Full wwPDB X-ray Structure Validation Report (i)

Sep 3, 2023 – 12:13 AM JST

PDB ID	:	8IE2
Title	:	Crystal structure of Lactiplantibacillus plantarum GlyRS
Authors	:	Yamashita, S.; Tomita, K.
Deposited on	:	2023-02-15
Resolution	:	3.60 Å(reported)

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

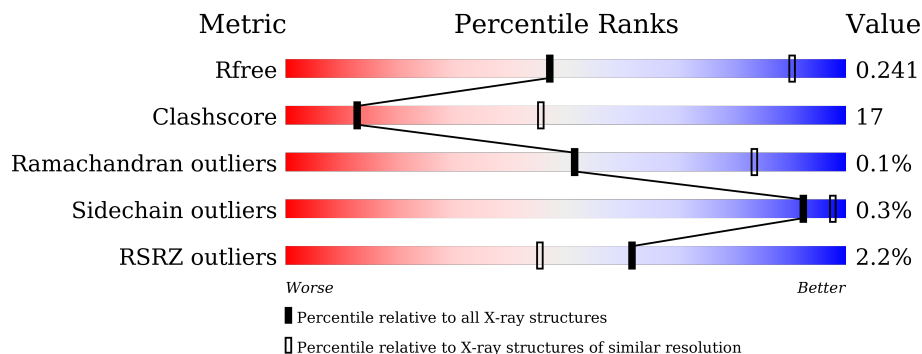|		
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.35
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.60 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.
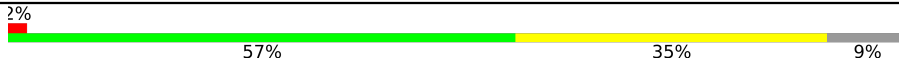
Metric	Percentile Ranks	Value
Rfree		0.241
Clashscore		17
Ramachandran outliers		0.1%
Sidechain outliers		0.3%
RSRZ outliers		2.2%

Worse   *Better*

▌ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1257 (3.70-3.50)
Clashscore	141614	1353 (3.70-3.50)
Ramachandran outliers	138981	1307 (3.70-3.50)
Sidechain outliers	138945	1307 (3.70-3.50)
RSRZ outliers	127900	1161 (3.70-3.50)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower 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 electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	301	64% 36%
1	B	301	% 65% 35%
1	C	301	58% 41%
1	D	301	% 65% 34%
2	E	694	4% 65% 34%
2	F	694	% 57% 34% 9%

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Mol	Chain	Length	Quality of chain
2	G	694	2% / 57% / 35% / 9%
2	H	694	3% / 60% / 40%

2 Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 30972 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 Glycine–tRNA ligase alpha subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	B	299	Total	C	N	O	S	0	0	0
			2430	1544	405	466	15			
1	A	299	Total	C	N	O	S	0	0	0
			2430	1544	405	466	15			
1	D	299	Total	C	N	O	S	0	0	0
			2430	1544	405	466	15			
1	C	299	Total	C	N	O	S	0	0	0
			2430	1544	405	466	15			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-1	GLY	-	expression tag	UNP Q88VS2
B	0	PRO	-	expression tag	UNP Q88VS2
A	-1	GLY	-	expression tag	UNP Q88VS2
A	0	PRO	-	expression tag	UNP Q88VS2
D	-1	GLY	-	expression tag	UNP Q88VS2
D	0	PRO	-	expression tag	UNP Q88VS2
C	-1	GLY	-	expression tag	UNP Q88VS2
C	0	PRO	-	expression tag	UNP Q88VS2

- Molecule 2 is a protein called Glycine–tRNA ligase beta subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	H	694	Total	C	N	O	S	0	0	0
			5533	3521	948	1044	20			
2	F	635	Total	C	N	O	S	0	0	0
			5093	3241	873	959	20			
2	E	694	Total	C	N	O	S	0	0	0
			5533	3521	948	1044	20			
2	G	635	Total	C	N	O	S	0	0	0
			5093	3241	873	959	20			

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 electron 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 dot above a residue indicates a poor fit to the electron density (RSRZ > 2). 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: Glycine–tRNA ligase alpha subunit
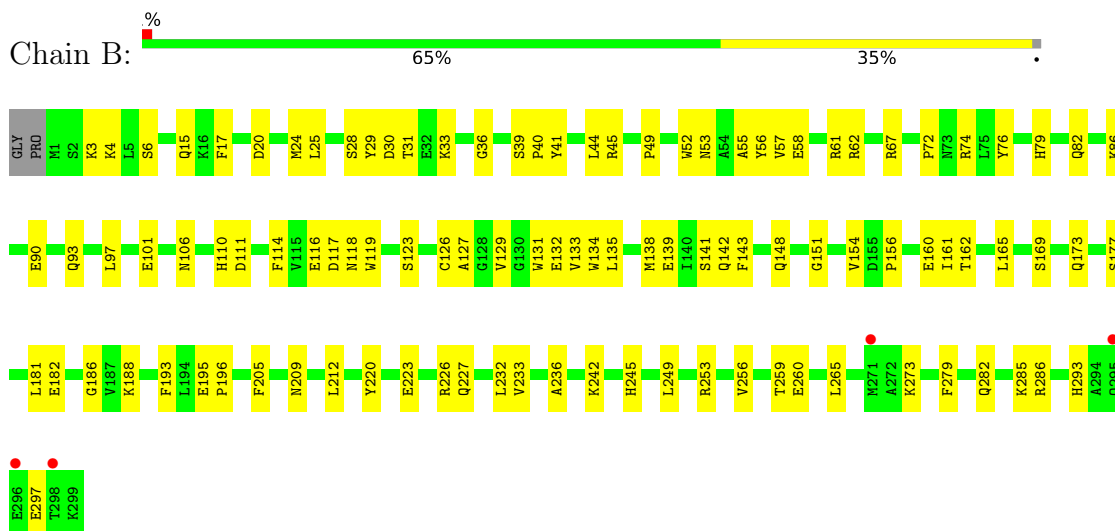
Chain B:

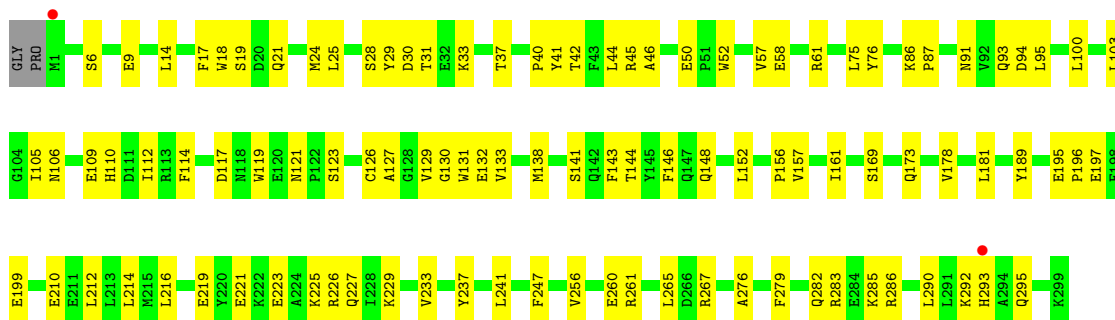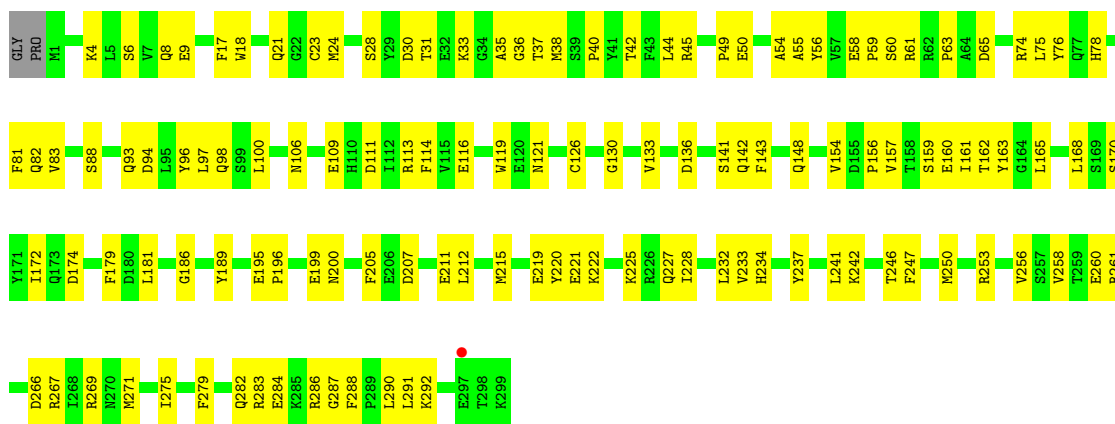• Molecule 1: Glycine–tRNA ligase alpha subunit
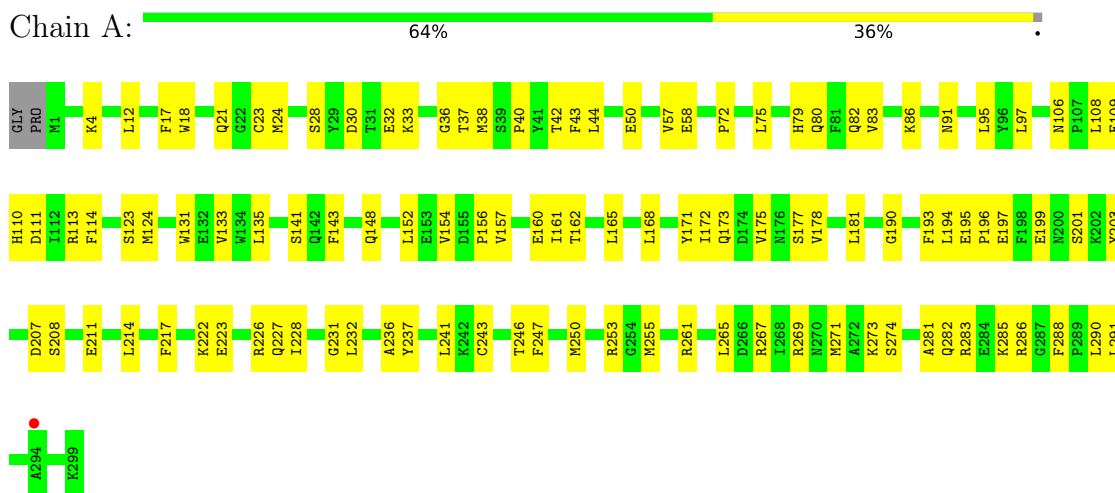
Chain A:

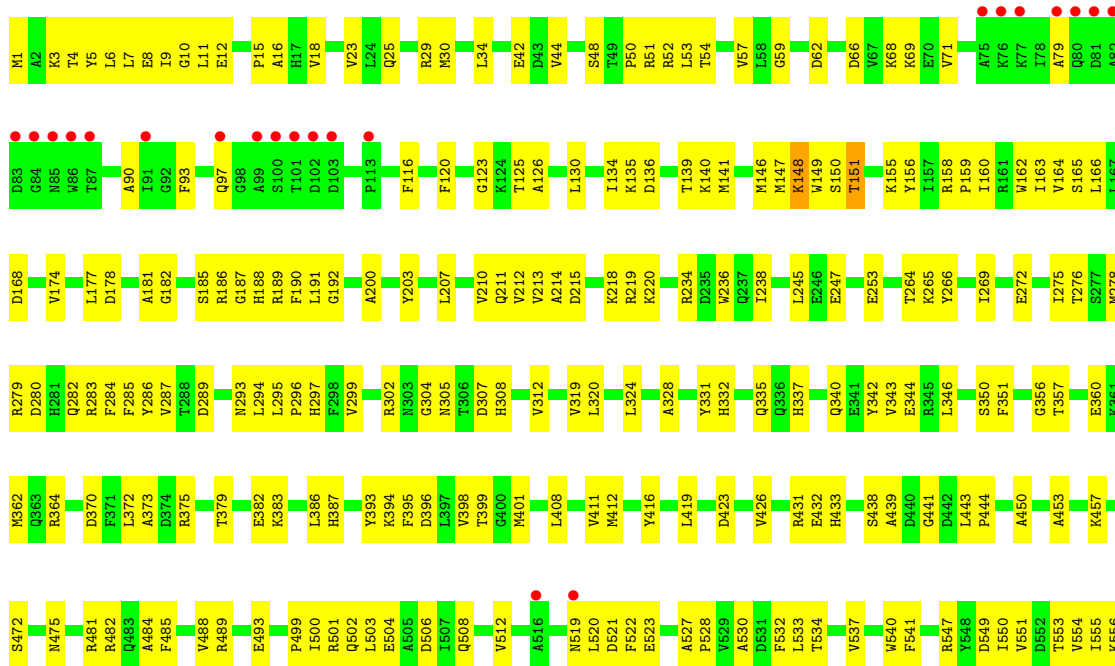• Molecule 1: Glycine–tRNA ligase alpha subunit

Chain D:

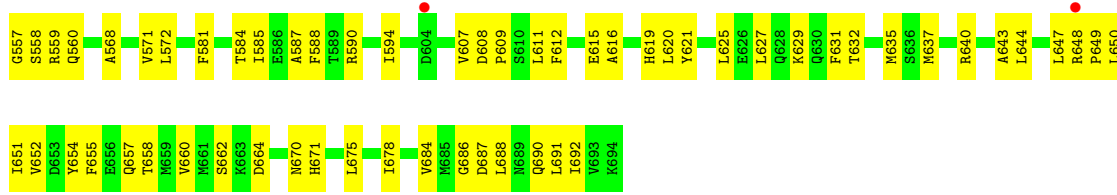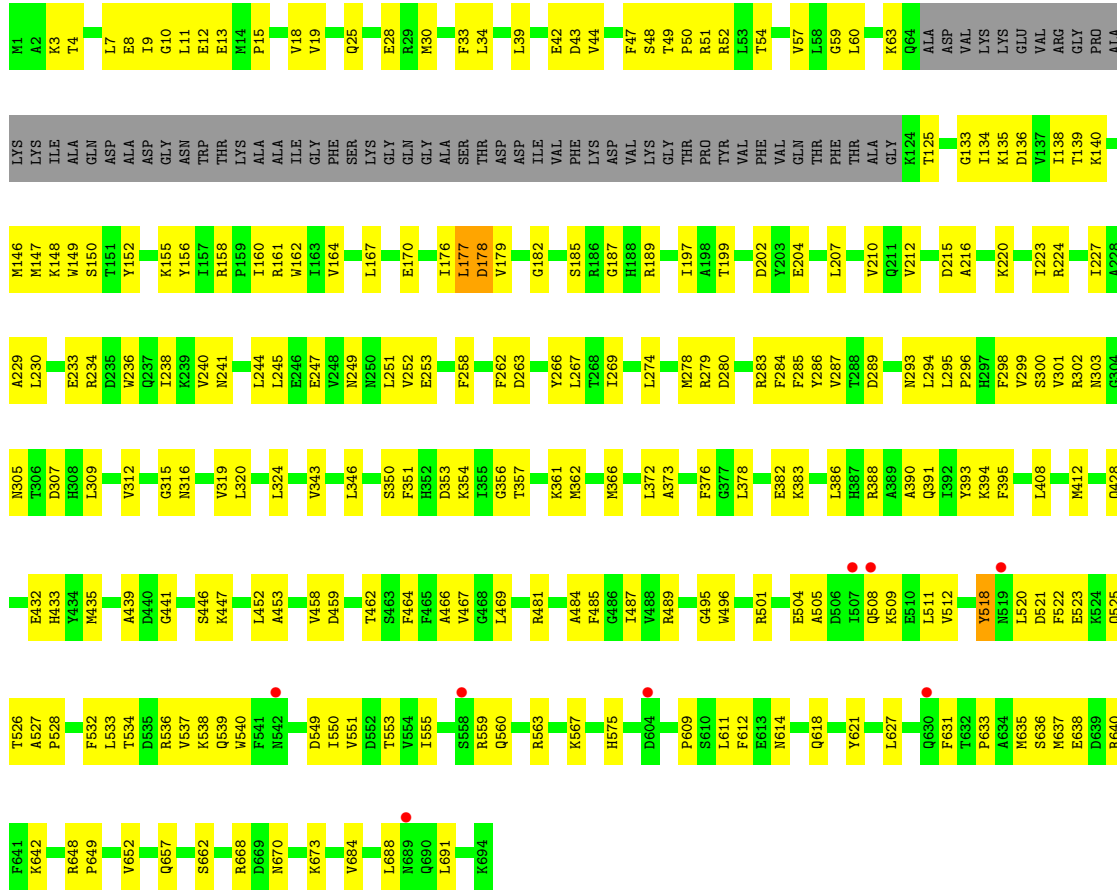• Molecule 1: Glycine–tRNA ligase alpha subunit

Chain C:

58%　　　　41%　　•

• Molecule 2: Glycine–tRNA ligase beta subunit

Chain H:

3%

60%　　　　40%
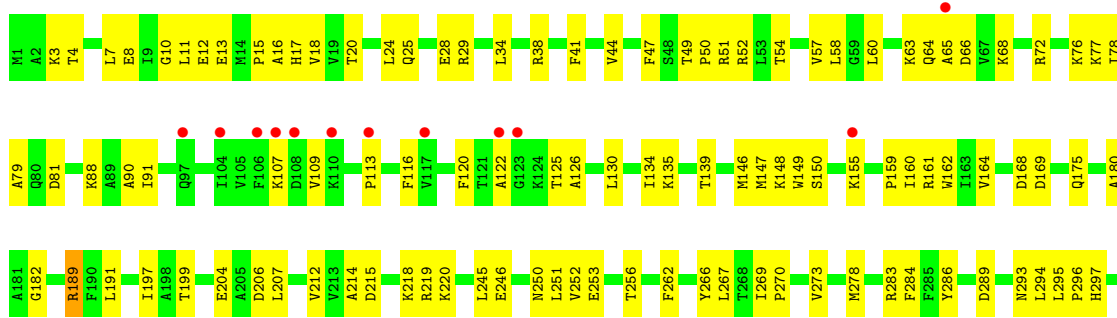
G557 S558 R559 Q560 A568 V571 L572 F581 T584 I585 E586 A587 F588 T589 R590 I594 D604 V607 D608 P609 S610 L611 F612 E615 A616 H619 L620 Y621 L625 E626 L627 Q628 K629 Q630 F631 T632 M635 S636 M637 R640 A643 L644 L647 R648 P649 L650

I651 V652 D653 Y654 F655 E656 Q657 T658 M659 V660 M661 S662 K663 D664 N670 H671 L675 I678 V684 M685 G686 D687 L688 N689 Q690 L691 I692 V693 K694

- Molecule 2: Glycine–tRNA ligase beta subunit

Chain F:

M1 A2 K3 T4 L7 E8 I9 G10 L11 E12 E13 M14 P15 V18 V19 Q25 E28 R29 M30 F33 L34 L39 E42 D43 V44 F47 S48 T49 P50 R51 R52 L53 T54 V57 L58 G59 L60 K63 Q64 ALA ASP VAL LYS GLU VAL ARG GLY PRO ALA

LYS LYS ILE ALA GLN ASP ALA ASP GLY ASN TRP THR LYS ALA ALA ILE GLY PHE SER LYS GLY GLN GLY ALA SER THR ASP ASP ILE VAL PHE LYS ASP VAL LYS GLY THR PRO TYR VAL PHE VAL GLN THR PHE THR ALA GLY K124 T125 G133 I134 K135 D136 V137 I138 T139 K140

M146 M147 K148 W149 S150 T151 Y152 K155 Y156 I157 R158 P159 I160 R161 W162 I163 V164 L167 E170 I176 L177 D178 V179 G182 S185 R186 G187 H188 R189 I197 A198 T199 D202 Y203 E204 L207 V210 Q211 V212 D215 A216 K220 I223 R224 I227 A228

A229 L230 E233 R234 D235 W236 Q237 I238 K239 V240 N241 L244 L245 E246 E247 V248 N249 N250 L251 V252 E253 F258 F262 D263 Y266 L267 T268 I269 L274 M278 R279 D280 R283 F284 F285 V286 V287 T288 D289 N293 L294 L295 P296 H297 F298 V299 V301 R302 N303 G304

N305 T306 D307 H308 L309 V312 G315 N316 V319 L320 L324 V343 L346 S350 F351 H352 D353 K354 I355 G356 T357 K361 M362 M366 L372 A373 F376 G377 L378 E382 K383 L386 H387 R388 A389 A390 Q391 I392 Y393 K394 F395 L408 M412 Q428

E432 H433 Y434 M435 A439 D440 Q441 S446 K447 L452 A453 V458 D459 T462 S463 F464 F465 A466 V467 G468 L469 R481 A484 F485 G486 I487 V488 R489 G495 W496 R501 E504 A505 D506 I507 Q508 K509 E510 L511 V512 Y518 N519 L520 D521 F522 E523 K524 Q525

T526 A527 P528 F532 L533 T534 D535 R536 V537 K538 Q539 W540 F541 N542 D549 I550 V551 D552 T553 V554 I555 S558 R559 Q560 R563 K567 H575 D604 P609 S610 L611 F612 E613 N614 Q618 Y621 L627 Q630 F631 T632 P633 A634 M635 S636 M637 E638 D639 R640

F641 K642 R648 P649 V652 Q657 S662 R668 D669 N670 K673 V684 L688 N689 Q690 L691 K694

- Molecule 2: Glycine–tRNA ligase beta subunit

Chain E:

M1 A2 K3 T4 L7 E8 I9 G10 L11 E12 E13 M14 P15 A16 H17 V18 V19 T20 L24 Q25 E28 R29 L34 R38 F41 V44 F47 S48 T49 P50 R51 R52 L53 T54 V57 L58 G59 L60 K63 Q64 A65 D66 V67 K68 R72 K76 K77 I78

A79 Q80 D81 K88 A89 A90 I91 Q97 I104 V105 F106 K107 D108 V109 K110 P113 F116 V117 F120 T121 A122 G123 K124 T125 A126 L130 I134 K135 T139 M146 M147 K148 W149 S150 K155 P159 I160 R161 W162 I163 V164 D168 D169 Q175 A180

A181 G182 R189 F190 L191 I197 A198 T199 E204 A205 D206 L207 V212 V213 A214 D215 K218 R219 K220 L245 E246 N250 L251 V252 E253 T256 F262 Y266 L267 T268 I269 P270 V273 M278 R283 F284 F285 Y286 D289 N293 L294 L295 P296 H297

• Molecule 2: Glycine–tRNA ligase beta subunit

Chain G:

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	155.14Å 163.17Å 155.28Å 90.00° 119.81° 90.00°	Depositor
Resolution (Å)	48.63 – 3.60 48.64 – 3.60	Depositor EDS
% Data completeness (in resolution range)	59.6 (48.63-3.60) 59.6 (48.64-3.60)	Depositor EDS
R_{merge}	0.26	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.78 (at 3.57Å)	Xtriage
Refinement program	PHENIX 1.18.2	Depositor
R, R_{free}	0.215 , 0.244 0.216 , 0.241	Depositor DCC
R_{free} test set	2347 reflections (5.06%)	wwPDB-VP
Wilson B-factor (Å^2)	61.4	Xtriage
Anisotropy	0.304	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.31 , 15.7	EDS
L-test for twinning[2]	$< |L| > = 0.41, < L^2 > = 0.24$	Xtriage
Estimated twinning fraction	0.054 for -h-l,k,h 0.054 for l,k,-h-l 0.057 for h,-k,-h-l 0.055 for -h-l,-k,l 0.358 for l,-k,h	Xtriage
F_o,F_c correlation	0.86	EDS
Total number of atoms	30972	wwPDB-VP
Average B, all atoms (Å^2)	71.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.87% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
1	A	0.28	0/2490	0.49	0/3365
1	B	0.29	0/2490	0.52	0/3365
1	C	0.31	0/2490	0.50	0/3365
1	D	0.29	0/2490	0.50	0/3365
2	E	0.28	0/5637	0.51	0/7624
2	F	0.28	0/5187	0.54	0/7015
2	G	0.28	0/5187	0.51	0/7015
2	H	0.29	0/5637	0.53	0/7624
All	All	0.29	0/31608	0.52	0/42738

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	A	2430	0	2333	80	0
1	B	2430	0	2333	76	0
1	C	2430	0	2333	96	0
1	D	2430	0	2333	77	0
2	E	5533	0	5540	180	0
2	F	5093	0	5100	178	0
2	G	5093	0	5100	179	0
2	H	5533	0	5540	214	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	30972	0	30612	1019	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 17.

