



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 17, 2026 – 09:05 PM UTC

PDB ID : 5EXB / pdb_00005exb
Title : Wild type green fluorescent protein DendFP (Dendronephthya sp.)
Authors : Pletnev, V.Z.; Pletneva, N.V.; Pletnev, S.V.
Deposited on : 2015-11-23
Resolution : 1.81 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

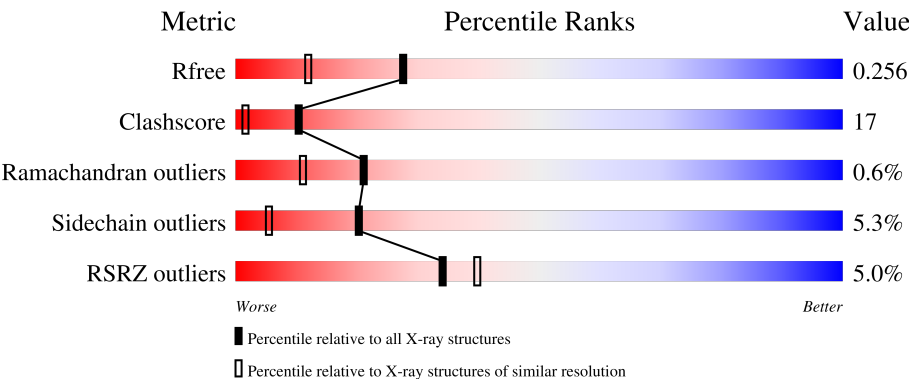
MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance i

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

The reported resolution of this entry is 1.81 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R _{free}	180053	1112 (1.82-1.82)
Clashscore	190562	1148 (1.82-1.82)
Ramachandran outliers	187476	1140 (1.82-1.82)
Sidechain outliers	187428	1140 (1.82-1.82)
RSRZ outliers	180081	1112 (1.82-1.82)

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 $\leq 5\%$. 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	232	8% 56% 36% • 5%
1	B	232	57% 35% • •
1	C	232	• 65% 29% • •
1	D	232	3% 56% 31% 8% •
1	E	232	2% 62% 30% • • 5%

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Mol	Chain	Length	Quality of chain
1	F	232	
1	G	232	
1	H	232	
1	I	232	
1	J	232	
1	K	232	
1	L	232	
1	M	232	
1	N	232	
1	O	232	
1	P	232	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	GOL	E	301	-	-	X	-
2	GOL	N	301	-	-	X	-

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 31172 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 Green fluorescent protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	221	Total	C	N	O	S	0	0	0
			1802	1157	302	334	9			
1	B	225	Total	C	N	O	S	0	2	0
			1849	1186	313	341	9			
1	C	224	Total	C	N	O	S	0	1	0
			1830	1172	308	341	9			
1	D	222	Total	C	N	O	S	0	2	0
			1821	1169	305	338	9			
1	E	221	Total	C	N	O	S	0	0	0
			1802	1157	302	334	9			
1	F	222	Total	C	N	O	S	0	0	0
			1810	1161	304	336	9			
1	G	225	Total	C	N	O	S	0	6	0
			1873	1201	317	346	9			
1	H	221	Total	C	N	O	S	0	2	0
			1817	1166	305	336	10			
1	I	221	Total	C	N	O	S	0	0	0
			1802	1157	302	334	9			
1	J	222	Total	C	N	O	S	0	2	0
			1823	1171	307	336	9			
1	K	227	Total	C	N	O	S	0	6	0
			1886	1210	322	345	9			
1	L	226	Total	C	N	O	S	0	0	0
			1842	1180	313	340	9			
1	M	221	Total	C	N	O	S	0	1	0
			1808	1162	303	334	9			
1	N	221	Total	C	N	O	S	0	2	0
			1817	1167	304	337	9			
1	O	222	Total	C	N	O	S	0	2	0
			1822	1170	305	338	9			
1	P	222	Total	C	N	O	S	0	4	0
			1832	1179	307	337	9			

There are 208 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	0	MET	-	initiating methionine	UNP Q8T6U0
A	1	GLY	-	expression tag	UNP Q8T6U0
A	64	5SQ	HIS	chromophore	UNP Q8T6U0
A	64	5SQ	TYR	chromophore	UNP Q8T6U0
A	64	5SQ	GLY	chromophore	UNP Q8T6U0
A	226	GLY	-	expression tag	UNP Q8T6U0
A	227	SER	-	expression tag	UNP Q8T6U0
A	228	HIS	-	expression tag	UNP Q8T6U0
A	229	HIS	-	expression tag	UNP Q8T6U0
A	230	HIS	-	expression tag	UNP Q8T6U0
A	231	HIS	-	expression tag	UNP Q8T6U0
A	232	HIS	-	expression tag	UNP Q8T6U0
A	233	HIS	-	expression tag	UNP Q8T6U0
B	0	MET	-	initiating methionine	UNP Q8T6U0
B	1	GLY	-	expression tag	UNP Q8T6U0
B	64	5SQ	HIS	chromophore	UNP Q8T6U0
B	64	5SQ	TYR	chromophore	UNP Q8T6U0
B	64	5SQ	GLY	chromophore	UNP Q8T6U0
B	226	GLY	-	expression tag	UNP Q8T6U0
B	227	SER	-	expression tag	UNP Q8T6U0
B	228	HIS	-	expression tag	UNP Q8T6U0
B	229	HIS	-	expression tag	UNP Q8T6U0
B	230	HIS	-	expression tag	UNP Q8T6U0
B	231	HIS	-	expression tag	UNP Q8T6U0
B	232	HIS	-	expression tag	UNP Q8T6U0
B	233	HIS	-	expression tag	UNP Q8T6U0
C	0	MET	-	initiating methionine	UNP Q8T6U0
C	1	GLY	-	expression tag	UNP Q8T6U0
C	64	5SQ	HIS	chromophore	UNP Q8T6U0
C	64	5SQ	TYR	chromophore	UNP Q8T6U0
C	64	5SQ	GLY	chromophore	UNP Q8T6U0
C	226	GLY	-	expression tag	UNP Q8T6U0
C	227	SER	-	expression tag	UNP Q8T6U0
C	228	HIS	-	expression tag	UNP Q8T6U0
C	229	HIS	-	expression tag	UNP Q8T6U0
C	230	HIS	-	expression tag	UNP Q8T6U0
C	231	HIS	-	expression tag	UNP Q8T6U0
C	232	HIS	-	expression tag	UNP Q8T6U0
C	233	HIS	-	expression tag	UNP Q8T6U0
D	0	MET	-	initiating methionine	UNP Q8T6U0
D	1	GLY	-	expression tag	UNP Q8T6U0
D	64	5SQ	HIS	chromophore	UNP Q8T6U0

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Chain	Residue	Modelled	Actual	Comment	Reference
D	64	5SQ	TYR	chromophore	UNP Q8T6U0
D	64	5SQ	GLY	chromophore	UNP Q8T6U0
D	226	GLY	-	expression tag	UNP Q8T6U0
D	227	SER	-	expression tag	UNP Q8T6U0
D	228	HIS	-	expression tag	UNP Q8T6U0
D	229	HIS	-	expression tag	UNP Q8T6U0
D	230	HIS	-	expression tag	UNP Q8T6U0
D	231	HIS	-	expression tag	UNP Q8T6U0
D	232	HIS	-	expression tag	UNP Q8T6U0
D	233	HIS	-	expression tag	UNP Q8T6U0
E	0	MET	-	initiating methionine	UNP Q8T6U0
E	1	GLY	-	expression tag	UNP Q8T6U0
E	64	5SQ	HIS	chromophore	UNP Q8T6U0
E	64	5SQ	TYR	chromophore	UNP Q8T6U0
E	64	5SQ	GLY	chromophore	UNP Q8T6U0
E	226	GLY	-	expression tag	UNP Q8T6U0
E	227	SER	-	expression tag	UNP Q8T6U0
E	228	HIS	-	expression tag	UNP Q8T6U0
E	229	HIS	-	expression tag	UNP Q8T6U0
E	230	HIS	-	expression tag	UNP Q8T6U0
E	231	HIS	-	expression tag	UNP Q8T6U0
E	232	HIS	-	expression tag	UNP Q8T6U0
E	233	HIS	-	expression tag	UNP Q8T6U0
F	0	MET	-	initiating methionine	UNP Q8T6U0
F	1	GLY	-	expression tag	UNP Q8T6U0
F	64	5SQ	HIS	chromophore	UNP Q8T6U0
F	64	5SQ	TYR	chromophore	UNP Q8T6U0
F	64	5SQ	GLY	chromophore	UNP Q8T6U0
F	226	GLY	-	expression tag	UNP Q8T6U0
F	227	SER	-	expression tag	UNP Q8T6U0
F	228	HIS	-	expression tag	UNP Q8T6U0
F	229	HIS	-	expression tag	UNP Q8T6U0
F	230	HIS	-	expression tag	UNP Q8T6U0
F	231	HIS	-	expression tag	UNP Q8T6U0
F	232	HIS	-	expression tag	UNP Q8T6U0
F	233	HIS	-	expression tag	UNP Q8T6U0
G	0	MET	-	initiating methionine	UNP Q8T6U0
G	1	GLY	-	expression tag	UNP Q8T6U0
G	64	5SQ	HIS	chromophore	UNP Q8T6U0
G	64	5SQ	TYR	chromophore	UNP Q8T6U0
G	64	5SQ	GLY	chromophore	UNP Q8T6U0
G	226	GLY	-	expression tag	UNP Q8T6U0

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Chain	Residue	Modelled	Actual	Comment	Reference
G	227	SER	-	expression tag	UNP Q8T6U0
G	228	HIS	-	expression tag	UNP Q8T6U0
G	229	HIS	-	expression tag	UNP Q8T6U0
G	230	HIS	-	expression tag	UNP Q8T6U0
G	231	HIS	-	expression tag	UNP Q8T6U0
G	232	HIS	-	expression tag	UNP Q8T6U0
G	233	HIS	-	expression tag	UNP Q8T6U0
H	0	MET	-	initiating methionine	UNP Q8T6U0
H	1	GLY	-	expression tag	UNP Q8T6U0
H	64	5SQ	HIS	chromophore	UNP Q8T6U0
H	64	5SQ	TYR	chromophore	UNP Q8T6U0
H	64	5SQ	GLY	chromophore	UNP Q8T6U0
H	226	GLY	-	expression tag	UNP Q8T6U0
H	227	SER	-	expression tag	UNP Q8T6U0
H	228	HIS	-	expression tag	UNP Q8T6U0
H	229	HIS	-	expression tag	UNP Q8T6U0
H	230	HIS	-	expression tag	UNP Q8T6U0
H	231	HIS	-	expression tag	UNP Q8T6U0
H	232	HIS	-	expression tag	UNP Q8T6U0
H	233	HIS	-	expression tag	UNP Q8T6U0
I	0	MET	-	initiating methionine	UNP Q8T6U0
I	1	GLY	-	expression tag	UNP Q8T6U0
I	64	5SQ	HIS	chromophore	UNP Q8T6U0
I	64	5SQ	TYR	chromophore	UNP Q8T6U0
I	64	5SQ	GLY	chromophore	UNP Q8T6U0
I	226	GLY	-	expression tag	UNP Q8T6U0
I	227	SER	-	expression tag	UNP Q8T6U0
I	228	HIS	-	expression tag	UNP Q8T6U0
I	229	HIS	-	expression tag	UNP Q8T6U0
I	230	HIS	-	expression tag	UNP Q8T6U0
I	231	HIS	-	expression tag	UNP Q8T6U0
I	232	HIS	-	expression tag	UNP Q8T6U0
I	233	HIS	-	expression tag	UNP Q8T6U0
J	0	MET	-	initiating methionine	UNP Q8T6U0
J	1	GLY	-	expression tag	UNP Q8T6U0
J	64	5SQ	HIS	chromophore	UNP Q8T6U0
J	64	5SQ	TYR	chromophore	UNP Q8T6U0
J	64	5SQ	GLY	chromophore	UNP Q8T6U0
J	226	GLY	-	expression tag	UNP Q8T6U0
J	227	SER	-	expression tag	UNP Q8T6U0
J	228	HIS	-	expression tag	UNP Q8T6U0
J	229	HIS	-	expression tag	UNP Q8T6U0

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Chain	Residue	Modelled	Actual	Comment	Reference
J	230	HIS	-	expression tag	UNP Q8T6U0
J	231	HIS	-	expression tag	UNP Q8T6U0
J	232	HIS	-	expression tag	UNP Q8T6U0
J	233	HIS	-	expression tag	UNP Q8T6U0
K	0	MET	-	initiating methionine	UNP Q8T6U0
K	1	GLY	-	expression tag	UNP Q8T6U0
K	64	5SQ	HIS	chromophore	UNP Q8T6U0
K	64	5SQ	TYR	chromophore	UNP Q8T6U0
K	64	5SQ	GLY	chromophore	UNP Q8T6U0
K	226	GLY	-	expression tag	UNP Q8T6U0
K	227	SER	-	expression tag	UNP Q8T6U0
K	228	HIS	-	expression tag	UNP Q8T6U0
K	229	HIS	-	expression tag	UNP Q8T6U0
K	230	HIS	-	expression tag	UNP Q8T6U0
K	231	HIS	-	expression tag	UNP Q8T6U0
K	232	HIS	-	expression tag	UNP Q8T6U0
K	233	HIS	-	expression tag	UNP Q8T6U0
L	0	MET	-	initiating methionine	UNP Q8T6U0
L	1	GLY	-	expression tag	UNP Q8T6U0
L	64	5SQ	HIS	chromophore	UNP Q8T6U0
L	64	5SQ	TYR	chromophore	UNP Q8T6U0
L	64	5SQ	GLY	chromophore	UNP Q8T6U0
L	226	GLY	-	expression tag	UNP Q8T6U0
L	227	SER	-	expression tag	UNP Q8T6U0
L	228	HIS	-	expression tag	UNP Q8T6U0
L	229	HIS	-	expression tag	UNP Q8T6U0
L	230	HIS	-	expression tag	UNP Q8T6U0
L	231	HIS	-	expression tag	UNP Q8T6U0
L	232	HIS	-	expression tag	UNP Q8T6U0
L	233	HIS	-	expression tag	UNP Q8T6U0
M	0	MET	-	initiating methionine	UNP Q8T6U0
M	1	GLY	-	expression tag	UNP Q8T6U0
M	64	5SQ	HIS	chromophore	UNP Q8T6U0
M	64	5SQ	TYR	chromophore	UNP Q8T6U0
M	64	5SQ	GLY	chromophore	UNP Q8T6U0
M	226	GLY	-	expression tag	UNP Q8T6U0
M	227	SER	-	expression tag	UNP Q8T6U0
M	228	HIS	-	expression tag	UNP Q8T6U0
M	229	HIS	-	expression tag	UNP Q8T6U0
M	230	HIS	-	expression tag	UNP Q8T6U0
M	231	HIS	-	expression tag	UNP Q8T6U0
M	232	HIS	-	expression tag	UNP Q8T6U0

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Chain	Residue	Modelled	Actual	Comment	Reference
M	233	HIS	-	expression tag	UNP Q8T6U0
N	0	MET	-	initiating methionine	UNP Q8T6U0
N	1	GLY	-	expression tag	UNP Q8T6U0
N	64	5SQ	HIS	chromophore	UNP Q8T6U0
N	64	5SQ	TYR	chromophore	UNP Q8T6U0
N	64	5SQ	GLY	chromophore	UNP Q8T6U0
N	226	GLY	-	expression tag	UNP Q8T6U0
N	227	SER	-	expression tag	UNP Q8T6U0
N	228	HIS	-	expression tag	UNP Q8T6U0
N	229	HIS	-	expression tag	UNP Q8T6U0
N	230	HIS	-	expression tag	UNP Q8T6U0
N	231	HIS	-	expression tag	UNP Q8T6U0
N	232	HIS	-	expression tag	UNP Q8T6U0
N	233	HIS	-	expression tag	UNP Q8T6U0
O	0	MET	-	initiating methionine	UNP Q8T6U0
O	1	GLY	-	expression tag	UNP Q8T6U0
O	64	5SQ	HIS	chromophore	UNP Q8T6U0
O	64	5SQ	TYR	chromophore	UNP Q8T6U0
O	64	5SQ	GLY	chromophore	UNP Q8T6U0
O	226	GLY	-	expression tag	UNP Q8T6U0
O	227	SER	-	expression tag	UNP Q8T6U0
O	228	HIS	-	expression tag	UNP Q8T6U0
O	229	HIS	-	expression tag	UNP Q8T6U0
O	230	HIS	-	expression tag	UNP Q8T6U0
O	231	HIS	-	expression tag	UNP Q8T6U0
O	232	HIS	-	expression tag	UNP Q8T6U0
O	233	HIS	-	expression tag	UNP Q8T6U0
P	0	MET	-	initiating methionine	UNP Q8T6U0
P	1	GLY	-	expression tag	UNP Q8T6U0
P	64	5SQ	HIS	chromophore	UNP Q8T6U0
P	64	5SQ	TYR	chromophore	UNP Q8T6U0
P	64	5SQ	GLY	chromophore	UNP Q8T6U0
P	226	GLY	-	expression tag	UNP Q8T6U0
P	227	SER	-	expression tag	UNP Q8T6U0
P	228	HIS	-	expression tag	UNP Q8T6U0
P	229	HIS	-	expression tag	UNP Q8T6U0
P	230	HIS	-	expression tag	UNP Q8T6U0
P	231	HIS	-	expression tag	UNP Q8T6U0
P	232	HIS	-	expression tag	UNP Q8T6U0
P	233	HIS	-	expression tag	UNP Q8T6U0

- Molecule 2 is GLYCEROL (CCD ID: GOL) (formula: C₃H₈O₃).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	B	1	Total	C	O	0	0
			6	3	3		
2	E	1	Total	C	O	0	0
			6	3	3		
2	N	1	Total	C	O	0	0
			6	3	3		

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	76	Total	O	0	0
			76	76		
3	B	140	Total	O	0	0
			140	140		
3	C	116	Total	O	0	0
			116	116		
3	D	123	Total	O	0	0
			123	123		
3	E	36	Total	O	0	0
			36	36		
3	F	135	Total	O	0	0
			135	135		
3	G	147	Total	O	0	0
			147	147		
3	H	156	Total	O	0	0
			156	156		
3	I	170	Total	O	0	0
			170	170		

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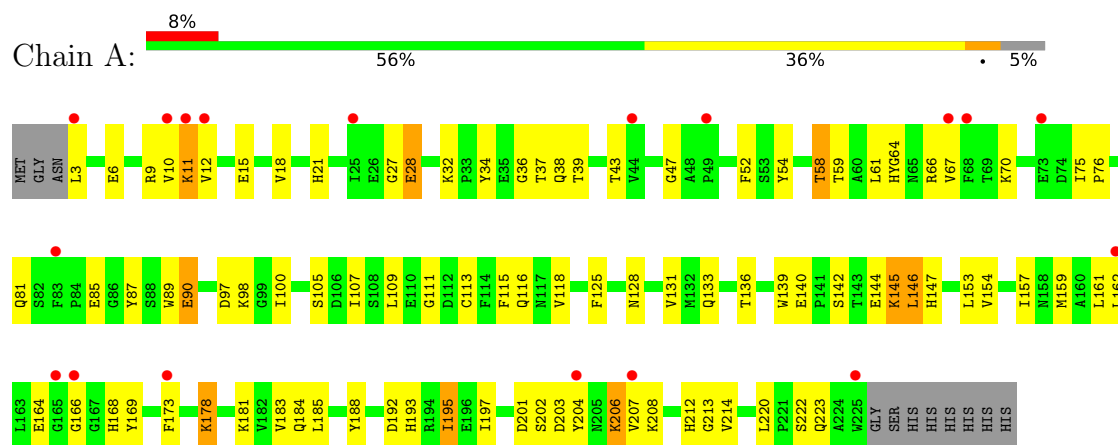
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	J	130	Total 130	O 130	0	0
3	K	187	Total 187	O 187	0	0
3	L	48	Total 48	O 48	0	0
3	M	86	Total 86	O 86	0	0
3	N	180	Total 180	O 180	0	0
3	O	80	Total 80	O 80	0	0
3	P	108	Total 108	O 108	0	0

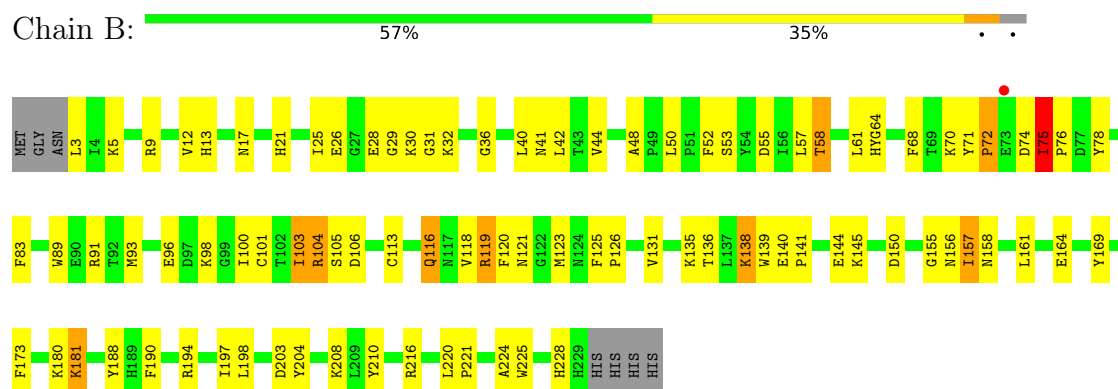
3 Residue-property plots

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.

