



# Full wwPDB X-ray Structure Validation Report ⓘ

May 18, 2019 – 10:46 PM EDT

PDB ID : 2J4L  
Title : Crystal structure of uridylate kinase from *Sulfolobus solfataricus* in complex with UTP to 2.8 Angstrom resolution  
Authors : Jensen, K.S.; Johansson, E.; Jensen, K.F.  
Deposited on : 2006-09-01  
Resolution : 2.80 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.

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

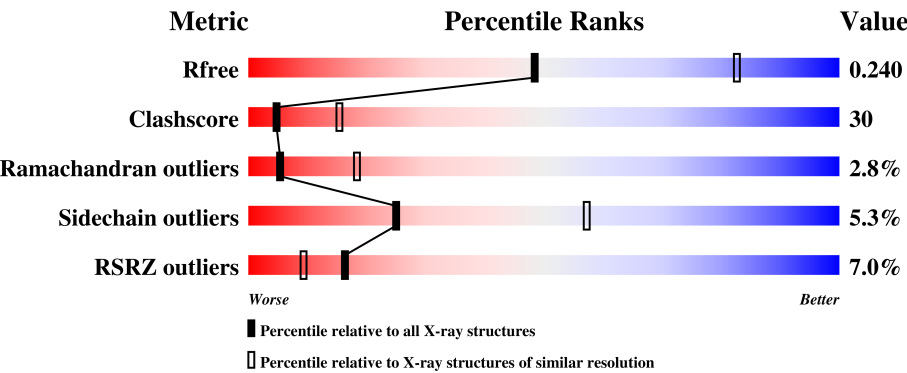
MolProbity : 4.02b-467  
Mogul : 1.8.0 (224370), CSD as540be (2019)  
Xtriage (Phenix) : 1.13  
EDS : rb-20031633  
Percentile statistics : 20171227.v01 (using entries in the PDB archive December 27th 2017)  
Refmac : 5.8.0158  
CCP4 : 7.0 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : rb-20031633

# 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 2.80 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 <sub>free</sub>	111664	2792 (2.80-2.80)
Clashscore	122126	3209 (2.80-2.80)
Ramachandran outliers	120053	3158 (2.80-2.80)
Sidechain outliers	120020	3160 (2.80-2.80)
RSRZ outliers	108989	2726 (2.80-2.80)

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 on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. 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	226	<div><div>5%</div><div>47%41%5%5%</div></div>
1	B	226	<div><div>5%</div><div>49%41%6%</div></div>
1	C	226	<div><div>7%</div><div>43%38%6%12%</div></div>
1	D	226	<div><div>4%</div><div>48%40%6%6%</div></div>
1	E	226	<div><div>9%</div><div>50%42%. .</div></div>

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Mol	Chain	Length	Quality of chain
1	F	226	<div><div>4%</div><div><div></div><div>50%</div><div>41%</div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div></div>
1	G	226	<div><div>7%</div><div><div></div><div>47%</div><div>42%</div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div>6%</div></div></div>
1	H	226	<div><div>8%</div><div><div></div><div>37%</div><div>34%</div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div>24%</div></div></div>
1	I	226	<div><div>9%</div><div><div></div><div>45%</div><div>37%</div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div>14%</div></div></div>
1	J	226	<div><div>4%</div><div><div></div><div>45%</div><div>45%</div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div>5%</div></div></div>
1	K	226	<div><div>11%</div><div><div></div><div>41%</div><div>38%</div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div>16%</div></div></div>
1	L	226	<div><div>2%</div><div><div></div><div>51%</div><div>41%</div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div>5%</div></div></div>

## 2 Entry composition

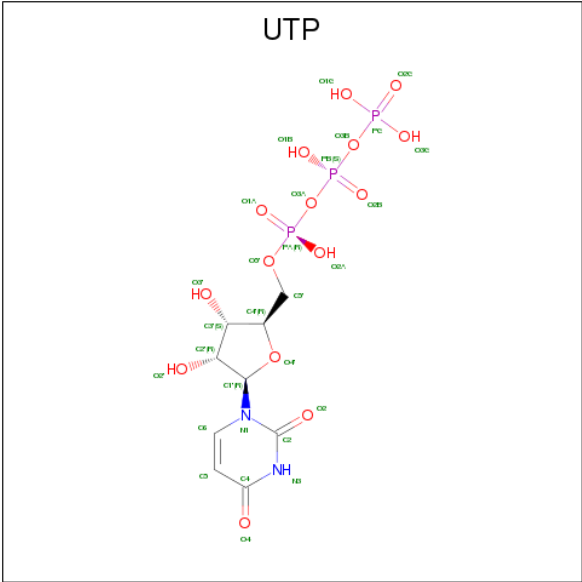
There are 3 unique types of molecules in this entry. The entry contains 19613 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 URIDYLATE KINASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	214	Total	C	N	O	S	0	0	0
			1674	1074	286	310	4			
1	B	213	Total	C	N	O	S	0	0	0
			1665	1069	285	307	4			
1	C	198	Total	C	N	O	S	0	0	0
			1539	991	260	284	4			
1	D	213	Total	C	N	O	S	0	0	0
			1665	1069	285	307	4			
1	E	217	Total	C	N	O	S	0	0	0
			1688	1082	287	315	4			
1	F	219	Total	C	N	O	S	0	0	0
			1714	1100	291	319	4			
1	G	212	Total	C	N	O	S	0	0	0
			1662	1070	283	305	4			
1	H	171	Total	C	N	O	S	0	0	0
			1317	850	222	241	4			
1	I	194	Total	C	N	O	S	0	0	0
			1507	970	256	277	4			
1	J	214	Total	C	N	O	S	0	0	0
			1673	1075	286	308	4			
1	K	190	Total	C	N	O	S	0	0	0
			1481	950	254	273	4			
1	L	214	Total	C	N	O	S	0	0	0
			1673	1075	286	308	4			

- Molecule 2 is URIDINE 5'-TRIPHOSPHATE (three-letter code: UTP) (formula:  $C_9H_{15}N_2O_{15}P_3$ ).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			29	9	2	15	3		
2	B	1	Total	C	N	O	P	0	0
			29	9	2	15	3		
2	C	1	Total	C	N	O	P	0	0
			29	9	2	15	3		
2	D	1	Total	C	N	O	P	0	0
			29	9	2	15	3		
2	E	1	Total	C	N	O	P	0	0
			29	9	2	15	3		
2	F	1	Total	C	N	O	P	0	0
			29	9	2	15	3		
2	G	1	Total	C	N	O	P	0	0
			29	9	2	15	3		
2	H	1	Total	C	N	O	P	0	0
			29	9	2	15	3		
2	I	1	Total	C	N	O	P	0	0
			29	9	2	15	3		
2	J	1	Total	C	N	O	P	0	0
			29	9	2	15	3		
2	K	1	Total	C	N	O	P	0	0
			29	9	2	15	3		
2	L	1	Total	C	N	O	P	0	0
			29	9	2	15	3		

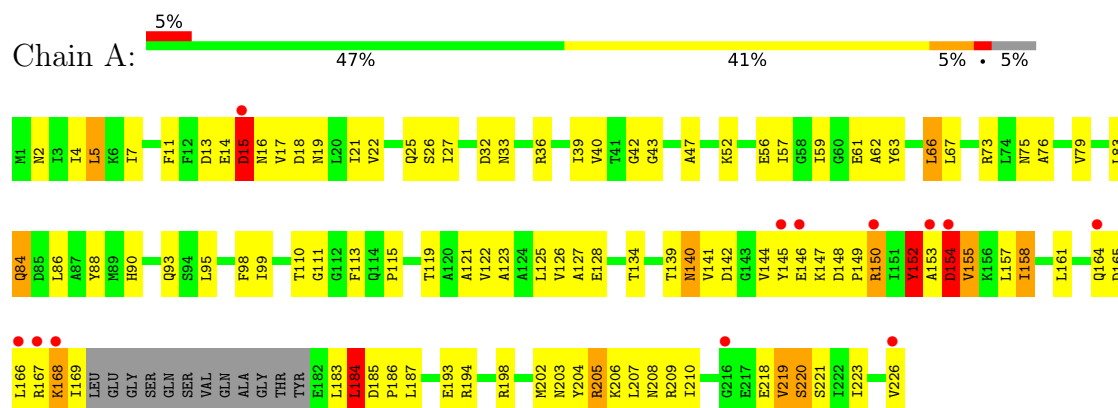
- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	J	1	Total 1	Mg 1	0	0
3	D	1	Total 1	Mg 1	0	0
3	E	1	Total 1	Mg 1	0	0
3	B	1	Total 1	Mg 1	0	0
3	I	1	Total 1	Mg 1	0	0
3	C	1	Total 1	Mg 1	0	0
3	L	1	Total 1	Mg 1	0	0

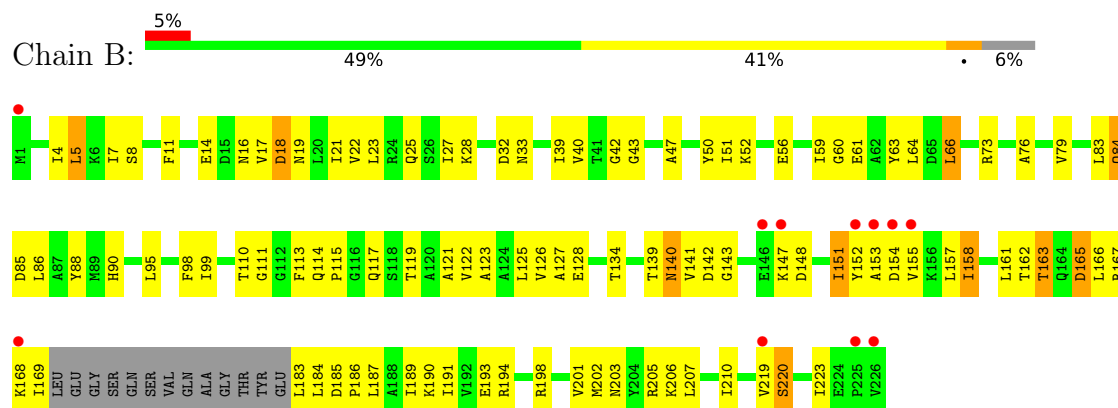
### 3 Residue-property plots

These plots are drawn for all protein, RNA and DNA 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.

