Full wwPDB X-ray Structure Validation Report (i)

Feb 24, 2026 – 01:05 AM EST

PDB ID	:	2PX0 / pdb_00002px0
Title	:	Crystal structure of FlhF complexed with GMPPNP/Mg(2+)
Authors	:	Bange, G.; Wild, K.; Sinning, I.
Deposited on	:	2007-05-14
Resolution	:	3.00 Å(reported)

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

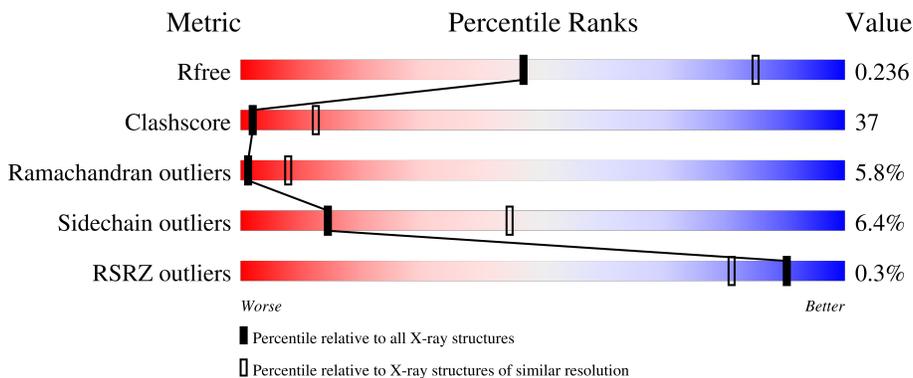|		
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.48.1

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 3.00 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		0.236
Clashscore		37
Ramachandran outliers		5.8%
Sidechain outliers		6.4%
RSRZ outliers		0.3%

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$_{free}$	164625	2511 (3.00-3.00)
Clashscore	180529	2866 (3.00-3.00)
Ramachandran outliers	177936	2778 (3.00-3.00)
Sidechain outliers	177891	2781 (3.00-3.00)
RSRZ outliers	164620	2523 (3.00-3.00)

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	296	39% / 42% / 6% / 13%
1	B	296	35% / 45% / 7% / 13%
1	C	296	30% / 49% / 8% / 13%
1	D	296	29% / 49% / 8% / · / 13%
1	E	296	30% / 48% / 7% / · / 13%

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Mol	Chain	Length	Quality of chain
1	F	296	39%　　41%　　7%　　13%
1	G	296	30%　　49%　　7%　　13%
1	H	296	36%　　43%　　8%　　13%

2 Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 16624 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 Flagellar biosynthesis protein flhF.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	258	Total	C	N	O	S	0	0	0
			2042	1310	331	393	8			
1	B	258	Total	C	N	O	S	0	0	0
			2042	1310	331	393	8			
1	C	258	Total	C	N	O	S	0	0	0
			2042	1310	331	393	8			
1	D	258	Total	C	N	O	S	0	0	0
			2042	1310	331	393	8			
1	E	258	Total	C	N	O	S	0	0	0
			2042	1310	331	393	8			
1	F	258	Total	C	N	O	S	0	0	0
			2042	1310	331	393	8			
1	G	258	Total	C	N	O	S	0	0	0
			2042	1310	331	393	8			
1	H	258	Total	C	N	O	S	0	0	0
			2042	1310	331	393	8			

There are 64 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	71	MET	-	cloning artifact	UNP Q01960
A	72	GLY	-	cloning artifact	UNP Q01960
A	73	HIS	-	cloning artifact	UNP Q01960
A	74	HIS	-	cloning artifact	UNP Q01960
A	75	HIS	-	cloning artifact	UNP Q01960
A	76	HIS	-	cloning artifact	UNP Q01960
A	77	HIS	-	cloning artifact	UNP Q01960
A	78	HIS	-	cloning artifact	UNP Q01960
B	71	MET	-	cloning artifact	UNP Q01960
B	72	GLY	-	cloning artifact	UNP Q01960
B	73	HIS	-	cloning artifact	UNP Q01960
B	74	HIS	-	cloning artifact	UNP Q01960
B	75	HIS	-	cloning artifact	UNP Q01960

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Chain	Residue	Modelled	Actual	Comment	Reference
B	76	HIS	-	cloning artifact	UNP Q01960
B	77	HIS	-	cloning artifact	UNP Q01960
B	78	HIS	-	cloning artifact	UNP Q01960
C	71	MET	-	cloning artifact	UNP Q01960
C	72	GLY	-	cloning artifact	UNP Q01960
C	73	HIS	-	cloning artifact	UNP Q01960
C	74	HIS	-	cloning artifact	UNP Q01960
C	75	HIS	-	cloning artifact	UNP Q01960
C	76	HIS	-	cloning artifact	UNP Q01960
C	77	HIS	-	cloning artifact	UNP Q01960
C	78	HIS	-	cloning artifact	UNP Q01960
D	71	MET	-	cloning artifact	UNP Q01960
D	72	GLY	-	cloning artifact	UNP Q01960
D	73	HIS	-	cloning artifact	UNP Q01960
D	74	HIS	-	cloning artifact	UNP Q01960
D	75	HIS	-	cloning artifact	UNP Q01960
D	76	HIS	-	cloning artifact	UNP Q01960
D	77	HIS	-	cloning artifact	UNP Q01960
D	78	HIS	-	cloning artifact	UNP Q01960
E	71	MET	-	cloning artifact	UNP Q01960
E	72	GLY	-	cloning artifact	UNP Q01960
E	73	HIS	-	cloning artifact	UNP Q01960
E	74	HIS	-	cloning artifact	UNP Q01960
E	75	HIS	-	cloning artifact	UNP Q01960
E	76	HIS	-	cloning artifact	UNP Q01960
E	77	HIS	-	cloning artifact	UNP Q01960
E	78	HIS	-	cloning artifact	UNP Q01960
F	71	MET	-	cloning artifact	UNP Q01960
F	72	GLY	-	cloning artifact	UNP Q01960
F	73	HIS	-	cloning artifact	UNP Q01960
F	74	HIS	-	cloning artifact	UNP Q01960
F	75	HIS	-	cloning artifact	UNP Q01960
F	76	HIS	-	cloning artifact	UNP Q01960
F	77	HIS	-	cloning artifact	UNP Q01960
F	78	HIS	-	cloning artifact	UNP Q01960
G	71	MET	-	cloning artifact	UNP Q01960
G	72	GLY	-	cloning artifact	UNP Q01960
G	73	HIS	-	cloning artifact	UNP Q01960
G	74	HIS	-	cloning artifact	UNP Q01960
G	75	HIS	-	cloning artifact	UNP Q01960
G	76	HIS	-	cloning artifact	UNP Q01960
G	77	HIS	-	cloning artifact	UNP Q01960

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Chain	Residue	Modelled	Actual	Comment	Reference
G	78	HIS	-	cloning artifact	UNP Q01960
H	71	MET	-	cloning artifact	UNP Q01960
H	72	GLY	-	cloning artifact	UNP Q01960
H	73	HIS	-	cloning artifact	UNP Q01960
H	74	HIS	-	cloning artifact	UNP Q01960
H	75	HIS	-	cloning artifact	UNP Q01960
H	76	HIS	-	cloning artifact	UNP Q01960
H	77	HIS	-	cloning artifact	UNP Q01960
H	78	HIS	-	cloning artifact	UNP Q01960

- Molecule 2 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total 1	Mg 1	0	0
2	B	1	Total 1	Mg 1	0	0
2	C	1	Total 1	Mg 1	0	0
2	D	1	Total 1	Mg 1	0	0
2	E	1	Total 1	Mg 1	0	0
2	F	1	Total 1	Mg 1	0	0
2	G	1	Total 1	Mg 1	0	0
2	H	1	Total 1	Mg 1	0	0

- Molecule 3 is PHOSPHOAMINOPHOSPHONIC ACID-GUANYLATE ESTER (CCD ID: GNP) (formula: $C_{10}H_{17}N_6O_{13}P_3$).

GNP

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	0	0
			32	10	6	13	3		
3	B	1	Total	C	N	O	P	0	0
			32	10	6	13	3		
3	C	1	Total	C	N	O	P	0	0
			32	10	6	13	3		
3	D	1	Total	C	N	O	P	0	0
			32	10	6	13	3		
3	E	1	Total	C	N	O	P	0	0
			32	10	6	13	3		
3	F	1	Total	C	N	O	P	0	0
			32	10	6	13	3		
3	G	1	Total	C	N	O	P	0	0
			32	10	6	13	3		
3	H	1	Total	C	N	O	P	0	0
			32	10	6	13	3		

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	3	Total	O	0	0
			3	3		
4	B	3	Total	O	0	0
			3	3		
4	C	3	Total	O	0	0
			3	3		
4	D	3	Total	O	0	0
			3	3		

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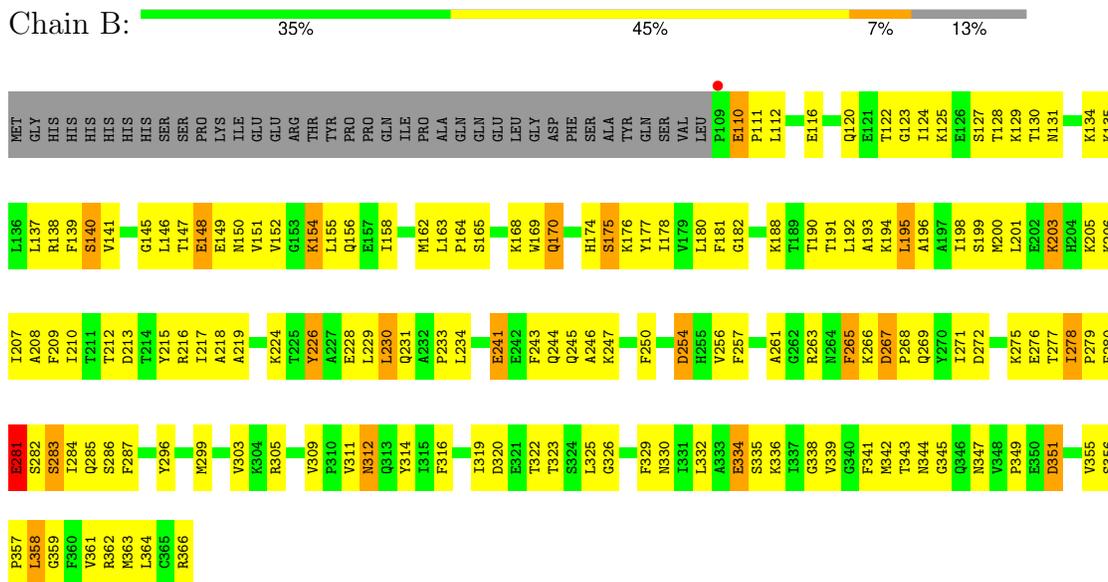| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	E	3	Total 3	O 3	0	0
4	F	3	Total 3	O 3	0	0
4	G	3	Total 3	O 3	0	0
4	H	3	Total 3	O 3	0	0

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 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.
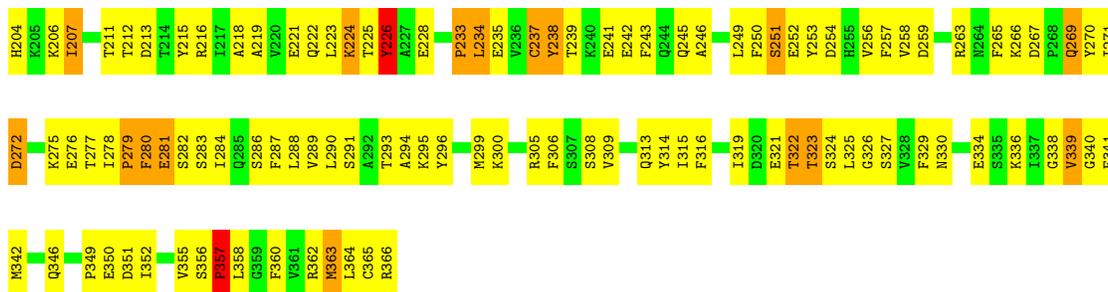
• Molecule 1: Flagellar biosynthesis protein flhF
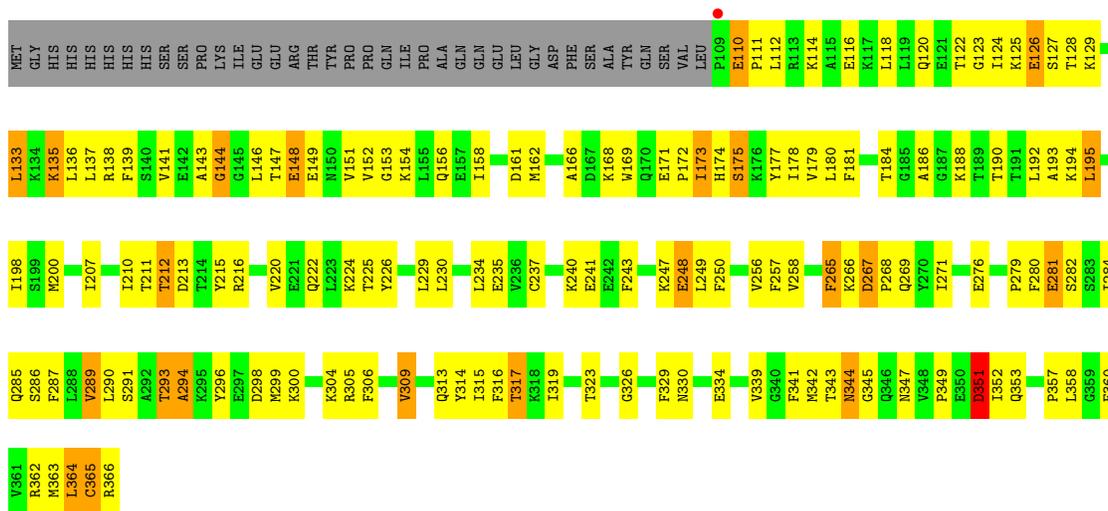
Chain A:

• Molecule 1: Flagellar biosynthesis protein flhF

Chain B:

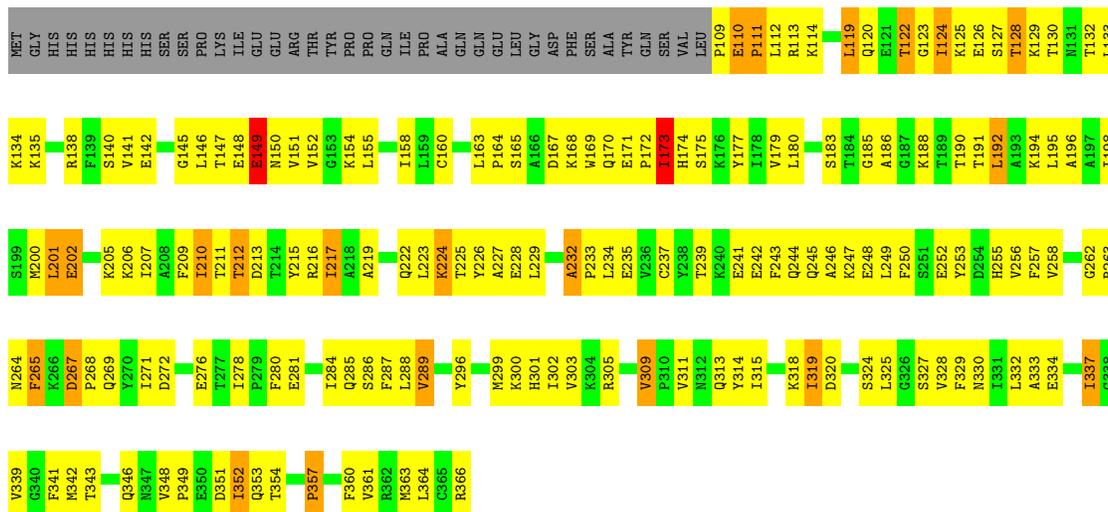

• Molecule 1: Flagellar biosynthesis protein flhF

Chain C:

• Molecule 1: Flagellar biosynthesis protein flhF

Chain D:

• Molecule 1: Flagellar biosynthesis protein flhF

Chain E:

H204 K205 K206 I207 T211 T212 D213 T214 Y215 R216 I217 A218 A219 V220 E221 Q222 L223 K224 T225 Y226 A227 E228 P233 L234 E235 V236 C237 Y238 T239 K240 E241 E242 F243 Q244 Q245 A246 L249 F250 S251 E252 Y253 D254 H255 V256 F257 V258 D259 R263 N264 F265 K266 D267 P268 Q269 Y270 I271

D272 K275 E276 T277 I278 P279 F280 E281 S282 S283 I284 Q285 S286 F287 L288 V289 L290 S291 A292 T293 A294 K295 Y296 M299 K300 R305 F306 S307 S308 V309 Q313 Y314 I315 F316 I319 D320 E321 T322 T323 S324 L325 G326 S327 V328 F329 N330 E334 S335 K336 I337 G338 V339 G340 F341

M342 Q346 P349 E350 D351 I352 V355 S356 P357 L358 G359 F360 V361 R362 M363 L364 C365 R366

• Molecule 1: Flagellar biosynthesis protein flhF

Chain F: 39% 41% 7% 13%

MET GLY HIS HIS HIS HIS HIS SER SER PRO LYS ILE GLU GLU ARG THR TYR PRO PRO GLN ILE PRO ALA GLN GLN GLU GLY LEU ASP PHE SER ALA TYR GLN SER VAL LEU P109 E110 P111 L112 R113 K114 A115 E116 K117 L118 L119 Q120 E121 T122 G123 I124 K125 E126 S127 T128 K129

L133 K134 K135 L136 L137 R138 F139 S140 V141 E142 A143 G144 G145 L146 T147 E148 E149 N150 V151 V152 G153 K154 L155 Q156 E157 I158 D161 M162 A166 D167 K168 W169 Q170 E171 P172 I173 H174 S175 K176 I177 I178 V179 L180 F181 T184 G185 A186 G187 K188 T189 T190 T191 L192 A193 K194 L195

I198 S199 M200 I207 I210 T211 T212 D213 T214 Y215 R216 V220 E221 Q222 L223 K224 T225 Y226 L229 L230 L234 E235 V236 C237 K240 E241 E242 F243 K247 E248 L249 F250 V256 F257 V258 F265 K266 D267 P268 Q269 Y270 I271 E276 P279 F280 E281 S282 S283 I284

Q285 S286 F287 L288 V289 L290 S291 A292 T293 A294 K295 Y296 E297 D298 M299 K300 K304 R305 F306 V309 Q313 Y314 I315 F316 T317 K318 I319 T323 G326 F329 N330 E334 V339 G340 F341 M342 T343 N344 G345 Q346 N347 V348 P349 E350 D351 I352 Q353 P357 L358 G359 F360

V361 R362 M363 L364 C365 R366

• Molecule 1: Flagellar biosynthesis protein flhF

Chain G: 30% 49% 7% • 13%

MET GLY HIS HIS HIS HIS HIS SER SER PRO LYS ILE GLU GLU ARG THR TYR PRO PRO GLN ILE PRO ALA GLN GLN GLU LEU GLY ASP PHE SER ALA TYR GLN SER VAL LEU P109 E110 P111 L112 R113 K114 L119 Q120 E121 T122 G123 I124 K125 E126 S127 T128 K129 T130 N131 T132 L133

K134 K135 R138 F139 S140 V141 E142 G145 L146 T147 E148 E149 N150 V151 V152 G153 K154 L155 I158 L159 C160 L163 P164 S165 A166 D167 K168 W169 Q170 E171 P172 I173 H174 S175 K176 Y177 I178 V179 L180 S183 T184 G185 A186 G187 K188 T189 T190 T191 L192 A193 K194 L195 A196 A197 I198

S199 M200 L201 E202 K205 K206 I207 A208 F209 I210 T211 T212 D213 T214 Y215 R216 I217 A218 A219 Q222 L223 K224 T225 Y226 A227 E228 L229 A232 P233 L234 E235 V236 C237 Y238 T239 K240 E241 E242 F243 Q244 Q245 A246 K247 E248 L249 F250 S251 E252 Y253 D254 H255 V256 F257 V258 G262 R263

N264 F265 K266 D267 P268 Q269 Y270 I271 D272 E276 T277 I278 P279 F280 E281 I284 Q285 S286 F287 L288 V289 Y296 M299 K300 H301 I302 V303 K304 R305 V309 P310 V311 N312 Q313 Y314 I315 K318 I319 D320 S324 L325 G326 S327 V328 F329 N330 I331 L332 A333 E334 I337 G338

V339 G340 F341 M342 T343 Q346 N347 V348 P349 E350 D351 I352 Q353 T354 P357 F360 V361 R362 M363 L364 C365 R366

• Molecule 1: Flagellar biosynthesis protein flhF

Chain H:

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	104.65Å 111.38Å 112.09Å 90.00° 89.78° 90.00°	Depositor
Resolution (Å)	62.97 – 3.00 62.97 – 3.00	Depositor EDS
% Data completeness (in resolution range)	98.8 (62.97-3.00) 98.9 (62.97-3.00)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.07	Depositor
$< I/\sigma(I) >$ [1]	2.12 (at 3.01Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.254 , 0.328 0.244 , 0.236	Depositor DCC
R_{free} test set	2605 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å^2)	83.1	Xtriage
Anisotropy	0.505	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 75.4	EDS
L-test for twinning[2]	$< |L| > = 0.46$, $< L^2 > = 0.28$	Xtriage
Estimated twinning fraction	0.019 for -h,l,k 0.028 for -h,-l,-k 0.088 for h,-k,-l	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	16624	wwPDB-VP
Average B, all atoms (Å^2)	79.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 8.07% 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 ⓘ

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

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	0.48	0/2079	0.99	7/2805 (0.2%)
1	B	0.40	0/2079	0.98	8/2805 (0.3%)
1	C	0.38	0/2079	0.99	14/2805 (0.5%)
1	D	0.41	0/2079	0.99	10/2805 (0.4%)
1	E	0.44	0/2079	1.00	14/2805 (0.5%)
1	F	0.43	0/2079	0.98	9/2805 (0.3%)
1	G	0.41	0/2079	0.96	10/2805 (0.4%)
1	H	0.41	0/2079	0.99	12/2805 (0.4%)
All	All	0.42	0/16632	0.99	84/22440 (0.4%)

There are no bond length outliers.

