Full wwPDB EM Validation Report (i)

Nov 19, 2022 – 04:12 pm GMT

PDB ID	:	5NIK
EMDB ID	:	EMD-3652
Title	:	Structure of the MacAB-TolC ABC-type tripartite multidrug efflux pump
Authors	:	Fitzpatrick, A.W.P.; Llabres, S.; Neuberger, A.; Blaza, J.N.; Bai, X.-C.; Okada, U.; Murakami, S.; van Veen, H.W.; Zachariae, U.; Scheres, S.H.W.; Luisi, B.F.; Du, D.
Deposited on	:	2017-03-24
Resolution	:	3.30 Å(reported)

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

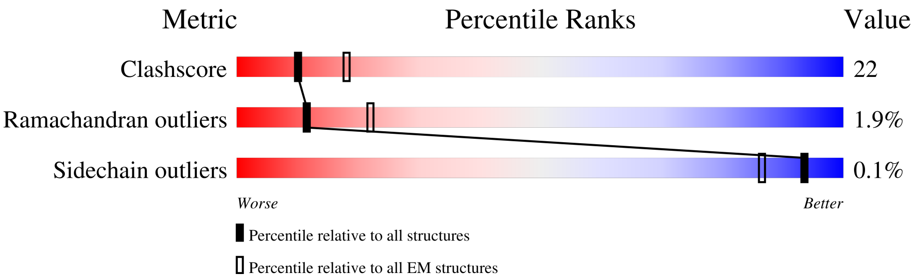
EMDB validation analysis	:	0.0.1.dev43
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 3.30 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	479	21% 52% 36% • 11%
1	B	479	20% 58% 31% • 11%
1	C	479	20% 51% 37% • 11%
2	D	371	29% 66% 24% • 8%
2	E	371	28% 69% 23% 8%
2	F	371	28% 63% 27% • 8%
2	G	371	30% 65% 26% • 8%
2	H	371	27% 66% 25% • 8%

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Mol	Chain	Length	Quality of chain
2	I	371	28% / 63% 27% • 8%
3	J	654	96% / 47% 48% • •
3	K	654	96% / 48% 47% • •

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 35215 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 Outer membrane protein TolC.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	428	Total 3305	C 2038	N 586	O 676	S 5	0	0
1	B	428	Total 3305	C 2038	N 586	O 676	S 5	0	0
1	C	428	Total 3305	C 2038	N 586	O 676	S 5	0	0

There are 27 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	169	LEU	VAL	conflict	UNP P02930
A	472	ASP	-	expression tag	UNP P02930
A	473	TYR	-	expression tag	UNP P02930
A	474	LYS	-	expression tag	UNP P02930
A	475	ASP	-	expression tag	UNP P02930
A	476	ASP	-	expression tag	UNP P02930
A	477	ASP	-	expression tag	UNP P02930
A	478	ASP	-	expression tag	UNP P02930
A	479	LYS	-	expression tag	UNP P02930
B	169	LEU	VAL	conflict	UNP P02930
B	472	ASP	-	expression tag	UNP P02930
B	473	TYR	-	expression tag	UNP P02930
B	474	LYS	-	expression tag	UNP P02930
B	475	ASP	-	expression tag	UNP P02930
B	476	ASP	-	expression tag	UNP P02930
B	477	ASP	-	expression tag	UNP P02930
B	478	ASP	-	expression tag	UNP P02930
B	479	LYS	-	expression tag	UNP P02930
C	169	LEU	VAL	conflict	UNP P02930
C	472	ASP	-	expression tag	UNP P02930
C	473	TYR	-	expression tag	UNP P02930
C	474	LYS	-	expression tag	UNP P02930
C	475	ASP	-	expression tag	UNP P02930
C	476	ASP	-	expression tag	UNP P02930

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Chain	Residue	Modelled	Actual	Comment	Reference
C	477	ASP	-	expression tag	UNP P02930
C	478	ASP	-	expression tag	UNP P02930
C	479	LYS	-	expression tag	UNP P02930

- Molecule 2 is a protein called Macrolide export protein MacA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D	340	Total 2604	C 1622	N 462	O 514	S 6	0	0
2	E	340	Total 2604	C 1622	N 462	O 514	S 6	0	0
2	F	340	Total 2604	C 1622	N 462	O 514	S 6	0	0
2	G	340	Total 2604	C 1622	N 462	O 514	S 6	0	0
2	H	340	Total 2604	C 1622	N 462	O 514	S 6	0	0
2	I	340	Total 2604	C 1622	N 462	O 514	S 6	0	0

There are 18 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	139	GLN	LYS	conflict	UNP P75830
D	148	ASN	THR	conflict	UNP P75830
D	251	GLN	PRO	conflict	UNP P75830
E	139	GLN	LYS	conflict	UNP P75830
E	148	ASN	THR	conflict	UNP P75830
E	251	GLN	PRO	conflict	UNP P75830
F	139	GLN	LYS	conflict	UNP P75830
F	148	ASN	THR	conflict	UNP P75830
F	251	GLN	PRO	conflict	UNP P75830
G	139	GLN	LYS	conflict	UNP P75830
G	148	ASN	THR	conflict	UNP P75830
G	251	GLN	PRO	conflict	UNP P75830
H	139	GLN	LYS	conflict	UNP P75830
H	148	ASN	THR	conflict	UNP P75830
H	251	GLN	PRO	conflict	UNP P75830
I	139	GLN	LYS	conflict	UNP P75830
I	148	ASN	THR	conflict	UNP P75830
I	251	GLN	PRO	conflict	UNP P75830

- Molecule 3 is a protein called Macrolide export ATP-binding/permease protein MacB.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	J	629	Total	C	N	O	S	0	0
			4838	3066	853	898	21		
3	K	629	Total	C	N	O	S	0	0
			4838	3066	853	898	21		

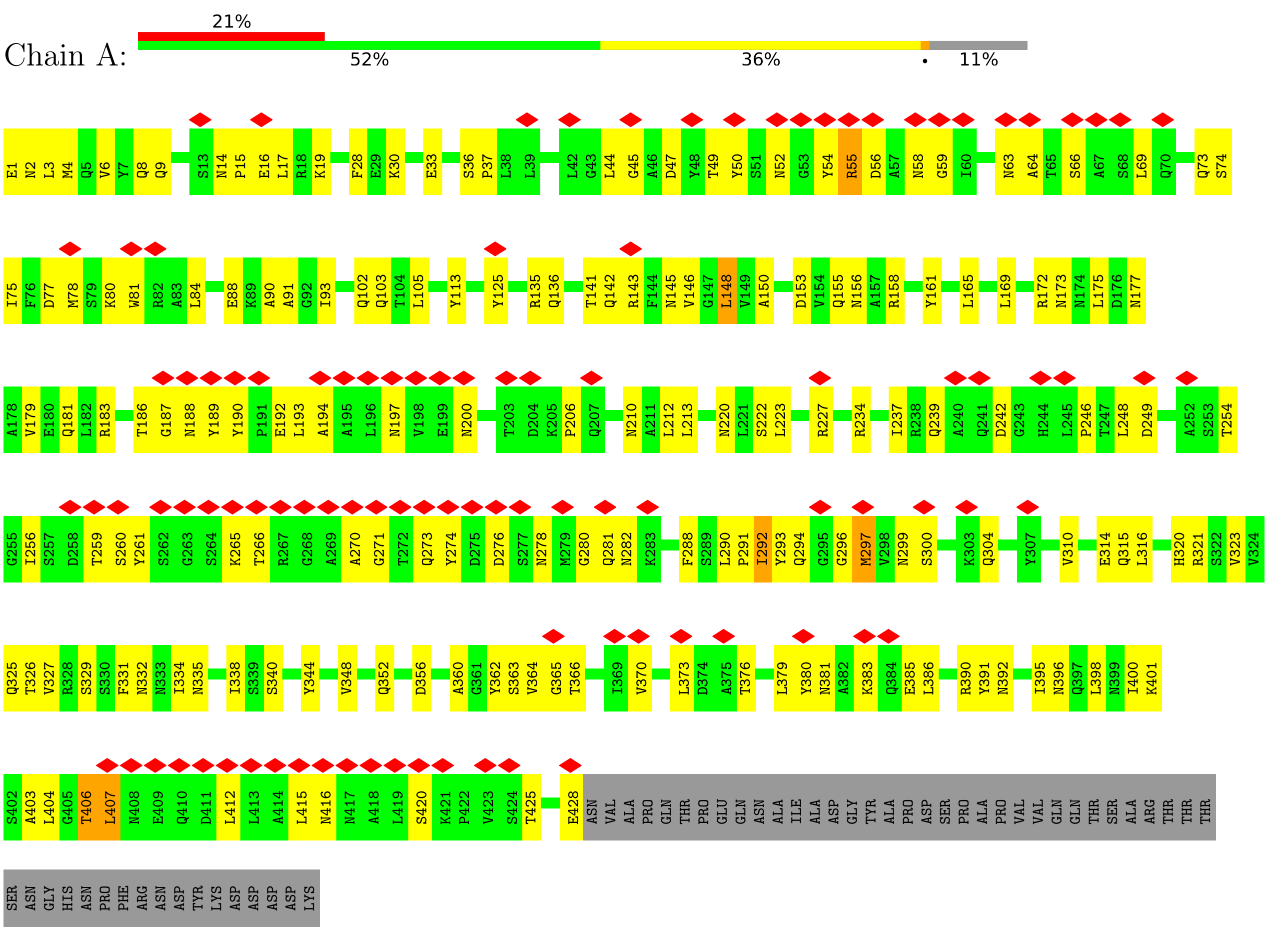
There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
J	649	HIS	-	expression tag	UNP P75831
J	650	HIS	-	expression tag	UNP P75831
J	651	HIS	-	expression tag	UNP P75831
J	652	HIS	-	expression tag	UNP P75831
J	653	HIS	-	expression tag	UNP P75831
J	654	HIS	-	expression tag	UNP P75831
K	649	HIS	-	expression tag	UNP P75831
K	650	HIS	-	expression tag	UNP P75831
K	651	HIS	-	expression tag	UNP P75831
K	652	HIS	-	expression tag	UNP P75831
K	653	HIS	-	expression tag	UNP P75831
K	654	HIS	-	expression tag	UNP P75831

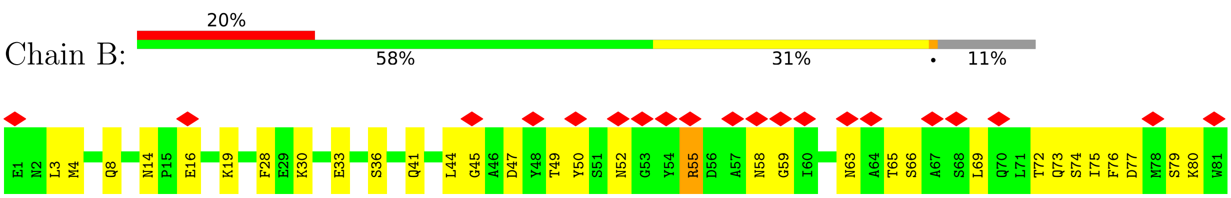
3 Residue-property plots (i)

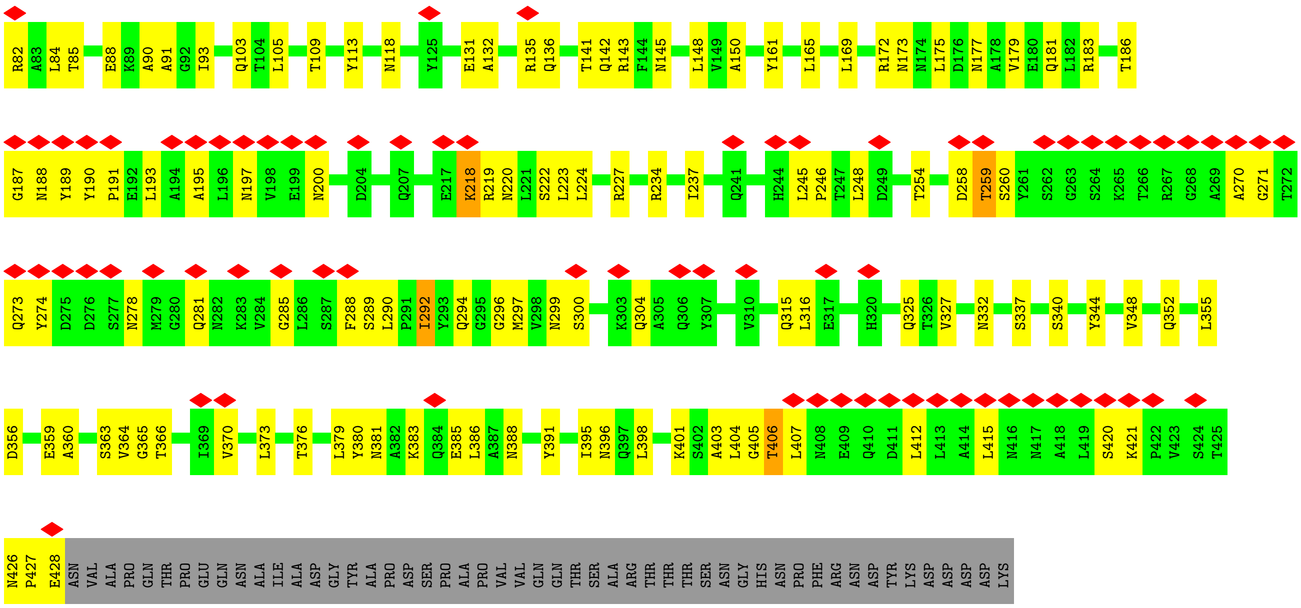
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: Outer membrane protein TolC



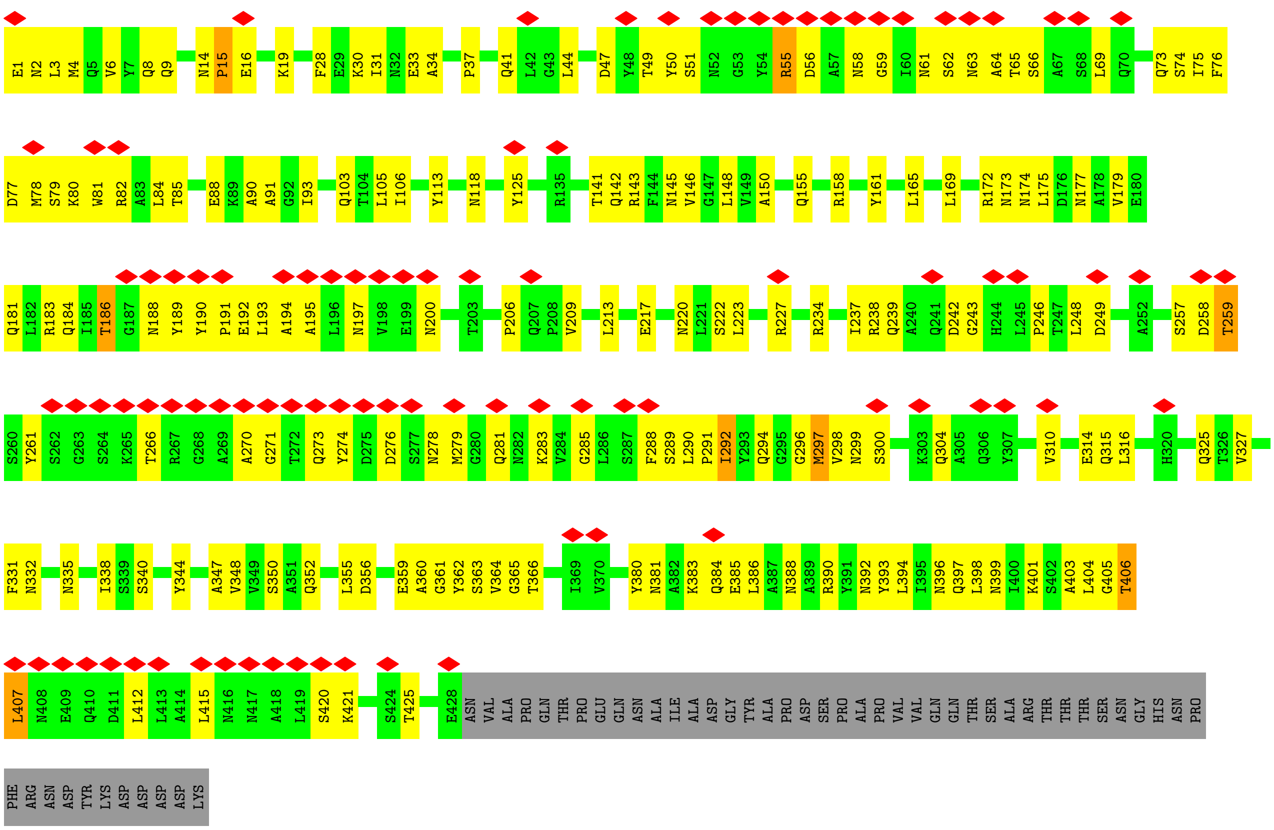
- Molecule 1: Outer membrane protein TolC





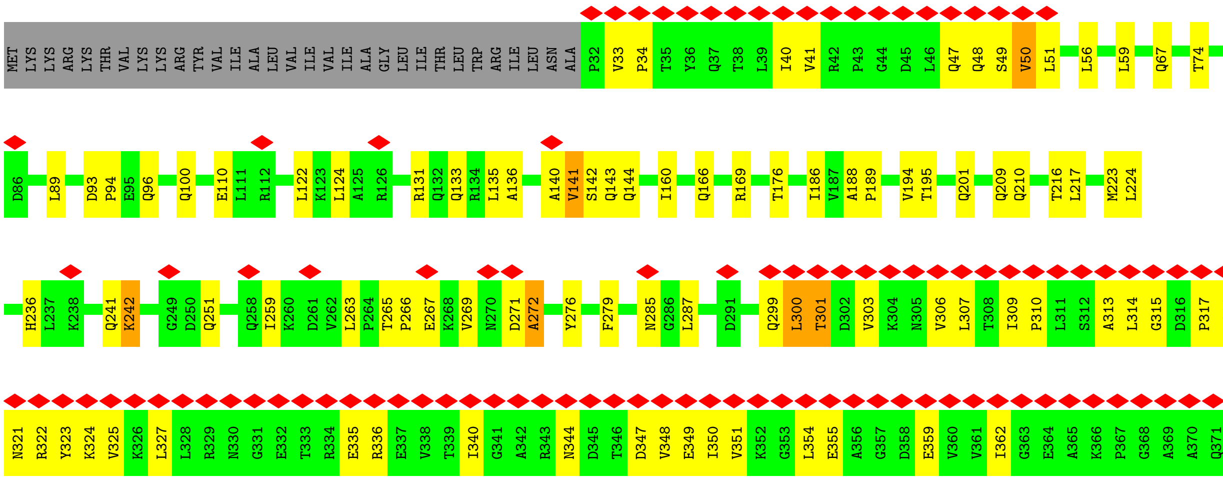
• Molecule 1: Outer membrane protein TolC

Chain C:



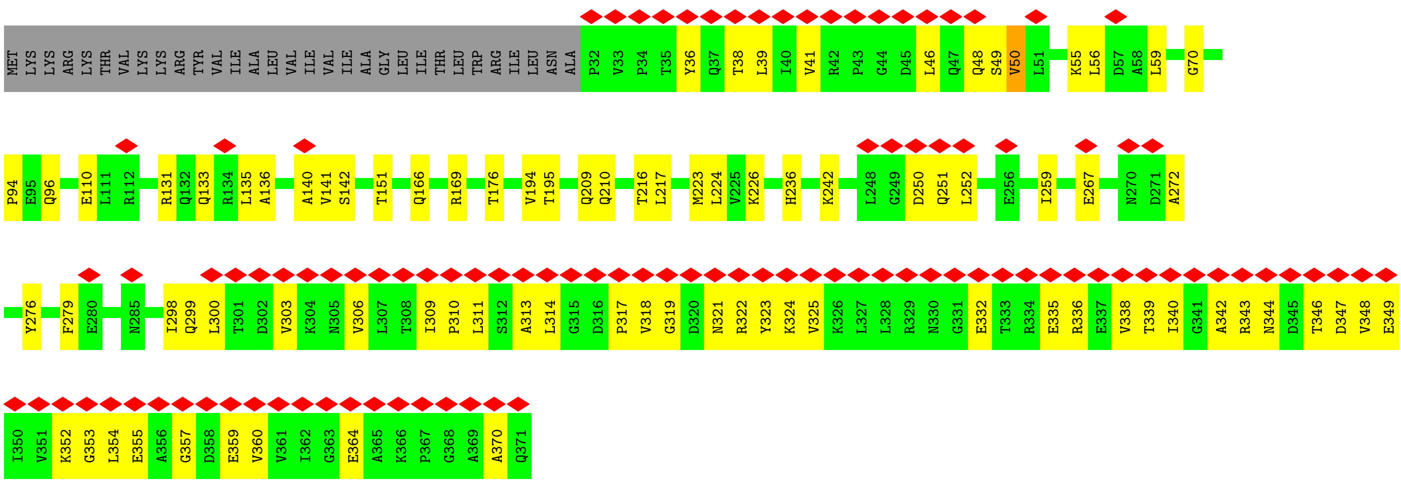
• Molecule 2: Macrolide export protein MacA

Chain D:



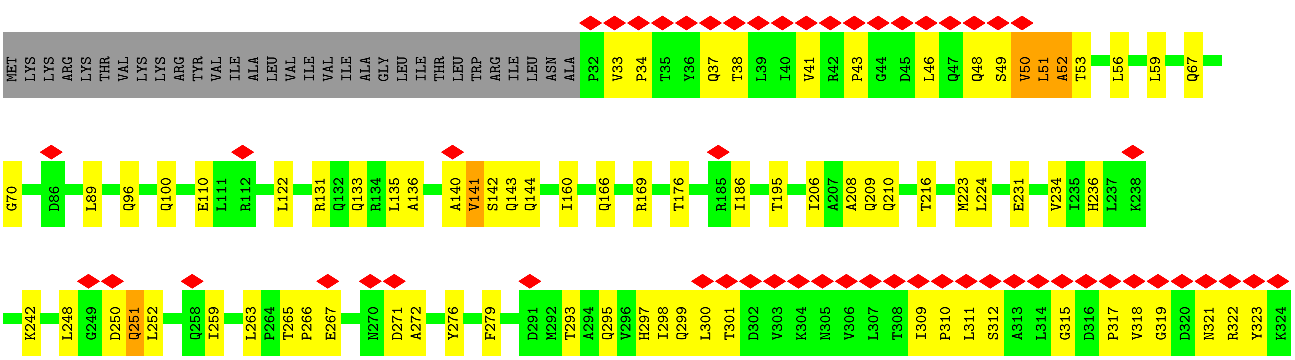
• Molecule 2: Macrolide export protein MacA

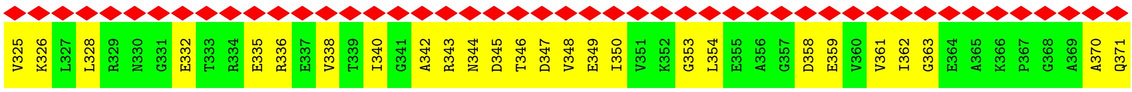
Chain E:



• Molecule 2: Macrolide export protein MacA

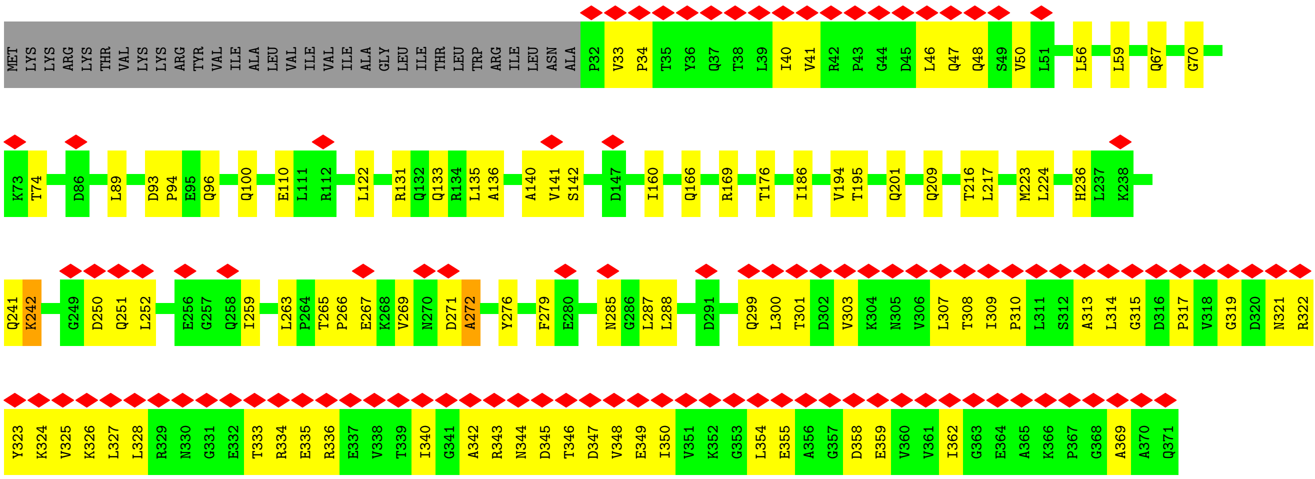
Chain F:





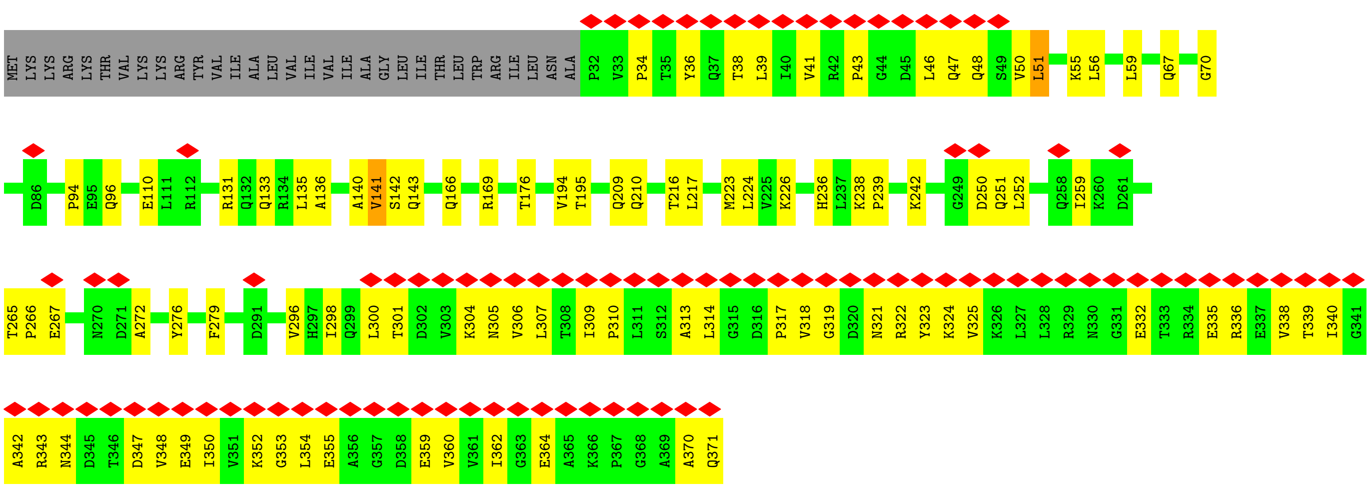
• Molecule 2: Macrolide export protein MacA

Chain G:



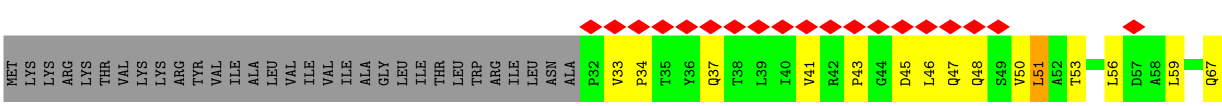
• Molecule 2: Macrolide export protein MacA

Chain H:



• Molecule 2: Macrolide export protein MacA

Chain I:



G70 L89 Q96 Q100 E110 L111 R112 L122 R131 Q132 Q133 R134 L135 A136 A140 V141 S142 D145 I160 Q166 R169 T176 I186 T195 Q209 Q210 T216 M223 L224 E231 V234 I235 H236 K242 L248 G249 D250 Q251

L252 I259 L263 P264 T265 P266 E267 N270 D271 A272 Y276 F279 E280 N285 Q295 V296 H297 I298 Q299 L300 T301 D302 V303 K304 N305 V306 L307 T308 I309 P310 L311 S312 A313 L314 G315 D316 P317 V318 G319 D320 N321 R322 Y323 K324 V325 K326 L327 L328 R329 N330 G331 E332 T333

R334 E335 R336 E337 V338 T339 I340 G341 A342 R343 N344 D345 T346 D347 V348 E349 I350 V351 K352 G353 L354 E355 A356 G357 D358 E359 V360 V361 I362 G363 E364 A365 K366 P367 G368 A369 A370 Q371

- Molecule 3: Macrolide export ATP-binding/permease protein MacB

Chain J: 96% 47% 48% • •

M1 T2 P3 L4 L5 E6 L7 K8 D9 I10 R11 R12 S13 Y14 P15 A16 G17 D18 E19 Q20 V21 E22 V23 L24 K25 G26 I27 S28 L29 D30 I31 Y32 A33 G34 E35 M36 V37 A38 I39 V40 G41 A42 S43 G44 S45 G46 K47 S48 T49 L50 M51 N52 I53 L54 G55 C56 L57 D58 K59 A60

T61 S62 G63 T64 Y65 R66 V67 A68 G69 Q70 D71 V72 A73 T74 L75 D76 A77 D78 A79 L80 A81 Q82 L83 R84 R85 E86 H87 F88 G89 F90 I91 F92 Q93 R94 Y95 H96 L97 L98 S99 H100 L101 T102 A103 E104 Q105 N106 V107 E108 V109 P110 A111 V112 Y113 A114 G115 L116 E117 R118 K119 Q120

R121 L122 L123 R124 A125 Q126 E127 L128 L129 Q130 R131 L132 G133 L134 E135 D136 R137 T138 E139 Y140 Y141 P142 A143 Q144 L145 S146 G147 G148 Q149 Q150 Q151 R152 V153 S154 I155 A156 R157 A158 L159 M160 N161 G162 G163 Q164 V165 I166 L167 A168 D169 E170 P171 T172 G173 A174 L175 D176 S177 H178 S179 G180

E181 E182 V183 M184 A185 I186 L187 H188 Q189 L190 R191 D192 R193 G194 H195 T196 V197 I198 I199 V200 T201 H202 D203 P204 Q205 V206 A207 A208 Q209 A210 E211 R212 V213 I214 E215 I216 R217 D218 G219 E220 I221 V222 R223 N224 P225 P226 ALA ILE GLU LYS VAL ASN VAL THR GLY GLY GLY THR GLU PRO VAL

VAL ASN THR VAL SER G246 W247 R248 Q249 F250 V251 S252 G253 F254 N255 E256 A257 L258 T259 M260 A261 W262 R263 A264 L265 A266 A267 N268 K269 M270 R271 T272 L273 L274 T275 M276 L277 G278 I279 I280 I281 G282 I283 A284 S285 V286 V287 S288 I289 V290 V291 V292 G293 D294 A295 A296 K297 Q298 M299 V300

L301 A302 D303 I304 R305 S306 I307 G308 T309 N310 T311 I312 D313 V314 Y315 P316 G317 K318 D319 F320 G321 D322 D323 D324 P325 Q326 Y327 Q328 Q329 A330 L331 K332 Y333 D334 D335 L336 I337 A338 I339 Q340 K341 Q342 P343 W344 V345 A346 S347 A348 T349 P350 A351 V352 S353 Q354 N355 L356 R357 L358 R359 Y360

N361 N362 V363 D364 V365 A366 A367 S368 A369 N370 G371 V372 S373 G374 D375 Y376 F377 N378 V379 Y380 G381 M382 T383 F384 S385 E386 G387 N388 T389 F390 N391 Q392 E393 Q394 L395 N396 G397 R398 A399 Q400 V401 V402 V403 L404 D405 S406 N407 T408 R409 R410 Q411 L412 F413 P414 H415 K416 A417 D418 V419 V420

G421 E422 V423 I424 L425 V426 G427 N428 M429 P430 A431 R432 V433 I434 G435 V436 A437 E438 E439 K440 Q441 S442 M443 F444 G445 S446 S447 K448 V449 L450 R451 V452 W453 L454 P455 Y456 S457 T458 M459 S460 G461 R462 V463 M464 G465 Q466 S467 W468 L469 N470 S471 I472 T473 V474 R475 V476 K477 E478 G479 F480

D481 S482 A483 E484 A485 E486 Q487 Q488 L489 T490 R491 L492 L493 S494 L495 R496 H497 G498 K499 K500 D501 F502 F503 T504 W505 N506 M507 D508 G509 V510 L511 K512 T513 V514 E515 K516 T517 T518 R519 T520 L521 Q522 L523 F524 L525 T526 L527 V528 A529 V530 I531 S532 L533 V534 V535 G536 G537 I538 G539 V540

M541 N542 I543 M544 L545 V546 S547 V548 T549 E550 R551 T552 R553 E554 I555 G556 I557 R558 M559 A560 V561 G562 A563 R564 A565 S566 D567 V568 L569 Q570 Q571 F572 L573 I574 E575 A576 V577 L578 V579 C580 L581 V582 G583 G584 A585 L586 G587 I588 T589 L590 S591 L592 L593 I594 A595 F596 T597 L598 Q599 L600

F601 L602 P603 G604 W605 E606 I607 G608 F609 S610 P611 L612 A613 L614 L615 L616 A617 F618 L619 C620 S621 T622 V623 T624 G625 I626 L627 F628 G629 W630 L631 P632 A633 R634 N635 A636 A637 R638 L639 D640 P641 V642 D643 A644 L645 A646 R647 E648 HIS HIS HIS HIS HIS HIS

- Molecule 3: Macrolide export ATP-binding/permease protein MacB

Chain K: 96% 48% 47%

M1 T2 P3 L4 L5 E6 L7 K8 D9 I10 R11 R12 S13 Y14 P15 A16 G17 D18 E19 Q20 V21 E22 V23 L24 K25 G26 I27 S28 L29 D30 I31 Y32 A33 G34 E35 M36 V37 A38 I39 V40 G41 A42 S43 G44 S45 G46 K47 S48 T49 L50 M51 N52 I53 L54 G55 C56 L57 D58 K59 A60

T61 S62 G63 T64 Y65 R66 V67 A68 G69 Q70 D71 V72 A73 T74 L75 D76 A77 D78 A79 L80 A81 Q82 L83 R84 R85 E86 H87 F88 G89 F90 I91 F92 Q93 R94 Y95 H96 L97 L98 S99 H100 L101 T102 A103 E104 Q105 N106 V107 E108 V109 P110 A111 V112 Y113 A114 G115 L116 E117 R118 K119 Q120

R121 L122 L123 R124 A125 Q126 E127 L128 L129 Q130 R131 L132 G133 L134 E135 D136 R137 T138 E139 Y140 Y141 P142 A143 Q144 L145 S146 G147 G148 Q149 Q150 Q151 R152 V153 S154 I155 A156 R157 A158 L159 M160 N161 G162 G163 Q164 V165 I166 L167 A168 D169 E170 P171 T172 G173 A174 L175 D176 S177 H178 S179 G180

E181 E182 V183 M184 A185 I186 L187 H188 Q189 L190 R191 D192 R193 G194 H195 T196 V197 I198 I199 V200 T201 H202 D203 P204 Q205 V206 A207 A208 Q209 A210 E211 R212 V213 I214 E215 I216 R217 D218 G219 E220 I221 V222 R223 N224 P225 P226 ALA ILE GLU LYS VAL ASN VAL THR GLY GLY THR GLU PRO VAL

VAL ASN THR VAL SER G246 W247 R248 Q249 F250 V251 S252 G253 F254 N255 E256 A257 L258 T259 M260 A261 W262 R263 A264 L265 A266 A267 N268 K269 M270 R271 T272 L273 L274 T275 M276 L277 G278 I279 I280 I281 G282 I283 A284 S285 V286 V287 S288 I289 V290 V291 V292 G293 D294 A295 A296 K297 Q298 M299 V300

L301 A302 D303 I304 R305 S306 I307 G308 T309 N310 T311 I312 D313 V314 Y315 P316 G317 K318 D319 F320 G321 D322 D323 D324 P325 Q326 Y327 Q328 Q329 A330 L331 K332 Y333 D334 D335 L336 I337 A338 I339 Q340 K341 Q342 P343 W344 V345 A346 S347 A348 T349 P350 A351 V352 S353 Q354 N355 L356 R357 L358 R359 Y360

N361 N362 V363 D364 V365 A366 A367 S368 A369 N370 G371 V372 S373 G374 D375 Y376 F377 N378 V379 Y380 G381 M382 T383 F384 S385 E386 G387 N388 T389 F390 N391 Q392 E393 Q394 L395 N396 G397 R398 A399 Q400 V401 V402 V403 L404 D405 S406 N407 T408 R409 R410 Q411 L412 F413 P414 H415 K416 A417 D418 V419 V420

G421 E422 V423 I424 L425 V426 G427 N428 M429 P430 A431 R432 V433 I434 G435 V436 A437 E438 E439 K440 Q441 S442 M443 F444 G445 S446 S447 K448 V449 L450 R451 V452 W453 L454 P455 Y456 S457 T458 M459 S460 G461 R462 V463 M464 G465 Q466 S467 W468 L469 N470 S471 I472 T473 V474 R475 V476 K477 E478 G479 F480

D481 S482 A483 E484 A485 E486 Q487 Q488 L489 T490 R491 L492 L493 S494 L495 R496 H497 G498 K499 K500 D501 F502 F503 T504 W505 N506 M507 D508 G509 V510 L511 K512 T513 V514 E515 K516 T517 T518 R519 T520 L521 Q522 L523 F524 L525 T526 L527 V528 A529 V530 I531 S532 L533 V534 V535 G536 G537 I538 G539 V540

M541 N542 I543 M544 L545 V546 S547 V548 T549 E550 R551 T552 R553 E554 I555 G556 I557 R558 M559 A560 V561 G562 A563 R564 A565 S566 D567 V568 L569 Q570 Q571 F572 L573 I574 E575 A576 V577 L578 V579 C580 L581 V582 G583 G584 A585 L586 G587 I588 T589 L590 S591 L592 L593 I594 A595 F596 T597 L598 Q599 L600

F601 L602 P603 G604 W605 E606 I607 G608 F609 S610 P611 L612 A613 L614 L615 L616 A617 F618 L619 C620 S621 T622 V623 T624 G625 I626 L627 F628 G629 W630 L631 P632 A633 R634 N635 A636 A637 R638 L639 D640 P641 V642 D643 A644 L645 A646 R647 E648 HIS HIS HIS HIS HIS HIS

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	27614	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	45	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.345	Depositor
Minimum map value	-0.136	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.07	Depositor
Map size (Å)	408.0, 408.0, 408.0	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.36, 1.36, 1.36	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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	0.39	0/3346	0.55	0/4545
1	B	0.40	0/3346	0.54	0/4545
1	C	0.39	0/3346	0.54	0/4545
2	D	0.24	0/2631	0.45	0/3568
2	E	0.24	0/2630	0.47	0/3565
2	F	0.25	0/2630	0.46	0/3565
2	G	0.24	0/2631	0.45	0/3568
2	H	0.24	0/2631	0.46	0/3568
2	I	0.24	0/2631	0.46	0/3568
3	J	0.29	0/4914	0.49	0/6661
3	K	0.29	0/4914	0.48	0/6661
All	All	0.30	0/35650	0.49	0/48359

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (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	3305	0	3256	164	0
1	B	3305	0	3256	147	0
1	C	3305	0	3256	163	0
2	D	2604	0	2678	133	0
2	E	2604	0	2678	90	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	F	2604	0	2677	138	0
2	G	2604	0	2679	132	0
2	H	2604	0	2678	87	0
2	I	2604	0	2679	124	0
3	J	4838	0	4930	304	0
3	K	4838	0	4930	313	0
All	All	35215	0	35697	1532	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 22.

All (1532) 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:D:271:ASP:CB	3:K:357:ARG:HD2	1.13	1.61
2:D:271:ASP:HB2	3:K:357:ARG:CD	1.19	1.60
2:G:50:VAL:CG2	2:G:300:LEU:HD11	1.38	1.51
1:A:148:LEU:O	2:F:142:SER:CB	1.71	1.38
2:E:299:GLN:O	2:E:300:LEU:CA	1.76	1.33
2:H:48:GLN:HG2	2:H:300:LEU:CD2	1.59	1.33
2:F:53:THR:OG1	3:J:430:PRO:HD3	1.26	1.31
2:I:51:LEU:HD23	2:I:297:HIS:CD2	1.65	1.30
2:G:50:VAL:HG23	2:G:300:LEU:CG	1.62	1.29
2:I:47:GLN:HB2	2:I:299:GLN:NE2	1.46	1.28
2:F:48:GLN:NE2	2:F:343:ARG:O	1.67	1.27
2:I:53:THR:OG1	3:K:430:PRO:HD3	1.13	1.26
2:D:271:ASP:OD2	3:K:357:ARG:CB	1.84	1.25
2:F:251:GLN:HE22	3:J:361:ASN:ND2	1.34	1.23
2:G:50:VAL:HG23	2:G:300:LEU:CD1	1.68	1.23
1:C:143:ARG:HA	2:I:135:LEU:CD1	1.69	1.22
2:G:50:VAL:CG2	2:G:300:LEU:CD1	2.17	1.22
2:H:47:GLN:HB3	2:H:301:THR:O	1.38	1.21
2:D:271:ASP:OD2	3:K:357:ARG:CG	1.87	1.21
2:D:271:ASP:OD2	3:K:357:ARG:HB2	1.36	1.21
2:I:47:GLN:CB	2:I:299:GLN:HE22	1.54	1.19
2:D:48:GLN:O	2:D:300:LEU:CB	1.94	1.16
2:F:271:ASP:OD2	3:J:466:GLN:N	1.80	1.15
2:D:272:ALA:N	3:K:359:ARG:HH21	1.44	1.14
2:I:251:GLN:HE22	3:K:361:ASN:ND2	1.46	1.12
2:H:50:VAL:HB	2:H:298:ILE:HB	1.25	1.10
1:A:148:LEU:HD22	2:F:144:GLN:HE21	1.12	1.09

