



# Full wwPDB X-ray Structure Validation Report ⓘ

Aug 21, 2023 – 10:16 PM EDT

PDB ID : 2Q4O  
Title : Ensemble refinement of the crystal structure of a lysine decarboxylase-like protein from Arabidopsis thaliana gene At2g37210  
Authors : Levin, E.J.; Kondrashov, D.A.; Wesenberg, G.E.; Phillips Jr., G.N.; Center for Eukaryotic Structural Genomics (CESG)  
Deposited on : 2007-05-31  
Resolution : 1.95 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](mailto: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>.

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

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.35  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.35

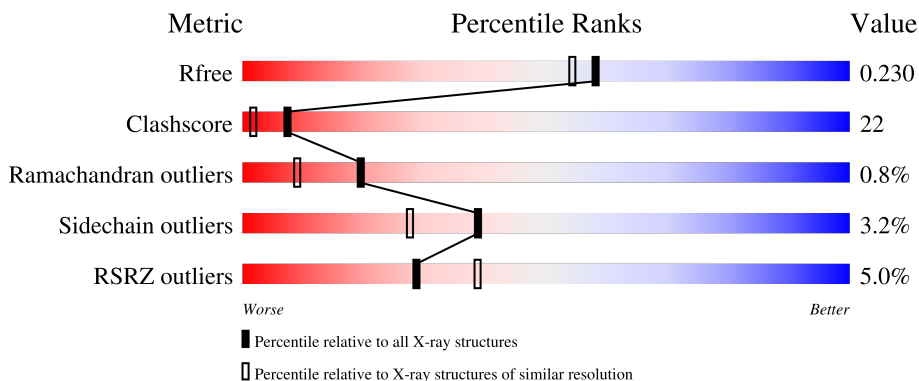
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 1.95 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))
$R_{free}$	130704	2580 (1.96-1.96)
Clashscore	141614	2705 (1.96-1.96)
Ramachandran outliers	138981	2678 (1.96-1.96)
Sidechain outliers	138945	2678 (1.96-1.96)
RSRZ outliers	127900	2539 (1.96-1.96)

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  $\geq 3$ , 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	1-A	215	 2% 55% 24% 19%
1	1-B	215	 5% 53% 26% 20%
1	2-A	215	 2% 47% 33% 19%
1	2-B	215	 5% 50% 29% 20%
1	3-A	215	 2% 45% 34% 19%

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Mol	Chain	Length	Quality of chain			
1	3-B	215	5%	48%	30%	20%
1	4-A	215	2%	53%	27%	19%
1	4-B	215	5%	48%	31%	20%
1	5-A	215	2%	55%	26%	19%
1	5-B	215	5%	51%	27%	20%
1	6-A	215	2%	49%	31%	19%
1	6-B	215	5%	56%	24%	20%
1	7-A	215	2%	48%	29%	19%
1	7-B	215	5%	53%	27%	20%
1	8-A	215	2%	51%	27%	19%
1	8-B	215	5%	52%	28%	20%

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
3	MG	1-B	700	-	-	-	X

## 2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 22875 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.

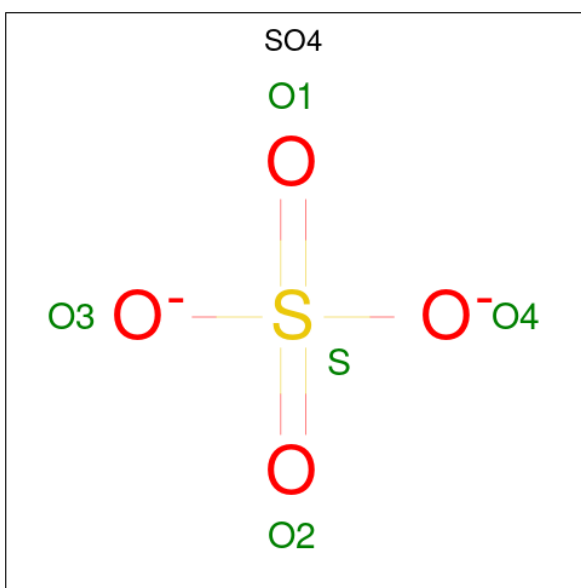
- Molecule 1 is a protein called Uncharacterized protein At2g37210/T2N18.3.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	N	O	S	Se			
1	1-A	175	1328	842	229	250	2	5	0	0	0
1	2-A	175	1328	842	229	250	2	5	0	0	0
1	3-A	175	1328	842	229	250	2	5	0	0	0
1	4-A	175	1328	842	229	250	2	5	0	0	0
1	5-A	175	1328	842	229	250	2	5	0	0	0
1	6-A	175	1328	842	229	250	2	5	0	0	0
1	7-A	175	1328	842	229	250	2	5	0	0	0
1	8-A	175	1328	842	229	250	2	5	0	0	0
1	1-B	173	1308	828	226	249	2	3	0	0	0
1	2-B	173	1308	828	226	249	2	3	0	0	0
1	3-B	173	1308	828	226	249	2	3	0	0	0
1	4-B	173	1308	828	226	249	2	3	0	0	0
1	5-B	173	1308	828	226	249	2	3	0	0	0
1	6-B	173	1308	828	226	249	2	3	0	0	0
1	7-B	173	1308	828	226	249	2	3	0	0	0
1	8-B	173	1308	828	226	249	2	3	0	0	0

There are 14 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MSE	MET	modified residue	UNP Q8L8B8
A	8	MSE	MET	modified residue	UNP Q8L8B8
A	58	MSE	MET	modified residue	UNP Q8L8B8
A	81	MSE	MET	modified residue	UNP Q8L8B8
A	99	MSE	MET	modified residue	UNP Q8L8B8
A	106	MSE	MET	modified residue	UNP Q8L8B8
A	206	MSE	MET	modified residue	UNP Q8L8B8
B	1	MSE	MET	modified residue	UNP Q8L8B8
B	8	MSE	MET	modified residue	UNP Q8L8B8
B	58	MSE	MET	modified residue	UNP Q8L8B8
B	81	MSE	MET	modified residue	UNP Q8L8B8
B	99	MSE	MET	modified residue	UNP Q8L8B8
B	106	MSE	MET	modified residue	UNP Q8L8B8
B	206	MSE	MET	modified residue	UNP Q8L8B8

- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O<sub>4</sub>S).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf		
2	1-A	1	Total	O	S	0	0
			5	4	1		
2	1-B	1	Total	O	S	0	0
			5	4	1		

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	1-B	1	Total	Mg	0	0
			1	1		

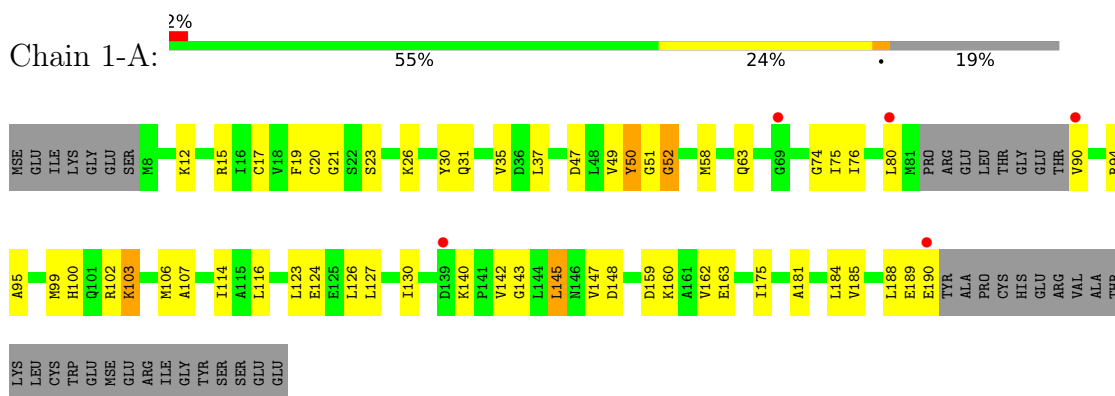
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	1-A	108	Total	O	0	0
			108	108		
4	1-B	114	Total	O	0	0
			114	114		

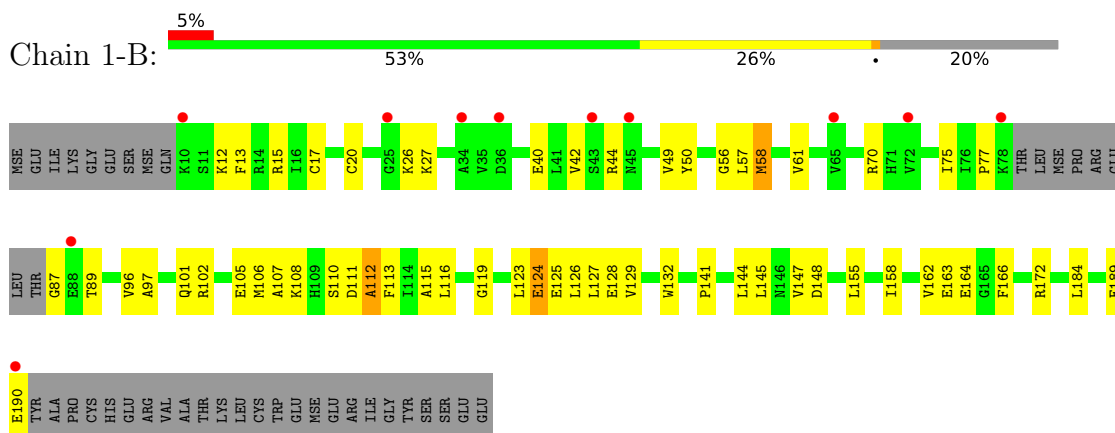
### 3 Residue-property plots [i](#)

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

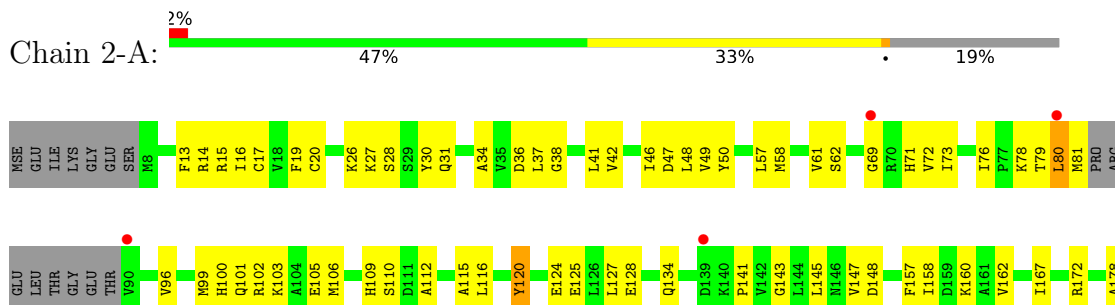
- Molecule 1: Uncharacterized protein At2g37210/T2N18.3



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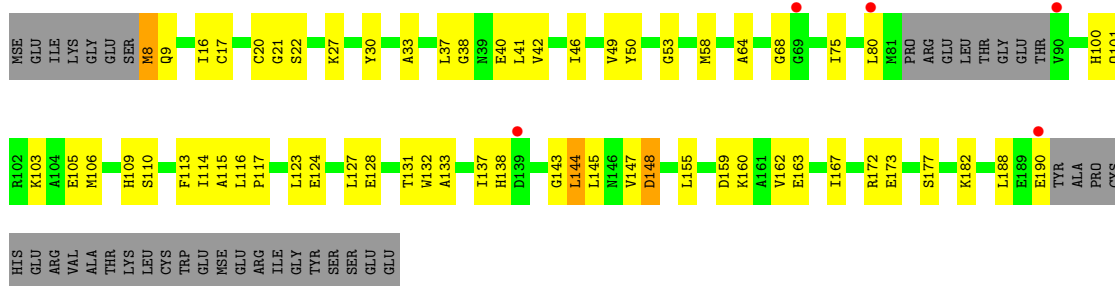


- Molecule 1: Uncharacterized protein At2g37210/T2N18.3

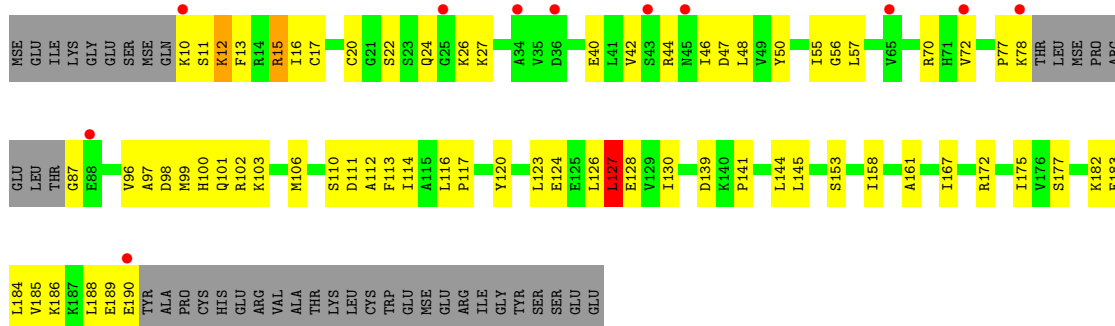




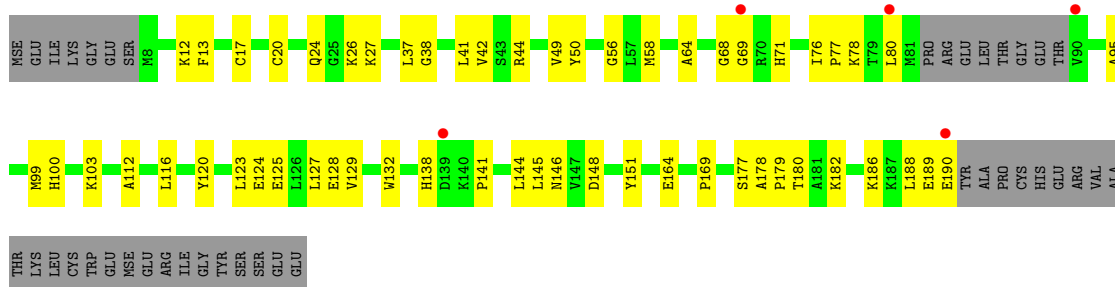




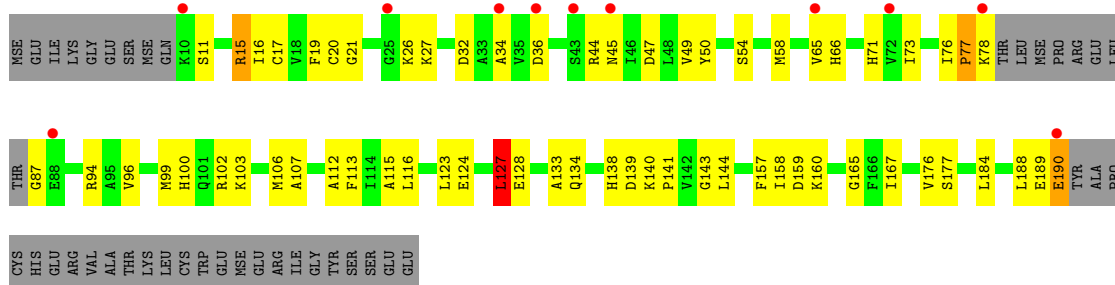
- Molecule 1: Uncharacterized protein At2g37210/T2N18.3