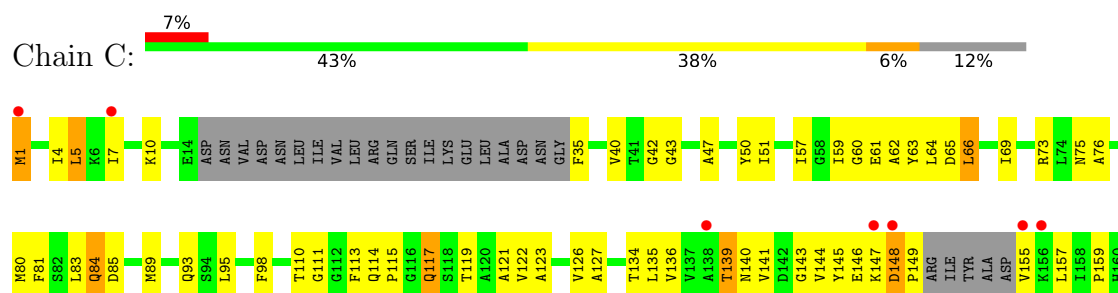
#### • Molecule 1: URIDYLATE KINASE

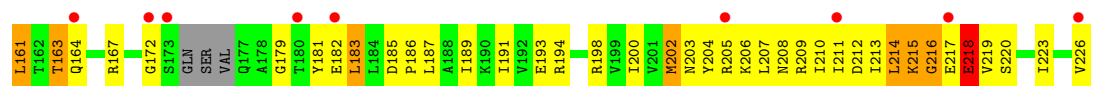


#### • Molecule 1: URIDYLATE KINASE

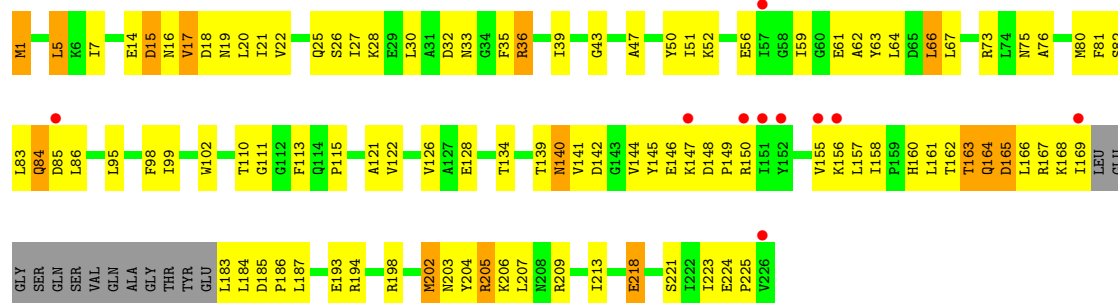


#### • Molecule 1: URIDYLATE KINASE

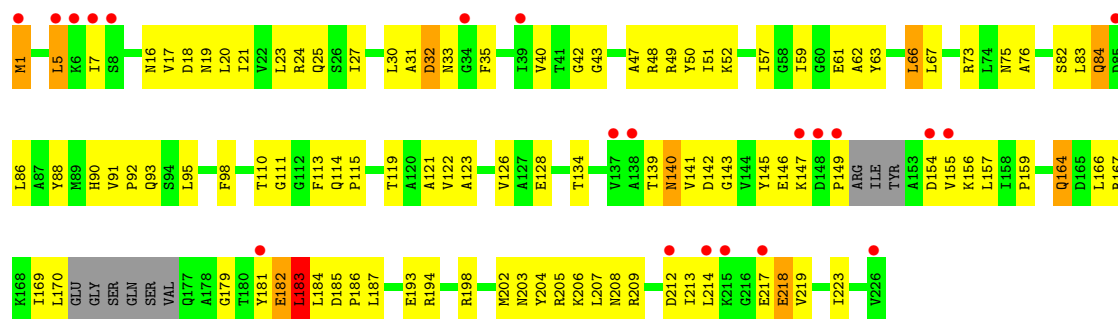




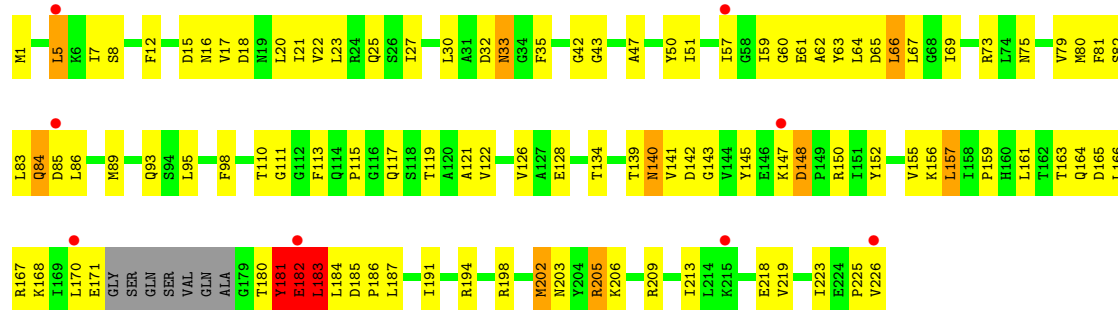
• Molecule 1: URIDYLATE KINASE



• Molecule 1: URIDYLATE KINASE



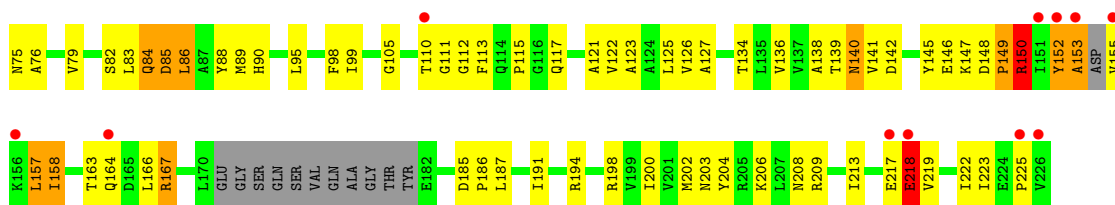
• Molecule 1: URIDYLATE KINASE



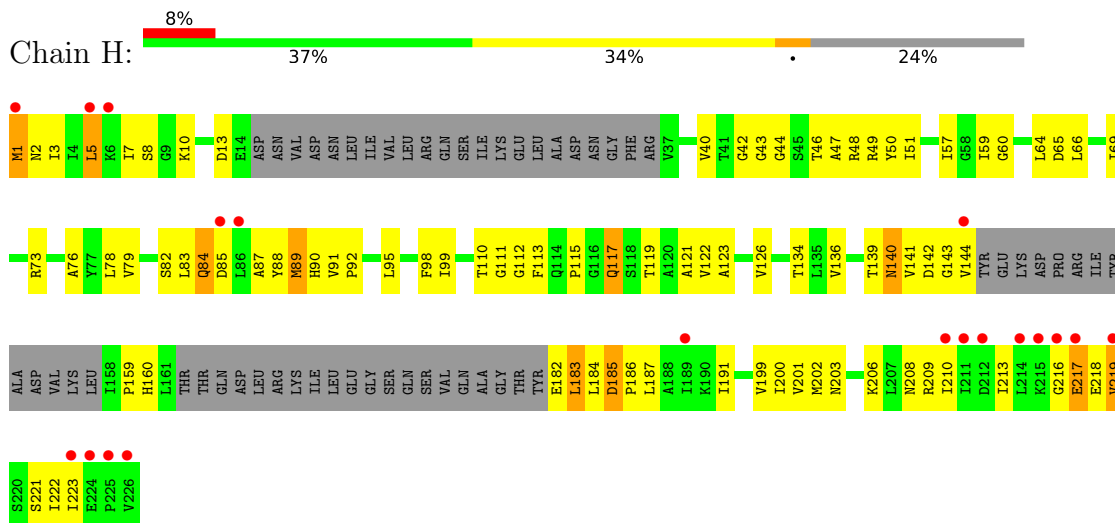
• Molecule 1: URIDYLATE KINASE



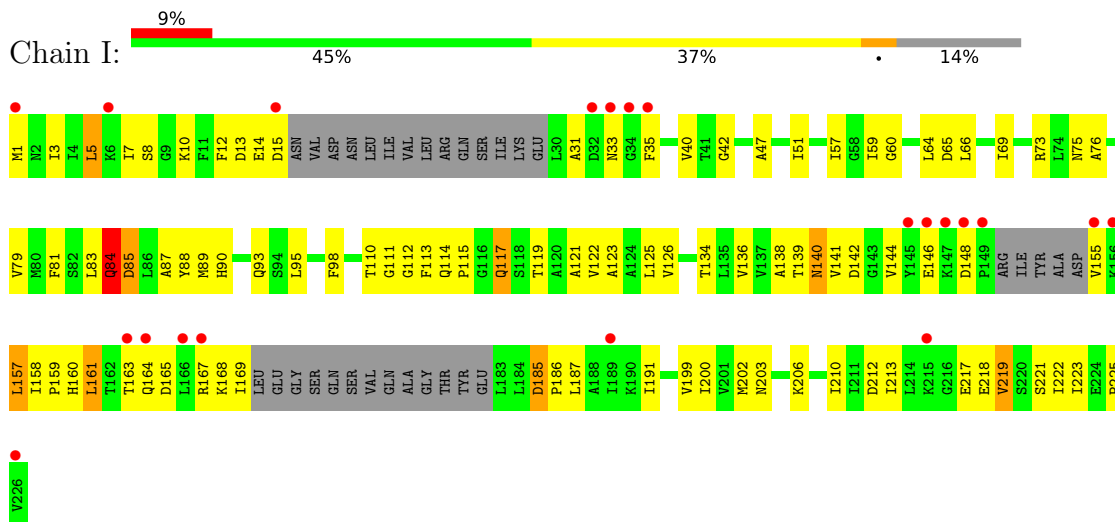




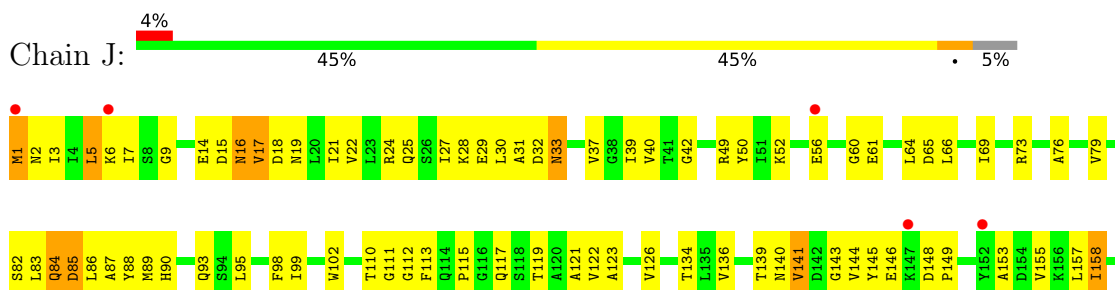
• Molecule 1: URIDYLATE KINASE



• Molecule 1: URIDYLATE KINASE

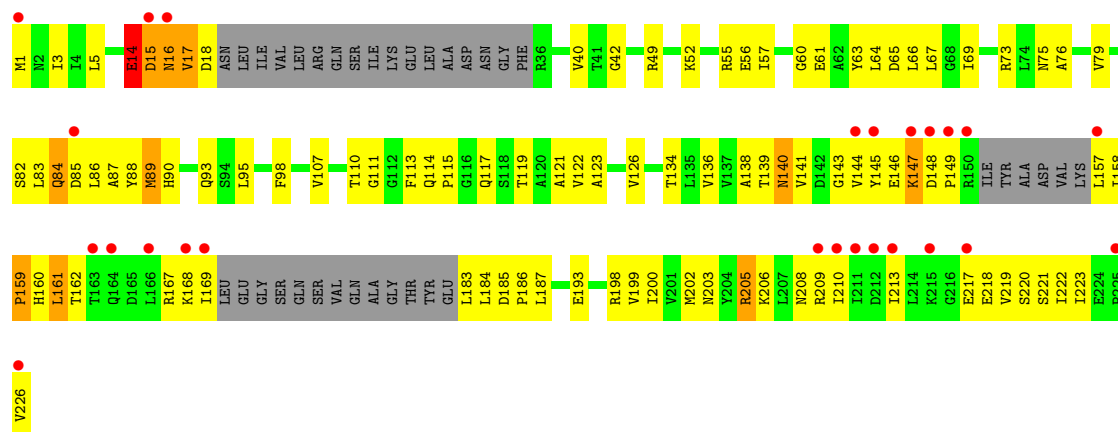
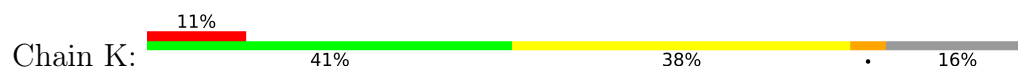


• Molecule 1: URIDYLATE KINASE

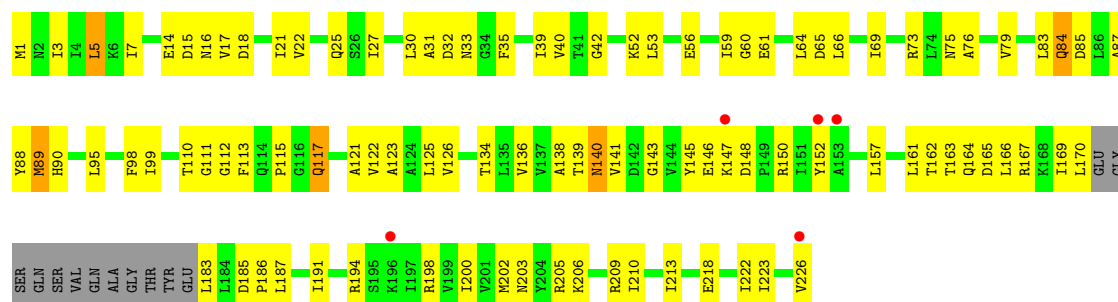




• Molecule 1: URIDYLATE KINASE



• Molecule 1: URIDYLATE KINASE



## 4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	224.75Å 79.03Å 223.47Å 90.00° 96.56° 90.00°	Depositor
Resolution (Å)	29.63 – 2.80 29.63 – 2.78	Depositor EDS
% Data completeness (in resolution range)	94.6 (29.63-2.80) 93.3 (29.63-2.78)	Depositor EDS
$R_{merge}$	0.08	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.19 (at 2.76Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, $R_{free}$	0.246 , 0.278 0.246 , 0.240	Depositor DCC
$R_{free}$ test set	4633 reflections (5.03%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	74.1	Xtriage
Anisotropy	0.498	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.32 , 56.7	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.50$ , $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	19613	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	76.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.52% 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: UTP, MG

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z  > 5$	RMSZ	$\# Z  > 5$
1	A	0.49	0/1698	0.74	1/2296 (0.0%)
1	B	0.45	0/1689	0.69	0/2284
1	C	0.52	0/1561	0.83	6/2107 (0.3%)
1	D	0.43	0/1689	0.73	1/2284 (0.0%)
1	E	0.43	0/1711	0.70	2/2313 (0.1%)
1	F	0.50	0/1739	0.81	4/2352 (0.2%)
1	G	0.48	2/1684 (0.1%)	1.01	10/2274 (0.4%)
1	H	0.36	0/1335	0.65	1/1803 (0.1%)
1	I	0.36	0/1528	0.65	0/2063
1	J	0.39	0/1697	0.68	0/2295
1	K	0.42	0/1501	0.75	5/2027 (0.2%)
1	L	0.43	0/1697	0.68	0/2295
All	All	0.44	2/19529 (0.0%)	0.75	30/26393 (0.1%)

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	G	0	2

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	G	153	ALA	C-O	-8.10	1.07	1.23
1	G	152	TYR	C-N	-5.19	1.22	1.34

All (30) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	150	ARG	O-C-N	-18.52	93.06	122.70
1	F	183	LEU	N-CA-C	-13.30	75.09	111.00
1	G	152	TYR	C-N-CA	-12.80	89.70	121.70
1	C	217	GLU	N-CA-C	-12.36	77.62	111.00
1	G	153	ALA	CA-C-O	-12.19	94.50	120.10
1	G	150	ARG	CA-C-N	11.74	143.04	117.20
1	G	218	GLU	N-CA-C	11.19	141.20	111.00
1	G	150	ARG	C-N-CA	10.71	148.47	121.70
1	K	205	ARG	NE-CZ-NH1	-9.37	115.61	120.30
1	G	152	TYR	O-C-N	9.20	137.42	122.70
1	K	205	ARG	NE-CZ-NH2	8.96	124.78	120.30
1	F	183	LEU	N-CA-CB	8.52	127.45	110.40
1	F	182	GLU	CB-CA-C	7.58	125.55	110.40
1	C	215	LYS	C-N-CA	-7.42	106.71	122.30
1	G	217	GLU	C-N-CA	7.24	139.81	121.70
1	G	152	TYR	CA-C-N	-6.99	101.81	117.20
1	K	1	MET	CA-CB-CG	5.81	123.18	113.30
1	K	14	GLU	N-CA-C	5.81	126.69	111.00
1	H	217	GLU	N-CA-C	5.72	126.45	111.00
1	C	216	GLY	N-CA-C	-5.69	98.87	113.10
1	K	1	MET	CB-CA-C	-5.67	99.06	110.40
1	C	218	GLU	N-CA-C	-5.66	95.71	111.00
1	D	36	ARG	N-CA-C	-5.54	96.06	111.00
1	E	182	GLU	N-CA-C	-5.38	96.47	111.00
1	E	183	LEU	N-CA-C	-5.37	96.50	111.00
1	C	214	LEU	C-N-CA	-5.31	108.42	121.70
1	G	16	ASN	N-CA-C	-5.28	96.74	111.00
1	C	216	GLY	CA-C-N	-5.08	106.02	117.20
1	F	157	LEU	CA-CB-CG	5.05	126.92	115.30
1	A	15	ASP	N-CA-C	-5.00	97.49	111.00

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	G	150	ARG	Mainchain
1	G	152	TYR	Peptide

## 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	1674	0	1742	112	0
1	B	1665	0	1736	99	0
1	C	1539	0	1599	102	0
1	D	1665	0	1736	101	0
1	E	1688	0	1751	117	0
1	F	1714	0	1778	122	0
1	G	1662	0	1738	107	0
1	H	1317	0	1374	95	0
1	I	1507	0	1569	94	0
1	J	1673	0	1747	121	0
1	K	1481	0	1541	99	0
1	L	1673	0	1747	120	0
2	A	29	0	11	0	0
2	B	29	0	11	1	0
2	C	29	0	11	2	0
2	D	29	0	11	0	0
2	E	29	0	11	2	0
2	F	29	0	11	5	0
2	G	29	0	11	1	0
2	H	29	0	11	2	0
2	I	29	0	11	2	0
2	J	29	0	11	3	0
2	K	29	0	11	0	0
2	L	29	0	11	1	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
3	E	1	0	0	0	0
3	I	1	0	0	0	0
3	J	1	0	0	0	0
3	L	1	0	0	0	0
All	All	19613	0	20190	1177	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 30.

