WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB EM Validation Report (i)

Jan 20, 2026 – 01:37 pm GMT

PDB ID	:	9QCR / pdb_00009qcr
EMDB ID	:	EMD-53025
Title	:	DNA-PK bound to 153 bp H2AX nucleosome model 2
Authors	:	Hall, C.; Chaplin, A.
Deposited on	:	2025-03-05
Resolution	:	4.37 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references (i)) were used in the production of this report:
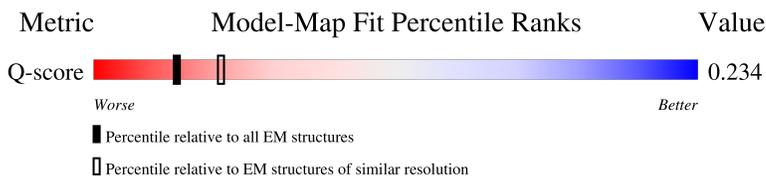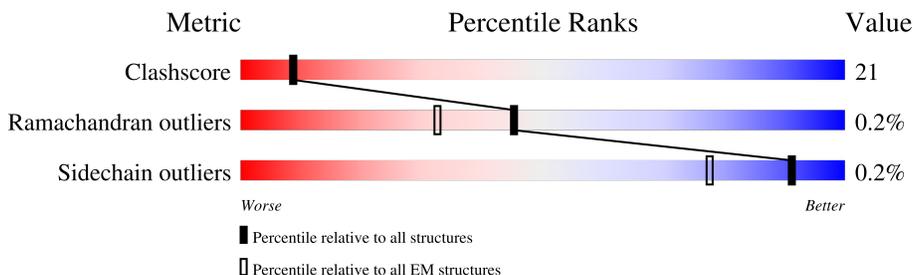
EMDB validation analysis	:	0.0.1.dev129
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.47

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 4.37 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.
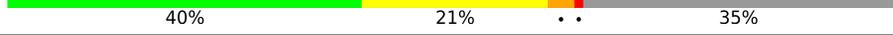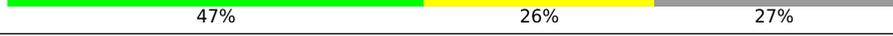
Metric	Percentile Ranks	Value
Clashscore		21
Ramachandran outliers		0.2%
Sidechain outliers		0.2%

Worse									*Better*

▮ Percentile relative to all structures

▯ Percentile relative to all EM structures

Metric	Model-Map Fit Percentile Ranks	Value
Q-score		0.234

Worse									*Better*

▮ Percentile relative to all EM structures

▯ Percentile relative to EM structures of similar resolution

Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	3738 (3.87 - 4.87)

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	K	609	50% 31% 19%
2	L	732	39% 31% 29%
3	O	4128	49% 36% 15%
4	C	143	34% 30% 36%

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Mol	Chain	Length	Quality of chain
4	G	143	41% 26% 32%
5	D	126	45% 29% 26%
5	H	126	49% 24% 27%
6	A	136	43% 27% 29%
6	E	136	40% 21% 35%
7	B	103	47% 26% 27%
7	F	103	44% 31% 25%
8	I	153	24% 60% 16%
9	J	153	39% 47% 14%

2 Entry composition ⓘ

There are 9 unique types of molecules in this entry. The entry contains 46641 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 X-ray repair cross-complementing protein 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	K	493	Total 3886	C 2489	N 647	O 732	S 18	0	0

- Molecule 2 is a protein called X-ray repair cross-complementing protein 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	L	517	Total 4051	C 2599	N 678	O 751	S 23	0	0

- Molecule 3 is a protein called DNA-dependent protein kinase catalytic subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	O	3527	Total 27819	C 17843	N 4673	O 5117	S 186	0	0

- Molecule 4 is a protein called Histone H2AX.

Mol	Chain	Residues	Atoms				AltConf	Trace
4	C	92	Total 707	C 445	N 139	O 123	0	0
4	G	97	Total 738	C 463	N 145	O 130	0	0

- Molecule 5 is a protein called Histone H2B type 1-J.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	D	93	Total 705	C 443	N 126	O 135	S 1	0	0
5	H	92	Total 718	C 453	N 127	O 136	S 2	0	0

- Molecule 6 is a protein called Histone H3.1.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	A	96	Total 794	C 500	N 154	O 136	S 4	0	0
6	E	88	Total 705	C 447	N 130	O 124	S 4	0	0

• Molecule 7 is a protein called Histone H4.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	B	75	Total 595	C 377	N 116	O 101	S 1	0	0
7	F	77	Total 608	C 382	N 118	O 107	S 1	0	0

• Molecule 8 is a DNA chain called 153 bp DNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	I	129	Total 2624	C 1247	N 481	O 769	P 127	0	0

• Molecule 9 is a DNA chain called 153 bp DNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	J	131	Total 2691	C 1275	N 504	O 783	P 129	0	0

3 Residue-property plots ⓘ

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

- Molecule 1: X-ray repair cross-complementing protein 6

Chain K:

50%   31%   19%

- Molecule 2: X-ray repair cross-complementing protein 5

Chain L:

39%   31%   29%

L85 P86 D93 K97 I98 Q99 P100 Q103 Q104 A105 D106 F107 L108 D109 A110 L111 I112 V113 S114 Q119 T122 K125 K126 F127 R130 H131 I132 E133 I134 F135 L138 S139 S140 S143 L147 D148 I149 I150 I151 H152 S153 L154 K155 K156 C157 F163 F164 L165

P166 F167 S168 L169 G170 LYS GLU ASP GLY SER GLY ASP ARG GLY ASP GLY ASP PRO PHE ARG LEU GLY GLY HIS GLY PRO SER F192 P193 L194 K195 G196 I197 Q201 K202 E203 G204 L205 E206 I207 V208 K209 M210 V211 M212 I213 S214 L215 E216 G217 G220 Y225 S226 F227 S228 E229 S230 L231

C235 V236 F237 K238 K239 I240 S244 I245 H246 W247 P248 C249 R250 L251 T252 I253 N256 I261 A262 A263 Y264 K265 S266 Q269 T277 K285 K286 E287 K291 E292 T293 V294 Y295 C296 L297 D300 E304 V305 L306 K307 E308 D309 I310 I311 Q312 G313 F314 R315 Y316

D319 I320 S324 K325 V326 D327 E328 E329 Q330 Y333 G337 K338 C339 F340 S341 V342 L343 G344 K347 S348 S349 Q350 V351 Q352 R353 R354 M357 G358 N359 Q360 V361 L362 K363 V364 F365 A366 A367 D386 L387 A391 I392 V393 R394 Y395 K399 Q404 V405 G406 V407 A408

L419 V420 Y421 V422 Q423 L424 M427 E428 D429 L430 R431 Q432 Y433 S436 S437 L438 E448 A449 Q450 L451 L457 I458 D459 S460 M461 S462 L463 A464 K465 K466 D467 L473 E474 T479 T480 K481 I482 R486 R489 C493 L494 L495 H496 R497 A498 P504 L505 P506 H511

I512 M515 L516 N517 T523 T524 K525 S526 Q527 I528 P529 L530 S531 K532 I533 K534 T535 L536 L539 I540 K543 LYS LYS ASP GLN VAL THR ALA GLN GLU ILE PHE GLN ASP ASN HIS GLU ASP GLY PRO THR ALA LYS LYS LEU LYS THR GLU GLN GLY GLY ALA HIS PHE SER VAL

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

ILE ARG ALA PHE ARG GLU GLU ALA ILE LYS PHE SER GLU GLU GLN ASN ASN PHE LEU LYS ALA LEU GLN LYS VAL GLU ILE LYS GLN LEU ASN HIS PHE TRP GLU ILE VAL VAL ASP GLY ILE THR LEU ILE THR LYS GLU GLU GLY ALA SER GLY SER SER VAL THR ALA

GLU GLU ALA LYS PHE LEU ALA PRO LYS ASP LYS SER GLY ASP THR ALA ALA VAL PHE GLU GLU GLY GLY ASP VAL ASP ASP LEU LEU ASP MET ILE

• Molecule 3: DNA-dependent protein kinase catalytic subunit

Chain O: 49%   36%   15%

MET ALA GLY SER GLY ALA GLY VAL ARG C10 S11 L12 L13 L19 S20 D23 L29 A30 G31 H32 Q33 L34 I35 V43 L44 S45 S46 A52 T55 S56 L57 V58 F59 S60 R61 V67 F68 V69 R70 K71 S72 L73 N74 S75 I76 E77 F78 R79 E80 C81 R82 E83 E84

I85 L86 K87 F88 L89 C90 I91 F92 L93 E94 K95 K108 T112 S113 V114 K117 D118 R119 K124 L128 D129 L130 L131 I132 Q136 S140 S141 R142 L143 M144 K148 I149 G150 E151 I164 K165 I166 T169 V170 L171 E172 K173 V174 Y175 E176 L177 L178 G179 L180 L181

G182 E183 V184 H185 P186 M189 I190 N191 N195 L196 F197 F200 L201 K205 T206 Q207 V212 R213 L217 P218 V219 L220 A221 G222 C223 L224 K225 G226 L227 S228 S229 L230 L231 F234 T235 M238 E239 E240 Q243 I248 F249 N250 F251 K254 I255 I256 R257 I260

A270 G271 L272 R273 L274 F275 Q281 F282 S283 D288 N289 Y290 V291 F294 L297 L298 T304 N305 V306 E307 L308 K309 K310 L316 F319 L320 V323 V327 A331 E332 M333 H334 K335 N336 K337 Y340 F341 M342 Y346 I349 ARG ASN VAL ASP SER ASN

N356 K357 E358 L359 S360 I361 A362 I363 R364 G365 Y366 G367 L368 G371 K374 V381 D382 Y385 I389 Q390 R391 C392 K393 Q394 M395 F396 L397 T398 Q399 THR ASP THR GLY ASP D405 M410 P411 S412 F413 L414 Q415 S416 V417 A418 S419 V420 L421 L422 Y423 L424 D425 V430

L438 M441 Q442 S445 F446 Y449 S450 M453 A460 I461 V462 K463 V464 F465 L466 A467 L468 A469 G472 P473 V474 L475 R476 N477 C478 I479 V483 H484 Q485 G486 L487 I488 R489 I490 C491 S492 K493 P498 LYS GLY PRO GLU SER GLU SER GLU ASP HIS ARG ALA SER GLY

• Molecule 4: Histone H2AX

Chain C:

34%   30%   36%

MET SER GLY ARG GLY LYS THR GLY GLY LYS ALA ARG ALA LYS ALA LYS SER R17 R20 A21 Q24 F25 P26 V27 G28 R29 R32 L33 L34 R35 K36 G37 H38 E41 R42 V43 A47 P48 L51 E56 I62 L63 E64 N68 D72 N73 I78 I79 P80

R81 H82 L85 A86 I87 R88 N89 D90 E91 E92 L93 N94 K95 L96 L97 T101 V107 L108 PRO ASN ILE GLN ALA VAL LEU LEU PRO LYS LYS THR SER ALA THR VAL GLY PRO LYS ALA PRO SER GLY GLY LYS LYS ALA THR GLN ALA SER GLN GLU TYR

• Molecule 4: Histone H2AX

Chain G:

41%   26%   •   32%

MET SER GLY ARG GLY LYS THR GLY GLY LYS ALA ARG ALA LYS A14 K15 S16 R17 R20 A21 G22 L23 R29 L34 H38 Y39 A40 E41 R42 V43 Y50 L51 A52 A60 L63 E64 L65 A70 K74 R77 I78 I79 P80 R81 H82 L83 Q84 I87 R88

N89 D90 L93 N94 K95 L96 V100 T101 I102 V107 L108 P109 N110 ILE GLN ALA VAL LEU LEU PRO LYS LYS THR SER ALA THR VAL GLY PRO LYS ALA PRO SER GLY GLY LYS LYS ALA THR GLN ALA SER GLN GLU TYR

• Molecule 5: Histone H2B type 1-J

Chain D:

45%   29%   26%

MET PRO GLU PRO ALA LYS SER ALA PRO ALA PRO LYS LYS GLY SER LYS LYS ALA VAL THR LYS ALA GLN LYS LYS ASP GLY LYS LYS ARG ARG SER R30 K31 E32 S33 Y34 Y37 K40 V41 L42 K43 H46 P47 D48 I51 M56 N60 V63 I66

I70 R83 I86 T87 S88 R89 E90 I91 Q92 T93 A94 V95 R96 L97 L98 L99 P100 G101 K105 E110 K113 K117 K122

• Molecule 5: Histone H2B type 1-J

Chain H:

49%   24%   27%

MET PRO GLU PRO ALA LYS SER ALA PRO ALA PRO LYS LYS GLY SER LYS LYS ALA VAL THR LYS ALA GLN LYS LYS ASP GLY LYS LYS ARG ARG SER K31 E32 Y37 V41 L42 V45 G50 I51 M59 R76 Y80 R83 S84 T85 I86 R89

Q92 T93 A94 V95 R96 L97 L98 L99 P100 G101 K105 H106 A107 V108 S109 E110 G111 V115 T116 K117 Y118 A121 K122

• Molecule 6: Histone H3.1

Chain A:

43%   27%   29%

MET ALA ARG THR LYS GLN THR ALA ARG LYS SER THR GLY GLY LYS ALA PRO ARG LYS GLN LEU ALA THR LYS ALA ALA ARG LYS SER ALA PRO ALA THR GLY GLY VAL LYS LYS PRO H39 R40 Y41 R42 P43 G44 T45 V46 R49 E50 I51 R52 R53 Y54 Q55 K56 E59 L60 L61

I62 R63 K64 L65 R72 E73 I74 A75 Q76 D81 L82 R83 S87 Q93 L103 D106 T107 H113 R116 V117 T118 I119 M120 P121 K122 D123 Q124 D125 L126 R131 R134 ALA

• Molecule 6: Histone H3.1

Chain E:

40%   21%   35%

MET ALA ARG THR LYS GLN THR ALA ARG LYS SER THR GLY LYS ALA PRO ARG LYS GLN LEU ALA THR LYS ALA ALA ARG LYS SER ALA PRO ALA THR GLY GLY VAL LYS LYS PRO HIS ARG TYR ARG PRO GLY THR V46 A47 L48 I51 L61 I62 R63 K64 L65 L70 V71

R72 E73 I74 A75 Q76 D77 F78 K79 T80 D81 L82 R83 F84 A91 E94 Y99 F104 E105 D106 T107 N108 L109 C110 A111 I112 H113 T118 I119 D123 R128 R131 G132 E133 ARG ALA

• Molecule 7: Histone H4

Chain B:

47%   26%   27%

MET SER GLY ARG GLY LYS GLY GLY LYS GLY LEU GLY LYS GLY GLY ALA LYS ARG HIS ARG LYS VAL LEU ARG ASP ASN I26 T30 K31 P32 A33 I34 R35 A38 R39 R40 V43 K44 R45 I46 L49 I50 Y51 L62 V65 I66 R78 K79 T80 V81 T82 A83 M84

Y88 A89 L90 R95 T96 F100 GLY GLY

• Molecule 7: Histone H4

Chain F:

44%   31%   25%

MET SER GLY ARG GLY LYS GLY GLY LYS GLY LEU GLY LYS GLY GLY ALA LYS ARG HIS ARG LYS VAL LEU R23 D24 N25 I26 Q27 G28 I29 T30 K31 P32 R35 R36 L37 R40 G41 G42 R45 I46 I50 R55 L62 E63 N64 V65 I66 R67 V70 T71 H75

A76 K77 R78 K79 T80 V81 T82 A83 M84 L90 T96 L97 Y98 G99 PHE GLY GLY

• Molecule 8: 153 bp DNA

Chain I:

24%   60%   16%

DA DT DC DC DT DG DG A8 G9 A10 A11 C14 C15 G16 G17 T18 G19 C20 C21 G22 A23 G24 G25 C26 C27 G28 C29 T30 C31 A32 A33 T34 T35 C39 G40 T41 A42 G43 A46 T49 C50 T51 A52 G53 C54 C57 G58 C59 A62 A63 A64 C65 G66 C67

A68 C69 G70 T71 A72 C73 G74 C75 G76 C77 T78 G79 T80 C81 C82 C83 C84 C85 G86 C87 G88 T89 T90 T91 T92 A93 A94 C95 C96 G97 C98 C99 A100 A101 G102 G103 G104 A105 A106 C110 T111 C112 C113 C114 T115 A116 G117 T118 C121 C122 A123 G124 G125 A126 A127 A136 DT

DA DT DA DT DA DC DA DT DC DC DT DG DT DG DA DT

• Molecule 9: 153 bp DNA

Chain J:

39%   47%   14%

DA DT DC DA DC DA DG DG DA DT DG DT DT DA DT DA DT DA T18 A22 C23 C30 T31 G32 G33 A34 C37 T38 A39 G40 G41 G42 A43 G44 T48 C49 C50 C51 C52 T53 T54 G55 G56 C57 G58 G59 T60 T61 A62 A63 A64 G69 G70 G71 G72 G73

A74 C75 A76 G79 C80 G81 T82 A83 G89 T90 T91 T92 A93 A94 G97 C101 T102 A103 G104 A105 G106 C107 T108 A113 T122 G125 C126 G127 C128 C129 C130 T131 C132 G133 G134 C135 A136 C137 C138 G139 G140 G141 C147 C148 DA DG DG DA DT

4   Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	15518	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	48.59	Depositor
Minimum defocus (nm)	700	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.875	Depositor
Minimum map value	-0.280	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.024	Depositor
Recommended contour level	0.19	Depositor
Map size (Å)	692.16, 692.16, 692.16	wwPDB
Map dimensions	420, 420, 420	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.6479999, 1.6479999, 1.6479999	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#|Z|>5$	RMSZ	$\#|Z|>5$
1	K	0.11	0/3962	0.27	0/5354
2	L	0.13	0/4131	0.35	0/5585
3	O	0.12	0/28365	0.36	0/38383
4	C	0.10	0/716	0.26	0/965
4	G	0.10	0/748	0.29	0/1010
5	D	0.12	0/714	0.32	0/961
5	H	0.10	0/729	0.28	0/979
6	A	0.11	0/805	0.30	0/1079
6	E	0.26	0/713	0.52	0/958
7	B	0.11	0/601	0.26	0/805
7	F	0.11	0/614	0.30	0/825
8	I	0.19	0/2940	0.36	0/4530
9	J	0.18	0/3020	0.36	0/4661
All	All	0.13	0/48058	0.35	0/66095

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	K	3886	0	3875	166	0
2	L	4051	0	4049	186	0
3	O	27819	0	27772	1141	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	C	707	0	744	38	0
4	G	738	0	769	40	0
5	D	705	0	719	33	0
5	H	718	0	740	26	0
6	A	794	0	831	43	0
6	E	705	0	726	44	0
7	B	595	0	640	29	0
7	F	608	0	639	45	0
8	I	2624	0	1449	118	0
9	J	2691	0	1472	92	0
All	All	46641	0	44425	1799	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 21.

