Full wwPDB EM Validation Report ⓘ

Nov 29, 2022 – 05:17 AM JST

PDB ID	:	7VXB
EMDB ID	:	EMD-32174
Title	:	SARS-CoV-2 Kappa variant spike protein in C2b state
Authors	:	Xu, C.; Cong, Y.
Deposited on	:	2021-11-12
Resolution	:	3.90 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:

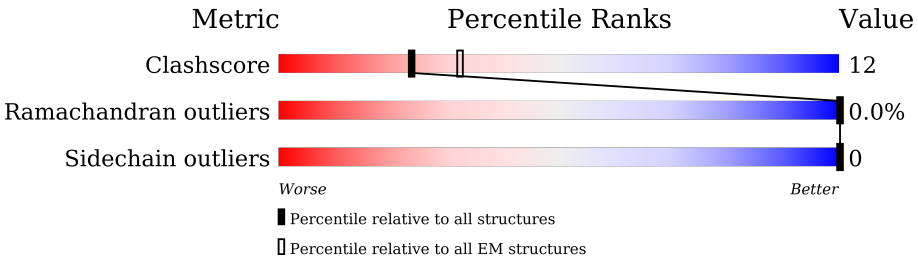
EMDB validation analysis	:	0.0.1.dev43
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.3

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.90 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	1261	5% 79% 5% 16%
1	B	1261	10% 80% • 15%
1	D	1261	7% 49% 36% 15%
2	C	625	29% 56% 40% •

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 29888 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 Spike glycoprotein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	D	1068	Total	C	N	O	S	0	0
			8354	5327	1401	1587	39		
1	A	1062	Total	C	N	O	S	0	0
			8310	5300	1394	1578	38		
1	B	1068	Total	C	N	O	S	0	0
			8354	5327	1401	1587	39		

There are 192 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	142	ASP	GLY	variant	UNP P0DTC2
D	154	LYS	GLU	variant	UNP P0DTC2
D	452	ARG	LEU	variant	UNP P0DTC2
D	484	GLN	GLU	variant	UNP P0DTC2
D	614	GLY	ASP	variant	UNP P0DTC2
D	681	ARG	PRO	variant	UNP P0DTC2
D	682	GLY	ARG	variant	UNP P0DTC2
D	683	SER	ARG	variant	UNP P0DTC2
D	685	SER	ARG	variant	UNP P0DTC2
D	986	PRO	LYS	variant	UNP P0DTC2
D	987	PRO	VAL	variant	UNP P0DTC2
D	1209	GLY	-	expression tag	UNP P0DTC2
D	1210	SER	-	expression tag	UNP P0DTC2
D	1211	GLY	-	expression tag	UNP P0DTC2
D	1212	TYR	-	expression tag	UNP P0DTC2
D	1213	ILE	-	expression tag	UNP P0DTC2
D	1214	PRO	-	expression tag	UNP P0DTC2
D	1215	GLU	-	expression tag	UNP P0DTC2
D	1216	ALA	-	expression tag	UNP P0DTC2
D	1217	PRO	-	expression tag	UNP P0DTC2
D	1218	ARG	-	expression tag	UNP P0DTC2
D	1219	ASP	-	expression tag	UNP P0DTC2
D	1220	GLY	-	expression tag	UNP P0DTC2
D	1221	GLN	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
D	1222	ALA	-	expression tag	UNP P0DTC2
D	1223	TYR	-	expression tag	UNP P0DTC2
D	1224	VAL	-	expression tag	UNP P0DTC2
D	1225	ARG	-	expression tag	UNP P0DTC2
D	1226	LYS	-	expression tag	UNP P0DTC2
D	1227	ASP	-	expression tag	UNP P0DTC2
D	1228	GLY	-	expression tag	UNP P0DTC2
D	1229	GLU	-	expression tag	UNP P0DTC2
D	1230	TRP	-	expression tag	UNP P0DTC2
D	1231	VAL	-	expression tag	UNP P0DTC2
D	1232	LEU	-	expression tag	UNP P0DTC2
D	1233	LEU	-	expression tag	UNP P0DTC2
D	1234	SER	-	expression tag	UNP P0DTC2
D	1235	THR	-	expression tag	UNP P0DTC2
D	1236	PHE	-	expression tag	UNP P0DTC2
D	1237	LEU	-	expression tag	UNP P0DTC2
D	1238	GLU	-	expression tag	UNP P0DTC2
D	1239	ASN	-	expression tag	UNP P0DTC2
D	1240	LEU	-	expression tag	UNP P0DTC2
D	1241	TYR	-	expression tag	UNP P0DTC2
D	1242	PHE	-	expression tag	UNP P0DTC2
D	1243	GLN	-	expression tag	UNP P0DTC2
D	1244	GLY	-	expression tag	UNP P0DTC2
D	1245	ASP	-	expression tag	UNP P0DTC2
D	1246	TYR	-	expression tag	UNP P0DTC2
D	1247	LYS	-	expression tag	UNP P0DTC2
D	1248	ASP	-	expression tag	UNP P0DTC2
D	1249	ASP	-	expression tag	UNP P0DTC2
D	1250	ASP	-	expression tag	UNP P0DTC2
D	1251	ASP	-	expression tag	UNP P0DTC2
D	1252	LYS	-	expression tag	UNP P0DTC2
D	1253	HIS	-	expression tag	UNP P0DTC2
D	1254	HIS	-	expression tag	UNP P0DTC2
D	1255	HIS	-	expression tag	UNP P0DTC2
D	1256	HIS	-	expression tag	UNP P0DTC2
D	1257	HIS	-	expression tag	UNP P0DTC2
D	1258	HIS	-	expression tag	UNP P0DTC2
D	1259	HIS	-	expression tag	UNP P0DTC2
D	1260	HIS	-	expression tag	UNP P0DTC2
D	1261	HIS	-	expression tag	UNP P0DTC2
A	142	ASP	GLY	variant	UNP P0DTC2
A	154	LYS	GLU	variant	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	452	ARG	LEU	variant	UNP P0DTC2
A	484	GLN	GLU	variant	UNP P0DTC2
A	614	GLY	ASP	variant	UNP P0DTC2
A	681	ARG	PRO	variant	UNP P0DTC2
A	682	GLY	ARG	variant	UNP P0DTC2
A	683	SER	ARG	variant	UNP P0DTC2
A	685	SER	ARG	variant	UNP P0DTC2
A	986	PRO	LYS	variant	UNP P0DTC2
A	987	PRO	VAL	variant	UNP P0DTC2
A	1209	GLY	-	expression tag	UNP P0DTC2
A	1210	SER	-	expression tag	UNP P0DTC2
A	1211	GLY	-	expression tag	UNP P0DTC2
A	1212	TYR	-	expression tag	UNP P0DTC2
A	1213	ILE	-	expression tag	UNP P0DTC2
A	1214	PRO	-	expression tag	UNP P0DTC2
A	1215	GLU	-	expression tag	UNP P0DTC2
A	1216	ALA	-	expression tag	UNP P0DTC2
A	1217	PRO	-	expression tag	UNP P0DTC2
A	1218	ARG	-	expression tag	UNP P0DTC2
A	1219	ASP	-	expression tag	UNP P0DTC2
A	1220	GLY	-	expression tag	UNP P0DTC2
A	1221	GLN	-	expression tag	UNP P0DTC2
A	1222	ALA	-	expression tag	UNP P0DTC2
A	1223	TYR	-	expression tag	UNP P0DTC2
A	1224	VAL	-	expression tag	UNP P0DTC2
A	1225	ARG	-	expression tag	UNP P0DTC2
A	1226	LYS	-	expression tag	UNP P0DTC2
A	1227	ASP	-	expression tag	UNP P0DTC2
A	1228	GLY	-	expression tag	UNP P0DTC2
A	1229	GLU	-	expression tag	UNP P0DTC2
A	1230	TRP	-	expression tag	UNP P0DTC2
A	1231	VAL	-	expression tag	UNP P0DTC2
A	1232	LEU	-	expression tag	UNP P0DTC2
A	1233	LEU	-	expression tag	UNP P0DTC2
A	1234	SER	-	expression tag	UNP P0DTC2
A	1235	THR	-	expression tag	UNP P0DTC2
A	1236	PHE	-	expression tag	UNP P0DTC2
A	1237	LEU	-	expression tag	UNP P0DTC2
A	1238	GLU	-	expression tag	UNP P0DTC2
A	1239	ASN	-	expression tag	UNP P0DTC2
A	1240	LEU	-	expression tag	UNP P0DTC2
A	1241	TYR	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1242	PHE	-	expression tag	UNP P0DTC2
A	1243	GLN	-	expression tag	UNP P0DTC2
A	1244	GLY	-	expression tag	UNP P0DTC2
A	1245	ASP	-	expression tag	UNP P0DTC2
A	1246	TYR	-	expression tag	UNP P0DTC2
A	1247	LYS	-	expression tag	UNP P0DTC2
A	1248	ASP	-	expression tag	UNP P0DTC2
A	1249	ASP	-	expression tag	UNP P0DTC2
A	1250	ASP	-	expression tag	UNP P0DTC2
A	1251	ASP	-	expression tag	UNP P0DTC2
A	1252	LYS	-	expression tag	UNP P0DTC2
A	1253	HIS	-	expression tag	UNP P0DTC2
A	1254	HIS	-	expression tag	UNP P0DTC2
A	1255	HIS	-	expression tag	UNP P0DTC2
A	1256	HIS	-	expression tag	UNP P0DTC2
A	1257	HIS	-	expression tag	UNP P0DTC2
A	1258	HIS	-	expression tag	UNP P0DTC2
A	1259	HIS	-	expression tag	UNP P0DTC2
A	1260	HIS	-	expression tag	UNP P0DTC2
A	1261	HIS	-	expression tag	UNP P0DTC2
B	142	ASP	GLY	variant	UNP P0DTC2
B	154	LYS	GLU	variant	UNP P0DTC2
B	452	ARG	LEU	variant	UNP P0DTC2
B	484	GLN	GLU	variant	UNP P0DTC2
B	614	GLY	ASP	variant	UNP P0DTC2
B	681	ARG	PRO	variant	UNP P0DTC2
B	682	GLY	ARG	variant	UNP P0DTC2
B	683	SER	ARG	variant	UNP P0DTC2
B	685	SER	ARG	variant	UNP P0DTC2
B	986	PRO	LYS	variant	UNP P0DTC2
B	987	PRO	VAL	variant	UNP P0DTC2
B	1209	GLY	-	expression tag	UNP P0DTC2
B	1210	SER	-	expression tag	UNP P0DTC2
B	1211	GLY	-	expression tag	UNP P0DTC2
B	1212	TYR	-	expression tag	UNP P0DTC2
B	1213	ILE	-	expression tag	UNP P0DTC2
B	1214	PRO	-	expression tag	UNP P0DTC2
B	1215	GLU	-	expression tag	UNP P0DTC2
B	1216	ALA	-	expression tag	UNP P0DTC2
B	1217	PRO	-	expression tag	UNP P0DTC2
B	1218	ARG	-	expression tag	UNP P0DTC2
B	1219	ASP	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	1220	GLY	-	expression tag	UNP P0DTC2
B	1221	GLN	-	expression tag	UNP P0DTC2
B	1222	ALA	-	expression tag	UNP P0DTC2
B	1223	TYR	-	expression tag	UNP P0DTC2
B	1224	VAL	-	expression tag	UNP P0DTC2
B	1225	ARG	-	expression tag	UNP P0DTC2
B	1226	LYS	-	expression tag	UNP P0DTC2
B	1227	ASP	-	expression tag	UNP P0DTC2
B	1228	GLY	-	expression tag	UNP P0DTC2
B	1229	GLU	-	expression tag	UNP P0DTC2
B	1230	TRP	-	expression tag	UNP P0DTC2
B	1231	VAL	-	expression tag	UNP P0DTC2
B	1232	LEU	-	expression tag	UNP P0DTC2
B	1233	LEU	-	expression tag	UNP P0DTC2
B	1234	SER	-	expression tag	UNP P0DTC2
B	1235	THR	-	expression tag	UNP P0DTC2
B	1236	PHE	-	expression tag	UNP P0DTC2
B	1237	LEU	-	expression tag	UNP P0DTC2
B	1238	GLU	-	expression tag	UNP P0DTC2
B	1239	ASN	-	expression tag	UNP P0DTC2
B	1240	LEU	-	expression tag	UNP P0DTC2
B	1241	TYR	-	expression tag	UNP P0DTC2
B	1242	PHE	-	expression tag	UNP P0DTC2
B	1243	GLN	-	expression tag	UNP P0DTC2
B	1244	GLY	-	expression tag	UNP P0DTC2
B	1245	ASP	-	expression tag	UNP P0DTC2
B	1246	TYR	-	expression tag	UNP P0DTC2
B	1247	LYS	-	expression tag	UNP P0DTC2
B	1248	ASP	-	expression tag	UNP P0DTC2
B	1249	ASP	-	expression tag	UNP P0DTC2
B	1250	ASP	-	expression tag	UNP P0DTC2
B	1251	ASP	-	expression tag	UNP P0DTC2
B	1252	LYS	-	expression tag	UNP P0DTC2
B	1253	HIS	-	expression tag	UNP P0DTC2
B	1254	HIS	-	expression tag	UNP P0DTC2
B	1255	HIS	-	expression tag	UNP P0DTC2
B	1256	HIS	-	expression tag	UNP P0DTC2
B	1257	HIS	-	expression tag	UNP P0DTC2
B	1258	HIS	-	expression tag	UNP P0DTC2
B	1259	HIS	-	expression tag	UNP P0DTC2
B	1260	HIS	-	expression tag	UNP P0DTC2
B	1261	HIS	-	expression tag	UNP P0DTC2

- Molecule 2 is a protein called Angiotensin-converting enzyme 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	597	Total	C	N	O	S	0	0
			4870	3115	806	920	29		

There are 26 discrepancies between the modelled and reference sequences:

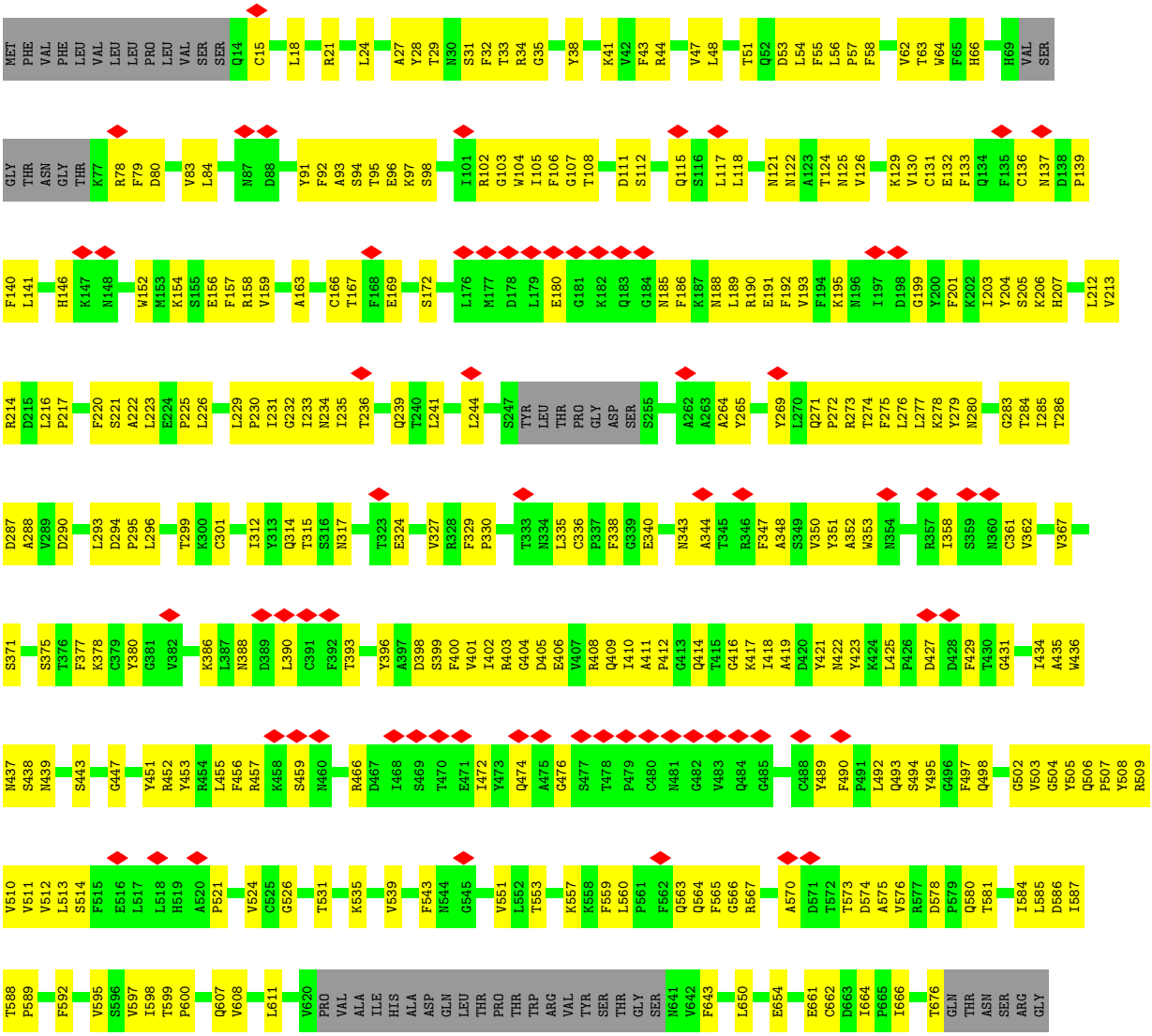
Chain	Residue	Modelled	Actual	Comment	Reference
C	0	MET	-	initiating methionine	UNP Q9BYF1
C	1	HIS	-	expression tag	UNP Q9BYF1
C	2	SER	-	expression tag	UNP Q9BYF1
C	3	SER	-	expression tag	UNP Q9BYF1
C	4	ALA	-	expression tag	UNP Q9BYF1
C	5	LEU	-	expression tag	UNP Q9BYF1
C	6	LEU	-	expression tag	UNP Q9BYF1
C	7	CYS	-	expression tag	UNP Q9BYF1
C	8	CYS	-	expression tag	UNP Q9BYF1
C	9	LEU	-	expression tag	UNP Q9BYF1
C	10	VAL	-	expression tag	UNP Q9BYF1
C	11	LEU	-	expression tag	UNP Q9BYF1
C	12	LEU	-	expression tag	UNP Q9BYF1
C	13	THR	-	expression tag	UNP Q9BYF1
C	14	GLY	-	expression tag	UNP Q9BYF1
C	15	VAL	-	expression tag	UNP Q9BYF1
C	16	ARG	-	expression tag	UNP Q9BYF1
C	616	HIS	-	expression tag	UNP Q9BYF1
C	617	HIS	-	expression tag	UNP Q9BYF1
C	618	HIS	-	expression tag	UNP Q9BYF1
C	619	HIS	-	expression tag	UNP Q9BYF1
C	620	HIS	-	expression tag	UNP Q9BYF1
C	621	HIS	-	expression tag	UNP Q9BYF1
C	622	HIS	-	expression tag	UNP Q9BYF1
C	623	HIS	-	expression tag	UNP Q9BYF1
C	624	HIS	-	expression tag	UNP Q9BYF1

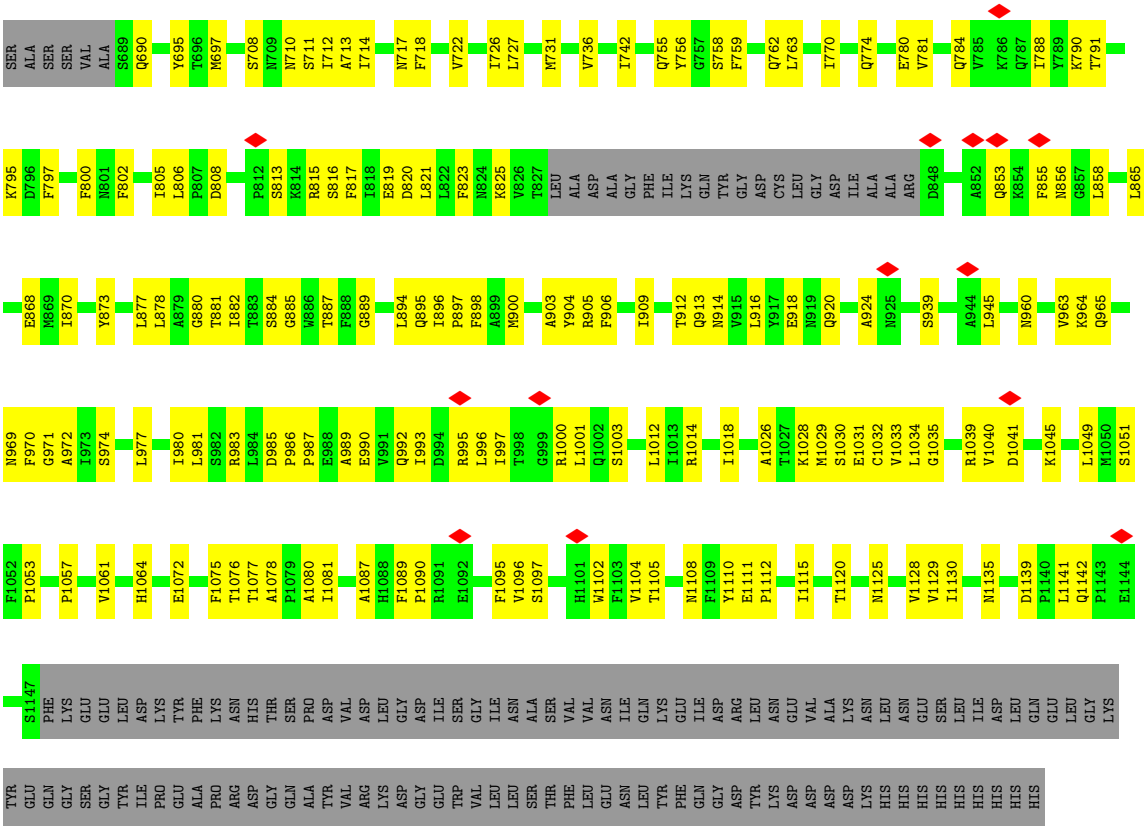
3 Residue-property plots (i)

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: Spike glycoprotein

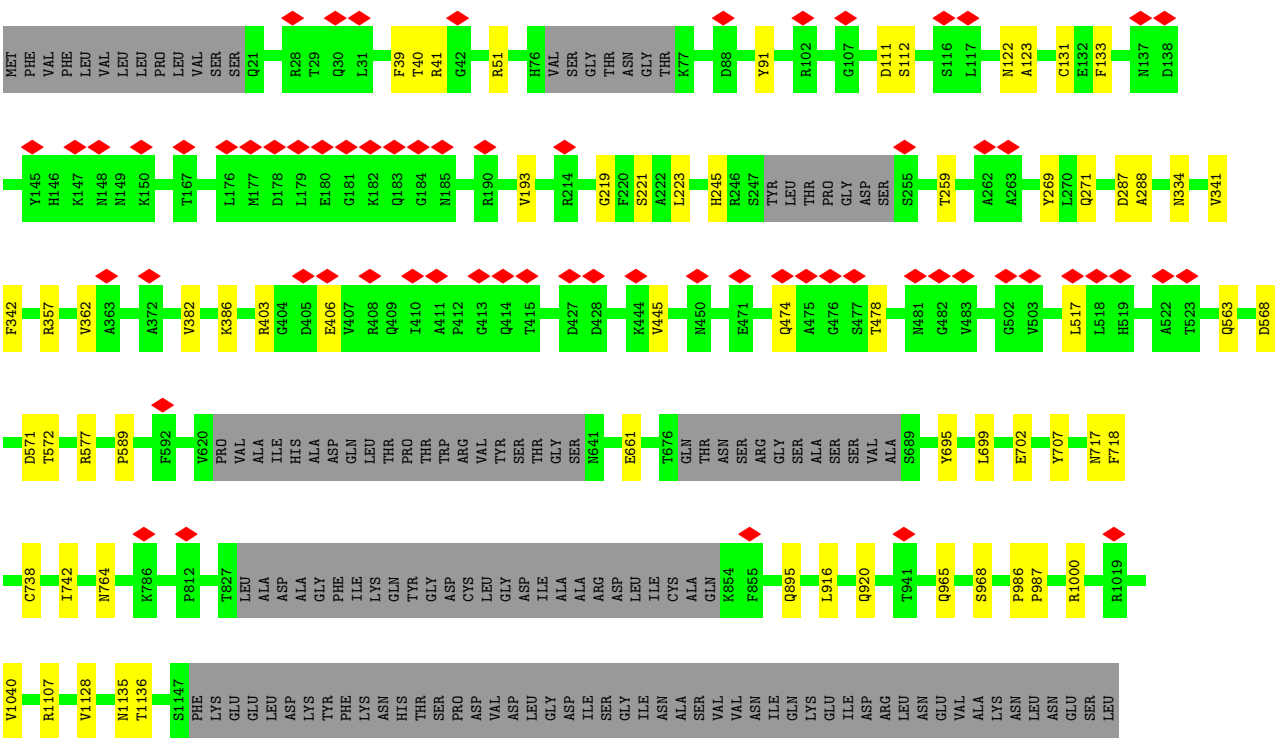
Chain D:

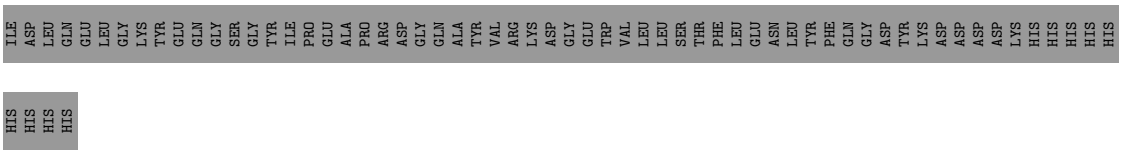




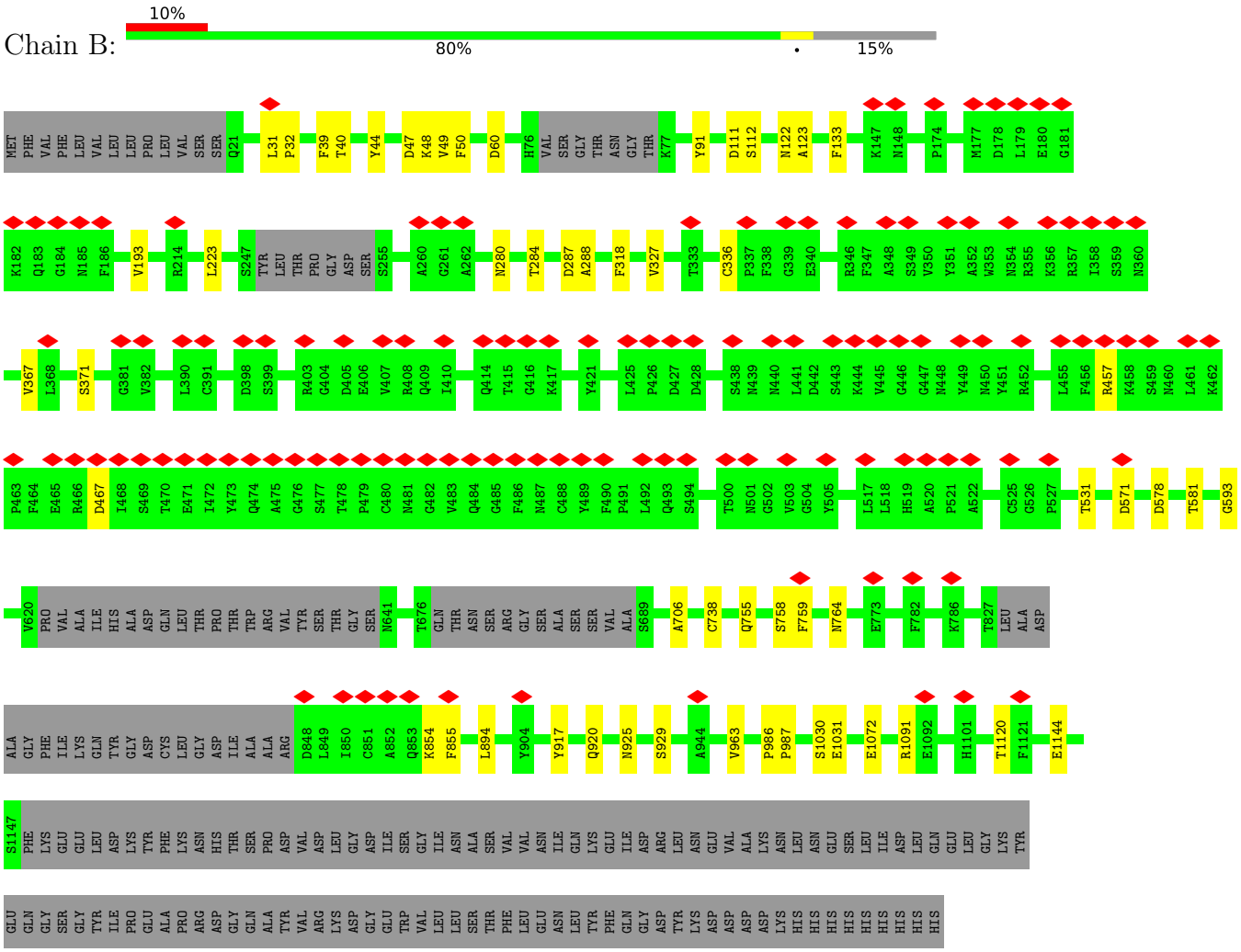
• Molecule 1: Spike glycoprotein

Chain A:

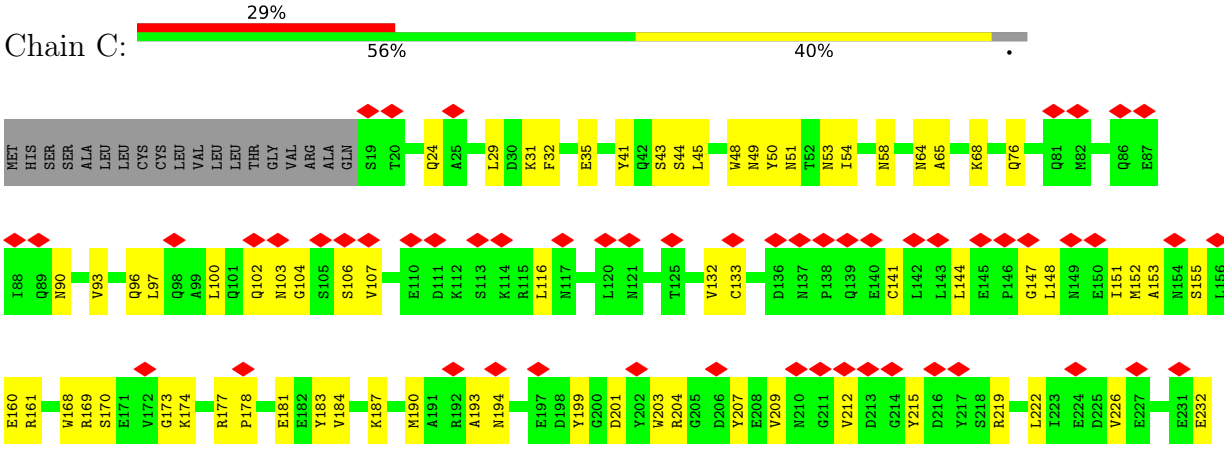


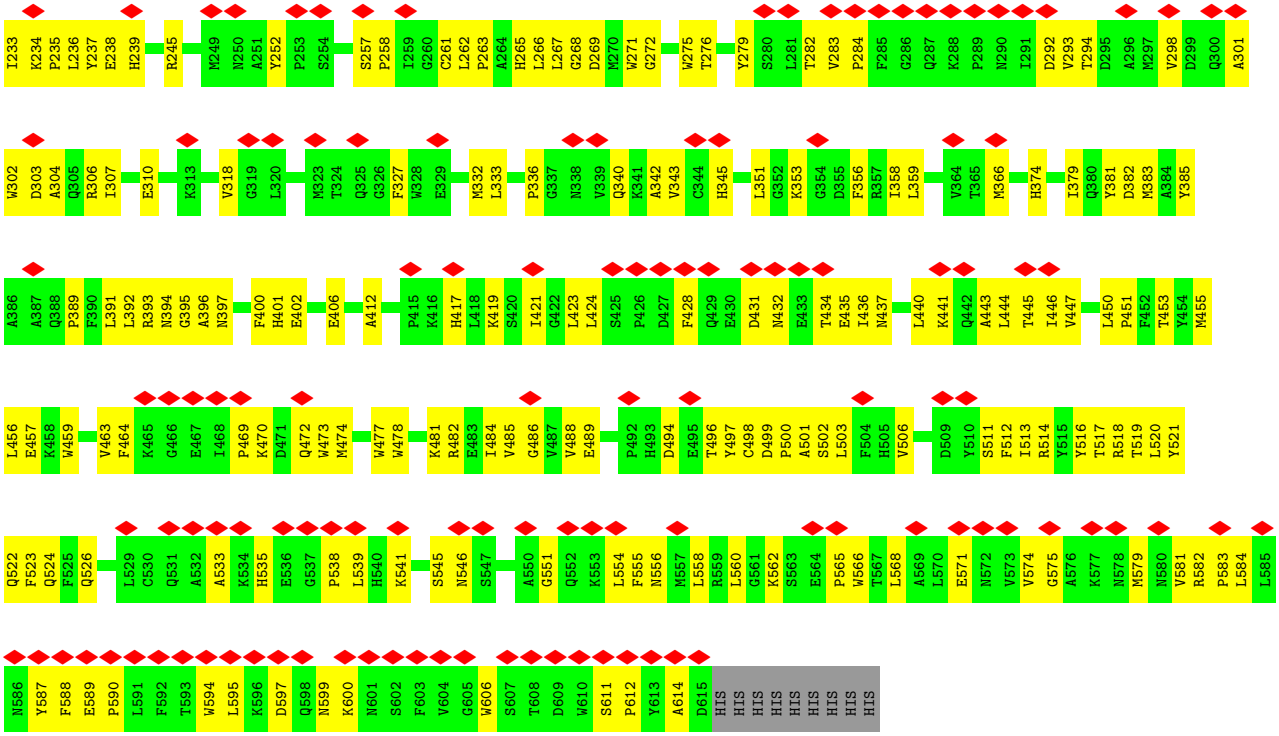


• Molecule 1: Spike glycoprotein



• Molecule 2: Angiotensin-converting enzyme 2




I233 K234 P235 L236 Y237 E238 H239 R245 M249 N250 A251 Y252 P253 S254 S257 P258 I259 G260 C261 L262 P263 A264 H265 L266 L267 G268 D269 M270 W271 G272 W275 T276 Y279 S280 L281 T282 V283 P284 F285 G286 Q287 K288 P289 N290 I291 D292 V293 T294 D295 A296 M297 V298 D299 Q300 A301
W302 D303 A304 Q305 R306 I307 E310 K313 V318 G319 L320 M323 T324 Q325 G326 F327 W328 E329 M332 L333 P336 G337 N338 V339 Q340 K341 A342 V343 C344 H345 L351 G352 K353 G354 D355 F356 R357 I358 L359 V364 T365 M366 H374 I379 Q380 Y381 D382 M383 A384 Y385
A386 A387 Q388 P389 F390 L391 L392 R393 N394 G395 A396 N397 F400 H401 E402 E406 A412 P415 K416 H417 L418 K419 S420 I421 G422 L423 L424 S425 P426 D427 F428 Q429 E430 D431 N432 E433 T434 E435 I436 N437 L440 K441 Q442 A443 L444 T445 I446 V447 L450 P451 P452 T453 Y454 M455
L456 E457 K458 W459 V463 F464 K465 G466 E467 I468 P469 K470 D471 Q472 W473 M474 W477 W478 K481 R482 E483 I484 V485 G486 V487 V488 E489 P492 H493 D494 E495 T496 Y497 C498 D499 P500 A501 S502 L503 F504 H505 V506 D509 Y510 S511 F512 I513 R514 Y515 Y516 T517 R518 T519 L520 Y521
Q522 F523 Q524 F525 Q526 L529 C530 Q531 A532 A533 K534 H535 E536 G537 P538 L539 H540 K541 S545 N546 S547 A550 G551 Q552 K553 L554 F555 N556 M557 L558 R559 L560 G561 K562 S563 E564 P565 W566 T567 L568 A569 L570 E571 N572 V573 V574 G575 A576 K577 N578 M579 N580 V581 R582 P583 L584 L585
N586 Y587 F588 E589 P590 L591 F592 T593 W594 L595 K596 D597 Q598 N599 K600 N601 S602 F603 V604 G605 W606 S607 T608 D609 W610 S611 P612 Y613 A614 D615 HIS HIS HIS HIS HIS HIS HIS HIS HIS

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	67543	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	3.992	Depositor
Minimum map value	-2.150	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.126	Depositor
Recommended contour level	0.65	Depositor
Map size (Å)	393.48, 393.48, 393.48	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.093, 1.093, 1.093	Depositor

5 Model quality

5.1 Standard geometry

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	A	0.25	0/8502	0.41	0/11565
1	B	0.25	1/8546 (0.0%)	0.41	0/11625
1	D	0.25	0/8546	0.40	0/11625
2	C	0.23	0/5007	0.35	0/6803
All	All	0.24	1/30601 (0.0%)	0.40	0/41618

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	336	CYS	C-N	5.38	1.44	1.34

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	8310	0	8117	48	0
1	B	8354	0	8159	45	0
1	D	8354	0	8159	436	0
2	C	4870	0	4643	231	0
All	All	29888	0	29078	714	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 12.