All (1177) 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:C:212:ASP:O	1:C:216:GLY:N	1.83	1.12
1:B:14:GLU:HB3	1:B:16:ASN:HD22	1.05	1.10
1:D:156:LYS:HG3	1:D:157:LEU:H	1.16	1.05
1:D:145:TYR:HD1	1:D:156:LYS:O	1.43	1.02
1:I:212:ASP:HB3	1:I:217:GLU:HB2	1.42	1.00
1:F:18:ASP:O	1:F:22:VAL:HG12	1.62	0.99
1:L:147:LYS:HD3	1:L:152:TYR:CD1	1.99	0.97
1:B:14:GLU:HB3	1:B:16:ASN:ND2	1.80	0.95
1:I:14:GLU:O	1:I:15:ASP:HB2	1.66	0.94
1:B:183:LEU:HD23	1:B:184:LEU:HG	1.47	0.94
1:L:185:ASP:HB2	1:L:186:PRO:HD2	1.50	0.93
1:H:185:ASP:HB2	1:H:186:PRO:HD2	1.52	0.92
1:D:166:LEU:HD22	1:D:223:ILE:HG12	1.50	0.92
1:A:206:LYS:HZ3	1:A:219:VAL:HG21	1.32	0.91
1:I:185:ASP:HB2	1:I:186:PRO:HD2	1.52	0.91
1:J:202:MET:HE2	1:J:213:ILE:HG21	1.52	0.91
1:A:164:GLN:HG3	1:A:226:VAL:CG2	2.01	0.91
1:A:166:LEU:HD21	1:A:184:LEU:HG	1.53	0.91
1:G:185:ASP:HB2	1:G:186:PRO:HD2	1.53	0.90
1:D:185:ASP:HB2	1:D:186:PRO:HD2	1.54	0.89
1:C:211:ILE:O	1:C:215:LYS:HG2	1.73	0.89
1:D:145:TYR:CD1	1:D:156:LYS:O	2.25	0.88
1:F:180:THR:HG22	1:F:181:TYR:H	1.38	0.88
1:C:163:THR:HG22	1:C:189:ILE:HG23	1.53	0.88
1:J:185:ASP:HB2	1:J:186:PRO:HD2	1.56	0.88
1:K:185:ASP:HB2	1:K:186:PRO:HD2	1.55	0.87
1:K:202:MET:HE2	1:K:213:ILE:HG21	1.57	0.87
1:K:213:ILE:HD13	1:K:218:GLU:HB3	1.56	0.86
1:E:181:TYR:O	1:E:182:GLU:HG3	1.74	0.86
1:G:147:LYS:HB2	1:G:155:VAL:HG21	1.58	0.85
1:B:151:ILE:HG12	1:B:152:TYR:HD2	1.38	0.85
1:E:16:ASN:HD21	1:E:18:ASP:HB2	1.40	0.85
1:J:213:ILE:HD13	1:J:218:GLU:HB3	1.59	0.85
1:F:185:ASP:HB2	1:F:186:PRO:HD2	1.59	0.84
1:H:202:MET:HE2	1:H:213:ILE:HG21	1.60	0.83
1:F:170:LEU:HB3	1:F:182:GLU:OE1	1.77	0.83
1:A:164:GLN:HG3	1:A:226:VAL:HG23	1.61	0.83
1:C:185:ASP:HB2	1:C:186:PRO:HD2	1.60	0.83
1:E:16:ASN:HB3	1:E:19:ASN:ND2	1.92	0.83
1:J:21:ILE:O	1:J:25:GLN:HG2	1.78	0.82
1:G:202:MET:HE2	1:G:213:ILE:HG21	1.61	0.82
1:E:16:ASN:HB3	1:E:19:ASN:HD22	1.43	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:121:ALA:HB1	1:G:187:LEU:HD23	1.62	0.82
1:E:185:ASP:HB2	1:E:186:PRO:HD2	1.61	0.82
1:B:185:ASP:HB2	1:B:186:PRO:HD2	1.61	0.82
1:F:181:TYR:HE1	2:F:1227:UTP:O3G	1.61	0.82
1:J:162:THR:HG22	1:J:164:GLN:H	1.44	0.82
1:L:42:GLY:HA3	2:L:1227:UTP:O2B	1.79	0.81
1:K:141:VAL:HG12	1:K:143:GLY:H	1.44	0.81
1:G:153:ALA:C	1:G:155:VAL:N	2.34	0.81
1:C:208:ASN:OD1	1:C:209:ARG:HG3	1.81	0.80
1:C:47:ALA:O	1:C:51:ILE:HG13	1.81	0.80
1:A:185:ASP:HB2	1:A:186:PRO:HD2	1.63	0.80
1:H:206:LYS:HZ3	1:H:219:VAL:HB	1.45	0.79
1:L:202:MET:HE2	1:L:213:ILE:HG21	1.63	0.79
1:E:146:GLU:HG2	1:E:147:LYS:HG3	1.65	0.79
1:G:82:SER:HA	1:H:59:ILE:HD11	1.65	0.79
1:E:145:TYR:CD2	1:E:149:PRO:HD3	2.18	0.79
1:L:121:ALA:HB1	1:L:187:LEU:HD23	1.65	0.79
1:F:170:LEU:HD22	1:F:182:GLU:HG2	1.65	0.78
1:C:148:ASP:HB2	1:C:149:PRO:HD2	1.63	0.78
1:C:163:THR:HG21	1:C:193:GLU:HG3	1.65	0.78
1:I:202:MET:HE2	1:I:213:ILE:HG21	1.66	0.77
1:J:121:ALA:HB1	1:J:187:LEU:HD23	1.66	0.77
1:E:42:GLY:HA3	2:E:1227:UTP:O2B	1.84	0.77
1:A:14:GLU:HB3	1:A:16:ASN:ND2	2.00	0.77
1:G:79:VAL:HG12	1:G:83:LEU:HD11	1.66	0.77
1:A:17:VAL:O	1:A:21:ILE:HG12	1.84	0.77
1:G:115:PRO:HG2	1:K:95:LEU:HD23	1.66	0.77
1:G:140:ASN:HD22	1:G:141:VAL:N	1.84	0.76
1:C:139:THR:OG1	1:C:140:ASN:N	2.19	0.76
1:J:28:LYS:HE2	1:J:86:LEU:HD11	1.69	0.75
1:F:183:LEU:O	1:F:183:LEU:HD12	1.87	0.75
1:D:163:THR:O	1:D:167:ARG:HG2	1.85	0.75
1:H:121:ALA:HB1	1:H:187:LEU:HD23	1.69	0.75
1:K:121:ALA:HB1	1:K:187:LEU:HD23	1.68	0.75
1:L:164:GLN:O	1:L:167:ARG:HB2	1.86	0.75
1:G:21:ILE:O	1:G:25:GLN:HG2	1.85	0.75
1:E:32:ASP:C	1:E:33:ASN:HD22	1.91	0.74
1:F:30:LEU:O	1:F:35:PHE:HB2	1.87	0.74
1:D:156:LYS:HG3	1:D:157:LEU:N	1.97	0.74
1:E:182:GLU:OE1	1:E:185:ASP:HA	1.86	0.74
1:A:14:GLU:HB2	1:A:16:ASN:HB2	1.69	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:11:PHE:CE1	1:B:19:ASN:HB3	2.22	0.74
1:F:170:LEU:HD22	1:F:182:GLU:CG	2.16	0.74
1:E:141:VAL:HG12	1:E:142:ASP:N	2.01	0.74
1:A:14:GLU:HB3	1:A:16:ASN:HD22	1.49	0.74
1:E:141:VAL:HG12	1:E:143:GLY:H	1.53	0.74
1:E:217:GLU:O	1:E:218:GLU:HB2	1.87	0.73
1:F:205:ARG:HH11	1:L:16:ASN:ND2	1.87	0.73
1:B:14:GLU:CB	1:B:16:ASN:HD22	1.93	0.73
1:J:144:VAL:O	1:J:158:ILE:HG12	1.89	0.72
1:L:14:GLU:O	1:L:15:ASP:HB3	1.87	0.72
1:L:167:ARG:HG3	1:L:167:ARG:HH11	1.52	0.72
1:E:145:TYR:HE1	1:E:157:LEU:HB2	1.54	0.72
1:B:167:ARG:C	1:B:169:ILE:H	1.93	0.72
1:C:218:GLU:HG2	1:C:219:VAL:HG23	1.70	0.72
1:G:206:LYS:HZ3	1:G:219:VAL:HG11	1.55	0.72
1:B:141:VAL:HG12	1:B:143:GLY:H	1.55	0.71
1:A:167:ARG:C	1:A:169:ILE:H	1.93	0.71
1:D:146:GLU:HG3	1:D:158:ILE:HD11	1.72	0.71
1:A:95:LEU:CD2	1:E:115:PRO:HG2	2.19	0.71
1:D:47:ALA:O	1:D:51:ILE:HG13	1.90	0.71
1:J:27:ILE:CD1	1:J:39:ILE:HD11	2.20	0.71
1:D:18:ASP:O	1:D:22:VAL:HG12	1.90	0.71
1:H:141:VAL:HG12	1:H:143:GLY:H	1.54	0.71
1:K:206:LYS:HZ3	1:K:219:VAL:HG21	1.56	0.71
1:B:11:PHE:CZ	1:B:19:ASN:HB3	2.25	0.70
1:E:20:LEU:HD13	1:F:57:ILE:HD13	1.73	0.70
1:K:159:PRO:HG2	1:K:160:HIS:H	1.55	0.70
1:J:162:THR:CG2	1:J:164:GLN:H	2.05	0.70
1:L:166:LEU:HD12	1:L:223:ILE:HG12	1.73	0.70
1:D:164:GLN:O	1:D:167:ARG:HB2	1.91	0.70
1:G:17:VAL:O	1:G:21:ILE:HG12	1.91	0.70
1:G:206:LYS:NZ	1:G:219:VAL:HG11	2.07	0.70
1:I:121:ALA:HB1	1:I:187:LEU:HD23	1.73	0.70
1:A:203:ASN:OD1	1:A:205:ARG:HB2	1.91	0.70
1:B:17:VAL:O	1:B:21:ILE:HG12	1.92	0.70
1:I:14:GLU:O	1:I:15:ASP:CB	2.41	0.69
1:G:115:PRO:HG2	1:K:95:LEU:CD2	2.21	0.69
1:G:51:ILE:HG23	1:G:64:LEU:HB3	1.73	0.69
1:I:157:LEU:HD22	1:I:158:ILE:N	2.07	0.69
1:J:61:GLU:HG2	1:L:194:ARG:HD2	1.75	0.69
1:A:128:GLU:HG2	1:E:62:ALA:HB2	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:218:GLU:OE2	1:H:219:VAL:HG23	1.91	0.69
1:C:10:LYS:HD2	1:C:140:ASN:HB3	1.73	0.69
1:D:203:ASN:OD1	1:D:205:ARG:HB2	1.93	0.69
1:G:145:TYR:CE1	1:G:157:LEU:HB2	2.28	0.69
1:B:110:THR:HG22	1:B:111:GLY:N	2.07	0.68
1:L:60:GLY:O	1:L:64:LEU:HG	1.92	0.68
1:B:95:LEU:CD2	1:C:115:PRO:HG2	2.24	0.68
1:K:203:ASN:OD1	1:K:205:ARG:HD3	1.92	0.68
1:K:183:LEU:HD22	1:K:184:LEU:HG	1.76	0.68
1:E:16:ASN:ND2	1:E:18:ASP:HB2	2.07	0.68
1:C:213:ILE:HG23	1:C:220:SER:HB3	1.76	0.68
1:F:110:THR:HG22	1:F:111:GLY:N	2.09	0.68
1:F:181:TYR:CE1	2:F:1227:UTP:O3G	2.46	0.68
1:I:110:THR:HG22	1:I:111:GLY:N	2.09	0.68
1:J:24:ARG:HD3	1:J:82:SER:O	1.94	0.67
1:D:61:GLU:HG2	1:F:194:ARG:HD2	1.75	0.67
1:L:167:ARG:HG3	1:L:167:ARG:NH1	2.08	0.67
1:E:48:ARG:HG3	1:E:52:LYS:HE3	1.76	0.67
1:H:208:ASN:OD1	1:H:209:ARG:HG3	1.95	0.67
1:F:141:VAL:HG12	1:F:143:GLY:H	1.58	0.67
1:D:95:LEU:CD2	1:F:115:PRO:HG2	2.25	0.67
1:H:60:GLY:O	1:H:64:LEU:HG	1.95	0.67
1:B:21:ILE:O	1:B:25:GLN:HG3	1.95	0.66
1:L:18:ASP:O	1:L:22:VAL:HG12	1.94	0.66
1:A:110:THR:HG22	1:A:111:GLY:N	2.10	0.66
1:G:95:LEU:CD2	1:K:115:PRO:HG2	2.24	0.66
1:B:61:GLU:HG2	1:C:194:ARG:HD2	1.78	0.66
1:H:183:LEU:HD22	1:H:184:LEU:HG	1.76	0.66
1:I:165:ASP:O	1:I:169:ILE:HD13	1.96	0.66
1:F:205:ARG:HH21	1:L:205:ARG:NH1	1.94	0.66
1:D:110:THR:HG22	1:D:111:GLY:N	2.11	0.66
1:L:110:THR:HG22	1:L:111:GLY:N	2.11	0.66
1:J:144:VAL:N	1:J:221:SER:OG	2.17	0.66
1:C:59:ILE:CD1	1:D:82:SER:HA	2.27	0.65
1:G:84:GLN:HA	1:G:89:MET:HE1	1.78	0.65
1:F:147:LYS:O	1:F:148:ASP:HB2	1.97	0.65
1:C:140:ASN:O	1:C:141:VAL:HG23	1.97	0.65
1:G:42:GLY:HA3	2:G:1227:UTP:O2B	1.96	0.65
1:H:182:GLU:HG3	1:H:183:LEU:H	1.60	0.65
1:H:95:LEU:HD23	1:I:115:PRO:HG2	1.79	0.65
1:C:110:THR:HG22	1:C:111:GLY:N	2.11	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:95:LEU:HD22	1:C:115:PRO:HG2	1.77	0.65
1:E:110:THR:HG22	1:E:111:GLY:O	1.96	0.65
1:L:79:VAL:O	1:L:83:LEU:HG	1.97	0.65
1:K:79:VAL:O	1:K:83:LEU:HG	1.97	0.65
1:L:165:ASP:O	1:L:169:ILE:HD13	1.97	0.65
1:B:157:LEU:HD23	1:B:157:LEU:C	2.17	0.65
1:C:203:ASN:OD1	1:C:205:ARG:HB2	1.97	0.65
1:K:17:VAL:HG13	1:K:18:ASP:H	1.61	0.65
1:A:32:ASP:C	1:A:33:ASN:HD22	2.00	0.64
1:G:95:LEU:HD23	1:K:115:PRO:HG2	1.77	0.64
1:A:95:LEU:HD22	1:E:115:PRO:HG2	1.78	0.64
1:E:141:VAL:CG1	1:E:142:ASP:N	2.59	0.64
1:F:42:GLY:HA3	2:F:1227:UTP:O2B	1.96	0.64
1:L:30:LEU:O	1:L:35:PHE:HB2	1.98	0.64
1:C:141:VAL:HG12	1:C:143:GLY:H	1.61	0.64
1:E:110:THR:HG22	1:E:111:GLY:N	2.11	0.64
1:G:27:ILE:CD1	1:G:39:ILE:HD11	2.28	0.64
1:F:181:TYR:CD2	1:F:182:GLU:N	2.66	0.64
1:I:148:ASP:OD2	1:I:155:VAL:HG22	1.97	0.64
1:C:110:THR:HG22	1:C:111:GLY:O	1.97	0.64
1:B:113:PHE:CE2	1:B:122:VAL:HG13	2.33	0.64
1:E:49:ARG:NH2	1:F:12:PHE:O	2.31	0.64
1:A:11:PHE:CE1	1:A:19:ASN:HB3	2.33	0.64
1:D:95:LEU:HD22	1:F:115:PRO:HG2	1.80	0.64
1:E:24:ARG:HH21	1:E:84:GLN:HG2	1.61	0.64
1:G:206:LYS:NZ	1:G:219:VAL:CG1	2.61	0.64
1:G:50:TYR:HD2	1:H:78:LEU:HD22	1.63	0.64
1:A:61:GLU:HG2	1:E:194:ARG:HD2	1.80	0.63
1:D:17:VAL:O	1:D:21:ILE:HG12	1.98	0.63
1:J:32:ASP:C	1:J:33:ASN:HD22	2.02	0.63
1:F:161:LEU:HD12	1:F:165:ASP:HB2	1.80	0.63
1:A:209:ARG:HD3	1:A:218:GLU:OE1	1.98	0.63
1:J:110:THR:HG22	1:J:111:GLY:N	2.12	0.63
1:J:162:THR:HB	1:J:165:ASP:OD1	1.98	0.63
1:E:73:ARG:NH2	1:E:93:GLN:HB3	2.14	0.63
1:F:203:ASN:OD1	1:F:205:ARG:HB2	1.97	0.63
1:H:79:VAL:O	1:H:83:LEU:HG	1.98	0.63
1:C:59:ILE:HD11	1:D:82:SER:HA	1.81	0.62
1:H:110:THR:HG22	1:H:111:GLY:N	2.13	0.62
1:J:162:THR:HG22	1:J:164:GLN:N	2.13	0.62
1:K:110:THR:HG22	1:K:111:GLY:N	2.14	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:128:GLU:HG2	1:C:62:ALA:HB2	1.81	0.62
1:J:139:THR:O	1:J:203:ASN:HA	2.00	0.62
1:L:213:ILE:HD13	1:L:218:GLU:HB3	1.80	0.62
1:E:203:ASN:OD1	1:E:205:ARG:HB2	1.99	0.62
1:F:209:ARG:O	1:F:213:ILE:HG12	2.00	0.62
1:J:162:THR:HG23	1:J:226:VAL:CG2	2.29	0.62
1:F:32:ASP:C	1:F:33:ASN:HD22	2.01	0.62
1:J:162:THR:CG2	1:J:226:VAL:HG21	2.30	0.62
1:B:151:ILE:HG12	1:B:152:TYR:N	2.14	0.62
1:D:164:GLN:OE1	1:D:167:ARG:HG3	2.00	0.62
1:B:162:THR:H	1:B:165:ASP:HB2	1.65	0.61
1:C:10:LYS:HD2	1:C:140:ASN:CB	2.30	0.61
1:D:163:THR:OG1	1:D:225:PRO:HA	2.00	0.61
1:E:82:SER:HA	1:F:59:ILE:HD11	1.82	0.61
1:A:110:THR:HG22	1:A:111:GLY:O	2.00	0.61
1:J:145:TYR:CZ	1:J:157:LEU:HD23	2.36	0.61
1:J:194:ARG:HD2	1:L:61:GLU:HG2	1.82	0.61
1:E:155:VAL:HG12	1:E:156:LYS:N	2.15	0.61
1:F:110:THR:HG22	1:F:111:GLY:O	1.99	0.61
1:A:164:GLN:HG3	1:A:226:VAL:HG21	1.80	0.61
1:F:180:THR:HG22	1:F:181:TYR:N	2.14	0.61
1:D:30:LEU:O	1:D:35:PHE:HB2	2.00	0.61
1:E:218:GLU:HG3	1:E:219:VAL:N	2.16	0.61
1:F:181:TYR:C	1:F:181:TYR:CD2	2.73	0.61
1:H:87:ALA:O	1:H:89:MET:HE2	2.01	0.61
1:D:213:ILE:HD13	1:D:218:GLU:HB3	1.83	0.61
1:J:183:LEU:HD23	1:J:184:LEU:HG	1.83	0.61
1:A:142:ASP:HA	1:A:203:ASN:HB2	1.82	0.61
1:E:157:LEU:HD23	1:E:157:LEU:C	2.21	0.61
1:K:168:LYS:O	1:K:169:ILE:C	2.38	0.61
1:K:79:VAL:HG12	1:K:83:LEU:HD11	1.83	0.61
1:E:50:TYR:OH	1:F:75:ASN:ND2	2.34	0.60
1:G:209:ARG:O	1:G:213:ILE:HG12	2.00	0.60
1:G:82:SER:HA	1:H:59:ILE:CD1	2.30	0.60
1:J:95:LEU:CD2	1:L:115:PRO:HG2	2.32	0.60
1:B:140:ASN:HD22	1:B:140:ASN:H	1.49	0.60
1:D:163:THR:HG21	1:D:193:GLU:HG3	1.84	0.60
1:B:140:ASN:HD22	1:B:140:ASN:N	1.99	0.60
1:C:209:ARG:CZ	1:C:218:GLU:OE2	2.50	0.60
1:K:60:GLY:O	1:K:64:LEU:HG	2.02	0.60
1:F:8:SER:HA	2:F:1227:UTP:O1G	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:79:VAL:O	1:A:83:LEU:HG	2.01	0.60
1:F:98:PHE:CZ	1:F:126:VAL:HG13	2.37	0.60
1:F:166:LEU:HD21	1:F:184:LEU:HD12	1.82	0.60
1:F:83:LEU:O	1:F:86:LEU:HB2	2.02	0.60
1:A:27:ILE:HD11	1:A:39:ILE:HD11	1.84	0.59
1:E:218:GLU:HG3	1:E:219:VAL:H	1.66	0.59
1:D:115:PRO:HG2	1:F:95:LEU:CD2	2.31	0.59
1:H:8:SER:HA	2:H:1227:UTP:O3G	2.00	0.59
1:E:145:TYR:HD2	1:E:149:PRO:HD3	1.65	0.59
1:G:27:ILE:HD12	1:G:39:ILE:HD11	1.83	0.59
1:B:194:ARG:HD2	1:C:61:GLU:HG2	1.83	0.59
1:B:203:ASN:OD1	1:B:205:ARG:HB2	2.02	0.59
1:F:181:TYR:CG	1:F:182:GLU:N	2.68	0.59
1:F:85:ASP:H	1:F:89:MET:HE3	1.66	0.59
1:A:206:LYS:NZ	1:A:219:VAL:HG21	2.13	0.59
1:H:134:THR:HG23	1:H:200:ILE:HD13	1.84	0.59
1:C:161:LEU:HD23	1:C:161:LEU:N	2.18	0.59
1:L:169:ILE:HG22	1:L:170:LEU:HD23	1.85	0.59
1:B:148:ASP:HB3	1:B:151:ILE:HG23	1.83	0.59
1:B:183:LEU:CD2	1:B:184:LEU:HG	2.30	0.59
1:C:163:THR:HB	1:C:193:GLU:OE1	2.03	0.59
1:C:42:GLY:HA3	2:C:1227:UTP:O2B	2.02	0.59
1:G:148:ASP:O	1:G:149:PRO:O	2.21	0.59
1:A:14:GLU:CB	1:A:16:ASN:HD22	2.15	0.59
1:L:141:VAL:HG13	1:L:143:GLY:H	1.68	0.59
1:D:21:ILE:O	1:D:25:GLN:HG2	2.03	0.59
1:E:147:LYS:HB2	1:E:155:VAL:HG21	1.84	0.59
1:H:182:GLU:CG	1:H:183:LEU:H	2.16	0.59
1:E:179:GLY:N	2:E:1227:UTP:O3'	2.35	0.58
1:E:1:MET:H3	1:E:1:MET:HE3	1.68	0.58
1:F:21:ILE:O	1:F:25:GLN:HG3	2.02	0.58
1:H:115:PRO:HG2	1:I:95:LEU:HD23	1.84	0.58
1:I:57:ILE:HG22	1:J:21:ILE:HD11	1.84	0.58
1:J:95:LEU:HD23	1:L:115:PRO:HG2	1.85	0.58
1:D:140:ASN:HD22	1:D:140:ASN:N	2.01	0.58
1:B:167:ARG:O	1:B:169:ILE:N	2.36	0.58
1:D:113:PHE:CE2	1:D:122:VAL:HG13	2.38	0.58
1:F:167:ARG:HH11	1:F:167:ARG:HG3	1.69	0.58
1:J:168:LYS:O	1:J:169:ILE:HD12	2.03	0.58
1:I:60:GLY:O	1:I:64:LEU:HG	2.02	0.58
1:C:145:TYR:CD1	1:C:157:LEU:HA	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:206:LYS:HZ3	1:C:219:VAL:HB	1.68	0.58
1:F:213:ILE:HD13	1:F:218:GLU:HB3	1.85	0.58
1:G:110:THR:HG22	1:G:111:GLY:N	2.18	0.58
1:G:60:GLY:O	1:G:64:LEU:HG	2.02	0.58
1:K:56:GLU:HG2	1:L:17:VAL:CG2	2.33	0.58
1:E:181:TYR:O	1:E:182:GLU:CG	2.50	0.58
1:E:167:ARG:NH2	1:E:193:GLU:OE2	2.35	0.58
1:J:16:ASN:OD1	1:J:18:ASP:HB2	2.04	0.58
1:E:157:LEU:HD23	1:E:157:LEU:O	2.04	0.58
1:K:79:VAL:HG12	1:K:83:LEU:CD1	2.33	0.58
1:A:167:ARG:HH22	1:A:193:GLU:CD	2.07	0.58
1:G:164:GLN:O	1:G:167:ARG:HB2	2.04	0.58
1:H:95:LEU:CD2	1:I:115:PRO:HG2	2.34	0.58
1:G:50:TYR:CD2	1:H:78:LEU:HD22	2.39	0.57
1:L:134:THR:HG23	1:L:200:ILE:HD13	1.86	0.57
1:A:142:ASP:CG	1:A:206:LYS:HZ1	2.08	0.57
1:H:140:ASN:HD22	1:H:140:ASN:N	2.01	0.57
1:G:25:GLN:O	1:G:29:GLU:HG3	2.04	0.57
1:I:144:VAL:HG23	1:I:221:SER:CB	2.35	0.57
1:J:17:VAL:O	1:J:21:ILE:HG12	2.04	0.57
1:H:206:LYS:NZ	1:H:219:VAL:HB	2.19	0.57
1:G:59:ILE:HD11	1:H:82:SER:HA	1.85	0.57
1:K:17:VAL:HG13	1:K:18:ASP:N	2.18	0.57
1:A:98:PHE:CZ	1:A:126:VAL:HG13	2.39	0.57
1:C:211:ILE:O	1:C:215:LYS:CG	2.51	0.57
1:D:144:VAL:HG23	1:D:221:SER:CB	2.34	0.57
1:L:162:THR:HB	1:L:226:VAL:CG2	2.35	0.57
1:D:140:ASN:HD22	1:D:140:ASN:H	1.51	0.57
1:E:218:GLU:CG	1:E:219:VAL:H	2.17	0.57
1:A:147:LYS:O	1:A:155:VAL:HG11	2.04	0.57
1:G:167:ARG:HH11	1:G:167:ARG:HG3	1.69	0.57
1:I:110:THR:HG22	1:I:111:GLY:O	2.04	0.57
1:I:47:ALA:O	1:I:51:ILE:HG13	2.04	0.57
1:B:18:ASP:O	1:B:22:VAL:HG12	2.04	0.57
1:C:84:GLN:O	1:C:85:ASP:HB2	2.05	0.57
1:D:163:THR:HG1	1:D:225:PRO:HA	1.69	0.57
1:I:69:ILE:HG23	1:I:112:GLY:HA3	1.87	0.57
1:K:160:HIS:O	1:K:161:LEU:HB3	2.05	0.57
1:B:98:PHE:CZ	1:B:126:VAL:HG13	2.40	0.57
1:G:140:ASN:ND2	1:G:141:VAL:HG23	2.20	0.57
1:H:115:PRO:HG2	1:I:95:LEU:CD2	2.33	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:30:LEU:HD13	1:J:37:VAL:HG21	1.87	0.57
1:J:84:GLN:O	1:J:85:ASP:HB3	2.04	0.57
1:E:141:VAL:CG1	1:E:142:ASP:H	2.17	0.56
1:H:182:GLU:HG3	1:H:183:LEU:N	2.19	0.56
1:K:134:THR:HG23	1:K:200:ILE:HD13	1.87	0.56
1:F:170:LEU:CD2	1:F:182:GLU:HG2	2.34	0.56
1:G:47:ALA:O	1:G:51:ILE:HG13	2.05	0.56
1:I:87:ALA:O	1:I:89:MET:HE2	2.05	0.56
1:K:57:ILE:HG22	1:L:17:VAL:HG13	1.86	0.56
1:C:73:ARG:NH2	1:C:93:GLN:HB3	2.20	0.56
1:H:206:LYS:HG2	1:H:209:ARG:HH21	1.71	0.56
1:K:84:GLN:O	1:K:85:ASP:HB2	2.05	0.56
1:B:158:ILE:HD13	1:B:158:ILE:N	2.20	0.56
1:F:84:GLN:HA	1:F:89:MET:CE	2.35	0.56
1:L:40:VAL:HG21	1:L:123:ALA:HA	1.88	0.56
1:K:144:VAL:HG23	1:K:221:SER:HB2	1.87	0.56
1:L:31:ALA:C	1:L:33:ASN:H	2.09	0.56
1:H:84:GLN:O	1:H:85:ASP:HB2	2.06	0.56
1:L:79:VAL:HG12	1:L:83:LEU:HD11	1.86	0.56
1:A:11:PHE:CZ	1:A:19:ASN:HB3	2.40	0.56
1:E:52:LYS:HB3	1:L:150:ARG:HB2	1.86	0.56
1:F:161:LEU:HD21	1:F:223:ILE:HG13	1.87	0.56
1:G:206:LYS:HZ2	1:G:219:VAL:CG1	2.18	0.56
1:H:3:ILE:HD11	1:H:136:VAL:HG23	1.88	0.56
1:J:27:ILE:HD12	1:J:39:ILE:HD11	1.88	0.56
1:A:139:THR:O	1:A:203:ASN:HA	2.06	0.56
1:E:179:GLY:O	1:E:181:TYR:CD1	2.58	0.56
1:I:206:LYS:NZ	1:I:219:VAL:HB	2.21	0.56
1:K:144:VAL:HG23	1:K:221:SER:CB	2.36	0.56
1:A:22:VAL:HG23	1:A:208:ASN:HD22	1.71	0.55
1:I:65:ASP:O	1:I:69:ILE:HG13	2.06	0.55
1:J:27:ILE:HD11	1:J:39:ILE:HD11	1.89	0.55
1:L:21:ILE:O	1:L:25:GLN:HG2	2.05	0.55
1:F:84:GLN:HA	1:F:89:MET:HE1	1.88	0.55
1:H:142:ASP:HA	1:H:203:ASN:HB2	1.87	0.55
1:J:52:LYS:O	1:J:56:GLU:HB2	2.05	0.55
1:H:142:ASP:HB3	1:H:219:VAL:HG11	1.89	0.55
1:J:60:GLY:O	1:J:64:LEU:HG	2.07	0.55
1:I:40:VAL:HG21	1:I:123:ALA:HA	1.88	0.55
1:K:84:GLN:HA	1:K:89:MET:HE1	1.89	0.55
1:C:157:LEU:O	1:C:159:PRO:HD3	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:59:ILE:HD11	1:D:82:SER:CA	2.36	0.55
1:E:1:MET:CE	1:E:1:MET:H3	2.19	0.55
1:F:23:LEU:O	1:F:27:ILE:HG12	2.06	0.55
1:G:145:TYR:HE1	1:G:157:LEU:HB2	1.70	0.55
1:G:134:THR:HG23	1:G:200:ILE:HD13	1.87	0.55
1:A:164:GLN:O	1:A:168:LYS:HG3	2.06	0.55
1:B:84:GLN:O	1:B:85:ASP:HB2	2.05	0.55
1:D:141:VAL:HG12	1:D:142:ASP:N	2.22	0.55
1:I:13:ASP:HA	1:J:49:ARG:NH2	2.22	0.55
1:F:84:GLN:O	1:F:85:ASP:HB2	2.07	0.55
1:A:14:GLU:C	1:A:16:ASN:N	2.54	0.55
1:A:167:ARG:C	1:A:169:ILE:N	2.60	0.54
1:I:164:GLN:O	1:I:167:ARG:HB2	2.06	0.54
1:A:144:VAL:N	1:A:221:SER:OG	2.27	0.54
1:I:223:ILE:HD12	1:I:223:ILE:N	2.21	0.54
1:B:167:ARG:C	1:B:169:ILE:N	2.61	0.54
1:J:169:ILE:O	1:J:169:ILE:HG22	2.08	0.54
1:J:206:LYS:HG2	1:J:209:ARG:HH21	1.71	0.54
1:F:167:ARG:NH1	1:F:167:ARG:HG3	2.23	0.54
1:H:140:ASN:O	1:H:203:ASN:ND2	2.41	0.54
1:H:223:ILE:HD12	1:H:223:ILE:N	2.23	0.54
1:H:79:VAL:HG12	1:H:83:LEU:HD11	1.89	0.54
1:D:51:ILE:HG23	1:D:64:LEU:HB3	1.89	0.54
1:A:14:GLU:CB	1:A:16:ASN:HB2	2.37	0.54
1:G:28:LYS:HG2	1:G:86:LEU:HD11	1.90	0.54