All (84) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	266	LYS	N-CA-C	-9.08	102.12	113.02
1	A	212	THR	N-CA-C	-7.56	103.42	114.39
1	H	266	LYS	N-CA-C	-7.44	104.20	113.20
1	H	215	TYR	N-CA-C	7.42	119.16	111.14
1	D	113	ARG	N-CA-C	-7.31	103.25	111.07
1	D	225	THR	N-CA-C	-7.29	103.33	111.28
1	C	198	ILE	N-CA-C	-7.19	105.63	111.81
1	D	286	SER	N-CA-C	7.12	120.16	110.55
1	E	339	VAL	N-CA-C	7.07	118.07	108.17
1	E	272	ASP	N-CA-C	-7.04	103.21	111.03
1	F	289	VAL	N-CA-C	6.99	118.20	107.99
1	B	203	LYS	N-CA-C	-6.93	106.02	114.75
1	A	192	LEU	N-CA-C	-6.87	103.81	111.71
1	H	305	ARG	N-CA-C	-6.87	104.90	113.55
1	E	266	LYS	N-CA-C	-6.83	101.12	111.56
1	D	110	GLU	CA-C-N	-6.80	112.57	120.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	110	GLU	C-N-CA	-6.80	112.57	120.12
1	C	309	VAL	N-CA-C	6.67	115.49	108.95
1	A	266	LYS	N-CA-C	-6.63	105.11	113.72
1	C	113	ARG	N-CA-C	-6.62	104.46	112.54
1	F	249	LEU	N-CA-C	-6.37	105.57	113.15
1	A	289	VAL	N-CA-C	6.36	117.64	107.73
1	C	278	ILE	CA-C-N	6.32	125.74	118.85
1	C	278	ILE	C-N-CA	6.32	125.74	118.85
1	C	258	VAL	N-CA-C	6.29	117.28	107.28
1	E	226	TYR	N-CA-C	-6.27	104.69	112.90
1	D	148	GLU	N-CA-C	-6.26	105.63	113.20
1	H	246	ALA	N-CA-C	-6.19	104.99	112.54
1	G	337	ILE	N-CA-C	6.03	117.45	108.46
1	H	113	ARG	N-CA-C	-6.02	104.80	111.36
1	C	227	ALA	N-CA-C	-6.01	104.72	111.28
1	C	351	ASP	N-CA-C	6.01	119.28	107.98
1	G	232	ALA	CA-C-N	5.98	127.32	119.84
1	G	232	ALA	C-N-CA	5.98	127.32	119.84
1	H	351	ASP	N-CA-C	5.97	118.19	108.63
1	H	353	GLN	N-CA-C	5.92	115.92	108.45
1	B	246	ALA	N-CA-C	-5.90	104.80	112.23
1	F	135	LYS	N-CA-C	-5.86	105.13	112.93
1	F	294	ALA	N-CA-C	5.82	119.40	110.20
1	B	230	LEU	N-CA-C	-5.81	104.90	113.61
1	C	289	VAL	N-CA-C	5.78	116.18	107.80
1	D	278	ILE	CA-C-N	5.75	125.43	119.05
1	D	278	ILE	C-N-CA	5.75	125.43	119.05
1	F	248	GLU	N-CA-C	-5.72	106.64	113.97
1	E	363	MET	N-CA-C	-5.68	104.70	111.69
1	G	212	THR	N-CA-C	-5.63	105.36	114.09
1	C	293	THR	N-CA-C	-5.62	107.06	114.31
1	H	309	VAL	CA-C-N	5.58	126.82	119.84
1	H	309	VAL	C-N-CA	5.58	126.82	119.84
1	B	351	ASP	N-CA-C	5.58	118.46	107.98
1	E	148	GLU	N-CA-C	-5.57	105.98	112.89
1	G	289	VAL	N-CA-C	5.54	115.92	108.17
1	E	207	ILE	N-CA-C	5.53	116.95	108.71
1	F	229	LEU	N-CA-C	-5.49	106.43	113.23
1	B	226	TYR	N-CA-C	-5.48	106.64	113.55
1	G	351	ASP	N-CA-C	5.47	117.58	107.73
1	B	212	THR	N-CA-C	-5.47	106.65	113.38
1	E	284	ILE	N-CA-C	5.47	115.76	108.11

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	306	PHE	N-CA-C	-5.46	106.93	113.21
1	F	351	ASP	N-CA-C	5.45	122.41	110.80
1	A	141	VAL	N-CA-C	-5.45	105.61	113.07
1	H	264	ASN	N-CA-C	-5.44	101.46	109.62
1	D	266	LYS	N-CA-C	-5.44	105.81	113.20
1	C	341	PHE	N-CA-C	5.41	117.20	109.14
1	E	321	GLU	N-CA-C	-5.38	106.89	113.50
1	E	141	VAL	N-CA-C	-5.34	105.81	113.07
1	E	245	GLN	N-CA-C	-5.33	104.72	111.11
1	C	309	VAL	CA-C-N	5.32	125.23	119.76
1	C	309	VAL	C-N-CA	5.32	125.23	119.76
1	H	240	LYS	N-CA-C	-5.28	106.09	112.54
1	E	113	ARG	N-CA-C	-5.27	104.95	111.33
1	G	286	SER	N-CA-C	5.25	118.79	109.96
1	A	230	LEU	N-CA-C	-5.23	106.97	113.19
1	G	111	PRO	N-CA-C	-5.22	106.93	114.18
1	C	356	SER	N-CA-C	-5.19	104.08	110.31
1	G	265	PHE	N-CA-C	5.17	118.69	112.38
1	F	212	THR	N-CA-C	-5.16	106.09	114.09
1	G	112	LEU	N-CA-C	-5.16	106.83	113.23
1	E	270	TYR	N-CA-C	5.15	119.61	113.23
1	F	168	LYS	N-CA-C	-5.13	106.80	113.16
1	D	192	LEU	N-CA-C	-5.12	106.13	112.38
1	E	171	GLU	N-CA-C	-5.12	101.85	109.42
1	B	286	SER	N-CA-C	5.07	117.50	109.24
1	A	143	ALA	N-CA-C	5.06	114.72	108.19

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	2042	0	2080	133	0
1	B	2042	0	2080	151	0
1	C	2042	0	2080	171	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	2042	0	2080	191	0
1	E	2042	0	2080	156	0
1	F	2042	0	2079	140	0
1	G	2042	0	2080	168	0
1	H	2042	0	2080	169	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
2	E	1	0	0	0	0
2	F	1	0	0	0	0
2	G	1	0	0	0	0
2	H	1	0	0	0	0
3	A	32	0	13	0	0
3	B	32	0	13	1	0
3	C	32	0	13	3	0
3	D	32	0	13	2	0
3	E	32	0	13	2	0
3	F	32	0	13	0	0
3	G	32	0	13	0	0
3	H	32	0	13	0	0
4	A	3	0	0	0	0
4	B	3	0	0	0	0
4	C	3	0	0	1	0
4	D	3	0	0	0	0
4	E	3	0	0	0	0
4	F	3	0	0	0	0
4	G	3	0	0	0	0
4	H	3	0	0	0	0
All	All	16624	0	16743	1244	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 37.

All (1244) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:166:ALA:HA	1:D:357:PRO:HG2	1.35	1.09
1:C:211:THR:HG22	1:C:212:THR:H	1.24	1.01
1:G:289:VAL:HG22	1:G:315:ILE:HB	1.44	0.99
1:D:289:VAL:HG22	1:D:315:ILE:HB	1.45	0.98