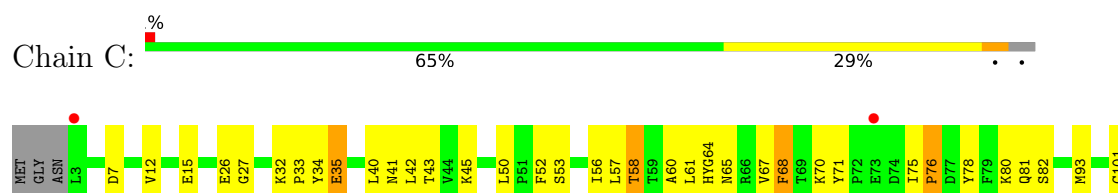
• Molecule 1: Green fluorescent protein

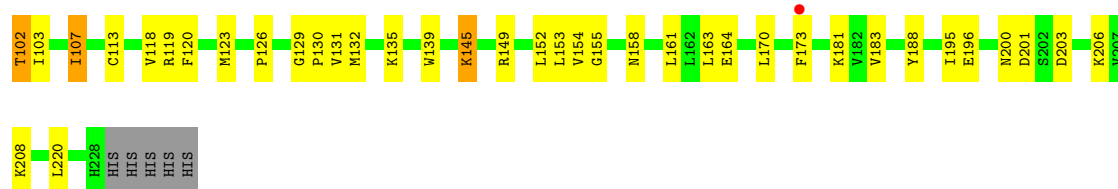


• Molecule 1: Green fluorescent protein

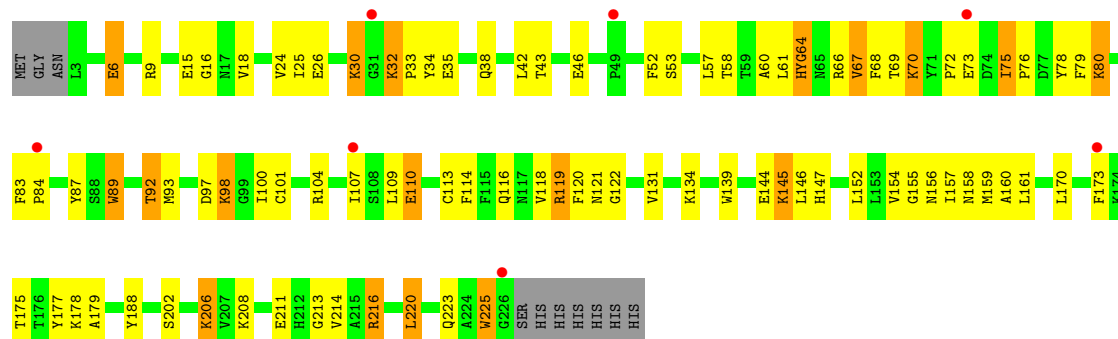


• Molecule 1: Green fluorescent protein

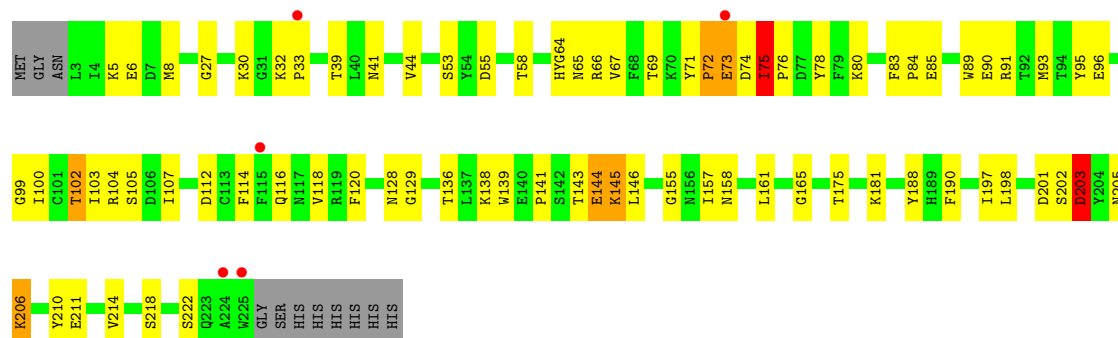




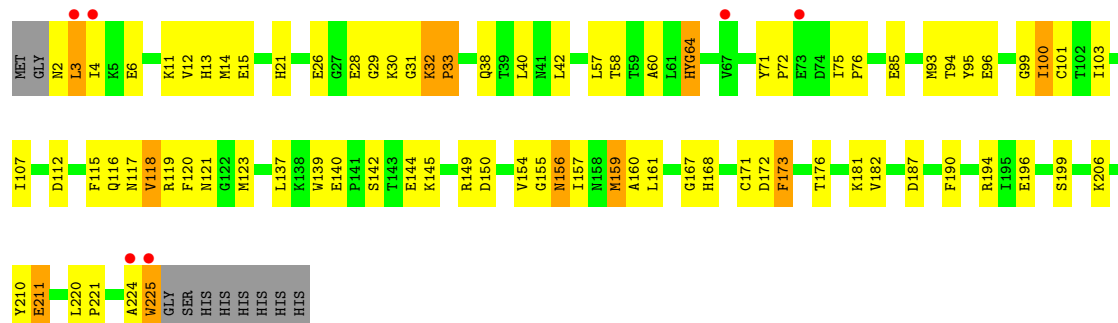
- Molecule 1: Green fluorescent protein



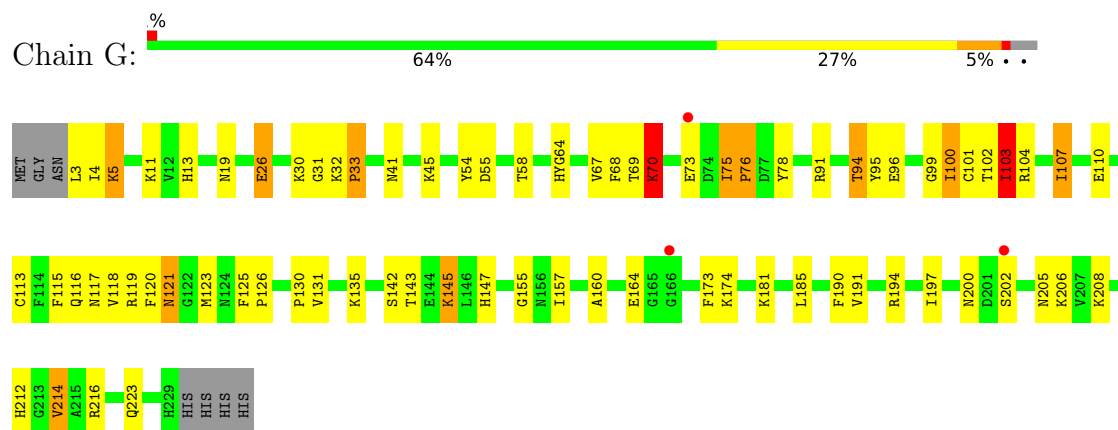
- Molecule 1: Green fluorescent protein



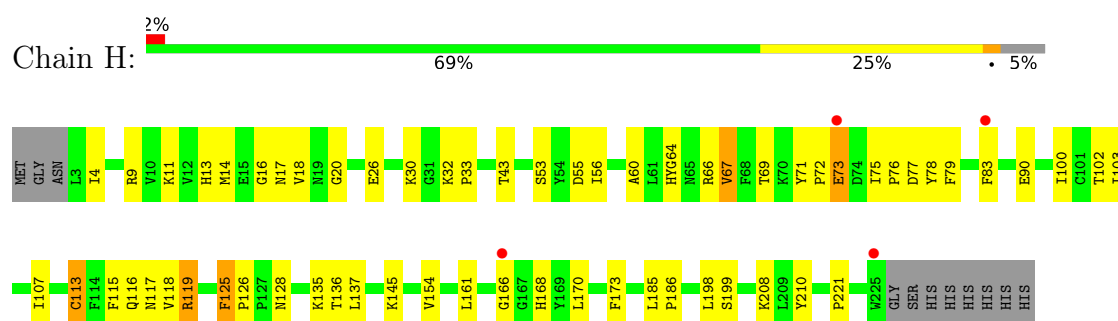
- Molecule 1: Green fluorescent protein



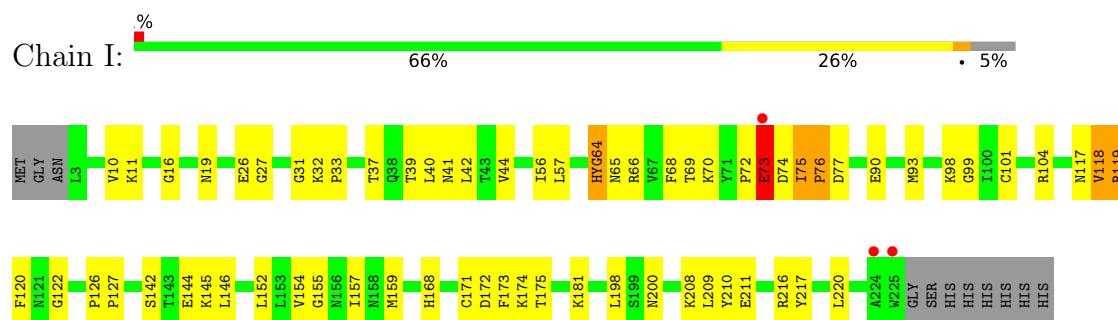
- Molecule 1: Green fluorescent protein



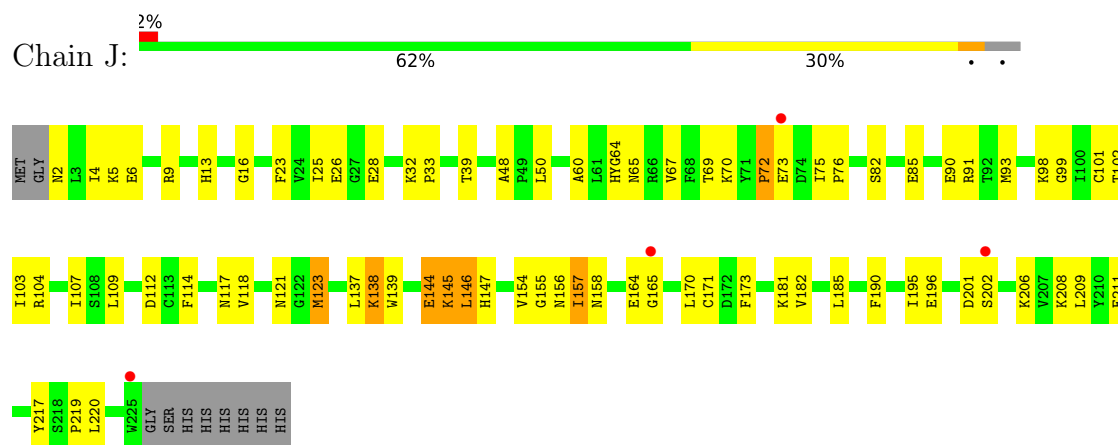
- Molecule 1: Green fluorescent protein



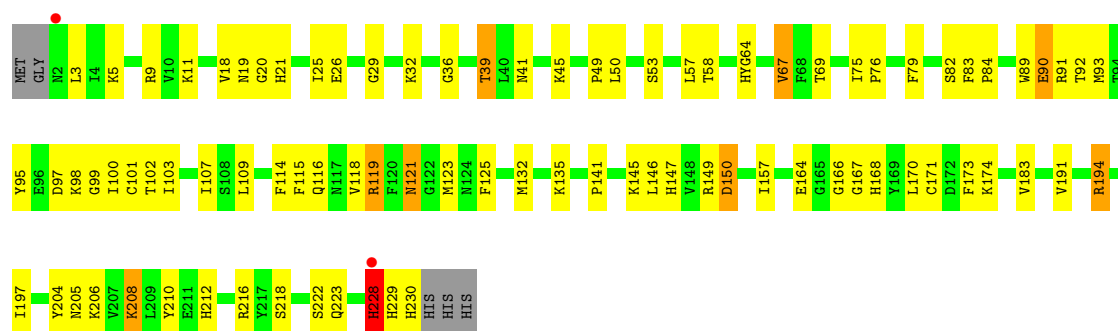
- Molecule 1: Green fluorescent protein



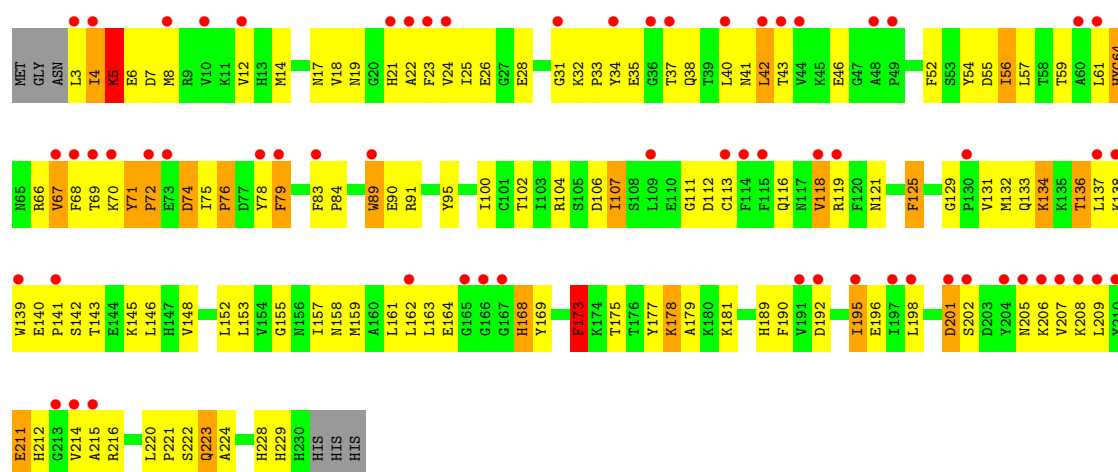
- Molecule 1: Green fluorescent protein



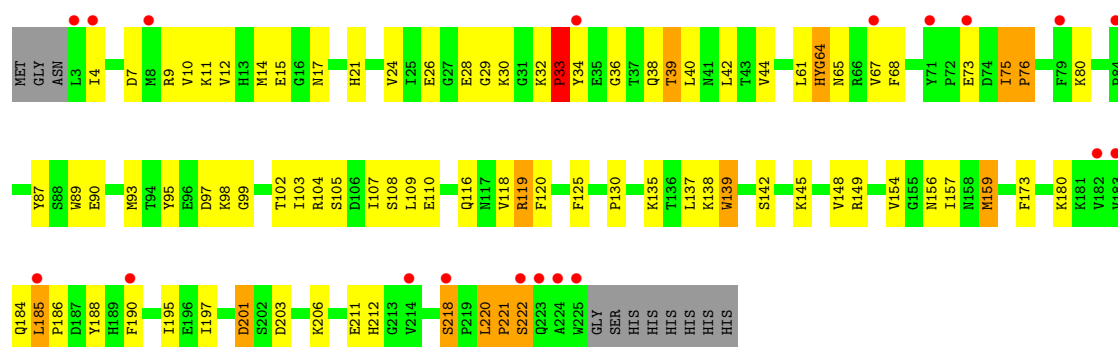
Chain K: %



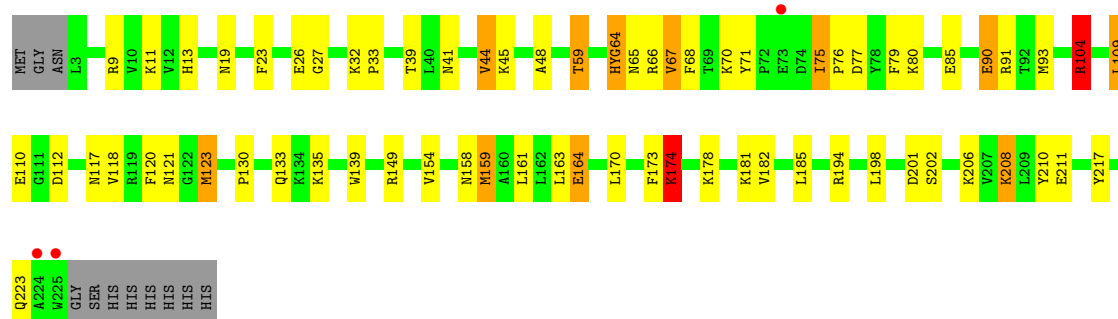
Chain L: 27% 42% 45% 9% ..



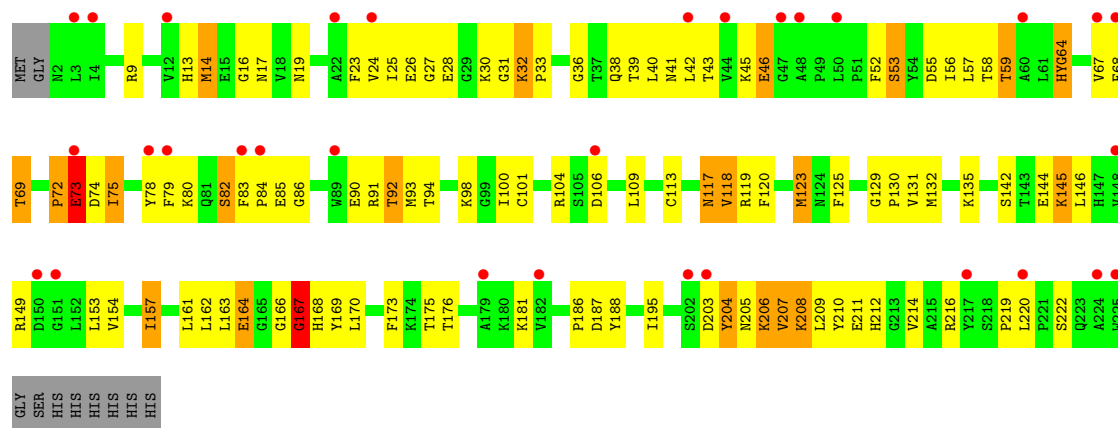
Chain M:



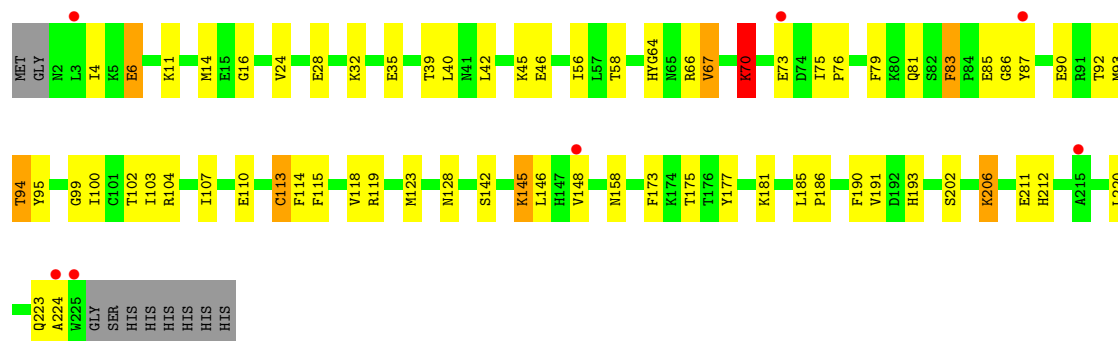
Chain N: 66% 24% 5% • 5%



- Molecule 1: Green fluorescent protein



- Molecule 1: Green fluorescent protein



4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	69.38Å 106.40Å 137.21Å 109.68° 100.01° 101.72°	Depositor
Resolution (Å)	37.37 – 1.81 37.37 – 1.81	Depositor EDS
% Data completeness (in resolution range)	96.8 (37.37-1.81) 97.1 (37.37-1.81)	Depositor EDS
R_{merge}	0.03	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.17 (at 1.81Å)	Xtriage
Refinement program	REFMAC 5.8.0049	Depositor
R, R_{free}	0.182 , 0.249 0.191 , 0.256	Depositor DCC
R_{free} test set	3215 reflections (1.00%)	wwPDB-VP
Wilson B-factor (Å ²)	17.5	Xtriage
Anisotropy	0.020	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 32.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	0.052 for -h,-k,h+k+l	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	31172	wwPDB-VP
Average B, all atoms (Å ²)	22.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 43.38 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 1.7783e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ 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: GOL, 5SQ

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	1.13	5/1824 (0.3%)	1.20	8/2467 (0.3%)
1	B	1.39	17/1873 (0.9%)	1.33	21/2532 (0.8%)
1	C	1.38	10/1853 (0.5%)	1.33	8/2506 (0.3%)
1	D	1.30	12/1843 (0.7%)	1.32	10/2493 (0.4%)
1	E	1.50	20/1824 (1.1%)	1.37	16/2467 (0.6%)
1	F	1.37	11/1832 (0.6%)	1.31	11/2478 (0.4%)
1	G	1.59	33/1913 (1.7%)	1.39	17/2585 (0.7%)
1	H	1.46	18/1839 (1.0%)	1.38	15/2486 (0.6%)
1	I	1.63	29/1824 (1.6%)	1.36	10/2467 (0.4%)
1	J	1.45	15/1851 (0.8%)	1.38	18/2503 (0.7%)
1	K	1.52	19/1929 (1.0%)	1.44	20/2607 (0.8%)
1	L	1.05	4/1867 (0.2%)	1.30	20/2525 (0.8%)
1	M	1.26	7/1833 (0.4%)	1.29	14/2478 (0.6%)
1	N	1.51	19/1842 (1.0%)	1.38	8/2490 (0.3%)
1	O	1.27	8/1847 (0.4%)	1.28	7/2499 (0.3%)
1	P	1.40	9/1866 (0.5%)	1.31	11/2524 (0.4%)
All	All	1.40	236/29660 (0.8%)	1.34	214/40107 (0.5%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	F	0	1
1	O	0	2
All	All	0	3

