Full wwPDB X-ray Structure Validation Report ⓘ

Mar 10, 2024 – 04:06 PM EDT

PDB ID	:	4I0U
Title	:	Improved structure of Thermotoga maritima CorA at 2.7 A resolution
Authors	:	Nordin, N.; Guskov, A.; Phua, T.; Sahaf, N.; Xia, Y.; Lu, S.Y.; Eshaghi, H.; Eshaghi, S.
Deposited on	:	2012-11-19
Resolution	:	2.70 Å(reported)

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

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

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

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

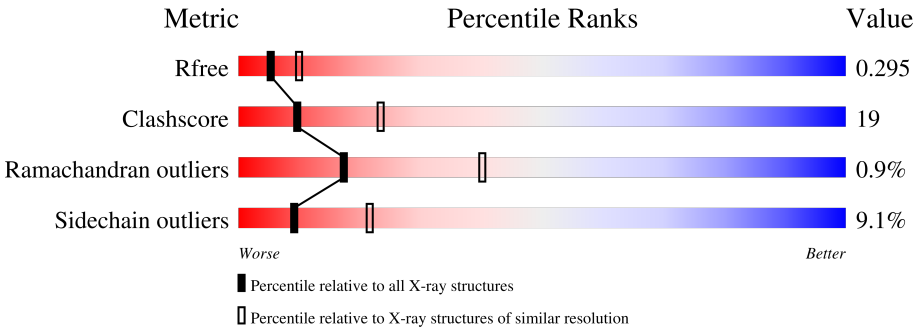
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (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 2.70 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	2808 (2.70-2.70)
Clashscore	141614	3122 (2.70-2.70)
Ramachandran outliers	138981	3069 (2.70-2.70)
Sidechain outliers	138945	3069 (2.70-2.70)

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%

Mol	Chain	Length	Quality of chain
1	A	351	58% 36%
1	B	351	56% 39%
1	C	351	58% 36%
1	D	351	54% 38% 5%
1	E	351	56% 38%
1	F	351	57% 34% 6%
1	G	351	48% 45% 6%

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Mol	Chain	Length	Quality of chain
1	H	351	57% 37%
1	I	351	58% 34% 5%
1	J	351	54% 41%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	CL	G	406	-	-	X	-
4	LMT	A	403	-	-	X	-
4	LMT	B	406	-	-	X	-
5	PEG	C	406	-	-	X	-

2 Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 29094 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 Magnesium transport protein CorA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	347	Total	C	N	O	S	0	0	0
			2886	1880	471	525	10			
1	B	348	Total	C	N	O	S	0	0	0
			2895	1885	472	528	10			
1	C	347	Total	C	N	O	S	0	0	0
			2865	1862	469	525	9			
1	D	343	Total	C	N	O	S	0	0	0
			2849	1857	463	519	10			
1	E	345	Total	C	N	O	S	0	1	0
			2844	1850	465	519	10			
1	F	346	Total	C	N	O	S	0	0	0
			2856	1859	466	522	9			
1	G	346	Total	C	N	O	S	0	0	0
			2844	1850	465	519	10			
1	H	343	Total	C	N	O	S	0	0	0
			2826	1838	461	518	9			
1	I	345	Total	C	N	O	S	0	0	0
			2850	1857	462	521	10			
1	J	345	Total	C	N	O	S	0	0	0
			2844	1849	465	520	10			

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	Mg	0	0
			1	1		
2	B	3	Total	Mg	0	0
			3	3		
2	C	2	Total	Mg	0	0
			2	2		
2	D	3	Total	Mg	0	0
			3	3		

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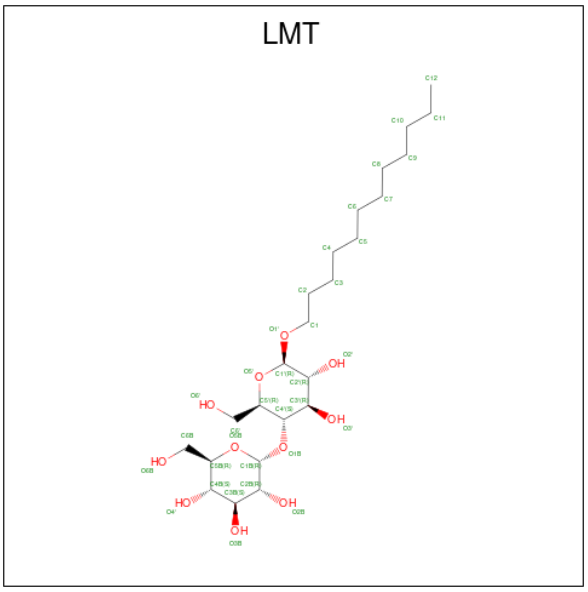
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	E	2	Total Mg 2 2	0	0
2	F	2	Total Mg 2 2	0	0
2	G	5	Total Mg 5 5	0	0
2	I	3	Total Mg 3 3	0	0
2	J	3	Total Mg 3 3	0	0

- Molecule 3 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

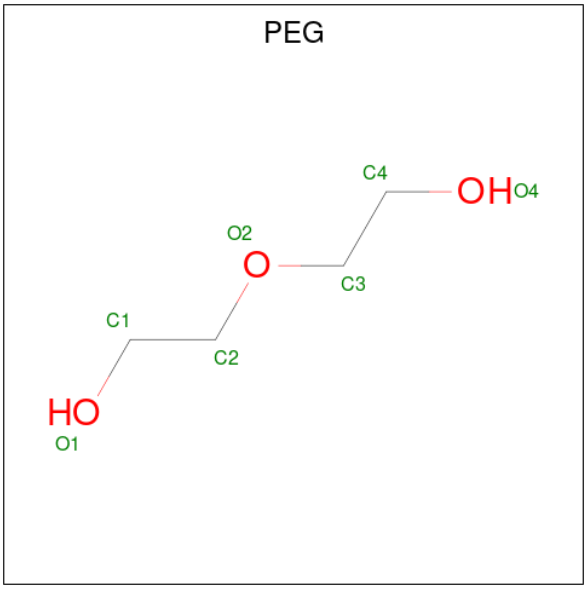
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total Cl 1 1	0	0
3	B	2	Total Cl 2 2	0	0
3	C	2	Total Cl 2 2	0	0
3	D	1	Total Cl 1 1	0	0
3	E	2	Total Cl 2 2	0	0
3	F	1	Total Cl 1 1	0	0
3	G	2	Total Cl 2 2	0	0
3	H	1	Total Cl 1 1	0	0
3	J	1	Total Cl 1 1	0	0

- Molecule 4 is DODECYL-BETA-D-MALTOSIDE (three-letter code: LMT) (formula: $C_{24}H_{46}O_{11}$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C O 35 24 11	0	0
4	B	1	Total C O 35 24 11	0	0
4	B	1	Total C O 32 21 11	0	0

- Molecule 5 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: $C_4H_{10}O_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	B	1	Total C O 7 4 3	0	0

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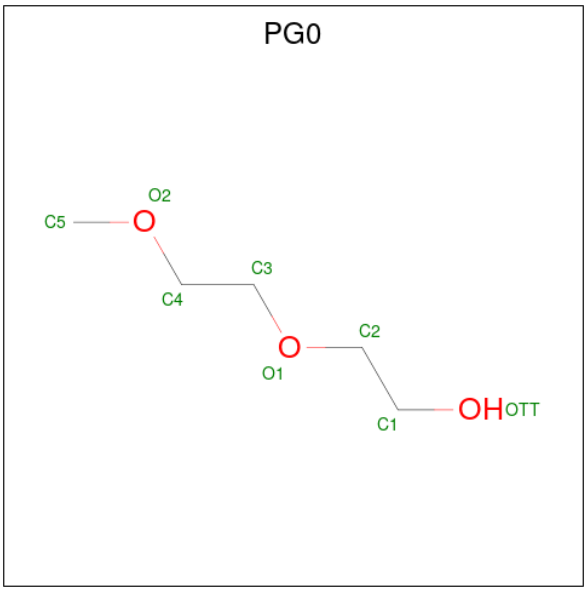
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	B	1	Total C O 7 4 3	0	0
5	B	1	Total C O 7 4 3	0	0
5	B	1	Total C O 7 4 3	0	0
5	C	1	Total C O 7 4 3	0	0
5	C	1	Total C O 7 4 3	0	0
5	D	1	Total C O 7 4 3	0	0
5	E	1	Total C O 7 4 3	0	0
5	E	1	Total C O 7 4 3	0	0
5	E	1	Total C O 7 4 3	0	0
5	E	1	Total C O 7 4 3	0	0
5	F	1	Total C O 7 4 3	0	0
5	G	1	Total C O 7 4 3	0	0
5	G	1	Total C O 7 4 3	0	0
5	G	1	Total C O 7 4 3	0	0
5	G	1	Total C O 7 4 3	0	0
5	G	1	Total C O 7 4 3	0	0
5	H	1	Total C O 7 4 3	0	0
5	I	1	Total C O 7 4 3	0	0
5	J	1	Total C O 7 4 3	0	0
5	J	1	Total C O 7 4 3	0	0

- Molecule 6 is 2-(2-METHOXYETHOXY)ETHANOL (three-letter code: PG0) (formula: $C_5H_{12}O_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	E	1	Total C O 8 5 3	0	0

- Molecule 7 is water.