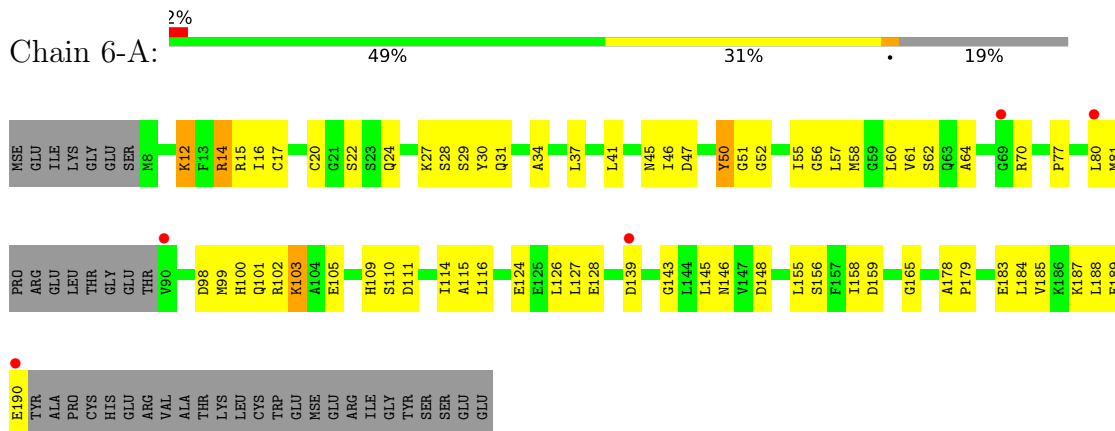
- Molecule 1: Uncharacterized protein At2g37210/T2N18.3



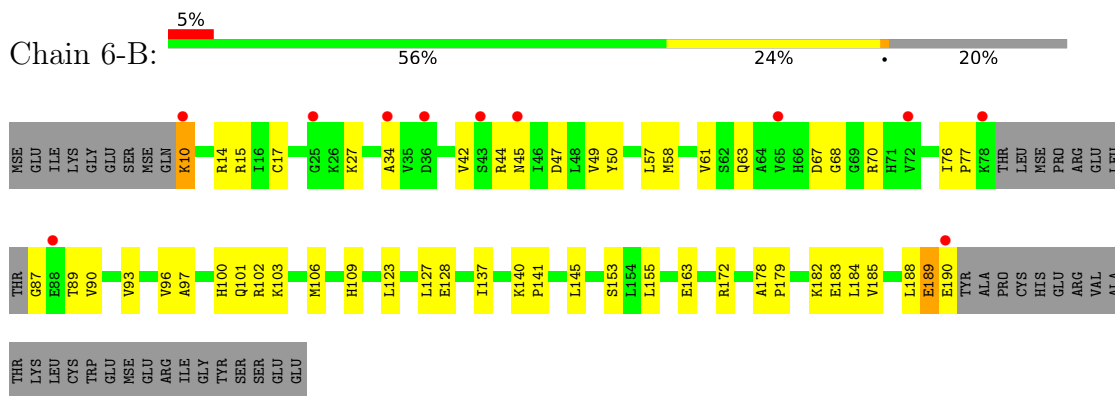
- Molecule 1: Uncharacterized protein At2g37210/T2N18.3



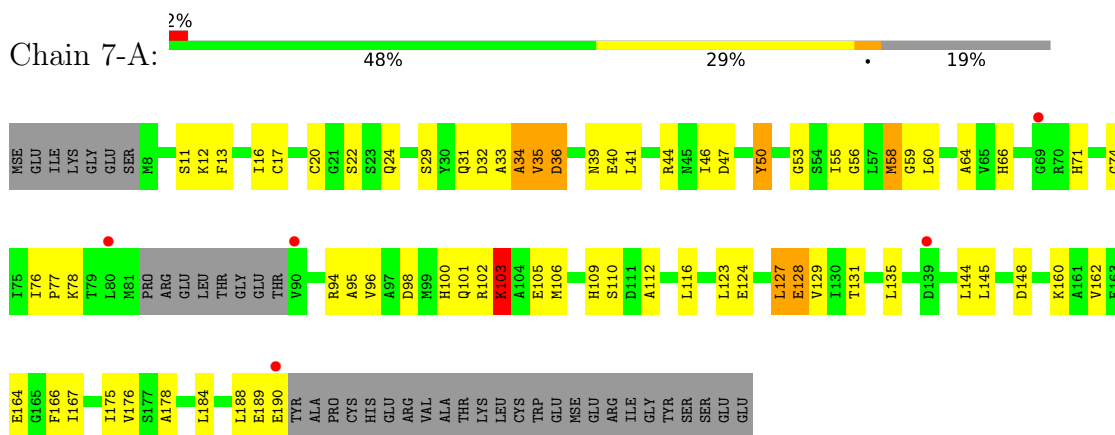
- Molecule 1: Uncharacterized protein At2g37210/T2N18.3



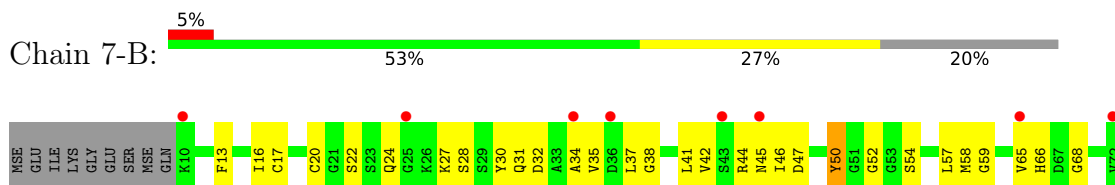
- Molecule 1: Uncharacterized protein At2g37210/T2N18.3

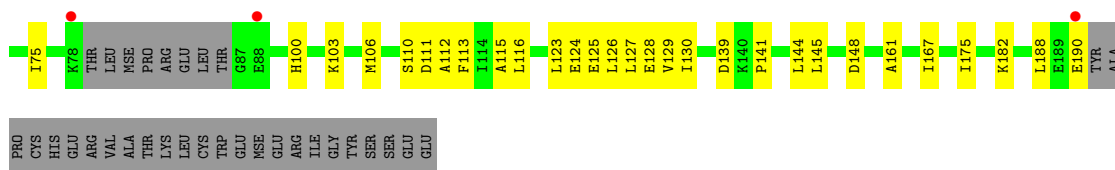


- Molecule 1: Uncharacterized protein At2g37210/T2N18.3

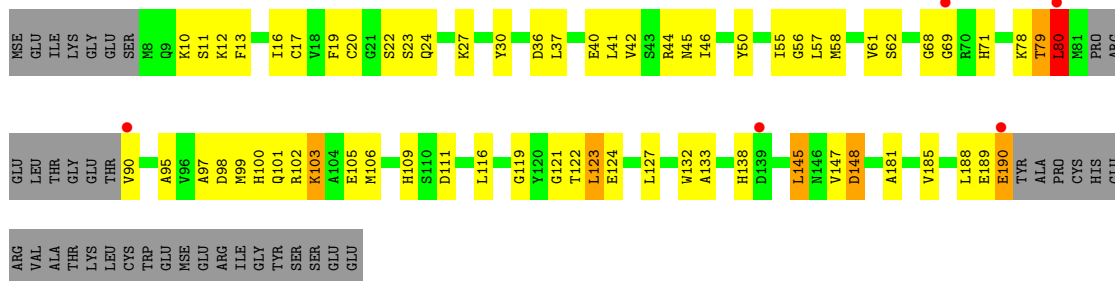


- Molecule 1: Uncharacterized protein At2g37210/T2N18.3

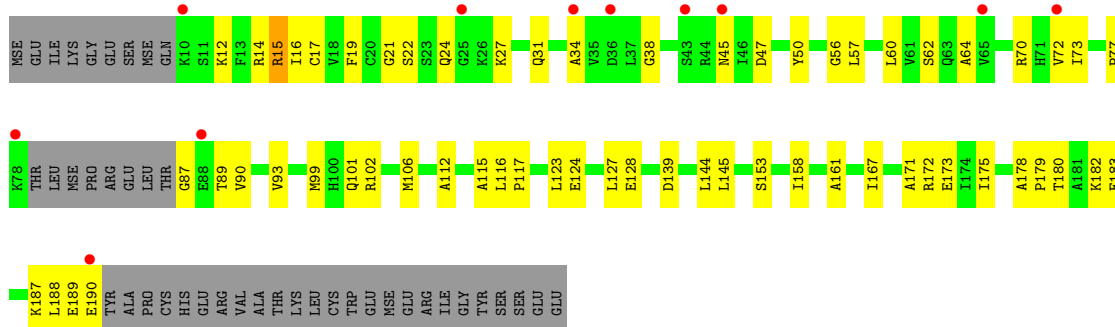




• Molecule 1: Uncharacterized protein At2g37210/T2N18.3



• Molecule 1: Uncharacterized protein At2g37210/T2N18.3



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	53.40Å 66.77Å 98.64Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	46.96 – 1.95 46.96 – 1.95	Depositor EDS
% Data completeness (in resolution range)	99.7 (46.96-1.95) 99.8 (46.96-1.95)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.26 (at 1.95Å)	Xtrriage
Refinement program	CNS 1.1	Depositor
R, $R_{free}$	0.168 , 0.224 0.180 , 0.230	Depositor DCC
$R_{free}$ test set	1336 reflections (5.07%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	27.8	Xtrriage
Anisotropy	0.009	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.31 , 51.6	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.50$ , $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	22875	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	24.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 7.48% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical 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 [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: MG, SO4

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	1-A	0.60	0/1344	0.66	0/1802
1	1-B	0.58	0/1325	0.69	0/1779
1	2-A	0.60	0/1344	0.68	0/1802
1	2-B	0.59	0/1325	0.68	0/1779
1	3-A	0.60	0/1344	0.68	0/1802
1	3-B	0.59	0/1325	0.67	0/1779
1	4-A	0.61	0/1344	0.68	0/1802
1	4-B	0.59	0/1325	0.68	1/1779 (0.1%)
1	5-A	0.64	0/1344	0.70	0/1802
1	5-B	0.64	0/1325	0.72	1/1779 (0.1%)
1	6-A	0.63	0/1344	0.72	0/1802
1	6-B	0.62	0/1325	0.75	1/1779 (0.1%)
1	7-A	0.63	0/1344	0.74	0/1802
1	7-B	0.63	0/1325	0.71	0/1779
1	8-A	0.63	0/1344	0.73	0/1802
1	8-B	0.62	0/1325	0.72	0/1779
All	All	0.61	0/21352	0.70	3/28648 (0.0%)

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	2-A	0	1

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5-B	127	LEU	CA-CB-CG	-6.51	100.33	115.30
1	4-B	127	LEU	CA-CB-CG	-5.91	101.71	115.30
1	6-B	127	LEU	CA-CB-CG	-5.74	102.09	115.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	2-A	120	TYR	Sidechain

## 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	1-A	1328	0	1351	71	0
1	1-B	1308	0	1323	59	0
1	2-A	1328	0	1351	65	0
1	2-B	1308	0	1323	66	0
1	3-A	1328	0	1351	77	0
1	3-B	1308	0	1323	63	0
1	4-A	1328	0	1351	59	0
1	4-B	1308	0	1323	62	0
1	5-A	1328	0	1351	57	0
1	5-B	1308	0	1323	57	0
1	6-A	1328	0	1351	72	0
1	6-B	1308	0	1323	51	0
1	7-A	1328	0	1351	74	0
1	7-B	1308	0	1323	62	0
1	8-A	1328	0	1351	59	0
1	8-B	1308	0	1323	64	0
2	1-A	5	0	0	0	0
2	1-B	5	0	0	0	0
3	1-B	1	0	0	0	0
4	1-A	108	0	0	5	0
4	1-B	114	0	0	6	0
4	2-A	109	0	0	11	0
4	2-B	113	0	0	9	0
4	3-A	104	0	0	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	3-B	118	0	0	11	0
4	4-A	108	0	0	5	0
4	4-B	114	0	0	8	0
4	5-A	105	0	0	9	0
4	5-B	117	0	0	11	0
4	6-A	104	0	0	14	0
4	6-B	118	0	0	16	0
4	7-A	104	0	0	7	0
4	7-B	118	0	0	6	0
4	8-A	104	0	0	9	0
4	8-B	118	0	0	12	0
All	All	22875	0	21392	946	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 22.