All (1019) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:508:GLN:HG3	2:E:523:GLU:HB3	1.51	0.93
2:G:508:GLN:HG3	2:G:523:GLU:HB3	1.58	0.85
2:H:285:PHE:HB2	2:H:299:VAL:HB	1.59	0.85
1:C:111:ASP:HB3	1:C:136:ASP:HA	1.61	0.83
2:G:38:ARG:HB2	2:G:64:GLN:HG3	1.61	0.81
2:H:534:THR:HG23	2:H:555:ILE:HD12	1.63	0.80
2:H:443:LEU:HD12	2:H:493:GLU:HG3	1.64	0.80
1:C:157:VAL:H	2:G:150:SER:HA	1.47	0.79
2:G:4:THR:HA	2:G:57:VAL:O	1.81	0.79
2:H:302:ARG:HD2	2:H:312:VAL:HG21	1.65	0.79
2:F:279:ARG:NE	2:F:280:ASP:OD1	2.17	0.78
1:D:123:SER:HB3	1:D:265:LEU:HD22	1.65	0.78
2:G:350:SER:HA	2:G:357:THR:HA	1.65	0.77
2:H:620:LEU:HD13	2:H:651:ILE:HG12	1.67	0.77
2:F:9:ILE:HD11	2:F:138:ILE:HG12	1.67	0.76
1:B:49:PRO:HA	1:B:156:PRO:HD3	1.68	0.76
1:B:129:VAL:HG21	2:F:147:MET:HG2	1.67	0.76
2:H:441:GLY:H	2:H:489:ARG:HH12	1.35	0.75
2:G:47:PHE:HB3	2:G:214:ALA:HB1	1.69	0.74
1:B:40:PRO:HB3	1:B:44:LEU:HD12	1.68	0.74
2:H:557:GLY:HA2	2:H:686:GLY:HA2	1.69	0.74
2:F:176:ILE:HG22	2:F:177:LEU:H	1.52	0.74
2:H:342:TYR:HD1	2:H:398:VAL:HG23	1.53	0.74
2:F:481:ARG:HG2	2:F:532:PHE:HZ	1.52	0.74
1:C:81:PHE:HB2	1:C:165:LEU:HD21	1.70	0.74
2:E:289:ASP:OD1	2:E:293:ASN:N	2.21	0.73
2:E:212:VAL:HG13	2:E:253:GLU:HB3	1.70	0.73
2:H:66:ASP:HB3	2:H:120:PHE:HE2	1.53	0.73
1:B:133:VAL:HB	1:B:141:SER:HB2	1.69	0.73
2:G:37:ALA:HB2	2:G:129:VAL:HG11	1.70	0.73
1:C:40:PRO:HB3	1:C:44:LEU:HD12	1.71	0.72
1:B:256:VAL:HG13	1:B:260:GLU:HG3	1.71	0.72
2:F:485:PHE:HE1	2:F:540:TRP:HD1	1.37	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:373:ALA:HB1	2:F:383:LYS:HG2	1.70	0.72
1:B:282:GLN:NE2	1:A:199:GLU:OE1	2.21	0.72
2:H:520:LEU:H	2:H:522:PHE:HD2	1.37	0.72
2:E:50:PRO:HD2	2:E:253:GLU:HG2	1.72	0.72
2:F:350:SER:HA	2:F:357:THR:HA	1.72	0.72
2:H:549:ASP:HB2	2:H:691:LEU:HA	1.72	0.71
2:F:575:HIS:NE2	2:F:638:GLU:OE1	2.24	0.71
2:G:168:ASP:O	2:G:199:THR:HA	1.91	0.70
2:G:51:ARG:NH2	2:G:187:GLY:O	2.24	0.70
1:A:50:GLU:HB3	1:A:290:LEU:HD12	1.72	0.70
1:C:170:SER:HA	1:C:181:LEU:HD21	1.72	0.70
1:D:121:ASN:HB3	1:D:126:CYS:HB2	1.74	0.70
2:E:350:SER:HA	2:E:357:THR:HA	1.72	0.70
2:H:48:SER:O	2:H:219:ARG:NH2	2.22	0.70
2:H:52:ARG:NH2	2:H:253:GLU:OE1	2.24	0.70
2:H:632:THR:O	2:H:640:ARG:NH2	2.24	0.69
2:F:302:ARG:NH2	2:F:305:ASN:O	2.24	0.69
2:E:295:LEU:HB3	2:E:297:HIS:HD2	1.58	0.69
2:E:38:ARG:HB2	2:E:64:GLN:HG3	1.74	0.69
2:G:266:TYR:O	2:G:269:ILE:HG12	1.91	0.69
2:E:149:TRP:HH2	2:E:160:ILE:O	1.76	0.69
2:F:441:GLY:O	2:F:489:ARG:NH2	2.26	0.68
2:G:167:LEU:HB3	2:G:170:GLU:HB3	1.76	0.68
2:G:286:TYR:HB2	2:G:294:LEU:HD11	1.75	0.68
1:D:226:ARG:NH2	1:C:207:ASP:O	2.23	0.68
1:B:233:VAL:HG11	1:B:279:PHE:HB2	1.74	0.68
2:H:632:THR:HG21	2:E:88:LYS:HB2	1.76	0.68
2:E:512:VAL:HG22	2:E:519:ASN:HD21	1.59	0.67
1:D:30:ASP:HA	1:C:30:ASP:HA	1.75	0.67
2:E:302:ARG:NH2	2:E:305:ASN:O	2.26	0.67
2:F:63:LYS:HE2	2:F:125:THR:HG22	1.75	0.67
2:H:616:ALA:HB3	2:H:654:TYR:CZ	2.29	0.67
1:B:106:ASN:O	1:B:110:HIS:ND1	2.28	0.67
2:F:521:ASP:OD1	2:G:599:LYS:NZ	2.28	0.67
2:E:433:HIS:HA	2:E:453:ALA:HB2	1.76	0.67
2:E:76:LYS:HB3	2:E:113:PRO:HG2	1.77	0.67
2:F:51:ARG:HD2	2:F:189:ARG:HH11	1.58	0.66
2:F:534:THR:HG23	2:F:555:ILE:HD12	1.77	0.66
2:E:47:PHE:HB3	2:E:214:ALA:HB1	1.77	0.66
2:G:216:ALA:HA	2:G:219:ARG:HE	1.60	0.66
2:F:481:ARG:HG2	2:F:532:PHE:CZ	2.31	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:43:PHE:HE2	1:A:124:MET:HB3	1.60	0.66
1:C:109:GLU:HB2	2:G:308:HIS:HB2	1.78	0.66
2:H:439:ALA:O	2:H:489:ARG:NH1	2.29	0.66
2:H:652:VAL:HA	2:H:655:PHE:HB3	1.77	0.66
2:F:212:VAL:HG13	2:F:253:GLU:HB3	1.76	0.66
2:F:484:ALA:HA	2:F:487:ILE:HD12	1.76	0.66
1:D:76:TYR:N	1:D:197:GLU:OE1	2.27	0.66
2:E:520:LEU:HD12	2:E:521:ASP:H	1.60	0.65
2:G:337:HIS:ND1	2:G:341:GLU:OE1	2.29	0.65
2:H:587:ALA:HB1	2:H:652:VAL:HG21	1.79	0.65
2:G:12:GLU:OE1	2:G:161:ARG:NH2	2.30	0.65
2:G:346:LEU:HD11	2:G:395:PHE:HA	1.78	0.65
2:F:146:MET:HB3	2:F:155:LYS:HB3	1.79	0.65
2:G:3:LYS:O	2:G:60:LEU:N	2.29	0.65
2:E:346:LEU:HD11	2:E:395:PHE:HA	1.79	0.64
2:E:549:ASP:HB2	2:E:690:GLN:O	1.97	0.64
2:H:608:ASP:O	2:H:670:ASN:ND2	2.28	0.64
2:G:48:SER:O	2:G:219:ARG:NH2	2.30	0.64
2:H:433:HIS:HA	2:H:453:ALA:HB2	1.78	0.64
2:F:136:ASP:HB3	2:F:140:LYS:HE3	1.78	0.64
2:G:492:ARG:HB2	2:G:566:PHE:CZ	2.32	0.64
2:H:375:ARG:NH2	2:H:506:ASP:OD2	2.31	0.64
2:F:149:TRP:HD1	2:F:150:SER:H	1.42	0.64
2:F:354:LYS:HD2	2:F:467:VAL:HB	1.79	0.64
1:A:37:THR:HA	1:A:42:THR:HG21	1.79	0.64
2:G:677:THR:O	2:G:681:MET:HG3	1.98	0.64
1:C:228:ILE:HD11	1:C:275:ILE:HG13	1.80	0.64
2:H:500:ILE:HG12	2:H:560:GLN:O	1.97	0.64
2:E:207:LEU:HD12	2:E:214:ALA:HB2	1.78	0.64
1:A:80:GLN:NE2	1:A:82:GLN:OE1	2.30	0.63
1:D:41:TYR:O	1:D:52:TRP:NE1	2.31	0.63
2:G:7:LEU:O	2:G:54:THR:HA	1.97	0.63
2:F:343:VAL:HA	2:F:346:LEU:HD12	1.80	0.63
2:G:156:TYR:HD2	2:G:158:ARG:H	1.46	0.63
2:H:508:GLN:HG3	2:H:523:GLU:HB3	1.80	0.63
2:G:648:ARG:HG3	2:G:649:PRO:HD3	1.80	0.63
1:B:223:GLU:OE1	1:B:227:GLN:NE2	2.31	0.63
2:H:44:VAL:HG22	2:H:57:VAL:HG22	1.81	0.63
2:H:551:VAL:O	2:H:555:ILE:HG12	1.99	0.63
2:H:559:ARG:HH22	2:H:640:ARG:HH22	1.44	0.63
2:H:278:MET:O	2:H:283:ARG:N	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:289:ASP:OD1	2:H:293:ASN:N	2.32	0.63
2:G:393:TYR:HA	2:G:430:ILE:HG12	1.80	0.63
2:H:264:THR:HG22	2:H:296:PRO:HG3	1.81	0.62
2:H:635:MET:HB3	2:H:640:ARG:HE	1.63	0.62
2:F:267:LEU:HD11	2:F:296:PRO:HD3	1.81	0.62
2:F:611:LEU:HB2	2:F:670:ASN:HD22	1.64	0.62
2:G:373:ALA:HA	2:G:378:LEU:HD13	1.81	0.62
2:F:39:LEU:HD13	2:F:60:LEU:HD11	1.80	0.62
2:H:79:ALA:HB1	2:H:90:ALA:HB2	1.81	0.62
2:F:230:LEU:HD22	2:F:234:ARG:HH12	1.65	0.62
2:F:504:GLU:HG3	2:F:526:THR:HB	1.81	0.62
2:G:271:ASP:HA	2:G:274:LEU:HD12	1.80	0.62
1:B:111:ASP:HB2	2:F:302:ARG:HG3	1.81	0.62
2:H:568:ALA:HA	2:H:637:MET:HG2	1.80	0.62
2:E:219:ARG:NH1	2:E:252:VAL:O	2.31	0.62
2:E:495:GLY:O	2:E:563:ARG:NH1	2.32	0.62
2:H:351:PHE:N	2:H:356:GLY:O	2.32	0.62
2:G:146:MET:HB3	2:G:155:LYS:HB3	1.81	0.62
2:H:520:LEU:HD12	2:H:521:ASP:H	1.63	0.62
2:F:504:GLU:HB3	2:F:523:GLU:HB2	1.82	0.62
2:H:15:PRO:HG2	2:H:18:VAL:HB	1.82	0.62
2:H:423:ASP:HB3	2:H:426:VAL:HG23	1.82	0.61
2:H:212:VAL:HG13	2:H:253:GLU:HB3	1.81	0.61
2:E:4:THR:HA	2:E:57:VAL:O	2.00	0.61
2:H:51:ARG:NH2	2:H:187:GLY:O	2.33	0.61
2:F:177:LEU:O	2:F:179:VAL:N	2.34	0.61
1:B:226:ARG:NH2	1:A:207:ASP:O	2.33	0.61
2:F:162:TRP:HA	2:F:179:VAL:HG11	1.82	0.61
1:C:50:GLU:HB3	1:C:290:LEU:HB2	1.81	0.61
2:H:4:THR:HA	2:H:57:VAL:O	2.01	0.61
2:F:266:TYR:O	2:F:269:ILE:HG12	2.00	0.61
1:B:61:ARG:HD3	1:B:76:TYR:HE1	1.66	0.61
1:A:157:VAL:H	2:E:150:SER:HA	1.66	0.60
2:E:484:ALA:HA	2:E:487:ILE:HD12	1.83	0.60
1:A:106:ASN:HD21	1:A:108:LEU:HD12	1.66	0.60
1:A:247:PHE:HZ	1:A:261:ARG:HG3	1.66	0.60
2:E:130:LEU:O	2:E:134:ILE:HG12	2.02	0.60
1:A:133:VAL:HB	1:A:141:SER:HB2	1.83	0.60
2:E:561:ASP:HB3	2:E:564:GLU:HB2	1.82	0.60
2:G:319:VAL:HG12	2:G:323:ARG:HE	1.67	0.60
1:A:40:PRO:HB3	1:A:44:LEU:HD12	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:611:LEU:HB2	2:H:670:ASN:HD22	1.67	0.60
2:H:631:PHE:HZ	2:H:684:VAL:HG21	1.66	0.60
1:C:42:THR:HG1	1:C:56:TYR:HH	1.46	0.60
2:F:346:LEU:HD11	2:F:395:PHE:HA	1.84	0.60
2:F:447:LYS:HE2	2:F:496:TRP:HZ2	1.67	0.60
2:E:512:VAL:HG22	2:E:519:ASN:ND2	2.17	0.60
2:G:64:GLN:HB3	2:G:124:LYS:N	2.17	0.60
2:G:3:LYS:N	2:G:60:LEU:O	2.33	0.59
1:D:75:LEU:HD11	1:D:178:VAL:HG21	1.83	0.59
2:H:346:LEU:HD11	2:H:395:PHE:HA	1.84	0.59
2:E:441:GLY:O	2:E:489:ARG:NH2	2.36	0.59
2:F:238:ILE:HD11	2:F:299:VAL:HG21	1.83	0.59
2:E:687:ASP:OD2	2:E:690:GLN:HG2	2.01	0.59
2:H:328:ALA:O	2:H:332:HIS:ND1	2.22	0.59
2:E:422:GLU:HG3	2:E:423:ASP:H	1.67	0.59
2:E:520:LEU:HD12	2:E:521:ASP:N	2.18	0.59
2:G:568:ALA:HB2	2:G:637:MET:HG2	1.85	0.59
1:C:266:ASP:OD1	1:C:269:ARG:NH2	2.25	0.59
1:B:90:GLU:HG3	2:F:161:ARG:NH1	2.18	0.59
2:H:687:ASP:OD2	2:H:690:GLN:NE2	2.32	0.59
2:E:149:TRP:CZ2	2:E:159:PRO:HB3	2.38	0.59
2:E:559:ARG:HH22	2:E:633:PRO:HA	1.68	0.59
2:E:573:ASN:O	2:E:576:GLN:NE2	2.36	0.59
1:B:293:HIS:O	1:B:297:GLU:HG3	2.03	0.58
1:B:142:GLN:HB3	1:B:162:THR:HB	1.84	0.58
1:D:156:PRO:HG3	2:H:151:THR:HG23	1.85	0.58
2:H:164:VAL:HA	2:H:182:GLY:O	2.03	0.58
1:B:173:GLN:OE1	1:B:182:GLU:N	2.36	0.58
1:D:112:ILE:HB	2:H:190:PHE:HZ	1.69	0.58
2:H:12:GLU:HB2	2:H:158:ARG:HB3	1.84	0.58
2:G:375:ARG:NH2	2:G:506:ASP:OD2	2.36	0.58
2:F:520:LEU:HD12	2:F:521:ASP:H	1.69	0.58
2:F:7:LEU:HD22	2:F:134:ILE:HD12	1.86	0.58
2:E:333:GLU:HG3	2:E:337:HIS:HE1	1.68	0.58
2:G:351:PHE:N	2:G:356:GLY:O	2.36	0.58
2:F:12:GLU:OE1	2:F:161:ARG:NH2	2.35	0.58
1:A:227:GLN:HB2	1:A:236:ALA:HB2	1.85	0.58
2:H:130:LEU:O	2:H:134:ILE:HG12	2.04	0.58
2:F:670:ASN:HA	2:F:673:LYS:HD2	1.85	0.58
1:B:116:GLU:OE2	1:B:118:ASN:ND2	2.36	0.58
1:D:25:LEU:HB2	1:C:8:GLN:HG3	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:29:TYR:OH	1:C:61:ARG:NH2	2.37	0.58
2:H:213:VAL:O	2:H:219:ARG:NH1	2.37	0.58
2:H:520:LEU:HD12	2:H:521:ASP:N	2.19	0.57
2:G:342:TYR:HD1	2:G:398:VAL:HG23	1.68	0.57
2:G:433:HIS:HA	2:G:453:ALA:HB2	1.86	0.57
2:G:396:ASP:OD2	2:G:410:GLY:N	2.35	0.57
2:E:24:LEU:O	2:E:28:GLU:HG3	2.03	0.57
1:A:211:GLU:HA	1:A:214:LEU:HD12	1.86	0.57