All (714) 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:D:106:PHE:HB3	1:D:235:ILE:HD13	1.41	1.02
1:D:736:VAL:HG22	1:D:858:LEU:HG	1.45	0.98
2:C:503:LEU:HD23	2:C:506:VAL:HG23	1.43	0.97
2:C:539:LEU:HD23	2:C:587:TYR:HB2	1.44	0.97
1:D:129:LYS:HG2	1:D:169:GLU:HA	1.47	0.96
1:D:296:LEU:HB2	1:D:608:VAL:HG21	1.44	0.95
1:A:269:TYR:HE1	1:A:271:GLN:NE2	1.64	0.94
2:C:538:PRO:HD2	2:C:541:LYS:HD2	1.49	0.94
1:D:212:LEU:HD22	1:D:217:PRO:HD3	1.51	0.90
1:D:805:ILE:HD12	1:D:878:LEU:HD11	1.52	0.90
1:D:33:THR:HG21	1:D:220:PHE:HA	1.53	0.89
1:D:1030:SER:HA	1:D:1034:LEU:HB3	1.56	0.88
2:C:144:LEU:HA	2:C:148:LEU:HB2	1.55	0.87
2:C:144:LEU:HD12	2:C:148:LEU:HB2	1.55	0.87
1:D:344:ALA:HB3	1:D:347:PHE:HE1	1.40	0.86
1:D:418:ILE:HA	1:D:422:ASN:HD22	1.42	0.84
2:C:457:GLU:HG2	2:C:513:ILE:HD13	1.60	0.83
1:D:398:ASP:HB3	1:D:512:VAL:HB	1.61	0.82
1:D:32:PHE:CD2	1:D:33:THR:HG23	2.16	0.80
1:D:314:GLN:NE2	1:D:317:ASN:OD1	2.16	0.79
1:D:24:LEU:HB3	1:D:78:ARG:HD2	1.65	0.79
1:D:712:ILE:HG21	1:D:1077:THR:HB	1.65	0.79
1:D:781:VAL:HG22	1:D:1026:ALA:HB2	1.65	0.78
1:D:106:PHE:HB2	1:D:117:LEU:HB3	1.65	0.78
2:C:152:MET:O	2:C:161:ARG:NH1	2.15	0.78
1:D:758:SER:OG	1:A:965:GLN:NE2	2.18	0.77
2:C:389:PRO:HG2	2:C:392:LEU:HD12	1.66	0.77
2:C:301:ALA:O	2:C:306:ARG:NH2	2.18	0.76
1:D:1035:GLY:HA3	1:A:1040:VAL:HG21	1.66	0.76
2:C:446:ILE:HD13	2:C:523:PHE:HZ	1.52	0.75
1:A:403:ARG:NH2	1:A:406:GLU:OE2	2.20	0.75
1:D:277:LEU:HD22	1:D:285:ILE:HD13	1.67	0.75
2:C:144:LEU:HD21	2:C:271:TRP:HH2	1.53	0.74
1:D:490:PHE:CE2	1:D:492:LEU:HB2	2.23	0.74
1:D:813:SER:OG	1:D:868:GLU:OE1	2.04	0.74
1:A:269:TYR:CE1	1:A:271:GLN:NE2	2.47	0.74
1:D:157:PHE:CZ	1:D:159:VAL:HB	2.22	0.74
1:D:742:ILE:O	1:D:1000:ARG:NH1	2.20	0.74
2:C:157:ASP:HB3	2:C:160:GLU:HB3	1.70	0.74
2:C:524:GLN:HB3	2:C:574:VAL:HG11	1.67	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:437:ASN:HA	1:D:508:TYR:HD1	1.50	0.73
1:D:770:ILE:HD11	1:D:1012:LEU:HD23	1.70	0.73
1:D:887:THR:HG21	1:D:894:LEU:HD12	1.68	0.73
1:D:1031:GLU:OE1	1:D:1039:ARG:NH2	2.21	0.73
2:C:394:ASN:OD1	2:C:395:GLY:N	2.22	0.73
1:D:981:LEU:O	1:A:386:LYS:NZ	2.22	0.73
1:D:278:LYS:O	1:D:286:THR:N	2.13	0.73
1:D:476:GLY:HA3	2:C:24:GLN:HE21	1.53	0.73
2:C:263:PRO:HG2	2:C:266:LEU:HD12	1.70	0.73
1:D:102:ARG:HH12	1:D:154:LYS:HE2	1.54	0.73
1:D:338:PHE:HE1	1:D:358:ILE:HG21	1.52	0.73
1:D:437:ASN:ND2	1:D:506:GLN:OE1	2.22	0.73
2:C:451:PRO:HB2	2:C:485:VAL:HG12	1.71	0.72
1:D:329:PHE:HB3	1:D:330:PRO:HD2	1.70	0.72
1:D:726:ILE:HG12	1:D:1061:VAL:HG22	1.72	0.72
2:C:132:VAL:HG23	2:C:168:TRP:HE3	1.55	0.72
2:C:190:MET:O	2:C:194:ASN:ND2	2.22	0.72
1:D:102:ARG:HB3	1:D:241:LEU:HB3	1.71	0.72
1:D:121:ASN:O	1:D:154:LYS:NZ	2.23	0.71
1:D:106:PHE:HD2	1:D:117:LEU:HD23	1.54	0.71
1:D:417:LYS:HD2	1:D:455:LEU:HD12	1.71	0.71
1:D:599:THR:OG1	1:D:607:GLN:O	2.07	0.71
1:D:1039:ARG:HD3	1:B:1031:GLU:OE2	1.91	0.70
1:D:1129:VAL:HG22	1:B:917:TYR:HB3	1.73	0.70
2:C:276:THR:OG1	2:C:445:THR:OG1	2.09	0.70
2:C:450:LEU:HB2	2:C:451:PRO:HD3	1.73	0.70
1:D:204:TYR:HD1	1:D:225:PRO:HA	1.53	0.70
2:C:144:LEU:HA	2:C:148:LEU:CB	2.21	0.70
1:D:43:PHE:HB2	1:A:563:GLN:CD	2.12	0.69
1:D:437:ASN:HA	1:D:508:TYR:CD1	2.27	0.69
1:D:1033:VAL:HA	1:D:1051:SER:HB3	1.73	0.69
1:D:131:CYS:HB2	1:D:133:PHE:CE1	2.27	0.69
1:D:578:ASP:OD2	1:D:581:THR:N	2.25	0.69
1:D:44:ARG:HB3	1:D:47:VAL:CG2	2.23	0.68
2:C:204:ARG:HG2	2:C:222:LEU:HD23	1.75	0.68
1:D:788:ILE:HD11	1:A:699:LEU:HB2	1.76	0.68
1:A:40:THR:OG1	1:A:219:GLY:O	2.10	0.68
1:D:447:GLY:HA2	1:D:497:PHE:O	1.93	0.68
1:D:108:THR:HA	1:D:236:THR:H	1.58	0.68
1:D:335:LEU:CD2	1:D:362:VAL:HB	2.24	0.68
1:D:758:SER:O	1:D:762:GLN:N	2.19	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:396:ALA:HB3	2:C:400:PHE:CD2	2.30	0.67
1:D:338:PHE:CE1	1:D:358:ILE:HG21	2.29	0.67
1:D:865:LEU:HD21	1:D:873:TYR:HE2	1.60	0.66
2:C:29:LEU:HD13	2:C:96:GLN:OE1	1.95	0.66
1:D:35:GLY:HA3	1:D:56:LEU:HB3	1.76	0.66
2:C:304:ALA:HB1	2:C:333:LEU:HD22	1.76	0.66
1:D:713:ALA:HB3	1:B:894:LEU:CD1	2.25	0.66
2:C:235:PRO:O	2:C:239:HIS:ND1	2.24	0.66
1:D:105:ILE:HG12	1:D:118:LEU:HD13	1.77	0.66
1:A:717:ASN:OD1	1:A:718:PHE:N	2.29	0.66
1:D:102:ARG:HB3	1:D:241:LEU:CB	2.26	0.66
2:C:389:PRO:O	2:C:393:ARG:HG3	1.96	0.66
1:D:48:LEU:HD11	1:D:276:LEU:HB3	1.77	0.65
1:D:290:ASP:HB3	1:D:293:LEU:HB2	1.78	0.65
1:A:563:GLN:O	1:A:577:ARG:NH1	2.29	0.65
1:D:347:PHE:CE2	1:D:509:ARG:HD3	2.32	0.65
1:D:31:SER:HB3	1:D:34:ARG:HB2	1.79	0.65
1:D:204:TYR:CD1	1:D:225:PRO:HA	2.32	0.65
1:D:15:CYS:HA	1:D:137:ASN:HB2	1.79	0.64
1:D:24:LEU:HD21	1:D:80:ASP:OD2	1.97	0.64
1:D:95:THR:HG22	1:D:189:LEU:HD13	1.79	0.64
2:C:100:LEU:HD11	2:C:391:LEU:HD11	1.80	0.64
1:D:912:THR:HG22	1:D:914:ASN:H	1.60	0.64
1:D:502:GLY:O	1:D:506:GLN:HG3	1.98	0.64
2:C:595:LEU:O	2:C:599:ASN:ND2	2.29	0.64
2:C:554:LEU:O	2:C:558:LEU:HG	1.97	0.64
1:D:712:ILE:O	1:D:1075:PHE:N	2.29	0.64
2:C:469:PRO:HD2	2:C:472:GLN:OE1	1.98	0.64
1:D:350:VAL:HG22	1:D:422:ASN:HB3	1.80	0.64
1:D:96:GLU:O	1:D:188:ASN:HB2	1.98	0.63
2:C:302:TRP:HA	2:C:306:ARG:HH21	1.62	0.63
1:A:895:GLN:NE2	1:B:706:ALA:O	2.31	0.63
2:C:267:LEU:CD1	2:C:272:GLY:HA3	2.28	0.63
1:D:80:ASP:O	1:D:265:TYR:OH	2.16	0.63
2:C:158:TYR:HB2	2:C:252:TYR:CE2	2.33	0.63
1:D:717:ASN:OD1	1:D:718:PHE:N	2.32	0.63
2:C:155:SER:O	2:C:161:ARG:HD2	1.99	0.63
2:C:396:ALA:HB1	2:C:566:TRP:HB3	1.81	0.63
2:C:144:LEU:O	2:C:148:LEU:N	2.32	0.63
1:D:106:PHE:O	1:D:117:LEU:N	2.33	0.62
1:D:756:TYR:HB3	1:D:759:PHE:CD2	2.35	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:965:GLN:NE2	1:B:758:SER:OG	2.33	0.62
1:D:329:PHE:O	1:D:580:GLN:HB2	1.99	0.62
2:C:382:ASP:HA	2:C:385:TYR:CE2	2.34	0.62
1:D:231:ILE:HG22	1:D:233:ILE:HG23	1.80	0.62
1:D:33:THR:CG2	1:D:220:PHE:HA	2.27	0.62
1:D:412:PRO:HB3	1:D:427:ASP:HA	1.80	0.62
2:C:382:ASP:OD1	2:C:385:TYR:OH	2.14	0.62
1:D:27:ALA:HB3	1:D:64:TRP:HB3	1.81	0.62
1:D:439:ASN:O	1:D:443:SER:OG	2.17	0.62
1:D:661:GLU:O	1:D:695:TYR:OH	2.15	0.62
1:D:856:ASN:HD22	1:D:963:VAL:HG22	1.65	0.62
2:C:453:THR:CG2	2:C:516:TYR:HB2	2.30	0.61
1:D:102:ARG:NH1	1:D:154:LYS:HE2	2.14	0.61
2:C:389:PRO:CG	2:C:392:LEU:HD12	2.29	0.61
1:D:378:LYS:HE2	1:D:380:TYR:HE1	1.66	0.61
1:D:206:LYS:HD2	1:D:222:ALA:O	2.01	0.61
1:D:1089:PHE:HZ	1:D:1129:VAL:HG21	1.65	0.61
1:A:1135:ASN:OD1	1:A:1136:THR:N	2.32	0.61
2:C:144:LEU:HD12	2:C:148:LEU:CB	2.29	0.61
1:A:245:HIS:O	1:A:259:THR:OG1	2.17	0.61
1:D:344:ALA:HB3	1:D:347:PHE:CE1	2.30	0.61
1:D:212:LEU:CD2	1:D:217:PRO:HD3	2.29	0.61
1:D:600:PRO:HD2	1:D:607:GLN:O	2.01	0.61
2:C:144:LEU:HA	2:C:148:LEU:CG	2.31	0.61
2:C:406:GLU:HG3	2:C:518:ARG:HH11	1.66	0.61
1:D:34:ARG:HH22	1:D:217:PRO:HD2	1.65	0.60
1:D:118:LEU:HB2	1:D:133:PHE:HE2	1.66	0.60
1:D:884:SER:HA	1:D:894:LEU:O	2.01	0.60
1:D:44:ARG:HB2	1:D:279:TYR:CD2	2.36	0.60
2:C:44:SER:CB	2:C:351:LEU:HG	2.30	0.60
1:D:122:ASN:HA	1:D:154:LYS:HZ3	1.66	0.60
1:D:43:PHE:HB2	1:A:563:GLN:OE1	2.01	0.60
1:D:905:ARG:NH1	1:D:1049:LEU:O	2.35	0.60
1:D:32:PHE:HD2	1:D:33:THR:HG23	1.63	0.60
1:D:190:ARG:HH11	1:D:192:PHE:HZ	1.50	0.60
1:D:377:PHE:HD1	1:D:434:ILE:HG12	1.67	0.60
1:D:403:ARG:HB2	1:D:406:GLU:HG2	1.83	0.60
1:D:708:SER:HB3	1:D:711:SER:CB	2.32	0.60
1:D:790:LYS:HD2	1:A:702:GLU:OE2	2.01	0.60
1:D:918:GLU:HG2	1:A:1128:VAL:HG11	1.84	0.60
1:D:108:THR:OG1	1:D:234:ASN:O	2.19	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:144:LEU:HD21	2:C:271:TRP:CH2	2.36	0.60
2:C:396:ALA:HB3	2:C:400:PHE:CE2	2.37	0.60
2:C:421:ILE:HD11	2:C:423:LEU:CD1	2.31	0.60
1:D:140:PHE:O	1:D:158:ARG:HB2	2.02	0.60
1:D:140:PHE:CE1	1:D:244:LEU:HD12	2.37	0.60
1:D:83:VAL:HG22	1:D:239:GLN:HG2	1.82	0.60
2:C:482:ARG:O	2:C:606:TRP:NE1	2.32	0.60
1:D:205:SER:HB2	1:D:226:LEU:HD22	1.84	0.59
1:B:287:ASP:OD1	1:B:288:ALA:N	2.35	0.59
1:D:95:THR:HG22	1:D:189:LEU:CD1	2.32	0.59
1:D:351:TYR:HE2	1:D:452:ARG:HB2	1.67	0.59
1:D:896:ILE:HG23	1:D:897:PRO:HD2	1.84	0.59
1:D:361:CYS:O	1:D:524:VAL:HA	2.02	0.59
2:C:103:ASN:HB3	2:C:106:SER:HB2	1.84	0.59
2:C:374:HIS:CE1	2:C:402:GLU:HG3	2.37	0.59
1:D:889:GLY:HA3	1:D:1034:LEU:HD11	1.85	0.59
2:C:517:THR:HB	2:C:521:TYR:CE2	2.38	0.59
1:D:974:SER:OG	1:D:983:ARG:NH2	2.35	0.59
1:D:29:THR:O	1:D:62:VAL:HG22	2.03	0.59
1:D:797:PHE:CE2	1:D:802:PHE:HB2	2.38	0.59
1:D:1125:ASN:OD1	1:D:1128:VAL:HG23	2.03	0.59
1:B:112:SER:N	1:B:133:PHE:O	2.36	0.59
1:D:418:ILE:O	1:D:422:ASN:HB2	2.03	0.59
1:D:714:ILE:HB	1:D:1075:PHE:HE2	1.68	0.59
1:A:287:ASP:OD1	1:A:288:ALA:N	2.36	0.59
2:C:394:ASN:HB3	2:C:562:LYS:HD3	1.85	0.59
2:C:499:ASP:HB3	2:C:500:PRO:HD3	1.84	0.59
1:D:107:GLY:H	1:D:235:ILE:HG23	1.67	0.58
1:D:965:GLN:HB3	1:D:970:PHE:HZ	1.68	0.58
1:D:287:ASP:OD1	1:D:288:ALA:N	2.34	0.58
1:D:419:ALA:HA	1:D:423:TYR:O	2.03	0.58
2:C:267:LEU:HD13	2:C:272:GLY:HA3	1.85	0.58
2:C:332:MET:HE3	2:C:336:PRO:HD3	1.84	0.58
1:D:276:LEU:HD11	1:D:301:CYS:HA	1.86	0.58
2:C:303:ASP:O	2:C:307:ILE:HG13	2.03	0.58
1:D:756:TYR:HE2	1:D:997:ILE:HG21	1.68	0.58
1:D:1030:SER:HA	1:D:1034:LEU:CB	2.32	0.58
2:C:389:PRO:HD2	2:C:392:LEU:HD12	1.85	0.58
2:C:470:LYS:HA	2:C:473:TRP:NE1	2.18	0.58
1:D:870:ILE:HA	1:D:873:TYR:CD2	2.38	0.58
1:D:553:THR:O	1:D:586:ASP:N	2.33	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:294:THR:O	2:C:298:VAL:HG23	2.04	0.57
1:D:565:PHE:O	1:B:50:PHE:N	2.32	0.57
1:D:578:ASP:HB3	1:D:581:THR:O	2.05	0.57
2:C:446:ILE:HD13	2:C:523:PHE:CZ	2.36	0.57
2:C:457:GLU:HG2	2:C:513:ILE:CD1	2.34	0.57
2:C:455:MET:SD	2:C:481:LYS:HG3	2.44	0.57
2:C:470:LYS:HA	2:C:473:TRP:CE2	2.40	0.57
2:C:245:ARG:HG3	2:C:262:LEU:HD21	1.86	0.57
2:C:419:LYS:HE3	2:C:424:LEU:HD23	1.87	0.57
2:C:453:THR:HA	2:C:512:PHE:CE2	2.40	0.57
2:C:456:LEU:HB3	2:C:512:PHE:CE2	2.40	0.57
1:D:136:CYS:O	1:D:139:PRO:HD3	2.04	0.57
1:A:41:ARG:NH1	1:A:221:SER:OG	2.38	0.57
2:C:184:VAL:HG22	2:C:464:PHE:HE1	1.69	0.57
1:D:94:SER:HB2	1:D:264:ALA:O	2.05	0.57
1:D:97:LYS:HE2	1:D:186:PHE:CE1	2.39	0.57
1:D:404:GLY:HA2	1:D:508:TYR:CD2	2.40	0.56
1:D:94:SER:HB3	1:D:265:TYR:HA	1.88	0.56
1:A:334:ASN:O	1:A:362:VAL:N	2.38	0.56
1:D:1040:VAL:O	1:B:1030:SER:OG	2.24	0.56
2:C:451:PRO:CB	2:C:485:VAL:HG12	2.35	0.56
1:D:44:ARG:NH2	1:A:571:ASP:OD1	2.32	0.56
1:D:1130:ILE:HD12	1:B:920:GLN:NE2	2.21	0.56
1:D:335:LEU:HD22	1:D:362:VAL:O	2.06	0.56
1:D:405:ASP:O	1:D:408:ARG:HG2	2.06	0.56
2:C:222:LEU:O	2:C:226:VAL:HG22	2.06	0.56
1:B:39:PHE:CD2	1:B:40:THR:HG23	2.41	0.56
1:D:1090:PRO:HA	1:D:1120:THR:HG22	1.87	0.56
2:C:539:LEU:HD23	2:C:587:TYR:CB	2.28	0.56
1:D:34:ARG:NH2	1:D:216:LEU:HB3	2.21	0.55
1:D:93:ALA:CB	1:D:191:GLU:HG2	2.36	0.55
1:D:121:ASN:OD1	1:D:126:VAL:HG22	2.07	0.55
1:D:897:PRO:HA	1:A:707:TYR:CE1	2.41	0.55
1:D:111:ASP:OD1	1:D:112:SER:N	2.36	0.55
1:D:474:GLN:HG2	1:D:476:GLY:O	2.07	0.55
1:D:708:SER:HB3	1:D:711:SER:HB2	1.88	0.55