All (1799) 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)
3:O:3868:VAL:HG12	3:O:4117:LEU:HB2	1.57	0.86
7:F:90:LEU:HB3	7:F:96:THR:HA	1.60	0.84
3:O:1172:LEU:HD11	3:O:1187:SER:HB2	1.62	0.82
6:E:128:ARG:HG3	6:E:133:GLU:HG3	1.62	0.82
3:O:196:LEU:HD13	3:O:227:LEU:HD11	1.61	0.81
6:E:83:ARG:HB2	7:F:80:THR:HG22	1.62	0.80
3:O:4116:ILE:HA	3:O:4124:TRP:HH2	1.47	0.80
3:O:364:ARG:HH12	3:O:415:GLN:HB2	1.47	0.79
3:O:2187:VAL:HB	3:O:2728:LEU:HD21	1.64	0.79
3:O:3163:THR:HB	3:O:3167:ARG:HH22	1.46	0.79
8:I:111:DT:H1'	9:J:44:DG:H22	1.48	0.79
1:K:507:THR:HB	2:L:394:ARG:HD3	1.63	0.78
3:O:3717:VAL:HG23	3:O:3743:HIS:H	1.49	0.78
2:L:251:LEU:HB2	2:L:261:ILE:HG12	1.66	0.78
3:O:393:LYS:HA	3:O:397:LEU:HD23	1.64	0.78
1:K:39:ILE:HG22	1:K:84:ALA:HB3	1.67	0.76
3:O:1169:VAL:HG21	3:O:1198:LEU:HD11	1.66	0.76
2:L:253:ILE:HD11	2:L:342:VAL:HG23	1.67	0.76
4:C:28:GLY:HA3	8:I:33:DA:H3'	1.67	0.75
9:J:41:DG:H2"	9:J:42:DG:N7	2.01	0.75
3:O:925:GLN:HG3	3:O:2800:ARG:HH12	1.52	0.75
3:O:1380:ALA:HA	3:O:1384:PHE:HA	1.69	0.75
3:O:2415:LEU:HB3	3:O:2420:PHE:HB2	1.66	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:4125:GLU:HB2	3:O:4128:MET:HE1	1.67	0.74
6:E:72:ARG:NH2	8:I:54:DC:OP1	2.20	0.74
1:K:95:ASN:HD22	1:K:95:ASN:N	1.82	0.74
3:O:893:SER:O	3:O:944:LYS:NZ	2.20	0.74
3:O:663:ILE:HG22	3:O:665:GLY:H	1.53	0.74
7:B:82:THR:HG22	7:B:84:MET:H	1.52	0.74
3:O:124:LYS:HZ2	8:I:11:DA:H3'	1.52	0.73
3:O:3535:ILE:HG23	3:O:3797:THR:HA	1.70	0.73
2:L:44:ARG:NH2	2:L:240:ILE:O	2.21	0.73
2:L:337:GLY:HA2	2:L:399:LYS:HA	1.69	0.73
3:O:1932:GLN:HB2	3:O:1937:ARG:HE	1.53	0.73
1:K:400:TYR:O	1:K:408:PRO:HA	1.90	0.72
3:O:1068:LEU:HD21	3:O:1106:ILE:HD12	1.71	0.72
3:O:1686:LEU:HD11	3:O:1738:ASN:HB3	1.71	0.72
3:O:901:MET:HG2	3:O:903:PRO:HD3	1.71	0.72
6:A:39:HIS:HB2	8:I:86:DG:H21	1.54	0.72
3:O:914:VAL:HG11	3:O:937:MET:HE1	1.72	0.71
1:K:299:LYS:NZ	2:L:296:CYS:O	2.22	0.71
6:A:113:HIS:NE2	6:E:123:ASP:OD1	2.23	0.71
7:F:31:LYS:HG3	7:F:32:PRO:HD3	1.72	0.71
6:E:82:LEU:O	6:E:83:ARG:C	2.33	0.71
3:O:1589:ASN:HD21	3:O:1592:MET:HB2	1.55	0.71
3:O:3681:LYS:NZ	3:O:3683:CYS:SG	2.63	0.71
3:O:271:GLY:O	3:O:274:LEU:HB2	1.91	0.71
7:F:25:ASN:HB3	7:F:29:ILE:HG12	1.71	0.71
2:L:362:LEU:HB2	2:L:421:TYR:HB3	1.73	0.71
3:O:867:ASN:HB3	3:O:3129:LEU:HD11	1.73	0.71
2:L:391:ALA:HB3	2:L:408:ALA:HB3	1.73	0.70
3:O:3069:MET:HA	3:O:3075:LYS:HB2	1.71	0.70
3:O:730:LEU:HD11	3:O:765:LEU:HD22	1.72	0.70
3:O:3156:PRO:O	3:O:3159:ARG:NH1	2.24	0.70
6:E:108:ASN:ND2	7:F:42:GLY:O	2.24	0.70
4:C:43:VAL:HG23	5:D:86:ILE:HB	1.72	0.69
3:O:771:ASN:OD1	3:O:854:ARG:NH2	2.26	0.69
3:O:2327:LEU:O	3:O:2333:ARG:NH1	2.26	0.69
9:J:69:DG:H2"	9:J:70:DG:C8	2.27	0.69
3:O:1034:ARG:HD2	3:O:1084:ASN:HB2	1.74	0.69
3:O:2357:GLU:HA	3:O:2360:PHE:HB3	1.75	0.69
1:K:172:GLU:HA	1:K:207:LYS:HE3	1.75	0.69
3:O:3969:ASN:HA	3:O:3972:LEU:HG	1.75	0.69
1:K:420:LEU:HG	1:K:426:GLN:HA	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:500:PRO:O	1:K:502:GLN:NE2	2.26	0.68
3:O:3130:GLN:NE2	3:O:3174:ASP:OD1	2.26	0.68
3:O:172:GLU:HB2	3:O:219:VAL:HG12	1.75	0.68
4:G:40:ALA:HB3	5:H:86:ILE:HD11	1.75	0.68
1:K:358:LYS:HA	2:L:353:ARG:HH12	1.58	0.68
1:K:264:ASN:HB2	2:L:530:LEU:HD22	1.75	0.67
6:E:74:ILE:HG23	7:F:66:ILE:HD13	1.76	0.67
3:O:1817:GLN:OE1	3:O:1936:ARG:NH2	2.27	0.67
1:K:300:THR:H	3:O:164:LYS:HZ2	1.43	0.67
2:L:248:PRO:HB2	2:L:262:ALA:HB1	1.75	0.67
3:O:1011:GLU:O	3:O:1015:ASP:N	2.27	0.67
3:O:2507:ILE:HD11	3:O:2545:LEU:HD12	1.77	0.67
3:O:2365:ASN:ND2	3:O:2399:GLU:OE1	2.27	0.67
4:G:84:GLN:HB3	4:G:102:ILE:HD11	1.75	0.67
3:O:275:PHE:HA	3:O:282:PHE:HE2	1.60	0.67
3:O:2461:PHE:HB2	3:O:2473:MET:HE3	1.77	0.67
6:A:116:ARG:NH1	6:A:118:THR:O	2.28	0.67
3:O:1568:ASN:HA	3:O:1600:MET:HE1	1.75	0.67
1:K:430:PRO:HG2	2:L:438:LEU:HD12	1.78	0.66
3:O:532:ARG:NH1	3:O:636:GLU:OE2	2.27	0.66
3:O:2361:ILE:HD11	3:O:2393:LEU:HD23	1.77	0.66
3:O:3531:TYR:OH	3:O:3796:MET:SD	2.51	0.66
4:G:23:LEU:HD21	4:G:52:ALA:HB3	1.76	0.66
3:O:1359:LEU:O	3:O:1362:ASP:HB2	1.94	0.66
7:B:78:ARG:NH2	7:B:80:THR:OG1	2.29	0.66
3:O:165:LYS:NZ	9:J:139:DG:N7	2.41	0.66
3:O:3314:SER:HB2	3:O:3318:LYS:HB3	1.78	0.66
2:L:111:LEU:HD22	2:L:150:ILE:HG12	1.78	0.66
3:O:297:LEU:HD13	3:O:316:LEU:HA	1.77	0.66
3:O:2407:GLY:HA3	3:O:2411:LEU:HD11	1.76	0.66
3:O:3291:GLN:HG2	3:O:3293:CYS:H	1.59	0.66
3:O:862:LEU:HB3	3:O:866:ILE:HD11	1.77	0.66
3:O:3693:GLU:HG3	3:O:3696:ARG:HH21	1.61	0.66
2:L:489:ARG:NH2	2:L:506:PRO:O	2.29	0.66
3:O:1475:LEU:HD22	3:O:1523:GLY:HA2	1.78	0.66
3:O:653:LEU:HD23	3:O:670:LEU:HD22	1.78	0.65
1:K:254:ARG:NH1	8:I:14:DC:OP1	2.29	0.65
3:O:2225:HIS:H	3:O:2231:PHE:HB2	1.61	0.65
3:O:4004:VAL:HG22	3:O:4005:PHE:H	1.62	0.65
4:C:85:LEU:HD23	4:C:108:LEU:HD21	1.79	0.65
3:O:1417:THR:O	3:O:1420:ARG:HB2	1.96	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:D:56:MET:O	5:D:60:ASN:ND2	2.29	0.65
3:O:2195:SER:O	3:O:2722:ARG:NH1	2.30	0.65
3:O:3739:ILE:HG23	3:O:3749:PRO:HB3	1.78	0.65
1:K:444:ARG:NH2	2:L:244:SER:OG	2.30	0.65
3:O:200:PHE:HE2	3:O:227:LEU:HD22	1.62	0.65
3:O:2446:LEU:HG	3:O:2450:GLU:HG3	1.78	0.65
3:O:3015:SER:HA	3:O:3044:MET:HE1	1.79	0.65
3:O:418:ALA:HB2	3:O:464:VAL:HG12	1.77	0.65
1:K:76:ILE:HG21	1:K:248:ALA:HA	1.77	0.65
3:O:469:ALA:HA	3:O:475:LEU:HD12	1.79	0.65
3:O:2165:LEU:HD11	3:O:2200:ALA:HB1	1.78	0.65
3:O:2287:PRO:HB3	3:O:2326:ILE:HD12	1.77	0.65
3:O:2531:LEU:HG	3:O:2538:ARG:HG3	1.79	0.65
3:O:4114:PRO:HA	3:O:4117:LEU:HG	1.78	0.65
3:O:1155:ARG:NH2	3:O:3689:ASP:OD1	2.30	0.64
3:O:1389:VAL:HG22	3:O:1390:GLN:H	1.61	0.64
4:C:20:ARG:NH1	8:I:35:DT:OP1	2.30	0.64
4:G:77:ARG:NH2	5:H:51:ILE:O	2.30	0.64
1:K:376:ILE:HB	2:L:540:ILE:HG13	1.77	0.64
3:O:1331:ASN:HA	3:O:1334:LYS:HE2	1.80	0.64
3:O:3870:SER:HB2	3:O:3874:ARG:HH21	1.61	0.64
1:K:94:LYS:H	1:K:103:TYR:HA	1.62	0.64
2:L:11:VAL:HB	2:L:132:ILE:HG12	1.79	0.64
3:O:3172:LYS:HG3	3:O:3173:MET:HG3	1.80	0.64
3:O:3838:GLU:OE2	3:O:3874:ARG:NH1	2.30	0.64
3:O:1445:ARG:NH2	3:O:1507:CYS:SG	2.70	0.64
3:O:1607:GLU:OE2	3:O:1614:GLN:NE2	2.31	0.64
9:J:104:DG:H2"	9:J:105:DA:C8	2.33	0.64
3:O:415:GLN:HA	3:O:463:LYS:HD2	1.79	0.64
3:O:2216:LEU:HD13	3:O:2241:LEU:HD23	1.80	0.64
4:G:81:ARG:NH1	4:G:107:VAL:O	2.24	0.64
2:L:250:ARG:NH1	2:L:252:THR:OG1	2.31	0.64
2:L:493:CYS:HB2	2:L:505:LEU:HD13	1.80	0.64
2:L:64:THR:HG22	2:L:69:SER:HB2	1.79	0.64
3:O:3311:ASN:HB3	3:O:3314:SER:HA	1.79	0.63
7:F:26:ILE:HG13	7:F:27:GLN:H	1.63	0.63
3:O:2367:VAL:O	3:O:2371:PHE:N	2.30	0.63
2:L:250:ARG:NH2	2:L:338:LYS:O	2.31	0.63
3:O:670:LEU:HB3	3:O:732:PHE:CE1	2.34	0.63
3:O:1445:ARG:NH2	3:O:1506:SER:OG	2.32	0.63
4:G:77:ARG:HA	5:H:50:GLY:H	1.62	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:289:TYR:HD2	1:K:292:THR:H	1.47	0.63
3:O:1458:LEU:HD22	3:O:1463:LEU:HD12	1.78	0.63
8:I:88:DG:H2"	8:I:89:DT:H5"	1.79	0.63
3:O:1851:LEU:HD13	3:O:1870:LYS:HD3	1.81	0.63
3:O:197:PHE:O	3:O:201:LEU:HG	1.98	0.63
3:O:3681:LYS:HG2	3:O:3724:GLU:HG2	1.79	0.63
6:E:82:LEU:C	7:F:80:THR:HA	2.24	0.63
3:O:2391:GLY:O	3:O:2431:ARG:NH2	2.32	0.63
8:I:9:DG:N2	9:J:147:DC:O2	2.32	0.63
1:K:275:ASN:ND2	1:K:278:GLN:OE1	2.32	0.62
3:O:174:VAL:O	3:O:177:LEU:HB2	1.99	0.62
3:O:1073:PHE:HE1	3:O:1121:LEU:HD22	1.64	0.62
5:D:101:GLY:O	5:D:105:LYS:NZ	2.32	0.62
1:K:48:MET:HA	1:K:59:PRO:HG2	1.79	0.62
3:O:956:PRO:HA	3:O:959:TYR:HB2	1.81	0.62
3:O:1071:ASN:ND2	3:O:1073:PHE:H	1.96	0.62
3:O:2353:GLN:HB3	3:O:2360:PHE:HB2	1.80	0.62
1:K:338:LYS:NZ	8:I:18:DT:OP1	2.31	0.62
2:L:316:TYR:HB3	2:L:319:ASP:HB2	1.81	0.62
2:L:347:LYS:HG3	2:L:349:SER:H	1.64	0.62
3:O:2356:MET:SD	3:O:2359:LYS:NZ	2.66	0.62
2:L:10:VAL:HB	2:L:54:ILE:HG13	1.81	0.62
3:O:1833:LEU:HD23	3:O:1835:ALA:H	1.65	0.62
1:K:95:ASN:N	1:K:95:ASN:ND2	2.47	0.62
3:O:2310:VAL:HG11	3:O:2359:LYS:HD2	1.81	0.62
4:C:87:ILE:HA	4:C:93:LEU:HD12	1.82	0.62
6:A:59:GLU:O	7:B:40:ARG:NH1	2.33	0.62
2:L:65:ASP:HB3	2:L:78:THR:HG23	1.82	0.62
3:O:3066:ASP:HA	3:O:3069:MET:SD	2.40	0.62
8:I:25:DG:H4'	8:I:26:DC:H5'	1.81	0.62
1:K:203:MET:HE1	1:K:241:ASP:HB2	1.81	0.62
3:O:396:PHE:HE2	3:O:441:MET:HG2	1.65	0.62
3:O:3759:ARG:HA	3:O:3762:GLN:HG2	1.81	0.62
1:K:484:GLN:O	1:K:488:ARG:HG2	1.99	0.61
3:O:2122:LEU:O	3:O:2127:LYS:NZ	2.32	0.61
3:O:1766:LEU:HD23	3:O:1775:GLU:HG3	1.82	0.61
3:O:2587:GLN:O	3:O:2777:HIS:N	2.33	0.61
6:A:106:ASP:OD2	6:A:131:ARG:NH2	2.32	0.61
2:L:465:LYS:O	2:L:474:GLU:N	2.33	0.61
3:O:914:VAL:O	3:O:918:ALA:N	2.30	0.61
3:O:1632:TRP:CD1	3:O:1645:VAL:HG21	2.35	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:2386:LEU:HD12	3:O:2418:LYS:HG3	1.82	0.61
1:K:407:PRO:HG2	2:L:486:ARG:HD2	1.82	0.61
3:O:655:LEU:HB3	3:O:659:ARG:HH12	1.65	0.61
3:O:1301:ILE:H	3:O:1301:ILE:HD12	1.66	0.61
2:L:461:MET:HB3	2:L:526:SER:HB3	1.82	0.61
3:O:23:ASP:OD2	3:O:70:ARG:NH1	2.34	0.61
3:O:2524:PHE:O	3:O:2530:ARG:NH1	2.27	0.61
2:L:7:LYS:HB2	2:L:51:LYS:HB3	1.83	0.61
2:L:264:TYR:HB2	2:L:363:LYS:HB3	1.83	0.61
3:O:990:GLN:NE2	3:O:2778:GLY:O	2.33	0.61
3:O:1820:VAL:HG23	3:O:1824:LEU:HB2	1.83	0.61
3:O:2808:LEU:HD23	3:O:2812:LEU:HD23	1.81	0.61
3:O:305:ASN:O	3:O:308:LEU:N	2.34	0.61
3:O:1452:VAL:HA	3:O:1517:LEU:HD11	1.83	0.61
5:D:83:ARG:NH1	8:I:43:DG:OP2	2.34	0.61
3:O:1725:GLN:O	3:O:1768:ARG:NH2	2.34	0.60
3:O:2125:TRP:O	3:O:2129:LEU:N	2.29	0.60
3:O:2404:ARG:O	3:O:2441:LYS:NZ	2.34	0.60
3:O:767:GLU:O	3:O:771:ASN:ND2	2.35	0.60
3:O:3720:ALA:HB3	3:O:3743:HIS:HA	1.82	0.60
4:G:100:VAL:HG12	7:F:96:THR:HG22	1.83	0.60
2:L:93:ASP:O	2:L:97:LYS:HB2	2.01	0.60
3:O:971:ARG:HG3	3:O:1025:LEU:HD11	1.83	0.60
3:O:1831:CYS:SG	3:O:1883:ARG:NH1	2.74	0.60
3:O:2136:PRO:O	3:O:2143:ARG:NH2	2.33	0.60
3:O:2538:ARG:NH2	3:O:2565:MET:HE3	2.16	0.60
3:O:164:LYS:HB2	3:O:166:ILE:HG12	1.83	0.60
8:I:57:DC:H1'	9:J:97:DG:H22	1.65	0.60
1:K:173:ASP:OD1	1:K:207:LYS:NZ	2.30	0.60
1:K:325:ARG:NH2	2:L:498:ALA:O	2.35	0.60
3:O:1367:HIS:HA	3:O:1370:ARG:HH11	1.67	0.60
4:C:101:THR:OG1	7:B:96:THR:O	2.20	0.60
8:I:20:DC:N4	9:J:134:DG:O6	2.35	0.60
3:O:1072:ALA:HB1	3:O:1123:THR:HG21	1.84	0.60
3:O:2097:LEU:HD11	3:O:2149:LEU:HD22	1.83	0.60
3:O:1602:ASP:O	3:O:1606:ARG:N	2.35	0.60
3:O:3960:PRO:HD3	3:O:4111:ALA:HB1	1.84	0.60
8:I:104:DG:N2	9:J:51:DC:O2	2.35	0.60
1:K:469:LEU:HD11	1:K:518:LEU:HD11	1.84	0.60
3:O:848:LEU:HB3	3:O:852:ARG:HH22	1.67	0.60
5:D:92:GLN:OE1	5:D:96:ARG:NH2	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:17:GLY:O	2:L:21:SER:N	2.32	0.60
3:O:207:GLN:HG3	3:O:217:LEU:HD13	1.84	0.60
3:O:2278:GLY:O	3:O:2282:ALA:N	2.35	0.60
1:K:52:GLN:NE2	1:K:206:LYS:O	2.34	0.59
8:I:62:DA:H1'	8:I:63:DA:H5'	1.84	0.59
3:O:225:LYS:HE3	3:O:270:ALA:HB3	1.83	0.59
3:O:2544:SER:HA	3:O:2842:ARG:HH22	1.68	0.59
3:O:2843:PHE:O	3:O:2847:THR:OG1	2.20	0.59
1:K:413:LEU:HD12	1:K:432:PHE:HB3	1.85	0.59
3:O:908:ASP:HA	3:O:911:LEU:HD23	1.84	0.59
3:O:1727:ARG:NH2	3:O:1771:GLN:O	2.36	0.59
4:G:90:ASP:HB2	4:G:93:LEU:HB2	1.85	0.59
3:O:393:LYS:NZ	3:O:1685:ASP:OD2	2.35	0.59
3:O:2988:GLU:HA	3:O:2991:LYS:HE2	1.84	0.59
3:O:3190:LEU:HB3	3:O:3231:ILE:HG23	1.84	0.59
2:L:448:GLU:HA	2:L:451:LEU:HD12	1.84	0.59
3:O:415:GLN:NE2	3:O:460:ALA:HB2	2.17	0.59
3:O:950:GLU:OE1	3:O:950:GLU:N	2.33	0.59
8:I:117:DG:N2	9:J:38:DT:O2	2.35	0.59
3:O:3011:LEU:HB3	3:O:3047:SER:HB3	1.83	0.59
7:B:39:ARG:NH1	7:B:44:LYS:O	2.36	0.59
3:O:953:GLN:OE1	3:O:953:GLN:N	2.36	0.59
3:O:1083:ASN:ND2	3:O:1126:GLN:OE1	2.34	0.59
3:O:1583:MET:HG3	3:O:1625:HIS:HB3	1.85	0.59
3:O:3593:ARG:HH21	3:O:3660:ASN:HD22	1.51	0.59
7:F:35:ARG:HG3	7:F:46:ILE:HD11	1.83	0.59
8:I:97:DG:N1	9:J:57:DC:N3	2.50	0.59
2:L:315:ARG:HA	2:L:320:ILE:HA	1.85	0.59
3:O:3666:LEU:HA	3:O:3669:LYS:HD2	1.83	0.59
1:K:492:ALA:HA	1:K:497:LEU:HD13	1.83	0.58
2:L:54:ILE:HD13	2:L:86:PRO:HG3	1.84	0.58
3:O:584:GLU:O	3:O:613:HIS:N	2.34	0.58
3:O:4004:VAL:H	3:O:4007:LYS:HZ1	1.51	0.58
1:K:488:ARG:NH2	1:K:491:GLU:OE2	2.36	0.58
2:L:352:GLN:HB3	2:L:354:ARG:HG2	1.84	0.58
3:O:793:LEU:HB3	3:O:870:LEU:HA	1.84	0.58
3:O:3319:ASN:O	3:O:3322:ALA:N	2.32	0.58
3:O:3606:ILE:HA	3:O:3609:MET:HE2	1.84	0.58
3:O:1096:VAL:O	3:O:1100:VAL:HG13	2.03	0.58
3:O:2452:ARG:HB2	3:O:2498:ILE:HD11	1.85	0.58
9:J:73:DG:H2''	9:J:74:DA:N7	2.17	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:288:LEU:N	2:L:311:ILE:O	2.36	0.58
3:O:3416:LEU:HD22	3:O:3449:LYS:HE3	1.86	0.58
3:O:3880:ALA:O	3:O:3885:ARG:NH2	2.34	0.58
3:O:243:GLN:NE2	3:O:281:GLN:O	2.36	0.58
3:O:3909:ALA:HB1	3:O:3984:MET:HE3	1.86	0.58
4:C:17:ARG:HH21	4:C:27:VAL:HG12	1.67	0.58
3:O:958:MET:HB2	3:O:961:LEU:HB2	1.85	0.58
6:A:59:GLU:H	7:B:40:ARG:HH12	1.52	0.58
2:L:21:SER:HB2	2:L:100:PRO:HB2	1.86	0.58
3:O:1365:ASN:OD1	3:O:1370:ARG:NH1	2.37	0.58
3:O:2266:ASN:O	3:O:2311:ARG:NH1	2.36	0.58
8:I:124:DG:N2	9:J:31:DT:O2	2.37	0.58
9:J:133:DG:H2'	9:J:134:DG:C8	2.39	0.58
2:L:153:SER:HA	2:L:156:LYS:HG2	1.85	0.58
3:O:734:LEU:HD11	3:O:768:VAL:HB	1.85	0.58
3:O:1112:ALA:HB1	3:O:1180:GLN:HE21	1.69	0.58
3:O:3135:LEU:O	3:O:3138:ILE:HG22	2.04	0.58
3:O:3301:LEU:HD12	3:O:3304:VAL:HG23	1.86	0.58
4:C:79:ILE:HG22	4:C:81:ARG:H	1.67	0.58
2:L:165:LEU:O	2:L:227:PHE:N	2.35	0.58
3:O:1069:HIS:HB3	3:O:1074:LYS:HD2	1.85	0.58
3:O:1464:LEU:HD11	3:O:1521:PHE:HA	1.85	0.58
3:O:3471:ILE:HA	3:O:3474:ARG:HB2	1.85	0.58
4:G:16:SER:HA	9:J:34:DA:H4'	1.85	0.58
3:O:1230:GLY:O	3:O:1292:LYS:NZ	2.33	0.58
3:O:3993:SER:OG	3:O:3994:ASP:N	2.33	0.58
1:K:388:LYS:HE3	2:L:451:LEU:HB3	1.85	0.57
3:O:201:LEU:HD22	3:O:249:PHE:HD2	1.69	0.57
3:O:1304:HIS:O	3:O:1334:LYS:NZ	2.31	0.57
3:O:1841:SER:HA	3:O:1844:VAL:HG23	1.84	0.57
3:O:3974:MET:N	3:O:3974:MET:SD	2.77	0.57
3:O:4055:ASN:HD21	3:O:4057:ALA:HB3	1.69	0.57
4:G:84:GLN:HA	4:G:87:ILE:HG12	1.86	0.57
8:I:41:DT:H2''	8:I:42:DA:C8	2.40	0.57
8:I:94:DA:H2''	8:I:95:DC:H5''	1.85	0.57
1:K:416:GLN:NE2	1:K:417:GLU:O	2.37	0.57
3:O:860:GLY:HA3	3:O:3136:THR:HG21	1.86	0.57
3:O:2594:ASP:HB3	3:O:2596:ARG:HD3	1.86	0.57
8:I:102:DG:H2''	8:I:103:DG:C8	2.40	0.57
2:L:496:HIS:CG	2:L:506:PRO:HD3	2.39	0.57
2:L:193:PRO:HD2	2:L:195:LYS:HE2	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:225:LYS:HB3	3:O:274:LEU:HD21	1.86	0.57
3:O:1961:PHE:CE1	3:O:2100:LEU:HD21	2.40	0.57
3:O:3875:GLU:HG3	3:O:3965:ARG:HE	1.70	0.57
6:E:70:LEU:HD22	7:F:25:ASN:HB2	1.87	0.57
1:K:192:ASP:OD1	3:O:2380:ASN:ND2	2.37	0.57
3:O:93:LEU:HD23	3:O:136:GLN:HG3	1.85	0.57
3:O:2322:VAL:HA	3:O:2325:LEU:HD12	1.85	0.57
3:O:2773:ARG:HG2	3:O:2789:SER:HB2	1.85	0.57
3:O:3321:LEU:HG	3:O:3324:ARG:HH21	1.70	0.57
3:O:3750:PHE:HB3	3:O:3802:LEU:HD11	1.86	0.57
8:I:103:DG:N2	9:J:52:DC:O2	2.38	0.57
1:K:299:LYS:HG3	2:L:294:VAL:HG23	1.86	0.57
2:L:130:ARG:NH2	2:L:157:CYS:O	2.38	0.57
3:O:2196:TRP:HB2	3:O:2199:LEU:HB2	1.87	0.57
3:O:3636:PHE:O	3:O:3640:PHE:N	2.32	0.57
4:G:43:VAL:HA	5:H:86:ILE:HB	1.86	0.57
8:I:53:DG:O6	9:J:101:DC:N4	2.38	0.57
1:K:194:ARG:NH1	1:K:219:ASP:O	2.37	0.57
3:O:1201:ASN:OD1	3:O:1207:TRP:N	2.34	0.57
3:O:2543:ASN:OD1	3:O:2544:SER:N	2.38	0.57
3:O:3281:CYS:O	3:O:3285:HIS:ND1	2.37	0.57
3:O:3662:ILE:HA	3:O:3665:MET:HE2	1.87	0.57
3:O:1075:ARG:NH2	3:O:1117:ASP:OD2	2.38	0.57
4:C:41:GLU:OE1	4:G:38:HIS:NE2	2.37	0.57
8:I:96:DC:H42	9:J:57:DC:H41	1.53	0.57
9:J:43:DA:H2"	9:J:44:DG:C8	2.40	0.57
1:K:369:TYR:OH	2:L:436:SER:O	2.21	0.57
2:L:316:TYR:N	2:L:319:ASP:O	2.38	0.57
3:O:724:GLU:HB3	3:O:2600:THR:HA	1.85	0.57
1:K:157:VAL:O	3:O:2388:LYS:NZ	2.37	0.56
3:O:3360:LEU:HB2	3:O:3373:VAL:HG21	1.86	0.56
4:C:17:ARG:NH1	8:I:34:DT:OP2	2.37	0.56
5:H:83:ARG:NH2	9:J:44:DG:OP2	2.38	0.56
1:K:147:LEU:HD12	1:K:189:LYS:HB3	1.86	0.56
1:K:403:ARG:HD2	9:J:140:DG:H4'	1.87	0.56
1:K:459:VAL:HG12	1:K:463:LYS:HE3	1.87	0.56
2:L:245:ILE:N	9:J:131:DT:OP1	2.37	0.56
3:O:1420:ARG:NH2	3:O:1466:ASN:O	2.38	0.56
3:O:2161:ALA:HA	3:O:2164:TRP:HB2	1.86	0.56
4:C:29:ARG:NH1	5:D:32:GLU:O	2.38	0.56
1:K:40:PHE:HB3	1:K:169:PHE:HE2	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:300:THR:HA	2:L:293:THR:HA	1.87	0.56
1:K:349:GLY:HA3	2:L:463:LEU:HG	1.85	0.56
2:L:51:LYS:NZ	8:I:27:DC:O2	2.33	0.56
3:O:220:LEU:HD23	3:O:224:LEU:HD23	1.87	0.56
3:O:331:ALA:O	3:O:334:HIS:ND1	2.38	0.56
3:O:1428:ILE:HA	3:O:1431:LEU:HB2	1.87	0.56
3:O:1711:ARG:NH1	3:O:1760:GLU:OE2	2.38	0.56
3:O:1805:PHE:HD1	3:O:1819:PHE:HB2	1.70	0.56
3:O:2168:LEU:O	3:O:2172:ALA:N	2.37	0.56
3:O:4055:ASN:HD22	3:O:4058:VAL:HG23	1.70	0.56
4:C:96:LEU:HD13	5:D:100:PRO:HD3	1.87	0.56
2:L:139:SER:HA	2:L:201:GLN:HG2	1.88	0.56
2:L:194:LEU:HD22	2:L:202:LYS:HE2	1.88	0.56
3:O:1369:MET:SD	3:O:1370:ARG:NH1	2.79	0.56
3:O:2938:VAL:HG22	3:O:3979:LEU:HD21	1.87	0.56
3:O:3578:LEU:HD13	3:O:3676:PRO:HA	1.87	0.56
3:O:527:TYR:O	3:O:530:LEU:HB3	2.06	0.56
3:O:1261:LEU:HD11	3:O:1336:THR:HG22	1.87	0.56
3:O:2167:PRO:O	3:O:2171:LEU:N	2.34	0.56
3:O:3737:ARG:HA	3:O:3751:LEU:HB2	1.88	0.56
3:O:346:TYR:HB3	3:O:349:ILE:HD11	1.87	0.56
3:O:971:ARG:HA	3:O:1025:LEU:HD21	1.88	0.56
3:O:3239:LYS:HG3	3:O:3262:LEU:HD21	1.88	0.56
2:L:47:PHE:HE2	2:L:495:LEU:HG	1.70	0.56
3:O:361:ILE:O	3:O:364:ARG:HB3	2.06	0.56
3:O:958:MET:N	3:O:958:MET:SD	2.79	0.56
3:O:1614:GLN:HA	3:O:1617:LYS:HE2	1.88	0.56
3:O:1825:LEU:HD21	3:O:1875:LYS:HD3	1.88	0.56
3:O:3838:GLU:O	3:O:3842:TRP:NE1	2.39	0.56
9:J:58:DG:C8	9:J:58:DG:H5'	2.41	0.56
1:K:469:LEU:HD21	1:K:518:LEU:HG	1.87	0.56
1:K:469:LEU:HD22	1:K:514:MET:HG3	1.86	0.56
2:L:326:VAL:O	2:L:329:GLU:HG3	2.06	0.56
8:I:114:DC:O2	9:J:41:DG:N2	2.38	0.56
2:L:253:ILE:HD13	2:L:340:PHE:CD2	2.41	0.56
3:O:367:GLY:HA3	3:O:416:SER:HA	1.88	0.56
3:O:998:ASN:HA	3:O:1001:PHE:HB2	1.88	0.56
3:O:1594:SER:O	3:O:1598:ASN:ND2	2.38	0.56
4:G:107:VAL:H	7:F:40:ARG:HH21	1.52	0.56
9:J:102:DT:H1'	9:J:103:DA:C5	2.41	0.56
3:O:360:SER:O	3:O:363:ILE:HG12	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:1583:MET:HA	3:O:1586:SER:HB3	1.88	0.56
3:O:3988:LEU:HD23	3:O:4100:GLU:HA	1.87	0.56
1:K:264:ASN:HB3	1:K:267:ILE:H	1.71	0.55
3:O:91:ILE:HG21	3:O:834:LEU:HD23	1.89	0.55
3:O:612:LEU:HD11	3:O:2602:LEU:HD11	1.88	0.55
3:O:3794:VAL:HG11	3:O:3802:LEU:HD23	1.88	0.55
3:O:108:LYS:HE3	3:O:148:LYS:HE3	1.87	0.55
3:O:1413:ASP:OD1	3:O:1414:ILE:N	2.39	0.55
3:O:1771:GLN:OE1	3:O:1775:GLU:N	2.39	0.55
3:O:3048:LYS:HB3	3:O:3061:LEU:HD13	1.89	0.55
3:O:3588:TRP:HE1	3:O:3609:MET:HG3	1.71	0.55
5:D:37:TYR:HA	5:D:40:LYS:HE3	1.88	0.55
3:O:715:ALA:HA	3:O:718:MET:HE2	1.86	0.55
3:O:2410:GLU:HG3	3:O:2413:PHE:HB3	1.87	0.55
3:O:2890:ILE:HD13	3:O:2893:LEU:HD21	1.88	0.55
4:C:26:PRO:HG2	4:C:29:ARG:HB3	1.88	0.55
6:A:72:ARG:NH2	9:J:54:DT:OP2	2.39	0.55
2:L:41:PHE:HA	2:L:238:LYS:HZ3	1.72	0.55
3:O:415:GLN:HE21	3:O:460:ALA:HB2	1.71	0.55
3:O:1476:HIS:ND1	3:O:1476:HIS:O	2.38	0.55
3:O:1793:THR:O	3:O:1797:LEU:HG	2.06	0.55
3:O:3176:MET:HE1	3:O:3249:GLN:NE2	2.21	0.55
5:D:89:ARG:O	5:D:92:GLN:NE2	2.30	0.55
3:O:864:GLY:HA2	3:O:867:ASN:HB2	1.87	0.55
3:O:1436:LEU:HD22	3:O:1445:ARG:HG2	1.89	0.55
3:O:2327:LEU:HD11	3:O:2342:CYS:SG	2.47	0.55
6:E:83:ARG:HB3	8:I:53:DG:H4'	1.87	0.55
1:K:74:LYS:HG3	1:K:83:LEU:HD11	1.89	0.55
1:K:418:GLU:HG3	1:K:430:PRO:HD3	1.89	0.55
2:L:405:VAL:O	2:L:423:GLN:NE2	2.40	0.55
3:O:3236:PHE:HB3	3:O:3272:TRP:CH2	2.42	0.55
3:O:3446:VAL:HG23	3:O:3468:LEU:HD11	1.89	0.55
6:A:53:ARG:HA	6:A:56:LYS:HE2	1.88	0.55
3:O:334:HIS:O	3:O:337:LYS:HB3	2.06	0.55
3:O:892:LEU:HA	3:O:944:LYS:HE3	1.89	0.55
3:O:2824:LYS:O	3:O:2829:LYS:NZ	2.39	0.55
3:O:414:LEU:HD12	3:O:464:VAL:HG11	1.87	0.55
3:O:2093:CYS:O	3:O:2094:MET:HE2	2.07	0.55
3:O:3814:ASP:O	3:O:3818:ASN:ND2	2.39	0.55
2:L:108:LEU:O	2:L:112:ILE:HD12	2.06	0.55
3:O:894:PHE:HB2	3:O:940:PHE:CE2	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:103:DG:H2"	8:I:104:DG:O5'	2.06	0.55
1:K:327:ILE:HG23	2:L:497:ARG:HG2	1.89	0.55
2:L:266:SER:HB2	2:L:361:VAL:HG12	1.89	0.55
3:O:639:ALA:H	3:O:679:LYS:HZ3	1.55	0.55
3:O:2260:PHE:HA	3:O:2270:ASN:HB2	1.88	0.55
3:O:2295:GLN:HG2	3:O:2297:SER:H	1.70	0.55
3:O:3533:PHE:O	3:O:3537:SER:OG	2.23	0.55
3:O:3864:ARG:O	3:O:3868:VAL:HG13	2.07	0.55
3:O:3882:LEU:H	3:O:3966:GLN:HE22	1.53	0.55
3:O:4041:ARG:HE	3:O:4044:ILE:HD11	1.72	0.55
6:E:81:ASP:O	6:E:82:LEU:C	2.51	0.54
1:K:416:GLN:O	1:K:430:PRO:HA	2.07	0.54
3:O:2105:HIS:NE2	3:O:2156:VAL:O	2.39	0.54
1:K:404:ARG:HD2	3:O:213:ARG:HG3	1.89	0.54
3:O:1226:GLY:O	3:O:1230:GLY:N	2.35	0.54
3:O:1610:ASN:OD1	3:O:1611:GLN:N	2.41	0.54
3:O:2425:ARG:NH1	3:O:2460:GLU:OE2	2.39	0.54
3:O:3288:SER:HB2	3:O:3296:GLN:HG2	1.89	0.54
