Full wwPDB X-ray Structure Validation Report (i)

Nov 14, 2023 – 02:05 PM JST

PDB ID	:	5ZJE
Title	:	LDHA-mla
Authors	:	Han, C.W.; Jang, S.B.
Deposited on	:	2018-03-20
Resolution	:	2.93 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

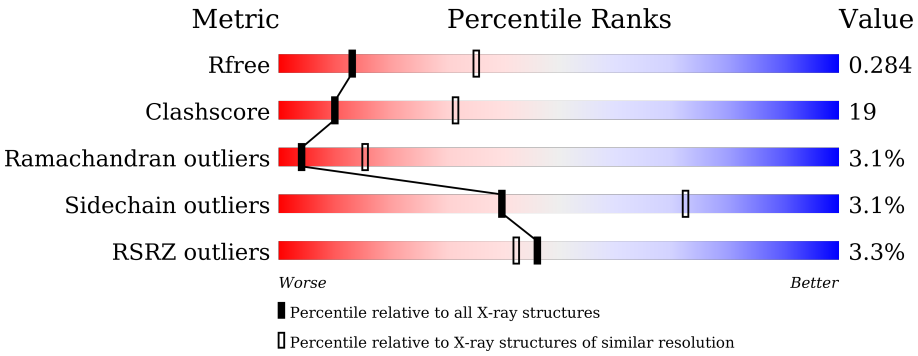
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 2.93 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	2307 (2.94-2.90)
Clashscore	141614	2531 (2.94-2.90)
Ramachandran outliers	138981	2462 (2.94-2.90)
Sidechain outliers	138945	2464 (2.94-2.90)
RSRZ outliers	127900	2248 (2.94-2.90)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	337	2% 65% 30%
1	B	337	5% 60% 34%
1	C	337	5% 54% 41%
1	D	337	4% 58% 36%
1	E	337	% 60% 36%
1	F	337	3% 61% 35%

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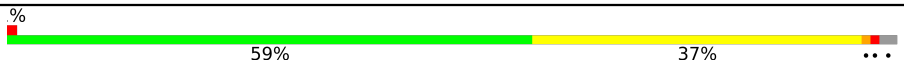
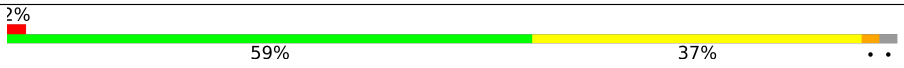
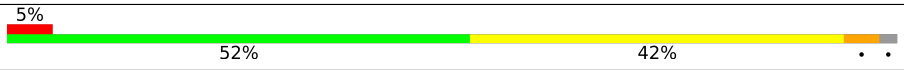
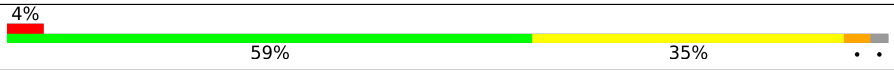
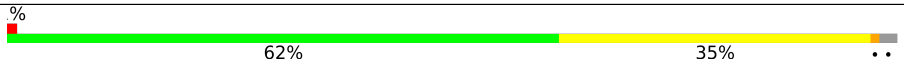
Mol	Chain	Length	Quality of chain
1	G	337	
1	H	337	
1	I	337	
1	J	337	
1	K	337	
1	L	337	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	MLI	A	601	-	X	X	-
2	MLI	D	601	-	X	X	-
2	MLI	E	601	-	X	X	-
2	MLI	G	601	-	X	X	-
2	MLI	J	601	-	X	X	-
2	MLI	K	601	-	X	-	-

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 31204 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 L-lactate dehydrogenase A chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	331	Total	C	N	O	S	0	0	0
			2568	1639	439	477	13			
1	B	331	Total	C	N	O	S	0	0	0
			2568	1639	439	477	13			
1	C	331	Total	C	N	O	S	0	0	0
			2568	1639	439	477	13			
1	D	331	Total	C	N	O	S	0	0	0
			2568	1639	439	477	13			
1	E	331	Total	C	N	O	S	0	0	0
			2568	1639	439	477	13			
1	F	331	Total	C	N	O	S	0	0	0
			2568	1639	439	477	13			
1	G	331	Total	C	N	O	S	0	0	0
			2568	1639	439	477	13			
1	H	331	Total	C	N	O	S	0	0	0
			2568	1639	439	477	13			
1	I	331	Total	C	N	O	S	0	0	0
			2568	1639	439	477	13			
1	J	331	Total	C	N	O	S	0	0	0
			2568	1639	439	477	13			
1	K	331	Total	C	N	O	S	0	0	0
			2568	1639	439	477	13			
1	L	331	Total	C	N	O	S	0	0	0
			2568	1639	439	477	13			

There are 72 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-5	HIS	-	expression tag	UNP P00338
A	-4	HIS	-	expression tag	UNP P00338
A	-3	HIS	-	expression tag	UNP P00338
A	-2	HIS	-	expression tag	UNP P00338
A	-1	HIS	-	expression tag	UNP P00338

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Chain	Residue	Modelled	Actual	Comment	Reference
A	0	HIS	-	expression tag	UNP P00338
B	-5	HIS	-	expression tag	UNP P00338
B	-4	HIS	-	expression tag	UNP P00338
B	-3	HIS	-	expression tag	UNP P00338
B	-2	HIS	-	expression tag	UNP P00338
B	-1	HIS	-	expression tag	UNP P00338
B	0	HIS	-	expression tag	UNP P00338
C	-5	HIS	-	expression tag	UNP P00338
C	-4	HIS	-	expression tag	UNP P00338
C	-3	HIS	-	expression tag	UNP P00338
C	-2	HIS	-	expression tag	UNP P00338
C	-1	HIS	-	expression tag	UNP P00338
C	0	HIS	-	expression tag	UNP P00338
D	-5	HIS	-	expression tag	UNP P00338
D	-4	HIS	-	expression tag	UNP P00338
D	-3	HIS	-	expression tag	UNP P00338
D	-2	HIS	-	expression tag	UNP P00338
D	-1	HIS	-	expression tag	UNP P00338
D	0	HIS	-	expression tag	UNP P00338
E	-5	HIS	-	expression tag	UNP P00338
E	-4	HIS	-	expression tag	UNP P00338
E	-3	HIS	-	expression tag	UNP P00338
E	-2	HIS	-	expression tag	UNP P00338
E	-1	HIS	-	expression tag	UNP P00338
E	0	HIS	-	expression tag	UNP P00338
F	-5	HIS	-	expression tag	UNP P00338
F	-4	HIS	-	expression tag	UNP P00338
F	-3	HIS	-	expression tag	UNP P00338
F	-2	HIS	-	expression tag	UNP P00338
F	-1	HIS	-	expression tag	UNP P00338
F	0	HIS	-	expression tag	UNP P00338
G	-5	HIS	-	expression tag	UNP P00338
G	-4	HIS	-	expression tag	UNP P00338
G	-3	HIS	-	expression tag	UNP P00338
G	-2	HIS	-	expression tag	UNP P00338
G	-1	HIS	-	expression tag	UNP P00338
G	0	HIS	-	expression tag	UNP P00338
H	-5	HIS	-	expression tag	UNP P00338
H	-4	HIS	-	expression tag	UNP P00338
H	-3	HIS	-	expression tag	UNP P00338
H	-2	HIS	-	expression tag	UNP P00338
H	-1	HIS	-	expression tag	UNP P00338

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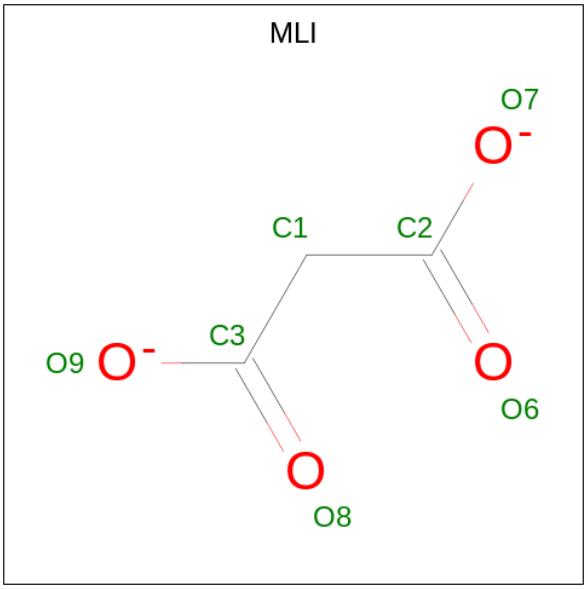
Chain	Residue	Modelled	Actual	Comment	Reference
H	0	HIS	-	expression tag	UNP P00338
I	-5	HIS	-	expression tag	UNP P00338
I	-4	HIS	-	expression tag	UNP P00338
I	-3	HIS	-	expression tag	UNP P00338
I	-2	HIS	-	expression tag	UNP P00338
I	-1	HIS	-	expression tag	UNP P00338
I	0	HIS	-	expression tag	UNP P00338
J	-5	HIS	-	expression tag	UNP P00338
J	-4	HIS	-	expression tag	UNP P00338
J	-3	HIS	-	expression tag	UNP P00338
J	-2	HIS	-	expression tag	UNP P00338
J	-1	HIS	-	expression tag	UNP P00338
J	0	HIS	-	expression tag	UNP P00338
K	-5	HIS	-	expression tag	UNP P00338
K	-4	HIS	-	expression tag	UNP P00338
K	-3	HIS	-	expression tag	UNP P00338
K	-2	HIS	-	expression tag	UNP P00338
K	-1	HIS	-	expression tag	UNP P00338
K	0	HIS	-	expression tag	UNP P00338
L	-5	HIS	-	expression tag	UNP P00338
L	-4	HIS	-	expression tag	UNP P00338
L	-3	HIS	-	expression tag	UNP P00338
L	-2	HIS	-	expression tag	UNP P00338
L	-1	HIS	-	expression tag	UNP P00338
L	0	HIS	-	expression tag	UNP P00338

- Molecule 2 is MALONATE ION (three-letter code: MLI) (formula: $C_3H_2O_4$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C O 7 3 4	0	0
2	D	1	Total C O 7 3 4	0	0
2	E	1	Total C O 7 3 4	0	0
2	G	1	Total C O 7 3 4	0	0
2	J	1	Total C O 7 3 4	0	0
2	K	1	Total C O 7 3 4	0	0

- Molecule 3 is water.

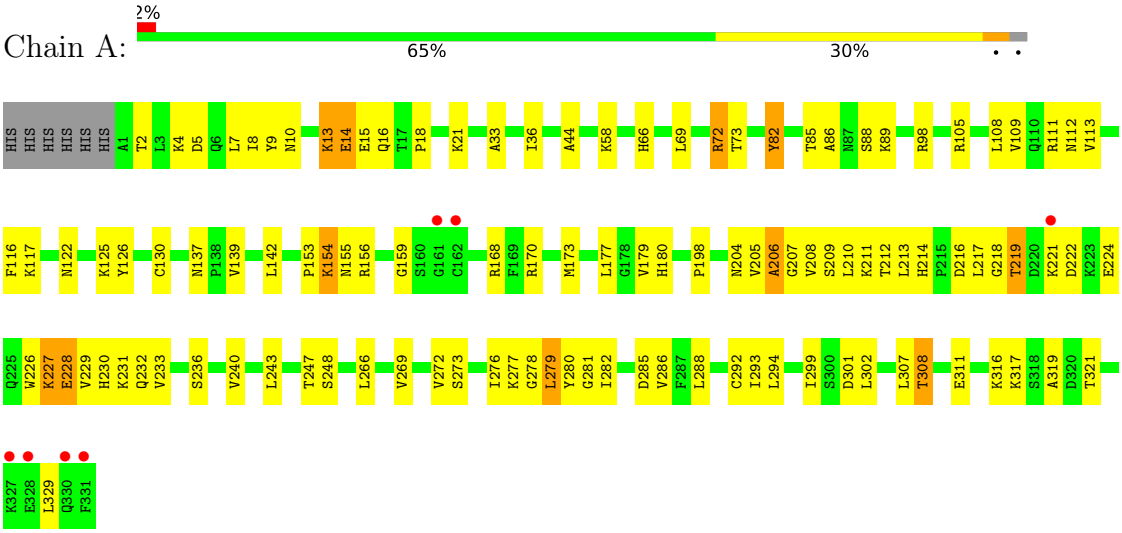
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	29	Total O 29 29	0	0
3	B	26	Total O 26 26	0	0
3	C	20	Total O 20 20	0	0
3	D	46	Total O 46 46	0	0
3	E	37	Total O 37 37	0	0
3	F	30	Total O 30 30	0	0
3	G	34	Total O 34 34	0	0
3	H	23	Total O 23 23	0	0
3	I	23	Total O 23 23	0	0
3	J	33	Total O 33 33	0	0
3	K	23	Total O 23 23	0	0
3	L	22	Total O 22 22	0	0

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.

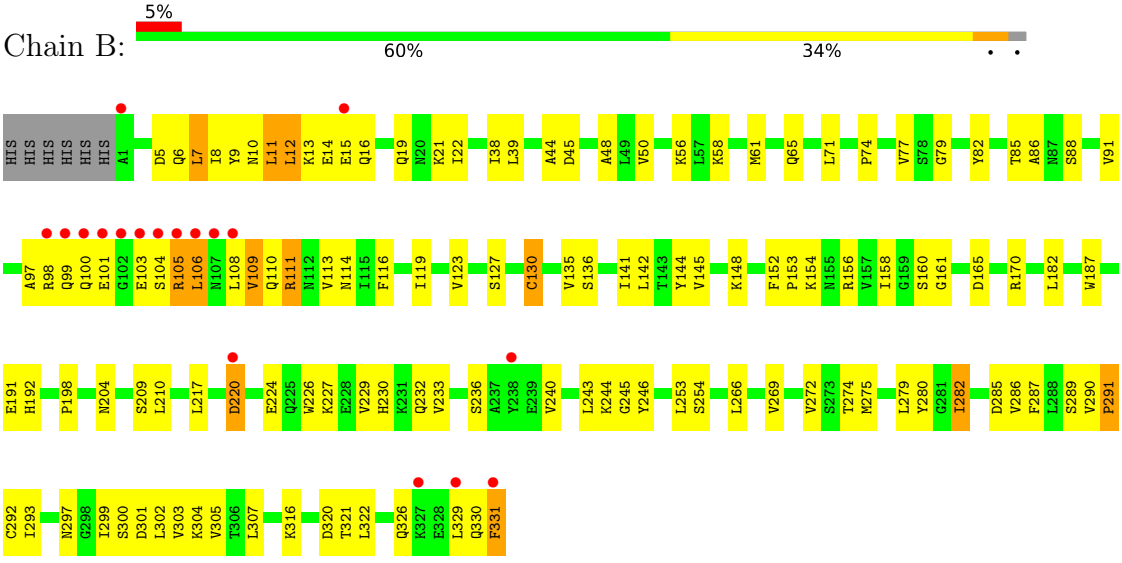
• Molecule 1: L-lactate dehydrogenase A chain

Chain A:



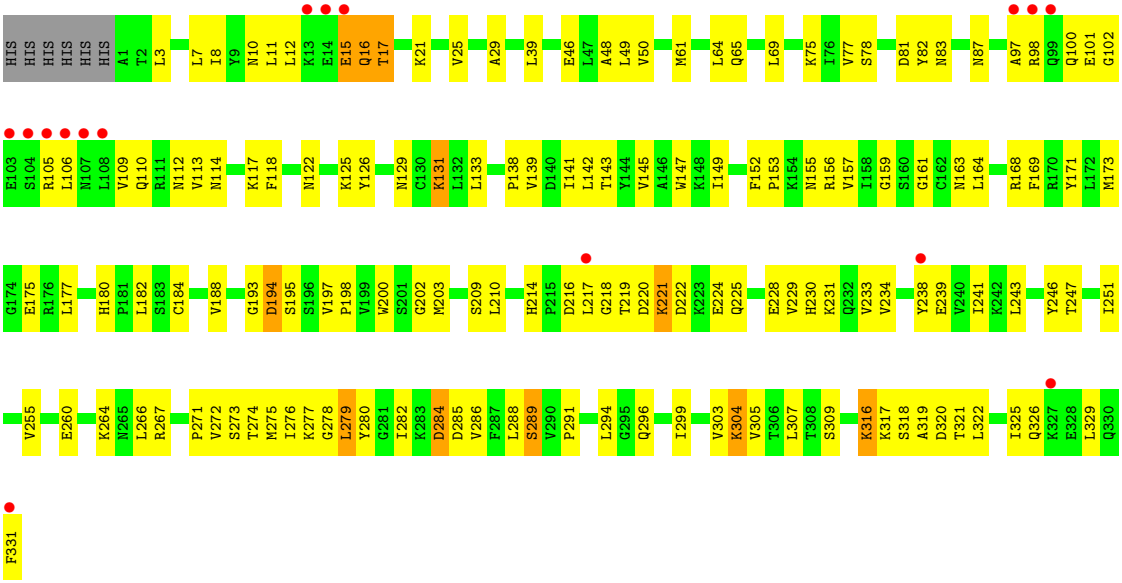
• Molecule 1: L-lactate dehydrogenase A chain

Chain B:



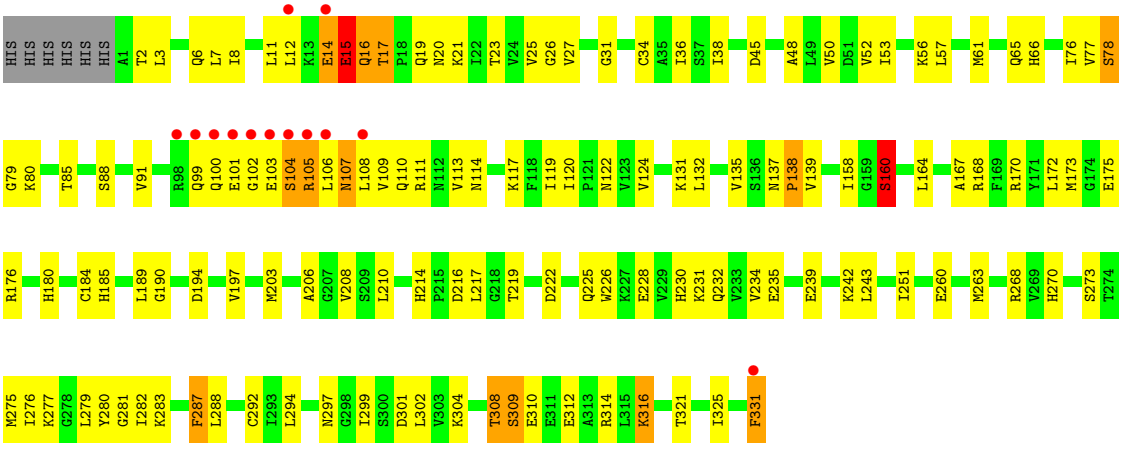
• Molecule 1: L-lactate dehydrogenase A chain

Chain C:



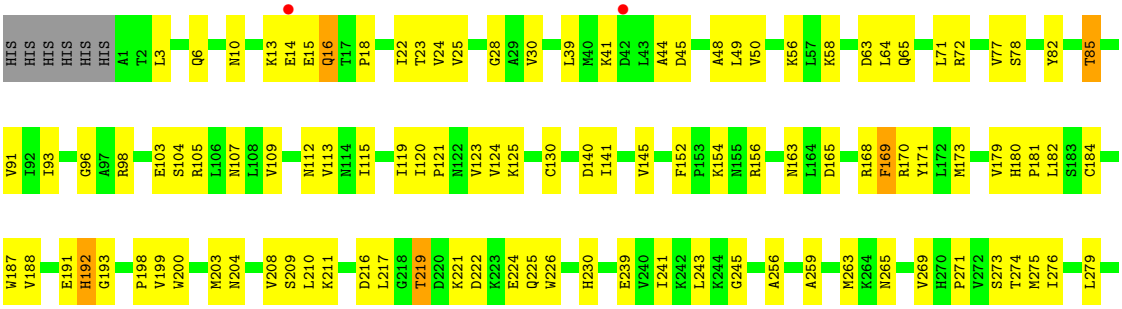
• Molecule 1: L-lactate dehydrogenase A chain