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:192:LEU:HD22	1:C:257:PHE:HB3	1.47	0.96
1:D:110:GLU:HG3	1:D:111:PRO:HD3	1.48	0.96
1:E:192:LEU:HD11	1:E:258:VAL:O	1.65	0.96
1:E:358:LEU:HG	1:E:362:ARG:HH21	1.28	0.96
1:C:110:GLU:HB3	1:C:111:PRO:HD3	1.50	0.92
1:D:200:MET:HE3	1:D:207:ILE:HB	1.53	0.91
1:H:208:ALA:HB3	1:H:256:VAL:HG22	1.52	0.90
1:D:216:ARG:HB3	1:D:219:ALA:HB2	1.52	0.90
1:C:268:PRO:HA	1:C:271:ILE:HB	1.55	0.89
1:G:319:ILE:HG21	1:G:342:MET:HE2	1.55	0.89
1:B:140:SER:HB2	1:B:146:LEU:HD11	1.54	0.88
1:C:206:LYS:HB2	1:C:254:ASP:H	1.38	0.87
1:E:275:LYS:HD3	1:E:309:VAL:HG12	1.56	0.87
1:G:268:PRO:HD3	1:G:305:ARG:HH21	1.39	0.86
1:E:121:GLU:HB3	1:E:366:ARG:HG3	1.59	0.85
1:F:192:LEU:HD22	1:F:257:PHE:HB3	1.57	0.85
1:F:319:ILE:HG21	1:F:342:MET:HE3	1.58	0.85
1:G:341:PHE:HB3	1:G:352:ILE:HD11	1.57	0.85
1:F:267:ASP:OD2	1:F:269:GLN:HB3	1.77	0.84
1:A:298:ASP:OD1	1:E:323:THR:HB	1.77	0.84
1:C:211:THR:HG22	1:C:213:ASP:H	1.41	0.83
1:H:268:PRO:HD3	1:H:305:ARG:NH2	1.93	0.83
1:C:216:ARG:HB3	1:C:219:ALA:HB2	1.59	0.82
1:E:163:LEU:HB3	1:E:164:PRO:HD2	1.59	0.82
1:E:164:PRO:HG2	1:E:169:TRP:HE1	1.45	0.82
1:D:302:ILE:HA	1:D:305:ARG:HB2	1.62	0.81
1:H:216:ARG:HB3	1:H:219:ALA:HB2	1.62	0.81
1:E:179:VAL:O	1:E:180:LEU:HD23	1.81	0.80
1:E:211:THR:HG22	1:E:213:ASP:H	1.45	0.80
1:E:319:ILE:HG21	1:E:342:MET:HE3	1.63	0.80
1:H:224:LYS:HA	1:H:234:LEU:HD13	1.64	0.80
1:A:152:VAL:O	1:A:156:GLN:HG3	1.82	0.80
1:F:200:MET:HB2	1:F:207:ILE:HG13	1.63	0.80
1:B:127:SER:O	1:B:131:ASN:HB2	1.81	0.80
1:G:192:LEU:HD11	1:G:257:PHE:HB3	1.61	0.80
1:D:110:GLU:CG	1:D:111:PRO:HD3	2.12	0.79
1:A:211:THR:HG22	1:A:213:ASP:H	1.46	0.79
1:D:264:ASN:ND2	1:D:266:LYS:H	1.80	0.79
1:D:248:GLU:HA	1:D:251:SER:HB2	1.62	0.79
1:A:110:GLU:HB3	1:A:111:PRO:CD	2.11	0.79
1:D:203:LYS:O	1:D:205:LYS:HG3	1.82	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:281:GLU:HG2	1:B:282:SER:N	1.99	0.78
1:A:327:SER:HA	1:A:330:ASN:HD22	1.49	0.78
1:D:280:PHE:HA	1:D:284:ILE:HD12	1.66	0.78
1:H:180:LEU:HD22	1:H:287:PHE:HB2	1.64	0.78
1:B:180:LEU:CD2	1:B:287:PHE:HB2	2.13	0.77
1:B:199:SER:HA	1:B:203:LYS:HB2	1.66	0.77
1:A:180:LEU:HD22	1:A:287:PHE:HB2	1.65	0.77
1:F:171:GLU:HB2	1:F:313:GLN:HG3	1.66	0.77
1:C:217:ILE:HD13	1:C:217:ILE:H	1.50	0.76
1:H:221:GLU:HA	1:H:224:LYS:HB2	1.68	0.76
1:H:206:LYS:HD2	1:H:206:LYS:N	2.01	0.76
1:G:319:ILE:HD13	1:G:342:MET:HE2	1.68	0.76
1:H:122:THR:OG1	1:H:124:ILE:HG12	1.85	0.76
1:F:128:THR:HG23	1:F:162:MET:HE1	1.68	0.75
1:C:216:ARG:HH22	1:G:216:ARG:HH22	1.33	0.75
1:E:110:GLU:HB2	1:E:111:PRO:CD	2.17	0.75
1:B:267:ASP:OD2	1:B:269:GLN:HB3	1.86	0.75
1:H:223:LEU:HA	1:H:226:TYR:HB2	1.69	0.75
1:G:122:THR:OG1	1:G:124:ILE:HG12	1.88	0.74
1:H:223:LEU:HD12	1:H:226:TYR:HB3	1.70	0.74
1:B:271:ILE:HD11	1:B:305:ARG:HB3	1.70	0.74
1:C:272:ASP:HA	1:C:275:LYS:HE2	1.70	0.74
1:D:264:ASN:HD21	1:D:266:LYS:H	1.35	0.74
1:F:180:LEU:HD22	1:F:287:PHE:HB2	1.70	0.74
1:F:207:ILE:HD12	1:F:257:PHE:HE2	1.53	0.73
1:G:319:ILE:HG21	1:G:342:MET:CE	2.18	0.73
1:C:218:ALA:HB3	1:G:222:GLN:HG2	1.70	0.73
1:H:170:GLN:HG2	1:H:354:THR:OG1	1.88	0.73
1:D:216:ARG:HB3	1:D:219:ALA:CB	2.18	0.73
1:E:358:LEU:HG	1:E:362:ARG:NH2	2.03	0.73
1:H:137:LEU:HD23	1:H:138:ARG:H	1.53	0.73
1:A:147:THR:C	1:A:149:GLU:H	1.96	0.73
1:C:211:THR:HG22	1:C:212:THR:N	2.02	0.73
1:C:206:LYS:HB3	1:C:253:TYR:HD1	1.52	0.73
1:E:192:LEU:HD22	1:E:257:PHE:HB3	1.70	0.73
1:G:211:THR:HG22	1:G:213:ASP:H	1.53	0.73
1:A:110:GLU:HB3	1:A:111:PRO:HD2	1.69	0.72
1:D:147:THR:HG22	1:D:148:GLU:H	1.53	0.72
1:H:192:LEU:CD2	1:H:257:PHE:HB3	2.19	0.72
1:D:360:PHE:HA	1:D:363:MET:HE3	1.71	0.72
1:B:347:ASN:ND2	1:F:215:TYR:OH	2.22	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:175:SER:HB2	1:F:285:GLN:HE21	1.54	0.72
1:A:109:PRO:O	1:A:110:GLU:HG2	1.88	0.72
1:H:128:THR:HG23	1:H:162:MET:HE1	1.71	0.72
1:D:181:PHE:HE2	1:D:286:SER:HB2	1.54	0.72
1:B:281:GLU:HG2	1:B:282:SER:H	1.55	0.71
1:D:222:GLN:HE22	1:H:216:ARG:HH21	1.35	0.71
1:C:179:VAL:HG22	1:C:258:VAL:HB	1.72	0.71
1:B:110:GLU:HB2	1:B:111:PRO:CD	2.20	0.71
1:H:120:GLN:HE21	1:H:129:LYS:HE3	1.55	0.71
1:E:237:CYS:HB3	1:E:242:GLU:HB2	1.74	0.70
1:A:355:VAL:HG11	1:A:363:MET:HE1	1.73	0.70
1:B:124:ILE:CG2	1:B:128:THR:HB	2.21	0.70
1:G:352:ILE:HD13	1:G:353:GLN:N	2.06	0.70
1:H:268:PRO:HA	1:H:271:ILE:HD13	1.74	0.70
1:D:194:LYS:HG2	1:D:348:VAL:HG13	1.72	0.70
1:B:244:GLN:HE22	1:B:247:LYS:NZ	1.90	0.69
1:C:200:MET:HB2	1:C:207:ILE:HG13	1.74	0.69
1:B:275:LYS:HZ1	1:B:309:VAL:HB	1.57	0.69
1:C:122:THR:OG1	1:C:124:ILE:HG12	1.92	0.69
1:H:137:LEU:HA	1:H:140:SER:OG	1.91	0.69
1:A:138:ARG:O	1:A:141:VAL:HG12	1.93	0.69
1:D:167:ASP:C	1:D:169:TRP:H	1.99	0.69
1:F:268:PRO:HA	1:F:271:ILE:HD13	1.73	0.69
1:B:358:LEU:O	1:B:362:ARG:HG3	1.93	0.69
1:F:180:LEU:CD2	1:F:287:PHE:HB2	2.21	0.69
1:C:110:GLU:CB	1:C:111:PRO:HD3	2.21	0.69
1:F:200:MET:HB2	1:F:207:ILE:CG1	2.22	0.69
1:C:123:GLY:CA	1:C:326:GLY:HA3	2.22	0.69
1:C:211:THR:CG2	1:C:212:THR:H	2.05	0.69
1:D:192:LEU:O	1:D:192:LEU:HD13	1.92	0.69
1:E:216:ARG:HB3	1:E:219:ALA:HB2	1.74	0.69
1:F:152:VAL:O	1:F:156:GLN:HG3	1.93	0.69
1:D:300:LYS:O	1:D:304:LYS:HD3	1.93	0.68
1:F:210:ILE:HB	1:F:258:VAL:HG22	1.74	0.68
1:D:280:PHE:CA	1:D:284:ILE:HD12	2.23	0.68
1:C:323:THR:HG22	1:C:366:ARG:HH22	1.57	0.68
1:G:233:PRO:HB2	1:G:250:PHE:CZ	2.28	0.68
1:B:194:LYS:HG2	1:B:349:PRO:HA	1.76	0.68
1:E:194:LYS:HD3	1:E:352:ILE:HB	1.74	0.68
1:D:196:ALA:HA	1:D:257:PHE:CE2	2.29	0.68
1:F:179:VAL:O	1:F:180:LEU:HD23	1.93	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:119:LEU:HD11	1:G:132:THR:HG21	1.74	0.68
1:D:191:THR:O	1:D:195:LEU:HD13	1.94	0.67
1:A:198:ILE:HD11	1:A:349:PRO:HB2	1.74	0.67
1:F:280:PHE:HA	1:F:284:ILE:HD12	1.75	0.67
1:H:192:LEU:HD11	1:H:258:VAL:O	1.94	0.67
1:A:279:PRO:O	1:A:280:PHE:HB2	1.94	0.67
1:H:189:THR:HG21	1:H:222:GLN:OE1	1.94	0.67
1:D:182:GLY:N	1:D:188:LYS:HD3	2.09	0.67
1:H:235:GLU:HG3	1:H:249:LEU:HD23	1.77	0.67
1:B:200:MET:HB2	1:B:207:ILE:HG13	1.76	0.67
1:D:177:TYR:OH	1:D:247:LYS:HB3	1.95	0.67
1:D:239:THR:OG1	1:D:242:GLU:HG3	1.94	0.67
1:E:147:THR:O	1:E:151:VAL:HG13	1.95	0.67
1:F:169:TRP:CE2	1:F:357:PRO:HG3	2.30	0.67
1:B:181:PHE:HZ	1:B:311:VAL:HG12	1.59	0.67
1:G:244:GLN:HA	1:G:247:LYS:HD3	1.77	0.67
1:A:234:LEU:HD23	1:A:235:GLU:N	2.10	0.66
1:F:226:TYR:HE1	1:F:230:LEU:HD13	1.59	0.66
1:H:342:MET:HE2	1:H:355:VAL:HG21	1.77	0.66
1:C:208:ALA:O	1:C:209:PHE:HD1	1.79	0.66
1:G:177:TYR:HD1	1:G:256:VAL:HB	1.59	0.66
1:B:152:VAL:HG12	1:B:156:GLN:HE21	1.61	0.66
1:D:186:ALA:O	1:D:318:LYS:HE3	1.96	0.66
1:D:319:ILE:HG21	1:D:342:MET:HE3	1.77	0.66
1:E:147:THR:HG22	1:E:148:GLU:N	2.11	0.66
1:D:314:TYR:O	1:D:339:VAL:HG23	1.95	0.66
1:C:342:MET:HE1	1:C:363:MET:HE1	1.78	0.66
1:G:192:LEU:CD1	1:G:257:PHE:HB3	2.26	0.66
1:C:199:SER:HA	1:C:203:LYS:CG	2.26	0.65
1:E:272:ASP:O	1:E:276:GLU:HG2	1.97	0.65
1:D:286:SER:O	1:D:312:ASN:HB2	1.96	0.65
1:G:173:ILE:HA	1:G:285:GLN:NE2	2.11	0.65
1:G:280:PHE:HA	1:G:284:ILE:HD12	1.79	0.65
1:E:322:THR:HG21	1:E:325:LEU:CD1	2.27	0.65
1:A:147:THR:C	1:A:149:GLU:N	2.54	0.65
1:D:343:THR:HA	1:D:352:ILE:HA	1.78	0.65
1:A:342:MET:HE2	1:A:355:VAL:HG11	1.78	0.65
1:C:171:GLU:HB2	1:C:313:GLN:HG3	1.78	0.65
1:C:170:GLN:HG2	1:C:354:THR:OG1	1.96	0.65
1:A:268:PRO:HD3	1:A:305:ARG:HH22	1.60	0.65
1:D:110:GLU:HB3	1:D:111:PRO:CD	2.27	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:284:ILE:HG23	1:H:285:GLN:N	2.12	0.65
1:A:147:THR:O	1:A:149:GLU:N	2.30	0.65
1:D:275:LYS:HA	1:D:280:PHE:HE2	1.61	0.65
1:B:194:LYS:O	1:B:198:ILE:HG12	1.96	0.64
1:E:194:LYS:O	1:E:198:ILE:HG12	1.96	0.64
1:F:116:GLU:HB2	1:F:133:LEU:HD11	1.79	0.64
1:D:285:GLN:HG3	1:D:312:ASN:ND2	2.12	0.64
1:A:288:LEU:HD23	1:A:314:TYR:HE1	1.62	0.64
1:E:358:LEU:HD12	1:E:358:LEU:O	1.97	0.64
1:G:233:PRO:HB2	1:G:250:PHE:CE1	2.32	0.64
1:H:194:LYS:O	1:H:198:ILE:HG12	1.97	0.64
1:F:349:PRO:O	1:F:352:ILE:HG22	1.97	0.64
1:C:123:GLY:HA3	1:C:326:GLY:HA3	1.79	0.64
1:B:278:ILE:N	1:B:278:ILE:HD12	2.12	0.64
1:E:163:LEU:HB3	1:E:164:PRO:CD	2.28	0.64
1:G:267:ASP:OD2	1:G:269:GLN:HB3	1.97	0.64
1:C:288:LEU:HG	1:C:290:LEU:HD11	1.78	0.64
1:G:155:LEU:O	1:G:158:ILE:HB	1.98	0.63
1:A:112:LEU:HD11	1:A:146:LEU:HD12	1.80	0.63
1:A:271:ILE:O	1:A:275:LYS:HE2	1.98	0.63
1:G:200:MET:HE3	1:G:207:ILE:HB	1.80	0.63
1:H:231:GLN:N	1:H:231:GLN:OE1	2.31	0.63
1:E:223:LEU:HA	1:E:226:TYR:HB2	1.78	0.63
1:G:133:LEU:C	1:G:135:LYS:H	2.05	0.63
1:H:192:LEU:HD22	1:H:257:PHE:HB3	1.80	0.63
1:E:279:PRO:O	1:E:280:PHE:HB2	1.98	0.63
1:G:180:LEU:CD2	1:G:287:PHE:HB2	2.29	0.63
1:A:211:THR:HG22	1:A:213:ASP:N	2.13	0.62
1:A:194:LYS:O	1:A:198:ILE:HG12	1.99	0.62
1:B:154:LYS:O	1:B:158:ILE:HG13	1.98	0.62
1:F:200:MET:HE3	1:F:207:ILE:HB	1.80	0.62
1:B:180:LEU:HD23	1:B:287:PHE:HB2	1.79	0.62
1:C:147:THR:C	1:C:149:GLU:H	2.08	0.62
1:H:302:ILE:HD12	1:H:302:ILE:O	1.99	0.62
1:G:211:THR:OG1	1:G:223:LEU:HD23	1.99	0.62
1:D:110:GLU:CB	1:D:111:PRO:HD3	2.28	0.62
1:D:181:PHE:CE2	1:D:286:SER:HB2	2.34	0.62
1:C:237:CYS:SG	1:C:243:PHE:HA	2.40	0.62
1:F:169:TRP:CE3	1:F:339:VAL:HG22	2.35	0.62
1:G:324:SER:HB3	1:G:366:ARG:NH2	2.15	0.62
1:B:175:SER:HB3	1:B:283:SER:O	2.00	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:110:GLU:HB2	1:E:111:PRO:HD3	1.81	0.62
1:E:119:LEU:O	1:E:129:LYS:HE2	2.00	0.62
1:H:119:LEU:HD21	1:H:155:LEU:HD11	1.82	0.62
1:H:129:LYS:HZ3	1:H:129:LYS:HB3	1.64	0.61
1:B:120:GLN:HG2	1:B:129:LYS:HD3	1.82	0.61
1:E:287:PHE:CD2	1:E:315:ILE:HD11	2.36	0.61
1:A:295:LYS:HE2	1:E:327:SER:OG	1.99	0.61
1:D:147:THR:HG22	1:D:148:GLU:N	2.14	0.61
1:F:111:PRO:O	1:F:114:LYS:HB3	2.00	0.61
1:G:224:LYS:HG2	1:G:234:LEU:HD22	1.82	0.61
1:G:211:THR:HG22	1:G:212:THR:N	2.13	0.61
1:D:166:ALA:HA	1:D:357:PRO:CG	2.22	0.61
1:D:355:VAL:HG12	1:D:363:MET:HE1	1.83	0.61
1:F:266:LYS:HA	1:F:305:ARG:HE	1.65	0.61
1:E:200:MET:HG2	1:E:201:LEU:HD23	1.82	0.61
1:F:265:PHE:O	1:F:305:ARG:HD2	2.01	0.61
1:H:147:THR:C	1:H:149:GLU:H	2.07	0.61
1:D:210:ILE:HG21	1:D:243:PHE:HE1	1.65	0.60
1:B:200:MET:HB2	1:B:207:ILE:CG1	2.31	0.60
1:G:224:LYS:O	1:G:228:GLU:HG3	2.01	0.60
1:G:194:LYS:O	1:G:198:ILE:HG12	2.01	0.60
1:G:328:VAL:HG12	1:G:332:LEU:HD12	1.82	0.60
1:C:240:LYS:O	1:C:244:GLN:HB2	2.01	0.60
1:F:266:LYS:HG3	1:F:305:ARG:HH21	1.66	0.60
1:B:357:PRO:O	1:B:361:VAL:HG23	2.00	0.60
1:G:177:TYR:CD1	1:G:256:VAL:HB	2.36	0.60
1:G:196:ALA:HA	1:G:257:PHE:CE2	2.35	0.60
1:G:239:THR:OG1	1:G:242:GLU:HG3	2.02	0.60
1:C:314:TYR:HB2	1:C:338:GLY:O	2.02	0.60
1:D:319:ILE:HD11	1:D:344:ASN:HB3	1.82	0.60
1:G:337:ILE:O	1:G:337:ILE:HD12	2.02	0.60
1:H:210:ILE:O	1:H:258:VAL:HA	2.02	0.60
1:A:342:MET:O	1:A:352:ILE:HD12	2.01	0.60
1:F:319:ILE:HG21	1:F:342:MET:CE	2.29	0.60
1:H:192:LEU:HD21	1:H:257:PHE:HB3	1.83	0.60
1:H:206:LYS:HD2	1:H:206:LYS:H	1.67	0.60
1:F:294:ALA:HB3	1:F:299:MET:HE2	1.83	0.59
1:G:170:GLN:HG2	1:G:354:THR:OG1	2.02	0.59
1:G:173:ILE:HA	1:G:285:GLN:HE22	1.65	0.59
1:G:296:TYR:OH	1:G:300:LYS:HE2	2.01	0.59
1:B:177:TYR:CZ	1:B:247:LYS:HG3	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:319:ILE:O	1:E:322:THR:HG22	2.02	0.59
1:H:160:CYS:HA	1:H:163:LEU:HD23	1.84	0.59
1:H:265:PHE:O	1:H:271:ILE:HD11	2.03	0.59
1:A:200:MET:HB2	1:A:207:ILE:HG13	1.84	0.59
1:B:355:VAL:HG11	1:B:363:MET:HE1	1.82	0.59
1:F:234:LEU:O	1:F:235:GLU:HG2	2.02	0.59
1:G:318:LYS:C	1:G:320:ASP:H	2.11	0.59
1:A:346:GLN:HE22	1:E:263:ARG:HD3	1.67	0.59
1:B:316:PHE:O	1:B:342:MET:HA	2.02	0.59
1:G:194:LYS:HG2	1:G:348:VAL:HG13	1.83	0.59
1:H:182:GLY:N	1:H:188:LYS:HD3	2.18	0.59
1:B:110:GLU:HB2	1:B:111:PRO:HD2	1.84	0.59
1:H:221:GLU:HA	1:H:224:LYS:CB	2.33	0.59
1:H:299:MET:O	1:H:303:VAL:HG23	2.02	0.59
1:D:176:LYS:HA	1:D:254:ASP:O	2.03	0.59
1:D:289:VAL:HG22	1:D:315:ILE:CB	2.27	0.59
1:E:147:THR:HG22	1:E:148:GLU:H	1.66	0.59
1:F:330:ASN:O	1:F:334:GLU:HG2	2.03	0.59
1:H:114:LYS:O	1:H:118:LEU:HG	2.02	0.59
1:F:122:THR:HB	1:F:364:LEU:HD22	1.85	0.58
1:G:211:THR:HG22	1:G:213:ASP:N	2.18	0.58
1:A:234:LEU:HD23	1:A:234:LEU:C	2.27	0.58
1:D:280:PHE:N	1:D:284:ILE:HD12	2.19	0.58
1:E:322:THR:HG21	1:E:325:LEU:HD11	1.85	0.58
1:F:139:PHE:CE2	1:F:154:LYS:HE3	2.38	0.58
1:D:194:LYS:CG	1:D:348:VAL:HG13	2.32	0.58
1:D:291:SER:C	1:D:293:THR:H	2.12	0.58
1:E:122:THR:OG1	1:E:124:ILE:HG12	2.03	0.58
1:G:138:ARG:O	1:G:142:GLU:HG2	2.01	0.58
1:A:145:GLY:O	1:A:147:THR:N	2.36	0.58
1:A:263:ARG:HA	1:E:346:GLN:HE22	1.67	0.58
1:D:110:GLU:HB3	1:D:111:PRO:HD3	1.86	0.58
1:D:206:LYS:HB2	1:D:254:ASP:H	1.68	0.58
1:F:177:TYR:HD1	1:F:256:VAL:HB	1.68	0.58
1:G:119:LEU:O	1:G:122:THR:HG23	2.03	0.58
1:H:137:LEU:HD23	1:H:138:ARG:N	2.17	0.58
1:G:138:ARG:O	1:G:141:VAL:HG12	2.04	0.58
1:G:190:THR:HG22	1:G:194:LYS:HE3	1.84	0.58
1:C:240:LYS:HG2	1:C:241:GLU:OE2	2.04	0.58
1:D:280:PHE:H	1:D:284:ILE:HD12	1.69	0.58
1:D:300:LYS:NZ	1:D:304:LYS:HZ1	2.02	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:211:THR:HG21	1:F:220:VAL:HG22	1.86	0.58
1:H:357:PRO:O	1:H:361:VAL:HG23	2.03	0.58
1:A:128:THR:HG23	1:A:162:MET:HE1	1.86	0.58
1:B:199:SER:HA	1:B:203:LYS:HD2	1.85	0.58
1:H:177:TYR:O	1:H:178:ILE:HD13	2.04	0.58
1:D:156:GLN:HA	1:D:159:LEU:HD12	1.84	0.58
1:D:247:LYS:HE3	1:D:279:PRO:HG3	1.85	0.58
1:G:250:PHE:C	1:G:252:GLU:H	2.12	0.58
1:D:176:LYS:HG2	1:D:256:VAL:HG23	1.86	0.57
1:F:226:TYR:CE1	1:F:230:LEU:HD13	2.39	0.57
1:H:342:MET:HE2	1:H:355:VAL:CG2	2.34	0.57
1:A:126:GLU:CD	1:A:129:LYS:HZ1	2.11	0.57
1:B:244:GLN:HE22	1:B:247:LYS:HZ2	1.51	0.57
1:B:277:THR:HB	1:B:278:ILE:HD12	1.86	0.57
1:F:147:THR:C	1:F:149:GLU:H	2.10	0.57
1:H:289:VAL:O	1:H:290:LEU:HD23	2.04	0.57
1:A:343:THR:HG22	1:A:352:ILE:HD13	1.87	0.57
1:C:224:LYS:HE2	1:C:224:LYS:O	2.04	0.57
1:G:163:LEU:HB3	1:G:164:PRO:HD2	1.87	0.57
1:A:192:LEU:HD21	1:A:257:PHE:HB3	1.87	0.57
1:B:265:PHE:O	1:B:305:ARG:HG3	2.03	0.57
1:E:124:ILE:H	1:E:326:GLY:HA3	1.68	0.57
1:G:330:ASN:O	1:G:334:GLU:HG2	2.04	0.57
1:F:317:THR:HB	1:F:343:THR:OG1	2.05	0.57
1:B:129:LYS:C	1:B:131:ASN:H	2.12	0.57
1:B:272:ASP:O	1:B:276:GLU:HG2	2.05	0.57
1:F:147:THR:C	1:F:149:GLU:N	2.61	0.57
1:F:175:SER:CB	1:F:285:GLN:HE21	2.16	0.57
1:B:138:ARG:O	1:B:140:SER:N	2.32	0.57
1:C:199:SER:O	1:C:203:LYS:HB2	2.04	0.57
1:C:217:ILE:HD13	1:C:217:ILE:N	2.19	0.57
1:D:316:PHE:HB2	1:D:342:MET:HG3	1.87	0.57
1:H:278:ILE:HD12	1:H:278:ILE:N	2.20	0.57
1:E:126:GLU:O	1:E:127:SER:C	2.47	0.57
1:G:299:MET:O	1:G:303:VAL:HG23	2.05	0.57
1:H:196:ALA:HA	1:H:257:PHE:CE2	2.40	0.57
1:A:272:ASP:O	1:A:276:GLU:HG2	2.04	0.56
1:C:264:ASN:C	1:C:266:LYS:H	2.13	0.56
1:E:330:ASN:O	1:E:334:GLU:HG2	2.04	0.56
1:B:110:GLU:CB	1:B:111:PRO:CD	2.83	0.56
1:H:120:GLN:NE2	1:H:129:LYS:HE3	2.20	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:164:PRO:HG2	1:C:169:TRP:HE1	1.70	0.56
1:D:294:ALA:O	1:D:299:MET:HE2	2.05	0.56
1:D:315:ILE:HA	1:D:341:PHE:O	2.05	0.56
1:E:196:ALA:HA	1:E:257:PHE:CE2	2.40	0.56
1:F:235:GLU:HG3	1:F:250:PHE:CE2	2.40	0.56
1:G:119:LEU:HD11	1:G:132:THR:CG2	2.34	0.56
1:G:127:SER:O	1:G:130:THR:HB	2.05	0.56
1:G:325:LEU:HD12	1:G:325:LEU:N	2.21	0.56
1:A:318:LYS:NZ	1:E:184:THR:O	2.38	0.56
1:E:188:LYS:NZ	3:E:5:GNP:O1B	2.38	0.56
1:F:154:LYS:O	1:F:158:ILE:HG13	2.05	0.56
1:H:266:LYS:C	1:H:305:ARG:HH12	2.11	0.56
1:C:147:THR:C	1:C:149:GLU:N	2.61	0.56
1:D:210:ILE:HD12	1:D:258:VAL:HG22	1.86	0.56
1:D:295:LYS:HG3	1:H:293:THR:O	2.06	0.56
1:B:192:LEU:HD11	1:B:257:PHE:HB3	1.88	0.56
1:B:305:ARG:HG2	1:B:305:ARG:HH11	1.69	0.56
1:E:147:THR:HG22	1:E:149:GLU:H	1.69	0.56
1:B:192:LEU:HD13	1:B:192:LEU:O	2.05	0.56
1:D:357:PRO:O	1:D:361:VAL:HG23	2.05	0.56
1:G:272:ASP:O	1:G:276:GLU:HG2	2.06	0.56
1:C:314:TYR:O	1:C:339:VAL:HG23	2.06	0.56
1:D:110:GLU:OE1	1:D:110:GLU:HA	2.05	0.56
1:E:233:PRO:HB2	1:E:250:PHE:HE1	1.71	0.56
1:G:140:SER:HB2	1:G:146:LEU:HD11	1.88	0.56
1:C:199:SER:HA	1:C:203:LYS:HG3	1.87	0.56
1:D:233:PRO:HB2	1:D:250:PHE:CE1	2.41	0.56
1:E:224:LYS:HD3	1:E:224:LYS:C	2.30	0.56
1:E:239:THR:HB	1:E:241:GLU:OE1	2.06	0.56
1:G:163:LEU:HD13	1:G:333:ALA:HA	1.88	0.56
1:A:268:PRO:HD3	1:A:305:ARG:NH2	2.20	0.55
1:C:216:ARG:NH1	1:G:222:GLN:HE22	2.04	0.55
1:F:173:ILE:HD11	1:F:195:LEU:HG	1.88	0.55
1:G:343:THR:HA	1:G:352:ILE:HA	1.87	0.55
1:H:154:LYS:O	1:H:158:ILE:HG13	2.06	0.55
1:C:216:ARG:HB3	1:C:219:ALA:CB	2.35	0.55
1:D:164:PRO:O	1:D:165:SER:O	2.24	0.55
1:E:275:LYS:CD	1:E:309:VAL:HG12	2.31	0.55
1:F:173:ILE:HG23	1:F:178:ILE:HD11	1.87	0.55
1:E:152:VAL:O	1:E:156:GLN:HG3	2.06	0.55
1:H:169:TRP:O	1:H:170:GLN:HB2	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:128:THR:HG23	1:E:162:MET:HE1	1.87	0.55
1:F:248:GLU:C	1:F:250:PHE:H	2.15	0.55
1:G:225:THR:O	1:G:229:LEU:HG	2.06	0.55
1:A:176:LYS:HE2	1:A:253:TYR:O	2.07	0.55
1:C:125:LYS:HG2	1:C:330:ASN:OD1	2.06	0.55
1:E:200:MET:HE3	1:E:207:ILE:HB	1.89	0.55
1:G:175:SER:HB3	1:G:285:GLN:HB2	1.88	0.55
1:H:268:PRO:HD3	1:H:305:ARG:HH21	1.70	0.55
1:B:218:ALA:HB3	1:F:222:GLN:HG2	1.88	0.55
1:F:358:LEU:O	1:F:362:ARG:HG3	2.07	0.55
1:B:195:LEU:HD11	1:B:341:PHE:CE2	2.41	0.55
1:B:216:ARG:HB3	1:B:219:ALA:HB2	1.89	0.55
1:D:325:LEU:HD23	1:D:328:VAL:HG21	1.87	0.55
1:G:223:LEU:HA	1:G:226:TYR:HD2	1.71	0.55
1:G:309:VAL:HG22	1:G:309:VAL:O	2.05	0.55
1:G:319:ILE:HG13	1:G:319:ILE:O	2.06	0.55
1:G:341:PHE:CB	1:G:352:ILE:HD11	2.33	0.55
1:A:299:MET:HA	1:A:302:ILE:HG12	1.87	0.55
1:A:335:SER:C	1:A:336:LYS:HD2	2.32	0.55
1:C:169:TRP:CD2	1:C:357:PRO:HG3	2.42	0.55
1:C:270:TYR:HA	1:C:273:GLU:HB3	1.89	0.55
1:D:120:GLN:NE2	1:D:129:LYS:HE3	2.20	0.55
1:F:234:LEU:HG	1:F:235:GLU:N	2.22	0.55
1:G:194:LYS:CG	1:G:348:VAL:HG13	2.37	0.55
1:B:112:LEU:HD21	1:B:137:LEU:HD13	1.89	0.55
1:B:281:GLU:CG	1:B:282:SER:N	2.67	0.55
1:D:167:ASP:C	1:D:169:TRP:N	2.63	0.55
1:G:265:PHE:HD1	1:G:271:ILE:HD12	1.72	0.55
1:B:241:GLU:HB3	1:B:245:GLN:NE2	2.23	0.54
1:F:289:VAL:C	1:F:290:LEU:HD23	2.32	0.54
1:B:208:ALA:HB3	1:B:256:VAL:HA	1.89	0.54
1:C:122:THR:HG21	1:C:364:LEU:HD13	1.89	0.54
1:C:223:LEU:HG	1:C:234:LEU:HD11	1.88	0.54
1:E:294:ALA:O	1:E:299:MET:HE2	2.07	0.54
1:A:176:LYS:O	1:A:256:VAL:N	2.39	0.54
1:B:164:PRO:HG2	1:B:169:TRP:HE1	1.72	0.54
1:B:229:LEU:HD13	1:B:229:LEU:O	2.07	0.54
1:C:137:LEU:C	1:C:137:LEU:HD23	2.32	0.54
1:E:119:LEU:HD21	1:E:155:LEU:HD11	1.87	0.54
1:E:358:LEU:CG	1:E:362:ARG:HH21	2.13	0.54
1:F:289:VAL:O	1:F:290:LEU:HD23	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:120:GLN:NE2	1:G:129:LYS:HE3	2.22	0.54
1:G:200:MET:HG2	1:G:201:LEU:HD23	1.89	0.54
1:H:287:PHE:HB3	1:H:315:ILE:HG12	1.90	0.54