2:H:635:MET:SD	2:H:640:ARG:HG2	2.45	0.57
2:E:13:GLU:HG2	2:E:51:ARG:HG3	1.85	0.57
2:H:6:LEU:O	2:H:165:SER:HA	2.05	0.57
2:H:62:ASP:O	2:H:126:ALA:N	2.38	0.57
2:H:540:TRP:HE3	2:H:541:PHE:HD1	1.51	0.57
1:C:106:ASN:HB3	1:C:109:GLU:HG2	1.87	0.57
2:F:47:PHE:HB2	2:F:54:THR:HB	1.86	0.57
1:B:151:GLY:HA3	1:B:273:LYS:HE2	1.87	0.57
2:F:495:GLY:O	2:F:563:ARG:NH1	2.38	0.57
2:G:511:LEU:HD13	2:G:518:TYR:HB2	1.87	0.57
2:G:523:GLU:HA	2:G:526:THR:OG1	2.04	0.57
2:H:342:TYR:CE1	2:H:399:THR:HG22	2.40	0.57
2:E:44:VAL:HG22	2:E:57:VAL:HG22	1.87	0.57
2:G:33:PHE:CE1	2:G:129:VAL:HG12	2.40	0.57
2:E:369:SER:HB3	2:E:386:LEU:HD11	1.87	0.56
2:E:164:VAL:HA	2:E:182:GLY:O	2.05	0.56
2:E:394:LYS:HD2	2:E:397:LEU:HD11	1.87	0.56
1:A:32:GLU:OE2	1:A:32:GLU:N	2.38	0.56
2:F:320:LEU:O	2:F:324:LEU:HG	2.05	0.56
2:G:492:ARG:HB2	2:G:566:PHE:CE2	2.40	0.56
1:D:61:ARG:NH2	1:C:30:ASP:OD1	2.38	0.56
2:E:476:ASP:HB2	2:E:481:ARG:HH21	1.68	0.56
2:G:635:MET:H	2:G:640:ARG:HH21	1.51	0.56
1:B:30:ASP:HA	1:A:30:ASP:HA	1.87	0.56
1:A:75:LEU:HD11	1:A:178:VAL:HG21	1.87	0.56
2:G:244:LEU:HD11	2:G:283:ARG:HB3	1.87	0.56
1:C:205:PHE:O	1:C:253:ARG:NH1	2.37	0.56
2:H:472:SER:OG	2:H:475:ASN:HB3	2.06	0.56
2:F:278:MET:O	2:F:283:ARG:N	2.39	0.56
2:E:267:LEU:HD11	2:E:296:PRO:HD3	1.87	0.56
1:D:223:GLU:O	1:D:227:GLN:HG2	2.05	0.56
1:D:221:GLU:OE2	1:D:267:ARG:NH2	2.39	0.56
2:E:77:LYS:HG3	2:E:78:ILE:HG13	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:223:GLU:O	1:B:227:GLN:HG2	2.06	0.56
1:C:17:PHE:O	1:C:21:GLN:HG2	2.06	0.56
2:F:147:MET:O	2:F:155:LYS:HA	2.06	0.56
2:E:508:GLN:O	2:E:512:VAL:HG23	2.06	0.56
2:G:485:PHE:CZ	2:G:540:TRP:HD1	2.24	0.56
2:E:3:LYS:O	2:E:60:LEU:N	2.33	0.55
1:A:36:GLY:HA2	1:A:58:GLU:HG2	1.87	0.55
1:D:129:VAL:HG21	2:H:147:MET:HB3	1.88	0.55
2:H:69:LYS:HE2	2:H:71:VAL:HG22	1.88	0.55
2:F:204:GLU:OE1	2:F:215:ASP:HB2	2.05	0.55
2:F:549:ASP:HB2	2:F:691:LEU:HA	1.88	0.55
1:B:259:THR:OG1	2:F:353:ASP:OD1	2.22	0.55
1:A:197:GLU:OE1	1:A:201:SER:OG	2.24	0.55
1:D:46:ALA:HA	1:D:86:LYS:HD2	1.88	0.55
1:C:130:GLY:CA	2:G:158:ARG:HH22	2.19	0.55
2:F:408:LEU:O	2:F:412:MET:HG2	2.05	0.55
1:A:72:PRO:HB2	1:A:177:SER:HA	1.88	0.55
2:H:484:ALA:HB1	2:H:533:LEU:HD23	1.88	0.55
2:F:520:LEU:HD12	2:F:521:ASP:N	2.22	0.55
2:E:72:ARG:NH1	2:E:109:VAL:HG11	2.21	0.55
2:G:352:HIS:HB3	2:G:355:ILE:HB	1.88	0.55
1:B:36:GLY:HA2	1:B:58:GLU:HG2	1.87	0.55
2:F:662:SER:HB3	2:F:668:ARG:HB2	1.87	0.55
2:E:34:LEU:HD13	2:E:41:PHE:CE1	2.42	0.55
2:E:499:PRO:HA	2:E:561:ASP:HA	1.87	0.55
2:G:578:ASP:O	2:G:581:PHE:HB3	2.07	0.55
2:F:373:ALA:HB2	2:F:386:LEU:HD23	1.89	0.55
2:E:191:LEU:HD21	2:E:305:ASN:ND2	2.22	0.55
2:E:266:TYR:O	2:E:269:ILE:HG12	2.07	0.55
2:E:523:GLU:HA	2:E:526:THR:OG1	2.06	0.55
2:G:660:VAL:O	2:G:668:ARG:HG3	2.07	0.55
1:B:97:LEU:O	1:B:101:GLU:HG3	2.06	0.55
2:F:433:HIS:HB3	2:F:452:LEU:HD23	1.89	0.55
2:H:485:PHE:CE1	2:H:540:TRP:HD1	2.25	0.54
2:E:41:PHE:CE2	2:E:44:VAL:HG23	2.42	0.54
2:G:362:MET:SD	2:G:394:LYS:HB2	2.46	0.54
1:C:97:LEU:HD21	2:G:189:ARG:HE	1.71	0.54
2:E:362:MET:SD	2:E:394:LYS:HB2	2.47	0.54
2:E:374:ASP:OD1	2:E:383:LYS:NZ	2.31	0.54
1:C:93:GLN:HB3	2:G:189:ARG:NH2	2.23	0.54
2:F:508:GLN:O	2:F:512:VAL:HG23	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:471:PRO:HB3	2:E:476:ASP:HA	1.89	0.54
1:B:114:PHE:HB3	1:B:131:TRP:CD1	2.43	0.54
2:H:501:ARG:HG3	2:H:502:GLN:HG3	1.89	0.54
2:E:8:GLU:HG2	2:E:164:VAL:HB	1.89	0.54
2:E:278:MET:HB3	2:E:284:PHE:HB2	1.89	0.54
1:A:227:GLN:HB3	1:A:232:LEU:HB2	1.90	0.54
2:H:162:TRP:CH2	2:H:186:ARG:HB2	2.43	0.54
2:E:68:LYS:HG2	2:E:120:PHE:HD2	1.72	0.54
2:G:16:ALA:HB1	2:G:250:ASN:HB2	1.90	0.54
2:G:270:PRO:HD3	2:G:331:TYR:CZ	2.43	0.54
1:A:156:PRO:HA	2:E:150:SER:O	2.08	0.54
2:F:366:MET:HA	2:F:390:ALA:HB1	1.90	0.54
2:F:508:GLN:HG3	2:F:523:GLU:HB3	1.90	0.54
2:G:130:LEU:HD13	2:G:172:VAL:HG21	1.90	0.54
2:H:23:VAL:HB	2:H:53:LEU:HD22	1.90	0.54
2:H:284:PHE:HD2	2:H:320:LEU:HD22	1.72	0.54
2:E:393:TYR:HA	2:E:430:ILE:HG12	1.90	0.54
2:E:511:LEU:HD13	2:E:518:TYR:HB2	1.89	0.54
2:H:266:TYR:O	2:H:269:ILE:HG12	2.07	0.54
2:F:504:GLU:OE2	2:F:527:ALA:HA	2.07	0.54
2:E:549:ASP:OD1	2:E:550:ILE:N	2.41	0.54
1:B:181:LEU:O	1:B:188:LYS:HA	2.08	0.54
1:C:142:GLN:HB3	1:C:162:THR:HB	1.90	0.54
2:H:581:PHE:O	2:H:584:THR:HG22	2.08	0.54
2:G:312:VAL:O	2:G:316:ASN:ND2	2.37	0.54
1:D:282:GLN:O	1:D:286:ARG:HG3	2.08	0.53
2:H:501:ARG:NH2	2:H:558:SER:O	2.41	0.53
2:F:149:TRP:CD1	2:F:150:SER:N	2.67	0.53
1:B:6:SER:HA	1:B:173:GLN:NE2	2.23	0.53
1:B:67:ARG:HG3	1:B:74:ARG:HB3	1.91	0.53
2:F:262:PHE:CE1	2:F:296:PRO:HA	2.44	0.53
1:D:199:GLU:HA	1:C:232:LEU:HD22	1.90	0.53
1:C:133:VAL:HB	1:C:141:SER:HB2	1.91	0.53
2:F:10:GLY:HA3	2:F:162:TRP:CE2	2.43	0.53
1:D:138:MET:HB2	2:H:319:VAL:HG22	1.90	0.53
2:F:148:LYS:HG3	2:F:155:LYS:HE2	1.89	0.53
1:C:65:ASP:HA	1:C:74:ARG:HH21	1.74	0.53
2:H:340:GLN:O	2:H:344:GLU:HG2	2.09	0.53
2:H:662:SER:OG	2:H:664:ASP:O	2.26	0.53
1:C:35:ALA:N	1:C:38:MET:SD	2.82	0.53
2:H:644:LEU:O	2:H:648:ARG:HG2	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:635:MET:HB2	2:E:640:ARG:HD2	1.90	0.53
2:H:30:MET:O	2:H:34:LEU:HG	2.09	0.53
2:F:388:ARG:O	2:F:391:GLN:HB2	2.09	0.53
2:G:508:GLN:NE2	2:G:519:ASN:OD1	2.42	0.53
1:A:82:GLN:NE2	1:A:162:THR:OG1	2.38	0.52
2:H:408:LEU:O	2:H:412:MET:HG2	2.09	0.52
2:G:20:THR:O	2:G:24:LEU:HG	2.10	0.52
2:H:556:LYS:HB2	2:H:687:ASP:HB3	1.91	0.52
2:F:522:PHE:O	2:F:526:THR:OG1	2.28	0.52
2:E:88:LYS:HA	2:E:91:ILE:HD12	1.89	0.52
1:C:179:PHE:HA	1:C:189:TYR:HB3	1.91	0.52
2:F:33:PHE:CE2	2:F:133:GLY:HA3	2.44	0.52
2:G:557:GLY:HA2	2:G:686:GLY:HA2	1.91	0.52
1:B:29:TYR:HB3	1:B:33:LYS:NZ	2.25	0.52
2:H:5:TYR:HH	2:H:165:SER:HG	1.56	0.52
2:F:187:GLY:HA3	2:F:210:VAL:HB	1.91	0.52
2:H:512:VAL:HG22	2:H:519:ASN:OD1	2.09	0.52
2:E:331:TYR:O	2:E:335:GLN:HG3	2.09	0.52
1:D:169:SER:OG	1:D:181:LEU:HD22	2.08	0.52
1:D:247:PHE:CZ	1:D:261:ARG:HG3	2.44	0.52
1:D:247:PHE:HZ	1:D:261:ARG:HG3	1.75	0.52
2:H:500:ILE:O	2:H:504:GLU:OE2	2.28	0.52
2:F:536:ARG:NH1	2:F:539:GLN:OE1	2.42	0.52
2:F:609:PRO:HB3	2:F:618:GLN:OE1	2.09	0.52
1:A:114:PHE:HB3	1:A:131:TRP:CG	2.45	0.52
1:D:233:VAL:HG11	1:D:279:PHE:HD2	1.75	0.52
2:F:378:LEU:HD23	2:F:382:GLU:HB3	1.92	0.52
2:E:648:ARG:HG3	2:E:649:PRO:HD3	1.90	0.52
2:G:135:LYS:O	2:G:139:THR:HG23	2.09	0.52
1:B:232:LEU:HD13	1:A:203:TYR:HB2	1.91	0.52
1:A:178:VAL:HA	1:A:181:LEU:HG	1.92	0.52
2:E:11:LEU:HD23	2:E:160:ILE:HA	1.90	0.52
2:E:411:VAL:O	2:E:415:LYS:HG2	2.09	0.52
2:G:388:ARG:HH21	2:G:422:GLU:CD	2.13	0.52
2:G:508:GLN:O	2:G:512:VAL:HG23	2.10	0.52
1:C:45:ARG:HH12	1:C:283:ARG:NH2	2.08	0.52
2:H:611:LEU:HB2	2:H:670:ASN:ND2	2.24	0.52
2:F:648:ARG:HG3	2:F:649:PRO:HD3	1.92	0.52
1:D:256:VAL:HG13	1:D:260:GLU:HG3	1.91	0.52
2:H:584:THR:HA	2:H:649:PRO:HG3	1.91	0.52
2:E:637:MET:HA	2:E:640:ARG:HE	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:19:SER:OG	1:C:8:GLN:NE2	2.42	0.51
1:D:40:PRO:HB3	1:D:44:LEU:HD12	1.92	0.51
1:B:165:LEU:O	1:B:169:SER:OG	2.23	0.51
1:D:247:PHE:HE2	1:D:256:VAL:HG11	1.75	0.51
2:H:362:MET:SD	2:H:394:LYS:HB2	2.51	0.51
2:F:49:THR:OG1	2:F:52:ARG:HG2	2.11	0.51
2:F:57:VAL:HG12	2:F:60:LEU:HB2	1.93	0.51
2:F:164:VAL:HA	2:F:182:GLY:O	2.10	0.51
2:F:485:PHE:CE1	2:F:540:TRP:HD1	2.23	0.51
2:G:44:VAL:HG22	2:G:57:VAL:HG22	1.92	0.51
2:G:51:ARG:HE	2:G:253:GLU:CD	2.13	0.51
1:D:112:ILE:HB	2:H:190:PHE:CZ	2.46	0.51
1:C:233:VAL:HG11	1:C:279:PHE:HB2	1.91	0.51
2:H:54:THR:HG21	2:H:203:TYR:CZ	2.45	0.51
2:H:373:ALA:HB2	2:H:386:LEU:HD23	1.91	0.51
2:E:266:TYR:CD1	2:E:324:LEU:HB3	2.45	0.51
2:E:498:PHE:CD2	2:E:562:ILE:HD12	2.44	0.51
2:G:389:ALA:HA	2:G:426:VAL:HG13	1.93	0.51
1:C:36:GLY:HA2	1:C:58:GLU:HG2	1.92	0.51
2:E:149:TRP:CE2	2:E:159:PRO:HB3	2.45	0.51
2:E:246:GLU:OE1	2:E:250:ASN:ND2	2.44	0.51
2:E:286:TYR:HB2	2:E:294:LEU:HD11	1.92	0.51
2:G:310:GLU:O	2:G:314:LEU:HG	2.10	0.51
2:G:512:VAL:HG22	2:G:519:ASN:ND2	2.25	0.51
2:F:501:ARG:HE	2:F:560:GLN:CD	2.14	0.51
2:G:356:GLY:HA3	2:G:360:GLU:OE2	2.11	0.51
1:C:75:LEU:HD21	1:C:179:PHE:HZ	1.76	0.51
2:H:375:ARG:NH1	2:H:503:LEU:HD13	2.26	0.51
2:E:135:LYS:O	2:E:139:THR:HG23	2.10	0.51
1:A:114:PHE:HB3	1:A:131:TRP:CD1	2.46	0.51
1:A:168:LEU:O	1:A:172:ILE:HG13	2.11	0.51
2:F:432:GLU:HA	2:F:435:MET:HG3	1.93	0.51
2:E:25:GLN:O	2:E:29:ARG:HG2	2.10	0.51
2:E:79:ALA:HB1	2:E:90:ALA:HB2	1.93	0.51
2:G:609:PRO:HG3	2:G:621:TYR:CE1	2.46	0.51
1:A:106:ASN:O	1:A:109:GLU:HG2	2.11	0.51
2:E:273:VAL:HA	2:E:408:LEU:HD11	1.92	0.51
2:E:438:SER:OG	2:E:440:ASP:O	2.29	0.51
1:D:114:PHE:HB3	1:D:131:TRP:CD1	2.46	0.51
2:F:42:GLU:HG3	2:F:59:GLY:HA3	1.93	0.50
2:F:362:MET:SD	2:F:394:LYS:HB2	2.50	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:63:LYS:HE2	2:E:125:THR:HG22	1.93	0.50
2:E:559:ARG:NH2	2:E:633:PRO:HA	2.26	0.50
2:F:15:PRO:HG2	2:F:18:VAL:CG2	2.42	0.50
2:F:361:LYS:HG3	2:F:459:ASP:OD2	2.10	0.50
2:G:203:TYR:CZ	2:G:207:LEU:HD11	2.46	0.50
2:G:373:ALA:HB1	2:G:383:LYS:HG2	1.92	0.50
1:C:256:VAL:HG13	1:C:260:GLU:HG3	1.93	0.50
2:F:147:MET:H	2:F:156:TYR:H	1.59	0.50
2:E:477:PRO:HG2	2:E:478:PHE:CE2	2.45	0.50