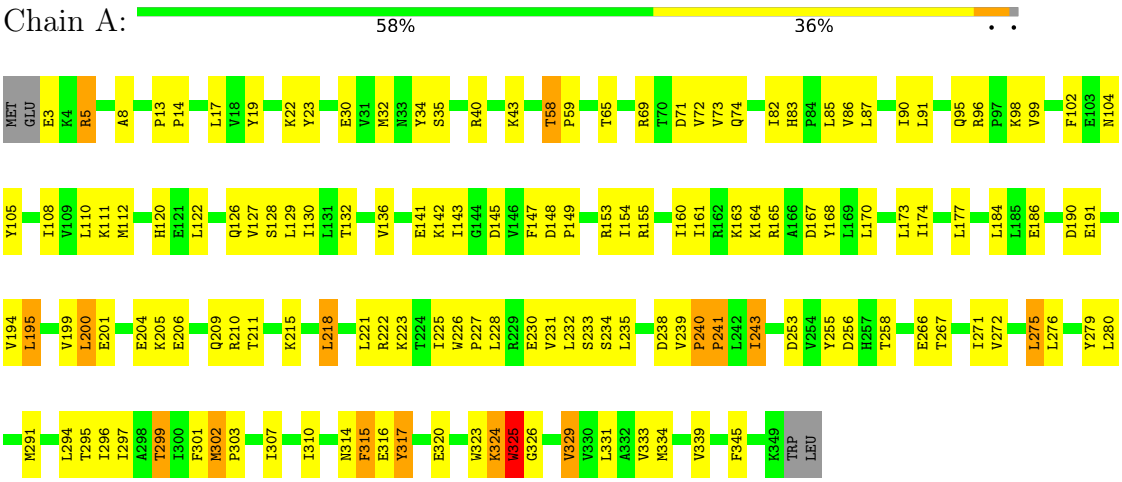
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	20	Total O 20 20	0	0
7	B	28	Total O 28 28	0	0
7	C	27	Total O 27 27	0	0
7	D	25	Total O 25 25	0	0
7	E	27	Total O 27 27	0	0
7	F	20	Total O 20 20	0	0
7	G	35	Total O 35 35	0	0
7	H	15	Total O 15 15	0	0
7	I	21	Total O 21 21	0	0
7	J	23	Total O 23 23	0	0

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. 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. 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.

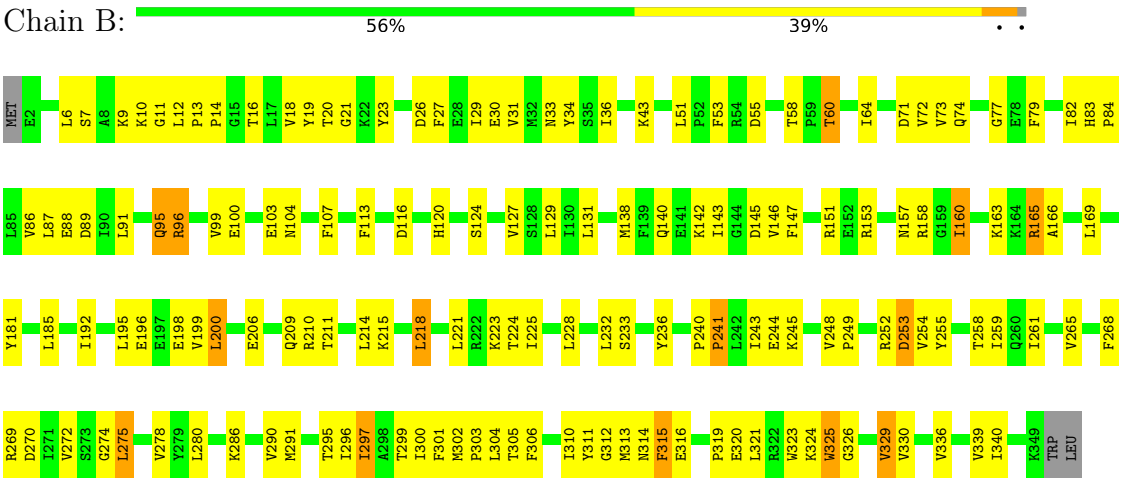
• Molecule 1: Magnesium transport protein CorA

Chain A:



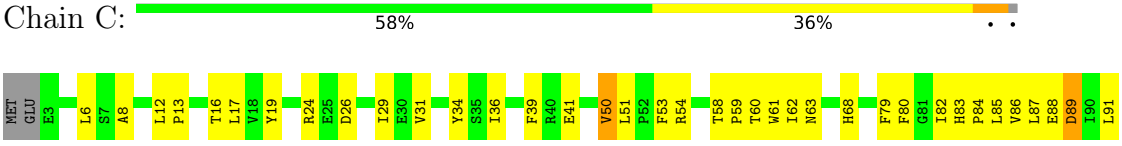
• Molecule 1: Magnesium transport protein CorA

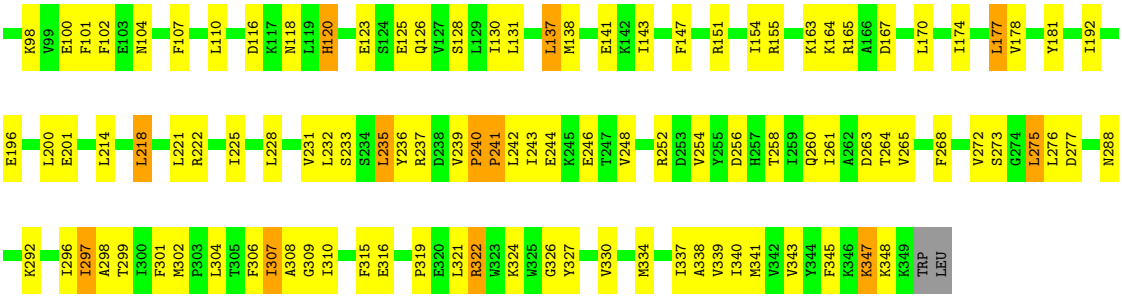
Chain B:



• Molecule 1: Magnesium transport protein CorA

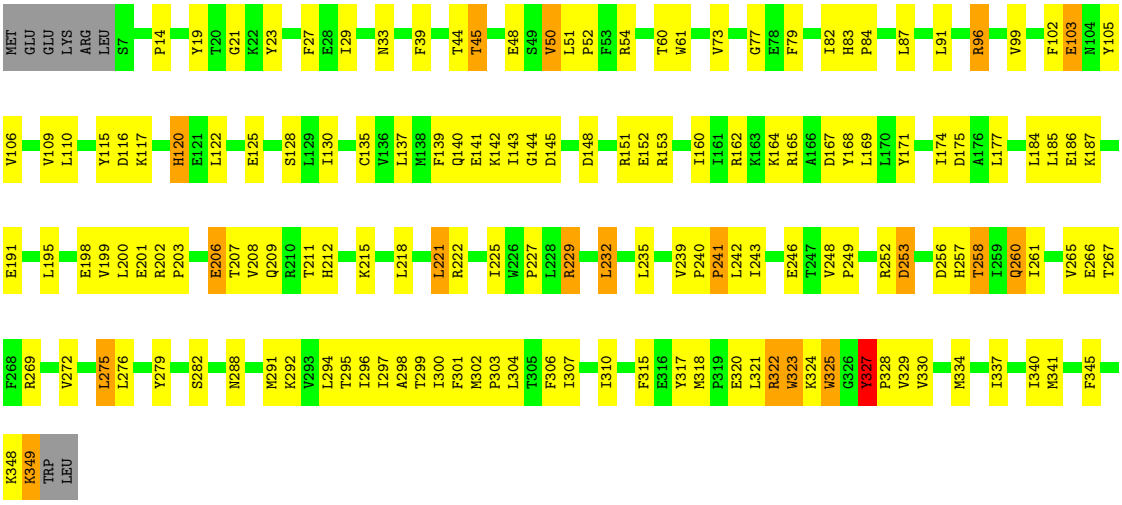
Chain C:





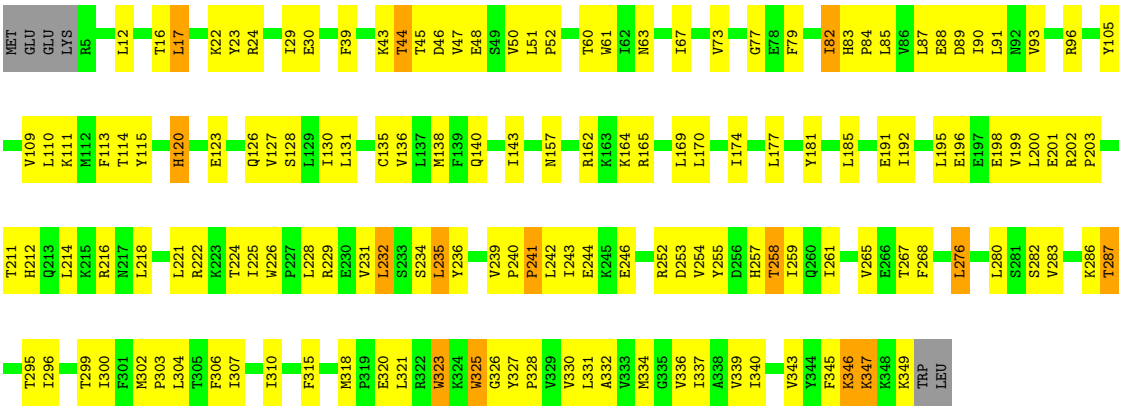
• Molecule 1: Magnesium transport protein CorA

Chain D:



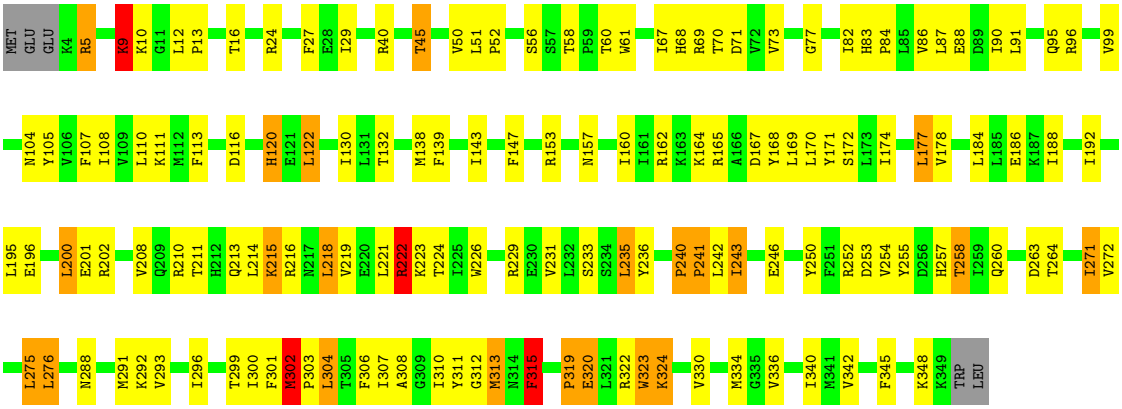
• Molecule 1: Magnesium transport protein CorA

Chain E:



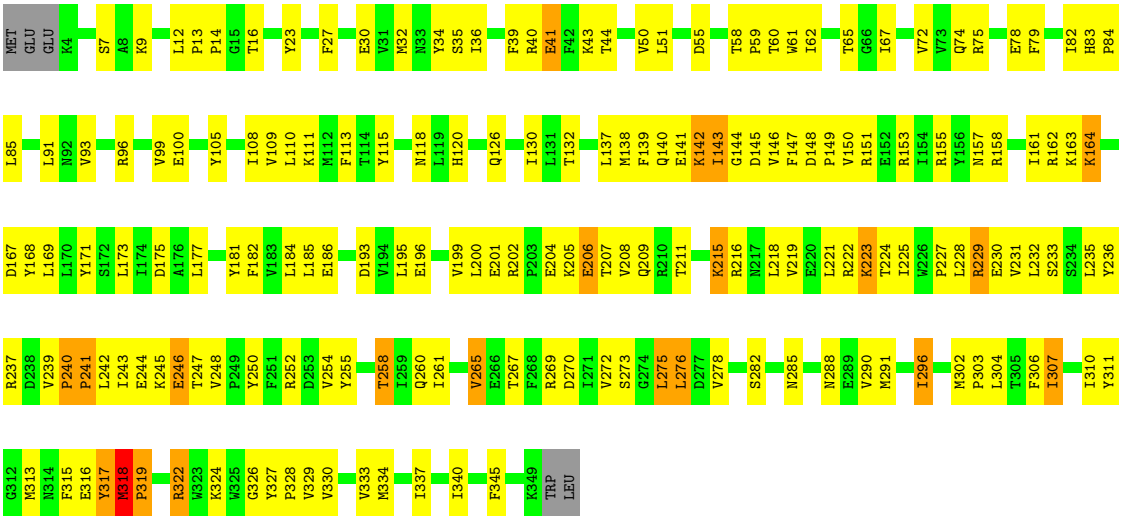
• Molecule 1: Magnesium transport protein CorA

Chain F:



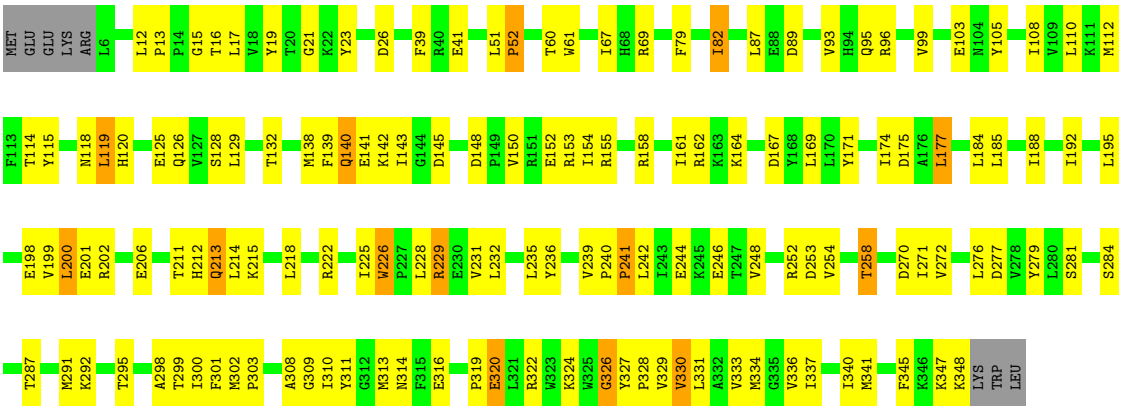
• Molecule 1: Magnesium transport protein CorA

Chain G:



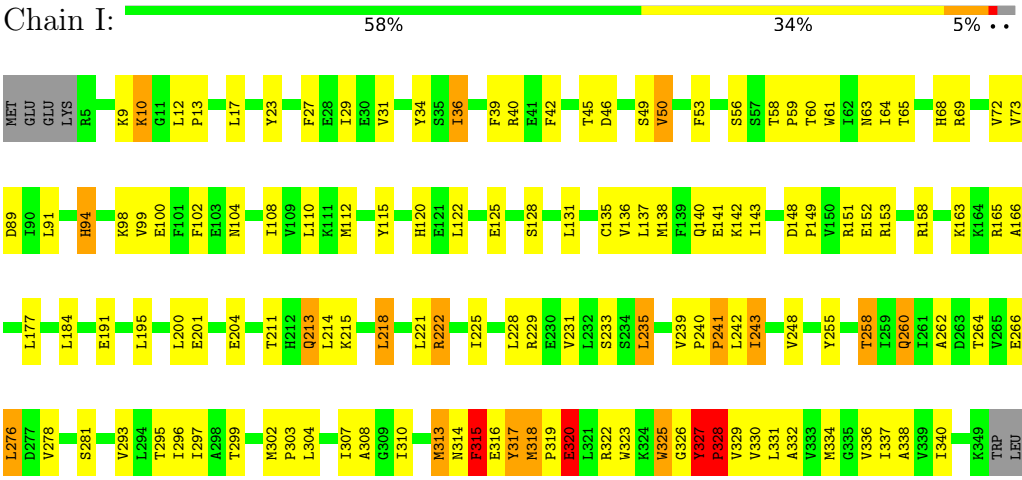
• Molecule 1: Magnesium transport protein CorA

Chain H:



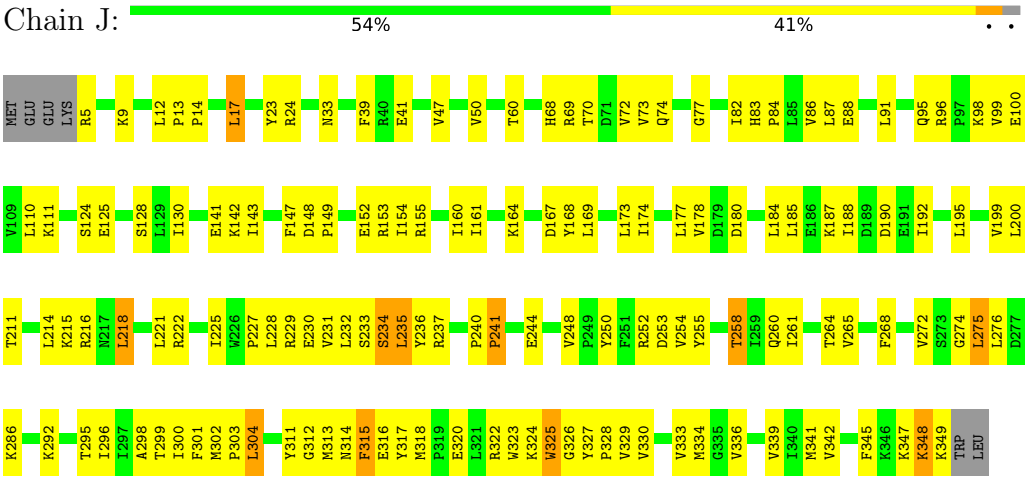
• Molecule 1: Magnesium transport protein CorA

Chain I:



• Molecule 1: Magnesium transport protein CorA

Chain J:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	116.25Å 151.50Å 143.36Å 90.00° 98.88° 90.00°	Depositor
Resolution (Å)	38.30 – 2.70 38.31 – 2.70	Depositor EDS
% Data completeness (in resolution range)	90.5 (38.30-2.70) 90.5 (38.31-2.70)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.63 (at 2.69Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.8.1_1168)	Depositor
R, R_{free}	0.228 , 0.289 0.237 , 0.295	Depositor DCC
R_{free} test set	6083 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	75.0	Xtriage
Anisotropy	0.286	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.30 , 81.2	EDS
L-test for twinning[2]	$< \|L\| > = 0.43$, $< L^2 > = 0.25$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	29094	wwPDB-VP
Average B, all atoms (Å^2)	77.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.13% 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: PG0, LMT, PEG, CL, 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	0.51	0/2950	0.72	1/3997 (0.0%)
1	B	0.58	0/2959	0.78	1/4009 (0.0%)
1	C	0.53	0/2925	0.74	2/3962 (0.1%)
1	D	0.48	0/2913	0.70	1/3949 (0.0%)
1	E	0.50	0/2907	0.73	1/3941 (0.0%)
1	F	0.54	0/2918	0.76	5/3955 (0.1%)
1	G	0.57	0/2905	0.79	0/3938
1	H	0.51	0/2887	0.73	0/3915
1	I	0.54	1/2914 (0.0%)	0.75	4/3952 (0.1%)
1	J	0.55	0/2905	0.72	0/3939
All	All	0.53	1/29183 (0.0%)	0.74	15/39557 (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	1
1	E	0	2
1	F	0	2
1	G	0	1
1	H	0	1
1	I	0	3
All	All	0	12

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	I	328	PRO	N-CD	5.23	1.55	1.47

All (15) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	F	122	LEU	CA-CB-CG	7.56	132.69	115.30
1	A	232	LEU	CA-CB-CG	-6.54	100.27	115.30
1	I	320	GLU	N-CA-C	6.53	128.64	111.00
1	I	315	PHE	N-CA-C	-6.49	93.49	111.00
1	I	327	TYR	C-N-CD	6.30	141.63	128.40
1	F	302	MET	C-N-CD	6.08	141.16	128.40
1	C	137	LEU	CA-CB-CG	-6.04	101.41	115.30
1	E	232	LEU	CA-CB-CG	-5.99	101.53	115.30
1	F	222	ARG	NE-CZ-NH1	5.82	123.21	120.30
1	B	253	ASP	CB-CG-OD1	-5.76	113.12	118.30
1	D	232	LEU	CA-CB-CG	-5.68	102.23	115.30
1	F	323	TRP	N-CA-C	5.40	125.57	111.00
1	I	318	MET	C-N-CD	-5.29	108.96	120.60
1	F	9	LYS	N-CA-C	-5.09	97.24	111.00
1	C	89	ASP	CB-CG-OD1	-5.00	113.80	118.30

There are no chirality outliers.