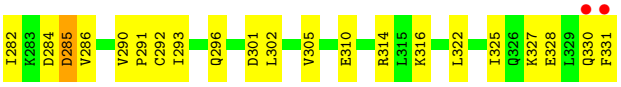
Chain D:



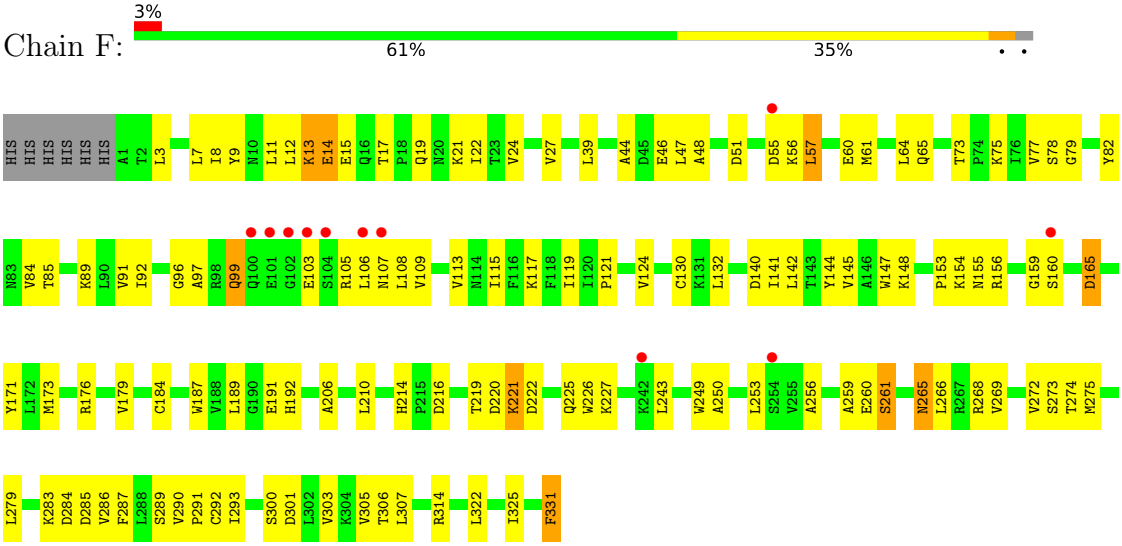
• Molecule 1: L-lactate dehydrogenase A chain

Chain E:

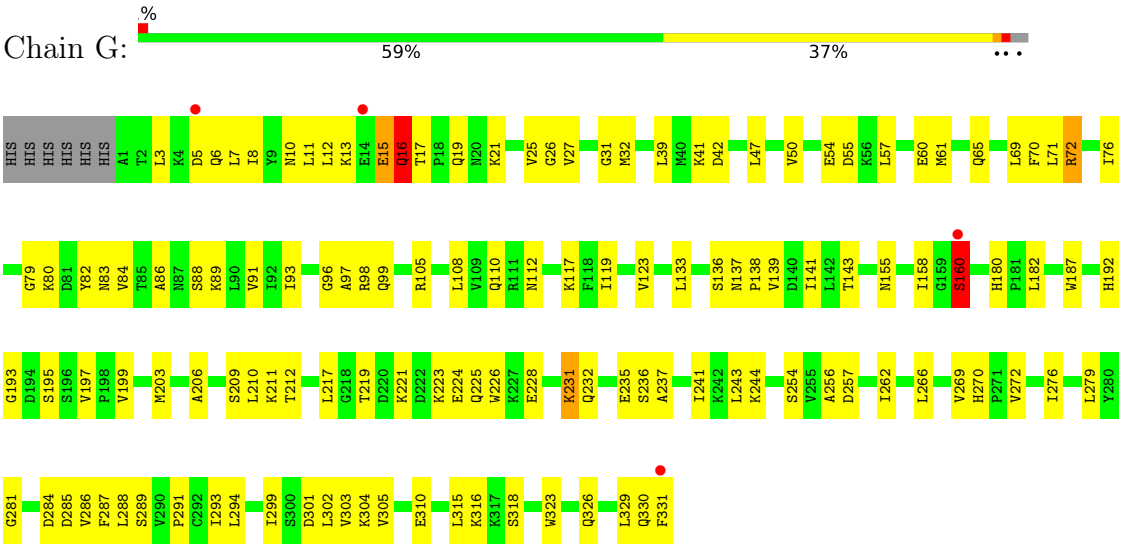




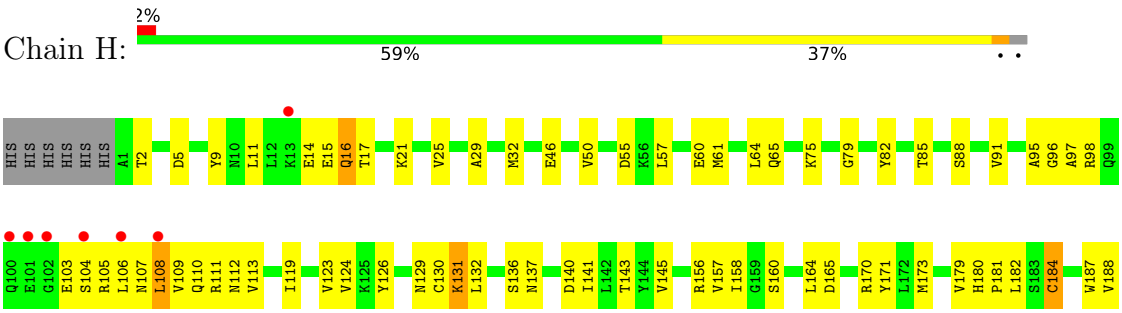
• Molecule 1: L-lactate dehydrogenase A chain

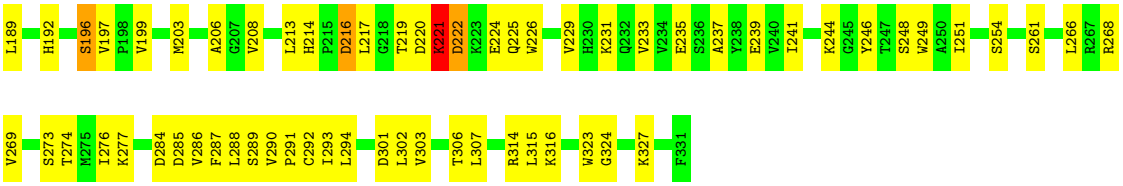


• Molecule 1: L-lactate dehydrogenase A chain

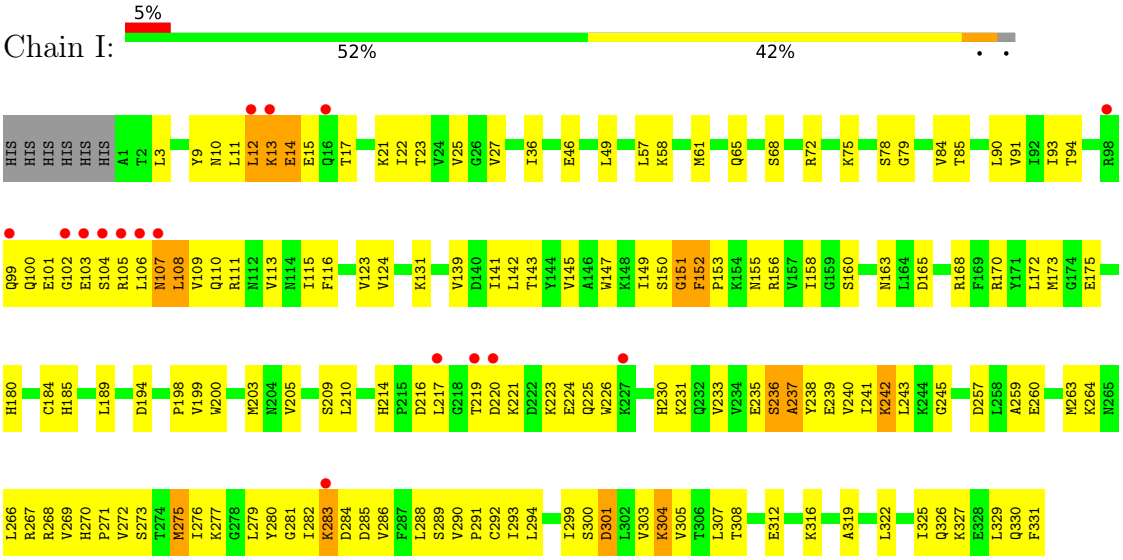


• Molecule 1: L-lactate dehydrogenase A chain

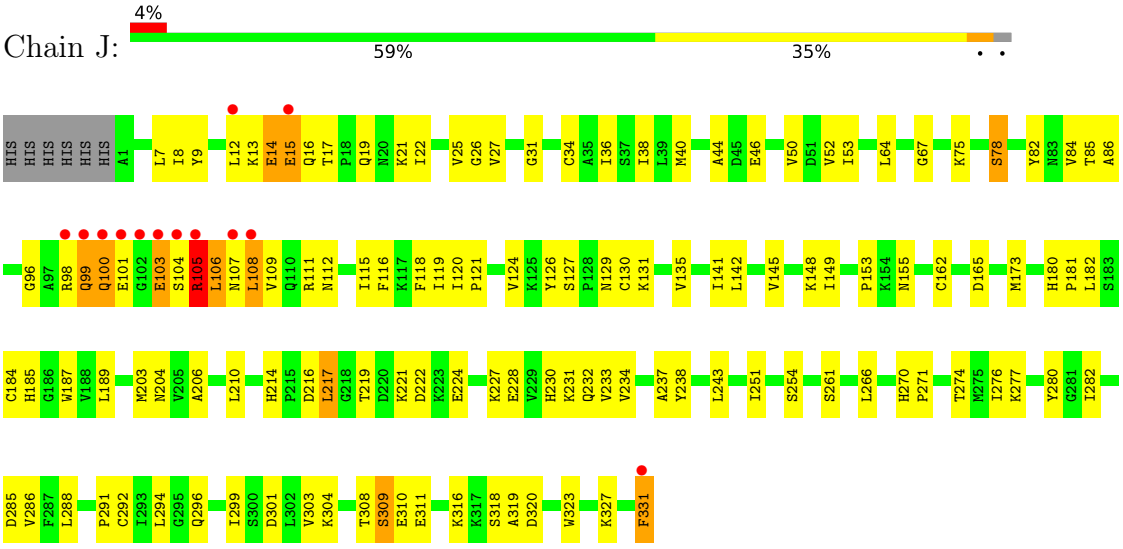




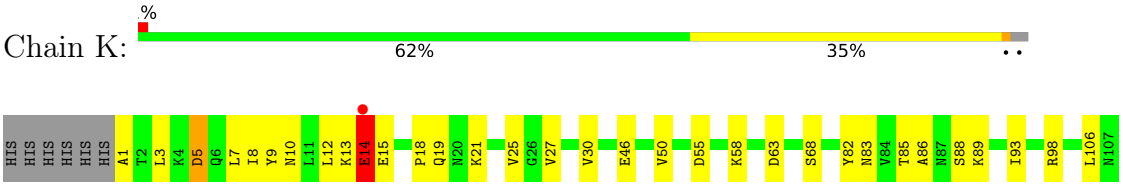
• Molecule 1: L-lactate dehydrogenase A chain

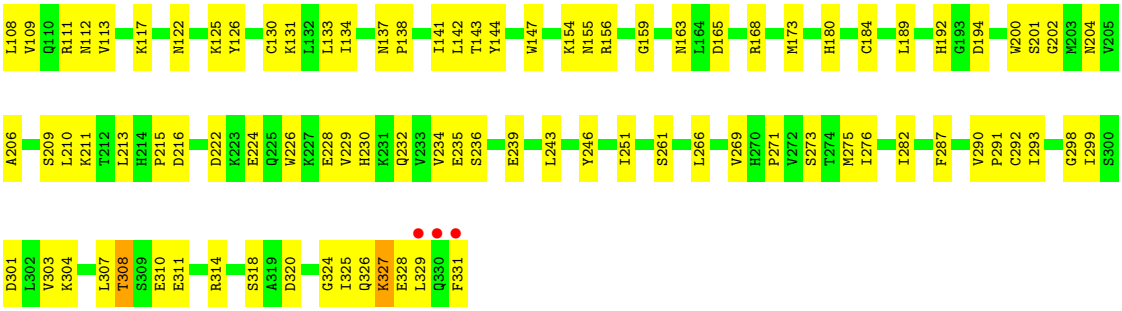


• Molecule 1: L-lactate dehydrogenase A chain



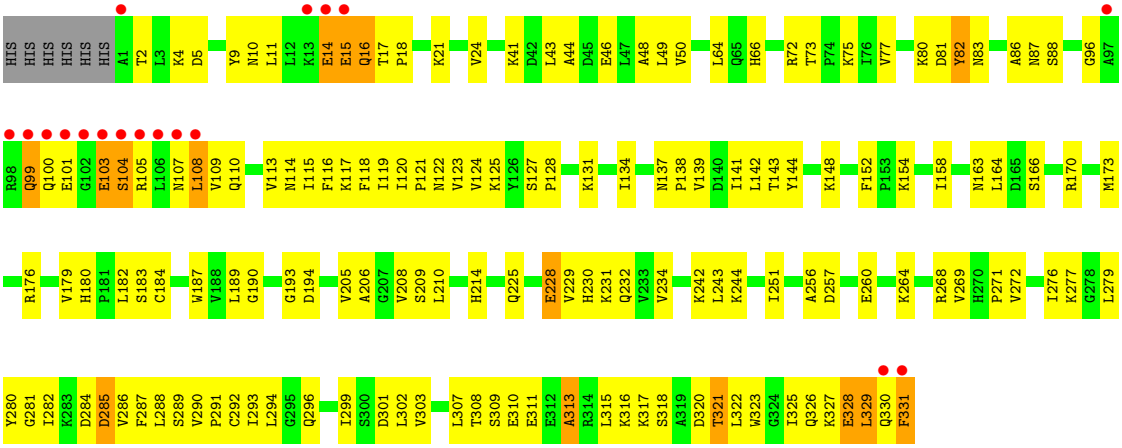
• Molecule 1: L-lactate dehydrogenase A chain





• Molecule 1: L-lactate dehydrogenase A chain

Chain L:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	85.59Å 219.33Å 112.79Å 90.00° 92.28° 90.00°	Depositor
Resolution (Å)	30.19 – 2.93 30.19 – 2.93	Depositor EDS
% Data completeness (in resolution range)	97.5 (30.19-2.93) 97.5 (30.19-2.93)	Depositor EDS
R_{merge}	0.17	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.80 (at 2.95Å)	Xtriage
Refinement program	PHENIX (1.14_3260: ???)	Depositor
R, R_{free}	0.188 , 0.284 0.188 , 0.284	Depositor DCC
R_{free} test set	4358 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å^2)	53.7	Xtriage
Anisotropy	0.481	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 53.4	EDS
L-test for twinning[2]	$< \|L\| > = 0.51$, $< L^2 > = 0.34$	Xtriage
Estimated twinning fraction	0.065 for h,-k,-l	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	31204	wwPDB-VP
Average B, all atoms (Å^2)	51.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.93% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

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

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	0.47	0/2612	0.67	1/3532 (0.0%)
1	B	0.47	1/2612 (0.0%)	0.66	3/3532 (0.1%)
1	C	0.46	0/2612	0.68	2/3532 (0.1%)
1	D	0.49	0/2612	0.67	0/3532
1	E	0.50	0/2612	0.67	0/3532
1	F	0.48	1/2612 (0.0%)	0.66	2/3532 (0.1%)
1	G	0.53	1/2612 (0.0%)	0.69	1/3532 (0.0%)
1	H	0.50	2/2612 (0.1%)	0.69	1/3532 (0.0%)
1	I	0.49	0/2612	0.69	2/3532 (0.1%)
1	J	0.46	0/2612	0.66	2/3532 (0.1%)
1	K	0.48	0/2612	0.67	0/3532
1	L	0.49	1/2612 (0.0%)	0.67	0/3532
All	All	0.49	6/31344 (0.0%)	0.67	14/42384 (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	A	0	1
1	C	0	1
1	D	0	2
1	E	0	1
1	G	0	1
1	I	0	2
1	J	0	3
1	L	0	3
All	All	0	14

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	283	LYS	CD-CE	-6.47	1.35	1.51
1	G	310	GLU	CG-CD	-6.26	1.42	1.51
1	B	111	ARG	NE-CZ	5.28	1.40	1.33
1	L	103	GLU	CB-CG	5.26	1.62	1.52
1	H	221	LYS	CE-NZ	-5.07	1.36	1.49
1	H	184	CYS	CB-SG	-5.00	1.73	1.81

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	G	310	GLU	CA-CB-CG	8.37	131.82	113.40
1	I	108	LEU	CA-CB-CG	7.32	132.14	115.30
1	F	283	LYS	CB-CG-CD	-6.99	93.42	111.60
1	B	111	ARG	NE-CZ-NH1	-6.65	116.97	120.30
1	J	108	LEU	CA-CB-CG	6.06	129.23	115.30
1	I	12	LEU	CA-CB-CG	5.99	129.06	115.30
1	F	283	LYS	CD-CE-NZ	-5.49	99.07	111.70
1	C	279	LEU	CA-CB-CG	5.40	127.71	115.30
1	B	11	LEU	CA-CB-CG	5.34	127.59	115.30
1	B	111	ARG	CG-CD-NE	5.32	122.96	111.80
1	H	216	ASP	CB-CG-OD2	-5.11	113.70	118.30
1	C	275	MET	CA-CB-CG	-5.04	104.74	113.30
1	A	279	LEU	CA-CB-CG	5.02	126.84	115.30
1	J	106	LEU	CA-CB-CG	5.00	126.81	115.30

There are no chirality outliers.

All (14) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	14	GLU	Peptide
1	C	15	GLU	Peptide
1	D	15	GLU	Peptide
1	D	308	THR	Peptide
1	E	16	GLN	Peptide
1	G	16	GLN	Peptide
1	I	107	ASN	Peptide
1	I	150	SER	Peptide
1	J	100	GLN	Peptide
1	J	15	GLU	Peptide
1	J	99	GLN	Peptide
1	L	108	LEU	Peptide
1	L	14	GLU	Peptide
1	L	15	GLU	Peptide

5.2 Too-close contacts (i)

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	2568	0	2656	93	0
1	B	2568	0	2656	111	0
1	C	2568	0	2656	118	0
1	D	2568	0	2656	117	0
1	E	2568	0	2656	96	0
1	F	2568	0	2656	99	1
1	G	2568	0	2656	111	0
1	H	2568	0	2656	107	0
1	I	2568	0	2656	127	1
1	J	2568	0	2656	98	0
1	K	2568	0	2656	100	0
1	L	2568	0	2656	127	0
2	A	7	0	2	2	0
2	D	7	0	2	4	0
2	E	7	0	2	5	0
2	G	7	0	2	3	0
2	J	7	0	2	2	0
2	K	7	0	2	1	0
3	A	29	0	0	4	0
3	B	26	0	0	2	0
3	C	20	0	0	3	0
3	D	46	0	0	12	0
3	E	37	0	0	1	0
3	F	30	0	0	1	0
3	G	34	0	0	4	0
3	H	23	0	0	6	0
3	I	23	0	0	7	0
3	J	33	0	0	5	0
3	K	23	0	0	9	0
3	L	22	0	0	1	0
All	All	31204	0	31884	1190	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 19.