6:E:61:LEU:HD23	7:F:36:ARG:HB3	1.90	0.54
8:I:14:DC:H42	9:J:140:DG:H1	1.54	0.54
4:C:96:LEU:HD13	5:D:99:LEU:HA	1.90	0.54
6:A:83:ARG:HB3	9:J:53:DT:H4'	1.88	0.54
6:A:83:ARG:HB2	7:B:80:THR:HA	1.89	0.54
8:I:40:DG:O6	9:J:113:DA:N6	2.40	0.54
3:O:2561:PHE:O	3:O:2565:MET:HG3	2.08	0.54
6:E:82:LEU:HA	7:F:80:THR:HA	1.90	0.54
1:K:241:ASP:O	1:K:244:ARG:NH1	2.33	0.54
2:L:119:GLN:HA	2:L:122:THR:HB	1.89	0.54
3:O:240:GLU:HG2	3:O:243:GLN:HG2	1.90	0.54
3:O:2225:HIS:CD2	3:O:2226:PRO:HD2	2.43	0.54
3:O:3382:PHE:HD2	3:O:3419:PHE:HE2	1.55	0.54
3:O:3879:PRO:HB2	3:O:3882:LEU:HD21	1.90	0.54
8:I:101:DA:H2"	8:I:102:DG:C8	2.42	0.54
3:O:234:PHE:HD1	3:O:235:THR:HG23	1.73	0.54
3:O:332:GLU:O	3:O:335:LYS:NZ	2.40	0.54
3:O:1722:PHE:HZ	3:O:1742:CYS:HB2	1.73	0.54
3:O:3588:TRP:NE1	3:O:3609:MET:HG3	2.23	0.54
3:O:3980:MET:N	3:O:3980:MET:SD	2.81	0.54
8:I:69:DC:H2"	8:I:70:DG:C5	2.43	0.54
3:O:79:ARG:HA	3:O:119:ARG:HH21	1.73	0.54
3:O:1606:ARG:HH11	3:O:2042:GLN:HG2	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:1632:TRP:HD1	3:O:1633:TRP:HB3	1.72	0.54
8:I:65:DC:H2"	8:I:66:DG:H8	1.73	0.54
3:O:639:ALA:H	3:O:679:LYS:NZ	2.06	0.54
3:O:2298:GLU:HA	3:O:2301:GLN:HG2	1.89	0.54
3:O:2568:MET:SD	3:O:2568:MET:N	2.80	0.54
3:O:3292:GLY:HA2	3:O:3297:VAL:HG11	1.89	0.54
4:G:17:ARG:HG2	4:G:20:ARG:HH21	1.73	0.54
1:K:299:LYS:HA	3:O:164:LYS:NZ	2.23	0.54
1:K:522:VAL:HG11	2:L:256:ASN:HB2	1.89	0.54
3:O:12:LEU:HD21	3:O:44:LEU:HD22	1.88	0.54
3:O:4005:PHE:O	3:O:4007:LYS:N	2.41	0.54
4:G:83:LEU:HD13	5:H:59:MET:HE3	1.90	0.54
3:O:2891:ARG:NH2	3:O:2895:GLU:OE2	2.41	0.53
3:O:3796:MET:HB3	3:O:3801:GLY:HA2	1.89	0.53
4:C:90:ASP:O	4:C:94:ASN:ND2	2.41	0.53
2:L:44:ARG:HD3	2:L:239:LYS:HD3	1.89	0.53
2:L:460:SER:HB2	2:L:525:LYS:HB3	1.90	0.53
3:O:1747:LEU:HD21	3:O:1781:SER:OG	2.08	0.53
3:O:2575:PRO:HA	3:O:2786:LYS:HA	1.90	0.53
3:O:3333:THR:O	3:O:3337:ILE:HG12	2.08	0.53
3:O:3679:ASN:N	3:O:3724:GLU:O	2.41	0.53
6:A:107:THR:HG22	6:A:124:ILE:HA	1.88	0.53
2:L:464:ALA:HB1	2:L:473:LEU:HB3	1.91	0.53
3:O:71:LYS:HG3	3:O:73:LEU:H	1.74	0.53
3:O:726:LEU:HG	3:O:730:LEU:HD23	1.90	0.53
4:C:72:ASP:OD1	4:C:73:ASN:N	2.41	0.53
4:G:88:ARG:HH21	4:G:94:ASN:HA	1.73	0.53
3:O:3259:LEU:HD11	3:O:3283:LEU:HD13	1.89	0.53
6:E:82:LEU:O	7:F:81:VAL:HG12	2.08	0.53
3:O:664:SER:HB3	3:O:725:LEU:HD12	1.89	0.53
3:O:790:LYS:HA	3:O:869:ASN:HB3	1.89	0.53
3:O:2263:LYS:HA	3:O:2309:PHE:HZ	1.74	0.53
3:O:4014:LYS:HG2	3:O:4015:ASN:H	1.74	0.53
4:C:107:VAL:O	6:A:55:GLN:NE2	2.42	0.53
3:O:710:PHE:O	3:O:714:VAL:HG12	2.08	0.53
3:O:865:GLN:HE22	3:O:3172:LYS:HB3	1.74	0.53
3:O:1423:ILE:HD11	3:O:1427:SER:HB3	1.91	0.53
3:O:3588:TRP:HZ2	3:O:3610:TYR:HB2	1.74	0.53
3:O:3637:GLY:O	3:O:3641:ASP:N	2.41	0.53
5:H:105:LYS:HA	5:H:108:VAL:HG12	1.90	0.53
8:I:57:DC:H2"	8:I:58:DG:C5	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:111:DT:H71	8:I:112:DC:H42	1.74	0.53
2:L:64:THR:HG23	2:L:76:ASN:H	1.74	0.53
3:O:1837:ARG:O	3:O:1840:PHE:HB3	2.08	0.53
3:O:3610:TYR:O	3:O:3614:TYR:HB3	2.08	0.53
4:G:42:ARG:NH2	8:I:114:DC:O2	2.42	0.53
3:O:746:ARG:HE	3:O:788:TYR:HE1	1.56	0.53
3:O:1354:GLU:HA	3:O:1357:LYS:HB3	1.90	0.53
3:O:1836:LEU:O	3:O:1840:PHE:N	2.34	0.53
3:O:2251:ILE:HD12	3:O:2252:PRO:HD2	1.91	0.53
3:O:4064:LEU:O	3:O:4068:HIS:N	2.38	0.53
3:O:169:THR:HG23	3:O:170:VAL:HG23	1.90	0.53
3:O:1288:SER:O	3:O:1292:LYS:N	2.32	0.53
3:O:3030:ILE:HG13	3:O:3067:LYS:HD2	1.91	0.53
3:O:4053:GLY:O	3:O:4097:GLY:N	2.42	0.53
4:C:62:ILE:HG13	4:C:63:LEU:HD12	1.91	0.53
4:C:88:ARG:NH2	4:C:94:ASN:OD1	2.41	0.53
5:D:92:GLN:HB2	5:D:96:ARG:HH21	1.74	0.53
2:L:40:MET:SD	2:L:238:LYS:NZ	2.73	0.53
3:O:528:VAL:HG23	3:O:633:ILE:HD13	1.91	0.53
4:G:79:ILE:HG13	4:G:80:PRO:HD2	1.89	0.53
6:E:71:VAL:HA	6:E:74:ILE:HG22	1.90	0.53
8:I:116:DA:H61	9:J:38:DT:H3	1.57	0.53
3:O:449:TYR:CD2	3:O:453:MET:HE1	2.43	0.52
3:O:643:GLU:HA	3:O:646:VAL:HG23	1.91	0.52
6:A:50:GLU:HG3	6:A:53:ARG:HH21	1.73	0.52
1:K:362:LEU:HD11	2:L:269:GLN:HB2	1.92	0.52
3:O:31:GLY:O	3:O:35:ILE:HG12	2.10	0.52
3:O:477:ASN:OD1	3:O:478:CYS:N	2.42	0.52
3:O:1374:GLN:O	3:O:1378:GLU:N	2.36	0.52
3:O:3975:LYS:HG3	3:O:3977:THR:H	1.74	0.52
8:I:51:DT:H2"	8:I:52:DA:N7	2.24	0.52
2:L:20:MET:HE1	2:L:30:PRO:HB2	1.92	0.52
2:L:235:CYS:O	2:L:237:PHE:N	2.41	0.52
2:L:431:ARG:NH1	8:I:15:DC:OP1	2.36	0.52
3:O:648:SER:O	3:O:651:TYR:N	2.43	0.52
3:O:1751:GLU:HA	3:O:1785:ILE:HD12	1.92	0.52
3:O:2332:GLU:O	3:O:2334:LYS:NZ	2.41	0.52
3:O:3139:GLN:HA	3:O:3142:ILE:HG12	1.91	0.52
1:K:403:ARG:HB3	3:O:213:ARG:HH12	1.72	0.52
3:O:714:VAL:HG11	3:O:733:LEU:HD21	1.92	0.52
3:O:1080:LEU:O	3:O:1084:ASN:ND2	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:2151:ILE:HD11	3:O:2189:ILE:HG22	1.92	0.52
3:O:2254:ARG:NH1	3:O:2292:CYS:SG	2.82	0.52
3:O:2322:VAL:O	3:O:2326:ILE:HG12	2.08	0.52
3:O:2589:TYR:HB2	3:O:2777:HIS:HB2	1.91	0.52
3:O:3535:ILE:HD12	3:O:3797:THR:N	2.25	0.52
3:O:3701:ILE:HG12	3:O:3717:VAL:HG13	1.91	0.52
6:E:83:ARG:CB	7:F:80:THR:HG22	2.37	0.52
8:I:118:DT:N3	9:J:37:DC:O2	2.43	0.52
3:O:486:GLY:O	3:O:490:ILE:HG12	2.09	0.52
3:O:1057:LYS:O	3:O:1061:LYS:HG2	2.10	0.52
3:O:1743:MET:HG3	3:O:1773:VAL:HG11	1.91	0.52
3:O:2169:LEU:HB3	3:O:2211:LEU:HD11	1.91	0.52
3:O:3453:ALA:O	3:O:3458:SER:OG	2.28	0.52
3:O:3460:GLU:O	3:O:3464:LYS:HG2	2.10	0.52
8:I:116:DA:H2"	8:I:117:DG:C8	2.45	0.52
2:L:361:VAL:HG13	2:L:420:VAL:HG13	1.90	0.52
3:O:899:ARG:HD2	3:O:2569:SER:N	2.25	0.52
3:O:1104:LEU:HD22	3:O:1134:LEU:HD21	1.92	0.52
3:O:1775:GLU:N	3:O:1775:GLU:OE1	2.42	0.52
3:O:3002:TYR:HD2	3:O:3014:CYS:HB3	1.73	0.52
1:K:213:ILE:O	1:K:218:ARG:N	2.43	0.52
3:O:225:LYS:O	3:O:274:LEU:HD11	2.10	0.52
3:O:3546:SER:O	3:O:3549:HIS:NE2	2.43	0.52
1:K:90:THR:O	1:K:101:ASN:ND2	2.39	0.52
3:O:176:GLU:HG3	3:O:223:CYS:HA	1.92	0.52
3:O:222:GLY:HA2	3:O:225:LYS:HE2	1.90	0.52
3:O:941:MET:HG2	3:O:958:MET:HE2	1.91	0.52
3:O:2129:LEU:HA	3:O:2132:LYS:HE3	1.91	0.52
3:O:3450:MET:O	3:O:3454:LEU:N	2.41	0.52
3:O:3605:ASN:HA	3:O:3608:LYS:HG2	1.91	0.52
3:O:3922:ASP:OD2	3:O:3927:ASN:ND2	2.43	0.52
5:D:93:THR:O	5:D:96:ARG:HG2	2.09	0.52
1:K:38:LEU:O	1:K:83:LEU:HA	2.09	0.52
2:L:246:HIS:CD2	2:L:264:TYR:HD1	2.28	0.52
3:O:1327:GLY:O	3:O:1331:ASN:ND2	2.43	0.52
3:O:1406:LEU:HD13	3:O:1415:LEU:HG	1.91	0.52
3:O:1815:THR:O	3:O:1818:SER:OG	2.26	0.52
6:A:45:THR:HG22	6:A:49:ARG:HH12	1.75	0.52
1:K:297:LYS:HG2	2:L:297:LEU:HD12	1.92	0.52
2:L:85:LEU:HD12	2:L:86:PRO:HD2	1.92	0.52
3:O:85:ILE:O	3:O:89:LEU:N	2.30	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:473:PRO:O	3:O:477:ASN:ND2	2.43	0.52
3:O:931:CYS:O	3:O:984:TYR:OH	2.23	0.52
3:O:1711:ARG:HG3	3:O:1761:LEU:HD11	1.93	0.52
3:O:2349:LEU:HB3	3:O:2360:PHE:HE1	1.75	0.52
4:C:21:ALA:O	5:D:117:LYS:NZ	2.42	0.52
4:G:14:ALA:HB3	8:I:122:DC:H4'	1.91	0.52
4:G:17:ARG:HG3	9:J:34:DA:H3'	1.92	0.52
1:K:147:LEU:HA	1:K:150:CYS:SG	2.49	0.51
2:L:295:TYR:HB2	2:L:304:GLU:HB2	1.92	0.51
3:O:307:GLU:HA	3:O:310:LYS:HE3	1.92	0.51
3:O:1605:PHE:HE2	3:O:2042:GLN:HA	1.75	0.51
4:C:64:GLU:O	4:C:68:ASN:ND2	2.43	0.51
3:O:638:GLN:HG3	3:O:640:GLU:HG3	1.92	0.51
3:O:1835:ALA:O	3:O:1838:GLU:HG2	2.11	0.51
3:O:4124:TRP:CZ3	3:O:4126:PRO:HG3	2.45	0.51
8:I:49:DT:H4'	8:I:50:DC:H5'	1.93	0.51
8:I:110:DC:H2"	8:I:111:DT:O4'	2.10	0.51
1:K:252:ARG:NE	8:I:14:DC:OP2	2.44	0.51
3:O:217:LEU:HG	3:O:221:ALA:HB2	1.93	0.51
3:O:397:LEU:HD21	3:O:438:LEU:HD21	1.91	0.51
3:O:2186:VAL:HA	3:O:2189:ILE:HG12	1.91	0.51
3:O:2473:MET:O	3:O:2477:LEU:HG	2.10	0.51
9:J:125:DG:H1'	9:J:126:DC:H5'	1.91	0.51
9:J:136:DA:H2'	9:J:137:DC:C6	2.45	0.51
1:K:95:ASN:HD22	1:K:95:ASN:H	1.55	0.51
3:O:341:PHE:O	3:O:342:MET:HE2	2.10	0.51
3:O:1588:ASP:OD1	3:O:1589:ASN:N	2.43	0.51
3:O:1727:ARG:NH1	3:O:1772:HIS:O	2.44	0.51
3:O:3269:ARG:O	3:O:3272:TRP:N	2.42	0.51
1:K:287:LYS:HA	2:L:312:GLN:HA	1.91	0.51
2:L:496:HIS:NE2	2:L:504:PRO:O	2.43	0.51
3:O:1052:SER:O	3:O:1055:ASN:ND2	2.38	0.51
6:E:48:LEU:HD13	6:E:51:ILE:HD12	1.91	0.51
1:K:319:SER:N	2:L:277:THR:O	2.37	0.51
1:K:189:LYS:O	1:K:193:LEU:HG	2.10	0.51
3:O:643:GLU:HG3	3:O:644:PRO:HD3	1.91	0.51
3:O:899:ARG:HH12	3:O:2566:THR:HG23	1.76	0.51
3:O:1282:LEU:HA	3:O:1286:ALA:HB2	1.92	0.51
3:O:2287:PRO:HG3	3:O:2326:ILE:HG23	1.93	0.51
3:O:2571:ASP:O	3:O:2787:HIS:ND1	2.43	0.51
3:O:3158:LYS:HB2	3:O:3162:ASN:ND2	2.25	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:27:DC:H3'	8:I:28:DG:C8	2.46	0.51
8:I:71:DT:H72	8:I:72:DA:H61	1.76	0.51
1:K:262:LYS:HE2	1:K:346:MET:HB3	1.92	0.51
3:O:251:PHE:O	3:O:255:ALA:N	2.44	0.51
3:O:955:ALA:N	3:O:956:PRO:HD3	2.26	0.51
3:O:3390:GLN:HA	3:O:3393:GLU:HG2	1.91	0.51
7:B:32:PRO:HG2	9:J:64:DA:H2'	1.91	0.51
9:J:138:DC:H2"	9:J:139:DG:C8	2.45	0.51
3:O:762:TYR:HD2	3:O:765:LEU:HG	1.75	0.51
3:O:1414:ILE:HD12	3:O:1417:THR:HB	1.92	0.51
3:O:2886:GLN:H	3:O:2886:GLN:CD	2.19	0.51
3:O:3479:THR:HA	3:O:3482:LEU:HD12	1.93	0.51
6:A:126:LEU:HD22	6:E:113:HIS:CG	2.45	0.51
2:L:364:VAL:HB	2:L:419:LEU:HB2	1.92	0.51
2:L:457:LEU:HD13	2:L:529:PRO:HB2	1.93	0.51
3:O:1414:ILE:O	3:O:1418:HIS:N	2.34	0.51
3:O:1963:GLN:HA	3:O:2125:TRP:CE2	2.46	0.51
3:O:2098:THR:O	3:O:2102:LYS:HD3	2.11	0.51
6:A:116:ARG:HH21	6:A:122:LYS:HE3	1.75	0.51
1:K:142:SER:HB3	1:K:182:LYS:HE2	1.93	0.50
2:L:206:GLU:HA	2:L:209:LYS:HD2	1.92	0.50
2:L:306:LEU:HG	2:L:308:GLU:H	1.75	0.50
3:O:859:LEU:O	3:O:867:ASN:ND2	2.41	0.50
3:O:3103:ILE:HG23	3:O:3135:LEU:HD11	1.93	0.50
4:C:63:LEU:HD22	5:D:41:VAL:HG23	1.92	0.50
4:C:88:ARG:HB2	4:C:108:LEU:HD23	1.92	0.50
6:E:63:ARG:NH2	8:I:63:DA:O4'	2.43	0.50
3:O:43:VAL:O	3:O:46:SER:OG	2.27	0.50
3:O:526:ASP:OD1	3:O:526:ASP:N	2.44	0.50
3:O:1104:LEU:HG	3:O:1168:LEU:HD11	1.93	0.50
3:O:2040:MET:HA	3:O:2040:MET:HE3	1.91	0.50
3:O:3295:GLU:O	3:O:3299:THR:N	2.43	0.50
3:O:3420:CYS:O	3:O:3424:LEU:HG	2.10	0.50
3:O:3592:VAL:HG12	3:O:3606:ILE:HD12	1.94	0.50
3:O:966:PHE:CD2	3:O:1011:GLU:HG2	2.47	0.50
3:O:1921:ASP:OD1	3:O:1922:ALA:N	2.44	0.50
3:O:3029:LYS:HB2	3:O:3033:GLU:HA	1.92	0.50
2:L:154:LEU:HD13	2:L:215:LEU:HD11	1.93	0.50
3:O:1073:PHE:O	3:O:1076:LEU:HG	2.12	0.50
3:O:2602:LEU:HG	3:O:2603:THR:HG23	1.93	0.50
3:O:3085:GLU:OE1	3:O:3085:GLU:N	2.37	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:3339:ASN:O	3:O:3343:SER:OG	2.27	0.50
3:O:3577:GLN:HA	3:O:3617:LEU:HD11	1.93	0.50
8:I:26:DC:O2	9:J:128:DG:N2	2.44	0.50
1:K:74:LYS:O	1:K:78:SER:N	2.44	0.50
3:O:1090:ARG:HA	3:O:1137:ILE:HD11	1.94	0.50
3:O:1372:LEU:HD21	3:O:1415:LEU:HD11	1.94	0.50
3:O:2538:ARG:HH21	3:O:2565:MET:HE3	1.75	0.50
3:O:2576:MET:N	3:O:2576:MET:SD	2.85	0.50
4:G:34:LEU:HD11	4:G:51:LEU:HD12	1.94	0.50
2:L:251:LEU:HD11	2:L:340:PHE:CE2	2.47	0.50
3:O:1142:HIS:CG	3:O:1197:LEU:HD12	2.47	0.50
3:O:1411:TYR:O	3:O:1414:ILE:HG22	2.10	0.50
3:O:2555:LEU:HD11	3:O:2854:PHE:HA	1.93	0.50
6:E:82:LEU:HA	7:F:79:LYS:O	2.12	0.50
3:O:1016:GLY:O	3:O:1026:ARG:HG2	2.12	0.50
3:O:1198:LEU:O	3:O:1202:ARG:NH2	2.34	0.50
3:O:1445:ARG:HE	3:O:1510:LEU:HD11	1.77	0.50
3:O:3506:LEU:HD11	3:O:3518:VAL:HG11	1.94	0.50
3:O:4088:ASN:ND2	3:O:4109:ASP:O	2.44	0.50
4:C:17:ARG:N	8:I:34:DT:H5"	2.26	0.50
4:G:96:LEU:HD13	5:H:99:LEU:HD12	1.94	0.50
8:I:14:DC:N3	9:J:141:DG:N2	2.60	0.50
9:J:33:DG:C2	9:J:34:DA:C6	3.00	0.50
3:O:394:GLN:HE21	3:O:1738:ASN:CG	2.19	0.50
3:O:847:SER:OG	3:O:848:LEU:N	2.45	0.50
3:O:848:LEU:HD13	3:O:851:ILE:HD11	1.94	0.50
3:O:898:PHE:HB3	3:O:2535:THR:HG21	1.93	0.50
3:O:2949:THR:N	3:O:2990:GLU:OE2	2.36	0.50
3:O:3728:VAL:HG23	3:O:3734:ARG:HD2	1.94	0.50
1:K:329:LEU:HD23	1:K:334:THR:HG22	1.94	0.50
2:L:329:GLU:OE2	2:L:330:GLN:NE2	2.45	0.50
3:O:180:LEU:HD23	3:O:189:MET:HE3	1.92	0.50
3:O:3451:LEU:O	3:O:3454:LEU:HB2	2.12	0.50
4:C:78:ILE:HB	5:D:51:ILE:HA	1.94	0.50
6:A:41:TYR:HB2	8:I:86:DG:H4'	1.93	0.50
8:I:121:DC:H1'	9:J:33:DG:H22	1.76	0.50
1:K:36:ASP:O	1:K:81:ASP:HA	2.12	0.49
3:O:672:ILE:HG22	3:O:676:ASN:HD21	1.78	0.49
3:O:1081:ALA:HA	3:O:1084:ASN:HD21	1.76	0.49
3:O:1330:TYR:CZ	3:O:1334:LYS:HD3	2.46	0.49
3:O:3618:GLY:H	3:O:3629:ARG:HG3	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:59:GLU:H	7:B:40:ARG:HH22	1.60	0.49
8:I:62:DA:H2"	8:I:63:DA:N7	2.27	0.49
9:J:30:DC:H2"	9:J:31:DT:C5	2.47	0.49
1:K:466:VAL:O	1:K:470:ARG:N	2.45	0.49
3:O:1267:TYR:HB3	3:O:1344:PHE:CE1	2.47	0.49
3:O:1684:LEU:O	3:O:1689:LYS:NZ	2.35	0.49
3:O:1779:GLN:O	3:O:1783:ARG:HG2	2.12	0.49
3:O:3007:GLU:HA	3:O:3257:LYS:HE3	1.94	0.49
3:O:3545:THR:HB	3:O:3548:GLY:HA3	1.93	0.49
6:A:107:THR:HG21	6:A:124:ILE:HG12	1.94	0.49
2:L:110:ALA:HA	2:L:113:VAL:HG12	1.94	0.49
2:L:168:SER:HB3	2:L:226:SER:HB2	1.93	0.49
2:L:529:PRO:HA	2:L:532:LYS:HG2	1.94	0.49
3:O:742:GLU:HB3	3:O:780:ILE:HD12	1.93	0.49
3:O:1180:GLN:OE1	3:O:1180:GLN:N	2.45	0.49
3:O:1251:GLN:OE1	3:O:1251:GLN:N	2.34	0.49
3:O:2476:ILE:O	3:O:2480:ILE:HG12	2.12	0.49
3:O:2980:ASP:N	3:O:2980:ASP:OD1	2.42	0.49
3:O:3192:LYS:O	3:O:3195:GLU:HG3	2.12	0.49
3:O:3916:TRP:HZ2	3:O:4056:PRO:HB3	1.77	0.49
3:O:3965:ARG:HA	3:O:3968:ILE:HD12	1.94	0.49
7:F:80:THR:N	9:J:105:DA:OP1	2.45	0.49
3:O:1722:PHE:CE2	3:O:1743:MET:HE3	2.47	0.49
3:O:1949:ILE:HG12	3:O:2100:LEU:HD13	1.94	0.49
3:O:2592:ASP:OD1	3:O:2593:SER:N	2.45	0.49
5:D:30:ARG:HA	9:J:125:DG:H4'	1.95	0.49
6:A:62:ILE:HA	7:B:33:ALA:HB1	1.94	0.49
6:E:82:LEU:CA	7:F:80:THR:HA	2.41	0.49
2:L:18:PHE:N	2:L:104:GLN:OE1	2.46	0.49
3:O:651:TYR:CZ	3:O:655:LEU:HD11	2.47	0.49
3:O:1301:ILE:HD11	3:O:1334:LYS:HB3	1.93	0.49
3:O:2510:LEU:HD21	3:O:2525:TRP:CD1	2.47	0.49
3:O:3337:ILE:HB	3:O:3377:LEU:HD21	1.95	0.49
1:K:91:GLU:OE1	1:K:137:HIS:N	2.45	0.49
3:O:785:MET:N	3:O:785:MET:SD	2.85	0.49
3:O:1261:LEU:HD12	3:O:1337:VAL:HA	1.95	0.49
3:O:1370:ARG:O	3:O:1374:GLN:NE2	2.46	0.49
3:O:2548:PRO:HB2	3:O:2848:PHE:CD1	2.47	0.49
3:O:2817:LEU:HA	3:O:2820:MET:HG3	1.95	0.49
3:O:3448:GLU:O	3:O:3451:LEU:HG	2.12	0.49
5:D:43:LYS:HD3	5:D:47:PRO:HA	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:19:DG:N2	9:J:136:DA:H2	2.11	0.49
8:I:104:DG:H2"	8:I:105:DG:H8	1.77	0.49
3:O:535:LEU:HD12	3:O:637:LYS:HE3	1.95	0.49
3:O:1515:LEU:HD12	3:O:1519:PHE:CZ	2.48	0.49
3:O:3046:ARG:NH2	3:O:3181:ASP:OD2	2.45	0.49
3:O:3320:ILE:O	3:O:3324:ARG:HG3	2.12	0.49
7:F:79:LYS:HB2	9:J:104:DG:H3'	1.95	0.49
8:I:66:DG:H1'	8:I:67:DC:H5'	1.94	0.49
9:J:22:DA:H2"	9:J:23:DC:C6	2.47	0.49
1:K:263:LEU:HD23	1:K:347:LEU:HD22	1.94	0.49
2:L:246:HIS:CD2	2:L:248:PRO:HD3	2.47	0.49
3:O:52:ALA:O	3:O:56:SER:OG	2.28	0.49
3:O:1361:LYS:NZ	3:O:1366:THR:OG1	2.45	0.49
3:O:3123:GLN:OE1	3:O:3123:GLN:N	2.36	0.49
3:O:3469:LEU:HA	3:O:3472:ILE:HD12	1.95	0.49
3:O:3505:LEU:HD13	3:O:3514:VAL:HG21	1.94	0.49
6:E:80:THR:O	6:E:81:ASP:C	2.56	0.49
1:K:65:GLN:HG2	1:K:123:LYS:HE3	1.95	0.49
1:K:147:LEU:HB3	1:K:193:LEU:HD11	1.95	0.49
2:L:404:GLN:HB3	2:L:423:GLN:HE22	1.77	0.49
3:O:759:GLY:O	3:O:799:TYR:OH	2.31	0.49
3:O:1471:GLN:HB2	3:O:1476:HIS:HA	1.95	0.49
3:O:1685:ASP:HB3	3:O:1688:LEU:HG	1.95	0.49
3:O:2373:PRO:HA	3:O:2404:ARG:HH22	1.77	0.49
3:O:3916:TRP:O	3:O:4050:LYS:NZ	2.46	0.49
4:C:34:LEU:HD12	4:C:48:PRO:HG3	1.95	0.49
6:E:106:ASP:OD2	6:E:131:ARG:NH2	2.44	0.49
9:J:73:DG:H2"	9:J:74:DA:C5	2.48	0.49
1:K:263:LEU:HA	1:K:347:LEU:HB3	1.95	0.49
2:L:11:VAL:HG22	2:L:55:ALA:HB3	1.94	0.49
2:L:163:PHE:O	2:L:225:TYR:N	2.45	0.49
3:O:304:THR:OG1	3:O:305:ASN:N	2.46	0.49
3:O:2351:GLN:O	3:O:2352:HIS:ND1	2.46	0.49
3:O:3235:LYS:HA	3:O:3238:MET:SD	2.53	0.49
3:O:3842:TRP:CD1	3:O:3858:MET:HE3	2.47	0.49
3:O:585:ILE:HA	3:O:612:LEU:HA	1.95	0.48
3:O:2303:LEU:HD13	3:O:2323:LEU:HD21	1.94	0.48
3:O:3090:TYR:HB3	3:O:3095:ASP:HB2	1.95	0.48
3:O:3505:LEU:HA	3:O:3508:LYS:HG2	1.94	0.48
3:O:3870:SER:HB2	3:O:3874:ARG:NH2	2.28	0.48
2:L:261:ILE:HD11	2:L:263:ALA:HB2	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:404:GLN:NE2	2:L:423:GLN:OE1	2.45	0.48
3:O:583:LEU:HD13	3:O:612:LEU:HB2	1.95	0.48
3:O:1348:LEU:O	3:O:1352:SER:OG	2.31	0.48
3:O:4042:GLN:OE1	3:O:4042:GLN:N	2.41	0.48
4:G:102:ILE:HA	7:F:98:TYR:HB2	1.95	0.48
2:L:106:ASP:HB3	2:L:109:ASP:HB2	1.95	0.48
3:O:78:PHE:O	3:O:82:ARG:HG2	2.13	0.48
3:O:1178:ARG:HH22	3:O:1187:SER:HB3	1.77	0.48
3:O:1412:LYS:O	3:O:1415:LEU:HB2	2.14	0.48
3:O:1961:PHE:CD2	3:O:2124:SER:HA	2.47	0.48
6:A:119:ILE:HG13	7:B:43:VAL:HG13	1.95	0.48
4:G:29:ARG:HG3	9:J:33:DG:OP1	2.13	0.48
1:K:462:MET:HA	1:K:465:ILE:HD12	1.96	0.48
3:O:82:ARG:HH21	3:O:85:ILE:HD12	1.78	0.48
3:O:463:LYS:HA	3:O:466:LEU:HD12	1.95	0.48
3:O:1178:ARG:NH2	3:O:1183:CYS:SG	2.66	0.48
3:O:2175:GLU:N	3:O:2175:GLU:OE1	2.47	0.48
3:O:3090:TYR:HA	3:O:3093:GLN:HG2	1.94	0.48
3:O:3588:TRP:CZ2	3:O:3610:TYR:HB2	2.47	0.48
8:I:91:DT:O4	9:J:62:DA:N6	2.46	0.48
9:J:93:DA:H1'	9:J:94:DA:C8	2.49	0.48
2:L:107:PHE:HZ	2:L:140:SER:H	1.61	0.48
2:L:261:ILE:HA	2:L:367:ALA:H	1.78	0.48
2:L:394:ARG:NH1	2:L:404:GLN:H	2.12	0.48
3:O:1278:ALA:HB1	3:O:1282:LEU:HD12	1.95	0.48
3:O:2382:VAL:O	3:O:2386:LEU:HG	2.14	0.48
3:O:3089:LEU:HA	3:O:3092:LEU:HD12	1.95	0.48
3:O:3123:GLN:H	3:O:3123:GLN:CD	2.18	0.48
3:O:3413:TYR:CD1	3:O:3449:LYS:HG3	2.47	0.48
3:O:4113:ASP:N	3:O:4114:PRO:HD2	2.29	0.48
3:O:175:TYR:HA	3:O:178:LEU:HD12	1.96	0.48
3:O:430:VAL:HG11	3:O:1644:ALA:HB2	1.96	0.48
3:O:921:ALA:HB3	3:O:927:LYS:HB2	1.94	0.48
3:O:1358:LEU:O	3:O:1362:ASP:N	2.47	0.48
3:O:1725:GLN:HB2	3:O:1728:GLU:HB3	1.95	0.48
3:O:3171:ALA:HB1	3:O:3245:SER:HB2	1.94	0.48
3:O:3837:CYS:O	3:O:3840:LYS:HG3	2.14	0.48
3:O:3908:HIS:HA	3:O:3937:VAL:HG21	1.96	0.48
6:A:63:ARG:NH1	9:J:63:DA:H5"	2.29	0.48
9:J:140:DG:H2"	9:J:141:DG:C8	2.48	0.48
2:L:6:ASN:ND2	8:I:27:DC:OP1	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:467:ASP:N	2:L:467:ASP:OD1	2.45	0.48
3:O:180:LEU:H	3:O:231:LEU:HD21	1.79	0.48
3:O:1082:PHE:HD2	3:O:1130:ALA:HB1	1.77	0.48
3:O:1092:GLU:O	3:O:1096:VAL:HG12	2.14	0.48
3:O:1142:HIS:O	3:O:1146:ASN:N	2.43	0.48
3:O:2962:ARG:HA	3:O:3989:ARG:NH1	2.29	0.48
3:O:3820:MET:SD	3:O:3824:GLU:HG3	2.53	0.48
1:K:254:ARG:NH1	8:I:14:DC:O4'	2.47	0.48
2:L:43:GLN:HB2	2:L:495:LEU:HD21	1.96	0.48
2:L:204:GLY:O	2:L:207:ILE:HG22	2.14	0.48
2:L:359:ASN:CG	2:L:360:GLN:HG3	2.39	0.48
2:L:457:LEU:O	2:L:461:MET:HG3	2.13	0.48
3:O:1257:LEU:HA	3:O:1260:LEU:HD12	1.95	0.48
3:O:2295:GLN:HG3	3:O:2298:GLU:H	1.79	0.48
3:O:2311:ARG:H	3:O:2315:VAL:HG21	1.78	0.48
3:O:2826:LEU:HA	3:O:2829:LYS:HE2	1.96	0.48
3:O:3467:ARG:O	3:O:3471:ILE:HG12	2.14	0.48
1:K:41:LEU:HD13	1:K:86:VAL:HB	1.96	0.48
1:K:57:LEU:HB2	1:K:62:MET:HE3	1.94	0.48
1:K:403:ARG:HG2	3:O:213:ARG:HH22	1.78	0.48
1:K:471:PHE:CE2	2:L:344:GLY:HA3	2.48	0.48
3:O:1605:PHE:HB2	3:O:1655:ILE:HD11	1.96	0.48
3:O:1629:CYS:HB2	3:O:1632:TRP:CH2	2.49	0.48
3:O:2225:HIS:CG	3:O:2226:PRO:HD2	2.49	0.48
3:O:3805:TRP:CG	3:O:3806:LEU:H	2.32	0.48
3:O:3930:VAL:HG12	3:O:3937:VAL:HG12	1.95	0.48
1:K:438:PRO:HB2	1:K:442:ASP:HB2	1.96	0.48
2:L:11:VAL:HG11	2:L:114:SER:HB2	1.95	0.48
2:L:512:ILE:HA	2:L:515:MET:HG2	1.94	0.48
3:O:1653:LEU:HA	3:O:1656:ASP:HB3	1.96	0.48
3:O:4083:GLY:HA2	3:O:4088:ASN:HB3	1.96	0.48
6:A:46:VAL:N	8:I:86:DG:OP1	2.41	0.48
7:F:25:ASN:O	7:F:55:ARG:NH2	2.38	0.48
1:K:286:ILE:O	2:L:313:GLY:N	2.47	0.47
2:L:341:SER:H	2:L:394:ARG:HB2	1.78	0.47
3:O:1041:ILE:HD11	3:O:1056:THR:HG21	1.96	0.47
3:O:1082:PHE:HA	3:O:1085:ILE:HG12	1.95	0.47
3:O:2957:LEU:HD21	3:O:2993:PHE:HZ	1.78	0.47
3:O:3029:LYS:HZ2	3:O:3074:GLN:HB2	1.79	0.47
8:I:25:DG:N1	9:J:129:DC:N3	2.62	0.47
8:I:28:DG:H2'	8:I:28:DG:OP2	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:479:GLU:HG2	2:L:427:MET:HG3	1.96	0.47
3:O:213:ARG:NH2	9:J:141:DG:OP1	2.47	0.47
3:O:1005:ASP:OD1	3:O:1005:ASP:N	2.47	0.47
3:O:1147:LYS:HZ2	3:O:1149:LYS:HB3	1.78	0.47
3:O:1595:ALA:HA	3:O:1598:ASN:HD21	1.79	0.47
3:O:2931:ARG:HB2	3:O:2939:LEU:HD11	1.95	0.47
3:O:3729:MET:O	3:O:3734:ARG:HG3	2.13	0.47
3:O:2958:LEU:O	3:O:2962:ARG:NH1	2.48	0.47
5:D:34:TYR:HB3	5:D:37:TYR:HD2	1.79	0.47
8:I:99:DC:N3	8:I:100:DA:N6	2.63	0.47
3:O:399:GLN:H	3:O:1744:LYS:NZ	2.13	0.47
3:O:1300:SER:HB3	3:O:1301:ILE:HD12	1.95	0.47
3:O:1415:LEU:O	3:O:1419:LEU:HG	2.14	0.47
3:O:2274:ILE:HD13	3:O:2319:ALA:HB2	1.96	0.47
3:O:2574:ASN:O	3:O:2787:HIS:ND1	2.47	0.47
3:O:3811:THR:HG22	3:O:3813:LYS:H	1.78	0.47
4:C:24:GLN:N	4:C:56:GLU:OE2	2.47	0.47
6:E:82:LEU:HA	7:F:79:LYS:C	2.39	0.47
7:F:32:PRO:HB2	8:I:64:DA:P	2.54	0.47
8:I:34:DT:H2'	8:I:35:DT:C6	2.49	0.47
9:J:136:DA:H2'	9:J:137:DC:H6	1.78	0.47
3:O:67:VAL:HG21	3:O:82:ARG:NH1	2.29	0.47