All (236) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	O	72	PRO	C-N	-14.60	1.16	1.33
1	I	72	PRO	C-N	-13.28	1.15	1.33
1	K	119[A]	ARG	N-CA	12.29	1.61	1.46
1	K	119[B]	ARG	N-CA	12.29	1.61	1.46
1	H	118	VAL	C-O	-10.24	1.13	1.24
1	G	191	VAL	C-O	-9.80	1.13	1.24
1	K	118	VAL	C-O	-9.80	1.13	1.24
1	I	37	THR	N-CA	8.93	1.57	1.45
1	G	54	TYR	C-O	-8.79	1.13	1.24
1	K	119[A]	ARG	CA-C	8.70	1.63	1.52
1	K	119[B]	ARG	CA-C	8.70	1.63	1.52
1	I	73	GLU	C-N	-8.59	1.22	1.33
1	E	118	VAL	C-O	-8.43	1.14	1.24
1	B	119	ARG	C-O	-8.29	1.14	1.24
1	O	32	LYS	C-O	-8.03	1.17	1.25
1	P	32	LYS	C-O	-8.02	1.17	1.25
1	I	173	PHE	C-O	-7.96	1.14	1.24
1	N	174	LYS	C-O	-7.74	1.15	1.24
1	H	75	ILE	C-O	-7.55	1.15	1.24
1	I	118	VAL	C-O	-7.42	1.16	1.24
1	P	118	VAL	C-O	-7.41	1.16	1.24
1	P	16	GLY	N-CA	-7.38	1.37	1.45
1	I	172	ASP	C-O	-7.35	1.15	1.23
1	J	117	ASN	C-O	-7.35	1.15	1.24
1	C	71	TYR	C-O	-7.26	1.16	1.24
1	H	90	GLU	C-O	-7.23	1.15	1.23
1	J	209	LEU	C-O	-7.20	1.15	1.23
1	D	70	LYS	C-O	-7.17	1.15	1.24
1	G	75	ILE	C-O	-7.14	1.15	1.24
1	G	32	LYS	N-CA	-7.14	1.39	1.46
1	H	32	LYS	C-O	-7.13	1.18	1.24
1	P	119	ARG	C-O	-7.13	1.15	1.24
1	I	119	ARG	C-O	-7.12	1.15	1.24
1	G	160	ALA	CA-C	7.11	1.60	1.52
1	G	119	ARG	C-O	-7.07	1.16	1.24
1	E	78	TYR	C-O	-7.06	1.15	1.24
1	F	118	VAL	C-O	-7.00	1.16	1.24
1	D	118	VAL	C-O	-6.99	1.16	1.24
1	M	195	ILE	N-CA	-6.98	1.38	1.46
1	D	34	TYR	C-O	-6.93	1.14	1.24
1	N	159	MET	C-O	-6.92	1.15	1.23
1	N	91	ARG	N-CA	-6.90	1.37	1.46
1	O	75	ILE	C-N	6.88	1.41	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	118	VAL	C-O	-6.87	1.16	1.24
1	G	94	THR	C-O	-6.84	1.16	1.24
1	K	121	ASN	C-O	6.84	1.31	1.24
1	I	32	LYS	C-O	-6.81	1.18	1.24
1	F	71	TYR	C-O	-6.73	1.16	1.24
1	N	120	PHE	C-O	-6.71	1.16	1.24
1	P	99	GLY	N-CA	-6.68	1.38	1.45
1	P	75	ILE	C-N	6.64	1.41	1.33
1	H	43	THR	C-O	-6.61	1.16	1.23
1	I	70	LYS	C-O	-6.58	1.16	1.24
1	G	68	PHE	C-O	-6.54	1.14	1.23
1	B	116	GLN	C-O	-6.47	1.16	1.24
1	E	66	ARG	C-O	-6.47	1.15	1.24
1	D	119	ARG	C-O	-6.45	1.16	1.24
1	B	157	ILE	C-O	6.41	1.30	1.24
1	F	75	ILE	C-N	6.39	1.41	1.33
1	I	57	LEU	C-O	6.37	1.32	1.24
1	E	75	ILE	C-O	-6.34	1.17	1.24
1	G	143	THR	CA-C	6.33	1.60	1.52
1	J	118	VAL	C-O	-6.33	1.17	1.24
1	B	70	LYS	C-O	-6.29	1.16	1.24
1	M	197	ILE	CA-C	6.28	1.59	1.52
1	N	32	LYS	C-O	-6.28	1.17	1.24
1	P	73	GLU	C-O	-6.27	1.16	1.24
1	D	75	ILE	C-O	-6.25	1.17	1.24
1	I	75	ILE	C-O	-6.23	1.16	1.24
1	K	75	ILE	C-O	-6.22	1.17	1.23
1	M	119	ARG	C-O	-6.22	1.16	1.24
1	I	174	LYS	C-O	-6.21	1.16	1.24
1	B	103	ILE	C-O	-6.21	1.18	1.24
1	G	76	PRO	N-CD	6.20	1.56	1.47
1	H	76	PRO	N-CD	6.19	1.56	1.47
1	C	78	TYR	C-O	-6.16	1.17	1.24
1	K	57	LEU	N-CA	-6.14	1.38	1.46
1	B	76	PRO	N-CD	6.13	1.56	1.47
1	E	141	PRO	C-O	-6.13	1.16	1.23
1	J	73	GLU	C-O	-6.08	1.17	1.24
1	I	69	THR	C-O	-6.08	1.17	1.23
1	C	75	ILE	C-N	6.07	1.40	1.33
1	N	118	VAL	C-O	-6.07	1.17	1.24
1	A	142	SER	N-CA	6.06	1.53	1.45
1	O	33	PRO	N-CD	6.02	1.56	1.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	75	ILE	C-N	6.01	1.40	1.33
1	D	155	GLY	CA-C	6.00	1.56	1.52
1	I	175	THR	C-O	-5.99	1.17	1.24
1	B	118	VAL	C-O	-5.96	1.17	1.24
1	G	70	LYS	C-O	-5.95	1.16	1.24
1	B	71	TYR	C-N	5.95	1.40	1.33
1	K	170	LEU	CA-C	-5.95	1.45	1.52
1	N	59	THR	C-O	5.94	1.31	1.24
1	F	33	PRO	C-O	-5.94	1.16	1.24
1	A	15	GLU	C-O	-5.94	1.17	1.23
1	C	33	PRO	C-O	-5.93	1.16	1.24
1	C	35	GLU	C-O	-5.93	1.16	1.24
1	N	117	ASN	C-O	-5.92	1.17	1.24
1	G	76	PRO	C-O	-5.92	1.16	1.23
1	M	76	PRO	N-CD	5.88	1.55	1.47
1	G	13	HIS	N-CA	5.87	1.53	1.46
1	I	56	ILE	C-O	-5.87	1.16	1.24
1	B	31	GLY	C-O	-5.86	1.17	1.23
1	D	75	ILE	C-N	5.86	1.40	1.33
1	J	156	ASN	C-O	-5.84	1.16	1.23
1	A	76	PRO	N-CD	5.83	1.55	1.47
1	I	76	PRO	N-CD	5.80	1.55	1.47
1	B	155	GLY	C-O	5.79	1.31	1.23
1	J	25	ILE	C-O	-5.77	1.18	1.24
1	J	196	GLU	C-O	-5.77	1.17	1.24
1	E	33	PRO	N-CD	5.76	1.55	1.47
1	L	72	PRO	C-O	-5.76	1.16	1.24
1	N	76	PRO	N-CD	5.75	1.55	1.47
1	G	142	SER	N-CA	5.75	1.53	1.45
1	B	75	ILE	C-O	-5.71	1.18	1.24
1	I	171	CYS	N-CA	-5.71	1.39	1.46
1	N	71	TYR	C-O	-5.71	1.18	1.24
1	I	117	ASN	C-O	-5.71	1.17	1.24
1	D	161	LEU	C-O	-5.70	1.17	1.24
1	F	117	ASN	C-O	-5.70	1.17	1.24
1	I	154	VAL	N-CA	5.70	1.52	1.46
1	J	138	LYS	C-O	5.69	1.30	1.23
1	I	31	GLY	C-O	-5.69	1.17	1.23
1	P	14	MET	C-O	-5.68	1.17	1.24
1	G	73	GLU	C-O	-5.67	1.16	1.24
1	E	69	THR	C-O	-5.67	1.17	1.23
1	B	71	TYR	C-O	-5.66	1.17	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	J	75	ILE	C-O	-5.65	1.17	1.24
1	I	75	ILE	C-N	5.65	1.40	1.33
1	I	216	ARG	C-O	-5.64	1.17	1.23
1	N	33	PRO	N-CD	5.63	1.55	1.47
1	I	200	ASN	N-CA	-5.63	1.39	1.46
1	F	31	GLY	C-O	-5.62	1.18	1.23
1	N	104	ARG	CA-C	-5.62	1.45	1.52
1	C	34	TYR	C-O	-5.62	1.16	1.24
1	F	32	LYS	C-N	5.62	1.41	1.33
1	G	212	HIS	C-O	-5.62	1.17	1.23
1	E	75	ILE	C-N	5.61	1.40	1.33
1	N	154	VAL	C-O	5.61	1.30	1.24
1	A	118	VAL	C-O	-5.60	1.17	1.24
1	D	76	PRO	N-CD	5.59	1.55	1.47
1	I	19	ASN	CA-C	5.57	1.60	1.53
1	G	78	TYR	C-O	-5.57	1.17	1.24
1	N	90	GLU	N-CA	5.56	1.52	1.46
1	E	91	ARG	C-O	-5.55	1.17	1.23
1	B	225	TRP	C-O	-5.53	1.17	1.24
1	E	72	PRO	N-CD	5.53	1.55	1.47
1	N	75	ILE	C-N	5.52	1.40	1.33
1	G	96	GLU	CA-C	5.51	1.60	1.52
1	G	33	PRO	C-O	-5.51	1.17	1.24
1	N	79	PHE	N-CA	5.50	1.53	1.46
1	B	78	TYR	C-O	-5.50	1.17	1.24
1	E	76	PRO	N-CD	5.49	1.55	1.47
1	G	100	ILE	C-O	-5.49	1.18	1.24
1	H	221	PRO	C-O	-5.48	1.17	1.23
1	L	76	PRO	N-CD	5.47	1.55	1.47
1	G	120	PHE	C-O	5.47	1.30	1.24
1	H	77	ASP	C-O	-5.46	1.17	1.23
1	O	31	GLY	C-O	-5.46	1.18	1.23
1	K	69	THR	C-O	-5.45	1.17	1.23
1	D	33	PRO	N-CD	5.45	1.55	1.47
1	H	55	ASP	C-N	-5.45	1.28	1.34
1	G	223	GLN	C-O	-5.45	1.17	1.24
1	G	55	ASP	CG-OD2	-5.45	1.15	1.25
1	G	121	ASN	CA-C	-5.44	1.46	1.52
1	H	14	MET	CA-C	-5.44	1.46	1.52
1	I	33	PRO	N-CD	5.44	1.55	1.47
1	N	70	LYS	C-O	-5.43	1.17	1.24
1	G	26	GLU	CA-C	-5.43	1.46	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	H	33	PRO	N-CD	5.42	1.55	1.47
1	G	55	ASP	C-O	-5.42	1.17	1.24
1	E	175	THR	CA-C	-5.41	1.46	1.52
1	O	118	VAL	N-CA	-5.41	1.39	1.46
1	J	33	PRO	N-CD	5.41	1.55	1.47
1	G	19	ASN	C-O	-5.40	1.17	1.23
1	D	32	LYS	CA-C	-5.40	1.47	1.52
1	G	30	LYS	C-O	-5.39	1.17	1.23
1	K	53	SER	N-CA	5.39	1.53	1.46
1	G	33	PRO	N-CD	5.38	1.55	1.47
1	M	33	PRO	N-CD	5.37	1.55	1.47
1	F	76	PRO	N-CD	5.36	1.55	1.47
1	F	156	ASN	C-O	-5.35	1.17	1.23
1	C	76	PRO	N-CD	5.34	1.55	1.47
1	G	214	VAL	C-O	5.33	1.29	1.24
1	H	72	PRO	N-CD	5.32	1.55	1.47
1	E	30	LYS	C-O	-5.32	1.18	1.23
1	C	68	PHE	C-O	-5.31	1.17	1.23
1	I	65	ASN	C-O	-5.30	1.12	1.23
1	L	56	ILE	C-O	-5.30	1.17	1.24
1	E	144	GLU	N-CA	-5.28	1.39	1.46
1	K	76	PRO	N-CD	5.27	1.55	1.47
1	I	44	VAL	CA-C	5.26	1.58	1.52
1	E	73	GLU	C-O	-5.26	1.17	1.24
1	I	171	CYS	C-O	-5.26	1.17	1.23
1	J	69	THR	C-O	-5.25	1.17	1.23
1	K	102	THR	N-CA	-5.25	1.39	1.46
1	K	194	ARG	C-O	-5.25	1.18	1.23
1	D	156	ASN	C-O	-5.24	1.17	1.24
1	P	58	THR	C-O	-5.24	1.17	1.24
1	H	75	ILE	C-N	5.21	1.39	1.33
1	O	113	CYS	CA-C	-5.21	1.47	1.53
1	H	18	VAL	C-O	5.20	1.29	1.24
1	K	75	ILE	C-N	5.20	1.40	1.33
1	H	60	ALA	CA-CB	-5.20	1.44	1.53
1	O	69	THR	C-O	-5.19	1.18	1.23
1	J	76	PRO	N-CD	5.18	1.55	1.47
1	K	90	GLU	CA-C	-5.18	1.46	1.52
1	L	221	PRO	C-O	-5.17	1.18	1.23
1	I	77	ASP	C-O	-5.17	1.16	1.23
1	G	31	GLY	C-O	-5.16	1.17	1.23
1	N	44	VAL	N-CA	-5.15	1.40	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	K	32	LYS	C-O	-5.14	1.18	1.24
1	F	33	PRO	N-CD	5.14	1.54	1.47
1	M	109	LEU	CA-C	5.14	1.58	1.53
1	M	159	MET	CA-C	5.14	1.59	1.52
1	K	25	ILE	C-O	5.13	1.29	1.24
1	G	69	THR	C-O	-5.13	1.17	1.23
1	B	75	ILE	N-CA	-5.12	1.42	1.46
1	E	197	ILE	C-O	-5.12	1.19	1.23
1	B	72	PRO	N-CD	5.11	1.54	1.47
1	H	71	TYR	C-N	5.11	1.39	1.33
1	K	167	GLY	N-CA	5.11	1.50	1.45
1	E	71	TYR	C-N	5.10	1.40	1.33
1	G	32	LYS	C-O	-5.10	1.20	1.24
1	J	60	ALA	C-O	-5.09	1.17	1.24
1	N	19	ASN	N-CA	5.09	1.54	1.46
1	H	119	ARG	C-O	-5.07	1.18	1.24
1	E	144	GLU	C-O	5.06	1.30	1.23
1	H	137	LEU	N-CA	5.06	1.52	1.46
1	F	72	PRO	N-CD	5.04	1.54	1.47
1	J	4	ILE	N-CA	5.04	1.52	1.46
1	E	102	THR	CA-C	-5.03	1.46	1.52
1	C	70	LYS	C-O	-5.03	1.18	1.24
1	B	224	ALA	C-O	-5.02	1.17	1.23
1	J	72	PRO	C-O	-5.02	1.18	1.23
1	E	218	SER	CA-C	5.02	1.58	1.53

All (214) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	L	125	PHE	CA-C-N	-10.16	109.91	120.38
1	L	125	PHE	C-N-CA	-10.16	109.91	120.38
1	K	118	VAL	CA-C-N	8.93	136.10	123.07
1	K	118	VAL	C-N-CA	8.93	136.10	123.07
1	B	140	GLU	CA-C-N	8.92	128.99	119.89
1	B	140	GLU	C-N-CA	8.92	128.99	119.89
1	D	58	THR	N-CA-C	8.46	120.50	111.28
1	I	73	GLU	O-C-N	-8.33	111.51	122.59
1	M	218	SER	N-CA-C	-8.32	99.08	109.64
1	P	99	GLY	N-CA-C	-8.13	101.85	111.36
1	A	125	PHE	CA-C-N	-8.10	112.03	120.38
1	A	125	PHE	C-N-CA	-8.10	112.03	120.38
1	H	78	TYR	N-CA-C	8.06	121.08	111.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	99	GLY	N-CA-C	-8.03	101.78	112.14
1	C	129	GLY	CA-C-N	8.02	128.77	119.47
1	C	129	GLY	C-N-CA	8.02	128.77	119.47
1	C	58	THR	N-CA-C	8.00	121.01	111.33
1	D	118	VAL	N-CA-C	7.98	119.37	107.80
1	J	220	LEU	CA-C-N	-7.87	111.49	119.99
1	J	220	LEU	C-N-CA	-7.87	111.49	119.99
1	E	146	LEU	N-CA-C	7.85	121.20	108.41
1	I	99	GLY	N-CA-C	-7.77	102.09	112.82
1	J	99	GLY	N-CA-C	-7.62	103.17	111.93
1	K	166	GLY	N-CA-C	-7.58	103.16	112.33
1	D	220	LEU	CA-C-N	7.23	127.21	119.76
1	D	220	LEU	C-N-CA	7.23	127.21	119.76
1	L	106	ASP	N-CA-C	-7.18	98.34	109.76
1	B	118	VAL	N-CA-C	7.14	118.10	108.11
1	J	217	TYR	N-CA-C	-7.07	99.77	109.95
1	M	201	ASP	N-CA-C	-7.00	101.26	110.43
1	L	129	GLY	CA-C-N	6.98	128.56	119.84
1	L	129	GLY	C-N-CA	6.98	128.56	119.84
1	H	125	PHE	CA-C-N	-6.95	113.22	120.38
1	H	125	PHE	C-N-CA	-6.95	113.22	120.38
1	P	142	SER	N-CA-C	6.86	118.61	108.60
1	I	168	HIS	N-CA-C	6.81	120.26	109.50
1	L	142	SER	N-CA-C	6.79	118.88	108.42
1	L	189	HIS	N-CA-C	6.79	117.54	108.38
1	F	173	PHE	CB-CA-C	-6.79	99.20	110.19
1	K	121	ASN	CA-C-N	-6.70	116.45	121.61
1	K	121	ASN	C-N-CA	-6.70	116.45	121.61
1	N	67	VAL	N-CA-C	-6.70	102.67	111.05
1	F	118	VAL	CB-CA-C	6.62	120.42	110.63
1	F	196	GLU	N-CA-C	6.61	120.30	109.06
1	J	75	ILE	CA-C-N	-6.61	113.14	119.89
1	J	75	ILE	C-N-CA	-6.61	113.14	119.89
1	K	118	VAL	O-C-N	-6.54	116.47	123.14
1	B	75	ILE	O-C-N	6.49	126.89	120.92
1	E	71	TYR	CA-C-N	-6.49	113.10	119.78
1	E	71	TYR	C-N-CA	-6.49	113.10	119.78
1	K	119[A]	ARG	CA-C-O	6.48	127.20	120.40
1	K	119[B]	ARG	CA-C-O	6.48	127.20	120.40
1	L	23	PHE	N-CA-C	6.43	118.08	107.73
1	L	155	GLY	N-CA-C	6.40	120.50	110.71
1	A	75	ILE	CA-C-N	-6.38	113.11	119.93

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	75	ILE	C-N-CA	-6.38	113.11	119.93
1	H	71	TYR	CA-C-N	-6.35	114.11	120.21
1	H	71	TYR	C-N-CA	-6.35	114.11	120.21
1	C	126	PRO	CA-C-N	6.33	125.95	119.56
1	C	126	PRO	C-N-CA	6.33	125.95	119.56
1	P	75	ILE	CA-C-N	-6.32	113.01	119.83
1	P	75	ILE	C-N-CA	-6.32	113.01	119.83
1	L	89	TRP	N-CA-C	6.27	119.80	108.69
1	H	73	GLU	N-CA-C	6.26	118.10	111.28
1	L	190	PHE	N-CA-C	6.22	119.16	109.52
1	E	129	GLY	CA-C-N	6.22	126.68	119.47
1	E	129	GLY	C-N-CA	6.22	126.68	119.47
1	E	32	LYS	O-C-N	6.17	126.94	121.32
1	J	165	GLY	N-CA-C	-6.13	106.63	115.27
1	B	71	TYR	CA-C-N	-6.12	113.99	120.66
1	B	71	TYR	C-N-CA	-6.12	113.99	120.66
1	F	75	ILE	CA-C-N	-6.11	113.39	119.93
1	F	75	ILE	C-N-CA	-6.11	113.39	119.93
1	G	103	ILE	N-CA-C	6.10	117.48	108.45
1	M	139	TRP	N-CA-C	-6.08	101.47	110.48
1	P	70	LYS	CA-CB-CG	6.08	126.27	114.10
1	P	113	CYS	N-CA-C	6.06	118.29	108.41
1	L	228	HIS	N-CA-C	6.01	119.91	112.03
1	L	5	LYS	N-CA-C	5.99	119.24	109.59
1	B	75	ILE	CA-C-N	-5.99	113.78	119.89
1	B	75	ILE	C-N-CA	-5.99	113.78	119.89
1	E	58	THR	N-CA-C	-5.96	104.87	111.36
1	O	75	ILE	CA-C-N	-5.94	113.41	119.83
1	O	75	ILE	C-N-CA	-5.94	113.41	119.83
1	M	76	PRO	N-CA-C	5.94	120.18	111.03
1	L	178	LYS	N-CA-C	5.90	118.02	108.34
1	E	75	ILE	CA-C-N	-5.90	113.88	119.90
1	E	75	ILE	C-N-CA	-5.90	113.88	119.90
1	D	216	ARG	NE-CZ-NH2	5.89	124.50	119.20
1	L	118	VAL	CB-CA-C	-5.87	103.15	111.19
1	D	80	LYS	N-CA-C	-5.85	104.09	111.11
1	F	211	GLU	N-CA-C	5.85	118.19	108.13
1	J	107	ILE	CB-CA-C	-5.84	103.78	110.73
1	H	154	VAL	CA-C-N	-5.83	118.07	122.33
1	H	154	VAL	C-N-CA	-5.83	118.07	122.33
1	N	109	LEU	CB-CA-C	5.82	119.10	110.14
1	H	118	VAL	N-CA-C	5.80	116.83	108.48

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	I	119	ARG	NE-CZ-NH1	-5.79	115.70	121.50
1	D	92	THR	CB-CA-C	5.79	119.80	109.38
1	L	79	PHE	N-CA-C	5.76	118.77	111.69
1	K	58	THR	N-CA-C	5.75	118.29	111.33
1	O	129	GLY	CA-C-N	5.73	125.41	119.05
1	O	129	GLY	C-N-CA	5.73	125.41	119.05
1	E	203	ASP	N-CA-C	5.72	122.99	110.80
1	P	83	PHE	CB-CA-C	5.72	117.10	108.86
1	N	201	ASP	N-CA-CB	5.72	118.44	110.26
1	D	32	LYS	CA-C-N	-5.70	113.00	119.28
1	D	32	LYS	C-N-CA	-5.70	113.00	119.28
1	B	32	LYS	CA-C-N	-5.70	112.72	119.05
1	B	32	LYS	C-N-CA	-5.70	112.72	119.05
1	J	16	GLY	N-CA-C	5.69	119.59	111.12
1	G	45	LYS	N-CA-C	-5.68	106.39	113.55
1	G	131	VAL	N-CA-C	5.68	115.76	110.42
1	O	109	LEU	N-CA-C	5.68	118.13	108.02
1	P	75	ILE	CB-CA-C	-5.67	104.66	111.18
1	O	207	VAL	CB-CA-C	-5.65	103.09	111.80
1	P	56	ILE	N-CA-C	5.64	118.10	111.05
1	G	32	LYS	CA-C-N	-5.64	112.89	119.32
1	G	32	LYS	C-N-CA	-5.64	112.89	119.32
1	B	58	THR	N-CA-C	5.63	118.14	111.33
1	J	50	LEU	CA-C-N	5.61	126.86	119.84
1	J	50	LEU	C-N-CA	5.61	126.86	119.84
1	O	73	GLU	O-C-N	-5.60	116.08	122.08
1	H	30	LYS	N-CA-C	5.59	117.35	108.79
1	H	20	GLY	N-CA-C	5.57	122.50	115.42
1	B	197	ILE	N-CA-C	-5.56	100.32	108.54
1	N	164	GLU	CB-CA-C	-5.54	101.53	109.84
1	G	216	ARG	N-CA-C	5.54	116.56	108.14
1	L	76	PRO	CA-N-CD	-5.54	104.25	112.00
1	K	228	HIS	N-CA-CB	-5.54	102.23	111.20
1	P	128	ASN	N-CA-C	5.51	119.63	113.02
1	H	69	THR	CB-CA-C	-5.50	100.03	109.65
1	J	144	GLU	N-CA-C	-5.50	100.74	109.59
1	F	137	LEU	N-CA-C	-5.48	106.65	113.55
1	L	173	PHE	CB-CA-C	-5.47	101.93	110.74
1	M	220	LEU	CA-C-N	5.47	126.67	119.84
1	M	220	LEU	C-N-CA	5.47	126.67	119.84
1	B	123	MET	N-CA-C	5.46	117.99	109.52
1	K	197	ILE	CB-CA-C	-5.46	105.40	111.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	185	LEU	CA-C-N	-5.45	115.13	120.52
1	G	185	LEU	C-N-CA	-5.45	115.13	120.52
1	E	58	THR	N-CA-CB	5.43	118.20	110.16
1	K	216	ARG	NE-CZ-NH2	5.43	124.09	119.20
1	A	178	LYS	N-CA-C	5.41	117.66	108.02
1	M	185	LEU	CA-C-N	5.40	125.60	120.31
1	M	185	LEU	C-N-CA	5.40	125.60	120.31
1	F	32	LYS	CB-CA-C	5.38	117.34	110.34
1	K	50	LEU	N-CA-C	5.38	117.22	109.48
1	G	205	ASN	N-CA-C	-5.37	105.47	112.23
1	M	125	PHE	CA-C-N	-5.37	114.85	120.38
1	M	125	PHE	C-N-CA	-5.37	114.85	120.38
1	H	166	GLY	N-CA-C	-5.36	101.19	112.45
1	E	218	SER	CA-C-N	5.34	125.43	119.87
1	E	218	SER	C-N-CA	5.34	125.43	119.87
1	K	21	HIS	N-CA-C	5.33	116.94	108.67
1	A	75	ILE	O-C-N	5.30	125.59	121.46
1	J	202	SER	N-CA-C	5.29	117.13	111.36
1	G	75	ILE	CA-C-N	-5.29	114.50	119.90
1	G	75	ILE	C-N-CA	-5.29	114.50	119.90
1	B	203	ASP	CB-CA-C	-5.27	101.81	110.72
1	C	203	ASP	N-CA-C	-5.26	106.63	113.16
1	M	99	GLY	N-CA-C	-5.26	105.88	111.93
1	I	73	GLU	CA-C-N	5.24	131.34	122.65
1	I	73	GLU	C-N-CA	5.24	131.34	122.65
1	L	168	HIS	N-CA-C	5.23	117.94	108.69
1	N	185	LEU	CA-C-N	-5.23	115.20	120.85
1	N	185	LEU	C-N-CA	-5.23	115.20	120.85
1	M	75	ILE	CA-C-N	-5.22	114.19	119.83
1	M	75	ILE	C-N-CA	-5.22	114.19	119.83
1	H	75	ILE	CA-C-N	-5.22	114.34	119.93
1	H	75	ILE	C-N-CA	-5.22	114.34	119.93
1	K	75	ILE	CA-C-N	-5.22	114.39	119.76
1	K	75	ILE	C-N-CA	-5.22	114.39	119.76
1	F	99	GLY	N-CA-C	-5.21	105.42	112.14
1	F	190	PHE	N-CA-C	5.21	117.59	109.52
1	I	56	ILE	CA-C-O	-5.19	113.75	120.03
1	N	76	PRO	CA-N-CD	-5.18	104.75	112.00
1	L	102	THR	N-CA-C	5.18	117.51	108.76
1	B	50	LEU	CA-C-N	5.17	126.30	119.84
1	B	50	LEU	C-N-CA	5.17	126.30	119.84
1	K	89	TRP	N-CA-C	5.16	117.04	109.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	126	PRO	CA-C-N	5.16	124.82	119.56
1	B	126	PRO	C-N-CA	5.16	124.82	119.56
1	G	118	VAL	N-CA-C	5.15	116.00	108.53
1	B	83	PHE	CB-CA-C	5.14	116.27	108.86
1	K	204	TYR	N-CA-C	5.12	119.11	112.86
1	P	4	ILE	N-CA-C	5.12	114.86	106.72
1	I	122	GLY	CA-C-O	-5.11	117.12	121.57
1	B	216	ARG	N-CA-C	5.11	115.09	107.88
1	E	203	ASP	CB-CA-C	-5.10	100.26	110.42
1	B	228	HIS	CA-CB-CG	5.09	118.89	113.80
1	D	32	LYS	O-C-N	5.09	125.95	121.32
1	I	75	ILE	CA-C-N	-5.09	114.71	119.90
1	I	75	ILE	C-N-CA	-5.09	114.71	119.90
1	J	185	LEU	CA-C-N	5.08	125.53	120.14
1	J	185	LEU	C-N-CA	5.08	125.53	120.14
1	A	222	SER	N-CA-C	5.08	118.23	110.20
1	N	23	PHE	N-CA-C	5.08	116.56	108.79
1	G	125	PHE	CA-C-N	-5.07	115.16	120.38
1	G	125	PHE	C-N-CA	-5.07	115.16	120.38
1	G	70	LYS	CB-CA-C	-5.07	101.98	110.29
1	M	195	ILE	N-CA-C	-5.07	101.04	108.85
1	J	32	LYS	CA-C-N	-5.07	113.43	119.05
1	J	32	LYS	C-N-CA	-5.07	113.43	119.05
1	C	126	PRO	N-CA-C	-5.06	104.53	110.70
1	J	4	ILE	N-CA-C	5.06	115.62	107.73
1	K	32	LYS	CA-C-N	5.05	124.49	119.24
1	K	32	LYS	C-N-CA	5.05	124.49	119.24
1	A	58	THR	N-CA-C	5.03	116.76	111.28
1	C	113	CYS	N-CA-C	5.03	116.61	108.41
1	E	80	LYS	N-CA-C	5.02	116.83	111.36
1	G	126	PRO	CA-C-N	5.01	124.79	119.28
1	G	126	PRO	C-N-CA	5.01	124.79	119.28
1	F	58	THR	N-CA-C	5.00	117.46	111.71

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	F	167	GLY	Peptide
1	O	167	GLY	Peptide
1	O	73	GLU	Mainchain

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	1802	0	1734	73	0
1	B	1849	0	1778	73	0
1	C	1830	0	1752	64	0
1	D	1821	0	1753	82	0
1	E	1802	0	1732	51	0
1	F	1810	0	1740	67	0
1	G	1873	0	1804	58	1
1	H	1817	0	1750	39	0
1	I	1802	0	1733	48	0
1	J	1823	0	1764	42	1
1	K	1886	0	1830	73	0
1	L	1842	0	1763	102	0
1	M	1808	0	1747	62	0
1	N	1817	0	1752	51	0
1	O	1822	0	1756	117	0
1	P	1832	0	1782	51	0
2	B	6	0	8	3	0
2	E	6	0	8	5	0
2	N	6	0	8	8	0
3	A	76	0	0	20	0
3	B	140	0	0	18	0
3	C	116	0	0	13	0
3	D	123	0	0	37	0
3	E	36	0	0	7	0
3	F	135	0	0	18	0
3	G	147	0	0	14	0
3	H	156	0	0	11	0
3	I	170	0	0	15	0
3	J	130	0	0	14	0
3	K	187	0	0	16	0
3	L	48	0	0	7	0
3	M	86	0	0	11	0
3	N	180	0	0	10	0
3	O	80	0	0	43	0
3	P	108	0	0	9	0
All	All	31172	0	28194	979	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 17.