All (1190) 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:G:32:MET:HE2	1:G:60:GLU:OE1	1.36	1.24
1:B:220:ASP:OD2	1:B:227:LYS:NZ	1.84	1.09
1:L:316:LYS:NZ	1:L:317:LYS:HD3	1.76	1.01
1:K:324:GLY:HA2	1:K:327:LYS:NZ	1.75	0.98
1:E:105:ARG:HH21	2:E:601:MLI:H11	1.28	0.98
1:I:106:LEU:HD22	1:I:325:ILE:HD13	1.47	0.97
1:L:327:LYS:HD2	1:L:328:GLU:HG2	1.47	0.96
1:A:10:ASN:HD21	1:A:13:LYS:HD3	1.31	0.94
1:B:330:GLN:NE2	3:B:401:HOH:O	2.02	0.93
1:H:291:PRO:HB2	1:H:303:VAL:HB	1.48	0.92
1:B:300:SER:CB	1:C:12:LEU:HD22	2.01	0.90
1:J:99:GLN:HG2	1:J:100:GLN:H	1.35	0.90
1:G:91:VAL:HG11	1:G:123:VAL:HG21	1.52	0.89
1:L:99:GLN:HB2	1:L:103:GLU:HB3	1.53	0.88
1:L:316:LYS:HZ3	1:L:317:LYS:HD3	1.34	0.88
1:I:100:GLN:O	1:I:102:GLY:N	2.06	0.88
1:A:276:ILE:HG12	1:A:288:LEU:HD12	1.55	0.88
1:C:100:GLN:O	1:C:102:GLY:N	2.06	0.87
1:F:9:TYR:HB2	1:G:304:LYS:HE2	1.55	0.87
1:L:144:TYR:HE2	1:L:326:GLN:HB3	1.41	0.86
1:D:2:THR:O	1:D:6:GLN:OE1	1.94	0.85
1:H:216:ASP:O	1:H:219:THR:HG22	1.76	0.85
1:D:251:ILE:HD11	2:D:601:MLI:H11	1.57	0.85
1:L:9:TYR:HD1	1:L:10:ASN:H	1.20	0.84
1:G:13:LYS:NZ	3:G:701:HOH:O	2.05	0.84
1:F:260:GLU:OE2	1:G:72:ARG:NH1	2.10	0.84
1:A:72:ARG:NH1	1:D:260:GLU:OE1	2.10	0.84
1:B:100:GLN:HB3	1:B:103:GLU:HB2	1.59	0.84
1:H:324:GLY:HA2	1:H:327:LYS:HE3	1.58	0.83
1:K:111:ARG:HD2	3:K:707:HOH:O	1.78	0.82
1:D:283:LYS:NZ	3:D:704:HOH:O	2.13	0.82
1:I:75:LYS:NZ	3:I:404:HOH:O	2.13	0.82
1:E:222:ASP:O	1:E:225:GLN:NE2	2.12	0.81
1:I:189:LEU:HD21	1:I:291:PRO:HD3	1.62	0.81
1:H:97:ALA:O	1:H:108:LEU:HD13	1.81	0.80
1:A:204:ASN:HA	1:A:210:LEU:HD13	1.62	0.79
1:B:154:LYS:HD3	1:B:275:MET:HE1	1.64	0.79
1:J:131:LYS:NZ	1:J:296:GLN:O	2.15	0.79
1:C:291:PRO:HB2	1:C:303:VAL:HB	1.64	0.78
1:D:275:MET:HG2	1:D:287:PHE:CE1	2.19	0.78
1:I:245:GLY:O	3:I:401:HOH:O	2.01	0.78
1:D:107:ASN:ND2	3:D:706:HOH:O	2.16	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:108:LEU:O	1:B:110:GLN:N	2.16	0.78
1:B:274:THR:HB	1:B:299:ILE:HD12	1.65	0.78
1:K:141:ILE:HD12	1:K:326:GLN:HG3	1.66	0.77
1:A:307:LEU:HD22	1:A:311:GLU:HB3	1.65	0.77
1:I:107:ASN:O	3:I:402:HOH:O	2.01	0.77
1:F:291:PRO:HB2	1:F:303:VAL:HB	1.66	0.77
1:F:260:GLU:CD	1:G:72:ARG:HH11	1.87	0.77
1:L:313:ALA:O	1:L:316:LYS:N	2.18	0.77
1:B:110:GLN:O	1:B:114:ASN:ND2	2.18	0.77
1:L:313:ALA:HA	1:L:316:LYS:HG2	1.67	0.77
1:L:228:GLU:O	1:L:231:LYS:N	2.16	0.76
1:C:118:PHE:O	1:C:122:ASN:ND2	2.18	0.76
1:I:189:LEU:HD23	1:I:290:VAL:HA	1.68	0.76
1:K:246:TYR:HB2	3:K:702:HOH:O	1.84	0.76
1:I:210:LEU:HD21	1:J:7:LEU:HD22	1.67	0.76
1:I:106:LEU:HD22	1:I:325:ILE:CD1	2.15	0.75
1:G:39:LEU:HD22	1:G:71:LEU:HD13	1.66	0.75
1:I:276:ILE:HD13	1:I:288:LEU:HD12	1.66	0.75
1:L:109:VAL:O	1:L:113:VAL:HG23	1.87	0.75
1:L:164:LEU:HD22	1:L:251:ILE:HG13	1.66	0.74
1:K:324:GLY:HA2	1:K:327:LYS:HZ3	1.51	0.74
1:D:281:GLY:O	1:D:316:LYS:NZ	2.14	0.74
1:D:110:GLN:OE1	3:D:701:HOH:O	2.06	0.73
1:J:224:GLU:OE2	3:J:701:HOH:O	2.05	0.73
1:J:104:SER:O	1:J:106:LEU:N	2.21	0.73
1:F:96:GLY:HA2	1:F:115:ILE:HD12	1.69	0.73
1:I:291:PRO:HB2	1:I:303:VAL:HB	1.71	0.73
1:J:108:LEU:O	3:J:702:HOH:O	2.06	0.72
1:B:279:LEU:HB3	1:B:280:TYR:CD1	2.23	0.72
1:D:110:GLN:NE2	3:D:707:HOH:O	2.20	0.72
1:C:230:HIS:O	1:C:234:VAL:HG23	1.90	0.72
1:E:170:ARG:HD3	1:E:184:CYS:O	1.90	0.72
1:B:300:SER:HB3	1:C:12:LEU:HD22	1.69	0.71
1:K:113:VAL:HG12	1:K:117:LYS:HE2	1.71	0.71
1:A:226:TRP:O	1:A:229:VAL:HG22	1.90	0.71
1:B:279:LEU:HB3	1:B:280:TYR:HD1	1.54	0.71
1:C:143:THR:HG23	1:C:157:VAL:HG12	1.71	0.71
1:E:243:LEU:HD22	1:F:55:ASP:HB2	1.72	0.71
1:J:155:ASN:ND2	1:K:12:LEU:HD11	2.06	0.71
1:K:324:GLY:HA2	1:K:327:LYS:HZ1	1.56	0.71
1:I:107:ASN:HB2	1:I:108:LEU:HD13	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:32:MET:HE1	1:G:60:GLU:HB3	1.73	0.71
1:B:158:ILE:HG23	1:B:299:ILE:HD11	1.72	0.71
1:A:276:ILE:HD11	1:A:286:VAL:HG13	1.73	0.70
1:D:105:ARG:O	1:D:106:LEU:HD12	1.91	0.70
1:D:189:LEU:O	1:D:197:VAL:N	2.22	0.70
1:I:61:MET:O	1:I:65:GLN:HG3	1.90	0.70
1:K:189:LEU:HD22	1:K:290:VAL:HA	1.71	0.70
1:E:105:ARG:NH2	2:E:601:MLI:H11	2.02	0.70
1:G:293:ILE:HD12	1:G:301:ASP:HB2	1.71	0.70
1:H:222:ASP:O	1:H:225:GLN:NE2	2.23	0.70
1:D:222:ASP:O	1:D:225:GLN:NE2	2.25	0.70
1:E:276:ILE:HD13	1:E:282:ILE:HD13	1.72	0.70
1:B:302:LEU:HD12	1:C:11:LEU:HD11	1.72	0.69
1:A:108:LEU:HD23	1:A:111:ARG:NH2	2.08	0.69
1:B:279:LEU:HD23	1:B:280:TYR:HE1	1.57	0.69
1:H:143:THR:HG23	1:H:157:VAL:HG12	1.73	0.69
1:J:276:ILE:HD11	1:J:288:LEU:HD12	1.72	0.69
1:C:276:ILE:HG21	1:C:288:LEU:HD12	1.72	0.69
1:B:291:PRO:HB2	1:B:303:VAL:HB	1.72	0.69
1:C:229:VAL:O	1:C:233:VAL:HG23	1.93	0.69
1:B:5:ASP:O	1:C:304:LYS:NZ	2.26	0.68
1:B:105:ARG:HH21	1:B:192:HIS:CE1	2.12	0.68
1:H:290:VAL:HG12	1:H:291:PRO:HD2	1.75	0.68
1:I:65:GLN:O	1:I:68:SER:OG	2.10	0.68
1:I:124:VAL:HG22	1:I:152:PHE:CZ	2.28	0.68
1:I:279:LEU:O	1:I:282:ILE:HG12	1.92	0.68
1:L:110:GLN:O	1:L:114:ASN:ND2	2.26	0.68
1:J:107:ASN:O	3:J:703:HOH:O	2.12	0.68
1:K:98:ARG:NH2	3:K:702:HOH:O	2.27	0.68
1:E:302:LEU:HD13	1:H:11:LEU:HD11	1.76	0.68
1:G:237:ALA:O	1:G:241:ILE:HG13	1.94	0.68
1:I:235:GLU:O	1:I:237:ALA:N	2.26	0.68
1:F:216:ASP:O	1:F:219:THR:HG22	1.92	0.68
1:I:216:ASP:O	1:I:219:THR:HG22	1.93	0.68
1:L:123:VAL:O	1:L:127:SER:OG	2.07	0.68
1:J:237:ALA:HB2	2:J:601:MLI:H11	1.76	0.68
1:D:122:ASN:ND2	3:D:709:HOH:O	2.26	0.67
1:C:3:LEU:HD13	1:D:214:HIS:HB2	1.75	0.67
1:L:276:ILE:HG21	1:L:288:LEU:HB2	1.74	0.67
1:L:230:HIS:O	1:L:234:VAL:HG23	1.95	0.67
1:J:9:TYR:HB2	1:K:304:LYS:HE2	1.74	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:224:GLU:HG2	3:A:728:HOH:O	1.95	0.67
1:F:293:ILE:HD12	1:F:301:ASP:HB2	1.74	0.67
1:C:219:THR:HB	1:C:221:LYS:HD2	1.75	0.67
1:C:274:THR:HB	1:C:299:ILE:HD13	1.76	0.67
1:H:21:LYS:NZ	1:H:46:GLU:OE1	2.23	0.67
1:J:285:ASP:HB2	1:J:323:TRP:HZ3	1.60	0.67
1:F:12:LEU:HD11	1:G:155:ASN:ND2	2.09	0.66
1:K:224:GLU:HB3	1:K:226:TRP:CD1	2.30	0.66
1:L:46:GLU:HG3	1:L:75:LYS:HB3	1.77	0.66
1:B:148:LYS:HG2	1:B:331:PHE:CZ	2.30	0.66
1:I:141:ILE:O	1:I:145:VAL:HG23	1.94	0.66
1:L:316:LYS:HZ3	1:L:317:LYS:CD	2.08	0.66
1:C:29:ALA:H	1:C:98:ARG:HH22	1.43	0.66
1:J:214:HIS:CD2	1:J:216:ASP:HB2	2.29	0.66
1:C:318:SER:O	1:C:322:LEU:HD12	1.96	0.66
1:G:199:VAL:O	3:G:702:HOH:O	2.14	0.66
1:C:221:LYS:HD2	1:C:221:LYS:H	1.59	0.66
1:D:117:LYS:HE2	1:D:331:PHE:HB2	1.78	0.66
1:G:211:LYS:HD2	1:G:217:LEU:HB3	1.75	0.66
1:G:6:GLN:HG2	1:H:213:LEU:HD22	1.78	0.66
1:G:7:LEU:HG	1:G:8:ILE:HG13	1.78	0.66
1:I:270:HIS:HD2	1:I:294:LEU:HD13	1.61	0.66
1:D:103:GLU:OE2	3:D:705:HOH:O	2.14	0.66
1:G:221:LYS:HE2	1:G:223:LYS:HE2	1.78	0.66
1:A:2:THR:HB	1:A:5:ASP:OD2	1.96	0.66
1:A:302:LEU:HD13	1:D:11:LEU:HD11	1.77	0.66
1:D:308:THR:O	1:D:310:GLU:N	2.29	0.66
1:E:276:ILE:HD11	1:E:282:ILE:HG21	1.78	0.66
1:F:216:ASP:HB3	1:F:222:ASP:HB2	1.76	0.66
1:H:110:GLN:OE1	3:H:401:HOH:O	2.12	0.66
1:B:330:GLN:OE1	1:B:330:GLN:N	2.20	0.65
1:H:261:SER:HA	1:H:266:LEU:HD12	1.78	0.65
1:J:100:GLN:HG3	1:J:101:GLU:N	2.10	0.65
1:H:231:LYS:NZ	3:H:404:HOH:O	2.24	0.65
1:L:229:VAL:HA	1:L:232:GLN:HE21	1.60	0.65
1:B:21:LYS:HB3	1:B:88:SER:HA	1.78	0.65
1:A:105:ARG:HH21	2:A:601:MLI:H12	1.60	0.65
1:C:284:ASP:HB2	1:C:286:VAL:HG23	1.77	0.65
1:L:103:GLU:HG2	1:L:107:ASN:HB2	1.77	0.65
1:F:222:ASP:O	1:F:225:GLN:NE2	2.29	0.65
1:G:270:HIS:HB2	1:G:294:LEU:HD13	1.79	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:32:MET:CE	1:G:60:GLU:HB3	2.26	0.65
1:L:316:LYS:HZ1	1:L:317:LYS:HD3	1.57	0.65
1:G:32:MET:CE	1:G:60:GLU:OE1	2.29	0.65
1:L:286:VAL:HG22	1:L:287:PHE:H	1.61	0.65
1:B:154:LYS:HE3	1:C:11:LEU:HD23	1.79	0.65
1:E:25:VAL:HG22	1:E:50:VAL:CG2	2.27	0.65
1:H:237:ALA:O	1:H:241:ILE:HG13	1.96	0.65
1:A:85:THR:O	1:A:88:SER:OG	2.16	0.64
1:D:23:THR:HB	1:D:91:VAL:HG22	1.79	0.64
1:G:25:VAL:CG2	1:G:93:ILE:HD13	2.27	0.64
1:H:25:VAL:HG22	1:H:50:VAL:HG12	1.77	0.64
1:K:25:VAL:HA	1:K:50:VAL:HG23	1.79	0.64
1:G:10:ASN:ND2	1:G:12:LEU:O	2.30	0.64
1:B:302:LEU:CD1	1:C:11:LEU:HD11	2.28	0.64
1:C:277:LYS:HA	1:C:282:ILE:HG22	1.80	0.64
1:C:280:TYR:OH	1:C:305:VAL:O	2.15	0.64
1:E:168:ARG:NH1	2:E:601:MLI:O7	2.31	0.64
1:F:189:LEU:HD22	1:F:290:VAL:HA	1.78	0.64
1:F:260:GLU:CD	1:G:72:ARG:NH1	2.51	0.64
1:A:177:LEU:O	1:A:179:VAL:HG23	1.98	0.64
1:L:18:PRO:HG3	1:L:21:LYS:HD2	1.79	0.64
1:B:109:VAL:O	1:B:113:VAL:HG23	1.96	0.64
1:I:107:ASN:HB2	1:I:108:LEU:CD1	2.28	0.64
1:K:204:ASN:HA	1:K:210:LEU:HD13	1.77	0.64
1:E:199:VAL:O	3:E:701:HOH:O	2.15	0.63
1:K:58:LYS:HD3	1:L:243:LEU:HD21	1.80	0.63
1:L:277:LYS:HA	1:L:282:ILE:HG22	1.80	0.63
1:I:21:LYS:NZ	1:I:84:VAL:O	2.28	0.63
1:A:308:THR:HG1	1:A:311:GLU:H	1.46	0.63
1:F:187:TRP:CZ2	1:H:206:ALA:HA	2.34	0.62
1:L:100:GLN:HG3	1:L:101:GLU:HG2	1.80	0.62
1:E:204:ASN:HA	1:E:210:LEU:HD13	1.80	0.62
1:I:273:SER:HA	1:I:289:SER:HA	1.82	0.62
1:A:155:ASN:HB2	1:A:299:ILE:O	1.99	0.62
1:I:110:GLN:HG3	1:I:111:ARG:HG3	1.81	0.62
1:A:7:LEU:HB3	1:A:8:ILE:HD12	1.81	0.62
1:I:293:ILE:HD12	1:I:301:ASP:HB2	1.82	0.62
1:I:330:GLN:O	1:I:330:GLN:HG2	1.99	0.62
1:K:192:HIS:N	3:K:705:HOH:O	2.33	0.62
1:G:279:LEU:HD11	1:G:302:LEU:HD23	1.81	0.62
1:L:120:ILE:O	1:L:124:VAL:HG23	1.99	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:141:ILE:O	1:L:144:TYR:HB3	2.00	0.62
1:D:12:LEU:HB3	1:D:14:GLU:OE2	2.00	0.62
1:D:309:SER:HA	1:D:312:GLU:HB3	1.81	0.62
1:A:159:GLY:HA3	1:A:273:SER:HB3	1.81	0.62
1:E:224:GLU:HG2	1:I:283:LYS:HD2	1.82	0.62
1:E:276:ILE:C	1:E:276:ILE:HD12	2.20	0.62
1:G:231:LYS:HE3	1:G:235:GLU:OE1	2.00	0.62
1:C:222:ASP:OD1	1:C:224:GLU:N	2.33	0.62
1:I:308:THR:OG1	3:I:403:HOH:O	2.03	0.62
1:K:211:LYS:O	1:K:215:PRO:HA	2.00	0.62
1:A:113:VAL:HG21	1:A:329:LEU:HD11	1.82	0.61
1:D:105:ARG:O	1:D:138:PRO:HB3	2.00	0.61
1:I:270:HIS:CD2	1:I:294:LEU:HD13	2.35	0.61
1:I:189:LEU:CD2	1:I:291:PRO:HD3	2.30	0.61
1:J:99:GLN:HG3	1:J:103:GLU:O	2.00	0.61
1:D:107:ASN:O	3:D:707:HOH:O	2.16	0.61
1:D:110:GLN:NE2	3:D:703:HOH:O	2.12	0.61
1:I:233:VAL:O	1:I:236:SER:OG	2.18	0.61
1:L:48:ALA:HA	1:L:77:VAL:O	1.99	0.61
1:H:107:ASN:O	1:H:110:GLN:NE2	2.33	0.61
1:A:317:LYS:O	1:A:321:THR:HG23	2.00	0.61
1:B:301:ASP:OD1	1:C:10:ASN:ND2	2.34	0.61
1:F:153:PRO:O	1:F:155:ASN:N	2.34	0.61
1:I:304:LYS:HZ1	1:L:9:TYR:N	1.99	0.61
1:J:185:HIS:O	1:J:203:MET:HA	2.01	0.61
1:B:22:ILE:HD12	1:B:44:ALA:HB2	1.83	0.60
1:K:134:ILE:HG13	1:K:143:THR:HA	1.82	0.60
1:I:22:ILE:HG12	1:I:90:LEU:HB3	1.83	0.60
1:G:21:LYS:HB3	1:G:88:SER:HA	1.81	0.60
1:K:138:PRO:HG2	1:K:141:ILE:HB	1.83	0.60
1:K:159:GLY:HA3	1:K:273:SER:OG	2.02	0.60
1:A:240:VAL:HB	1:A:247:THR:HG22	1.82	0.60
1:A:281:GLY:O	1:A:316:LYS:HE2	2.02	0.60
1:K:194:ASP:HA	1:K:234:VAL:HG13	1.82	0.60
1:F:265:ASN:ND2	1:F:265:ASN:O	2.34	0.60
1:J:237:ALA:CB	2:J:601:MLI:H11	2.32	0.60
1:E:82:TYR:O	1:E:85:THR:HB	2.02	0.60
1:F:130:CYS:O	1:F:156:ARG:HD2	2.02	0.60
1:F:220:ASP:C	1:F:222:ASP:H	2.04	0.60
1:K:269:VAL:HA	1:K:292:CYS:O	2.02	0.60
1:A:154:LYS:NZ	1:D:11:LEU:HG	2.17	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:306:THR:O	1:F:307:LEU:HD23	2.02	0.60
1:I:14:GLU:N	1:I:14:GLU:OE2	2.32	0.60
1:I:168:ARG:NH1	1:I:237:ALA:HB2	2.17	0.60
1:K:324:GLY:CA	1:K:327:LYS:NZ	2.59	0.60
1:H:269:VAL:HA	1:H:292:CYS:O	2.01	0.60
1:H:274:THR:HA	1:H:287:PHE:CD2	2.37	0.60
1:I:239:GLU:O	1:I:243:LEU:HD13	2.01	0.60
1:C:139:VAL:HG21	1:C:161:GLY:H	1.66	0.59
1:J:270:HIS:HB2	1:J:294:LEU:HD13	1.82	0.59
1:B:300:SER:HB2	1:C:12:LEU:HD22	1.83	0.59
1:E:3:LEU:HD21	1:F:210:LEU:HD23	1.84	0.59
1:D:230:HIS:O	1:D:234:VAL:HG13	2.02	0.59
1:E:291:PRO:HG2	1:E:305:VAL:HG21	1.85	0.59
1:F:147:TRP:CZ3	1:F:148:LYS:HE3	2.38	0.59
1:G:83:ASN:OD1	1:G:84:VAL:N	2.34	0.59
1:K:1:ALA:HB2	3:K:723:HOH:O	2.00	0.59
1:K:112:ASN:HB3	1:K:142:LEU:HD11	1.85	0.59
1:L:96:GLY:HA2	1:L:115:ILE:HD12	1.85	0.59
1:B:100:GLN:HG3	1:B:101:GLU:N	2.18	0.59
1:B:145:VAL:HG22	1:B:329:LEU:HD21	1.83	0.59
1:H:16:GLN:HG3	1:H:17:THR:H	1.67	0.59
1:D:292:CYS:HB3	1:D:299:ILE:HG23	1.84	0.59
1:A:278:GLY:O	1:A:279:LEU:HG	2.03	0.59
1:E:10:ASN:HA	1:H:301:ASP:OD1	2.03	0.59
1:C:110:GLN:NE2	3:C:401:HOH:O	2.15	0.59
1:C:169:PHE:HD1	1:C:233:VAL:HG21	1.68	0.59
1:C:277:LYS:NZ	1:C:285:ASP:OD1	2.36	0.58
1:D:15:GLU:HG3	1:D:16:GLN:N	2.17	0.58
1:I:99:GLN:HA	1:I:103:GLU:HG3	1.85	0.58
1:J:34:CYS:O	1:J:38:ILE:HG13	2.02	0.58
1:K:109:VAL:HG22	1:K:138:PRO:HG3	1.85	0.58
1:L:291:PRO:HB2	1:L:303:VAL:HB	1.85	0.58
1:A:213:LEU:O	1:B:6:GLN:NE2	2.37	0.58
1:B:226:TRP:O	1:B:229:VAL:HG22	2.03	0.58
1:D:107:ASN:O	1:D:110:GLN:NE2	2.36	0.58
1:D:239:GLU:O	1:D:243:LEU:HD12	2.04	0.58
1:E:103:GLU:HG3	1:E:107:ASN:HD22	1.68	0.58
1:F:99:GLN:NE2	1:F:103:GLU:O	2.36	0.58
1:I:260:GLU:HG3	1:I:264:LYS:HE2	1.84	0.58
1:J:206:ALA:HA	1:L:187:TRP:CZ2	2.38	0.58
1:D:110:GLN:OE1	3:D:708:HOH:O	2.17	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:216:ASP:HB3	1:H:222:ASP:HB2	1.84	0.58
1:K:261:SER:HA	1:K:266:LEU:HD12	1.85	0.58
1:B:282:ILE:HD13	1:B:282:ILE:H	1.67	0.58
1:L:139:VAL:O	1:L:143:THR:OG1	2.14	0.58
1:D:52:VAL:HG23	1:D:53:ILE:HG12	1.86	0.58
1:A:205:VAL:O	1:A:208:VAL:N	2.35	0.58
1:C:21:LYS:NZ	1:C:46:GLU:OE2	2.23	0.58