All (946) 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:A:127:LEU:HD12	1:B:127:LEU:HD12	1.24	1.14
1:A:123:LEU:HG	1:B:127:LEU:HD13	1.29	1.13
1:A:127:LEU:HD12	1:B:127:LEU:HD12	1.21	1.08
1:B:48:LEU:HD21	1:B:50:TYR:HB3	1.37	1.05
1:B:15:ARG:HB2	1:B:15:ARG:HH11	1.20	1.04
1:B:77:PRO:HB3	1:B:99:MSE:HE3	1.42	1.00
1:B:48:LEU:HG	1:B:50:TYR:H	1.27	0.99
1:A:58:MSE:HG2	4:A:672:HOH:O	1.61	0.99
1:B:15:ARG:HB2	1:B:15:ARG:HH11	1.24	0.98
1:A:61:VAL:HG13	1:A:62:SER:H	1.26	0.98
1:A:58:MSE:HG2	4:A:286:HOH:O	1.64	0.98
1:B:97:ALA:HB3	1:B:101:GLN:HG3	1.46	0.98
1:B:97:ALA:HB3	1:B:101:GLN:HG3	1.46	0.97
1:A:55:ILE:O	1:A:58:MSE:HG3	1.66	0.95
1:A:16:ILE:HG12	1:A:112:ALA:HB3	1.49	0.94
1:A:127:LEU:HD13	1:B:123:LEU:HB3	1.48	0.94
1:B:125:GLU:O	1:B:129:VAL:HG22	1.66	0.94
1:A:44:ARG:HH22	1:A:186:LYS:HG3	1.30	0.93
1:A:127:LEU:HD12	1:B:127:LEU:HD12	1.51	0.93
1:A:80:LEU:HD23	1:A:80:LEU:H	1.34	0.92
1:B:15:ARG:HB2	1:B:15:ARG:HH11	1.38	0.89
1:A:80:LEU:HD23	1:A:80:LEU:H	1.38	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:99:MSE:HG3	4:B:300:HOH:O	1.75	0.86
1:A:80:LEU:HD23	1:A:80:LEU:H	1.42	0.85
1:A:80:LEU:HD23	1:A:80:LEU:H	1.40	0.85
1:A:75:ILE:HD12	1:A:75:ILE:N	1.93	0.84
1:A:20:CYS:SG	4:A:286:HOH:O	2.35	0.84
1:B:12:LYS:HB3	1:B:12:LYS:NZ	1.92	0.83
1:A:123:LEU:HG	1:B:127:LEU:HD13	1.59	0.83
1:A:123:LEU:HG	1:B:127:LEU:HD13	1.59	0.82
1:A:20:CYS:HB3	1:A:116:LEU:HB2	1.63	0.81
1:B:147:VAL:HG12	1:B:148:ASP:OD2	1.79	0.81
1:A:61:VAL:HG13	1:A:62:SER:N	1.95	0.81
1:B:125:GLU:O	1:B:129:VAL:HG22	1.81	0.80
1:A:22:SER:HA	1:A:58:MSE:SE	2.31	0.80
1:A:16:ILE:HG12	1:A:112:ALA:HB3	1.64	0.79
1:A:24:GLN:HG2	1:A:56:GLY:HA2	1.65	0.79
1:B:188:LEU:C	1:B:190:GLU:H	1.85	0.79
1:B:116:LEU:HD21	1:B:145:LEU:HD23	1.65	0.79
1:A:124:GLU:HG3	1:B:128:GLU:HA	1.65	0.78
1:A:52:GLY:N	1:A:58:MSE:HE1	1.99	0.78
1:B:27:LYS:HD3	4:B:275:HOH:O	1.84	0.78
1:A:124:GLU:OE1	1:B:128:GLU:HG3	1.84	0.78
1:B:42:VAL:HA	1:B:70:ARG:HG3	1.66	0.77
1:A:148:ASP:HB3	4:A:278:HOH:O	1.83	0.77
1:A:117:PRO:HB3	1:A:150:TYR:CD2	2.19	0.77
1:A:156:SER:HA	1:A:159:ASP:HB2	1.67	0.77
1:A:127:LEU:HD12	1:B:127:LEU:CD1	2.14	0.76
1:A:20:CYS:SG	4:A:286:HOH:O	2.42	0.76
1:A:160:LYS:HE3	1:A:164:GLU:HG3	1.66	0.76
1:A:148:ASP:HB3	4:A:322:HOH:O	1.84	0.76
1:B:12:LYS:HB3	1:B:12:LYS:HZ2	1.50	0.76
1:B:45:ASN:HA	1:B:70:ARG:HD3	1.66	0.76
1:A:178:ALA:HB3	1:A:184:LEU:HB2	1.68	0.76
1:A:127:LEU:HD12	1:B:127:LEU:CD1	2.11	0.75
1:A:52:GLY:H	1:A:58:MSE:HE1	1.50	0.75
1:A:51:GLY:C	1:A:58:MSE:HE1	2.07	0.75
1:A:119:GLY:O	1:A:123:LEU:HD22	1.87	0.75
1:A:127:LEU:HD13	1:B:123:LEU:HB3	1.68	0.74
1:B:15:ARG:HB2	1:B:15:ARG:NH1	2.01	0.74
1:A:24:GLN:NE2	1:A:60:LEU:HD11	2.03	0.74
1:A:128:GLU:HG3	4:B:221:HOH:O	1.87	0.74
1:A:58:MSE:HG3	1:A:59:GLY:H	1.51	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:20:CYS:SG	4:A:287:HOH:O	2.46	0.73
1:B:97:ALA:HB3	1:B:101:GLN:HG3	1.69	0.73
1:B:42:VAL:HG23	1:B:65:VAL:HG13	1.71	0.73
1:B:27:LYS:HD3	4:B:275:HOH:O	1.88	0.73
1:A:51:GLY:N	1:A:58:MSE:HE1	2.03	0.73
1:A:22:SER:HB3	1:A:55:ILE:HD12	1.70	0.72
1:A:148:ASP:HB3	4:A:664:HOH:O	1.90	0.72
1:A:124:GLU:HG3	1:B:128:GLU:HA	1.72	0.72
1:B:90:VAL:HG11	4:B:304:HOH:O	1.90	0.72
1:A:124:GLU:HG3	1:B:128:GLU:CA	2.20	0.72
1:A:51:GLY:HA3	1:A:58:MSE:HE1	1.72	0.71
1:A:21:GLY:O	1:A:58:MSE:HG3	1.91	0.71
1:B:96:VAL:HG21	1:B:102:ARG:HB2	1.72	0.71
1:B:116:LEU:HB3	1:B:117:PRO:CD	2.20	0.71
1:B:75:ILE:N	1:B:75:ILE:HD12	2.06	0.71
1:A:103:LYS:HD2	4:A:225:HOH:O	1.89	0.71
1:B:27:LYS:HD3	4:B:273:HOH:O	1.91	0.71
1:A:128:GLU:HA	1:B:124:GLU:HG3	1.73	0.70
1:A:47:ASP:CG	1:A:71:HIS:HB3	2.12	0.70
1:B:48:LEU:CD2	1:B:50:TYR:HB3	2.19	0.70
1:A:188:LEU:C	1:A:190:GLU:H	1.94	0.70
1:A:127:LEU:HD13	1:B:123:LEU:HG	1.72	0.70
1:A:16:ILE:HG13	1:A:46:ILE:HG21	1.73	0.70
1:B:34:ALA:HA	1:B:116:LEU:HD11	1.74	0.69
1:B:144:LEU:HD12	1:B:175:ILE:HG23	1.73	0.69
1:B:15:ARG:HB2	1:B:15:ARG:HH11	1.56	0.69
1:A:123:LEU:HG	1:B:127:LEU:CD1	2.22	0.69
1:B:101:GLN:HA	1:B:101:GLN:HE21	1.57	0.69
1:A:112:ALA:HB2	1:A:141:PRO:HD2	1.75	0.69
1:A:176:VAL:HG11	1:A:188:LEU:HD23	1.75	0.69
1:A:127:LEU:CD1	1:B:127:LEU:HD12	2.12	0.69
1:B:78:LYS:HB2	4:B:327:HOH:O	1.93	0.69
1:A:58:MSE:HE3	4:A:238:HOH:O	1.91	0.69
1:B:54:SER:O	1:B:59:GLY:HA3	1.93	0.69
1:B:116:LEU:HD23	1:B:145:LEU:HB3	1.74	0.69
1:B:123:LEU:HG	1:B:127:LEU:HD11	1.75	0.69
1:B:144:LEU:HD12	1:B:155:LEU:HD21	1.75	0.69
1:A:22:SER:O	1:A:56:GLY:HA3	1.93	0.69
1:A:51:GLY:CA	1:A:58:MSE:HE1	2.22	0.69
1:B:15:ARG:HB2	1:B:15:ARG:NH1	2.03	0.68
1:B:188:LEU:O	1:B:190:GLU:HG3	1.93	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:96:VAL:HG11	1:B:105:GLU:HG3	1.75	0.68
1:A:77:PRO:HG3	1:A:99:MSE:SE	2.44	0.68
1:A:24:GLN:HG3	1:A:56:GLY:HA2	1.74	0.68
1:B:99:MSE:HA	1:B:99:MSE:HE2	1.75	0.68
1:A:127:LEU:HD11	1:B:123:LEU:HD23	1.75	0.68
1:A:25:GLY:HA2	1:B:164:GLU:O	1.92	0.68
1:B:16:ILE:HG12	1:B:112:ALA:HB3	1.75	0.68
1:A:100:HIS:HA	1:A:103:LYS:NZ	2.09	0.68
1:A:17:CYS:SG	1:A:106:MSE:HE2	2.34	0.68
1:A:128:GLU:HA	1:B:124:GLU:HG3	1.74	0.67
1:A:78:LYS:HG2	1:A:95:ALA:HB1	1.76	0.67
1:B:32:ASP:O	1:B:36:ASP:HB2	1.94	0.67
1:B:48:LEU:HD21	1:B:50:TYR:CB	2.21	0.67
1:A:44:ARG:HH22	1:A:186:LYS:CG	2.06	0.67
1:A:119:GLY:C	1:A:123:LEU:HD22	2.13	0.67
1:B:145:LEU:HD11	1:B:180:THR:C	2.15	0.67
1:B:76:ILE:HB	1:B:77:PRO:HD2	1.75	0.67
1:A:103:LYS:NZ	1:B:128:GLU:OE2	2.24	0.67
1:B:128:GLU:HB3	4:B:327:HOH:O	1.94	0.67
1:A:44:ARG:NH1	1:A:189:GLU:HG3	2.10	0.67
1:B:177:SER:HB3	4:B:256:HOH:O	1.93	0.66
1:A:24:GLN:HE21	1:A:60:LEU:HD11	1.59	0.66
1:A:102:ARG:HD3	4:A:622:HOH:O	1.94	0.66
1:A:144:LEU:HD23	1:A:144:LEU:N	2.10	0.66
1:B:116:LEU:HB3	1:B:117:PRO:HD2	1.75	0.66
1:A:34:ALA:HB2	1:A:57:LEU:HD22	1.78	0.66
1:A:17:CYS:HA	1:A:49:VAL:O	1.94	0.66
1:A:99:MSE:SE	4:A:236:HOH:O	2.62	0.66
1:A:116:LEU:HB3	1:A:117:PRO:HD2	1.78	0.66
1:A:178:ALA:HB3	1:A:184:LEU:HB2	1.78	0.66
1:B:57:LEU:O	1:B:61:VAL:HG12	1.95	0.66
1:A:50:TYR:CD1	1:A:58:MSE:HE2	2.30	0.66
1:A:79:THR:OG1	1:A:80:LEU:HD23	1.95	0.66
1:A:144:LEU:HD23	1:A:144:LEU:H	1.61	0.66
1:A:123:LEU:HB3	1:B:127:LEU:HD13	1.78	0.65
1:B:188:LEU:C	1:B:190:GLU:H	1.99	0.65
1:B:45:ASN:HA	1:B:70:ARG:HD3	1.77	0.65
1:A:20:CYS:SG	4:A:289:HOH:O	2.53	0.65
1:A:144:LEU:HD23	1:A:144:LEU:H	1.62	0.65
1:B:102:ARG:O	1:B:106:MSE:HG3	1.96	0.65
1:B:74:GLY:HA3	1:B:89:THR:HG21	1.77	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:12:LYS:HE3	1:B:13:PHE:CZ	2.32	0.65
1:B:12:LYS:HE2	1:B:189:GLU:HA	1.78	0.65
1:B:37:LEU:HD22	1:B:116:LEU:HD21	1.78	0.65
1:B:15:ARG:HD2	1:B:109:HIS:O	1.96	0.64
1:A:76:ILE:HA	1:A:102:ARG:HD2	1.79	0.64
1:A:144:LEU:HD23	1:A:144:LEU:N	2.13	0.64
1:B:42:VAL:CG2	1:B:65:VAL:HG13	2.28	0.64
1:B:166:PHE:O	1:B:167:ILE:HG13	1.96	0.64
1:A:188:LEU:O	1:A:190:GLU:HG3	1.97	0.64
1:A:148:ASP:HB3	4:A:317:HOH:O	1.96	0.64
1:B:96:VAL:HG11	1:B:102:ARG:HA	1.80	0.64
1:A:178:ALA:HB3	1:A:184:LEU:HB2	1.79	0.64
1:A:71:HIS:ND1	4:A:309:HOH:O	2.30	0.64
1:B:87:GLY:N	4:B:319:HOH:O	2.31	0.64
1:B:157:PHE:O	1:B:160:LYS:HB3	1.97	0.63
1:B:76:ILE:O	1:B:96:VAL:HG22	1.98	0.63
1:A:57:LEU:O	1:A:61:VAL:HG12	1.99	0.63
1:B:144:LEU:CD1	1:B:155:LEU:HD21	2.28	0.63
1:B:123:LEU:O	1:B:127:LEU:HG	1.98	0.63
1:A:75:ILE:N	1:A:75:ILE:CD1	2.61	0.63
1:A:44:ARG:HH22	1:A:186:LYS:HG3	1.63	0.63
1:A:100:HIS:HA	1:A:103:LYS:HZ2	1.62	0.63
1:A:58:MSE:HG3	1:A:59:GLY:N	2.14	0.62
1:A:162:VAL:HA	1:A:167:ILE:O	1.97	0.62
1:B:186:LYS:HG3	4:B:243:HOH:O	1.99	0.62
1:A:51:GLY:CA	1:A:58:MSE:HE1	2.30	0.62
1:A:126:LEU:HD11	1:A:130:ILE:HD11	1.81	0.62
1:B:96:VAL:HG21	1:B:102:ARG:CB	2.30	0.62
1:A:124:GLU:HG2	4:B:221:HOH:O	1.98	0.62
1:B:182:LYS:NZ	4:B:323:HOH:O	2.32	0.62
1:B:12:LYS:HG2	1:B:189:GLU:OE2	1.99	0.62
1:B:12:LYS:HE2	1:B:189:GLU:HA	1.80	0.62
1:B:42:VAL:HA	1:B:70:ARG:HG3	1.81	0.62
1:A:127:LEU:HD13	1:B:123:LEU:HG	1.81	0.62
1:A:57:LEU:O	1:A:61:VAL:HG12	1.98	0.62
1:B:12:LYS:HE2	1:B:189:GLU:HA	1.80	0.62
1:A:20:CYS:SG	4:A:286:HOH:O	2.56	0.62
1:A:53:GLY:HA3	1:A:58:MSE:SE	2.50	0.62
1:B:182:LYS:NZ	4:B:323:HOH:O	2.32	0.62
1:B:14:ARG:O	1:B:15:ARG:HG3	2.00	0.62
1:B:87:GLY:N	4:B:319:HOH:O	2.32	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:145:LEU:HD11	1:B:180:THR:C	2.21	0.61
1:A:61:VAL:CG1	1:A:62:SER:H	2.05	0.61
1:A:106:MSE:HE1	1:A:125:GLU:OE2	2.00	0.61
1:A:16:ILE:HG13	1:A:46:ILE:HG21	1.82	0.61
1:B:188:LEU:C	1:B:190:GLU:N	2.53	0.61
1:A:52:GLY:H	1:A:58:MSE:CE	2.13	0.61
1:B:87:GLY:N	4:B:801:HOH:O	2.33	0.61
1:A:78:LYS:HA	1:A:95:ALA:HB1	1.82	0.61
1:A:10:LYS:HD3	1:A:11:SER:N	2.16	0.61
1:A:102:ARG:O	1:A:106:MSE:HG3	2.00	0.61
1:B:87:GLY:N	4:B:315:HOH:O	2.33	0.61
1:A:50:TYR:O	1:A:74:GLY:HA2	2.00	0.60
1:A:37:LEU:HD11	1:A:114:ILE:HD13	1.83	0.60
1:B:158:ILE:HG23	1:B:167:ILE:CD1	2.31	0.60
1:B:108:LYS:O	1:B:108:LYS:HG2	2.01	0.60
1:A:14:ARG:NH1	4:A:231:HOH:O	2.34	0.60
1:A:37:LEU:O	1:A:41:LEU:HG	2.01	0.60
1:A:148:ASP:CB	4:A:317:HOH:O	2.50	0.60
1:B:10:LYS:N	1:B:10:LYS:HD2	2.17	0.60
1:B:99:MSE:HE3	1:B:102:ARG:HH11	1.65	0.60
1:B:99:MSE:HE3	1:B:102:ARG:NH1	2.17	0.60
1:B:17:CYS:SG	1:B:106:MSE:HB3	2.42	0.60
1:A:127:LEU:CD1	1:B:123:LEU:HB3	2.29	0.60
1:A:162:VAL:HA	1:A:167:ILE:O	2.01	0.60
1:B:87:GLY:N	4:B:320:HOH:O	2.34	0.60
1:B:173:GLU:HB2	4:B:220:HOH:O	2.02	0.60
1:B:87:GLY:N	4:B:316:HOH:O	2.34	0.59
1:B:15:ARG:NH1	1:B:109:HIS:O	2.35	0.59
1:A:79:THR:OG1	1:A:80:LEU:HD23	2.02	0.59
1:A:12:LYS:HG2	1:A:189:GLU:OE1	2.02	0.59
1:A:169:PRO:HD2	4:A:263:HOH:O	2.00	0.59
1:A:188:LEU:C	1:A:190:GLU:N	2.56	0.59
1:B:87:GLY:N	4:B:319:HOH:O	2.34	0.59
1:A:76:ILE:O	1:A:95:ALA:HA	2.02	0.59
1:B:73:ILE:HA	1:B:92:GLU:O	2.02	0.59
1:A:63:GLN:OE1	1:A:90:VAL:HG11	2.02	0.59
1:B:40:GLU:HG3	1:B:44:ARG:HE	1.68	0.59
1:B:44:ARG:NE	1:B:185:VAL:HG11	2.18	0.59
1:B:77:PRO:HD3	1:B:102:ARG:HD2	1.84	0.59
1:A:12:LYS:HZ3	1:A:12:LYS:HB2	1.67	0.59
1:B:161:ALA:HB3	1:B:167:ILE:HD12	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:44:ARG:CD	1:B:185:VAL:HG11	2.33	0.59
1:A:52:GLY:N	1:A:58:MSE:HE1	2.16	0.59
1:B:15:ARG:HH12	1:B:109:HIS:HB3	1.68	0.59
1:B:179:PRO:HG2	1:B:183:GLU:OE2	2.03	0.59
1:A:40:GLU:HG2	1:A:182:LYS:HA	1.85	0.59
1:A:103:LYS:NZ	1:A:103:LYS:HB2	2.18	0.59
1:A:12:LYS:N	1:A:12:LYS:HD2	2.18	0.58
1:A:103:LYS:HE2	1:A:128:GLU:CD	2.23	0.58
1:A:37:LEU:O	1:A:41:LEU:HG	2.03	0.58
1:B:101:GLN:HA	1:B:101:GLN:NE2	2.17	0.58
1:B:116:LEU:CD2	1:B:145:LEU:HD23	2.31	0.58
1:B:15:ARG:HH11	1:B:15:ARG:CB	2.06	0.58
1:B:126:LEU:O	1:B:129:VAL:HG23	2.04	0.58
1:A:30:TYR:HA	1:A:147:VAL:HG11	1.86	0.58
1:B:98:ASP:OD1	1:B:101:GLN:HG2	2.02	0.58
1:B:38:GLY:O	1:B:65:VAL:HG22	2.03	0.58
1:A:103:LYS:HB2	1:A:103:LYS:NZ	2.19	0.58
1:A:37:LEU:HA	1:A:181:ALA:HB1	1.85	0.58
1:A:12:LYS:HB2	1:A:12:LYS:NZ	2.17	0.58
1:A:150:TYR:OH	1:B:161:ALA:HA	2.03	0.58
1:B:15:ARG:HG2	1:B:47:ASP:HB2	1.86	0.58
1:A:76:ILE:HD12	1:A:80:LEU:O	2.03	0.58
1:A:148:ASP:HB3	4:A:278:HOH:O	2.03	0.58
1:A:15:ARG:HD2	1:A:109:HIS:O	2.04	0.58
1:A:20:CYS:HB3	1:A:116:LEU:HB2	1.86	0.58
1:A:40:GLU:CD	1:A:182:LYS:HA	2.25	0.58
1:A:182:LYS:HB2	1:A:182:LYS:NZ	2.18	0.58
1:B:130:ILE:HD13	1:B:175:ILE:HD11	1.86	0.58
1:B:99:MSE:HE2	1:B:124:GLU:OE2	2.03	0.58
1:A:189:GLU:O	1:A:190:GLU:HB2	2.02	0.57
1:A:100:HIS:ND1	1:B:100:HIS:HB3	2.19	0.57
1:A:26:LYS:HG3	1:B:164:GLU:O	2.04	0.57
1:A:162:VAL:HG21	1:A:172:ARG:HB2	1.86	0.57
1:A:144:LEU:O	1:A:144:LEU:HD12	2.04	0.57
1:A:12:LYS:HD2	1:A:12:LYS:H	1.69	0.57
1:A:124:GLU:HG3	1:B:128:GLU:HA	1.86	0.57
1:A:162:VAL:HG11	1:A:172:ARG:CZ	2.34	0.57
1:B:141:PRO:CB	1:B:188:LEU:HD22	2.34	0.57
1:B:40:GLU:HG2	1:B:185:VAL:HG21	1.85	0.57
1:B:188:LEU:C	1:B:190:GLU:N	2.57	0.57
1:A:165:GLY:HA3	1:B:26:LYS:HG3	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:173:GLU:HG3	4:A:235:HOH:O	2.03	0.57
1:B:96:VAL:HG21	1:B:102:ARG:CA	2.35	0.57
1:B:76:ILE:HB	1:B:77:PRO:HD2	1.87	0.57
1:A:44:ARG:NH2	4:A:274:HOH:O	2.36	0.57
1:B:17:CYS:HB2	1:B:110:SER:OG	2.04	0.57
1:B:10:LYS:N	1:B:10:LYS:HD2	2.20	0.57
1:A:15:ARG:CG	1:A:47:ASP:HB2	2.35	0.57
1:A:127:LEU:CD1	1:B:127:LEU:HD12	2.30	0.57
1:A:17:CYS:HA	1:A:49:VAL:O	2.04	0.57
1:A:53:GLY:HA3	1:A:58:MSE:SE	2.54	0.57
1:A:116:LEU:HD12	1:A:116:LEU:N	2.19	0.57
1:A:116:LEU:HG	1:A:145:LEU:HD23	1.87	0.57
1:B:66:HIS:CD2	4:B:301:HOH:O	2.57	0.57
1:B:128:GLU:HB3	4:B:326:HOH:O	2.05	0.56
1:B:143:GLY:HA3	1:B:184:LEU:HD11	1.87	0.56
1:A:128:GLU:HG3	4:B:221:HOH:O	2.05	0.56
1:B:57:LEU:O	1:B:61:VAL:HG12	2.05	0.56
1:B:24:GLN:O	1:B:57:LEU:HD21	2.06	0.56
1:A:11:SER:OG	1:A:46:ILE:HD11	2.04	0.56
1:A:18:VAL:HG13	1:A:114:ILE:O	2.05	0.56
1:A:132:TRP:CG	1:A:137:ILE:HD12	2.40	0.56
1:B:130:ILE:HD13	1:B:175:ILE:HD11	1.86	0.56
1:A:49:VAL:HG22	1:A:73:ILE:HB	1.87	0.56
1:A:188:LEU:O	1:A:190:GLU:HG3	2.06	0.56
1:A:27:LYS:HB2	1:A:30:TYR:CE2	2.40	0.56
1:A:27:LYS:HE2	4:A:278:HOH:O	2.05	0.56
1:B:144:LEU:HD12	1:B:175:ILE:CG2	2.34	0.56
1:A:74:GLY:C	1:A:75:ILE:HD12	2.26	0.56
1:A:100:HIS:HA	1:A:103:LYS:HZ2	1.71	0.56
1:A:79:THR:OG1	1:A:80:LEU:HD23	2.06	0.56
1:A:20:CYS:HB3	1:A:116:LEU:HB2	1.87	0.56
1:A:27:LYS:HE3	4:B:258:HOH:O	2.05	0.56
1:A:160:LYS:HE3	1:A:164:GLU:HG3	1.88	0.56
1:B:34:ALA:HB2	1:B:57:LEU:HD22	1.88	0.56
1:A:105:GLU:OE1	1:A:109:HIS:HE1	1.89	0.56
1:B:77:PRO:CB	1:B:99:MSE:HE3	2.28	0.56
1:A:14:ARG:NH2	4:A:231:HOH:O	2.39	0.56
1:A:13:PHE:HB3	1:A:111:ASP:HB2	1.88	0.56
1:A:42:VAL:HG21	1:A:68:GLY:HA3	1.88	0.56
1:B:17:CYS:HB3	1:B:113:PHE:CD1	2.41	0.56
1:B:15:ARG:O	1:B:16:ILE:HG13	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:185:VAL:O	1:A:189:GLU:HG2	2.06	0.55
1:B:123:LEU:HG	1:B:127:LEU:HD12	1.88	0.55
1:B:154:LEU:O	1:B:158:ILE:HG12	2.06	0.55
1:A:148:ASP:HB3	4:B:280:HOH:O	2.06	0.55
1:A:124:GLU:HG2	4:A:604:HOH:O	2.06	0.55
1:A:126:LEU:HG	1:A:130:ILE:HD12	1.89	0.55
1:B:119:GLY:O	1:B:123:LEU:HD13	2.06	0.55
1:A:58:MSE:HG2	4:A:287:HOH:O	2.05	0.55
1:B:28:SER:HA	1:B:31:GLN:CD	2.27	0.55
1:A:181:ALA:O	1:A:185:VAL:HG23	2.06	0.55
1:B:77:PRO:HD3	1:B:102:ARG:HD2	1.88	0.55