All (979) 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:M:40:LEU:HG	3:M:326:HOH:O	1.25	1.29
1:C:56:ILE:HD11	1:C:101:CYS:SG	1.71	1.29
1:F:159:MET:SD	3:F:382:HOH:O	1.92	1.27
1:N:44:VAL:HG11	3:N:478:HOH:O	1.31	1.25
1:G:58:THR:HG21	3:G:372:HOH:O	1.39	1.23
1:B:48:ALA:HB2	3:B:492:HOH:O	1.35	1.22
1:C:154:VAL:HG23	3:C:305:HOH:O	1.39	1.18
1:L:70:LYS:HE3	1:L:212:HIS:NE2	1.61	1.14
1:A:34:TYR:O	1:A:70:LYS:HG3	1.49	1.11
1:C:67:VAL:HB	3:C:343:HOH:O	1.52	1.09
1:I:119:ARG:NH2	2:N:301:GOL:O1	1.87	1.08
1:B:150:ASP:HA	3:B:424:HOH:O	1.56	1.06
1:O:24:VAL:HG13	3:O:321:HOH:O	1.56	1.06
1:C:135:LYS:HB3	3:C:394:HOH:O	1.56	1.06
1:K:26:GLU:HG2	3:K:334:HOH:O	1.58	1.01
1:F:119:ARG:HB2	3:F:402:HOH:O	1.61	1.00
1:D:97:ASP:O	1:D:98:LYS:HG2	1.62	0.99
1:G:197:ILE:HD11	3:G:372:HOH:O	1.61	0.99
1:I:104:ARG:HD2	2:N:301:GOL:C1	1.91	0.99
1:F:142:SER:HB3	1:F:159:MET:HE1	1.45	0.99
1:B:161:LEU:HB3	3:B:409:HOH:O	1.62	0.97
1:I:120:PHE:HB2	3:I:418:HOH:O	1.61	0.97
1:P:185:LEU:HD22	3:P:364:HOH:O	1.64	0.96
1:K:49:PRO:HB3	3:K:310:HOH:O	1.63	0.96
1:E:72:PRO:HB2	1:E:74:ASP:OD1	1.65	0.96
1:E:201:ASP:HB3	3:E:402:HOH:O	1.63	0.96
1:I:104:ARG:HD2	2:N:301:GOL:H12	1.44	0.95
1:J:104:ARG:HD3	3:J:305:HOH:O	1.65	0.95
1:P:35:GLU:HA	1:P:70:LYS:HD2	1.47	0.95
1:A:115:PHE:CD1	3:A:343:HOH:O	2.17	0.95
1:D:53:SER:HB3	3:D:379:HOH:O	1.65	0.94
1:M:184:GLN:HB3	3:M:367:HOH:O	1.67	0.94
1:L:70:LYS:HD2	1:L:214:VAL:HG22	1.50	0.93
1:N:48:ALA:HB2	3:N:478:HOH:O	1.70	0.92
1:L:70:LYS:CE	1:L:212:HIS:NE2	2.32	0.92
1:I:11:LYS:HE2	3:I:433:HOH:O	1.69	0.91
1:O:56:ILE:HD12	3:O:338:HOH:O	1.69	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:206:LYS:HG2	3:J:349:HOH:O	1.71	0.90
1:N:104:ARG:HD3	3:N:557:HOH:O	1.71	0.89
1:L:118:VAL:HG12	1:L:119:ARG:N	1.86	0.89
1:A:192:ASP:HB3	3:A:305:HOH:O	1.71	0.88
1:B:91:ARG:O	1:C:123:MET:HE1	1.74	0.88
1:D:6:GLU:HB2	3:D:373:HOH:O	1.73	0.87
1:K:19:ASN:CG	1:K:132:MET:HE3	1.99	0.87
1:P:11:LYS:HE3	1:P:115:PHE:CD1	2.10	0.86
1:J:90:GLU:OE1	1:J:104:ARG:NH1	2.08	0.86
1:K:119[B]:ARG:HE	1:K:121:ASN:HD21	1.24	0.86
1:K:157:ILE:HD12	1:K:173:PHE:CD2	2.11	0.85
1:I:152:LEU:HB2	3:I:349:HOH:O	1.78	0.84
1:F:142:SER:HB3	1:F:159:MET:CE	2.08	0.84
1:O:38:GLN:HB3	3:O:349:HOH:O	1.77	0.83
1:A:115:PHE:CE1	3:A:343:HOH:O	2.29	0.83
1:A:195:ILE:HG21	3:A:333:HOH:O	1.77	0.83
1:L:31:GLY:HA3	1:L:68:PHE:HE2	1.43	0.83
1:A:145:LYS:HD2	1:A:188:TYR:OH	1.78	0.82
1:L:72:PRO:HD2	1:L:215:ALA:HB3	1.61	0.82
1:M:42:LEU:HG	3:M:326:HOH:O	1.77	0.82
1:P:202:SER:OG	3:P:301:HOH:O	1.91	0.82
1:L:79:PHE:HA	3:L:340:HOH:O	1.79	0.81
1:H:16:GLY:HA3	3:H:305:HOH:O	1.80	0.81
1:O:94:THR:HG23	3:O:326:HOH:O	1.81	0.80
1:I:93:MET:HE2	1:I:101:CYS:HB2	1.62	0.80
1:J:123:MET:HG2	3:J:378:HOH:O	1.81	0.80
1:J:145:LYS:HB3	3:J:419:HOH:O	1.82	0.79
1:O:204:TYR:HB3	3:O:313:HOH:O	1.82	0.79
1:P:206:LYS:NZ	3:P:302:HOH:O	2.14	0.79
1:J:9[B]:ARG:NH2	1:J:112:ASP:OD1	2.17	0.78
3:A:366:HOH:O	1:D:104:ARG:HD3	1.83	0.78
1:D:107[A]:ILE:HD11	1:D:114:PHE:HB3	1.64	0.78
1:F:42:LEU:HG	3:F:315:HOH:O	1.84	0.78
1:A:168:HIS:O	1:O:149:ARG:NH2	2.17	0.77
1:L:163:LEU:HD23	3:L:311:HOH:O	1.84	0.77
1:O:167:GLY:HA2	3:O:314:HOH:O	1.83	0.77
1:A:10:VAL:HB	3:A:322:HOH:O	1.84	0.77
1:C:56:ILE:CD1	1:C:101:CYS:SG	2.66	0.77
1:K:99:GLY:O	1:K:100[A]:ILE:HD13	1.85	0.76
1:O:204:TYR:HD2	3:O:313:HOH:O	1.68	0.76
1:L:3:LEU:C	1:L:4:ILE:HG22	2.09	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:42:LEU:CD1	3:F:315:HOH:O	2.33	0.76
1:O:32:LYS:HB3	3:O:363:HOH:O	1.87	0.75
1:O:186:PRO:HD3	3:O:350:HOH:O	1.85	0.75
1:O:162:LEU:C	1:O:163[B]:LEU:HD12	2.12	0.75
1:D:78:TYR:CE2	3:D:302:HOH:O	2.39	0.75
1:L:70:LYS:CD	1:L:214:VAL:HG22	2.15	0.75
1:H:16:GLY:CA	3:H:305:HOH:O	2.34	0.75
1:L:18:VAL:O	1:L:19:ASN:C	2.28	0.75
1:I:118:VAL:HG12	3:I:418:HOH:O	1.85	0.74
1:G:197:ILE:HG22	3:G:383:HOH:O	1.87	0.74
1:O:40:LEU:O	1:O:208:LYS:HA	1.87	0.74
1:L:118:VAL:CG1	1:L:119:ARG:N	2.50	0.74
1:D:131:VAL:HG13	3:D:379:HOH:O	1.86	0.74
1:L:72:PRO:HG2	1:L:75:ILE:HD12	1.69	0.74
1:A:11:LYS:HD2	1:A:113:CYS:SG	2.28	0.74
1:F:2:ASN:HD21	1:F:4:ILE:HD12	1.53	0.73
1:E:107:ILE:HD12	1:E:116:GLN:HG2	1.69	0.73
1:C:93:MET:HE3	1:C:173:PHE:CZ	2.24	0.73
1:K:18:VAL:HG12	1:K:132:MET:HE1	1.69	0.73
1:K:19:ASN:CB	1:K:132:MET:HE3	2.19	0.73
1:F:93:MET:HE3	1:F:173:PHE:CZ	2.24	0.72
1:O:26:GLU:CD	1:O:45:LYS:HG3	2.14	0.72
1:C:7:ASP:OD2	1:C:32:LYS:HE3	1.89	0.72
1:O:92[A]:THR:HG22	1:O:100:ILE:HD11	1.69	0.72
1:N:11:LYS:NZ	1:N:26[B]:GLU:OE1	2.21	0.72
1:C:158:ASN:HB3	1:E:145:LYS:HD3	1.72	0.72
1:D:225:TRP:CZ2	3:D:405:HOH:O	2.42	0.72
1:O:123:MET:HG2	3:O:320:HOH:O	1.88	0.72
1:I:93:MET:HE2	1:I:101:CYS:CB	2.20	0.72
1:O:123:MET:HG3	3:O:357:HOH:O	1.89	0.72
1:P:90:GLU:OE1	1:P:104:ARG:NH1	2.23	0.72
1:K:5:LYS:HE2	3:K:318:HOH:O	1.89	0.71
1:D:147:HIS:HD2	3:D:310:HOH:O	1.72	0.71
1:B:91:ARG:C	1:C:123:MET:HE1	2.16	0.71
1:B:145[A]:LYS:HD3	1:B:188:TYR:OH	1.90	0.71
1:M:33:PRO:HB3	1:M:80:LYS:HE3	1.71	0.71
1:C:149:ARG:NH2	1:E:96:GLU:OE2	2.24	0.71
1:O:56:ILE:CD1	3:O:338:HOH:O	2.34	0.71
1:O:68:PHE:HB3	3:O:349:HOH:O	1.89	0.71
1:M:93:MET:HE3	1:M:173:PHE:CZ	2.25	0.71
1:O:145:LYS:HD3	1:O:188:TYR:OH	1.91	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:107[A]:ILE:HD13	1:D:116:GLN:HG2	1.72	0.70
1:D:83:PHE:HB2	3:D:375:HOH:O	1.89	0.70
1:D:97:ASP:O	1:D:98:LYS:CG	2.38	0.70
1:M:4:ILE:O	1:M:34:TYR:OH	2.07	0.70
1:G:95:TYR:O	3:G:301:HOH:O	2.09	0.70
1:F:4:ILE:HG22	1:F:33:PRO:HG2	1.74	0.70
1:I:10:VAL:HG21	3:I:309:HOH:O	1.90	0.70
1:M:15:GLU:O	1:M:119:ARG:HA	1.91	0.69
1:N:13:HIS:ND1	1:N:26[B]:GLU:OE2	2.25	0.69
1:O:132:MET:HG2	3:O:335:HOH:O	1.92	0.69
1:K:26:GLU:CG	3:K:334:HOH:O	2.28	0.69
1:F:154:VAL:HG22	1:F:176:THR:HG23	1.73	0.69
1:K:9[A]:ARG:NE	1:K:29:GLY:O	2.25	0.69
1:L:35:GLU:O	1:L:70:LYS:HE2	1.92	0.69
1:A:201:ASP:O	1:A:204:TYR:N	2.21	0.68
1:L:220:LEU:HD22	1:M:212:HIS:CE1	2.28	0.68
1:M:148:VAL:HG13	3:M:348:HOH:O	1.93	0.68
1:O:56:ILE:CG1	3:O:338:HOH:O	2.42	0.68
1:K:19:ASN:HB2	1:K:132:MET:HE3	1.74	0.68
1:N:93:MET:HE3	1:N:173:PHE:CZ	2.28	0.68
1:B:44:VAL:CG1	3:B:492:HOH:O	2.42	0.68
1:B:44:VAL:HG11	3:B:492:HOH:O	1.92	0.68
1:G:135:LYS:O	1:G:135:LYS:HG3	1.93	0.68
1:K:210:TYR:HD2	3:K:357:HOH:O	1.76	0.68
1:L:137:LEU:HD21	1:L:164:GLU:HG2	1.76	0.68
1:C:130:PRO:HB3	3:C:394:HOH:O	1.94	0.67
1:K:41:ASN:OD1	1:K:208[A]:LYS:HD3	1.94	0.67
1:O:173:PHE:HD2	3:O:322:HOH:O	1.75	0.67
1:G:115:PHE:HE2	1:G:117:ASN:HD22	1.41	0.67
1:L:195:ILE:HG22	1:L:211:GLU:HB2	1.76	0.67
1:M:7:ASP:OD1	1:M:32:LYS:HE3	1.95	0.67
1:E:201:ASP:CB	3:E:402:HOH:O	2.30	0.67
1:G:110[B]:GLU:CD	3:G:321:HOH:O	2.38	0.67
1:H:199:SER:OG	1:H:208[A]:LYS:HD3	1.93	0.67
1:F:145:LYS:O	1:F:155:GLY:HA2	1.94	0.67
1:C:153:LEU:C	3:C:305:HOH:O	2.36	0.67
1:P:93:MET:HE3	1:P:173:PHE:CZ	2.29	0.67
1:L:125:PHE:CD1	1:L:131:VAL:HG21	2.30	0.66
1:D:87:TYR:O	1:D:107[A]:ILE:HG22	1.94	0.66
1:O:207:VAL:CG2	3:O:313:HOH:O	2.43	0.66
1:D:214:VAL:HB	3:D:304:HOH:O	1.94	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:58:THR:HB	1:O:195:ILE:HD11	1.78	0.66
1:G:58:THR:CG2	3:G:372:HOH:O	2.16	0.66
1:B:210:TYR:CD2	1:P:223:GLN:HG3	2.31	0.66
1:C:67:VAL:CB	3:C:343:HOH:O	2.26	0.66
1:C:107:ILE:HD12	1:C:107:ILE:N	2.11	0.66
1:L:223:GLN:HA	1:L:223:GLN:OE1	1.94	0.66
1:J:219:PRO:HA	3:J:399:HOH:O	1.94	0.66
1:O:38:GLN:CB	3:O:349:HOH:O	2.36	0.66
1:M:185:LEU:HD13	3:M:348:HOH:O	1.94	0.65
1:P:102:THR:C	1:P:103:ILE:HG13	2.20	0.65
1:A:201:ASP:OD1	1:A:206:LYS:N	2.24	0.65
1:B:106:ASP:OD1	1:B:180:LYS:NZ	2.28	0.65
1:B:125:PHE:CE1	1:B:131:VAL:HG21	2.32	0.65
1:C:57:LEU:O	1:C:60:ALA:HB3	1.96	0.65
1:L:31:GLY:HA3	1:L:68:PHE:CE2	2.30	0.65
1:C:196:GLU:OE2	1:E:222:SER:OG	2.12	0.65
1:E:55:ASP:OD2	1:E:136:THR:OG1	2.12	0.65
1:C:130:PRO:CB	3:C:394:HOH:O	2.43	0.65
1:H:145:LYS:NZ	1:J:170:LEU:HD22	2.12	0.65
1:L:70:LYS:HD2	1:L:214:VAL:CG2	2.26	0.65
1:A:220:LEU:HD22	1:O:212:HIS:CE1	2.32	0.65
1:C:158:ASN:H	2:E:301:GOL:C3	2.09	0.65
1:H:107:ILE:HD12	1:H:116:GLN:HG2	1.79	0.65
1:O:38:GLN:CG	3:O:349:HOH:O	2.45	0.65
1:L:157:ILE:HD12	1:L:173:PHE:CD2	2.32	0.64
1:K:125:PHE:HB2	1:K:132:MET:HE2	1.78	0.64
1:L:4:ILE:HG23	1:L:34:TYR:OH	1.98	0.64
1:D:159:MET:HG3	1:D:173:PHE:CE1	2.33	0.64
1:G:145:LYS:HZ1	1:I:142:SER:HB2	1.63	0.64
1:P:93:MET:HE3	1:P:173:PHE:CE1	2.33	0.64
1:F:2:ASN:O	1:F:3:LEU:HG	1.98	0.64
1:O:40:LEU:HD13	3:O:305:HOH:O	1.97	0.64
1:N:48:ALA:CB	3:N:478:HOH:O	2.38	0.63
1:O:17:ASN:HB2	3:O:368:HOH:O	1.97	0.63
1:F:30:LYS:HE2	3:F:324:HOH:O	1.97	0.63
1:O:204:TYR:CD2	3:O:313:HOH:O	2.47	0.63
1:J:182:VAL:HG11	1:N:182:VAL:O	1.98	0.63
1:A:6:GLU:OE2	1:A:32:LYS:HG2	1.99	0.63
1:G:123:MET:HE2	1:K:90:GLU:HG2	1.79	0.63
1:D:223:GLN:HG3	1:F:210:TYR:CE2	2.34	0.63
1:O:27:GLY:HA3	1:O:42:LEU:HD23	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:145[A]:LYS:HD2	1:P:158:ASN:O	1.98	0.62
1:B:48:ALA:CB	3:B:492:HOH:O	2.12	0.62
1:F:123:MET:HE3	1:O:90:GLU:HB3	1.80	0.62
1:D:78:TYR:HE2	3:D:302:HOH:O	1.80	0.62
1:D:87:TYR:CE1	1:D:107[A]:ILE:HG21	2.35	0.62
1:A:201:ASP:O	1:A:203:ASP:N	2.32	0.62
1:O:166:GLY:O	1:O:167:GLY:O	2.18	0.62
1:A:58:THR:HA	1:A:61:LEU:HD12	1.82	0.62
1:K:19:ASN:CG	1:K:132:MET:CE	2.71	0.62
1:O:19:ASN:ND2	1:O:125:PHE:O	2.29	0.62
1:F:42:LEU:CG	3:F:315:HOH:O	2.42	0.62
1:K:135:LYS:HD2	3:K:423:HOH:O	2.00	0.61
1:N:93:MET:HE3	1:N:173:PHE:CE1	2.35	0.61
1:F:103:ILE:HG12	1:F:120:PHE:CD2	2.36	0.61
1:L:72:PRO:CD	1:L:215:ALA:HB3	2.31	0.61
1:D:109:LEU:HD23	3:D:323:HOH:O	2.01	0.61
1:D:60:ALA:HB3	3:D:327:HOH:O	1.99	0.61
1:M:15:GLU:HG3	3:M:323:HOH:O	2.00	0.61
1:C:158:ASN:H	2:E:301:GOL:H31	1.66	0.61
1:E:93:MET:HE3	1:E:95:TYR:OH	2.01	0.61
1:F:14:MET:HB2	1:F:118:VAL:HG13	1.83	0.61
1:G:123:MET:HE1	1:K:103:ILE:O	2.01	0.61
1:L:161:LEU:HB2	1:L:169:TYR:HB3	1.83	0.61
1:E:198:LEU:HD11	1:E:210:TYR:HB2	1.83	0.61
1:G:145:LYS:HZ1	1:I:142:SER:CB	2.14	0.61
1:L:198:LEU:HD11	1:L:208:LYS:HD2	1.82	0.61
1:J:65:ASN:OD1	1:J:67:VAL:HG12	2.01	0.60
1:L:70:LYS:NZ	1:L:212:HIS:NE2	2.49	0.60
1:M:14:MET:O	1:M:24:VAL:HA	2.00	0.60
1:I:104:ARG:HD2	2:N:301:GOL:H11	1.83	0.60
1:N:90:GLU:HG2	1:N:104:ARG:CG	2.31	0.60
1:F:173:PHE:HD1	3:F:404:HOH:O	1.84	0.60
1:M:12:VAL:HG22	1:M:116:GLN:HB2	1.83	0.60
1:G:202:SER:HB2	3:G:337:HOH:O	2.00	0.60
1:A:18:VAL:HB	1:A:52:PHE:CE2	2.35	0.60
1:I:10:VAL:CG2	3:I:309:HOH:O	2.48	0.60
1:O:40:LEU:CD2	1:O:42:LEU:HD21	2.32	0.60
1:A:59:THR:HG23	3:A:333:HOH:O	2.01	0.59
1:F:4:ILE:CG2	1:F:33:PRO:HG2	2.31	0.59
1:O:93:MET:O	1:O:100:ILE:HD12	2.02	0.59
1:C:130:PRO:HA	3:C:394:HOH:O	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:145:LYS:O	1:H:145:LYS:HG3	2.02	0.59
1:O:173:PHE:CD2	3:O:322:HOH:O	2.51	0.59
1:K:145:LYS:HD2	1:N:158:ASN:O	2.02	0.59
1:C:131:VAL:HG12	1:C:132:MET:HE2	1.85	0.59
1:M:93:MET:HE3	1:M:173:PHE:CE1	2.36	0.59
1:O:130:PRO:HG3	3:O:379:HOH:O	2.02	0.59
1:D:159:MET:HG3	1:D:173:PHE:CD1	2.38	0.59
1:G:70:LYS:HG3	1:G:214:VAL:HG22	1.83	0.59
1:L:32:LYS:HD3	1:L:35:GLU:OE1	2.03	0.59
1:F:85:GLU:OE1	1:F:181:LYS:HD2	2.03	0.59
1:N:41:ASN:OD1	1:N:208:LYS:HD3	2.03	0.59
1:B:145[A]:LYS:HE3	3:P:363:HOH:O	2.02	0.58
1:L:74:ASP:N	1:L:74:ASP:OD1	2.35	0.58
1:C:58:THR:HA	1:C:61:LEU:HD12	1.84	0.58
1:D:208:LYS:HD2	3:D:337:HOH:O	2.02	0.58
3:D:304:HOH:O	1:F:220:LEU:HD21	2.03	0.58
1:G:145:LYS:NZ	1:I:142:SER:HB2	2.17	0.58
1:K:39[B]:THR:HG23	3:K:442:HOH:O	2.03	0.58
1:A:87:TYR:HB2	1:A:178:LYS:O	2.03	0.58
1:C:130:PRO:CA	3:C:394:HOH:O	2.50	0.58
1:L:59:THR:HG22	1:L:195:ILE:HD13	1.84	0.58
1:L:104:ARG:O	1:L:118:VAL:HA	2.04	0.58
1:M:32:LYS:O	1:M:36:GLY:N	2.35	0.58
1:C:67:VAL:CG2	3:C:343:HOH:O	2.51	0.58
1:K:39[A]:THR:CG2	1:K:208[A]:LYS:HD2	2.33	0.58
1:L:70:LYS:HE3	1:L:212:HIS:CD2	2.36	0.58
1:B:173:PHE:HD2	3:B:404:HOH:O	1.87	0.58
1:C:65:ASN:CG	1:C:67:VAL:HG22	2.28	0.58
1:C:145:LYS:HD3	1:E:158:ASN:HB3	1.85	0.58
1:G:91:ARG:O	1:K:123:MET:HE1	2.03	0.58
1:N:104:ARG:CD	3:N:557:HOH:O	2.39	0.58
1:O:92[A]:THR:CG2	1:O:100:ILE:HD11	2.34	0.58
1:E:201:ASP:CG	3:E:402:HOH:O	2.47	0.58
1:P:191:VAL:HG11	1:P:193:HIS:CE1	2.39	0.58
1:C:65:ASN:OD1	1:C:67:VAL:HG22	2.04	0.58
1:D:84:PRO:HA	3:D:323:HOH:O	2.02	0.58
1:O:207:VAL:HG21	3:O:313:HOH:O	2.02	0.58
1:F:42:LEU:HD11	3:F:315:HOH:O	2.00	0.58
1:P:87:TYR:CZ	1:P:107:ILE:HD12	2.39	0.58
1:A:43:THR:HB	3:A:356:HOH:O	2.04	0.57
1:F:21:HIS:HA	3:F:361:HOH:O	2.02	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:142:SER:CB	1:F:159:MET:CE	2.82	0.57
1:L:3:LEU:O	1:L:4:ILE:HG22	2.04	0.57
1:M:12:VAL:O	1:M:26:GLU:HA	2.03	0.57
1:A:9:ARG:O	1:A:113:CYS:HA	2.04	0.57
1:G:107:ILE:HD13	1:G:116:GLN:HG2	1.86	0.57
1:M:107:ILE:HD12	1:M:116:GLN:HG2	1.86	0.57
1:L:201:ASP:OD1	1:L:205:ASN:N	2.38	0.57
1:O:144:GLU:HB2	1:O:157:ILE:CD1	2.34	0.57
1:L:5:LYS:NZ	1:L:112:ASP:HB3	2.19	0.57
1:N:110:GLU:HG2	3:N:494:HOH:O	2.04	0.57
1:K:3:LEU:HD11	1:K:84:PRO:HB3	1.87	0.56
1:K:147:HIS:CE1	1:N:170:LEU:HD11	2.40	0.56
1:F:2:ASN:O	1:F:3:LEU:CB	2.53	0.56
1:M:10:VAL:O	1:M:28:GLU:HA	2.04	0.56
1:G:70:LYS:HD3	1:G:214:VAL:HG22	1.88	0.56
1:O:56:ILE:HD13	1:O:131:VAL:HG11	1.88	0.56
1:O:67:VAL:O	1:O:69:THR:N	2.39	0.56
1:O:78:TYR:HB2	3:O:350:HOH:O	2.05	0.56
1:D:145:LYS:HD3	1:D:188:TYR:OH	2.06	0.56
1:M:87:TYR:HA	1:M:180:LYS:HG3	1.87	0.56
1:O:39:THR:CG2	1:O:208:LYS:HE3	2.35	0.56
1:B:12:VAL:HG22	1:B:116:GLN:HB2	1.88	0.56
1:L:139:TRP:CZ3	1:L:159:MET:HB3	2.41	0.56
1:O:118:VAL:O	3:O:301:HOH:O	2.18	0.56
1:A:146:LEU:HA	1:A:154:VAL:O	2.06	0.56
1:D:152:LEU:HD22	1:D:178:LYS:HG3	1.88	0.56
1:G:123:MET:CE	1:K:90:GLU:HG2	2.36	0.56
1:H:145:LYS:HZ3	1:J:170:LEU:HD22	1.70	0.56
1:O:161:LEU:O	1:O:163[B]:LEU:CD1	2.54	0.55
1:B:139:TRP:HD1	2:B:301:GOL:H11	1.70	0.55
1:A:100:ILE:HD12	1:D:92:THR:HG21	1.87	0.55
1:E:65:ASN:CG	1:E:67:VAL:HG12	2.30	0.55
1:G:123:MET:HE2	1:K:90:GLU:CG	2.36	0.55
1:M:190:PHE:N	1:M:190:PHE:CD1	2.74	0.55
1:B:158:ASN:HB3	1:P:145:LYS:HD3	1.89	0.55
1:G:145:LYS:HD2	3:I:385:HOH:O	2.05	0.55
1:I:68:PHE:CE2	3:I:309:HOH:O	2.53	0.55
1:J:13:HIS:ND1	1:J:26:GLU:OE2	2.37	0.55
1:L:14:MET:SD	1:L:57:LEU:HD13	2.46	0.55
1:C:43:THR:HG22	1:C:45:LYS:HD2	1.89	0.55
1:G:123:MET:HE2	1:K:90:GLU:CB	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:19:ASN:ND2	1:L:132:MET:SD	2.80	0.55
1:O:40:LEU:HB2	3:O:305:HOH:O	2.05	0.55
1:A:59:THR:CG2	3:A:333:HOH:O	2.55	0.55
1:D:43:THR:OG1	1:D:206:LYS:NZ	2.35	0.55
1:L:132:MET:O	1:L:133:GLN:C	2.48	0.55
1:M:65:ASN:ND2	1:M:67:VAL:HG12	2.22	0.55
1:O:203:ASP:O	1:O:204:TYR:HB2	2.06	0.55
1:E:158:ASN:H	2:E:301:GOL:C1	2.20	0.55
1:C:200:ASN:HA	1:C:206:LYS:O	2.06	0.54
1:D:57:LEU:HA	3:D:327:HOH:O	2.06	0.54
1:A:90:GLU:O	1:A:90:GLU:HG2	2.07	0.54
1:A:97:ASP:O	1:A:98:LYS:HG2	2.07	0.54
1:B:145[A]:LYS:HE2	1:B:188:TYR:HE1	1.73	0.54
1:H:100:ILE:CD1	1:L:100:ILE:HD11	2.37	0.54
1:L:66:ARG:NH1	1:L:69:THR:OG1	2.41	0.54
1:M:64:5SQ:OH	1:M:142:SER:OG	2.22	0.54
1:D:214:VAL:CB	3:D:304:HOH:O	2.53	0.54
1:L:140:GLU:HG3	1:M:188:TYR:CD2	2.42	0.54
1:M:9:ARG:O	1:M:10:VAL:HG23	2.07	0.54
1:P:92:THR:HG22	1:P:94[B]:THR:HG23	1.89	0.54
1:B:135:LYS:HD2	3:B:480:HOH:O	2.06	0.54
1:I:104:ARG:CD	2:N:301:GOL:H12	2.30	0.54
1:O:52:PHE:HD1	1:O:53:SER:O	1.90	0.54
1:P:100[A]:ILE:HD11	3:P:402:HOH:O	2.07	0.54
1:D:26:GLU:HG2	3:D:408:HOH:O	2.07	0.54
1:E:145:LYS:HD2	1:E:188:TYR:OH	2.08	0.54
1:F:112:ASP:CG	3:F:307:HOH:O	2.50	0.54
1:A:223:GLN:HG3	1:O:210:TYR:CE2	2.43	0.54
1:E:206:LYS:NZ	3:E:404:HOH:O	2.41	0.54
1:K:210:TYR:CD2	1:N:223:GLN:HG3	2.43	0.54
1:C:93:MET:HE3	1:C:173:PHE:HZ	1.71	0.54
1:I:68:PHE:HE2	3:I:309:HOH:O	1.90	0.54
1:O:68:PHE:CB	3:O:349:HOH:O	2.53	0.54
1:B:25:ILE:HG12	1:B:44:VAL:HG22	1.89	0.54
1:H:17:ASN:N	3:H:305:HOH:O	2.41	0.54
1:O:9:ARG:NH1	3:O:304:HOH:O	2.38	0.54
1:A:85:GLU:OE1	1:A:85:GLU:N	2.38	0.54
1:G:145:LYS:HZ1	1:I:142:SER:CA	2.20	0.54
1:N:90:GLU:HG2	1:N:104:ARG:HG2	1.90	0.53
1:O:131:VAL:HG12	1:O:132:MET:HE2	1.90	0.53
1:P:35:GLU:CA	1:P:70:LYS:HD2	2.30	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:115:PHE:CE2	1:G:117:ASN:ND2	2.75	0.53
1:H:73:GLU:HG2	3:H:318:HOH:O	2.08	0.53
1:K:228:HIS:NE2	1:N:202:SER:OG	2.41	0.53
1:G:110[B]:GLU:HG3	3:G:401:HOH:O	2.06	0.53
1:G:197:ILE:CD1	3:G:372:HOH:O	2.37	0.53
1:H:4:ILE:N	3:H:302:HOH:O	2.33	0.53
1:H:102:THR:HG21	3:H:323:HOH:O	2.08	0.53
1:L:5:LYS:NZ	1:L:112:ASP:CB	2.71	0.53
1:L:161:LEU:O	1:L:168:HIS:HA	2.09	0.53
1:O:78:TYR:CB	3:O:350:HOH:O	2.57	0.53
1:P:211:GLU:HG3	1:P:212:HIS:N	2.23	0.53
1:B:17:ASN:HA	1:B:21:HIS:O	2.09	0.53
1:C:145:LYS:HD2	1:C:188:TYR:OH	2.09	0.53
1:P:40:LEU:HD13	1:P:42:LEU:HD21	1.90	0.53
1:C:82:SER:O	1:C:181:LYS:HD3	2.08	0.53
1:C:154:VAL:N	3:C:305:HOH:O	2.40	0.53
1:E:72:PRO:HG2	1:E:75:ILE:HG13	1.90	0.53
1:J:85:GLU:OE1	1:J:181:LYS:HE2	2.07	0.53
1:D:6:GLU:CB	3:D:373:HOH:O	2.42	0.53
1:D:38:GLN:NE2	1:D:211:GLU:OE1	2.40	0.53
1:P:85:GLU:OE1	1:P:181:LYS:HD3	2.08	0.53
3:A:366:HOH:O	1:D:104:ARG:CD	2.51	0.53
1:F:13:HIS:ND1	1:F:26:GLU:OE2	2.36	0.53
1:L:66:ARG:HB2	1:L:79:PHE:CD1	2.44	0.53
1:L:162:LEU:C	3:L:311:HOH:O	2.50	0.53
1:O:154:VAL:HG22	1:O:176:THR:HG23	1.91	0.53
1:J:182:VAL:HG12	3:J:412:HOH:O	2.09	0.53
1:N:206:LYS:HD2	3:N:460:HOH:O	2.09	0.53
1:F:100:ILE:HD11	1:F:123:MET:HE2	1.90	0.53
1:N:133:GLN:HB2	1:N:135:LYS:HD3	1.89	0.53
1:D:214:VAL:N	3:D:304:HOH:O	2.42	0.52
1:F:11:LYS:O	1:F:115:PHE:HA	2.09	0.52
1:K:218:SER:HB3	1:N:194:ARG:NH2	2.24	0.52
1:B:9:ARG:HB2	1:B:113:CYS:HB2	1.91	0.52
1:H:102:THR:C	1:H:103:ILE:HG13	2.34	0.52
1:K:5:LYS:CE	3:K:318:HOH:O	2.51	0.52
1:L:67:VAL:HG23	1:L:79:PHE:O	2.09	0.52
1:G:145:LYS:HE3	3:I:395:HOH:O	2.09	0.52
1:I:64:5SQ:OH	1:I:159:MET:HE1	2.10	0.52
1:L:137:LEU:HD11	1:L:164:GLU:HA	1.90	0.52
1:F:173:PHE:CD1	3:F:404:HOH:O	2.54	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:135:LYS:NZ	1:G:164:GLU:O	2.41	0.52
1:O:59:THR:O	1:O:64:5SQ:C2	2.57	0.52
1:A:220:LEU:HD21	1:O:214:VAL:HG23	1.91	0.52
1:D:52:PHE:CD1	1:D:52:PHE:C	2.88	0.52
1:E:44:VAL:CG2	1:E:205:ASN:HA	2.40	0.52
1:K:210:TYR:CE2	1:N:223:GLN:HG3	2.45	0.52
1:M:40:LEU:C	3:M:326:HOH:O	2.52	0.52
1:F:2:ASN:HD21	1:F:4:ILE:CD1	2.22	0.52
1:G:107:ILE:CD1	1:G:116:GLN:HG2	2.39	0.52
1:E:107:ILE:CD1	1:E:116:GLN:HG2	2.36	0.52
1:K:19:ASN:ND2	1:K:132:MET:HE3	2.25	0.52
1:M:17:ASN:HA	1:M:21:HIS:O	2.10	0.52
1:B:9:ARG:NH1	1:B:30:LYS:NZ	2.58	0.52
1:C:93:MET:HE3	1:C:173:PHE:CE1	2.45	0.52
1:C:201:ASP:CG	1:C:206:LYS:H	2.18	0.52
1:G:95:TYR:CD1	3:G:324:HOH:O	2.63	0.52
1:H:199:SER:OG	1:H:208[A]:LYS:CD	2.57	0.52
1:O:59:THR:HG22	1:O:64:5SQ:CG2	2.40	0.52
1:P:76:PRO:HD2	1:P:186:PRO:HA	1.92	0.52
1:E:144:GLU:HA	1:E:157:ILE:HG12	1.93	0.51
1:E:158:ASN:H	2:E:301:GOL:H11	1.74	0.51
1:E:93:MET:HE3	1:E:95:TYR:CE1	2.46	0.51
1:K:141:PRO:HG3	1:K:194:ARG:NH1	2.25	0.51
1:K:223:GLN:HG3	1:N:210:TYR:CE2	2.45	0.51
1:L:212:HIS:CG	1:M:220:LEU:HD22	2.45	0.51
1:M:156:ASN:O	1:M:157:ILE:HG13	2.10	0.51
1:O:73:GLU:HG3	1:O:74:ASP:H	1.75	0.51
1:C:163:LEU:HD12	1:C:163:LEU:C	2.35	0.51
1:K:26:GLU:HG3	1:K:45:LYS:HG2	1.92	0.51
1:H:125:PHE:O	1:H:126:PRO:C	2.51	0.51
1:J:101:CYS:HA	1:J:121:ASN:O	2.10	0.51
1:P:148:VAL:HG13	3:P:364:HOH:O	2.10	0.51
1:P:191:VAL:CG1	1:P:193:HIS:CE1	2.94	0.51
1:C:152:LEU:C	3:C:305:HOH:O	2.53	0.51
1:F:149:ARG:O	1:F:150:ASP:HB2	2.10	0.51
1:I:181:LYS:HE3	3:I:348:HOH:O	2.11	0.51
1:M:7:ASP:OD1	1:M:32:LYS:CE	2.59	0.51
1:J:6:GLU:HG3	3:J:398:HOH:O	2.09	0.51
1:J:190:PHE:HD2	3:J:419:HOH:O	1.93	0.51
1:O:13:HIS:O	1:O:117:ASN:HA	2.11	0.51
1:D:175:THR:HG21	1:D:177:TYR:CZ	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:2:ASN:O	1:F:3:LEU:CG	2.59	0.51
1:K:19:ASN:HB2	1:K:132:MET:CE	2.37	0.51
1:F:101:CYS:HA	1:F:121:ASN:O	2.11	0.51
1:J:102:THR:C	1:J:103:ILE:HG13	2.35	0.51
1:A:21:HIS:CE1	1:A:47:GLY:O	2.64	0.51
1:B:103:ILE:HG12	1:B:120:PHE:CD2	2.46	0.51
1:H:67:VAL:HG21	1:H:83:PHE:HE2	1.73	0.51
1:H:168:HIS:HE1	3:J:413:HOH:O	1.94	0.51
1:O:216:ARG:NH2	1:O:219:PRO:HD3	2.25	0.51
1:P:181:LYS:HB2	3:P:313:HOH:O	2.10	0.51
1:I:64:5SQ:CZ1	1:I:159:MET:HE1	2.40	0.51
1:P:6:GLU:OE2	1:P:6:GLU:N	2.44	0.51
1:B:29:GLY:HA2	3:B:503:HOH:O	2.10	0.50
1:G:123:MET:HE2	1:K:90:GLU:HB3	1.93	0.50
1:H:198:LEU:HD11	1:H:210:TYR:HB2	1.93	0.50
1:J:82:SER:O	1:J:181:LYS:HE3	2.12	0.50
1:L:72:PRO:CG	1:L:75:ILE:HD12	2.40	0.50
1:M:98:LYS:HB2	3:M:329:HOH:O	2.12	0.50
1:P:93:MET:HE2	1:P:95:TYR:OH	2.11	0.50
1:B:93:MET:HE2	1:B:103:ILE:HD11	1.93	0.50
1:E:44:VAL:HG23	1:E:205:ASN:HA	1.93	0.50
1:O:93:MET:HE3	1:O:173:PHE:CZ	2.46	0.50
1:D:52:PHE:CD1	1:D:52:PHE:O	2.64	0.50
1:D:216:ARG:CZ	3:D:308:HOH:O	2.59	0.50
1:K:95:TYR:CD1	1:K:171:CYS:HB2	2.46	0.50
1:E:90:GLU:HG2	1:E:104:ARG:HG2	1.93	0.50
1:I:26:GLU:HG2	3:I:433:HOH:O	2.10	0.50
3:I:451:HOH:O	1:N:174:LYS:HE3	2.12	0.50
1:A:147:HIS:HE1	1:O:170:LEU:HD11	1.76	0.50
1:O:45:LYS:C	1:O:46:GLU:HG3	2.36	0.50
1:D:32:LYS:HD3	1:D:35:GLU:OE1	2.12	0.50
1:I:144:GLU:HG3	1:I:157:ILE:HG12	1.94	0.50
1:O:78:TYR:HA	3:O:350:HOH:O	2.11	0.50
1:F:182:VAL:HG11	3:P:407:HOH:O	2.11	0.50
1:A:192:ASP:O	1:A:213:GLY:HA2	2.10	0.49
1:C:32:LYS:HB2	1:C:35:GLU:HB2	1.94	0.49
1:D:120:PHE:CD2	3:D:327:HOH:O	2.63	0.49
1:F:30:LYS:CE	3:F:324:HOH:O	2.55	0.49
1:A:90:GLU:O	1:A:90:GLU:CG	2.59	0.49
1:F:144:GLU:HG3	1:F:157:ILE:CG1	2.43	0.49