3:O:586:GLN:OE1	3:O:586:GLN:N	2.47	0.47
3:O:1772:HIS:ND1	3:O:1773:VAL:HG23	2.29	0.47
3:O:3058:ASP:OD2	3:O:3060:SER:OG	2.28	0.47
3:O:3150:ASN:HD21	3:O:3157:LEU:HD21	1.79	0.47
3:O:3515:GLN:O	3:O:3519:GLU:N	2.36	0.47
3:O:3822:GLN:HA	3:O:3825:LYS:HE3	1.97	0.47
3:O:3860:LYS:HG3	3:O:4073:ALA:HB2	1.97	0.47
3:O:250:ASN:O	3:O:254:LYS:N	2.39	0.47
3:O:1782:PHE:HA	3:O:1785:ILE:HG22	1.96	0.47
3:O:2385:LEU:HD13	3:O:2388:LYS:HG3	1.96	0.47
3:O:2725:LEU:HA	3:O:2728:LEU:HB3	1.95	0.47
3:O:3039:THR:O	3:O:3042:PRO:HD2	2.14	0.47
3:O:3244:ASP:OD1	3:O:3245:SER:N	2.47	0.47
3:O:3357:ARG:HD2	3:O:3360:LEU:HD21	1.96	0.47
3:O:3724:GLU:OE1	3:O:3724:GLU:N	2.47	0.47
6:A:119:ILE:HB	7:B:46:ILE:HG22	1.95	0.47
9:J:135:DC:H2"	9:J:136:DA:O5'	2.14	0.47
1:K:481:PRO:HB2	2:L:333:TYR:CE2	2.50	0.47
3:O:170:VAL:HA	3:O:219:VAL:HG11	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:746:ARG:NH2	3:O:788:TYR:OH	2.48	0.47
3:O:914:VAL:HA	3:O:917:LEU:HD12	1.96	0.47
3:O:1085:ILE:O	3:O:1089:PHE:HB2	2.14	0.47
3:O:1269:THR:O	3:O:1273:GLU:HB2	2.14	0.47
3:O:1585:SER:OG	3:O:1588:ASP:OD1	2.29	0.47
3:O:1868:THR:HG22	3:O:1936:ARG:NH1	2.30	0.47
3:O:1927:MET:SD	3:O:1927:MET:N	2.86	0.47
3:O:2122:LEU:HB2	3:O:2126:MET:HG2	1.96	0.47
3:O:2147:ALA:O	3:O:2151:ILE:HG12	2.15	0.47
3:O:2255:LEU:O	3:O:2259:LYS:HB2	2.15	0.47
3:O:2349:LEU:HB3	3:O:2360:PHE:CE1	2.50	0.47
3:O:3103:ILE:HD12	3:O:3142:ILE:HD13	1.97	0.47
3:O:3995:PRO:O	3:O:3999:THR:N	2.48	0.47
9:J:79:DG:H2"	9:J:80:DC:H5'	1.97	0.47
3:O:129:ASP:HA	3:O:132:ILE:HG12	1.96	0.47
3:O:1015:ASP:N	3:O:1015:ASP:OD1	2.46	0.47
3:O:2965:TYR:O	3:O:2969:ALA:N	2.39	0.47
3:O:3000:ASP:O	3:O:3004:HIS:ND1	2.48	0.47
3:O:3321:LEU:HA	3:O:3324:ARG:HE	1.79	0.47
7:F:26:ILE:O	7:F:55:ARG:HG3	2.15	0.47
8:I:29:DC:N4	9:J:125:DG:O6	2.47	0.47
9:J:54:DT:N3	9:J:55:DG:O6	2.48	0.47
1:K:330:GLU:N	1:K:333:GLU:OE1	2.40	0.47
2:L:59:PHE:HB2	2:L:105:ALA:HB3	1.97	0.47
2:L:296:CYS:HB3	2:L:300:ASP:HA	1.96	0.47
3:O:738:HIS:HA	3:O:741:ILE:HB	1.97	0.47
3:O:738:HIS:CE1	3:O:779:TYR:HB3	2.49	0.47
3:O:2133:LEU:HD22	3:O:2171:LEU:HD11	1.96	0.47
3:O:3236:PHE:HB3	3:O:3272:TRP:CZ2	2.50	0.47
3:O:3300:VAL:HG11	3:O:3359:ILE:HD11	1.96	0.47
5:D:90:GLU:HG3	7:F:75:HIS:CE1	2.50	0.47
6:E:83:ARG:HD3	9:J:104:DG:H4'	1.96	0.47
9:J:61:DT:H2"	9:J:62:DA:N7	2.30	0.47
3:O:650:SER:O	3:O:654:ILE:HG12	2.15	0.47
3:O:1350:ASN:OD1	3:O:1351:THR:N	2.48	0.47
3:O:2455:LEU:HD21	3:O:2498:ILE:HG12	1.96	0.47
3:O:2792:THR:OG1	3:O:2793:PRO:HD3	2.15	0.47
3:O:3478:GLU:OE1	3:O:3478:GLU:N	2.48	0.47
3:O:3490:VAL:HG23	3:O:3494:GLN:HB2	1.96	0.47
4:C:33:LEU:HA	4:C:36:LYS:HG2	1.96	0.47
8:I:82:DC:H1'	8:I:83:DC:C2	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:529:PRO:HA	2:L:532:LYS:HE3	1.95	0.46
3:O:128:LEU:HD22	3:O:170:VAL:HG12	1.97	0.46
3:O:2155:GLU:HA	3:O:2158:ARG:HG3	1.96	0.46
3:O:2196:TRP:CD1	3:O:2200:ALA:HB3	2.50	0.46
3:O:2328:ARG:NH2	3:O:2370:SER:O	2.48	0.46
3:O:2356:MET:HG2	3:O:2358:ASP:H	1.80	0.46
3:O:3065:ILE:HG22	3:O:3069:MET:HE1	1.96	0.46
3:O:3625:LEU:N	3:O:3683:CYS:O	2.48	0.46
4:G:87:ILE:HA	4:G:93:LEU:HB3	1.96	0.46
1:K:472:THR:HG23	2:L:350:GLN:NE2	2.30	0.46
2:L:251:LEU:CB	2:L:261:ILE:HG12	2.43	0.46
3:O:206:THR:HG22	3:O:212:VAL:HG21	1.98	0.46
3:O:2253:TYR:HA	3:O:2256:ILE:HD12	1.97	0.46
3:O:2443:MET:HE1	3:O:2479:TRP:CE3	2.50	0.46
3:O:3192:LYS:C	3:O:3196:LYS:HZ2	2.23	0.46
4:G:108:LEU:HD23	4:G:108:LEU:H	1.79	0.46
5:H:89:ARG:O	5:H:92:GLN:NE2	2.48	0.46
3:O:30:ALA:HA	3:O:33:GLN:HG2	1.97	0.46
3:O:887:ASP:OD2	3:O:890:LYS:N	2.48	0.46
3:O:1016:GLY:HA2	3:O:1019:ASP:HB3	1.98	0.46
3:O:1164:CYS:SG	3:O:1165:LEU:N	2.89	0.46
3:O:1354:GLU:HB3	3:O:1357:LYS:HD3	1.97	0.46
3:O:2225:HIS:CD2	3:O:2230:VAL:HB	2.50	0.46
3:O:3296:GLN:HB2	3:O:3301:LEU:HD23	1.97	0.46
3:O:3614:TYR:HB2	3:O:3640:PHE:HE2	1.80	0.46
3:O:3833:ARG:NH2	3:O:3835:PRO:HD3	2.29	0.46
8:I:122:DC:H2”	8:I:123:DA:N7	2.30	0.46
2:L:13:CYS:HB3	2:L:134:ILE:HA	1.98	0.46
2:L:57:VAL:HG22	2:L:79:VAL:HG13	1.97	0.46
2:L:531:SER:HA	2:L:534:LYS:HE2	1.97	0.46
3:O:31:GLY:HA2	3:O:77:GLU:OE1	2.16	0.46
3:O:332:GLU:OE1	3:O:332:GLU:N	2.44	0.46
3:O:953:GLN:HG2	3:O:954:GLY:H	1.79	0.46
3:O:1149:LYS:HE2	3:O:1151:ARG:HD2	1.96	0.46
3:O:1287:GLN:HG3	3:O:1289:SER:H	1.81	0.46
3:O:2531:LEU:HD23	3:O:2538:ARG:HH11	1.81	0.46
7:B:30:THR:HG21	9:J:64:DA:H5”	1.98	0.46
7:B:84:MET:HG3	7:B:88:TYR:CZ	2.50	0.46
8:I:82:DC:O2	9:J:72:DG:N1	2.31	0.46
1:K:252:ARG:CZ	8:I:14:DC:H4’	2.45	0.46
2:L:7:LYS:HE3	2:L:127:PHE:HD1	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:865:GLN:HG2	3:O:3170:ASP:HA	1.96	0.46
3:O:1201:ASN:CG	3:O:1206:LEU:HB2	2.41	0.46
3:O:1440:ASP:OD1	3:O:1440:ASP:N	2.47	0.46
6:A:65:LEU:HD12	8:I:94:DA:H2'	1.96	0.46
6:E:80:THR:O	6:E:82:LEU:N	2.49	0.46
8:I:121:DC:H2"	8:I:122:DC:C2	2.51	0.46
1:K:71:TYR:CE2	1:K:115:ARG:HD3	2.50	0.46
2:L:386:ASP:OD1	2:L:387:LEU:N	2.49	0.46
2:L:479:THR:O	2:L:482:ILE:HG22	2.16	0.46
3:O:71:LYS:HD2	3:O:75:SER:HB2	1.98	0.46
3:O:1442:GLN:HA	3:O:1445:ARG:HD3	1.96	0.46
3:O:2433:LYS:NZ	3:O:2437:ASP:OD1	2.49	0.46
3:O:3250:ASN:HA	3:O:3286:CYS:SG	2.55	0.46
3:O:3810:VAL:N	3:O:3930:VAL:O	2.43	0.46
7:F:82:THR:HB	7:F:84:MET:HG3	1.98	0.46
2:L:197:ILE:HG23	2:L:202:LYS:HE3	1.96	0.46
3:O:88:PHE:O	3:O:92:PHE:N	2.33	0.46
3:O:573:LEU:HA	3:O:576:VAL:HG22	1.97	0.46
3:O:3796:MET:HG3	3:O:3800:LEU:HB3	1.98	0.46
3:O:3985:VAL:HG12	3:O:3989:ARG:NE	2.30	0.46
4:C:91:GLU:HA	4:C:94:ASN:HD22	1.80	0.46
1:K:297:LYS:HZ2	2:L:297:LEU:HA	1.81	0.46
1:K:320:GLN:HB3	1:K:322:TYR:CE1	2.51	0.46
1:K:372:GLU:CD	1:K:377:GLY:H	2.22	0.46
2:L:324:SER:O	2:L:328:GLU:N	2.45	0.46
3:O:114:VAL:O	3:O:119:ARG:HB2	2.16	0.46
3:O:180:LEU:HG	3:O:185:HIS:CE1	2.50	0.46
3:O:736:LEU:HD21	3:O:740:ILE:HB	1.97	0.46
3:O:1417:THR:HA	3:O:1420:ARG:HG2	1.98	0.46
3:O:2724:ASP:N	3:O:2724:ASP:OD1	2.46	0.46
3:O:3770:VAL:O	3:O:3774:ILE:HG23	2.15	0.46
3:O:4060:THR:O	3:O:4064:LEU:HD23	2.16	0.46
6:E:64:LYS:HG3	6:E:65:LEU:HD12	1.98	0.46
8:I:57:DC:H1'	9:J:97:DG:H1	1.81	0.46
1:K:130:ARG:HB3	1:K:134:MET:HE1	1.98	0.46
1:K:399:ARG:HH12	2:L:517:ASN:HA	1.80	0.46
3:O:148:LYS:HG2	3:O:151:GLU:OE2	2.16	0.46
3:O:414:LEU:HB3	3:O:460:ALA:HB1	1.98	0.46
3:O:441:MET:O	3:O:445:SER:N	2.49	0.46
3:O:933:LEU:HG	3:O:937:MET:HE2	1.98	0.46
3:O:996:THR:HG23	3:O:1040:SER:HA	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:3529:ILE:O	3:O:3532:PRO:HD2	2.15	0.46
7:F:66:ILE:HG13	7:F:67:ARG:N	2.31	0.46
2:L:212:MET:HE2	2:L:220:GLY:HA2	1.97	0.46
2:L:357:MET:N	2:L:357:MET:SD	2.87	0.46
3:O:86:LEU:HA	3:O:89:LEU:HD12	1.98	0.46
3:O:374:LYS:HD3	3:O:423:TYR:HB3	1.98	0.46
3:O:2773:ARG:NH2	3:O:2785:ILE:HG21	2.31	0.46
3:O:3450:MET:HG2	3:O:3468:LEU:HD12	1.97	0.46
6:E:104:PHE:HE2	7:F:37:LEU:HB3	1.80	0.46
9:J:48:DT:H2"	9:J:49:DC:H5'	1.98	0.46
1:K:91:GLU:OE1	1:K:91:GLU:N	2.49	0.45
3:O:1235:ILE:HG23	3:O:1296:PHE:HZ	1.81	0.45
3:O:2330:VAL:HG12	3:O:2335:ASN:HB3	1.98	0.45
3:O:3700:GLU:HA	3:O:3718:ARG:HA	1.97	0.45
5:D:56:MET:HE3	5:D:60:ASN:HD21	1.80	0.45
6:A:43:PRO:HA	8:I:86:DG:H5"	1.98	0.45
6:E:83:ARG:HH21	8:I:53:DG:H5'	1.81	0.45
8:I:114:DC:H2"	8:I:115:DT:C6	2.51	0.45
1:K:478:PHE:O	2:L:427:MET:HG2	2.17	0.45
2:L:261:ILE:HA	2:L:367:ALA:N	2.31	0.45
3:O:248:ILE:HA	3:O:251:PHE:CD2	2.52	0.45
3:O:288:ASP:OD1	3:O:288:ASP:N	2.47	0.45
3:O:1330:TYR:O	3:O:1334:LYS:HG3	2.16	0.45
3:O:1412:LYS:HA	3:O:1415:LEU:HB2	1.98	0.45
3:O:2120:ARG:HA	3:O:2159:PRO:HB2	1.98	0.45
3:O:2166:SER:OG	3:O:2167:PRO:HD3	2.16	0.45
3:O:2819:GLU:O	3:O:2822:LYS:HG2	2.16	0.45
3:O:2837:LEU:HD11	3:O:2870:SER:HB2	1.97	0.45
3:O:2940:ARG:NH1	3:O:2961:ALA:HA	2.32	0.45
3:O:2999:LEU:HD23	3:O:3014:CYS:HB2	1.97	0.45
3:O:3151:LEU:HD11	3:O:3196:LYS:HD3	1.97	0.45
3:O:3152:SER:O	3:O:3154:GLN:NE2	2.49	0.45
3:O:3760:GLN:O	3:O:3764:VAL:HG23	2.16	0.45
3:O:4055:ASN:ND2	3:O:4058:VAL:HG23	2.31	0.45
7:B:46:ILE:HB	7:B:50:ILE:HG13	1.97	0.45
7:F:26:ILE:HG13	7:F:27:GLN:N	2.30	0.45
9:J:50:DC:H4'	9:J:51:DC:H5'	1.97	0.45
1:K:300:THR:H	3:O:164:LYS:NZ	2.11	0.45
3:O:1031:ARG:O	3:O:1034:ARG:HG2	2.16	0.45
3:O:1231:GLN:HA	3:O:1292:LYS:HD3	1.97	0.45
3:O:1508:LYS:NZ	3:O:1562:LEU:HB3	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:2518:GLN:HA	3:O:2521:ILE:HG22	1.99	0.45
3:O:2551:GLU:OE2	3:O:2851:PHE:N	2.47	0.45
3:O:3446:VAL:HA	3:O:3449:LYS:HE2	1.99	0.45
4:C:38:HIS:O	4:G:38:HIS:HB3	2.16	0.45
6:A:123:ASP:OD1	6:A:124:ILE:N	2.49	0.45
8:I:22:DG:H1'	8:I:23:DA:C8	2.52	0.45
1:K:382:PHE:HE1	1:K:431:GLY:HA2	1.82	0.45
1:K:412:ALA:HB2	1:K:437:LEU:HD11	1.98	0.45
1:K:509:PRO:HG2	2:L:341:SER:HB3	1.98	0.45
2:L:359:ASN:OD1	2:L:360:GLN:HG3	2.16	0.45
3:O:490:ILE:HD12	3:O:527:TYR:CE2	2.52	0.45
3:O:886:TRP:NE1	3:O:912:PRO:HB3	2.31	0.45
3:O:1661:PHE:HA	3:O:1665:HIS:HD2	1.81	0.45
3:O:1747:LEU:O	3:O:1750:LEU:HG	2.17	0.45
3:O:2206:PRO:O	3:O:2210:VAL:HG12	2.16	0.45
3:O:2806:LYS:HG3	3:O:2857:CYS:HB2	1.98	0.45
5:D:83:ARG:HH11	8:I:43:DG:H2'	1.81	0.45
8:I:73:DC:H2"	8:I:74:DG:C8	2.51	0.45
1:K:463:LYS:O	1:K:466:VAL:N	2.49	0.45
2:L:251:LEU:HD21	2:L:253:ILE:HB	1.98	0.45
3:O:363:ILE:O	3:O:366:TYR:HB2	2.17	0.45
3:O:768:VAL:HA	3:O:771:ASN:HD22	1.80	0.45
3:O:1723:PRO:HB2	3:O:1725:GLN:OE1	2.16	0.45
3:O:2869:LEU:HB3	3:O:2896:ALA:HA	1.99	0.45
3:O:3183:ILE:HG13	3:O:3242:MET:SD	2.56	0.45
3:O:3381:ALA:O	3:O:3385:LEU:HG	2.17	0.45
3:O:3898:LEU:C	3:O:3900:LEU:H	2.24	0.45
6:A:83:ARG:HG3	7:B:79:LYS:HG3	1.98	0.45
1:K:304:ASN:OD1	1:K:305:THR:N	2.49	0.45
1:K:371:GLU:OE2	1:K:373:SER:OG	2.29	0.45
3:O:450:SER:HG	3:O:453:MET:HG3	1.81	0.45
3:O:475:LEU:O	3:O:479:ILE:HG12	2.17	0.45
3:O:853:ILE:HA	3:O:856:VAL:HG12	1.97	0.45
3:O:2245:TRP:HD1	3:O:2249:LEU:HD11	1.82	0.45
3:O:2424:MET:HE1	3:O:2457:PRO:HB2	1.98	0.45
3:O:3421:ASP:OD1	3:O:3467:ARG:NE	2.49	0.45
4:G:63:LEU:HD22	5:H:42:LEU:HD13	1.97	0.45
4:G:64:GLU:HB2	5:H:45:VAL:HB	1.99	0.45
6:E:91:ALA:HA	6:E:94:GLU:CD	2.41	0.45
1:K:256:LEU:HB2	1:K:273:ILE:O	2.17	0.45
3:O:712:LYS:NZ	3:O:748:TYR:OH	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:1675:TYR:OH	3:O:1693:VAL:HA	2.16	0.45
8:I:32:DA:H2	9:J:122:DT:H3	1.65	0.45
1:K:329:LEU:HG	1:K:333:GLU:HB2	1.99	0.45
1:K:422:ASP:OD2	1:K:423:GLN:NE2	2.50	0.45
3:O:257:ARG:HD2	3:O:260:ILE:HD11	1.99	0.45
3:O:488:ILE:HA	3:O:491:CYS:SG	2.57	0.45
3:O:682:TYR:CZ	3:O:700:LYS:HD3	2.52	0.45
3:O:771:ASN:O	3:O:775:GLU:HG2	2.16	0.45
3:O:1766:LEU:HA	3:O:1772:HIS:CE1	2.52	0.45
3:O:3128:LYS:O	3:O:3132:VAL:HG13	2.17	0.45
3:O:3533:PHE:O	3:O:3537:SER:N	2.49	0.45
3:O:4091:ALA:HB3	3:O:4110:GLN:OE1	2.16	0.45
5:D:42:LEU:O	5:D:46:HIS:N	2.38	0.45
5:D:48:ASP:N	5:D:48:ASP:OD1	2.49	0.45
8:I:104:DG:H2"	8:I:105:DG:C8	2.52	0.45
3:O:58:VAL:HG23	3:O:61:ARG:HE	1.82	0.45
3:O:493:LYS:HD3	3:O:524:TYR:HD1	1.82	0.45
3:O:888:ARG:HB3	3:O:3889:ARG:NE	2.31	0.45
3:O:1934:LEU:HD22	3:O:1937:ARG:HD2	1.99	0.45
3:O:2421:VAL:O	3:O:2425:ARG:N	2.49	0.45
3:O:2429:ASP:HA	3:O:2432:GLN:NE2	2.32	0.45
3:O:2964:ASP:OD2	3:O:2967:GLU:HB3	2.17	0.45
3:O:3681:LYS:H	3:O:3724:GLU:HB2	1.82	0.45
3:O:3693:GLU:HG3	3:O:3696:ARG:NH2	2.28	0.45
5:H:115:VAL:HA	5:H:118:TYR:CE2	2.52	0.45
1:K:299:LYS:HA	3:O:164:LYS:HZ1	1.82	0.45
2:L:285:LYS:HB3	2:L:287:GLU:HG2	1.99	0.45
3:O:483:VAL:HG21	3:O:567:GLU:HG3	1.99	0.45
3:O:905:ILE:HG23	3:O:2811:SER:HB2	1.98	0.45
3:O:1249:SER:O	3:O:1253:THR:N	2.40	0.45
3:O:1560:TYR:CZ	3:O:1596:VAL:HA	2.51	0.45
3:O:1709:GLU:CD	3:O:1709:GLU:H	2.25	0.45
3:O:1757:MET:SD	3:O:1758:LEU:N	2.90	0.45
3:O:1818:SER:HA	3:O:1821:ASP:HB2	1.98	0.45
3:O:2392:VAL:O	3:O:2396:LEU:HG	2.15	0.45
3:O:2409:THR:C	3:O:2411:LEU:H	2.24	0.45
3:O:2987:THR:HG23	3:O:2990:GLU:H	1.81	0.45
3:O:3049:LEU:HD21	3:O:3088:LEU:HD12	1.99	0.45
3:O:3498:TRP:O	3:O:3502:MET:HG2	2.17	0.45
3:O:3718:ARG:H	3:O:3743:HIS:CG	2.35	0.45
8:I:58:DG:H1'	8:I:59:DC:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:97:DG:O6	9:J:57:DC:N4	2.50	0.45
1:K:476:ASP:OD1	1:K:476:ASP:N	2.47	0.44
3:O:20:SER:HA	3:O:70:ARG:HH12	1.81	0.44
3:O:80:GLU:O	3:O:83:GLU:HB2	2.17	0.44
3:O:485:GLN:HA	3:O:488:ILE:HG22	1.99	0.44
3:O:653:LEU:HB3	3:O:670:LEU:HD21	1.99	0.44
3:O:800:LEU:HB3	3:O:3114:TYR:CD1	2.52	0.44
3:O:891:ARG:NE	3:O:957:PRO:O	2.32	0.44
3:O:1349:LEU:HB3	3:O:1405:ALA:HB1	2.00	0.44
3:O:3226:ASP:O	3:O:3229:SER:OG	2.24	0.44
3:O:3283:LEU:O	3:O:3287:ARG:HG2	2.17	0.44
3:O:3493:TRP:HB2	3:O:3708:ARG:O	2.16	0.44
7:B:49:LEU:HD23	7:B:49:LEU:H	1.82	0.44
9:J:39:DA:H2"	9:J:40:DG:C8	2.51	0.44
9:J:105:DA:H2"	9:J:106:DG:C8	2.52	0.44
1:K:352:PRO:HG3	2:L:473:LEU:HD22	1.98	0.44
3:O:149:ILE:HD13	3:O:180:LEU:HD11	1.99	0.44
3:O:1279:LEU:HD13	3:O:1356:TRP:HE1	1.82	0.44
3:O:2396:LEU:O	3:O:2400:VAL:HG23	2.17	0.44
3:O:2429:ASP:OD1	3:O:2430:GLU:N	2.51	0.44
3:O:2866:ALA:HA	3:O:2869:LEU:HG	1.99	0.44
3:O:2897:LEU:HD11	3:O:2923:TRP:CE2	2.53	0.44
3:O:3771:MET:O	3:O:3775:LEU:HG	2.17	0.44
3:O:3839:TYR:HA	3:O:3842:TRP:CD1	2.52	0.44
3:O:3858:MET:HB3	3:O:3862:ALA:HB2	1.99	0.44
6:A:60:LEU:HD13	6:A:93:GLN:HG2	1.98	0.44
6:A:113:HIS:HE1	6:E:110:CYS:HB3	1.81	0.44
8:I:14:DC:N3	9:J:140:DG:N2	2.55	0.44
8:I:112:DC:H4'	8:I:113:DC:C2	2.52	0.44
2:L:245:ILE:HG22	2:L:246:HIS:H	1.81	0.44
2:L:450:GLN:HG2	2:L:536:LEU:HB3	1.99	0.44
3:O:391:ARG:HD3	3:O:391:ARG:HA	1.81	0.44
3:O:425:ASP:N	3:O:425:ASP:OD1	2.49	0.44
3:O:489:ARG:O	3:O:492:SER:OG	2.24	0.44
3:O:931:CYS:HB3	3:O:984:TYR:HE2	1.82	0.44
3:O:3424:LEU:HD21	3:O:3443:PRO:HB3	1.98	0.44
3:O:1335:CYS:O	3:O:1339:VAL:HG13	2.16	0.44
3:O:2430:GLU:N	3:O:2430:GLU:OE1	2.46	0.44
3:O:2773:ARG:NH1	3:O:2775:TYR:HA	2.32	0.44
3:O:2865:HIS:HB2	3:O:2868:LEU:HD12	1.99	0.44
3:O:3002:TYR:CD2	3:O:3014:CYS:HB3	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:3762:GLN:HB2	3:O:3793:VAL:HG11	1.99	0.44
4:G:77:ARG:HE	5:H:50:GLY:HA3	1.82	0.44
1:K:111:PRO:HA	1:K:115:ARG:HD2	1.99	0.44
1:K:446:MET:HE3	1:K:447:PRO:HG2	1.98	0.44
2:L:151:ILE:HG12	2:L:211:VAL:HG13	1.98	0.44
3:O:358:GLU:O	3:O:361:ILE:HG12	2.17	0.44
3:O:618:LYS:HE2	3:O:618:LYS:HB2	1.87	0.44
3:O:640:GLU:O	3:O:643:GLU:HG3	2.18	0.44
3:O:727:ALA:HB1	3:O:765:LEU:HD21	1.98	0.44
3:O:1151:ARG:HB2	3:O:1163:LEU:HD12	2.00	0.44
3:O:1487:VAL:HG12	3:O:1559:PHE:CE1	2.53	0.44
3:O:1820:VAL:O	3:O:1825:LEU:HG	2.16	0.44
3:O:2197:THR:HG23	3:O:2722:ARG:HH12	1.83	0.44
3:O:2855:VAL:O	3:O:2859:GLN:HG2	2.16	0.44
3:O:3239:LYS:HB3	3:O:3262:LEU:HD11	1.98	0.44
9:J:56:DG:H2"	9:J:57:DC:C5	2.52	0.44
1:K:122:PHE:HB3	1:K:131:PHE:HB2	2.00	0.44
1:K:248:ALA:C	1:K:249:LYS:HD3	2.43	0.44
1:K:254:ARG:N	2:L:433:TYR:OH	2.50	0.44
2:L:539:LEU:HD23	2:L:539:LEU:HA	1.79	0.44
3:O:175:TYR:O	3:O:227:LEU:HD12	2.16	0.44
3:O:442:GLN:NE2	3:O:442:GLN:O	2.50	0.44
3:O:524:TYR:HD2	3:O:525:LYS:HD3	1.83	0.44
3:O:1288:SER:O	3:O:1288:SER:OG	2.36	0.44
3:O:1363:LEU:C	3:O:1365:ASN:H	2.25	0.44
3:O:1590:THR:OG1	3:O:1591:LYS:NZ	2.35	0.44
3:O:2364:LEU:HA	3:O:2367:VAL:HG12	2.00	0.44
3:O:2382:VAL:HG23	3:O:2397:CYS:HB2	1.99	0.44
3:O:2405:VAL:HG23	3:O:2441:LYS:HD3	2.00	0.44
3:O:2965:TYR:HB3	3:O:3001:CYS:HB2	2.00	0.44
3:O:3183:ILE:HG13	3:O:3242:MET:CE	2.48	0.44
3:O:3424:LEU:O	3:O:3427:GLU:HG2	2.16	0.44
8:I:65:DC:H2"	8:I:66:DG:C8	2.51	0.44
8:I:81:DC:H1'	9:J:73:DG:H22	1.82	0.44
9:J:90:DT:H2"	9:J:91:DT:H5'	1.99	0.44
1:K:36:ASP:HB2	1:K:81:ASP:CG	2.42	0.44
2:L:74:TYR:CD1	2:L:113:VAL:HB	2.53	0.44
2:L:167:PHE:HB3	2:L:192:PHE:HD2	1.81	0.44
3:O:290:TYR:HE2	3:O:340:TYR:HB3	1.83	0.44
3:O:561:ASN:HA	3:O:564:LEU:HG	1.98	0.44
3:O:1017:ILE:HG13	3:O:1080:LEU:HD11	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:1102:GLU:H	3:O:1102:GLU:CD	2.25	0.44
3:O:2304:VAL:O	3:O:2307:MET:HB2	2.18	0.44
3:O:3332:THR:HG23	3:O:3335:ARG:NH1	2.33	0.44
3:O:3360:LEU:O	3:O:3364:GLY:N	2.43	0.44
3:O:3460:GLU:H	3:O:3460:GLU:CD	2.24	0.44
3:O:3464:LYS:HE2	3:O:3998:LEU:HD21	1.98	0.44
3:O:3613:MET:SD	3:O:3614:TYR:N	2.90	0.44
6:A:74:ILE:HG22	7:B:66:ILE:HG21	2.00	0.44
9:J:89:DG:H21	9:J:91:DT:H5"	1.83	0.44
3:O:19:LEU:HD13	3:O:34:LEU:HG	2.00	0.44
3:O:200:PHE:HB3	3:O:224:LEU:HD22	2.00	0.44
3:O:1710:LEU:HD23	3:O:1710:LEU:H	1.83	0.44
3:O:3772:ASN:HD21	3:O:3788:LEU:HB3	1.83	0.44
6:E:61:LEU:HB2	7:F:37:LEU:HD23	1.99	0.44
6:E:76:GLN:C	6:E:78:PHE:N	2.76	0.44
3:O:468:LEU:HD13	3:O:478:CYS:SG	2.58	0.44
3:O:682:TYR:O	3:O:700:LYS:NZ	2.37	0.44
3:O:1017:ILE:HD11	3:O:1081:ALA:HB2	2.00	0.44
3:O:1034:ARG:HA	3:O:1085:ILE:HG22	2.00	0.44
3:O:1034:ARG:HH21	3:O:1087:ARG:HB2	1.82	0.44
3:O:1092:GLU:OE1	3:O:1095:LEU:HB2	2.18	0.44
3:O:2402:LEU:HA	3:O:2438:ILE:HG12	1.99	0.44
3:O:3519:GLU:O	3:O:3523:ASP:N	2.46	0.44
3:O:3851:ASP:OD1	3:O:3852:VAL:N	2.51	0.44
3:O:3865:THR:O	3:O:3868:VAL:HG22	2.18	0.44
6:E:118:THR:HA	7:F:45:ARG:O	2.18	0.44
8:I:126:DC:H2'	8:I:127:DA:C8	2.53	0.44
9:J:92:DT:H2"	9:J:93:DA:H5'	1.99	0.44
1:K:76:ILE:HG12	1:K:248:ALA:HB1	2.00	0.43
1:K:523:ASP:O	1:K:527:GLU:HG2	2.17	0.43
2:L:261:ILE:HG13	2:L:262:ALA:N	2.33	0.43
2:L:261:ILE:HD13	2:L:364:VAL:HG13	1.99	0.43
2:L:312:GLN:NE2	2:L:313:GLY:N	2.66	0.43
3:O:676:ASN:O	3:O:680:ILE:HG13	2.19	0.43
3:O:1184:ARG:NH2	3:O:1262:ALA:HA	2.33	0.43
3:O:1750:LEU:HD13	3:O:1759:LEU:HD23	1.99	0.43
3:O:1773:VAL:O	3:O:1773:VAL:HG12	2.18	0.43
3:O:2928:LYS:HA	3:O:2931:ARG:NH1	2.33	0.43
3:O:3552:LYS:HA	3:O:3555:VAL:HG12	1.99	0.43
3:O:3970:LEU:O	3:O:3971:MET:HE2	2.18	0.43
3:O:174:VAL:HA	3:O:177:LEU:HD23	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:291:VAL:HG12	3:O:340:TYR:CG	2.52	0.43
3:O:385:TYR:O	3:O:389:ILE:HG12	2.18	0.43
3:O:966:PHE:HD2	3:O:1011:GLU:HG2	1.83	0.43
3:O:995:PHE:HB3	3:O:1005:ASP:HB3	1.99	0.43
3:O:2234:ASN:HA	3:O:2237:ILE:HD12	2.00	0.43
3:O:3132:VAL:O	3:O:3136:THR:HG23	2.18	0.43
3:O:3530:VAL:O	3:O:3534:ILE:HG13	2.19	0.43
6:A:121:PRO:HG2	7:B:49:LEU:HG	2.00	0.43
7:B:62:LEU:HA	7:B:65:VAL:HG22	1.99	0.43
5:H:99:LEU:HD12	5:H:99:LEU:HA	1.89	0.43
8:I:90:DT:H2"	8:I:91:DT:H5"	1.99	0.43
1:K:143:LEU:O	1:K:147:LEU:HG	2.17	0.43
1:K:468:LYS:O	1:K:517:ARG:NH2	2.50	0.43
2:L:14:MET:SD	2:L:38:ILE:HG13	2.58	0.43
2:L:14:MET:HB2	2:L:58:LEU:HB3	2.00	0.43
2:L:37:VAL:HG22	2:L:231:LEU:HB2	1.98	0.43
2:L:107:PHE:CZ	2:L:138:LEU:HA	2.52	0.43
3:O:181:LEU:HD23	3:O:234:PHE:HD2	1.82	0.43
3:O:270:ALA:O	3:O:273:ARG:HG2	2.18	0.43
3:O:395:MET:HE1	3:O:410:MET:HE1	2.00	0.43
3:O:789:TYR:O	3:O:793:LEU:HB2	2.18	0.43
3:O:1876:ILE:O	3:O:1880:MET:HG3	2.18	0.43
3:O:2139:PRO:O	3:O:2143:ARG:HG3	2.17	0.43
3:O:2415:LEU:O	3:O:2419:ASP:N	2.52	0.43
3:O:2532:PRO:HD2	3:O:2538:ARG:HA	2.00	0.43
3:O:3588:TRP:O	3:O:3592:VAL:HG13	2.18	0.43
3:O:3822:GLN:NE2	3:O:3822:GLN:O	2.51	0.43
3:O:3946:PHE:HZ	3:O:4047:ALA:HB2	1.83	0.43
3:O:3958:LEU:HD11	3:O:4081:ALA:HB2	1.99	0.43
3:O:4010:SER:O	3:O:4014:LYS:HB3	2.19	0.43
6:A:103:LEU:O	6:A:107:THR:HG23	2.18	0.43
4:G:60:ALA:HB1	5:H:45:VAL:HG11	2.00	0.43
4:G:77:ARG:HH12	9:J:23:DC:H5"	1.83	0.43
5:H:94:ALA:O	5:H:98:LEU:HB2	2.18	0.43
8:I:10:DA:H2"	8:I:11:DA:C8	2.53	0.43
1:K:44:ALA:HB3	1:K:89:GLY:C	2.44	0.43
1:K:278:GLN:O	2:L:429:ASP:HA	2.18	0.43
3:O:714:VAL:CG1	3:O:733:LEU:HD21	2.48	0.43
3:O:912:PRO:O	3:O:915:THR:HB	2.18	0.43
3:O:1056:THR:HA	3:O:1059:LEU:HG	1.99	0.43
3:O:1458:LEU:HB3	3:O:1463:LEU:HB2	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:2572:TYR:HA	3:O:2787:HIS:HB2	2.00	0.43
3:O:2918:PRO:HB2	3:O:2919:ASP:H	1.62	0.43
3:O:3192:LYS:HG3	3:O:3196:LYS:NZ	2.34	0.43
3:O:3894:PRO:HA	3:O:3897:PHE:HB3	1.99	0.43
5:D:63:VAL:HA	5:D:66:ILE:HG12	1.99	0.43
5:D:92:GLN:HA	5:D:95:VAL:HG22	2.01	0.43
6:A:64:LYS:H	8:I:95:DC:P	2.41	0.43
4:G:17:ARG:HA	4:G:20:ARG:HE	1.84	0.43
7:F:46:ILE:HB	7:F:50:ILE:HD11	2.00	0.43
7:F:66:ILE:O	7:F:70:VAL:HG23	2.17	0.43
1:K:350:PHE:CE2	2:L:458:ILE:HG12	2.52	0.43
3:O:357:LYS:NZ	3:O:1732:GLY:HA3	2.33	0.43
3:O:1195:VAL:HG12	3:O:1203:SER:HA	1.99	0.43
3:O:1428:ILE:HG12	3:O:1432:CYS:HB3	2.01	0.43
3:O:1646:LEU:HD11	3:O:1692:ALA:HB2	2.00	0.43
3:O:2185:MET:N	3:O:2185:MET:SD	2.91	0.43
3:O:2562:LEU:O	3:O:2566:THR:OG1	2.34	0.43
3:O:3139:GLN:NE2	3:O:3139:GLN:O	2.52	0.43
3:O:3371:GLU:HA	3:O:3374:ILE:HG12	1.99	0.43
3:O:3522:THR:HB	3:O:3561:LYS:HD2	2.01	0.43
3:O:4009:PRO:HA	3:O:4012:ASP:HB2	2.00	0.43
5:D:110:GLU:HA	5:D:113:LYS:HE3	1.99	0.43
8:I:105:DG:H2"	8:I:106:DA:C8	2.53	0.43
1:K:157:VAL:HG22	1:K:159:PHE:H	1.84	0.43
2:L:7:LYS:NZ	2:L:125:LYS:O	2.35	0.43
2:L:148:ASP:OD1	2:L:148:ASP:N	2.51	0.43