1:D:727:LEU:HD11	1:D:1028:LYS:NZ	2.21	0.55
1:D:972:ALA:HA	1:D:992:GLN:OE1	2.05	0.55
2:C:237:TYR:CE1	2:C:451:PRO:HG2	2.41	0.55
1:A:112:SER:N	1:A:133:PHE:O	2.39	0.55
1:A:661:GLU:O	1:A:695:TYR:OH	2.17	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:386:LYS:HE2	1:D:390:LEU:HD11	1.87	0.55
1:D:453:TYR:HB3	1:D:495:TYR:CE2	2.42	0.55
1:D:969:ASN:HB3	1:D:972:ALA:O	2.07	0.55
2:C:455:MET:SD	2:C:481:LYS:HA	2.46	0.55
1:D:1033:VAL:CG1	1:D:1053:PRO:HD3	2.37	0.55
1:D:714:ILE:HG13	1:D:1096:VAL:HG11	1.89	0.55
2:C:450:LEU:HD21	2:C:519:THR:CB	2.37	0.55
1:D:124:THR:HG22	1:D:125:ASN:ND2	2.21	0.55
1:D:567:ARG:HD2	1:B:49:VAL:HG11	1.89	0.55
1:D:983:ARG:HG2	1:A:382:VAL:HG12	1.89	0.55
2:C:203:TRP:CZ3	2:C:511:SER:HB2	2.42	0.55
2:C:212:VAL:HG11	2:C:215:TYR:HD2	1.72	0.55
2:C:589:GLU:HB3	2:C:590:PRO:HD3	1.88	0.55
1:D:451:TYR:HD2	1:D:497:PHE:HE2	1.55	0.55
2:C:233:ILE:HG12	2:C:584:LEU:CD2	2.36	0.55
2:C:394:ASN:HB3	2:C:562:LYS:CD	2.35	0.55
2:C:412:ALA:HA	2:C:417:HIS:CD2	2.42	0.55
1:D:855:PHE:HB3	1:A:589:PRO:HG2	1.89	0.54
1:D:1033:VAL:CA	1:D:1051:SER:HB3	2.36	0.54
1:D:1089:PHE:CZ	1:D:1129:VAL:HG21	2.43	0.54
2:C:181:GLU:HG2	2:C:473:TRP:HH2	1.72	0.54
2:C:236:LEU:HD21	2:C:588:PHE:HD2	1.72	0.54
2:C:402:GLU:O	2:C:406:GLU:HG2	2.07	0.54
1:D:411:ALA:HB3	1:D:414:GLN:CG	2.38	0.54
2:C:44:SER:HB3	2:C:351:LEU:HG	1.88	0.54
1:D:662:CYS:HB2	1:D:697:MET:HG3	1.88	0.54
2:C:29:LEU:HD21	2:C:97:LEU:CD2	2.36	0.54
1:D:44:ARG:HB2	1:D:279:TYR:CE2	2.43	0.54
1:D:731:MET:N	1:D:774:GLN:OE1	2.23	0.54
2:C:168:TRP:HE1	2:C:502:SER:HB2	1.72	0.54
2:C:170:SER:HA	2:C:497:TYR:HE1	1.72	0.54
1:D:756:TYR:HB3	1:D:759:PHE:HD2	1.73	0.54
1:D:126:VAL:HB	1:D:172:SER:HB3	1.89	0.54
1:D:472:ILE:HG23	1:D:489:TYR:O	2.07	0.54
1:D:1110:TYR:CZ	1:D:1112:PRO:HG3	2.43	0.54
1:D:38:TYR:HE1	1:D:285:ILE:HG13	1.73	0.54
1:D:199:GLY:HA2	1:D:232:GLY:HA2	1.90	0.54
1:D:815:ARG:NH2	1:D:820:ASP:OD1	2.37	0.54
1:D:327:VAL:HB	1:D:531:THR:OG1	2.07	0.54
1:D:453:TYR:O	1:D:492:LEU:HA	2.08	0.54
1:D:557:LYS:O	1:D:584:ILE:HG21	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:356:PHE:HE2	2:C:383:MET:HG2	1.72	0.54
2:C:389:PRO:CD	2:C:392:LEU:HD12	2.38	0.54
1:D:559:PHE:HZ	1:D:575:ALA:HB3	1.73	0.54
1:D:396:TYR:HB2	1:D:514:SER:HB3	1.90	0.53
1:D:410:ILE:HG23	1:D:425:LEU:HD11	1.90	0.53
2:C:187:LYS:HB3	2:C:199:TYR:CD1	2.43	0.53
1:D:93:ALA:HA	1:D:191:GLU:HG2	1.91	0.53
1:D:906:PHE:CE2	1:D:916:LEU:HD13	2.43	0.53
2:C:144:LEU:HD22	2:C:168:TRP:CZ2	2.44	0.53
2:C:263:PRO:CG	2:C:266:LEU:HD12	2.37	0.53
2:C:302:TRP:CZ3	2:C:423:LEU:HD21	2.43	0.53
1:D:1081:ILE:HG23	1:D:1135:ASN:HB3	1.90	0.53
2:C:402:GLU:HB3	2:C:518:ARG:HD3	1.90	0.53
2:C:343:VAL:HG12	2:C:345:HIS:H	1.74	0.53
2:C:520:LEU:O	2:C:524:GLN:HG3	2.08	0.53
1:D:54:LEU:HA	1:D:271:GLN:O	2.09	0.53
2:C:32:PHE:HE2	2:C:391:LEU:HD21	1.74	0.53
1:B:280:ASN:OD1	1:B:284:THR:N	2.41	0.53
2:C:381:TYR:HD1	2:C:558:LEU:HD22	1.74	0.53
1:D:887:THR:OG1	1:D:894:LEU:HB2	2.10	0.52
1:D:903:ALA:HB1	1:D:913:GLN:HB2	1.91	0.52
1:D:1081:ILE:CG2	1:D:1135:ASN:HB3	2.38	0.52
1:D:438:SER:HB3	1:D:509:ARG:HG3	1.90	0.52
1:D:455:LEU:HG	1:D:456:PHE:CE1	2.44	0.52
1:D:643:PHE:HE2	1:D:654:GLU:HA	1.74	0.52
1:D:94:SER:CB	1:D:265:TYR:HA	2.39	0.52
1:D:997:ILE:O	1:D:1001:LEU:HG	2.09	0.52
2:C:144:LEU:HA	2:C:148:LEU:HD12	1.91	0.52
2:C:494:ASP:OD1	2:C:496:THR:OG1	2.26	0.52
1:D:95:THR:CG2	1:D:189:LEU:HD13	2.38	0.52
1:D:398:ASP:O	1:D:511:VAL:HA	2.09	0.52
1:D:453:TYR:CZ	1:D:493:GLN:HB2	2.45	0.52
1:D:503:VAL:HA	1:D:506:GLN:CD	2.29	0.52
2:C:318:VAL:O	2:C:551:GLY:HA3	2.10	0.52
2:C:611:SER:HB3	2:C:614:ALA:HB3	1.91	0.52
1:D:103:GLY:N	1:D:241:LEU:HB2	2.25	0.52
2:C:389:PRO:HD2	2:C:392:LEU:HB2	1.92	0.52
1:D:279:TYR:HE1	1:D:285:ILE:HG12	1.75	0.52
2:C:526:GLN:HG3	2:C:539:LEU:HD11	1.92	0.52
1:D:201:PHE:HB3	1:D:229:LEU:O	2.09	0.52
1:D:410:ILE:HG23	1:D:425:LEU:CD1	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1028:LYS:O	1:D:1032:CYS:HB2	2.09	0.52
2:C:284:PRO:HD3	2:C:440:LEU:HD23	1.92	0.52
1:D:296:LEU:HB2	1:D:608:VAL:CG2	2.29	0.51
1:D:378:LYS:HE2	1:D:380:TYR:CE1	2.46	0.51
2:C:232:GLU:OE1	2:C:581:VAL:HB	2.10	0.51
1:D:802:PHE:O	1:D:806:LEU:HG	2.09	0.51
1:D:887:THR:CG2	1:D:894:LEU:HD12	2.38	0.51
1:D:986:PRO:O	1:D:990:GLU:HG3	2.10	0.51
2:C:453:THR:HG21	2:C:516:TYR:HB2	1.92	0.51
1:D:1003:SER:HB3	1:B:759:PHE:CE1	2.45	0.51
1:D:34:ARG:CZ	1:D:216:LEU:HB3	2.41	0.51
1:D:280:ASN:HD21	1:D:284:THR:HB	1.75	0.51
1:D:574:ASP:O	1:D:587:ILE:N	2.27	0.51
1:D:980:ILE:HD12	1:D:996:LEU:HD11	1.93	0.51
1:D:1041:ASP:OD1	1:D:1045:LYS:HA	2.10	0.51
2:C:48:TRP:CZ3	2:C:359:LEU:HB2	2.45	0.51
2:C:597:ASP:HA	2:C:600:LYS:HE3	1.91	0.51
1:D:192:PHE:HE1	1:D:205:SER:HG	1.58	0.51
1:A:916:LEU:O	1:A:920:GLN:N	2.44	0.51
1:D:375:SER:OG	1:D:436:TRP:HA	2.10	0.51
2:C:170:SER:HA	2:C:497:TYR:CE1	2.46	0.51
1:D:986:PRO:N	1:D:987:PRO:HD2	2.25	0.51
2:C:215:TYR:CE2	2:C:568:LEU:HD12	2.46	0.51
1:D:409:GLN:NE2	1:D:416:GLY:HA3	2.25	0.51
1:D:816:SER:OG	1:D:819:GLU:HG3	2.11	0.51
1:D:1029:MET:O	1:D:1033:VAL:HB	2.11	0.51
2:C:116:LEU:HD11	2:C:187:LYS:HD3	1.93	0.51
2:C:236:LEU:HD21	2:C:588:PHE:CD2	2.44	0.51
2:C:474:MET:HG3	2:C:494:ASP:O	2.11	0.51
1:D:34:ARG:NH2	1:D:217:PRO:HD2	2.26	0.50
2:C:158:TYR:HB2	2:C:252:TYR:HE2	1.74	0.50
2:C:177:ARG:HD3	2:C:496:THR:O	2.11	0.50
2:C:293:VAL:CG2	2:C:366:MET:HA	2.42	0.50
1:D:44:ARG:HB3	1:D:47:VAL:HG21	1.92	0.50
1:D:576:VAL:HG13	1:D:587:ILE:HD11	1.91	0.50
2:C:402:GLU:HG2	2:C:518:ARG:HD2	1.92	0.50
1:D:312:ILE:HD12	1:D:598:ILE:HD11	1.92	0.50
1:D:505:TYR:CD2	2:C:353:LYS:HA	2.46	0.50
1:D:897:PRO:HG2	1:D:900:MET:HB2	1.93	0.50
1:D:388:ASN:O	1:D:526:GLY:HA3	2.12	0.50
1:D:551:VAL:N	1:D:588:THR:O	2.32	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:181:GLU:HG2	2:C:473:TRP:CH2	2.45	0.50
1:D:130:VAL:O	1:D:166:CYS:HA	2.12	0.50
1:D:156:GLU:HB3	1:D:158:ARG:NH1	2.27	0.50
1:D:1130:ILE:HD12	1:B:920:GLN:HE22	1.77	0.50
2:C:233:ILE:HG12	2:C:584:LEU:HD23	1.93	0.50
2:C:488:VAL:HG11	2:C:612:PRO:HD3	1.92	0.50
1:D:589:PRO:HD2	1:B:855:PHE:CD1	2.47	0.50
1:D:881:THR:HA	1:D:885:GLY:O	2.12	0.50
1:D:53:ASP:OD1	1:D:54:LEU:N	2.38	0.50
1:D:335:LEU:HD23	1:D:362:VAL:HB	1.94	0.50
1:D:708:SER:HB3	1:D:711:SER:HB3	1.94	0.50
1:D:713:ALA:HB3	1:B:894:LEU:HD11	1.94	0.50
2:C:170:SER:O	2:C:174:LYS:HB2	2.11	0.50
2:C:545:SER:O	2:C:546:ASN:HB2	2.12	0.50
1:D:92:PHE:CE1	1:D:265:TYR:HB2	2.48	0.49
2:C:44:SER:HB2	2:C:351:LEU:HG	1.93	0.49
1:D:566:GLY:O	1:D:573:THR:HG23	2.11	0.49
1:D:598:ILE:HD11	1:D:666:ILE:HG12	1.94	0.49
2:C:453:THR:HA	2:C:512:PHE:CZ	2.47	0.49
1:D:452:ARG:HG2	1:D:494:SER:OG	2.13	0.49
1:D:589:PRO:HG2	1:B:855:PHE:CB	2.42	0.49
2:C:406:GLU:HG3	2:C:518:ARG:NH1	2.27	0.49
1:B:1072:GLU:N	1:B:1072:GLU:OE1	2.45	0.49
1:D:564:GLN:HG2	1:D:565:PHE:CE1	2.47	0.49
1:D:808:ASP:HB2	1:D:817:PHE:CE1	2.48	0.49
2:C:48:TRP:CH2	2:C:359:LEU:HB2	2.47	0.49
2:C:183:TYR:O	2:C:187:LYS:HG2	2.12	0.49
2:C:396:ALA:HB3	2:C:400:PHE:HD2	1.76	0.49
1:D:43:PHE:CE1	1:D:283:GLY:HA3	2.48	0.49
1:D:598:ILE:HG23	1:D:664:ILE:HG21	1.94	0.49
1:D:611:LEU:HD13	1:D:650:LEU:HD13	1.94	0.49
1:D:916:LEU:O	1:D:920:GLN:HB3	2.13	0.49
2:C:279:TYR:HA	2:C:282:THR:OG1	2.12	0.49
2:C:478:TRP:CD2	2:C:489:GLU:HB3	2.48	0.49
1:D:380:TYR:CD2	1:D:412:PRO:HD3	2.48	0.49
1:D:714:ILE:CG1	1:D:1096:VAL:HG11	2.43	0.49
2:C:174:LYS:HD2	2:C:497:TYR:CZ	2.47	0.49
2:C:393:ARG:O	2:C:394:ASN:HB2	2.12	0.49
1:A:193:VAL:HG23	1:A:223:LEU:HD22	1.94	0.49
1:A:341:VAL:HG23	1:A:342:PHE:N	2.28	0.49
1:D:55:PHE:HB3	1:D:275:PHE:CE2	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:129:LYS:HD3	1:D:169:GLU:HG2	1.95	0.49
1:D:104:TRP:HA	1:D:239:GLN:O	2.13	0.48
1:D:453:TYR:HB3	1:D:495:TYR:CZ	2.47	0.48
1:D:825:LYS:HE3	1:D:939:SER:HA	1.95	0.48
2:C:50:TYR:O	2:C:54:ILE:HD13	2.13	0.48
1:D:118:LEU:HB2	1:D:133:PHE:CE2	2.47	0.48
1:D:353:TRP:CZ2	1:D:466:ARG:HB2	2.48	0.48
2:C:275:TRP:HB2	2:C:444:LEU:HB3	1.94	0.48
2:C:450:LEU:HD21	2:C:519:THR:HB	1.95	0.48
2:C:470:LYS:HG2	2:C:473:TRP:CZ2	2.49	0.48
1:D:909:ILE:O	1:D:1108:ASN:ND2	2.46	0.48
1:D:34:ARG:HB3	1:D:91:TYR:CE2	2.48	0.48
1:D:329:PHE:HB3	1:D:330:PRO:CD	2.43	0.48
1:D:564:GLN:H	1:B:48:LYS:HB3	1.77	0.48
1:D:33:THR:HG21	1:D:220:PHE:CA	2.34	0.48
1:D:393:THR:HG23	1:D:521:PRO:O	2.13	0.48
1:D:710:ASN:HB3	1:D:1076:THR:HG23	1.93	0.48
1:D:714:ILE:HG21	1:D:1110:TYR:HA	1.96	0.48
2:C:237:TYR:CD1	2:C:451:PRO:HG2	2.48	0.48
2:C:279:TYR:CE1	2:C:441:LYS:HB2	2.49	0.48
1:A:341:VAL:HG23	1:A:342:PHE:H	1.77	0.48
1:D:106:PHE:N	1:D:117:LEU:O	2.35	0.48
2:C:279:TYR:O	2:C:283:VAL:HG23	2.13	0.48
2:C:443:ALA:O	2:C:447:VAL:N	2.46	0.48
1:D:731:MET:HB3	1:D:774:GLN:NE2	2.28	0.48
2:C:103:ASN:HB2	2:C:107:VAL:HG13	1.95	0.48
2:C:234:LYS:O	2:C:238:GLU:HG3	2.14	0.48
1:D:58:PHE:HB2	1:D:293:LEU:HD22	1.94	0.48
1:D:188:ASN:HB3	1:D:207:HIS:HE1	1.78	0.48
1:D:455:LEU:HG	1:D:456:PHE:CD1	2.49	0.48
1:D:497:PHE:CE1	1:D:507:PRO:HB3	2.48	0.48
1:D:575:ALA:HB2	1:D:586:ASP:HA	1.96	0.48
1:D:906:PHE:HE2	1:D:916:LEU:HD13	1.79	0.47
1:D:279:TYR:CE1	1:D:285:ILE:HG12	2.49	0.47
1:D:1014:ARG:O	1:D:1018:ILE:HG12	2.13	0.47
2:C:293:VAL:HG11	2:C:423:LEU:HD13	1.95	0.47
1:D:103:GLY:O	1:D:241:LEU:N	2.38	0.47
1:D:1030:SER:CA	1:D:1034:LEU:HB3	2.37	0.47
2:C:157:ASP:OD1	2:C:158:TYR:N	2.47	0.47
2:C:170:SER:O	2:C:174:LYS:HD3	2.15	0.47
2:C:203:TRP:CE3	2:C:511:SER:HB2	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:233:ILE:HD13	2:C:450:LEU:HD13	1.96	0.47
1:D:41:LYS:O	1:A:563:GLN:NE2	2.47	0.47
1:D:294:ASP:HB3	1:D:295:PRO:HD2	1.96	0.47
2:C:489:GLU:O	2:C:489:GLU:HG2	2.14	0.47
1:D:411:ALA:O	1:D:414:GLN:HG2	2.15	0.47
1:D:755:GLN:O	1:A:968:SER:OG	2.31	0.47
2:C:327:PHE:CE1	2:C:379:ILE:HG21	2.50	0.47
1:D:56:LEU:HD22	1:D:91:TYR:CD2	2.50	0.47
1:D:213:VAL:HG12	1:D:214:ARG:HG2	1.97	0.47
1:D:770:ILE:O	1:D:774:GLN:HG2	2.14	0.47
2:C:424:LEU:HD21	2:C:428:PHE:CD2	2.49	0.47
2:C:453:THR:HG22	2:C:516:TYR:HB2	1.97	0.47
2:C:581:VAL:HG12	2:C:581:VAL:O	2.13	0.47
2:C:209:VAL:HG13	2:C:565:PRO:HB3	1.97	0.47
1:D:94:SER:O	1:D:189:LEU:HD12	2.14	0.47
1:D:543:PHE:CD2	1:D:576:VAL:HG21	2.50	0.47
1:D:821:LEU:O	1:D:825:LYS:HG2	2.15	0.47
1:D:972:ALA:HB3	1:D:996:LEU:HD21	1.97	0.47
1:D:107:GLY:N	1:D:235:ILE:HG23	2.29	0.47
1:D:396:TYR:O	1:D:513:LEU:HA	2.15	0.47
2:C:45:LEU:HA	2:C:351:LEU:HD21	1.97	0.47
1:D:63:THR:HG21	1:D:84:LEU:HD21	1.97	0.46
1:D:983:ARG:HD3	1:A:517:LEU:CD2	2.45	0.46
1:D:1104:VAL:HG23	1:D:1115:ILE:HG12	1.95	0.46
2:C:102:GLN:HG2	2:C:104:GLY:H	1.79	0.46
1:D:93:ALA:HB1	1:D:191:GLU:HG2	1.98	0.46
1:D:97:LYS:HE2	1:D:186:PHE:CD1	2.50	0.46
1:D:314:GLN:HG3	1:D:595:VAL:O	2.14	0.46
1:D:398:ASP:OD1	1:D:399:SER:N	2.48	0.46
1:D:421:TYR:CD1	1:D:457:ARG:HB3	2.49	0.46
1:B:578:ASP:OD2	1:B:581:THR:OG1	2.26	0.46
