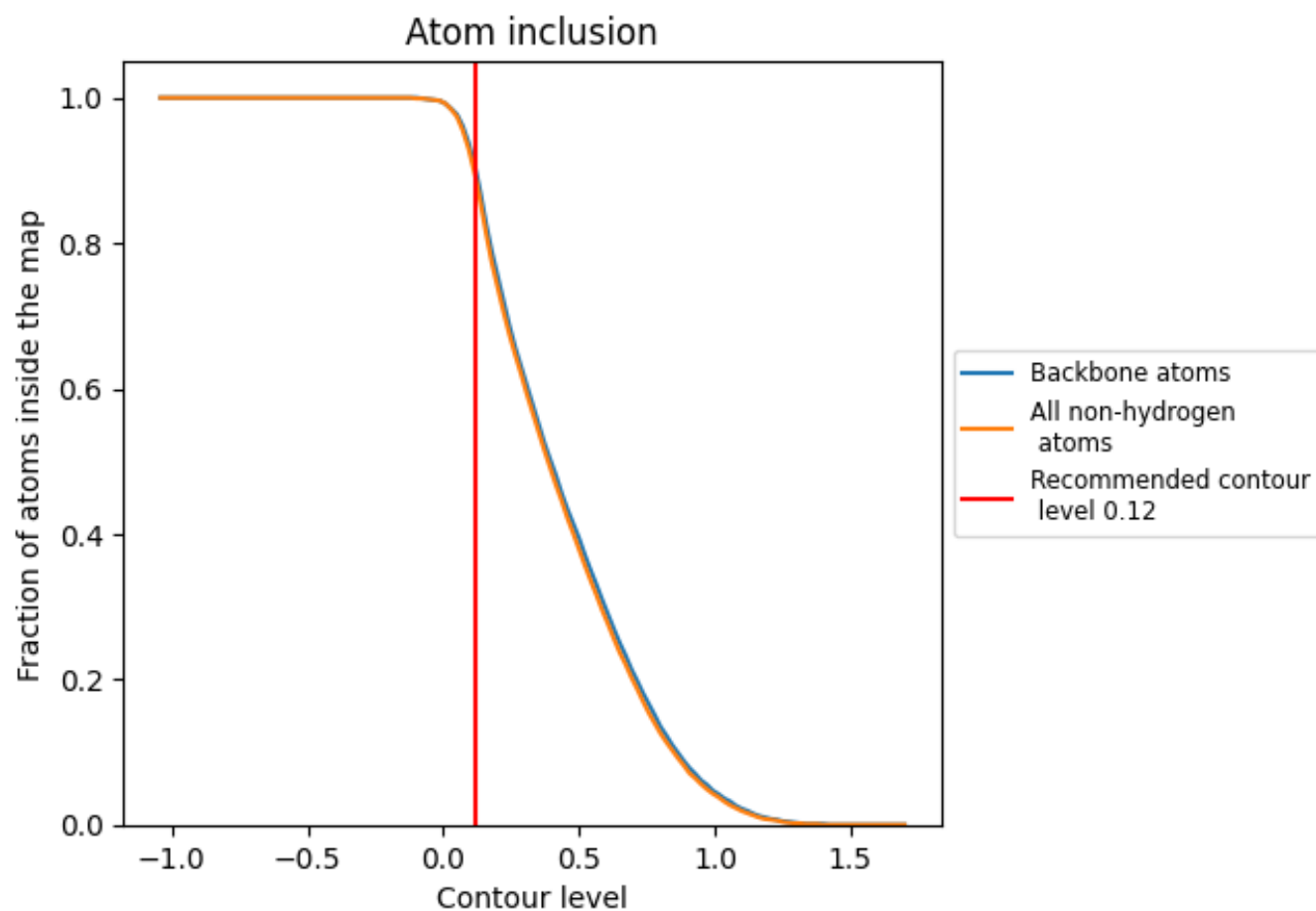
At the recommended contour level, 90% of all backbone atoms, 89% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.12) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8890	0.5030
A	0.8370	0.4520
B	0.8370	0.4480
C	0.8860	0.1950
D	0.8860	0.2530
G	0.9470	0.5640
H	0.9460	0.5590
K	0.9080	0.5160
L	0.9240	0.5400

1.0

0.0
<0.0