All (12) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	8	ALA	Peptide
1	C	326	GLY	Peptide
1	D	327	TYR	Peptide
1	E	323	TRP	Peptide
1	E	325	TRP	Peptide
1	F	315	PHE	Peptide
1	F	323	TRP	Peptide
1	G	317	TYR	Peptide
1	H	326	GLY	Peptide
1	I	320	GLU	Peptide
1	I	327	TYR	Peptide
1	I	94	HIS	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	2886	0	2938	105	0
1	B	2895	0	2944	126	0
1	C	2865	0	2915	112	0
1	D	2849	0	2895	116	0
1	E	2844	0	2890	118	0
1	F	2856	0	2897	134	0
1	G	2844	0	2882	143	0
1	H	2826	0	2862	104	0
1	I	2850	0	2879	138	0
1	J	2844	0	2882	118	0
2	A	1	0	0	0	0
2	B	3	0	0	0	0
2	C	2	0	0	0	0
2	D	3	0	0	0	0
2	E	2	0	0	0	0
2	F	2	0	0	0	0
2	G	5	0	0	0	0
2	I	3	0	0	0	0
2	J	3	0	0	0	0
3	A	1	0	0	1	0
3	B	2	0	0	1	0
3	C	2	0	0	1	0
3	D	1	0	0	0	0
3	E	2	0	0	2	0
3	F	1	0	0	1	0
3	G	2	0	0	2	0
3	H	1	0	0	1	0
3	J	1	0	0	1	0
4	A	35	0	46	27	0
4	B	67	0	83	35	0
5	B	28	0	40	5	0
5	C	14	0	20	4	0
5	D	7	0	10	0	0
5	E	28	0	40	1	0
5	F	7	0	10	0	0
5	G	35	0	50	8	0
5	H	7	0	10	0	0
5	I	7	0	10	0	0
5	J	14	0	20	2	0
6	E	8	0	12	0	0
7	A	20	0	0	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	B	28	0	0	8	0
7	C	27	0	0	4	0
7	D	25	0	0	8	0
7	E	27	0	0	4	0
7	F	20	0	0	2	0
7	G	35	0	0	12	0
7	H	15	0	0	3	0
7	I	21	0	0	4	0
7	J	23	0	0	6	0
All	All	29094	0	29335	1128	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 19.