1:L:22:VAL:HA	1:L:25:GLN:HG2	1.88	0.54
1:A:140:ASN:HB3	1:A:204:TYR:CZ	2.42	0.54
1:B:163:THR:HG21	1:B:193:GLU:HG3	1.89	0.54
1:B:207:LEU:O	1:B:210:ILE:HB	2.08	0.54
1:F:147:LYS:HB3	1:F:152:TYR:CD2	2.43	0.54
1:H:51:ILE:HG23	1:H:64:LEU:HB3	1.89	0.54
1:F:79:VAL:O	1:F:83:LEU:HG	2.07	0.54
1:I:168:LYS:O	1:I:169:ILE:C	2.47	0.54
1:A:83:LEU:O	1:A:86:LEU:HB2	2.06	0.54
1:G:59:ILE:CD1	1:H:82:SER:HA	2.38	0.54
1:K:218:GLU:HG3	1:K:219:VAL:H	1.73	0.54
1:L:84:GLN:O	1:L:85:ASP:HB2	2.07	0.54
1:B:166:LEU:CD2	1:B:184:LEU:HD12	2.39	0.53
1:H:141:VAL:HG12	1:H:142:ASP:N	2.23	0.53
1:J:158:ILE:HD13	1:J:158:ILE:N	2.23	0.53
1:D:28:LYS:HG2	1:D:86:LEU:HD11	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:194:ARG:HD2	1:E:61:GLU:HG2	1.89	0.53
1:F:33:ASN:HD22	1:F:33:ASN:N	2.05	0.53
1:J:134:THR:HG23	1:J:200:ILE:HD13	1.89	0.53
1:K:65:ASP:O	1:K:69:ILE:HG13	2.09	0.53
1:E:75:ASN:ND2	1:F:50:TYR:OH	2.41	0.53
1:E:59:ILE:HD11	1:F:82:SER:HA	1.90	0.53
1:G:1:MET:O	1:G:35:PHE:HA	2.08	0.53
1:I:223:ILE:HD12	1:I:223:ILE:H	1.74	0.53
1:J:209:ARG:O	1:J:213:ILE:HG12	2.08	0.53
1:C:80:MET:CE	1:C:81:PHE:CE2	2.91	0.53
1:J:115:PRO:HG2	1:L:95:LEU:CD2	2.39	0.53
1:D:27:ILE:CD1	1:D:39:ILE:HD11	2.39	0.53
1:E:218:GLU:CG	1:E:219:VAL:N	2.72	0.53
1:G:40:VAL:HG21	1:G:123:ALA:HA	1.89	0.53
1:G:79:VAL:O	1:G:83:LEU:HG	2.08	0.53
1:K:15:ASP:O	1:K:16:ASN:CG	2.46	0.53
1:L:22:VAL:HA	1:L:25:GLN:CG	2.39	0.53
1:B:110:THR:HG21	1:B:113:PHE:CE1	2.43	0.53
1:D:165:ASP:OD1	1:D:165:ASP:N	2.41	0.53
1:E:209:ARG:O	1:E:213:ILE:HG12	2.08	0.53
1:H:65:ASP:O	1:H:69:ILE:HG13	2.08	0.53
1:A:142:ASP:CG	1:A:206:LYS:NZ	2.62	0.53
1:I:98:PHE:CZ	1:I:126:VAL:HG13	2.44	0.53
1:J:183:LEU:CD2	1:J:184:LEU:HG	2.38	0.53
1:D:110:THR:HG22	1:D:111:GLY:O	2.09	0.53
1:F:205:ARG:NH2	1:L:14:GLU:OE2	2.42	0.53
1:E:31:ALA:C	1:E:33:ASN:H	2.12	0.53
1:B:151:ILE:HG12	1:B:152:TYR:CD2	2.30	0.53
1:L:27:ILE:CD1	1:L:39:ILE:HD11	2.39	0.53
1:A:115:PRO:HG2	1:E:95:LEU:CD2	2.38	0.52
1:F:110:THR:HG21	1:F:113:PHE:CE1	2.43	0.52
1:D:194:ARG:HD2	1:F:61:GLU:HG2	1.91	0.52
1:J:65:ASP:O	1:J:69:ILE:HG13	2.09	0.52
1:E:167:ARG:HH22	1:E:193:GLU:CD	2.11	0.52
1:E:20:LEU:HD13	1:F:57:ILE:CD1	2.38	0.52
1:K:3:ILE:HD11	1:K:136:VAL:HG23	1.91	0.52
1:K:82:SER:HA	1:L:59:ILE:HD11	1.91	0.52
1:L:140:ASN:C	1:L:140:ASN:ND2	2.61	0.52
1:B:139:THR:O	1:B:203:ASN:HA	2.09	0.52
1:E:145:TYR:CD1	1:E:157:LEU:HA	2.44	0.52
1:F:166:LEU:CD2	1:F:184:LEU:HD12	2.38	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:40:VAL:HG21	1:H:123:ALA:HA	1.91	0.52
1:L:140:ASN:HD22	1:L:140:ASN:C	2.12	0.52
1:B:60:GLY:O	1:B:64:LEU:HG	2.09	0.52
1:K:82:SER:HA	1:L:59:ILE:CD1	2.40	0.52
1:J:9:GLY:H	2:J:1227:UTP:PG	2.33	0.52
1:A:154:ASP:OD2	1:A:154:ASP:N	2.42	0.52
1:C:147:LYS:O	1:C:155:VAL:HG11	2.09	0.52
1:L:223:ILE:HD12	1:L:223:ILE:N	2.25	0.52
1:C:218:GLU:HG2	1:C:219:VAL:N	2.24	0.52
1:G:148:ASP:C	1:G:149:PRO:O	2.48	0.52
1:G:73:ARG:O	1:G:76:ALA:HB3	2.08	0.52
1:B:151:ILE:HD11	1:B:152:TYR:HE2	1.75	0.52
1:E:139:THR:HG23	1:E:141:VAL:H	1.75	0.52
1:G:166:LEU:HD12	1:G:166:LEU:O	2.10	0.52
1:C:179:GLY:N	2:C:1227:UTP:O3'	2.39	0.52
1:D:166:LEU:CD2	1:D:223:ILE:HG12	2.32	0.52
1:L:147:LYS:HD3	1:L:152:TYR:HD1	1.65	0.52
1:L:162:THR:HB	1:L:226:VAL:HG22	1.90	0.52
1:C:60:GLY:O	1:C:64:LEU:HG	2.10	0.51
1:D:163:THR:N	1:D:224:GLU:O	2.41	0.51
1:E:157:LEU:O	1:E:159:PRO:HD3	2.10	0.51
1:G:69:ILE:HG23	1:G:112:GLY:HA3	1.91	0.51
1:H:223:ILE:HD12	1:H:223:ILE:H	1.74	0.51
1:H:44:GLY:O	1:H:48:ARG:HG3	2.10	0.51
1:J:113:PHE:CE2	1:J:122:VAL:HG13	2.45	0.51
1:L:69:ILE:HG23	1:L:112:GLY:HA3	1.92	0.51
1:D:162:THR:HG22	1:D:224:GLU:HB2	1.93	0.51
1:D:27:ILE:HD12	1:D:39:ILE:HD11	1.92	0.51
1:E:179:GLY:O	1:E:181:TYR:HD1	1.94	0.51
1:F:157:LEU:O	1:F:159:PRO:HD3	2.09	0.51
1:K:87:ALA:O	1:K:89:MET:HE2	2.11	0.51
1:L:161:LEU:HD23	1:L:161:LEU:N	2.25	0.51
1:H:69:ILE:HG23	1:H:112:GLY:HA3	1.92	0.51
1:I:157:LEU:HD21	1:I:221:SER:OG	2.10	0.51
1:K:98:PHE:CZ	1:K:126:VAL:HG13	2.45	0.51
1:A:26:SER:CB	1:A:207:LEU:O	2.58	0.51
1:A:164:GLN:CG	1:A:226:VAL:CG2	2.84	0.51
1:C:144:VAL:HG11	1:C:161:LEU:HD11	1.93	0.51
1:C:206:LYS:NZ	1:C:219:VAL:HB	2.25	0.51
1:D:148:ASP:OD2	1:D:150:ARG:HB2	2.10	0.51
1:E:59:ILE:HD12	1:F:81:PHE:O	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:115:PRO:HG2	1:F:95:LEU:HD22	1.92	0.51
1:J:18:ASP:O	1:J:22:VAL:HG12	2.10	0.51
1:L:141:VAL:CG1	1:L:143:GLY:H	2.23	0.51
1:A:148:ASP:O	1:A:152:TYR:HB2	2.10	0.51
1:D:98:PHE:CZ	1:D:126:VAL:HG13	2.45	0.51
1:G:140:ASN:C	1:G:140:ASN:HD22	2.11	0.51
1:I:134:THR:HG23	1:I:200:ILE:HD13	1.93	0.51
1:J:84:GLN:O	1:J:85:ASP:CB	2.59	0.51
1:D:110:THR:HG21	1:D:113:PHE:CE1	2.46	0.51
1:D:147:LYS:O	1:D:155:VAL:HG11	2.10	0.51
1:F:223:ILE:HD12	1:F:223:ILE:N	2.26	0.51
1:K:223:ILE:HD12	1:K:223:ILE:H	1.76	0.51
1:K:49:ARG:HG3	1:K:49:ARG:HH11	1.76	0.51
1:B:134:THR:OG1	1:B:198:ARG:NH1	2.44	0.51
1:E:217:GLU:O	1:E:218:GLU:CB	2.56	0.51
1:I:110:THR:HG22	1:I:111:GLY:H	1.74	0.51
1:L:146:GLU:OE2	1:L:146:GLU:N	2.27	0.51
1:L:27:ILE:HD11	1:L:39:ILE:HD11	1.92	0.51
1:C:110:THR:HG21	1:C:113:PHE:CE1	2.46	0.51
1:C:57:ILE:HD11	1:D:82:SER:HB3	1.92	0.51
1:D:85:ASP:O	1:D:86:LEU:HD23	2.11	0.51
1:G:163:THR:HG23	1:G:225:PRO:HA	1.92	0.51
1:I:12:PHE:O	1:J:49:ARG:NH2	2.43	0.51
1:K:52:LYS:O	1:K:56:GLU:HB2	2.11	0.51
1:F:168:LYS:O	1:F:171:GLU:HB3	2.12	0.51
1:G:24:ARG:HG3	1:G:83:LEU:HD23	1.92	0.51
1:L:110:THR:HG21	1:L:113:PHE:CE1	2.46	0.51
1:L:223:ILE:HD12	1:L:223:ILE:H	1.76	0.51
1:B:219:VAL:O	1:B:220:SER:HB3	2.11	0.50
1:C:80:MET:CE	1:C:81:PHE:HE2	2.23	0.50
1:D:167:ARG:C	1:D:169:ILE:H	2.15	0.50
1:G:167:ARG:NH1	1:G:167:ARG:HG3	2.26	0.50
1:G:3:ILE:HD11	1:G:136:VAL:HG23	1.92	0.50
1:H:98:PHE:CZ	1:H:126:VAL:HG13	2.46	0.50
1:H:144:VAL:HG23	1:H:221:SER:CB	2.41	0.50
1:A:27:ILE:CD1	1:A:39:ILE:HD11	2.41	0.50
1:F:164:GLN:HG2	1:F:226:VAL:HG23	1.92	0.50
1:F:170:LEU:HD22	1:F:182:GLU:OE1	2.11	0.50
1:K:200:ILE:HG13	1:K:222:ILE:HG12	1.94	0.50
1:A:26:SER:HB3	1:A:208:ASN:HA	1.93	0.50
1:B:27:ILE:CD1	1:B:39:ILE:HD11	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:148:ASP:CB	1:C:149:PRO:HD2	2.38	0.50
1:E:17:VAL:HG23	1:F:57:ILE:HG22	1.93	0.50
1:G:223:ILE:N	1:G:223:ILE:HD12	2.26	0.50
1:H:3:ILE:HD11	1:H:136:VAL:CG2	2.42	0.50
1:I:59:ILE:HD11	1:J:82:SER:HA	1.94	0.50
1:A:157:LEU:HD23	1:A:157:LEU:C	2.32	0.50
1:B:121:ALA:HB1	1:B:187:LEU:HD23	1.92	0.50
1:C:57:ILE:HD13	1:D:20:LEU:HD13	1.93	0.50
1:D:43:GLY:HA3	1:D:47:ALA:HB2	1.93	0.50
1:I:140:ASN:HD22	1:I:140:ASN:N	2.08	0.50
1:C:80:MET:HE3	1:C:81:PHE:CE2	2.46	0.50
1:D:158:ILE:HG22	1:D:160:HIS:O	2.10	0.50
1:D:84:GLN:O	1:D:85:ASP:HB2	2.11	0.50
1:G:141:VAL:HG12	1:G:142:ASP:N	2.27	0.50
1:J:14:GLU:O	1:J:15:ASP:HB3	2.11	0.50
1:J:162:THR:H	1:J:165:ASP:HB2	1.77	0.50
1:K:209:ARG:O	1:K:213:ILE:HG12	2.11	0.50
1:L:148:ASP:OD1	1:L:150:ARG:HG2	2.12	0.50
1:A:148:ASP:OD1	1:A:150:ARG:N	2.45	0.50
1:B:110:THR:HG22	1:B:111:GLY:H	1.75	0.50
1:G:88:TYR:CE2	1:G:90:HIS:HB3	2.47	0.50
1:H:113:PHE:CE2	1:H:122:VAL:HG13	2.47	0.50
1:K:167:ARG:NH1	1:K:193:GLU:OE1	2.40	0.50
1:K:40:VAL:HG21	1:K:123:ALA:HA	1.92	0.50
1:L:169:ILE:H	1:L:169:ILE:HD12	1.76	0.50
1:A:219:VAL:O	1:A:220:SER:HB3	2.11	0.50
1:C:223:ILE:N	1:C:223:ILE:HD12	2.26	0.50
1:E:30:LEU:O	1:E:35:PHE:HB2	2.12	0.50
1:L:147:LYS:NZ	1:L:152:TYR:CE1	2.80	0.50
1:C:42:GLY:HA2	1:C:119:THR:HG21	1.94	0.50
1:E:140:ASN:HD22	1:E:141:VAL:N	2.10	0.50
1:I:33:ASN:O	1:I:35:PHE:HD1	1.93	0.50
1:K:42:GLY:HA2	1:K:119:THR:HG21	1.94	0.50
1:K:134:THR:CG2	1:K:200:ILE:HD13	2.42	0.50
1:K:3:ILE:HD11	1:K:136:VAL:CG2	2.41	0.50
1:D:204:TYR:O	1:D:207:LEU:HG	2.11	0.49
1:F:43:GLY:HA3	1:F:47:ALA:HB2	1.93	0.49
1:L:110:THR:HG22	1:L:111:GLY:H	1.76	0.49
1:K:157:LEU:O	1:K:157:LEU:HD23	2.12	0.49
1:K:183:LEU:C	1:K:183:LEU:HD23	2.33	0.49
1:L:73:ARG:O	1:L:76:ALA:HB3	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:10:LYS:HA	1:H:13:ASP:OD2	2.12	0.49
1:K:223:ILE:HD12	1:K:223:ILE:N	2.27	0.49
1:A:40:VAL:HG21	1:A:123:ALA:HA	1.93	0.49
1:D:36:ARG:NH2	1:D:102:TRP:O	2.43	0.49
1:J:73:ARG:NH2	1:J:93:GLN:HB3	2.26	0.49
1:K:146:GLU:O	1:K:147:LYS:HG3	2.12	0.49
1:D:26:SER:O	1:D:30:LEU:HD12	2.12	0.49
1:K:110:THR:HG22	1:K:111:GLY:H	1.77	0.49
1:J:115:PRO:HG2	1:L:95:LEU:HD23	1.94	0.49
1:E:82:SER:HA	1:F:59:ILE:CD1	2.42	0.49
1:J:166:LEU:HD12	1:J:166:LEU:O	2.13	0.49
1:J:223:ILE:HD12	1:J:223:ILE:N	2.26	0.49
1:A:75:ASN:ND2	1:B:50:TYR:OH	2.45	0.49
1:C:211:ILE:O	1:C:215:LYS:HE3	2.12	0.49
1:F:139:THR:HG23	1:F:141:VAL:H	1.76	0.49
1:L:157:LEU:HD23	1:L:157:LEU:C	2.33	0.49
1:B:148:ASP:HB3	1:B:151:ILE:CG2	2.43	0.49
1:B:142:ASP:CG	1:B:206:LYS:NZ	2.66	0.49
1:E:146:GLU:HA	1:E:169:ILE:HG23	1.95	0.49
1:G:12:PHE:O	1:H:49:ARG:NH2	2.42	0.49
1:H:110:THR:HG22	1:H:111:GLY:O	2.12	0.49
1:L:148:ASP:OD2	1:L:150:ARG:NH1	2.45	0.49
1:L:166:LEU:O	1:L:170:LEU:HG	2.13	0.49
1:A:110:THR:CG2	1:A:111:GLY:N	2.75	0.49
1:C:204:TYR:O	1:C:207:LEU:HG	2.12	0.49
1:E:204:TYR:O	1:E:207:LEU:HG	2.12	0.49
1:G:223:ILE:H	1:G:223:ILE:HD12	1.77	0.49
1:H:183:LEU:HD11	1:H:201:VAL:HG21	1.95	0.49
1:J:162:THR:CG2	1:J:164:GLN:HB3	2.43	0.49
1:K:203:ASN:OD1	1:K:205:ARG:HB2	2.13	0.49
1:I:57:ILE:HG22	1:J:17:VAL:HG22	1.94	0.49
1:K:84:GLN:HA	1:K:89:MET:CE	2.43	0.49
1:A:66:LEU:HD13	1:A:115:PRO:HG3	1.95	0.48
1:A:5:LEU:HD22	1:A:7:ILE:CD1	2.43	0.48
1:F:164:GLN:HG2	1:F:226:VAL:CG2	2.43	0.48
1:G:79:VAL:O	1:G:83:LEU:CD1	2.61	0.48
1:J:162:THR:HG23	1:J:226:VAL:HG22	1.95	0.48
1:L:202:MET:HE1	1:L:210:ILE:HD12	1.94	0.48
1:E:134:THR:OG1	1:E:198:ARG:NH1	2.46	0.48
1:F:73:ARG:NH2	1:F:93:GLN:HB3	2.28	0.48
1:I:42:GLY:HA2	1:I:119:THR:HG21	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:208:ASN:OD1	1:K:209:ARG:HG3	2.13	0.48
1:L:113:PHE:CE2	1:L:122:VAL:HG13	2.48	0.48
1:B:110:THR:HG22	1:B:111:GLY:O	2.13	0.48
1:B:147:LYS:HD3	1:B:152:TYR:CD1	2.49	0.48
1:B:151:ILE:HD11	1:B:152:TYR:CE2	2.48	0.48
1:B:157:LEU:HD23	1:B:158:ILE:N	2.28	0.48
1:I:157:LEU:HD13	1:I:157:LEU:O	2.13	0.48
1:L:5:LEU:HD22	1:L:7:ILE:CD1	2.43	0.48
1:C:75:ASN:ND2	1:D:50:TYR:OH	2.46	0.48
1:F:18:ASP:OD1	1:L:206:LYS:HE3	2.12	0.48
1:G:98:PHE:CZ	1:G:126:VAL:HG13	2.48	0.48
1:J:61:GLU:HG2	1:L:194:ARG:CD	2.42	0.48
1:A:152:TYR:HB3	1:A:155:VAL:HG22	1.95	0.48
1:A:18:ASP:O	1:A:22:VAL:HG12	2.12	0.48
1:A:164:GLN:CG	1:A:226:VAL:HG23	2.38	0.48
1:B:99:ILE:HD12	1:C:66:LEU:HD21	1.94	0.48
1:E:164:GLN:HG2	1:E:167:ARG:NH1	2.28	0.48
1:I:140:ASN:H	1:I:140:ASN:ND2	2.10	0.48
1:I:199:VAL:C	1:I:200:ILE:HD12	2.33	0.48
1:J:40:VAL:HG21	1:J:123:ALA:HA	1.95	0.48
1:J:79:VAL:O	1:J:83:LEU:HG	2.12	0.48
1:E:110:THR:HG21	1:E:113:PHE:CE1	2.49	0.48
1:G:52:LYS:O	1:G:56:GLU:HB2	2.13	0.48
1:G:79:VAL:HG12	1:G:83:LEU:CD1	2.39	0.48
1:H:182:GLU:CG	1:H:183:LEU:N	2.76	0.48
1:H:182:GLU:O	1:H:183:LEU:C	2.51	0.48
1:A:113:PHE:CE2	1:A:122:VAL:HG13	2.49	0.48
1:A:167:ARG:NH2	1:A:193:GLU:OE1	2.45	0.48
1:A:22:VAL:HG23	1:A:208:ASN:ND2	2.28	0.48
1:B:142:ASP:HA	1:B:203:ASN:HB2	1.96	0.48
1:F:17:VAL:O	1:F:21:ILE:HG12	2.14	0.48
1:A:165:ASP:HA	1:A:168:LYS:HD2	1.96	0.48
1:A:185:ASP:CB	1:A:186:PRO:HD2	2.38	0.48
1:C:1:MET:O	1:C:35:PHE:HA	2.13	0.48
1:E:98:PHE:CZ	1:E:126:VAL:HG13	2.49	0.48
1:G:141:VAL:HG12	1:G:142:ASP:H	1.77	0.48
1:I:69:ILE:HG23	1:I:112:GLY:CA	2.44	0.48
1:K:139:THR:OG1	1:K:140:ASN:N	2.47	0.48
1:L:134:THR:CG2	1:L:200:ILE:HD13	2.44	0.48
1:A:145:TYR:CE2	1:A:149:PRO:HG3	2.49	0.48
1:C:66:LEU:HD13	1:C:115:PRO:HG3	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:110:THR:HG21	1:K:113:PHE:CE1	2.49	0.48
1:K:113:PHE:CE2	1:K:122:VAL:HG13	2.48	0.48
1:L:187:LEU:O	1:L:191:ILE:HG12	2.14	0.48
1:A:148:ASP:OD1	1:A:150:ARG:HB2	2.14	0.47
1:A:26:SER:HB3	1:A:207:LEU:O	2.13	0.47
1:A:149:PRO:O	1:A:150:ARG:C	2.52	0.47
1:B:42:GLY:HA2	1:B:119:THR:HG21	1.95	0.47
1:C:110:THR:CG2	1:C:111:GLY:N	2.76	0.47
1:I:144:VAL:HG23	1:I:221:SER:HB2	1.96	0.47
1:I:200:ILE:HD12	1:I:200:ILE:N	2.30	0.47
1:E:59:ILE:CD1	1:F:82:SER:HA	2.44	0.47
1:F:47:ALA:O	1:F:51:ILE:HG13	2.13	0.47
1:G:187:LEU:O	1:G:191:ILE:HG12	2.14	0.47
1:H:110:THR:HG21	1:H:113:PHE:CE1	2.49	0.47
1:L:200:ILE:HG13	1:L:222:ILE:HG12	1.96	0.47
1:A:4:ILE:HG13	1:A:127:ALA:HA	1.97	0.47
1:I:140:ASN:HD22	1:I:141:VAL:N	2.13	0.47
1:J:162:THR:HG22	1:J:164:GLN:HB3	1.96	0.47
1:J:88:TYR:CE2	1:J:90:HIS:HB3	2.49	0.47
1:E:110:THR:CG2	1:E:111:GLY:N	2.77	0.47
1:E:21:ILE:O	1:E:25:GLN:HG2	2.15	0.47
1:F:121:ALA:HB1	1:F:187:LEU:HD23	1.96	0.47
1:I:110:THR:CG2	1:I:111:GLY:N	2.77	0.47
1:I:157:LEU:HD13	1:I:157:LEU:C	2.34	0.47
1:J:183:LEU:O	1:J:183:LEU:HD23	2.14	0.47
1:K:140:ASN:ND2	1:K:141:VAL:HG23	2.29	0.47
1:G:99:ILE:HD13	1:K:63:TYR:HE1	1.79	0.47
1:B:163:THR:HG22	1:B:189:ILE:HG23	1.95	0.47
1:C:59:ILE:HB	1:C:64:LEU:HD21	1.95	0.47
1:J:199:VAL:C	1:J:200:ILE:HD12	2.35	0.47
1:L:3:ILE:HD11	1:L:136:VAL:HG23	1.95	0.47
1:L:166:LEU:CD1	1:L:223:ILE:HG12	2.44	0.47
1:C:157:LEU:C	1:C:157:LEU:HD23	2.35	0.47
1:C:43:GLY:HA3	1:C:47:ALA:HB2	1.97	0.47
1:F:66:LEU:HD13	1:F:115:PRO:HG3	1.97	0.47
1:I:3:ILE:HD11	1:I:136:VAL:HG23	1.96	0.47
1:J:162:THR:O	1:J:165:ASP:N	2.47	0.47
1:B:139:THR:OG1	1:B:140:ASN:N	2.46	0.47
1:B:88:TYR:CE2	1:B:90:HIS:HB3	2.50	0.47
1:D:139:THR:O	1:D:203:ASN:HA	2.13	0.47
1:D:52:LYS:HE2	1:D:56:GLU:OE2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:5:LEU:HD22	1:E:7:ILE:CD1	2.44	0.47
1:G:110:THR:HG21	1:G:113:PHE:CE1	2.49	0.47
1:G:79:VAL:CG1	1:G:83:LEU:HD11	2.40	0.47
1:H:134:THR:CG2	1:H:200:ILE:HD13	2.45	0.47
1:J:3:ILE:HD11	1:J:136:VAL:HG23	1.97	0.47
1:J:187:LEU:O	1:J:191:ILE:HG12	2.15	0.47
1:K:162:THR:HB	1:K:226:VAL:CG2	2.45	0.47
1:B:5:LEU:HD22	1:B:7:ILE:CD1	2.45	0.47
1:C:98:PHE:CZ	1:C:126:VAL:HG13	2.49	0.47
1:F:150:ARG:HH11	1:F:150:ARG:HG2	1.80	0.47
1:F:163:THR:HG23	1:F:225:PRO:HA	1.96	0.47
1:L:1:MET:N	1:L:1:MET:SD	2.88	0.47
1:B:110:THR:CG2	1:B:111:GLY:N	2.76	0.47
1:D:14:GLU:O	1:D:15:ASP:C	2.51	0.47
1:E:155:VAL:CG1	1:E:156:LYS:N	2.77	0.47
1:H:42:GLY:HA3	2:H:1227:UTP:O2B	2.15	0.47
1:G:163:THR:CG2	1:G:225:PRO:HA	2.45	0.47
1:H:200:ILE:HG13	1:H:222:ILE:HG12	1.96	0.47
1:I:110:THR:HG21	1:I:113:PHE:CE1	2.49	0.47
1:I:81:PHE:O	1:I:84:GLN:HB2	2.15	0.47
1:K:140:ASN:HD22	1:K:140:ASN:N	2.13	0.47
1:A:110:THR:HG21	1:A:113:PHE:CE1	2.49	0.46
1:A:99:ILE:HD12	1:E:66:LEU:HD21	1.97	0.46
1:C:206:LYS:HZ3	1:C:219:VAL:CB	2.28	0.46
1:C:206:LYS:HZ3	1:C:219:VAL:CG2	2.27	0.46
1:K:202:MET:CE	1:K:210:ILE:HD12	2.44	0.46
1:E:121:ALA:HB1	1:E:187:LEU:HD23	1.96	0.46
1:G:157:LEU:O	1:G:157:LEU:HD13	2.14	0.46
1:H:140:ASN:H	1:H:140:ASN:HD22	1.63	0.46
1:B:183:LEU:HD11	1:B:201:VAL:CG2	2.45	0.46
1:B:79:VAL:O	1:B:83:LEU:HG	2.16	0.46
1:D:32:ASP:O	1:D:33:ASN:ND2	2.43	0.46
1:D:73:ARG:O	1:D:76:ALA:HB3	2.14	0.46
1:G:3:ILE:HD11	1:G:136:VAL:CG2	2.45	0.46
1:I:65:ASP:HB3	2:I:1227:UTP:O2	2.15	0.46
1:I:73:ARG:NH2	1:I:93:GLN:HB3	2.30	0.46
1:C:65:ASP:O	1:C:69:ILE:HG13	2.16	0.46
1:D:110:THR:CG2	1:D:111:GLY:N	2.78	0.46
1:A:99:ILE:HD13	1:E:63:TYR:CE1	2.50	0.46
1:F:206:LYS:HE3	1:L:18:ASP:OD1	2.15	0.46
1:G:99:ILE:HD13	1:K:63:TYR:CE1	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:69:ILE:HG23	1:H:112:GLY:CA	2.46	0.46
1:H:199:VAL:C	1:H:200:ILE:HD12	2.35	0.46
1:I:84:GLN:O	1:I:85:ASP:HB3	2.14	0.46
1:I:84:GLN:HA	1:I:89:MET:CE	2.45	0.46
1:J:110:THR:HG22	1:J:111:GLY:O	2.15	0.46
1:F:110:THR:HG22	1:F:111:GLY:H	1.78	0.46
1:G:157:LEU:C	1:G:157:LEU:HD13	2.36	0.46
1:I:1:MET:N	1:I:1:MET:SD	2.88	0.46
1:J:110:THR:HG21	1:J:113:PHE:CE1	2.51	0.46
1:C:50:TYR:OH	1:D:75:ASN:ND2	2.48	0.46
1:F:16:ASN:OD1	1:F:18:ASP:HB2	2.15	0.46
1:G:75:ASN:O	1:G:79:VAL:HG23	2.16	0.46
1:A:115:PRO:HG2	1:E:95:LEU:HD22	1.98	0.46
1:A:121:ALA:HB1	1:A:187:LEU:HD23	1.96	0.46
1:C:121:ALA:HB1	1:C:187:LEU:HD23	1.96	0.46
1:D:19:ASN:N	1:D:19:ASN:HD22	2.13	0.46
1:E:113:PHE:CE2	1:E:122:VAL:HG13	2.51	0.46
1:J:30:LEU:HD13	1:J:37:VAL:CG2	2.45	0.46
1:L:161:LEU:HB2	1:L:165:ASP:HB2	1.97	0.46
1:L:69:ILE:HG23	1:L:112:GLY:CA	2.46	0.46
1:D:16:ASN:OD1	1:D:18:ASP:HB2	2.15	0.46
1:E:57:ILE:HD13	1:F:20:LEU:HD13	1.97	0.46
1:F:5:LEU:HD22	1:F:7:ILE:CD1	2.46	0.46
1:A:79:VAL:HG12	1:A:83:LEU:HD11	1.97	0.46
1:D:164:GLN:HA	1:D:167:ARG:HG3	1.98	0.46
1:G:200:ILE:HG13	1:G:222:ILE:HG12	1.98	0.46
1:G:82:SER:CA	1:H:59:ILE:HD11	2.41	0.46
1:J:164:GLN:O	1:J:167:ARG:HB2	2.15	0.46
1:K:219:VAL:O	1:K:220:SER:HB3	2.16	0.46
1:L:98:PHE:CZ	1:L:126:VAL:HG13	2.51	0.46
1:B:187:LEU:O	1:B:191:ILE:HG12	2.16	0.46
1:B:59:ILE:HB	1:B:64:LEU:HD21	1.98	0.46
1:E:73:ARG:O	1:E:76:ALA:HB3	2.16	0.46
1:I:1:MET:O	1:I:35:PHE:HA	2.17	0.46
1:I:79:VAL:O	1:I:83:LEU:HG	2.16	0.46
1:K:202:MET:HE1	1:K:210:ILE:HD12	1.98	0.46
1:L:75:ASN:O	1:L:79:VAL:HG23	2.16	0.46
1:A:73:ARG:NH2	1:A:93:GLN:HB3	2.30	0.45
1:B:115:PRO:HG2	1:C:95:LEU:CD2	2.46	0.45
1:B:66:LEU:HD13	1:B:115:PRO:HG3	1.98	0.45
1:E:212:ASP:HB3	1:E:217:GLU:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:18:ASP:O	1:G:22:VAL:HG12	2.16	0.45
1:G:65:ASP:O	1:G:69:ILE:HG13	2.15	0.45
1:H:5:LEU:HD22	1:H:7:ILE:HD13	1.98	0.45
1:J:98:PHE:CZ	1:J:126:VAL:HG13	2.51	0.45
1:L:5:LEU:HD22	1:L:7:ILE:HD13	1.99	0.45
1:A:206:LYS:HZ3	1:A:219:VAL:CG2	2.17	0.45
1:C:215:LYS:HB3	1:C:215:LYS:HE2	1.73	0.45
1:F:110:THR:CG2	1:F:111:GLY:N	2.76	0.45
1:G:147:LYS:H	1:G:155:VAL:HG11	1.80	0.45
1:G:84:GLN:O	1:G:85:ASP:HB2	2.16	0.45
1:H:159:PRO:HG2	1:H:160:HIS:H	1.81	0.45
1:H:42:GLY:HA2	1:H:119:THR:HG21	1.97	0.45
1:H:73:ARG:O	1:H:76:ALA:HB3	2.15	0.45
1:L:65:ASP:O	1:L:69:ILE:HG13	2.15	0.45