1:B:339:VAL:HG23	1:B:339:VAL:O	2.06	0.54
1:G:183:SER:HB2	1:G:186:ALA:HB2	1.88	0.54
1:C:263:ARG:HA	1:G:346:GLN:HE22	1.72	0.54
1:F:291:SER:OG	1:F:293:THR:HB	2.07	0.54
1:G:314:TYR:HB2	1:G:339:VAL:HA	1.90	0.54
1:D:181:PHE:HZ	1:D:311:VAL:HG22	1.72	0.54
1:D:198:ILE:HD12	1:D:202:GLU:OE2	2.07	0.54
1:G:332:LEU:HD21	1:G:339:VAL:HG13	1.90	0.54
1:D:110:GLU:CB	1:D:111:PRO:CD	2.85	0.54
1:F:136:LEU:O	1:F:136:LEU:HG	2.08	0.54
1:F:194:LYS:O	1:F:198:ILE:HG12	2.08	0.54
1:G:133:LEU:C	1:G:135:LYS:N	2.66	0.54
1:B:332:LEU:HD21	1:B:339:VAL:HG13	1.88	0.54
1:C:358:LEU:O	1:C:362:ARG:HG3	2.08	0.54
1:H:111:PRO:HB2	1:H:151:VAL:CG2	2.38	0.54
1:H:179:VAL:C	1:H:180:LEU:HD23	2.33	0.54
1:H:179:VAL:O	1:H:180:LEU:HD23	2.08	0.54
1:H:216:ARG:HB3	1:H:219:ALA:CB	2.35	0.54
1:F:110:GLU:HB2	1:F:111:PRO:CD	2.37	0.54
1:F:133:LEU:C	1:F:135:LYS:H	2.15	0.54
1:H:263:ARG:HB2	1:H:265:PHE:CE1	2.43	0.54
1:H:296:TYR:OH	1:H:300:LYS:HE2	2.08	0.54
1:B:190:THR:O	1:B:193:ALA:HB3	2.07	0.53
1:E:234:LEU:HD23	1:E:235:GLU:N	2.23	0.53
1:E:355:VAL:HG11	1:E:363:MET:CE	2.38	0.53
1:F:235:GLU:HG3	1:F:250:PHE:HE2	1.73	0.53
1:G:287:PHE:CD2	1:G:315:ILE:HD11	2.43	0.53
1:A:147:THR:O	1:A:151:VAL:HG23	2.07	0.53
1:B:176:LYS:HA	1:B:254:ASP:O	2.08	0.53
1:C:203:LYS:O	1:C:205:LYS:HG2	2.08	0.53
1:D:194:LYS:HG2	1:D:349:PRO:HA	1.91	0.53
1:D:234:LEU:HD23	1:D:234:LEU:C	2.33	0.53
1:H:316:PHE:HE2	1:H:332:LEU:HD21	1.73	0.53
1:A:180:LEU:CD2	1:A:287:PHE:HB2	2.37	0.53
1:B:178:ILE:HB	1:B:257:PHE:CD1	2.44	0.53
1:F:112:LEU:HD11	1:F:146:LEU:CD1	2.38	0.53
1:H:211:THR:HG22	1:H:212:THR:N	2.23	0.53
1:A:198:ILE:CD1	1:A:349:PRO:HB2	2.39	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:288:LEU:HD23	1:A:314:TYR:CE1	2.44	0.53
1:C:217:ILE:H	1:C:217:ILE:CD1	2.20	0.53
1:C:319:ILE:HG12	1:C:344:ASN:HB3	1.90	0.53
1:F:124:ILE:CG2	1:F:128:THR:HB	2.39	0.53
1:F:344:ASN:HD21	1:F:351:ASP:HA	1.73	0.53
1:G:124:ILE:HG22	1:G:128:THR:OG1	2.08	0.53
1:C:211:THR:HG22	1:C:213:ASP:N	2.17	0.53
1:E:206:LYS:HB2	1:E:254:ASP:H	1.73	0.53
1:E:290:LEU:O	1:E:316:PHE:HA	2.09	0.53
1:F:234:LEU:HG	1:F:235:GLU:H	1.73	0.53
1:H:287:PHE:HB3	1:H:315:ILE:CG1	2.38	0.53
1:B:200:MET:HG2	1:B:201:LEU:HD23	1.90	0.53
1:G:325:LEU:C	1:G:364:LEU:HD21	2.33	0.53
1:H:240:LYS:HG3	1:H:241:GLU:OE2	2.09	0.53
1:D:165:SER:OG	1:D:168:LYS:HB2	2.09	0.53
1:F:122:THR:HB	1:F:364:LEU:CD2	2.39	0.53
1:F:147:THR:HG22	1:F:149:GLU:H	1.73	0.53
1:B:196:ALA:HA	1:B:257:PHE:CE2	2.44	0.53
1:B:335:SER:C	1:B:336:LYS:HD2	2.33	0.53
1:E:250:PHE:O	1:E:253:TYR:HD1	1.92	0.53
1:G:122:THR:OG1	1:G:123:GLY:N	2.42	0.53
1:H:147:THR:C	1:H:149:GLU:N	2.67	0.53
1:B:231:GLN:OE1	1:B:231:GLN:N	2.42	0.53
1:C:209:PHE:O	1:C:234:LEU:HA	2.08	0.53
1:D:196:ALA:HA	1:D:257:PHE:HE2	1.72	0.53
1:G:148:GLU:O	1:G:148:GLU:HG3	2.09	0.53
1:H:285:GLN:HG3	1:H:312:ASN:ND2	2.24	0.53
1:B:285:GLN:HG3	1:B:312:ASN:ND2	2.24	0.53
1:C:208:ALA:C	1:C:209:PHE:HD1	2.17	0.53
1:H:211:THR:HG22	1:H:213:ASP:H	1.74	0.53
1:A:249:LEU:HD23	1:H:336:LYS:HE2	1.91	0.52
1:C:177:TYR:CE1	1:C:247:LYS:HG2	2.43	0.52
1:C:294:ALA:O	1:C:299:MET:HE2	2.09	0.52
1:F:175:SER:HB2	1:F:285:GLN:HB2	1.90	0.52
1:G:237:CYS:SG	1:G:243:PHE:HA	2.49	0.52
1:B:193:ALA:O	1:B:194:LYS:C	2.51	0.52
1:C:152:VAL:O	1:C:156:GLN:HG3	2.09	0.52
1:A:143:ALA:O	1:A:144:GLY:O	2.26	0.52
1:D:300:LYS:NZ	1:D:304:LYS:NZ	2.58	0.52
1:E:355:VAL:HG11	1:E:363:MET:HE1	1.91	0.52
1:G:200:MET:HB2	1:G:207:ILE:HG13	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:207:ILE:HD12	1:B:257:PHE:HE2	1.75	0.52
1:D:268:PRO:C	1:D:270:TYR:H	2.17	0.52
1:H:213:ASP:HA	1:H:261:ALA:HB2	1.92	0.52
1:B:169:TRP:CE3	1:B:339:VAL:HG22	2.44	0.52
1:D:119:LEU:HB3	1:D:129:LYS:CG	2.39	0.52
1:E:192:LEU:HD11	1:E:258:VAL:C	2.33	0.52
1:E:281:GLU:O	1:E:283:SER:N	2.42	0.52
1:E:296:TYR:OH	1:E:300:LYS:HD2	2.09	0.52
1:F:114:LYS:HE2	1:F:148:GLU:O	2.10	0.52
1:A:319:ILE:HG12	1:A:343:THR:O	2.10	0.52
1:B:169:TRP:CD1	1:B:338:GLY:HA3	2.45	0.52
1:B:265:PHE:C	1:B:267:ASP:H	2.18	0.52
1:D:264:ASN:ND2	1:D:266:LYS:N	2.53	0.52
1:H:267:ASP:OD1	1:H:269:GLN:HB2	2.09	0.52
1:H:274:LEU:O	1:H:274:LEU:HD23	2.10	0.52
1:A:224:LYS:O	1:A:228:GLU:HG3	2.10	0.52
1:C:247:LYS:O	1:C:251:SER:HB3	2.10	0.52
1:A:200:MET:HB2	1:A:207:ILE:CG1	2.39	0.52
1:C:214:THR:HG21	1:C:238:TYR:CE2	2.45	0.52
1:G:329:PHE:HB2	1:G:364:LEU:HD11	1.92	0.52
1:F:306:PHE:HD1	1:F:309:VAL:HG11	1.75	0.52
1:G:179:VAL:HG22	1:G:258:VAL:HB	1.91	0.52
1:G:341:PHE:HB3	1:G:352:ILE:CD1	2.35	0.52
1:C:182:GLY:N	1:C:188:LYS:HD3	2.24	0.51
1:D:182:GLY:HA2	1:D:288:LEU:CD1	2.40	0.51
1:D:287:PHE:CE1	1:D:313:GLN:HB2	2.46	0.51
1:H:111:PRO:O	1:H:114:LYS:HB3	2.09	0.51
1:H:124:ILE:CG2	1:H:128:THR:HB	2.40	0.51
1:H:268:PRO:C	1:H:270:TYR:H	2.19	0.51
1:A:218:ALA:CB	1:E:222:GLN:HA	2.39	0.51
1:B:218:ALA:CB	1:F:222:GLN:HG2	2.41	0.51
1:D:264:ASN:ND2	1:D:265:PHE:N	2.58	0.51
1:D:265:PHE:C	1:D:267:ASP:H	2.16	0.51
1:G:160:CYS:SG	1:G:361:VAL:HG21	2.50	0.51
1:G:207:ILE:HD12	1:G:257:PHE:HE2	1.76	0.51
1:C:122:THR:HG22	1:C:364:LEU:O	2.11	0.51
1:C:156:GLN:HG2	1:C:365:CYS:SG	2.49	0.51
1:D:188:LYS:HB2	1:D:188:LYS:NZ	2.25	0.51
1:D:264:ASN:HD21	1:D:266:LYS:N	2.04	0.51
1:E:291:SER:OG	1:E:293:THR:HB	2.11	0.51
1:H:179:VAL:HG13	1:H:258:VAL:HB	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:281:GLU:OE2	1:B:284:ILE:HG13	2.11	0.51
1:B:314:TYR:HB2	1:B:339:VAL:HA	1.92	0.51
1:C:206:LYS:HG3	1:C:254:ASP:OD2	2.10	0.51
1:D:280:PHE:H	1:D:284:ILE:CD1	2.23	0.51
1:D:300:LYS:HZ1	1:D:304:LYS:NZ	2.08	0.51
1:H:166:ALA:HA	1:H:357:PRO:HG2	1.90	0.51
1:D:224:LYS:HA	1:D:227:ALA:HB3	1.92	0.51
1:A:244:GLN:HG3	1:A:248:GLU:OE2	2.10	0.51
1:C:216:ARG:CZ	1:G:222:GLN:HE22	2.23	0.51
1:D:114:LYS:O	1:D:118:LEU:HG	2.10	0.51
1:E:364:LEU:O	1:E:366:ARG:N	2.43	0.51
1:G:198:ILE:HG23	1:G:202:GLU:OE1	2.11	0.51
1:E:128:THR:O	1:E:129:LYS:C	2.54	0.51
1:E:152:VAL:O	1:E:155:LEU:HB3	2.10	0.51
1:F:147:THR:HG22	1:F:149:GLU:HB3	1.92	0.51
1:A:211:THR:HG22	1:A:212:THR:N	2.25	0.51
1:C:217:ILE:HG12	1:C:217:ILE:O	2.10	0.51
1:D:268:PRO:C	1:D:270:TYR:N	2.68	0.51
1:E:322:THR:HG21	1:E:325:LEU:HD12	1.92	0.51
1:B:181:PHE:CZ	1:B:311:VAL:HG12	2.45	0.51
1:C:188:LYS:HE2	4:C:3001:HOH:O	2.09	0.51
1:E:278:ILE:HG23	1:E:279:PRO:HD2	1.93	0.51
1:F:120:GLN:NE2	1:F:129:LYS:HE3	2.25	0.51
1:C:171:GLU:OE1	1:C:312:ASN:HB3	2.09	0.50
1:C:222:GLN:OE1	1:G:222:GLN:HG3	2.11	0.50
1:E:124:ILE:HA	1:E:330:ASN:HD21	1.76	0.50
1:G:114:LYS:HE2	1:G:148:GLU:HB2	1.93	0.50
1:H:192:LEU:HD12	1:H:259:ASP:HB2	1.93	0.50
1:A:160:CYS:C	1:A:162:MET:H	2.20	0.50
1:A:317:THR:HA	1:A:343:THR:OG1	2.12	0.50
1:B:233:PRO:HB2	1:B:250:PHE:CE1	2.46	0.50
1:C:349:PRO:HD2	1:C:350:GLU:OE1	2.12	0.50
1:D:207:ILE:HD12	1:D:257:PHE:CE2	2.46	0.50
1:F:266:LYS:O	1:F:305:ARG:NE	2.45	0.50
1:G:147:THR:HB	1:G:150:ASN:ND2	2.26	0.50
1:H:264:ASN:C	1:H:266:LYS:H	2.19	0.50
1:A:154:LYS:O	1:A:158:ILE:HG13	2.10	0.50
1:C:268:PRO:HD3	1:C:305:ARG:HH21	1.77	0.50
1:F:300:LYS:O	1:F:304:LYS:HD3	2.11	0.50
1:A:249:LEU:HD23	1:A:249:LEU:C	2.37	0.50
1:D:230:LEU:O	1:D:231:GLN:HB2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:112:LEU:HD21	1:E:137:LEU:HD13	1.94	0.50
1:G:140:SER:CB	1:G:146:LEU:HD11	2.42	0.50
1:G:209:PHE:O	1:G:210:ILE:HG13	2.12	0.50
1:A:192:LEU:CD2	1:A:257:PHE:HB3	2.42	0.50
1:B:147:THR:C	1:B:149:GLU:N	2.69	0.50
1:B:206:LYS:HD2	1:B:254:ASP:OD1	2.12	0.50
1:D:181:PHE:O	1:D:288:LEU:HA	2.11	0.50
1:D:212:THR:HB	1:D:260:THR:HG22	1.93	0.50
1:G:250:PHE:C	1:G:252:GLU:N	2.69	0.50
1:A:279:PRO:O	1:A:280:PHE:CB	2.59	0.50
1:G:309:VAL:O	1:G:309:VAL:CG2	2.59	0.50
1:H:111:PRO:HB2	1:H:151:VAL:HG21	1.94	0.50
1:H:271:ILE:N	1:H:271:ILE:HD12	2.26	0.50
1:B:110:GLU:C	1:B:112:LEU:H	2.19	0.50
1:C:200:MET:C	1:C:202:GLU:H	2.19	0.50
1:E:190:THR:O	1:E:190:THR:HG22	2.11	0.50
1:F:152:VAL:HG23	1:F:153:GLY:N	2.27	0.50
1:F:280:PHE:CA	1:F:284:ILE:HD12	2.40	0.50
1:G:173:ILE:HG21	1:G:195:LEU:HD23	1.94	0.50
1:G:285:GLN:HG2	1:G:287:PHE:HE1	1.77	0.50
1:H:316:PHE:O	1:H:342:MET:HA	2.12	0.50
1:F:123:GLY:C	1:F:326:GLY:HA3	2.36	0.50
1:G:167:ASP:C	1:G:169:TRP:N	2.70	0.50
1:A:176:LYS:HG3	1:A:254:ASP:O	2.11	0.50
1:D:350:GLU:CD	1:D:350:GLU:H	2.20	0.50
1:F:138:ARG:HG2	1:F:138:ARG:HH11	1.77	0.50
1:G:169:TRP:CE2	1:G:357:PRO:HG3	2.47	0.50
1:H:206:LYS:N	1:H:206:LYS:CD	2.74	0.50
1:A:300:LYS:O	1:A:303:VAL:HG12	2.11	0.49
1:A:356:SER:O	1:A:357:PRO:C	2.55	0.49
1:B:199:SER:CA	1:B:203:LYS:HB2	2.41	0.49
1:C:212:THR:HG23	1:C:277:THR:HG21	1.92	0.49
1:E:123:GLY:CA	1:E:326:GLY:HA3	2.41	0.49
1:E:233:PRO:HB2	1:E:250:PHE:CE1	2.47	0.49
1:F:192:LEU:CD2	1:F:257:PHE:HB3	2.37	0.49
1:G:114:LYS:CE	1:G:148:GLU:HB2	2.42	0.49
1:H:133:LEU:O	1:H:137:LEU:HD22	2.12	0.49
1:B:162:MET:HG2	1:H:248:GLU:OE1	2.12	0.49
1:B:233:PRO:HB2	1:B:250:PHE:HE1	1.78	0.49
1:C:123:GLY:O	1:C:124:ILE:C	2.55	0.49
1:H:175:SER:HB3	1:H:283:SER:O	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:293:THR:O	1:E:295:LYS:HG3	2.12	0.49
1:B:128:THR:HG23	1:B:162:MET:HE1	1.94	0.49
1:B:271:ILE:HG22	1:B:275:LYS:HZ2	1.76	0.49
1:B:345:GLY:HA3	1:B:351:ASP:OD2	2.13	0.49
1:D:166:ALA:CA	1:D:357:PRO:HG2	2.25	0.49
1:D:302:ILE:C	1:D:305:ARG:H	2.20	0.49
1:G:114:LYS:HZ1	1:G:152:VAL:CG2	2.24	0.49
1:H:169:TRP:CE2	1:H:357:PRO:HG3	2.48	0.49
1:A:224:LYS:C	1:A:226:TYR:H	2.20	0.49
1:A:229:LEU:C	1:A:231:GLN:H	2.19	0.49
1:C:288:LEU:HG	1:C:290:LEU:CD1	2.42	0.49
1:D:111:PRO:HB3	1:D:148:GLU:HA	1.93	0.49
1:C:220:VAL:CG1	1:C:236:VAL:HG21	2.42	0.49
1:F:190:THR:O	1:F:193:ALA:HB3	2.13	0.49
1:G:114:LYS:HZ1	1:G:152:VAL:HG21	1.78	0.49
1:B:182:GLY:N	1:B:188:LYS:HD3	2.28	0.49
1:B:281:GLU:OE2	1:B:283:SER:N	2.46	0.49
1:D:319:ILE:HD13	1:D:342:MET:HE3	1.95	0.49
1:E:211:THR:HG23	1:E:259:ASP:HB3	1.94	0.49
1:G:171:GLU:HB3	1:G:313:GLN:HG3	1.93	0.49
1:G:205:LYS:HD3	1:G:255:HIS:CE1	2.48	0.49
1:H:159:LEU:O	1:H:163:LEU:HD22	2.13	0.49
1:B:280:PHE:HA	1:B:284:ILE:HD12	1.93	0.49
1:D:321:GLU:HG3	1:H:264:ASN:CG	2.36	0.49
1:D:348:VAL:CG1	1:D:349:PRO:HA	2.43	0.49
1:E:123:GLY:HA3	1:E:326:GLY:HA3	1.94	0.49
1:F:171:GLU:HB2	1:F:313:GLN:CG	2.39	0.49
1:F:212:THR:HG22	1:F:212:THR:O	2.13	0.49
1:H:140:SER:HB2	1:H:146:LEU:HG	1.95	0.49
1:A:243:PHE:CE2	1:A:247:LYS:HD2	2.48	0.49
1:B:320:ASP:OD1	1:B:344:ASN:HA	2.13	0.49
1:G:243:PHE:CE2	1:G:247:LYS:HD2	2.48	0.49
1:C:110:GLU:HB3	1:C:111:PRO:CD	2.32	0.49
1:C:118:LEU:HD23	1:C:155:LEU:HD23	1.95	0.49
1:D:169:TRP:O	1:D:171:GLU:N	2.46	0.49
1:E:233:PRO:O	1:E:234:LEU:HB2	2.13	0.49
1:F:175:SER:H	1:F:285:GLN:NE2	2.10	0.49
1:G:167:ASP:CG	1:G:168:LYS:N	2.70	0.49
1:G:268:PRO:HD3	1:G:305:ARG:NH2	2.20	0.49
1:G:303:VAL:HG12	1:G:303:VAL:O	2.12	0.49
1:F:344:ASN:HD21	1:F:351:ASP:CA	2.26	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:180:LEU:HD22	1:G:287:PHE:HB2	1.94	0.49
1:H:160:CYS:HA	1:H:163:LEU:CD2	2.43	0.49
1:C:165:SER:HB2	1:C:167:ASP:OD1	2.13	0.48
1:F:194:LYS:HG2	1:F:349:PRO:HA	1.95	0.48
1:A:126:GLU:HA	1:A:129:LYS:HZ3	1.78	0.48
1:A:130:THR:O	1:A:134:LYS:HG2	2.13	0.48
1:B:147:THR:HG22	1:B:148:GLU:OE2	2.12	0.48
1:B:163:LEU:HD11	1:B:329:PHE:CE1	2.48	0.48
1:B:205:LYS:HB3	1:B:254:ASP:OD2	2.13	0.48
1:C:278:ILE:HG23	1:C:279:PRO:HD2	1.95	0.48
1:E:180:LEU:CD2	1:E:287:PHE:HB2	2.43	0.48
1:A:269:GLN:O	1:A:272:ASP:HB2	2.13	0.48
1:E:309:VAL:O	1:E:309:VAL:HG23	2.13	0.48
1:A:109:PRO:O	1:A:110:GLU:CG	2.59	0.48
1:C:177:TYR:HB2	1:C:284:ILE:HG12	1.94	0.48
1:C:194:LYS:HG2	1:C:349:PRO:HA	1.95	0.48
1:C:244:GLN:NE2	1:C:247:LYS:HD2	2.27	0.48
1:C:244:GLN:O	1:C:247:LYS:HB2	2.13	0.48
1:D:306:PHE:HD2	1:D:309:VAL:HG11	1.77	0.48
1:G:124:ILE:HA	1:G:330:ASN:OD1	2.13	0.48
1:H:309:VAL:O	1:H:309:VAL:HG22	2.12	0.48
1:B:322:THR:HA	1:F:298:ASP:OD2	2.14	0.48
1:D:111:PRO:O	1:D:114:LYS:HB3	2.14	0.48
1:D:352:ILE:HG12	1:D:353:GLN:N	2.28	0.48
1:E:151:VAL:HG23	1:E:152:VAL:H	1.79	0.48
1:E:234:LEU:HD23	1:E:234:LEU:C	2.38	0.48
1:E:329:PHE:CD1	1:E:329:PHE:C	2.92	0.48
1:F:148:GLU:HA	1:F:151:VAL:CG2	2.44	0.48
1:G:288:LEU:HB2	1:G:311:VAL:HG11	1.95	0.48
1:A:336:LYS:HD2	1:A:336:LYS:N	2.29	0.48
1:B:241:GLU:HB3	1:B:245:GLN:HE22	1.79	0.48
1:C:151:VAL:HG23	1:C:152:VAL:H	1.77	0.48
1:E:173:ILE:HG23	1:E:178:ILE:CD1	2.43	0.48
1:H:169:TRP:CE3	1:H:339:VAL:HG22	2.47	0.48
1:A:109:PRO:O	1:A:110:GLU:CB	2.62	0.48
1:C:224:LYS:HA	1:C:234:LEU:HD13	1.95	0.48
1:C:247:LYS:NZ	1:C:281:GLU:OE2	2.46	0.48
1:D:119:LEU:HB3	1:D:129:LYS:HG3	1.96	0.48
1:D:173:ILE:HD13	1:D:257:PHE:HZ	1.77	0.48
1:E:250:PHE:O	1:E:253:TYR:N	2.45	0.48
1:E:288:LEU:HD23	1:E:314:TYR:CE1	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:194:LYS:HA	1:B:349:PRO:HB3	1.95	0.48
1:C:199:SER:HA	1:C:203:LYS:HB2	1.96	0.48
1:H:258:VAL:HG12	1:H:259:ASP:N	2.29	0.48
1:C:210:ILE:O	1:C:258:VAL:HG13	2.14	0.48
1:E:350:GLU:N	1:E:350:GLU:OE1	2.47	0.48
1:H:210:ILE:CD1	1:H:256:VAL:HG11	2.44	0.48
1:H:263:ARG:H	1:H:265:PHE:HE1	1.60	0.48
1:A:296:TYR:CE2	1:A:300:LYS:HD2	2.48	0.48
1:D:183:SER:OG	1:D:184:THR:N	2.46	0.48
1:D:196:ALA:O	1:D:197:ALA:C	2.57	0.48
1:D:209:PHE:O	1:D:210:ILE:HG13	2.13	0.48
1:D:248:GLU:CD	1:D:248:GLU:H	2.22	0.48
1:D:279:PRO:HG2	1:D:284:ILE:HD11	1.95	0.48
1:D:329:PHE:CD2	1:D:364:LEU:HD11	2.49	0.48
1:E:265:PHE:HD1	1:E:271:ILE:HD12	1.78	0.48
1:B:208:ALA:HB3	1:B:256:VAL:HG22	1.95	0.47
1:C:223:LEU:HG	1:C:234:LEU:CD1	2.44	0.47
1:F:281:GLU:OE2	1:F:284:ILE:HG13	2.14	0.47
1:H:325:LEU:N	1:H:325:LEU:HD12	2.29	0.47
1:A:170:GLN:HG2	1:A:354:THR:OG1	2.13	0.47
1:B:215:TYR:HB2	1:B:263:ARG:NH2	2.29	0.47
1:C:267:ASP:C	1:C:269:GLN:H	2.22	0.47
1:C:291:SER:C	1:C:293:THR:H	2.22	0.47
1:E:151:VAL:HG23	1:E:152:VAL:N	2.29	0.47
1:F:287:PHE:CE2	1:F:313:GLN:HB2	2.49	0.47
1:G:211:THR:CG2	1:G:212:THR:N	2.77	0.47
1:G:212:THR:O	1:G:212:THR:HG22	2.13	0.47
1:H:123:GLY:O	1:H:124:ILE:C	2.56	0.47
1:H:192:LEU:HD11	1:H:258:VAL:C	2.39	0.47
1:A:179:VAL:C	1:A:180:LEU:HD23	2.40	0.47
1:A:190:THR:O	1:A:194:LYS:HG3	2.15	0.47
1:B:145:GLY:C	1:B:146:LEU:HD12	2.39	0.47
1:C:110:GLU:CB	1:C:111:PRO:CD	2.92	0.47
1:C:250:PHE:HD1	1:C:253:TYR:HE2	1.62	0.47
1:E:116:GLU:HG2	1:E:120:GLN:NE2	2.29	0.47
1:F:111:PRO:HB2	1:F:151:VAL:HG21	1.96	0.47
1:C:263:ARG:HA	1:G:346:GLN:NE2	2.29	0.47
1:D:194:LYS:O	1:D:198:ILE:HG12	2.15	0.47
1:D:355:VAL:CG1	1:D:363:MET:HE1	2.44	0.47
1:G:109:PRO:O	1:G:113:ARG:HB2	2.14	0.47
1:A:229:LEU:C	1:A:231:GLN:N	2.72	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:358:LEU:HD12	1:A:358:LEU:O	2.14	0.47
1:H:295:LYS:O	1:H:298:ASP:HB2	2.14	0.47
1:A:245:GLN:O	1:A:249:LEU:N	2.48	0.47
1:D:194:LYS:HE2	1:D:351:ASP:O	2.13	0.47
1:E:179:VAL:HG12	1:E:180:LEU:N	2.29	0.47
1:F:114:LYS:O	1:F:118:LEU:HG	2.14	0.47
1:G:211:THR:CG2	1:G:213:ASP:H	2.24	0.47
1:A:181:PHE:CE2	1:A:286:SER:HB2	2.50	0.47
1:A:342:MET:HE2	1:A:355:VAL:CG1	2.44	0.47
1:B:191:THR:C	1:B:193:ALA:N	2.71	0.47
1:B:254:ASP:OD1	1:B:254:ASP:N	2.47	0.47
1:C:136:LEU:O	1:C:136:LEU:HD23	2.14	0.47
1:D:147:THR:O	1:D:151:VAL:HG22	2.15	0.47
1:D:190:THR:HG22	1:D:190:THR:O	2.15	0.47
1:D:314:TYR:HB2	1:D:339:VAL:HB	1.97	0.47
3:D:4:GNP:O4'	1:H:184:THR:HB	2.14	0.47
1:E:110:GLU:C	1:E:112:LEU:H	2.22	0.47
1:E:123:GLY:O	1:E:124:ILE:O	2.32	0.47
1:E:287:PHE:HB3	1:E:315:ILE:CD1	2.45	0.47
1:E:289:VAL:HG22	1:E:315:ILE:HB	1.97	0.47
1:F:211:THR:HG22	1:F:213:ASP:H	1.80	0.47
1:F:271:ILE:HD12	1:F:271:ILE:N	2.29	0.47
1:C:154:LYS:O	1:C:158:ILE:HG13	2.15	0.47
1:F:135:LYS:C	1:F:137:LEU:H	2.23	0.47
1:G:253:TYR:CD1	1:G:253:TYR:N	2.82	0.47
1:A:163:LEU:HD21	1:A:329:PHE:CE2	2.50	0.47
1:C:182:GLY:H	1:C:188:LYS:HD3	1.79	0.47
1:E:147:THR:CG2	1:E:148:GLU:N	2.77	0.47
1:E:325:LEU:HD23	1:E:360:PHE:HE1	1.79	0.47
1:C:234:LEU:C	1:C:234:LEU:HD23	2.40	0.47
1:C:267:ASP:O	1:C:269:GLN:N	2.48	0.47
1:D:237:CYS:SG	1:D:243:PHE:HA	2.55	0.47
1:D:317:THR:HA	1:D:343:THR:OG1	2.15	0.47
1:D:350:GLU:O	1:D:352:ILE:HG22	2.15	0.47
1:E:267:ASP:OD1	1:E:269:GLN:HB2	2.15	0.47
1:G:110:GLU:HB2	1:G:111:PRO:CD	2.45	0.47
1:B:147:THR:O	1:B:151:VAL:HG23	2.14	0.46
1:B:169:TRP:CZ3	1:B:339:VAL:HG22	2.50	0.46
1:B:209:PHE:HB2	1:B:233:PRO:O	2.15	0.46
1:B:244:GLN:HE22	1:B:247:LYS:HZ3	1.63	0.46
1:C:115:ALA:O	1:C:119:LEU:HG	2.14	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:357:PRO:O	1:C:360:PHE:N	2.47	0.46
1:D:176:LYS:O	1:D:256:VAL:N	2.43	0.46
1:D:315:ILE:HG12	1:D:341:PHE:HB2	1.97	0.46
1:F:345:GLY:HA3	1:F:351:ASP:OD2	2.13	0.46
1:G:171:GLU:HB3	1:G:313:GLN:CG	2.45	0.46
1:A:163:LEU:HD11	1:A:329:PHE:CD2	2.50	0.46
1:B:116:GLU:O	1:B:120:GLN:HG3	2.15	0.46
1:C:147:THR:O	1:C:149:GLU:N	2.47	0.46
1:C:216:ARG:HD3	1:C:219:ALA:HB2	1.97	0.46
1:G:227:ALA:HB1	1:G:232:ALA:O	2.14	0.46
1:A:131:ASN:HD21	1:G:249:LEU:HA	1.79	0.46
1:D:330:ASN:O	1:D:334:GLU:HG2	2.16	0.46
1:A:285:GLN:HE21	1:A:287:PHE:HZ	1.64	0.46
1:C:210:ILE:HB	1:C:258:VAL:HG22	1.98	0.46
1:D:291:SER:C	1:D:293:THR:N	2.73	0.46
1:G:224:LYS:HE2	1:G:224:LYS:HA	1.96	0.46
1:C:199:SER:OG	1:C:255:HIS:ND1	2.45	0.46
1:C:264:ASN:OD1	1:C:264:ASN:O	2.34	0.46
1:C:319:ILE:HD13	1:C:342:MET:HE3	1.96	0.46
1:F:147:THR:CG2	1:F:149:GLU:HB3	2.45	0.46
1:F:266:LYS:HA	1:F:305:ARG:NE	2.29	0.46
1:H:210:ILE:HB	1:H:258:VAL:HG22	1.97	0.46
1:A:138:ARG:NH1	1:A:139:PHE:CD2	2.83	0.46
1:A:221:GLU:O	1:A:225:THR:HG23	2.16	0.46
1:A:222:GLN:HG2	1:E:218:ALA:HB1	1.97	0.46
1:B:147:THR:HG22	1:B:149:GLU:H	1.79	0.46
1:D:246:ALA:O	1:D:249:LEU:HB3	2.16	0.46
1:E:164:PRO:HG2	1:E:169:TRP:NE1	2.24	0.46
1:E:250:PHE:O	1:E:251:SER:C	2.57	0.46
1:E:288:LEU:HD13	1:E:306:PHE:CD2	2.50	0.46
1:F:175:SER:H	1:F:285:GLN:HE22	1.62	0.46
1:H:211:THR:CG2	1:H:212:THR:N	2.79	0.46
1:H:229:LEU:C	1:H:230:LEU:HD12	2.40	0.46
1:H:274:LEU:HD23	1:H:274:LEU:C	2.41	0.46
1:E:221:GLU:O	1:E:225:THR:HG23	2.15	0.46
1:G:125:LYS:H	1:G:330:ASN:HD21	1.63	0.46
1:G:145:GLY:O	1:G:146:LEU:HD23	2.16	0.46
1:G:360:PHE:HA	1:G:363:MET:HE3	1.96	0.46
1:H:234:LEU:C	1:H:234:LEU:HD23	2.41	0.46
1:H:305:ARG:C	1:H:307:SER:H	2.22	0.46
1:A:123:GLY:CA	1:A:326:GLY:HA3	2.44	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:244:GLN:O	1:B:247:LYS:HB3	2.16	0.46
1:C:188:LYS:N	3:C:3:GNP:O1B	2.45	0.46
1:C:217:ILE:O	1:G:222:GLN:HG2	2.16	0.46
1:D:216:ARG:CB	1:D:219:ALA:HB2	2.35	0.46
1:F:266:LYS:CG	1:F:305:ARG:HH21	2.29	0.46
1:H:266:LYS:HE3	1:H:301:HIS:ND1	2.31	0.46
1:A:267:ASP:OD2	1:A:269:GLN:HB3	2.16	0.46
1:C:120:GLN:OE1	1:C:129:LYS:HE3	2.16	0.46
1:D:213:ASP:OD2	1:D:219:ALA:HB1	2.16	0.46
1:H:223:LEU:HD12	1:H:226:TYR:CB	2.43	0.46
1:C:117:LYS:HE3	1:C:121:GLU:OE2	2.16	0.46