All (1128) 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:246:GLU:OE1	5:G:411:PEG:H22	1.24	1.32
4:A:403:LMT:H3B	4:B:406:LMT:C6'	1.59	1.32
4:A:403:LMT:C3B	4:B:406:LMT:H6E	1.83	1.08
4:A:403:LMT:H3B	4:B:406:LMT:H6E	1.07	1.06
1:G:246:GLU:OE1	5:G:411:PEG:C2	2.06	1.02
1:F:307:ILE:O	1:F:310:ILE:HG22	1.60	1.00
1:F:307:ILE:HD11	1:F:334:MET:CE	1.91	1.00
4:A:403:LMT:H3B	4:B:406:LMT:H6D	1.50	0.93
1:B:323:TRP:HB2	4:B:407:LMT:O4'	1.70	0.92
1:F:307:ILE:HD11	1:F:334:MET:CG	1.98	0.92
1:I:316:GLU:HB2	1:I:318:MET:HG2	1.49	0.92
1:I:326:GLY:HA3	1:I:328:PRO:HD3	1.50	0.92
1:I:330:VAL:O	1:I:334:MET:HG3	1.68	0.92
1:C:256:ASP:OD1	1:E:96[B]:ARG:NH2	2.03	0.91
4:A:403:LMT:C3B	4:B:406:LMT:C6'	2.47	0.91
1:F:301:PHE:HE2	1:I:303:PRO:HG3	1.32	0.91
1:C:316:GLU:HG2	1:E:321:LEU:HB3	1.53	0.90
1:B:43:LYS:HD2	5:B:410:PEG:H11	1.53	0.90
4:A:403:LMT:C3'	4:B:406:LMT:H4'	2.03	0.89
1:A:323:TRP:HB3	1:A:324:LYS:HA	1.54	0.88
1:D:203:PRO:HB2	7:D:521:HOH:O	1.73	0.88
1:G:61:TRP:HB2	1:G:169:LEU:HD21	1.56	0.87
1:G:196:GLU:OE1	1:H:212:HIS:NE2	2.06	0.86
1:F:110:LEU:HD13	1:F:177:LEU:HD22	1.58	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:203:PRO:CB	7:D:521:HOH:O	2.22	0.85
1:E:88:GLU:OE1	7:E:501:HOH:O	1.94	0.85
1:G:229:ARG:NH2	7:G:514:HOH:O	2.09	0.84
1:A:324:LYS:HD2	1:D:317:TYR:HB2	1.58	0.84
4:A:403:LMT:H3'	4:B:406:LMT:H4'	1.59	0.83
1:F:307:ILE:CD1	1:F:334:MET:CE	2.57	0.82
1:F:307:ILE:CD1	1:F:334:MET:HE3	2.09	0.82
1:A:13:PRO:HG3	1:D:153:ARG:HD3	1.62	0.81
1:D:229:ARG:HG2	1:D:258:THR:HG23	1.63	0.80
1:G:140:GLN:HE22	1:G:145:ASP:HB3	1.45	0.80
1:A:307:ILE:HD11	1:A:334:MET:HG2	1.64	0.80
1:I:235:LEU:HD12	1:I:242:LEU:HD11	1.63	0.80
1:B:74:GLN:NE2	7:B:526:HOH:O	2.15	0.79
1:I:89:ASP:OD2	7:I:505:HOH:O	1.99	0.79
1:C:126:GLN:NE2	7:C:522:HOH:O	2.14	0.79
1:F:13:PRO:HG3	1:I:153:ARG:HD3	1.63	0.79
4:A:403:LMT:H12	4:B:406:LMT:H51	1.62	0.79
1:F:306:PHE:CE1	1:G:304:LEU:HB3	2.18	0.79
7:F:513:HOH:O	1:G:223:LYS:NZ	2.16	0.79
1:J:88:GLU:OE2	7:J:507:HOH:O	2.01	0.78
1:B:252:ARG:NH2	5:C:406:PEG:O4	2.15	0.78
1:I:326:GLY:HA2	1:I:327:TYR:HB3	1.65	0.78
1:D:48:GLU:OE2	7:D:510:HOH:O	2.01	0.78
1:I:184:LEU:HD21	1:I:221:LEU:HD11	1.65	0.78
1:J:218:LEU:HD21	1:J:268:PHE:HB3	1.66	0.78
1:D:54:ARG:NH1	1:D:79:PHE:O	2.17	0.77
3:C:403:CL:CL	7:C:503:HOH:O	2.39	0.77
4:A:403:LMT:O2'	4:B:406:LMT:O3'	2.01	0.77
1:D:199:VAL:HG13	1:D:279:TYR:HB2	1.66	0.77
1:G:41:GLU:OE2	1:G:155:ARG:NE	2.16	0.77
1:G:168:TYR:OH	3:G:406:CL:CL	2.39	0.76
1:G:74:GLN:HE22	5:G:409:PEG:H31	1.48	0.76
1:H:175:ASP:OD1	7:H:505:HOH:O	2.03	0.76
1:E:83:HIS:CD2	1:E:85:LEU:H	2.03	0.76
1:I:327:TYR:CE1	1:J:318:MET:HE3	2.20	0.76
1:B:253:ASP:OD1	7:B:506:HOH:O	2.02	0.76
3:E:404:CL:CL	7:E:503:HOH:O	2.41	0.76
1:I:326:GLY:HA3	1:I:328:PRO:CD	2.14	0.76
1:C:192:ILE:HG12	1:C:214:LEU:HD21	1.68	0.76
1:I:325:TRP:HA	1:I:325:TRP:CE3	2.20	0.76
1:E:61:TRP:HB2	1:E:169:LEU:HD21	1.67	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:403:LMT:H12	4:B:406:LMT:C5	2.17	0.75
1:B:163:LYS:NZ	7:B:511:HOH:O	2.19	0.75
1:I:327:TYR:CE1	1:J:318:MET:CE	2.69	0.75
1:H:120:HIS:O	1:H:213:GLN:NE2	2.20	0.74
1:F:307:ILE:HG13	1:F:308:ALA:N	2.02	0.74
1:F:307:ILE:HD11	1:F:334:MET:HG2	1.69	0.74
1:H:195:LEU:HD21	1:H:211:THR:HA	1.68	0.74
1:D:73:VAL:HG21	1:D:91:LEU:HD21	1.68	0.74
1:G:232:LEU:HD13	1:G:254:VAL:HG12	1.68	0.74
4:A:403:LMT:C3'	4:B:406:LMT:O3'	2.36	0.73
1:D:140:GLN:HE22	1:D:145:ASP:HB3	1.52	0.73
1:I:63:ASN:HD22	1:I:151:ARG:HH22	1.32	0.73
1:F:311:TYR:HE2	1:F:330:VAL:HG21	1.53	0.73
1:I:327:TYR:HB2	1:J:315:PHE:HZ	1.53	0.73
1:I:331:LEU:O	1:I:334:MET:HB2	1.89	0.73
1:J:82:ILE:HG12	1:J:130:ILE:HD13	1.71	0.72
1:G:100:GLU:O	7:G:523:HOH:O	2.06	0.72
1:B:89:ASP:OD2	7:B:502:HOH:O	2.07	0.72
1:J:229:ARG:NH1	7:J:518:HOH:O	2.22	0.72
1:I:222:ARG:NE	1:I:266:GLU:OE1	2.23	0.72
1:I:211:THR:HG21	1:I:276:LEU:HD13	1.73	0.71
1:H:61:TRP:HB2	1:H:169:LEU:HD21	1.72	0.71
1:E:200:LEU:HD12	1:E:201:GLU:HG3	1.73	0.71
1:F:311:TYR:HB2	1:I:313:MET:HG2	1.72	0.71
1:E:327:TYR:HA	1:E:330:VAL:HB	1.72	0.71
1:H:125:GLU:HG3	1:H:141:GLU:HB2	1.72	0.71
1:D:61:TRP:HB2	1:D:169:LEU:HD21	1.73	0.71
1:B:198:GLU:OE1	1:B:210:ARG:NH1	2.24	0.71
1:D:184:LEU:HD21	1:D:221:LEU:HD11	1.72	0.70
3:H:401:CL:CL	1:J:14:PRO:HD2	2.28	0.70
1:C:8:ALA:O	7:C:511:HOH:O	2.09	0.70
1:A:184:LEU:HD21	1:A:221:LEU:HD11	1.72	0.70
1:C:263:ASP:OD2	1:E:96[A]:ARG:NH1	2.21	0.70
1:F:307:ILE:HD11	1:F:334:MET:HE2	1.73	0.70
1:A:314:ASN:ND2	1:B:314:ASN:OD1	2.25	0.70
1:C:200:LEU:HD12	1:C:201:GLU:HG3	1.72	0.70
1:E:83:HIS:HD2	1:E:85:LEU:H	1.40	0.69
1:I:307:ILE:HD11	1:I:334:MET:HG2	1.73	0.69
1:E:221:LEU:HG	1:E:225:ILE:HD12	1.74	0.69
1:F:301:PHE:C	1:F:303:PRO:HD2	2.13	0.69
1:B:232:LEU:HD13	1:B:254:VAL:HG12	1.75	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:83:HIS:ND1	1:C:84:PRO:HD2	2.08	0.69
1:G:272:VAL:O	7:G:515:HOH:O	2.10	0.69
1:A:256:ASP:OD2	7:A:518:HOH:O	2.09	0.69
1:E:120:HIS:ND1	1:E:191:GLU:OE2	2.26	0.69
1:A:99:VAL:HG22	1:A:231:VAL:HG13	1.74	0.69
4:B:407:LMT:O2'	4:B:407:LMT:H31	1.93	0.69
1:F:301:PHE:CE2	1:I:303:PRO:HG3	2.23	0.68
4:B:407:LMT:H1B	4:B:407:LMT:O3'	1.91	0.68
1:E:195:LEU:HD21	1:E:211:THR:HA	1.76	0.68
1:H:200:LEU:HD12	1:H:201:GLU:HG3	1.76	0.68
1:B:153:ARG:HD3	1:C:13:PRO:HG3	1.74	0.68
1:A:302:MET:HE1	1:B:302:MET:HG3	1.75	0.67
1:D:222:ARG:HD2	1:D:266:GLU:OE1	1.93	0.67
1:J:253:ASP:OD1	7:J:512:HOH:O	2.11	0.67
1:J:228:LEU:HA	1:J:231:VAL:HB	1.76	0.67
1:H:105:TYR:HB3	1:H:132:THR:HB	1.76	0.66
1:C:316:GLU:HG2	1:E:321:LEU:CB	2.24	0.66
4:A:403:LMT:H3'	4:B:406:LMT:C4'	2.25	0.66
1:F:319:PRO:HB2	1:F:320:GLU:HA	1.77	0.66
1:G:318:MET:HG2	1:G:319:PRO:HD3	1.77	0.66
1:D:200:LEU:HD12	1:D:201:GLU:HG3	1.78	0.66
1:F:302:MET:HG3	1:I:302:MET:HE1	1.78	0.66
1:G:327:TYR:HB3	1:G:328:PRO:HD3	1.77	0.66
1:I:45:THR:O	7:I:509:HOH:O	2.14	0.66
1:I:326:GLY:CA	1:I:328:PRO:HD3	2.24	0.66
1:I:328:PRO:CD	1:I:329:VAL:H	2.08	0.66
1:J:88:GLU:OE1	7:J:501:HOH:O	2.14	0.66
1:F:264:THR:OG1	7:F:513:HOH:O	2.12	0.66
1:F:77:GLY:HA3	1:F:87:LEU:HD21	1.77	0.66
4:A:403:LMT:O3'	4:B:406:LMT:O3'	2.13	0.65
1:C:302:MET:HE1	1:E:302:MET:HG3	1.76	0.65
1:D:203:PRO:HB3	7:D:521:HOH:O	1.91	0.65
1:E:90:ILE:HD11	1:E:130:ILE:HD11	1.77	0.65
1:F:165:ARG:HH12	1:F:243:ILE:HG21	1.61	0.65
1:G:193:ASP:OD2	7:G:513:HOH:O	2.14	0.65
1:J:108:ILE:HD13	1:J:235:LEU:HD21	1.79	0.65
1:J:255:TYR:O	1:J:258:THR:HG22	1.96	0.65
1:H:308:ALA:N	1:H:309:GLY:HA3	2.11	0.65
1:A:153:ARG:HD3	1:B:13:PRO:HG3	1.78	0.65
1:B:27:PHE:CZ	1:B:72:VAL:HG21	2.32	0.65