1:C:219:THR:HB	1:C:221:LYS:CD	2.33	0.58
1:F:11:LEU:HD11	1:G:302:LEU:HD13	1.86	0.58
1:G:272:VAL:O	1:G:289:SER:HA	2.04	0.58
1:I:220:ASP:OD2	1:I:221:LYS:N	2.37	0.58
1:K:276:ILE:C	1:K:276:ILE:HD12	2.24	0.58
1:B:39:LEU:HD22	1:B:71:LEU:HD13	1.86	0.58
1:G:209:SER:HB3	1:G:212:THR:HG23	1.85	0.58
1:B:266:LEU:O	1:D:180:HIS:HB2	2.03	0.58
1:D:135:VAL:HA	1:D:160:SER:HB3	1.86	0.57
1:C:7:LEU:HD23	1:C:8:ILE:HG13	1.86	0.57
1:F:109:VAL:HG21	1:F:325:ILE:HG21	1.86	0.57
1:L:110:GLN:OE1	1:L:114:ASN:ND2	2.37	0.57
1:I:99:GLN:OE1	1:I:241:ILE:HD13	2.04	0.57
1:I:72:ARG:NH2	1:J:182:LEU:HD21	2.19	0.57
1:K:7:LEU:HD21	1:L:205:VAL:HB	1.86	0.57
1:B:98:ARG:HB2	1:B:99:GLN:HG2	1.85	0.57
1:B:282:ILE:HD11	1:B:316:LYS:HA	1.85	0.57
1:C:16:GLN:CG	1:C:17:THR:H	2.16	0.57
1:L:103:GLU:O	1:L:104:SER:O	2.22	0.57
1:H:274:THR:HA	1:H:287:PHE:HD2	1.69	0.57
1:I:11:LEU:O	1:I:12:LEU:HD23	2.04	0.57
1:I:99:GLN:NE2	3:I:401:HOH:O	1.71	0.57
1:B:104:SER:O	1:B:106:LEU:N	2.32	0.57
1:H:143:THR:HG23	1:H:157:VAL:CG1	2.34	0.57
1:H:248:SER:O	1:H:251:ILE:HG22	2.05	0.57
1:G:61:MET:O	1:G:65:GLN:HG3	2.04	0.57
1:H:203:MET:HE2	1:H:217:LEU:HD21	1.85	0.57
1:H:276:ILE:HG21	1:H:290:VAL:HG21	1.87	0.57
1:B:61:MET:O	1:B:65:GLN:HG3	2.05	0.57
1:G:137:ASN:ND2	2:G:601:MLI:O9	2.38	0.57
1:H:25:VAL:HG22	1:H:50:VAL:CG1	2.35	0.57
1:I:266:LEU:HD12	1:I:268:ARG:HH11	1.68	0.57
1:J:108:LEU:HA	3:J:716:HOH:O	2.05	0.57
1:K:292:CYS:HB3	1:K:299:ILE:HG23	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:50:VAL:HG11	1:B:82:TYR:CZ	2.40	0.56
1:D:276:ILE:HD11	1:D:280:TYR:CD1	2.40	0.56
1:F:141:ILE:O	1:F:145:VAL:HG23	2.05	0.56
1:I:151:GLY:O	1:I:152:PHE:CD1	2.58	0.56
1:L:308:THR:HG22	1:L:310:GLU:H	1.69	0.56
1:E:22:ILE:HD12	1:E:44:ALA:HB2	1.86	0.56
1:L:24:VAL:HB	1:L:49:LEU:HD23	1.87	0.56
1:C:193:GLY:O	1:C:195:SER:N	2.38	0.56
1:E:30:VAL:H	1:E:98:ARG:NH2	2.03	0.56
1:E:284:ASP:O	1:E:286:VAL:N	2.33	0.56
1:F:268:ARG:HD3	1:H:182:LEU:HD23	1.87	0.56
1:B:144:TYR:CE2	1:B:326:GLN:HB3	2.40	0.56
1:C:260:GLU:HG3	1:C:264:LYS:HE2	1.86	0.56
1:I:155:ASN:HB2	1:I:299:ILE:O	2.06	0.56
1:J:141:ILE:O	1:J:145:VAL:HG23	2.06	0.56
1:B:148:LYS:HG2	1:B:331:PHE:CE2	2.40	0.56
1:L:279:LEU:HB3	1:L:280:TYR:CD2	2.40	0.56
1:E:28:GLY:HA3	1:E:98:ARG:HH22	1.71	0.56
1:F:109:VAL:HG23	1:F:141:ILE:HG21	1.88	0.56
1:C:125:LYS:HD3	1:C:126:TYR:CE2	2.41	0.56
1:D:228:GLU:O	1:D:232:GLN:HG3	2.06	0.56
1:H:103:GLU:OE1	3:H:402:HOH:O	2.18	0.56
1:I:155:ASN:ND2	1:I:156:ARG:HG3	2.19	0.56
1:L:293:ILE:HD12	1:L:301:ASP:HB2	1.87	0.56
1:I:14:GLU:CD	1:I:14:GLU:H	2.09	0.56
1:C:214:HIS:HB3	1:D:3:LEU:HD13	1.88	0.56
1:E:3:LEU:HD13	1:F:214:HIS:HB2	1.88	0.56
1:I:139:VAL:O	1:I:143:THR:OG1	2.17	0.56
1:K:320:ASP:O	1:K:324:GLY:N	2.39	0.56
1:A:180:HIS:HB2	1:C:266:LEU:O	2.06	0.56
1:F:249:TRP:O	1:F:253:LEU:HD12	2.06	0.56
1:L:21:LYS:HG3	1:L:46:GLU:HB3	1.88	0.56
1:G:284:ASP:O	1:G:286:VAL:N	2.33	0.55
1:B:220:ASP:CG	1:B:227:LYS:NZ	2.59	0.55
1:C:228:GLU:O	1:C:231:LYS:HG2	2.06	0.55
1:E:18:PRO:HB2	1:E:45:ASP:OD1	2.06	0.55
1:G:105:ARG:NE	2:G:601:MLI:O8	2.38	0.55
1:D:190:GLY:O	1:D:288:LEU:HB2	2.05	0.55
1:E:130:CYS:O	1:E:156:ARG:HD2	2.05	0.55
1:F:61:MET:O	1:F:65:GLN:HG3	2.06	0.55
1:G:25:VAL:HG21	1:G:93:ILE:HD13	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:197:VAL:HG21	1:G:315:LEU:HA	1.88	0.55
1:J:308:THR:O	1:J:311:GLU:N	2.39	0.55
1:L:131:LYS:HD3	1:L:296:GLN:O	2.06	0.55
1:A:82:TYR:O	1:A:85:THR:HB	2.06	0.55
1:E:140:ASP:OD1	1:E:273:SER:OG	2.23	0.55
1:L:121:PRO:O	1:L:125:LYS:HG2	2.07	0.55
1:F:14:GLU:CD	1:F:14:GLU:H	2.10	0.55
1:F:82:TYR:OH	1:F:119:ILE:HG23	2.06	0.55
1:I:203:MET:HE1	1:I:226:TRP:CZ3	2.42	0.55
1:G:69:LEU:HD21	1:H:170:ARG:NH2	2.21	0.55
1:I:109:VAL:O	1:I:113:VAL:HG23	2.05	0.55
1:C:141:ILE:HG23	1:C:326:GLN:HG2	1.88	0.55
1:C:125:LYS:NZ	1:C:126:TYR:OH	2.37	0.55
1:I:23:THR:HB	1:I:91:VAL:HG22	1.88	0.55
1:K:173:MET:HG2	1:K:184:CYS:HB3	1.87	0.55
1:L:44:ALA:O	1:L:73:THR:HG23	2.06	0.55
1:C:163:ASN:HA	1:C:271:PRO:HG2	1.88	0.55
1:G:93:ILE:HD12	1:G:119:ILE:HG21	1.88	0.55
1:I:85:THR:HG21	1:I:123:VAL:HG23	1.89	0.55
1:I:329:LEU:HB3	1:I:331:PHE:CE1	2.42	0.55
1:C:129:ASN:HA	1:C:156:ARG:HH12	1.72	0.55
1:E:169:PHE:HD2	1:E:188:VAL:CG2	2.19	0.55
1:F:82:TYR:O	1:F:85:THR:HB	2.07	0.55
1:G:219:THR:HG22	1:G:221:LYS:N	2.22	0.55
1:E:141:ILE:HD11	1:E:322:LEU:HD22	1.88	0.54
1:I:147:TRP:NE1	1:I:152:PHE:O	2.40	0.54
1:D:276:ILE:HD11	1:D:280:TYR:HD1	1.71	0.54
1:G:15:GLU:O	1:G:16:GLN:OE1	2.26	0.54
1:B:292:CYS:HB3	1:B:299:ILE:HG23	1.90	0.54
1:E:241:ILE:HG23	1:E:245:GLY:O	2.08	0.54
1:I:21:LYS:NZ	1:I:46:GLU:OE2	2.36	0.54
1:K:98:ARG:HB2	3:K:722:HOH:O	2.07	0.54
1:K:324:GLY:HA2	1:K:327:LYS:CE	2.36	0.54
1:A:72:ARG:NE	1:D:260:GLU:OE2	2.41	0.54
1:B:290:VAL:HG11	1:B:302:LEU:HD23	1.89	0.54
1:F:19:GLN:O	1:F:89:LYS:HE2	2.07	0.54
1:G:105:ARG:HH12	1:G:193:GLY:HA2	1.72	0.54
1:L:18:PRO:CG	1:L:21:LYS:HD2	2.38	0.54
1:A:205:VAL:O	1:A:207:GLY:N	2.40	0.54
1:C:276:ILE:HG12	1:C:276:ILE:O	2.08	0.54
1:C:16:GLN:HG2	1:C:17:THR:H	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:244:LYS:HE2	1:H:60:GLU:CD	2.28	0.54
1:I:110:GLN:HG3	1:I:111:ARG:N	2.23	0.54
1:I:292:CYS:SG	1:I:299:ILE:HD13	2.47	0.54
1:J:280:TYR:HB2	1:J:282:ILE:HD12	1.90	0.54
1:K:137:ASN:HD21	2:K:601:MLI:C3	2.21	0.54
1:F:269:VAL:HA	1:F:292:CYS:O	2.08	0.54
1:H:130:CYS:O	1:H:156:ARG:NH1	2.34	0.54
1:C:278:GLY:N	1:C:282:ILE:O	2.32	0.54
1:G:138:PRO:HG2	1:G:141:ILE:HB	1.89	0.54
1:G:25:VAL:HB	1:G:93:ILE:HD13	1.90	0.54
1:J:25:VAL:HG13	1:J:50:VAL:HG13	1.89	0.54
1:C:216:ASP:O	1:C:219:THR:OG1	2.25	0.53
1:D:277:LYS:HD2	1:D:283:LYS:O	2.09	0.53
1:E:180:HIS:HB2	1:G:266:LEU:O	2.09	0.53
1:F:266:LEU:O	1:H:180:HIS:HB2	2.08	0.53
1:K:293:ILE:HD13	1:K:301:ASP:HB2	1.89	0.53
1:A:72:ARG:HH11	1:D:260:GLU:CD	2.08	0.53
1:D:27:VAL:HG23	1:D:56:LYS:HE3	1.90	0.53
1:F:105:ARG:C	1:F:107:ASN:H	2.11	0.53
1:C:203:MET:HE2	1:C:210:LEU:HD12	1.91	0.53
1:J:108:LEU:HG	1:J:111:ARG:HD3	1.91	0.53
1:L:205:VAL:O	1:L:208:VAL:HG12	2.08	0.53
1:H:244:LYS:O	1:H:244:LYS:HG2	2.09	0.53
1:D:197:VAL:HG22	1:D:314:ARG:HD3	1.89	0.53
1:D:321:THR:O	1:D:325:ILE:HD12	2.08	0.53
1:B:10:ASN:O	1:B:11:LEU:HD12	2.08	0.53
1:C:251:ILE:HD12	1:C:251:ILE:N	2.24	0.53
1:D:279:LEU:HD11	1:D:302:LEU:HD23	1.90	0.53
1:K:239:GLU:O	1:K:243:LEU:HD12	2.09	0.53
1:A:58:LYS:HG2	1:B:243:LEU:HD13	1.90	0.53
1:B:22:ILE:HG21	1:B:38:ILE:HD13	1.89	0.53
1:J:291:PRO:HB2	1:J:303:VAL:HB	1.91	0.53
1:A:272:VAL:HG11	1:A:294:LEU:HD11	1.91	0.53
1:B:14:GLU:OE1	1:B:16:GLN:N	2.41	0.53
1:D:14:GLU:O	1:D:15:GLU:HB3	2.08	0.53
1:D:216:ASP:HB3	1:D:222:ASP:HB2	1.91	0.53
1:E:293:ILE:HD12	1:E:301:ASP:HB2	1.91	0.53
1:J:204:ASN:HA	1:J:210:LEU:HD13	1.91	0.53
1:L:269:VAL:HA	1:L:292:CYS:O	2.09	0.53
1:A:308:THR:OG1	1:A:311:GLU:N	2.41	0.53
1:I:145:VAL:HG12	1:I:149:ILE:CD1	2.40	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:99:GLN:HG2	1:J:100:GLN:N	2.16	0.53
1:L:103:GLU:HG2	1:L:107:ASN:CB	2.39	0.53
1:A:44:ALA:O	1:A:73:THR:HG23	2.09	0.52
1:A:276:ILE:CG1	1:A:288:LEU:HD12	2.33	0.52
1:B:56:LYS:NZ	3:B:404:HOH:O	2.38	0.52
1:C:141:ILE:O	1:C:145:VAL:HG23	2.09	0.52
1:E:120:ILE:O	1:E:124:VAL:HG23	2.09	0.52
1:F:206:ALA:HA	1:H:187:TRP:CZ2	2.43	0.52
1:G:25:VAL:HG13	1:G:50:VAL:HG23	1.90	0.52
1:D:282:ILE:HG13	1:D:316:LYS:HE3	1.91	0.52
1:H:129:ASN:HA	1:H:156:ARG:NH1	2.24	0.52
1:H:179:VAL:HG23	1:H:184:CYS:SG	2.48	0.52
1:K:310:GLU:OE1	1:K:314:ARG:HD2	2.10	0.52
1:D:21:LYS:HB3	1:D:88:SER:HA	1.90	0.52
1:H:164:LEU:HD22	1:H:251:ILE:HD12	1.90	0.52
1:L:2:THR:HB	1:L:5:ASP:HB2	1.90	0.52
1:L:190:GLY:HA2	1:L:288:LEU:HD23	1.91	0.52
1:D:168:ARG:HH22	2:D:601:MLI:C2	2.22	0.52
1:I:269:VAL:HA	1:I:292:CYS:O	2.10	0.52
1:B:330:GLN:O	1:B:330:GLN:HG2	2.08	0.52
1:F:44:ALA:O	1:F:73:THR:HG23	2.09	0.52
1:F:284:ASP:O	1:F:286:VAL:N	2.41	0.52
1:I:238:TYR:HA	1:I:241:ILE:HB	1.92	0.52
1:I:286:VAL:HG11	1:I:319:ALA:HA	1.92	0.52
1:J:304:LYS:HE2	1:K:9:TYR:HB2	1.92	0.52
1:K:21:LYS:HB3	1:K:88:SER:HA	1.91	0.52
1:H:123:VAL:HG11	1:H:132:LEU:HD21	1.92	0.52
1:I:238:TYR:O	1:I:242:LYS:N	2.38	0.52
1:K:21:LYS:HG3	1:K:46:GLU:HB3	1.90	0.52
1:A:116:PHE:CE2	1:A:142:LEU:HB3	2.44	0.52
1:F:141:ILE:HG13	1:F:322:LEU:CD2	2.40	0.52
1:G:25:VAL:HG21	1:G:93:ILE:CD1	2.39	0.52
1:J:304:LYS:HE3	1:K:5:ASP:O	2.10	0.52
1:L:41:LYS:HB3	1:L:43:LEU:HG	1.92	0.52
1:G:291:PRO:HB2	1:G:303:VAL:HB	1.90	0.52
1:A:18:PRO:HB2	1:A:21:LYS:HB2	1.92	0.52
1:B:153:PRO:HD2	1:B:156:ARG:HH21	1.75	0.52
1:B:236:SER:O	1:B:240:VAL:HG23	2.09	0.52
1:E:269:VAL:HA	1:E:292:CYS:O	2.10	0.52
1:B:136:SER:O	1:B:142:LEU:HD12	2.10	0.52
1:D:105:ARG:NH2	2:D:601:MLI:O8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:15:GLU:O	1:G:16:GLN:HB2	2.09	0.52
1:I:286:VAL:HG21	1:I:319:ALA:O	2.10	0.52
1:J:206:ALA:HB3	1:L:303:VAL:HG11	1.90	0.51
1:K:106:LEU:O	1:K:109:VAL:HG23	2.10	0.51
1:K:108:LEU:HD23	1:K:111:ARG:NH2	2.25	0.51
1:A:113:VAL:HG12	1:A:117:LYS:HE2	1.93	0.51
1:B:154:LYS:HD3	1:B:275:MET:CE	2.37	0.51
1:K:144:TYR:HB2	1:K:287:PHE:CD1	2.45	0.51
1:B:7:LEU:HD23	1:B:8:ILE:HG13	1.92	0.51
1:K:10:ASN:ND2	1:K:13:LYS:HE2	2.25	0.51
1:K:168:ARG:HD2	3:K:716:HOH:O	2.10	0.51
1:G:41:LYS:HB2	1:G:41:LYS:HZ3	1.75	0.51
1:J:230:HIS:O	1:J:233:VAL:HG12	2.10	0.51
1:L:110:GLN:HA	1:L:113:VAL:HB	1.91	0.51
1:L:260:GLU:HG2	1:L:264:LYS:HE2	1.92	0.51
1:C:159:GLY:HA3	1:C:273:SER:HB2	1.91	0.51
1:E:265:ASN:HB2	1:E:296:GLN:HB3	1.91	0.51
1:G:137:ASN:HD21	2:G:601:MLI:C3	2.24	0.51
1:H:96:GLY:O	3:H:403:HOH:O	2.19	0.51
1:D:34:CYS:O	1:D:38:ILE:HG13	2.10	0.51
1:E:105:ARG:HH21	2:E:601:MLI:C1	2.13	0.51
1:J:251:ILE:HA	1:J:254:SER:HB3	1.93	0.51
1:K:13:LYS:O	1:K:14:GLU:O	2.28	0.51
1:A:228:GLU:O	1:A:232:GLN:HG3	2.11	0.51
1:F:57:LEU:HD21	1:F:79:GLY:N	2.25	0.51
1:F:61:MET:HB2	1:F:78:SER:HB3	1.93	0.51
1:H:82:TYR:O	1:H:85:THR:HB	2.11	0.51
1:I:236:SER:O	1:I:240:VAL:HG23	2.10	0.51
1:L:144:TYR:CE2	1:L:326:GLN:HB3	2.31	0.51
1:L:251:ILE:HD12	1:L:251:ILE:H	1.74	0.51
1:A:153:PRO:HB2	1:A:155:ASN:OD1	2.11	0.51
1:I:163:ASN:HA	1:I:271:PRO:HD2	1.92	0.51
1:C:278:GLY:C	1:C:279:LEU:HD12	2.31	0.51
1:E:63:ASP:O	1:F:250:ALA:HB2	2.11	0.51
1:E:208:VAL:HG21	1:G:305:VAL:HA	1.93	0.51
1:B:220:ASP:HA	1:B:227:LYS:HZ3	1.75	0.50
1:I:180:HIS:HB2	1:K:266:LEU:O	2.11	0.50
1:J:50:VAL:HG21	1:J:82:TYR:CE1	2.47	0.50
1:L:105:ARG:O	1:L:138:PRO:HB3	2.11	0.50
1:C:200:TRP:HB3	1:C:217:LEU:HD23	1.92	0.50
1:C:273:SER:HA	1:C:288:LEU:O	2.10	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:104:SER:O	1:E:107:ASN:HB2	2.11	0.50
1:F:144:TYR:HB2	1:F:287:PHE:CD1	2.46	0.50
1:G:244:LYS:HE2	1:H:60:GLU:OE1	2.11	0.50
1:H:14:GLU:O	1:H:15:GLU:HG3	2.11	0.50
1:H:180:HIS:CE1	1:H:182:LEU:HD13	2.46	0.50
1:K:63:ASP:OD2	1:L:244:LYS:NZ	2.43	0.50
1:B:45:ASP:O	1:B:74:PRO:HD2	2.11	0.50
1:C:319:ALA:HA	1:C:322:LEU:HD13	1.94	0.50
1:D:20:ASN:HB3	1:D:263:MET:HE3	1.92	0.50
1:H:292:CYS:SG	1:H:302:LEU:HD23	2.51	0.50
1:I:145:VAL:HG12	1:I:149:ILE:HD12	1.93	0.50
1:K:25:VAL:CG2	1:K:93:ILE:HD13	2.41	0.50
1:A:277:LYS:HD2	1:A:285:ASP:OD1	2.11	0.50
1:D:14:GLU:HG2	1:D:15:GLU:N	2.27	0.50
1:D:108:LEU:HA	3:D:701:HOH:O	2.10	0.50
1:L:118:PHE:CE1	1:L:122:ASN:ND2	2.80	0.50
1:L:173:MET:SD	1:L:184:CYS:HB3	2.51	0.50
1:L:279:LEU:HB3	1:L:280:TYR:HD2	1.76	0.50
1:C:49:LEU:HB2	1:C:78:SER:HB2	1.94	0.50
1:E:327:LYS:NZ	1:E:327:LYS:HB3	2.27	0.50
1:F:300:SER:O	1:G:11:LEU:HB2	2.12	0.50
1:H:226:TRP:CE3	1:H:229:VAL:HG21	2.47	0.50
1:I:153:PRO:HG2	1:I:156:ARG:HD3	1.93	0.50
1:J:189:LEU:HD11	1:J:291:PRO:HD3	1.94	0.50
1:J:316:LYS:HD3	1:J:320:ASP:CG	2.31	0.50
1:D:61:MET:HB2	1:D:78:SER:HB3	1.92	0.50
1:C:168:ARG:HG2	1:D:66:HIS:HB3	1.94	0.50
1:D:19:GLN:N	1:D:45:ASP:OD2	2.44	0.50
1:E:3:LEU:HD23	1:F:226:TRP:CZ2	2.46	0.50
1:A:214:HIS:CE1	1:A:216:ASP:HB2	2.47	0.50
1:C:48:ALA:HA	1:C:77:VAL:O	2.11	0.50
1:H:170:ARG:NH2	3:H:406:HOH:O	2.43	0.50
1:I:185:HIS:O	1:I:203:MET:HA	2.11	0.50
1:I:303:VAL:HG11	1:K:206:ALA:HB3	1.93	0.50
1:E:179:VAL:HB	1:E:184:CYS:SG	2.52	0.50
1:F:176:ARG:HD2	1:F:226:TRP:CH2	2.47	0.50
1:H:50:VAL:HG23	1:H:79:GLY:O	2.12	0.50
1:I:322:LEU:O	1:I:326:GLN:HB2	2.11	0.50
1:L:180:HIS:ND1	1:L:182:LEU:HB2	2.27	0.50
1:L:290:VAL:HG22	1:L:291:PRO:HD2	1.93	0.50
1:A:266:LEU:O	1:C:180:HIS:HB2	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:135:VAL:HA	1:B:160:SER:OG	2.12	0.49
1:B:154:LYS:HE3	1:C:11:LEU:CD2	2.40	0.49
1:C:251:ILE:HD12	1:C:251:ILE:H	1.75	0.49
1:D:176:ARG:HG3	1:D:226:TRP:CH2	2.47	0.49
1:E:115:ILE:HG22	1:E:119:ILE:CD1	2.42	0.49
1:G:257:ASP:OD2	1:G:270:HIS:HE1	1.95	0.49
1:K:276:ILE:C	1:K:276:ILE:CD1	2.80	0.49
1:B:111:ARG:H	1:B:111:ARG:HD3	1.77	0.49
1:E:198:PRO:HD3	1:E:230:HIS:CE1	2.46	0.49
1:J:99:GLN:CG	1:J:100:GLN:H	2.17	0.49
1:J:120:ILE:O	1:J:124:VAL:HG13	2.12	0.49
1:C:171:TYR:O	1:C:175:GLU:OE1	2.29	0.49
1:E:271:PRO:HA	1:E:290:VAL:O	2.12	0.49
1:K:293:ILE:N	1:K:293:ILE:HD12	2.27	0.49
1:A:21:LYS:NZ	1:A:86:ALA:O	2.36	0.49
1:B:269:VAL:HA	1:B:292:CYS:O	2.12	0.49
1:C:17:THR:HG22	1:C:87:ASN:ND2	2.27	0.49
1:H:288:LEU:HD13	1:H:315:LEU:HD11	1.94	0.49