1:D:145:TYR:HE1	1:D:157:LEU:HB2	1.81	0.45
1:E:17:VAL:O	1:E:21:ILE:HG12	2.16	0.45
1:G:19:ASN:O	1:G:22:VAL:HG12	2.16	0.45
1:L:110:THR:CG2	1:L:111:GLY:N	2.79	0.45
1:D:5:LEU:HD22	1:D:7:ILE:CD1	2.47	0.45
1:I:73:ARG:O	1:I:76:ALA:HB3	2.17	0.45
1:J:136:VAL:HG11	1:J:202:MET:HE3	1.99	0.45
1:J:99:ILE:HG22	1:K:89:MET:HB3	1.98	0.45
1:B:183:LEU:C	1:B:183:LEU:HD23	2.37	0.45
1:H:187:LEU:O	1:H:191:ILE:HG12	2.17	0.45
1:J:146:GLU:OE1	1:J:155:VAL:HG13	2.17	0.45
1:J:200:ILE:HD12	1:J:200:ILE:N	2.32	0.45
1:J:1:MET:HB2	1:J:2:ASN:H	1.61	0.45
1:B:59:ILE:HG22	1:B:63:TYR:HB2	1.98	0.45
1:C:182:GLU:O	1:C:183:LEU:C	2.55	0.45
1:D:223:ILE:HD12	1:D:223:ILE:N	2.32	0.45
1:G:69:ILE:HG23	1:G:112:GLY:CA	2.46	0.45
1:G:149:PRO:O	1:G:150:ARG:HB2	2.17	0.45
1:H:141:VAL:CG1	1:H:142:ASP:N	2.80	0.45
1:J:223:ILE:HD12	1:J:223:ILE:H	1.80	0.45
1:E:181:TYR:CD1	1:E:181:TYR:N	2.85	0.45
1:G:10:LYS:HA	1:G:13:ASP:OD2	2.16	0.45
1:H:110:THR:HG22	1:H:111:GLY:H	1.82	0.45
1:H:79:VAL:HG12	1:H:83:LEU:CD1	2.46	0.45
1:I:160:HIS:O	1:I:161:LEU:HB3	2.17	0.45
1:B:190:LYS:NZ	1:C:181:TYR:CE2	2.84	0.45
1:F:42:GLY:HA2	1:F:119:THR:HG21	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:138:ALA:HA	1:G:202:MET:HG3	1.99	0.45
1:I:113:PHE:CE2	1:I:122:VAL:HG13	2.52	0.45
1:L:198:ARG:NE	1:L:200:ILE:HD11	2.32	0.45
1:B:165:ASP:O	1:B:169:ILE:HG13	2.16	0.45
1:D:209:ARG:O	1:D:213:ILE:HG12	2.17	0.45
1:E:209:ARG:NH1	1:E:218:GLU:OE1	2.49	0.45
1:E:23:LEU:O	1:E:27:ILE:HG12	2.16	0.45
1:E:57:ILE:HD13	1:F:20:LEU:CD1	2.47	0.45
1:F:218:GLU:HG3	1:F:219:VAL:N	2.32	0.45
1:I:140:ASN:ND2	1:I:141:VAL:HG23	2.32	0.45
1:I:200:ILE:HG13	1:I:222:ILE:HG12	1.99	0.45
1:I:84:GLN:O	1:I:85:ASP:CB	2.64	0.45
1:J:202:MET:HE1	1:J:210:ILE:HD12	1.99	0.45
1:J:33:ASN:N	1:J:33:ASN:HD22	2.13	0.45
1:A:42:GLY:HA2	1:A:119:THR:HG21	1.99	0.45
1:A:185:ASP:C	1:A:185:ASP:OD2	2.54	0.45
1:B:73:ARG:O	1:B:76:ALA:HB3	2.16	0.45
1:E:1:MET:HE3	1:E:1:MET:N	2.32	0.45
1:G:113:PHE:CE2	1:G:122:VAL:HG13	2.52	0.45
1:H:142:ASP:HB3	1:H:219:VAL:CG1	2.47	0.45
1:A:13:ASP:C	1:A:15:ASP:H	2.19	0.44
1:A:88:TYR:CE2	1:A:90:HIS:HB3	2.51	0.44
1:B:183:LEU:HD23	1:B:183:LEU:O	2.17	0.44
1:C:136:VAL:HG21	1:C:214:LEU:HD21	1.98	0.44
1:D:148:ASP:HA	1:D:149:PRO:HD3	1.77	0.44
1:D:167:ARG:HH21	1:D:193:GLU:CD	2.20	0.44
1:I:140:ASN:HD22	1:I:140:ASN:H	1.64	0.44
1:I:161:LEU:HD21	1:I:223:ILE:HG13	1.99	0.44
1:K:14:GLU:HB3	1:K:15:ASP:H	1.31	0.44
1:L:147:LYS:CD	1:L:152:TYR:CD1	2.87	0.44
1:A:145:TYR:CD2	1:A:149:PRO:HG3	2.52	0.44
1:B:23:LEU:O	1:B:27:ILE:HG12	2.18	0.44
1:B:28:LYS:HE3	1:B:86:LEU:HD11	1.99	0.44
1:D:121:ALA:HB1	1:D:187:LEU:HD23	1.99	0.44
1:D:206:LYS:HG2	1:D:209:ARG:NH2	2.32	0.44
1:E:213:ILE:HD13	1:E:218:GLU:HB3	1.98	0.44
1:K:16:ASN:OD1	1:L:53:LEU:HD13	2.17	0.44
1:K:79:VAL:CG1	1:K:83:LEU:HD11	2.48	0.44
1:L:147:LYS:NZ	1:L:152:TYR:HE1	2.15	0.44
1:D:144:VAL:HG23	1:D:221:SER:HB2	1.98	0.44
1:G:140:ASN:O	1:G:203:ASN:ND2	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:43:GLY:HA3	1:G:47:ALA:HB2	1.99	0.44
1:I:202:MET:HE1	1:I:210:ILE:HD12	1.98	0.44
1:I:89:MET:HB3	1:L:99:ILE:HG22	1.99	0.44
1:J:200:ILE:HG13	1:J:222:ILE:HG12	1.99	0.44
1:A:59:ILE:HG22	1:A:63:TYR:HB2	1.99	0.44
1:D:145:TYR:CE1	1:D:157:LEU:HB2	2.53	0.44
1:E:223:ILE:HD12	1:E:223:ILE:N	2.33	0.44
1:H:185:ASP:HB2	1:H:186:PRO:CD	2.36	0.44
1:H:43:GLY:HA3	1:H:47:ALA:HB2	1.99	0.44
1:A:134:THR:OG1	1:A:198:ARG:NH1	2.50	0.44
1:C:202:MET:HE2	1:C:213:ILE:HG13	1.99	0.44
1:E:30:LEU:HD21	1:E:214:LEU:HD11	1.99	0.44
1:H:47:ALA:O	1:H:51:ILE:HG13	2.18	0.44
1:I:187:LEU:O	1:I:191:ILE:HG12	2.17	0.44
1:J:134:THR:CG2	1:J:200:ILE:HD13	2.48	0.44
1:J:69:ILE:HG23	1:J:112:GLY:HA3	1.98	0.44
1:J:5:LEU:HD22	1:J:7:ILE:CD1	2.47	0.44
1:F:205:ARG:NH1	1:L:16:ASN:ND2	2.62	0.44
1:L:52:LYS:O	1:L:56:GLU:HB2	2.18	0.44
1:A:43:GLY:HA3	1:A:47:ALA:HB2	2.00	0.44
1:B:27:ILE:HD11	1:B:39:ILE:HD11	1.99	0.44
1:H:140:ASN:HD22	1:H:141:VAL:N	2.16	0.44
1:I:202:MET:CE	1:I:210:ILE:HD12	2.48	0.44
1:J:110:THR:HG22	1:J:111:GLY:H	1.79	0.44
1:A:140:ASN:HD22	1:A:140:ASN:H	1.66	0.44
1:D:144:VAL:H	1:D:221:SER:CB	2.31	0.44
1:D:66:LEU:HD13	1:D:115:PRO:HG3	1.99	0.44
1:E:164:GLN:HG2	1:E:167:ARG:HH11	1.83	0.44
1:F:164:GLN:O	1:F:167:ARG:HB2	2.18	0.44
1:G:22:VAL:CG2	1:G:208:ASN:HB3	2.48	0.44
1:H:46:THR:O	1:H:50:TYR:HD1	2.00	0.44
1:I:89:MET:CB	1:L:99:ILE:HG22	2.47	0.44
1:D:83:LEU:O	1:D:84:GLN:C	2.56	0.44
1:F:157:LEU:C	1:F:157:LEU:HD13	2.38	0.44
1:G:134:THR:CG2	1:G:200:ILE:HD13	2.47	0.44
1:G:8:SER:HB2	1:G:139:THR:HA	2.00	0.44
1:I:10:LYS:HA	1:I:13:ASP:OD2	2.17	0.44
1:B:40:VAL:HG21	1:B:123:ALA:HA	1.99	0.44
1:E:66:LEU:HD13	1:E:115:PRO:HG3	1.98	0.44
1:K:217:GLU:O	1:K:218:GLU:HB2	2.18	0.44
1:L:139:THR:O	1:L:203:ASN:HA	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:14:GLU:O	1:L:15:ASP:CB	2.55	0.44
1:L:145:TYR:CE1	1:L:157:LEU:HB2	2.53	0.44
1:L:202:MET:CE	1:L:210:ILE:HD12	2.48	0.44
1:E:114:GLN:HA	1:E:115:PRO:HD3	1.93	0.43
1:H:110:THR:CG2	1:H:111:GLY:N	2.81	0.43
1:L:169:ILE:N	1:L:169:ILE:HD12	2.34	0.43
1:B:114:GLN:HA	1:B:115:PRO:HD3	1.91	0.43
1:D:99:ILE:HD13	1:F:63:TYR:CE1	2.53	0.43
1:E:206:LYS:HZ2	1:E:219:VAL:HB	1.82	0.43
1:L:88:TYR:CE2	1:L:90:HIS:HB3	2.53	0.43
1:A:52:LYS:NZ	1:A:56:GLU:OE2	2.32	0.43
1:B:59:ILE:CG2	1:B:63:TYR:HB2	2.49	0.43
1:C:134:THR:OG1	1:C:198:ARG:NH1	2.51	0.43
1:C:80:MET:HE3	1:C:81:PHE:HE2	1.83	0.43
1:D:110:THR:HG22	1:D:111:GLY:H	1.83	0.43
1:E:67:LEU:HD23	1:E:67:LEU:HA	1.84	0.43
1:F:205:ARG:NH1	1:L:16:ASN:CB	2.81	0.43
1:I:139:THR:O	1:I:203:ASN:HA	2.18	0.43
1:L:117:GLN:HE21	1:L:117:GLN:HB3	1.61	0.43
1:B:194:ARG:CD	1:C:61:GLU:HG2	2.48	0.43
1:C:80:MET:HE2	1:C:81:PHE:CE2	2.53	0.43
1:H:139:THR:O	1:H:203:ASN:HA	2.18	0.43
1:H:91:VAL:HA	1:H:92:PRO:HD2	1.87	0.43
1:F:150:ARG:O	1:K:55:ARG:HD2	2.18	0.43
1:L:84:GLN:HA	1:L:89:MET:HE1	2.01	0.43
1:A:167:ARG:NH2	1:A:193:GLU:OE2	2.51	0.43
1:C:207:LEU:O	1:C:210:ILE:HB	2.18	0.43
1:D:161:LEU:HD12	1:D:165:ASP:HB2	1.99	0.43
1:D:1:MET:N	1:D:1:MET:SD	2.88	0.43
1:E:17:VAL:HG23	1:F:57:ILE:CG2	2.48	0.43
1:E:181:TYR:HD1	1:E:181:TYR:N	2.16	0.43
1:I:84:GLN:HA	1:I:89:MET:HE3	1.99	0.43
1:J:185:ASP:CB	1:J:186:PRO:HD2	2.35	0.43
1:K:139:THR:HG23	1:K:141:VAL:H	1.83	0.43
1:A:95:LEU:HD13	1:A:125:LEU:HB3	2.00	0.43
1:F:98:PHE:CE2	1:F:126:VAL:HG13	2.54	0.43
1:H:140:ASN:H	1:H:140:ASN:ND2	2.16	0.43
1:H:88:TYR:CE2	1:H:90:HIS:HB3	2.53	0.43
1:I:185:ASP:CB	1:I:186:PRO:HD2	2.34	0.43
1:I:59:ILE:HB	1:I:64:LEU:HD21	2.01	0.43
1:J:19:ASN:O	1:J:22:VAL:HG12	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:5:LEU:HD22	1:J:7:ILE:HD13	2.01	0.43
1:H:99:ILE:HG22	1:J:89:MET:CB	2.48	0.43
1:K:140:ASN:H	1:K:140:ASN:HD22	1.66	0.43
1:K:73:ARG:NH2	1:K:93:GLN:HB3	2.33	0.43
1:J:194:ARG:CD	1:L:61:GLU:HG2	2.47	0.43
1:A:13:ASP:C	1:A:15:ASP:N	2.72	0.43
1:A:208:ASN:C	1:A:210:ILE:H	2.21	0.43
1:A:83:LEU:O	1:A:84:GLN:C	2.57	0.43
1:J:224:GLU:OE1	1:J:225:PRO:HD2	2.19	0.43
1:I:75:ASN:ND2	1:J:50:TYR:OH	2.52	0.43
1:K:200:ILE:HD12	1:K:200:ILE:N	2.33	0.43
1:A:164:GLN:CG	1:A:226:VAL:HG21	2.47	0.43
1:C:187:LEU:O	1:C:191:ILE:HG12	2.19	0.43
1:C:164:GLN:HG3	1:C:226:VAL:HG23	2.00	0.43
1:F:8:SER:CA	2:F:1227:UTP:O1G	2.66	0.43
1:G:36:ARG:CZ	1:G:105:GLY:HA2	2.49	0.43
1:I:114:GLN:HA	1:I:115:PRO:HD3	1.92	0.43
1:I:57:ILE:HG22	1:J:17:VAL:CG2	2.48	0.43
1:J:65:ASP:OD1	2:J:1227:UTP:O2'	2.36	0.43
1:K:199:VAL:C	1:K:200:ILE:HD12	2.39	0.43
1:E:47:ALA:O	1:E:51:ILE:HG13	2.19	0.43
1:J:2:ASN:ND2	1:J:102:TRP:HZ2	2.16	0.43
1:A:157:LEU:HD23	1:A:158:ILE:N	2.34	0.43
1:A:167:ARG:O	1:A:169:ILE:N	2.51	0.43
1:F:80:MET:CE	1:F:81:PHE:CE2	3.01	0.43
1:G:206:LYS:HZ2	1:G:219:VAL:HG12	1.82	0.43
1:G:83:LEU:O	1:G:84:GLN:C	2.58	0.43
1:K:141:VAL:HG13	1:K:145:TYR:CE2	2.53	0.43
1:A:154:ASP:O	1:A:155:VAL:C	2.57	0.42
1:C:40:VAL:HG21	1:C:123:ALA:HA	2.01	0.42
1:H:140:ASN:HD22	1:H:141:VAL:H	1.67	0.42
1:I:159:PRO:O	1:I:160:HIS:ND1	2.52	0.42
1:K:144:VAL:O	1:K:158:ILE:HG12	2.19	0.42
1:L:185:ASP:CB	1:L:186:PRO:HD2	2.32	0.42
1:C:136:VAL:CG2	1:C:214:LEU:HD21	2.50	0.42
1:D:202:MET:HE2	1:D:213:ILE:HG13	2.01	0.42
1:D:128:GLU:HG2	1:F:62:ALA:HB2	2.00	0.42
1:H:5:LEU:HD22	1:H:7:ILE:CD1	2.49	0.42
1:I:163:THR:HG23	1:I:225:PRO:HA	2.00	0.42
1:K:75:ASN:HA	1:K:75:ASN:HD22	1.69	0.42
1:B:4:ILE:CD1	1:B:126:VAL:HG12	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:5:LEU:HD22	1:C:7:ILE:CD1	2.49	0.42
1:E:5:LEU:HD22	1:E:7:ILE:HD13	2.01	0.42
1:I:95:LEU:HD13	1:I:125:LEU:HB3	2.01	0.42
1:J:16:ASN:O	1:J:17:VAL:C	2.57	0.42
1:L:3:ILE:HD11	1:L:136:VAL:CG2	2.49	0.42
1:C:200:ILE:HD12	1:C:214:LEU:HD23	2.00	0.42
1:G:59:ILE:HB	1:G:64:LEU:HD21	2.01	0.42
1:H:59:ILE:HB	1:H:64:LEU:HD21	2.01	0.42
1:J:166:LEU:O	1:J:169:ILE:HD13	2.19	0.42
1:K:213:ILE:HD13	1:K:218:GLU:CB	2.39	0.42
1:A:144:VAL:O	1:A:158:ILE:HG23	2.18	0.42
1:B:8:SER:HA	2:B:1227:UTP:O1G	2.19	0.42
1:B:99:ILE:HD13	1:C:63:TYR:CE1	2.55	0.42
1:F:141:VAL:CG1	1:F:142:ASP:N	2.82	0.42
1:F:145:TYR:CZ	1:F:157:LEU:HD23	2.55	0.42
1:G:198:ARG:NE	1:G:200:ILE:HD11	2.33	0.42
1:K:67:LEU:HD23	1:K:67:LEU:HA	1.88	0.42
1:A:148:ASP:OD1	1:A:148:ASP:C	2.58	0.42
1:C:123:ALA:HB1	1:C:135:LEU:HD11	2.02	0.42
1:D:62:ALA:HB2	1:F:128:GLU:HG2	2.00	0.42
1:F:51:ILE:HG23	1:F:64:LEU:HB3	2.01	0.42
1:G:110:THR:HG22	1:G:111:GLY:O	2.20	0.42
1:G:139:THR:HG23	1:G:141:VAL:H	1.85	0.42
1:B:95:LEU:HD22	1:C:115:PRO:CG	2.49	0.42
1:D:167:ARG:NH2	1:D:193:GLU:OE2	2.51	0.42
1:E:42:GLY:HA2	1:E:119:THR:HG21	2.01	0.42
1:F:113:PHE:CE2	1:F:122:VAL:HG13	2.54	0.42
1:I:163:THR:CG2	1:I:225:PRO:HA	2.49	0.42
1:J:202:MET:CE	1:J:210:ILE:HD12	2.50	0.42
1:K:86:LEU:O	1:K:107:VAL:HB	2.18	0.42
1:J:99:ILE:HG22	1:K:89:MET:CB	2.50	0.42
1:L:17:VAL:HG12	1:L:21:ILE:CD1	2.50	0.42
1:L:87:ALA:O	1:L:89:MET:HE2	2.19	0.42
1:A:207:LEU:O	1:A:210:ILE:HB	2.20	0.42
1:A:59:ILE:CG2	1:A:63:TYR:HB2	2.49	0.42
1:B:166:LEU:HD22	1:B:223:ILE:HG12	2.01	0.42
1:D:156:LYS:CG	1:D:157:LEU:H	1.95	0.42
1:G:147:LYS:HB2	1:G:155:VAL:CG2	2.40	0.42
1:K:147:LYS:O	1:K:148:ASP:HB2	2.20	0.42
1:L:31:ALA:C	1:L:33:ASN:N	2.73	0.42
1:A:157:LEU:HD23	1:A:158:ILE:C	2.39	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:84:GLN:HA	1:C:89:MET:HE1	2.02	0.42
1:D:61:GLU:HG2	1:F:194:ARG:CD	2.47	0.42
1:D:59:ILE:HG22	1:D:63:TYR:HB2	2.02	0.42
1:A:62:ALA:HB2	1:E:128:GLU:HG2	2.02	0.42
1:F:60:GLY:O	1:F:64:LEU:HG	2.19	0.42
1:G:185:ASP:CB	1:G:186:PRO:HD2	2.35	0.42
1:K:110:THR:HG22	1:K:111:GLY:O	2.20	0.42
1:L:209:ARG:O	1:L:213:ILE:HG12	2.20	0.42
1:B:52:LYS:NZ	1:B:56:GLU:OE2	2.53	0.42
1:E:1:MET:SD	1:E:1:MET:N	2.93	0.42
1:E:31:ALA:O	1:E:33:ASN:N	2.53	0.42
1:F:167:ARG:O	1:F:171:GLU:HB2	2.19	0.42
1:I:117:GLN:HB3	1:I:117:GLN:HE21	1.62	0.42
1:I:138:ALA:HA	1:I:202:MET:HG3	2.01	0.42
1:L:162:THR:HB	1:L:226:VAL:HG21	2.02	0.42
1:L:169:ILE:H	1:L:169:ILE:CD1	2.33	0.42
1:C:161:LEU:H	1:C:161:LEU:HD23	1.85	0.41
1:F:166:LEU:O	1:F:166:LEU:HD12	2.20	0.41
1:E:20:LEU:CD1	1:F:57:ILE:HD13	2.44	0.41
1:F:67:LEU:HA	1:F:67:LEU:HD23	1.89	0.41
1:F:75:ASN:HA	1:F:75:ASN:HD22	1.70	0.41
1:F:80:MET:HE3	1:F:81:PHE:CE2	2.54	0.41
1:G:158:ILE:N	1:G:158:ILE:HD13	2.35	0.41
1:H:1:MET:HB2	1:H:2:ASN:H	1.47	0.41
1:J:29:GLU:HB3	1:J:211:ILE:HD11	2.01	0.41
1:J:87:ALA:O	1:J:89:MET:HE2	2.19	0.41
1:C:113:PHE:CE2	1:C:122:VAL:HG13	2.56	0.41
1:D:140:ASN:ND2	1:D:140:ASN:H	2.16	0.41
1:D:213:ILE:CD1	1:D:218:GLU:HB3	2.49	0.41
1:C:57:ILE:CD1	1:D:82:SER:HB3	2.50	0.41
1:H:206:LYS:HZ3	1:H:219:VAL:CB	2.23	0.41
1:I:88:TYR:CE2	1:I:90:HIS:HB3	2.55	0.41
1:J:166:LEU:O	1:J:167:ARG:C	2.57	0.41
1:J:42:GLY:HA2	1:J:119:THR:HG21	2.02	0.41
1:J:84:GLN:O	1:J:84:GLN:HG2	2.20	0.41
1:K:167:ARG:HH12	1:K:193:GLU:CD	2.22	0.41
1:L:83:LEU:O	1:L:84:GLN:C	2.59	0.41
1:A:139:THR:O	1:A:204:TYR:N	2.46	0.41
1:A:223:ILE:N	1:A:223:ILE:HD12	2.36	0.41
1:B:157:LEU:HD23	1:B:158:ILE:C	2.41	0.41
1:I:8:SER:HA	2:I:1227:UTP:O1G	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:166:LEU:CD2	1:L:170:LEU:HD11	2.50	0.41
1:A:145:TYR:CE1	1:A:157:LEU:HB2	2.56	0.41
1:A:67:LEU:HA	1:A:67:LEU:HD23	1.83	0.41
1:B:152:TYR:O	1:B:155:VAL:HG23	2.20	0.41
1:B:153:ALA:O	1:B:154:ASP:HB2	2.20	0.41
1:B:166:LEU:HD21	1:B:184:LEU:HD12	2.01	0.41
1:C:146:GLU:C	1:C:147:LYS:HG3	2.41	0.41
1:E:40:VAL:HG21	1:E:123:ALA:HA	2.01	0.41
1:F:155:VAL:HG12	1:F:155:VAL:O	2.19	0.41
1:F:65:ASP:O	1:F:69:ILE:HG13	2.21	0.41
1:I:3:ILE:HD11	1:I:136:VAL:CG2	2.51	0.41
1:J:110:THR:CG2	1:J:111:GLY:N	2.80	0.41
1:J:210:ILE:HG23	1:J:211:ILE:N	2.35	0.41
1:J:73:ARG:O	1:J:76:ALA:HB3	2.20	0.41
1:G:194:ARG:HD2	1:K:61:GLU:HG2	2.02	0.41
1:L:95:LEU:HD13	1:L:125:LEU:HB3	2.02	0.41
1:L:167:ARG:CG	1:L:167:ARG:HH11	2.25	0.41
1:A:73:ARG:O	1:A:76:ALA:HB3	2.20	0.41
1:B:11:PHE:HZ	1:B:19:ASN:O	2.04	0.41
1:D:134:THR:OG1	1:D:198:ARG:NH1	2.54	0.41
1:F:202:MET:HE2	1:F:213:ILE:HG13	2.02	0.41
1:F:80:MET:CE	1:F:81:PHE:HE2	2.33	0.41
1:I:5:LEU:HD22	1:I:7:ILE:HD13	2.02	0.41
1:J:6:LYS:NZ	2:J:1227:UTP:O3G	2.52	0.41
1:J:162:THR:HG21	1:J:226:VAL:HG21	2.02	0.41
1:K:88:TYR:CE2	1:K:90:HIS:HB3	2.55	0.41
1:L:185:ASP:HB2	1:L:186:PRO:CD	2.35	0.41
1:J:141:VAL:HG13	1:J:143:GLY:H	1.84	0.41
1:J:31:ALA:C	1:J:33:ASN:H	2.23	0.41
1:B:223:ILE:N	1:B:223:ILE:HD12	2.36	0.41
1:C:117:GLN:HE21	1:C:117:GLN:HB3	1.66	0.41
1:C:141:VAL:CG1	1:C:143:GLY:H	2.32	0.41
1:F:20:LEU:HD23	1:F:20:LEU:HA	1.89	0.41
1:G:17:VAL:HG22	1:H:57:ILE:HG22	2.03	0.41
1:B:117:GLN:HB3	1:B:117:GLN:HE21	1.65	0.41
1:E:43:GLY:HA3	1:E:47:ALA:HB2	2.03	0.41
1:H:202:MET:CE	1:H:210:ILE:HD12	2.51	0.41
1:H:206:LYS:HG2	1:H:209:ARG:NH2	2.36	0.41
1:L:138:ALA:HA	1:L:202:MET:HG3	2.03	0.41
1:B:140:ASN:ND2	1:B:140:ASN:H	2.14	0.41
1:C:73:ARG:O	1:C:76:ALA:HB3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:88:TYR:CE2	1:E:90:HIS:HB3	2.56	0.41
1:E:91:VAL:HA	1:E:92:PRO:HD2	1.93	0.41
1:F:187:LEU:O	1:F:191:ILE:HG12	2.21	0.41
1:K:161:LEU:HD21	1:K:223:ILE:HG13	2.02	0.41
1:L:110:THR:HG22	1:L:111:GLY:O	2.21	0.41
1:C:114:GLN:HA	1:C:115:PRO:HD3	1.92	0.41
1:D:67:LEU:HA	1:D:67:LEU:HD23	1.82	0.41
1:D:80:MET:HE2	1:D:81:PHE:CE2	2.55	0.41
1:E:145:TYR:HD1	1:E:157:LEU:HA	1.85	0.41
1:E:33:ASN:O	1:E:35:PHE:HD1	2.04	0.41
1:H:200:ILE:N	1:H:200:ILE:HD12	2.36	0.41
1:K:85:ASP:H	1:K:89:MET:HE3	1.86	0.41
1:A:2:ASN:OD1	1:A:36:ARG:HB2	2.20	0.41
1:A:57:ILE:HG22	1:B:17:VAL:HB	2.02	0.41
1:B:51:ILE:HG23	1:B:64:LEU:HB3	2.02	0.41
1:C:167:ARG:HH22	1:C:193:GLU:CD	2.25	0.41
1:E:166:LEU:HG	1:E:170:LEU:CD1	2.51	0.41
1:F:140:ASN:HD22	1:F:140:ASN:N	2.19	0.41
1:F:59:ILE:HB	1:F:64:LEU:HD21	2.03	0.41
1:K:15:ASP:HB2	1:K:16:ASN:H	1.72	0.41
1:L:150:ARG:HH11	1:L:150:ARG:HG2	1.86	0.41
1:A:21:ILE:O	1:A:25:GLN:HG2	2.21	0.40
1:B:95:LEU:HD13	1:B:125:LEU:HB3	2.03	0.40
1:B:43:GLY:HA3	1:B:47:ALA:HB2	2.03	0.40
1:C:4:ILE:HG13	1:C:127:ALA:HA	2.02	0.40
1:D:166:LEU:HD12	1:D:166:LEU:HA	1.96	0.40
1:E:183:LEU:O	1:E:184:LEU:HD23	2.21	0.40
1:E:83:LEU:O	1:E:84:GLN:C	2.59	0.40
1:G:145:TYR:CD2	1:G:149:PRO:HG2	2.57	0.40
1:H:140:ASN:ND2	1:H:140:ASN:N	2.66	0.40
1:I:165:ASP:O	1:I:169:ILE:CD1	2.66	0.40
1:J:164:GLN:HA	1:J:167:ARG:HB2	2.03	0.40
1:J:169:ILE:O	1:J:169:ILE:CG2	2.68	0.40
1:K:114:GLN:HA	1:K:115:PRO:HD3	1.95	0.40
1:K:157:LEU:C	1:K:157:LEU:HD23	2.42	0.40
1:K:73:ARG:O	1:K:76:ALA:HB3	2.21	0.40
1:C:185:ASP:HB2	1:C:186:PRO:CD	2.42	0.40
1:D:139:THR:OG1	1:D:140:ASN:N	2.55	0.40
1:I:206:LYS:HZ3	1:I:219:VAL:HB	1.85	0.40
1:J:3:ILE:HD11	1:J:136:VAL:CG2	2.51	0.40
1:J:162:THR:HG22	1:J:165:ASP:H	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:138:ALA:HA	1:K:202:MET:HG3	2.03	0.40
1:A:183:LEU:O	1:A:184:LEU:HB2	2.21	0.40
1:C:144:VAL:O	1:C:145:TYR:HD1	2.05	0.40
1:C:83:LEU:O	1:C:84:GLN:C	2.60	0.40
1:F:181:TYR:C	1:F:181:TYR:HD2	2.25	0.40
1:G:158:ILE:H	1:G:158:ILE:HD13	1.86	0.40
1:I:142:ASP:HA	1:I:203:ASN:HB2	2.03	0.40
1:J:162:THR:C	1:J:164:GLN:N	2.74	0.40
1:K:140:ASN:H	1:K:140:ASN:ND2	2.19	0.40
1:C:210:ILE:HG23	1:C:211:ILE:N	2.37	0.40
1:E:208:ASN:OD1	1:E:209:ARG:N	2.54	0.40
1:F:134:THR:OG1	1:F:198:ARG:NH1	2.55	0.40
1:G:95:LEU:HD13	1:G:125:LEU:HB3	2.03	0.40
1:H:117:GLN:HB3	1:H:117:GLN:HE21	1.62	0.40
1:H:217:GLU:O	1:H:217:GLU:HG2	2.20	0.40
1:I:75:ASN:HA	1:I:75:ASN:HD22	1.70	0.40
1:I:59:ILE:CD1	1:J:82:SER:HA	2.51	0.40
1:K:16:ASN:HB3	1:L:56:GLU:OE1	2.22	0.40
1:B:4:ILE:HG13	1:B:127:ALA:HA	2.03	0.40
1:G:110:THR:CG2	1:G:111:GLY:N	2.85	0.40
1:G:4:ILE:HG13	1:G:127:ALA:HA	2.02	0.40
1:H:83:LEU:O	1:H:84:GLN:C	2.60	0.40
1:J:148:ASP:HA	1:J:149:PRO:HD3	1.94	0.40
1:J:69:ILE:HG23	1:J:112:GLY:CA	2.51	0.40
1:K:198:ARG:NE	1:K:200:ILE:HD11	2.37	0.40
1:L:17:VAL:HG12	1:L:21:ILE:HD12	2.02	0.40
1:L:59:ILE:HB	1:L:64:LEU:HD21	2.04	0.40
1:L:79:VAL:HG12	1:L:83:LEU:CD1	2.52	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	A	210/226 (93%)	190 (90%)	11 (5%)	9 (4%)	3	9
1	B	209/226 (92%)	198 (95%)	7 (3%)	4 (2%)	9	28
1	C	190/226 (84%)	166 (87%)	20 (10%)	4 (2%)	8	26
1	D	209/226 (92%)	191 (91%)	12 (6%)	6 (3%)	5	17
1	E	211/226 (93%)	187 (89%)	21 (10%)	3 (1%)	12	38
1	F	215/226 (95%)	192 (89%)	17 (8%)	6 (3%)	5	18
1	G	204/226 (90%)	182 (89%)	18 (9%)	4 (2%)	8	27
1	H	163/226 (72%)	147 (90%)	10 (6%)	6 (4%)	4	12
1	I	186/226 (82%)	169 (91%)	11 (6%)	6 (3%)	4	15
1	J	210/226 (93%)	187 (89%)	17 (8%)	6 (3%)	5	17
1	K	182/226 (80%)	159 (87%)	13 (7%)	10 (6%)	2	6
1	L	210/226 (93%)	194 (92%)	13 (6%)	3 (1%)	12	38
All	All	2399/2712 (88%)	2162 (90%)	170 (7%)	67 (3%)	5	18