1:C:170:GLN:HE21	1:C:354:THR:HG23	1.81	0.46
1:D:264:ASN:CG	1:D:265:PHE:N	2.74	0.46
1:E:122:THR:HB	1:E:364:LEU:CD2	2.46	0.46
1:E:211:THR:HG22	1:E:213:ASP:N	2.21	0.46
1:A:301:HIS:O	1:A:303:VAL:N	2.49	0.45
1:C:171:GLU:HB2	1:C:313:GLN:CG	2.46	0.45
1:C:189:THR:HG22	1:C:190:THR:N	2.31	0.45
1:D:210:ILE:HG21	1:D:243:PHE:CE1	2.49	0.45
1:D:300:LYS:HZ2	1:D:304:LYS:HZ1	1.64	0.45
1:F:315:ILE:HG12	1:F:341:PHE:HB2	1.98	0.45
1:H:206:LYS:H	1:H:206:LYS:CD	2.28	0.45
1:E:349:PRO:HD2	1:E:350:GLU:OE1	2.17	0.45
1:F:147:THR:O	1:F:149:GLU:N	2.49	0.45
1:F:323:THR:CG2	1:F:366:ARG:HH22	2.29	0.45
1:G:169:TRP:CE3	1:G:339:VAL:HG22	2.51	0.45
1:G:352:ILE:HD13	1:G:352:ILE:C	2.41	0.45
1:A:296:TYR:CE1	1:A:330:ASN:HB3	2.51	0.45
1:B:210:ILE:HG21	1:B:243:PHE:CE1	2.51	0.45
1:C:119:LEU:HD21	1:C:155:LEU:HD11	1.98	0.45
1:F:296:TYR:OH	1:F:300:LYS:HD2	2.17	0.45
1:G:244:GLN:O	1:G:248:GLU:HG3	2.17	0.45
1:A:279:PRO:HG2	1:A:280:PHE:H	1.82	0.45
1:B:296:TYR:OH	1:B:334:GLU:OE2	2.31	0.45
1:C:346:GLN:HE22	1:G:263:ARG:HA	1.80	0.45
1:D:123:GLY:CA	1:D:326:GLY:HA3	2.47	0.45
1:E:147:THR:CG2	1:E:148:GLU:H	2.30	0.45
1:E:224:LYS:O	1:E:228:GLU:HG3	2.15	0.45
1:H:315:ILE:CD1	1:H:341:PHE:HB2	2.47	0.45
1:A:341:PHE:HB3	1:A:352:ILE:HD11	1.98	0.45
1:E:128:THR:O	1:E:131:ASN:N	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:347:ASN:HB2	1:F:351:ASP:CG	2.41	0.45
1:H:203:LYS:O	1:H:204:HIS:C	2.59	0.45
1:A:124:ILE:CG2	1:A:128:THR:HB	2.47	0.45
1:A:126:GLU:HA	1:A:129:LYS:NZ	2.32	0.45
1:C:133:LEU:H	1:C:133:LEU:HD12	1.81	0.45
1:C:232:ALA:HB1	1:C:233:PRO:HD2	1.99	0.45
1:C:323:THR:CG2	1:C:366:ARG:HH22	2.27	0.45
1:F:111:PRO:HG2	1:F:112:LEU:HD12	1.99	0.45
1:F:143:ALA:O	1:F:144:GLY:O	2.34	0.45
1:H:200:MET:HB2	1:H:207:ILE:HG13	1.98	0.45
1:B:147:THR:H	1:B:150:ASN:HD21	1.64	0.45
1:H:205:LYS:HD2	1:H:255:HIS:CE1	2.51	0.45
1:H:305:ARG:NH1	1:H:305:ARG:HG3	2.31	0.45
1:A:179:VAL:O	1:A:180:LEU:HD23	2.16	0.45
1:C:309:VAL:HA	1:C:310:PRO:HD3	1.79	0.45
1:D:183:SER:O	1:D:188:LYS:HE3	2.17	0.45
1:E:341:PHE:CD1	1:E:341:PHE:N	2.84	0.45
1:H:296:TYR:CE1	1:H:330:ASN:HB3	2.52	0.45
1:B:188:LYS:NZ	3:B:2:GNP:O3G	2.48	0.45
1:B:192:LEU:HD21	1:B:257:PHE:HB3	1.99	0.45
1:E:177:TYR:CD1	1:E:256:VAL:HB	2.52	0.45
1:H:267:ASP:C	1:H:269:GLN:H	2.24	0.45
1:D:356:SER:O	1:D:357:PRO:C	2.60	0.45
1:E:243:PHE:O	1:E:246:ALA:HB3	2.17	0.45
1:A:316:PHE:CE1	1:A:328:VAL:HG13	2.52	0.44
1:B:169:TRP:CE2	1:B:357:PRO:HG3	2.52	0.44
1:D:345:GLY:HA3	1:D:351:ASP:HB3	1.98	0.44
1:E:238:TYR:N	1:E:238:TYR:CD1	2.84	0.44
1:E:275:LYS:NZ	1:E:308:SER:HB2	2.32	0.44
1:F:237:CYS:SG	1:F:243:PHE:HA	2.57	0.44
1:G:235:GLU:CG	1:G:250:PHE:HE2	2.30	0.44
1:H:123:GLY:H	1:H:326:GLY:HA3	1.82	0.44
1:B:278:ILE:HG22	1:B:280:PHE:H	1.81	0.44
1:C:169:TRP:CD1	1:C:338:GLY:HA3	2.53	0.44
1:C:302:ILE:HA	1:C:305:ARG:CG	2.47	0.44
1:D:348:VAL:HG13	1:D:349:PRO:HA	1.98	0.44
1:D:350:GLU:O	1:D:352:ILE:N	2.50	0.44
1:E:120:GLN:HA	1:E:129:LYS:NZ	2.32	0.44
1:F:127:SER:OG	1:F:128:THR:N	2.51	0.44
1:H:268:PRO:C	1:H:270:TYR:N	2.74	0.44
1:C:316:PHE:O	1:C:342:MET:HA	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:235:GLU:HB2	1:D:250:PHE:HZ	1.81	0.44
1:E:196:ALA:C	1:E:198:ILE:N	2.75	0.44
1:E:224:LYS:HA	1:E:234:LEU:HD13	1.98	0.44
1:E:314:TYR:HB2	1:E:339:VAL:HG12	1.99	0.44
1:G:200:MET:HB2	1:G:207:ILE:CG1	2.47	0.44
1:H:200:MET:HB2	1:H:207:ILE:CG1	2.47	0.44
1:H:314:TYR:HB2	1:H:339:VAL:HA	1.99	0.44
1:H:336:LYS:HD2	1:H:336:LYS:N	2.33	0.44
1:A:117:LYS:CE	1:A:118:LEU:HD23	2.47	0.44
1:C:177:TYR:CB	1:C:284:ILE:HG12	2.48	0.44
1:D:243:PHE:O	1:D:244:GLN:C	2.60	0.44
1:D:302:ILE:O	1:D:305:ARG:N	2.49	0.44
1:D:345:GLY:HA3	1:D:351:ASP:OD2	2.18	0.44
1:G:169:TRP:CD2	1:G:357:PRO:HG3	2.52	0.44
1:G:172:PRO:O	1:G:174:HIS:N	2.50	0.44
1:C:176:LYS:HA	1:C:254:ASP:O	2.17	0.44
1:F:110:GLU:CB	1:F:111:PRO:CD	2.95	0.44
1:G:278:ILE:HG22	1:G:280:PHE:H	1.82	0.44
1:H:229:LEU:N	1:H:229:LEU:HD12	2.32	0.44
1:A:222:GLN:HG2	1:E:218:ALA:CB	2.47	0.44
1:A:330:ASN:O	1:A:334:GLU:HG2	2.17	0.44
1:C:151:VAL:HG23	1:C:152:VAL:N	2.33	0.44
1:E:117:LYS:HE2	1:E:117:LYS:HB3	1.77	0.44
1:E:360:PHE:C	1:E:362:ARG:N	2.73	0.44
1:F:365:CYS:O	1:F:366:ARG:C	2.60	0.44
1:C:237:CYS:C	1:C:238:TYR:CD1	2.96	0.44
1:D:208:ALA:O	1:D:257:PHE:N	2.46	0.44
1:E:305:ARG:HD2	1:E:305:ARG:HA	1.68	0.44
1:F:192:LEU:HD23	1:F:192:LEU:HA	1.90	0.44
1:G:215:TYR:HB2	1:G:263:ARG:NH2	2.32	0.44
1:G:265:PHE:HD1	1:G:271:ILE:CD1	2.30	0.44
1:H:210:ILE:O	1:H:258:VAL:HG13	2.17	0.44
1:B:268:PRO:HA	1:B:271:ILE:HD12	2.00	0.44
1:D:110:GLU:HG3	1:D:111:PRO:CD	2.34	0.44
1:D:221:GLU:O	1:D:225:THR:HG23	2.17	0.44
1:D:290:LEU:CD2	1:D:302:ILE:HD11	2.48	0.44
1:E:356:SER:O	1:E:357:PRO:C	2.61	0.44
1:F:149:GLU:C	1:F:149:GLU:CD	2.85	0.44
1:H:281:GLU:O	1:H:284:ILE:HB	2.18	0.44
1:A:175:SER:HB3	1:A:283:SER:O	2.18	0.44
1:A:284:ILE:CG2	1:A:285:GLN:N	2.80	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:199:SER:HA	1:B:203:LYS:CB	2.43	0.44
1:B:325:LEU:N	1:B:325:LEU:HD22	2.33	0.44
1:C:199:SER:C	1:C:203:LYS:HB2	2.43	0.44
1:C:262:GLY:HA3	3:C:3:GNP:O3G	2.17	0.44
1:C:265:PHE:O	1:C:271:ILE:HD11	2.17	0.44
1:D:206:LYS:HB3	1:D:253:TYR:CD2	2.53	0.44
1:D:243:PHE:O	1:D:246:ALA:N	2.51	0.44
1:D:248:GLU:C	1:D:250:PHE:N	2.76	0.44
1:E:130:THR:CG2	1:E:131:ASN:N	2.80	0.44
1:E:165:SER:O	1:E:167:ASP:N	2.51	0.44
1:G:233:PRO:HB2	1:G:250:PHE:HZ	1.82	0.44
1:G:324:SER:C	1:G:325:LEU:HD12	2.43	0.44
1:H:129:LYS:NZ	1:H:129:LYS:CB	2.81	0.44
1:H:212:THR:O	1:H:212:THR:CG2	2.66	0.44
1:H:278:ILE:HD12	1:H:278:ILE:H	1.81	0.44
1:A:117:LYS:HE3	1:A:118:LEU:HD23	1.98	0.43
1:A:163:LEU:N	1:A:163:LEU:HD22	2.32	0.43
1:A:169:TRP:NE1	1:A:357:PRO:HG3	2.33	0.43
1:C:220:VAL:HG13	1:C:236:VAL:HG21	1.99	0.43
1:D:163:LEU:HG	1:D:164:PRO:HD2	2.00	0.43
1:C:267:ASP:HA	1:C:268:PRO:HD2	1.88	0.43
1:C:287:PHE:N	1:C:287:PHE:CD1	2.86	0.43
1:D:268:PRO:O	1:D:270:TYR:N	2.51	0.43
1:D:271:ILE:CD1	1:D:305:ARG:HD2	2.48	0.43
1:E:286:SER:C	1:E:287:PHE:HD1	2.26	0.43
1:E:287:PHE:HB3	1:E:315:ILE:HD11	2.00	0.43
1:G:151:VAL:HG23	1:G:152:VAL:N	2.32	0.43
1:H:177:TYR:C	1:H:178:ILE:HD13	2.43	0.43
1:B:135:LYS:O	1:B:138:ARG:N	2.51	0.43
1:B:213:ASP:OD2	1:B:261:ALA:HA	2.18	0.43
1:C:272:ASP:O	1:C:276:GLU:HG2	2.18	0.43
1:C:347:ASN:HB2	1:C:351:ASP:OD2	2.19	0.43
1:D:133:LEU:C	1:D:135:LYS:N	2.74	0.43
1:B:124:ILE:HG22	1:B:125:LYS:N	2.34	0.43
1:D:209:PHE:C	1:D:210:ILE:HG13	2.43	0.43
1:F:352:ILE:HG13	1:F:353:GLN:N	2.33	0.43
1:G:288:LEU:HD23	1:G:314:TYR:CE1	2.53	0.43
1:G:309:VAL:O	1:G:311:VAL:HG23	2.19	0.43
1:A:119:LEU:HB3	1:A:129:LYS:HG2	2.00	0.43
1:B:164:PRO:HB2	1:B:168:LYS:HD2	1.99	0.43
1:B:174:HIS:O	1:B:175:SER:C	2.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:180:LEU:HD12	1:C:192:LEU:HG	2.00	0.43
1:D:169:TRP:CZ3	1:D:355:VAL:HG23	2.53	0.43
1:D:222:GLN:NE2	1:H:219:ALA:HA	2.34	0.43
1:E:286:SER:C	1:E:287:PHE:CD1	2.96	0.43
1:F:125:LYS:O	1:F:126:GLU:C	2.61	0.43
1:H:301:HIS:C	1:H:303:VAL:H	2.25	0.43
1:C:327:SER:O	1:C:331:ILE:HG12	2.18	0.43
1:D:113:ARG:NH1	1:E:224:LYS:HE3	2.34	0.43
1:D:268:PRO:HA	1:D:271:ILE:CG1	2.48	0.43
1:F:123:GLY:CA	1:F:326:GLY:HA3	2.49	0.43
1:F:192:LEU:O	1:F:193:ALA:C	2.61	0.43
1:H:147:THR:O	1:H:149:GLU:N	2.52	0.43
1:A:173:ILE:HA	1:A:285:GLN:HE22	1.84	0.43
1:F:112:LEU:HD11	1:F:146:LEU:HD13	2.00	0.43
1:H:243:PHE:CZ	1:H:278:ILE:HG13	2.53	0.43
1:D:138:ARG:O	1:D:142:GLU:HG2	2.19	0.43
1:D:206:LYS:HB2	1:D:253:TYR:HA	2.00	0.43
1:E:169:TRP:CD1	1:E:338:GLY:HA3	2.52	0.43
1:F:323:THR:HG23	1:F:366:ARG:HH12	1.84	0.43
1:G:167:ASP:C	1:G:169:TRP:H	2.26	0.43
1:H:285:GLN:HG2	1:H:287:PHE:HE1	1.84	0.43
1:D:286:SER:OG	1:D:311:VAL:HA	2.19	0.43
1:G:296:TYR:HH	1:G:300:LYS:HE2	1.82	0.43
1:H:305:ARG:N	1:H:305:ARG:HD2	2.34	0.43
1:A:148:GLU:HA	1:A:151:VAL:CG2	2.49	0.43
1:B:120:GLN:HG2	1:B:129:LYS:CE	2.48	0.43
1:B:271:ILE:HG22	1:B:275:LYS:NZ	2.34	0.43
1:B:305:ARG:HH11	1:B:305:ARG:CG	2.32	0.43
1:C:208:ALA:HB2	1:C:253:TYR:CD2	2.54	0.43
1:C:215:TYR:HB2	1:C:263:ARG:NH2	2.34	0.43
1:C:361:VAL:O	1:C:364:LEU:HB3	2.19	0.43
1:D:233:PRO:HB2	1:D:250:PHE:HE1	1.81	0.43
1:E:198:ILE:O	1:E:202:GLU:HB2	2.19	0.43
1:D:268:PRO:HA	1:D:271:ILE:HD12	2.00	0.42
1:D:339:VAL:CG2	1:D:340:GLY:N	2.82	0.42
1:E:188:LYS:NZ	3:E:5:GNP:O3G	2.51	0.42
1:F:352:ILE:HD12	1:F:353:GLN:H	1.84	0.42
1:A:129:LYS:O	1:A:130:THR:C	2.62	0.42
1:A:268:PRO:HA	1:A:271:ILE:HD12	2.01	0.42
1:B:120:GLN:HG2	1:B:129:LYS:CD	2.49	0.42
1:C:264:ASN:OD1	1:C:266:LYS:HB3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:343:THR:HA	1:C:352:ILE:HA	2.01	0.42
1:D:250:PHE:HA	1:D:253:TYR:CD1	2.54	0.42
1:E:190:THR:O	1:E:194:LYS:HG3	2.18	0.42
1:F:319:ILE:HD13	1:F:342:MET:HE2	2.01	0.42
1:G:235:GLU:HG3	1:G:250:PHE:HE2	1.84	0.42
1:H:264:ASN:C	1:H:266:LYS:N	2.76	0.42
1:A:122:THR:OG1	1:A:124:ILE:HG12	2.19	0.42
1:B:129:LYS:C	1:B:131:ASN:N	2.77	0.42
1:B:164:PRO:O	1:B:165:SER:C	2.62	0.42
1:B:209:PHE:O	1:B:210:ILE:HG13	2.19	0.42
1:D:147:THR:O	1:D:151:VAL:CG2	2.67	0.42
1:G:147:THR:O	1:G:149:GLU:N	2.48	0.42
1:H:266:LYS:HA	1:H:305:ARG:NH1	2.34	0.42
1:A:169:TRP:CE2	1:A:357:PRO:HG3	2.54	0.42
1:B:226:TYR:C	1:B:228:GLU:N	2.76	0.42
1:C:163:LEU:HD23	1:C:169:TRP:CZ2	2.55	0.42
1:C:330:ASN:O	1:C:334:GLU:HG2	2.20	0.42
1:F:111:PRO:O	1:F:114:LYS:N	2.51	0.42
1:F:341:PHE:HB3	1:F:352:ILE:HD11	2.00	0.42
1:G:213:ASP:OD1	1:G:219:ALA:CB	2.67	0.42
1:A:355:VAL:HG11	1:A:363:MET:CE	2.45	0.42
1:B:122:THR:HB	1:B:364:LEU:HD22	2.02	0.42
1:B:243:PHE:CE2	1:B:279:PRO:HD2	2.55	0.42
1:B:319:ILE:HG12	1:B:343:THR:O	2.20	0.42
1:C:179:VAL:HG12	1:C:180:LEU:N	2.34	0.42
1:C:184:THR:C	1:C:186:ALA:H	2.28	0.42
1:D:217:ILE:O	1:D:218:ALA:HB3	2.19	0.42
1:D:349:PRO:HD2	1:D:350:GLU:OE2	2.18	0.42
1:E:180:LEU:HD22	1:E:287:PHE:HB2	2.02	0.42
1:A:146:LEU:HB3	1:A:151:VAL:HG22	2.01	0.42
1:A:163:LEU:HD21	1:A:329:PHE:HE2	1.83	0.42
1:A:211:THR:OG1	1:A:223:LEU:HD23	2.20	0.42
1:A:296:TYR:HA	1:A:299:MET:HE3	2.01	0.42
1:E:313:GLN:OE1	1:E:340:GLY:HA2	2.19	0.42
1:F:169:TRP:NE1	1:F:357:PRO:HG3	2.34	0.42
1:G:207:ILE:HD12	1:G:257:PHE:CE2	2.55	0.42
1:H:212:THR:N	1:H:259:ASP:O	2.50	0.42
1:H:329:PHE:CD1	1:H:329:PHE:C	2.97	0.42
1:B:110:GLU:C	1:B:112:LEU:N	2.78	0.42
1:B:209:PHE:C	1:B:210:ILE:HG13	2.44	0.42
1:B:314:TYR:HB2	1:B:338:GLY:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:137:LEU:O	1:C:140:SER:OG	2.34	0.42
1:C:138:ARG:O	1:C:140:SER:N	2.52	0.42
1:C:185:GLY:HA3	1:G:185:GLY:O	2.19	0.42
1:D:279:PRO:O	1:D:280:PHE:HB2	2.18	0.42
1:G:146:LEU:HB3	1:G:151:VAL:CG1	2.50	0.42
1:G:179:VAL:HG22	1:G:258:VAL:CG2	2.49	0.42
1:H:266:LYS:C	1:H:305:ARG:NH1	2.77	0.42
1:H:266:LYS:O	1:H:305:ARG:NH1	2.44	0.42
1:D:232:ALA:HA	1:D:233:PRO:HD3	1.83	0.42
1:F:138:ARG:HG2	1:F:138:ARG:NH1	2.34	0.42
1:F:181:PHE:CZ	1:F:286:SER:HB3	2.55	0.42
1:G:110:GLU:HB2	1:G:111:PRO:HD3	2.01	0.42
1:G:188:LYS:NZ	1:G:262:GLY:HA2	2.34	0.42
1:G:329:PHE:C	1:G:329:PHE:CD1	2.98	0.42
1:H:207:ILE:HD12	1:H:257:PHE:HE2	1.83	0.42
1:H:305:ARG:HG3	1:H:305:ARG:HH11	1.85	0.42
1:A:224:LYS:C	1:A:226:TYR:N	2.77	0.42
1:B:224:LYS:HA	1:B:234:LEU:HD13	2.01	0.42
1:C:366:ARG:HD3	1:C:366:ARG:HA	1.89	0.42
1:E:118:LEU:O	1:E:122:THR:HG23	2.20	0.42
1:H:110:GLU:HB3	1:H:111:PRO:CD	2.50	0.42
1:H:110:GLU:HB3	1:H:111:PRO:HD3	2.00	0.42
1:H:110:GLU:CB	1:H:111:PRO:CD	2.98	0.42
1:H:129:LYS:HB3	1:H:129:LYS:NZ	2.27	0.42
1:A:179:VAL:HG22	1:A:258:VAL:HB	2.02	0.42
1:B:111:PRO:HG3	1:B:146:LEU:O	2.20	0.42
1:C:348:VAL:HA	1:C:349:PRO:HA	1.86	0.42
1:D:163:LEU:HD12	1:D:333:ALA:HA	2.02	0.42
1:D:267:ASP:OD2	1:D:269:GLN:HB3	2.20	0.42
1:E:286:SER:O	1:E:287:PHE:CD1	2.72	0.42
1:H:156:GLN:HA	1:H:159:LEU:HD12	2.02	0.42
1:H:208:ALA:O	1:H:256:VAL:HA	2.20	0.42
1:H:210:ILE:HD11	1:H:256:VAL:HG11	2.02	0.42
1:A:244:GLN:HE22	1:A:247:LYS:NZ	2.18	0.41
1:B:124:ILE:HA	1:B:330:ASN:HD21	1.84	0.41
1:B:243:PHE:CE2	1:B:278:ILE:HG23	2.55	0.41
1:D:293:THR:HG22	1:D:293:THR:O	2.20	0.41
1:E:279:PRO:HG2	1:E:280:PHE:H	1.85	0.41
1:E:291:SER:C	1:E:293:THR:H	2.26	0.41
1:F:344:ASN:HD22	1:F:351:ASP:HB3	1.84	0.41
1:G:126:GLU:O	1:G:127:SER:C	2.63	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:191:THR:HG21	1:G:315:ILE:HG21	2.02	0.41
1:H:129:LYS:O	1:H:130:THR:C	2.61	0.41
1:H:193:ALA:O	1:H:194:LYS:C	2.62	0.41
1:H:204:HIS:O	1:H:205:LYS:HG3	2.19	0.41
1:H:267:ASP:C	1:H:269:GLN:N	2.77	0.41
1:A:169:TRP:CD1	1:A:357:PRO:HG3	2.55	0.41
1:A:222:GLN:HG2	1:E:218:ALA:O	2.20	0.41
1:C:267:ASP:OD2	1:C:269:GLN:HG3	2.20	0.41
1:C:268:PRO:HA	1:C:271:ILE:CB	2.39	0.41
1:D:110:GLU:C	1:D:112:LEU:N	2.77	0.41
1:D:209:PHE:O	1:D:210:ILE:CG1	2.68	0.41
1:E:112:LEU:CD2	1:E:137:LEU:HD13	2.50	0.41
1:E:130:THR:HG22	1:E:131:ASN:N	2.34	0.41
1:E:206:LYS:N	1:E:254:ASP:OD2	2.37	0.41
1:F:175:SER:N	1:F:285:GLN:HE22	2.18	0.41
1:B:359:GLY:O	1:B:362:ARG:HB2	2.20	0.41
1:C:319:ILE:CG1	1:C:344:ASN:HB3	2.50	0.41
1:D:267:ASP:HA	1:D:268:PRO:HD2	1.91	0.41
1:E:212:THR:HG23	1:E:277:THR:HG21	2.03	0.41
1:F:290:LEU:O	1:F:316:PHE:HA	2.20	0.41
1:G:179:VAL:HG22	1:G:258:VAL:CB	2.50	0.41
1:G:206:LYS:O	1:G:207:ILE:HD13	2.20	0.41
1:H:116:GLU:O	1:H:120:GLN:HB2	2.20	0.41
1:H:277:THR:HG22	1:H:278:ILE:HD12	2.03	0.41
1:A:110:GLU:C	1:A:112:LEU:N	2.76	0.41
1:B:323:THR:O	1:B:366:ARG:NH2	2.53	0.41
1:C:321:GLU:HG3	1:G:264:ASN:OD1	2.20	0.41
1:E:177:TYR:HD1	1:E:256:VAL:HB	1.85	0.41
1:E:200:MET:HB2	1:E:207:ILE:HG13	2.01	0.41
1:H:296:TYR:CE2	1:H:300:LYS:HE2	2.55	0.41
1:A:222:GLN:NE2	1:E:219:ALA:HA	2.35	0.41
1:C:199:SER:O	1:C:205:LYS:HB2	2.20	0.41
1:D:188:LYS:NZ	3:D:4:GNP:O1B	2.46	0.41
1:D:245:GLN:HA	1:D:248:GLU:OE1	2.20	0.41
1:D:248:GLU:C	1:D:250:PHE:H	2.27	0.41
1:H:164:PRO:O	1:H:165:SER:C	2.63	0.41
1:C:176:LYS:HB2	1:C:176:LYS:NZ	2.36	0.41
1:D:221:GLU:C	1:D:223:LEU:H	2.28	0.41
1:F:326:GLY:O	1:F:329:PHE:HB3	2.20	0.41
1:H:149:GLU:C	1:H:151:VAL:H	2.29	0.41
1:H:196:ALA:HA	1:H:257:PHE:CZ	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:236:VAL:HG12	1:H:238:TYR:CE1	2.55	0.41
1:H:265:PHE:CA	1:H:271:ILE:HD11	2.50	0.41
1:A:194:LYS:HA	1:A:348:VAL:HG13	2.01	0.41
1:B:147:THR:C	1:B:149:GLU:H	2.28	0.41
1:B:278:ILE:HD12	1:B:278:ILE:H	1.81	0.41
1:C:330:ASN:O	1:C:333:ALA:HB3	2.21	0.41
1:H:230:LEU:O	1:H:231:GLN:C	2.62	0.41
1:B:122:THR:HG22	1:B:364:LEU:O	2.21	0.41
1:C:320:ASP:CG	3:C:3:GNP:HN21	2.29	0.41
1:E:154:LYS:HD3	1:E:154:LYS:O	2.21	0.41
1:F:224:LYS:HA	1:F:234:LEU:HD22	2.03	0.41
1:F:296:TYR:HH	1:F:300:LYS:HD2	1.86	0.41
1:G:318:LYS:C	1:G:320:ASP:N	2.76	0.41
1:H:314:TYR:CE2	1:H:337:ILE:HG13	2.56	0.41
1:A:131:ASN:O	1:A:135:LYS:HG2	2.20	0.41
1:B:138:ARG:O	1:B:141:VAL:HG12	2.20	0.41
1:B:170:GLN:HE22	1:B:356:SER:HA	1.86	0.41
1:C:169:TRP:CZ2	1:C:332:LEU:HD13	2.55	0.41
1:C:217:ILE:O	1:C:218:ALA:HB3	2.20	0.41
1:C:264:ASN:O	1:C:266:LYS:N	2.53	0.41
1:D:225:THR:O	1:D:229:LEU:HG	2.21	0.41
1:D:339:VAL:HG22	1:D:340:GLY:N	2.36	0.41
1:E:291:SER:C	1:E:293:THR:N	2.77	0.41
1:E:314:TYR:CB	1:E:339:VAL:HG12	2.51	0.41
1:F:137:LEU:O	1:F:141:VAL:HB	2.20	0.41
1:F:184:THR:C	1:F:186:ALA:H	2.27	0.41
1:F:360:PHE:O	1:F:363:MET:HB3	2.21	0.41
1:H:304:LYS:C	1:H:305:ARG:HD2	2.46	0.41
1:H:315:ILE:HD13	1:H:341:PHE:HB2	2.02	0.41
1:A:301:HIS:C	1:A:303:VAL:N	2.78	0.41
1:B:244:GLN:HA	1:B:247:LYS:HB3	2.02	0.41
1:D:213:ASP:OD2	1:D:219:ALA:CB	2.69	0.41
1:E:164:PRO:CG	1:E:169:TRP:HE1	2.25	0.41
1:F:240:LYS:HG3	1:F:241:GLU:OE2	2.20	0.41
1:F:364:LEU:O	1:F:366:ARG:N	2.53	0.41
1:G:132:THR:HG23	1:G:158:ILE:HG21	2.03	0.41
1:A:148:GLU:HA	1:A:151:VAL:HG23	2.02	0.40
1:A:301:HIS:C	1:A:303:VAL:H	2.28	0.40
1:B:123:GLY:CA	1:B:326:GLY:HA3	2.51	0.40
1:C:123:GLY:C	1:C:326:GLY:HA3	2.46	0.40
1:C:199:SER:HA	1:C:203:LYS:CB	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:246:ALA:O	1:G:250:PHE:HD2	2.04	0.40
1:G:301:HIS:O	1:G:305:ARG:HD3	2.21	0.40
1:A:249:LEU:HD23	1:A:249:LEU:O	2.22	0.40
1:B:151:VAL:O	1:B:155:LEU:HB2	2.21	0.40
1:D:212:THR:CB	1:D:260:THR:HG22	2.52	0.40
1:D:281:GLU:O	1:D:284:ILE:N	2.37	0.40
1:D:295:LYS:O	1:D:298:ASP:HB2	2.21	0.40
1:D:306:PHE:CD2	1:D:309:VAL:HG11	2.56	0.40
1:D:321:GLU:HG3	1:H:264:ASN:OD1	2.22	0.40
1:E:116:GLU:HG2	1:E:120:GLN:HE21	1.84	0.40
1:E:267:ASP:OD1	1:E:269:GLN:CB	2.69	0.40
1:G:125:LYS:HD2	1:G:330:ASN:ND2	2.36	0.40
1:G:180:LEU:HG	1:G:192:LEU:HD23	2.02	0.40
1:G:241:GLU:HB3	1:G:245:GLN:NE2	2.36	0.40
1:H:217:ILE:H	1:H:217:ILE:HG12	1.67	0.40
1:A:176:LYS:HA	1:A:254:ASP:O	2.20	0.40
1:A:267:ASP:O	1:A:269:GLN:N	2.54	0.40
1:B:229:LEU:C	1:B:230:LEU:HD12	2.46	0.40
1:B:299:MET:O	1:B:303:VAL:HG23	2.20	0.40
1:C:266:LYS:HG3	1:C:305:ARG:HH12	1.86	0.40
1:D:281:GLU:OE2	1:D:284:ILE:HG13	2.22	0.40
1:F:152:VAL:HG23	1:F:153:GLY:H	1.86	0.40
1:F:323:THR:HG22	1:F:366:ARG:HH22	1.86	0.40
1:B:122:THR:CG2	1:B:364:LEU:HD22	2.52	0.40
1:B:272:ASP:O	1:B:275:LYS:HB2	2.21	0.40
1:C:271:ILE:HG22	1:C:272:ASP:N	2.36	0.40
1:C:313:GLN:HB3	1:C:340:GLY:H	1.86	0.40
1:D:360:PHE:O	1:D:363:MET:HB2	2.21	0.40
1:E:160:CYS:HA	1:E:163:LEU:HD23	2.03	0.40
1:F:172:PRO:O	1:F:174:HIS:N	2.54	0.40
1:F:247:LYS:HZ3	1:F:279:PRO:CG	2.35	0.40
1:G:154:LYS:HD2	1:G:154:LYS:HA	1.96	0.40
1:H:339:VAL:O	1:H:339:VAL:HG23	2.21	0.40
1:B:193:ALA:O	1:B:196:ALA:N	2.55	0.40
1:B:326:GLY:O	1:B:329:PHE:HB3	2.22	0.40
1:B:332:LEU:HD21	1:B:339:VAL:CG1	2.51	0.40
1:C:249:LEU:O	1:C:252:GLU:HG2	2.21	0.40
1:C:344:ASN:ND2	1:C:353:GLN:HE21	2.19	0.40
1:D:168:LYS:HG3	1:D:168:LYS:O	2.20	0.40
1:D:268:PRO:HA	1:D:271:ILE:HG13	2.02	0.40
1:D:325:LEU:HD23	1:D:328:VAL:CG2	2.52	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:110:GLU:C	1:E:112:LEU:N	2.79	0.40
1:E:364:LEU:O	1:E:364:LEU:HD23	2.21	0.40
1:F:112:LEU:CD1	1:F:146:LEU:HD13	2.51	0.40
1:F:139:PHE:CD2	1:F:154:LYS:HE3	2.56	0.40
1:F:212:THR:O	1:F:212:THR:CG2	2.69	0.40
1:F:314:TYR:HB2	1:F:339:VAL:HA	2.04	0.40
1:G:133:LEU:O	1:G:135:LYS:N	2.54	0.40
1:G:289:VAL:HA	1:G:315:ILE:O	2.21	0.40
1:H:237:CYS:SG	1:H:243:PHE:HA	2.61	0.40
1:H:264:ASN:O	1:H:266:LYS:N	2.54	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	256/296 (86%)	209 (82%)	35 (14%)	12 (5%)	2	11
1	B	256/296 (86%)	201 (78%)	46 (18%)	9 (4%)	3	16
1	C	256/296 (86%)	200 (78%)	38 (15%)	18 (7%)	1	4
1	D	256/296 (86%)	186 (73%)	49 (19%)	21 (8%)	1	3
1	E	256/296 (86%)	192 (75%)	42 (16%)	22 (9%)	0	3
1	F	256/296 (86%)	208 (81%)	37 (14%)	11 (4%)	2	13
1	G	256/296 (86%)	198 (77%)	47 (18%)	11 (4%)	2	13
1	H	256/296 (86%)	190 (74%)	52 (20%)	14 (6%)	1	8
All	All	2048/2368 (86%)	1584 (77%)	346 (17%)	118 (6%)	1	8