3:O:319:PHE:O	3:O:323:VAL:HG13	2.18	0.43
3:O:1423:ILE:O	3:O:1467:ILE:HD11	2.19	0.43
3:O:1611:GLN:HB2	3:O:1613:HIS:ND1	2.33	0.43
3:O:3235:LYS:O	3:O:3238:MET:HG2	2.18	0.43
3:O:3324:ARG:HG2	3:O:3391:ALA:HB3	2.00	0.43
1:K:270:SER:H	1:K:375:VAL:HB	1.82	0.43
2:L:347:LYS:HB2	2:L:347:LYS:HE2	1.76	0.43
3:O:136:GLN:NE2	3:O:140:SER:OG	2.52	0.43
3:O:925:GLN:O	3:O:925:GLN:NE2	2.51	0.43
3:O:1125:GLN:HA	3:O:1128:CYS:SG	2.59	0.43
3:O:3467:ARG:HB2	3:O:3997:LEU:CD1	2.48	0.43
3:O:3993:SER:C	3:O:3995:PRO:HD3	2.44	0.43
3:O:4121:TRP:HB3	3:O:4124:TRP:HB2	2.01	0.43
4:G:29:ARG:NH2	5:H:32:GLU:OE1	2.52	0.43
4:G:77:ARG:HA	5:H:50:GLY:N	2.31	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:654:ILE:HD12	3:O:710:PHE:CG	2.54	0.43
3:O:672:ILE:O	3:O:676:ASN:ND2	2.51	0.43
3:O:1128:CYS:HA	3:O:1131:ILE:HG12	2.01	0.43
3:O:1518:ALA:HB1	3:O:1524:LEU:HD21	2.00	0.43
3:O:1576:ASP:OD1	3:O:1576:ASP:N	2.52	0.43
3:O:2269:ASP:OD1	3:O:2269:ASP:N	2.52	0.43
3:O:3447:VAL:HA	3:O:3450:MET:HG3	2.01	0.43
3:O:3796:MET:HE3	3:O:3797:THR:HG22	2.00	0.43
5:D:87:THR:HG22	5:D:88:SER:H	1.84	0.43
6:A:62:ILE:HD11	6:A:93:GLN:HE22	1.84	0.43
4:G:50:TYR:CZ	5:H:111:GLY:HA3	2.54	0.43
7:F:67:ARG:O	7:F:71:THR:HG22	2.18	0.43
8:I:125:DG:H1'	8:I:126:DC:C2	2.53	0.43
9:J:59:DG:H2"	9:J:60:DT:C6	2.54	0.43
1:K:332:GLU:OE1	3:O:205:LYS:NZ	2.47	0.43
3:O:359:LEU:O	3:O:362:ALA:HB3	2.19	0.43
3:O:460:ALA:O	3:O:464:VAL:HG13	2.18	0.43
3:O:1432:CYS:HB2	3:O:1486:LEU:HD11	2.01	0.43
3:O:2245:TRP:CD1	3:O:2249:LEU:HD11	2.54	0.43
3:O:2325:LEU:N	3:O:2370:SER:OG	2.52	0.43
3:O:2544:SER:HA	3:O:2842:ARG:NH2	2.33	0.43
3:O:3239:LYS:O	3:O:3243:ILE:HG12	2.19	0.43
8:I:22:DG:N1	9:J:133:DG:C2	2.86	0.43
1:K:35:ARG:O	1:K:164:LYS:NZ	2.50	0.43
1:K:166:ILE:HG23	1:K:200:LEU:HA	2.00	0.43
1:K:349:GLY:HA2	2:L:461:MET:HE1	2.00	0.43
2:L:306:LEU:HD23	2:L:309:ASP:HB2	2.00	0.43
3:O:217:LEU:HB2	3:O:220:LEU:HB3	2.00	0.43
3:O:886:TRP:HE1	3:O:912:PRO:HB3	1.84	0.43
3:O:888:ARG:HD2	3:O:3889:ARG:HG2	2.00	0.43
3:O:913:ARG:NH1	3:O:916:GLU:OE1	2.51	0.43
3:O:1102:GLU:O	3:O:1106:ILE:HG12	2.18	0.43
3:O:1437:TYR:HA	3:O:1507:CYS:SG	2.59	0.43
3:O:1632:TRP:CG	3:O:1645:VAL:HG11	2.54	0.43
3:O:2257:PHE:CE1	3:O:2299:TYR:HA	2.53	0.43
3:O:3172:LYS:HA	3:O:3172:LYS:HD2	1.87	0.43
3:O:3810:VAL:O	3:O:3930:VAL:N	2.50	0.43
3:O:3882:LEU:H	3:O:3966:GLN:NE2	2.14	0.43
3:O:3995:PRO:HD2	3:O:4051:LEU:HD21	2.00	0.43
7:B:31:LYS:HG2	7:B:51:TYR:CE1	2.54	0.43
1:K:376:ILE:N	2:L:540:ILE:O	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:261:ILE:HB	2:L:365:PHE:O	2.18	0.42
3:O:540:MET:HE2	3:O:540:MET:HA	2.01	0.42
3:O:764:PRO:O	3:O:768:VAL:HG22	2.18	0.42
3:O:975:ASP:O	3:O:981:ARG:HD2	2.19	0.42
3:O:1111:LEU:HD11	3:O:1131:ILE:HD13	2.01	0.42
3:O:2301:GLN:HA	3:O:2304:VAL:HG22	2.00	0.42
3:O:2310:VAL:HG13	3:O:2316:TYR:CE2	2.54	0.42
3:O:2405:VAL:HA	3:O:2441:LYS:HD3	2.00	0.42
3:O:3052:LEU:HD11	3:O:3061:LEU:HD21	2.01	0.42
3:O:3504:ALA:O	3:O:3508:LYS:NZ	2.47	0.42
5:D:31:LYS:O	9:J:125:DG:H5"	2.18	0.42
5:D:110:GLU:HA	5:D:113:LYS:HG2	2.00	0.42
7:F:77:LYS:HE3	7:F:77:LYS:HB2	1.77	0.42
8:I:102:DG:N2	9:J:52:DC:O2	2.52	0.42
3:O:143:LEU:HG	3:O:182:GLY:HA2	2.00	0.42
3:O:478:CYS:SG	3:O:479:ILE:N	2.91	0.42
3:O:665:GLY:HA2	3:O:668:LYS:HD2	2.02	0.42
3:O:1069:HIS:CD2	3:O:1070:PRO:HD2	2.54	0.42
3:O:1069:HIS:CG	3:O:1070:PRO:HD2	2.55	0.42
3:O:1776:GLU:O	3:O:1779:GLN:HG3	2.19	0.42
3:O:2295:GLN:HE21	3:O:2295:GLN:HB3	1.70	0.42
3:O:3451:LEU:HD22	3:O:3486:GLU:HB3	2.00	0.42
3:O:3462:ARG:O	3:O:3465:PHE:HB3	2.19	0.42
3:O:3515:GLN:O	3:O:3519:GLU:HG2	2.19	0.42
7:B:90:LEU:HB3	7:B:95:ARG:O	2.18	0.42
6:E:51:ILE:HD13	7:F:42:GLY:HA2	2.00	0.42
3:O:382:ASP:OD1	3:O:424:LEU:HD11	2.18	0.42
3:O:1100:VAL:HG23	3:O:1101:PHE:N	2.34	0.42
3:O:1366:THR:O	3:O:1368:LEU:N	2.52	0.42
3:O:1755:SER:HB3	3:O:1758:LEU:HB2	2.01	0.42
3:O:3815:LEU:HA	3:O:3818:ASN:HD21	1.85	0.42
3:O:3822:GLN:HA	3:O:3825:LYS:HG2	2.00	0.42
4:C:91:GLU:HG2	4:C:95:LYS:HE2	2.02	0.42
6:A:76:GLN:OE1	6:A:81:ASP:N	2.49	0.42
8:I:74:DG:H1'	8:I:75:DC:C2	2.54	0.42
8:I:77:DC:H1'	8:I:78:DT:H5'	2.01	0.42
3:O:924:ARG:NH2	3:O:977:ASP:OD1	2.43	0.42
3:O:1560:TYR:OH	3:O:1599:GLY:HA3	2.19	0.42
3:O:1632:TRP:CD1	3:O:1633:TRP:HB3	2.52	0.42
3:O:3172:LYS:HA	3:O:3248:LYS:HZ1	1.84	0.42
3:O:4086:ASP:OD1	3:O:4086:ASP:N	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:4120:THR:HA	3:O:4124:TRP:CZ3	2.53	0.42
5:H:85:THR:OG1	9:J:43:DA:OP1	2.27	0.42
5:H:93:THR:HA	5:H:96:ARG:HE	1.85	0.42
6:E:78:PHE:O	6:E:80:THR:N	2.52	0.42
3:O:86:LEU:HD13	3:O:129:ASP:HB3	2.01	0.42
3:O:108:LYS:O	3:O:112:THR:HG22	2.19	0.42
3:O:371:GLY:O	3:O:374:LYS:N	2.52	0.42
3:O:1150:LYS:HD3	3:O:1162:SER:HA	2.01	0.42
3:O:2164:TRP:O	3:O:2167:PRO:HD2	2.19	0.42
3:O:2398:LEU:HD23	3:O:2434:VAL:HG13	2.00	0.42
3:O:3123:GLN:O	3:O:3126:LEU:HG	2.19	0.42
3:O:3161:LEU:HG	3:O:3166:ASN:ND2	2.34	0.42
3:O:3552:LYS:HA	3:O:3552:LYS:HD3	1.92	0.42
6:E:99:TYR:OH	6:E:133:GLU:OE1	2.28	0.42
2:L:342:VAL:HG22	2:L:393:VAL:HG12	2.02	0.42
3:O:131:LEU:HB3	3:O:177:LEU:HD21	2.01	0.42
3:O:643:GLU:HB3	3:O:680:ILE:HD13	2.02	0.42
3:O:1122:GLY:C	3:O:1124:ILE:H	2.27	0.42
3:O:1942:CYS:HB2	3:O:2094:MET:SD	2.60	0.42
3:O:2120:ARG:O	3:O:2160:TYR:HB2	2.19	0.42
3:O:2280:VAL:HG11	3:O:2287:PRO:HA	2.01	0.42
3:O:2773:ARG:HD2	3:O:2775:TYR:CE1	2.55	0.42
3:O:3161:LEU:HD11	3:O:3186:ARG:HH12	1.84	0.42
3:O:3291:GLN:HG2	3:O:3293:CYS:N	2.30	0.42
3:O:3522:THR:HG21	3:O:3558:ILE:HD12	2.01	0.42
3:O:3833:ARG:HG2	3:O:3834:ALA:H	1.83	0.42
1:K:333:GLU:HA	1:K:336:GLU:HG3	2.01	0.42
1:K:465:ILE:HG12	1:K:521:LEU:HB3	2.02	0.42
2:L:147:LEU:O	2:L:151:ILE:HG13	2.19	0.42
3:O:294:PHE:O	3:O:298:LEU:HG	2.20	0.42
3:O:364:ARG:NH1	3:O:415:GLN:HB2	2.25	0.42
3:O:442:GLN:HG2	3:O:461:ILE:HD11	2.02	0.42
3:O:468:LEU:HD22	3:O:478:CYS:SG	2.59	0.42
3:O:472:GLY:O	3:O:475:LEU:HB3	2.20	0.42
3:O:979:VAL:HA	3:O:982:GLN:HG2	2.00	0.42
3:O:1379:PRO:O	3:O:1382:ILE:HG12	2.19	0.42
3:O:1483:LEU:HD11	3:O:1515:LEU:HD22	2.00	0.42
3:O:2153:THR:HG21	3:O:2157:PHE:HE2	1.85	0.42
3:O:2268:LYS:HB3	3:O:2311:ARG:HD3	2.01	0.42
3:O:3034:PRO:HB2	3:O:3037:GLN:HG3	2.02	0.42
5:H:106:HIS:O	5:H:110:GLU:HG2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:E:119:ILE:HD11	7:F:46:ILE:HG22	2.01	0.42
8:I:31:DC:H2"	8:I:32:DA:C5	2.55	0.42
1:K:109:ASP:HB3	1:K:115:ARG:HH12	1.84	0.42
1:K:332:GLU:O	1:K:335:GLU:HG3	2.20	0.42
2:L:17:GLY:HA2	2:L:103:GLN:O	2.19	0.42
2:L:326:VAL:HG12	2:L:330:GLN:HE22	1.84	0.42
3:O:68:PHE:CE1	3:O:117:LYS:HG3	2.55	0.42
3:O:416:SER:O	3:O:420:VAL:HG23	2.20	0.42
3:O:1711:ARG:HD2	3:O:1757:MET:HB2	2.00	0.42
3:O:1839:PHE:O	3:O:1842:THR:HB	2.20	0.42
3:O:2153:THR:HG22	3:O:2154:GLU:H	1.84	0.42
3:O:2279:ILE:O	3:O:2282:ALA:HB3	2.19	0.42
3:O:2385:LEU:HD12	3:O:2389:PHE:CZ	2.55	0.42
3:O:2503:LYS:O	3:O:2507:ILE:HG12	2.19	0.42
3:O:3419:PHE:O	3:O:3422:GLN:HG2	2.20	0.42
3:O:3737:ARG:HA	3:O:3751:LEU:CB	2.49	0.42
4:C:95:LYS:HB2	4:C:95:LYS:HE3	1.79	0.42
6:E:82:LEU:O	6:E:84:PHE:N	2.53	0.42
8:I:46:DA:H61	9:J:108:DT:H3	1.67	0.42
8:I:78:DT:H2"	8:I:79:DG:C8	2.54	0.42
9:J:102:DT:H4'	9:J:103:DA:O4'	2.20	0.42
2:L:7:LYS:HE2	2:L:7:LYS:HB3	1.54	0.42
2:L:528:ILE:HB	2:L:529:PRO:HD3	2.02	0.42
3:O:95:LYS:HD2	3:O:837:THR:HG22	2.00	0.42
3:O:164:LYS:HD3	3:O:164:LYS:N	2.34	0.42
3:O:888:ARG:HB3	3:O:3889:ARG:HE	1.84	0.42
3:O:1346:THR:HG22	3:O:1402:LEU:HA	2.00	0.42
3:O:1360:LYS:O	3:O:1363:LEU:HB2	2.20	0.42
3:O:1601:LEU:HD11	3:O:1652:ILE:HG13	2.01	0.42
3:O:2959:ALA:HA	3:O:2962:ARG:HH22	1.85	0.42
3:O:3447:VAL:O	3:O:3450:MET:HG3	2.19	0.42
3:O:3508:LYS:HE3	3:O:3508:LYS:HB3	1.80	0.42
3:O:3712:LEU:HB3	3:O:3716:HIS:CD2	2.54	0.42
8:I:111:DT:H5"	8:I:112:DC:C5	2.54	0.42
1:K:189:LYS:HD2	1:K:189:LYS:HA	1.80	0.42
2:L:213:ILE:HA	2:L:217:GLY:HA2	2.01	0.42
3:O:33:GLN:HG3	3:O:34:LEU:HD12	2.01	0.42
3:O:465:PHE:HD1	3:O:468:LEU:HD21	1.84	0.42
3:O:891:ARG:HH21	3:O:958:MET:HA	1.85	0.42
3:O:1071:ASN:ND2	3:O:1072:ALA:N	2.68	0.42
3:O:1071:ASN:HD21	3:O:1073:PHE:H	1.65	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:1445:ARG:HB3	3:O:1510:LEU:HD11	2.02	0.42
3:O:1596:VAL:O	3:O:1600:MET:HG2	2.19	0.42
3:O:3289:ARG:H	3:O:3289:ARG:HD3	1.85	0.42
3:O:4070:LYS:HE2	3:O:4070:LYS:HB2	1.92	0.42
8:I:39:DC:H2"	8:I:40:DG:C4	2.55	0.42
1:K:144:SER:HB2	1:K:185:ARG:HG3	2.02	0.41
2:L:165:LEU:HB2	2:L:167:PHE:O	2.20	0.41
3:O:183:GLU:O	3:O:185:HIS:ND1	2.53	0.41
3:O:584:GLU:N	3:O:613:HIS:O	2.38	0.41
3:O:789:TYR:HA	3:O:792:ILE:HG12	2.02	0.41
3:O:910:PHE:O	3:O:914:VAL:HG12	2.19	0.41
3:O:938:VAL:O	3:O:941:MET:HB3	2.20	0.41
3:O:2145:PHE:O	3:O:2149:LEU:HG	2.19	0.41
3:O:2426:HIS:O	3:O:2432:GLN:OE1	2.38	0.41
3:O:2549:LYS:HB2	3:O:2549:LYS:HE3	1.79	0.41
3:O:3061:LEU:O	3:O:3065:ILE:HG12	2.20	0.41
3:O:3704:GLN:N	3:O:3704:GLN:HE21	2.18	0.41
3:O:3927:ASN:OD1	3:O:3940:ILE:N	2.50	0.41
7:B:35:ARG:HH22	8:I:85:DC:H2'	1.84	0.41
8:I:15:DC:H2"	8:I:16:DG:C8	2.55	0.41
1:K:115:ARG:O	1:K:119:LEU:HG	2.20	0.41
1:K:153:LEU:HD23	1:K:153:LEU:HA	1.88	0.41
1:K:259:LEU:HD23	1:K:259:LEU:HA	1.89	0.41
2:L:14:MET:HE1	2:L:135:PHE:CD1	2.55	0.41
3:O:191:ASN:O	3:O:195:ASN:OD1	2.38	0.41
3:O:623:PHE:HE2	3:O:665:GLY:HA3	1.85	0.41
3:O:932:GLU:HG3	3:O:2793:PRO:HB3	2.01	0.41
3:O:1483:LEU:HD22	3:O:1518:ALA:CB	2.50	0.41
3:O:1729:PHE:CZ	3:O:1735:ARG:HD2	2.54	0.41
3:O:2153:THR:HG22	3:O:2154:GLU:N	2.35	0.41
3:O:2186:VAL:O	3:O:2189:ILE:HG12	2.20	0.41
3:O:2193:ILE:HD13	3:O:2196:TRP:HZ2	1.85	0.41
3:O:2514:ASN:HB3	3:O:2517:LEU:HG	2.02	0.41
3:O:2776:ARG:HG3	3:O:2782:ASP:OD2	2.21	0.41
3:O:2825:THR:N	3:O:2828:GLU:OE1	2.48	0.41
3:O:3238:MET:O	3:O:3242:MET:HG2	2.19	0.41
3:O:3772:ASN:OD1	3:O:3788:LEU:N	2.53	0.41
3:O:3946:PHE:CZ	3:O:4047:ALA:HB2	2.55	0.41
7:F:62:LEU:O	7:F:66:ILE:HG12	2.20	0.41
2:L:543:LYS:HA	2:L:543:LYS:HD3	1.85	0.41
3:O:229:SER:HB3	3:O:274:LEU:HD13	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:1294:VAL:HG21	3:O:1363:LEU:HG	2.03	0.41
3:O:1464:LEU:O	3:O:1468:LEU:N	2.50	0.41
3:O:2438:ILE:O	3:O:2442:MET:HG3	2.19	0.41
3:O:2470:ARG:NH1	3:O:2513:GLU:OE2	2.53	0.41
3:O:3069:MET:HB2	3:O:3075:LYS:HD3	2.02	0.41
3:O:3348:LEU:O	3:O:3352:GLU:N	2.46	0.41
3:O:3719:ILE:C	3:O:3743:HIS:HB2	2.45	0.41
3:O:3840:LYS:NZ	3:O:3874:ARG:HH22	2.18	0.41
3:O:4077:TYR:HA	3:O:4080:VAL:HG22	2.03	0.41
4:C:51:LEU:HD11	5:D:70:ILE:HG21	2.02	0.41
5:D:92:GLN:NE2	5:D:93:THR:OG1	2.54	0.41
1:K:49:PHE:CE2	1:K:137:HIS:HB2	2.55	0.41
1:K:330:GLU:O	1:K:334:THR:HG23	2.21	0.41
1:K:413:LEU:HB3	1:K:432:PHE:CD1	2.55	0.41
2:L:7:LYS:HG3	2:L:52:ASP:HA	2.02	0.41
2:L:237:PHE:CE2	2:L:511:HIS:HB3	2.55	0.41
3:O:717:LYS:HD2	3:O:717:LYS:HA	1.75	0.41
3:O:1322:THR:O	3:O:1327:GLY:N	2.41	0.41
3:O:1633:TRP:HB2	3:O:1678:LEU:HD21	2.02	0.41
3:O:1808:ASP:O	3:O:1816:ARG:NE	2.50	0.41
3:O:2965:TYR:HB2	3:O:3005:LEU:HD21	2.01	0.41
3:O:3725:ARG:O	3:O:3738:ILE:HA	2.21	0.41
3:O:3740:ILE:H	3:O:3749:PRO:HA	1.84	0.41
5:D:93:THR:HG21	7:F:75:HIS:HB2	2.01	0.41
6:A:103:LEU:HA	6:A:131:ARG:HH22	1.85	0.41
6:E:51:ILE:HG21	7:F:42:GLY:HA2	2.01	0.41
9:J:50:DC:H1'	9:J:51:DC:C2	2.55	0.41
1:K:248:ALA:O	1:K:249:LYS:HD3	2.20	0.41
1:K:252:ARG:HH22	1:K:254:ARG:HB2	1.85	0.41
1:K:350:PHE:HB3	1:K:394:VAL:HG21	2.03	0.41
3:O:349:ILE:H	3:O:391:ARG:NH2	2.18	0.41
3:O:2459:VAL:HA	3:O:2473:MET:HE2	2.01	0.41
3:O:2794:LEU:HG	3:O:2808:LEU:HD11	2.03	0.41
3:O:2806:LYS:HG3	3:O:2857:CYS:CB	2.50	0.41
3:O:3173:MET:HE2	3:O:3173:MET:O	2.21	0.41
3:O:3467:ARG:NH2	3:O:3471:ILE:HD11	2.35	0.41
3:O:3577:GLN:NE2	3:O:3629:ARG:HD2	2.36	0.41
8:I:126:DC:H2'	8:I:127:DA:H8	1.84	0.41
1:K:440:ALA:HB2	2:L:481:LYS:C	2.45	0.41
1:K:478:PHE:N	2:L:427:MET:HE2	2.34	0.41
3:O:238:MET:HE3	3:O:283:SER:OG	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:320:LEU:HB3	3:O:368:LEU:HD23	2.02	0.41
3:O:327:VAL:HG12	3:O:333:MET:HB3	2.02	0.41
3:O:359:LEU:O	3:O:363:ILE:HG23	2.21	0.41
3:O:488:ILE:HD11	3:O:2036:LEU:HA	2.02	0.41
3:O:1086:TYR:CD1	3:O:1133:HIS:HB3	2.56	0.41
3:O:1196:PRO:HB3	3:O:1203:SER:HB3	2.02	0.41
3:O:1504:ASP:OD1	3:O:1505:LEU:N	2.52	0.41
3:O:2571:ASP:HA	3:O:2574:ASN:HB2	2.02	0.41
3:O:3719:ILE:HD11	3:O:3722:PHE:CZ	2.56	0.41
3:O:3950:THR:OG1	3:O:4063:GLU:OE2	2.32	0.41
5:H:37:TYR:O	5:H:41:VAL:HG23	2.21	0.41
7:F:64:ASN:HA	7:F:67:ARG:NH1	2.35	0.41
1:K:418:GLU:HB2	1:K:430:PRO:HB3	2.03	0.41
3:O:73:LEU:N	3:O:118:ASP:OD2	2.54	0.41
3:O:1533:LEU:HD13	3:O:1585:SER:HB3	2.02	0.41
3:O:3193:ILE:HA	3:O:3196:LYS:HG2	2.02	0.41
3:O:3677:PRO:O	3:O:3681:LYS:HD3	2.20	0.41
3:O:3717:VAL:HG23	3:O:3743:HIS:HB3	2.03	0.41
7:B:38:ALA:HB1	7:B:43:VAL:HB	2.01	0.41
4:G:65:LEU:HD13	4:G:93:LEU:HD11	2.02	0.41
1:K:351:LYS:HE3	1:K:351:LYS:HB2	1.67	0.41
3:O:173:LYS:HA	3:O:223:CYS:HB3	2.02	0.41
3:O:381:VAL:HG12	3:O:424:LEU:HD13	2.03	0.41
3:O:1141:LYS:HG3	3:O:1141:LYS:O	2.20	0.41
3:O:1184:ARG:HH22	3:O:1265:GLU:HB2	1.86	0.41
3:O:1256:TRP:CE2	3:O:1260:LEU:HD11	2.56	0.41
3:O:1300:SER:HB3	3:O:1301:ILE:H	1.61	0.41
3:O:1504:ASP:HB3	3:O:1507:CYS:SG	2.60	0.41
3:O:1619:ALA:HA	3:O:1622:ILE:HG22	2.03	0.41
3:O:2126:MET:HA	3:O:2129:LEU:HD12	2.02	0.41
3:O:2344:LEU:O	3:O:2347:LYS:HG2	2.21	0.41
3:O:2418:LYS:HD3	3:O:2418:LYS:HA	1.83	0.41
3:O:3368:GLU:HA	3:O:3372:LYS:HD2	2.02	0.41
3:O:3642:LYS:HA	3:O:3642:LYS:HD3	1.93	0.41
3:O:3809:THR:HG1	3:O:3930:VAL:C	2.27	0.41
4:C:32:ARG:N	4:C:35:ARG:HH21	2.19	0.41
6:A:83:ARG:HB2	7:B:80:THR:HG22	2.03	0.41
7:F:25:ASN:HD22	7:F:28:GLY:HA3	1.85	0.41
8:I:79:DG:N2	9:J:76:DA:N1	2.69	0.41
1:K:71:TYR:HE2	1:K:115:ARG:HD3	1.86	0.41
1:K:264:ASN:OD1	1:K:265:LYS:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:421:ASP:HB3	1:K:425:ILE:HB	2.03	0.41
1:K:459:VAL:O	1:K:463:LYS:HG3	2.20	0.41
2:L:155:LYS:HE3	2:L:215:LEU:HD23	2.02	0.41
2:L:523:THR:O	2:L:527:GLN:HG3	2.20	0.41
3:O:55:THR:HA	3:O:58:VAL:HG12	2.02	0.41
3:O:82:ARG:HG2	3:O:82:ARG:HH11	1.85	0.41
3:O:142:ARG:H	3:O:144:MET:HE1	1.86	0.41
3:O:320:LEU:HA	3:O:323:VAL:HG22	2.02	0.41
3:O:410:MET:N	3:O:411:PRO:HD2	2.36	0.41
3:O:446:PHE:CZ	3:O:530:LEU:HB2	2.56	0.41
3:O:671:SER:HA	3:O:674:VAL:HG12	2.03	0.41
3:O:714:VAL:O	3:O:718:MET:N	2.53	0.41
3:O:854:ARG:O	3:O:857:GLN:HG3	2.20	0.41
3:O:910:PHE:HB3	3:O:2804:ILE:HD11	2.03	0.41
3:O:1112:ALA:HA	3:O:1180:GLN:HG2	2.03	0.41
3:O:1342:MET:O	3:O:1346:THR:HG23	2.20	0.41
3:O:1526:GLU:OE1	3:O:1526:GLU:N	2.54	0.41
3:O:1754:GLN:HA	3:O:1785:ILE:HD11	2.02	0.41
3:O:1919:CYS:SG	3:O:1948:ALA:HB2	2.61	0.41
3:O:1935:GLU:O	3:O:1939:LEU:HG	2.20	0.41
3:O:2160:TYR:HD2	3:O:2164:TRP:NE1	2.18	0.41
3:O:2227:LYS:HG3	3:O:2228:ARG:H	1.86	0.41
3:O:2398:LEU:HA	3:O:2401:VAL:HG22	2.03	0.41
3:O:2404:ARG:C	3:O:2441:LYS:HZ3	2.27	0.41
3:O:2938:VAL:O	3:O:2942:ILE:HG12	2.21	0.41
3:O:3353:GLU:HA	3:O:3357:ARG:HG3	2.03	0.41
3:O:3447:VAL:HG12	3:O:3468:LEU:HD13	2.03	0.41
3:O:3483:MET:HE1	3:O:3513:ALA:HB3	2.02	0.41
3:O:3813:LYS:HD3	3:O:3925:LEU:HD12	2.01	0.41
3:O:3814:ASP:OD1	3:O:3815:LEU:N	2.54	0.41
3:O:3843:LEU:H	3:O:3843:LEU:HD23	1.85	0.41
5:D:93:THR:O	5:D:97:LEU:HD23	2.21	0.41
6:A:87:SER:C	7:B:83:ALA:HB2	2.45	0.41
6:E:109:LEU:HD23	6:E:112:ILE:HD11	2.03	0.41
8:I:41:DT:H6	8:I:41:DT:H2'	1.62	0.41
8:I:93:DA:H2"	8:I:94:DA:C8	2.56	0.41
8:I:113:DC:O2	9:J:42:DG:N2	2.54	0.41
9:J:51:DC:H2"	9:J:52:DC:C6	2.55	0.41
9:J:80:DC:H1'	9:J:81:DG:C4	2.56	0.41
1:K:64:ILE:O	1:K:67:ILE:HG22	2.21	0.41
1:K:484:GLN:O	1:K:488:ARG:NH1	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:712:LYS:HA	3:O:712:LYS:HD3	1.96	0.41
3:O:1057:LYS:HE2	3:O:1057:LYS:HB2	1.85	0.41
3:O:1756:PRO:HA	3:O:1759:LEU:HD12	2.02	0.41
3:O:1835:ALA:HA	3:O:1838:GLU:CD	2.46	0.41
3:O:2599:SER:OG	3:O:2600:THR:N	2.53	0.41
3:O:2817:LEU:HD12	3:O:2865:HIS:CE1	2.56	0.41
3:O:3531:TYR:O	3:O:3535:ILE:HG12	2.20	0.41
3:O:3558:ILE:HD13	3:O:3558:ILE:HA	1.90	0.41
6:A:113:HIS:CE1	6:E:110:CYS:HB3	2.55	0.41
4:G:22:GLY:HA3	5:H:117:LYS:HZ2	1.87	0.41
8:I:84:DC:H2"	8:I:85:DC:C5	2.56	0.41
1:K:46:LYS:HA	1:K:49:PHE:HD2	1.86	0.40
2:L:64:THR:HG23	2:L:76:ASN:N	2.36	0.40
3:O:1098:GLN:HA	3:O:1151:ARG:HE	1.85	0.40
3:O:1403:MET:HB3	3:O:1463:LEU:HD11	2.03	0.40
3:O:1736:PHE:O	3:O:1740:VAL:HG13	2.21	0.40
3:O:3614:TYR:HB2	3:O:3640:PHE:CE2	2.56	0.40
6:A:51:ILE:HG13	7:B:39:ARG:HD2	2.02	0.40
5:H:121:ALA:HB3	5:H:122:LYS:HE2	2.03	0.40
8:I:49:DT:H2"	8:I:50:DC:C5	2.56	0.40
1:K:420:LEU:HA	1:K:427:VAL:H	1.85	0.40
2:L:395:TYR:O	2:L:404:GLN:HB2	2.22	0.40
3:O:78:PHE:O	3:O:82:ARG:NH1	2.55	0.40
3:O:186:PRO:O	3:O:190:ILE:HG12	2.21	0.40
3:O:385:TYR:CZ	3:O:421:LEU:HD13	2.56	0.40
3:O:627:VAL:HA	3:O:630:CYS:SG	2.61	0.40
3:O:1297:PHE:HA	3:O:1300:SER:OG	2.21	0.40
3:O:1366:THR:C	3:O:1368:LEU:H	2.29	0.40
3:O:2350:LYS:HD2	3:O:2350:LYS:HA	1.86	0.40
3:O:2957:LEU:HD23	3:O:2957:LEU:HA	1.84	0.40
4:C:29:ARG:HG3	4:C:32:ARG:HH21	1.86	0.40
4:C:93:LEU:O	4:C:97:LEU:HG	2.21	0.40
5:H:76:ARG:NE	5:H:80:TYR:OH	2.54	0.40
6:E:82:LEU:HB3	7:F:81:VAL:HG12	2.03	0.40
8:I:30:DT:H1'	8:I:31:DC:C4	2.56	0.40
9:J:30:DC:H1'	9:J:31:DT:C2	2.56	0.40
1:K:206:LYS:HB2	1:K:237:SER:HA	2.04	0.40
2:L:226:SER:HB3	2:L:229:GLU:HG2	2.03	0.40
3:O:13:LEU:HB2	3:O:59:PHE:CE2	2.57	0.40
3:O:363:ILE:HA	3:O:366:TYR:CD2	2.56	0.40
3:O:559:SER:OG	3:O:560:LEU:N	2.53	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:886:TRP:HE3	3:O:961:LEU:HD13	1.86	0.40
3:O:1442:GLN:HG2	3:O:1445:ARG:HD3	2.02	0.40
3:O:1849:ASP:OD1	3:O:1850:VAL:N	2.54	0.40
3:O:1963:GLN:HA	3:O:2125:TRP:NE1	2.36	0.40
3:O:2312:TYR:O	3:O:2315:VAL:HG22	2.20	0.40
3:O:2335:ASN:HD21	3:O:2337:LEU:HG	1.85	0.40
3:O:2339:GLU:OE1	3:O:2339:GLU:N	2.53	0.40
3:O:3048:LYS:HA	3:O:3048:LYS:HD3	1.83	0.40
3:O:3609:MET:O	3:O:3613:MET:HG3	2.22	0.40
3:O:3681:LYS:O	3:O:3688:SER:OG	2.37	0.40
3:O:3738:ILE:H	3:O:3751:LEU:HA	1.87	0.40
1:K:90:THR:OG1	1:K:135:MET:O	2.38	0.40
2:L:291:LYS:HB2	2:L:291:LYS:HE2	1.83	0.40
2:L:406:GLY:HA2	2:L:424:LEU:HG	2.04	0.40
3:O:201:LEU:HB3	3:O:249:PHE:CE2	2.56	0.40
3:O:225:LYS:HE2	3:O:225:LYS:HB2	1.87	0.40
3:O:275:PHE:CE1	3:O:319:PHE:HB2	2.57	0.40
3:O:392:CYS:SG	3:O:413:PHE:HD2	2.45	0.40
3:O:990:GLN:HB3	3:O:2781:PRO:HD3	2.02	0.40
3:O:1098:GLN:HE22	3:O:1151:ARG:HG2	1.86	0.40
3:O:1326:GLU:OE2	3:O:1329:ARG:HG3	2.21	0.40
3:O:2104:MET:HE1	3:O:2122:LEU:HD22	2.02	0.40
3:O:2873:PRO:C	3:O:2925:GLU:HG3	2.46	0.40
3:O:2945:SER:OG	3:O:3975:LYS:HE2	2.21	0.40
3:O:3029:LYS:NZ	3:O:3074:GLN:HB2	2.36	0.40
3:O:3675:LYS:O	3:O:3677:PRO:HD3	2.20	0.40
4:C:47:ALA:HB3	4:C:48:PRO:HD3	2.04	0.40
6:A:59:GLU:N	7:B:40:ARG:HH12	2.17	0.40
6:A:62:ILE:HG22	7:B:33:ALA:HB1	2.03	0.40
4:G:78:ILE:HD13	4:G:78:ILE:HA	1.93	0.40
6:E:79:LYS:HD2	6:E:79:LYS:HA	1.62	0.40
7:F:45:ARG:HE	9:J:83:DA:H5'	1.86	0.40
8:I:103:DG:H4'	8:I:104:DG:OP1	2.22	0.40
9:J:137:DC:H2'	9:J:138:DC:C6	2.57	0.40
1:K:38:LEU:HD12	1:K:39:ILE:H	1.87	0.40
1:K:42:VAL:HB	1:K:87:PHE:CD2	2.57	0.40
1:K:67:ILE:HD11	1:K:85:VAL:HG22	2.04	0.40
2:L:35:LYS:HE2	2:L:98:ILE:HG22	2.03	0.40
2:L:108:LEU:HD12	2:L:143:SER:O	2.21	0.40
2:L:408:ALA:HA	2:L:420:VAL:O	2.20	0.40
3:O:169:THR:HG21	8:I:10:DA:H5'	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:524:TYR:OH	3:O:625:ASN:O	2.27	0.40
3:O:653:LEU:HD21	3:O:669:LEU:HB3	2.03	0.40
3:O:714:VAL:O	3:O:718:MET:HG3	2.22	0.40
3:O:1166:LEU:C	3:O:1170:LYS:HZ3	2.29	0.40
3:O:2260:PHE:HE1	3:O:2302:ALA:HB3	1.86	0.40
3:O:3328:ILE:HD13	3:O:3328:ILE:HA	1.94	0.40
3:O:3356:ALA:HA	3:O:3359:ILE:HG12	2.02	0.40
3:O:3853:GLY:HA2	3:O:4121:TRP:CZ2	2.56	0.40
3:O:4045:CYS:HA	3:O:4048:LYS:HE2	2.03	0.40
3:O:4116:ILE:HA	3:O:4124:TRP:CH2	2.39	0.40
4:C:82:HIS:HA	4:C:85:LEU:HD12	2.04	0.40
4:G:70:ALA:O	4:G:74:LYS:N	2.54	0.40
8:I:18:DT:H2"	8:I:19:DG:OP1	2.19	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	K	489/609 (80%)	466 (95%)	23 (5%)	0	100	100
2	L	513/732 (70%)	451 (88%)	62 (12%)	0	100	100
3	O	3455/4128 (84%)	3118 (90%)	331 (10%)	6 (0%)	44	78
4	C	90/143 (63%)	87 (97%)	3 (3%)	0	100	100
4	G	95/143 (66%)	89 (94%)	6 (6%)	0	100	100
5	D	91/126 (72%)	88 (97%)	3 (3%)	0	100	100
5	H	90/126 (71%)	88 (98%)	2 (2%)	0	100	100
6	A	94/136 (69%)	87 (93%)	7 (7%)	0	100	100
6	E	86/136 (63%)	76 (88%)	6 (7%)	4 (5%)	2	17
7	B	73/103 (71%)	72 (99%)	1 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
7	F	75/103 (73%)	73 (97%)	2 (3%)	0	100	100
All	All	5151/6485 (79%)	4695 (91%)	446 (9%)	10 (0%)	45	78