All (67) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	84	GLN
1	G	218	GLU
1	H	183	LEU
1	I	84	GLN
1	J	84	GLN
1	J	153	ALA
1	K	14	GLU
1	K	17	VAL
1	A	84	GLN
1	A	154	ASP
1	A	184	LEU
1	B	84	GLN
1	B	168	LYS
1	C	84	GLN
1	C	172	GLY
1	D	84	GLN
1	D	168	LYS
1	E	32	ASP
1	E	218	GLU
1	F	84	GLN
1	F	148	ASP
1	F	156	LYS

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Mol	Chain	Res	Type
1	F	182	GLU
1	G	149	PRO
1	H	84	GLN
1	I	85	ASP
1	I	219	VAL
1	J	85	ASP
1	K	16	ASN
1	K	84	GLN
1	K	159	PRO
1	L	84	GLN
1	A	152	TYR
1	A	155	VAL
1	A	168	LYS
1	B	33	ASN
1	C	218	GLU
1	D	184	LEU
1	F	181	TYR
1	G	84	GLN
1	H	89	MET
1	H	216	GLY
1	I	31	ALA
1	J	16	ASN
1	J	167	ARG
1	K	147	LYS
1	A	220	SER
1	B	220	SER
1	D	218	GLU
1	H	219	VAL
1	I	161	LEU
1	K	15	ASP
1	K	161	LEU
1	L	32	ASP
1	L	89	MET
1	A	153	ALA
1	C	148	ASP
1	D	15	ASP
1	F	183	LEU
1	G	150	ARG
1	I	185	ASP
1	K	89	MET
1	A	150	ARG
1	D	17	VAL