1:D:34:ARG:CZ	1:D:216:LEU:HD13	2.44	0.46
2:C:459:TRP:CZ2	2:C:463:VAL:HG21	2.51	0.46
1:D:28:TYR:HA	1:D:62:VAL:O	2.15	0.46
1:D:350:VAL:O	1:D:353:TRP:HD1	1.98	0.46
1:D:865:LEU:HG	1:D:870:ILE:HG13	1.98	0.46
1:D:906:PHE:HA	1:D:909:ILE:HG12	1.98	0.46
2:C:51:ASN:O	2:C:342:ALA:HA	2.15	0.46
1:D:132:GLU:O	1:D:163:ALA:HA	2.16	0.46
1:D:780:GLU:O	1:D:784:GLN:NE2	2.45	0.46
2:C:184:VAL:HG22	2:C:464:PHE:CE1	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:51:THR:O	1:D:274:THR:HG23	2.16	0.46
1:D:57:PRO:HG3	1:D:273:ARG:HG3	1.97	0.46
1:D:126:VAL:HB	1:D:172:SER:CB	2.45	0.46
1:D:576:VAL:HG13	1:D:587:ILE:CD1	2.46	0.46
1:D:853:GLN:NE2	1:D:960:ASN:OD1	2.49	0.46
2:C:201:ASP:OD2	2:C:219:ARG:NE	2.46	0.46
1:D:457:ARG:NH1	1:D:459:SER:OG	2.49	0.46
1:D:505:TYR:HD2	2:C:353:LYS:HA	1.81	0.46
1:D:971:GLY:H	1:B:755:GLN:HB3	1.81	0.46
1:D:1090:PRO:HD3	1:D:1095:PHE:CZ	2.51	0.46
2:C:64:ASN:O	2:C:68:LYS:HG3	2.15	0.46
1:B:122:ASN:O	1:B:123:ALA:HB3	2.16	0.46
1:D:131:CYS:HB3	1:D:163:ALA:HB1	1.97	0.45
1:D:535:LYS:HE2	1:D:585:LEU:CD2	2.46	0.45
2:C:446:ILE:HG21	2:C:523:PHE:HZ	1.81	0.45
1:D:401:VAL:HG22	1:D:509:ARG:HG2	1.98	0.45
1:D:1087:ALA:HB1	1:D:1089:PHE:CE1	2.51	0.45
2:C:304:ALA:HA	2:C:307:ILE:HD12	1.97	0.45
2:C:306:ARG:O	2:C:310:GLU:HG2	2.16	0.45
2:C:478:TRP:CE3	2:C:489:GLU:HB3	2.51	0.45
1:D:418:ILE:HA	1:D:422:ASN:ND2	2.21	0.45
1:D:985:ASP:HB3	1:D:987:PRO:HD2	1.98	0.45
1:A:742:ILE:O	1:A:1000:ARG:NH1	2.41	0.45
2:C:32:PHE:CE1	2:C:76:GLN:HG3	2.52	0.45
2:C:263:PRO:HG2	2:C:266:LEU:CD1	2.42	0.45
1:A:474:GLN:NE2	1:A:478:THR:O	2.49	0.45
1:D:21:ARG:HG3	1:D:79:PHE:HB3	1.99	0.45
1:D:367:VAL:O	1:D:371:SER:HB3	2.15	0.45
1:D:503:VAL:HA	1:D:506:GLN:HG3	1.98	0.45
1:D:788:ILE:HD11	1:A:699:LEU:CB	2.44	0.45
1:D:970:PHE:O	1:D:995:ARG:HB3	2.15	0.45
1:D:1051:SER:HG	1:D:1064:HIS:CE1	2.33	0.45
2:C:302:TRP:HA	2:C:306:ARG:NH2	2.31	0.45
1:D:91:TYR:CE2	1:D:93:ALA:HB2	2.51	0.45
1:D:193:VAL:HG23	1:D:223:LEU:HD13	1.99	0.45
1:D:271:GLN:HB3	1:D:272:PRO:HD2	1.99	0.45
1:D:971:GLY:HA2	1:B:755:GLN:OE1	2.16	0.45
1:D:340:GLU:HA	1:D:343:ASN:HB3	1.97	0.45
1:D:398:ASP:N	1:D:512:VAL:O	2.23	0.45
1:D:400:PHE:CD1	1:D:402:ILE:HG23	2.52	0.45
2:C:446:ILE:HG21	2:C:523:PHE:CZ	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:350:VAL:HG12	1:D:452:ARG:O	2.16	0.45
1:D:1072:GLU:N	1:D:1072:GLU:OE1	2.50	0.45
1:D:400:PHE:HD1	1:D:402:ILE:HG23	1.81	0.45
1:D:887:THR:CB	1:D:894:LEU:HD12	2.46	0.45
1:D:1030:SER:O	1:D:1035:GLY:N	2.36	0.45
2:C:32:PHE:CE2	2:C:391:LEU:HD21	2.52	0.45
2:C:257:SER:OG	2:C:258:PRO:HD2	2.17	0.45
2:C:279:TYR:HA	2:C:282:THR:HG1	1.81	0.45
1:D:275:PHE:CD1	1:D:290:ASP:HA	2.52	0.45
1:D:560:LEU:HD12	1:D:563:GLN:CD	2.36	0.45
1:D:759:PHE:O	1:D:763:LEU:HG	2.16	0.45
2:C:533:ALA:HB3	2:C:535:HIS:CD2	2.52	0.45
1:D:336:CYS:SG	1:D:358:ILE:HG23	2.56	0.44
1:D:597:VAL:HG13	1:D:608:VAL:HG13	1.99	0.44
1:D:611:LEU:CD2	1:D:666:ILE:HG23	2.47	0.44
1:D:880:GLY:O	1:D:884:SER:HB2	2.17	0.44
1:D:98:SER:OG	1:D:180:GLU:O	2.13	0.44
1:D:1033:VAL:HG13	1:D:1053:PRO:HD3	1.99	0.44
1:D:1105:THR:HG22	1:D:1111:GLU:O	2.18	0.44
1:B:44:TYR:OH	1:B:60:ASP:OD2	2.35	0.44
1:D:452:ARG:HA	1:D:494:SER:HA	2.00	0.44
1:D:564:GLN:HG2	1:D:565:PHE:CD1	2.52	0.44
2:C:431:ASP:OD1	2:C:434:THR:HG23	2.18	0.44
1:A:568:ASP:OD2	1:A:572:THR:OG1	2.36	0.44
2:C:132:VAL:HG23	2:C:168:TRP:CE3	2.44	0.44
1:D:429:PHE:CZ	1:D:431:GLY:HA3	2.52	0.44
1:D:597:VAL:HG13	1:D:608:VAL:CG1	2.48	0.44
1:D:676:THR:HA	1:D:690:GLN:HG2	1.99	0.44
1:D:974:SER:CB	1:D:983:ARG:HH22	2.31	0.44
1:D:996:LEU:O	1:D:1000:ARG:HG3	2.18	0.44
2:C:521:TYR:CE1	2:C:579:MET:HG2	2.53	0.44
1:D:18:LEU:HB2	1:D:21:ARG:HB2	2.00	0.44
1:D:107:GLY:O	1:D:235:ILE:HG23	2.18	0.44
1:B:39:PHE:CE2	1:B:40:THR:HG23	2.52	0.44
1:D:800:PHE:CE1	1:D:924:ALA:HA	2.52	0.44
1:D:904:TYR:HB2	1:A:1107:ARG:HH22	1.83	0.44
2:C:43:SER:HA	2:C:65:ALA:HB1	2.00	0.44
2:C:503:LEU:HD23	2:C:506:VAL:CG2	2.29	0.44
2:C:581:VAL:HG13	2:C:584:LEU:HD23	2.00	0.44
2:C:261:CYS:HB3	2:C:486:GLY:O	2.18	0.44
1:B:738:CYS:SG	1:B:764:ASN:ND2	2.91	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:348:ALA:HB1	1:D:352:ALA:O	2.18	0.43
1:D:435:ALA:HB2	1:D:510:VAL:HG22	2.00	0.43
1:D:1080:ALA:HB2	1:D:1089:PHE:HE1	1.82	0.43
2:C:144:LEU:CA	2:C:148:LEU:HB2	2.38	0.43
2:C:478:TRP:CE3	2:C:481:LYS:HD2	2.52	0.43
1:D:185:ASN:OD1	1:D:213:VAL:HG22	2.18	0.43
2:C:49:ASN:O	2:C:58:ASN:ND2	2.51	0.43
1:A:39:PHE:CD2	1:A:40:THR:HG23	2.53	0.43
1:D:230:PRO:HG2	1:A:357:ARG:HH12	1.83	0.43
1:D:592:PHE:HZ	1:B:854:LYS:O	2.01	0.43
1:D:714:ILE:HB	1:D:1075:PHE:CE2	2.52	0.43
2:C:556:ASN:O	2:C:560:LEU:HG	2.18	0.43
1:A:269:TYR:HE1	1:A:271:GLN:HE21	0.78	0.43
1:D:102:ARG:NH2	1:D:141:LEU:HD22	2.34	0.43
1:D:324:GLU:O	1:D:539:VAL:HB	2.19	0.43
2:C:292:ASP:HA	2:C:366:MET:SD	2.58	0.43
2:C:435:GLU:OE2	2:C:541:LYS:HE2	2.18	0.43
1:D:314:GLN:HA	1:D:595:VAL:O	2.18	0.43
1:D:589:PRO:HG2	1:B:855:PHE:HB3	2.00	0.43
1:D:800:PHE:CD2	1:D:898:PHE:HE2	2.37	0.43
1:D:977:LEU:O	1:D:981:LEU:HG	2.18	0.43
2:C:267:LEU:HD12	2:C:272:GLY:HA3	1.99	0.43
1:D:102:ARG:CZ	1:D:141:LEU:HB3	2.49	0.43
1:D:201:PHE:HE2	1:D:203:ILE:HB	1.83	0.43
1:D:906:PHE:CE2	1:D:916:LEU:HB2	2.53	0.43
1:D:960:ASN:O	1:D:964:LYS:HG3	2.19	0.43
2:C:234:LYS:N	2:C:235:PRO:HD2	2.33	0.43
2:C:478:TRP:CE2	2:C:489:GLU:HB3	2.54	0.43
1:D:598:ILE:CD1	1:D:666:ILE:HG12	2.49	0.43
1:D:1105:THR:HG22	1:D:1111:GLU:C	2.40	0.43
2:C:32:PHE:HE1	2:C:76:GLN:HG3	1.84	0.43
1:A:122:ASN:O	1:A:123:ALA:HB3	2.18	0.43
1:D:895:GLN:O	1:D:895:GLN:HG3	2.19	0.43
2:C:31:LYS:HE2	2:C:35:GLU:OE2	2.19	0.43
1:D:66:HIS:CE1	1:D:78:ARG:HE	2.36	0.42
1:D:418:ILE:HD13	1:D:422:ASN:ND2	2.34	0.42
1:D:201:PHE:CE2	1:D:203:ILE:HB	2.54	0.42
1:D:570:ALA:HB1	1:B:963:VAL:HG11	2.01	0.42
1:D:714:ILE:HG12	1:D:1075:PHE:HD2	1.84	0.42
1:A:738:CYS:SG	1:A:764:ASN:ND2	2.93	0.42
1:B:457:ARG:NH1	1:B:467:ASP:OD2	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:245:ARG:HG3	2:C:262:LEU:CD2	2.48	0.42
2:C:401:HIS:HB2	2:C:514:ARG:NH2	2.34	0.42
1:A:131:CYS:HB2	1:A:133:PHE:CE1	2.54	0.42
1:B:31:LEU:HB2	1:B:32:PRO:HD2	2.01	0.42
1:B:193:VAL:HG23	1:B:223:LEU:HD13	2.00	0.42
1:D:714:ILE:HG22	1:D:1110:TYR:HB2	2.00	0.42
2:C:269:ASP:OD1	2:C:272:GLY:HA2	2.19	0.42
1:D:802:PHE:CD2	1:D:882:ILE:HD13	2.54	0.42
1:D:453:TYR:N	1:D:493:GLN:O	2.53	0.42
2:C:90:ASN:ND2	2:C:93:VAL:HG23	2.34	0.42
1:D:713:ALA:O	1:B:894:LEU:HD11	2.20	0.42
2:C:488:VAL:CG1	2:C:612:PRO:HD3	2.49	0.42
1:B:318:PHE:N	1:B:593:GLY:O	2.52	0.42
1:D:146:HIS:HE1	1:D:152:TRP:HA	1.85	0.42
1:D:411:ALA:HB3	1:D:414:GLN:NE2	2.34	0.42
2:C:284:PRO:HD3	2:C:440:LEU:CD2	2.49	0.42
2:C:374:HIS:HE1	2:C:402:GLU:HG3	1.84	0.42
1:D:410:ILE:O	1:D:411:ALA:HB2	2.20	0.42
1:D:503:VAL:HA	1:D:506:GLN:CG	2.50	0.42
1:D:91:TYR:HE1	1:D:223:LEU:HD11	1.85	0.42
1:D:1078:ALA:HB2	1:D:1102:TRP:CH2	2.55	0.42
2:C:500:PRO:O	2:C:506:VAL:HB	2.19	0.42
1:B:327:VAL:O	1:B:531:THR:N	2.53	0.42
1:D:129:LYS:CD	1:D:169:GLU:HG2	2.49	0.41
1:D:190:ARG:HD3	1:D:192:PHE:CZ	2.55	0.41
1:D:989:ALA:O	1:D:993:ILE:HG13	2.20	0.41
2:C:144:LEU:HA	2:C:148:LEU:CD1	2.48	0.41
2:C:358:ILE:HD11	2:C:379:ILE:HG13	2.02	0.41
2:C:594:TRP:CE3	2:C:595:LEU:HD23	2.55	0.41
1:A:51:ARG:NH2	1:B:571:ASP:OD1	2.53	0.41
1:D:34:ARG:NH2	1:D:216:LEU:HD22	2.35	0.41
1:D:476:GLY:HA3	2:C:24:GLN:NE2	2.27	0.41
1:D:726:ILE:HD13	1:D:945:LEU:HD23	2.01	0.41
1:D:877:LEU:HD13	1:D:1029:MET:SD	2.60	0.41
2:C:207:TYR:CE1	2:C:397:ASN:HB2	2.54	0.41
2:C:518:ARG:O	2:C:522:GLN:HG2	2.20	0.41
2:C:107:VAL:HB	2:C:193:ALA:HB1	2.03	0.41
2:C:293:VAL:HG22	2:C:366:MET:HG3	2.02	0.41
2:C:432:ASN:O	2:C:436:ILE:HG13	2.20	0.41
1:D:498:GLN:OE1	2:C:41:TYR:HE2	2.03	0.41
1:D:1033:VAL:HG22	1:D:1051:SER:OG	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1095:PHE:CD1	1:D:1104:VAL:HG22	2.54	0.41
2:C:571:GLU:O	2:C:575:GLY:HA2	2.21	0.41
1:D:129:LYS:HE2	1:D:169:GLU:HB3	2.03	0.41
2:C:177:ARG:N	2:C:178:PRO:HD2	2.36	0.41
2:C:582:ARG:N	2:C:583:PRO:HD2	2.35	0.41
1:B:91:TYR:HD1	1:B:193:VAL:HG22	1.85	0.41
1:B:111:ASP:OD1	1:B:112:SER:N	2.45	0.41
1:D:83:VAL:CG2	1:D:239:GLN:HE21	2.34	0.41
1:D:93:ALA:CA	1:D:191:GLU:HG2	2.49	0.41
1:D:206:LYS:HE2	1:D:221:SER:HB3	2.02	0.41
2:C:144:LEU:HB2	2:C:168:TRP:CH2	2.55	0.41
1:A:986:PRO:N	1:A:987:PRO:HD2	2.36	0.41
1:B:1091:ARG:NE	1:B:1120:THR:O	2.54	0.41
1:D:53:ASP:OD2	1:D:195:LYS:NZ	2.54	0.41
1:D:102:ARG:NE	1:D:141:LEU:HB3	2.36	0.41
1:D:269:TYR:HD1	1:D:271:GLN:HE21	1.69	0.41
1:D:404:GLY:HA3	1:D:504:GLY:O	2.20	0.41
2:C:144:LEU:CA	2:C:148:LEU:HD12	2.51	0.41
2:C:169:ARG:HA	2:C:173:GLY:H	1.86	0.41
1:B:47:ASP:OD1	1:B:48:LYS:N	2.45	0.41
1:D:33:THR:HG21	1:D:220:PHE:CD1	2.56	0.41
1:D:1033:VAL:HG11	1:D:1053:PRO:HD3	2.01	0.41
1:A:111:ASP:OD1	1:A:112:SER:N	2.46	0.41
1:D:451:TYR:HD2	1:D:497:PHE:CE2	2.37	0.41
1:D:712:ILE:CG2	1:D:1077:THR:HB	2.44	0.41
1:D:791:THR:CB	1:D:795:LYS:HE2	2.51	0.41
1:D:808:ASP:HB2	1:D:817:PHE:HE1	1.86	0.41
1:D:823:PHE:CD1	1:D:1057:PRO:HD3	2.56	0.41
1:D:1141:LEU:HD23	1:B:1144:GLU:OE1	2.21	0.41
2:C:53:ASN:OD1	2:C:340:GLN:HB3	2.21	0.41
2:C:147:GLY:O	2:C:151:ILE:HG12	2.21	0.41
2:C:161:ARG:NH2	2:C:265:HIS:O	2.53	0.41
2:C:455:MET:HB2	2:C:484:ILE:HG21	2.03	0.41
2:C:477:TRP:NE1	2:C:499:ASP:OD2	2.54	0.41
2:C:555:PHE:HA	2:C:558:LEU:HD12	2.02	0.41
1:D:351:TYR:CE2	1:D:452:ARG:HB2	2.51	0.41
1:D:986:PRO:CD	1:D:987:PRO:HD2	2.50	0.41
1:D:1097:SER:HB2	1:D:1102:TRP:CE3	2.56	0.41
2:C:133:CYS:HA	2:C:141:CYS:HA	2.03	0.41
1:D:434:ILE:O	1:D:510:VAL:HA	2.21	0.40
1:D:986:PRO:HD2	1:D:987:PRO:HD2	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:177:ARG:O	2:C:181:GLU:HG3	2.20	0.40
1:A:91:TYR:HD1	1:A:193:VAL:HG22	1.86	0.40
1:B:925:ASN:O	1:B:929:SER:OG	2.33	0.40
1:D:129:LYS:HG2	1:D:169:GLU:CA	2.34	0.40
1:D:896:ILE:CG2	1:D:897:PRO:HD2	2.51	0.40
2:C:498:CYS:SG	2:C:501:ALA:HB2	2.61	0.40
1:B:986:PRO:N	1:B:987:PRO:HD2	2.37	0.40
1:D:115:GLN:HE22	1:D:167:THR:HG21	1.85	0.40
1:D:643:PHE:CE2	1:D:654:GLU:HA	2.54	0.40
1:D:865:LEU:HD11	1:D:873:TYR:CE2	2.57	0.40
1:D:1139:ASP:HB3	1:D:1142:GLN:HG3	2.03	0.40
2:C:153:ALA:HA	2:C:268:GLY:O	2.21	0.40
2:C:594:TRP:CZ3	2:C:595:LEU:HD23	2.56	0.40
1:B:367:VAL:O	1:B:371:SER:N	2.54	0.40
1:D:299:THR:HA	1:D:315:THR:HG22	2.04	0.40
1:D:535:LYS:HE2	1:D:585:LEU:HD21	2.03	0.40
1:D:722:VAL:HA	1:D:1064:HIS:O	2.22	0.40
2:C:284:PRO:HD2	2:C:437:ASN:OD1	2.22	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	1050/1261 (83%)	1001 (95%)	48 (5%)	1 (0%)	51 84
1	B	1056/1261 (84%)	1008 (96%)	48 (4%)	0	100 100
1	D	1056/1261 (84%)	1005 (95%)	51 (5%)	0	100 100
2	C	595/625 (95%)	587 (99%)	8 (1%)	0	100 100
All	All	3757/4408 (85%)	3601 (96%)	155 (4%)	1 (0%)	100 100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	445	VAL