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:251:GLN:OE1	3:J:361:ASN:CG	1.90	1.09
1:C:143:ARG:HA	2:I:135:LEU:HD12	1.24	1.09
2:F:48:GLN:O	2:F:300:LEU:N	1.83	1.09
2:E:50:VAL:HB	2:E:298:ILE:HB	1.27	1.09
2:H:47:GLN:CB	2:H:301:THR:O	2.00	1.08
1:A:148:LEU:CD2	2:F:144:GLN:HE21	1.67	1.07
2:E:299:GLN:O	2:E:300:LEU:HA	1.49	1.07
2:D:50:VAL:HG12	2:D:51:LEU:N	1.62	1.06
2:I:271:ASP:OD2	3:K:466:GLN:N	1.87	1.06
2:E:299:GLN:O	2:E:300:LEU:N	1.89	1.06
2:D:50:VAL:CG1	2:D:51:LEU:H	1.64	1.05
2:E:50:VAL:CB	2:E:298:ILE:HB	1.85	1.05
2:H:48:GLN:HG2	2:H:300:LEU:HD23	1.09	1.04
2:G:50:VAL:HG22	2:G:300:LEU:HD11	1.38	1.04
2:I:53:THR:OG1	3:K:430:PRO:CD	2.07	1.02
2:D:48:GLN:O	2:D:300:LEU:HB3	1.60	1.00
2:I:251:GLN:OE1	3:K:361:ASN:CG	2.00	1.00
2:D:271:ASP:CG	3:K:357:ARG:HD2	1.80	1.00
2:H:48:GLN:CG	2:H:300:LEU:CD2	2.37	1.00
2:I:51:LEU:CD2	2:I:297:HIS:CD2	2.43	1.00
2:H:48:GLN:O	2:H:300:LEU:HB2	1.62	0.99
2:F:48:GLN:NE2	2:F:344:ASN:OD1	1.95	0.99
2:F:50:VAL:HG12	2:F:51:LEU:H	1.25	0.99
1:A:148:LEU:O	2:F:142:SER:HB2	0.81	0.99
2:D:271:ASP:CG	3:K:357:ARG:HB2	1.82	0.98
2:F:251:GLN:OE1	3:J:361:ASN:CB	2.10	0.98
1:A:148:LEU:CD2	2:F:144:GLN:NE2	2.25	0.98
2:G:50:VAL:HG23	2:G:300:LEU:HG	1.43	0.97
1:C:143:ARG:CA	2:I:135:LEU:HD11	1.93	0.97
2:F:271:ASP:CG	3:J:466:GLN:N	2.17	0.97
2:I:251:GLN:OE1	3:K:361:ASN:OD1	1.82	0.97
2:F:53:THR:OG1	3:J:430:PRO:CD	2.14	0.96
2:G:48:GLN:NE2	2:G:343:ARG:O	1.96	0.96
2:D:50:VAL:HG12	2:D:51:LEU:H	0.81	0.95
2:D:271:ASP:OD2	3:K:357:ARG:HG3	1.61	0.95
2:I:51:LEU:HD23	2:I:297:HIS:HD2	1.29	0.94
2:F:251:GLN:NE2	3:J:361:ASN:ND2	2.15	0.94
2:G:50:VAL:HG21	2:G:300:LEU:HD11	1.48	0.94
2:H:50:VAL:O	2:H:298:ILE:HD12	1.66	0.94
2:D:48:GLN:O	2:D:300:LEU:HB2	1.63	0.94
2:F:271:ASP:CG	3:J:465:GLY:C	2.26	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:271:ASP:HB2	3:K:357:ARG:HD3	1.49	0.93
2:I:271:ASP:CG	3:K:466:GLN:N	2.22	0.92
1:C:143:ARG:CA	2:I:135:LEU:CD1	2.46	0.92
1:B:143:ARG:HB2	2:G:135:LEU:HD11	1.52	0.91
2:E:50:VAL:CG1	2:E:298:ILE:HB	1.99	0.91
2:I:271:ASP:CG	3:K:465:GLY:C	2.27	0.91
1:C:143:ARG:HA	2:I:135:LEU:HD11	1.51	0.90
2:F:48:GLN:HE21	2:F:344:ASN:HA	1.36	0.90
2:D:272:ALA:H	3:K:359:ARG:HH21	1.16	0.90
1:C:183:ARG:HH21	1:C:189:TYR:HB2	1.37	0.90
2:H:48:GLN:CG	2:H:300:LEU:HD23	2.02	0.88
2:D:272:ALA:N	3:K:359:ARG:NH2	2.20	0.88
2:I:251:GLN:NE2	3:K:361:ASN:ND2	2.22	0.88
2:D:241:GLN:NE2	2:D:300:LEU:O	2.07	0.88
2:E:50:VAL:HB	2:E:298:ILE:CB	2.03	0.88
1:A:146:VAL:HG22	2:E:131:ARG:HG3	1.53	0.87
2:F:271:ASP:CG	3:J:465:GLY:CA	2.33	0.87
3:K:400:GLN:HB3	3:K:431:ALA:HA	1.56	0.87
2:G:48:GLN:HG3	2:G:300:LEU:HD12	1.53	0.87
3:J:391:ASN:H	3:J:394:GLN:HE21	1.19	0.86
1:B:148:LEU:HD23	2:G:131:ARG:HD2	1.55	0.86
1:C:143:ARG:CB	2:I:135:LEU:HD11	2.04	0.86
1:A:148:LEU:C	2:F:142:SER:HB2	1.94	0.85
3:K:573:LEU:HD11	3:K:626:ILE:HA	1.58	0.85
1:B:183:ARG:HH21	1:B:189:TYR:HB2	1.41	0.85
2:E:299:GLN:O	2:E:300:LEU:C	2.13	0.85
2:D:271:ASP:CB	3:K:357:ARG:CD	2.00	0.84
2:G:271:ASP:O	3:J:357:ARG:NH1	2.11	0.84
2:F:299:GLN:O	2:F:300:LEU:N	2.10	0.84
2:F:51:LEU:HD23	2:F:297:HIS:CD2	2.14	0.83
1:B:148:LEU:HD21	2:G:131:ARG:HG2	1.60	0.83
1:B:143:ARG:HA	2:G:135:LEU:HD12	1.59	0.83
1:B:364:VAL:HG21	2:F:131:ARG:HG3	1.62	0.82
3:J:573:LEU:HD11	3:J:626:ILE:HA	1.58	0.82
3:K:391:ASN:H	3:K:394:GLN:HE21	1.23	0.82
2:E:50:VAL:HG23	2:E:298:ILE:O	1.80	0.82
1:A:150:ALA:HB2	2:F:141:VAL:HA	1.61	0.81
3:K:477:LYS:HG2	3:K:478:GLU:H	1.45	0.81
2:D:269:VAL:O	3:K:357:ARG:NH1	2.14	0.81
3:K:312:ILE:HB	3:K:474:VAL:HB	1.63	0.81
1:B:366:THR:O	2:G:142:SER:HB2	1.81	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:48:GLN:CG	2:H:300:LEU:HD22	2.09	0.81
1:B:366:THR:C	2:G:142:SER:HB2	2.02	0.80
2:E:48:GLN:O	2:E:300:LEU:N	2.14	0.80
1:A:365:GLY:O	2:E:142:SER:CB	2.29	0.80
2:E:299:GLN:O	2:E:300:LEU:O	1.99	0.79
1:B:148:LEU:CD2	2:G:131:ARG:CD	2.61	0.79
2:F:251:GLN:OE1	3:J:361:ASN:OD1	2.00	0.79
3:J:5:LEU:HB2	3:J:31:ILE:HB	1.62	0.79
1:B:131:GLU:HB3	1:B:135:ARG:HH12	1.46	0.79
1:C:50:TYR:HA	1:C:63:ASN:HA	1.65	0.79
2:F:49:SER:HB2	2:F:298:ILE:O	1.83	0.79
1:A:364:VAL:CB	2:D:131:ARG:HG3	2.13	0.79
1:A:364:VAL:HB	2:D:131:ARG:HG3	1.63	0.78
2:I:251:GLN:HE22	3:K:361:ASN:HD21	1.27	0.78
3:J:400:GLN:HB3	3:J:431:ALA:HA	1.65	0.78
2:E:48:GLN:HE21	2:E:300:LEU:HD12	1.48	0.78
3:J:57:LEU:HD23	3:J:642:VAL:HG22	1.64	0.78
1:C:143:ARG:HB2	2:I:135:LEU:HD11	1.63	0.78
1:A:183:ARG:HH21	1:A:189:TYR:HB2	1.47	0.78
1:A:292:ILE:HG22	1:A:293:TYR:H	1.47	0.78
1:B:148:LEU:HD23	2:G:131:ARG:CD	2.14	0.77
1:B:218:LYS:HG2	1:B:219:ARG:HG3	1.66	0.77
2:D:272:ALA:H	3:K:359:ARG:NH2	1.79	0.77
3:J:280:ILE:HG23	3:J:587:GLY:HA2	1.66	0.77
2:F:251:GLN:OE1	3:J:361:ASN:HB3	1.85	0.77
3:K:335:ASP:HA	3:K:496:ARG:HH22	1.48	0.77
3:K:398:ARG:O	3:K:462:ARG:NH2	2.17	0.77
2:I:41:VAL:HB	2:I:307:LEU:HD11	1.67	0.76
1:A:63:ASN:OD1	1:A:260:SER:OG	2.01	0.76
2:G:50:VAL:HG23	2:G:300:LEU:CD2	2.15	0.76
3:J:282:GLY:HA2	3:J:533:LEU:HD22	1.65	0.76
3:K:282:GLY:HA2	3:K:533:LEU:HD22	1.67	0.76
2:G:50:VAL:CG2	2:G:300:LEU:CG	2.53	0.76
2:H:209:GLN:HB3	2:I:209:GLN:HE22	1.51	0.76
3:K:346:ALA:HB2	3:K:477:LYS:HB2	1.68	0.76
3:K:25:LYS:HB2	3:K:220:GLU:HG3	1.68	0.75
2:G:271:ASP:CA	3:J:357:ARG:HH11	2.00	0.75
1:A:398:LEU:HD11	1:A:415:LEU:HD11	1.68	0.75
3:J:403:VAL:HB	3:J:453:TRP:HB2	1.67	0.75
1:A:143:ARG:HA	2:E:135:LEU:HD12	1.69	0.75
2:F:46:LEU:HD11	2:F:48:GLN:HG3	1.67	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:148:LEU:HD21	2:F:144:GLN:NE2	2.00	0.75
2:G:269:VAL:O	3:J:357:ARG:NH1	2.19	0.75
2:G:242:LYS:O	2:G:299:GLN:HB2	1.86	0.74
3:J:25:LYS:HB2	3:J:220:GLU:HG3	1.69	0.74
3:J:216:ILE:HA	3:J:221:ILE:HA	1.69	0.74
3:J:482:SER:HB3	3:J:508:ASP:HB2	1.68	0.74
2:D:56:LEU:HD11	2:D:223:MET:HB3	1.70	0.74
3:K:57:LEU:HD23	3:K:642:VAL:HG22	1.69	0.74
2:G:50:VAL:CG2	2:G:300:LEU:HD21	2.18	0.74
2:G:56:LEU:HD11	2:G:223:MET:HB3	1.70	0.74
2:H:47:GLN:HB2	2:H:301:THR:O	1.87	0.74
3:K:409:ARG:HD3	3:K:436:VAL:HG11	1.68	0.74
1:A:136:GLN:HG2	1:A:370:VAL:HG11	1.70	0.74
3:J:391:ASN:HB2	3:J:394:GLN:HG2	1.70	0.74
1:B:142:GLN:HA	1:B:145:ASN:HD22	1.53	0.73
3:J:429:MET:SD	3:J:462:ARG:NH1	2.60	0.73
3:K:314:VAL:HG12	3:K:316:PRO:HD3	1.70	0.73
1:A:181:GLN:HE22	1:B:325:GLN:HE21	1.36	0.73
2:G:271:ASP:C	3:J:357:ARG:HH11	1.92	0.73
3:K:216:ILE:HA	3:K:221:ILE:HA	1.69	0.73
2:E:56:LEU:HD11	2:E:223:MET:HB3	1.71	0.73
2:H:332:GLU:HA	2:H:370:ALA:HA	1.70	0.73
1:B:398:LEU:HD11	1:B:415:LEU:HD11	1.71	0.73
1:A:146:VAL:CG2	2:E:131:ARG:HG3	2.18	0.73
1:A:365:GLY:O	2:E:142:SER:HB2	1.89	0.73
3:K:331:LEU:HD23	3:K:469:LEU:H	1.52	0.73
2:G:272:ALA:HA	3:J:359:ARG:NE	2.02	0.72
2:H:56:LEU:HD11	2:H:223:MET:HB3	1.71	0.72
1:B:63:ASN:OD1	1:B:260:SER:OG	2.05	0.72
2:H:96:GLN:HE22	2:I:176:THR:HG23	1.54	0.72
1:B:246:PRO:HB3	1:B:290:LEU:HD12	1.69	0.72
1:C:398:LEU:HD11	1:C:415:LEU:HD11	1.71	0.72
3:J:311:THR:HG23	3:J:473:THR:HG23	1.72	0.72
3:J:359:ARG:HB2	3:J:425:LEU:HD21	1.72	0.72
3:K:391:ASN:HB2	3:K:394:GLN:HG2	1.71	0.72
2:H:343:ARG:NH1	3:K:495:LEU:O	2.23	0.71
2:F:340:ILE:HG12	2:F:350:ILE:HA	1.73	0.71
2:D:47:GLN:O	2:D:344:ASN:ND2	2.22	0.71
1:C:220:ASN:HD21	1:C:222:SER:HB2	1.56	0.71
1:B:148:LEU:CD2	2:G:131:ARG:HD2	2.20	0.70
3:K:280:ILE:HG23	3:K:587:GLY:HA2	1.71	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:110:GLU:OE1	2:I:169:ARG:NH2	2.25	0.70
1:C:142:GLN:HA	1:C:145:ASN:HD22	1.57	0.70
3:J:316:PRO:HG2	3:J:326:GLN:HG3	1.74	0.70
2:F:48:GLN:HE21	2:F:344:ASN:CA	2.04	0.70
3:J:477:LYS:HG2	3:J:478:GLU:H	1.56	0.70
3:K:92:PHE:HA	3:K:169:ASP:HB3	1.74	0.70
3:K:383:THR:HG23	3:K:438:GLU:HB2	1.74	0.70
2:E:96:GLN:HE22	2:F:176:THR:HG23	1.55	0.70
2:E:209:GLN:HG3	2:E:210:GLN:H	1.56	0.70
2:F:309:ILE:HD11	2:F:350:ILE:HD12	1.74	0.70
2:F:251:GLN:CD	3:J:361:ASN:CG	2.49	0.69
2:F:295:GLN:HE22	3:J:423:VAL:HB	1.55	0.69
2:E:110:GLU:OE1	2:F:169:ARG:NH2	2.25	0.69
2:E:332:GLU:HA	2:E:370:ALA:HA	1.73	0.69
3:K:336:LEU:HA	3:K:339:ILE:HB	1.74	0.69
1:A:75:ILE:HB	1:A:248:LEU:HD22	1.73	0.69
1:A:360:ALA:HB1	2:D:135:LEU:HG	1.74	0.69
2:I:47:GLN:HB2	2:I:299:GLN:HE22	0.62	0.69
2:G:340:ILE:HG21	2:G:348:VAL:HB	1.74	0.69
1:B:364:VAL:CG2	2:F:131:ARG:HG3	2.22	0.69
3:K:113:TYR:HE2	3:K:561:VAL:HG23	1.57	0.69
1:A:296:GLY:HA2	1:A:299:ASN:HD22	1.58	0.69
1:B:401:LYS:HD2	1:B:404:LEU:HD12	1.73	0.69
1:C:401:LYS:HD2	1:C:404:LEU:HD12	1.74	0.69
1:C:65:THR:HB	1:C:258:ASP:HB2	1.74	0.69
2:E:50:VAL:CG2	2:E:298:ILE:O	2.40	0.69
2:I:56:LEU:HD11	2:I:223:MET:HB3	1.75	0.69
1:B:143:ARG:CB	2:G:135:LEU:HD11	2.21	0.68
1:B:366:THR:HA	2:G:142:SER:OG	1.93	0.68
1:C:327:VAL:HG12	1:C:403:ALA:HB1	1.75	0.68
3:K:384:PHE:HA	3:K:437:ALA:HA	1.76	0.68
1:B:172:ARG:NH1	1:B:426:ASN:OD1	2.27	0.68
1:C:103:GLN:NE2	1:C:406:THR:O	2.26	0.68
2:I:45:ASP:HB3	2:I:302:ASP:OD2	1.93	0.68
2:F:50:VAL:HG12	2:F:51:LEU:N	2.05	0.68
1:A:142:GLN:HA	1:A:145:ASN:HD22	1.59	0.68
3:K:360:TYR:CD1	3:K:424:ILE:HG12	2.28	0.68
1:C:364:VAL:CG2	2:H:131:ARG:HG3	2.25	0.67
3:K:7:LEU:O	3:K:29:LEU:N	2.27	0.67
1:A:103:GLN:NE2	1:A:406:THR:O	2.26	0.67
1:C:146:VAL:HG22	2:I:131:ARG:HG3	1.75	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:110:GLU:OE1	2:H:169:ARG:NH2	2.28	0.67
3:K:541:MET:HB2	3:K:628:PHE:HB3	1.77	0.67
1:A:392:ASN:O	1:A:396:ASN:ND2	2.28	0.67
1:A:227:ARG:HG2	1:A:316:LEU:HD11	1.76	0.67
2:D:272:ALA:HA	3:K:359:ARG:NE	2.09	0.67
2:E:136:ALA:HA	2:E:140:ALA:H	1.59	0.67
3:K:101:LEU:HB3	3:K:105:GLN:HB2	1.77	0.67
2:F:49:SER:HA	2:F:300:LEU:HG	1.77	0.67
2:E:338:VAL:HG12	2:E:353:GLY:HA3	1.77	0.67
2:F:317:PRO:HD3	2:F:323:TYR:CD2	2.30	0.67
3:J:92:PHE:HA	3:J:169:ASP:HB3	1.74	0.67
1:B:290:LEU:HD23	1:B:292:ILE:H	1.60	0.67
2:F:299:GLN:O	2:F:300:LEU:CA	2.42	0.67
3:J:97:LEU:HD22	3:J:106:ASN:HB3	1.77	0.67
3:J:360:TYR:CD1	3:J:424:ILE:HG12	2.30	0.67
3:J:541:MET:HB2	3:J:628:PHE:HB3	1.76	0.67
2:D:272:ALA:HA	3:K:359:ARG:CZ	2.25	0.67
2:F:342:ALA:HB3	2:F:349:GLU:HB3	1.76	0.67
1:A:172:ARG:NH2	1:A:428:GLU:O	2.26	0.66
2:D:110:GLU:OE1	2:E:169:ARG:NH2	2.28	0.66
2:H:51:LEU:HA	2:H:296:VAL:O	1.95	0.66
2:I:136:ALA:HA	2:I:140:ALA:H	1.60	0.66
1:B:65:THR:HB	1:B:258:ASP:HB2	1.77	0.66
1:B:148:LEU:HD21	2:G:131:ARG:CG	2.25	0.66
2:D:169:ARG:NH2	2:I:110:GLU:OE1	2.28	0.66
3:K:97:LEU:HD22	3:K:106:ASN:HB3	1.77	0.66
3:K:370:ASN:HD21	3:K:451:ARG:HE	1.43	0.66
1:B:364:VAL:HG21	2:F:131:ARG:CG	2.23	0.66
3:J:506:ASN:OD1	3:J:507:MET:N	2.29	0.66
2:F:110:GLU:OE1	2:G:169:ARG:NH2	2.28	0.66
1:C:261:TYR:N	1:C:276:ASP:OD1	2.29	0.66
2:G:319:GLY:HA3	3:J:417:ALA:HA	1.78	0.66
2:H:48:GLN:HG3	2:H:300:LEU:HD22	1.76	0.66
3:J:332:LYS:HE3	3:J:334:ASP:HB2	1.78	0.66
2:G:271:ASP:N	3:J:357:ARG:NH1	2.43	0.66
3:K:142:PRO:O	3:K:150:GLN:NE2	2.28	0.66
2:D:319:GLY:HA3	3:K:417:ALA:HA	1.77	0.65
3:K:5:LEU:HB2	3:K:31:ILE:HB	1.78	0.65
3:K:403:VAL:HB	3:K:453:TRP:HB2	1.78	0.65
3:K:314:VAL:HA	3:K:504:THR:HG22	1.78	0.65
3:J:84:ARG:HA	3:J:88:PHE:HD2	1.62	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:278:ASN:O	1:C:55:ARG:NH2	2.30	0.65
1:A:19:LYS:HE3	1:B:315:GLN:HE21	1.62	0.65
2:I:317:PRO:HD3	2:I:323:TYR:CD2	2.31	0.65
3:J:101:LEU:HB3	3:J:105:GLN:HB2	1.77	0.65
2:I:340:ILE:HG12	2:I:350:ILE:HA	1.77	0.65
3:K:507:MET:O	3:K:509:GLY:N	2.25	0.65
2:F:51:LEU:CD2	2:F:297:HIS:CD2	2.80	0.64
2:G:314:LEU:HD11	2:G:322:ARG:HB3	1.77	0.64
3:K:37:VAL:HG22	3:K:212:ARG:HD3	1.80	0.64
3:J:113:TYR:HE2	3:J:561:VAL:HG23	1.62	0.64
3:K:84:ARG:HG3	3:K:88:PHE:HB2	1.78	0.64
3:K:391:ASN:H	3:K:394:GLN:NE2	1.94	0.64
2:H:317:PRO:HG2	2:H:321:ASN:HB3	1.79	0.64
1:A:135:ARG:NH2	1:A:373:LEU:HD12	2.13	0.64
1:A:143:ARG:HA	2:E:135:LEU:CD1	2.26	0.64
2:F:136:ALA:HA	2:F:140:ALA:H	1.63	0.64
2:F:299:GLN:O	2:F:300:LEU:HA	1.97	0.64
2:E:343:ARG:NH1	3:J:495:LEU:O	2.30	0.64
2:H:209:GLN:HG3	2:H:210:GLN:H	1.63	0.64
3:J:385:SER:H	3:J:437:ALA:HA	1.63	0.64
1:A:73:GLN:NE2	1:A:74:SER:O	2.30	0.64
2:I:48:GLN:HB2	2:I:300:LEU:HB3	1.79	0.64
2:I:311:LEU:HD21	2:I:348:VAL:HG13	1.80	0.64
3:J:142:PRO:O	3:J:150:GLN:NE2	2.29	0.64
3:K:84:ARG:HA	3:K:88:PHE:HD2	1.62	0.64
2:I:251:GLN:CD	3:K:361:ASN:CG	2.56	0.64
3:J:357:ARG:HA	3:J:366:ALA:HA	1.78	0.64
2:D:272:ALA:CA	3:K:359:ARG:NH2	2.60	0.64
2:E:317:PRO:HG2	2:E:321:ASN:HB3	1.79	0.64
3:K:460:SER:HA	3:K:464:MET:HB2	1.81	0.63
1:B:296:GLY:HA2	1:B:299:ASN:HD22	1.64	0.63
2:E:313:ALA:HB1	2:E:324:LYS:HE3	1.80	0.63
2:F:251:GLN:NE2	3:J:361:ASN:CG	2.51	0.63
3:J:212:ARG:HH21	3:J:224:ASN:HD21	1.45	0.63
3:J:391:ASN:H	3:J:394:GLN:NE2	1.94	0.63
1:B:19:LYS:HE3	1:C:315:GLN:HE21	1.62	0.63
1:C:186:THR:HG21	1:C:190:TYR:HE2	1.63	0.63
2:E:209:GLN:HB3	2:F:209:GLN:HE22	1.62	0.63
2:F:309:ILE:HD12	2:F:340:ILE:HD11	1.81	0.63
2:G:50:VAL:CG2	2:G:300:LEU:CD2	2.76	0.63
1:B:103:GLN:NE2	1:B:406:THR:O	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:313:ALA:HB1	2:H:324:LYS:HE3	1.81	0.63
3:J:37:VAL:HG22	3:J:212:ARG:HD3	1.81	0.63
3:J:84:ARG:HG3	3:J:88:PHE:HB2	1.78	0.63
3:J:355:ASN:HD21	3:K:323:ASP:HB2	1.63	0.63
2:F:251:GLN:HE22	3:J:361:ASN:CG	2.00	0.63
2:H:41:VAL:HB	2:H:307:LEU:HD11	1.80	0.63
3:J:323:ASP:O	3:J:327:TYR:N	2.32	0.63
1:B:337:SER:OG	1:B:396:ASN:ND2	2.31	0.63
2:H:50:VAL:HB	2:H:298:ILE:CB	2.14	0.63
3:K:13:SER:HB3	3:K:20:GLN:HB3	1.81	0.63
1:A:352:GLN:NE2	1:A:356:ASP:OD1	2.32	0.63
2:I:309:ILE:HD11	2:I:350:ILE:HD12	1.80	0.63
3:J:38:ALA:HB3	3:J:213:VAL:HA	1.81	0.63
1:B:227:ARG:HG2	1:B:316:LEU:HD11	1.79	0.62
2:G:136:ALA:HA	2:G:140:ALA:H	1.64	0.62
2:H:336:ARG:HH22	2:H:355:GLU:H	1.45	0.62
1:C:364:VAL:HB	2:H:131:ARG:HG3	1.81	0.62
3:K:38:ALA:HB3	3:K:213:VAL:HA	1.81	0.62
3:K:323:ASP:O	3:K:327:TYR:N	2.32	0.62
1:C:290:LEU:HD23	1:C:292:ILE:H	1.65	0.62
1:A:315:GLN:HE21	1:C:19:LYS:HE3	1.64	0.62
3:J:9:ASP:N	3:J:27:ILE:O	2.30	0.62
2:H:338:VAL:HG12	2:H:353:GLY:HA3	1.82	0.62
1:A:135:ARG:HH22	1:A:373:LEU:HD12	1.63	0.62
1:A:246:PRO:HB3	1:A:290:LEU:HD12	1.81	0.62
1:B:181:GLN:HE22	1:C:325:GLN:HE21	1.48	0.62
3:J:314:VAL:HA	3:J:504:THR:HG22	1.80	0.62
1:A:332:ASN:HB3	1:C:173:ASN:ND2	2.14	0.62
1:C:246:PRO:HB3	1:C:290:LEU:HD12	1.82	0.62
2:D:41:VAL:HB	2:D:307:LEU:HD11	1.82	0.62
2:I:251:GLN:OE1	3:K:361:ASN:CB	2.47	0.62
3:J:350:PRO:HA	3:J:472:ILE:HG12	1.81	0.62
1:C:174:ASN:HA	1:C:177:ASN:HD22	1.64	0.62
2:F:48:GLN:NE2	2:F:343:ARG:C	2.50	0.62
3:J:336:LEU:HA	3:J:339:ILE:HB	1.82	0.62
3:K:307:ILE:O	3:K:310:ASN:ND2	2.32	0.62
3:K:335:ASP:HB3	3:K:496:ARG:HH12	1.64	0.62
3:J:151:GLN:O	3:J:155:ILE:HD12	1.99	0.62
2:I:271:ASP:OD1	3:K:465:GLY:C	2.37	0.61
3:K:151:GLN:O	3:K:155:ILE:HD12	1.99	0.61
2:D:241:GLN:NE2	2:D:300:LEU:C	2.53	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:272:ALA:H	3:K:359:ARG:HE	1.48	0.61
3:J:466:GLN:NE2	3:J:468:TRP:O	2.33	0.61
2:D:241:GLN:HE21	2:D:300:LEU:C	2.03	0.61
2:D:96:GLN:HE22	2:E:176:THR:HG23	1.64	0.61
2:F:96:GLN:HE22	2:G:176:THR:HG23	1.65	0.61
3:K:311:THR:HG23	3:K:473:THR:HG23	1.82	0.61
2:D:135:LEU:HD22	2:D:140:ALA:HB2	1.81	0.61
2:G:96:GLN:HE22	2:H:176:THR:HG23	1.64	0.61
3:J:21:VAL:HG23	3:J:23:VAL:HG13	1.83	0.61
3:K:384:PHE:HZ	3:K:389:THR:HG1	1.49	0.61
2:F:56:LEU:HD11	2:F:223:MET:HB3	1.83	0.61
1:C:143:ARG:NH2	2:I:141:VAL:CG1	2.63	0.61
2:F:332:GLU:HA	2:F:370:ALA:HA	1.81	0.61
2:I:51:LEU:CD2	2:I:297:HIS:NE2	2.64	0.61
3:K:403:VAL:HG13	3:K:436:VAL:HA	1.83	0.61
1:C:197:ASN:HD21	1:C:200:ASN:HD22	1.47	0.61
2:G:272:ALA:HA	3:J:359:ARG:HE	1.63	0.61
2:I:251:GLN:HE22	3:K:361:ASN:CG	2.04	0.61
3:K:426:VAL:O	3:K:428:ASN:N	2.33	0.61
2:E:50:VAL:HG11	2:E:298:ILE:HB	1.79	0.61
2:F:48:GLN:CD	2:F:344:ASN:OD1	2.38	0.61
3:J:482:SER:HB2	3:J:506:ASN:ND2	2.16	0.61
2:I:251:GLN:NE2	3:K:361:ASN:CG	2.54	0.60
2:D:176:THR:HG23	2:I:96:GLN:HE22	1.64	0.60
2:F:311:LEU:HD21	2:F:348:VAL:HG13	1.84	0.60
3:J:312:ILE:HB	3:J:474:VAL:HB	1.83	0.60
3:J:508:ASP:HA	3:J:511:LEU:HB3	1.84	0.60
2:G:317:PRO:HD3	2:G:323:TYR:CD2	2.36	0.60
3:J:599:GLN:HE21	3:J:607:ILE:HG21	1.67	0.60
1:A:381:ASN:O	1:A:385:GLU:HG2	2.01	0.60
1:B:148:LEU:HD21	2:G:131:ARG:CD	2.31	0.60
2:D:271:ASP:OD2	3:K:357:ARG:CD	2.46	0.60
2:D:340:ILE:HG21	2:D:348:VAL:HB	1.83	0.60
2:H:43:PRO:HB3	2:H:305:ASN:HA	1.83	0.60
3:J:383:THR:HG23	3:J:438:GLU:HB2	1.82	0.60
2:E:50:VAL:HB	2:E:298:ILE:CA	2.32	0.60
3:J:336:LEU:O	3:J:340:GLN:N	2.30	0.60
3:K:93:GLN:HB2	3:K:170:GLU:HB2	1.83	0.60
1:A:334:ILE:HG12	1:A:396:ASN:HB3	1.84	0.60
2:E:336:ARG:HH22	2:E:355:GLU:H	1.48	0.60
2:E:342:ALA:HB3	2:E:349:GLU:HB3	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:271:ASP:OD2	3:K:464:MET:HB3	2.01	0.60
3:K:212:ARG:HH21	3:K:224:ASN:HD21	1.49	0.60
2:E:50:VAL:HG12	2:E:50:VAL:O	2.02	0.60
2:E:343:ARG:HA	2:E:348:VAL:HG12	1.82	0.60
3:K:482:SER:HB3	3:K:508:ASP:HB3	1.83	0.60
2:D:300:LEU:O	2:D:301:THR:HB	2.00	0.60
2:D:314:LEU:HD11	2:D:322:ARG:HB3	1.84	0.60
2:F:317:PRO:HD2	2:F:322:ARG:HA	1.82	0.60
2:H:50:VAL:O	2:H:50:VAL:HG12	2.02	0.59
3:K:132:LEU:HD22	3:K:152:ARG:HB3	1.84	0.59
1:C:9:GLN:OE1	1:C:190:TYR:OH	2.19	0.59
2:G:336:ARG:HH12	2:G:355:GLU:HG2	1.67	0.59
3:K:540:VAL:HA	3:K:543:ILE:HD12	1.83	0.59
2:G:47:GLN:HB3	2:G:299:GLN:HE22	1.67	0.59
3:K:599:GLN:HE21	3:K:607:ILE:HG21	1.67	0.59
2:G:46:LEU:HB3	2:G:303:VAL:HG23	1.84	0.59
1:A:173:ASN:ND2	1:B:332:ASN:HB3	2.16	0.59
1:C:143:ARG:HH21	2:I:141:VAL:HG13	1.68	0.59
2:I:309:ILE:HD12	2:I:340:ILE:HD11	1.85	0.59
3:K:7:LEU:HB3	3:K:29:LEU:HB2	1.82	0.59
1:A:47:ASP:OD1	1:A:66:SER:OG	2.20	0.59
1:A:365:GLY:O	2:E:142:SER:OG	2.19	0.59
1:C:227:ARG:HG2	1:C:316:LEU:HD11	1.83	0.59
2:D:325:VAL:HA	2:D:335:GLU:HA	1.85	0.59
3:J:93:GLN:HB2	3:J:170:GLU:HB2	1.83	0.59
1:B:197:ASN:HB2	1:B:420:SER:HB3	1.83	0.59
2:D:317:PRO:HD3	2:D:323:TYR:CD2	2.37	0.59
3:J:426:VAL:O	3:J:428:ASN:N	2.36	0.59
1:B:183:ARG:O	1:B:187:GLY:N	2.27	0.59
3:K:8:LYS:HA	3:K:28:SER:HA	1.83	0.59
1:B:197:ASN:HD21	1:B:200:ASN:HD22	1.50	0.59
1:B:47:ASP:OD1	1:B:66:SER:OG	2.20	0.58
1:C:143:ARG:NH2	2:I:141:VAL:HG13	2.18	0.58
3:J:405:ASP:HB2	3:J:408:THR:OG1	2.03	0.58
1:A:220:ASN:HD21	1:A:222:SER:HB2	1.67	0.58
3:K:100:HIS:HA	3:K:263:ARG:HE	1.68	0.58
3:K:359:ARG:HB2	3:K:425:LEU:HD11	1.84	0.58
1:A:325:GLN:HE21	1:C:181:GLN:HE22	1.51	0.58
1:C:14:ASN:HD22	1:C:105:LEU:HD13	1.68	0.58
2:D:315:GLY:HA3	2:D:323:TYR:CZ	2.38	0.58
3:K:405:ASP:OD2	3:K:451:ARG:N	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:360:ALA:O	1:A:363:SER:OG	2.14	0.58
2:I:50:VAL:HG12	2:I:50:VAL:O	2.02	0.58
3:J:310:ASN:HD22	3:J:507:MET:HG2	1.68	0.58
3:K:385:SER:HB3	3:K:436:VAL:HG23	1.84	0.58
2:G:241:GLN:NE2	2:G:300:LEU:O	2.37	0.58
3:J:400:GLN:HE22	3:J:430:PRO:HG2	1.69	0.58
3:K:56:CYS:HB3	3:K:80:LEU:HD13	1.86	0.58
2:D:48:GLN:HB3	2:D:301:THR:O	2.03	0.58
2:E:41:VAL:O	2:E:357:GLY:N	2.25	0.58
2:G:41:VAL:HB	2:G:307:LEU:HD11	1.86	0.58
2:G:242:LYS:O	2:G:299:GLN:CB	2.52	0.58
3:J:132:LEU:HD22	3:J:152:ARG:HB3	1.85	0.58
3:J:540:VAL:HA	3:J:543:ILE:HD12	1.84	0.58
1:B:186:THR:HG22	1:B:188:ASN:HD22	1.69	0.58
2:H:317:PRO:HD3	2:H:323:TYR:CD2	2.39	0.58
1:B:148:LEU:CD2	2:G:131:ARG:NE	2.66	0.58
2:D:271:ASP:O	3:K:357:ARG:NH1	2.37	0.58
1:C:197:ASN:HB2	1:C:420:SER:HB3	1.86	0.58
2:D:324:LYS:HG2	2:D:354:LEU:HD11	1.85	0.58
2:I:325:VAL:HB	2:I:365:ALA:HB1	1.86	0.58
1:C:75:ILE:HB	1:C:248:LEU:HD22	1.86	0.58
1:C:28:PHE:CE1	1:C:91:ALA:HB1	2.39	0.57
2:G:241:GLN:NE2	2:G:299:GLN:O	2.37	0.57
2:G:272:ALA:N	3:J:359:ARG:HH21	2.02	0.57
2:E:299:GLN:C	2:E:300:LEU:HA	2.23	0.57
1:A:45:GLY:HA2	1:B:289:SER:HA	1.85	0.57
1:A:49:THR:HA	1:B:285:GLY:HA3	1.86	0.57
2:G:195:THR:HB	2:G:216:THR:HG23	1.86	0.57
2:I:338:VAL:HG12	2:I:353:GLY:HA3	1.85	0.57
3:K:9:ASP:N	3:K:27:ILE:O	2.36	0.57
3:K:184:MET:HG3	3:K:188:HIS:HE1	1.70	0.57
2:F:50:VAL:C	2:F:51:LEU:HG	2.25	0.57
2:F:248:LEU:O	3:J:361:ASN:HA	2.04	0.57
3:J:405:ASP:OD2	3:J:451:ARG:N	2.36	0.57
1:C:392:ASN:O	1:C:396:ASN:ND2	2.37	0.57
3:J:385:SER:HB3	3:J:436:VAL:HG23	1.86	0.57
3:J:546:VAL:HG11	3:K:546:VAL:HG11	1.85	0.57
1:B:136:GLN:HG2	1:B:370:VAL:HG11	1.85	0.57
1:C:148:LEU:HD23	2:I:131:ARG:HD2	1.87	0.57
2:D:272:ALA:H	3:K:359:ARG:NE	2.03	0.57
3:J:147:GLY:HA2	3:J:150:GLN:OE1	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:151:GLN:O	3:J:154:SER:OG	2.17	0.57
1:B:150:ALA:HB2	2:H:141:VAL:HA	1.86	0.57
2:F:338:VAL:HG12	2:F:353:GLY:HA3	1.86	0.57
3:J:56:CYS:HB3	3:J:80:LEU:HD13	1.85	0.57
3:K:147:GLY:HA2	3:K:150:GLN:OE1	2.05	0.57
1:B:173:ASN:ND2	1:C:332:ASN:HB3	2.20	0.57
2:F:312:SER:OG	3:J:388:ASN:ND2	2.37	0.57
2:G:271:ASP:CB	3:J:357:ARG:HH11	2.18	0.57
3:K:21:VAL:HG23	3:K:23:VAL:HG13	1.87	0.57
1:A:9:GLN:OE1	1:A:190:TYR:OH	2.22	0.57
2:D:195:THR:HB	2:D:216:THR:HG23	1.86	0.57
2:D:272:ALA:H	3:K:359:ARG:CZ	2.18	0.57
2:F:293:THR:OG1	3:J:359:ARG:NH1	2.37	0.57
3:K:313:ASP:HB3	3:K:471:SER:HB2	1.86	0.57
1:B:183:ARG:NH2	1:B:189:TYR:HB2	2.17	0.56
3:J:184:MET:HG3	3:J:188:HIS:HE1	1.70	0.56
1:A:294:GLN:O	1:A:297:MET:HG2	2.06	0.56
2:E:36:TYR:CD1	2:E:364:GLU:HG3	2.40	0.56
3:J:322:ASP:OD1	3:J:323:ASP:N	2.38	0.56
1:C:125:TYR:CD1	1:C:380:TYR:HB3	2.40	0.56
1:C:174:ASN:HA	1:C:177:ASN:ND2	2.20	0.56
2:H:310:PRO:HA	2:H:347:ASP:OD1	2.04	0.56
2:I:209:GLN:HG3	2:I:210:GLN:H	1.71	0.56
3:J:13:SER:HB3	3:J:20:GLN:HG2	1.87	0.56
3:J:391:ASN:N	3:J:394:GLN:HE21	1.95	0.56
3:K:400:GLN:HE22	3:K:430:PRO:HG2	1.69	0.56
2:G:313:ALA:HB2	2:G:362:ILE:HA	1.87	0.56
2:G:315:GLY:HA3	2:G:323:TYR:CZ	2.40	0.56
2:H:136:ALA:HA	2:H:140:ALA:H	1.71	0.56
1:B:143:ARG:HA	2:G:135:LEU:CD1	2.31	0.56
2:F:251:GLN:HE22	3:J:361:ASN:HD21	1.44	0.56
3:J:485:ALA:H	3:J:487:GLN:HE22	1.51	0.56
3:K:404:LEU:H	3:K:436:VAL:HG12	1.69	0.56
3:J:350:PRO:HB3	3:J:469:LEU:HD22	1.88	0.56
1:C:234:ARG:HA	1:C:237:ILE:HD12	1.88	0.56
3:J:317:GLY:HA2	3:J:325:PRO:HB2	1.87	0.56
2:H:140:ALA:O	2:H:142:SER:N	2.38	0.56
2:E:317:PRO:HD3	2:E:323:TYR:CD2	2.41	0.56
2:G:343:ARG:HA	2:G:348:VAL:HA	1.88	0.56
2:D:321:ASN:OD1	2:D:322:ARG:N	2.39	0.56
3:K:12:ARG:NH2	3:K:58:ASP:O	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:313:ALA:HB2	2:D:362:ILE:HA	1.87	0.55
2:E:140:ALA:O	2:E:142:SER:N	2.39	0.55
3:J:184:MET:O	3:J:188:HIS:ND1	2.36	0.55
3:J:501:ASP:HA	3:J:503:PHE:CZ	2.40	0.55
3:K:409:ARG:O	3:K:413:PHE:N	2.39	0.55
1:A:296:GLY:HA2	1:A:299:ASN:ND2	2.21	0.55
1:C:364:VAL:HG21	2:H:131:ARG:HG3	1.88	0.55
2:I:317:PRO:HD2	2:I:322:ARG:HA	1.87	0.55
2:I:325:VAL:HA	2:I:335:GLU:HA	1.88	0.55
2:G:324:LYS:HG2	2:G:354:LEU:HD11	1.88	0.55
2:H:267:GLU:OE2	2:H:276:TYR:OH	2.18	0.55