1:F:144:GLU:HA	1:F:157:ILE:HG12	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:187:ASP:HA	3:F:376:HOH:O	2.12	0.49
1:J:91:ARG:CZ	3:J:371:HOH:O	2.60	0.49
1:P:175:THR:HG21	1:P:177:TYR:CE1	2.46	0.49
1:P:211:GLU:HG2	3:P:369:HOH:O	2.11	0.49
1:A:136:THR:O	1:A:136:THR:OG1	2.28	0.49
1:A:166:GLY:HA2	3:A:364:HOH:O	2.11	0.49
1:B:150:ASP:CA	3:B:424:HOH:O	2.33	0.49
1:D:110:GLU:O	1:D:110:GLU:HG3	2.12	0.49
1:E:104:ARG:HG3	1:P:123:MET:HE2	1.93	0.49
1:G:145:LYS:HG3	1:G:190:PHE:CD2	2.47	0.49
1:L:64:5SQ:C1H	1:L:209:LEU:HG	2.42	0.49
1:L:79:PHE:HE1	1:L:177:TYR:CD1	2.30	0.49
1:N:65:ASN:CG	1:N:67:VAL:HG12	2.38	0.49
1:A:144:GLU:CB	1:A:157:ILE:HG12	2.43	0.49
1:J:93:MET:HB3	1:J:171:CYS:SG	2.52	0.49
1:J:146:LEU:HA	1:J:154:VAL:O	2.12	0.49
1:A:212:HIS:HB3	1:O:220:LEU:HD13	1.92	0.49
1:B:210:TYR:CE2	1:P:223:GLN:CG	2.96	0.49
1:E:8:MET:HE1	1:E:112:ASP:HA	1.94	0.49
1:E:145:LYS:O	1:E:155:GLY:HA2	2.13	0.49
1:I:39:THR:CG2	1:I:208:LYS:HD3	2.42	0.49
1:O:205:ASN:HB2	1:O:206:LYS:NZ	2.27	0.49
1:L:42:LEU:HD13	1:L:54:TYR:OH	2.12	0.49
1:O:39:THR:HG21	1:O:208:LYS:HE3	1.95	0.49
1:L:91:ARG:HB2	1:L:175:THR:HG23	1.93	0.49
1:D:16:GLY:C	3:D:320:HOH:O	2.55	0.49
1:G:130:PRO:HA	1:G:135:LYS:HB3	1.93	0.49
1:A:89:TRP:CE2	1:A:105:SER:HB3	2.48	0.49
1:K:119[B]:ARG:NH1	1:K:121:ASN:OD1	2.46	0.49
1:N:121:ASN:HB3	2:N:301:GOL:O3	2.12	0.49
1:O:40:LEU:HD23	1:O:42:LEU:HD21	1.94	0.49
1:A:66:ARG:CZ	1:A:66:ARG:HA	2.43	0.49
1:B:57:LEU:HD23	1:B:120:PHE:CZ	2.48	0.49
1:J:182:VAL:CG1	1:N:182:VAL:O	2.60	0.49
1:D:107[A]:ILE:HD13	1:D:116:GLN:CG	2.41	0.48
1:D:208:LYS:CE	3:D:337:HOH:O	2.61	0.48
1:L:5:LYS:HD3	1:L:8:MET:SD	2.53	0.48
1:O:36:GLY:O	1:O:212:HIS:HA	2.13	0.48
1:O:67:VAL:HG13	1:O:80:LYS:HG2	1.96	0.48
1:B:145[A]:LYS:CD	1:B:188:TYR:OH	2.59	0.48
1:J:39:THR:HG21	1:J:208:LYS:HD3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:119[B]:ARG:NE	1:K:121:ASN:HD21	2.02	0.48
1:O:72:PRO:HG2	1:O:75:ILE:HD12	1.94	0.48
1:D:147:HIS:CD2	3:D:310:HOH:O	2.54	0.48
1:E:93:MET:HE3	1:E:95:TYR:CZ	2.48	0.48
1:N:159:MET:HE2	1:N:173:PHE:CE2	2.49	0.48
1:C:195:ILE:HG23	1:C:195:ILE:O	2.13	0.48
1:O:73:GLU:HG3	1:O:74:ASP:N	2.28	0.48
1:D:216:ARG:NE	3:D:308:HOH:O	2.46	0.48
1:F:2:ASN:O	1:F:3:LEU:HB2	2.13	0.48
1:G:110[B]:GLU:CG	3:G:401:HOH:O	2.62	0.48
1:H:128:ASN:HB2	3:H:380:HOH:O	2.12	0.48
1:N:39:THR:HG22	1:N:208:LYS:HD2	1.94	0.48
1:O:13:HIS:CD2	3:O:321:HOH:O	2.66	0.48
1:O:26:GLU:OE2	1:O:45:LYS:HG3	2.13	0.48
1:D:72:PRO:HG2	1:D:75:ILE:HD12	1.94	0.48
1:K:101:CYS:HA	1:K:121:ASN:O	2.13	0.48
1:M:105:SER:HB2	1:M:118:VAL:HG22	1.95	0.48
1:O:220:LEU:HG	3:O:331:HOH:O	2.14	0.48
1:A:109:LEU:HD11	1:A:111:GLY:O	2.14	0.48
1:H:11:LYS:NZ	3:H:310:HOH:O	2.44	0.48
1:J:65:ASN:CG	1:J:67:VAL:HG12	2.38	0.48
1:J:158:ASN:HB3	3:J:352:HOH:O	2.13	0.48
1:P:24:VAL:HB	1:P:46:GLU:HB2	1.96	0.48
1:P:94[A]:THR:HG23	1:P:100[A]:ILE:HD12	1.95	0.48
1:D:208:LYS:HE2	3:D:337:HOH:O	2.13	0.48
3:D:304:HOH:O	1:F:220:LEU:CD2	2.59	0.48
1:L:42:LEU:CD2	1:L:61:LEU:HD22	2.43	0.48
1:O:207:VAL:HG23	3:O:315:HOH:O	2.13	0.48
1:D:15:GLU:O	1:D:119:ARG:NH2	2.46	0.48
1:E:27:GLY:HA2	1:E:41:ASN:O	2.14	0.48
1:F:40:LEU:HB3	3:F:315:HOH:O	2.14	0.48
1:N:27:GLY:HA2	1:N:41:ASN:O	2.13	0.48
1:K:83:PHE:HB3	1:K:84:PRO:HA	1.96	0.48
1:O:100:ILE:HG23	1:O:123:MET:HB2	1.96	0.48
1:B:180:LYS:N	3:B:413:HOH:O	2.47	0.47
1:C:12:VAL:HG11	1:C:40:LEU:HD21	1.96	0.47
1:B:42:LEU:HD21	1:B:61:LEU:HD22	1.96	0.47
1:B:48:ALA:CA	3:B:492:HOH:O	2.53	0.47
1:F:160:ALA:HB1	1:F:168:HIS:HB3	1.96	0.47
1:G:147:HIS:HA	3:G:391:HOH:O	2.13	0.47
1:H:115:PHE:CE2	1:H:117:ASN:HB2	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:133:GLN:O	1:L:134:LYS:HB2	2.14	0.47
1:A:197:ILE:HG23	1:A:207:VAL:HG23	1.96	0.47
1:B:125:PHE:CD1	1:B:131:VAL:HG21	2.49	0.47
1:C:220:LEU:HD21	1:E:214:VAL:HG23	1.95	0.47
1:N:48:ALA:CA	3:N:478:HOH:O	2.60	0.47
1:O:16:GLY:C	1:O:23:PHE:CE1	2.93	0.47
1:C:42:LEU:HD13	1:C:61:LEU:HD13	1.97	0.47
1:O:83:PHE:O	1:O:181:LYS:NZ	2.47	0.47
1:B:104:ARG:NH1	3:B:414:HOH:O	2.47	0.47
1:B:145[A]:LYS:NZ	3:B:412:HOH:O	2.46	0.47
1:F:156:ASN:HA	1:F:173:PHE:O	2.14	0.47
1:I:119:ARG:HH22	2:N:301:GOL:C1	2.27	0.47
1:N:85:GLU:OE1	1:N:181[A]:LYS:HD3	2.14	0.47
1:O:26:GLU:CG	1:O:45:LYS:HG3	2.44	0.47
1:B:41:ASN:OD1	1:B:208:LYS:HG3	2.15	0.47
1:F:107:ILE:HD12	1:F:116:GLN:HG2	1.96	0.47
1:H:107:ILE:CD1	1:H:116:GLN:HG2	2.45	0.47
1:L:215:ALA:O	1:L:216:ARG:HB3	2.15	0.47
1:O:135:LYS:HD3	3:O:346:HOH:O	2.13	0.47
1:E:89:TRP:CE2	1:E:105:SER:HB3	2.50	0.47
1:J:23:PHE:CD1	1:J:23:PHE:C	2.93	0.47
1:J:146:LEU:HD13	1:J:155:GLY:CA	2.45	0.47
1:K:194:ARG:NH2	3:K:313:HOH:O	2.48	0.47
1:L:25:ILE:HG22	1:L:26:GLU:N	2.29	0.47
1:M:76:PRO:HD2	1:M:186:PRO:HB3	1.96	0.47
1:M:148:VAL:CG1	3:M:348:HOH:O	2.56	0.47
1:C:93:MET:HB2	1:C:101:CYS:HB2	1.96	0.47
1:I:90:GLU:HG2	1:N:123:MET:SD	2.55	0.47
1:A:195:ILE:HD13	3:A:333:HOH:O	2.15	0.47
1:G:4:ILE:CG2	1:G:33:PRO:HG2	2.45	0.47
1:H:66:ARG:HG2	1:H:66:ARG:HH21	1.79	0.47
1:L:17:ASN:ND2	1:L:22:ALA:HB2	2.30	0.47
1:L:52:PHE:C	1:L:52:PHE:CD1	2.92	0.47
1:F:140:GLU:OE2	1:F:168:HIS:NE2	2.35	0.47
1:K:146:LEU:CD1	1:K:191:VAL:HG23	2.45	0.47
1:L:59:THR:HG22	1:L:195:ILE:CD1	2.44	0.47
1:L:83:PHE:HB3	1:L:84:PRO:HA	1.96	0.47
1:C:131:VAL:HG12	1:C:132:MET:CE	2.44	0.46
1:D:104:ARG:NE	3:D:312:HOH:O	2.48	0.46
1:D:158:ASN:HB3	1:F:145:LYS:HD3	1.97	0.46
1:I:93:MET:HE2	1:I:101:CYS:SG	2.56	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:137:LEU:HD21	1:J:164:GLU:HG2	1.97	0.46
1:P:83:PHE:CD1	1:P:86:GLY:HA2	2.50	0.46
1:B:194:ARG:NH2	1:P:220:LEU:O	2.41	0.46
1:E:203:ASP:OD2	1:E:205:ASN:ND2	2.49	0.46
1:F:161:LEU:O	1:F:168:HIS:HA	2.15	0.46
1:I:66:ARG:HH12	1:I:211:GLU:CD	2.23	0.46
1:N:178:LYS:HD2	3:N:532:HOH:O	2.15	0.46
1:N:198:LEU:HD11	1:N:210:TYR:HB2	1.97	0.46
1:B:204:TYR:N	1:B:204:TYR:CD1	2.84	0.46
1:D:79:PHE:O	1:D:80:LYS:C	2.58	0.46
1:L:55:ASP:OD2	1:L:136:THR:OG1	2.33	0.46
1:A:66:ARG:HD2	3:A:323:HOH:O	2.15	0.46
1:D:134:LYS:CE	3:D:321:HOH:O	2.63	0.46
1:K:91:ARG:HA	1:K:174:LYS:O	2.15	0.46
1:M:130:PRO:HA	1:M:135:LYS:HB2	1.97	0.46
1:A:128:ASN:HA	1:A:133:GLN:OE1	2.15	0.46
1:B:141:PRO:O	1:P:190:PHE:HZ	1.99	0.46
1:B:210:TYR:CD2	1:P:223:GLN:CG	2.97	0.46
1:D:72:PRO:CG	1:D:75:ILE:HD12	2.45	0.46
1:E:144:GLU:CB	1:E:157:ILE:HG12	2.45	0.46
1:F:29:GLY:HA3	1:F:40:LEU:HD12	1.97	0.46
1:L:71:TYR:HA	1:L:72:PRO:HD2	1.73	0.46
1:D:66:ARG:O	1:D:67:VAL:C	2.58	0.46
1:K:9[A]:ARG:HD2	1:K:9[A]:ARG:HA	1.81	0.46
1:L:32:LYS:HD2	1:L:37:THR:OG1	2.15	0.46
1:M:221:PRO:O	1:M:222:SER:CB	2.63	0.46
1:I:73:GLU:HG2	1:I:74:ASP:N	2.30	0.46
1:L:4:ILE:HD11	1:L:33:PRO:HG2	1.98	0.46
1:M:138:LYS:HD2	1:M:139:TRP:O	2.16	0.46
1:O:163[B]:LEU:HD21	1:O:169:TYR:HB2	1.97	0.46
1:G:99:GLY:C	1:G:100:ILE:HG12	2.41	0.46
1:L:66:ARG:HB2	1:L:79:PHE:CE1	2.51	0.46
1:L:70:LYS:NZ	1:L:212:HIS:CE1	2.84	0.46
1:L:148:VAL:HA	1:L:152:LEU:O	2.16	0.46
1:P:94[A]:THR:HG23	1:P:100[A]:ILE:CD1	2.46	0.46
1:D:18:VAL:HA	1:D:122:GLY:O	2.16	0.46
1:E:85:GLU:OE2	1:E:181:LYS:HD3	2.16	0.46
1:I:73:GLU:N	1:I:73:GLU:OE1	2.49	0.46
1:L:201:ASP:O	1:L:202:SER:C	2.59	0.46
1:B:156:ASN:C	1:B:157:ILE:HG13	2.41	0.46
1:D:53:SER:HB2	3:D:352:HOH:O	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:94:THR:HA	1:F:100:ILE:HG22	1.98	0.46
1:M:33:PRO:HB3	1:M:80:LYS:CE	2.44	0.46
1:N:9:ARG:HG3	1:N:112:ASP:OD2	2.16	0.46
1:A:162:LEU:CD1	3:A:364:HOH:O	2.64	0.45
1:B:101:CYS:HA	1:B:121:ASN:O	2.15	0.45
1:A:193:HIS:N	3:A:305:HOH:O	2.50	0.45
1:B:139:TRP:CZ3	1:B:161:LEU:HG	2.52	0.45
1:F:115:PHE:CD2	3:F:423:HOH:O	2.68	0.45
1:G:70:LYS:CD	1:G:214:VAL:HG22	2.46	0.45
1:J:206:LYS:CG	3:J:349:HOH:O	2.43	0.45
1:K:135:LYS:CD	3:K:423:HOH:O	2.59	0.45
1:B:28:GLU:C	1:B:40:LEU:HD12	2.40	0.45
1:B:181:LYS:N	3:B:413:HOH:O	2.50	0.45
1:F:107:ILE:CD1	1:F:116:GLN:HG2	2.46	0.45
1:G:91:ARG:C	1:K:123:MET:HE1	2.42	0.45
1:P:66:ARG:HA	1:P:66:ARG:NE	2.32	0.45
1:B:55:ASP:OD2	1:B:136:THR:OG1	2.30	0.45
1:B:96:GLU:OE2	1:B:169:TYR:HA	2.15	0.45
1:B:144:GLU:O	1:B:190:PHE:HA	2.16	0.45
1:F:123:MET:HG2	1:O:90:GLU:CD	2.42	0.45
1:F:139:TRP:O	1:F:140:GLU:C	2.59	0.45
1:O:101:CYS:SG	1:O:125:PHE:HZ	2.39	0.45
1:A:10:VAL:HG12	1:A:12:VAL:HG23	1.98	0.45
1:E:144:GLU:O	1:E:190:PHE:HA	2.16	0.45
1:N:139:TRP:CZ3	1:N:161:LEU:HG	2.52	0.45
1:O:144:GLU:HG2	1:O:146:LEU:HG	1.99	0.45
1:A:100:ILE:CD1	1:D:92:THR:HG21	2.46	0.45
1:I:39:THR:HG23	1:I:208:LYS:HD3	1.97	0.45
1:M:89:TRP:CE2	1:M:105:SER:HB3	2.51	0.45
1:O:207:VAL:HG22	3:O:313:HOH:O	2.14	0.45
1:A:81:GLN:HB3	1:A:183:VAL:HG11	1.98	0.45
1:C:102:THR:C	1:C:103:ILE:HG13	2.40	0.45
1:I:98:LYS:HD2	3:I:391:HOH:O	2.17	0.45
1:K:222:SER:HB3	3:K:429:HOH:O	2.16	0.45
1:D:64:5SQ:N1H	1:D:211:GLU:HB2	2.31	0.45
1:I:119:ARG:HH22	2:N:301:GOL:C3	2.29	0.45
1:L:121:ASN:ND2	3:L:307:HOH:O	2.49	0.45
1:M:90:GLU:HA	1:M:103:ILE:O	2.17	0.45
1:A:147:HIS:CD2	1:A:147:HIS:C	2.95	0.45
1:C:163:LEU:HD12	1:C:164:GLU:O	2.17	0.45
1:E:83:PHE:HA	1:E:84:PRO:C	2.42	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:143:THR:O	2:E:301:GOL:O1	2.30	0.45
1:E:165:GLY:HA3	3:E:405:HOH:O	2.17	0.45
1:K:107:ILE:HD12	1:K:116:GLN:HG2	1.99	0.45
1:M:159:MET:HG3	1:M:173:PHE:CD1	2.52	0.45
1:N:39:THR:CG2	1:N:208:LYS:HD2	2.46	0.45
1:N:77:ASP:OD2	1:N:80:LYS:HG3	2.17	0.45
1:O:14:MET:O	1:O:24:VAL:HA	2.16	0.45
1:A:21:HIS:HE1	1:A:47:GLY:O	1.98	0.45
1:D:24:VAL:HB	1:D:46:GLU:HB2	1.97	0.45
1:G:91:ARG:HA	1:G:174:LYS:O	2.17	0.45
1:L:4:ILE:HG23	1:L:34:TYR:CE1	2.52	0.45
1:L:125:PHE:CE1	1:L:131:VAL:HG21	2.52	0.45
1:M:104:ARG:HH22	1:M:119:ARG:HD3	1.82	0.45
1:O:93:MET:HE3	1:O:173:PHE:CE1	2.52	0.45
1:O:166:GLY:O	1:O:167:GLY:C	2.59	0.45
1:B:135:LYS:HA	1:B:164:GLU:OE2	2.16	0.44
1:C:139:TRP:CZ3	1:C:161:LEU:HG	2.52	0.44
1:G:145:LYS:HZ1	1:I:142:SER:HA	1.81	0.44
1:K:39[A]:THR:HG23	1:K:208[A]:LYS:HD2	1.97	0.44
1:K:168:HIS:O	1:N:149:ARG:NH2	2.50	0.44
1:B:72:PRO:HG2	1:B:75:ILE:HG13	1.99	0.44
1:D:9:ARG:O	1:D:113:CYS:HA	2.18	0.44
1:D:60:ALA:CB	3:D:327:HOH:O	2.61	0.44
1:D:80:LYS:HB2	3:D:389:HOH:O	2.17	0.44
1:E:104:ARG:HG3	1:P:123:MET:CE	2.47	0.44
1:F:57:LEU:O	1:F:60:ALA:HB3	2.18	0.44
1:K:5:LYS:NZ	3:K:318:HOH:O	2.50	0.44
1:A:159:MET:HG3	1:A:173:PHE:CD1	2.52	0.44
1:B:145[B]:LYS:HD2	1:B:188:TYR:OH	2.17	0.44
1:C:135:LYS:HE2	1:C:164:GLU:HB3	1.98	0.44
1:D:109:LEU:HB3	3:D:323:HOH:O	2.17	0.44
1:E:5:LYS:HE3	1:E:6:GLU:H	1.81	0.44
1:I:198:LEU:HD11	1:I:210:TYR:HB2	2.00	0.44
1:M:42:LEU:O	1:M:206:LYS:HA	2.17	0.44
1:O:39:THR:HA	1:O:209:LEU:O	2.16	0.44
1:O:55:ASP:O	1:O:57:LEU:N	2.50	0.44
1:O:219:PRO:O	1:O:220:LEU:C	2.60	0.44
1:B:13:HIS:ND1	1:B:26:GLU:OE2	2.42	0.44
1:C:27:GLY:HA2	1:C:41:ASN:O	2.17	0.44
1:N:44:VAL:CG1	3:N:478:HOH:O	2.17	0.44
1:O:125:PHE:HB3	3:O:335:HOH:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:P:175:THR:HG21	1:P:177:TYR:CZ	2.53	0.44
1:D:66:ARG:C	1:D:68:PHE:N	2.75	0.44
1:G:194:ARG:NE	1:I:220:LEU:O	2.46	0.44
1:I:145:LYS:HG3	1:I:145:LYS:O	2.17	0.44
1:L:5:LYS:HZ3	1:L:112:ASP:HB3	1.83	0.44
1:L:143:THR:OG1	1:L:192:ASP:OD1	2.36	0.44
1:M:110:GLU:HG2	3:M:324:HOH:O	2.17	0.44
1:O:163[A]:LEU:HD21	1:O:169:TYR:HB2	1.99	0.44
1:E:67:VAL:HG21	1:E:114:PHE:CZ	2.53	0.44
1:A:131:VAL:HG23	1:A:169:TYR:CE2	2.53	0.44
1:A:147:HIS:CE1	1:O:170:LEU:HD11	2.53	0.44
1:F:95:TYR:CD2	1:F:171:CYS:HB2	2.52	0.44
1:L:89:TRP:NE1	1:L:107:ILE:HD11	2.33	0.44
1:L:157:ILE:HB	1:L:173:PHE:HB2	2.00	0.44
1:A:54:TYR:CD2	1:A:204:TYR:HB3	2.53	0.44
1:B:198:LEU:HD11	1:B:210:TYR:HB2	1.99	0.44
1:E:144:GLU:HG3	1:E:157:ILE:CG1	2.47	0.44
1:I:27:GLY:HA2	1:I:41:ASN:O	2.18	0.44
1:K:157:ILE:HD12	1:K:173:PHE:CE2	2.52	0.44
1:L:4:ILE:HG23	1:L:34:TYR:CZ	2.53	0.44
1:M:93:MET:HE2	1:M:95:TYR:OH	2.18	0.44
1:O:55:ASP:O	1:O:56:ILE:C	2.61	0.44
1:B:52:PHE:CD1	1:B:52:PHE:C	2.95	0.44
1:C:145:LYS:O	1:C:155:GLY:HA2	2.18	0.44
1:G:94:THR:HG23	1:G:100:ILE:HD11	1.99	0.44
1:J:182:VAL:O	1:J:182:VAL:HG13	2.18	0.44
1:D:30:LYS:HB3	1:D:30:LYS:HE3	1.81	0.43
1:L:137:LEU:HD21	1:L:164:GLU:CG	2.47	0.43
1:L:179:ALA:HB1	1:L:181:LYS:O	2.18	0.43
1:N:139:TRP:CE2	1:N:161:LEU:HD21	2.53	0.43
1:O:161:LEU:O	1:O:168:HIS:HA	2.18	0.43
1:B:36:GLY:HA2	1:B:68:PHE:C	2.43	0.43
1:N:11:LYS:HD2	1:N:27:GLY:O	2.18	0.43
1:A:146:LEU:HD22	1:A:153:LEU:HD21	2.00	0.43
1:E:165:GLY:CA	3:E:405:HOH:O	2.66	0.43
1:G:173:PHE:HD2	3:G:334:HOH:O	2.00	0.43
1:H:11:LYS:HE2	3:H:388:HOH:O	2.18	0.43
1:H:66:ARG:HG2	1:H:66:ARG:NH2	2.33	0.43
1:M:201:ASP:OD2	1:M:206:LYS:HD3	2.18	0.43
1:N:163:LEU:O	1:N:164:GLU:C	2.60	0.43
1:C:40:LEU:HD21	1:C:42:LEU:HD21	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:50:LEU:HD22	1:C:52:PHE:CZ	2.54	0.43
1:K:174:LYS:HE2	3:K:321:HOH:O	2.17	0.43
1:L:111:GLY:C	1:L:113:CYS:H	2.26	0.43
1:M:29:GLY:HA3	1:M:39:THR:O	2.17	0.43
1:N:65:ASN:OD1	1:N:67:VAL:HG12	2.19	0.43
1:N:130:PRO:HA	1:N:135:LYS:HB2	1.99	0.43
1:O:56:ILE:HG13	3:O:338:HOH:O	2.13	0.43
1:E:165:GLY:C	3:E:405:HOH:O	2.62	0.43
1:P:93:MET:HG2	1:P:173:PHE:CE1	2.53	0.43
1:A:139:TRP:CE2	1:A:161:LEU:HD21	2.53	0.43
1:C:93:MET:HG2	1:C:173:PHE:CE1	2.54	0.43
1:D:160:ALA:HB2	1:D:170:LEU:HD23	2.00	0.43
1:L:41:ASN:OD1	1:L:208:LYS:HG2	2.19	0.43
1:P:211:GLU:CG	1:P:212:HIS:N	2.81	0.43
1:A:10:VAL:CB	3:A:322:HOH:O	2.56	0.43
1:E:103:ILE:HG12	1:E:120:PHE:CD2	2.54	0.43
1:L:95:TYR:CD2	1:L:169:TYR:CE2	3.07	0.43
1:C:80:LYS:O	1:C:81:GLN:C	2.62	0.43
1:E:139:TRP:CE3	1:E:161:LEU:HG	2.53	0.43
1:F:6:GLU:O	1:F:32:LYS:HG2	2.19	0.43
1:I:146:LEU:HD23	1:I:155:GLY:HA2	2.00	0.43
1:I:146:LEU:HD23	1:I:155:GLY:CA	2.48	0.43
1:N:59:THR:O	1:N:64:5SQ:C2	2.67	0.43
1:A:195:ILE:CD1	3:A:333:HOH:O	2.66	0.43
1:C:56:ILE:HG12	1:C:120:PHE:HZ	1.84	0.43
1:H:198:LEU:CB	1:H:208[A]:LYS:CE	2.97	0.43
1:I:75:ILE:HG12	1:I:217:TYR:CZ	2.53	0.43
1:K:67:VAL:HG11	1:K:114:PHE:CZ	2.53	0.43
1:K:92:THR:HG22	1:K:93:MET:N	2.34	0.43
1:N:75:ILE:HG12	1:N:217:TYR:CZ	2.54	0.43
1:P:146:LEU:HD12	1:P:191:VAL:HG23	2.01	0.43
1:B:210:TYR:CE2	1:P:223:GLN:HG3	2.54	0.43
1:D:70:LYS:HB3	1:D:214:VAL:HG22	2.00	0.43
1:O:52:PHE:CE1	1:O:57:LEU:HD11	2.54	0.43
1:C:170:LEU:HD22	1:E:145:LYS:NZ	2.34	0.42
1:H:170:LEU:HD11	1:J:147:HIS:CE1	2.53	0.42
1:N:90:GLU:CG	1:N:104:ARG:HG2	2.49	0.42
1:C:53:SER:O	1:C:56:ILE:HG22	2.20	0.42
1:D:69:THR:HA	1:D:213:GLY:O	2.19	0.42
1:J:195:ILE:O	1:J:195:ILE:HG23	2.19	0.42
1:M:203:ASP:OD1	1:M:203:ASP:N	2.47	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:145[A]:LYS:HE2	1:B:188:TYR:CE1	2.52	0.42
1:D:101:CYS:HA	1:D:121:ASN:O	2.18	0.42
1:J:39:THR:CG2	1:J:208:LYS:HD3	2.49	0.42
1:K:36:GLY:O	1:K:212:HIS:HA	2.19	0.42
1:L:140:GLU:HG3	1:M:188:TYR:CE2	2.53	0.42
1:A:70:LYS:HB3	1:A:214:VAL:HG13	2.00	0.42
1:L:158:ASN:ND2	3:L:306:HOH:O	2.49	0.42
1:M:97:ASP:C	1:M:98:LYS:HD2	2.44	0.42
1:F:38:GLN:HG3	1:F:64:5SQ:N2H	2.35	0.42
1:G:200:ASN:HA	1:G:206:LYS:O	2.19	0.42
1:M:105:SER:CB	1:M:118:VAL:HG22	2.48	0.42
1:O:78:TYR:CA	3:O:350:HOH:O	2.68	0.42
1:A:87:TYR:CZ	1:A:107:ILE:HG13	2.55	0.42
1:D:93:MET:HE3	1:D:173:PHE:CE1	2.55	0.42
1:O:68:PHE:CG	3:O:349:HOH:O	2.56	0.42
1:A:107:ILE:HG23	1:A:116:GLN:HG2	2.01	0.42
1:B:9:ARG:HH11	1:B:30:LYS:HZ1	1.67	0.42
1:G:115:PHE:CZ	1:G:117:ASN:ND2	2.88	0.42
1:K:11:LYS:O	1:K:115:PHE:HA	2.19	0.42
1:P:146:LEU:CD1	1:P:191:VAL:HG23	2.50	0.42
1:A:181:LYS:HD2	1:A:183:VAL:CG1	2.50	0.42
1:B:89:TRP:CE2	1:B:105:SER:HB3	2.55	0.42
1:B:145[A]:LYS:CD	1:P:158:ASN:O	2.67	0.42
1:E:53:SER:OG	1:E:55:ASP:HB2	2.19	0.42
1:J:145:LYS:O	1:J:155:GLY:HA2	2.19	0.42
1:K:205:ASN:ND2	3:K:310:HOH:O	2.46	0.42
1:K:229:HIS:CD2	1:K:230:HIS:N	2.88	0.42
1:O:120:PHE:CZ	3:O:338:HOH:O	2.57	0.42
1:P:67:VAL:HG11	1:P:114:PHE:CZ	2.55	0.42
1:A:27:GLY:C	1:A:28:GLU:HG2	2.44	0.42
1:D:9:ARG:HB2	1:D:113:CYS:HB2	2.02	0.42
1:G:174:LYS:HE3	3:G:426:HOH:O	2.20	0.42
1:H:9:ARG:CB	1:H:113[A]:CYS:SG	3.08	0.42
1:I:66:ARG:HD2	3:I:373:HOH:O	2.20	0.42
1:M:38:GLN:NE2	1:M:68:PHE:HB2	2.34	0.42
1:M:44:VAL:HG21	3:M:314:HOH:O	2.20	0.42
1:O:16:GLY:O	1:O:23:PHE:CD1	2.72	0.42
1:B:58:THR:HG21	2:B:301:GOL:O1	2.20	0.42
1:H:185:LEU:HA	1:H:186:PRO:HD3	1.96	0.42
1:J:72:PRO:HG3	3:J:301:HOH:O	2.19	0.42
1:L:3:LEU:O	1:L:4:ILE:CB	2.67	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:146:LEU:HB3	1:L:153:LEU:HD11	2.01	0.42
1:M:29:GLY:HA3	1:M:40:LEU:HA	2.02	0.42
1:O:187:ASP:HB3	3:O:348:HOH:O	2.19	0.42
1:A:140:GLU:HG3	1:O:188:TYR:CE2	2.55	0.41
1:O:24:VAL:HG12	1:O:45:LYS:HB2	2.00	0.41
1:P:81:GLN:O	1:P:181:LYS:NZ	2.53	0.41
1:A:162:LEU:HD11	3:A:364:HOH:O	2.19	0.41
1:C:220:LEU:HD21	1:E:214:VAL:CG2	2.50	0.41
1:G:75:ILE:HD13	1:G:75:ILE:HG21	1.87	0.41
1:H:4:ILE:HB	3:H:302:HOH:O	2.20	0.41
1:H:208[A]:LYS:O	1:H:208[A]:LYS:CG	2.67	0.41
1:I:126:PRO:HA	1:I:127:PRO:HD3	1.87	0.41
1:K:107:ILE:CD1	1:K:116:GLN:HG2	2.50	0.41
1:L:141:PRO:HB2	1:M:218:SER:HB2	2.03	0.41
1:O:64:5SQ:OH	1:O:142:SER:OG	2.28	0.41
1:A:128:ASN:ND2	3:A:308:HOH:O	2.51	0.41
1:F:96:GLU:HG3	3:F:394:HOH:O	2.19	0.41
1:G:70:LYS:HD3	1:G:214:VAL:CG2	2.49	0.41
1:A:201:ASP:C	1:A:203:ASP:N	2.78	0.41
1:D:146:LEU:HA	1:D:154:VAL:O	2.20	0.41
1:H:13:HIS:HD1	1:H:26:GLU:CD	2.28	0.41
1:J:109:LEU:HD13	1:J:114:PHE:CE1	2.54	0.41
1:O:82:SER:OG	1:O:86:GLY:O	2.32	0.41
1:B:57:LEU:HD23	1:B:120:PHE:CE2	2.55	0.41
1:D:89:TRP:O	1:D:104:ARG:HA	2.20	0.41
1:G:101:CYS:HA	1:G:121:ASN:O	2.21	0.41
1:G:102:THR:C	1:G:103:ILE:HG13	2.44	0.41
1:G:145:LYS:HG3	1:G:190:PHE:CE2	2.55	0.41
1:G:145:LYS:O	1:G:155:GLY:HA2	2.21	0.41
1:K:145:LYS:CD	1:N:158:ASN:O	2.69	0.41
1:L:159:MET:HG3	1:L:173:PHE:CD1	2.56	0.41
1:M:97:ASP:O	1:M:98:LYS:HD2	2.19	0.41
1:N:66:ARG:C	1:N:68:PHE:N	2.76	0.41
1:O:131:VAL:C	1:O:132:MET:HE2	2.46	0.41
1:A:128:ASN:HB2	3:D:385:HOH:O	2.20	0.41
1:D:42:LEU:CD1	1:D:61:LEU:HD13	2.50	0.41
1:K:97:ASP:O	1:K:98:LYS:HB2	2.21	0.41
1:M:103:ILE:HG12	1:M:120:PHE:CD2	2.55	0.41
1:O:91:ARG:NE	1:O:175:THR:OG1	2.35	0.41
1:A:89:TRP:CZ2	1:A:105:SER:HB3	2.55	0.41
1:B:74:ASP:OD1	1:B:74:ASP:N	2.52	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:145:LYS:NZ	1:I:142:SER:CB	2.80	0.41
1:H:100:ILE:HD11	1:L:100:ILE:CD1	2.51	0.41
1:L:40:LEU:HB2	1:L:64:5SQ:N2H	2.35	0.41
1:O:79:PHE:CD1	1:O:79:PHE:N	2.89	0.41
1:B:44:VAL:CB	3:B:492:HOH:O	2.69	0.41
1:F:172:ASP:CG	3:F:314:HOH:O	2.63	0.41
1:H:66:ARG:CZ	1:H:66:ARG:HA	2.50	0.41
1:H:102:THR:CB	3:H:323:HOH:O	2.69	0.41
1:K:3:LEU:HD21	1:K:109:LEU:CD2	2.50	0.41
1:L:42:LEU:HD22	1:L:61:LEU:HD22	2.03	0.41
1:C:12:VAL:CG1	1:C:27:GLY:HA3	2.51	0.41
1:C:15:GLU:O	1:C:119:ARG:HA	2.21	0.41
1:C:170:LEU:HD22	1:E:145:LYS:HZ1	1.86	0.41
1:D:16:GLY:HA2	3:D:320:HOH:O	2.21	0.41
1:D:66:ARG:HD2	3:D:309:HOH:O	2.21	0.41
1:D:139:TRP:CZ3	1:D:159:MET:HB3	2.56	0.41
1:G:11[B]:LYS:HG3	1:G:113:CYS:SG	2.61	0.41
1:I:40:LEU:CD2	1:I:42:LEU:HD21	2.50	0.41
1:J:173:PHE:HD2	3:J:371:HOH:O	2.03	0.41
1:J:201:ASP:OD1	1:J:201:ASP:C	2.64	0.41
1:L:5:LYS:O	1:L:7:ASP:N	2.54	0.41
1:L:90:GLU:HG3	3:L:317:HOH:O	2.21	0.41
1:L:118:VAL:CG1	1:L:119:ARG:H	2.28	0.41
1:O:78:TYR:CB	1:O:153:LEU:HD22	2.50	0.41
1:O:104:ARG:HH11	1:O:119:ARG:CD	2.34	0.41
1:A:159:MET:HG3	1:A:173:PHE:CE1	2.57	0.41
1:B:190:PHE:CD1	1:B:190:PHE:N	2.88	0.41
1:F:181:LYS:HE3	1:F:181:LYS:HB2	1.91	0.41
1:F:221:PRO:HA	3:F:323:HOH:O	2.20	0.41
1:H:79:PHE:CD1	1:H:79:PHE:N	2.89	0.41
1:K:90:GLU:CD	3:K:301:HOH:O	2.63	0.41
1:L:107:ILE:HD13	1:L:116:GLN:HG2	2.03	0.41
1:L:138:LYS:O	1:L:161:LEU:HA	2.21	0.41
1:M:12:VAL:HG22	1:M:116:GLN:NE2	2.36	0.41
1:M:137:LEU:O	1:M:138:LYS:HB3	2.21	0.41
1:P:85:GLU:CD	1:P:181:LYS:HD3	2.46	0.41
1:B:44:VAL:HB	3:B:492:HOH:O	2.20	0.40
1:D:144:GLU:HA	1:D:157:ILE:HG12	2.03	0.40
1:D:208:LYS:CD	3:D:337:HOH:O	2.66	0.40
1:F:12:VAL:HG21	1:F:40:LEU:HD21	2.03	0.40
1:H:136:THR:HB	1:H:161:LEU:HD22	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:39:THR:HA	1:I:209:LEU:O	2.21	0.40
1:J:137:LEU:HD21	1:J:164:GLU:CG	2.51	0.40
1:K:149:ARG:O	1:K:150:ASP:C	2.64	0.40
1:L:89:TRP:HE1	1:L:107:ILE:HD11	1.85	0.40
1:B:138:LYS:HA	2:B:301:GOL:H31	2.03	0.40
1:B:220:LEU:HA	1:B:221:PRO:HD2	1.89	0.40
1:C:81:GLN:O	1:C:181:LYS:HE2	2.21	0.40
1:G:3:LEU:O	1:G:5:LYS:HD2	2.21	0.40
1:H:53:SER:O	1:H:56:ILE:HG12	2.21	0.40
1:I:16:GLY:HA2	1:I:120:PHE:O	2.21	0.40
1:J:144:GLU:CB	1:J:157:ILE:HG12	2.52	0.40
1:L:12:VAL:C	3:L:328:HOH:O	2.64	0.40
1:M:110:GLU:OE1	1:M:110:GLU:HA	2.21	0.40
1:A:166:GLY:CA	3:A:364:HOH:O	2.69	0.40
1:B:3:LEU:N	3:B:425:HOH:O	2.54	0.40
1:E:102:THR:C	1:E:103:ILE:HG13	2.47	0.40
1:F:224:ALA:O	1:F:225:TRP:CE3	2.74	0.40
1:G:104[B]:ARG:NH2	1:K:20:GLY:H	2.19	0.40
1:J:138:LYS:HE3	1:J:139:TRP:O	2.22	0.40
1:K:145:LYS:HD3	3:K:360:HOH:O	2.21	0.40
1:M:149:ARG:HB3	1:M:154:VAL:HG21	2.02	0.40
1:P:66:ARG:HB3	1:P:79:PHE:CE2	2.56	0.40
1:A:185:LEU:HD23	1:A:185:LEU:HA	1.95	0.40
1:B:98:LYS:HD3	3:C:372:HOH:O	2.20	0.40
1:D:87:TYR:CB	1:D:179:ALA:HA	2.52	0.40
1:F:14:MET:HA	1:F:118:VAL:O	2.21	0.40
1:H:67:VAL:HG21	1:H:83:PHE:CE2	2.55	0.40
1:K:3:LEU:HD21	1:K:109:LEU:HD21	2.04	0.40
1:K:79:PHE:O	1:K:82:SER:OG	2.37	0.40
1:L:223:GLN:O	1:L:224:ALA:C	2.64	0.40
1:A:36:GLY:O	1:A:212:HIS:HA	2.21	0.40
1:B:139:TRP:CE3	1:B:161:LEU:HG	2.56	0.40
1:C:67:VAL:HG23	1:C:68:PHE:CD1	2.57	0.40
1:D:220:LEU:O	1:F:194:ARG:NE	2.53	0.40
1:L:32:LYS:CD	1:L:35:GLU:OE1	2.68	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:11[B]:LYS:NZ	1:J:48:ALA:O[1_565]	1.85	0.35