1:B:169:PRO:O	1:B:172:ARG:HB3	2.06	0.55
1:A:105:GLU:OE1	1:A:109:HIS:HE1	1.90	0.55
1:A:77:PRO:HG3	1:A:99:MSE:SE	2.56	0.55
1:B:15:ARG:HH11	1:B:15:ARG:CB	2.16	0.55
1:B:74:GLY:HA3	1:B:89:THR:CG2	2.37	0.55
1:A:80:LEU:H	1:A:80:LEU:CD2	2.15	0.55
1:B:20:CYS:HB3	1:B:116:LEU:HB2	1.89	0.55
1:A:124:GLU:HG2	4:A:219:HOH:O	2.06	0.55
1:B:189:GLU:O	1:B:190:GLU:HB2	2.06	0.55
1:A:33:ALA:CB	1:A:147:VAL:HG21	2.37	0.55
1:A:26:LYS:HE3	1:B:165:GLY:N	2.22	0.55
1:A:58:MSE:HG2	4:A:286:HOH:O	2.06	0.55
1:A:15:ARG:HA	1:A:47:ASP:O	2.07	0.55
1:A:160:LYS:HE3	1:A:164:GLU:CG	2.35	0.55
1:B:188:LEU:C	1:B:190:GLU:N	2.59	0.55
1:A:23:SER:HB3	4:B:743:HOH:O	2.06	0.55
1:B:143:GLY:HA2	1:B:176:VAL:O	2.07	0.55
1:B:162:VAL:HG21	1:B:172:ARG:HB2	1.89	0.55
1:B:77:PRO:HD3	1:B:102:ARG:NE	2.22	0.55
1:A:15:ARG:HA	1:A:47:ASP:O	2.06	0.54
1:A:18:VAL:HG22	1:A:114:ILE:HB	1.88	0.54
1:A:124:GLU:HG2	4:B:221:HOH:O	2.07	0.54
1:B:14:ARG:HH11	1:B:14:ARG:HG3	1.71	0.54
1:A:80:LEU:H	1:A:80:LEU:CD2	2.18	0.54
1:B:141:PRO:HB3	1:B:188:LEU:HD22	1.88	0.54
1:A:28:SER:HA	1:A:31:GLN:OE1	2.08	0.54
1:B:141:PRO:CB	1:B:188:LEU:HD22	2.38	0.54
1:A:103:LYS:HE3	1:A:124:GLU:OE2	2.07	0.54
1:A:44:ARG:NH2	1:A:186:LYS:HG3	2.22	0.54
1:A:128:GLU:HA	1:B:124:GLU:HG3	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:49:VAL:HA	1:A:73:ILE:O	2.08	0.54
1:B:48:LEU:HG	1:B:50:TYR:N	2.10	0.54
1:A:105:GLU:OE1	1:A:109:HIS:HE1	1.89	0.54
1:A:158:ILE:O	1:A:158:ILE:HG22	2.07	0.54
1:A:20:CYS:HB3	1:A:116:LEU:HB2	1.89	0.54
1:B:182:LYS:HE3	4:B:319:HOH:O	2.07	0.54
1:A:37:LEU:O	1:A:41:LEU:HG	2.07	0.54
1:B:103:LYS:HA	1:B:106:MSE:HE3	1.90	0.54
1:B:17:CYS:SG	1:B:106:MSE:HE2	2.48	0.54
1:A:42:VAL:HG21	1:A:68:GLY:HA3	1.90	0.54
1:A:144:LEU:HD12	1:A:144:LEU:C	2.27	0.54
1:A:69:GLY:C	4:A:268:HOH:O	2.46	0.54
1:A:22:SER:HB3	1:A:55:ILE:CD1	2.38	0.54
1:B:188:LEU:O	1:B:190:GLU:N	2.40	0.54
1:B:17:CYS:HB2	1:B:110:SER:OG	2.08	0.53
1:B:99:MSE:HA	1:B:99:MSE:CE	2.36	0.53
1:A:116:LEU:HA	1:A:145:LEU:HB3	1.88	0.53
1:A:103:LYS:HG2	1:A:128:GLU:OE1	2.07	0.53
1:A:123:LEU:HG	1:B:127:LEU:CD1	2.21	0.53
1:A:125:GLU:O	1:A:129:VAL:HG23	2.09	0.53
1:B:178:ALA:HB1	1:B:179:PRO:HD2	1.91	0.53
1:B:17:CYS:SG	1:B:106:MSE:HE2	2.49	0.53
1:A:37:LEU:HA	1:A:181:ALA:CB	2.38	0.53
1:A:17:CYS:HB2	1:A:110:SER:OG	2.09	0.53
1:B:114:ILE:HG22	1:B:114:ILE:O	2.07	0.53
1:A:100:HIS:ND1	1:B:100:HIS:HB3	2.23	0.53
1:A:100:HIS:ND1	1:B:100:HIS:HB3	2.24	0.53
1:B:46:ILE:HG22	1:B:47:ASP:O	2.07	0.53
1:A:38:GLY:HA3	1:A:64:ALA:HB3	1.90	0.53
1:A:77:PRO:HG2	1:A:80:LEU:HD12	1.90	0.53
1:B:27:LYS:HB2	1:B:30:TYR:CD2	2.44	0.53
1:A:12:LYS:HE2	1:A:189:GLU:O	2.08	0.53
1:B:17:CYS:SG	1:B:106:MSE:HG2	2.49	0.53
1:B:97:ALA:HB3	1:B:101:GLN:CG	2.32	0.53
1:A:69:GLY:C	4:A:266:HOH:O	2.45	0.53
1:B:22:SER:C	1:B:56:GLY:HA3	2.29	0.53
1:B:182:LYS:HE3	4:B:322:HOH:O	2.07	0.53
1:A:123:LEU:HD23	1:B:127:LEU:HD22	1.91	0.53
1:B:54:SER:OG	1:B:87:GLY:HA3	2.09	0.53
1:A:24:GLN:CG	1:A:56:GLY:HA2	2.39	0.53
1:A:101:GLN:O	1:A:105:GLU:HG2	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:55:ILE:HD12	1:B:55:ILE:O	2.09	0.53
1:A:14:ARG:HB3	1:A:14:ARG:NH1	2.23	0.53
1:A:130:ILE:CG1	1:A:142:VAL:HG11	2.38	0.52
1:B:158:ILE:HG21	1:B:175:ILE:HD12	1.89	0.52
1:B:143:GLY:HA2	1:B:176:VAL:O	2.09	0.52
1:B:159:ASP:CG	1:B:172:ARG:HH21	2.12	0.52
1:B:49:VAL:O	1:B:49:VAL:HG12	2.08	0.52
1:A:13:PHE:CZ	1:A:141:PRO:HG2	2.45	0.52
1:A:183:GLU:HG2	1:A:187:LYS:HD2	1.91	0.52
1:B:50:TYR:C	1:B:106:MSE:HE3	2.30	0.52
1:B:187:LYS:O	1:B:190:GLU:HG3	2.09	0.52
1:B:98:ASP:OD1	1:B:100:HIS:HB2	2.10	0.52
1:A:35:VAL:HG13	1:A:64:ALA:HB2	1.92	0.52
1:B:27:LYS:HB2	1:B:30:TYR:CE2	2.45	0.52
1:B:105:GLU:O	1:B:108:LYS:N	2.43	0.52
1:B:15:ARG:HH11	1:B:15:ARG:CB	2.10	0.52
1:B:189:GLU:O	1:B:190:GLU:O	2.27	0.52
1:A:13:PHE:HB2	1:A:46:ILE:HD13	1.91	0.52
1:A:18:VAL:HA	1:A:114:ILE:O	2.10	0.52
1:A:16:ILE:HG13	1:A:46:ILE:HG21	1.92	0.52
1:B:44:ARG:HH12	1:B:189:GLU:CD	2.13	0.52
1:A:103:LYS:HE2	1:A:128:GLU:OE1	2.10	0.52
1:A:188:LEU:C	1:A:190:GLU:H	2.13	0.52
1:A:50:TYR:CD1	1:A:58:MSE:HE3	2.45	0.52
1:A:94:ARG:HD3	4:A:613:HOH:O	2.09	0.52
1:B:111:ASP:O	1:B:112:ALA:HB2	2.10	0.52
1:A:141:PRO:HB2	1:A:188:LEU:HD22	1.92	0.52
1:B:182:LYS:HE3	4:B:323:HOH:O	2.08	0.52
1:A:80:LEU:H	1:A:80:LEU:CD2	2.18	0.52
1:B:15:ARG:HH11	1:B:15:ARG:HG3	1.74	0.52
1:A:100:HIS:CD2	1:A:103:LYS:HZ1	2.27	0.52
1:B:27:LYS:HD3	4:B:275:HOH:O	2.10	0.52
1:B:77:PRO:HD3	1:B:102:ARG:CD	2.40	0.52
1:A:114:ILE:HG23	1:A:184:LEU:HD21	1.92	0.51
1:B:188:LEU:C	1:B:190:GLU:H	2.12	0.51
1:A:75:ILE:HD12	1:A:106:MSE:HA	1.92	0.51
1:B:34:ALA:HA	1:B:116:LEU:HD11	1.92	0.51
1:A:76:ILE:HA	1:A:102:ARG:HE	1.75	0.51
1:A:100:HIS:CD2	1:A:100:HIS:N	2.78	0.51
1:B:77:PRO:HD3	1:B:102:ARG:HD2	1.92	0.51
1:B:188:LEU:O	1:B:190:GLU:HG3	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:20:CYS:HB2	1:B:57:LEU:HB2	1.92	0.51
1:B:31:GLN:O	1:B:35:VAL:HG23	2.11	0.51
1:A:156:SER:CA	1:A:159:ASP:HB2	2.39	0.51
1:B:158:ILE:O	1:B:162:VAL:HG23	2.10	0.51
1:A:183:GLU:OE2	1:A:187:LYS:HE3	2.11	0.51
1:B:28:SER:HA	1:B:31:GLN:OE1	2.10	0.51
1:B:161:ALA:HB3	1:B:167:ILE:HD12	1.93	0.51
1:B:17:CYS:SG	1:B:19:PHE:CE1	3.03	0.51
1:A:124:GLU:HG2	4:A:219:HOH:O	2.10	0.51
1:A:160:LYS:HE3	1:A:164:GLU:CG	2.41	0.51
1:A:127:LEU:CD1	1:B:123:LEU:HG	2.41	0.51
1:A:124:GLU:HG2	4:A:219:HOH:O	2.09	0.51
1:B:102:ARG:HD3	4:B:240:HOH:O	2.11	0.51
1:B:45:ASN:HA	1:B:70:ARG:HD3	1.92	0.51
1:B:17:CYS:HB2	1:B:110:SER:CB	2.41	0.51
1:A:115:ALA:HB2	1:A:126:LEU:HD13	1.93	0.50
1:A:17:CYS:SG	1:A:106:MSE:HE2	2.51	0.50
1:A:188:LEU:C	1:A:190:GLU:N	2.62	0.50
1:A:27:LYS:HB2	1:A:30:TYR:CD2	2.46	0.50
1:A:158:ILE:O	1:A:162:VAL:N	2.44	0.50
1:A:19:PHE:HB2	1:A:115:ALA:HA	1.94	0.50
1:A:38:GLY:HA3	1:A:64:ALA:HB3	1.93	0.50
1:B:123:LEU:HD11	1:B:127:LEU:HD21	1.94	0.50
1:B:182:LYS:HE3	4:B:323:HOH:O	2.09	0.50
1:B:19:PHE:O	1:B:115:ALA:HA	2.11	0.50
1:B:62:SER:HB2	1:B:90:VAL:HG21	1.93	0.50
1:A:154:LEU:HB2	1:B:157:PHE:CG	2.46	0.50
1:A:131:THR:OG1	1:B:120:TYR:HB3	2.10	0.50
1:A:12:LYS:HE2	1:A:189:GLU:HA	1.93	0.50
1:A:38:GLY:O	1:A:42:VAL:HG23	2.12	0.50
1:B:96:VAL:HG23	1:B:97:ALA:N	2.27	0.50
1:A:132:TRP:HB3	1:A:137:ILE:HB	1.93	0.50
1:A:164:GLU:OE1	1:B:27:LYS:HG3	2.10	0.50
1:B:20:CYS:CB	1:B:116:LEU:HB2	2.42	0.50
1:A:75:ILE:HG12	1:A:94:ARG:HB2	1.93	0.50
1:A:132:TRP:CD1	1:A:137:ILE:HD12	2.47	0.50
1:A:154:LEU:HB2	1:B:157:PHE:CD2	2.46	0.50
1:A:116:LEU:HB3	1:A:117:PRO:CD	2.40	0.50
1:A:127:LEU:HD21	1:B:123:LEU:HD23	1.92	0.50
1:A:27:LYS:HE2	4:A:278:HOH:O	2.10	0.50
1:A:12:LYS:HE3	1:A:13:PHE:CE1	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:32:ASP:O	1:B:35:VAL:N	2.44	0.50
1:B:12:LYS:HZ2	1:B:12:LYS:CB	2.23	0.50
1:A:24:GLN:HG3	4:A:307:HOH:O	2.11	0.50
1:A:144:LEU:HB3	1:A:177:SER:HB2	1.94	0.50
1:A:123:LEU:HG	1:A:127:LEU:HD11	1.93	0.50
1:B:13:PHE:HD1	1:B:111:ASP:HB3	1.76	0.50
1:B:99:MSE:CE	1:B:124:GLU:OE2	2.58	0.50
1:A:115:ALA:N	1:A:143:GLY:O	2.37	0.50
1:B:141:PRO:HG3	4:B:814:HOH:O	2.12	0.49
1:A:40:GLU:CG	1:A:182:LYS:HA	2.42	0.49
1:A:76:ILE:HG12	1:A:94:ARG:O	2.12	0.49
1:A:176:VAL:HG11	1:A:188:LEU:HD23	1.93	0.49
1:B:126:LEU:HD21	1:B:144:LEU:HD21	1.93	0.49
1:A:12:LYS:HZ1	1:A:189:GLU:HA	1.77	0.49
1:B:89:THR:HB	1:B:93:VAL:HG22	1.95	0.49
1:A:14:ARG:HG2	1:A:111:ASP:OD2	2.13	0.49
1:B:16:ILE:HG13	1:B:46:ILE:HG21	1.94	0.49
1:B:21:GLY:O	1:B:57:LEU:N	2.46	0.49
1:B:31:GLN:HG3	1:B:60:LEU:HD11	1.94	0.49
1:B:26:LYS:O	1:B:27:LYS:HD3	2.12	0.49
1:A:123:LEU:HG	1:A:127:LEU:CD1	2.43	0.49
1:B:17:CYS:HB3	1:B:113:PHE:CD1	2.48	0.49
1:A:12:LYS:NZ	1:A:189:GLU:HA	2.28	0.49
1:B:116:LEU:HD23	1:B:145:LEU:HD23	1.95	0.49
1:A:184:LEU:O	1:A:188:LEU:HG	2.13	0.49
1:A:37:LEU:O	1:A:41:LEU:HG	2.12	0.49
1:B:21:GLY:O	1:B:58:MSE:HG3	2.13	0.49
1:B:47:ASP:HB3	1:B:71:HIS:O	2.11	0.49
1:A:14:ARG:CZ	1:A:15:ARG:HH22	2.25	0.49
1:A:33:ALA:HB2	4:A:239:HOH:O	2.13	0.49
1:B:37:LEU:O	1:B:41:LEU:HG	2.12	0.49
1:A:162:VAL:HA	1:A:167:ILE:O	2.12	0.49
1:B:132:TRP:HB3	1:B:137:ILE:HB	1.94	0.49
1:A:76:ILE:HG12	1:A:94:ARG:O	2.13	0.49
1:A:51:GLY:N	1:A:58:MSE:CE	2.74	0.49
1:B:20:CYS:HB3	1:B:116:LEU:HB2	1.94	0.49
1:A:127:LEU:HD13	1:B:123:LEU:HB3	1.95	0.49
1:B:42:VAL:HG22	1:B:70:ARG:HG3	1.94	0.49
1:A:27:LYS:HB2	1:A:30:TYR:CE2	2.48	0.49
1:B:75:ILE:N	1:B:75:ILE:CD1	2.76	0.49
1:B:107:ALA:HA	1:B:113:PHE:CZ	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:15:ARG:HH11	1:B:49:VAL:CG2	2.25	0.48
1:A:40:GLU:OE2	1:A:44:ARG:HG3	2.14	0.48
1:A:103:LYS:HE2	1:A:128:GLU:OE1	2.12	0.48
1:A:20:CYS:HB3	1:A:116:LEU:HB2	1.94	0.48
1:A:99:MSE:O	1:A:103:LYS:HD3	2.13	0.48
1:A:27:LYS:HB2	1:A:30:TYR:CD2	2.47	0.48
1:A:162:VAL:HG22	1:A:167:ILE:O	2.13	0.48
1:B:98:ASP:H	1:B:101:GLN:HB2	1.78	0.48
1:B:90:VAL:HG11	4:B:306:HOH:O	2.13	0.48
1:A:12:LYS:HG2	1:A:189:GLU:OE1	2.12	0.48
1:B:40:GLU:OE2	1:B:44:ARG:NE	2.46	0.48
1:B:162:VAL:HG22	1:B:167:ILE:O	2.14	0.48
1:A:80:LEU:HD23	1:A:80:LEU:N	2.27	0.48
1:A:162:VAL:CG2	1:A:172:ARG:HB2	2.43	0.48
1:B:50:TYR:CZ	1:B:52:GLY:HA2	2.49	0.48
1:B:15:ARG:HG2	1:B:47:ASP:HB2	1.95	0.48
1:A:114:ILE:HG23	1:A:184:LEU:HD21	1.95	0.48
1:B:42:VAL:HG21	1:B:68:GLY:HA3	1.95	0.48
1:B:189:GLU:O	1:B:190:GLU:C	2.52	0.48
1:B:50:TYR:OH	1:B:89:THR:HG23	2.13	0.48
1:B:173:GLU:O	1:B:174:ILE:C	2.52	0.48
1:A:124:GLU:HG3	1:B:128:GLU:HA	1.94	0.48
1:A:120:TYR:CE1	1:B:130:ILE:HG21	2.48	0.48
1:B:185:VAL:O	1:B:189:GLU:HG2	2.13	0.48
1:B:77:PRO:O	1:B:78:LYS:HB2	2.13	0.48
1:B:160:LYS:NZ	4:B:327:HOH:O	2.46	0.48
1:A:37:LEU:HD11	1:A:114:ILE:CD1	2.43	0.48
1:B:90:VAL:HG11	4:B:304:HOH:O	2.13	0.48
1:B:16:ILE:HG12	1:B:112:ALA:HB3	1.94	0.48
1:B:103:LYS:NZ	1:B:124:GLU:OE1	2.47	0.48
1:B:140:LYS:HE2	4:B:252:HOH:O	2.14	0.48
1:B:189:GLU:O	1:B:190:GLU:HB2	2.14	0.48
1:B:97:ALA:N	4:B:291:HOH:O	2.44	0.48
1:A:96:VAL:HG21	1:A:102:ARG:HA	1.96	0.48
1:B:50:TYR:C	1:B:106:MSE:HE3	2.34	0.48
1:B:87:GLY:N	4:B:320:HOH:O	2.46	0.48
1:B:58:MSE:HE2	4:B:235:HOH:O	2.14	0.48
1:A:36:ASP:O	1:A:39:ASN:N	2.44	0.48
1:A:80:LEU:O	1:A:81:MSE:HB3	2.14	0.47
1:A:124:GLU:HB2	1:B:127:LEU:HB3	1.96	0.47
1:B:40:GLU:HG3	1:B:44:ARG:HE	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:76:ILE:O	1:A:95:ALA:HA	2.15	0.47
1:B:14:ARG:O	1:B:47:ASP:HB2	2.14	0.47
1:A:100:HIS:ND1	1:B:100:HIS:HB3	2.29	0.47
1:A:97:ALA:HB3	1:A:101:GLN:HG3	1.96	0.47
1:B:13:PHE:HZ	1:B:141:PRO:HG2	1.79	0.47
1:A:145:LEU:HD12	1:A:147:VAL:HG22	1.96	0.47
1:A:17:CYS:HB2	1:A:110:SER:OG	2.14	0.47
1:A:133:ALA:HB2	1:A:138:HIS:CE1	2.48	0.47
1:A:187:LYS:O	1:A:190:GLU:HG3	2.14	0.47
1:B:116:LEU:CD2	1:B:145:LEU:HD23	2.44	0.47
1:B:115:ALA:HB3	1:B:144:LEU:HD23	1.96	0.47
1:A:27:LYS:NZ	4:A:317:HOH:O	2.48	0.47
1:A:146:ASN:O	1:A:179:PRO:HA	2.15	0.47
1:A:15:ARG:HG2	1:A:47:ASP:HB2	1.94	0.47
1:A:52:GLY:O	1:A:58:MSE:SE	2.83	0.47
1:B:17:CYS:SG	1:B:106:MSE:HE2	2.55	0.47
1:B:182:LYS:CE	4:B:323:HOH:O	2.63	0.47
1:B:123:LEU:HG	1:B:127:LEU:CD1	2.43	0.47
1:A:36:ASP:O	1:A:40:GLU:HB2	2.14	0.47
1:A:61:VAL:HG13	1:A:62:SER:N	2.29	0.47
1:A:15:ARG:HG3	1:A:47:ASP:HB2	1.97	0.47
1:A:147:VAL:HG22	4:A:241:HOH:O	2.14	0.47
1:A:132:TRP:HB2	1:A:138:HIS:HD2	1.80	0.47
1:A:19:PHE:O	1:A:20:CYS:HB3	2.15	0.47
1:B:145:LEU:HB2	1:B:184:LEU:HD22	1.97	0.47
1:A:99:MSE:HB3	4:A:287:HOH:O	2.14	0.47
1:B:179:PRO:HG2	1:B:183:GLU:OE2	2.14	0.47
1:A:19:PHE:O	1:A:115:ALA:HA	2.15	0.47
1:B:66:HIS:CD2	4:B:300:HOH:O	2.67	0.47
1:B:126:LEU:O	1:B:129:VAL:HG22	2.15	0.47
1:A:17:CYS:O	1:A:113:PHE:HA	2.15	0.47
1:B:114:ILE:HG23	1:B:184:LEU:CD2	2.45	0.47
1:A:144:LEU:HD13	1:A:151:TYR:CD2	2.50	0.47
1:A:16:ILE:HG13	1:A:46:ILE:HG21	1.97	0.47
1:A:103:LYS:HE2	1:A:128:GLU:OE1	2.16	0.46
1:B:111:ASP:O	1:B:112:ALA:HB2	2.14	0.46
1:A:184:LEU:O	1:A:188:LEU:HG	2.15	0.46
1:B:31:GLN:O	1:B:35:VAL:N	2.46	0.46
1:A:27:LYS:HB2	1:A:30:TYR:CD2	2.50	0.46
1:B:24:GLN:HG3	1:B:31:GLN:NE2	2.30	0.46
1:B:103:LYS:HB3	4:B:322:HOH:O	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:164:GLU:HB3	1:B:30:TYR:HE2	1.81	0.46
1:A:155:LEU:O	1:A:158:ILE:N	2.46	0.46
1:B:49:VAL:HA	1:B:73:ILE:O	2.16	0.46
1:B:123:LEU:O	1:B:127:LEU:HD12	2.15	0.46
1:B:140:LYS:HE2	4:B:250:HOH:O	2.14	0.46
1:B:187:LYS:HG3	4:B:324:HOH:O	2.14	0.46
1:B:144:LEU:HB3	1:B:177:SER:HB2	1.97	0.46
1:A:144:LEU:HG	1:A:177:SER:HB2	1.98	0.46
1:A:144:LEU:CD1	1:A:146:ASN:HB2	2.45	0.46
1:B:49:VAL:HA	1:B:73:ILE:O	2.16	0.46
1:A:114:ILE:HG12	1:A:188:LEU:HD11	1.98	0.46
1:A:165:GLY:HA2	4:A:252:HOH:O	2.14	0.46
1:B:145:LEU:HD11	1:B:180:THR:O	2.15	0.46
1:B:24:GLN:CG	1:B:56:GLY:HA2	2.45	0.46
1:B:46:ILE:C	1:B:70:ARG:HH21	2.19	0.46
1:B:15:ARG:HD3	1:B:47:ASP:CB	2.45	0.46
1:B:75:ILE:HD12	1:B:106:MSE:HA	1.96	0.46
1:A:127:LEU:CD1	1:B:123:LEU:HG	2.46	0.46
1:B:87:GLY:N	4:B:320:HOH:O	2.48	0.46
1:B:96:VAL:HG21	1:B:102:ARG:HA	1.98	0.46
1:B:153:SER:HB2	4:B:218:HOH:O	2.15	0.46
1:A:17:CYS:SG	1:A:106:MSE:HE2	2.55	0.46
1:A:105:GLU:OE1	1:A:109:HIS:HE1	1.98	0.46
1:A:153:SER:HB3	1:B:157:PHE:HB2	1.97	0.46
1:A:17:CYS:HB2	1:A:110:SER:OG	2.15	0.46
1:A:127:LEU:HD13	1:B:123:LEU:HG	1.98	0.46
1:A:132:TRP:HB3	1:A:138:HIS:HD2	1.81	0.46
1:A:178:ALA:HB1	1:A:179:PRO:HD2	1.97	0.46
1:B:15:ARG:HH11	1:B:15:ARG:CB	2.26	0.46
1:B:182:LYS:CE	4:B:323:HOH:O	2.64	0.46
1:A:78:LYS:HA	1:A:95:ALA:HB1	1.97	0.46
1:A:20:CYS:HB3	1:A:116:LEU:HB2	1.97	0.46
1:B:27:LYS:HD3	4:B:759:HOH:O	2.16	0.46
1:B:65:VAL:HG13	1:B:70:ARG:HB2	1.98	0.46
1:A:127:LEU:HD13	1:B:123:LEU:HG	1.98	0.46
1:A:148:ASP:HB3	4:A:278:HOH:O	2.15	0.46
1:A:127:LEU:CD1	1:B:123:LEU:HG	2.46	0.46
1:A:20:CYS:HB3	1:A:116:LEU:HB2	1.97	0.46
1:B:34:ALA:HB2	1:B:57:LEU:HD22	1.98	0.46
1:A:78:LYS:HB2	1:A:96:VAL:O	2.16	0.46
1:B:12:LYS:NZ	1:B:12:LYS:CB	2.72	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:71:HIS:ND1	4:A:310:HOH:O	2.36	0.46
1:B:76:ILE:O	1:B:96:VAL:HG22	2.16	0.46
1:A:181:ALA:O	1:A:185:VAL:HG23	2.15	0.46
1:B:62:SER:HB2	1:B:90:VAL:CG2	2.46	0.46
1:B:77:PRO:O	1:B:78:LYS:HB2	2.16	0.45
1:B:96:VAL:HG21	1:B:102:ARG:HA	1.98	0.45
1:A:128:GLU:HA	1:B:124:GLU:HG3	1.97	0.45