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	928/1099 (84%)	928 (100%)	0	100	100
1	B	933/1099 (85%)	933 (100%)	0	100	100
1	D	933/1099 (85%)	933 (100%)	0	100	100
2	C	527/552 (96%)	527 (100%)	0	100	100
All	All	3321/3849 (86%)	3321 (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 (24) such sidechains are listed below:

Mol	Chain	Res	Type
1	D	115	GLN
1	D	137	ASN
1	D	207	HIS
1	D	239	GLN
1	D	343	ASN
1	D	394	ASN
1	D	414	GLN
1	D	422	ASN
1	D	853	GLN
1	D	895	GLN
1	D	965	GLN
1	D	1101	HIS
1	D	1106	GLN
2	C	24	GLN
2	C	210	ASN
2	C	380	GLN
2	C	401	HIS
2	C	417	HIS

Continued on next page...

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Mol	Chain	Res	Type
2	C	524	GLN
2	C	526	GLN
1	A	965	GLN
1	B	99	ASN
1	B	895	GLN
1	B	920	GLN

5.3.3 RNA (i)

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)

There are no ligands in this entry.

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.

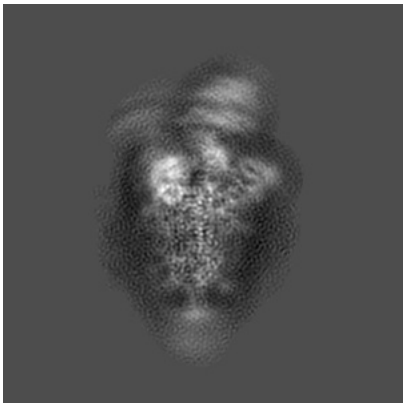
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-32174. These allow visual inspection of the internal detail of the map and identification of artifacts.

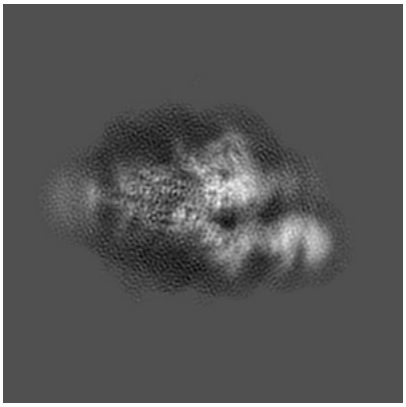
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

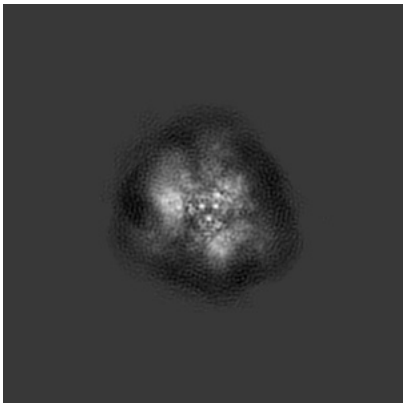
6.1.1 Primary map



X



Y

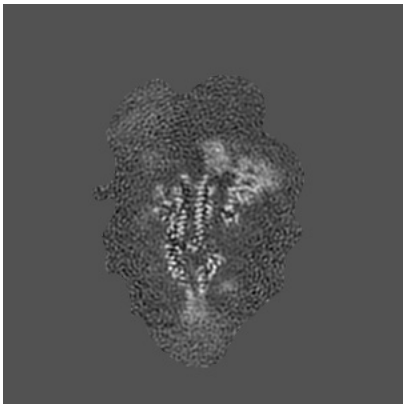


Z

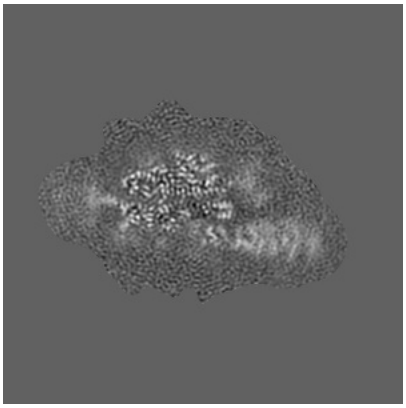
The images above show the map projected in three orthogonal directions.

6.2 Central slices

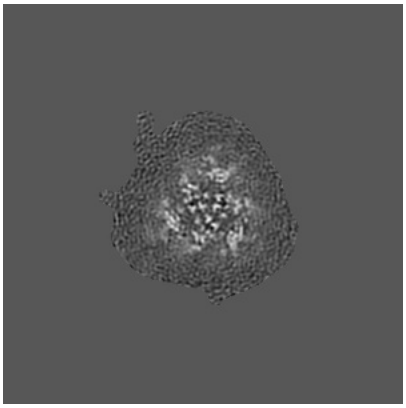
6.2.1 Primary map



X Index: 180



Y Index: 180

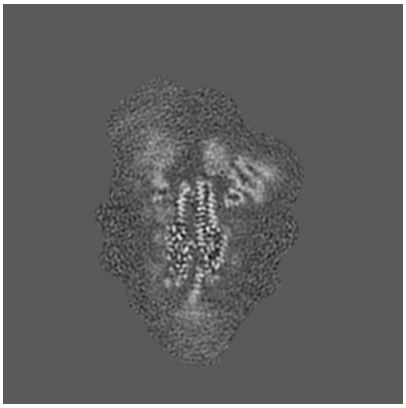


Z Index: 180

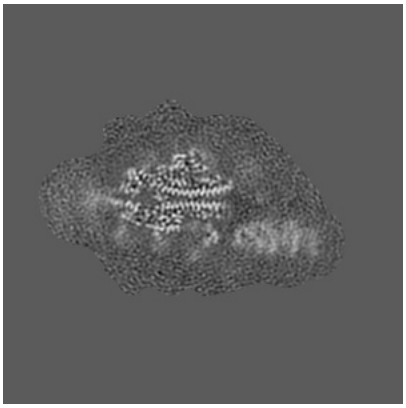
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

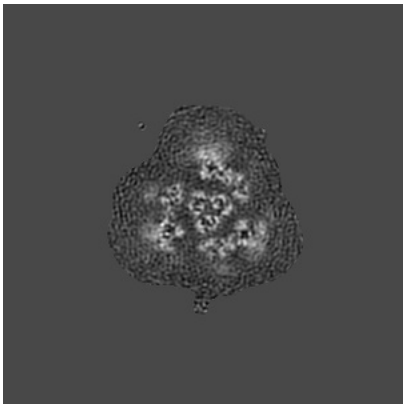
6.3.1 Primary map



X Index: 192



Y Index: 177



Z Index: 193

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

6.4 Orthogonal surface views (i)

6.4.1 Primary map

X

Y

Z

The images above show the 3D surface view of the map at the recommended contour level 0.65. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

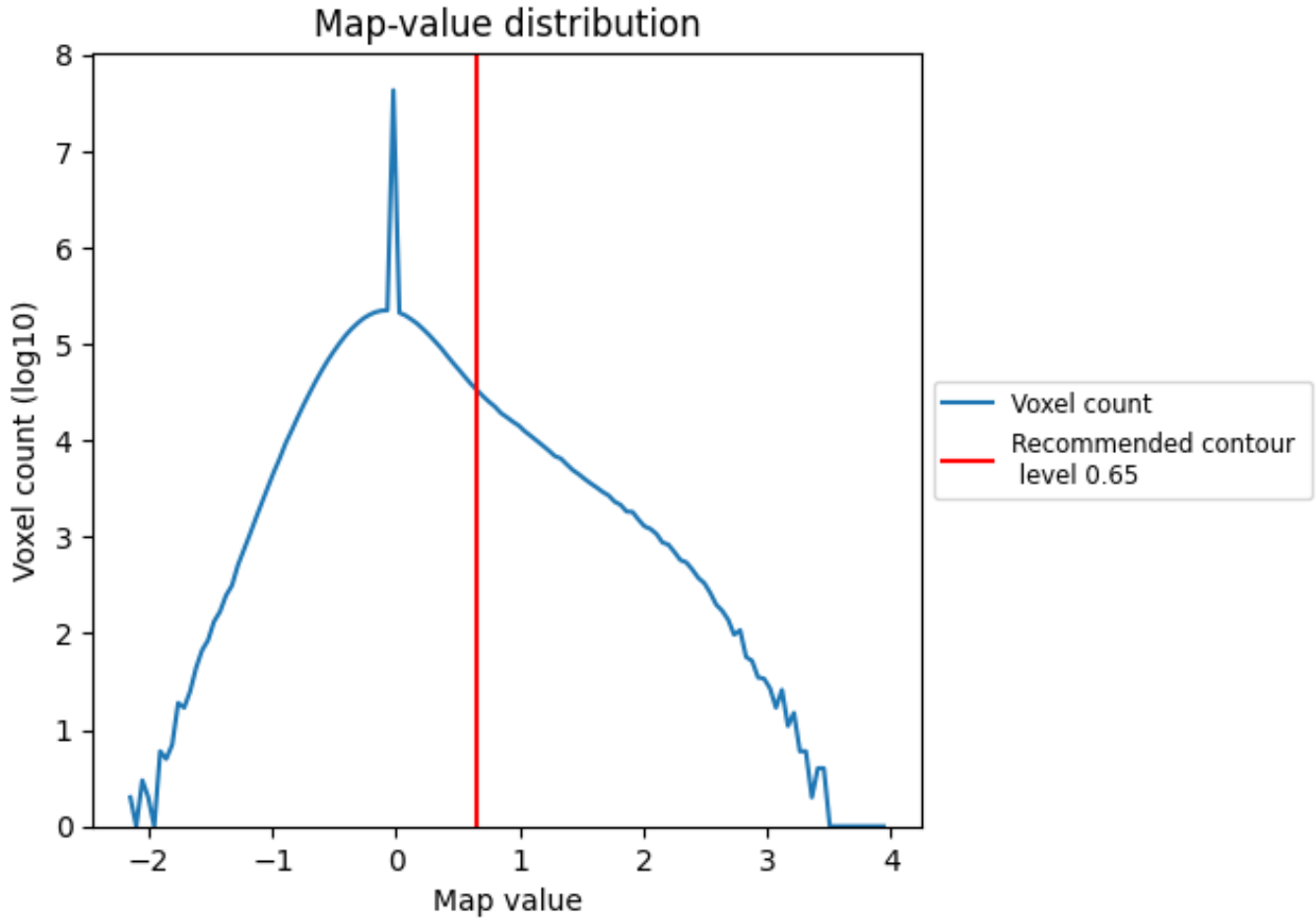
6.5 Mask visualisation (i)