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	216/232 (93%)	203 (94%)	11 (5%)	2 (1%)	14	5
1	B	222/232 (96%)	216 (97%)	6 (3%)	0	100	100
1	C	220/232 (95%)	212 (96%)	8 (4%)	0	100	100
1	D	219/232 (94%)	213 (97%)	4 (2%)	2 (1%)	14	5
1	E	216/232 (93%)	209 (97%)	6 (3%)	1 (0%)	24	14
1	F	217/232 (94%)	199 (92%)	17 (8%)	1 (0%)	24	14
1	G	226/232 (97%)	221 (98%)	5 (2%)	0	100	100
1	H	218/232 (94%)	212 (97%)	6 (3%)	0	100	100
1	I	216/232 (93%)	212 (98%)	3 (1%)	1 (0%)	24	14
1	J	219/232 (94%)	214 (98%)	5 (2%)	0	100	100
1	K	228/232 (98%)	220 (96%)	7 (3%)	1 (0%)	30	19
1	L	221/232 (95%)	194 (88%)	21 (10%)	6 (3%)	4	0
1	M	217/232 (94%)	197 (91%)	18 (8%)	2 (1%)	14	5
1	N	218/232 (94%)	212 (97%)	6 (3%)	0	100	100
1	O	219/232 (94%)	198 (90%)	17 (8%)	4 (2%)	6	1
1	P	221/232 (95%)	216 (98%)	4 (2%)	1 (0%)	24	14
All	All	3513/3712 (95%)	3348 (95%)	144 (4%)	21 (1%)	21	11