1:A:155:LEU:O	1:A:159:ASP:N	2.49	0.45
1:B:73:ILE:O	1:B:73:ILE:HG22	2.15	0.45
1:A:128:GLU:CA	1:B:124:GLU:HG3	2.44	0.45
1:A:123:LEU:HD23	1:B:127:LEU:CD2	2.45	0.45
1:B:163:GLU:HG3	4:B:292:HOH:O	2.17	0.45
1:B:123:LEU:CG	1:B:127:LEU:HD11	2.45	0.45
1:B:34:ALA:HA	1:B:116:LEU:CD1	2.46	0.45
1:B:89:THR:HB	1:B:93:VAL:HG22	1.98	0.45
1:B:73:ILE:HG22	1:B:75:ILE:HG13	1.99	0.45
1:A:45:ASN:OD1	1:A:70:ARG:NH1	2.50	0.45
1:A:114:ILE:HA	1:A:143:GLY:O	2.16	0.45
1:A:144:LEU:HD11	1:A:146:ASN:HB2	1.98	0.45
1:A:51:GLY:HA3	1:A:102:ARG:HH21	1.81	0.45
1:A:55:ILE:O	1:A:59:GLY:N	2.35	0.45
1:A:103:LYS:HE2	1:A:128:GLU:OE2	2.16	0.45
1:A:133:ALA:HB2	1:A:138:HIS:NE2	2.31	0.45
1:A:75:ILE:HD13	1:A:106:MSE:HG2	1.98	0.45
1:B:126:LEU:O	1:B:129:VAL:HG23	2.16	0.45
1:A:115:ALA:CB	1:A:126:LEU:HD22	2.47	0.45
1:A:26:LYS:NZ	4:A:276:HOH:O	2.49	0.45
1:A:17:CYS:HB2	1:A:110:SER:OG	2.17	0.45
1:B:103:LYS:HD2	4:B:327:HOH:O	2.15	0.45
1:A:134:GLN:NE2	4:A:320:HOH:O	2.46	0.45
1:B:48:LEU:HD23	1:B:62:SER:HA	1.97	0.45
1:B:17:CYS:HB2	1:B:110:SER:OG	2.17	0.45
1:B:141:PRO:HB2	1:B:188:LEU:HD22	1.98	0.45
1:A:61:VAL:O	1:A:64:ALA:N	2.50	0.45
1:B:90:VAL:CG1	4:B:306:HOH:O	2.64	0.45
1:B:126:LEU:HD21	1:B:144:LEU:HD21	1.97	0.45
1:B:44:ARG:O	1:B:45:ASN:HB2	2.16	0.45
1:B:158:ILE:HG23	1:B:167:ILE:HD12	1.97	0.45
1:A:123:LEU:CG	1:B:127:LEU:HD13	2.38	0.45
1:A:162:VAL:HG11	1:A:169:PRO:HG3	1.98	0.45
1:A:188:LEU:O	1:A:190:GLU:HG3	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:148:ASP:HB3	4:A:281:HOH:O	2.16	0.45
1:A:46:ILE:HG22	1:A:47:ASP:O	2.17	0.45
1:A:114:ILE:HA	1:A:143:GLY:O	2.17	0.45
1:A:50:TYR:CZ	1:A:52:GLY:HA2	2.52	0.45
1:A:131:THR:O	1:A:135:LEU:HG	2.16	0.45
1:B:15:ARG:HD3	1:B:47:ASP:HB3	1.99	0.45
1:B:115:ALA:HB3	1:B:144:LEU:HD23	1.99	0.45
1:A:100:HIS:HD2	1:A:103:LYS:HZ1	1.62	0.45
1:B:97:ALA:HB3	1:B:101:GLN:CG	2.44	0.45
1:A:157:PHE:O	1:A:160:LYS:HB3	2.17	0.45
1:B:49:VAL:O	1:B:106:MSE:HE3	2.16	0.45
1:B:52:GLY:HA2	1:B:89:THR:HG23	1.99	0.45
1:A:144:LEU:HD23	1:A:176:VAL:O	2.17	0.45
1:B:33:ALA:CB	1:B:147:VAL:HG21	2.47	0.45
1:B:103:LYS:NZ	1:B:124:GLU:OE2	2.39	0.45
1:A:76:ILE:HG13	1:A:95:ALA:HA	1.98	0.45
1:A:144:LEU:HD21	1:A:175:ILE:HG23	1.98	0.45
1:B:31:GLN:HA	1:B:57:LEU:CD2	2.48	0.44
1:B:99:MSE:HB3	4:B:241:HOH:O	2.16	0.44
1:A:124:GLU:HG3	1:B:128:GLU:CA	2.42	0.44
1:A:17:CYS:HA	1:A:49:VAL:O	2.17	0.44
1:A:80:LEU:O	1:A:81:MSE:HB2	2.16	0.44
1:A:103:LYS:HE2	1:A:128:GLU:OE1	2.17	0.44
1:A:144:LEU:N	1:A:144:LEU:CD2	2.81	0.44
1:A:155:LEU:O	1:A:156:SER:C	2.54	0.44
1:B:102:ARG:HD3	4:B:241:HOH:O	2.16	0.44
1:B:65:VAL:O	1:B:68:GLY:N	2.50	0.44
1:B:24:GLN:HB3	1:B:31:GLN:HE21	1.82	0.44
1:A:17:CYS:O	1:A:113:PHE:HA	2.17	0.44
1:A:160:LYS:HD2	1:A:163:GLU:OE2	2.17	0.44
1:B:103:LYS:NZ	1:B:124:GLU:OE2	2.41	0.44
1:A:48:LEU:HD23	1:A:62:SER:HA	1.99	0.44
1:B:159:ASP:OD1	1:B:172:ARG:NH2	2.50	0.44
1:B:103:LYS:HD2	1:B:128:GLU:OE1	2.18	0.44
1:B:50:TYR:CZ	1:B:52:GLY:HA2	2.53	0.44
1:A:22:SER:O	1:A:55:ILE:HG13	2.16	0.44
1:A:127:LEU:HB3	1:B:124:GLU:HB2	1.99	0.44
1:A:17:CYS:HB3	1:A:113:PHE:CD1	2.52	0.44
1:A:15:ARG:HG3	1:A:47:ASP:HB2	2.00	0.44
1:B:141:PRO:HA	4:B:224:HOH:O	2.17	0.44
1:A:130:ILE:HG13	1:A:142:VAL:HG11	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:48:LEU:HB3	1:A:72:VAL:HG22	1.99	0.44
1:A:100:HIS:CD2	1:A:100:HIS:H	2.35	0.44
1:A:127:LEU:HD11	1:B:123:LEU:HD23	2.00	0.44
1:A:103:LYS:NZ	1:B:128:GLU:OE2	2.51	0.44
1:B:158:ILE:HG23	1:B:167:ILE:HD13	2.00	0.44
1:B:177:SER:OG	4:B:250:HOH:O	2.20	0.44
1:B:20:CYS:HB3	1:B:116:LEU:HB2	2.00	0.44
1:B:22:SER:HB3	1:B:58:MSE:SE	2.68	0.44
1:A:77:PRO:CG	1:A:99:MSE:SE	3.16	0.44
1:B:65:VAL:O	1:B:66:HIS:C	2.57	0.44
1:A:20:CYS:CB	1:A:116:LEU:HB2	2.48	0.44
1:B:90:VAL:CG1	4:B:304:HOH:O	2.59	0.44
1:A:114:ILE:HG12	1:A:188:LEU:HD11	2.00	0.43
1:A:145:LEU:HD22	1:A:145:LEU:HA	1.82	0.43
1:B:99:MSE:O	1:B:103:LYS:HG3	2.17	0.43
1:B:141:PRO:HG3	4:B:333:HOH:O	2.18	0.43
1:A:120:TYR:HD2	1:B:134:GLN:NE2	2.16	0.43
1:A:28:SER:O	1:A:31:GLN:HB2	2.18	0.43
1:B:89:THR:HB	1:B:93:VAL:HG22	1.99	0.43
1:B:96:VAL:HG21	1:B:102:ARG:HA	1.99	0.43
1:A:71:HIS:HA	4:A:248:HOH:O	2.17	0.43
1:A:160:LYS:C	1:A:162:VAL:H	2.22	0.43
1:A:42:VAL:HG22	1:A:70:ARG:HG2	2.00	0.43
1:B:15:ARG:CG	1:B:47:ASP:HB2	2.48	0.43
1:B:20:CYS:HB3	1:B:116:LEU:HB2	2.00	0.43
1:A:166:PHE:HZ	1:B:30:TYR:CG	2.36	0.43
1:B:22:SER:HA	1:B:58:MSE:SE	2.68	0.43
1:B:107:ALA:HA	1:B:113:PHE:CZ	2.53	0.43
1:B:155:LEU:HD23	1:B:155:LEU:HA	1.71	0.43
1:A:76:ILE:O	1:A:95:ALA:HA	2.18	0.43
1:A:90:VAL:HG23	1:A:90:VAL:O	2.19	0.43
1:A:182:LYS:HE3	1:A:186:LYS:NZ	2.33	0.43
1:B:11:SER:OG	1:B:46:ILE:HD11	2.19	0.43
1:A:29:SER:O	1:A:30:TYR:C	2.57	0.43
1:A:60:LEU:HG	4:A:282:HOH:O	2.18	0.43
1:A:42:VAL:HG21	1:A:68:GLY:HA3	2.00	0.43
1:A:26:LYS:NZ	4:A:278:HOH:O	2.51	0.43
1:A:16:ILE:CG1	1:A:112:ALA:HB3	2.35	0.43
1:A:8:MSE:HB3	1:A:9:GLN:H	1.69	0.43
1:A:16:ILE:HG12	1:A:112:ALA:HB3	2.01	0.43
1:A:50:TYR:O	1:A:74:GLY:HA2	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:77:PRO:HB3	1:A:98:ASP:C	2.38	0.43
1:A:127:LEU:CD2	1:B:123:LEU:HD23	2.48	0.43
1:A:98:ASP:HB2	4:A:284:HOH:O	2.18	0.43
1:B:72:VAL:HG11	1:B:90:VAL:HG23	1.99	0.43
1:B:128:GLU:CG	4:B:326:HOH:O	2.67	0.43
1:B:15:ARG:HG3	1:B:15:ARG:NH1	2.34	0.43
1:A:100:HIS:ND1	1:B:100:HIS:HB3	2.33	0.43
1:B:15:ARG:NH1	4:B:264:HOH:O	2.51	0.43
1:A:123:LEU:HD23	1:B:127:LEU:CD2	2.48	0.43
1:A:51:GLY:H	1:A:58:MSE:CE	2.32	0.43
1:A:103:LYS:HB2	1:A:103:LYS:NZ	2.33	0.43
1:A:123:LEU:HD23	1:B:127:LEU:HD22	2.01	0.43
1:A:175:ILE:O	1:A:175:ILE:HG22	2.18	0.43
1:A:57:LEU:O	1:A:61:VAL:HG12	2.18	0.43
1:B:16:ILE:O	1:B:48:LEU:HD12	2.19	0.43
1:B:48:LEU:CD2	1:B:62:SER:HA	2.49	0.43
1:A:98:ASP:OD2	1:A:101:GLN:HG2	2.19	0.43
1:B:155:LEU:HD22	1:B:172:ARG:NH2	2.34	0.43
1:A:130:ILE:HD13	1:A:175:ILE:HG12	2.01	0.43
1:B:115:ALA:CB	1:B:126:LEU:HD22	2.49	0.43
1:A:143:GLY:HA3	1:A:184:LEU:HD11	1.99	0.43
1:A:49:VAL:HG12	1:A:106:MSE:HG2	1.99	0.43
1:B:188:LEU:O	1:B:190:GLU:N	2.51	0.43
1:A:147:VAL:HA	4:A:310:HOH:O	2.18	0.43
1:A:188:LEU:C	1:A:190:GLU:N	2.71	0.43
1:A:37:LEU:O	1:A:37:LEU:HD12	2.19	0.43
1:B:17:CYS:SG	1:B:106:MSE:HE2	2.58	0.43
1:B:12:LYS:HG2	1:B:189:GLU:OE1	2.18	0.42
1:B:13:PHE:CE1	1:B:112:ALA:HB2	2.54	0.42
1:B:50:TYR:CZ	1:B:52:GLY:CA	3.02	0.42
1:B:90:VAL:CG1	4:B:304:HOH:O	2.66	0.42
1:B:97:ALA:N	4:B:287:HOH:O	2.51	0.42
1:A:37:LEU:O	1:A:41:LEU:HG	2.18	0.42
1:A:127:LEU:O	1:A:129:VAL:N	2.52	0.42
1:A:44:ARG:HH11	1:A:44:ARG:HG3	1.83	0.42
1:B:99:MSE:CE	4:B:279:HOH:O	2.67	0.42
1:B:56:GLY:C	1:B:58:MSE:N	2.71	0.42
1:B:133:ALA:HB2	1:B:138:HIS:CE1	2.54	0.42
1:A:66:HIS:HD2	4:A:248:HOH:O	2.02	0.42
1:A:58:MSE:HG2	4:A:286:HOH:O	2.18	0.42
1:A:16:ILE:HG13	1:A:46:ILE:HG21	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:24:GLN:HG3	1:B:56:GLY:HA2	2.00	0.42
1:B:158:ILE:HG22	1:B:172:ARG:HD3	2.02	0.42
1:B:17:CYS:HB3	1:B:113:PHE:CD1	2.55	0.42
1:B:141:PRO:HB3	1:B:188:LEU:HD22	2.02	0.42
1:B:16:ILE:HG23	1:B:112:ALA:O	2.20	0.42
1:B:44:ARG:O	1:B:45:ASN:HB2	2.20	0.42
1:A:31:GLN:O	1:A:35:VAL:HG23	2.20	0.42
1:A:37:LEU:HD21	1:A:114:ILE:HG21	2.01	0.42
1:A:17:CYS:HB2	1:A:110:SER:OG	2.19	0.42
1:A:51:GLY:O	1:A:75:ILE:N	2.52	0.42
1:A:159:ASP:O	1:A:162:VAL:HB	2.20	0.42
1:A:48:LEU:CD2	1:A:62:SER:HA	2.49	0.42
1:A:44:ARG:NH2	1:A:186:LYS:HG3	2.15	0.42
1:B:37:LEU:O	1:B:41:LEU:HG	2.19	0.42
1:B:187:LYS:O	1:B:190:GLU:HG3	2.19	0.42
1:A:37:LEU:CD2	1:A:116:LEU:HD11	2.49	0.42
1:A:77:PRO:HG3	1:A:102:ARG:HD2	2.00	0.42
1:A:184:LEU:O	1:A:188:LEU:HG	2.19	0.42
1:B:66:HIS:HD2	4:B:301:HOH:O	2.03	0.42
1:A:50:TYR:CD1	1:A:58:MSE:CE	3.03	0.42
1:B:128:GLU:HG2	1:B:132:TRP:CE2	2.55	0.42
1:A:19:PHE:O	1:A:116:LEU:N	2.50	0.42
1:A:31:GLN:O	1:A:35:VAL:HG23	2.20	0.42
1:A:148:ASP:HB3	4:B:279:HOH:O	2.19	0.42
1:B:179:PRO:HG2	1:B:183:GLU:OE2	2.19	0.42
1:A:80:LEU:HD23	1:A:80:LEU:H	1.85	0.42
1:A:133:ALA:HB2	1:A:138:HIS:HE1	1.84	0.42
1:B:38:GLY:HA3	1:B:64:ALA:HB3	2.01	0.42
1:B:167:ILE:HG23	1:B:171:ALA:HB3	2.00	0.42
1:A:154:LEU:O	1:A:157:PHE:HB3	2.20	0.42
1:A:13:PHE:CZ	1:A:141:PRO:HG2	2.55	0.42
1:B:58:MSE:HE3	4:B:240:HOH:O	2.19	0.42
1:B:153:SER:HB2	4:B:218:HOH:O	2.20	0.42
1:B:165:GLY:O	1:B:166:PHE:CG	2.73	0.42
1:A:31:GLN:O	1:A:34:ALA:HB3	2.20	0.42
1:B:13:PHE:CZ	1:B:141:PRO:HG2	2.55	0.42
1:B:102:ARG:HD3	4:B:242:HOH:O	2.19	0.42
1:A:107:ALA:O	1:A:140:LYS:NZ	2.47	0.42
1:A:162:VAL:HG13	4:A:254:HOH:O	2.19	0.42
1:B:22:SER:O	1:B:56:GLY:HA3	2.20	0.42
1:B:14:ARG:HG3	1:B:14:ARG:NH1	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:23:SER:HA	4:A:295:HOH:O	2.18	0.42
1:A:20:CYS:HB2	4:A:290:HOH:O	2.20	0.42
1:B:183:GLU:O	1:B:186:LYS:HB3	2.20	0.42
1:B:103:LYS:HB3	1:B:128:GLU:OE1	2.19	0.42
1:B:13:PHE:CD1	1:B:111:ASP:HB3	2.54	0.42
1:B:101:GLN:NE2	4:B:752:HOH:O	2.52	0.41
1:B:48:LEU:HG	1:B:49:VAL:N	2.34	0.41
1:B:177:SER:HB3	4:B:247:HOH:O	2.19	0.41
1:A:123:LEU:O	1:A:127:LEU:HG	2.19	0.41
1:A:188:LEU:O	1:A:190:GLU:N	2.52	0.41
1:A:143:GLY:HA3	1:A:184:LEU:HD11	2.02	0.41
1:A:22:SER:HA	1:A:58:MSE:HG2	2.02	0.41
1:A:131:THR:O	1:A:135:LEU:HD23	2.20	0.41
1:B:116:LEU:CD2	1:B:145:LEU:HD23	2.50	0.41
1:A:13:PHE:CE1	1:A:141:PRO:HG2	2.55	0.41
1:B:172:ARG:NH1	1:B:175:ILE:HB	2.35	0.41
1:B:178:ALA:HB1	1:B:179:PRO:HD2	2.02	0.41
1:A:185:VAL:O	1:A:189:GLU:HG2	2.20	0.41
1:A:78:LYS:HB2	1:A:96:VAL:O	2.20	0.41
1:A:8:MSE:HB3	1:A:9:GLN:H	1.52	0.41
1:A:40:GLU:HG2	1:A:182:LYS:HA	2.03	0.41
1:B:44:ARG:CD	1:B:185:VAL:HG11	2.50	0.41
1:B:147:VAL:HG13	4:B:223:HOH:O	2.20	0.41
1:A:113:PHE:O	1:A:143:GLY:N	2.51	0.41
1:A:159:ASP:HA	1:A:172:ARG:HH11	1.86	0.41
1:A:19:PHE:CB	1:A:122:THR:HG23	2.50	0.41
1:A:50:TYR:C	1:A:106:MSE:HE3	2.40	0.41
1:A:78:LYS:N	1:A:96:VAL:O	2.51	0.41
1:A:38:GLY:O	1:A:42:VAL:HG23	2.20	0.41
1:B:96:VAL:HG21	1:B:102:ARG:CA	2.50	0.41
1:A:15:ARG:HD3	4:A:314:HOH:O	2.21	0.41
1:A:58:MSE:HA	4:A:286:HOH:O	2.20	0.41
1:B:50:TYR:C	1:B:106:MSE:HE3	2.41	0.41
1:A:13:PHE:HB2	1:A:46:ILE:CD1	2.51	0.41
1:A:29:SER:HA	1:A:32:ASP:HB2	2.03	0.41
1:A:53:GLY:H	1:A:58:MSE:HE2	1.85	0.41
1:A:103:LYS:HZ2	1:A:103:LYS:HB2	1.86	0.41
1:A:13:PHE:HZ	1:A:141:PRO:HG2	1.85	0.41
1:B:107:ALA:HA	1:B:113:PHE:CE1	2.56	0.41
1:B:127:LEU:HD23	1:B:127:LEU:HA	1.95	0.41
1:B:13:PHE:HZ	1:B:141:PRO:HG2	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:144:LEU:N	1:A:144:LEU:CD2	2.80	0.41
1:B:162:VAL:HG21	1:B:172:ARG:HB2	2.01	0.41
1:B:153:SER:HB2	4:B:218:HOH:O	2.21	0.41
1:B:87:GLY:CA	4:B:319:HOH:O	2.69	0.41
1:B:127:LEU:HD23	1:B:127:LEU:HA	1.95	0.41
1:A:37:LEU:HA	1:A:181:ALA:HB1	2.02	0.41
1:A:164:GLU:O	1:B:26:LYS:HG3	2.20	0.41
1:A:103:LYS:HG2	1:A:128:GLU:OE1	2.21	0.41
1:B:35:VAL:O	1:B:38:GLY:N	2.53	0.41
1:B:17:CYS:HA	1:B:49:VAL:HB	2.02	0.41
1:B:158:ILE:HG22	1:B:172:ARG:HD3	2.03	0.41
1:A:34:ALA:HA	1:A:116:LEU:HD11	2.02	0.41
1:B:71:HIS:HA	4:B:298:HOH:O	2.21	0.41
1:A:47:ASP:HB3	1:A:71:HIS:O	2.21	0.41
1:B:87:GLY:CA	4:B:319:HOH:O	2.69	0.41
1:B:107:ALA:HA	1:B:113:PHE:CZ	2.55	0.41
1:A:99:MSE:O	1:A:102:ARG:HB3	2.20	0.41
1:B:15:ARG:HD3	1:B:73:ILE:HD12	2.03	0.41
1:A:124:GLU:HG3	1:B:128:GLU:CB	2.51	0.41
1:A:163:GLU:O	1:B:26:LYS:HD2	2.20	0.41
1:B:32:ASP:O	1:B:33:ALA:C	2.59	0.41
1:A:14:ARG:HB2	1:A:111:ASP:OD2	2.21	0.41
1:A:40:GLU:CD	1:A:182:LYS:HA	2.41	0.41
1:A:66:HIS:HD2	4:A:250:HOH:O	2.04	0.41
1:A:144:LEU:HD23	1:A:144:LEU:HA	1.89	0.41
1:A:69:GLY:C	4:A:265:HOH:O	2.59	0.41
1:B:11:SER:HB2	1:B:44:ARG:HH11	1.86	0.41
1:B:16:ILE:HG12	1:B:112:ALA:HB3	2.03	0.41
1:B:76:ILE:HG12	1:B:94:ARG:O	2.21	0.41
1:A:61:VAL:O	1:A:62:SER:C	2.59	0.41
1:A:16:ILE:HD12	1:A:41:LEU:CD2	2.50	0.41
1:B:116:LEU:CD2	1:B:145:LEU:HD23	2.51	0.41
1:B:158:ILE:O	1:B:161:ALA:HB3	2.20	0.41
1:A:155:LEU:HD23	1:A:155:LEU:HA	1.94	0.41
1:B:24:GLN:CG	1:B:56:GLY:HA2	2.51	0.41
1:B:99:MSE:HG2	4:B:296:HOH:O	2.21	0.41
1:A:45:ASN:HA	1:A:70:ARG:HD3	2.02	0.41
1:A:189:GLU:O	1:A:190:GLU:HB2	2.20	0.41
1:B:16:ILE:HG12	1:B:112:ALA:HB3	2.03	0.41
1:A:15:ARG:HD2	1:A:49:VAL:HG23	2.03	0.40
1:B:166:PHE:C	1:B:167:ILE:HG13	2.40	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:175:ILE:O	1:A:175:ILE:HG22	2.20	0.40
1:A:33:ALA:HB1	1:A:147:VAL:HG21	2.02	0.40
1:B:44:ARG:HH12	1:B:189:GLU:CG	2.34	0.40
1:A:105:GLU:OE1	1:A:109:HIS:HE1	2.03	0.40
1:B:63:GLN:HG3	1:B:67:ASP:OD2	2.21	0.40
1:A:71:HIS:ND1	4:A:310:HOH:O	2.37	0.40
1:A:58:MSE:HG2	4:A:289:HOH:O	2.21	0.40
1:A:139:ASP:O	1:A:139:ASP:CG	2.59	0.40
1:B:87:GLY:CA	4:B:801:HOH:O	2.68	0.40
1:A:14:ARG:NH2	1:A:15:ARG:HH22	2.19	0.40
1:A:162:VAL:HG21	1:A:172:ARG:NE	2.36	0.40
1:B:48:LEU:HB3	1:B:72:VAL:HG22	2.04	0.40
1:A:180:THR:HA	4:A:228:HOH:O	2.21	0.40
1:B:178:ALA:HB3	1:B:184:LEU:HB2	2.02	0.40
1:A:58:MSE:HE1	4:A:288:HOH:O	2.20	0.40
1:A:21:GLY:HA3	1:B:166:PHE:CE1	2.57	0.40
1:A:63:GLN:CD	1:A:90:VAL:HG11	2.40	0.40
1:B:47:ASP:N	1:B:70:ARG:HH21	2.20	0.40
1:A:98:ASP:OD1	1:A:101:GLN:HG2	2.22	0.40
1:A:80:LEU:O	1:A:81:MSE:CB	2.69	0.40
1:A:80:LEU:HD23	1:A:80:LEU:N	2.17	0.40
1:A:116:LEU:HG	1:A:145:LEU:CD2	2.51	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	1-A	171/215 (80%)	164 (96%)	6 (4%)	1 (1%)	25 14
1	1-B	169/215 (79%)	165 (98%)	3 (2%)	1 (1%)	25 14
1	2-A	171/215 (80%)	163 (95%)	8 (5%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	2-B	169/215 (79%)	156 (92%)	10 (6%)	3 (2%)	8	2
1	3-A	171/215 (80%)	163 (95%)	7 (4%)	1 (1%)	25	14
1	3-B	169/215 (79%)	162 (96%)	6 (4%)	1 (1%)	25	14
1	4-A	171/215 (80%)	163 (95%)	8 (5%)	0	100	100
1	4-B	169/215 (79%)	163 (96%)	6 (4%)	0	100	100
1	5-A	171/215 (80%)	165 (96%)	6 (4%)	0	100	100
1	5-B	169/215 (79%)	162 (96%)	5 (3%)	2 (1%)	13	4
1	6-A	171/215 (80%)	164 (96%)	7 (4%)	0	100	100
1	6-B	169/215 (79%)	156 (92%)	11 (6%)	2 (1%)	13	4
1	7-A	171/215 (80%)	159 (93%)	7 (4%)	5 (3%)	4	1
1	7-B	169/215 (79%)	162 (96%)	6 (4%)	1 (1%)	25	14
1	8-A	171/215 (80%)	159 (93%)	8 (5%)	4 (2%)	6	1
1	8-B	169/215 (79%)	162 (96%)	7 (4%)	0	100	100
All	All	2720/3440 (79%)	2588 (95%)	111 (4%)	21 (1%)	19	9