1:A:197:ASN:HD21	1:A:200:ASN:HD22	1.54	0.55
1:B:148:LEU:CD2	2:G:131:ARG:HG2	2.31	0.55
2:D:314:LEU:HD21	2:D:322:ARG:HD3	1.87	0.55
3:K:355:ASN:HA	3:K:368:SER:HA	1.87	0.55
3:J:168:ALA:HB3	3:J:199:ILE:HA	1.88	0.55
3:J:223:ARG:HG3	3:J:225:PRO:HD3	1.89	0.55
3:J:316:PRO:HG3	3:J:329:GLN:HE21	1.70	0.55
2:G:50:VAL:HG21	2:G:300:LEU:HD21	1.89	0.55
3:J:335:ASP:HA	3:J:496:ARG:HH22	1.72	0.55
1:A:58:ASN:OD1	1:A:59:GLY:N	2.40	0.55
1:B:195:ALA:O	1:B:420:SER:N	2.38	0.55
2:D:327:LEU:HB3	2:D:359:GLU:HB2	1.89	0.55
2:F:317:PRO:HG2	2:F:321:ASN:HB3	1.89	0.55
3:J:212:ARG:HG3	3:J:226:PRO:HA	1.89	0.55
3:J:358:LEU:HG	3:J:426:VAL:HA	1.88	0.55
3:J:516:LYS:O	3:J:520:THR:OG1	2.20	0.55
1:A:169:LEU:O	1:A:173:ASN:HB2	2.07	0.55
1:C:183:ARG:NH2	1:C:189:TYR:HB2	2.17	0.55
2:F:140:ALA:O	2:F:142:SER:N	2.40	0.54
2:G:271:ASP:HB2	3:J:357:ARG:HH11	1.72	0.54
3:J:294:ASP:O	3:J:298:GLN:HG2	2.07	0.54
3:K:212:ARG:HG3	3:K:226:PRO:HA	1.87	0.54
3:K:478:GLU:HB2	3:K:480:PHE:HB2	1.89	0.54
2:E:195:THR:HB	2:E:216:THR:HG23	1.90	0.54
2:G:319:GLY:HA2	3:J:415:HIS:O	2.08	0.54
1:B:364:VAL:CB	2:F:131:ARG:HG3	2.37	0.54
3:J:359:ARG:H	3:J:425:LEU:HD11	1.73	0.54
1:B:14:ASN:HD22	1:B:105:LEU:HD13	1.72	0.54
1:B:45:GLY:HA2	1:C:289:SER:HA	1.89	0.54
1:B:55:ARG:NH2	1:C:278:ASN:O	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:364:VAL:CB	2:H:131:ARG:HG3	2.37	0.54
2:E:324:LYS:HG2	2:E:354:LEU:HD11	1.90	0.54
2:G:325:VAL:HA	2:G:335:GLU:HA	1.88	0.54
2:H:325:VAL:HA	2:H:335:GLU:HA	1.89	0.54
2:H:342:ALA:HB3	2:H:349:GLU:HB3	1.90	0.54
2:I:312:SER:OG	3:K:388:ASN:ND2	2.41	0.54
1:A:270:ALA:HA	1:A:274:TYR:HD2	1.72	0.54
3:J:360:TYR:O	3:J:362:ASN:N	2.41	0.54
3:K:168:ALA:HB3	3:K:199:ILE:HA	1.89	0.54
3:K:490:THR:HG23	3:K:502:PHE:HZ	1.73	0.54
1:B:173:ASN:HD21	1:C:332:ASN:HB3	1.72	0.54
2:H:36:TYR:CD1	2:H:364:GLU:HG3	2.43	0.54
3:J:573:LEU:HD21	3:J:626:ILE:HG13	1.90	0.54
1:C:47:ASP:OD1	1:C:66:SER:OG	2.20	0.54
2:I:327:LEU:HB2	2:I:361:VAL:HG13	1.89	0.54
3:J:358:LEU:HD21	3:J:426:VAL:HG12	1.89	0.54
3:J:360:TYR:HB2	3:J:424:ILE:HG23	1.88	0.54
3:J:551:ARG:O	3:J:555:ILE:N	2.38	0.54
3:K:255:ASN:O	3:K:258:LEU:HB3	2.08	0.54
1:A:254:THR:OG1	1:A:281:GLN:O	2.26	0.54
2:D:271:ASP:CG	3:K:357:ARG:CG	2.68	0.54
3:K:314:VAL:H	3:K:472:ILE:H	1.54	0.54
3:K:391:ASN:N	3:K:394:GLN:HE21	1.98	0.54
1:A:1:GLU:OE2	1:A:194:ALA:N	2.41	0.54
3:J:12:ARG:HG2	3:J:60:ALA:HA	1.89	0.54
3:K:12:ARG:HG2	3:K:60:ALA:HA	1.88	0.54
3:K:360:TYR:HB2	3:K:424:ILE:HG23	1.90	0.54
1:C:364:VAL:HG23	1:C:366:THR:HG23	1.90	0.54
2:H:195:THR:HB	2:H:216:THR:HG23	1.90	0.54
1:A:14:ASN:OD1	1:A:16:GLU:N	2.41	0.53
1:B:76:PHE:HB3	1:B:248:LEU:HB3	1.89	0.53
1:C:73:GLN:NE2	1:C:74:SER:O	2.29	0.53
1:C:294:GLN:O	1:C:297:MET:HG2	2.07	0.53
3:K:294:ASP:O	3:K:298:GLN:HG2	2.08	0.53
3:J:39:ILE:HD12	3:J:200:VAL:HB	1.90	0.53
3:J:184:MET:HG3	3:J:188:HIS:CE1	2.43	0.53
3:J:409:ARG:HD3	3:J:436:VAL:HG11	1.90	0.53
3:J:485:ALA:H	3:J:487:GLN:NE2	2.05	0.53
1:A:364:VAL:HB	2:D:131:ARG:CG	2.33	0.53
1:B:296:GLY:HA2	1:B:299:ASN:ND2	2.22	0.53
1:B:383:LYS:O	1:B:386:LEU:HB3	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:37:PRO:HB2	1:C:80:LYS:HD2	1.90	0.53
1:B:113:TYR:HE1	1:B:193:LEU:HD22	1.72	0.53
1:C:266:THR:HG23	1:C:274:TYR:HB3	1.90	0.53
1:C:296:GLY:HA2	1:C:299:ASN:HD22	1.73	0.53
2:G:140:ALA:O	2:G:142:SER:N	2.41	0.53
2:I:303:VAL:HG13	2:I:306:VAL:HG11	1.88	0.53
3:K:7:LEU:HA	3:K:10:ILE:HD13	1.90	0.53
3:K:405:ASP:HB2	3:K:408:THR:OG1	2.08	0.53
1:C:58:ASN:OD1	1:C:59:GLY:N	2.41	0.53
2:D:317:PRO:HG2	2:D:321:ASN:HB3	1.90	0.53
2:G:133:GLN:HA	2:G:136:ALA:HB3	1.90	0.53
2:I:317:PRO:HG2	2:I:321:ASN:HB3	1.89	0.53
3:J:215:GLU:OE1	3:J:223:ARG:NH1	2.42	0.53
3:K:87:HIS:HA	3:K:164:GLN:HB2	1.89	0.53
3:K:151:GLN:O	3:K:154:SER:OG	2.17	0.53
1:A:364:VAL:CG1	2:D:131:ARG:HG3	2.38	0.53
2:H:309:ILE:HD12	2:H:340:ILE:HD11	1.90	0.53
3:J:255:ASN:O	3:J:258:LEU:HB3	2.07	0.53
3:J:257:ALA:HA	3:J:260:MET:HB2	1.90	0.53
2:F:50:VAL:CG1	2:F:51:LEU:H	2.08	0.53
2:H:142:SER:OG	2:H:143:GLN:N	2.42	0.53
2:I:271:ASP:OD2	3:K:464:MET:CB	2.54	0.53
3:J:349:THR:O	3:J:473:THR:N	2.42	0.53
3:K:39:ILE:HD12	3:K:200:VAL:HB	1.89	0.53
2:D:48:GLN:HB3	2:D:301:THR:HG22	1.90	0.53
2:D:306:VAL:HG23	2:D:351:VAL:HA	1.91	0.53
2:F:51:LEU:O	2:F:52:ALA:HB2	2.09	0.53
2:G:271:ASP:CA	3:J:357:ARG:NH1	2.70	0.53
2:G:321:ASN:OD1	2:G:322:ARG:N	2.42	0.53
3:J:87:HIS:HA	3:J:164:GLN:HB2	1.90	0.53
3:K:184:MET:HG3	3:K:188:HIS:CE1	2.43	0.53
3:K:215:GLU:OE1	3:K:223:ARG:NH1	2.42	0.53
1:A:383:LYS:O	1:A:386:LEU:HB3	2.07	0.53
3:K:166:ILE:HB	3:K:197:VAL:HG12	1.90	0.53
3:K:552:THR:HA	3:K:555:ILE:HD12	1.91	0.53
1:B:381:ASN:O	1:B:385:GLU:HG2	2.08	0.52
2:D:271:ASP:CG	3:K:357:ARG:CB	2.57	0.52
2:D:272:ALA:N	3:K:359:ARG:HE	2.06	0.52
3:K:223:ARG:HG3	3:K:225:PRO:HD3	1.90	0.52
3:K:485:ALA:H	3:K:487:GLN:HE22	1.57	0.52
3:K:573:LEU:HD21	3:K:626:ILE:HG13	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:210:ASN:HA	1:A:213:LEU:HD12	1.91	0.52
1:A:266:THR:HG23	1:A:274:TYR:HB3	1.91	0.52
1:C:270:ALA:HA	1:C:274:TYR:HD2	1.74	0.52
3:J:182:GLU:O	3:J:186:ILE:HD12	2.09	0.52
1:B:169:LEU:O	1:B:173:ASN:HB2	2.09	0.52
1:B:197:ASN:ND2	1:B:200:ASN:HD22	2.08	0.52
1:C:78:MET:HA	1:C:81:TRP:HD1	1.75	0.52
1:A:292:ILE:HD11	1:C:44:LEU:HB2	1.90	0.52
1:A:148:LEU:C	2:F:142:SER:CB	2.64	0.52
1:B:365:GLY:O	2:G:142:SER:CB	2.58	0.52
2:D:259:ILE:HG22	2:D:279:PHE:CE1	2.44	0.52
2:D:271:ASP:CB	3:K:357:ARG:CB	2.88	0.52
2:G:327:LEU:HB3	2:G:359:GLU:HB2	1.91	0.52
3:K:463:VAL:HG23	3:K:464:MET:HG2	1.91	0.52
3:K:500:LYS:HG2	3:K:503:PHE:HE1	1.73	0.52
2:D:47:GLN:OE1	2:D:47:GLN:N	2.34	0.52
2:F:49:SER:C	2:F:50:VAL:HG23	2.30	0.52
2:G:259:ILE:HG22	2:G:279:PHE:CE1	2.44	0.52
3:J:351:ALA:N	3:J:471:SER:O	2.42	0.52
3:K:184:MET:O	3:K:188:HIS:ND1	2.37	0.52
3:K:322:ASP:OD1	3:K:323:ASP:N	2.43	0.52
1:A:290:LEU:HD23	1:A:292:ILE:H	1.75	0.52
3:K:182:GLU:O	3:K:186:ILE:HD12	2.09	0.52
1:C:177:ASN:O	1:C:181:GLN:HG2	2.10	0.52
2:D:271:ASP:CG	3:K:357:ARG:CD	2.56	0.52
2:E:325:VAL:HA	2:E:335:GLU:HA	1.92	0.52
3:J:346:ALA:HB2	3:J:477:LYS:HB2	1.92	0.52
3:K:490:THR:HA	3:K:502:PHE:CZ	2.44	0.52
1:A:212:LEU:HD13	1:A:400:ILE:HD11	1.90	0.52
1:B:223:LEU:HD13	1:B:227:ARG:HH12	1.75	0.52
1:C:51:SER:N	1:C:62:SER:O	2.42	0.52
3:J:289:ILE:HD11	3:J:525:LEU:HD21	1.91	0.52
1:B:294:GLN:O	1:B:297:MET:HG2	2.10	0.52
3:J:380:TYR:HB3	3:J:440:LYS:HE2	1.91	0.52
2:F:325:VAL:HA	2:F:335:GLU:HA	1.92	0.51
1:A:28:PHE:CE1	1:A:91:ALA:HB1	2.46	0.51
1:A:55:ARG:CZ	1:B:278:ASN:HB3	2.41	0.51
1:A:197:ASN:HB2	1:A:420:SER:HB3	1.92	0.51
1:A:294:GLN:HB3	1:C:41:GLN:NE2	2.25	0.51
1:B:365:GLY:O	2:G:142:SER:OG	2.24	0.51
2:G:209:GLN:HB3	2:H:209:GLN:HE22	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:340:ILE:HG12	2:H:350:ILE:HA	1.91	0.51
2:D:241:GLN:NE2	2:D:299:GLN:O	2.44	0.51
2:D:309:ILE:HD12	2:D:340:ILE:HD11	1.91	0.51
2:D:319:GLY:HA2	3:K:415:HIS:O	2.10	0.51
2:G:314:LEU:HD21	2:G:322:ARG:HD3	1.92	0.51
3:K:423:VAL:HA	3:K:432:ARG:HA	1.92	0.51
1:A:183:ARG:O	1:A:187:GLY:N	2.27	0.51
1:A:380:TYR:CD1	1:A:383:LYS:HD2	2.45	0.51
1:B:172:ARG:NH2	1:B:428:GLU:O	2.44	0.51
2:E:339:THR:HG22	2:E:352:LYS:HB2	1.90	0.51
2:G:267:GLU:OE2	2:G:276:TYR:OH	2.24	0.51
2:I:51:LEU:HD22	2:I:297:HIS:NE2	2.26	0.51
3:J:15:PRO:HA	3:J:20:GLN:HA	1.93	0.51
3:K:500:LYS:HG2	3:K:503:PHE:CE1	2.45	0.51
1:A:315:GLN:NE2	1:C:19:LYS:HE3	2.25	0.51
2:F:271:ASP:OD1	3:J:465:GLY:C	2.49	0.51
2:G:317:PRO:HG2	2:G:321:ASN:HB3	1.93	0.51
2:H:209:GLN:CB	2:I:209:GLN:HE22	2.20	0.51
3:K:279:ILE:HD13	3:K:580:CYS:HA	1.93	0.51
1:B:148:LEU:HD23	2:G:131:ARG:NE	2.24	0.51
1:C:169:LEU:O	1:C:173:ASN:HB2	2.10	0.51
2:D:142:SER:OG	2:D:143:GLN:N	2.44	0.51
2:G:272:ALA:H	3:J:359:ARG:HE	1.58	0.51
2:G:342:ALA:HB3	2:G:349:GLU:HB3	1.93	0.51
2:I:140:ALA:O	2:I:142:SER:N	2.44	0.51
3:J:27:ILE:HG23	3:J:221:ILE:HG12	1.91	0.51
3:K:374:GLY:O	3:K:389:THR:HG21	2.10	0.51
1:A:332:ASN:HB3	1:C:173:ASN:HD21	1.75	0.51
1:A:335:ASN:HA	1:A:338:ILE:HD12	1.92	0.51
2:D:144:GLN:OE1	2:I:131:ARG:NH1	2.43	0.51
2:E:46:LEU:HD11	2:E:344:ASN:HD22	1.76	0.51
2:H:209:GLN:HG3	2:H:210:GLN:N	2.26	0.51
3:J:5:LEU:HD23	3:J:67:VAL:HA	1.92	0.51
3:J:46:GLY:O	3:J:50:LEU:N	2.38	0.51
3:J:485:ALA:HA	3:J:488:GLN:HB2	1.93	0.51
1:A:294:GLN:HB3	1:C:41:GLN:HE22	1.75	0.51
1:C:399:ASN:O	1:C:403:ALA:N	2.44	0.51
2:D:336:ARG:HH12	2:D:355:GLU:HG2	1.75	0.51
2:F:317:PRO:HD3	2:F:323:TYR:HD2	1.76	0.51
2:H:321:ASN:OD1	2:H:322:ARG:N	2.44	0.51
3:J:166:ILE:HB	3:J:197:VAL:HG12	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:37:VAL:HB	3:K:198:ILE:HG12	1.92	0.51
1:B:28:PHE:CE1	1:B:91:ALA:HB1	2.45	0.51
1:B:360:ALA:O	1:B:363:SER:OG	2.14	0.51
2:G:317:PRO:HD3	2:G:323:TYR:HD2	1.75	0.51
3:J:302:ALA:HA	3:J:305:ARG:HG2	1.93	0.51
3:J:466:GLN:HB2	3:J:468:TRP:CD1	2.46	0.51
3:K:96:HIS:HB2	3:K:557:ILE:HD13	1.93	0.51
3:K:398:ARG:HE	3:K:457:SER:HB3	1.76	0.51
1:A:256:ILE:HA	1:A:280:GLY:HA2	1.92	0.51
1:B:143:ARG:CB	2:G:135:LEU:CD1	2.89	0.51
2:D:301:THR:O	2:D:301:THR:HG23	2.11	0.51
2:F:89:LEU:HD12	2:F:186:ILE:HG22	1.91	0.51
3:K:257:ALA:HA	3:K:260:MET:HB2	1.91	0.51
1:A:183:ARG:NH2	1:A:189:TYR:HB2	2.20	0.50
1:A:186:THR:HG22	1:A:188:ASN:HD22	1.77	0.50
2:F:51:LEU:HD12	3:J:400:GLN:OE1	2.11	0.50
2:F:209:GLN:HG3	2:F:210:GLN:H	1.74	0.50
2:G:317:PRO:HD2	2:G:322:ARG:HA	1.92	0.50
2:I:133:GLN:HA	2:I:136:ALA:HB3	1.93	0.50
3:J:284:ALA:HA	3:J:591:SER:HB2	1.92	0.50
1:A:54:TYR:HA	1:A:58:ASN:HA	1.93	0.50
1:B:58:ASN:OD1	1:B:59:GLY:N	2.44	0.50
1:C:28:PHE:HE1	1:C:91:ALA:HB1	1.75	0.50
2:E:50:VAL:CB	2:E:298:ILE:O	2.59	0.50
2:E:310:PRO:HA	2:E:347:ASP:OD1	2.11	0.50
2:I:195:THR:HB	2:I:216:THR:HG23	1.94	0.50
3:J:255:ASN:OD1	3:J:256:GLU:N	2.44	0.50
3:J:384:PHE:HZ	3:J:389:THR:HG1	1.58	0.50
2:E:131:ARG:NH1	2:F:144:GLN:OE1	2.45	0.50
2:E:267:GLU:OE2	2:E:276:TYR:OH	2.18	0.50
3:J:324:ASP:HB3	3:J:325:PRO:HD3	1.93	0.50
3:K:5:LEU:HD23	3:K:67:VAL:HA	1.93	0.50
1:A:177:ASN:O	1:A:181:GLN:HG2	2.12	0.50
1:C:30:LYS:HG3	1:C:33:GLU:OE2	2.12	0.50
1:C:360:ALA:O	1:C:363:SER:OG	2.15	0.50
2:E:309:ILE:HD12	2:E:340:ILE:HD11	1.94	0.50
1:A:14:ASN:HD22	1:A:105:LEU:HD22	1.77	0.50
2:D:48:GLN:HB3	2:D:301:THR:CG2	2.42	0.50
2:D:48:GLN:CB	2:D:301:THR:O	2.59	0.50
2:D:271:ASP:CB	3:K:357:ARG:HB2	2.40	0.50
2:H:339:THR:HG22	2:H:352:LYS:HB2	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:552:THR:HA	3:J:555:ILE:HD12	1.94	0.50
1:A:281:GLN:NE2	1:C:51:SER:HB3	2.26	0.50
1:A:412:LEU:HA	1:A:415:LEU:HD12	1.93	0.50
1:B:177:ASN:O	1:B:181:GLN:HG2	2.11	0.50
1:C:150:ALA:HB2	2:D:141:VAL:HA	1.92	0.50
1:C:383:LYS:O	1:C:386:LEU:HB3	2.12	0.50
2:G:336:ARG:HH22	2:G:355:GLU:H	1.59	0.50
3:J:374:GLY:O	3:J:389:THR:HG21	2.12	0.50
1:B:14:ASN:OD1	1:B:16:GLU:N	2.45	0.50
1:C:49:THR:O	1:C:64:ALA:N	2.45	0.50
1:C:113:TYR:HE1	1:C:193:LEU:HD22	1.77	0.50
2:D:317:PRO:HD3	2:D:323:TYR:HD2	1.74	0.50
2:G:272:ALA:CA	3:J:359:ARG:HE	2.25	0.50
2:I:271:ASP:OD1	3:K:466:GLN:N	2.44	0.50
3:K:266:ALA:HA	3:K:269:LYS:HD3	1.92	0.50
3:J:566:SER:O	3:J:570:GLN:HG3	2.12	0.50
3:K:534:VAL:O	3:K:538:ILE:HG13	2.12	0.50
1:B:234:ARG:HA	1:B:237:ILE:HD12	1.94	0.49
2:D:242:LYS:O	2:D:299:GLN:CB	2.59	0.49
2:E:321:ASN:OD1	2:E:322:ARG:N	2.44	0.49
2:F:310:PRO:HA	2:F:347:ASP:OD1	2.12	0.49
2:H:135:LEU:HD22	2:H:140:ALA:HB2	1.94	0.49
2:I:259:ILE:HG22	2:I:279:PHE:HE1	1.76	0.49
3:J:91:ILE:HD11	3:J:155:ILE:HA	1.93	0.49
3:J:266:ALA:HA	3:J:269:LYS:HD3	1.93	0.49
2:E:50:VAL:HG21	2:E:298:ILE:HG22	1.94	0.49
3:K:289:ILE:HD11	3:K:525:LEU:HD21	1.95	0.49
3:K:324:ASP:HB3	3:K:325:PRO:HD3	1.94	0.49
1:A:30:LYS:HG3	1:A:33:GLU:OE2	2.11	0.49
1:B:132:ALA:HA	1:B:135:ARG:NH2	2.27	0.49
2:F:195:THR:HB	2:F:216:THR:HG23	1.94	0.49
1:C:186:THR:HG21	1:C:190:TYR:CE2	2.46	0.49
2:D:317:PRO:HD2	2:D:322:ARG:HA	1.94	0.49
1:B:30:LYS:HG3	1:B:33:GLU:OE2	2.13	0.49
2:D:271:ASP:CB	3:K:357:ARG:CG	2.85	0.49
2:E:133:GLN:HA	2:E:136:ALA:HB3	1.94	0.49
2:I:326:LYS:HE2	2:I:336:ARG:NH2	2.28	0.49
3:K:137:ARG:HA	3:K:140:TYR:CD2	2.47	0.49
3:K:310:ASN:HA	3:K:507:MET:HE3	1.93	0.49
3:K:314:VAL:HG11	3:K:331:LEU:HD13	1.95	0.49
3:K:318:LYS:HA	3:K:503:PHE:CD2	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:78:MET:HA	1:A:81:TRP:HD1	1.76	0.49
1:A:143:ARG:HB2	2:E:135:LEU:HD11	1.95	0.49
2:D:336:ARG:HH22	2:D:355:GLU:H	1.60	0.49
3:J:534:VAL:O	3:J:538:ILE:HG13	2.12	0.49
3:K:392:GLN:HA	3:K:395:LEU:HB3	1.94	0.49
1:B:412:LEU:HA	1:B:415:LEU:HD12	1.94	0.49
1:C:197:ASN:ND2	1:C:200:ASN:HD22	2.10	0.49
2:D:67:GLN:NE2	2:I:70:GLY:HA2	2.28	0.49
2:D:310:PRO:HA	2:D:347:ASP:OD1	2.12	0.49
2:I:259:ILE:HG22	2:I:279:PHE:CE1	2.47	0.49
3:J:137:ARG:HA	3:J:140:TYR:CD2	2.48	0.49
3:J:510:VAL:HA	3:J:513:THR:HG22	1.95	0.49
3:J:516:LYS:HA	3:J:519:ARG:HG2	1.95	0.49
3:J:406:SER:O	3:J:410:ARG:HG2	2.13	0.49
3:K:255:ASN:OD1	3:K:256:GLU:N	2.46	0.49
3:K:324:ASP:HA	3:K:327:TYR:HB3	1.95	0.49
3:K:512:LYS:HE3	3:K:516:LYS:HE3	1.95	0.49
2:F:37:GLN:HB2	2:F:363:GLY:HA3	1.95	0.49
3:J:8:LYS:HA	3:J:28:SER:HA	1.95	0.49
1:B:148:LEU:CD2	2:G:131:ARG:CG	2.88	0.49
1:C:344:TYR:O	1:C:348:VAL:HG23	2.13	0.49
2:E:50:VAL:HB	2:E:298:ILE:O	2.12	0.49
3:J:547:SER:O	3:J:551:ARG:HG3	2.13	0.49
3:K:76:ASP:OD1	3:K:77:ALA:N	2.46	0.49
1:C:15:PRO:O	1:C:19:LYS:N	2.39	0.48
1:C:143:ARG:CB	2:I:135:LEU:CD1	2.84	0.48
2:F:267:GLU:OE2	2:F:276:TYR:OH	2.24	0.48
2:I:343:ARG:NH1	3:K:393:GLU:O	2.46	0.48
3:K:4:LEU:HD12	3:K:5:LEU:HG	1.94	0.48
3:K:91:ILE:HD11	3:K:155:ILE:HA	1.94	0.48
3:K:485:ALA:H	3:K:487:GLN:NE2	2.11	0.48
1:B:50:TYR:CE2	1:B:52:ASN:HB2	2.48	0.48
1:B:365:GLY:O	2:G:142:SER:HA	2.13	0.48
1:C:1:GLU:OE2	1:C:194:ALA:N	2.46	0.48
2:F:34:PRO:HB2	2:F:371:GLN:HA	1.94	0.48
2:F:259:ILE:HG22	2:F:279:PHE:CE1	2.48	0.48
2:H:50:VAL:O	2:H:298:ILE:CD1	2.49	0.48
3:J:4:LEU:HD12	3:J:5:LEU:HG	1.95	0.48
3:K:84:ARG:HA	3:K:88:PHE:CD2	2.47	0.48
1:B:181:GLN:HE22	1:C:325:GLN:NE2	2.11	0.48
1:C:220:ASN:HB3	1:C:223:LEU:HG	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:49:SER:CA	2:F:300:LEU:HG	2.43	0.48
2:F:321:ASN:OD1	2:F:322:ARG:N	2.46	0.48
2:I:321:ASN:OD1	2:I:322:ARG:N	2.45	0.48
3:J:217:ARG:HG2	3:J:222:VAL:HB	1.96	0.48
3:J:384:PHE:HA	3:J:437:ALA:HA	1.94	0.48
3:K:459:MET:O	3:K:463:VAL:HG22	2.13	0.48
2:D:133:GLN:HA	2:D:136:ALA:HB3	1.96	0.48
2:G:343:ARG:HB2	2:G:348:VAL:HG12	1.95	0.48
3:J:310:ASN:ND2	3:J:507:MET:HG2	2.28	0.48
3:K:12:ARG:HB2	3:K:24:LEU:HD12	1.94	0.48
3:K:566:SER:O	3:K:570:GLN:HG3	2.13	0.48
1:C:195:ALA:O	1:C:420:SER:N	2.42	0.48
2:D:50:VAL:CG1	2:D:51:LEU:N	2.36	0.48
3:J:335:ASP:HB3	3:J:496:ARG:HH12	1.79	0.48
3:K:12:ARG:NH2	3:K:58:ASP:H	2.11	0.48
3:K:590:LEU:HA	3:K:593:LEU:HD12	1.95	0.48
1:A:125:TYR:CZ	1:A:380:TYR:HB3	2.49	0.48
2:F:326:LYS:HE2	2:F:336:ARG:NH2	2.29	0.48
3:J:519:ARG:O	3:J:523:LEU:HG	2.14	0.48
1:A:234:ARG:HA	1:A:237:ILE:HD12	1.96	0.48
1:A:364:VAL:HG21	2:D:131:ARG:CG	2.44	0.48
1:A:364:VAL:HG11	2:D:131:ARG:HG3	1.95	0.48
3:J:51:MET:HA	3:J:54:LEU:HD12	1.95	0.48
3:K:217:ARG:HG2	3:K:222:VAL:HB	1.95	0.48
1:A:50:TYR:CE2	1:A:52:ASN:HB2	2.49	0.48
2:F:311:LEU:HG	2:F:347:ASP:HA	1.95	0.48
3:J:40:VAL:O	3:J:215:GLU:HA	2.14	0.48
3:K:27:ILE:HG23	3:K:221:ILE:HG12	1.95	0.48
1:A:344:TYR:O	1:A:348:VAL:HG23	2.13	0.48
1:A:352:GLN:HE21	1:A:356:ASP:CG	2.18	0.48
2:G:40:ILE:HD13	2:G:359:GLU:HG2	1.96	0.48
2:I:336:ARG:NH2	2:I:354:LEU:HA	2.29	0.48
3:J:398:ARG:O	3:J:462:ARG:NH2	2.47	0.48
1:B:344:TYR:O	1:B:348:VAL:HG23	2.13	0.48
1:B:352:GLN:NE2	1:B:356:ASP:OD1	2.46	0.48
1:C:103:GLN:NE2	1:C:405:GLY:O	2.40	0.48
2:G:333:THR:OG1	2:G:369:ALA:O	2.25	0.48
3:K:13:SER:HA	3:K:23:VAL:HG22	1.96	0.48
1:C:296:GLY:HA2	1:C:299:ASN:ND2	2.28	0.47
2:D:40:ILE:HD13	2:D:359:GLU:HG2	1.94	0.47
2:I:343:ARG:HA	2:I:348:VAL:HG12	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:535:VAL:HA	3:J:538:ILE:HD12	1.96	0.47
1:B:4:MET:O	1:B:8:GLN:HG2	2.14	0.47
2:E:314:LEU:O	3:J:491:ARG:NH2	2.47	0.47
2:F:70:GLY:HA2	2:G:67:GLN:NE2	2.29	0.47
2:H:304:LYS:O	2:H:306:VAL:N	2.39	0.47
3:J:289:ILE:HA	3:J:292:VAL:HG22	1.96	0.47
3:K:36:MET:HB3	3:K:211:GLU:HG2	1.96	0.47
3:K:40:VAL:O	3:K:215:GLU:HA	2.14	0.47
3:K:191:ARG:NH2	3:K:211:GLU:OE1	2.40	0.47
3:K:344:TRP:O	3:K:477:LYS:N	2.41	0.47
3:K:547:SER:O	3:K:551:ARG:HG3	2.14	0.47
1:B:77:ASP:OD2	1:B:79:SER:OG	2.32	0.47
2:D:140:ALA:O	2:D:142:SER:N	2.47	0.47
2:D:242:LYS:O	2:D:299:GLN:HB2	2.14	0.47
2:E:209:GLN:HG3	2:E:210:GLN:N	2.28	0.47
2:I:51:LEU:HA	2:I:296:VAL:O	2.15	0.47
2:I:89:LEU:HD12	2:I:186:ILE:HG22	1.95	0.47
3:J:76:ASP:OD1	3:J:77:ALA:N	2.46	0.47
3:J:355:ASN:HA	3:J:368:SER:HA	1.95	0.47
3:K:350:PRO:HG2	3:K:456:TYR:CZ	2.50	0.47
3:K:406:SER:O	3:K:410:ARG:HG2	2.15	0.47
1:A:292:ILE:HG22	1:A:293:TYR:N	2.24	0.47
1:B:41:GLN:HB2	1:B:72:THR:OG1	2.15	0.47
2:E:36:TYR:HD1	2:E:364:GLU:HG3	1.79	0.47
2:F:46:LEU:HD11	2:F:48:GLN:CG	2.43	0.47
2:F:259:ILE:HG22	2:F:279:PHE:HE1	1.79	0.47
2:H:133:GLN:HA	2:H:136:ALA:HB3	1.96	0.47
3:J:309:THR:HA	3:J:310:ASN:HA	1.58	0.47
1:A:376:THR:O	1:A:379:LEU:HB3	2.14	0.47
1:C:90:ALA:HA	1:C:93:ILE:HD12	1.96	0.47
1:C:197:ASN:HD21	1:C:200:ASN:ND2	2.11	0.47
1:C:412:LEU:HA	1:C:415:LEU:HD12	1.96	0.47
2:E:259:ILE:HG22	2:E:279:PHE:CE1	2.49	0.47
2:F:133:GLN:HA	2:F:136:ALA:HB3	1.97	0.47
2:G:309:ILE:HD12	2:G:340:ILE:HD11	1.96	0.47
3:J:49:THR:HA	3:J:52:ASN:ND2	2.30	0.47
3:J:279:ILE:HD13	3:J:580:CYS:HA	1.95	0.47
3:K:213:VAL:HG23	3:K:225:PRO:HG2	1.96	0.47
1:A:90:ALA:HA	1:A:93:ILE:HD12	1.97	0.47
1:A:254:THR:OG1	1:A:282:ASN:OD1	2.20	0.47
1:B:148:LEU:HD21	2:G:131:ARG:NE	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:148:LEU:HD23	2:I:131:ARG:CD	2.45	0.47
1:C:239:GLN:HA	1:C:242:ASP:OD2	2.15	0.47
1:C:290:LEU:HA	1:C:291:PRO:HD3	1.79	0.47
1:C:381:ASN:O	1:C:385:GLU:HG2	2.15	0.47
2:D:272:ALA:CA	3:K:359:ARG:CZ	2.91	0.47
2:F:49:SER:HB2	2:F:299:GLN:HA	1.97	0.47
2:I:209:GLN:HG3	2:I:210:GLN:N	2.30	0.47
3:J:36:MET:HB3	3:J:211:GLU:HG2	1.97	0.47
3:J:39:ILE:HG22	3:J:47:LYS:HD2	1.96	0.47
3:J:331:LEU:O	3:J:468:TRP:HA	2.14	0.47
3:J:385:SER:HB2	3:J:438:GLU:HG3	1.97	0.47
3:K:39:ILE:HG22	3:K:47:LYS:HD2	1.96	0.47
3:K:103:ALA:HA	3:K:106:ASN:HD22	1.80	0.47
3:K:284:ALA:HA	3:K:591:SER:HB2	1.97	0.47
3:K:360:TYR:CE1	3:K:424:ILE:HG12	2.50	0.47
1:B:172:ARG:O	1:B:175:LEU:HB3	2.15	0.47
1:C:352:GLN:NE2	1:C:356:ASP:OD1	2.47	0.47
2:D:265:THR:HA	2:D:266:PRO:HD2	1.79	0.47
2:E:259:ILE:HG22	2:E:279:PHE:HE1	1.80	0.47
3:J:329:GLN:HB2	3:J:468:TRP:HB2	1.96	0.47
3:K:459:MET:O	3:K:463:VAL:N	2.40	0.47
3:K:551:ARG:O	3:K:555:ILE:N	2.41	0.47
1:A:362:TYR:C	1:A:365:GLY:H	2.18	0.47
2:I:34:PRO:HB2	2:I:371:GLN:HA	1.96	0.47
3:J:191:ARG:NH2	3:J:211:GLU:OE1	2.43	0.47
3:J:213:VAL:HG23	3:J:225:PRO:HG2	1.96	0.47
3:J:282:GLY:O	3:J:285:SER:OG	2.25	0.47
3:J:403:VAL:HA	3:J:435:GLY:O	2.15	0.47
3:J:460:SER:O	3:J:465:GLY:N	2.39	0.47
1:C:195:ALA:N	1:C:421:LYS:O	2.26	0.47
3:K:111:ALA:O	3:K:121:ARG:NH1	2.48	0.47
3:K:489:LEU:HA	3:K:492:LEU:HB3	1.97	0.47
3:K:602:LEU:HD11	3:K:606:GLU:HA	1.97	0.47
1:A:364:VAL:HG21	2:D:131:ARG:HG2	1.97	0.46
1:B:254:THR:OG1	1:B:281:GLN:O	2.33	0.46
2:E:50:VAL:HG12	2:E:298:ILE:HD13	1.97	0.46
2:F:271:ASP:OD2	3:J:465:GLY:N	2.29	0.46
2:G:46:LEU:HD11	2:G:344:ASN:ND2	2.31	0.46
2:H:259:ILE:HG22	2:H:279:PHE:HE1	1.80	0.46
3:J:84:ARG:HA	3:J:88:PHE:CD2	2.47	0.46
3:J:96:HIS:HB2	3:J:557:ILE:HD13	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:535:VAL:HA	3:K:538:ILE:HD12	1.96	0.46
1:A:113:TYR:HE1	1:A:193:LEU:HD22	1.80	0.46
1:B:172:ARG:NH1	1:B:427:PRO:O	2.24	0.46
2:F:142:SER:OG	2:F:143:GLN:N	2.47	0.46
3:J:103:ALA:HA	3:J:106:ASN:HD22	1.80	0.46
3:J:542:ASN:O	3:J:546:VAL:HG23	2.16	0.46
3:K:51:MET:HA	3:K:54:LEU:HD12	1.96	0.46
3:K:590:LEU:O	3:K:594:ILE:HG12	2.15	0.46
1:B:327:VAL:HG12	1:B:403:ALA:HB1	1.97	0.46
3:J:590:LEU:O	3:J:594:ILE:HG12	2.16	0.46
3:K:4:LEU:O	3:K:68:ALA:N	2.41	0.46
3:K:519:ARG:O	3:K:523:LEU:HG	2.15	0.46
1:A:391:TYR:O	1:A:395:ILE:HG12	2.16	0.46
1:B:380:TYR:CD1	1:B:383:LYS:HD2	2.50	0.46
1:C:148:LEU:HD21	2:I:131:ARG:HG2	1.96	0.46
3:J:482:SER:HB2	3:J:506:ASN:HD21	1.79	0.46
3:K:39:ILE:HB	3:K:200:VAL:HG23	1.98	0.46
3:K:201:THR:HG21	3:K:206:VAL:HG13	1.97	0.46
1:B:105:LEU:O	1:B:109:THR:OG1	2.30	0.46
2:E:50:VAL:CB	2:E:298:ILE:CB	2.74	0.46
2:G:241:GLN:NE2	2:G:300:LEU:C	2.69	0.46
3:J:309:THR:HA	3:J:310:ASN:ND2	2.30	0.46
1:A:17:LEU:HD11	1:A:102:GLN:HG2	1.96	0.46
1:A:327:VAL:HG12	1:A:403:ALA:HB1	1.98	0.46
1:B:220:ASN:HD21	1:B:222:SER:HB2	1.79	0.46
2:H:259:ILE:HG22	2:H:279:PHE:CE1	2.50	0.46
3:J:497:HIS:CE1	3:J:499:LYS:HB2	2.50	0.46
3:J:590:LEU:HA	3:J:593:LEU:HD12	1.96	0.46
1:B:41:GLN:HE22	1:C:294:GLN:HB3	1.81	0.46
1:C:141:THR:O	1:C:145:ASN:ND2	2.49	0.46
2:D:303:VAL:HG21	2:D:349:GLU:OE2	2.15	0.46
2:F:326:LYS:HB2	2:F:359:GLU:O	2.15	0.46
3:J:52:ASN:HB3	3:J:57:LEU:HB2	1.98	0.46
3:J:392:GLN:HA	3:J:395:LEU:HB3	1.96	0.46
3:J:442:SER:OG	3:J:443:MET:N	2.45	0.46
1:A:271:GLY:C	1:A:273:GLN:H	2.19	0.46
1:B:161:TYR:CE2	1:B:165:LEU:HD11	2.50	0.46
1:C:14:ASN:OD1	1:C:16:GLU:N	2.49	0.46
1:C:103:GLN:HE22	1:C:405:GLY:C	2.19	0.46
2:F:209:GLN:HG3	2:F:210:GLN:N	2.30	0.46
2:H:265:THR:HA	2:H:266:PRO:HD2	1.78	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:282:GLY:O	3:K:285:SER:OG	2.24	0.46
3:K:529:ALA:O	3:K:533:LEU:HG	2.16	0.46
1:B:364:VAL:HG23	1:B:366:THR:HG23	1.97	0.46
1:C:63:ASN:O	1:C:259:THR:HG23	2.16	0.46
2:D:259:ILE:HG22	2:D:279:PHE:HE1	1.81	0.46
2:E:336:ARG:NH2	2:E:354:LEU:HA	2.31	0.46
2:G:308:THR:HA	2:G:350:ILE:HG22	1.98	0.46
2:G:336:ARG:NH2	2:G:358:ASP:OD2	2.49	0.46
3:J:39:ILE:HB	3:J:200:VAL:HG23	1.98	0.46
3:J:118:ARG:HA	3:J:121:ARG:HE	1.80	0.46
3:J:247:TRP:HA	3:J:250:PHE:CD2	2.51	0.46
3:K:315:TYR:CD2	3:K:504:THR:HA	2.51	0.46
1:A:206:PRO:HB2	1:A:331:PHE:CE1	2.51	0.46
1:A:239:GLN:HA	1:A:242:ASP:OD2	2.16	0.46
1:C:257:SER:OG	1:C:279:MET:O	2.23	0.46
3:J:360:TYR:CE1	3:J:424:ILE:HG12	2.51	0.46
3:J:602:LEU:HG	3:J:605:TRP:O	2.16	0.46
3:K:46:GLY:O	3:K:50:LEU:N	2.40	0.46
1:B:220:ASN:ND2	1:B:222:SER:HB2	2.32	0.45
2:D:209:GLN:HB3	2:E:209:GLN:HE22	1.81	0.45
2:G:272:ALA:N	3:J:359:ARG:HE	2.14	0.45
2:I:310:PRO:HA	2:I:347:ASP:OD1	2.16	0.45
2:I:315:GLY:HA3	2:I:323:TYR:CE1	2.51	0.45
3:K:338:ALA:HB3	3:K:496:ARG:CZ	2.46	0.45
3:K:611:PRO:O	3:K:614:LEU:HB2	2.16	0.45
1:A:161:TYR:CE2	1:A:165:LEU:HD11	2.52	0.45