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	O	76	ILE
6	E	79	LYS
6	E	81	ASP
6	E	83	ARG
3	O	1956	PHE
3	O	3250	ASN
3	O	3633	ILE
6	E	80	THR
3	O	1925	GLU
3	O	956	PRO

5.3.2　Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	K	427/548 (78%)	426 (100%)	1 (0%)	92	94
2	L	445/649 (69%)	443 (100%)	2 (0%)	89	91
3	O	3045/3671 (83%)	3041 (100%)	4 (0%)	92	95
4	C	70/106 (66%)	70 (100%)	0	100	100
4	G	73/106 (69%)	72 (99%)	1 (1%)	62	76
5	D	74/105 (70%)	74 (100%)	0	100	100
5	H	78/105 (74%)	78 (100%)	0	100	100
6	A	84/111 (76%)	84 (100%)	0	100	100
6	E	73/111 (66%)	71 (97%)	2 (3%)	40	60
7	B	61/79 (77%)	61 (100%)	0	100	100
7	F	62/79 (78%)	62 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	4492/5670 (79%)	4482 (100%)	10 (0%)	91 94

All (10) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	K	95	ASN
2	L	312	GLN
2	L	360	GLN
3	O	1691	GLN
3	O	2295	GLN
3	O	2432	GLN
3	O	3704	GLN
4	G	84	GLN
6	E	78	PHE
6	E	79	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	K	95	ASN
2	L	312	GLN
2	L	360	GLN
2	L	500	HIS
3	O	136	GLN
3	O	1568	ASN
3	O	2295	GLN
3	O	3166	ASN
3	O	3278	GLN
7	B	64	ASN
4	G	110	ASN
7	F	25	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Map visualisation (i)