All (118) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	110	GLU
1	A	144	GLY
1	A	146	LEU
1	B	110	GLU
1	B	139	PHE
1	B	175	SER
1	D	110	GLU
1	D	165	SER
1	D	170	GLN
1	D	318	LYS
1	D	351	ASP
1	E	110	GLU
1	E	124	ILE
1	E	143	ALA
1	E	215	TYR
1	E	282	SER
1	F	110	GLU
1	H	165	SER
1	H	200	MET
1	H	201	LEU
1	H	204	HIS
1	A	148	GLU
1	A	175	SER
1	A	265	PHE
1	A	351	ASP
1	C	110	GLU
1	C	140	SER
1	C	202	GLU
1	C	212	THR
1	D	204	HIS
1	D	282	SER
1	E	140	SER
1	E	166	ALA
1	E	204	HIS
1	E	251	SER
1	E	365	CYS
1	F	144	GLY
1	F	265	PHE
1	F	282	SER
1	F	351	ASP
1	F	365	CYS
1	G	165	SER
1	G	217	ILE

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Mol	Chain	Res	Type
1	H	124	ILE
1	H	150	ASN
1	H	265	PHE
1	H	302	ILE
1	A	280	PHE
1	A	302	ILE
1	B	130	THR
1	B	140	SER
1	B	281	GLU
1	B	283	SER
1	B	312	ASN
1	C	201	LEU
1	C	265	PHE
1	C	268	PRO
1	C	280	PHE
1	C	301	HIS
1	C	357	PRO
1	D	143	ALA
1	D	144	GLY
1	D	161	ASP
1	D	175	SER
1	D	243	PHE
1	E	351	ASP
1	E	357	PRO
1	F	126	GLU
1	F	166	ALA
1	F	188	LYS
1	G	202	GLU
1	G	210	ILE
1	H	110	GLU
1	H	213	ASP
1	H	285	GLN
1	A	282	SER
1	C	234	LEU
1	E	249	LEU
1	F	173	ILE
1	G	110	GLU
1	H	148	GLU
1	H	251	SER
1	A	161	ASP
1	A	200	MET
1	B	265	PHE