2:G:423:ASP:HB3	2:G:426:VAL:HG23	1.93	0.50
2:G:645:ALA:O	2:G:648:ARG:HG2	2.11	0.50
1:C:119:TRP:CZ2	1:C:121:ASN:HB2	2.46	0.50
1:C:143:PHE:CD1	1:C:161:ILE:HG12	2.46	0.50
2:H:508:GLN:O	2:H:512:VAL:HG23	2.11	0.50
2:E:149:TRP:NE1	2:E:159:PRO:HB3	2.27	0.50
2:G:213:VAL:HB	2:G:219:ARG:HG2	1.93	0.50
1:D:156:PRO:HB3	2:H:151:THR:HA	1.94	0.50
2:H:163:ILE:HB	2:H:181:ALA:HA	1.93	0.50
2:H:488:VAL:HG11	2:H:537:VAL:HG22	1.94	0.50
2:F:284:PHE:CD1	2:F:300:SER:HB2	2.47	0.50
2:E:396:ASP:N	2:E:396:ASP:OD1	2.45	0.50
2:G:10:GLY:HA3	2:G:162:TRP:CZ2	2.47	0.50
2:G:154:PHE:CE2	2:G:156:TYR:HB2	2.47	0.50
2:G:562:ILE:O	2:G:565:MET:HB2	2.12	0.50
2:H:590:ARG:O	2:H:594:ILE:HG13	2.11	0.49
2:E:388:ARG:O	2:E:391:GLN:HB2	2.12	0.49
1:C:246:THR:O	1:C:250:MET:HG3	2.13	0.49
2:E:443:LEU:HD11	2:E:489:ARG:HB3	1.94	0.49
2:E:520:LEU:H	2:E:522:PHE:HD2	1.58	0.49
2:F:3:LYS:O	2:F:60:LEU:N	2.44	0.49
2:F:50:PRO:HD2	2:F:253:GLU:HG2	1.93	0.49
2:F:505:ALA:O	2:F:509:LYS:HB2	2.12	0.49
2:E:677:THR:O	2:E:681:MET:HG3	2.12	0.49
1:B:245:HIS:O	1:B:249:LEU:HG	2.12	0.49
1:A:228:ILE:HD13	1:A:274:SER:HB2	1.93	0.49
2:H:1:MET:HB2	2:H:3:LYS:HE3	1.93	0.49
2:H:12:GLU:HG3	2:H:159:PRO:HD2	1.94	0.49
2:G:29:ARG:HA	2:G:32:LYS:HD2	1.94	0.49
2:G:130:LEU:O	2:G:134:ILE:HG12	2.12	0.49
2:G:262:PHE:CZ	2:G:296:PRO:HA	2.47	0.49
1:C:116:GLU:OE1	2:G:158:ARG:NH2	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:614:ASN:ND2	2:G:658:THR:OG1	2.46	0.49
1:A:83:VAL:O	1:A:160:GLU:HA	2.12	0.49
2:H:220:LYS:HE3	2:H:245:LEU:HG	1.95	0.49
2:F:485:PHE:HE1	2:F:540:TRP:CD1	2.25	0.49
2:E:505:ALA:O	2:E:509:LYS:HB2	2.13	0.49
2:G:360:GLU:O	2:G:364:ARG:HG3	2.12	0.49
1:D:50:GLU:HB3	1:D:290:LEU:HB2	1.95	0.49
2:E:632:THR:C	2:E:634:ALA:H	2.15	0.49
2:G:207:LEU:HD12	2:G:214:ALA:HB2	1.94	0.49
2:G:331:TYR:O	2:G:335:GLN:HG3	2.13	0.49
1:A:154:VAL:O	2:E:148:LYS:HD3	2.13	0.49
1:A:195:GLU:O	1:A:199:GLU:HG3	2.12	0.49
1:D:29:TYR:HB3	1:D:33:LYS:HZ3	1.78	0.49
1:C:88:SER:HB2	1:C:159:SER:HB3	1.94	0.49
2:F:15:PRO:O	2:F:19:VAL:HG23	2.12	0.49
1:D:293:HIS:CE1	1:C:186:GLY:O	2.65	0.49
1:C:221:GLU:OE2	1:C:267:ARG:NH2	2.44	0.49
2:H:337:HIS:HB2	2:H:342:TYR:HE2	1.78	0.49
2:F:220:LYS:HB2	2:F:249:ASN:ND2	2.27	0.49
1:B:182:GLU:HG3	1:B:186:GLY:HA2	1.95	0.49
1:A:175:VAL:O	2:E:318:LYS:NZ	2.34	0.49
1:D:100:LEU:HD22	1:D:105:ILE:HD12	1.94	0.49
1:C:24:MET:H	1:C:54:ALA:HA	1.78	0.49
2:E:15:PRO:HG2	2:E:18:VAL:HG22	1.94	0.49
2:G:648:ARG:HG3	2:G:649:PRO:CD	2.43	0.49
2:E:66:ASP:HB3	2:E:122:ALA:HA	1.95	0.48
2:G:64:GLN:OE1	2:G:124:LYS:HG3	2.13	0.48
1:D:138:MET:HB2	2:H:319:VAL:CG2	2.42	0.48
2:H:481:ARG:HG2	2:H:532:PHE:HZ	1.78	0.48
2:F:9:ILE:CD1	2:F:138:ILE:HG12	2.40	0.48
2:F:538:LYS:HG3	2:F:551:VAL:HG11	1.95	0.48
2:E:270:PRO:HB2	2:E:273:VAL:HG23	1.94	0.48
2:G:484:ALA:O	2:G:488:VAL:HG23	2.13	0.48
1:C:282:GLN:O	1:C:286:ARG:HG3	2.13	0.48
2:H:147:MET:N	2:H:156:TYR:O	2.45	0.48
2:F:428:GLN:NE2	2:F:446:SER:HB3	2.28	0.48
2:E:508:GLN:HG3	2:E:523:GLU:CB	2.35	0.48
2:E:660:VAL:HG13	2:E:671:HIS:HB3	1.96	0.48
1:A:227:GLN:O	1:A:231:GLY:N	2.45	0.48
1:C:284:GLU:HB2	1:C:288:PHE:CZ	2.48	0.48
2:H:234:ARG:HD3	2:H:236:TRP:CZ2	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:547:ARG:NH2	2:H:549:ASP:OD2	2.46	0.48
2:F:258:PHE:CZ	2:F:300:SER:HB3	2.48	0.48
1:A:97:LEU:HD11	2:E:189:ARG:HE	1.79	0.48
1:D:226:ARG:O	1:D:229:LYS:HB3	2.14	0.48
2:F:567:LYS:HB3	2:F:637:MET:HB2	1.95	0.48
2:G:361:LYS:HA	2:G:364:ARG:CZ	2.43	0.48
1:B:24:MET:N	1:B:53:ASN:O	2.44	0.48
1:D:91:ASN:HB2	1:D:94:ASP:HB2	1.95	0.48
2:H:25:GLN:O	2:H:29:ARG:HG3	2.14	0.48
2:F:236:TRP:HB3	2:F:287:VAL:HG13	1.95	0.48
2:E:38:ARG:HB3	2:E:65:ALA:HB3	1.95	0.48
1:B:160:GLU:OE2	1:B:162:THR:OG1	2.31	0.48
2:G:635:MET:HB2	2:G:640:ARG:NE	2.29	0.48
1:A:288:PHE:HB3	1:A:291:LEU:HG	1.96	0.48
2:F:633:PRO:HA	2:F:640:ARG:NH2	2.29	0.48
2:G:149:TRP:HE1	2:G:159:PRO:HB3	1.79	0.48
2:H:191:LEU:HB3	2:H:211:GLN:OE1	2.13	0.48
1:A:281:ALA:O	1:A:285:LYS:HB2	2.14	0.48
1:C:154:VAL:HG12	1:C:156:PRO:O	2.14	0.48
2:F:44:VAL:HG22	2:F:57:VAL:HG22	1.95	0.48
2:F:351:PHE:N	2:F:356:GLY:O	2.47	0.48
2:E:76:LYS:N	2:E:113:PRO:O	2.45	0.48
2:G:352:HIS:CE1	2:G:354:LYS:H	2.32	0.48
2:H:553:THR:HG21	2:H:688:LEU:HD23	1.94	0.47
2:E:461:ILE:HG12	2:E:480:LEU:HD22	1.94	0.47
2:H:276:THR:HG23	2:H:280:ASP:OD2	2.14	0.47
2:H:616:ALA:HB3	2:H:654:TYR:CE1	2.49	0.47
2:F:609:PRO:HA	2:F:612:PHE:CD2	2.49	0.47
2:G:508:GLN:CG	2:G:523:GLU:HB3	2.38	0.47
1:C:75:LEU:HD21	1:C:179:PHE:CZ	2.50	0.47
2:H:453:ALA:HB1	2:H:457:LYS:NZ	2.29	0.47
2:F:135:LYS:O	2:F:139:THR:HG23	2.15	0.47
1:D:33:LYS:NZ	1:D:58:GLU:OE1	2.42	0.47
2:H:649:PRO:HA	2:H:652:VAL:HG22	1.97	0.47
2:F:511:LEU:HD13	2:F:518:TYR:HB2	1.95	0.47
2:F:520:LEU:H	2:F:522:PHE:HD2	1.60	0.47
2:G:25:GLN:HA	2:G:28:GLU:HG2	1.97	0.47
2:G:237:GLN:HG3	2:G:290:ALA:HA	1.96	0.47
2:G:508:GLN:OE1	2:G:522:PHE:HB2	2.14	0.47
1:B:131:TRP:NE1	2:F:13:GLU:O	2.42	0.47
1:C:65:ASP:HA	1:C:74:ARG:HE	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:609:PRO:HA	2:H:612:PHE:CE2	2.49	0.47
2:E:310:GLU:O	2:E:314:LEU:HG	2.15	0.47
2:G:10:GLY:HA3	2:G:162:TRP:CE2	2.49	0.47
2:G:369:SER:HB3	2:G:386:LEU:HD11	1.97	0.47
1:B:119:TRP:HZ3	1:B:126:CYS:HB3	1.78	0.47
1:A:79:HIS:HB3	1:A:165:LEU:HD12	1.97	0.47
2:H:647:LEU:O	2:H:650:LEU:HG	2.14	0.47
2:E:126:ALA:O	2:E:130:LEU:HG	2.15	0.47
2:E:485:PHE:CE1	2:E:489:ARG:HD2	2.50	0.47
2:E:627:LEU:HD21	2:E:644:LEU:HD23	1.97	0.47
1:A:157:VAL:HG21	2:E:148:LYS:O	2.15	0.47
2:H:360:GLU:O	2:H:364:ARG:HG3	2.14	0.47
2:H:481:ARG:HG2	2:H:532:PHE:CZ	2.50	0.47
2:E:432:GLU:OE2	2:E:446:SER:OG	2.21	0.47
2:G:266:TYR:OH	2:G:325:GLU:HG2	2.15	0.47
1:B:205:PHE:O	1:B:253:ARG:NH1	2.48	0.47
1:D:119:TRP:HZ3	1:D:126:CYS:HB3	1.79	0.47
2:H:11:LEU:HG	2:H:12:GLU:O	2.14	0.47
2:H:187:GLY:HA3	2:H:210:VAL:HB	1.97	0.47
1:D:146:PHE:O	1:D:157:VAL:HG13	2.15	0.47
1:C:111:ASP:HB2	2:G:312:VAL:HG13	1.95	0.47
2:H:66:ASP:OD1	2:H:123:GLY:HA3	2.15	0.47
2:H:616:ALA:HA	2:H:619:HIS:HD2	1.80	0.47
2:F:312:VAL:O	2:F:316:ASN:ND2	2.36	0.47
2:F:378:LEU:O	2:F:383:LYS:HE3	2.14	0.47
2:G:43:ASP:OD1	2:G:44:VAL:N	2.47	0.47
2:G:149:TRP:CZ2	2:G:159:PRO:HB3	2.50	0.47
2:F:224:ARG:HH21	2:F:245:LEU:HD23	1.80	0.47
2:E:10:GLY:HA3	2:E:162:TRP:CE2	2.50	0.47
2:G:549:ASP:OD1	2:G:550:ILE:N	2.48	0.47
1:A:38:MET:O	1:A:237:TYR:OH	2.32	0.46
1:A:111:ASP:CG	2:E:302:ARG:HG3	2.36	0.46
1:A:195:GLU:HB3	1:A:196:PRO:HD3	1.97	0.46
1:C:247:PHE:CE2	1:C:256:VAL:HG11	2.50	0.46
2:H:485:PHE:CE2	2:H:489:ARG:HD2	2.49	0.46
2:F:30:MET:O	2:F:34:LEU:HG	2.16	0.46
1:B:127:ALA:N	1:B:148:GLN:O	2.45	0.46
1:D:17:PHE:O	1:D:21:GLN:HG2	2.16	0.46
1:C:4:LYS:NZ	1:C:174:ASP:HB3	2.30	0.46
1:C:114:PHE:HB2	2:G:13:GLU:OE1	2.15	0.46
2:H:265:LYS:HE3	2:H:266:TYR:CZ	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:581:PHE:HA	2:H:584:THR:HG22	1.95	0.46
2:E:38:ARG:HE	2:E:64:GLN:HE21	1.63	0.46
2:G:540:TRP:CH2	2:G:566:PHE:HE1	2.33	0.46
1:A:86:LYS:HE3	1:A:156:PRO:HD2	1.97	0.46
1:C:55:ALA:HA	1:C:82:GLN:O	2.15	0.46
1:C:168:LEU:O	1:C:172:ILE:HG13	2.15	0.46
2:H:8:GLU:OE1	2:H:185:SER:OG	2.34	0.46
2:E:373:ALA:HB1	2:E:383:LYS:HG2	1.98	0.46
2:G:472:SER:OG	2:G:475:ASN:HB3	2.16	0.46
2:G:533:LEU:O	2:G:537:VAL:HG23	2.15	0.46
1:A:12:LEU:HD23	1:A:12:LEU:HA	1.81	0.46
1:D:24:MET:HA	1:C:8:GLN:OE1	2.15	0.46
2:H:559:ARG:NH2	2:H:640:ARG:HH22	2.11	0.46
2:F:10:GLY:HA3	2:F:162:TRP:CD2	2.50	0.46
2:F:158:ARG:HA	2:F:158:ARG:HD3	1.74	0.46
2:F:240:VAL:HG13	2:F:285:PHE:CE1	2.50	0.46
2:F:433:HIS:HA	2:F:453:ALA:HB2	1.95	0.46
2:E:366:MET:HA	2:E:390:ALA:HB1	1.97	0.46
2:G:215:ASP:HB3	2:G:218:LYS:HB3	1.97	0.46
2:H:93:PHE:O	2:H:97:GLN:HG2	2.16	0.46
2:H:675:LEU:HD23	2:H:678:ILE:HD12	1.98	0.46
2:E:364:ARG:O	2:E:368:ILE:HG13	2.15	0.46
2:G:352:HIS:CG	2:G:353:ASP:N	2.84	0.46
2:G:631:PHE:HA	2:G:635:MET:SD	2.55	0.46
2:H:337:HIS:HB2	2:H:342:TYR:CE2	2.51	0.46
2:H:444:PRO:HG2	2:H:450:ALA:HA	1.97	0.46
2:H:547:ARG:HB3	2:H:549:ASP:OD1	2.15	0.46
2:F:147:MET:N	2:F:156:TYR:O	2.49	0.46
2:F:636:SER:O	2:F:640:ARG:HG3	2.15	0.46
2:E:215:ASP:HB3	2:E:218:LYS:HB3	1.97	0.46
1:C:267:ARG:O	1:C:271:MET:HG3	2.16	0.46
2:H:68:LYS:HG2	2:H:120:PHE:HB2	1.98	0.46
2:H:71:VAL:O	2:H:116:PHE:HA	2.16	0.46
2:H:286:TYR:HB2	2:H:294:LEU:HD11	1.98	0.46
2:F:505:ALA:O	2:F:509:LYS:CB	2.64	0.46
2:E:433:HIS:O	2:E:457:LYS:NZ	2.49	0.46
1:A:143:PHE:CD1	1:A:161:ILE:HG12	2.51	0.46
1:D:196:PRO:HG3	1:C:234:HIS:NE2	2.31	0.46
2:F:393:TYR:CE2	2:F:394:LYS:HG2	2.51	0.46
2:E:38:ARG:HH21	2:E:64:GLN:HG2	1.81	0.46
2:E:388:ARG:O	2:E:392:ILE:HG12	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:33:LYS:HD3	1:A:241:LEU:HD13	1.97	0.46
1:A:217:PHE:CE2	1:A:243:CYS:HB3	2.51	0.46
1:D:114:PHE:HB3	1:D:131:TRP:CG	2.51	0.46
2:H:5:TYR:OH	2:H:165:SER:OG	2.30	0.46
2:H:188:HIS:HB3	2:H:192:GLY:N	2.31	0.46
2:F:635:MET:HB3	2:F:640:ARG:HE	1.81	0.46
2:E:12:GLU:OE1	2:E:161:ARG:NH2	2.43	0.46
2:E:466:ALA:HA	2:E:525:GLN:HG3	1.98	0.46
2:G:315:GLY:O	2:G:319:VAL:HG23	2.16	0.46
2:G:551:VAL:O	2:G:555:ILE:HG12	2.16	0.46
2:G:644:LEU:HD13	2:G:682:ILE:HG12	1.97	0.46
2:H:11:LEU:HA	2:H:160:ILE:HA	1.97	0.46