This section contains visualisations of the EMDB entry EMD-53025. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

6.1 Orthogonal projections (i)

6.1.1 Primary map
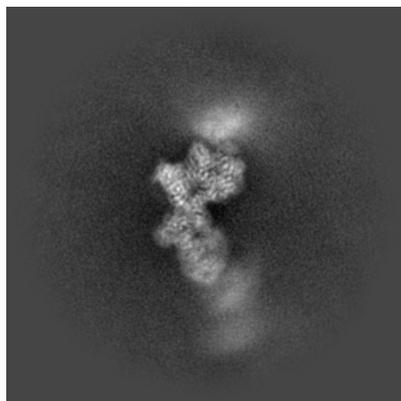
X
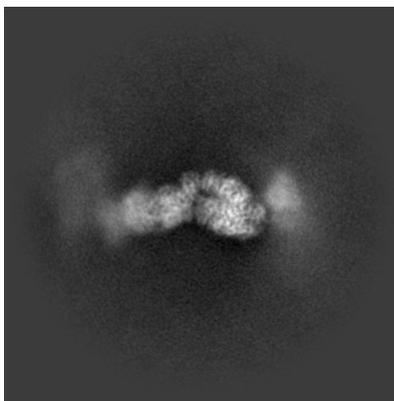
Y
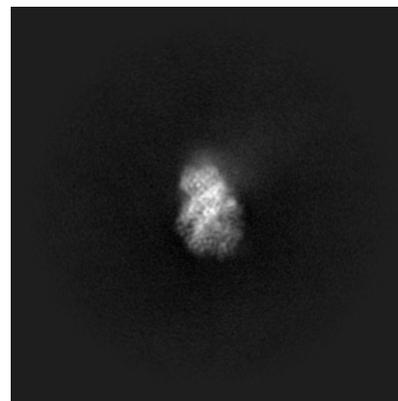
Z

6.1.2 Raw map

X

Y

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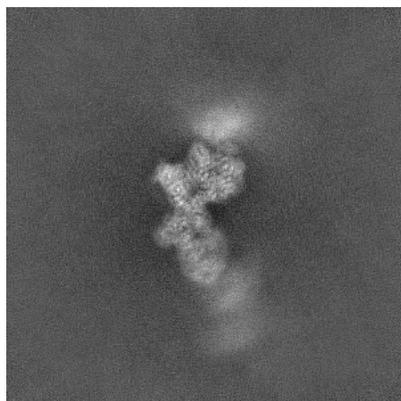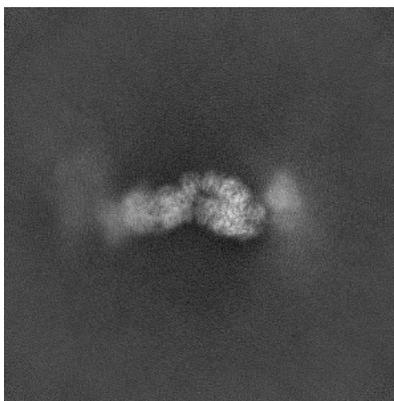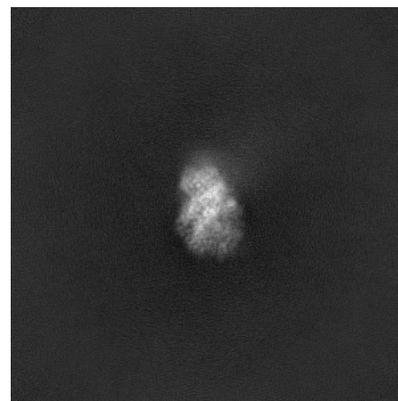
The images above show the map projected in three orthogonal directions.

6.2　Central slices ⓘ
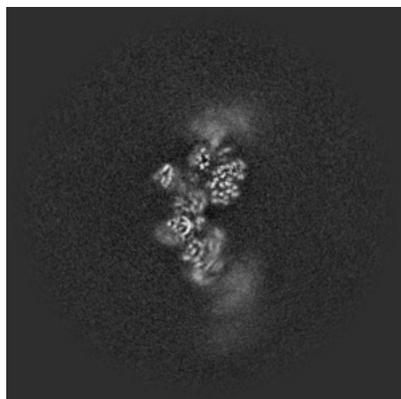
6.2.1　Primary map
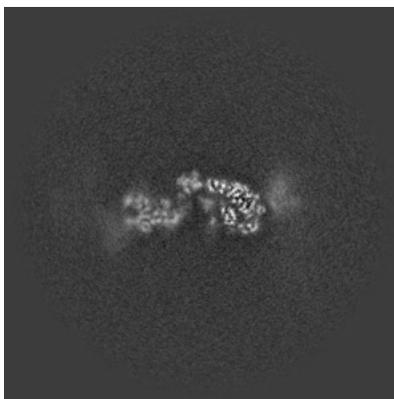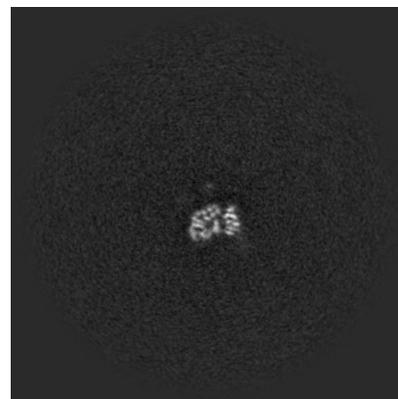
| X Index: 210 | Y Index: 210 | Z Index: 210 |

6.2.2　Raw map
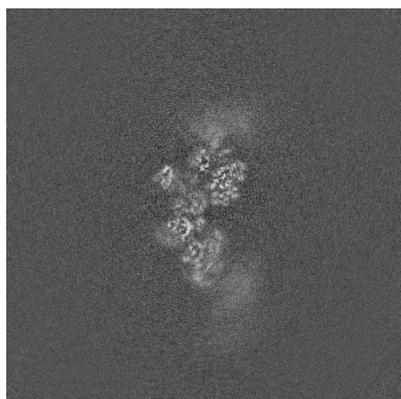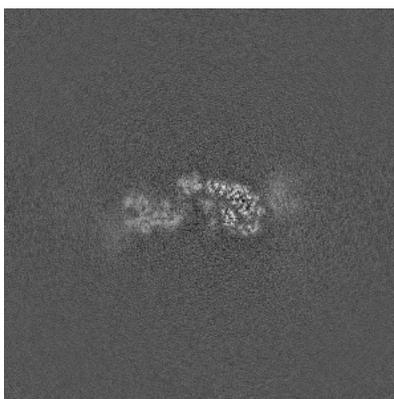
| X Index: 210 | Y Index: 210 | Z Index: 210 |

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

6.3 Largest variance slices ⓘ

6.3.1 Primary map
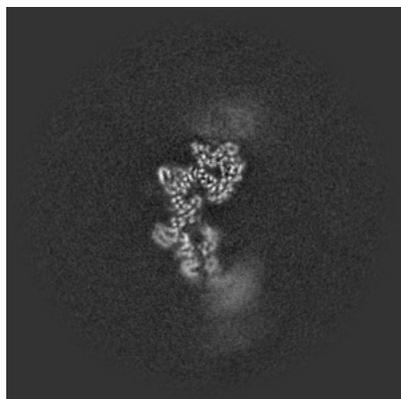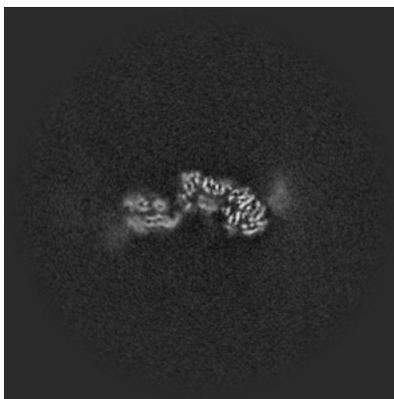
| X Index: 201 | Y Index: 206 | Z Index: 238 |
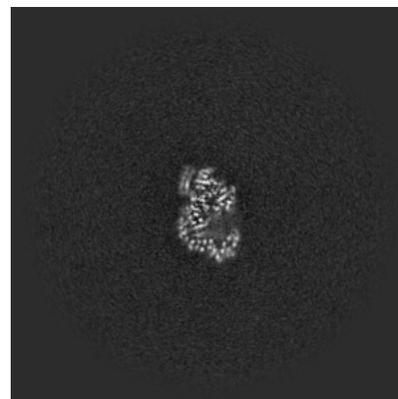
6.3.2 Raw map
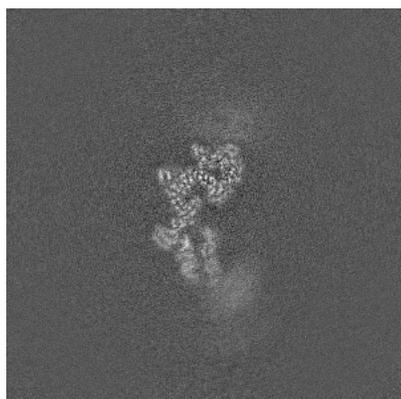
| X Index: 200 | Y Index: 206 | Z Index: 239 |
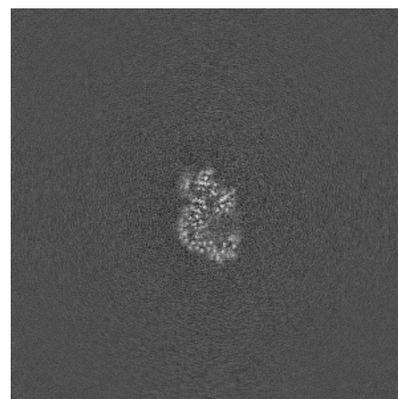
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map

| X | Y | Z |

6.4.2 Raw map

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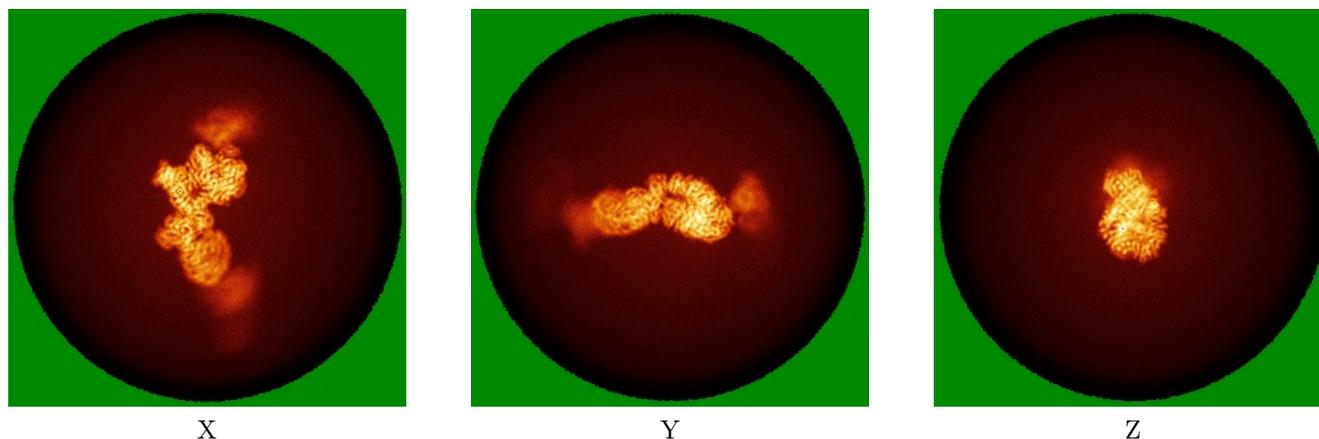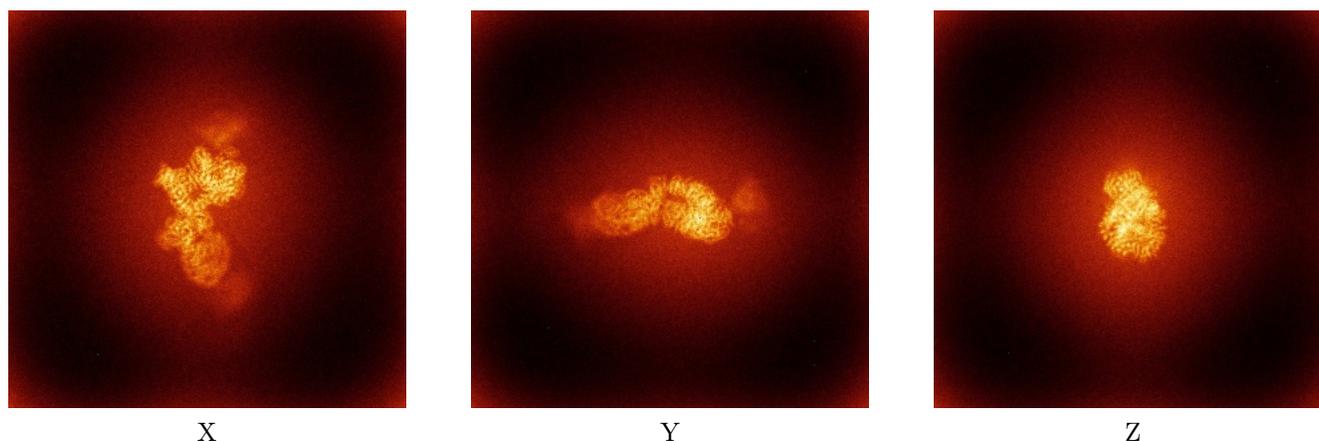
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views ⓘ

6.5.1 Primary map
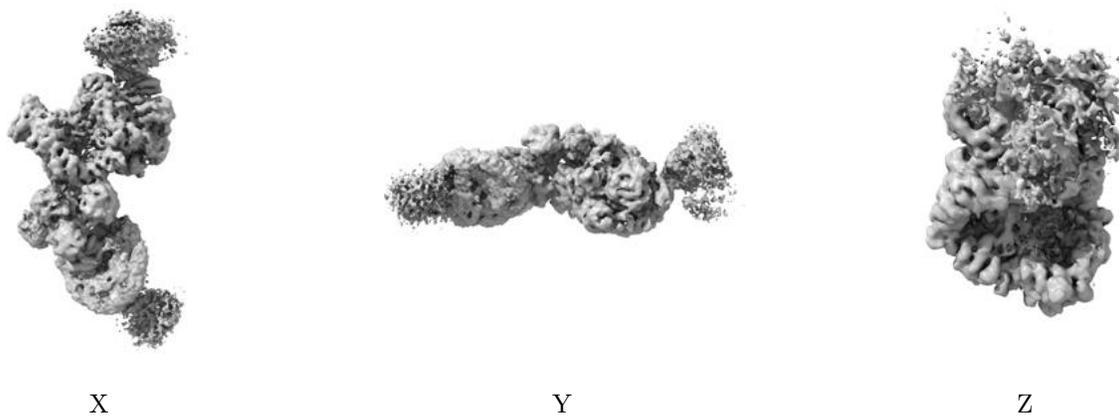
The images above show the 3D surface view of the map at the recommended contour level 0.19. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