1:D:14:GLU:CD	1:D:14:GLU:H	2.15	0.49
1:G:225:GLN:O	1:G:228:GLU:HB2	2.12	0.49
1:L:96:GLY:HA2	1:L:115:ILE:CD1	2.42	0.49
1:F:153:PRO:C	1:F:155:ASN:H	2.16	0.49
1:F:284:ASP:O	1:F:286:VAL:HG23	2.13	0.49
1:L:311:GLU:O	1:L:315:LEU:HB2	2.13	0.49
1:A:5:ASP:O	1:D:304:LYS:NZ	2.39	0.49
1:A:280:TYR:CE1	1:A:307:LEU:HD12	2.48	0.49
1:D:203:MET:HB3	1:D:210:LEU:HD12	1.93	0.49
1:H:32:MET:SD	1:H:60:GLU:HB3	2.52	0.49
1:F:109:VAL:O	1:F:113:VAL:HG23	2.13	0.49
1:F:220:ASP:C	1:F:222:ASP:N	2.66	0.49
1:G:243:LEU:HB3	1:H:55:ASP:O	2.13	0.49
1:H:216:ASP:OD1	1:H:221:LYS:HB2	2.13	0.49
1:L:225:GLN:O	1:L:228:GLU:N	2.33	0.49
1:L:320:ASP:O	1:L:322:LEU:N	2.46	0.49
1:A:33:ALA:O	1:A:36:ILE:HG22	2.13	0.49
1:G:26:GLY:O	1:G:31:GLY:HA3	2.13	0.49
1:H:124:VAL:C	1:H:126:TYR:H	2.16	0.49
1:K:25:VAL:HG21	1:K:93:ILE:HD13	1.95	0.49
1:L:10:ASN:C	1:L:11:LEU:HD12	2.33	0.49
1:L:276:ILE:HD11	1:L:282:ILE:HG12	1.95	0.49
1:A:125:LYS:NZ	3:A:701:HOH:O	2.17	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:141:ILE:O	1:B:144:TYR:HB3	2.13	0.48
1:C:46:GLU:HA	1:C:75:LYS:O	2.12	0.48
1:C:180:HIS:CE1	1:C:182:LEU:HD12	2.48	0.48
1:D:16:GLN:N	3:D:710:HOH:O	2.46	0.48
1:D:57:LEU:HG	1:D:78:SER:HB2	1.95	0.48
1:D:103:GLU:OE1	1:D:108:LEU:HD11	2.13	0.48
1:I:280:TYR:HB3	1:I:312:GLU:HG3	1.95	0.48
1:A:154:LYS:HZ3	1:D:11:LEU:HG	1.78	0.48
1:H:95:ALA:O	1:H:136:SER:OG	2.24	0.48
1:J:26:GLY:O	1:J:31:GLY:HA3	2.13	0.48
1:B:127:SER:HB3	1:B:130:CYS:HB3	1.96	0.48
1:C:105:ARG:NH1	3:C:406:HOH:O	2.46	0.48
1:D:107:ASN:ND2	3:D:702:HOH:O	2.10	0.48
1:I:281:GLY:C	1:I:282:ILE:HD13	2.34	0.48
1:J:292:CYS:HB3	1:J:299:ILE:HG23	1.95	0.48
1:D:231:LYS:HD3	1:D:235:GLU:OE1	2.12	0.48
1:J:118:PHE:O	1:J:121:PRO:HD2	2.13	0.48
1:J:135:VAL:CG1	1:J:251:ILE:HD11	2.43	0.48
1:K:291:PRO:HB2	1:K:303:VAL:HB	1.96	0.48
1:K:276:ILE:HD11	1:K:282:ILE:HG21	1.95	0.48
1:L:134:ILE:HG22	1:L:139:VAL:HG23	1.94	0.48
1:B:154:LYS:CD	1:B:275:MET:CE	2.91	0.48
1:B:282:ILE:HD13	1:B:282:ILE:N	2.28	0.48
1:F:274:THR:OG1	1:F:275:MET:N	2.46	0.48
1:I:106:LEU:O	3:I:405:HOH:O	2.20	0.48
1:I:205:VAL:HB	1:J:7:LEU:HD11	1.96	0.48
1:I:329:LEU:HD23	1:I:331:PHE:CE1	2.48	0.48
1:K:324:GLY:CA	1:K:327:LYS:HZ1	2.23	0.48
1:B:97:ALA:O	1:B:108:LEU:HD13	2.14	0.48
1:B:274:THR:HB	1:B:299:ILE:CD1	2.37	0.48
1:E:187:TRP:CZ2	1:G:206:ALA:HA	2.49	0.48
1:G:117:LYS:HE2	1:G:331:PHE:HA	1.95	0.48
1:G:143:THR:HG22	1:G:287:PHE:CE2	2.47	0.48
1:I:214:HIS:CD2	1:I:216:ASP:HB2	2.49	0.48
1:D:104:SER:C	1:D:106:LEU:H	2.17	0.48
1:E:115:ILE:HG22	1:E:119:ILE:HD12	1.95	0.48
1:J:112:ASN:HB3	1:J:142:LEU:HD21	1.95	0.48
1:K:19:GLN:O	1:K:89:LYS:HE2	2.14	0.48
1:B:282:ILE:CD1	1:B:316:LYS:HA	2.44	0.48
1:C:241:ILE:HG13	1:C:247:THR:HG23	1.95	0.48
1:D:164:LEU:HD12	1:D:167:ALA:HB3	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:214:HIS:O	1:H:217:LEU:N	2.46	0.48
1:J:187:TRP:CZ3	1:J:271:PRO:HD3	2.49	0.48
1:A:130:CYS:O	1:A:156:ARG:HD2	2.14	0.48
1:A:218:GLY:O	1:A:219:THR:O	2.30	0.48
1:C:109:VAL:O	1:C:113:VAL:HG23	2.14	0.48
1:D:185:HIS:O	1:D:203:MET:HA	2.13	0.48
1:J:78:SER:O	1:J:84:VAL:HG21	2.14	0.48
1:K:3:LEU:HD21	1:L:210:LEU:HD23	1.95	0.48
1:A:66:HIS:CE1	1:B:236:SER:HB3	2.49	0.47
1:B:204:ASN:HA	1:B:210:LEU:HD13	1.96	0.47
1:C:97:ALA:N	3:C:403:HOH:O	2.25	0.47
1:C:284:ASP:HB2	1:C:286:VAL:CG2	2.44	0.47
1:A:269:VAL:HA	1:A:292:CYS:O	2.14	0.47
1:C:112:ASN:HB3	1:C:142:LEU:HD21	1.96	0.47
1:E:322:LEU:HD23	1:E:322:LEU:HA	1.73	0.47
1:F:109:VAL:CG2	1:F:141:ILE:HG21	2.44	0.47
1:A:230:HIS:HA	1:A:233:VAL:HG12	1.95	0.47
1:A:308:THR:HG23	1:A:311:GLU:OE2	2.13	0.47
1:H:46:GLU:OE2	1:H:75:LYS:HD3	2.14	0.47
1:K:125:LYS:HD3	1:K:126:TYR:CE2	2.50	0.47
1:L:138:PRO:O	1:L:142:LEU:HG	2.14	0.47
1:C:147:TRP:CD1	1:C:152:PHE:O	2.67	0.47
1:D:61:MET:O	1:D:65:GLN:HG3	2.15	0.47
1:D:216:ASP:O	1:D:219:THR:HB	2.14	0.47
1:E:154:LYS:HE3	1:E:275:MET:HE2	1.96	0.47
1:G:25:VAL:CB	1:G:93:ILE:HD13	2.43	0.47
1:H:323:TRP:O	1:H:327:LYS:HG2	2.14	0.47
1:I:11:LEU:HD11	1:L:302:LEU:HD13	1.95	0.47
1:L:287:PHE:O	1:L:288:LEU:HD12	2.14	0.47
1:B:279:LEU:HD23	1:B:280:TYR:CE1	2.43	0.47
1:C:21:LYS:HD2	1:C:46:GLU:CD	2.34	0.47
1:C:106:LEU:HD21	1:C:141:ILE:HD11	1.95	0.47
1:H:188:VAL:CG1	1:H:196:SER:HB3	2.43	0.47
1:L:158:ILE:HG23	1:L:299:ILE:HD11	1.96	0.47
1:L:318:SER:HA	1:L:321:THR:HB	1.96	0.47
1:C:147:TRP:NE1	1:C:152:PHE:O	2.48	0.47
1:C:194:ASP:H	1:C:234:VAL:CG1	2.27	0.47
1:E:39:LEU:HD11	1:E:64:LEU:HD13	1.97	0.47
1:G:224:GLU:O	1:G:225:GLN:HB2	2.15	0.47
1:H:21:LYS:HB3	1:H:88:SER:HA	1.96	0.47
1:H:108:LEU:O	1:H:112:ASN:HB2	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:281:GLY:O	1:A:316:LYS:CE	2.63	0.47
1:B:100:GLN:HG3	1:B:101:GLU:H	1.78	0.47
1:C:61:MET:O	1:C:65:GLN:HG3	2.15	0.47
1:D:109:VAL:O	1:D:113:VAL:HG23	2.14	0.47
1:E:65:GLN:HB3	1:F:171:TYR:CZ	2.49	0.47
1:F:91:VAL:HB	1:F:132:LEU:HD23	1.97	0.47
1:H:29:ALA:N	1:H:98:ARG:HH12	2.12	0.47
1:I:198:PRO:HG3	1:I:230:HIS:CG	2.49	0.47
1:L:108:LEU:HD12	1:L:137:ASN:O	2.14	0.47
1:L:166:SER:O	1:L:170:ARG:HG3	2.14	0.47
1:L:179:VAL:CG1	1:L:183:SER:HB2	2.45	0.47
1:B:217:LEU:HD12	1:B:226:TRP:CD1	2.50	0.47
1:C:11:LEU:N	1:C:11:LEU:HD12	2.30	0.47
1:E:191:GLU:O	1:E:193:GLY:N	2.48	0.47
1:G:47:LEU:HB3	1:G:76:ILE:HG12	1.97	0.47
1:G:224:GLU:HB3	1:G:226:TRP:CD1	2.49	0.47
1:H:103:GLU:OE2	1:H:108:LEU:HD21	2.15	0.47
1:H:105:ARG:HD3	1:H:137:ASN:HB3	1.95	0.47
1:I:327:LYS:C	1:I:329:LEU:H	2.18	0.47
1:K:109:VAL:O	1:K:113:VAL:HG23	2.15	0.47
1:K:230:HIS:O	1:K:234:VAL:HG23	2.15	0.47
1:A:112:ASN:ND2	1:A:137:ASN:O	2.48	0.47
1:B:187:TRP:CZ2	1:D:206:ALA:HA	2.50	0.47
1:B:329:LEU:HD12	1:B:329:LEU:HA	1.69	0.47
1:F:109:VAL:HG21	1:F:325:ILE:CG2	2.45	0.47
1:G:105:ARG:HD3	1:G:137:ASN:ND2	2.30	0.47
1:I:3:LEU:HD12	1:I:3:LEU:HA	1.63	0.47
1:I:110:GLN:O	1:I:330:GLN:NE2	2.48	0.47
1:K:55:ASP:O	1:L:243:LEU:HG	2.15	0.47
1:L:100:GLN:HG3	1:L:101:GLU:CG	2.43	0.47
1:A:4:LYS:O	1:A:4:LYS:HG2	2.14	0.47
1:A:219:THR:O	1:A:222:ASP:HB2	2.15	0.47
1:D:104:SER:O	1:D:106:LEU:N	2.48	0.47
1:K:194:ASP:HA	1:K:234:VAL:CG1	2.43	0.47
1:A:269:VAL:HG22	1:A:293:ILE:HG13	1.96	0.46
1:A:292:CYS:HB3	1:A:299:ILE:HG23	1.96	0.46
1:I:198:PRO:HG2	1:I:200:TRP:CZ2	2.50	0.46
1:C:317:LYS:O	1:C:321:THR:HG23	2.16	0.46
1:E:163:ASN:OD1	1:E:271:PRO:HD2	2.16	0.46
1:F:140:ASP:OD2	1:F:191:GLU:HA	2.16	0.46
1:B:182:LEU:HD13	1:D:268:ARG:HD3	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:48:ALA:HA	1:E:77:VAL:O	2.15	0.46
1:E:221:LYS:O	1:E:221:LYS:HG3	2.15	0.46
1:G:99:GLN:HG3	1:G:241:ILE:CD1	2.45	0.46
1:I:116:PHE:CE1	1:I:142:LEU:HD22	2.50	0.46
1:L:14:GLU:O	1:L:16:GLN:N	2.49	0.46
1:E:191:GLU:HG3	1:E:322:LEU:HD11	1.96	0.46
1:H:32:MET:HE1	1:H:64:LEU:HD11	1.98	0.46
1:H:61:MET:O	1:H:65:GLN:HG3	2.15	0.46
1:H:129:ASN:HA	1:H:156:ARG:HH12	1.79	0.46
1:I:173:MET:SD	1:I:184:CYS:HB3	2.56	0.46
1:J:100:GLN:HG3	1:J:101:GLU:H	1.78	0.46
1:L:110:GLN:HE21	1:L:329:LEU:HA	1.78	0.46
1:L:193:GLY:O	1:L:234:VAL:HG13	2.15	0.46
1:B:191:GLU:OE2	1:B:322:LEU:HD11	2.15	0.46
1:D:276:ILE:HG21	1:D:288:LEU:HG	1.97	0.46
1:E:208:VAL:CG2	1:G:305:VAL:HA	2.46	0.46
1:E:279:LEU:HD11	1:E:302:LEU:HD23	1.97	0.46
1:F:12:LEU:HB3	1:F:14:GLU:OE2	2.15	0.46
1:F:46:GLU:CD	1:F:75:LYS:HD2	2.36	0.46
1:G:262:ILE:HG13	1:G:294:LEU:HD23	1.97	0.46
1:I:303:VAL:O	1:I:305:VAL:N	2.46	0.46
1:J:52:VAL:HG23	1:J:53:ILE:HD12	1.97	0.46
1:K:25:VAL:HA	1:K:50:VAL:CG2	2.45	0.46
1:K:324:GLY:CA	1:K:327:LYS:HZ3	2.24	0.46
1:B:91:VAL:HG11	1:B:123:VAL:HG11	1.97	0.46
1:E:91:VAL:HG11	1:E:123:VAL:HG11	1.96	0.46
1:E:145:VAL:HG13	1:E:331:PHE:CE1	2.50	0.46
1:E:200:TRP:CE3	1:E:203:MET:HE3	2.50	0.46
1:E:291:PRO:HG2	1:E:305:VAL:CG2	2.45	0.46
1:G:99:GLN:HG3	1:G:241:ILE:HD13	1.95	0.46
1:G:133:LEU:HD23	1:G:133:LEU:HA	1.55	0.46
1:I:280:TYR:CD2	1:I:307:LEU:HD12	2.50	0.46
1:J:21:LYS:HG3	1:J:46:GLU:HB3	1.98	0.46
1:L:272:VAL:O	1:L:289:SER:HA	2.15	0.46
1:A:168:ARG:HB2	1:A:233:VAL:HG23	1.96	0.46
1:C:316:LYS:HA	1:C:319:ALA:HB3	1.98	0.46
1:E:50:VAL:HG21	1:E:82:TYR:CE2	2.50	0.46
1:G:99:GLN:OE1	1:G:105:ARG:HG2	2.16	0.46
1:L:308:THR:HG22	1:L:309:SER:N	2.30	0.46
1:C:200:TRP:CE2	1:C:218:GLY:HA3	2.51	0.46
1:J:214:HIS:HD2	1:J:216:ASP:HB2	1.76	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:251:ILE:O	1:C:255:VAL:HG23	2.15	0.46
1:J:180:HIS:CE1	1:J:182:LEU:HD13	2.51	0.46
1:K:130:CYS:O	1:K:156:ARG:NH1	2.43	0.46
1:L:18:PRO:HB2	1:L:21:LYS:HB2	1.96	0.46
1:A:286:VAL:HG22	1:A:288:LEU:HG	1.97	0.46
1:C:164:LEU:HD22	1:C:251:ILE:HG13	1.97	0.46
1:C:203:MET:HE2	1:C:203:MET:HB3	1.75	0.46
1:E:96:GLY:HA3	1:E:112:ASN:OD1	2.16	0.46
1:F:261:SER:OG	1:F:268:ARG:HB2	2.16	0.46
1:J:111:ARG:O	1:J:115:ILE:HG13	2.16	0.46
1:L:257:ASP:OD1	1:L:268:ARG:NH1	2.49	0.46
1:C:173:MET:SD	1:C:184:CYS:HB3	2.56	0.45
1:D:172:LEU:O	1:D:175:GLU:HB2	2.16	0.45
1:E:310:GLU:O	1:E:314:ARG:HG3	2.16	0.45
1:G:16:GLN:HB3	1:G:17:THR:H	1.60	0.45
1:H:46:GLU:HG3	1:H:75:LYS:HB3	1.98	0.45
1:J:119:ILE:HG13	1:J:120:ILE:N	2.32	0.45
1:J:219:THR:OG1	1:J:222:ASP:HB2	2.16	0.45
1:A:137:ASN:HD22	1:A:139:VAL:H	1.62	0.45
1:C:105:ARG:O	1:C:138:PRO:HB3	2.16	0.45
1:E:173:MET:HE1	1:E:203:MET:HG3	1.99	0.45
1:F:293:ILE:HD13	1:H:179:VAL:HG12	1.97	0.45
1:I:257:ASP:OD1	1:I:268:ARG:NH2	2.46	0.45
1:J:309:SER:OG	1:J:310:GLU:N	2.49	0.45
1:A:198:PRO:HG3	1:A:230:HIS:CG	2.51	0.45
1:F:11:LEU:CD1	1:G:302:LEU:HD13	2.46	0.45
1:F:220:ASP:O	1:F:222:ASP:N	2.49	0.45
1:G:99:GLN:H	1:G:99:GLN:HG2	1.48	0.45
1:G:180:HIS:ND1	1:G:182:LEU:HB2	2.30	0.45
1:H:171:TYR:HA	1:H:181:PRO:HG3	1.97	0.45
1:I:200:TRP:HB3	1:I:217:LEU:HD23	1.97	0.45
1:J:145:VAL:O	1:J:149:ILE:HG13	2.17	0.45
1:A:58:LYS:HE2	1:B:243:LEU:HD11	1.99	0.45
1:E:109:VAL:O	1:E:113:VAL:HG23	2.16	0.45
1:F:21:LYS:NZ	1:F:84:VAL:O	2.38	0.45
1:H:229:VAL:O	1:H:233:VAL:HG23	2.16	0.45
1:L:317:LYS:HA	1:L:317:LYS:HD2	1.46	0.45
1:B:50:VAL:HG22	1:B:79:GLY:O	2.16	0.45
1:H:244:LYS:HD3	1:H:246:TYR:CZ	2.52	0.45
1:I:110:GLN:HG2	3:I:402:HOH:O	2.15	0.45
1:A:98:ARG:NE	3:A:703:HOH:O	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:198:PRO:HG3	1:C:230:HIS:CG	2.51	0.45
1:E:256:ALA:HA	1:E:259:ALA:HB3	1.98	0.45
1:G:72:ARG:HH21	1:H:182:LEU:HD21	1.81	0.45
1:J:173:MET:SD	1:J:184:CYS:HB3	2.57	0.45
1:D:276:ILE:HG13	1:D:276:ILE:O	2.16	0.45
1:F:97:ALA:O	1:F:108:LEU:HD23	2.16	0.45
1:H:108:LEU:N	1:H:108:LEU:HD23	2.32	0.45
1:J:64:LEU:O	1:J:67:GLY:N	2.32	0.45
1:K:10:ASN:HD21	1:K:13:LYS:HE2	1.80	0.45
1:B:280:TYR:HE2	1:B:307:LEU:HG	1.82	0.45
1:E:16:GLN:N	1:E:16:GLN:OE1	2.49	0.45
1:F:159:GLY:HA3	1:F:273:SER:HB3	1.98	0.45
1:F:227:LYS:HG2	3:F:402:HOH:O	2.16	0.45
1:G:195:SER:O	1:G:318:SER:OG	2.34	0.45
1:L:320:ASP:O	1:L:323:TRP:N	2.49	0.45
1:A:13:LYS:HG3	1:A:14:GLU:H	1.82	0.45
1:B:274:THR:HG21	1:B:299:ILE:HG21	1.98	0.45
1:F:274:THR:O	1:F:287:PHE:HA	2.16	0.45
1:G:276:ILE:HD13	1:G:288:LEU:HD11	1.98	0.45
1:I:280:TYR:O	1:I:316:LYS:HD3	2.16	0.45
1:L:189:LEU:HD22	1:L:291:PRO:HD3	1.98	0.45
1:D:132:LEU:HD23	1:D:132:LEU:HA	1.59	0.45
1:H:131:LYS:HB2	1:H:131:LYS:HE2	1.73	0.45
1:J:135:VAL:HG12	1:J:135:VAL:O	2.17	0.45
1:K:83:ASN:HA	1:K:126:TYR:CD1	2.52	0.45
1:D:120:ILE:O	1:D:124:VAL:HG13	2.16	0.44
1:G:117:LYS:CE	1:G:331:PHE:HA	2.48	0.44
1:J:14:GLU:OE1	1:J:14:GLU:N	2.39	0.44
1:K:236:SER:HB3	1:L:66:HIS:CE1	2.52	0.44
1:K:308:THR:HG1	1:K:311:GLU:H	1.59	0.44
1:B:304:LYS:HB2	1:B:304:LYS:HE2	1.68	0.44
1:E:216:ASP:O	1:E:219:THR:OG1	2.22	0.44
1:I:25:VAL:HG11	1:I:93:ILE:HD13	1.99	0.44
1:I:281:GLY:O	1:I:282:ILE:HD13	2.17	0.44
1:J:153:PRO:HA	3:J:717:HOH:O	2.17	0.44
1:J:308:THR:O	1:J:310:GLU:N	2.50	0.44
1:K:307:LEU:HD22	1:K:311:GLU:HB3	1.99	0.44
1:L:194:ASP:HB2	3:L:416:HOH:O	2.16	0.44
1:A:301:ASP:HB3	1:D:8:ILE:CG2	2.48	0.44
1:E:25:VAL:HB	1:E:93:ILE:HA	2.00	0.44
1:E:180:HIS:CE1	1:E:182:LEU:HD12	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:200:TRP:HB3	1:E:217:LEU:HD23	1.99	0.44
1:F:303:VAL:HG11	1:H:206:ALA:HB3	1.97	0.44
1:H:57:LEU:HD21	1:H:79:GLY:H	1.83	0.44
1:I:58:LYS:HG2	1:J:243:LEU:HD23	2.00	0.44
1:I:284:ASP:HB2	1:I:286:VAL:HG23	1.97	0.44
1:K:86:ALA:HA	1:K:126:TYR:O	2.18	0.44
1:L:81:ASP:O	1:L:83:ASN:N	2.50	0.44
1:I:170:ARG:HD3	1:I:184:CYS:O	2.18	0.44
1:L:279:LEU:O	1:L:281:GLY:N	2.50	0.44
1:C:21:LYS:HD2	1:C:46:GLU:CG	2.48	0.44
1:C:210:LEU:HD23	1:C:210:LEU:HA	1.73	0.44
1:I:147:TRP:CD1	1:I:152:PHE:O	2.70	0.44
1:I:189:LEU:CD1	1:I:199:VAL:HG21	2.47	0.44
1:K:3:LEU:HD13	1:L:214:HIS:HB2	2.00	0.44
1:L:137:ASN:HA	1:L:139:VAL:N	2.33	0.44
1:A:69:LEU:HD21	1:B:170:ARG:NH2	2.33	0.44
1:B:198:PRO:HD3	1:B:230:HIS:CD2	2.52	0.44
1:D:36:ILE:HD12	1:D:36:ILE:HA	1.78	0.44
1:D:61:MET:HG3	1:D:76:ILE:HG22	1.99	0.44
1:E:325:ILE:O	1:E:328:GLU:HB2	2.18	0.44
1:H:141:ILE:O	1:H:145:VAL:HG23	2.18	0.44
1:I:326:GLN:O	1:I:329:LEU:HB2	2.17	0.44
1:J:17:THR:HG22	1:J:19:GLN:OE1	2.16	0.44
1:J:274:THR:HB	1:J:299:ILE:HD13	2.00	0.44
1:H:306:THR:O	1:H:307:LEU:HD23	2.18	0.44
1:B:105:ARG:HE	1:B:192:HIS:CE1	2.36	0.44
1:E:211:LYS:HD2	1:E:217:LEU:HB3	1.99	0.44
1:F:105:ARG:C	1:F:107:ASN:N	2.71	0.44
1:F:179:VAL:HG22	1:H:293:ILE:HD13	2.00	0.44