2:F:4:THR:HA	2:F:57:VAL:O	2.16	0.46
2:F:8:GLU:OE1	2:F:52:ARG:HD3	2.15	0.46
2:F:635:MET:SD	2:F:640:ARG:HG2	2.56	0.46
2:G:492:ARG:HD2	2:G:566:PHE:CE1	2.51	0.46
1:B:39:SER:HB3	1:B:56:TYR:OH	2.16	0.45
1:D:127:ALA:HB3	1:D:148:GLN:HB3	1.96	0.45
2:H:331:TYR:CE2	2:H:416:TYR:HE1	2.35	0.45
2:H:350:SER:HA	2:H:357:THR:HA	1.97	0.45
2:G:349:VAL:O	2:G:358:MET:N	2.46	0.45
2:G:438:SER:HA	2:G:482:ARG:HD2	1.97	0.45
1:B:209:ASN:HB3	1:B:212:LEU:HB3	1.98	0.45
1:A:148:GLN:HA	1:A:152:LEU:O	2.16	0.45
1:D:221:GLU:O	1:D:225:LYS:HG3	2.16	0.45
1:C:49:PRO:HD2	1:C:288:PHE:CZ	2.51	0.45
2:H:50:PRO:HD2	2:H:253:GLU:HG2	1.98	0.45
2:H:627:LEU:HD11	2:H:643:ALA:HB1	1.97	0.45
2:F:13:GLU:HG2	2:F:51:ARG:HG2	1.98	0.45
2:G:188:HIS:HD2	2:G:253:GLU:HB2	1.81	0.45
1:B:6:SER:HB3	1:B:182:GLU:OE1	2.15	0.45
1:B:15:GLN:HG2	1:B:25:LEU:HD22	1.98	0.45
1:A:267:ARG:O	1:A:271:MET:HG3	2.16	0.45
1:C:50:GLU:HB3	1:C:290:LEU:HD12	1.98	0.45
2:H:287:VAL:HG12	2:H:295:LEU:HD12	1.97	0.45
2:H:588:PHE:HE1	2:H:648:ARG:HB2	1.81	0.45
2:E:598:ALA:HB2	2:E:672:LEU:HD22	1.98	0.45
1:A:28:SER:HB3	1:A:57:VAL:O	2.16	0.45
1:D:143:PHE:CD1	1:D:161:ILE:HG12	2.52	0.45
1:D:195:GLU:HA	1:C:286:ARG:HH12	1.81	0.45
1:C:222:LYS:HA	1:C:225:LYS:HD2	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:11:LEU:HD12	2:H:158:ARG:HB2	1.97	0.45
2:H:238:ILE:HG12	2:H:287:VAL:HG22	1.98	0.45
2:H:279:ARG:O	2:H:283:ARG:HA	2.16	0.45
2:E:581:PHE:O	2:E:585:ILE:HG12	2.16	0.45
2:E:648:ARG:HG3	2:E:649:PRO:CD	2.46	0.45
2:G:439:ALA:O	2:G:489:ARG:NH1	2.49	0.45
2:G:484:ALA:HB1	2:G:533:LEU:HD23	1.98	0.45
1:B:31:THR:O	1:A:30:ASP:HB2	2.16	0.45
1:B:61:ARG:HD3	1:B:76:TYR:CE1	2.49	0.45
1:A:253:ARG:HB3	1:A:255:MET:HG3	1.97	0.45
1:D:293:HIS:HE1	1:C:186:GLY:O	1.99	0.45
1:C:60:SER:HB2	1:C:78:HIS:CD2	2.51	0.45
2:H:340:GLN:NE2	2:H:344:GLU:OE2	2.49	0.45
2:F:11:LEU:HD23	2:F:160:ILE:HA	1.98	0.45
2:F:136:ASP:O	2:F:140:LYS:HG3	2.17	0.45
2:F:533:LEU:O	2:F:537:VAL:HG23	2.16	0.45
2:F:648:ARG:HG3	2:F:649:PRO:CD	2.47	0.45
1:B:3:LYS:HG2	1:B:4:LYS:O	2.16	0.45
1:A:33:LYS:HD2	1:A:38:MET:HB2	1.99	0.45
1:A:154:VAL:HG12	1:A:156:PRO:O	2.17	0.45
1:D:212:LEU:HD11	1:C:219:GLU:HB3	1.99	0.45
2:H:42:GLU:HG3	2:H:59:GLY:HA3	1.98	0.45
2:H:373:ALA:HB1	2:H:383:LYS:HG2	1.99	0.45
2:H:553:THR:OG1	2:H:691:LEU:HG	2.16	0.45
2:H:625:LEU:O	2:H:629:LYS:HG3	2.17	0.45
2:E:341:GLU:O	2:E:345:ARG:HG3	2.16	0.45
2:G:176:ILE:HG22	2:G:177:LEU:HG	1.99	0.45
2:G:362:MET:HE3	2:G:393:TYR:CD1	2.52	0.45
2:E:478:PHE:HB2	2:E:480:LEU:HG	1.99	0.45
1:A:24:MET:HE2	1:A:24:MET:HB2	1.66	0.45
1:A:237:TYR:O	1:A:241:LEU:HG	2.17	0.45
2:H:8:GLU:HB3	2:H:164:VAL:HB	1.98	0.45
2:H:305:ASN:ND2	2:H:307:ASP:OD2	2.50	0.45
2:H:411:VAL:HG13	2:H:431:ARG:CZ	2.46	0.45
2:H:571:VAL:HG21	2:H:637:MET:HB3	1.99	0.45
2:F:15:PRO:HG2	2:F:18:VAL:HG22	1.97	0.45
2:E:315:GLY:O	2:E:319:VAL:HG23	2.17	0.45
2:E:525:GLN:C	2:E:528:PRO:HD2	2.37	0.45
2:G:617:GLU:HG2	2:G:654:TYR:HE2	1.82	0.45
1:B:119:TRP:CZ3	1:B:126:CYS:HB3	2.51	0.45
1:A:135:LEU:HD21	1:A:171:TYR:CE1	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:18:TRP:HB3	1:C:23:CYS:SG	2.57	0.45
1:C:93:GLN:O	1:C:97:LEU:HG	2.17	0.45
2:H:207:LEU:HD12	2:H:214:ALA:HB2	1.99	0.45
2:H:607:VAL:HB	2:H:621:TYR:CD2	2.52	0.45
2:E:20:THR:O	2:E:24:LEU:HG	2.16	0.45
2:G:220:LYS:HE2	2:G:224:ARG:NH2	2.32	0.45
1:B:129:VAL:HG21	2:F:147:MET:CG	2.43	0.44
1:A:18:TRP:HB3	1:A:23:CYS:HB2	1.98	0.44
1:D:219:GLU:HB3	1:C:212:LEU:CD1	2.47	0.44
1:C:33:LYS:HZ1	1:C:58:GLU:CD	2.21	0.44
2:H:66:ASP:HB3	2:H:120:PHE:CE2	2.43	0.44
2:H:320:LEU:O	2:H:324:LEU:HG	2.16	0.44
2:H:650:LEU:HD12	2:H:651:ILE:N	2.32	0.44
2:E:492:ARG:HB2	2:E:566:PHE:CZ	2.52	0.44
2:E:532:PHE:C	2:E:534:THR:H	2.20	0.44
2:G:56:GLN:NE2	2:G:200:ALA:O	2.38	0.44
1:B:86:LYS:HE2	1:B:156:PRO:HD2	1.99	0.44
1:A:17:PHE:O	1:A:21:GLN:HG2	2.17	0.44
1:A:222:LYS:O	1:A:226:ARG:HG3	2.16	0.44
1:C:83:VAL:O	1:C:160:GLU:HA	2.18	0.44
2:H:275:ILE:HG12	2:H:286:TYR:CG	2.52	0.44
2:G:184:VAL:HG22	2:G:196:GLU:HG2	1.99	0.44
1:B:282:GLN:O	1:B:286:ARG:HG3	2.17	0.44
2:H:148:LYS:H	2:H:148:LYS:HG3	1.49	0.44
2:E:72:ARG:HH12	2:E:109:VAL:HG11	1.82	0.44
2:G:134:ILE:HG21	2:G:174:VAL:HG11	1.99	0.44
2:H:615:GLU:HG2	2:H:619:HIS:NE2	2.32	0.44
2:F:614:ASN:ND2	2:F:657:GLN:HB3	2.33	0.44
2:E:389:ALA:O	2:E:393:TYR:N	2.50	0.44
2:G:263:ASP:CG	2:G:265:LYS:HG2	2.37	0.44
1:D:109:GLU:HG2	2:H:308:HIS:CE1	2.52	0.44
2:E:423:ASP:OD2	2:E:425:ALA:HB3	2.17	0.44
2:E:556:LYS:O	2:E:686:GLY:HA2	2.18	0.44
2:G:145:THR:HB	2:G:157:ILE:HD12	1.98	0.44
2:G:358:MET:O	2:G:362:MET:HG3	2.17	0.44
1:A:208:SER:OG	1:A:253:ARG:HD3	2.17	0.44
2:H:629:LYS:HD3	2:E:81:ASP:HB3	2.00	0.44
2:E:147:MET:H	2:E:155:LYS:HA	1.82	0.44
2:E:270:PRO:HB3	2:E:415:LYS:HE3	1.98	0.44
2:G:135:LYS:HA	2:G:176:ILE:HD11	1.99	0.44
2:H:7:LEU:O	2:H:54:THR:HA	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:553:THR:O	2:H:686:GLY:HA3	2.17	0.44
2:F:252:VAL:HG12	2:F:303:ASN:HB2	1.99	0.44
2:G:220:LYS:HE3	2:G:245:LEU:HG	2.00	0.44
1:B:93:GLN:CD	2:F:189:ARG:HH22	2.20	0.44
1:A:4:LYS:HD3	1:A:173:GLN:HA	1.99	0.44
1:A:123:SER:HB3	1:A:265:LEU:HD22	1.99	0.44
1:D:45:ARG:HG3	1:D:52:TRP:CE2	2.52	0.44
1:C:49:PRO:HD2	1:C:288:PHE:CE1	2.52	0.44
1:C:81:PHE:HB3	1:C:163:TYR:HB2	1.99	0.44
2:H:508:GLN:CG	2:H:523:GLU:HB3	2.48	0.44
2:H:534:THR:HG21	2:H:555:ILE:HG23	2.00	0.44
2:F:207:LEU:HD23	2:F:207:LEU:HA	1.86	0.44
1:D:181:LEU:O	1:D:189:TYR:N	2.40	0.44
2:H:29:ARG:HD3	2:H:141:MET:SD	2.58	0.44
2:F:464:PHE:HA	2:F:467:VAL:HG22	2.00	0.44
2:G:11:LEU:HD23	2:G:160:ILE:HA	2.00	0.44
1:B:227:GLN:HB2	1:B:236:ALA:HB2	1.99	0.43
1:C:6:SER:OG	1:C:9:GLU:HG3	2.18	0.43
2:H:438:SER:HA	2:H:482:ARG:HD2	1.99	0.43
2:F:152:TYR:CD2	2:F:177:LEU:HD13	2.53	0.43
2:F:287:VAL:O	2:F:294:LEU:HD12	2.18	0.43
2:F:439:ALA:O	2:F:489:ARG:NH1	2.50	0.43
2:F:484:ALA:HB1	2:F:533:LEU:HD23	1.99	0.43
2:F:553:THR:OG1	2:F:691:LEU:HD12	2.18	0.43
2:E:351:PHE:H	2:E:357:THR:HA	1.82	0.43
2:G:9:ILE:O	2:G:52:ARG:HA	2.18	0.43
1:D:106:ASN:O	1:D:110:HIS:ND1	2.52	0.43
2:H:146:MET:HE2	2:H:155:LYS:O	2.18	0.43
2:H:282:GLN:HB3	2:H:284:PHE:CE2	2.53	0.43
2:F:25:GLN:HA	2:F:28:GLU:OE2	2.18	0.43
1:B:62:ARG:N	1:B:76:TYR:O	2.50	0.43
1:D:6:SER:HA	1:D:173:GLN:HE21	1.82	0.43
1:C:113:ARG:NH2	2:G:301:VAL:O	2.51	0.43
1:C:126:CYS:HA	1:C:148:GLN:O	2.19	0.43
1:C:237:TYR:O	1:C:241:LEU:HG	2.18	0.43
1:D:14:LEU:HD21	1:D:103:LEU:HD11	1.99	0.43
1:D:283:ARG:HA	1:D:283:ARG:HD2	1.81	0.43
1:C:49:PRO:O	1:C:291:LEU:HD21	2.19	0.43
2:F:199:THR:OG1	2:F:202:ASP:OD2	2.27	0.43
2:F:553:THR:HG21	2:F:688:LEU:HD23	2.00	0.43
2:E:358:MET:O	2:E:362:MET:HG3	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:158:ARG:HD3	2:G:158:ARG:HA	1.81	0.43
2:G:536:ARG:N	2:G:536:ARG:HD2	2.33	0.43
2:G:621:TYR:CZ	2:G:625:LEU:HD11	2.53	0.43
1:B:134:TRP:HA	1:B:139:GLU:HA	2.01	0.43
1:D:93:GLN:CD	2:H:189:ARG:HH22	2.22	0.43
1:C:247:PHE:HE2	1:C:256:VAL:HG11	1.82	0.43
2:H:215:ASP:CB	2:H:218:LYS:HD2	2.48	0.43
2:H:342:TYR:CD1	2:H:398:VAL:HG23	2.41	0.43
2:H:644:LEU:HD23	2:H:648:ARG:HD3	2.00	0.43
2:F:559:ARG:HD2	2:F:684:VAL:HG13	2.01	0.43
2:E:422:GLU:HG3	2:E:423:ASP:N	2.31	0.43
2:G:358:MET:SD	2:G:361:LYS:HD3	2.58	0.43
1:A:111:ASP:OD2	1:A:113:ARG:NH1	2.52	0.43
1:D:18:TRP:CZ3	1:D:95:LEU:HB3	2.54	0.43
1:D:133:VAL:HB	1:D:141:SER:HB2	2.00	0.43
1:C:143:PHE:CE1	1:C:161:ILE:HG12	2.54	0.43
2:E:571:VAL:HG22	2:E:638:GLU:OE2	2.18	0.43
2:G:216:ALA:HB2	2:G:219:ARG:HH21	1.83	0.43
1:D:6:SER:OG	1:D:9:GLU:HG3	2.18	0.43
1:C:63:PRO:HA	1:C:76:TYR:CD2	2.54	0.43
1:C:96:TYR:CZ	1:C:100:LEU:HD11	2.54	0.43
1:C:220:TYR:CE2	1:C:242:LYS:HB3	2.54	0.43
2:H:158:ARG:HD3	2:H:158:ARG:HA	1.83	0.43
2:F:305:ASN:ND2	2:F:307:ASP:OD2	2.52	0.43
2:E:49:THR:OG1	2:E:52:ARG:NE	2.52	0.43
2:G:575:HIS:C	2:G:577:ASP:H	2.21	0.43
2:G:642:LYS:HA	2:G:642:LYS:HE2	2.01	0.43
2:F:289:ASP:OD1	2:F:293:ASN:N	2.51	0.43
2:G:231:ALA:HB2	2:G:238:ILE:HD12	1.99	0.43
2:G:251:LEU:HD11	2:G:283:ARG:NH1	2.34	0.43
1:B:28:SER:HB3	1:B:57:VAL:O	2.18	0.43
1:D:292:LYS:O	1:D:295:GLN:HB2	2.18	0.43
2:F:575:HIS:HE2	2:F:638:GLU:CD	2.19	0.43
2:E:614:ASN:ND2	2:E:658:THR:OG1	2.52	0.43
2:G:360:GLU:HG3	2:G:364:ARG:HH12	1.84	0.43
2:G:492:ARG:NH2	2:G:544:ARG:HH22	2.17	0.43
1:B:79:HIS:O	1:B:165:LEU:HB2	2.18	0.43
2:H:4:THR:N	2:H:168:ASP:OD1	2.43	0.43
2:H:135:LYS:O	2:H:139:THR:HG23	2.18	0.43
2:F:178:ASP:N	2:F:178:ASP:OD1	2.52	0.43
2:F:287:VAL:HG12	2:F:295:LEU:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:631:PHE:HE1	2:F:640:ARG:HB3	1.83	0.43
2:E:262:PHE:CZ	2:E:296:PRO:HA	2.54	0.43
2:E:552:ASP:HB3	2:E:690:GLN:HG3	2.00	0.43
2:G:416:TYR:O	2:G:419:LEU:HB3	2.19	0.43
2:G:508:GLN:HG3	2:G:523:GLU:CB	2.39	0.43
1:B:30:ASP:OD2	1:A:32:GLU:HG3	2.19	0.42
1:B:123:SER:HB3	1:B:265:LEU:HD22	2.01	0.42
1:D:37:THR:HA	1:D:42:THR:HG21	2.01	0.42
1:C:221:GLU:HG3	1:C:271:MET:SD	2.59	0.42
2:F:167:LEU:HB3	2:F:170:GLU:HB3	2.02	0.42
2:E:175:GLN:HA	2:E:180:ALA:HA	2.00	0.42
2:E:362:MET:HE3	2:E:393:TYR:CD1	2.54	0.42
2:G:558:SER:OG	2:G:684:VAL:HA	2.19	0.42
2:G:581:PHE:O	2:G:585:ILE:HG12	2.19	0.42
1:B:195:GLU:HA	1:A:286:ARG:HH22	1.84	0.42