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Mol	Chain	Res	Type
1	H	185	ASP
1	J	17	VAL
1	K	149	PRO

### 5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	183/192 (95%)	169 (92%)	14 (8%)	14	38
1	B	182/192 (95%)	171 (94%)	11 (6%)	21	52
1	C	167/192 (87%)	158 (95%)	9 (5%)	24	56
1	D	182/192 (95%)	172 (94%)	10 (6%)	24	55
1	E	184/192 (96%)	175 (95%)	9 (5%)	27	60
1	F	187/192 (97%)	176 (94%)	11 (6%)	21	52
1	G	182/192 (95%)	170 (93%)	12 (7%)	18	47
1	H	143/192 (74%)	138 (96%)	5 (4%)	39	73
1	I	164/192 (85%)	156 (95%)	8 (5%)	27	60
1	J	183/192 (95%)	171 (93%)	12 (7%)	18	47
1	K	162/192 (84%)	158 (98%)	4 (2%)	50	82
1	L	183/192 (95%)	177 (97%)	6 (3%)	41	75
All	All	2102/2304 (91%)	1991 (95%)	111 (5%)	25	57

All (111) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	5	LEU
1	A	15	ASP
1	A	66	LEU
1	A	140	ASN
1	A	141	VAL
1	A	146	GLU
1	A	152	TYR

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Mol	Chain	Res	Type
1	A	154	ASP
1	A	158	ILE
1	A	161	LEU
1	A	184	LEU
1	A	202	MET
1	A	205	ARG
1	A	219	VAL
1	B	5	LEU
1	B	18	ASP
1	B	32	ASP
1	B	66	LEU
1	B	140	ASN
1	B	151	ILE
1	B	158	ILE
1	B	161	LEU
1	B	163	THR
1	B	165	ASP
1	B	202	MET
1	C	1	MET
1	C	5	LEU
1	C	66	LEU
1	C	117	GLN
1	C	139	THR
1	C	161	LEU
1	C	163	THR
1	C	183	LEU
1	C	202	MET
1	D	1	MET
1	D	5	LEU
1	D	66	LEU
1	D	140	ASN
1	D	163	THR
1	D	164	GLN
1	D	165	ASP
1	D	183	LEU
1	D	202	MET
1	D	205	ARG
1	E	1	MET
1	E	5	LEU
1	E	66	LEU
1	E	86	LEU
1	E	140	ASN

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Mol	Chain	Res	Type
1	E	154	ASP
1	E	164	GLN
1	E	183	LEU
1	E	202	MET
1	F	1	MET
1	F	5	LEU
1	F	15	ASP
1	F	33	ASN
1	F	66	LEU
1	F	117	GLN
1	F	140	ASN
1	F	181	TYR
1	F	183	LEU
1	F	202	MET
1	F	205	ARG
1	G	5	LEU
1	G	66	LEU
1	G	85	ASP
1	G	86	LEU
1	G	117	GLN
1	G	140	ASN
1	G	146	GLU
1	G	157	LEU
1	G	158	ILE
1	G	167	ARG
1	G	204	TYR
1	G	218	GLU
1	H	1	MET
1	H	5	LEU
1	H	66	LEU
1	H	117	GLN
1	H	140	ASN
1	I	5	LEU
1	I	66	LEU
1	I	84	GLN
1	I	117	GLN
1	I	140	ASN
1	I	146	GLU
1	I	157	LEU
1	I	218	GLU
1	J	1	MET
1	J	5	LEU

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Mol	Chain	Res	Type
1	J	33	ASN
1	J	66	LEU
1	J	117	GLN
1	J	140	ASN
1	J	141	VAL
1	J	158	ILE
1	J	162	THR
1	J	167	ARG
1	J	170	LEU
1	J	204	TYR
1	K	5	LEU
1	K	66	LEU
1	K	117	GLN
1	K	140	ASN
1	L	5	LEU
1	L	66	LEU
1	L	117	GLN
1	L	140	ASN
1	L	163	THR
1	L	183	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (66) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	16	ASN
1	A	19	ASN
1	A	33	ASN
1	A	75	ASN
1	A	84	GLN
1	A	114	GLN
1	A	117	GLN
1	A	140	ASN
1	B	16	ASN
1	B	19	ASN
1	B	75	ASN
1	B	84	GLN
1	B	114	GLN
1	B	117	GLN
1	B	140	ASN
1	C	75	ASN
1	C	117	GLN
1	C	140	ASN