1:F:305:VAL:HG12	1:H:208:VAL:CG2	2.48	0.44
1:J:86:ALA:HA	1:J:126:TYR:HB3	1.99	0.44
1:K:18:PRO:HB3	1:K:46:GLU:OE1	2.17	0.44
1:L:21:LYS:HB3	1:L:88:SER:HA	2.00	0.44
1:L:328:GLU:HB2	1:L:329:LEU:H	1.42	0.44
1:E:56:LYS:HE2	1:E:56:LYS:HB2	1.72	0.44
1:G:203:MET:O	1:G:210:LEU:HG	2.18	0.44
1:H:235:GLU:O	1:H:239:GLU:HG2	2.18	0.44
1:H:261:SER:OG	1:H:268:ARG:HB2	2.17	0.44
1:J:36:ILE:O	1:J:40:MET:HG3	2.17	0.44
1:D:105:ARG:C	1:D:106:LEU:HD12	2.38	0.43
1:K:209:SER:O	1:K:213:LEU:HD23	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:119:ILE:O	1:L:122:ASN:HB2	2.18	0.43
1:A:125:LYS:HG2	1:A:126:TYR:CD2	2.53	0.43
1:D:228:GLU:HG2	1:D:231:LYS:HD2	2.00	0.43
1:D:270:HIS:HB2	1:D:294:LEU:HD13	1.99	0.43
1:E:58:LYS:HG2	1:F:243:LEU:HD13	2.00	0.43
1:G:323:TRP:HA	1:G:326:GLN:HB2	1.99	0.43
1:H:273:SER:HA	1:H:289:SER:HA	2.00	0.43
1:I:11:LEU:HD11	1:L:302:LEU:CD1	2.49	0.43
1:K:30:VAL:HG22	1:K:251:ILE:HG21	2.00	0.43
1:C:25:VAL:HG22	1:C:50:VAL:CG2	2.48	0.43
1:C:169:PHE:CD1	1:C:233:VAL:HG21	2.50	0.43
1:E:124:VAL:HG13	1:E:152:PHE:CE1	2.53	0.43
1:E:239:GLU:OE2	1:E:243:LEU:HG	2.17	0.43
1:F:24:VAL:HG22	1:F:92:ILE:HB	1.99	0.43
1:F:227:LYS:HB2	1:F:227:LYS:HE3	1.57	0.43
1:G:105:ARG:NH1	1:G:193:GLY:HA2	2.34	0.43
1:I:264:LYS:HE3	1:L:72:ARG:HG2	2.00	0.43
1:J:127:SER:HB3	1:J:130:CYS:HB3	2.00	0.43
1:A:218:GLY:C	1:A:227:LYS:HD3	2.39	0.43
1:B:297:ASN:HB2	1:C:12:LEU:HD21	2.00	0.43
1:D:25:VAL:HG22	1:D:50:VAL:CG2	2.48	0.43
1:F:56:LYS:HE2	1:F:60:GLU:OE2	2.19	0.43
1:H:284:ASP:O	1:H:286:VAL:N	2.52	0.43
1:J:261:SER:HA	1:J:266:LEU:HG	2.00	0.43
1:K:111:ARG:NH1	3:K:707:HOH:O	2.48	0.43
1:L:294:LEU:HD12	1:L:294:LEU:HA	1.81	0.43
1:B:9:TYR:HB2	1:C:304:LYS:HD2	2.00	0.43
1:C:147:TRP:HA	1:C:157:VAL:HG21	2.00	0.43
1:D:275:MET:HG2	1:D:287:PHE:CZ	2.52	0.43
1:H:111:ARG:HG3	3:H:410:HOH:O	2.18	0.43
1:I:57:LEU:HD21	1:I:79:GLY:N	2.33	0.43
1:L:163:ASN:HA	1:L:271:PRO:HG2	2.00	0.43
1:A:82:TYR:CG	1:A:122:ASN:HB3	2.53	0.43
1:E:22:ILE:HD11	1:E:263:MET:HG3	1.99	0.43
1:G:72:ARG:NH2	1:H:182:LEU:HD21	2.33	0.43
1:J:116:PHE:CZ	1:J:142:LEU:HD22	2.53	0.43
1:F:173:MET:SD	1:F:184:CYS:HB3	2.59	0.43
1:G:139:VAL:HG21	1:G:160:SER:HB3	2.00	0.43
1:J:7:LEU:HG	1:J:8:ILE:CG1	2.48	0.43
1:K:25:VAL:HG21	1:K:93:ILE:CD1	2.48	0.43
1:C:171:TYR:CE1	1:C:175:GLU:HG2	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:100:GLN:HG2	1:D:101:GLU:H	1.82	0.43
1:E:243:LEU:HB3	1:F:55:ASP:O	2.19	0.43
1:G:54:GLU:OE2	1:G:80:LYS:HD2	2.18	0.43
1:G:57:LEU:HD21	1:G:79:GLY:H	1.84	0.43
1:G:329:LEU:O	1:G:330:GLN:HG2	2.18	0.43
1:H:14:GLU:HG3	1:H:15:GLU:HB3	2.01	0.43
1:I:210:LEU:HD23	1:I:210:LEU:HA	1.79	0.43
1:J:187:TRP:CZ2	1:L:206:ALA:HA	2.54	0.43
1:K:228:GLU:O	1:K:232:GLN:HG3	2.18	0.43
1:K:276:ILE:CD1	1:K:276:ILE:O	2.67	0.43
1:K:331:PHE:HD1	1:K:331:PHE:OXT	2.01	0.43
1:L:110:GLN:HG2	1:L:329:LEU:HD22	2.00	0.43
1:D:111:ARG:O	1:D:114:ASN:HB2	2.18	0.43
1:F:7:LEU:HD23	1:F:8:ILE:HG13	2.01	0.43
1:I:172:LEU:O	1:I:175:GLU:HB3	2.18	0.43
1:J:228:GLU:O	1:J:232:GLN:HG3	2.19	0.43
1:J:277:LYS:HB3	1:J:277:LYS:HE3	1.63	0.43
1:K:147:TRP:CH2	1:K:275:MET:HE1	2.53	0.43
1:K:276:ILE:CD1	1:K:282:ILE:HG21	2.48	0.43
1:A:231:LYS:HD3	1:A:231:LYS:HA	1.74	0.43
1:D:173:MET:SD	1:D:184:CYS:HB3	2.59	0.43
1:F:331:PHE:O	1:F:331:PHE:CG	2.71	0.43
1:G:21:LYS:HD3	1:G:86:ALA:O	2.19	0.43
1:H:165:ASP:OD2	1:H:192:HIS:ND1	2.52	0.43
1:I:236:SER:C	1:I:238:TYR:H	2.22	0.43
1:I:275:MET:HE1	1:I:277:LYS:HD2	2.01	0.43
1:A:316:LYS:O	1:A:319:ALA:HB3	2.19	0.42
1:B:305:VAL:HA	1:D:208:VAL:HG21	2.00	0.42
1:D:16:GLN:O	1:D:17:THR:C	2.57	0.42
1:E:23:THR:HB	1:E:91:VAL:HG22	2.00	0.42
1:E:71:LEU:HD21	1:F:253:LEU:HD21	2.01	0.42
1:F:51:ASP:N	1:F:57:LEU:HD13	2.34	0.42
1:F:103:GLU:OE1	1:F:108:LEU:HD11	2.19	0.42
1:G:3:LEU:N	1:H:224:GLU:OE1	2.50	0.42
1:G:16:GLN:O	3:G:703:HOH:O	2.21	0.42
1:H:2:THR:OG1	1:H:5:ASP:OD2	2.37	0.42
1:H:180:HIS:ND1	1:H:181:PRO:HD2	2.34	0.42
1:J:12:LEU:HB3	1:J:13:LYS:H	1.63	0.42
1:J:231:LYS:HA	1:J:234:VAL:HG22	2.01	0.42
1:L:276:ILE:HD13	1:L:288:LEU:HB2	2.01	0.42
1:A:206:ALA:HB3	1:C:303:VAL:HG11	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:114:ASN:HA	1:C:117:LYS:HG2	2.01	0.42
1:C:131:LYS:HE3	1:C:296:GLN:O	2.19	0.42
1:C:325:ILE:O	1:C:329:LEU:HD13	2.19	0.42
1:G:281:GLY:HA3	1:G:316:LYS:NZ	2.35	0.42
1:H:158:ILE:HG12	1:H:294:LEU:HD11	2.01	0.42
1:H:188:VAL:HG12	1:H:196:SER:HB3	2.01	0.42
1:I:266:LEU:HD12	1:I:268:ARG:NH1	2.34	0.42
1:J:148:LYS:CB	1:J:331:PHE:HE2	2.33	0.42
1:J:323:TRP:NE1	1:J:327:LYS:HB3	2.33	0.42
1:B:227:LYS:HE2	1:B:227:LYS:HB3	1.90	0.42
1:B:244:LYS:O	1:B:246:TYR:N	2.50	0.42
1:C:177:LEU:HD11	1:C:210:LEU:HD11	2.02	0.42
1:D:168:ARG:NH2	2:D:601:MLI:O7	2.42	0.42
1:E:276:ILE:CD1	1:E:282:ILE:HG21	2.47	0.42
1:K:122:ASN:OD1	1:K:122:ASN:N	2.51	0.42
1:L:251:ILE:HD12	1:L:251:ILE:N	2.34	0.42
1:D:158:ILE:HG12	1:D:299:ILE:HD11	2.01	0.42
1:G:133:LEU:HD23	1:G:158:ILE:HB	2.01	0.42
1:G:232:GLN:O	1:G:236:SER:HB3	2.19	0.42
1:I:231:LYS:HE2	1:I:235:GLU:OE1	2.18	0.42
1:J:219:THR:HB	1:J:221:LYS:H	1.85	0.42
1:A:105:ARG:HD3	1:A:137:ASN:CG	2.39	0.42
1:A:170:ARG:NH1	3:A:705:HOH:O	2.52	0.42
1:B:48:ALA:HA	1:B:77:VAL:O	2.19	0.42
1:B:320:ASP:O	1:B:322:LEU:N	2.52	0.42
1:C:267:ARG:HE	1:C:267:ARG:HB3	1.74	0.42
1:D:228:GLU:HG2	1:D:231:LYS:HB3	2.01	0.42
1:F:142:LEU:HD23	1:F:142:LEU:HA	1.82	0.42
1:F:272:VAL:O	1:F:289:SER:HA	2.19	0.42
1:A:10:ASN:ND2	1:A:13:LYS:HD3	2.14	0.42
1:A:13:LYS:HA	1:A:13:LYS:HD2	1.30	0.42
1:B:108:LEU:O	1:B:111:ARG:N	2.44	0.42
1:D:7:LEU:O	1:D:7:LEU:HG	2.20	0.42
1:D:50:VAL:HA	1:D:79:GLY:O	2.20	0.42
1:D:108:LEU:O	1:D:110:GLN:N	2.52	0.42
1:G:41:LYS:NZ	1:G:256:ALA:HB1	2.35	0.42
1:I:25:VAL:O	1:I:94:THR:OG1	2.30	0.42
1:I:276:ILE:HG12	1:I:276:ILE:O	2.20	0.42
1:I:283:LYS:HB2	1:I:283:LYS:HE3	1.89	0.42
1:J:19:GLN:NE2	1:J:19:GLN:HA	2.35	0.42
1:J:301:ASP:HB3	1:K:8:ILE:CG2	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:131:LYS:HB2	1:K:131:LYS:HE2	1.74	0.42
1:B:82:TYR:O	1:B:85:THR:HB	2.19	0.42
1:C:278:GLY:O	1:C:279:LEU:HD12	2.19	0.42
1:G:70:PHE:CE2	1:H:254:SER:HA	2.55	0.42
1:L:176:ARG:HH21	1:L:229:VAL:HG23	1.84	0.42
1:A:105:ARG:HH21	2:A:601:MLI:C1	2.31	0.42
1:G:69:LEU:HD12	1:H:182:LEU:HD12	2.01	0.42
1:G:158:ILE:HG23	1:G:299:ILE:HD11	2.01	0.42
1:J:105:ARG:NH1	1:J:238:TYR:OH	2.53	0.42
1:B:11:LEU:O	1:B:12:LEU:HG	2.19	0.42
1:B:229:VAL:HG12	1:B:232:GLN:NE2	2.35	0.42
1:C:153:PRO:HB2	1:C:155:ASN:OD1	2.20	0.42
1:I:13:LYS:N	1:I:14:GLU:OE2	2.44	0.42
1:I:25:VAL:CG1	1:I:93:ILE:HD13	2.50	0.42
1:I:304:LYS:HZ2	1:I:304:LYS:HG3	1.53	0.42
1:A:211:LYS:HD2	1:A:217:LEU:HB3	2.01	0.42
1:B:82:TYR:OH	1:B:119:ILE:HG23	2.20	0.42
1:B:293:ILE:HB	1:B:301:ASP:HB2	2.02	0.42
1:E:119:ILE:O	1:E:123:VAL:HG23	2.19	0.42
1:J:316:LYS:HD3	1:J:320:ASP:OD2	2.19	0.42
1:K:226:TRP:O	1:K:229:VAL:HB	2.19	0.42
1:K:235:GLU:OE1	1:K:239:GLU:HG2	2.19	0.42
1:L:50:VAL:HG11	1:L:82:TYR:CE1	2.55	0.42
1:E:3:LEU:O	1:E:6:GLN:HB2	2.20	0.41
1:E:192:HIS:NE2	2:E:601:MLI:O9	2.53	0.41
1:G:244:LYS:HE2	1:H:60:GLU:OE2	2.20	0.41
1:I:168:ARG:CZ	1:I:237:ALA:HB2	2.50	0.41
1:J:96:GLY:HA3	1:J:112:ASN:HD21	1.85	0.41
1:K:98:ARG:NH1	3:K:702:HOH:O	2.53	0.41
1:K:216:ASP:O	1:K:222:ASP:HB2	2.20	0.41
1:L:117:LYS:O	1:L:121:PRO:HG2	2.20	0.41
1:B:244:LYS:HE3	1:B:246:TYR:O	2.20	0.41
1:D:14:GLU:HG2	1:D:15:GLU:H	1.85	0.41
1:I:36:ILE:HD12	1:I:36:ILE:HA	1.78	0.41
1:J:21:LYS:HE3	1:J:46:GLU:HG2	2.02	0.41
1:L:330:GLN:O	1:L:331:PHE:O	2.38	0.41
1:A:243:LEU:HD11	1:B:58:LYS:HE3	2.03	0.41
1:B:272:VAL:O	1:B:289:SER:HA	2.20	0.41
1:C:69:LEU:HD21	1:D:170:ARG:NH2	2.34	0.41
1:G:96:GLY:HA3	1:G:112:ASN:OD1	2.20	0.41
1:I:25:VAL:CG1	1:I:93:ILE:HA	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:259:ALA:O	1:I:263:MET:HG2	2.21	0.41
1:K:82:TYR:O	1:K:85:THR:HB	2.20	0.41
1:L:110:GLN:NE2	1:L:329:LEU:HA	2.35	0.41
1:L:243:LEU:HD12	1:L:243:LEU:HA	1.77	0.41
1:B:300:SER:HB3	1:C:12:LEU:CD2	2.47	0.41
1:C:17:THR:HG22	1:C:87:ASN:HD21	1.85	0.41
1:C:145:VAL:O	1:C:149:ILE:HG13	2.19	0.41
1:C:188:VAL:HA	1:C:197:VAL:O	2.21	0.41
1:C:214:HIS:CB	1:D:3:LEU:HD13	2.51	0.41
1:D:26:GLY:O	1:D:31:GLY:HA3	2.19	0.41
1:E:169:PHE:HD2	1:E:188:VAL:HG22	1.82	0.41
1:F:107:ASN:C	1:F:109:VAL:H	2.22	0.41
1:F:214:HIS:O	1:F:216:ASP:N	2.53	0.41
1:B:230:HIS:O	1:B:230:HIS:CG	2.73	0.41
1:D:109:VAL:HG21	1:D:325:ILE:HG21	2.02	0.41
1:D:219:THR:HG22	1:D:222:ASP:HB2	2.02	0.41
1:F:165:ASP:OD1	1:F:192:HIS:CE1	2.73	0.41
1:G:192:HIS:O	1:G:192:HIS:CG	2.73	0.41
1:H:109:VAL:O	1:H:113:VAL:HG23	2.20	0.41
1:H:197:VAL:HG13	1:H:314:ARG:HH11	1.85	0.41
1:I:158:ILE:HG23	1:I:272:VAL:HG21	2.02	0.41
1:K:133:LEU:HD12	1:K:133:LEU:HA	1.80	0.41
1:K:200:TRP:C	1:K:202:GLY:H	2.23	0.41
1:B:105:ARG:HH11	1:B:105:ARG:HG2	1.86	0.41
1:B:230:HIS:O	1:B:233:VAL:HG22	2.21	0.41
1:F:12:LEU:O	1:F:13:LYS:HB2	2.20	0.41
1:F:121:PRO:HA	1:F:124:VAL:HG22	2.02	0.41
1:H:107:ASN:O	1:H:109:VAL:N	2.45	0.41
1:H:197:VAL:HG13	1:H:314:ARG:NH1	2.36	0.41
1:I:9:TYR:CG	1:I:10:ASN:N	2.89	0.41
1:J:216:ASP:O	1:J:219:THR:HG23	2.20	0.41
1:K:147:TRP:CZ3	1:K:275:MET:HE1	2.55	0.41
1:L:41:LYS:HD2	1:L:256:ALA:HB1	2.02	0.41
1:L:80:LYS:HE3	1:L:80:LYS:HB3	1.82	0.41
1:A:209:SER:OG	1:A:212:THR:HG23	2.21	0.41
1:B:85:THR:HG22	1:B:127:SER:OG	2.20	0.41
1:D:48:ALA:HA	1:D:77:VAL:O	2.20	0.41
1:E:276:ILE:C	1:E:276:ILE:CD1	2.88	0.41
1:H:189:LEU:HD12	1:H:199:VAL:HG21	2.03	0.41
1:K:224:GLU:HB3	1:K:226:TRP:HD1	1.78	0.41
1:L:99:GLN:HA	1:L:103:GLU:OE2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:8:ILE:CG2	1:D:301:ASP:HB3	2.50	0.41
1:A:173:MET:HE2	1:A:173:MET:HB2	1.78	0.41
1:C:164:LEU:CD2	1:C:251:ILE:HG13	2.51	0.41
1:C:294:LEU:HA	1:C:294:LEU:HD23	1.80	0.41
1:E:41:LYS:HB3	1:E:41:LYS:HE3	1.92	0.41
1:E:226:TRP:CZ2	1:F:3:LEU:HD23	2.56	0.41
1:F:39:LEU:HD11	1:F:64:LEU:HD13	2.02	0.41
1:F:57:LEU:HD21	1:F:79:GLY:H	1.85	0.41
1:G:7:LEU:HD12	1:G:7:LEU:O	2.19	0.41
1:J:162:CYS:HB3	1:J:165:ASP:HB2	2.03	0.41
1:L:280:TYR:HE1	1:L:307:LEU:HG	1.86	0.41
1:A:154:LYS:HZ1	1:D:11:LEU:HG	1.85	0.41
1:A:282:ILE:HG21	1:A:286:VAL:CG1	2.51	0.41
1:C:272:VAL:O	1:C:289:SER:HA	2.19	0.41
1:D:85:THR:HG22	1:D:85:THR:O	2.21	0.41
1:E:125:LYS:HB3	1:E:125:LYS:HE2	1.90	0.41
1:E:274:THR:HG21	1:E:302:LEU:HD11	2.02	0.41
1:G:13:LYS:O	1:G:15:GLU:HG3	2.21	0.41
1:G:330:GLN:NE2	3:G:707:HOH:O	2.54	0.41
1:H:91:VAL:HB	1:H:132:LEU:HD23	2.02	0.41
1:H:113:VAL:HG13	1:H:145:VAL:HG11	2.03	0.41
1:H:173:MET:HE1	1:H:203:MET:HG2	2.02	0.41
1:H:277:LYS:HG3	1:H:284:ASP:N	2.36	0.41
1:I:111:ARG:O	1:I:115:ILE:HG12	2.21	0.41
1:I:267:ARG:HA	1:I:294:LEU:O	2.21	0.41
1:J:22:ILE:HD12	1:J:44:ALA:HB2	2.03	0.41
1:J:286:VAL:HG21	1:J:319:ALA:HB1	2.02	0.41
1:K:155:ASN:O	1:K:298:GLY:HA3	2.21	0.41
1:B:253:LEU:HA	1:B:253:LEU:HD23	1.87	0.41
1:C:307:LEU:HD23	1:C:307:LEU:HA	1.77	0.41
1:E:24:VAL:HB	1:E:49:LEU:HD23	2.02	0.41
1:I:224:GLU:HB3	1:I:226:TRP:CD1	2.56	0.41
1:J:82:TYR:O	1:J:85:THR:HB	2.20	0.41
1:J:180:HIS:ND1	1:J:181:PRO:HD2	2.36	0.41
1:J:308:THR:N	1:J:311:GLU:OE2	2.44	0.41
1:B:286:VAL:CG1	1:B:287:PHE:N	2.84	0.40
1:B:300:SER:CA	1:C:12:LEU:HD22	2.49	0.40
1:E:120:ILE:HB	1:E:121:PRO:HD3	2.04	0.40
1:G:98:ARG:NH2	1:G:136:SER:HA	2.35	0.40
1:I:266:LEU:O	1:K:180:HIS:HB2	2.20	0.40
1:L:120:ILE:HD13	1:L:120:ILE:HA	1.95	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:109:VAL:O	1:A:113:VAL:HG23	2.22	0.40
1:B:111:ARG:HD3	1:B:111:ARG:N	2.36	0.40
1:C:133:LEU:HD12	1:C:133:LEU:HA	1.91	0.40
1:C:239:GLU:O	1:C:243:LEU:HD13	2.21	0.40
1:F:189:LEU:HD23	1:F:189:LEU:HA	1.88	0.40
1:F:301:ASP:HB3	1:G:8:ILE:CG2	2.51	0.40
1:G:41:LYS:HZ3	1:G:41:LYS:CB	2.33	0.40
1:G:47:LEU:HA	1:G:47:LEU:HD12	1.78	0.40
1:G:187:TRP:CH2	1:G:269:VAL:HG12	2.56	0.40
1:J:316:LYS:NZ	1:J:320:ASP:OD1	2.48	0.40
1:C:39:LEU:CD1	1:C:64:LEU:HD22	2.52	0.40
1:C:81:ASP:O	1:C:83:ASN:N	2.54	0.40
1:D:15:GLU:CG	1:D:16:GLN:N	2.83	0.40
1:F:256:ALA:HA	1:F:259:ALA:HB3	2.02	0.40
1:H:276:ILE:HG22	1:H:302:LEU:HD13	2.03	0.40
1:I:142:LEU:HD23	1:I:142:LEU:HA	1.93	0.40
1:J:165:ASP:O	1:J:233:VAL:HG21	2.22	0.40
1:K:163:ASN:HA	1:K:271:PRO:HG2	2.04	0.40
1:L:4:LYS:HG2	1:L:4:LYS:O	2.22	0.40
1:L:50:VAL:HG11	1:L:82:TYR:CZ	2.56	0.40
1:L:144:TYR:HE1	1:L:148:LYS:HZ3	1.67	0.40
1:L:279:LEU:C	1:L:281:GLY:H	2.25	0.40
1:A:2:THR:HG23	1:B:224:GLU:OE2	2.20	0.40
1:D:99:GLN:HE21	1:D:105:ARG:HA	1.85	0.40
1:D:137:ASN:HA	1:D:139:VAL:N	2.36	0.40
1:D:275:MET:HG2	1:D:287:PHE:CD1	2.55	0.40
1:E:171:TYR:HA	1:E:181:PRO:HG3	2.02	0.40
1:F:22:ILE:O	1:F:47:LEU:HA	2.21	0.40
1:F:48:ALA:HA	1:F:77:VAL:O	2.21	0.40
1:I:49:LEU:O	1:I:78:SER:HA	2.21	0.40
1:J:50:VAL:HG21	1:J:82:TYR:CZ	2.56	0.40
1:J:216:ASP:O	1:J:217:LEU:C	2.59	0.40
1:L:109:VAL:HG21	1:L:325:ILE:HG21	2.03	0.40
1:L:117:LYS:H	1:L:117:LYS:HG3	1.65	0.40
1:A:72:ARG:HE	1:D:260:GLU:CD	2.25	0.40
1:A:204:ASN:HB3	1:A:209:SER:HA	2.03	0.40
1:G:71:LEU:HD23	1:G:71:LEU:HA	1.79	0.40
1:G:97:ALA:O	1:G:108:LEU:HD22	2.21	0.40
1:G:110:GLN:OE1	1:G:110:GLN:HA	2.21	0.40
1:L:64:LEU:HA	1:L:64:LEU:HD23	1.81	0.40
1:L:176:ARG:HD3	1:L:229:VAL:HG21	2.03	0.40