1:C:258:VAL:O	1:C:261:ARG:HB3	2.18	0.42
2:H:540:TRP:CE3	2:H:541:PHE:HD1	2.34	0.42
2:H:549:ASP:OD1	2:H:550:ILE:N	2.52	0.42
2:F:527:ALA:HB3	2:F:528:PRO:HD3	2.01	0.42
1:B:282:GLN:O	1:B:285:LYS:HB3	2.20	0.42
1:A:109:GLU:HG3	1:A:110:HIS:CE1	2.55	0.42
1:C:113:ARG:O	1:C:133:VAL:HA	2.19	0.42
2:H:236:TRP:CH2	2:H:297:HIS:CG	3.08	0.42
2:H:657:GLN:HG2	2:H:658:THR:H	1.84	0.42
2:F:49:THR:HB	2:F:253:GLU:HG2	2.02	0.42
2:F:648:ARG:O	2:F:652:VAL:HG23	2.19	0.42
2:E:430:ILE:O	2:E:433:HIS:ND1	2.52	0.42
2:G:503:LEU:O	2:G:507:ILE:HG12	2.19	0.42
1:D:28:SER:HB3	1:D:57:VAL:O	2.19	0.42
1:D:109:GLU:HG2	2:H:308:HIS:ND1	2.34	0.42
1:B:143:PHE:CD1	1:B:161:ILE:HG12	2.54	0.42
1:C:37:THR:O	1:C:42:THR:HB	2.19	0.42
2:H:166:LEU:HB3	2:H:200:ALA:HB2	2.01	0.42
2:H:370:ASP:OD1	2:H:387:HIS:ND1	2.52	0.42
2:H:393:TYR:CE2	2:H:394:LYS:HG2	2.54	0.42
2:F:458:VAL:O	2:F:462:THR:HG23	2.20	0.42
2:G:54:THR:HG21	2:G:203:TYR:CE1	2.55	0.42
2:G:368:ILE:O	2:G:372:LEU:HG	2.19	0.42
1:C:50:GLU:OE2	1:C:288:PHE:HA	2.19	0.42
1:C:283:ARG:HD2	1:C:283:ARG:HA	1.89	0.42
2:H:393:TYR:HD2	2:H:433:HIS:CE1	2.37	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:197:ILE:HD13	2:E:206:ASP:OD2	2.19	0.42
2:E:284:PHE:CD1	2:E:300:SER:HB2	2.54	0.42
2:G:164:VAL:HA	2:G:182:GLY:O	2.20	0.42
2:G:504:GLU:HG3	2:G:526:THR:HB	2.02	0.42
1:D:119:TRP:CZ3	1:D:126:CYS:HB3	2.55	0.42
1:D:210:GLU:O	1:D:214:LEU:HG	2.20	0.42
2:H:10:GLY:HA3	2:H:162:TRP:CD2	2.55	0.42
2:F:466:ALA:HA	2:F:525:GLN:HG3	2.02	0.42
2:F:627:LEU:O	2:F:631:PHE:N	2.24	0.42
2:E:8:GLU:HB3	2:E:54:THR:HG23	2.01	0.42
2:E:302:ARG:HH11	2:E:312:VAL:HG21	1.85	0.42
2:G:365:VAL:O	2:G:369:SER:OG	2.33	0.42
1:C:195:GLU:O	1:C:199:GLU:HG3	2.20	0.42
2:E:15:PRO:HG2	2:E:18:VAL:CG2	2.49	0.42
2:E:16:ALA:HB1	2:E:250:ASN:HB2	2.02	0.42
2:E:38:ARG:HE	2:E:64:GLN:CG	2.33	0.42
2:E:432:GLU:HB3	2:E:444:PRO:HB3	2.02	0.42
2:G:40:ASP:O	2:G:61:ALA:N	2.44	0.42
2:G:481:ARG:HD3	2:G:536:ARG:NH2	2.34	0.42
1:B:193:PHE:C	1:B:196:PRO:HD2	2.41	0.42
1:D:130:GLY:HA3	1:D:144:THR:HA	2.02	0.42
1:C:136:ASP:HB3	2:G:315:GLY:HA3	2.02	0.42
1:C:211:GLU:O	1:C:215:MET:HG2	2.20	0.42
2:H:557:GLY:O	2:H:560:GLN:HG3	2.20	0.42
2:F:648:ARG:N	2:F:649:PRO:HD2	2.35	0.42
2:E:278:MET:O	2:E:283:ARG:N	2.53	0.42
2:E:476:ASP:CB	2:E:481:ARG:HH21	2.33	0.42
2:G:520:LEU:H	2:G:522:PHE:HD2	1.67	0.42
2:G:578:ASP:HA	2:G:579:PRO:HD3	1.93	0.42
1:A:193:PHE:C	1:A:196:PRO:HD2	2.40	0.42
1:A:246:THR:O	1:A:250:MET:HG3	2.19	0.42
2:H:396:ASP:HA	2:H:399:THR:HG23	2.01	0.42
2:H:401:MET:HG3	2:H:412:MET:HG3	2.02	0.42
2:E:204:GLU:OE1	2:E:215:ASP:HB2	2.20	0.42
2:H:177:LEU:HB3	2:H:178:ASP:H	1.66	0.41
2:H:568:ALA:O	2:H:572:LEU:HG	2.20	0.41
2:H:588:PHE:CD2	2:H:688:LEU:HD13	2.55	0.41
2:F:508:GLN:OE1	2:F:522:PHE:HB2	2.20	0.41
2:E:563:ARG:HH21	2:E:567:LYS:NZ	2.17	0.41
2:G:498:PHE:CE1	2:G:500:ILE:HG22	2.55	0.41
2:G:598:ALA:HB2	2:G:672:LEU:HD22	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:152:LEU:HD12	1:D:276:ALA:HB1	2.00	0.41
2:F:224:ARG:HA	2:F:227:ILE:HD12	2.03	0.41
2:E:168:ASP:O	2:E:199:THR:HA	2.20	0.41
2:G:346:LEU:HD13	2:G:362:MET:SD	2.59	0.41
1:B:220:TYR:CE2	1:B:242:LYS:HB3	2.55	0.41
1:A:50:GLU:CD	1:A:283:ARG:HH21	2.20	0.41
2:H:302:ARG:HH21	2:H:304:GLY:HA3	1.85	0.41
2:H:499:PRO:C	2:H:501:ARG:H	2.23	0.41
2:E:339:ILE:HA	2:E:342:TYR:HD2	1.85	0.41
2:E:357:THR:OG1	2:E:360:GLU:HG3	2.20	0.41
2:G:246:GLU:OE1	2:G:250:ASN:ND2	2.53	0.41
1:B:154:VAL:HG12	1:B:156:PRO:O	2.21	0.41
2:H:16:ALA:HB1	2:H:247:GLU:O	2.20	0.41
2:H:335:GLN:OE1	2:H:419:LEU:HD21	2.21	0.41
2:H:527:ALA:HB3	2:H:528:PRO:HD3	2.02	0.41
2:F:43:ASP:OD1	2:F:44:VAL:N	2.52	0.41
2:F:134:ILE:HD13	2:F:134:ILE:HA	1.90	0.41
2:F:247:GLU:O	2:F:251:LEU:HG	2.20	0.41
2:F:263:ASP:HB3	2:F:266:TYR:CE2	2.55	0.41
2:F:284:PHE:HB3	2:F:298:PHE:HB2	2.03	0.41
2:E:10:GLY:HA3	2:E:162:TRP:CZ2	2.54	0.41
2:E:17:HIS:CD2	2:E:18:VAL:HG13	2.55	0.41
1:A:36:GLY:HA3	1:A:82:GLN:HG3	2.01	0.41
1:A:269:ARG:CG	1:A:273:LYS:HE3	2.51	0.41
1:D:87:PRO:HB3	1:D:156:PRO:HB2	2.02	0.41
2:H:9:ILE:O	2:H:52:ARG:HA	2.20	0.41
2:H:275:ILE:HG23	2:H:286:TYR:CE1	2.55	0.41
2:F:302:ARG:NH1	2:F:309:LEU:HA	2.35	0.41
2:F:315:GLY:O	2:F:319:VAL:HG23	2.20	0.41
2:F:469:LEU:HD23	2:F:469:LEU:HA	1.86	0.41
2:E:256:THR:HG23	2:E:256:THR:O	2.20	0.41
2:E:387:HIS:O	2:E:391:GLN:HG3	2.21	0.41
2:G:498:PHE:HE1	2:G:500:ILE:HG22	1.84	0.41
1:B:93:GLN:OE1	2:F:12:GLU:HB3	2.21	0.41
1:B:212:LEU:CD2	1:A:223:GLU:HG3	2.50	0.41
1:A:227:GLN:OE1	1:A:232:LEU:HD12	2.21	0.41
1:D:31:THR:O	1:D:33:LYS:HE2	2.21	0.41
2:H:432:GLU:HB3	2:H:444:PRO:HG3	2.02	0.41
2:F:549:ASP:OD1	2:F:550:ILE:N	2.54	0.41
2:F:609:PRO:HG3	2:F:621:TYR:CE2	2.56	0.41
2:E:251:LEU:HD23	2:E:251:LEU:HA	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:31:THR:O	1:C:33:LYS:HE2	2.21	0.41
1:C:287:GLY:O	1:C:292:LYS:HE3	2.20	0.41
2:F:185:SER:HB3	2:F:197:ILE:HD11	2.03	0.41
2:E:7:LEU:HD22	2:E:134:ILE:HD12	2.02	0.41
1:B:132:GLU:HB2	1:B:134:TRP:HE1	1.86	0.41
1:A:91:ASN:O	1:A:95:LEU:HG	2.21	0.41
2:H:581:PHE:O	2:H:585:ILE:HG12	2.21	0.41
2:F:269:ILE:HD11	2:F:274:LEU:HD21	2.02	0.41
2:E:47:PHE:HB2	2:E:54:THR:HB	2.02	0.41
1:B:45:ARG:HG3	1:B:52:TRP:CZ2	2.56	0.41
1:B:135:LEU:N	1:B:138:MET:O	2.31	0.41
1:D:282:GLN:HA	1:D:285:LYS:HB3	2.02	0.41
2:H:357:THR:N	2:H:360:GLU:OE2	2.54	0.41
2:H:372:LEU:HD23	2:H:372:LEU:HA	1.89	0.41
2:H:500:ILE:HD12	2:H:530:ALA:HB1	2.02	0.41
2:F:57:VAL:HG11	2:F:60:LEU:HD13	2.03	0.41
2:F:223:ILE:HG23	2:F:301:VAL:HG21	2.02	0.41
2:F:638:GLU:OE1	2:F:642:LYS:HE3	2.21	0.41
2:E:11:LEU:N	2:E:51:ARG:O	2.30	0.41
2:E:107:LYS:HB2	2:E:116:PHE:CE2	2.56	0.41
2:E:146:MET:O	2:E:147:MET:HE2	2.21	0.41
2:E:252:VAL:HG12	2:E:303:ASN:HB2	2.03	0.41
2:E:505:ALA:O	2:E:509:LYS:CB	2.68	0.41
2:G:284:PHE:CD1	2:G:300:SER:HB2	2.56	0.41
2:G:484:ALA:HA	2:G:487:ILE:HD12	2.03	0.41
2:G:578:ASP:HB3	2:G:581:PHE:HB2	2.03	0.41
1:D:117:ASP:HB2	1:D:132:GLU:HG3	2.01	0.41
1:C:33:LYS:HB2	1:C:33:LYS:HE3	1.86	0.41
2:F:48:SER:OG	2:F:216:ALA:HB2	2.21	0.41
2:F:286:TYR:HB2	2:F:294:LEU:HD11	2.03	0.41
2:E:146:MET:SD	2:E:155:LYS:HD3	2.61	0.41
2:E:556:LYS:HD2	2:E:687:ASP:HB3	2.02	0.41
2:G:667:VAL:HG12	2:G:671:HIS:CE1	2.56	0.41
1:B:17:PHE:O	1:B:20:ASP:HB2	2.22	0.40
1:B:67:ARG:HE	1:B:74:ARG:HD3	1.85	0.40
1:B:117:ASP:HB2	1:B:132:GLU:HG3	2.03	0.40
2:H:10:GLY:HA3	2:H:162:TRP:CE2	2.56	0.40
2:F:229:ALA:O	2:F:233:GLU:HG3	2.20	0.40
2:F:241:ASN:HB3	2:F:244:LEU:HB3	2.02	0.40
2:F:372:LEU:HD22	2:F:376:PHE:CZ	2.56	0.40
2:G:15:PRO:O	2:G:18:VAL:HG22	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:389:ALA:CA	2:G:426:VAL:HG13	2.52	0.40
2:G:586:GLU:O	2:G:589:THR:OG1	2.27	0.40
1:D:237:TYR:O	1:D:241:LEU:HG	2.21	0.40
1:C:227:GLN:OE1	1:C:232:LEU:HD12	2.20	0.40
2:H:236:TRP:HB3	2:H:287:VAL:HG13	2.02	0.40
2:H:379:THR:HG23	2:H:382:GLU:OE2	2.21	0.40
2:H:660:VAL:HG13	2:H:671:HIS:HB3	2.03	0.40
2:E:38:ARG:HE	2:E:64:GLN:HG2	1.86	0.40
2:G:28:GLU:HB2	2:G:32:LYS:NZ	2.37	0.40
2:G:40:ASP:HB2	2:G:61:ALA:HB3	2.02	0.40
2:G:295:LEU:HB3	2:G:297:HIS:HD2	1.87	0.40
2:G:393:TYR:CE2	2:G:394:LYS:HG2	2.56	0.40
2:G:553:THR:HG21	2:G:688:LEU:HD23	2.03	0.40
1:B:67:ARG:NE	1:B:74:ARG:HD3	2.36	0.40
1:B:286:ARG:NH2	1:A:195:GLU:HG3	2.37	0.40
1:A:190:GLY:O	1:A:194:LEU:HB2	2.22	0.40
2:H:62:ASP:HA	2:H:126:ALA:HB2	2.03	0.40
2:H:136:ASP:O	2:H:140:LYS:HE2	2.21	0.40
2:H:272:GLU:HG2	2:H:431:ARG:HH22	1.86	0.40
2:E:4:THR:HG23	2:E:58:LEU:HD23	2.02	0.40
1:B:55:ALA:HA	1:B:82:GLN:O	2.21	0.40
1:B:72:PRO:HB2	1:B:177:SER:HA	2.02	0.40
1:A:36:GLY:H	1:A:80:GLN:NE2	2.20	0.40
1:A:72:PRO:HB2	1:A:178:VAL:H	1.86	0.40
1:D:45:ARG:HB3	1:D:52:TRP:CG	2.56	0.40
1:D:212:LEU:HG	1:D:216:LEU:HD12	2.04	0.40
1:C:28:SER:HB2	1:C:59:PRO:HD2	2.03	0.40
1:C:94:ASP:O	1:C:98:GLN:HG3	2.22	0.40
1:C:220:TYR:CE1	1:C:242:LYS:HD3	2.56	0.40
2:H:343:VAL:HA	2:H:346:LEU:HD12	2.04	0.40
2:E:220:LYS:HG3	2:E:245:LEU:HD21	2.03	0.40
1:B:41:TYR:O	1:B:52:TRP:NE1	2.54	0.40
1:A:282:GLN:O	1:A:286:ARG:HG3	2.22	0.40
1:C:196:PRO:O	1:C:200:ASN:ND2	2.48	0.40
2:H:276:THR:OG1	2:H:408:LEU:HD21	2.21	0.40
2:H:302:ARG:HE	2:H:304:GLY:HA3	1.86	0.40
2:H:541:PHE:HE2	2:H:554:VAL:HG21	1.87	0.40
2:H:547:ARG:NH2	2:H:692:ILE:O	2.52	0.40
2:F:149:TRP:CZ3	2:F:177:LEU:HD12	2.57	0.40
2:F:262:PHE:CZ	2:F:296:PRO:HA	2.56	0.40
2:E:420:LYS:HA	2:E:420:LYS:HD3	1.79	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:41:PHE:HA	2:G:59:GLY:O	2.22	0.40
2:G:589:THR:HB	2:G:593:ARG:CZ	2.51	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 X-ray entries followed by that with respect to entries of similar resolution.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	297/301 (99%)	288 (97%)	9 (3%)	0	100	100
1	B	297/301 (99%)	289 (97%)	8 (3%)	0	100	100
1	C	297/301 (99%)	286 (96%)	11 (4%)	0	100	100
1	D	297/301 (99%)	290 (98%)	7 (2%)	0	100	100
2	E	692/694 (100%)	647 (94%)	44 (6%)	1 (0%)	51	83
2	F	631/694 (91%)	594 (94%)	35 (6%)	2 (0%)	41	75
2	G	631/694 (91%)	587 (93%)	43 (7%)	1 (0%)	47	79
2	H	692/694 (100%)	645 (93%)	46 (7%)	1 (0%)	51	83
All	All	3834/3980 (96%)	3626 (95%)	203 (5%)	5 (0%)	51	83