2:D:209:GLN:CB	2:E:209:GLN:HE22	2.30	0.45
2:H:36:TYR:HD1	2:H:364:GLU:HG3	1.81	0.45
3:J:77:ALA:HA	3:J:80:LEU:HD12	1.97	0.45
3:J:487:GLN:O	3:J:491:ARG:HG3	2.16	0.45
3:K:191:ARG:HE	3:K:211:GLU:CD	2.20	0.45
3:K:216:ILE:HG13	3:K:220:GLU:C	2.37	0.45
3:K:247:TRP:HA	3:K:250:PHE:CD2	2.51	0.45
2:I:51:LEU:H	2:I:51:LEU:HG	1.47	0.45
2:I:59:LEU:HA	2:I:224:LEU:HG	1.97	0.45
3:J:104:GLU:HB2	3:J:138:THR:HG23	1.96	0.45
3:J:201:THR:HG21	3:J:206:VAL:HG13	1.97	0.45
3:J:529:ALA:O	3:J:533:LEU:HG	2.17	0.45
3:K:36:MET:HE3	3:K:210:ALA:HA	1.98	0.45
1:A:4:MET:O	1:A:8:GLN:HG2	2.17	0.45
1:A:386:LEU:HG	1:A:390:ARG:NH1	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:70:GLY:HA2	2:F:67:GLN:NE2	2.31	0.45
2:F:51:LEU:CD1	3:J:400:GLN:OE1	2.64	0.45
2:H:34:PRO:HB2	2:H:371:GLN:C	2.37	0.45
3:J:4:LEU:O	3:J:68:ALA:N	2.43	0.45
3:J:37:VAL:HB	3:J:198:ILE:HG12	1.97	0.45
3:J:216:ILE:HG13	3:J:220:GLU:C	2.37	0.45
3:K:51:MET:O	3:K:55:GLY:N	2.49	0.45
1:B:103:GLN:HE22	1:B:405:GLY:C	2.20	0.45
1:B:190:TYR:HA	1:B:191:PRO:HD2	1.85	0.45
2:G:33:VAL:HA	2:G:34:PRO:HD3	1.79	0.45
2:I:271:ASP:CA	3:K:465:GLY:HA3	2.24	0.45
3:J:83:LEU:O	3:J:87:HIS:N	2.49	0.45
3:J:274:LEU:HB2	3:K:542:ASN:ND2	2.32	0.45
3:J:398:ARG:HB3	3:J:462:ARG:HE	1.80	0.45
3:J:542:ASN:ND2	3:K:274:LEU:HB2	2.32	0.45
3:K:104:GLU:HB2	3:K:138:THR:HG23	1.97	0.45
3:K:516:LYS:O	3:K:520:THR:OG1	2.23	0.45
1:A:74:SER:HA	1:A:249:ASP:HA	1.98	0.45
1:B:44:LEU:HD13	1:B:69:LEU:HD23	1.98	0.45
1:C:103:GLN:HB3	1:C:407:LEU:HD12	1.97	0.45
2:D:209:GLN:HE22	2:I:209:GLN:HG2	1.80	0.45
2:I:317:PRO:C	2:I:319:GLY:H	2.20	0.45
3:J:36:MET:N	3:J:211:GLU:OE2	2.50	0.45
3:J:400:GLN:O	3:J:432:ARG:N	2.50	0.45
1:A:44:LEU:HB2	1:B:292:ILE:HD11	1.99	0.45
1:C:4:MET:O	1:C:8:GLN:HG2	2.17	0.45
2:I:96:GLN:HE21	2:I:100:GLN:NE2	2.15	0.45
2:I:263:LEU:HD12	2:I:276:TYR:HD2	1.81	0.45
2:I:332:GLU:HG2	2:I:334:ARG:HG3	1.97	0.45
1:B:63:ASN:O	1:B:259:THR:HA	2.17	0.45
1:B:141:THR:O	1:B:145:ASN:ND2	2.50	0.45
1:B:173:ASN:OD1	1:C:332:ASN:HB3	2.17	0.45
2:F:135:LEU:HD22	2:F:140:ALA:HB2	1.98	0.45
3:J:512:LYS:HE3	3:J:516:LYS:HE3	1.98	0.45
3:K:47:LYS:HB3	3:K:216:ILE:HG21	1.99	0.45
3:K:77:ALA:HA	3:K:80:LEU:HD12	1.98	0.45
1:C:347:ALA:O	1:C:350:SER:OG	2.27	0.45
2:D:285:ASN:HB3	2:D:287:LEU:HD13	1.99	0.45
2:F:263:LEU:HD12	2:F:276:TYR:HD2	1.81	0.45
3:J:531:ILE:O	3:J:535:VAL:HG23	2.16	0.45
3:K:358:LEU:HB3	3:K:365:VAL:HG23	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:516:LYS:HA	3:K:519:ARG:HG2	1.99	0.45
1:B:44:LEU:HB2	1:C:292:ILE:HD11	1.98	0.45
1:B:82:ARG:O	1:B:85:THR:OG1	2.25	0.45
1:C:213:LEU:O	1:C:217:GLU:HG2	2.16	0.45
2:D:209:GLN:HG3	2:D:210:GLN:H	1.82	0.45
2:E:194:VAL:HA	2:E:217:LEU:HD23	1.99	0.45
2:E:317:PRO:C	2:E:319:GLY:H	2.20	0.45
2:G:259:ILE:HG22	2:G:279:PHE:HE1	1.80	0.45
2:G:310:PRO:HA	2:G:347:ASP:OD1	2.17	0.45
3:J:12:ARG:H	3:J:24:LEU:HD12	1.82	0.45
3:J:36:MET:HE3	3:J:210:ALA:HA	1.98	0.45
3:J:113:TYR:CZ	3:J:563:ALA:HB2	2.52	0.45
3:J:275:THR:HG23	3:J:540:VAL:HG22	1.99	0.45
1:C:125:TYR:CE2	1:C:384:GLN:HB2	2.52	0.44
1:C:271:GLY:C	1:C:273:GLN:H	2.20	0.44
2:D:267:GLU:OE2	2:D:276:TYR:OH	2.24	0.44
2:G:47:GLN:HB3	2:G:299:GLN:NE2	2.30	0.44
2:G:48:GLN:HG3	2:G:48:GLN:O	2.17	0.44
2:H:48:GLN:O	2:H:300:LEU:CB	2.49	0.44
2:H:309:ILE:HD11	2:H:350:ILE:HD12	1.99	0.44
3:J:352:VAL:O	3:J:371:GLY:N	2.50	0.44
3:J:490:THR:HG23	3:J:502:PHE:CD2	2.53	0.44
3:J:623:VAL:HA	3:J:626:ILE:HG22	1.99	0.44
3:K:455:PRO:HG2	3:K:458:THR:OG1	2.17	0.44
1:A:197:ASN:HD21	1:A:200:ASN:ND2	2.15	0.44
1:B:143:ARG:CA	2:G:135:LEU:CD1	2.94	0.44
1:B:223:LEU:HD12	1:B:224:LEU:N	2.32	0.44
1:B:373:LEU:HD23	1:B:373:LEU:HA	1.75	0.44
2:D:319:GLY:HA3	3:K:417:ALA:CA	2.45	0.44
2:F:48:GLN:CG	2:F:344:ASN:OD1	2.65	0.44
2:H:70:GLY:HA2	2:I:67:GLN:NE2	2.33	0.44
3:J:487:GLN:O	3:J:490:THR:HB	2.18	0.44
3:K:36:MET:N	3:K:211:GLU:OE2	2.49	0.44
3:K:88:PHE:HB3	3:K:90:PHE:CE1	2.52	0.44
1:A:173:ASN:HD21	1:B:332:ASN:HB3	1.83	0.44
1:C:209:VAL:O	1:C:213:LEU:HG	2.18	0.44
2:D:136:ALA:HA	2:D:140:ALA:H	1.82	0.44
3:J:336:LEU:HD11	3:J:348:ALA:HB3	1.98	0.44
3:K:91:ILE:HD13	3:K:155:ILE:HG13	2.00	0.44
3:K:398:ARG:C	3:K:462:ARG:HH21	2.18	0.44
3:K:425:LEU:HA	3:K:430:PRO:HA	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:320:HIS:O	1:A:323:VAL:HG22	2.18	0.44
1:A:401:LYS:HD2	1:A:404:LEU:HD12	2.00	0.44
1:B:271:GLY:C	1:B:273:GLN:H	2.21	0.44
1:C:380:TYR:O	1:C:383:LYS:HB2	2.18	0.44
2:D:209:GLN:HG3	2:D:210:GLN:N	2.32	0.44
2:F:53:THR:CB	3:J:430:PRO:HD3	2.37	0.44
2:F:96:GLN:HE21	2:F:100:GLN:NE2	2.15	0.44
2:I:231:GLU:O	2:I:234:VAL:HG12	2.18	0.44
2:I:325:VAL:HG22	2:I:335:GLU:HB3	1.99	0.44
3:J:88:PHE:HB3	3:J:90:PHE:CE1	2.52	0.44
3:J:335:ASP:CB	3:J:496:ARG:HH12	2.30	0.44
3:K:308:GLY:O	3:K:310:ASN:HB3	2.17	0.44
3:K:429:MET:SD	3:K:462:ARG:NH1	2.90	0.44
1:B:364:VAL:CG2	2:F:131:ARG:CG	2.91	0.44
1:C:335:ASN:HA	1:C:338:ILE:HD12	2.00	0.44
2:F:48:GLN:NE2	2:F:344:ASN:HA	2.18	0.44
2:F:231:GLU:O	2:F:234:VAL:HG12	2.18	0.44
3:J:7:LEU:HA	3:J:10:ILE:HD13	1.99	0.44
1:B:73:GLN:NE2	1:B:74:SER:O	2.34	0.44
1:B:90:ALA:HA	1:B:93:ILE:HD12	1.99	0.44
1:C:3:LEU:HG	1:C:412:LEU:HD21	2.00	0.44
2:D:96:GLN:HE21	2:D:100:GLN:NE2	2.16	0.44
2:H:194:VAL:HA	2:H:217:LEU:HD23	2.00	0.44
2:I:295:GLN:HE22	3:K:423:VAL:HB	1.81	0.44
3:J:128:LEU:O	3:J:132:LEU:HG	2.18	0.44
3:K:105:GLN:HA	3:K:108:GLU:HB3	2.00	0.44
3:K:542:ASN:O	3:K:546:VAL:HG23	2.17	0.44
1:C:82:ARG:O	1:C:85:THR:OG1	2.22	0.44
2:E:38:THR:HA	2:E:360:VAL:O	2.18	0.44
2:E:311:LEU:HG	2:E:346:THR:O	2.18	0.44
2:F:41:VAL:HG22	2:F:358:ASP:O	2.17	0.44
2:F:271:ASP:OD1	3:J:466:GLN:N	2.50	0.44
2:F:343:ARG:NH1	3:J:393:GLU:HB3	2.32	0.44
2:H:48:GLN:OE1	2:H:344:ASN:HA	2.17	0.44
2:H:336:ARG:NH2	2:H:355:GLU:H	2.13	0.44
2:I:313:ALA:HB3	2:I:324:LYS:HE3	1.99	0.44
3:J:146:SER:O	3:J:150:GLN:HG3	2.18	0.44
3:K:83:LEU:O	3:K:87:HIS:N	2.51	0.44
1:A:37:PRO:HB2	1:A:80:LYS:HD3	1.99	0.44
1:A:181:GLN:HE22	1:B:325:GLN:NE2	2.11	0.44
1:C:220:ASN:ND2	1:C:222:SER:HB2	2.30	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:317:PRO:C	2:H:319:GLY:H	2.21	0.44
3:J:314:VAL:H	3:J:472:ILE:H	1.65	0.44
3:J:332:LYS:HB2	3:J:335:ASP:OD1	2.17	0.44
3:K:49:THR:HA	3:K:52:ASN:ND2	2.33	0.44
3:K:128:LEU:O	3:K:132:LEU:HG	2.18	0.44
3:K:146:SER:O	3:K:150:GLN:HG3	2.18	0.44
3:K:402:VAL:HG13	3:K:433:VAL:HG12	1.99	0.44
3:K:441:GLN:HB2	3:K:444:PHE:CZ	2.52	0.44
3:K:531:ILE:O	3:K:535:VAL:HG23	2.18	0.44
1:B:142:GLN:CA	1:B:145:ASN:HD22	2.27	0.44
2:G:285:ASN:HB3	2:G:287:LEU:HD13	2.00	0.44
2:G:336:ARG:NH2	2:G:355:GLU:H	2.16	0.44
2:H:336:ARG:NH2	2:H:354:LEU:HA	2.33	0.44
3:J:224:ASN:O	3:J:226:PRO:HD3	2.17	0.44
3:J:466:GLN:HB2	3:J:468:TRP:NE1	2.33	0.44
3:K:134:LEU:HD11	3:K:152:ARG:HD2	2.00	0.44
3:K:310:ASN:N	3:K:508:ASP:H	2.16	0.44
1:A:340:SER:O	1:A:344:TYR:HD2	2.01	0.43
1:B:77:ASP:OD2	1:B:80:LYS:HG3	2.17	0.43
1:B:175:LEU:O	1:B:179:VAL:HG23	2.17	0.43
2:D:49:SER:HA	2:D:300:LEU:H	1.83	0.43
2:F:317:PRO:C	2:F:319:GLY:H	2.20	0.43
2:F:336:ARG:NH2	2:F:354:LEU:HA	2.32	0.43
2:H:309:ILE:HG22	2:H:310:PRO:O	2.18	0.43
2:I:46:LEU:N	2:I:302:ASP:OD1	2.46	0.43
3:J:183:VAL:O	3:J:187:LEU:HG	2.18	0.43
3:J:191:ARG:HE	3:J:211:GLU:CD	2.20	0.43
3:J:611:PRO:O	3:J:614:LEU:HB2	2.17	0.43
3:K:3:PRO:HG3	3:K:30:ASP:HB3	1.99	0.43
1:A:55:ARG:NH2	1:B:278:ASN:HB3	2.32	0.43
1:A:64:ALA:HA	1:A:259:THR:HA	2.00	0.43
1:C:390:ARG:O	1:C:393:TYR:HB3	2.18	0.43
2:G:93:ASP:HA	2:G:94:PRO:HD3	1.88	0.43
2:G:265:THR:HA	2:G:266:PRO:HD2	1.78	0.43
2:I:265:THR:HA	2:I:266:PRO:HD2	1.78	0.43
3:K:183:VAL:O	3:K:187:LEU:HG	2.18	0.43
2:D:263:LEU:HD12	2:D:276:TYR:HD2	1.84	0.43
2:F:206:ILE:HG22	2:F:208:ALA:H	1.83	0.43
2:F:265:THR:HA	2:F:266:PRO:HD2	1.79	0.43
2:H:38:THR:HA	2:H:360:VAL:O	2.18	0.43
2:I:37:GLN:O	2:I:362:ILE:N	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:118:ARG:HA	3:K:121:ARG:HE	1.83	0.43
3:K:224:ASN:O	3:K:226:PRO:HD3	2.18	0.43
1:C:125:TYR:HE2	1:C:384:GLN:HB2	1.82	0.43
2:E:250:ASP:O	2:E:252:LEU:N	2.52	0.43
2:F:48:GLN:C	2:F:300:LEU:HG	2.39	0.43
2:G:166:GLN:HA	2:G:169:ARG:HG2	2.01	0.43
2:H:314:LEU:O	3:K:491:ARG:NH1	2.51	0.43
3:K:40:VAL:HA	3:K:201:THR:O	2.18	0.43
3:K:315:TYR:O	3:K:503:PHE:HB2	2.19	0.43
1:A:379:LEU:HG	1:A:383:LYS:HE3	2.01	0.43
1:B:19:LYS:HE3	1:C:315:GLN:NE2	2.31	0.43
2:E:55:LYS:HB3	2:E:226:LYS:HB2	2.00	0.43
2:F:38:THR:HA	2:F:362:ILE:H	1.83	0.43
2:H:340:ILE:HG21	2:H:348:VAL:HB	2.01	0.43
3:J:301:LEU:O	3:J:305:ARG:HG2	2.19	0.43
3:J:569:LEU:HA	3:J:633:ALA:HB1	2.00	0.43
1:C:146:VAL:CG2	2:I:131:ARG:HA	2.49	0.43
2:D:327:LEU:N	2:D:359:GLU:O	2.46	0.43
2:E:209:GLN:HG3	2:E:210:GLN:OE1	2.18	0.43
2:I:33:VAL:HA	2:I:34:PRO:HD3	1.84	0.43
3:J:100:HIS:HA	3:J:263:ARG:HE	1.84	0.43
3:J:124:ARG:O	3:J:128:LEU:HG	2.18	0.43
3:J:392:GLN:O	3:J:395:LEU:HB3	2.18	0.43
1:A:141:THR:HG22	1:A:145:ASN:HD21	1.83	0.43
1:A:321:ARG:HD3	1:C:184:GLN:HA	2.01	0.43
2:G:271:ASP:H	3:J:357:ARG:NH1	2.15	0.43
2:H:55:LYS:HB3	2:H:226:LYS:HB2	2.00	0.43
3:J:342:GLN:HA	3:J:343:PRO:HD3	1.75	0.43
3:K:100:HIS:CA	3:K:263:ARG:HE	2.30	0.43
1:A:2:ASN:HB2	1:A:416:ASN:OD1	2.19	0.43
1:A:290:LEU:HA	1:A:291:PRO:HD3	1.75	0.43
1:B:186:THR:HG21	1:B:190:TYR:HE2	1.83	0.43
1:B:197:ASN:HD21	1:B:200:ASN:ND2	2.16	0.43
1:B:246:PRO:HB2	1:B:288:PHE:HE1	1.84	0.43
1:C:76:PHE:HB3	1:C:248:LEU:HB3	1.99	0.43
2:F:315:GLY:HA3	2:F:323:TYR:CE1	2.53	0.43
2:H:166:GLN:HA	2:H:169:ARG:HG2	2.01	0.43
3:J:100:HIS:CA	3:J:263:ARG:HE	2.31	0.43
3:J:134:LEU:HD11	3:J:152:ARG:HD2	2.00	0.43
3:K:124:ARG:O	3:K:128:LEU:HG	2.19	0.43
1:A:84:LEU:O	1:A:88:GLU:HG3	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:89:LEU:HD12	2:D:186:ILE:HG22	2.01	0.43
2:G:48:GLN:CG	2:G:300:LEU:HD12	2.38	0.43
2:G:89:LEU:HD12	2:G:186:ILE:HG22	2.01	0.43
2:G:340:ILE:HD11	2:G:350:ILE:HB	2.01	0.43
3:K:98:LEU:HD22	3:K:100:HIS:HD2	1.83	0.43
3:K:400:GLN:NE2	3:K:430:PRO:HG2	2.32	0.43
1:C:148:LEU:CD2	2:I:131:ARG:CD	2.97	0.43
2:D:59:LEU:HD12	2:D:224:LEU:HD11	2.01	0.43
2:F:338:VAL:HG11	2:F:354:LEU:HG	2.01	0.43
2:G:263:LEU:HD12	2:G:276:TYR:HD2	1.84	0.43
2:I:43:PRO:HB2	2:I:305:ASN:HB3	2.00	0.43
3:J:7:LEU:HG	3:J:10:ILE:HD13	2.00	0.43
3:J:51:MET:HG3	3:J:167:LEU:HD13	2.01	0.43
1:A:210:ASN:HD22	1:A:213:LEU:HD12	1.84	0.42
1:B:14:ASN:ND2	1:B:105:LEU:HD13	2.32	0.42
2:D:47:GLN:H	2:D:47:GLN:CD	2.16	0.42
2:D:49:SER:OG	2:D:50:VAL:N	2.51	0.42
2:F:33:VAL:HA	2:F:34:PRO:HD3	1.83	0.42
2:G:41:VAL:HB	2:G:307:LEU:CD1	2.48	0.42
2:G:74:THR:HA	2:G:201:GLN:NE2	2.34	0.42
3:J:105:GLN:HA	3:J:108:GLU:HB3	2.01	0.42
3:J:315:TYR:HA	3:J:316:PRO:HD3	1.93	0.42
1:A:33:GLU:O	1:A:36:SER:OG	2.16	0.42
1:A:44:LEU:HD13	1:A:69:LEU:HD23	2.00	0.42
1:A:197:ASN:ND2	1:A:200:ASN:HD22	2.15	0.42
1:C:77:ASP:OD2	1:C:79:SER:OG	2.36	0.42
1:C:161:TYR:CE2	1:C:165:LEU:HD11	2.55	0.42
1:C:352:GLN:HE21	1:C:356:ASP:CG	2.23	0.42
2:G:41:VAL:HG22	2:G:358:ASP:O	2.18	0.42
2:G:314:LEU:HD21	2:G:322:ARG:HH11	1.83	0.42
2:H:250:ASP:O	2:H:252:LEU:N	2.52	0.42
3:J:67:VAL:N	3:J:70:GLN:O	2.53	0.42
3:J:477:LYS:HG2	3:J:478:GLU:N	2.28	0.42
1:C:190:TYR:HA	1:C:191:PRO:HD2	1.86	0.42
2:E:317:PRO:HG2	2:E:321:ASN:CB	2.49	0.42
3:J:47:LYS:HB3	3:J:216:ILE:HG21	2.02	0.42
3:J:324:ASP:O	3:J:328:GLN:HG2	2.19	0.42
3:J:346:ALA:HA	3:J:477:LYS:HE3	2.01	0.42
3:K:289:ILE:HA	3:K:292:VAL:HG22	2.01	0.42
1:A:143:ARG:CA	2:E:135:LEU:CD1	2.97	0.42
1:C:146:VAL:HG21	2:I:131:ARG:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:166:GLN:HA	2:D:169:ARG:HG2	2.01	0.42
2:F:166:GLN:HA	2:F:169:ARG:HG2	2.01	0.42
2:I:41:VAL:HG22	2:I:358:ASP:O	2.19	0.42
2:I:328:LEU:HB2	2:I:332:GLU:O	2.19	0.42
3:J:315:TYR:O	3:J:503:PHE:HB2	2.19	0.42
3:J:423:VAL:HG22	3:J:432:ARG:HA	2.01	0.42
3:K:55:GLY:HA2	3:K:90:PHE:CZ	2.54	0.42
3:K:107:VAL:O	3:K:110:PRO:HD2	2.19	0.42
1:A:3:LEU:HG	1:A:412:LEU:HD21	2.01	0.42
1:A:103:GLN:HB3	1:A:407:LEU:HD12	2.00	0.42
1:C:84:LEU:O	1:C:88:GLU:HG3	2.20	0.42
2:D:272:ALA:CA	3:K:359:ARG:NE	2.78	0.42
2:F:325:VAL:HG22	2:F:335:GLU:HB3	2.00	0.42
2:F:328:LEU:HB2	2:F:332:GLU:O	2.19	0.42
2:I:360:VAL:O	2:I:362:ILE:N	2.52	0.42
3:J:40:VAL:HA	3:J:201:THR:O	2.19	0.42
3:J:551:ARG:O	3:J:555:ILE:HG13	2.19	0.42
3:K:409:ARG:NH1	3:K:410:ARG:HH12	2.16	0.42
1:A:155:GLN:O	1:A:158:ARG:HB3	2.19	0.42
1:B:3:LEU:HG	1:B:412:LEU:HD21	2.01	0.42
1:B:75:ILE:HB	1:B:248:LEU:HD22	2.01	0.42
2:F:295:GLN:NE2	3:J:423:VAL:HB	2.30	0.42
2:G:326:LYS:HE2	2:G:336:ARG:CZ	2.50	0.42
3:K:7:LEU:N	3:K:29:LEU:O	2.52	0.42
3:K:400:GLN:HG2	3:K:462:ARG:HH12	1.83	0.42
1:B:84:LEU:O	1:B:88:GLU:HG3	2.19	0.42
1:C:2:ASN:O	1:C:6:VAL:HG23	2.20	0.42
2:E:166:GLN:HA	2:E:169:ARG:HG2	2.01	0.42
2:G:59:LEU:HD12	2:G:224:LEU:HD11	2.01	0.42
2:G:122:LEU:HD22	2:G:160:ILE:HD12	2.02	0.42
2:I:332:GLU:HA	2:I:370:ALA:HA	2.01	0.42
3:J:12:ARG:HB2	3:J:24:LEU:HD12	2.02	0.42
3:J:329:GLN:OE1	3:J:468:TRP:HE3	2.02	0.42
3:J:567:ASP:HA	3:J:570:GLN:OE1	2.20	0.42
3:K:316:PRO:HG2	3:K:329:GLN:HG2	2.02	0.42
1:A:192:GLU:HA	1:A:425:THR:HG23	2.01	0.42
1:A:326:THR:O	1:A:329:SER:OG	2.27	0.42
1:B:270:ALA:HA	1:B:274:TYR:HD2	1.85	0.42
1:B:355:LEU:O	1:B:359:GLU:HG3	2.20	0.42
1:B:364:VAL:HB	2:F:131:ARG:HG3	1.99	0.42
1:B:376:THR:O	1:B:379:LEU:HB3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:361:GLY:HA2	2:H:135:LEU:HD12	2.02	0.42
2:E:39:LEU:O	2:E:359:GLU:HA	2.19	0.42
2:E:209:GLN:CB	2:F:209:GLN:HE22	2.29	0.42
2:F:345:ASP:OD1	2:F:346:THR:N	2.52	0.42
3:J:3:PRO:HG3	3:J:30:ASP:HB3	2.02	0.42
3:K:113:TYR:CZ	3:K:563:ALA:HB2	2.55	0.42
1:A:58:ASN:O	1:A:265:LYS:HG3	2.20	0.42
1:B:173:ASN:CG	1:C:332:ASN:HB3	2.40	0.42
1:B:340:SER:O	1:B:344:TYR:HD2	2.03	0.42
1:C:192:GLU:HA	1:C:425:THR:HG23	2.01	0.42
1:C:386:LEU:HG	1:C:390:ARG:NH1	2.35	0.42
2:D:74:THR:HA	2:D:201:GLN:NE2	2.35	0.42
2:D:272:ALA:N	3:K:359:ARG:NE	2.66	0.42
2:E:340:ILE:HG23	2:E:349:GLU:O	2.20	0.42
2:H:46:LEU:HG	2:H:344:ASN:HD22	1.85	0.42
2:I:37:GLN:HB2	2:I:363:GLY:HA3	2.02	0.42
2:I:317:PRO:HD3	2:I:323:TYR:HD2	1.80	0.42
3:J:107:VAL:O	3:J:110:PRO:HD2	2.20	0.42
3:J:403:VAL:C	3:J:404:LEU:HD12	2.41	0.42
3:K:623:VAL:HA	3:K:626:ILE:HG22	2.01	0.42
1:A:77:ASP:OD2	1:A:80:LYS:HG3	2.20	0.42
1:A:148:LEU:HD22	2:F:144:GLN:NE2	1.94	0.42
1:A:175:LEU:O	1:A:179:VAL:HG23	2.19	0.42
1:C:355:LEU:O	1:C:359:GLU:HG3	2.20	0.42
2:D:194:VAL:HA	2:D:217:LEU:HD23	2.02	0.42
2:D:242:LYS:O	2:D:299:GLN:HB3	2.20	0.42
2:F:50:VAL:CG1	2:F:51:LEU:N	2.75	0.42
2:F:53:THR:OG1	3:J:428:ASN:O	2.33	0.42
3:J:49:THR:O	3:J:52:ASN:HB2	2.20	0.42
3:J:212:ARG:HH21	3:J:224:ASN:ND2	2.16	0.42
3:K:67:VAL:N	3:K:70:GLN:O	2.52	0.42
1:A:153:ASP:HA	1:A:156:ASN:ND2	2.35	0.41
1:C:186:THR:HG22	1:C:188:ASN:HB2	2.01	0.41
2:E:46:LEU:HB3	2:E:303:VAL:HG23	2.01	0.41
2:F:48:GLN:HE21	2:F:343:ARG:C	2.20	0.41
2:I:339:THR:HG23	2:I:351:VAL:HG13	2.02	0.41
2:I:345:ASP:OD1	2:I:346:THR:N	2.52	0.41
3:K:49:THR:O	3:K:52:ASN:HB2	2.20	0.41
3:K:50:LEU:HD12	3:K:53:ILE:HD12	2.02	0.41
3:K:551:ARG:O	3:K:555:ILE:HG13	2.20	0.41
1:A:220:ASN:ND2	1:A:323:VAL:HG11	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:360:ALA:CB	2:D:135:LEU:HG	2.47	0.41
1:B:49:THR:HA	1:C:285:GLY:HA3	2.03	0.41
1:B:300:SER:O	1:B:304:GLN:HG3	2.20	0.41
1:C:77:ASP:HB3	1:C:80:LYS:HZ1	1.85	0.41
2:D:309:ILE:HG13	2:D:350:ILE:HG21	2.02	0.41
2:E:59:LEU:HA	2:E:224:LEU:HG	2.01	0.41
2:E:309:ILE:HG22	2:E:310:PRO:O	2.19	0.41
2:I:166:GLN:HA	2:I:169:ARG:HG2	2.02	0.41
2:I:250:ASP:O	2:I:252:LEU:N	2.53	0.41
3:J:66:ARG:HA	3:J:71:ASP:HA	2.02	0.41
3:K:392:GLN:O	3:K:395:LEU:HB3	2.19	0.41
1:A:14:ASN:ND2	1:A:17:LEU:HB2	2.35	0.41
1:C:74:SER:HA	1:C:249:ASP:HA	2.03	0.41
1:C:300:SER:O	1:C:304:GLN:HG3	2.21	0.41
2:F:250:ASP:O	2:F:252:LEU:N	2.53	0.41
2:H:39:LEU:O	2:H:359:GLU:HA	2.19	0.41
2:H:59:LEU:HA	2:H:224:LEU:HG	2.01	0.41
3:K:466:GLN:NE2	3:K:468:TRP:O	2.53	0.41
1:A:141:THR:O	1:A:145:ASN:ND2	2.53	0.41
1:A:364:VAL:HG23	1:A:366:THR:HG23	2.01	0.41
1:B:28:PHE:CD1	1:B:91:ALA:HB1	2.54	0.41
1:C:281:GLN:HG3	1:C:283:LYS:HG3	2.01	0.41
1:C:362:TYR:C	1:C:365:GLY:H	2.24	0.41
2:D:271:ASP:CB	3:K:357:ARG:HD3	2.22	0.41
2:F:122:LEU:HD22	2:F:160:ILE:HD12	2.02	0.41
2:G:241:GLN:HE21	2:G:300:LEU:C	2.23	0.41
3:J:100:HIS:HB3	3:J:263:ARG:CG	2.50	0.41
3:K:142:PRO:HA	3:K:145:LEU:HD12	2.02	0.41
3:K:385:SER:H	3:K:437:ALA:HA	1.86	0.41
3:K:569:LEU:HA	3:K:633:ALA:HB1	2.02	0.41
1:A:2:ASN:O	1:A:6:VAL:HG23	2.21	0.41
2:G:96:GLN:HE21	2:G:100:GLN:NE2	2.16	0.41
2:G:345:ASP:OD1	2:G:346:THR:N	2.54	0.41
3:K:620:CYS:HA	3:K:623:VAL:HG22	2.02	0.41
1:A:146:VAL:HG21	2:E:131:ARG:O	2.20	0.41
1:A:220:ASN:HB3	1:A:223:LEU:HG	2.02	0.41
1:C:246:PRO:HB2	1:C:288:PHE:HE1	1.85	0.41
2:G:328:LEU:HD21	2:G:334:ARG:HD3	2.02	0.41
3:K:401:VAL:HA	3:K:432:ARG:O	2.20	0.41
3:K:567:ASP:HA	3:K:570:GLN:OE1	2.20	0.41
2:I:122:LEU:HD22	2:I:160:ILE:HD12	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:108:GLU:OE2	3:K:121:ARG:NE	2.54	0.41
3:K:316:PRO:HA	3:K:501:ASP:O	2.21	0.41
1:A:33:GLU:O	1:A:37:PRO:HD3	2.20	0.41
1:B:245:LEU:HA	1:B:246:PRO:HD2	1.92	0.41
1:C:118:ASN:HD21	1:C:388:ASN:ND2	2.18	0.41
1:C:146:VAL:HG13	1:C:148:LEU:HG	2.01	0.41
1:C:155:GLN:O	1:C:158:ARG:HB3	2.21	0.41
1:C:175:LEU:O	1:C:179:VAL:HG23	2.21	0.41
1:C:243:GLY:HA3	1:C:298:VAL:HG21	2.03	0.41
1:C:310:VAL:O	1:C:314:GLU:HG2	2.21	0.41
1:C:340:SER:O	1:C:344:TYR:HD2	2.03	0.41
2:D:122:LEU:HD22	2:D:160:ILE:HD12	2.03	0.41
2:D:271:ASP:HB2	3:K:357:ARG:HH11	1.85	0.41
2:E:38:THR:OG1	2:E:359:GLU:HB3	2.20	0.41
2:F:46:LEU:HD23	2:F:301:THR:HG23	2.02	0.41
2:F:59:LEU:HA	2:F:224:LEU:HG	2.03	0.41
2:G:70:GLY:HA2	2:H:67:GLN:NE2	2.36	0.41
3:J:168:ALA:HB1	3:J:171:PRO:HG3	2.02	0.41
3:J:391:ASN:HB3	3:J:393:GLU:OE1	2.21	0.41
3:J:460:SER:HA	3:J:464:MET:HB2	2.03	0.41
3:K:282:GLY:O	3:K:286:VAL:HG23	2.21	0.41
3:K:428:ASN:OD1	3:K:429:MET:N	2.54	0.41
1:A:125:TYR:CE2	1:A:380:TYR:HB3	2.56	0.41
1:A:143:ARG:HG3	1:A:148:LEU:HD12	2.02	0.41
1:A:206:PRO:HB2	1:A:331:PHE:HE1	1.85	0.41
1:A:246:PRO:HB2	1:A:288:PHE:HE1	1.85	0.41
1:B:33:GLU:O	1:B:36:SER:OG	2.18	0.41
1:B:118:ASN:HD21	1:B:388:ASN:ND2	2.19	0.41
1:B:143:ARG:HG3	1:B:148:LEU:HD12	2.02	0.41
2:E:306:VAL:HG11	2:E:349:GLU:OE2	2.21	0.41
2:G:48:GLN:HB3	2:G:301:THR:HG22	2.03	0.41
2:G:287:LEU:HB3	2:G:288:LEU:H	1.79	0.41
2:H:317:PRO:HD2	2:H:322:ARG:HA	2.03	0.41
2:I:41:VAL:HG23	2:I:357:GLY:H	1.86	0.41
3:J:111:ALA:O	3:J:121:ARG:NH1	2.54	0.41
3:J:149:GLN:O	3:J:153:VAL:HG23	2.21	0.41
3:J:310:ASN:HD21	3:J:508:ASP:CG	2.21	0.41
3:K:27:ILE:HD11	3:K:220:GLU:HA	2.03	0.41
3:K:301:LEU:O	3:K:305:ARG:HG2	2.20	0.41
3:K:325:PRO:HA	3:K:328:GLN:HG2	2.02	0.41
1:A:19:LYS:HE3	1:B:315:GLN:NE2	2.31	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:44:LEU:HD13	1:C:69:LEU:HD23	2.03	0.41
2:D:124:LEU:HB2	2:E:151:THR:HG21	2.02	0.41
2:D:336:ARG:NH2	2:D:355:GLU:H	2.18	0.41
2:G:194:VAL:HA	2:G:217:LEU:HD23	2.02	0.41
2:I:328:LEU:HD22	2:I:334:ARG:HD3	2.03	0.41
3:J:203:ASP:HA	3:J:204:PRO:HD2	1.79	0.41
3:J:375:ASP:O	3:J:379:VAL:HG12	2.21	0.41
3:J:418:ASP:OD1	3:J:419:VAL:N	2.54	0.41
3:J:428:ASN:OD1	3:J:429:MET:N	2.53	0.41
3:K:253:GLY:O	3:K:257:ALA:HB3	2.21	0.41
3:K:275:THR:HG23	3:K:540:VAL:HG22	2.03	0.41
3:K:350:PRO:HA	3:K:472:ILE:HG12	2.03	0.41
3:K:401:VAL:HG12	3:K:434:ILE:HD12	2.03	0.41
3:K:485:ALA:HA	3:K:488:GLN:HB2	2.03	0.41
1:A:300:SER:O	1:A:304:GLN:HG3	2.22	0.40
1:A:373:LEU:HA	1:A:373:LEU:HD23	1.76	0.40
1:C:31:ILE:O	1:C:34:ALA:HB3	2.21	0.40
2:D:33:VAL:HA	2:D:34:PRO:HD3	1.78	0.40
2:D:263:LEU:HD12	2:D:276:TYR:HB2	2.03	0.40
2:H:304:LYS:C	2:H:306:VAL:H	2.20	0.40
2:I:313:ALA:HB2	2:I:362:ILE:O	2.21	0.40
3:J:156:ALA:HA	3:J:159:LEU:HD12	2.03	0.40
3:J:307:ILE:HG22	3:J:507:MET:CE	2.50	0.40
3:J:578:LEU:O	3:J:582:VAL:HG22	2.21	0.40
3:K:324:ASP:O	3:K:328:GLN:HG2	2.21	0.40
3:K:332:LYS:HB2	3:K:335:ASP:CG	2.41	0.40
1:B:391:TYR:O	1:B:395:ILE:HG12	2.20	0.40
1:C:172:ARG:O	1:C:175:LEU:HB3	2.20	0.40
1:C:234:ARG:HH21	1:C:238:ARG:HH22	1.67	0.40
2:G:271:ASP:HB2	3:J:357:ARG:NH1	2.21	0.40
2:H:306:VAL:HG11	2:H:349:GLU:OE2	2.21	0.40
3:J:76:ASP:O	3:J:80:LEU:HG	2.21	0.40
3:J:400:GLN:NE2	3:J:430:PRO:HG2	2.33	0.40
3:K:297:LYS:HG3	3:K:518:THR:HG21	2.04	0.40
3:K:487:GLN:O	3:K:490:THR:HB	2.21	0.40
1:A:261:TYR:N	1:A:276:ASP:OD1	2.33	0.40
1:A:310:VAL:O	1:A:314:GLU:HG2	2.22	0.40
1:B:195:ALA:N	1:B:421:LYS:O	2.29	0.40
1:C:50:TYR:OH	1:C:61:ASN:ND2	2.54	0.40
1:C:103:GLN:HA	1:C:106:ILE:HD12	2.03	0.40
1:C:206:PRO:HB2	1:C:331:PHE:HE1	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:188:ALA:HA	2:D:189:PRO:HD2	1.93	0.40
2:F:59:LEU:HD12	2:F:224:LEU:HD11	2.03	0.40
2:F:309:ILE:HG22	2:F:310:PRO:O	2.21	0.40
2:G:317:PRO:HG2	2:G:321:ASN:CB	2.51	0.40
3:K:12:ARG:HD2	3:K:49:THR:HG22	2.04	0.40
3:K:302:ALA:HA	3:K:305:ARG:HG2	2.02	0.40
3:K:351:ALA:O	3:K:469:LEU:HB3	2.22	0.40
3:K:611:PRO:HA	3:K:614:LEU:HD13	2.02	0.40
1:A:172:ARG:O	1:A:175:LEU:HB3	2.20	0.40
1:A:401:LYS:O	1:A:406:THR:OG1	2.39	0.40
1:C:394:LEU:O	1:C:397:GLN:HB3	2.21	0.40
3:J:113:TYR:OH	3:J:563:ALA:HB2	2.21	0.40
3:J:620:CYS:HA	3:J:623:VAL:HG22	2.02	0.40
3:K:524:PHE:O	3:K:528:VAL:HG22	2.21	0.40
1:C:125:TYR:CE1	1:C:380:TYR:HB3	2.57	0.40
2:D:93:ASP:HA	2:D:94:PRO:HD3	1.87	0.40
2:F:251:GLN:OE1	3:J:361:ASN:CA	2.68	0.40
2:G:250:ASP:O	2:G:252:LEU:N	2.55	0.40
2:H:38:THR:OG1	2:H:359:GLU:HB3	2.21	0.40
2:H:238:LYS:HA	2:H:239:PRO:HD3	1.93	0.40
2:H:313:ALA:HB2	2:H:362:ILE:HG13	2.04	0.40
2:I:311:LEU:HD23	2:I:311:LEU:HA	1.84	0.40
2:I:311:LEU:HG	2:I:347:ASP:HA	2.02	0.40
2:I:322:ARG:O	2:I:338:VAL:HG22	2.21	0.40
2:I:361:VAL:O	2:I:365:ALA:HB2	2.21	0.40
3:J:50:LEU:O	3:J:54:LEU:HG	2.21	0.40
3:J:588:ILE:O	3:J:592:LEU:HG	2.22	0.40
3:K:168:ALA:HB1	3:K:171:PRO:HG3	2.04	0.40
3:K:184:MET:HA	3:K:187:LEU:HD12	2.04	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	426/479 (89%)	401 (94%)	17 (4%)	8 (2%)	8	34
1	B	426/479 (89%)	400 (94%)	20 (5%)	6 (1%)	11	38
1	C	426/479 (89%)	398 (93%)	19 (4%)	9 (2%)	7	31
2	D	338/371 (91%)	305 (90%)	25 (7%)	8 (2%)	6	28
2	E	336/371 (91%)	306 (91%)	21 (6%)	9 (3%)	5	26
2	F	336/371 (91%)	301 (90%)	25 (7%)	10 (3%)	4	24
2	G	338/371 (91%)	307 (91%)	26 (8%)	5 (2%)	10	38
2	H	338/371 (91%)	307 (91%)	24 (7%)	7 (2%)	7	31
2	I	338/371 (91%)	304 (90%)	27 (8%)	7 (2%)	7	31
3	J	623/654 (95%)	567 (91%)	48 (8%)	8 (1%)	12	40
3	K	623/654 (95%)	571 (92%)	41 (7%)	11 (2%)	8	35
All	All	4548/4971 (92%)	4167 (92%)	293 (6%)	88 (2%)	11	34