All (21) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	7-A	34	ALA
1	7-A	56	GLY
1	8-A	79	THR
1	8-A	97	ALA
1	2-B	112	ALA
1	3-B	96	VAL
1	6-B	189	GLU
1	7-A	128	GLU
1	8-A	80	LEU
1	2-B	50	TYR
1	7-A	103	LYS
1	1-A	52	GLY
1	1-B	112	ALA
1	2-B	167	ILE
1	7-B	148	ASP
1	8-A	121	GLY
1	5-B	65	VAL
1	6-B	137	ILE
1	7-A	35	VAL

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Mol	Chain	Res	Type
1	3-A	96	VAL
1	5-B	77	PRO

### 5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	1-A	142/170 (84%)	139 (98%)	3 (2%)	53	46
1	1-B	139/170 (82%)	136 (98%)	3 (2%)	52	44
1	2-A	142/170 (84%)	137 (96%)	5 (4%)	36	24
1	2-B	139/170 (82%)	136 (98%)	3 (2%)	52	44
1	3-A	142/170 (84%)	138 (97%)	4 (3%)	43	33
1	3-B	139/170 (82%)	134 (96%)	5 (4%)	35	23
1	4-A	142/170 (84%)	137 (96%)	5 (4%)	36	24
1	4-B	139/170 (82%)	133 (96%)	6 (4%)	29	16
1	5-A	142/170 (84%)	140 (99%)	2 (1%)	67	62
1	5-B	139/170 (82%)	133 (96%)	6 (4%)	29	16
1	6-A	142/170 (84%)	137 (96%)	5 (4%)	36	24
1	6-B	139/170 (82%)	137 (99%)	2 (1%)	67	62
1	7-A	142/170 (84%)	136 (96%)	6 (4%)	30	17
1	7-B	139/170 (82%)	135 (97%)	4 (3%)	42	31
1	8-A	142/170 (84%)	133 (94%)	9 (6%)	18	7
1	8-B	139/170 (82%)	136 (98%)	3 (2%)	52	44
All	All	2248/2720 (83%)	2177 (97%)	71 (3%)	39	27