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Mol	Chain	Res	Type
1	D	19	ASN
1	D	33	ASN
1	D	75	ASN
1	D	84	GLN
1	D	114	GLN
1	D	117	GLN
1	E	16	ASN
1	E	19	ASN
1	E	33	ASN
1	E	75	ASN
1	E	117	GLN
1	E	140	ASN
1	F	33	ASN
1	F	75	ASN
1	F	114	GLN
1	F	117	GLN
1	G	75	ASN
1	G	114	GLN
1	G	117	GLN
1	G	140	ASN
1	H	75	ASN
1	H	84	GLN
1	H	114	GLN
1	H	117	GLN
1	H	140	ASN
1	I	33	ASN
1	I	75	ASN
1	I	84	GLN
1	I	114	GLN
1	I	117	GLN
1	I	140	ASN
1	J	33	ASN
1	J	75	ASN
1	J	84	GLN
1	J	114	GLN
1	J	117	GLN
1	J	140	ASN
1	J	164	GLN
1	K	75	ASN
1	K	84	GLN
1	K	114	GLN
1	K	117	GLN

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Mol	Chain	Res	Type
1	K	140	ASN
1	L	75	ASN
1	L	84	GLN
1	L	114	GLN
1	L	117	GLN
1	L	140	ASN

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

## 5.6 Ligand geometry ⓘ

Of 19 ligands modelled in this entry, 7 are monoatomic - leaving 12 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	UTP	A	1227	-	26,30,30	2.25	4 (15%)	31,47,47	2.42	3 (9%)
2	UTP	B	1227	3	26,30,30	2.08	3 (11%)	31,47,47	2.36	5 (16%)
2	UTP	C	1227	3	26,30,30	2.55	7 (26%)	31,47,47	2.42	4 (12%)
2	UTP	D	1227	3	26,30,30	2.22	4 (15%)	31,47,47	2.36	3 (9%)
2	UTP	E	1227	3	26,30,30	2.51	6 (23%)	31,47,47	2.29	2 (6%)
2	UTP	F	1227	-	26,30,30	2.31	4 (15%)	31,47,47	2.37	3 (9%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	UTP	G	1227	-	26,30,30	2.37	6 (23%)	31,47,47	2.42	2 (6%)
2	UTP	H	1227	-	26,30,30	2.40	4 (15%)	31,47,47	2.39	3 (9%)
2	UTP	I	1227	-	26,30,30	2.29	4 (15%)	31,47,47	2.32	3 (9%)
2	UTP	J	1227	3	26,30,30	2.37	3 (11%)	31,47,47	2.35	2 (6%)
2	UTP	K	1227	-	26,30,30	2.27	3 (11%)	31,47,47	2.37	3 (9%)
2	UTP	L	1227	3	26,30,30	2.29	3 (11%)	31,47,47	2.33	2 (6%)

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	UTP	A	1227	-	-	0/22/38/38	0/2/2/2
2	UTP	B	1227	3	-	0/22/38/38	0/2/2/2
2	UTP	C	1227	3	-	0/22/38/38	0/2/2/2
2	UTP	D	1227	3	-	0/22/38/38	0/2/2/2
2	UTP	E	1227	3	-	0/22/38/38	0/2/2/2
2	UTP	F	1227	-	-	0/22/38/38	0/2/2/2
2	UTP	G	1227	-	-	0/22/38/38	0/2/2/2
2	UTP	H	1227	-	-	0/22/38/38	0/2/2/2
2	UTP	I	1227	-	-	0/22/38/38	0/2/2/2
2	UTP	J	1227	3	-	0/22/38/38	0/2/2/2
2	UTP	K	1227	-	-	0/22/38/38	0/2/2/2
2	UTP	L	1227	3	-	0/22/38/38	0/2/2/2

All (51) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	1227	UTP	C6-C5	-9.02	1.34	1.52
2	C	1227	UTP	C6-C5	-8.97	1.34	1.52
2	I	1227	UTP	C6-C5	-8.64	1.35	1.52
2	G	1227	UTP	C6-C5	-8.59	1.35	1.52
2	K	1227	UTP	C6-C5	-8.54	1.35	1.52
2	L	1227	UTP	C6-C5	-8.52	1.35	1.52
2	A	1227	UTP	C6-C5	-8.49	1.35	1.52
2	H	1227	UTP	C6-C5	-8.45	1.35	1.52
2	D	1227	UTP	C6-C5	-8.33	1.36	1.52
2	F	1227	UTP	C6-C5	-8.32	1.36	1.52
2	J	1227	UTP	C6-C5	-7.91	1.36	1.52
2	B	1227	UTP	C6-C5	-7.57	1.37	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	1227	UTP	C6-N1	-6.00	1.39	1.47
2	C	1227	UTP	C6-N1	-5.98	1.39	1.47
2	L	1227	UTP	C6-N1	-5.09	1.40	1.47
2	F	1227	UTP	C6-N1	-5.06	1.40	1.47
2	I	1227	UTP	C6-N1	-4.74	1.40	1.47
2	G	1227	UTP	C6-N1	-4.69	1.40	1.47
2	H	1227	UTP	C6-N1	-4.65	1.41	1.47
2	J	1227	UTP	C6-N1	-4.59	1.41	1.47
2	A	1227	UTP	C6-N1	-4.53	1.41	1.47
2	K	1227	UTP	C6-N1	-4.53	1.41	1.47
2	B	1227	UTP	C6-N1	-4.41	1.41	1.47
2	D	1227	UTP	C6-N1	-4.17	1.41	1.47
2	C	1227	UTP	C5-C4	-2.74	1.43	1.50
2	A	1227	UTP	C5-C4	-2.26	1.44	1.50
2	E	1227	UTP	C5-C4	-2.13	1.45	1.50
2	F	1227	UTP	PB-O1B	-2.10	1.45	1.55
2	E	1227	UTP	PB-O2B	-2.09	1.43	1.50
2	C	1227	UTP	PB-O2B	-2.07	1.43	1.50
2	G	1227	UTP	C5-C4	-2.04	1.45	1.50
2	D	1227	UTP	C5-C4	-2.04	1.45	1.50
2	I	1227	UTP	C5-C4	-2.03	1.45	1.50
2	E	1227	UTP	PB-O1B	-2.01	1.45	1.55
2	G	1227	UTP	PB-O1B	-2.00	1.45	1.55
2	C	1227	UTP	PB-O1B	-2.00	1.45	1.55
2	G	1227	UTP	C4-N3	2.08	1.40	1.37
2	H	1227	UTP	C4-N3	2.10	1.40	1.37
2	C	1227	UTP	PG-O3B	2.72	1.64	1.60
2	B	1227	UTP	C2-N1	3.81	1.41	1.35
2	L	1227	UTP	C2-N1	4.22	1.41	1.35
2	F	1227	UTP	C2-N1	4.39	1.41	1.35
2	A	1227	UTP	C2-N1	4.39	1.41	1.35
2	C	1227	UTP	C2-N1	4.44	1.42	1.35
2	E	1227	UTP	C2-N1	4.53	1.42	1.35
2	D	1227	UTP	C2-N1	4.56	1.42	1.35
2	I	1227	UTP	C2-N1	4.66	1.42	1.35
2	K	1227	UTP	C2-N1	4.78	1.42	1.35
2	G	1227	UTP	C2-N1	5.47	1.43	1.35
2	H	1227	UTP	C2-N1	5.95	1.44	1.35
2	J	1227	UTP	C2-N1	6.34	1.44	1.35

All (35) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	1227	UTP	N3-C2-N1	-2.32	114.20	116.65
2	H	1227	UTP	N3-C2-N1	-2.10	114.44	116.65
2	B	1227	UTP	C5-C4-N3	-2.04	114.34	116.65
2	K	1227	UTP	C4-N3-C2	2.01	127.51	125.80
2	F	1227	UTP	C4-N3-C2	2.04	127.53	125.80
2	A	1227	UTP	C4-N3-C2	2.04	127.54	125.80
2	B	1227	UTP	O4-C4-C5	2.09	126.70	122.22
2	I	1227	UTP	C4-N3-C2	2.21	127.67	125.80
2	D	1227	UTP	C4-N3-C2	2.28	127.73	125.80
2	K	1227	UTP	C3'-C2'-C1'	2.37	105.94	101.44
2	F	1227	UTP	C3'-C2'-C1'	2.41	106.01	101.44
2	C	1227	UTP	C4-N3-C2	2.42	127.86	125.80
2	H	1227	UTP	C3'-C2'-C1'	2.42	106.04	101.44
2	B	1227	UTP	C4-N3-C2	2.48	127.91	125.80
2	G	1227	UTP	C3'-C2'-C1'	2.49	106.16	101.44
2	B	1227	UTP	C3'-C2'-C1'	2.54	106.26	101.44
2	D	1227	UTP	C3'-C2'-C1'	2.54	106.27	101.44
2	E	1227	UTP	C3'-C2'-C1'	2.56	106.31	101.44
2	I	1227	UTP	C3'-C2'-C1'	2.59	106.35	101.44
2	A	1227	UTP	C3'-C2'-C1'	2.66	106.48	101.44
2	C	1227	UTP	C3'-C2'-C1'	2.79	106.73	101.44
2	L	1227	UTP	C3'-C2'-C1'	2.90	106.94	101.44
2	J	1227	UTP	C3'-C2'-C1'	3.12	107.36	101.44
2	E	1227	UTP	C5-C6-N1	11.39	122.85	110.71
2	I	1227	UTP	C5-C6-N1	11.50	122.97	110.71
2	L	1227	UTP	C5-C6-N1	11.55	123.02	110.71
2	J	1227	UTP	C5-C6-N1	11.63	123.11	110.71
2	D	1227	UTP	C5-C6-N1	11.80	123.28	110.71
2	B	1227	UTP	C5-C6-N1	11.83	123.32	110.71
2	K	1227	UTP	C5-C6-N1	11.93	123.42	110.71
2	F	1227	UTP	C5-C6-N1	11.93	123.43	110.71
2	C	1227	UTP	C5-C6-N1	11.96	123.46	110.71
2	H	1227	UTP	C5-C6-N1	12.09	123.59	110.71
2	A	1227	UTP	C5-C6-N1	12.11	123.61	110.71
2	G	1227	UTP	C5-C6-N1	12.16	123.67	110.71

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

9 monomers are involved in 19 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	1227	UTP	1	0
2	C	1227	UTP	2	0
2	E	1227	UTP	2	0
2	F	1227	UTP	5	0
2	G	1227	UTP	1	0
2	H	1227	UTP	2	0
2	I	1227	UTP	2	0
2	J	1227	UTP	3	0
2	L	1227	UTP	1	0

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

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	A	214/226 (94%)	0.16	12 (5%) 24 16	39, 59, 107, 116	0
1	B	213/226 (94%)	0.08	11 (5%) 27 18	42, 62, 92, 101	0
1	C	198/226 (87%)	0.35	16 (8%) 12 6	40, 65, 110, 121	0
1	D	213/226 (94%)	0.07	10 (4%) 31 21	44, 67, 96, 109	0
1	E	217/226 (96%)	0.30	21 (9%) 8 4	37, 65, 105, 114	0
1	F	219/226 (96%)	0.17	8 (3%) 41 31	41, 64, 92, 115	0
1	G	212/226 (93%)	0.33	16 (7%) 14 7	61, 83, 104, 120	0
1	H	171/226 (75%)	0.58	19 (11%) 5 3	64, 88, 131, 140	0
1	I	194/226 (85%)	0.46	21 (10%) 6 3	57, 85, 133, 153	0
1	J	214/226 (94%)	0.11	8 (3%) 41 31	53, 73, 101, 124	0
1	K	190/226 (84%)	0.50	25 (13%) 3 2	51, 86, 134, 145	0
1	L	214/226 (94%)	0.05	5 (2%) 60 51	47, 67, 89, 103	0
All	All	2469/2712 (91%)	0.25	172 (6%) 16 9	37, 72, 116, 153	0

All (172) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	K	226	VAL	13.1
1	H	216	GLY	8.2
1	I	33	ASN	7.3
1	H	226	VAL	6.6
1	I	147	LYS	6.4
1	F	226	VAL	5.6
1	B	226	VAL	5.3
1	J	226	VAL	5.1
1	C	173	SER	5.1
1	I	145	TYR	5.1
1	H	215	LYS	5.0

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Mol	Chain	Res	Type	RSRZ
1	K	215	LYS	4.8
1	A	164	GLN	4.6
1	G	151	ILE	4.5
1	D	151	ILE	4.4
1	B	168	LYS	4.4
1	H	212	ASP	4.2
1	B	155	VAL	4.2
1	K	150	ARG	4.1
1	A	166	LEU	4.1
1	E	181	TYR	4.0
1	E	138	ALA	3.9
1	C	172	GLY	3.9
1	I	155	VAL	3.9
1	G	156	LYS	3.9
1	I	156	LYS	3.9
1	I	215	LYS	3.9
1	G	155	VAL	3.8
1	A	168	LYS	3.8
1	C	164	GLN	3.8
1	F	182	GLU	3.8
1	E	1	MET	3.8
1	H	86	LEU	3.7
1	E	226	VAL	3.6
1	H	1	MET	3.6
1	K	148	ASP	3.6
1	A	226	VAL	3.6
1	D	150	ARG	3.5
1	K	225	PRO	3.5
1	H	217	GLU	3.5
1	K	168	LYS	3.4
1	H	214	LEU	3.4
1	K	164	GLN	3.4
1	G	218	GLU	3.4
1	D	226	VAL	3.4
1	E	6	LYS	3.3
1	G	152	TYR	3.3
1	I	148	ASP	3.3
1	D	152	TYR	3.3
1	E	7	ILE	3.3
1	B	146	GLU	3.3
1	K	166	LEU	3.3
1	I	164	GLN	3.3

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Mol	Chain	Res	Type	RSRZ
1	I	226	VAL	3.2
1	I	149	PRO	3.2
1	A	154	ASP	3.2
1	H	225	PRO	3.1
1	K	149	PRO	3.1
1	E	155	VAL	3.1
1	G	226	VAL	3.1
1	K	209	ARG	3.0
1	F	215	LYS	3.0
1	C	1	MET	3.0
1	K	1	MET	3.0
1	E	215	LYS	3.0
1	B	154	ASP	3.0
1	J	1	MET	3.0
1	I	146	GLU	2.9
1	A	145	TYR	2.9
1	H	219	VAL	2.9
1	B	152	TYR	2.9
1	L	152	TYR	2.9
1	F	57	ILE	2.9
1	D	147	LYS	2.9
1	E	34	GLY	2.9
1	I	32	ASP	2.8
1	H	211	ILE	2.8
1	I	189	ILE	2.8
1	K	144	VAL	2.8
1	E	137	VAL	2.7
1	C	147	LYS	2.7
1	G	164	GLN	2.7
1	I	15	ASP	2.6
1	A	146	GLU	2.6
1	K	147	LYS	2.6
1	D	169	ILE	2.6
1	H	144	VAL	2.6
1	E	154	ASP	2.6
1	C	155	VAL	2.6
1	I	163	THR	2.5
1	K	163	THR	2.5
1	K	145	TYR	2.5
1	E	147	LYS	2.5
1	J	147	LYS	2.5
1	C	180	THR	2.5

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Mol	Chain	Res	Type	RSRZ
1	L	147	LYS	2.5
1	G	59	ILE	2.5
1	J	168	LYS	2.5
1	K	157	LEU	2.5
1	I	167	ARG	2.5
1	E	217	GLU	2.5
1	A	15	ASP	2.5
1	E	149	PRO	2.4
1	G	217	GLU	2.4
1	F	147	LYS	2.4
1	G	6	LYS	2.4
1	H	210	ILE	2.4
1	J	152	TYR	2.4
1	K	15	ASP	2.4
1	C	182	GLU	2.4
1	G	56	GLU	2.4
1	I	35	PHE	2.4
1	J	170	LEU	2.4
1	E	148	ASP	2.3
1	D	156	LYS	2.3
1	I	1	MET	2.3
1	D	85	ASP	2.3
1	A	150	ARG	2.3
1	D	57	ILE	2.3
1	I	166	LEU	2.3
1	C	217	GLU	2.3
1	C	156	LYS	2.3
1	K	212	ASP	2.3
1	G	1	MET	2.3
1	A	216	GLY	2.3
1	C	148	ASP	2.3
1	L	226	VAL	2.3
1	F	85	ASP	2.3
1	E	214	LEU	2.3
1	L	196	LYS	2.3
1	J	56	GLU	2.3
1	H	85	ASP	2.2
1	B	153	ALA	2.2
1	K	210	ILE	2.2
1	C	226	VAL	2.2
1	I	34	GLY	2.2
1	C	205	ARG	2.2

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Mol	Chain	Res	Type	RSRZ
1	J	6	LYS	2.2
1	B	219	VAL	2.2
1	H	5	LEU	2.2
1	G	153	ALA	2.2
1	B	1	MET	2.2
1	K	217	GLU	2.2
1	G	225	PRO	2.2
1	C	138	ALA	2.2
1	K	213	ILE	2.2
1	K	16	ASN	2.2
1	A	167	ARG	2.2
1	H	6	LYS	2.2
1	I	6	LYS	2.2
1	E	212	ASP	2.1
1	C	7	ILE	2.1
1	B	147	LYS	2.1
1	E	5	LEU	2.1
1	B	225	PRO	2.1
1	H	223	ILE	2.1
1	H	189	ILE	2.1
1	L	153	ALA	2.1
1	D	155	VAL	2.1
1	F	170	LEU	2.1
1	A	153	ALA	2.1
1	C	211	ILE	2.1
1	G	51	ILE	2.1
1	H	224	GLU	2.0
1	E	8	SER	2.0
1	K	85	ASP	2.0
1	K	211	ILE	2.0
1	E	85	ASP	2.0
1	K	169	ILE	2.0
1	G	110	THR	2.0
1	E	39	ILE	2.0
1	F	5	LEU	2.0

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

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

### 6.3 Carbohydrates ⓘ

There are no carbohydrates in this entry.

### 6.4 Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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( $\text{\AA}^2$ )	Q<0.9
3	MG	E	1228	1/1	0.60	0.22	73,73,73,73	0
2	UTP	H	1227	29/29	0.82	0.21	78,92,128,129	0
3	MG	I	1228	1/1	0.84	0.40	78,78,78,78	0
2	UTP	K	1227	29/29	0.85	0.22	83,92,131,132	0
2	UTP	J	1227	29/29	0.86	0.20	63,72,109,110	0
2	UTP	G	1227	29/29	0.89	0.17	71,85,119,119	0
2	UTP	L	1227	29/29	0.91	0.18	71,77,110,111	0
2	UTP	D	1227	29/29	0.91	0.17	56,69,114,115	0
2	UTP	I	1227	29/29	0.91	0.17	62,78,122,122	0
2	UTP	A	1227	29/29	0.92	0.16	64,73,109,110	0
2	UTP	E	1227	29/29	0.93	0.22	53,62,97,98	0
2	UTP	F	1227	29/29	0.93	0.18	64,67,105,105	0
3	MG	C	1228	1/1	0.93	0.31	66,66,66,66	0
2	UTP	B	1227	29/29	0.93	0.17	56,69,111,112	0
2	UTP	C	1227	29/29	0.94	0.18	45,58,101,102	0
3	MG	D	1228	1/1	0.95	0.18	56,56,56,56	0
3	MG	B	1228	1/1	0.96	0.20	55,55,55,55	0
3	MG	J	1228	1/1	0.97	0.10	64,64,64,64	0
3	MG	L	1228	1/1	0.98	0.14	55,55,55,55	0

### 6.5 Other polymers ⓘ

There are no such residues in this entry.