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

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:117:LYS:NZ	1:I:15:GLU:OE2[1_655]	2.08	0.12

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	329/337 (98%)	304 (92%)	18 (6%)	7 (2%)	7 24
1	B	329/337 (98%)	279 (85%)	38 (12%)	12 (4%)	3 13
1	C	329/337 (98%)	278 (84%)	40 (12%)	11 (3%)	4 14
1	D	329/337 (98%)	290 (88%)	27 (8%)	12 (4%)	3 13
1	E	329/337 (98%)	302 (92%)	20 (6%)	7 (2%)	7 24
1	F	329/337 (98%)	291 (88%)	29 (9%)	9 (3%)	5 18
1	G	329/337 (98%)	303 (92%)	19 (6%)	7 (2%)	7 24
1	H	329/337 (98%)	294 (89%)	26 (8%)	9 (3%)	5 18
1	I	329/337 (98%)	274 (83%)	41 (12%)	14 (4%)	2 9
1	J	329/337 (98%)	287 (87%)	31 (9%)	11 (3%)	4 14
1	K	329/337 (98%)	286 (87%)	34 (10%)	9 (3%)	5 18
1	L	329/337 (98%)	280 (85%)	33 (10%)	16 (5%)	2 7
All	All	3948/4044 (98%)	3468 (88%)	356 (9%)	124 (3%)	4 15