1:F:61:TRP:HB2	1:F:169:LEU:HD21	1.79	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3:GLU:N	1:D:186:GLU:OE1	2.30	0.65
1:J:83:HIS:ND1	1:J:84:PRO:HD2	2.12	0.65
1:A:90:ILE:HD11	1:A:130:ILE:HD11	1.79	0.65
1:I:40:ARG:HH21	1:I:42:PHE:HE2	1.43	0.65
1:B:316:GLU:HB2	1:C:324:LYS:HG2	1.79	0.64
1:E:337:ILE:HA	1:E:340:ILE:HG12	1.79	0.64
1:F:302:MET:HG3	1:I:302:MET:CE	2.28	0.64
1:I:125:GLU:OE1	1:I:140:GLN:NE2	2.25	0.64
1:G:233:SER:OG	1:G:237:ARG:NH2	2.31	0.64
1:G:303:PRO:HG3	1:H:301:PHE:CE2	2.33	0.64
1:D:29:ILE:HG21	1:D:50:VAL:HG11	1.78	0.64
1:J:12:LEU:O	7:J:503:HOH:O	2.14	0.64
1:C:82:ILE:HG12	1:C:130:ILE:HD13	1.80	0.64
1:C:29:ILE:HG21	1:C:50:VAL:HG11	1.80	0.64
1:C:308:ALA:N	1:C:309:GLY:HA3	2.13	0.64
1:J:147:PHE:HZ	1:J:177:LEU:HD12	1.63	0.64
1:G:221:LEU:HD23	1:G:265:VAL:HG21	1.80	0.63
1:J:33:ASN:ND2	1:J:60:THR:OG1	2.31	0.63
1:G:184:LEU:HD21	1:G:221:LEU:HD11	1.80	0.63
1:G:306:PHE:CZ	5:G:408:PEG:H41	2.33	0.63
1:A:83:HIS:HE2	1:A:85:LEU:HD12	1.63	0.63
1:A:253:ASP:OD1	7:A:504:HOH:O	2.15	0.63
1:I:325:TRP:HA	1:I:325:TRP:HE3	1.63	0.63
1:E:82:ILE:HG13	1:E:105:TYR:CE2	2.33	0.63
1:E:185:LEU:HD11	1:E:261:ILE:HG23	1.80	0.63
1:E:231:VAL:HG12	1:E:232:LEU:HG	1.81	0.63
1:B:323:TRP:HB2	4:B:407:LMT:H4O1	1.64	0.62
1:A:95:GLN:HA	1:D:260:GLN:HE22	1.64	0.62
1:A:155:ARG:O	7:A:514:HOH:O	2.15	0.62
1:H:314:ASN:ND2	1:J:314:ASN:OD1	2.32	0.62
4:A:403:LMT:H3'	4:B:406:LMT:C3'	2.29	0.62
1:B:311:TYR:HE2	1:B:330:VAL:HG21	1.65	0.62
1:D:211:THR:HG21	1:D:276:LEU:HD13	1.80	0.62
1:I:40:ARG:NH1	7:I:520:HOH:O	2.23	0.62
1:B:324:LYS:HG2	1:B:325:TRP:H	1.63	0.62
1:E:236:TYR:CE1	1:E:252:ARG:HB2	2.34	0.62
1:F:192:ILE:HG12	1:F:214:LEU:HD21	1.81	0.62
1:F:200:LEU:HD13	1:G:209:GLN:HG2	1.81	0.62
1:G:315:PHE:HB3	1:H:327:TYR:HB2	1.82	0.62
1:H:115:TYR:HB2	1:H:184:LEU:HD11	1.82	0.62
1:I:327:TYR:HA	1:I:330:VAL:HB	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:307:ILE:HD11	1:D:334:MET:HG2	1.82	0.62
1:G:30:GLU:HG3	1:G:43:LYS:HG2	1.80	0.62
1:A:168:TYR:OH	1:B:14:PRO:HG2	2.00	0.62
1:F:9:LYS:HB2	1:F:12:LEU:HD12	1.80	0.62
1:A:303:PRO:HG3	1:B:301:PHE:HE2	1.65	0.61
1:D:148:ASP:O	1:D:152:GLU:HG2	2.00	0.61
1:B:55:ASP:HB3	5:B:411:PEG:H11	1.82	0.61
1:D:348:LYS:HG2	1:D:349:LYS:H	1.66	0.61
1:J:70:THR:HG22	1:J:91:LEU:HD13	1.81	0.61
1:D:209:GLN:HG2	1:E:200:LEU:HD22	1.81	0.61
1:G:175:ASP:OD2	7:G:510:HOH:O	2.16	0.61
1:I:307:ILE:HD11	1:I:334:MET:CG	2.30	0.61
1:I:327:TYR:CE1	1:J:318:MET:HE2	2.34	0.61
1:J:200:LEU:HD12	1:J:201:GLU:HG3	1.83	0.61
1:C:243:ILE:HG13	1:C:246:GLU:HB2	1.83	0.61
1:D:14:PRO:HD2	3:E:403:CL:CL	2.38	0.60
1:G:150:VAL:HG11	1:G:173:LEU:HD23	1.83	0.60
1:G:153:ARG:HD3	1:H:13:PRO:HG3	1.83	0.60
1:E:12:LEU:HD13	1:E:16:THR:HG21	1.83	0.60
1:F:29:ILE:HG21	1:F:50:VAL:HG11	1.83	0.60
1:C:83:HIS:CD2	1:C:85:LEU:HB2	2.36	0.60
1:D:175:ASP:OD2	7:D:501:HOH:O	2.17	0.60
1:G:36:ILE:HD13	1:G:163:LYS:HG3	1.83	0.60
1:G:310:ILE:HG22	1:H:334:MET:HE1	1.83	0.60
1:F:200:LEU:HD12	1:F:201:GLU:HG3	1.84	0.60
1:G:272:VAL:HA	1:G:275:LEU:HD22	1.83	0.60
1:D:130:ILE:HB	1:D:137:LEU:HB2	1.84	0.60
1:H:152:GLU:HB2	1:H:158:ARG:HH21	1.66	0.60
1:A:199:VAL:HG13	1:A:279:TYR:HB2	1.83	0.60
1:F:165:ARG:NH1	1:F:243:ILE:HG21	2.17	0.60
1:A:19:TYR:OH	1:A:141:GLU:OE1	2.09	0.59
1:C:98:LYS:NZ	1:C:100:GLU:OE1	2.21	0.59
3:F:403:CL:CL	1:G:14:PRO:HD2	2.39	0.59
1:J:203:PRO:HG2	1:J:286:LYS:HE2	1.84	0.59
4:A:403:LMT:O3'	4:B:406:LMT:C4'	2.51	0.59
1:D:243:ILE:HG13	1:D:246:GLU:HB2	1.85	0.59
1:J:23:TYR:CE2	1:J:142:LYS:HD3	2.37	0.59
1:E:239:VAL:HA	1:E:242:LEU:HD12	1.82	0.59
1:F:312:GLY:O	1:I:314:ASN:ND2	2.35	0.59
1:H:112:MET:HG3	1:H:177:LEU:HD11	1.83	0.59
1:I:326:GLY:HA2	1:I:327:TYR:CB	2.31	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:165:ARG:NH2	1:I:243:ILE:HD12	2.18	0.59
1:C:34:TYR:O	1:C:59:PRO:HD2	2.02	0.59
1:G:195:LEU:HD21	1:G:211:THR:HA	1.84	0.59
1:F:5:ARG:O	1:F:5:ARG:NE	2.36	0.59
1:H:99:VAL:HG22	1:H:108:ILE:HG12	1.85	0.59
1:C:131:LEU:HD22	1:C:170:LEU:HD22	1.83	0.59
1:C:174:ILE:O	1:C:178:VAL:HG23	2.02	0.59
1:I:255:TYR:O	1:I:258:THR:HG22	2.03	0.59
1:I:27:PHE:CZ	1:I:72:VAL:HG21	2.38	0.59
1:B:33:ASN:HB2	1:B:60:THR:HG23	1.85	0.58
1:G:143:ILE:HD13	1:G:144:GLY:H	1.68	0.58
1:F:195:LEU:HD11	1:F:210:ARG:HB3	1.83	0.58
1:H:330:VAL:HA	1:H:333:VAL:HG12	1.84	0.58
4:A:403:LMT:O3'	4:B:406:LMT:H4'	2.03	0.58
1:B:140:GLN:HE22	1:B:145:ASP:HB3	1.67	0.58
1:B:306:PHE:CE1	1:C:304:LEU:HB3	2.38	0.58
1:B:324:LYS:O	1:B:326:GLY:N	2.36	0.58
1:J:225:ILE:HD12	1:J:228:LEU:HD23	1.84	0.58
1:A:323:TRP:CB	1:A:324:LYS:HA	2.28	0.58
1:D:120:HIS:H	1:D:120:HIS:CD2	2.19	0.58
1:F:288:ASN:HD21	1:F:292:LYS:HE3	1.69	0.58
1:B:274:GLY:O	1:B:278:VAL:HG23	2.04	0.58
1:E:22:LYS:HE3	1:E:23:TYR:CZ	2.37	0.58
1:E:229:ARG:NE	1:E:259:ILE:HG12	2.17	0.58
1:F:178:VAL:HG21	1:F:254:VAL:HG13	1.85	0.58
1:H:281:SER:HB3	1:J:279:TYR:HE2	1.68	0.58
1:H:326:GLY:O	1:H:329:VAL:HG12	2.03	0.58
1:D:117:LYS:HE3	1:D:187:LYS:HG2	1.85	0.58
1:D:320:GLU:HB3	1:E:315:PHE:CE1	2.39	0.58
1:F:83:HIS:ND1	1:F:84:PRO:HD2	2.19	0.58
1:A:22:LYS:HE3	1:A:23:TYR:CE1	2.39	0.58
1:B:181:TYR:O	1:B:185:LEU:HG	2.04	0.58
1:B:236:TYR:CZ	1:B:252:ARG:HG3	2.39	0.58
1:C:232:LEU:HD13	1:C:254:VAL:HG12	1.86	0.58
1:D:195:LEU:HD23	1:D:275:LEU:HD23	1.86	0.58
1:I:326:GLY:CA	1:I:327:TYR:HB3	2.33	0.58
1:B:34:TYR:OH	1:B:169:LEU:HD13	2.03	0.57
1:B:73:VAL:HG11	1:B:91:LEU:HD21	1.85	0.57
1:F:229:ARG:HA	1:F:258:THR:HG21	1.86	0.57
1:B:30:GLU:OE1	1:B:151:ARG:NH2	2.37	0.57
1:G:93:VAL:HA	1:G:126:GLN:OE1	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:320:GLU:C	1:I:322:ARG:H	2.07	0.57
1:E:346:LYS:H	1:E:346:LYS:HE3	1.69	0.57
1:J:311:TYR:HE2	1:J:330:VAL:HG21	1.69	0.57
5:E:405:PEG:H32	7:G:535:HOH:O	2.03	0.57
1:D:222:ARG:HD3	1:D:269:ARG:HD2	1.87	0.57
3:G:406:CL:CL	7:G:533:HOH:O	2.54	0.57
1:J:221:LEU:O	1:J:225:ILE:HG22	2.04	0.57
1:A:108:ILE:HD12	1:A:170:LEU:HD11	1.86	0.57
1:F:307:ILE:HD11	1:F:334:MET:HG3	1.86	0.57
1:G:255:TYR:O	1:G:258:THR:HG22	2.04	0.57
1:H:299:THR:HG1	1:H:345:PHE:HZ	1.50	0.57
1:D:328:PRO:HG2	1:D:329:VAL:HG13	1.86	0.57
1:E:253:ASP:OD1	7:E:507:HOH:O	2.18	0.57
1:E:323:TRP:O	1:E:326:GLY:N	2.38	0.57
1:J:47:VAL:HG21	1:J:72:VAL:HG13	1.86	0.57
1:C:100:GLU:HB3	1:C:102:PHE:CE1	2.40	0.56
1:D:327:TYR:CE1	1:E:318:MET:HG3	2.40	0.56
1:H:292:LYS:HD3	1:H:348:LYS:HB3	1.87	0.56
1:F:116:ASP:O	1:F:120:HIS:HA	2.04	0.56
1:F:312:GLY:HA2	1:I:314:ASN:HD22	1.68	0.56
1:G:140:GLN:NE2	1:G:145:ASP:HB3	2.17	0.56
1:I:10:LYS:HD3	5:J:405:PEG:O4	2.05	0.56
1:I:328:PRO:CG	1:I:329:VAL:H	2.18	0.56