All (88) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	292	ILE
2	E	141	VAL
2	F	50	VAL
2	F	141	VAL
2	F	318	VAL
2	G	141	VAL
2	H	141	VAL
2	I	141	VAL
1	A	406	THR
1	C	406	THR
2	D	50	VAL
2	D	141	VAL
2	D	251	GLN
2	D	301	THR
2	E	318	VAL
2	F	251	GLN
2	G	251	GLN
2	H	318	VAL
2	I	251	GLN
2	I	318	VAL
3	J	361	ASN
3	J	427	GLY
3	K	427	GLY

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Mol	Chain	Res	Type
1	A	55	ARG
1	A	56	ASP
1	A	297	MET
1	A	407	LEU
1	B	55	ARG
1	B	259	THR
1	B	406	THR
1	B	407	LEU
1	C	56	ASP
1	C	259	THR
1	C	292	ILE
2	D	236	HIS
2	D	242	LYS
2	D	272	ALA
2	E	242	LYS
2	E	251	GLN
2	E	272	ALA
2	F	236	HIS
2	F	242	LYS
2	F	272	ALA
2	G	236	HIS
2	G	242	LYS
2	G	272	ALA
2	H	242	LYS
2	H	251	GLN
2	H	272	ALA
2	I	236	HIS
2	I	242	LYS
2	I	272	ALA
3	J	178	HIS
3	J	389	THR
3	J	442	SER
3	K	178	HIS
3	K	389	THR
1	A	148	LEU
1	C	186	THR
1	C	407	LEU
2	F	52	ALA
3	J	376	TYR
3	K	459	MET
1	B	218	LYS
1	B	292	ILE