All (124) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	15	GLU
1	A	219	THR
1	A	308	THR
1	B	15	GLU

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Mol	Chain	Res	Type
1	B	105	ARG
1	B	109	VAL
1	B	152	PHE
1	B	282	ILE
1	B	321	THR
1	C	101	GLU
1	C	194	ASP
1	C	309	SER
1	D	14	GLU
1	D	16	GLN
1	D	105	ARG
1	D	217	LEU
1	E	14	GLU
1	E	192	HIS
1	E	285	ASP
1	F	154	LYS
1	F	285	ASP
1	G	16	GLN
1	G	160	SER
1	G	285	ASP
1	H	108	LEU
1	I	13	LYS
1	I	101	GLU
1	I	104	SER
1	I	105	ARG
1	I	151	GLY
1	I	236	SER
1	I	304	LYS
1	J	105	ARG
1	J	309	SER
1	K	14	GLU
1	K	201	SER
1	K	329	LEU
1	L	15	GLU
1	L	16	GLN
1	L	104	SER
1	L	152	PHE
1	L	321	THR
1	L	329	LEU
1	A	206	ALA
1	A	221	LYS
1	B	245	GLY

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Mol	Chain	Res	Type
1	C	15	GLU
1	C	16	GLN
1	C	82	TYR
1	C	246	TYR
1	D	15	GLU
1	D	107	ASN
1	D	309	SER
1	E	13	LYS
1	E	15	GLU
1	E	85	THR
1	E	219	THR
1	F	13	LYS
1	F	106	LEU
1	F	221	LYS
1	G	72	ARG
1	H	119	ILE
1	H	285	ASP
1	I	14	GLU
1	I	225	GLN
1	I	275	MET
1	J	14	GLU
1	J	15	GLU
1	J	98	ARG
1	J	103	GLU
1	J	109	VAL
1	J	217	LEU
1	K	308	THR
1	L	154	LYS
1	B	86	ALA
1	B	130	CYS
1	C	17	THR
1	D	102	GLY
1	D	160	SER
1	H	16	GLN
1	H	160	SER
1	H	196	SER
1	I	160	SER
1	I	237	ALA
1	J	16	GLN
1	J	129	ASN
1	K	68	SER
1	K	328	GLU

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Mol	Chain	Res	Type
1	L	228	GLU
1	L	285	ASP
1	L	328	GLU
1	C	202	GLY
1	C	304	LYS
1	F	15	GLU
1	G	15	GLU
1	G	82	TYR
1	H	106	LEU
1	H	249	TRP
1	I	17	THR
1	K	15	GLU
1	L	86	ALA
1	L	87	ASN
1	L	313	ALA
1	B	220	ASP
1	C	225	GLN
1	D	17	THR
1	D	119	ILE
1	F	14	GLU
1	H	104	SER
1	I	27	VAL
1	L	17	THR
1	L	82	TYR
1	A	82	TYR
1	A	248	SER
1	F	17	THR
1	B	161	GLY
1	K	325	ILE
1	L	128	PRO
1	F	27	VAL
1	B	291	PRO
1	G	27	VAL
1	K	27	VAL
1	J	27	VAL
1	D	138	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	A	287/293 (98%)	278 (97%)	9 (3%)	40	72
1	B	287/293 (98%)	276 (96%)	11 (4%)	33	65
1	C	287/293 (98%)	277 (96%)	10 (4%)	36	68
1	D	287/293 (98%)	274 (96%)	13 (4%)	27	59
1	E	287/293 (98%)	279 (97%)	8 (3%)	43	75
1	F	287/293 (98%)	277 (96%)	10 (4%)	36	68
1	G	287/293 (98%)	279 (97%)	8 (3%)	43	75
1	H	287/293 (98%)	280 (98%)	7 (2%)	49	78
1	I	287/293 (98%)	276 (96%)	11 (4%)	33	65
1	J	287/293 (98%)	281 (98%)	6 (2%)	53	80
1	K	287/293 (98%)	281 (98%)	6 (2%)	53	80
1	L	287/293 (98%)	280 (98%)	7 (2%)	49	78
All	All	3444/3516 (98%)	3338 (97%)	106 (3%)	40	72

All (106) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	9	TYR
1	A	13	LYS
1	A	16	GLN
1	A	72	ARG
1	A	89	LYS
1	A	154	LYS
1	A	227	LYS
1	A	228	GLU
1	A	236	SER
1	B	7	LEU
1	B	12	LEU
1	B	13	LYS
1	B	19	GLN
1	B	106	LEU
1	B	116	PHE
1	B	165	ASP
1	B	209	SER
1	B	254	SER
1	B	285	ASP

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Mol	Chain	Res	Type
1	B	331	PHE
1	C	131	LYS
1	C	209	SER
1	C	220	ASP
1	C	221	LYS
1	C	238	TYR
1	C	284	ASP
1	C	289	SER
1	C	316	LYS
1	C	320	ASP
1	C	331	PHE
1	D	15	GLU
1	D	78	SER
1	D	80	LYS
1	D	104	SER
1	D	131	LYS
1	D	160	SER
1	D	194	ASP
1	D	242	LYS
1	D	273	SER
1	D	287	PHE
1	D	297	ASN
1	D	316	LYS
1	D	331	PHE
1	E	72	ARG
1	E	78	SER
1	E	165	ASP
1	E	169	PHE
1	E	209	SER
1	E	285	ASP
1	E	316	LYS
1	E	330	GLN
1	F	57	LEU
1	F	99	GLN
1	F	160	SER
1	F	165	ASP
1	F	221	LYS
1	F	261	SER
1	F	265	ASN
1	F	279	LEU
1	F	314	ARG
1	F	331	PHE

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Mol	Chain	Res	Type
1	G	5	ASP
1	G	19	GLN
1	G	42	ASP
1	G	55	ASP
1	G	89	LYS
1	G	160	SER
1	G	231	LYS
1	G	254	SER
1	H	9	TYR
1	H	131	LYS
1	H	140	ASP
1	H	220	ASP
1	H	221	LYS
1	H	222	ASP
1	H	316	LYS
1	I	131	LYS
1	I	152	PHE
1	I	165	ASP
1	I	194	ASP
1	I	209	SER
1	I	223	LYS
1	I	242	LYS
1	I	283	LYS
1	I	285	ASP
1	I	300	SER
1	I	301	ASP
1	J	75	LYS
1	J	78	SER
1	J	105	ARG
1	J	227	LYS
1	J	318	SER
1	J	331	PHE
1	K	5	ASP
1	K	14	GLU
1	K	154	LYS
1	K	165	ASP
1	K	318	SER
1	K	327	LYS
1	L	99	GLN
1	L	116	PHE
1	L	209	SER
1	L	242	LYS

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Mol	Chain	Res	Type
1	L	284	ASP
1	L	285	ASP
1	L	331	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (16) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	10	ASN
1	A	137	ASN
1	A	185	HIS
1	C	114	ASN
1	D	107	ASN
1	D	225	GLN
1	E	107	ASN
1	E	214	HIS
1	E	296	GLN
1	F	107	ASN
1	J	112	ASN
1	J	214	HIS
1	K	10	ASN
1	K	137	ASN
1	L	137	ASN
1	L	232	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

6 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	MLI	K	601	-	6,6,6	3.89	4 (66%)	7,7,7	3.37	5 (71%)
2	MLI	D	601	-	6,6,6	3.96	6 (100%)	7,7,7	3.19	5 (71%)
2	MLI	G	601	-	6,6,6	4.04	5 (83%)	7,7,7	3.48	5 (71%)
2	MLI	E	601	-	6,6,6	3.86	4 (66%)	7,7,7	3.42	5 (71%)
2	MLI	J	601	-	6,6,6	3.67	4 (66%)	7,7,7	3.51	5 (71%)
2	MLI	A	601	-	6,6,6	3.83	4 (66%)	7,7,7	3.50	5 (71%)

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	MLI	K	601	-	-	1/4/4/4	-
2	MLI	D	601	-	-	2/4/4/4	-
2	MLI	G	601	-	-	2/4/4/4	-
2	MLI	E	601	-	-	2/4/4/4	-
2	MLI	J	601	-	-	1/4/4/4	-
2	MLI	A	601	-	-	2/4/4/4	-

All (27) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	K	601	MLI	O8-C3	6.07	1.42	1.22
2	G	601	MLI	O6-C2	6.06	1.42	1.22
2	E	601	MLI	O8-C3	6.00	1.42	1.22
2	G	601	MLI	O8-C3	5.84	1.41	1.22
2	D	601	MLI	O6-C2	5.81	1.41	1.22
2	A	601	MLI	O6-C2	5.77	1.41	1.22
2	D	601	MLI	O8-C3	5.71	1.41	1.22
2	E	601	MLI	O6-C2	5.66	1.40	1.22
2	J	601	MLI	O6-C2	5.60	1.40	1.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	K	601	MLI	O6-C2	5.57	1.40	1.22
2	A	601	MLI	O8-C3	5.48	1.40	1.22
2	J	601	MLI	O8-C3	5.44	1.40	1.22
2	A	601	MLI	O7-C2	3.31	1.41	1.30
2	A	601	MLI	O9-C3	3.19	1.41	1.30
2	K	601	MLI	O9-C3	3.19	1.41	1.30
2	D	601	MLI	O9-C3	3.18	1.41	1.30
2	G	601	MLI	O9-C3	3.15	1.41	1.30
2	G	601	MLI	O7-C2	3.15	1.41	1.30
2	E	601	MLI	O9-C3	3.14	1.41	1.30
2	K	601	MLI	O7-C2	3.10	1.41	1.30
2	J	601	MLI	O9-C3	3.05	1.41	1.30
2	D	601	MLI	O7-C2	3.02	1.40	1.30
2	E	601	MLI	O7-C2	2.96	1.40	1.30
2	J	601	MLI	O7-C2	2.93	1.40	1.30
2	D	601	MLI	C1-C3	2.09	1.54	1.51
2	G	601	MLI	C1-C3	2.09	1.54	1.51
2	D	601	MLI	C1-C2	2.03	1.54	1.51

All (30) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	K	601	MLI	O6-C2-C1	-5.68	105.48	122.08
2	E	601	MLI	O6-C2-C1	-5.59	105.75	122.08
2	A	601	MLI	O8-C3-C1	-5.18	106.93	122.08
2	J	601	MLI	O8-C3-C1	-5.16	107.00	122.08
2	A	601	MLI	O6-C2-C1	-5.09	107.20	122.08
2	G	601	MLI	O9-C3-O8	-4.97	110.92	123.30
2	G	601	MLI	O6-C2-C1	-4.93	107.68	122.08
2	J	601	MLI	O6-C2-C1	-4.60	108.64	122.08
2	D	601	MLI	O7-C2-O6	-4.49	112.11	123.30
2	D	601	MLI	O8-C3-C1	-4.31	109.49	122.08
2	E	601	MLI	O8-C3-C1	-4.17	109.90	122.08
2	K	601	MLI	O7-C2-O6	-3.97	113.41	123.30
2	K	601	MLI	O8-C3-C1	-3.84	110.86	122.08
2	J	601	MLI	O9-C3-O8	-3.83	113.76	123.30
2	D	601	MLI	O6-C2-C1	-3.80	110.98	122.08
2	A	601	MLI	O7-C2-O6	-3.77	113.89	123.30
2	G	601	MLI	O7-C2-O6	-3.69	114.09	123.30
2	J	601	MLI	O7-C2-O6	-3.68	114.12	123.30
2	E	601	MLI	O9-C3-O8	-3.53	114.49	123.30
2	E	601	MLI	O7-C2-O6	-3.40	114.82	123.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	601	MLI	O9-C3-O8	-3.29	115.10	123.30
2	A	601	MLI	O9-C3-O8	-3.05	115.69	123.30
2	K	601	MLI	O9-C3-O8	-3.04	115.71	123.30
2	G	601	MLI	O8-C3-C1	-2.98	113.38	122.08
2	G	601	MLI	O9-C3-C1	-2.91	105.25	114.54
2	J	601	MLI	O7-C2-C1	-2.61	106.22	114.54
2	E	601	MLI	O9-C3-C1	-2.60	106.23	114.54
2	K	601	MLI	O9-C3-C1	-2.51	106.54	114.54
2	D	601	MLI	O7-C2-C1	-2.32	107.14	114.54
2	A	601	MLI	O7-C2-C1	-2.12	107.78	114.54

There are no chirality outliers.

All (10) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	J	601	MLI	C3-C1-C2-O7
2	A	601	MLI	C3-C1-C2-O6
2	D	601	MLI	C3-C1-C2-O6
2	E	601	MLI	C2-C1-C3-O8
2	G	601	MLI	C2-C1-C3-O8
2	A	601	MLI	C2-C1-C3-O8
2	D	601	MLI	C2-C1-C3-O9
2	K	601	MLI	C3-C1-C2-O7
2	G	601	MLI	C3-C1-C2-O7
2	E	601	MLI	C3-C1-C2-O6

There are no ring outliers.

6 monomers are involved in 17 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	K	601	MLI	1	0
2	D	601	MLI	4	0
2	G	601	MLI	3	0
2	E	601	MLI	5	0
2	J	601	MLI	2	0
2	A	601	MLI	2	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^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
1	A	331/337 (98%)	-0.15	7 (2%) 63 62	28, 42, 72, 87	0
1	B	331/337 (98%)	0.15	18 (5%) 25 22	31, 54, 93, 133	0
1	C	331/337 (98%)	0.08	16 (4%) 30 27	31, 54, 86, 122	0
1	D	331/337 (98%)	-0.04	13 (3%) 39 36	28, 47, 76, 133	0
1	E	331/337 (98%)	-0.25	4 (1%) 79 79	29, 39, 57, 92	0
1	F	331/337 (98%)	-0.06	11 (3%) 46 42	32, 46, 75, 106	0
1	G	331/337 (98%)	-0.21	4 (1%) 79 79	27, 42, 63, 92	0
1	H	331/337 (98%)	-0.07	7 (2%) 63 62	30, 46, 75, 102	0
1	I	331/337 (98%)	0.05	16 (4%) 30 27	33, 55, 90, 129	0
1	J	331/337 (98%)	-0.08	13 (3%) 39 36	32, 46, 76, 132	0
1	K	331/337 (98%)	-0.21	4 (1%) 79 79	29, 42, 69, 96	0
1	L	331/337 (98%)	0.15	18 (5%) 25 22	30, 55, 98, 134	0
All	All	3972/4044 (98%)	-0.05	131 (3%) 46 42	27, 46, 81, 134	0

All (131) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	102	GLY	10.8
1	I	105	ARG	9.6
1	J	102	GLY	9.2
1	B	107	ASN	9.0
1	B	106	LEU	8.7
1	D	104	SER	8.4
1	J	100	GLN	7.1
1	I	104	SER	6.8
1	L	106	LEU	6.8
1	D	100	GLN	6.7
1	B	103	GLU	6.7

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Mol	Chain	Res	Type	RSRZ
1	C	99	GLN	6.2
1	B	99	GLN	6.1
1	L	101	GLU	5.9
1	B	104	SER	5.8
1	D	105	ARG	5.5
1	L	102	GLY	5.4
1	B	102	GLY	5.4
1	D	101	GLU	5.3
1	L	107	ASN	5.3
1	B	101	GLU	5.3
1	I	103	GLU	5.1
1	L	100	GLN	5.0
1	C	107	ASN	4.9
1	B	331	PHE	4.9
1	J	101	GLU	4.8
1	J	105	ARG	4.7
1	D	99	GLN	4.7
1	C	105	ARG	4.5
1	J	99	GLN	4.4
1	D	98	ARG	4.4
1	B	100	GLN	4.2
1	L	331	PHE	4.2
1	L	98	ARG	4.2
1	I	99	GLN	4.1
1	B	98	ARG	4.1
1	J	107	ASN	4.1
1	C	104	SER	4.1
1	L	99	GLN	4.1
1	B	1	ALA	4.0
1	C	108	LEU	3.9
1	H	108	LEU	3.9
1	B	327	LYS	3.8
1	L	97	ALA	3.8
1	F	102	GLY	3.8
1	F	101	GLU	3.8
1	I	217	LEU	3.7
1	B	105	ARG	3.6
1	I	13	LYS	3.6
1	C	106	LEU	3.6
1	J	12	LEU	3.6
1	K	330	GLN	3.5
1	L	104	SER	3.4

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Mol	Chain	Res	Type	RSRZ
1	C	103	GLU	3.4
1	F	100	GLN	3.3
1	I	106	LEU	3.3
1	L	15	GLU	3.3
1	J	104	SER	3.2
1	I	107	ASN	3.2
1	L	105	ARG	3.2
1	E	330	GLN	3.2
1	G	331	PHE	3.1
1	E	331	PHE	3.1
1	I	220	ASP	3.1
1	H	102	GLY	3.1
1	C	97	ALA	3.0
1	F	55	ASP	3.0
1	B	329	LEU	3.0
1	G	14	GLU	2.9
1	L	1	ALA	2.9
1	B	238	TYR	2.9
1	H	101	GLU	2.9
1	L	103	GLU	2.9
1	J	331	PHE	2.8
1	A	327	LYS	2.8
1	D	14	GLU	2.8
1	D	331	PHE	2.8
1	F	107	ASN	2.8
1	H	106	LEU	2.7
1	L	330	GLN	2.7
1	C	15	GLU	2.7
1	L	14	GLU	2.6
1	C	217	LEU	2.6
1	A	330	GLN	2.6
1	F	106	LEU	2.6
1	J	108	LEU	2.6
1	I	219	THR	2.5
1	E	14	GLU	2.5
1	H	100	GLN	2.5
1	J	15	GLU	2.5
1	J	103	GLU	2.5
1	K	331	PHE	2.5
1	H	104	SER	2.5
1	F	242	LYS	2.4
1	A	328	GLU	2.4

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Mol	Chain	Res	Type	RSRZ
1	F	104	SER	2.4
1	D	106	LEU	2.4
1	A	221	LYS	2.4
1	G	160	SER	2.4
1	C	98	ARG	2.4
1	F	254	SER	2.3
1	B	15	GLU	2.3
1	I	283	LYS	2.3
1	C	13	LYS	2.3
1	I	16	GLN	2.3
1	D	103	GLU	2.3
1	C	14	GLU	2.2
1	A	162	CYS	2.2
1	I	12	LEU	2.2
1	J	98	ARG	2.2
1	L	108	LEU	2.2
1	C	327	LYS	2.2
1	K	329	LEU	2.2
1	E	42	ASP	2.1
1	A	161	GLY	2.1
1	F	160	SER	2.1
1	C	331	PHE	2.1
1	H	13	LYS	2.1
1	I	98	ARG	2.1
1	F	103	GLU	2.1
1	I	102	GLY	2.1
1	B	220	ASP	2.1
1	B	108	LEU	2.0
1	G	5	ASP	2.0
1	I	227	LYS	2.0
1	L	13	LYS	2.0
1	D	12	LEU	2.0
1	D	108	LEU	2.0
1	A	331	PHE	2.0
1	K	14	GLU	2.0
1	C	238	TYR	2.0

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^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	MLI	E	601	7/7	0.84	0.30	46,48,53,54	0
2	MLI	D	601	7/7	0.88	0.22	58,68,71,75	0
2	MLI	G	601	7/7	0.90	0.23	43,45,53,62	0
2	MLI	K	601	7/7	0.91	0.21	37,41,55,55	0
2	MLI	J	601	7/7	0.92	0.19	58,62,70,85	0
2	MLI	A	601	7/7	0.92	0.24	41,48,49,51	0

6.5 Other polymers (i)

There are no such residues in this entry.