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	F	177	LEU
2	F	178	ASP
2	H	125	THR
2	G	578	ASP
2	E	169	ASP

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	263/264 (100%)	263 (100%)	0	100	100
1	B	263/264 (100%)	263 (100%)	0	100	100
1	C	263/264 (100%)	263 (100%)	0	100	100
1	D	263/264 (100%)	263 (100%)	0	100	100
2	E	593/593 (100%)	590 (100%)	3 (0%)	88	95
2	F	549/593 (93%)	548 (100%)	1 (0%)	93	98
2	G	549/593 (93%)	549 (100%)	0	100	100
2	H	593/593 (100%)	588 (99%)	5 (1%)	81	91
All	All	3336/3428 (97%)	3327 (100%)	9 (0%)	92	97

All (9) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	H	148	LYS
2	H	149	TRP
2	H	150	SER
2	H	151	THR
2	H	174	VAL
2	F	518	TYR
2	E	189	ARG
2	E	640	ARG
2	E	648	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	245	HIS
1	D	293	HIS
2	E	519	ASN
2	G	297	HIS
2	G	508	GLN

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Mol	Chain	Res	Type
2	G	576	GLN

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 monosaccharides 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 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2		OWAB(Å²)	Q<0.9
1	A	299/301 (99%)	-0.17	1 (0%) 94	88	32, 58, 94, 131	0
1	B	299/301 (99%)	-0.14	4 (1%) 77	63	30, 51, 83, 160	0
1	C	299/301 (99%)	-0.13	1 (0%) 94	88	39, 63, 97, 125	0
1	D	299/301 (99%)	-0.14	2 (0%) 87	78	31, 54, 92, 192	0
2	E	694/694 (100%)	0.16	28 (4%) 38	25	42, 85, 144, 189	0
2	F	635/694 (91%)	-0.07	8 (1%) 77	63	29, 69, 111, 163	0
2	G	635/694 (91%)	-0.01	15 (2%) 59	42	36, 78, 117, 177	0
2	H	694/694 (100%)	-0.02	24 (3%) 44	29	27, 62, 131, 165	0
All	All	3854/3980 (96%)	-0.03	83 (2%) 62	45	27, 66, 127, 192	0

All (83) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	E	123	GLY	7.8
2	E	663	LYS	6.1
2	E	573	ASN	5.2
2	H	519	ASN	4.9
2	F	507	ILE	4.9
2	G	519	ASN	4.6
2	H	81	ASP	4.6
2	H	82	ALA	4.5
2	H	79	ALA	4.4
2	E	602	ALA	4.1
1	D	1	MET	3.9
2	E	694	LYS	3.7
2	F	604	ASP	3.7
2	E	113	PRO	3.6
2	H	75	ALA	3.6
1	C	297	GLU	3.5

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Mol	Chain	Res	Type	RSRZ
1	B	295	GLN	3.5
2	E	108	ASP	3.5
2	H	80	GLN	3.5
2	G	634	ALA	3.4
2	E	107	LYS	3.4
2	E	106	PHE	3.4
2	E	569	ALA	3.4
2	F	519	ASN	3.4
2	E	548	TYR	3.4
2	H	85	ASN	3.3
2	H	648	ARG	3.3
2	G	155	LYS	3.2
2	E	643	ALA	3.2
2	H	76	LYS	3.1
2	H	102	ASP	3.1
2	H	113	PRO	3.1
2	E	65	ALA	3.1
2	G	176	ILE	3.0
2	G	517	THR	3.0
2	E	519	ASN	3.0
1	B	298	THR	2.9
2	G	146	MET	2.9
2	G	1	MET	2.7
2	G	626	GLU	2.7
2	H	100	SER	2.7
2	E	622	ASP	2.7
2	H	84	GLY	2.6
1	D	293	HIS	2.6
2	E	97	GLN	2.6
2	G	55	VAL	2.5
2	H	86	TRP	2.5
2	F	558	SER	2.5
2	E	672	LEU	2.5
1	B	271	MET	2.4
2	E	520	LEU	2.4
2	H	91	ILE	2.3
2	F	508	GLN	2.3
2	G	539	GLN	2.3
2	H	604	ASP	2.3
2	E	155	LYS	2.3
2	E	660	VAL	2.3
2	H	97	GLN	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	294	ALA	2.3
2	H	99	ALA	2.3
2	H	103	ASP	2.3
2	G	44	VAL	2.2
2	H	87	THR	2.2
1	B	296	GLU	2.2
2	H	77	LYS	2.2
2	E	110	LYS	2.2
2	G	6	LEU	2.2
2	G	197	ILE	2.2
2	H	516	ALA	2.2
2	H	83	ASP	2.2
2	F	689	ASN	2.2
2	E	104	ILE	2.2
2	H	101	THR	2.2
2	F	630	GLN	2.2
2	E	355	ILE	2.1
2	F	542	ASN	2.1
2	E	122	ALA	2.1
2	E	653	ASP	2.1
2	G	2	ALA	2.1
2	E	463	SER	2.0
2	G	546	ILE	2.0
2	E	117	VAL	2.0
2	E	603	ASP	2.0

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

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

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

There are no ligands in this entry.

6.5 Other polymers ⓘ

There are no such residues in this entry.