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Mol	Chain	Res	Type
1	C	55	ARG
1	C	297	MET
2	D	318	VAL
2	E	49	SER
2	E	236	HIS
2	H	236	HIS
3	K	361	ASN
3	K	376	TYR
3	K	501	ASP
2	E	50	VAL
2	I	361	VAL
3	J	170	GLU
3	K	170	GLU
3	K	365	VAL
3	J	308	GLY
1	C	15	PRO
2	F	361	VAL
3	K	317	GLY
3	K	434	ILE
2	E	94	PRO
2	F	43	PRO
2	H	94	PRO
1	A	15	PRO

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	358/401 (89%)	358 (100%)	0	100	100
1	B	358/401 (89%)	358 (100%)	0	100	100
1	C	358/401 (89%)	358 (100%)	0	100	100
2	D	281/308 (91%)	280 (100%)	1 (0%)	91	95
2	E	281/308 (91%)	281 (100%)	0	100	100
2	F	281/308 (91%)	280 (100%)	1 (0%)	91	95

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	G	281/308 (91%)	281 (100%)	0	100	100
2	H	281/308 (91%)	280 (100%)	1 (0%)	91	95
2	I	281/308 (91%)	280 (100%)	1 (0%)	91	95
3	J	515/537 (96%)	515 (100%)	0	100	100
3	K	515/537 (96%)	515 (100%)	0	100	100
All	All	3790/4125 (92%)	3786 (100%)	4 (0%)	93	97

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	D	300	LEU
2	F	51	LEU
2	H	51	LEU
2	I	51	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (92) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	61	ASN
1	A	87	GLN
1	A	145	ASN
1	A	188	ASN
1	A	200	ASN
1	A	210	ASN
1	A	220	ASN
1	A	281	GLN
1	A	299	ASN
1	A	315	GLN
1	A	325	GLN
1	A	352	GLN
1	A	388	ASN
1	B	61	ASN
1	B	87	GLN
1	B	145	ASN
1	B	177	ASN
1	B	188	ASN
1	B	200	ASN
1	B	210	ASN
1	B	220	ASN

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Mol	Chain	Res	Type
1	B	281	GLN
1	B	315	GLN
1	B	325	GLN
1	B	332	ASN
1	B	352	GLN
1	B	388	ASN
1	B	396	ASN
1	C	41	GLN
1	C	61	ASN
1	C	87	GLN
1	C	145	ASN
1	C	177	ASN
1	C	181	GLN
1	C	200	ASN
1	C	220	ASN
1	C	281	GLN
1	C	315	GLN
1	C	320	HIS
1	C	325	GLN
1	C	352	GLN
1	C	388	ASN
2	D	96	GLN
2	D	241	GLN
2	E	48	GLN
2	E	96	GLN
2	E	251	GLN
2	F	48	GLN
2	F	96	GLN
2	F	144	GLN
2	F	209	GLN
2	F	295	GLN
2	F	297	HIS
2	G	96	GLN
2	G	241	GLN
2	G	299	GLN
2	H	96	GLN
2	H	251	GLN
2	H	297	HIS
2	H	344	ASN
2	I	48	GLN
2	I	96	GLN
2	I	209	GLN

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Mol	Chain	Res	Type
2	I	295	GLN
2	I	297	HIS
2	I	299	GLN
3	J	100	HIS
3	J	106	ASN
3	J	310	ASN
3	J	342	GLN
3	J	361	ASN
3	J	388	ASN
3	J	394	GLN
3	J	415	HIS
3	J	441	GLN
3	J	470	ASN
3	J	506	ASN
3	J	599	GLN
3	K	100	HIS
3	K	106	ASN
3	K	329	GLN
3	K	342	GLN
3	K	354	GLN
3	K	355	ASN
3	K	361	ASN
3	K	370	ASN
3	K	388	ASN
3	K	394	GLN
3	K	400	GLN
3	K	415	HIS
3	K	470	ASN
3	K	599	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)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
3	K	1
3	J	1
2	F	1
2	E	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	K	309:THR	C	310:ASN	N	6.65
1	J	506:ASN	C	507:MET	N	4.22
1	F	299:GLN	C	300:LEU	N	3.26
1	E	299:GLN	C	300:LEU	N	2.88

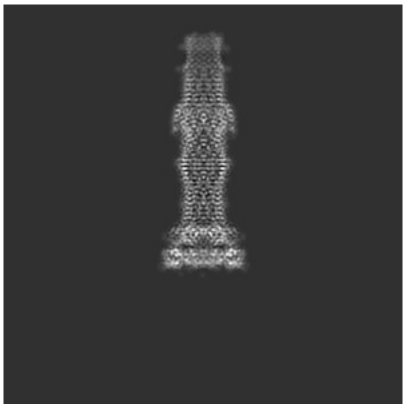
6 Map visualisation (i)

This section contains visualisations of the EMDB entry EMD-3652. These allow visual inspection of the internal detail of the map and identification of artifacts.