1:B:153:ARG:HG2	1:B:158:ARG:HB2	1.87	0.56
1:B:336:VAL:O	1:B:340:ILE:HG23	2.06	0.56
1:E:17:LEU:HG	1:E:91:LEU:HD12	1.88	0.56
1:A:325:TRP:CE3	1:A:325:TRP:HA	2.39	0.56
1:H:300:ILE:O	1:H:303:PRO:HD2	2.05	0.56
1:C:316:GLU:CG	1:E:321:LEU:O	2.53	0.56
1:J:304:LEU:HD13	1:J:334:MET:HB3	1.86	0.56
1:D:327:TYR:HA	1:D:330:VAL:H	1.70	0.56
1:H:120:HIS:HB2	1:H:213:GLN:HE22	1.70	0.56
4:A:403:LMT:C3'	4:B:406:LMT:C4'	2.78	0.56
1:C:288:ASN:HD21	1:C:292:LYS:HE3	1.70	0.56
1:D:144:GLY:O	7:D:511:HOH:O	2.18	0.56
1:F:229:ARG:HA	1:F:258:THR:CG2	2.35	0.56
1:J:178:VAL:HG21	1:J:232:LEU:HD11	1.88	0.56
1:H:252:ARG:NH2	7:H:509:HOH:O	2.39	0.56
1:A:200:LEU:HD13	1:B:209:GLN:HG2	1.87	0.56
1:C:80:PHE:CD2	1:C:137:LEU:HD11	2.41	0.55
1:C:310:ILE:HD13	1:E:331:LEU:HD11	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:129:LEU:CD2	1:B:138:MET:HG3	2.37	0.55
1:B:261:ILE:O	1:B:265:VAL:HG23	2.06	0.55
1:C:315:PHE:HA	1:E:321:LEU:HD22	1.87	0.55
1:H:313:MET:HA	1:J:312:GLY:HA2	1.89	0.55
1:C:225:ILE:HD12	1:C:228:LEU:HB3	1.89	0.55
1:G:109:VAL:O	1:G:110:LEU:HD23	2.06	0.55
1:I:327:TYR:HE1	1:J:318:MET:HE3	1.68	0.55
1:J:77:GLY:HA3	1:J:87:LEU:HD11	1.87	0.55
1:F:243:ILE:HG13	1:F:246:GLU:HB2	1.87	0.55
1:E:63:ASN:HA	1:E:138:MET:HB3	1.89	0.55
1:F:315:PHE:HD2	1:G:318:MET:HE2	1.71	0.55
1:F:69:ARG:HB3	1:F:71:ASP:OD1	2.07	0.55
1:A:324:LYS:HE3	1:A:325:TRP:H	1.72	0.55
1:B:86:VAL:HG13	1:B:107:PHE:CD2	2.42	0.55
1:H:333:VAL:HA	1:H:336:VAL:HG12	1.88	0.55
1:E:157:ASN:CG	1:E:162:ARG:HG3	2.28	0.55
1:F:167:ASP:HB2	1:F:242:LEU:HD23	1.88	0.55
1:G:39:PHE:HE2	1:G:41:GLU:HG2	1.72	0.54
1:A:307:ILE:HA	1:A:310:ILE:HG12	1.87	0.54
1:B:252:ARG:NH2	1:C:100:GLU:HG2	2.21	0.54
1:D:208:VAL:HG13	1:D:276:LEU:HD11	1.88	0.54
1:F:310:ILE:HG23	1:F:311:TYR:CD1	2.42	0.54
1:H:222:ARG:HA	1:H:225:ILE:HG22	1.89	0.54
1:I:63:ASN:ND2	1:I:151:ARG:HH22	2.02	0.54
1:I:110:LEU:HD13	1:I:177:LEU:HD22	1.89	0.54
1:J:174:ILE:HG21	1:J:232:LEU:HD21	1.89	0.54
1:C:62:ILE:HD12	1:C:137:LEU:HD21	1.89	0.54
1:H:284:SER:HB3	1:J:283:VAL:HG11	1.87	0.54
1:E:111:LYS:O	1:E:181:TYR:OH	2.19	0.54
1:H:270:ASP:OD2	1:J:215:LYS:HE2	2.07	0.54
1:B:310:ILE:HA	1:B:313:MET:HG3	1.89	0.54
1:D:325:TRP:O	1:D:328:PRO:HD3	2.07	0.54
1:F:301:PHE:O	1:F:302:MET:HB2	2.08	0.54
1:I:61:TRP:HB2	1:I:169:LEU:HD21	1.90	0.54
1:B:195:LEU:HD21	1:B:211:THR:HA	1.88	0.54
1:E:327:TYR:O	1:E:331:LEU:N	2.36	0.54
1:J:188:ILE:HG23	1:J:214:LEU:HD11	1.90	0.54
1:A:111:LYS:NZ	1:A:126:GLN:OE1	2.41	0.54
1:A:317:TYR:CD1	1:A:317:TYR:N	2.76	0.54
4:A:403:LMT:H3'	4:B:406:LMT:H2'	1.89	0.54
1:C:63:ASN:OD1	1:C:138:MET:HG2	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:82:ILE:HD11	1:E:130:ILE:HG21	1.89	0.54
1:G:61:TRP:HZ2	1:G:138:MET:HE1	1.73	0.54
1:G:222:ARG:HA	1:G:225:ILE:HG22	1.90	0.54
1:H:192:ILE:HG12	1:H:214:LEU:HD21	1.90	0.54
1:C:228:LEU:O	1:C:231:VAL:HB	2.07	0.54
1:G:200:LEU:HD12	1:G:201:GLU:HG3	1.90	0.54
1:I:328:PRO:HD2	1:I:329:VAL:H	1.72	0.54
1:D:82:ILE:HG13	1:D:105:TYR:CZ	2.42	0.53
1:D:294:LEU:HD13	1:E:295:THR:HA	1.90	0.53
1:E:318:MET:HB3	1:E:320:GLU:N	2.23	0.53
1:F:250:TYR:O	1:F:253:ASP:HB3	2.07	0.53
1:I:302:MET:HG3	1:J:302:MET:HE1	1.90	0.53
1:J:230:GLU:O	1:J:234:SER:OG	2.22	0.53
1:A:326:GLY:O	1:A:329:VAL:N	2.40	0.53
1:B:166:ALA:O	1:B:169:LEU:HB3	2.09	0.53
1:C:330:VAL:O	1:C:334:MET:HG2	2.08	0.53
1:D:110:LEU:HD13	1:D:177:LEU:HD22	1.90	0.53
1:G:82:ILE:HG12	1:G:130:ILE:HD13	1.89	0.53
1:F:90:ILE:HD11	1:F:130:ILE:HD11	1.89	0.53
1:H:281:SER:HB3	1:J:279:TYR:CE2	2.43	0.53
1:A:149:PRO:HB3	1:B:11:GLY:HA2	1.91	0.53
1:D:110:LEU:HD11	1:D:174:ILE:HG12	1.91	0.53
1:D:327:TYR:CG	1:D:327:TYR:O	2.61	0.53
1:E:346:LYS:NZ	1:E:347:LYS:HG3	2.23	0.53
1:F:300:ILE:HG13	1:F:301:PHE:N	2.23	0.53
1:F:313:MET:SD	1:G:311:TYR:HB2	2.48	0.53
1:D:206:GLU:HG3	1:D:207:THR:N	2.24	0.53
1:D:212:HIS:NE2	1:E:196:GLU:OE1	2.39	0.53
1:A:195:LEU:HD21	1:A:211:THR:HA	1.91	0.53
1:D:239:VAL:HA	1:D:242:LEU:HD12	1.91	0.53
1:F:168:TYR:OH	1:G:14:PRO:HG2	2.09	0.53
1:H:99:VAL:HG23	1:H:231:VAL:HG22	1.91	0.53
1:J:99:VAL:HG23	1:J:231:VAL:HG22	1.90	0.53
1:J:108:ILE:HD12	1:J:174:ILE:HD11	1.91	0.53
1:A:297:ILE:HG22	1:D:302:MET:HE3	1.89	0.53
1:B:19:TYR:CZ	1:B:21:GLY:HA3	2.44	0.53
1:F:186:GLU:OE2	1:G:7:SER:HB3	2.09	0.53
1:H:82:ILE:HG13	1:H:105:TYR:CE2	2.43	0.53
1:H:327:TYR:CZ	1:H:331:LEU:HD11	2.43	0.53
1:C:110:LEU:HD21	1:C:228:LEU:HD13	1.91	0.52
1:F:293:VAL:HA	1:F:296:ILE:HG12	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:225:ILE:HD12	1:G:228:LEU:HD23	1.91	0.52
1:I:13:PRO:HG3	1:J:153:ARG:HD3	1.91	0.52
1:J:100:GLU:OE2	7:J:515:HOH:O	2.19	0.52
1:F:307:ILE:CD1	1:F:334:MET:HE2	2.35	0.52
1:I:29:ILE:HG21	1:I:50:VAL:HG11	1.91	0.52
1:D:145:ASP:OD2	1:D:151:ARG:NH2	2.33	0.52
1:F:195:LEU:HD21	1:F:211:THR:HA	1.89	0.52
1:D:125:GLU:HG3	1:D:141:GLU:HB2	1.90	0.52
1:E:165:ARG:NH2	1:E:243:ILE:HG21	2.24	0.52
1:I:63:ASN:HD22	1:I:151:ARG:NH2	2.03	0.52
1:I:148:ASP:O	1:I:152:GLU:HG2	2.08	0.52
1:I:328:PRO:HG2	1:I:329:VAL:H	1.74	0.52
1:B:296:ILE:HA	1:B:299:THR:HG22	1.90	0.52
1:B:311:TYR:CE2	1:B:330:VAL:HG21	2.43	0.52
1:B:312:GLY:H	1:B:313:MET:HB2	1.74	0.52
1:F:307:ILE:HD11	1:F:334:MET:SD	2.49	0.52
1:J:147:PHE:CZ	1:J:177:LEU:HD12	2.42	0.52
1:B:301:PHE:O	1:B:305:THR:N	2.39	0.52
1:J:316:GLU:HG2	1:J:317:TYR:H	1.74	0.52
1:F:307:ILE:CG1	1:F:334:MET:HE2	2.39	0.52
1:H:310:ILE:HD11	1:J:334:MET:HE1	1.92	0.52
1:I:99:VAL:CG2	1:I:231:VAL:HG13	2.40	0.52
1:J:73:VAL:HG21	1:J:91:LEU:HD21	1.92	0.52
1:B:221:LEU:HG	1:B:225:ILE:HD12	1.91	0.52
1:E:44:THR:HG1	1:E:46:ASP:H	1.58	0.52
1:E:164:LYS:NZ	1:E:246:GLU:HB3	2.24	0.52
1:G:83:HIS:ND1	1:G:84:PRO:HD2	2.25	0.52
1:I:304:LEU:HD11	1:I:338:ALA:HB2	1.92	0.52
1:C:218:LEU:HD21	1:C:268:PHE:HB3	1.90	0.52
1:E:89:ASP:OD2	7:E:516:HOH:O	2.19	0.52
1:I:240:PRO:HB2	1:I:241:PRO:HD3	1.91	0.52
1:I:326:GLY:CA	1:I:327:TYR:CB	2.87	0.52
1:B:27:PHE:HZ	1:B:72:VAL:HG21	1.74	0.51
1:F:105:TYR:HB3	1:F:132:THR:HB	1.91	0.51
1:A:23:TYR:CE2	1:A:142:LYS:HD3	2.45	0.51
1:A:82:ILE:HG12	1:A:130:ILE:HD13	1.93	0.51
1:A:195:LEU:HD11	1:A:210:ARG:HB3	1.92	0.51
1:A:240:PRO:HB2	1:A:241:PRO:HD3	1.92	0.51
1:F:301:PHE:HE2	1:I:303:PRO:CG	2.14	0.51
5:G:408:PEG:O1	5:G:408:PEG:H32	2.10	0.51
1:D:297:ILE:HG12	1:E:299:THR:OG1	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:12:LEU:HD13	1:G:16:THR:HG21	1.92	0.51
1:G:307:ILE:HD11	1:G:334:MET:SD	2.50	0.51
1:G:319:PRO:HG2	1:G:322:ARG:O	2.10	0.51
1:I:120:HIS:ND1	1:I:191:GLU:OE2	2.38	0.51
1:I:328:PRO:CG	1:I:329:VAL:N	2.73	0.51
1:A:65:THR:OG1	7:A:516:HOH:O	2.19	0.51