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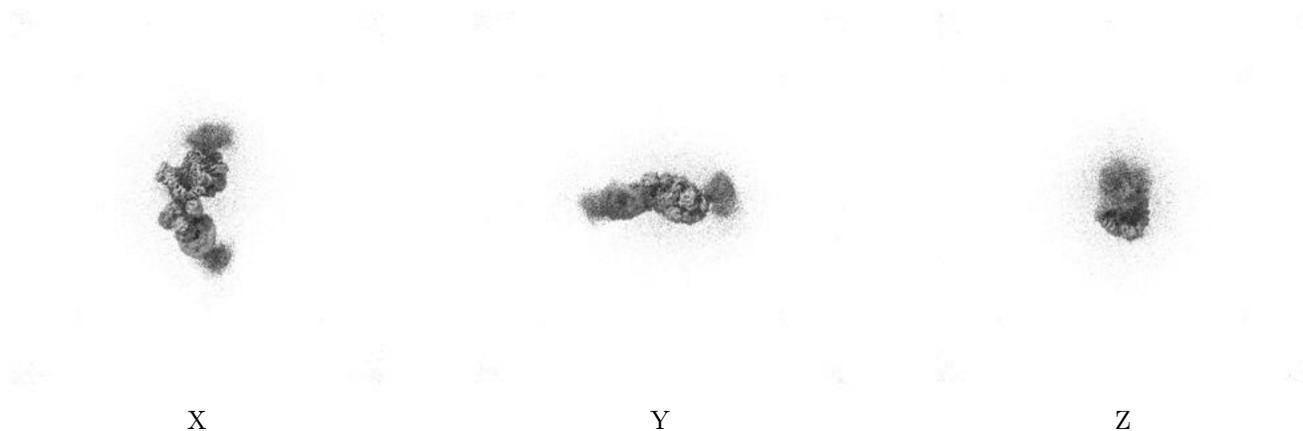
These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

6.6 Mask visualisation ⓘ

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

7　Map analysis ⓘ

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

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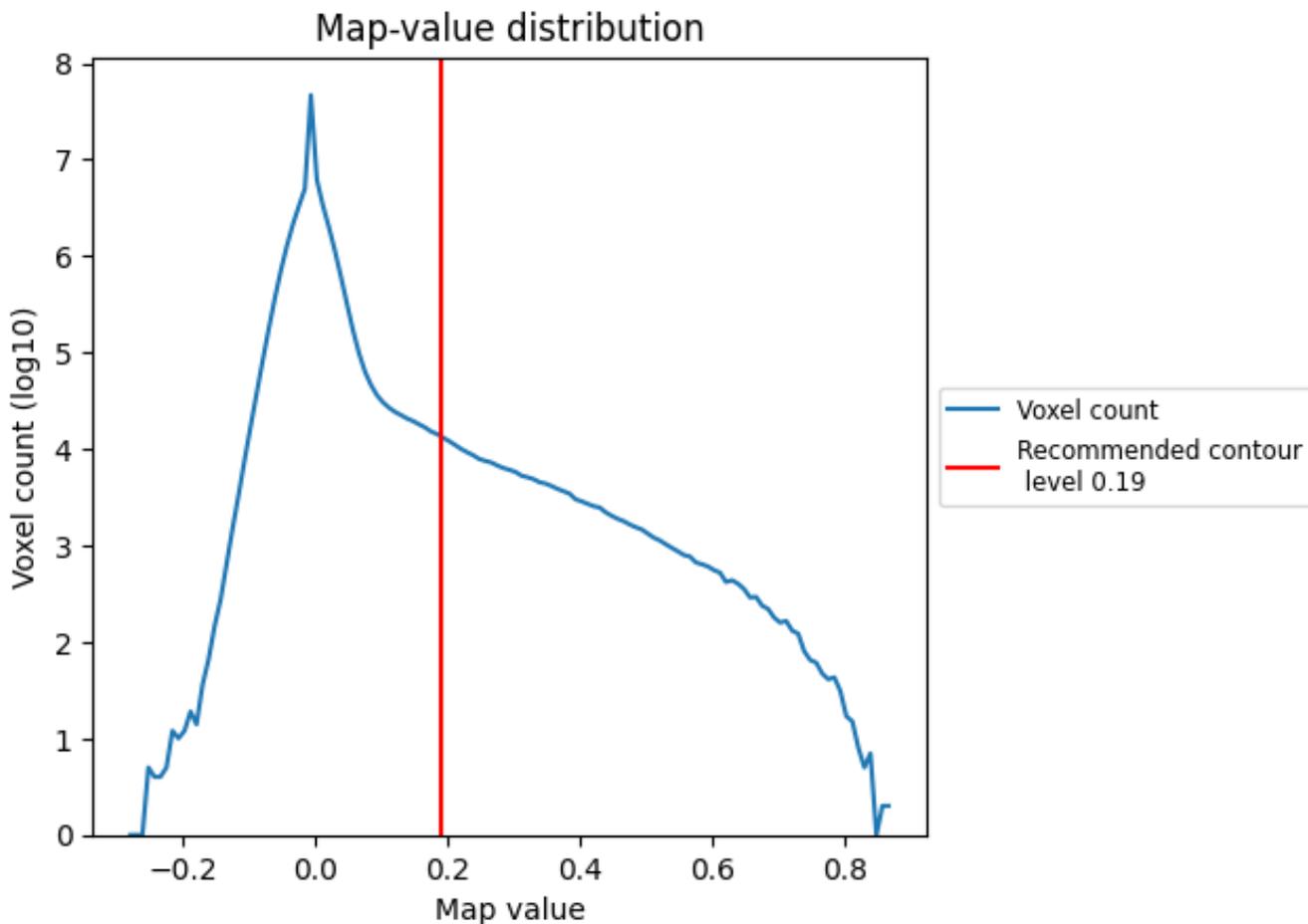
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2　Volume estimate ⓘ
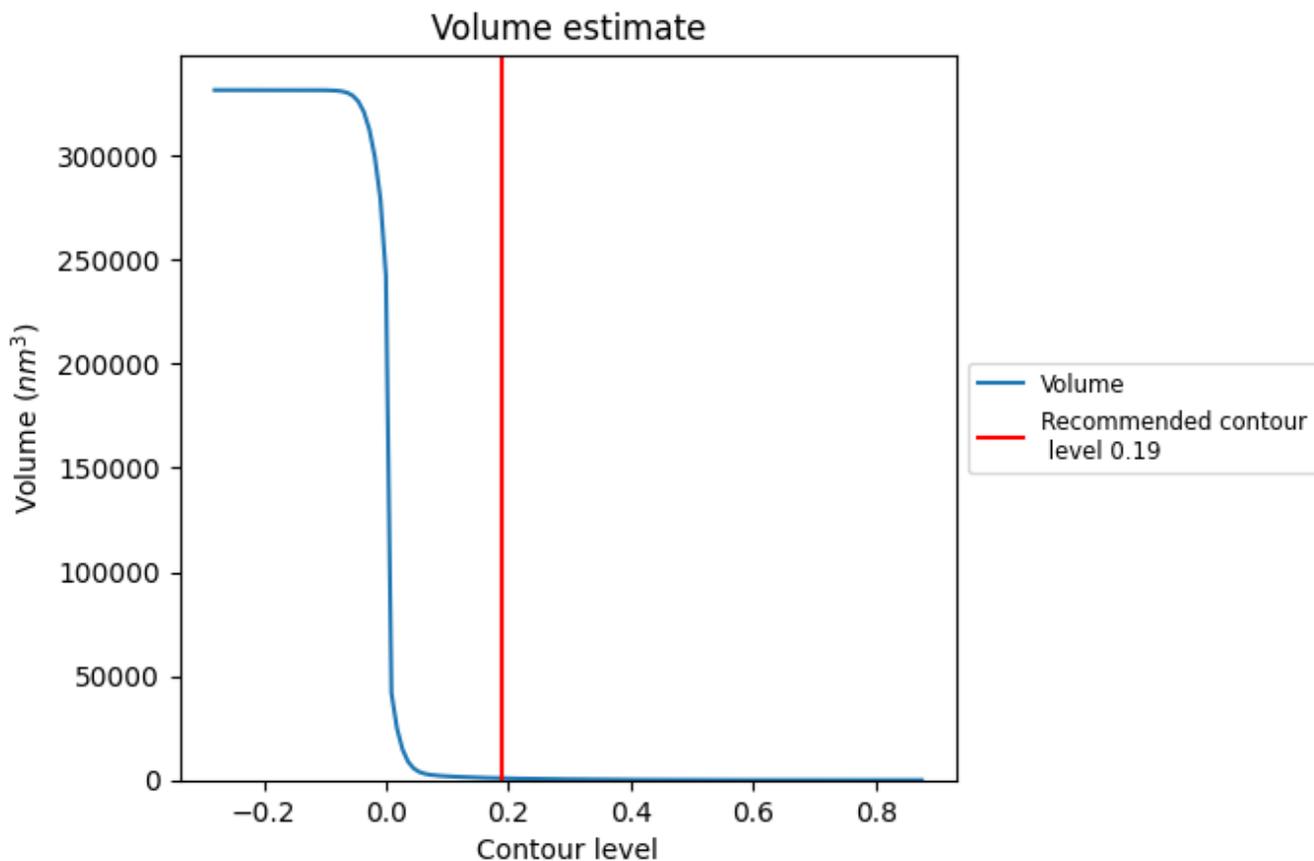
The volume at the recommended contour level is 880 nm³; this corresponds to an approximate mass of 795 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ
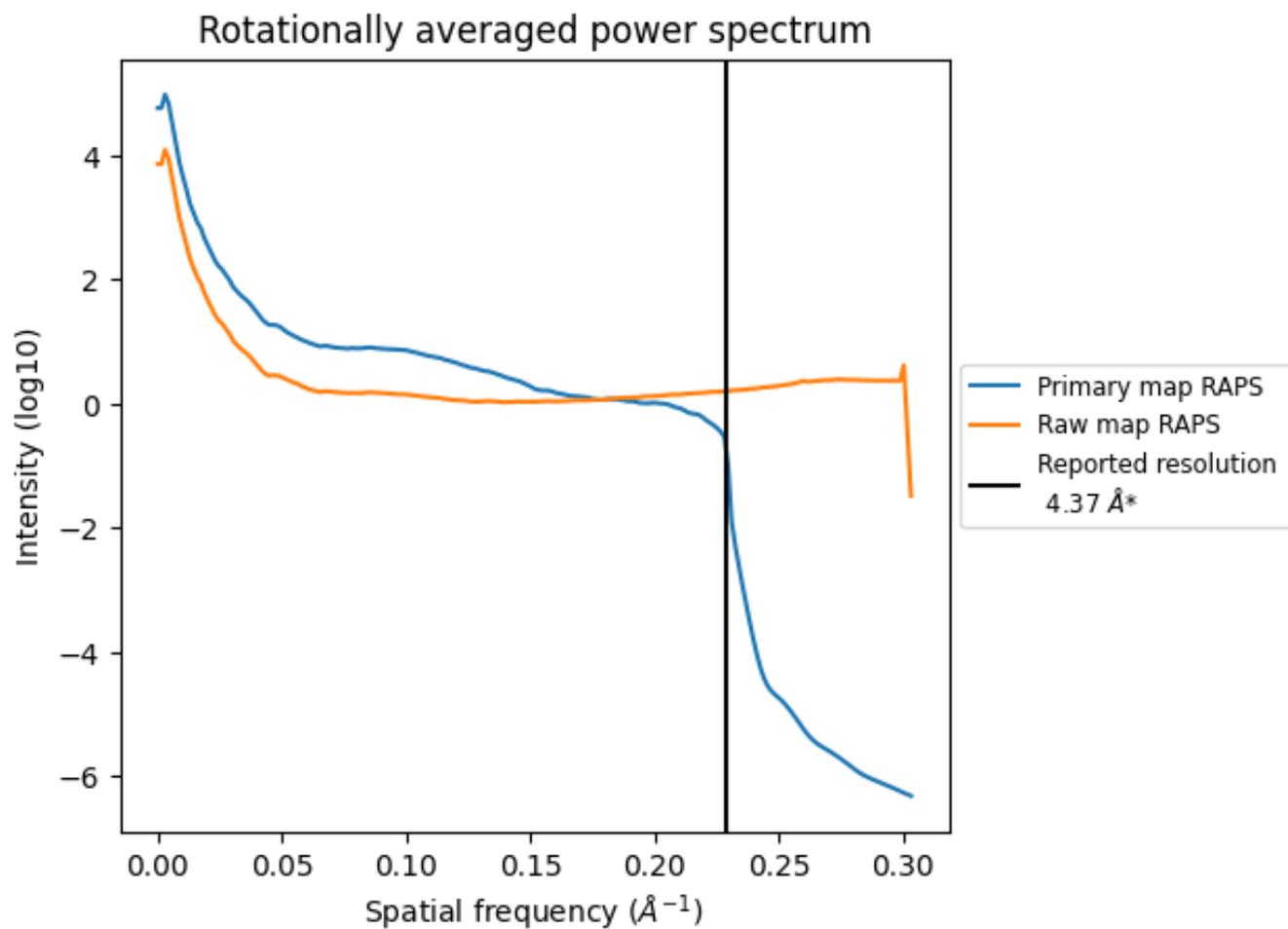
*Reported resolution corresponds to spatial frequency of 0.229 Å^{-1}

8   Fourier-Shell correlation ⓘ

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1   FSC ⓘ
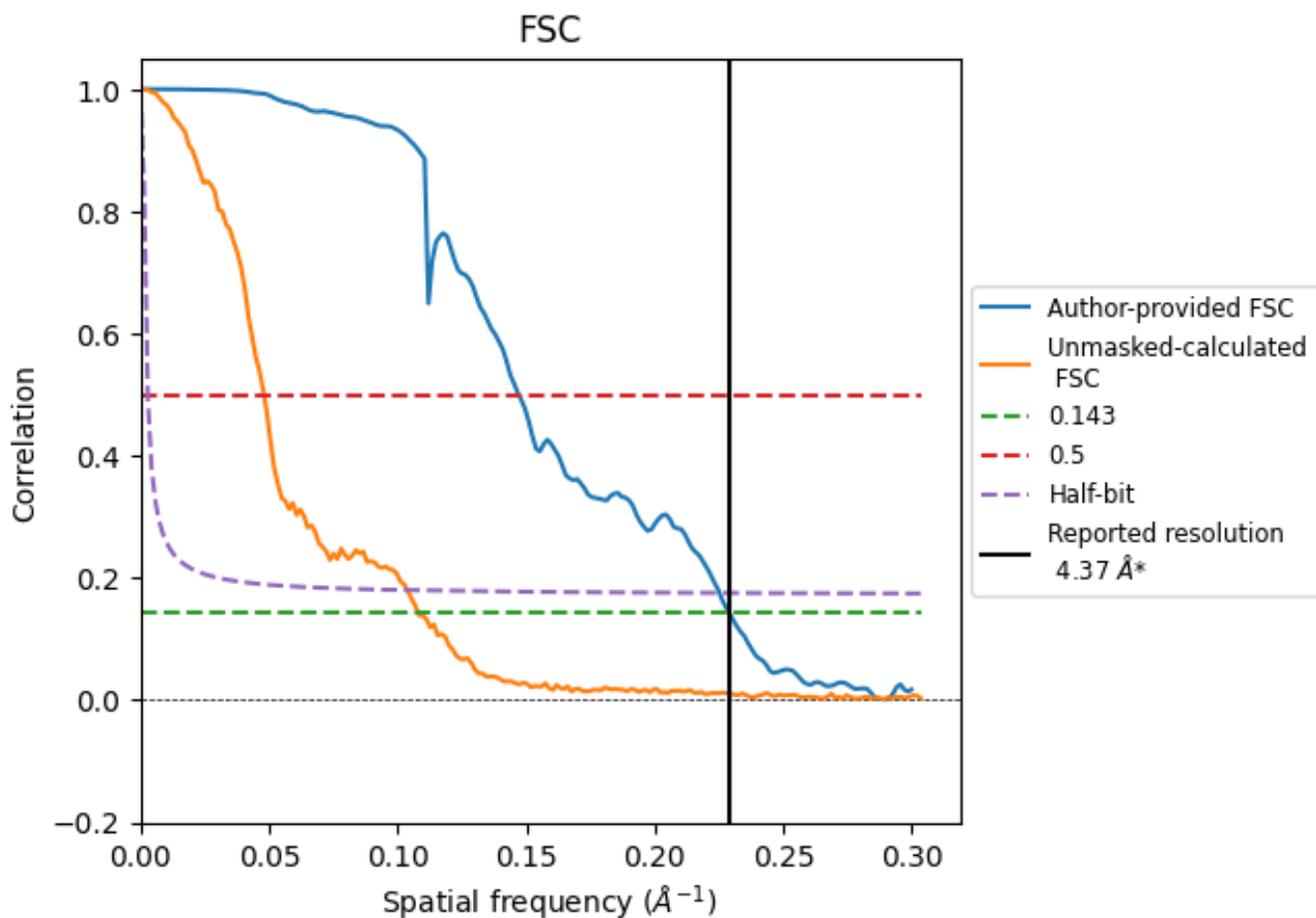
*Reported resolution corresponds to spatial frequency of 0.229 Å^{-1}

8.2   Resolution estimates ⓘ

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.37	-	-
Author-provided FSC curve	4.37	6.80	4.44
Unmasked-calculated*	9.27	20.83	9.63

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 9.27 differs from the reported value 4.37 by more than 10 %

9 Map-model fit (i)

This section contains information regarding the fit between EMDB map EMD-53025 and PDB model 9QCR. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay (i)


| X | Y | Z |
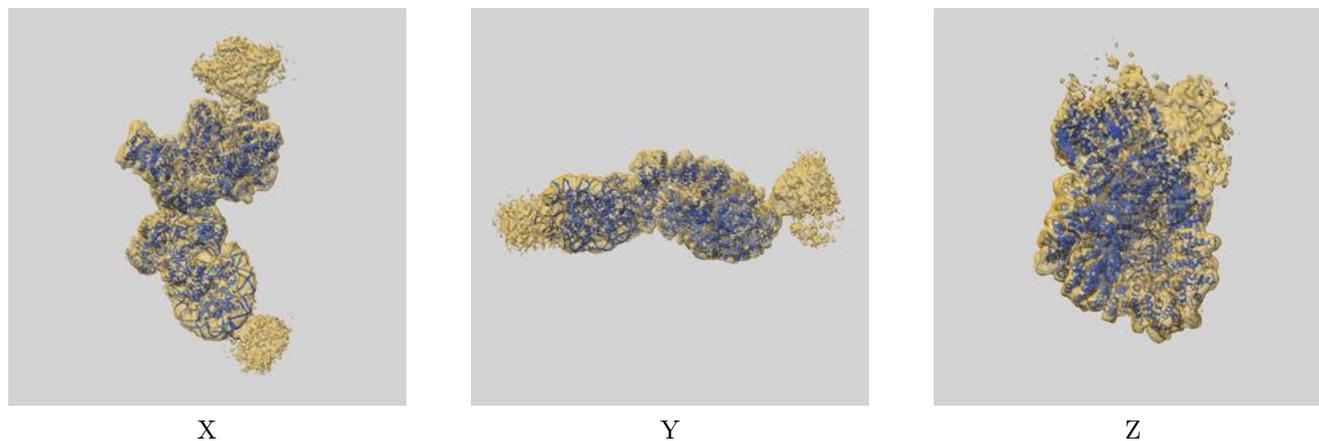
The images above show the 3D surface view of the map at the recommended contour level 0.19 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ

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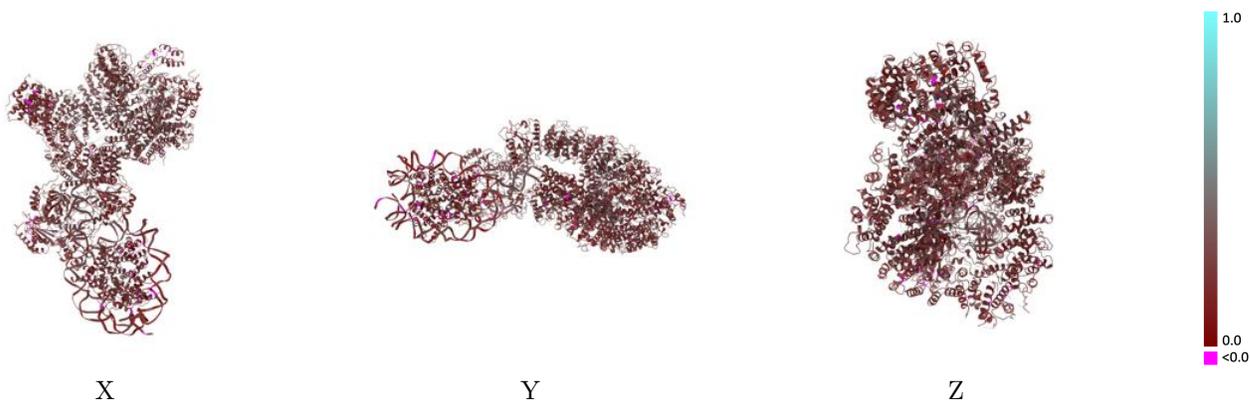
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model ⓘ

X Y Z
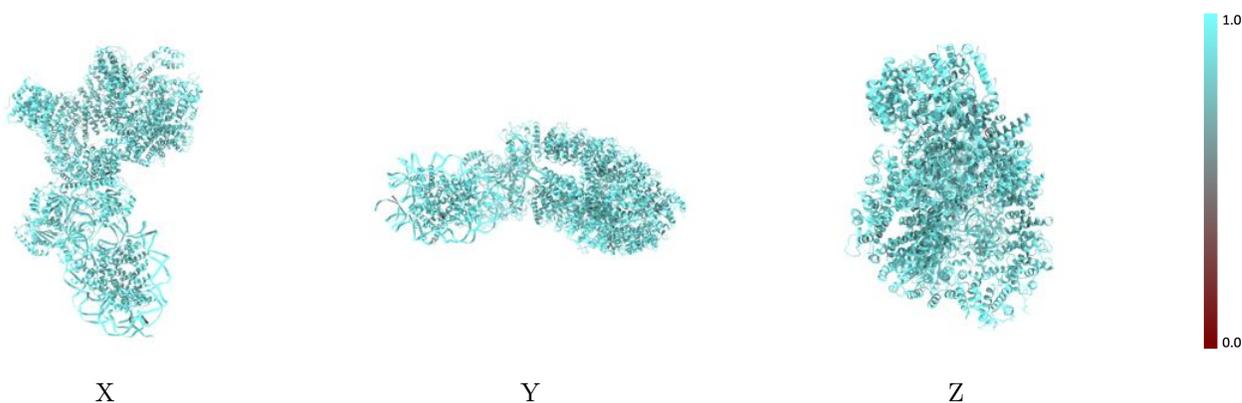
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.19).

9.4　Atom inclusion ⓘ
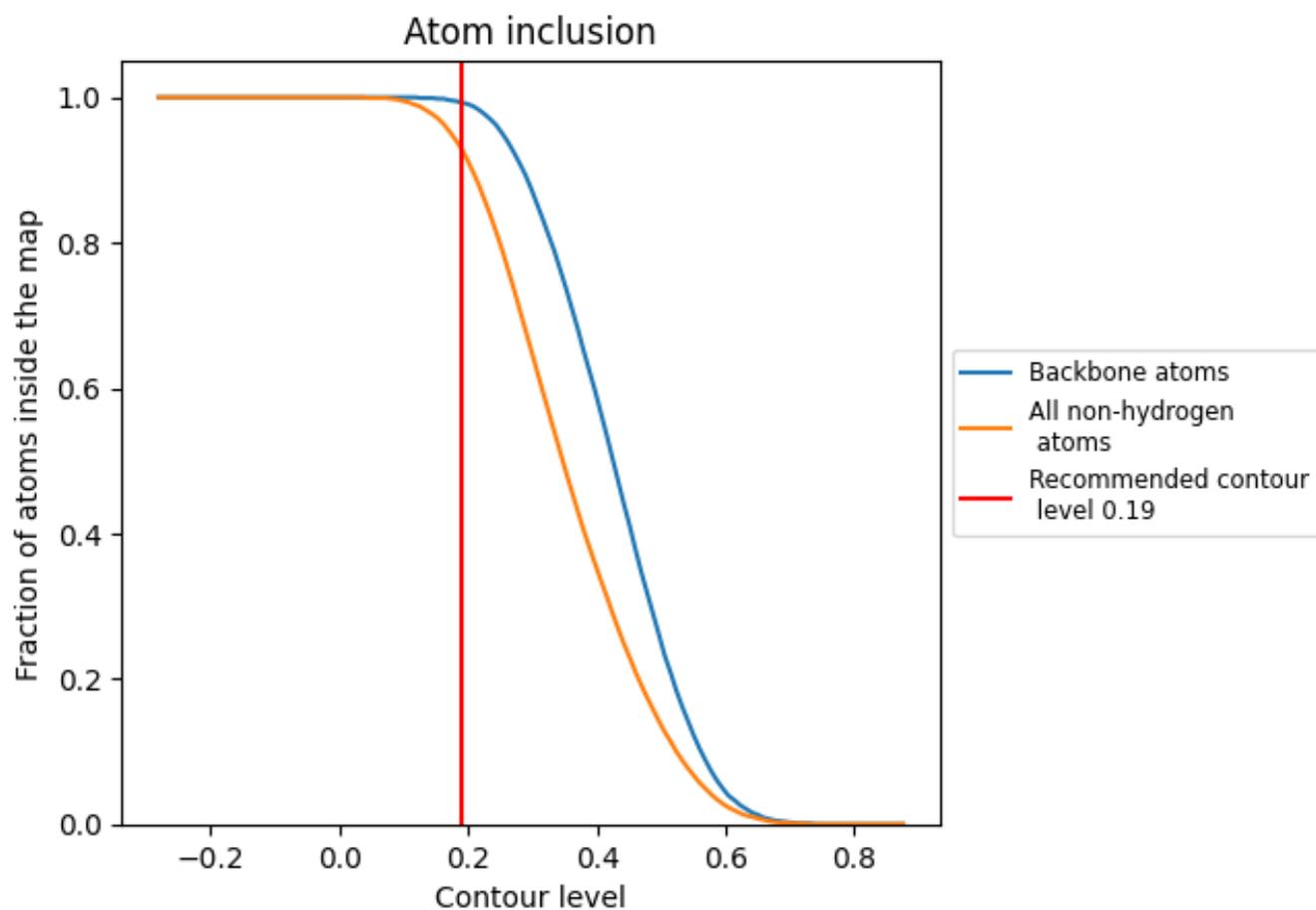
At the recommended contour level, 99% of all backbone atoms, 93% of all non-hydrogen atoms, are inside the map.

9.5　Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.19) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9290	0.2340
A	0.9520	0.1650
B	0.9440	0.1770
C	0.9430	0.2150
D	0.9520	0.2240
E	0.9650	0.1840
F	0.9620	0.1930
G	0.9440	0.1620
H	0.9090	0.1850
I	0.9730	0.2120
J	0.9620	0.2030
K	0.9360	0.2470
L	0.9460	0.2260
O	0.9140	0.2470

1.0

0.0
<0.0