All (71) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	1-A	50	TYR
1	1-A	103	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	1-A	145	LEU
1	1-B	58	MSE
1	1-B	124	GLU
1	1-B	163	GLU
1	2-A	36	ASP
1	2-A	50	TYR
1	2-A	80	LEU
1	2-A	124	GLU
1	2-A	145	LEU
1	2-B	15	ARG
1	2-B	50	TYR
1	2-B	145	LEU
1	3-A	50	TYR
1	3-A	80	LEU
1	3-A	145	LEU
1	3-A	153	SER
1	3-B	15	ARG
1	3-B	50	TYR
1	3-B	102	ARG
1	3-B	106	MSE
1	3-B	144	LEU
1	4-A	8	MSE
1	4-A	50	TYR
1	4-A	101	GLN
1	4-A	144	LEU
1	4-A	148	ASP
1	4-B	12	LYS
1	4-B	15	ARG
1	4-B	50	TYR
1	4-B	117	PRO
1	4-B	127	LEU
1	4-B	139	ASP
1	5-A	50	TYR
1	5-A	145	LEU
1	5-B	15	ARG
1	5-B	50	TYR
1	5-B	127	LEU
1	5-B	139	ASP
1	5-B	159	ASP
1	5-B	190	GLU
1	6-A	12	LYS
1	6-A	14	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	6-A	50	TYR
1	6-A	103	LYS
1	6-A	145	LEU
1	6-B	10	LYS
1	6-B	145	LEU
1	7-A	36	ASP
1	7-A	50	TYR
1	7-A	58	MSE
1	7-A	103	LYS
1	7-A	127	LEU
1	7-A	145	LEU
1	7-B	24	GLN
1	7-B	32	ASP
1	7-B	50	TYR
1	7-B	139	ASP
1	8-A	45	ASN
1	8-A	50	TYR
1	8-A	80	LEU
1	8-A	101	GLN
1	8-A	103	LYS
1	8-A	123	LEU
1	8-A	145	LEU
1	8-A	148	ASP
1	8-A	190	GLU
1	8-B	15	ARG
1	8-B	50	TYR
1	8-B	139	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (50) such sidechains are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	1-A	9	GLN
1	1-A	24	GLN
1	1-A	71	HIS
1	1-A	100	HIS
1	1-A	101	GLN
1	1-A	134	GLN
1	1-B	39	ASN
1	1-B	45	ASN
1	1-B	109	HIS
1	1-B	134	GLN
1	2-A	101	GLN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2-A	134	GLN
1	2-B	39	ASN
1	2-B	45	ASN
1	2-B	134	GLN
1	3-A	24	GLN
1	3-A	134	GLN
1	3-B	39	ASN
1	3-B	45	ASN
1	3-B	134	GLN
1	4-A	24	GLN
1	4-A	134	GLN
1	4-B	39	ASN
1	4-B	45	ASN
1	4-B	134	GLN
1	5-A	24	GLN
1	5-A	134	GLN
1	5-B	39	ASN
1	5-B	45	ASN
1	5-B	134	GLN
1	6-A	9	GLN
1	6-A	109	HIS
1	6-A	134	GLN
1	6-B	39	ASN
1	6-B	134	GLN
1	7-A	24	GLN
1	7-A	109	HIS
1	7-A	134	GLN
1	7-B	39	ASN
1	7-B	45	ASN
1	7-B	134	GLN
1	8-A	24	GLN
1	8-A	31	GLN
1	8-A	100	HIS
1	8-A	109	HIS
1	8-A	134	GLN
1	8-B	39	ASN
1	8-B	45	ASN
1	8-B	101	GLN
1	8-B	134	GLN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 3 ligands modelled in this entry, 1 is monoatomic - leaving 2 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
2	SO4	1-B	500	-	4,4,4	0.94	0	6,6,6	0.64	0
2	SO4	1-A	600	-	4,4,4	0.47	0	6,6,6	0.72	0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	1-A	170/215 (79%)	0.11	5 (2%) 51 60	13, 22, 36, 62	170 (100%)
1	1-B	170/215 (79%)	0.28	11 (6%) 18 27	12, 22, 36, 55	170 (100%)
1	2-A	170/215 (79%)	0.11	5 (2%) 51 60	13, 22, 36, 62	170 (100%)
1	2-B	170/215 (79%)	0.28	11 (6%) 18 27	12, 22, 36, 55	170 (100%)
1	3-A	170/215 (79%)	0.11	5 (2%) 51 60	13, 22, 36, 62	170 (100%)
1	3-B	170/215 (79%)	0.28	11 (6%) 18 27	12, 22, 36, 55	170 (100%)
1	4-A	170/215 (79%)	0.11	5 (2%) 51 60	13, 22, 36, 62	170 (100%)
1	4-B	170/215 (79%)	0.28	11 (6%) 18 27	12, 22, 36, 55	170 (100%)
1	5-A	170/215 (79%)	0.11	5 (2%) 51 60	13, 22, 36, 62	170 (100%)
1	5-B	170/215 (79%)	0.28	11 (6%) 18 27	12, 22, 36, 55	170 (100%)
1	6-A	170/215 (79%)	0.11	5 (2%) 51 60	13, 22, 36, 62	170 (100%)
1	6-B	170/215 (79%)	0.28	11 (6%) 18 27	12, 22, 36, 55	170 (100%)
1	7-A	170/215 (79%)	0.11	5 (2%) 51 60	13, 22, 36, 62	170 (100%)
1	7-B	170/215 (79%)	0.28	11 (6%) 18 27	12, 22, 36, 55	170 (100%)
1	8-A	170/215 (79%)	0.11	5 (2%) 51 60	13, 22, 36, 62	170 (100%)
1	8-B	170/215 (79%)	0.28	11 (6%) 18 27	12, 22, 36, 55	170 (100%)
All	All	2720/3440 (79%)	0.19	128 (4%) 28 41	12, 22, 36, 62	2720 (100%)