All (21) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	202	SER
1	D	225	TRP
1	F	3	LEU
1	L	4	ILE
1	L	6	GLU
1	L	21	HIS

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Mol	Chain	Res	Type
1	L	134	LYS
1	M	222	SER
1	O	204	TYR
1	I	73	GLU
1	L	78	TYR
1	L	229	HIS
1	M	221	PRO
1	O	167	GLY
1	P	224	ALA
1	A	164	GLU
1	E	203	ASP
1	O	85	GLU
1	K	150	ASP
1	O	84	PRO
1	D	67	VAL

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	195/204 (96%)	181 (93%)	14 (7%)	13	2
1	B	200/204 (98%)	191 (96%)	9 (4%)	24	8
1	C	198/204 (97%)	191 (96%)	7 (4%)	32	13
1	D	197/204 (97%)	186 (94%)	11 (6%)	19	4
1	E	195/204 (96%)	185 (95%)	10 (5%)	21	6
1	F	196/204 (96%)	188 (96%)	8 (4%)	27	10
1	G	204/204 (100%)	192 (94%)	12 (6%)	18	4
1	H	197/204 (97%)	191 (97%)	6 (3%)	36	17
1	I	195/204 (96%)	194 (100%)	1 (0%)	81	77
1	J	198/204 (97%)	188 (95%)	10 (5%)	21	6
1	K	206/204 (101%)	197 (96%)	9 (4%)	25	9
1	L	199/204 (98%)	174 (87%)	25 (13%)	4	0

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	M	196/204 (96%)	185 (94%)	11 (6%)	19	4
1	N	197/204 (97%)	190 (96%)	7 (4%)	31	13
1	O	198/204 (97%)	175 (88%)	23 (12%)	5	0
1	P	200/204 (98%)	189 (94%)	11 (6%)	19	5
All	All	3171/3264 (97%)	2997 (94%)	174 (6%)	20	5

All (174) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	LEU
1	A	11	LYS
1	A	28	GLU
1	A	37	THR
1	A	38	GLN
1	A	39	THR
1	A	67	VAL
1	A	90	GLU
1	A	145	LYS
1	A	146	LEU
1	A	184	GLN
1	A	195	ILE
1	A	206	LYS
1	A	208	LYS
1	B	5	LYS
1	B	53	SER
1	B	75	ILE
1	B	100[A]	ILE
1	B	100[B]	ILE
1	B	104	ARG
1	B	119	ARG
1	B	138	LYS
1	B	181	LYS
1	C	26	GLU
1	C	76	PRO
1	C	102	THR
1	C	107	ILE
1	C	145	LYS
1	C	183	VAL
1	C	208	LYS
1	D	6	GLU
1	D	25	ILE

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Mol	Chain	Res	Type
1	D	30	LYS
1	D	73	GLU
1	D	89	TRP
1	D	98	LYS
1	D	100	ILE
1	D	110	GLU
1	D	145	LYS
1	D	202	SER
1	D	206	LYS
1	E	39	THR
1	E	73	GLU
1	E	75	ILE
1	E	100	ILE
1	E	128	ASN
1	E	138	LYS
1	E	145	LYS
1	E	202	SER
1	E	206	LYS
1	E	211	GLU
1	F	15	GLU
1	F	28	GLU
1	F	100	ILE
1	F	159	MET
1	F	199	SER
1	F	206	LYS
1	F	211	GLU
1	F	225	TRP
1	G	5	LYS
1	G	26	GLU
1	G	41	ASN
1	G	67	VAL
1	G	70	LYS
1	G	76	PRO
1	G	103	ILE
1	G	107	ILE
1	G	145	LYS
1	G	157	ILE
1	G	181	LYS
1	G	208	LYS
1	H	67	VAL
1	H	113[A]	CYS
1	H	113[B]	CYS

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Mol	Chain	Res	Type
1	H	119	ARG
1	H	135	LYS
1	H	173	PHE
1	I	76	PRO
1	J	2	ASN
1	J	5	LYS
1	J	28	GLU
1	J	70	LYS
1	J	98	LYS
1	J	123	MET
1	J	145	LYS
1	J	146	LEU
1	J	157	ILE
1	J	211	GLU
1	K	39[A]	THR
1	K	39[B]	THR
1	K	67	VAL
1	K	164	GLU
1	K	183	VAL
1	K	206	LYS
1	K	208[A]	LYS
1	K	208[B]	LYS
1	K	228	HIS
1	L	5	LYS
1	L	24	VAL
1	L	28	GLU
1	L	38	GLN
1	L	42	LEU
1	L	43	THR
1	L	46	GLU
1	L	56	ILE
1	L	67	VAL
1	L	71	TYR
1	L	74	ASP
1	L	76	PRO
1	L	107	ILE
1	L	136	THR
1	L	145	LYS
1	L	173	PHE
1	L	178	LYS
1	L	195	ILE
1	L	196	GLU

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Mol	Chain	Res	Type
1	L	201	ASP
1	L	206	LYS
1	L	207	VAL
1	L	211	GLU
1	L	222	SER
1	L	223	GLN
1	M	11	LYS
1	M	30	LYS
1	M	33	PRO
1	M	39	THR
1	M	61	LEU
1	M	73	GLU
1	M	75	ILE
1	M	102	THR
1	M	108	SER
1	M	145	LYS
1	M	211	GLU
1	N	45	LYS
1	N	104	ARG
1	N	109	LEU
1	N	123	MET
1	N	174	LYS
1	N	208	LYS
1	N	211	GLU
1	O	14	MET
1	O	25	ILE
1	O	28	GLU
1	O	30	LYS
1	O	41	ASN
1	O	43	THR
1	O	46	GLU
1	O	53	SER
1	O	59	THR
1	O	82	SER
1	O	92[A]	THR
1	O	92[B]	THR
1	O	98	LYS
1	O	106	ASP
1	O	117	ASN
1	O	123	MET
1	O	145	LYS
1	O	157	ILE

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Mol	Chain	Res	Type
1	O	164	GLU
1	O	206	LYS
1	O	208	LYS
1	O	211	GLU
1	O	222	SER
1	P	6	GLU
1	P	28	GLU
1	P	39	THR
1	P	45	LYS
1	P	67	VAL
1	P	70	LYS
1	P	94[A]	THR
1	P	94[B]	THR
1	P	110	GLU
1	P	145	LYS
1	P	206	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (48) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	21	HIS
1	A	158	ASN
1	A	200	ASN
1	B	38	GLN
1	B	121	ASN
1	B	124	ASN
1	B	158	ASN
1	B	200	ASN
1	B	223	GLN
1	C	158	ASN
1	D	117	ASN
1	D	133	GLN
1	D	147	HIS
1	E	205	ASN
1	F	2	ASN
1	F	124	ASN
1	F	133	GLN
1	F	158	ASN
1	F	223	GLN
1	G	117	ASN
1	G	156	ASN
1	G	158	ASN

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Mol	Chain	Res	Type
1	H	121	ASN
1	H	128	ASN
1	H	200	ASN
1	I	158	ASN
1	J	158	ASN
1	K	158	ASN
1	K	212	HIS
1	L	19	ASN
1	L	38	GLN
1	L	121	ASN
1	L	124	ASN
1	M	38	GLN
1	M	65	ASN
1	M	81	GLN
1	M	116	GLN
1	M	147	HIS
1	M	156	ASN
1	M	205	ASN
1	M	223	GLN
1	N	223	GLN
1	O	2	ASN
1	O	38	GLN
1	O	158	ASN
1	P	124	ASN
1	P	158	ASN
1	P	193	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

16 non-standard protein/DNA/RNA residues are modelled in this entry.

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
1	5SQ	O	64	1	26,27,28	1.25	1 (3%)	34,37,39	1.89	8 (23%)
1	5SQ	G	64	1	26,27,28	1.35	5 (19%)	34,37,39	1.66	6 (17%)
1	5SQ	I	64	1	26,27,28	1.83	6 (23%)	34,37,39	1.99	10 (29%)
1	5SQ	J	64	1	26,27,28	1.25	3 (11%)	34,37,39	2.37	12 (35%)
1	5SQ	B	64	1	26,27,28	1.35	3 (11%)	34,37,39	3.33	18 (52%)
1	5SQ	A	64	1	26,27,28	0.72	0	34,37,39	1.62	6 (17%)
1	5SQ	L	64	1	26,27,28	0.93	1 (3%)	34,37,39	1.86	9 (26%)
1	5SQ	C	64	1	26,27,28	1.29	4 (15%)	34,37,39	2.85	9 (26%)
1	5SQ	N	64	1	26,27,28	1.98	8 (30%)	34,37,39	1.75	8 (23%)
1	5SQ	H	64	1	26,27,28	1.79	6 (23%)	34,37,39	2.43	14 (41%)
1	5SQ	K	64	1	26,27,28	1.58	4 (15%)	34,37,39	1.78	5 (14%)
1	5SQ	M	64	1	26,27,28	1.57	3 (11%)	34,37,39	1.90	9 (26%)
1	5SQ	F	64	1	26,27,28	0.93	1 (3%)	34,37,39	1.73	7 (20%)
1	5SQ	P	64	1	26,27,28	1.19	2 (7%)	34,37,39	1.87	10 (29%)
1	5SQ	E	64	1	26,27,28	1.56	3 (11%)	34,37,39	2.30	7 (20%)
1	5SQ	D	64	1	26,27,28	0.97	1 (3%)	34,37,39	1.92	10 (29%)

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
1	5SQ	O	64	1	-	4/12/31/32	0/3/3/3
1	5SQ	G	64	1	-	5/12/31/32	0/3/3/3
1	5SQ	I	64	1	-	3/12/31/32	0/3/3/3
1	5SQ	J	64	1	-	4/12/31/32	0/3/3/3
1	5SQ	B	64	1	-	5/12/31/32	0/3/3/3
1	5SQ	A	64	1	-	4/12/31/32	0/3/3/3
1	5SQ	L	64	1	-	7/12/31/32	0/3/3/3
1	5SQ	C	64	1	-	5/12/31/32	0/3/3/3
1	5SQ	N	64	1	-	3/12/31/32	0/3/3/3
1	5SQ	H	64	1	-	6/12/31/32	0/3/3/3
1	5SQ	K	64	1	-	6/12/31/32	0/3/3/3
1	5SQ	M	64	1	-	6/12/31/32	0/3/3/3
1	5SQ	F	64	1	-	5/12/31/32	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	5SQ	P	64	1	-	3/12/31/32	0/3/3/3
1	5SQ	E	64	1	-	3/12/31/32	0/3/3/3
1	5SQ	D	64	1	-	7/12/31/32	0/3/3/3

All (51) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	K	64	5SQ	CB2-CA2	6.09	1.41	1.35
1	I	64	5SQ	O2-C2	-5.44	1.12	1.23
1	M	64	5SQ	CB2-CA2	5.12	1.40	1.35
1	N	64	5SQ	CB2-CA2	4.65	1.39	1.35
1	E	64	5SQ	C1-N2	-4.57	1.25	1.32
1	N	64	5SQ	CA2-C2	-4.50	1.43	1.48
1	O	64	5SQ	CB2-CA2	4.27	1.39	1.35
1	H	64	5SQ	C1-N2	-4.14	1.26	1.32
1	M	64	5SQ	C1-N3	4.14	1.44	1.37
1	B	64	5SQ	O2-C2	-4.11	1.14	1.23
1	E	64	5SQ	O2-C2	-4.00	1.14	1.23
1	H	64	5SQ	CA3-N3	-3.99	1.39	1.47
1	C	64	5SQ	CB2-CA2	3.94	1.39	1.35
1	P	64	5SQ	CB2-CA2	3.78	1.38	1.35
1	N	64	5SQ	C1-N2	-3.37	1.27	1.32
1	J	64	5SQ	C1-N2	-3.37	1.27	1.32
1	I	64	5SQ	C1-N2	-3.36	1.27	1.32
1	N	64	5SQ	CE2-CD2	3.17	1.43	1.38
1	H	64	5SQ	CB2-CA2	-3.11	1.32	1.35
1	H	64	5SQ	O2-C2	-2.92	1.17	1.23
1	E	64	5SQ	CA2-C2	2.88	1.51	1.48
1	H	64	5SQ	C1H-N1H	-2.82	1.26	1.33
1	F	64	5SQ	CA2-C2	2.74	1.51	1.48
1	M	64	5SQ	CA2-C2	2.74	1.51	1.48
1	N	64	5SQ	O2-C2	-2.71	1.17	1.23
1	I	64	5SQ	CB2-CA2	-2.68	1.32	1.35
1	G	64	5SQ	C1-N2	-2.60	1.28	1.32
1	I	64	5SQ	CA3-N3	-2.55	1.42	1.47
1	C	64	5SQ	CA2-C2	2.49	1.51	1.48
1	G	64	5SQ	CE1-CD1	-2.43	1.34	1.38
1	H	64	5SQ	C1H-N2H	-2.41	1.25	1.34
1	G	64	5SQ	CB2-CA2	2.40	1.37	1.35
1	J	64	5SQ	CA2-N2	2.39	1.43	1.38
1	I	64	5SQ	OH-CZ1	-2.37	1.31	1.37
1	P	64	5SQ	C1-N2	-2.35	1.28	1.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	I	64	5SQ	C1H-N1H	-2.28	1.28	1.33
1	B	64	5SQ	CB2-CA2	2.23	1.37	1.35
1	G	64	5SQ	CA3-N3	-2.20	1.43	1.47
1	N	64	5SQ	CE1-CD1	2.17	1.42	1.38
1	K	64	5SQ	CD2-CG2	2.16	1.43	1.39
1	L	64	5SQ	C1-N3	2.16	1.40	1.37
1	C	64	5SQ	CE2-CZ1	-2.14	1.35	1.39
1	B	64	5SQ	C1-N2	-2.12	1.29	1.32
1	K	64	5SQ	C1-N2	-2.10	1.29	1.32
1	C	64	5SQ	CA3-N3	2.09	1.51	1.47
1	G	64	5SQ	CA2-C2	-2.08	1.46	1.48
1	N	64	5SQ	CE2-CZ1	2.06	1.42	1.39
1	N	64	5SQ	C1H-N2H	-2.03	1.26	1.34
1	K	64	5SQ	CG2-CB2	-2.02	1.43	1.46
1	J	64	5SQ	C1H-N1H	-2.02	1.28	1.33
1	D	64	5SQ	CA2-N2	2.01	1.42	1.38

All (148) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	64	5SQ	O2-C2-CA2	-8.81	125.40	131.02
1	C	64	5SQ	N3-C1-N2	8.39	118.10	111.48
1	B	64	5SQ	C2-CA2-N2	-8.09	103.16	108.95
1	C	64	5SQ	C2-N3-C1	-8.08	104.33	108.07
1	C	64	5SQ	CA1-C1-N3	-7.19	115.47	124.84
1	E	64	5SQ	CG2-CB2-CA2	6.81	137.96	129.87
1	B	64	5SQ	CA2-N2-C1	6.24	110.67	105.80
1	E	64	5SQ	N3-C1-N2	5.72	115.99	111.48
1	E	64	5SQ	CA1-C1-N3	-5.60	117.55	124.84
1	L	64	5SQ	CA2-N2-C1	5.55	110.14	105.80
1	D	64	5SQ	CA1-C1-N3	-5.51	117.66	124.84
1	J	64	5SQ	O2-C2-CA2	5.51	134.54	131.02
1	H	64	5SQ	C2-N3-C1	5.17	110.46	108.07
1	F	64	5SQ	CA1-C1-N3	-5.15	118.14	124.84
1	B	64	5SQ	CG2-CB2-CA2	5.14	135.98	129.87
1	H	64	5SQ	O2-C2-CA2	-5.06	127.79	131.02
1	H	64	5SQ	CA1-C1-N3	-5.02	118.30	124.84
1	M	64	5SQ	CA2-N2-C1	4.92	109.64	105.80
1	J	64	5SQ	N3-C1-N2	4.86	115.31	111.48
1	K	64	5SQ	CA1-C1-N3	-4.80	118.59	124.84
1	B	64	5SQ	CA1-C1-N3	-4.71	118.70	124.84
1	F	64	5SQ	O2-C2-CA2	-4.63	128.06	131.02