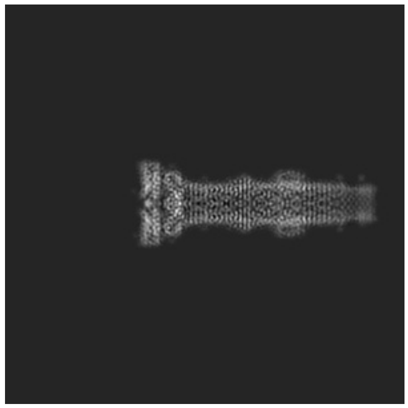
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections (i)

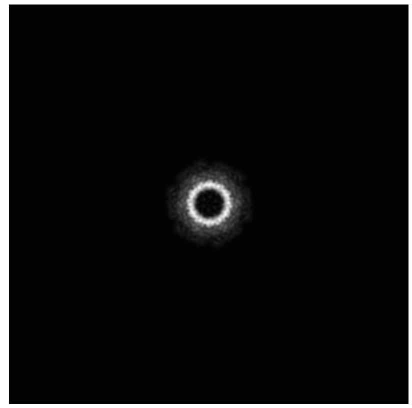
6.1.1 Primary map



X



Y

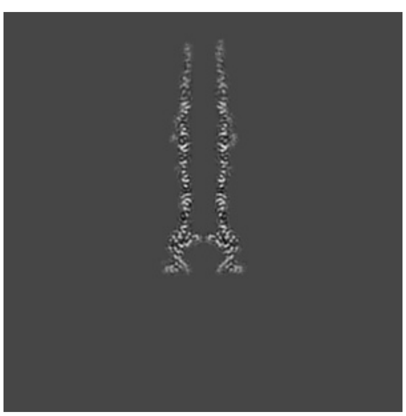


Z

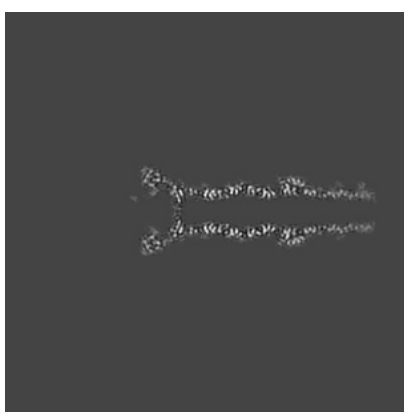
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

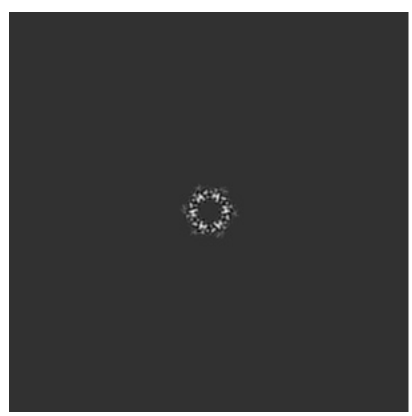
6.2.1 Primary map



X Index: 150



Y Index: 150

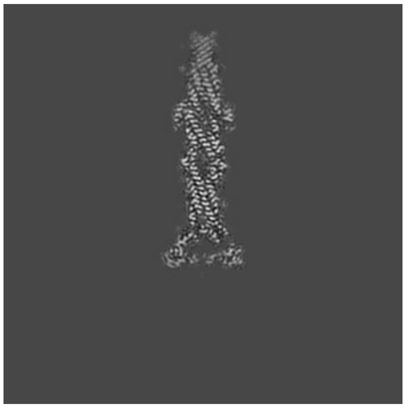


Z Index: 150

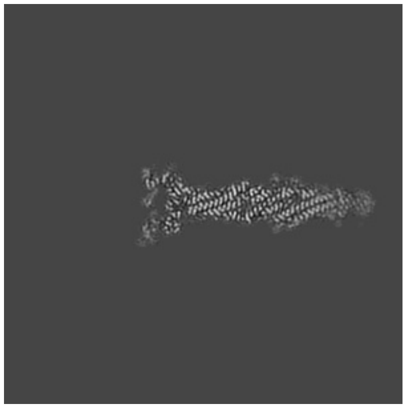
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices

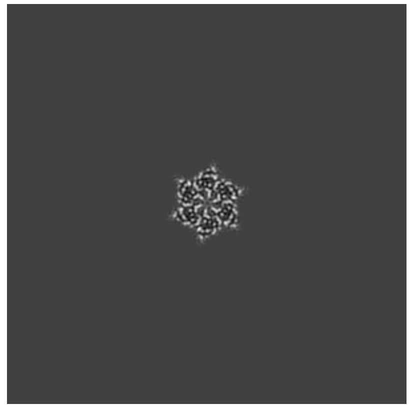
6.3.1 Primary map



X Index: 162



Y Index: 163



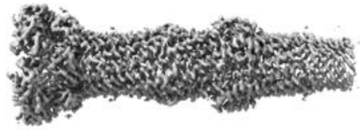
Z Index: 128

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

6.4 Orthogonal surface views

6.4.1 Primary map

X



Y

Z

The images above show the 3D surface view of the map at the recommended contour level 0.07. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

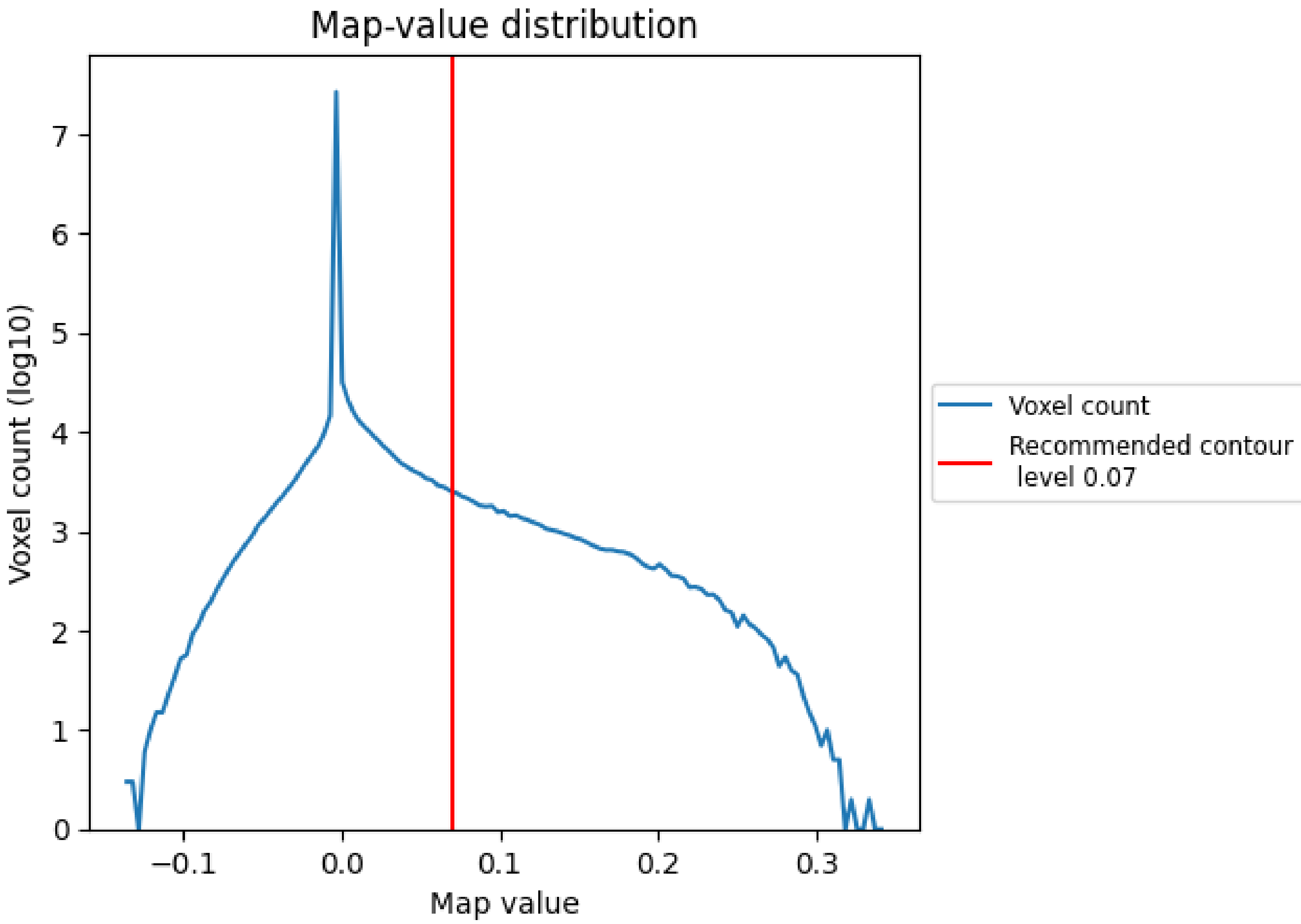
6.5 Mask visualisation (i)

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

7 Map analysis (i)

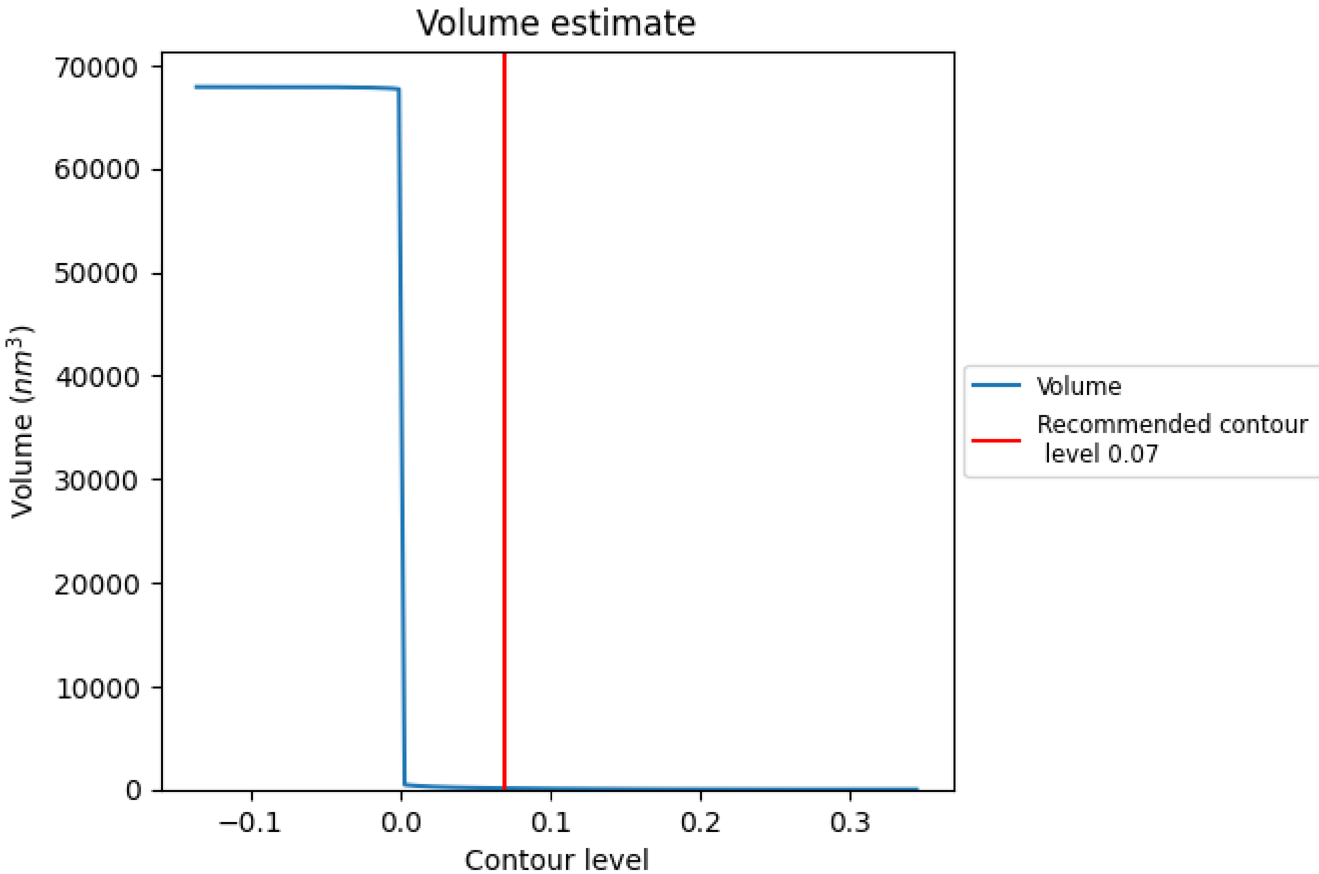
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution (i)



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.

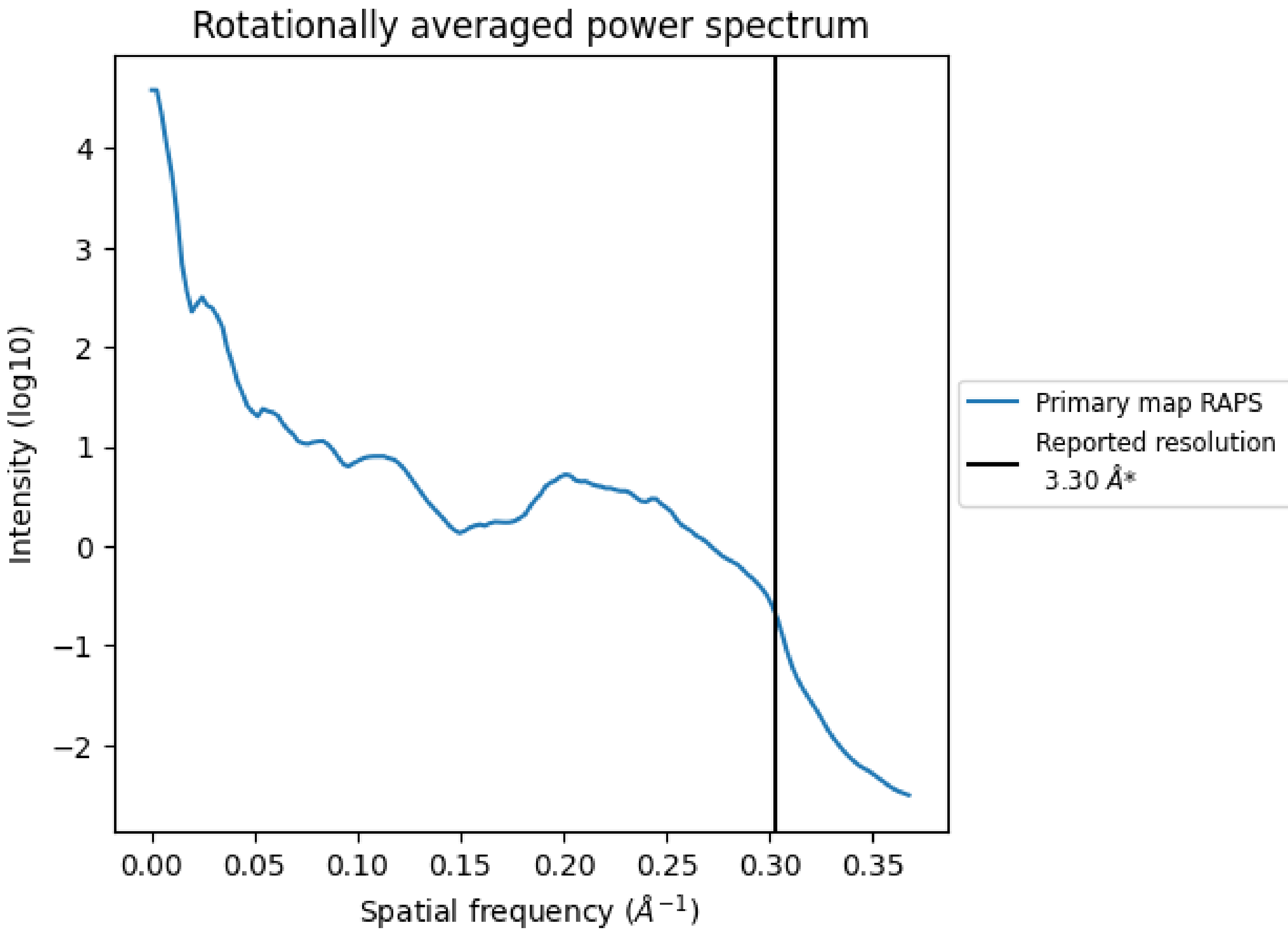
7.2 Volume estimate (i)



The volume at the recommended contour level is 114 nm^3; this corresponds to an approximate mass of 103 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 0.303 $Å^{-1}$

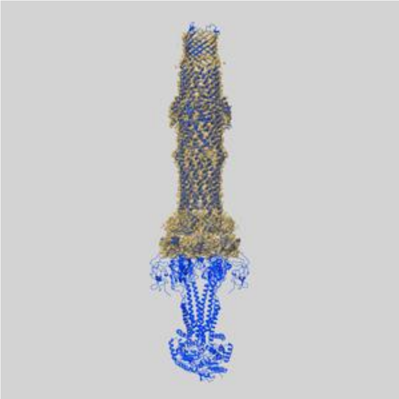
8 Fourier-Shell correlation (i)

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

9 Map-model fit (i)

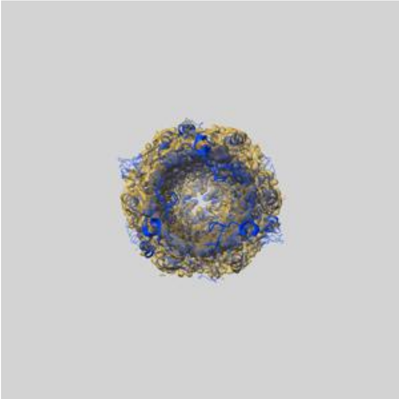
This section contains information regarding the fit between EMDB map EMD-3652 and PDB model 5NIK. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlay (i)



X

Y



Z

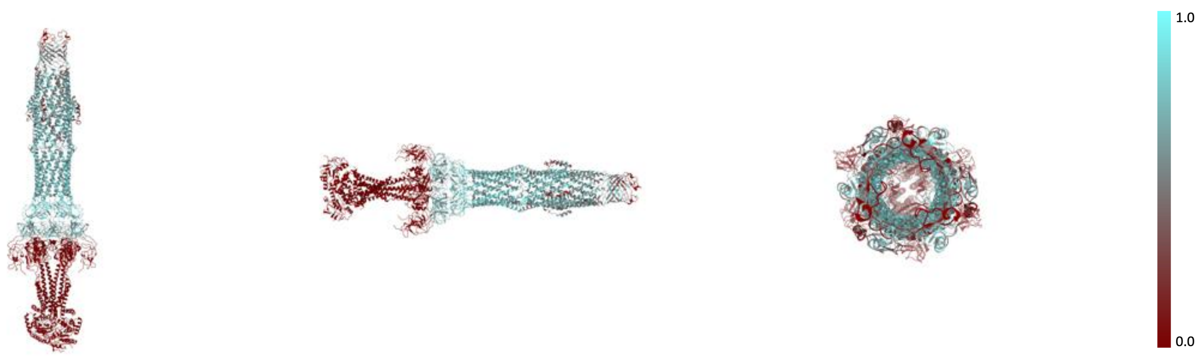
The images above show the 3D surface view of the map at the recommended contour level 0.07 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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.

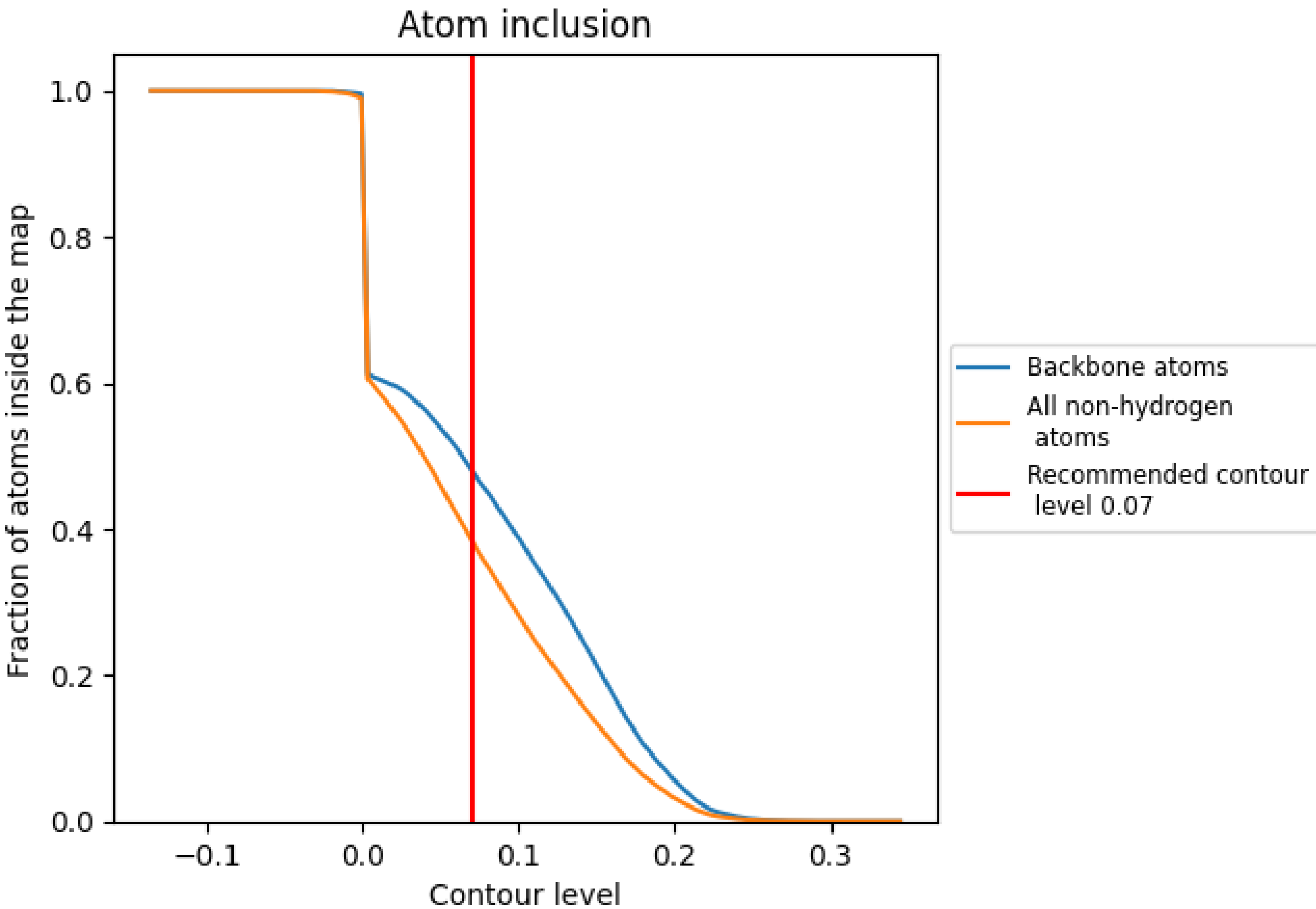
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.07).

9.4 Atom inclusion ⓘ



At the recommended contour level, 48% of all backbone atoms, 38% 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 (0.07) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.3846	0.2410
A	0.5583	0.3340
B	0.5626	0.3430
C	0.5666	0.3420
D	0.5016	0.3280
E	0.5105	0.3290
F	0.5098	0.3310
G	0.5117	0.3280
H	0.5074	0.3270
I	0.5125	0.3330
J	0.0000	-0.0030
K	0.0000	-0.0030