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Mol	Chain	Res	Type
1	C	189	THR
1	C	358	LEU
1	D	188	LYS
1	D	196	ALA
1	D	222	GLN
1	D	231	GLN
1	D	244	GLN
1	E	150	ASN
1	E	175	SER
1	E	201	LEU
1	E	234	LEU
1	G	134	LYS
1	G	149	GLU
1	D	187	GLY
1	D	197	ALA
1	D	350	GLU
1	E	125	LYS
1	E	279	PRO
1	E	280	PHE
1	F	175	SER
1	G	319	ILE
1	C	124	ILE
1	C	144	GLY
1	E	187	GLY
1	E	233	PRO
1	C	267	ASP
1	G	173	ILE
1	C	339	VAL
1	C	352	ILE
1	G	357	PRO
1	H	310	PRO
1	D	352	ILE
1	G	302	ILE

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	228/262 (87%)	213 (93%)	15 (7%)	14	43
1	B	228/262 (87%)	215 (94%)	13 (6%)	17	49
1	C	228/262 (87%)	221 (97%)	7 (3%)	35	68
1	D	228/262 (87%)	215 (94%)	13 (6%)	17	49
1	E	228/262 (87%)	210 (92%)	18 (8%)	10	35
1	F	228/262 (87%)	214 (94%)	14 (6%)	15	46
1	G	228/262 (87%)	212 (93%)	16 (7%)	12	41
1	H	228/262 (87%)	208 (91%)	20 (9%)	8	31
All	All	1824/2096 (87%)	1708 (94%)	116 (6%)	14	44

All (116) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	116	GLU
1	A	126	GLU
1	A	127	SER
1	A	136	LEU
1	A	139	PHE
1	A	152	VAL
1	A	163	LEU
1	A	183	SER
1	A	192	LEU
1	A	195	LEU
1	A	264	ASN
1	A	267	ASP
1	A	308	SER
1	A	339	VAL
1	A	346	GLN
1	B	134	LYS
1	B	148	GLU
1	B	154	LYS
1	B	170	GLN
1	B	195	LEU
1	B	217	ILE
1	B	241	GLU
1	B	254	ASP
1	B	267	ASP
1	B	278	ILE
1	B	281	GLU
1	B	334	GLU

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Mol	Chain	Res	Type
1	B	358	LEU
1	C	130	THR
1	C	149	GLU
1	C	163	LEU
1	C	176	LYS
1	C	217	ILE
1	C	224	LYS
1	C	281	GLU
1	D	134	LYS
1	D	154	LYS
1	D	163	LEU
1	D	180	LEU
1	D	184	THR
1	D	189	THR
1	D	230	LEU
1	D	235	GLU
1	D	305	ARG
1	D	318	LYS
1	D	325	LEU
1	D	339	VAL
1	D	352	ILE
1	E	118	LEU
1	E	130	THR
1	E	148	GLU
1	E	154	LYS
1	E	174	HIS
1	E	201	LEU
1	E	224	LYS
1	E	226	TYR
1	E	237	CYS
1	E	238	TYR
1	E	252	GLU
1	E	269	GLN
1	E	281	GLU
1	E	322	THR
1	E	323	THR
1	E	324	SER
1	E	336	LYS
1	E	357	PRO
1	F	133	LEU
1	F	148	GLU
1	F	161	ASP

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Mol	Chain	Res	Type
1	F	195	LEU
1	F	216	ARG
1	F	225	THR
1	F	267	ASP
1	F	276	GLU
1	F	281	GLU
1	F	293	THR
1	F	309	VAL
1	F	317	THR
1	F	344	ASN
1	F	364	LEU
1	G	119	LEU
1	G	122	THR
1	G	124	ILE
1	G	128	THR
1	G	149	GLU
1	G	173	ILE
1	G	192	LEU
1	G	201	LEU
1	G	217	ILE
1	G	224	LYS
1	G	267	ASP
1	G	281	GLU
1	G	309	VAL
1	G	327	SER
1	G	349	PRO
1	G	352	ILE
1	H	110	GLU
1	H	120	GLN
1	H	129	LYS
1	H	139	PHE
1	H	142	GLU
1	H	148	GLU
1	H	149	GLU
1	H	154	LYS
1	H	163	LEU
1	H	192	LEU
1	H	195	LEU
1	H	205	LYS
1	H	212	THR
1	H	231	GLN
1	H	252	GLU

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Mol	Chain	Res	Type
1	H	284	ILE
1	H	302	ILE
1	H	309	VAL
1	H	336	LYS
1	H	364	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (56) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	120	GLN
1	A	170	GLN
1	A	222	GLN
1	A	244	GLN
1	A	269	GLN
1	A	285	GLN
1	A	330	ASN
1	A	346	GLN
1	B	156	GLN
1	B	244	GLN
1	B	245	GLN
1	B	255	HIS
1	B	269	GLN
1	B	285	GLN
1	B	312	ASN
1	B	347	ASN
1	C	170	GLN
1	C	244	GLN
1	C	269	GLN
1	C	344	ASN
1	C	346	GLN
1	D	120	GLN
1	D	222	GLN
1	D	231	GLN
1	D	255	HIS
1	D	264	ASN
1	E	120	GLN
1	E	131	ASN
1	E	156	GLN
1	E	244	GLN
1	E	330	ASN
1	E	344	ASN
1	E	346	GLN

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Mol	Chain	Res	Type
1	E	347	ASN
1	F	120	GLN
1	F	269	GLN
1	F	285	GLN
1	F	344	ASN
1	F	346	GLN
1	F	347	ASN
1	F	353	GLN
1	G	120	GLN
1	G	222	GLN
1	G	231	GLN
1	G	245	GLN
1	G	285	GLN
1	G	313	GLN
1	G	330	ASN
1	G	346	GLN
1	G	347	ASN
1	H	120	GLN
1	H	170	GLN
1	H	269	GLN
1	H	285	GLN
1	H	313	GLN
1	H	347	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 ⓘ

Of 16 ligands modelled in this entry, 8 are monoatomic - leaving 8 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#$|Z| > 2$	Counts	RMSZ	#$|Z| > 2$
3	GNP	A	1	2	29,34,34	2.13	12 (41%)	33,54,54	3.07	10 (30%)
3	GNP	E	5	2	29,34,34	2.64	9 (31%)	33,54,54	2.98	10 (30%)
3	GNP	F	6	2	29,34,34	2.04	11 (37%)	33,54,54	3.15	11 (33%)
3	GNP	D	4	2	29,34,34	2.41	11 (37%)	33,54,54	3.14	11 (33%)
3	GNP	C	3	2	29,34,34	2.27	10 (34%)	33,54,54	3.02	10 (30%)
3	GNP	H	8	2	29,34,34	2.15	11 (37%)	33,54,54	3.09	9 (27%)
3	GNP	G	7	2	29,34,34	2.23	9 (31%)	33,54,54	3.04	9 (27%)
3	GNP	B	2	2	29,34,34	2.06	10 (34%)	33,54,54	3.10	10 (30%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	GNP	A	1	2	-	3/14/38/38	0/3/3/3
3	GNP	E	5	2	-	4/14/38/38	0/3/3/3
3	GNP	F	6	2	-	4/14/38/38	0/3/3/3
3	GNP	D	4	2	-	2/14/38/38	0/3/3/3
3	GNP	C	3	2	-	3/14/38/38	0/3/3/3
3	GNP	H	8	2	-	4/14/38/38	0/3/3/3
3	GNP	G	7	2	-	4/14/38/38	0/3/3/3
3	GNP	B	2	2	-	4/14/38/38	0/3/3/3

All (83) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	E	5	GNP	PA-O3A	-9.09	1.49	1.59
3	D	4	GNP	PA-O3A	-7.23	1.51	1.59
3	E	5	GNP	C2-N2	5.52	1.44	1.33
3	C	3	GNP	C2-N2	4.99	1.43	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	G	7	GNP	PA-O3A	-4.95	1.54	1.59
3	D	4	GNP	C2-N2	4.94	1.43	1.33
3	G	7	GNP	C2-N2	4.88	1.43	1.33
3	A	1	GNP	C2-N2	4.87	1.43	1.33
3	H	8	GNP	C2-N2	4.85	1.43	1.33
3	B	2	GNP	C2-N2	4.72	1.43	1.33
3	F	6	GNP	C2-N2	4.54	1.42	1.33
3	G	7	GNP	C6-N1	4.17	1.40	1.33
3	D	4	GNP	C6-N1	3.95	1.39	1.33
3	A	1	GNP	C6-N1	3.84	1.39	1.33
3	C	3	GNP	PA-O3A	-3.82	1.55	1.59
3	H	8	GNP	C6-N1	3.80	1.39	1.33
3	B	2	GNP	PB-O3A	3.75	1.63	1.59
3	F	6	GNP	C6-N1	3.70	1.39	1.33
3	A	1	GNP	PA-O3A	-3.69	1.55	1.59
3	F	6	GNP	PA-O3A	-3.62	1.55	1.59
3	B	2	GNP	C6-N1	3.61	1.39	1.33
3	C	3	GNP	C6-N1	3.58	1.39	1.33
3	G	7	GNP	C5-C6	3.48	1.47	1.41
3	H	8	GNP	PA-O3A	-3.45	1.55	1.59
3	C	3	GNP	PG-O3G	-3.45	1.47	1.56
3	E	5	GNP	O6-C6	-3.35	1.16	1.24
3	A	1	GNP	PB-O3A	3.35	1.63	1.59
3	C	3	GNP	PG-N3B	3.34	1.72	1.63
3	H	8	GNP	PG-O3G	-3.31	1.48	1.56
3	D	4	GNP	C5-C6	3.30	1.47	1.41
3	H	8	GNP	PB-O3A	3.27	1.63	1.59
3	E	5	GNP	C6-N1	3.23	1.38	1.33
3	G	7	GNP	PG-O3G	-3.23	1.48	1.56
3	E	5	GNP	PG-O3G	-3.22	1.48	1.56
3	D	4	GNP	O4'-C4'	-3.20	1.37	1.45
3	C	3	GNP	PB-O3A	3.19	1.63	1.59
3	F	6	GNP	C5-C6	3.16	1.46	1.41
3	E	5	GNP	C5-C6	3.15	1.46	1.41
3	F	6	GNP	PG-O3G	-3.15	1.48	1.56
3	D	4	GNP	PG-O3G	-3.14	1.48	1.56
3	C	3	GNP	O6-C6	-3.11	1.17	1.24
3	A	1	GNP	O6-C6	-3.05	1.17	1.24
3	B	2	GNP	PG-O3G	-3.01	1.48	1.56
3	F	6	GNP	O6-C6	-2.99	1.17	1.24
3	E	5	GNP	PG-N3B	2.99	1.71	1.63
3	B	2	GNP	O6-C6	-2.97	1.17	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	E	5	GNP	PB-O2B	-2.96	1.48	1.56
3	C	3	GNP	O4'-C4'	-2.96	1.38	1.45
3	C	3	GNP	C5-C6	2.94	1.46	1.41
3	H	8	GNP	C5-C6	2.91	1.46	1.41
3	A	1	GNP	PG-O3G	-2.90	1.49	1.56
3	B	2	GNP	C5-C6	2.86	1.46	1.41
3	B	2	GNP	PA-O3A	-2.82	1.56	1.59
3	G	7	GNP	O4'-C4'	-2.80	1.38	1.45
3	D	4	GNP	O6-C6	-2.77	1.18	1.24
3	H	8	GNP	O6-C6	-2.72	1.18	1.24
3	G	7	GNP	PG-N3B	2.66	1.70	1.63
3	G	7	GNP	PB-O2B	-2.63	1.49	1.56
3	A	1	GNP	C5-C6	2.63	1.45	1.41
3	G	7	GNP	O6-C6	-2.63	1.18	1.24
3	C	3	GNP	PB-O2B	-2.63	1.49	1.56
3	F	6	GNP	PB-O2B	-2.63	1.49	1.56
3	F	6	GNP	PB-O3A	2.60	1.62	1.59
3	B	2	GNP	O4'-C4'	-2.60	1.39	1.45
3	B	2	GNP	PG-N3B	2.59	1.70	1.63
3	H	8	GNP	O4'-C4'	-2.57	1.39	1.45
3	E	5	GNP	O4'-C4'	-2.53	1.39	1.45
3	H	8	GNP	PG-N3B	2.53	1.70	1.63
3	A	1	GNP	O4'-C4'	-2.53	1.39	1.45
3	A	1	GNP	C2-N1	2.46	1.39	1.35
3	B	2	GNP	PB-O2B	-2.43	1.50	1.56
3	A	1	GNP	PB-O2B	-2.41	1.50	1.56
3	H	8	GNP	PB-O2B	-2.40	1.50	1.56
3	F	6	GNP	PG-N3B	2.36	1.69	1.63
3	H	8	GNP	C2-N1	2.23	1.39	1.35
3	F	6	GNP	PG-O1G	2.23	1.49	1.46
3	D	4	GNP	C2-N1	2.22	1.39	1.35
3	D	4	GNP	PB-O2B	-2.21	1.50	1.56
3	A	1	GNP	PG-O1G	2.11	1.49	1.46
3	D	4	GNP	PG-O1G	2.09	1.49	1.46
3	A	1	GNP	PG-N3B	2.01	1.68	1.63
3	D	4	GNP	C3'-C4'	2.01	1.58	1.53
3	F	6	GNP	O4'-C4'	-2.01	1.40	1.45

All (80) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	D	4	GNP	C5-C6-N1	-9.35	110.92	123.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	H	8	GNP	C5-C6-N1	-9.35	110.92	123.42
3	G	7	GNP	C5-C6-N1	-9.25	111.05	123.42
3	A	1	GNP	C5-C6-N1	-9.25	111.05	123.42
3	C	3	GNP	C5-C6-N1	-9.10	111.25	123.42
3	F	6	GNP	C5-C6-N1	-9.04	111.33	123.42
3	B	2	GNP	C5-C6-N1	-8.98	111.42	123.42
3	E	5	GNP	C5-C6-N1	-8.87	111.56	123.42
3	B	2	GNP	O1G-PG-N3B	-8.24	99.64	111.77
3	F	6	GNP	O1G-PG-N3B	-7.97	100.03	111.77
3	H	8	GNP	C2-N3-C4	-7.93	106.93	115.48
3	A	1	GNP	C2-N3-C4	-7.72	107.17	115.48
3	D	4	GNP	C2-N3-C4	-7.71	107.17	115.48
3	B	2	GNP	C2-N3-C4	-7.71	107.18	115.48
3	F	6	GNP	C2-N3-C4	-7.70	107.18	115.48
3	A	1	GNP	O1G-PG-N3B	-7.64	100.52	111.77
3	C	3	GNP	C2-N3-C4	-7.61	107.28	115.48
3	H	8	GNP	O1G-PG-N3B	-7.55	100.65	111.77
3	G	7	GNP	C2-N3-C4	-7.50	107.40	115.48
3	E	5	GNP	C2-N3-C4	-7.44	107.47	115.48
3	E	5	GNP	O1G-PG-N3B	-7.42	100.84	111.77
3	C	3	GNP	O1G-PG-N3B	-7.13	101.27	111.77
3	D	4	GNP	O1G-PG-N3B	-6.90	101.61	111.77
3	G	7	GNP	O1G-PG-N3B	-6.70	101.91	111.77
3	F	6	GNP	N2-C2-N1	-5.52	108.94	117.22
3	G	7	GNP	N2-C2-N1	-5.46	109.03	117.22
3	C	3	GNP	N2-C2-N1	-5.33	109.23	117.22
3	F	6	GNP	N3-C2-N1	5.23	133.86	127.21
3	B	2	GNP	N2-C2-N1	-5.22	109.40	117.22
3	B	2	GNP	N3-C2-N1	5.09	133.68	127.21
3	H	8	GNP	N3-C2-N1	5.04	133.62	127.21
3	H	8	GNP	N2-C2-N1	-5.03	109.68	117.22
3	D	4	GNP	N2-C2-N1	-5.03	109.68	117.22
3	G	7	GNP	N3-C2-N1	4.98	133.54	127.21
3	D	4	GNP	N3-C2-N1	4.92	133.47	127.21
3	C	3	GNP	N3-C2-N1	4.91	133.45	127.21
3	A	1	GNP	N3-C2-N1	4.91	133.44	127.21
3	E	5	GNP	N3-C2-N1	4.90	133.43	127.21
3	E	5	GNP	N2-C2-N1	-4.89	109.88	117.22
3	A	1	GNP	N2-C2-N1	-4.66	110.23	117.22
3	F	6	GNP	O2B-PB-O1B	4.54	119.61	109.87
3	E	5	GNP	O2B-PB-O1B	4.45	119.42	109.87
3	H	8	GNP	O2B-PB-O1B	4.41	119.33	109.87

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	D	4	GNP	O2B-PB-O1B	4.40	119.30	109.87
3	G	7	GNP	O2B-PB-O1B	4.35	119.21	109.87
3	C	3	GNP	O2B-PB-O1B	4.30	119.09	109.87
3	A	1	GNP	O2B-PB-O1B	4.25	118.98	109.87
3	B	2	GNP	O2B-PB-O1B	4.24	118.96	109.87
3	G	7	GNP	O3A-PB-N3B	-4.14	95.09	106.59
3	D	4	GNP	O3A-PB-N3B	-4.04	95.37	106.59
3	D	4	GNP	C4'-O4'-C1'	3.94	113.53	109.92
3	A	1	GNP	O3A-PB-N3B	-3.85	95.90	106.59
3	H	8	GNP	O3A-PB-N3B	-3.28	97.49	106.59
3	F	6	GNP	O3A-PB-N3B	-3.12	97.94	106.59
3	B	2	GNP	O3A-PB-N3B	-3.03	98.20	106.59
3	C	3	GNP	O3A-PB-N3B	-2.86	98.66	106.59
3	F	6	GNP	O4'-C1'-N9	2.82	112.49	108.75
3	G	7	GNP	O4'-C4'-C5'	2.80	118.29	109.33
3	E	5	GNP	O3A-PB-N3B	-2.79	98.85	106.59
3	F	6	GNP	O4'-C4'-C5'	2.74	118.11	109.33
3	D	4	GNP	C2-N1-C6	2.53	119.48	115.96
3	C	3	GNP	C4'-O4'-C1'	2.52	112.24	109.92
3	G	7	GNP	C2-N1-C6	2.48	119.41	115.96
3	E	5	GNP	O4'-C4'-C5'	2.47	117.26	109.33
3	A	1	GNP	O4'-C4'-C5'	2.43	117.13	109.33
3	D	4	GNP	O4'-C4'-C5'	2.43	117.12	109.33
3	H	8	GNP	O4'-C4'-C5'	2.42	117.08	109.33
3	H	8	GNP	C2-N1-C6	2.40	119.29	115.96
3	C	3	GNP	C2-N1-C6	2.39	119.29	115.96
3	A	1	GNP	O2B-PB-O3A	2.35	112.50	104.64
3	B	2	GNP	O4'-C4'-C5'	2.34	116.84	109.33
3	E	5	GNP	O2B-PB-O3A	2.25	112.16	104.64
3	B	2	GNP	C2-N1-C6	2.25	119.08	115.96
3	C	3	GNP	O4'-C4'-C5'	2.24	116.51	109.33
3	B	2	GNP	O2B-PB-O3A	2.23	112.08	104.64
3	F	6	GNP	O2B-PB-O3A	2.19	111.95	104.64
3	E	5	GNP	C2-N1-C6	2.12	118.90	115.96
3	F	6	GNP	C2-N1-C6	2.10	118.89	115.96
3	D	4	GNP	O2B-PB-O3A	2.06	111.53	104.64
3	A	1	GNP	C2-N1-C6	2.02	118.77	115.96

There are no chirality outliers.