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	J	64	5SQ	C2-N3-C1	4.46	110.13	108.07
1	P	64	5SQ	CA2-N2-C1	4.46	109.28	105.80
1	E	64	5SQ	C3-CA3-N3	4.39	122.43	112.43
1	K	64	5SQ	N3-C1-N2	4.31	114.88	111.48
1	K	64	5SQ	CG2-CB2-CA2	4.30	134.98	129.87
1	H	64	5SQ	CA2-C2-N3	-4.25	99.93	103.50
1	G	64	5SQ	CA1-C1-N3	-4.23	119.33	124.84
1	P	64	5SQ	C2-CA2-N2	-4.19	105.95	108.95
1	I	64	5SQ	C2-CA2-N2	-4.18	105.96	108.95
1	G	64	5SQ	C3-CA3-N3	4.08	121.72	112.43
1	I	64	5SQ	CA1-C1-N3	-4.06	119.55	124.84
1	O	64	5SQ	O2-C2-CA2	-4.03	128.45	131.02
1	M	64	5SQ	C3-CA3-N3	4.02	121.57	112.43
1	O	64	5SQ	C2-CA2-N2	-3.95	106.12	108.95
1	B	64	5SQ	C2-N3-C1	-3.93	106.25	108.07
1	B	64	5SQ	CA2-C2-N3	3.89	106.77	103.50
1	J	64	5SQ	CA2-C2-N3	-3.88	100.24	103.50
1	B	64	5SQ	CE1-CD1-CG2	3.85	126.20	121.22
1	M	64	5SQ	C2-CA2-N2	-3.85	106.19	108.95
1	O	64	5SQ	CB2-CA2-N2	3.81	133.94	128.76
1	H	64	5SQ	O2-C2-N3	3.81	132.25	124.31
1	J	64	5SQ	CB2-CA2-C2	-3.80	117.75	122.36
1	B	64	5SQ	CA3-N3-C2	3.80	132.01	123.67
1	A	64	5SQ	CA1-C1-N3	-3.77	119.93	124.84
1	I	64	5SQ	O2-C2-CA2	-3.72	128.65	131.02
1	C	64	5SQ	C2-CA2-N2	-3.72	106.29	108.95
1	J	64	5SQ	CA2-N2-C1	-3.69	102.92	105.80
1	O	64	5SQ	C2-N3-C1	-3.65	106.38	108.07
1	I	64	5SQ	CB2-CA2-N2	3.60	133.64	128.76
1	F	64	5SQ	N3-C1-N2	3.59	114.31	111.48
1	C	64	5SQ	CG2-CB2-CA2	3.56	134.09	129.87
1	I	64	5SQ	CA2-N2-C1	3.52	108.55	105.80
1	D	64	5SQ	N3-C1-N2	3.49	114.23	111.48
1	K	64	5SQ	O2-C2-CA2	3.49	133.25	131.02
1	B	64	5SQ	CB2-CA2-N2	3.47	133.48	128.76
1	A	64	5SQ	C2-N3-C1	3.45	109.67	108.07
1	H	64	5SQ	N3-C1-N2	3.44	114.19	111.48
1	L	64	5SQ	C2-N3-C1	3.42	109.65	108.07
1	N	64	5SQ	C2-N3-C1	-3.40	106.50	108.07
1	B	64	5SQ	CD2-CE2-CZ1	3.35	123.42	119.88
1	J	64	5SQ	C2-CA2-N2	3.33	111.33	108.95
1	L	64	5SQ	C2-CA2-N2	-3.33	106.57	108.95

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	L	64	5SQ	O2-C2-CA2	-3.30	128.91	131.02
1	D	64	5SQ	O2-C2-CA2	-3.28	128.93	131.02
1	P	64	5SQ	CB2-CA2-N2	3.25	133.18	128.76
1	A	64	5SQ	CB2-CA2-N2	3.24	133.16	128.76
1	L	64	5SQ	CA1-CB1-CG1	3.24	121.75	113.77
1	H	64	5SQ	CB2-CA2-C2	-3.23	118.44	122.36
1	I	64	5SQ	C3-CA3-N3	3.20	119.72	112.43
1	D	64	5SQ	C2H-N2H-C1H	3.20	113.08	107.36
1	O	64	5SQ	CA2-N2-C1	3.18	108.29	105.80
1	M	64	5SQ	CA1-C1-N3	-3.16	120.73	124.84
1	J	64	5SQ	C3-CA3-N3	3.14	119.57	112.43
1	P	64	5SQ	CA1-C1-N3	-3.12	120.78	124.84
1	I	64	5SQ	O3-C3-CA3	-3.09	111.57	125.47
1	N	64	5SQ	C3-CA3-N3	3.06	119.39	112.43
1	C	64	5SQ	CD1-CE1-CZ1	3.04	123.09	119.88
1	C	64	5SQ	CA2-C2-N3	3.04	106.05	103.50
1	O	64	5SQ	CA1-C1-N3	-3.02	120.90	124.84
1	A	64	5SQ	CA2-N2-C1	3.01	108.15	105.80
1	M	64	5SQ	CG2-CB2-CA2	3.00	133.43	129.87
1	N	64	5SQ	CA2-C2-N3	2.88	105.92	103.50
1	H	64	5SQ	CE1-CZ1-CE2	-2.84	115.25	119.77
1	E	64	5SQ	C2-CA2-N2	-2.83	106.92	108.95
1	J	64	5SQ	CA1-C1-N3	-2.83	121.16	124.84
1	D	64	5SQ	CB2-CA2-C2	-2.80	118.97	122.36
1	E	64	5SQ	CD2-CE2-CZ1	2.78	122.82	119.88
1	H	64	5SQ	O3-C3-CA3	-2.78	112.97	125.47
1	N	64	5SQ	C2H-N2H-C1H	2.78	112.32	107.36
1	G	64	5SQ	CE2-CD2-CG2	-2.77	117.65	121.22
1	B	64	5SQ	CA1-CB1-CG1	2.74	120.53	113.77
1	M	64	5SQ	C2-N3-C1	-2.71	106.81	108.07
1	A	64	5SQ	CA1-C1-N2	2.70	128.84	123.57
1	P	64	5SQ	CD2-CE2-CZ1	2.68	122.72	119.88
1	H	64	5SQ	CB2-CA2-N2	2.64	132.34	128.76
1	I	64	5SQ	N3-C1-N2	2.62	113.55	111.48
1	E	64	5SQ	CE1-CZ1-CE2	-2.61	115.62	119.77
1	D	64	5SQ	CA1-CB1-CG1	2.57	120.10	113.77
1	O	64	5SQ	CA2-C2-N3	2.56	105.65	103.50
1	O	64	5SQ	N3-C1-N2	2.56	113.50	111.48
1	N	64	5SQ	C2-CA2-N2	-2.56	107.12	108.95
1	A	64	5SQ	CB2-CA2-C2	-2.55	119.27	122.36
1	N	64	5SQ	CA2-N2-C1	2.54	107.78	105.80
1	P	64	5SQ	CB1-CG1-C2H	-2.48	124.27	129.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	J	64	5SQ	CD1-CG2-CD2	2.46	121.30	117.65
1	P	64	5SQ	CE1-CZ1-CE2	-2.45	115.87	119.77
1	M	64	5SQ	CA2-C2-N3	2.44	105.55	103.50
1	P	64	5SQ	C3-CA3-N3	2.43	117.97	112.43
1	H	64	5SQ	CE1-CD1-CG2	2.43	124.36	121.22
1	C	64	5SQ	CB2-CA2-C2	2.40	125.27	122.36
1	M	64	5SQ	C2H-N2H-C1H	2.40	111.64	107.36
1	L	64	5SQ	CB2-CA2-N2	2.38	131.99	128.76
1	H	64	5SQ	OH-CZ1-CE2	2.36	126.57	120.00
1	G	64	5SQ	CA1-C1-N2	2.36	128.17	123.57
1	P	64	5SQ	CB1-CG1-N1H	2.35	128.77	121.74
1	B	64	5SQ	CA1-C1-N2	2.35	128.15	123.57
1	J	64	5SQ	CD2-CE2-CZ1	-2.34	117.40	119.88
1	D	64	5SQ	CB2-CA2-N2	2.33	131.92	128.76
1	C	64	5SQ	C2H-N2H-C1H	2.32	111.51	107.36
1	D	64	5SQ	CA1-C1-N2	2.32	128.10	123.57
1	M	64	5SQ	CB2-CA2-N2	2.32	131.91	128.76
1	N	64	5SQ	CD2-CE2-CZ1	2.31	122.33	119.88
1	B	64	5SQ	C1H-N1H-CG1	2.31	111.05	105.80
1	D	64	5SQ	CG1-C2H-N2H	-2.30	103.00	106.54
1	L	64	5SQ	N3-C1-N2	-2.30	109.67	111.48
1	L	64	5SQ	C1H-N1H-CG1	2.28	110.97	105.80
1	H	64	5SQ	C2H-N2H-C1H	2.25	111.38	107.36
1	G	64	5SQ	CG1-C2H-N2H	2.25	109.99	106.54
1	B	64	5SQ	C3-CA3-N3	2.24	117.53	112.43
1	P	64	5SQ	O3-C3-CA3	-2.24	115.37	125.47
1	N	64	5SQ	CB1-CG1-N1H	2.24	128.44	121.74
1	D	64	5SQ	O3-C3-CA3	-2.23	115.43	125.47
1	H	64	5SQ	C1H-N1H-CG1	2.22	110.84	105.80
1	F	64	5SQ	CE2-CD2-CG2	-2.21	118.37	121.22
1	J	64	5SQ	C1H-N1H-CG1	2.14	110.65	105.80
1	F	64	5SQ	O2-C2-N3	2.13	128.76	124.31
1	I	64	5SQ	C2H-CG1-N1H	-2.12	104.56	108.86
1	K	64	5SQ	CE2-CD2-CG2	-2.12	118.48	121.22
1	B	64	5SQ	N3-C1-N2	2.11	113.14	111.48
1	L	64	5SQ	C2H-CG1-N1H	-2.11	104.60	108.86
1	G	64	5SQ	CB1-CG1-N1H	2.09	127.99	121.74
1	B	64	5SQ	CD1-CG2-CB2	2.06	128.30	121.22
1	F	64	5SQ	CA1-C1-N2	2.04	127.55	123.57
1	F	64	5SQ	O3-C3-CA3	-2.03	116.34	125.47
1	B	64	5SQ	CE1-CZ1-CE2	-2.02	116.55	119.77
1	I	64	5SQ	CD1-CE1-CZ1	2.00	122.00	119.88

There are no chirality outliers.

All (76) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	64	5SQ	CA1-CB1-CG1-C2H
1	A	64	5SQ	C2-CA2-CB2-CG2
1	A	64	5SQ	N2-CA2-CB2-CG2
1	B	64	5SQ	C3-CA3-N3-C2
1	B	64	5SQ	CA1-CB1-CG1-C2H
1	B	64	5SQ	C2-CA2-CB2-CG2
1	D	64	5SQ	C3-CA3-N3-C2
1	D	64	5SQ	C1-CA1-CB1-CG1
1	E	64	5SQ	C3-CA3-N3-C2
1	F	64	5SQ	C2-CA2-CB2-CG2
1	G	64	5SQ	C3-CA3-N3-C2
1	G	64	5SQ	C1-CA1-CB1-CG1
1	H	64	5SQ	C3-CA3-N3-C2
1	H	64	5SQ	C1-CA1-CB1-CG1
1	H	64	5SQ	CA1-CB1-CG1-C2H
1	K	64	5SQ	C2-CA2-CB2-CG2
1	L	64	5SQ	C3-CA3-N3-C2
1	L	64	5SQ	C2-CA2-CB2-CG2
1	L	64	5SQ	N2-CA2-CB2-CG2
1	M	64	5SQ	C1-CA1-CB1-CG1
1	N	64	5SQ	C2-CA2-CB2-CG2
1	O	64	5SQ	CA1-CB1-CG1-C2H
1	P	64	5SQ	C2-CA2-CB2-CG2
1	B	64	5SQ	N2-CA2-CB2-CG2
1	K	64	5SQ	N2-CA2-CB2-CG2
1	M	64	5SQ	N2-CA2-CB2-CG2
1	C	64	5SQ	CA1-CB1-CG1-C2H
1	D	64	5SQ	CA1-CB1-CG1-C2H
1	E	64	5SQ	CA1-CB1-CG1-C2H
1	F	64	5SQ	CA1-CB1-CG1-C2H
1	G	64	5SQ	CA1-CB1-CG1-C2H
1	J	64	5SQ	CA1-CB1-CG1-C2H
1	A	64	5SQ	CA1-CB1-CG1-N1H
1	B	64	5SQ	CA1-CB1-CG1-N1H
1	E	64	5SQ	CA1-CB1-CG1-N1H
1	F	64	5SQ	CA1-CB1-CG1-N1H
1	G	64	5SQ	CA1-CB1-CG1-N1H
1	H	64	5SQ	CA1-CB1-CG1-N1H
1	I	64	5SQ	CA1-CB1-CG1-N1H
1	J	64	5SQ	CA1-CB1-CG1-N1H

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Mol	Chain	Res	Type	Atoms
1	K	64	5SQ	CA1-CB1-CG1-N1H
1	M	64	5SQ	CA1-CB1-CG1-N1H
1	O	64	5SQ	CA1-CB1-CG1-N1H
1	C	64	5SQ	C3-CA3-N3-C2
1	I	64	5SQ	C3-CA3-N3-C2
1	I	64	5SQ	CA1-CB1-CG1-C2H
1	K	64	5SQ	CA1-CB1-CG1-C2H
1	L	64	5SQ	CA1-CB1-CG1-C2H
1	M	64	5SQ	CA1-CB1-CG1-C2H
1	N	64	5SQ	CA1-CB1-CG1-C2H
1	P	64	5SQ	CA1-CB1-CG1-C2H
1	C	64	5SQ	CA1-CB1-CG1-N1H
1	D	64	5SQ	CA1-CB1-CG1-N1H
1	L	64	5SQ	CA1-CB1-CG1-N1H
1	N	64	5SQ	CA1-CB1-CG1-N1H
1	P	64	5SQ	CA1-CB1-CG1-N1H
1	M	64	5SQ	C2-CA2-CB2-CG2
1	C	64	5SQ	N1-CA1-CB1-CG1
1	H	64	5SQ	N1-CA1-CB1-CG1
1	M	64	5SQ	N1-CA1-CB1-CG1
1	O	64	5SQ	N2-CA2-CB2-CG2
1	J	64	5SQ	C1-CA1-CB1-CG1
1	D	64	5SQ	C2-CA2-CB2-CG2
1	D	64	5SQ	N1-CA1-CB1-CG1
1	G	64	5SQ	N1-CA1-CB1-CG1
1	J	64	5SQ	N1-CA1-CB1-CG1
1	K	64	5SQ	C3-CA3-N3-C2
1	C	64	5SQ	N2-CA2-CB2-CG2
1	D	64	5SQ	N2-CA2-CB2-CG2
1	F	64	5SQ	N2-CA2-CB2-CG2
1	L	64	5SQ	CA2-CB2-CG2-CD1
1	K	64	5SQ	N1-CA1-CB1-CG1
1	L	64	5SQ	CA2-CB2-CG2-CD2
1	F	64	5SQ	C3-CA3-N3-C2
1	O	64	5SQ	C2-CA2-CB2-CG2
1	H	64	5SQ	C3-CA3-N3-C1

There are no ring outliers.

7 monomers are involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	O	64	5SQ	3	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	I	64	5SQ	2	0
1	L	64	5SQ	2	0
1	N	64	5SQ	1	0
1	M	64	5SQ	1	0
1	F	64	5SQ	1	0
1	D	64	5SQ	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

3 ligands are modelled in this entry.

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	$\# Z > 2$
2	GOL	B	301	-	5,5,5	0.69	0	5,5,5	0.67	0
2	GOL	N	301	-	5,5,5	0.78	0	5,5,5	1.05	0
2	GOL	E	301	-	5,5,5	0.63	0	5,5,5	1.23	1 (20%)

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
2	GOL	B	301	-	-	0/4/4/4	-
2	GOL	N	301	-	-	3/4/4/4	-
2	GOL	E	301	-	-	0/4/4/4	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	301	GOL	C3-C2-C1	-2.43	102.90	111.80

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	N	301	GOL	O1-C1-C2-C3
2	N	301	GOL	O1-C1-C2-O2
2	N	301	GOL	O2-C2-C3-O3

There are no ring outliers.

3 monomers are involved in 16 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	301	GOL	3	0
2	N	301	GOL	8	0
2	E	301	GOL	5	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	O	1
1	I	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	O	72:PRO	C	73:GLU	N	1.16
1	I	72:PRO	C	73:GLU	N	1.15

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	220/232 (94%)	0.81	18 (8%) 17 20	15, 29, 42, 51	2 (0%)
1	B	224/232 (96%)	0.31	1 (0%) 88 91	7, 21, 32, 42	4 (1%)
1	C	223/232 (96%)	0.17	3 (1%) 75 80	7, 19, 30, 43	3 (1%)
1	D	221/232 (95%)	0.50	7 (3%) 50 57	12, 23, 34, 43	4 (1%)
1	E	220/232 (94%)	0.26	5 (2%) 61 68	9, 20, 31, 74	2 (0%)
1	F	221/232 (95%)	0.38	6 (2%) 56 61	11, 22, 39, 88	2 (0%)
1	G	224/232 (96%)	-0.09	3 (1%) 75 80	6, 15, 25, 35	7 (3%)
1	H	220/232 (94%)	0.01	4 (1%) 67 73	6, 16, 29, 51	4 (1%)
1	I	220/232 (94%)	-0.11	3 (1%) 73 79	6, 13, 28, 72	2 (0%)
1	J	221/232 (95%)	0.05	4 (1%) 67 73	8, 17, 29, 60	4 (1%)
1	K	226/232 (97%)	-0.15	2 (0%) 81 85	6, 14, 25, 43	7 (3%)
1	L	225/232 (96%)	1.61	63 (28%) 1 1	20, 38, 58, 75	2 (0%)
1	M	220/232 (94%)	0.76	19 (8%) 16 18	13, 25, 44, 86	3 (1%)
1	N	220/232 (94%)	-0.18	3 (1%) 73 79	6, 14, 23, 67	4 (1%)
1	O	221/232 (95%)	1.05	31 (14%) 6 7	9, 30, 43, 81	4 (1%)
1	P	221/232 (95%)	0.28	7 (3%) 50 57	5, 19, 33, 79	6 (2%)
All	All	3547/3712 (95%)	0.36	179 (5%) 34 40	5, 20, 41, 88	60 (1%)

All (179) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	225	TRP	7.4
1	M	225	TRP	6.2
1	I	225	TRP	6.1
1	P	225	TRP	5.8
1	O	225	TRP	5.8

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Mol	Chain	Res	Type	RSRZ
1	J	225	TRP	5.6
1	L	204	TYR	5.6
1	L	114	PHE	5.5
1	N	225	TRP	5.4
1	N	224	ALA	5.2
1	L	209	LEU	5.2
1	E	225	TRP	5.1
1	M	224	ALA	5.0
1	L	10	VAL	4.9
1	L	68	PHE	4.8
1	L	69	THR	4.8
1	H	225	TRP	4.7
1	L	210	TYR	4.6
1	P	224	ALA	4.4
1	L	23	PHE	4.3
1	L	44	VAL	4.1
1	D	173	PHE	4.1
1	L	198	LEU	4.1
1	O	224	ALA	4.0
1	L	73	GLU	4.0
1	L	207	VAL	4.0
1	L	12	VAL	3.9
1	L	79	PHE	3.8
1	L	115	PHE	3.8
1	F	224	ALA	3.7
1	A	207	VAL	3.7
1	O	68	PHE	3.6
1	L	49	PRO	3.5
1	O	73	GLU	3.5
1	A	165	GLY	3.5
1	O	3	LEU	3.5
1	D	73	GLU	3.4
1	I	73	GLU	3.4
1	H	166	GLY	3.4
1	O	150	ASP	3.3
1	L	167	GLY	3.3
1	A	49	PRO	3.3
1	O	78	TYR	3.3
1	M	182	VAL	3.3
1	M	73	GLU	3.2
1	L	22	ALA	3.2
1	L	215	ALA	3.2

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Mol	Chain	Res	Type	RSRZ
1	A	225	TRP	3.2
1	D	107[A]	ILE	3.2
1	L	195	ILE	3.1
1	L	118	VAL	3.1
1	L	43	THR	3.1
1	M	222	SER	3.1
1	L	21	HIS	3.0
1	L	48	ALA	3.0
1	O	202	SER	3.0
1	L	24	VAL	2.9
1	L	34	TYR	2.9
1	J	165	GLY	2.9
1	L	89	TRP	2.9
1	L	3	LEU	2.9
1	L	137	LEU	2.9
1	L	214	VAL	2.9
1	E	224	ALA	2.9
1	L	201	ASP	2.9
1	N	73	GLU	2.8
1	A	166	GLY	2.8
1	O	89	TRP	2.8
1	O	67	VAL	2.8
1	L	8	MET	2.8
1	A	73	GLU	2.8
1	L	4	ILE	2.8
1	M	214	VAL	2.8
1	L	83	PHE	2.7
1	O	50	LEU	2.7
1	M	67	VAL	2.7
1	L	109	LEU	2.7
1	I	224	ALA	2.7
1	L	60	ALA	2.7
1	A	10	VAL	2.7
1	L	31	GLY	2.6
1	M	79	PHE	2.6
1	L	130	PRO	2.6
1	L	197	ILE	2.6
1	L	166	GLY	2.6
1	F	3	LEU	2.6
1	L	61	LEU	2.6
1	F	4	ILE	2.6
1	L	202	SER	2.5

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Mol	Chain	Res	Type	RSRZ
1	O	44	VAL	2.5
1	O	182	VAL	2.5
1	E	73	GLU	2.5
1	F	73	GLU	2.5
1	O	84	PRO	2.5
1	M	34	TYR	2.5
1	O	220	LEU	2.5
1	L	139	TRP	2.5
1	H	73	GLU	2.5
1	L	72	PRO	2.5
1	L	208	LYS	2.5
1	D	226	GLY	2.5
1	G	73	GLU	2.5
1	O	47	GLY	2.4
1	A	83	PHE	2.4
1	K	228	HIS	2.4
1	M	4	ILE	2.4
1	M	84	PRO	2.4
1	B	73	GLU	2.4
1	M	3	LEU	2.4
1	O	217	TYR	2.4
1	P	3	LEU	2.4
1	L	70	LYS	2.4
1	O	79	PHE	2.4
1	L	37	THR	2.4
1	L	213	GLY	2.4
1	O	203	ASP	2.3
1	L	119	ARG	2.3
1	A	204	TYR	2.3
1	C	73	GLU	2.3
1	P	73	GLU	2.3
1	L	141	PRO	2.3
1	L	165	GLY	2.3
1	A	44	VAL	2.3
1	O	106	ASP	2.3
1	M	223	GLN	2.3
1	O	48	ALA	2.3
1	A	11	LYS	2.3
1	D	31	GLY	2.3
1	F	67	VAL	2.3
1	J	73	GLU	2.3
1	C	3	LEU	2.3

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Mol	Chain	Res	Type	RSRZ
1	O	24	VAL	2.3
1	L	113	CYS	2.3
1	M	185	LEU	2.3
1	L	78	TYR	2.2
1	O	4	ILE	2.2
1	A	3	LEU	2.2
1	L	162	LEU	2.2
1	L	192	ASP	2.2
1	L	67	VAL	2.2
1	M	183	VAL	2.2
1	O	22	ALA	2.2
1	C	173	PHE	2.2
1	L	138	LYS	2.2
1	A	12	VAL	2.2
1	L	191	VAL	2.2
1	O	148	VAL	2.2
1	J	202	SER	2.2
1	L	40	LEU	2.2
1	P	215	ALA	2.2
1	O	83	PHE	2.1
1	P	87	TYR	2.1
1	A	25	ILE	2.1
1	A	162	LEU	2.1
1	D	49	PRO	2.1
1	E	33	PRO	2.1
1	O	42	LEU	2.1
1	L	205	ASN	2.1
1	M	190	PHE	2.1
1	O	60	ALA	2.1
1	E	115	PHE	2.1
1	L	206	LYS	2.1
1	G	166	GLY	2.1
1	A	67	VAL	2.1
1	O	12	VAL	2.1
1	D	84	PRO	2.1
1	L	42	LEU	2.1
1	O	179	ALA	2.1
1	A	173	PHE	2.0
1	H	83	PHE	2.0
1	M	71	TYR	2.0
1	M	8	MET	2.0
1	K	2	ASN	2.0

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Mol	Chain	Res	Type	RSRZ
1	P	148	VAL	2.0
1	G	202	SER	2.0
1	M	218	SER	2.0
1	A	68	PHE	2.0
1	L	36	GLY	2.0
1	O	151	GLY	2.0

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

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
1	5SQ	L	64	25/26	0.78	0.15	33,42,45,47	0
1	5SQ	O	64	25/26	0.88	0.13	20,27,46,47	0
1	5SQ	A	64	25/26	0.89	0.10	24,28,32,33	0
1	5SQ	B	64	25/26	0.90	0.09	11,15,19,20	0
1	5SQ	M	64	25/26	0.91	0.09	20,22,26,26	0
1	5SQ	D	64	25/26	0.91	0.09	14,20,22,25	0
1	5SQ	F	64	25/26	0.92	0.09	12,16,20,21	0
1	5SQ	J	64	25/26	0.94	0.07	9,12,14,16	0
1	5SQ	P	64	25/26	0.94	0.08	13,15,17,18	0
1	5SQ	I	64	25/26	0.95	0.06	7,8,9,10	0
1	5SQ	N	64	25/26	0.95	0.07	8,10,12,12	0
1	5SQ	E	64	25/26	0.95	0.07	8,12,14,15	0
1	5SQ	H	64	25/26	0.95	0.06	9,10,12,13	0
1	5SQ	C	64	25/26	0.96	0.06	9,13,14,16	0
1	5SQ	G	64	25/26	0.96	0.06	9,11,13,14	0
1	5SQ	K	64	25/26	0.97	0.04	7,8,10,12	0

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

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
2	GOL	E	301	6/6	0.89	0.11	21,23,23,25	0
2	GOL	N	301	6/6	0.93	0.07	17,19,23,23	0
2	GOL	B	301	6/6	0.96	0.07	22,24,24,26	0

6.5 Other polymers [i](#)

There are no such residues in this entry.