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

7 Map analysis

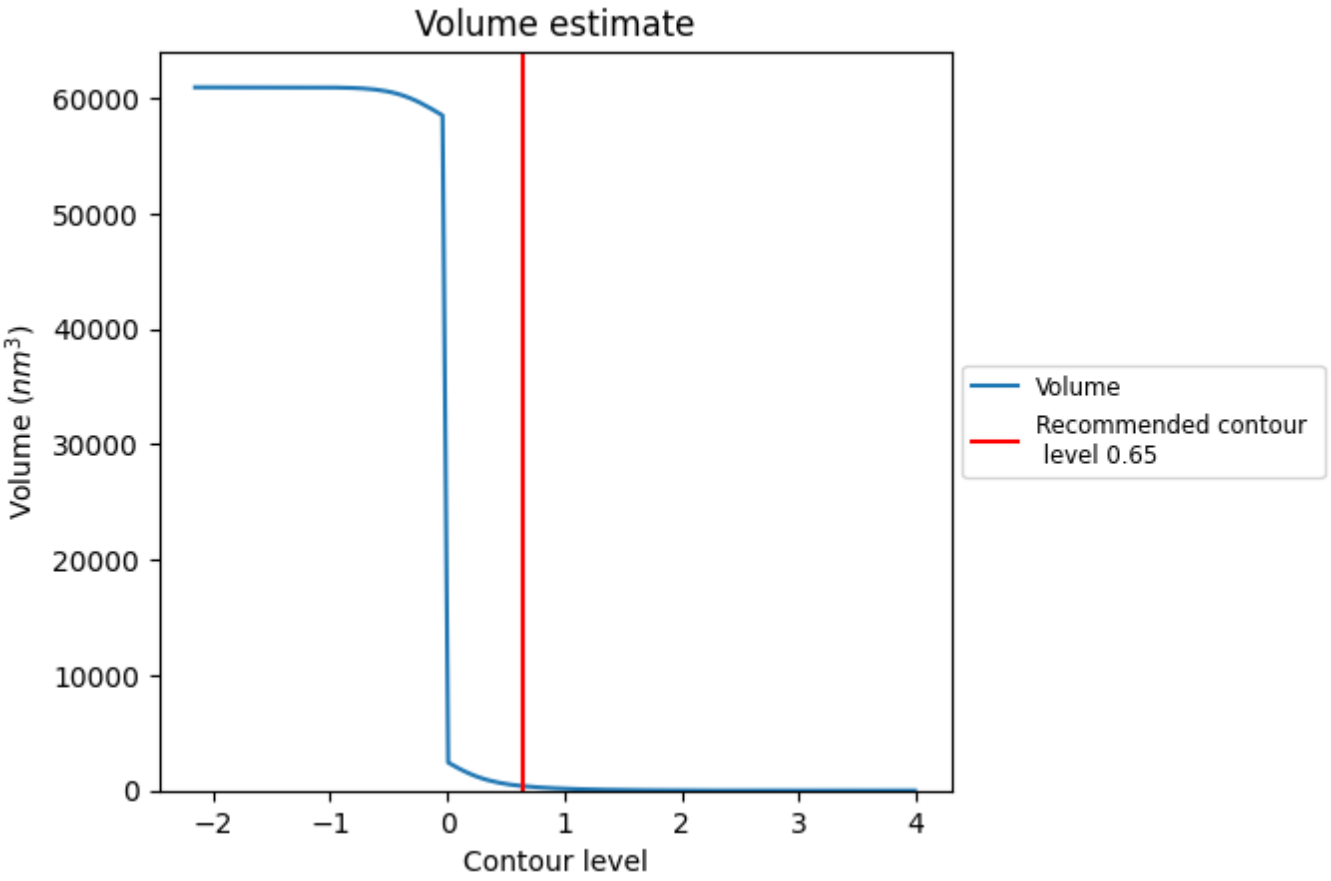
This section contains the results of statistical analysis of the map.

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.

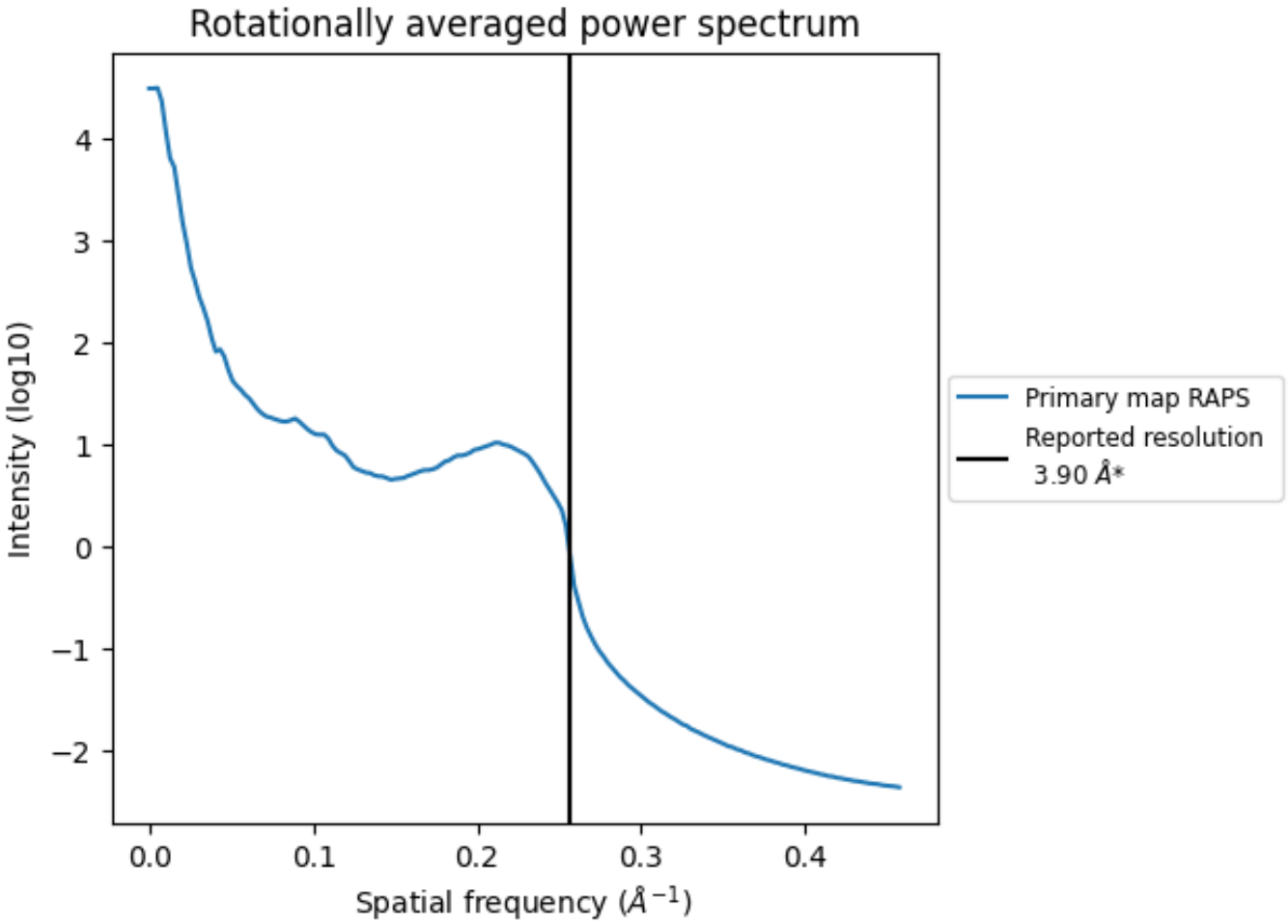
7.2 Volume estimate



The volume at the recommended contour level is 385 nm^3; this corresponds to an approximate mass of 348 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 0.256 Å^{-1}

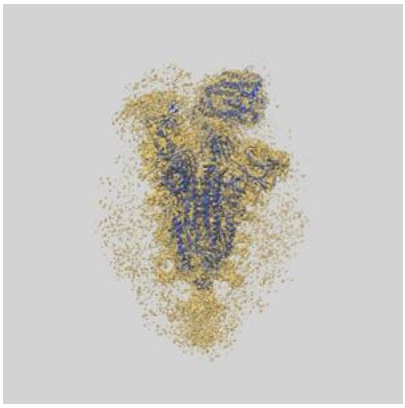
8 Fourier-Shell correlation (i)

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

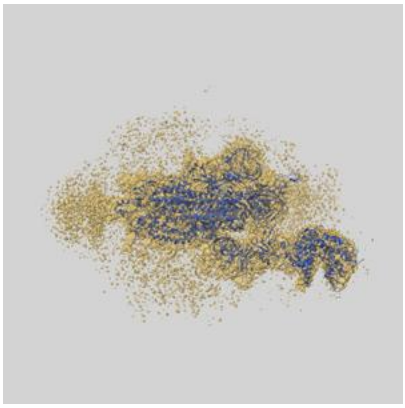
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-32174 and PDB model 7VXB. Per-residue inclusion information can be found in section 3 on page 9.

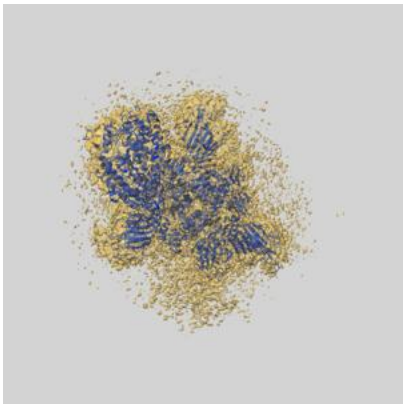
9.1 Map-model overlay



X



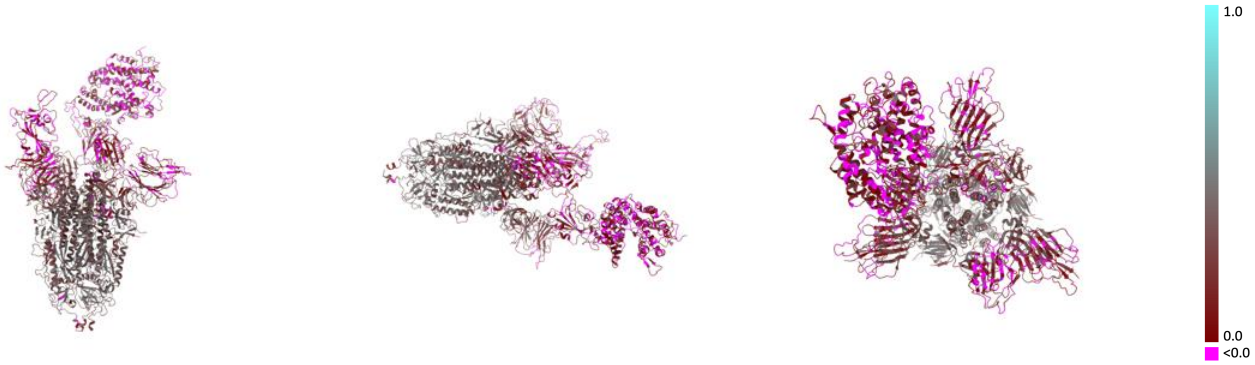
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.65 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.

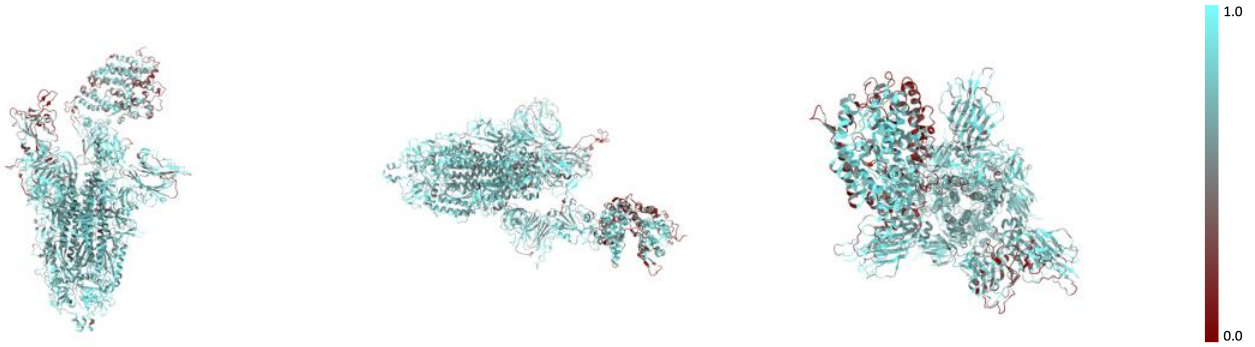
9.2 Q-score mapped to coordinate model (i)



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.

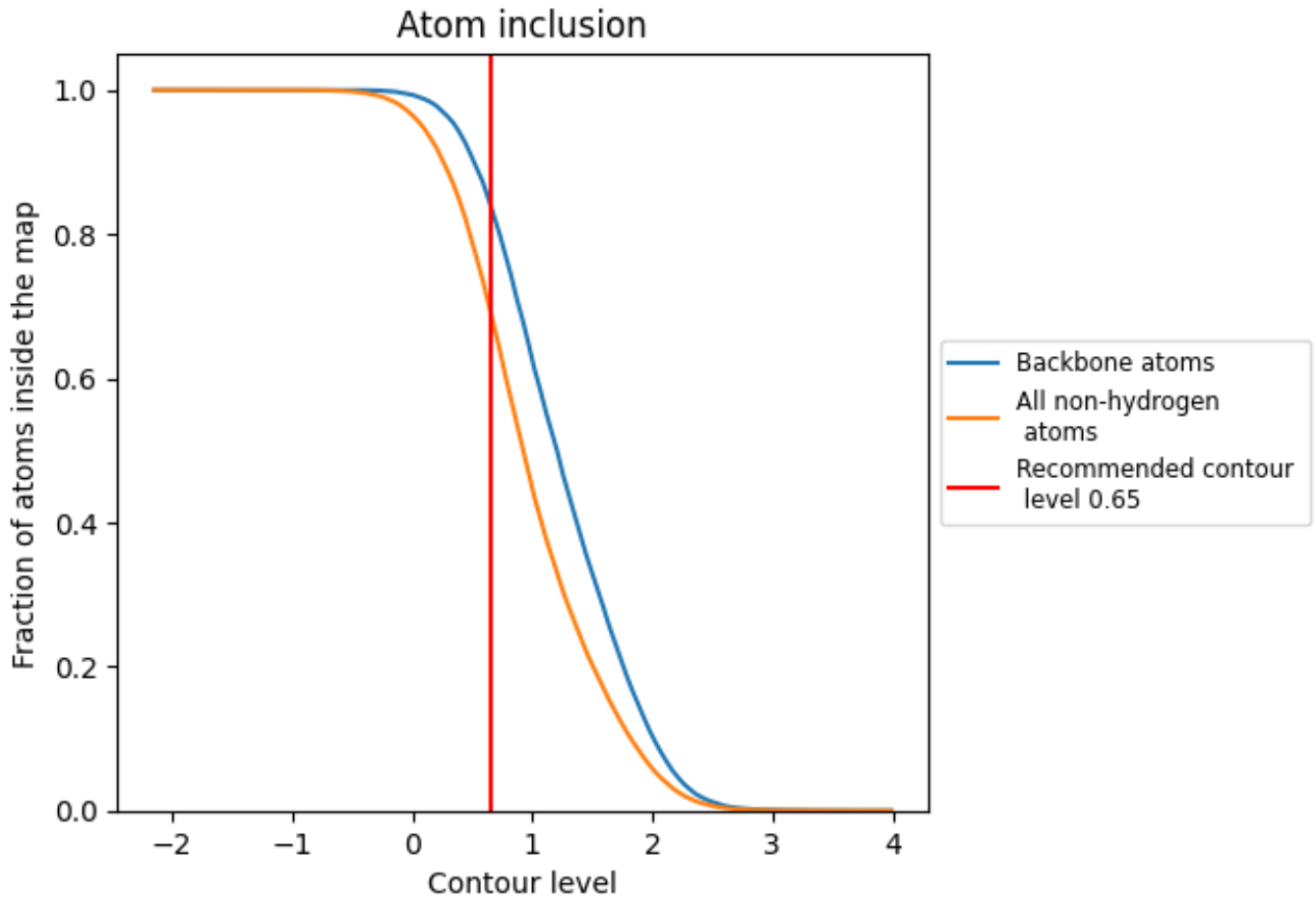
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.65).

9.4 Atom inclusion (i)



At the recommended contour level, 84% of all backbone atoms, 69% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.65) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6931	0.2220
A	0.7282	0.2640
B	0.6828	0.2640
C	0.5965	0.0460
D	0.7248	0.2430