All (28) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1	GNP	PG-N3B-PB-O1B
3	A	1	GNP	PG-N3B-PB-O3A
3	A	1	GNP	PA-O3A-PB-O2B
3	B	2	GNP	PG-N3B-PB-O1B
3	B	2	GNP	PG-N3B-PB-O3A
3	B	2	GNP	PA-O3A-PB-O2B
3	C	3	GNP	PG-N3B-PB-O1B
3	C	3	GNP	PA-O3A-PB-O2B
3	D	4	GNP	PG-N3B-PB-O1B
3	D	4	GNP	PG-N3B-PB-O3A
3	E	5	GNP	PG-N3B-PB-O1B
3	E	5	GNP	PG-N3B-PB-O3A
3	E	5	GNP	PA-O3A-PB-O2B
3	F	6	GNP	PG-N3B-PB-O1B
3	F	6	GNP	PG-N3B-PB-O3A
3	F	6	GNP	PA-O3A-PB-O2B
3	G	7	GNP	PG-N3B-PB-O1B
3	G	7	GNP	PA-O3A-PB-O2B
3	H	8	GNP	PG-N3B-PB-O1B
3	H	8	GNP	PA-O3A-PB-O2B
3	B	2	GNP	PA-O3A-PB-O1B
3	C	3	GNP	PA-O3A-PB-O1B
3	E	5	GNP	PA-O3A-PB-O1B
3	F	6	GNP	PA-O3A-PB-O1B
3	G	7	GNP	PA-O3A-PB-O1B
3	H	8	GNP	PA-O3A-PB-O1B
3	G	7	GNP	PG-N3B-PB-O3A
3	H	8	GNP	PG-N3B-PB-O3A

There are no ring outliers.

4 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	E	5	GNP	2	0
3	D	4	GNP	2	0
3	C	3	GNP	3	0
3	B	2	GNP	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier.

Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand GNP A 1

Bond lengths

Bond angles

Torsions

Rings

Ligand GNP E 5

Bond lengths

Bond angles

Torsions

Rings

Ligand GNP F 6

Bond lengths

Bond angles

Torsions

Rings

Ligand GNP D 4

Bond lengths

Bond angles

Torsions

Rings

Ligand GNP C 3

Bond lengths

Bond angles

Torsions

Rings

Ligand GNP H 8

Bond lengths

Bond angles

Torsions

Rings

Ligand GNP G 7

Bond lengths

Bond angles

Torsions

Rings

Ligand GNP B 2

Bond lengths

Bond angles

Torsions

Rings

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data (i)

6.1 Protein, DNA and RNA chains (i)

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(Å^2)	Q<0.9
1	A	258/296 (87%)	-0.63	1 (0%)	89	77	31, 61, 86, 94	0
1	B	258/296 (87%)	-0.44	1 (0%)	89	77	39, 75, 104, 112	0
1	C	258/296 (87%)	-0.37	1 (0%)	89	77	54, 89, 111, 119	0
1	D	258/296 (87%)	-0.20	2 (0%)	82	66	55, 96, 115, 125	0
1	E	258/296 (87%)	-0.39	1 (0%)	89	77	40, 72, 96, 109	0
1	F	258/296 (87%)	-0.53	1 (0%)	89	77	40, 67, 90, 116	0
1	G	258/296 (87%)	-0.37	0	100	100	55, 84, 102, 118	0
1	H	258/296 (87%)	-0.27	0	100	100	50, 85, 108, 114	0
All	All	2064/2368 (87%)	-0.40	7 (0%)	90	81	31, 79, 108, 125	0

All (7) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	109	PRO	3.2
1	D	226	TYR	3.0
1	F	109	PRO	2.6
1	E	109	PRO	2.4
1	A	109	PRO	2.4
1	B	109	PRO	2.3
1	C	109	PRO	2.2

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

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

6.3 Carbohydrates (i)

There are no oligosaccharides in this entry.

6.4 Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	GNP	D	4	32/32	0.94	0.08	67,75,81,83	0
3	GNP	H	8	32/32	0.94	0.07	65,67,73,74	0
3	GNP	G	7	32/32	0.95	0.07	55,66,69,70	0
2	MG	H	8000	1/1	0.95	0.06	74,74,74,74	0
3	GNP	C	3	32/32	0.96	0.06	66,71,76,77	0
2	MG	D	4000	1/1	0.96	0.05	76,76,76,76	0
3	GNP	A	1	32/32	0.96	0.08	41,47,50,52	0
3	GNP	B	2	32/32	0.96	0.06	47,54,57,59	0
3	GNP	F	6	32/32	0.97	0.06	42,46,58,60	0
2	MG	C	3000	1/1	0.97	0.05	72,72,72,72	0
3	GNP	E	5	32/32	0.97	0.06	43,48,53,54	0
2	MG	G	7000	1/1	0.98	0.05	59,59,59,59	0
2	MG	A	1000	1/1	0.98	0.06	47,47,47,47	0
2	MG	E	5000	1/1	0.99	0.04	50,50,50,50	0
2	MG	F	6000	1/1	0.99	0.03	47,47,47,47	0
2	MG	B	2000	1/1	0.99	0.04	51,51,51,51	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.
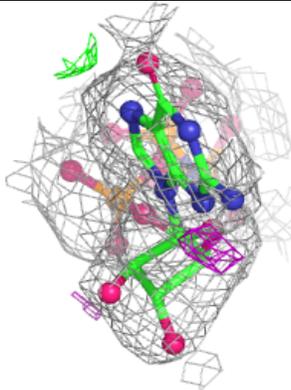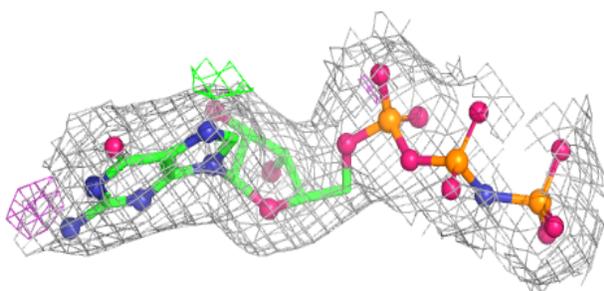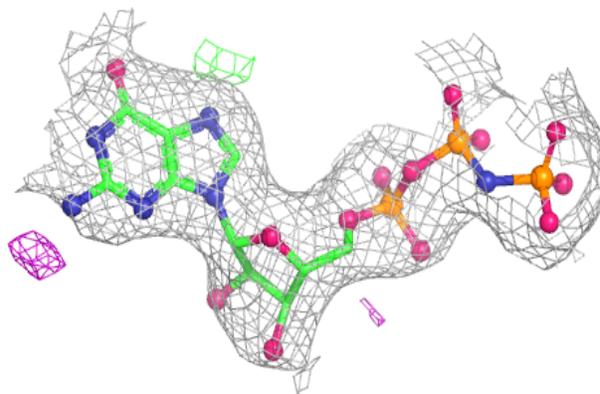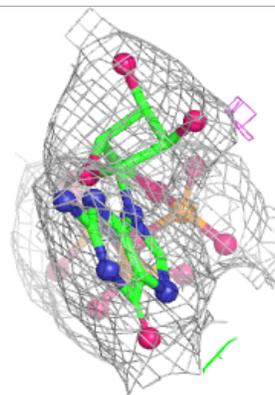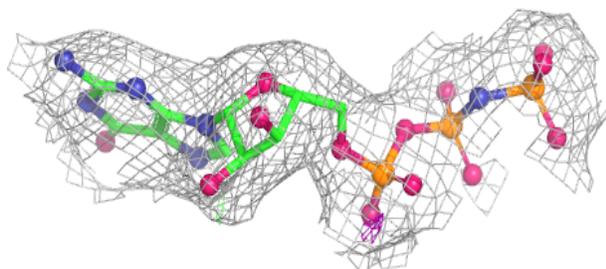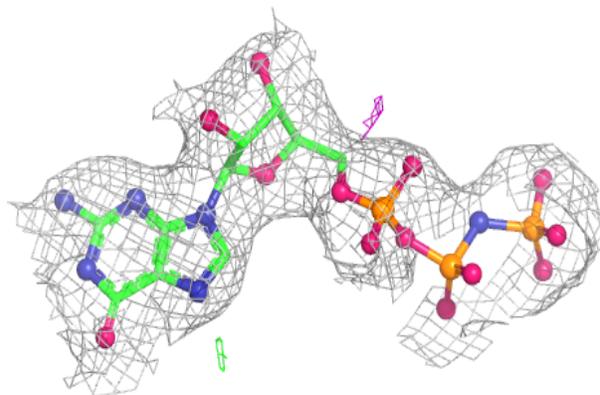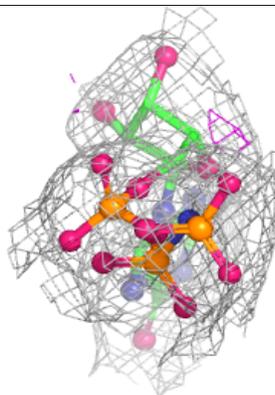
Electron density around GNP D 4:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
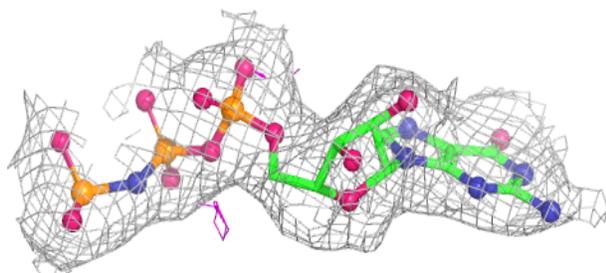and green (positive)
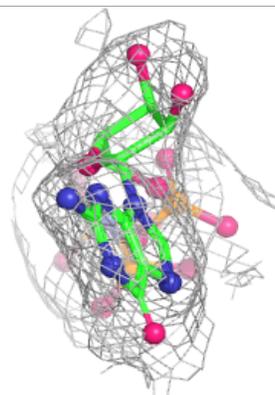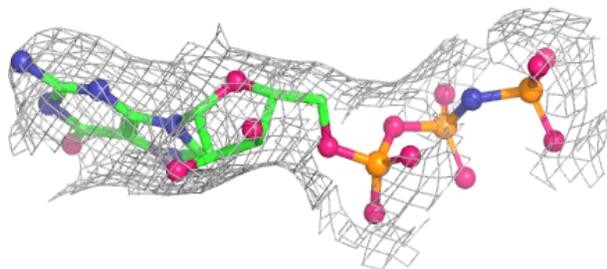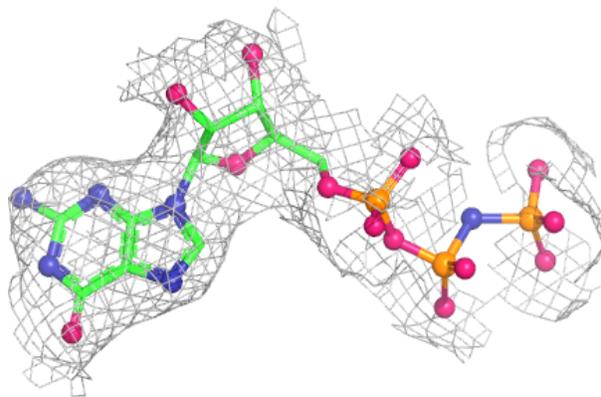
Electron density around GNP H 8:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
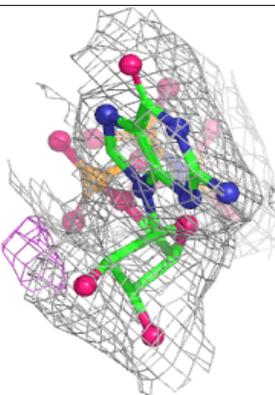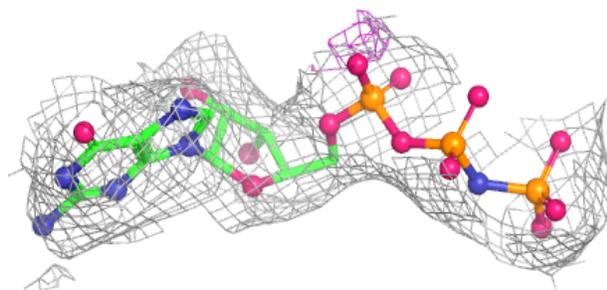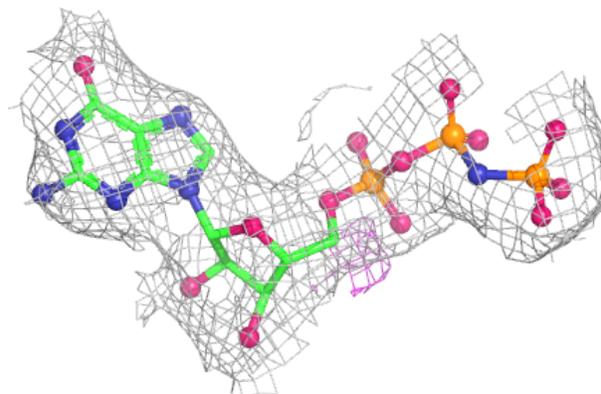
Electron density around GNP G 7:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
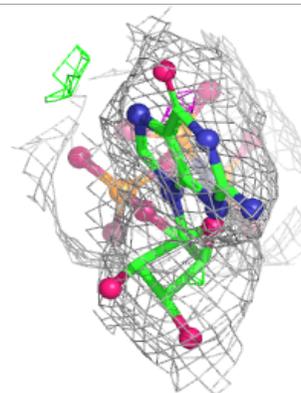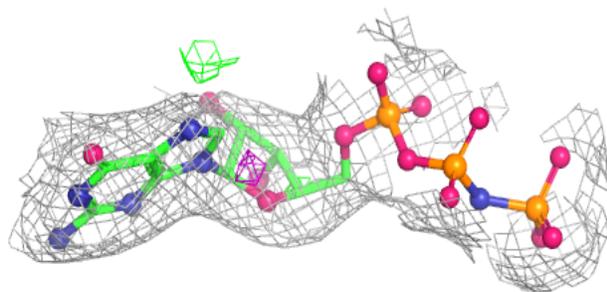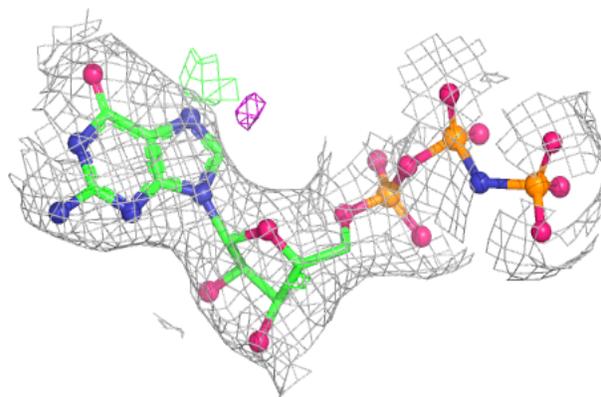
Electron density around GNP C 3:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
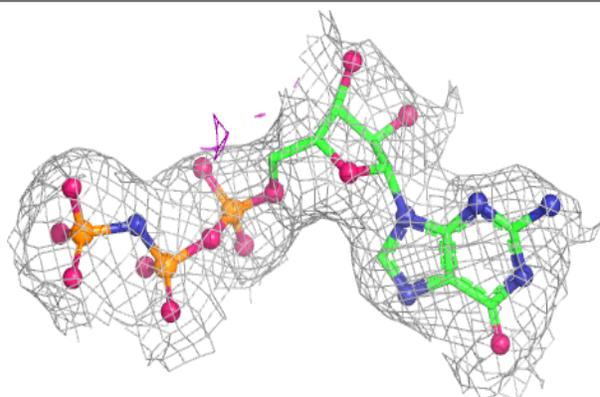$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
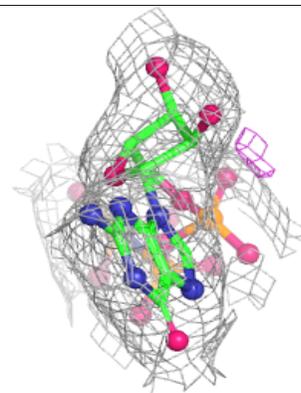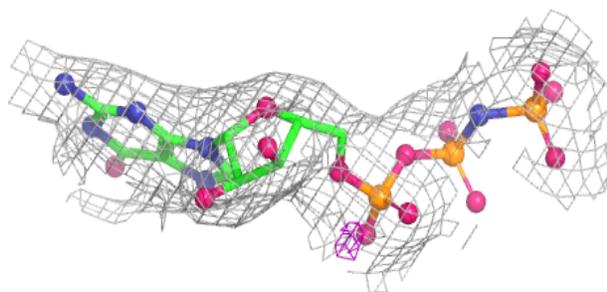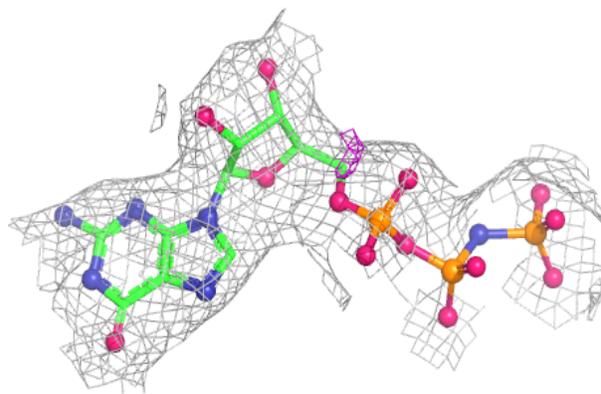
Electron density around GNP A 1:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
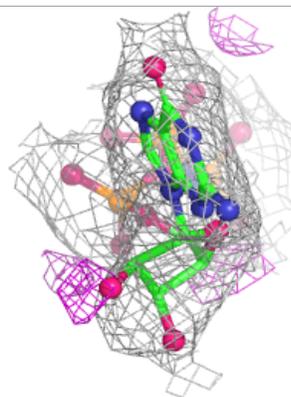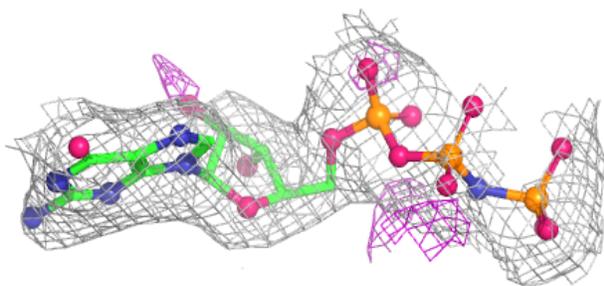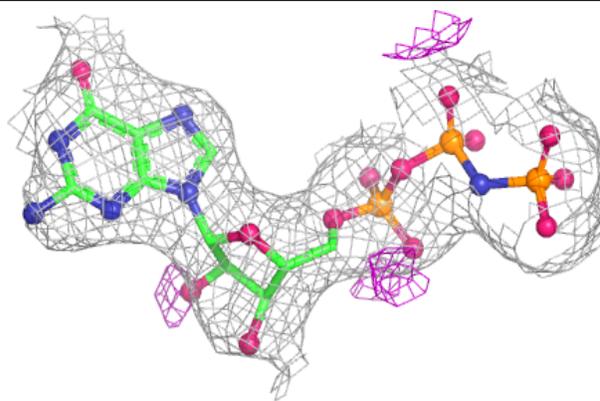
Electron density around GNP B 2:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

Electron density around GNP F 6:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

Electron density around GNP E 5:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

6.5 Other polymers ⓘ

There are no such residues in this entry.