All (128) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	1-A	90	VAL	5.1
1	2-A	90	VAL	5.1
1	3-A	90	VAL	5.1
1	4-A	90	VAL	5.1
1	5-A	90	VAL	5.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	6-A	90	VAL	5.1
1	7-A	90	VAL	5.1
1	8-A	90	VAL	5.1
1	1-B	25	GLY	4.1
1	2-B	25	GLY	4.1
1	3-B	25	GLY	4.1
1	4-B	25	GLY	4.1
1	5-B	25	GLY	4.1
1	6-B	25	GLY	4.1
1	7-B	25	GLY	4.1
1	8-B	25	GLY	4.1
1	1-A	69	GLY	3.5
1	2-A	69	GLY	3.5
1	3-A	69	GLY	3.5
1	4-A	69	GLY	3.5
1	5-A	69	GLY	3.5
1	6-A	69	GLY	3.5
1	7-A	69	GLY	3.5
1	8-A	69	GLY	3.5
1	1-B	190	GLU	3.4
1	2-B	190	GLU	3.4
1	3-B	190	GLU	3.4
1	4-B	190	GLU	3.4
1	5-B	190	GLU	3.4
1	6-B	190	GLU	3.4
1	7-B	190	GLU	3.4
1	8-B	190	GLU	3.4
1	1-A	139	ASP	3.3
1	2-A	139	ASP	3.3
1	3-A	139	ASP	3.3
1	4-A	139	ASP	3.3
1	5-A	139	ASP	3.3
1	6-A	139	ASP	3.3
1	7-A	139	ASP	3.3
1	8-A	139	ASP	3.3
1	1-B	43	SER	3.3
1	2-B	43	SER	3.3
1	3-B	43	SER	3.3
1	4-B	43	SER	3.3
1	5-B	43	SER	3.3
1	6-B	43	SER	3.3
1	7-B	43	SER	3.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	8-B	43	SER	3.3
1	1-B	88	GLU	3.2
1	2-B	88	GLU	3.2
1	3-B	88	GLU	3.2
1	4-B	88	GLU	3.2
1	5-B	88	GLU	3.2
1	6-B	88	GLU	3.2
1	7-B	88	GLU	3.2
1	8-B	88	GLU	3.2
1	1-B	10	LYS	3.1
1	2-B	10	LYS	3.1
1	3-B	10	LYS	3.1
1	4-B	10	LYS	3.1
1	5-B	10	LYS	3.1
1	6-B	10	LYS	3.1
1	7-B	10	LYS	3.1
1	8-B	10	LYS	3.1
1	1-A	190	GLU	3.1
1	2-A	190	GLU	3.1
1	3-A	190	GLU	3.1
1	4-A	190	GLU	3.1
1	5-A	190	GLU	3.1
1	6-A	190	GLU	3.1
1	7-A	190	GLU	3.1
1	8-A	190	GLU	3.1
1	1-A	80	LEU	2.8
1	2-A	80	LEU	2.8
1	3-A	80	LEU	2.8
1	4-A	80	LEU	2.8
1	5-A	80	LEU	2.8
1	6-A	80	LEU	2.8
1	7-A	80	LEU	2.8
1	8-A	80	LEU	2.8
1	1-B	78	LYS	2.7
1	2-B	78	LYS	2.7
1	3-B	78	LYS	2.7
1	4-B	78	LYS	2.7
1	5-B	78	LYS	2.7
1	6-B	78	LYS	2.7
1	7-B	78	LYS	2.7
1	8-B	78	LYS	2.7
1	1-B	72	VAL	2.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	2-B	72	VAL	2.4
1	3-B	72	VAL	2.4
1	4-B	72	VAL	2.4
1	5-B	72	VAL	2.4
1	6-B	72	VAL	2.4
1	7-B	72	VAL	2.4
1	8-B	72	VAL	2.4
1	1-B	34	ALA	2.3
1	2-B	34	ALA	2.3
1	3-B	34	ALA	2.3
1	4-B	34	ALA	2.3
1	5-B	34	ALA	2.3
1	6-B	34	ALA	2.3
1	7-B	34	ALA	2.3
1	8-B	34	ALA	2.3
1	1-B	36	ASP	2.2
1	2-B	36	ASP	2.2
1	3-B	36	ASP	2.2
1	4-B	36	ASP	2.2
1	5-B	36	ASP	2.2
1	6-B	36	ASP	2.2
1	7-B	36	ASP	2.2
1	8-B	36	ASP	2.2
1	1-B	45	ASN	2.1
1	2-B	45	ASN	2.1
1	3-B	45	ASN	2.1
1	4-B	45	ASN	2.1
1	5-B	45	ASN	2.1
1	6-B	45	ASN	2.1
1	7-B	45	ASN	2.1
1	8-B	45	ASN	2.1
1	1-B	65	VAL	2.1
1	2-B	65	VAL	2.1
1	3-B	65	VAL	2.1
1	4-B	65	VAL	2.1
1	5-B	65	VAL	2.1
1	6-B	65	VAL	2.1
1	7-B	65	VAL	2.1
1	8-B	65	VAL	2.1

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

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

## 6.3 Carbohydrates [i](#)

There are no monosaccharides 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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
3	MG	1-B	700	1/1	-0.09	0.89	33,33,33,33	1
2	SO4	1-B	500	5/5	0.84	1.18	19,21,26,27	5
2	SO4	1-A	600	5/5	0.84	1.37	26,27,30,32	5

## 6.5 Other polymers [i](#)

There are no such residues in this entry.