1:F:157:ASN:CG	1:F:162:ARG:HG3	2.31	0.51
1:I:165:ARG:CZ	1:I:243:ILE:HD12	2.41	0.51
1:A:209:GLN:HG2	1:D:200:LEU:HD13	1.91	0.51
1:D:198:GLU:O	1:D:202:ARG:N	2.43	0.51
1:D:323:TRP:O	1:D:325:TRP:N	2.44	0.51
1:H:295:THR:O	1:H:299:THR:HG23	2.11	0.51
1:B:303:PRO:HG3	1:C:301:PHE:CE2	2.45	0.51
5:B:408:PEG:H41	7:B:526:HOH:O	2.11	0.51
1:F:153:ARG:HD3	1:G:13:PRO:HG3	1.93	0.51
1:G:215:LYS:O	1:G:219:VAL:HG23	2.10	0.51
1:H:239:VAL:HG11	1:H:248:VAL:HG22	1.91	0.51
1:H:336:VAL:O	1:H:340:ILE:HG23	2.11	0.51
1:H:171:TYR:HE1	1:H:254:VAL:HG23	1.76	0.51
1:J:295:THR:O	1:J:299:THR:HG23	2.11	0.51
1:A:334:MET:HE1	1:D:310:ILE:HD11	1.93	0.51
1:D:109:VAL:O	1:D:110:LEU:HD23	2.11	0.51
1:H:41:GLU:OE1	1:H:155:ARG:NH2	2.44	0.51
1:H:244:GLU:HA	1:H:248:VAL:HG23	1.93	0.51
1:A:320:GLU:OE2	4:A:403:LMT:H1B	2.09	0.51
1:E:83:HIS:CE1	1:E:84:PRO:HD2	2.45	0.51
1:G:61:TRP:CZ2	1:G:138:MET:HE1	2.46	0.51
1:G:113:PHE:HD2	1:G:181:TYR:HE1	1.59	0.51
1:G:330:VAL:O	1:G:334:MET:HG2	2.10	0.51
1:C:110:LEU:HD13	1:C:177:LEU:HD22	1.93	0.50
1:C:233:SER:OG	1:C:237:ARG:NH2	2.43	0.50
1:G:34:TYR:O	1:G:59:PRO:HD2	2.11	0.50
1:G:316:GLU:HG3	1:H:324:LYS:HB3	1.93	0.50
1:I:326:GLY:CA	1:I:328:PRO:CD	2.85	0.50
1:C:86:VAL:HG13	1:C:107:PHE:CE2	2.46	0.50
1:D:327:TYR:HE1	1:E:318:MET:HG3	1.76	0.50
1:F:307:ILE:CD1	1:F:334:MET:CG	2.83	0.50
1:G:146:VAL:HG21	1:G:177:LEU:HA	1.93	0.50
1:A:317:TYR:N	1:A:317:TYR:HD1	2.09	0.50
1:B:29:ILE:HG12	1:B:64:ILE:HG12	1.93	0.50
1:I:125:GLU:HG3	1:I:141:GLU:HB2	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:195:LEU:HD21	1:I:211:THR:HA	1.94	0.50
1:A:14:PRO:HG3	1:D:171:TYR:OH	2.11	0.50
1:B:232:LEU:CD1	1:B:254:VAL:HG12	2.39	0.50
1:E:44:THR:OG1	1:E:45:THR:N	2.45	0.50
1:F:208:VAL:HG12	1:I:278:VAL:HG13	1.93	0.50
1:H:277:ASP:HB3	1:J:276:LEU:HD23	1.93	0.50
1:B:129:LEU:HD23	1:B:138:MET:HG3	1.94	0.50
1:D:167:ASP:OD2	1:D:243:ILE:N	2.31	0.50
1:D:239:VAL:HG11	1:D:248:VAL:HG22	1.94	0.50
1:E:73:VAL:HG21	1:E:91:LEU:HD21	1.93	0.50
1:E:93:VAL:HA	1:E:126:GLN:NE2	2.25	0.50
1:J:233:SER:OG	1:J:237:ARG:NH2	2.44	0.50
1:A:227:PRO:O	1:A:230:GLU:N	2.44	0.50
1:D:96:ARG:NH1	1:D:227:PRO:HB3	2.27	0.50
1:E:115:TYR:OH	1:E:120:HIS:HB3	2.12	0.50
1:F:222:ARG:HH11	1:F:222:ARG:CG	2.24	0.50
1:A:110:LEU:HD11	1:A:174:ILE:HG12	1.92	0.50
1:B:244:GLU:HA	1:B:248:VAL:HG23	1.94	0.50
1:C:228:LEU:HA	1:C:231:VAL:HB	1.93	0.50
1:E:29:ILE:HG21	1:E:50:VAL:HG11	1.94	0.50
1:E:51:LEU:N	1:E:52:PRO:HD2	2.26	0.50
1:F:99:VAL:HG22	1:F:108:ILE:HG12	1.94	0.50
1:G:270:ASP:O	1:G:273:SER:OG	2.22	0.50
1:A:73:VAL:HG21	1:A:91:LEU:HD21	1.93	0.50
1:A:136:VAL:HG11	1:A:173:LEU:HD12	1.94	0.50
1:B:255:TYR:CE2	1:B:259:ILE:HD11	2.46	0.50
1:B:302:MET:HE1	1:C:302:MET:HG3	1.94	0.50
1:E:296:ILE:HG22	1:E:345:PHE:CE2	2.47	0.50
1:I:46:ASP:O	1:I:49:SER:OG	2.26	0.50
1:I:153:ARG:HG2	1:I:158:ARG:HB2	1.94	0.50
1:J:187:LYS:O	1:J:190:ASP:HB2	2.12	0.50
1:F:315:PHE:HE1	1:G:327:TYR:HD2	1.59	0.50
1:G:229:ARG:HA	1:G:258:THR:HG21	1.94	0.50
1:H:188:ILE:O	1:H:192:ILE:HG13	2.11	0.50
1:I:307:ILE:HG13	1:I:334:MET:HE2	1.94	0.50
1:B:255:TYR:CZ	1:B:259:ILE:HD11	2.47	0.49
1:D:253:ASP:O	1:D:256:ASP:N	2.44	0.49
1:E:255:TYR:O	1:E:258:THR:HG22	2.12	0.49
1:G:99:VAL:HG23	1:G:231:VAL:HG22	1.93	0.49
1:G:326:GLY:HA2	1:G:329:VAL:HG22	1.93	0.49
1:I:73:VAL:HG21	1:I:91:LEU:HD21	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:34:TYR:O	1:B:58:THR:HB	2.12	0.49
1:C:167:ASP:OD2	1:C:243:ILE:N	2.43	0.49
1:E:336:VAL:O	1:E:340:ILE:HG23	2.12	0.49
1:F:306:PHE:HE1	1:G:304:LEU:HB3	1.71	0.49
1:G:74:GLN:NE2	5:G:409:PEG:H31	2.24	0.49
1:B:83:HIS:ND1	1:B:84:PRO:HD2	2.28	0.49
1:D:167:ASP:OD1	1:D:168:TYR:N	2.44	0.49
1:G:167:ASP:OD2	1:G:243:ILE:HG12	2.12	0.49
1:I:228:LEU:O	1:I:231:VAL:HB	2.12	0.49
1:F:211:THR:HG21	1:F:276:LEU:HD13	1.94	0.49
1:G:239:VAL:HB	1:G:242:LEU:HB2	1.93	0.49
1:I:34:TYR:CE1	1:I:59:PRO:HB2	2.47	0.49
1:I:328:PRO:CD	1:I:329:VAL:N	2.72	0.49
1:B:323:TRP:NE1	4:B:407:LMT:O6'	2.44	0.49
1:C:88:GLU:HB3	7:C:504:HOH:O	2.11	0.49
1:C:272:VAL:HA	1:C:275:LEU:HD22	1.93	0.49
1:G:315:PHE:CD2	1:H:327:TYR:HA	2.47	0.49
1:A:303:PRO:HG3	1:B:301:PHE:CE2	2.45	0.49
1:E:192:ILE:HG12	1:E:214:LEU:HD21	1.92	0.49
1:G:246:GLU:OE1	5:G:411:PEG:C1	2.60	0.49
1:I:60:THR:HB	1:I:135:CYS:SG	2.52	0.49
1:I:328:PRO:O	1:I:331:LEU:N	2.45	0.49
1:J:195:LEU:O	1:J:199:VAL:HG23	2.12	0.49
1:J:333:VAL:O	1:J:336:VAL:HG12	2.12	0.49
1:A:222:ARG:HG3	1:A:226:TRP:CD1	2.47	0.49
1:B:315:PHE:HD2	1:C:327:TYR:HD1	1.59	0.49
7:B:506:HOH:O	1:C:89:ASP:OD2	2.20	0.49
1:C:165:ARG:NH2	1:C:243:ILE:HG21	2.28	0.49
1:F:257:HIS:O	1:F:260:GLN:N	2.45	0.49
1:G:35:SER:HB3	1:G:58:THR:HG21	1.95	0.49
1:J:230:GLU:HA	1:J:233:SER:HB3	1.95	0.49
1:E:83:HIS:ND1	1:E:84:PRO:HD2	2.28	0.49
1:H:51:LEU:N	1:H:52:PRO:HD2	2.28	0.49
1:H:239:VAL:HG21	1:H:244:GLU:HG3	1.93	0.49
1:J:47:VAL:O	1:J:50:VAL:HG22	2.12	0.49
1:B:300:ILE:O	1:B:304:LEU:HG	2.13	0.49
1:C:116:ASP:O	1:C:120:HIS:HA	2.13	0.49
1:G:239:VAL:HG12	1:G:242:LEU:HD12	1.94	0.49
1:H:120:HIS:HB2	1:H:213:GLN:NE2	2.28	0.49
1:I:295:THR:O	1:I:299:THR:HG22	2.13	0.49
1:J:167:ASP:OD1	1:J:168:TYR:N	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:192:ILE:HG12	1:J:214:LEU:HD21	1.95	0.49
1:J:303:PRO:HG2	1:J:304:LEU:HD23	1.95	0.49
1:A:204:GLU:HG2	1:A:205:LYS:H	1.77	0.48
1:A:320:GLU:OE2	4:A:403:LMT:C1B	2.60	0.48
1:B:138:MET:HE1	1:B:147:PHE:CD2	2.47	0.48
1:E:83:HIS:CG	1:E:84:PRO:HD2	2.47	0.48
1:F:138:MET:HE1	1:F:147:PHE:CD2	2.48	0.48
1:C:101:PHE:H	5:C:406:PEG:C4	2.26	0.48
1:E:328:PRO:O	1:E:332:ALA:N	2.45	0.48
1:F:307:ILE:HD12	1:F:334:MET:HE3	1.91	0.48
1:G:93:VAL:O	1:G:111:LYS:NZ	2.46	0.48
1:H:302:MET:HE2	1:J:301:PHE:HB2	1.95	0.48
1:I:85:LEU:HD11	1:J:250:TYR:CD1	2.47	0.48
1:A:190:ASP:O	1:A:194:VAL:HG23	2.14	0.48
1:B:31:VAL:HG11	1:B:53:PHE:CE2	2.48	0.48
1:C:260:GLN:O	1:C:264:THR:OG1	2.16	0.48
1:G:113:PHE:HE2	1:G:224:THR:HG21	1.78	0.48
1:D:51:LEU:N	1:D:52:PRO:HD2	2.28	0.48
1:D:160:ILE:HG22	1:D:164:LYS:HG2	1.96	0.48
1:D:299:THR:HG21	1:D:345:PHE:CZ	2.47	0.48
1:G:171:TYR:HE1	1:G:254:VAL:HG23	1.78	0.48
1:H:236:TYR:CD1	1:H:252:ARG:HB2	2.49	0.48
4:A:403:LMT:C3'	4:B:406:LMT:C3'	2.92	0.48
1:C:277:ASP:HB3	1:E:276:LEU:HD23	1.94	0.48
1:F:301:PHE:O	1:F:303:PRO:HD2	2.13	0.48
1:F:303:PRO:HG2	1:F:304:LEU:H	1.79	0.48
1:J:95:GLN:HE22	1:J:98:LYS:NZ	2.12	0.48
1:C:24:ARG:HA	1:C:68:HIS:CD2	2.49	0.48
1:D:288:ASN:HD21	1:D:292:LYS:HE3	1.79	0.48
1:A:186:GLU:OE2	1:B:7:SER:HB3	2.12	0.48
1:J:330:VAL:O	1:J:334:MET:HG3	2.14	0.48
1:F:27:PHE:CD2	1:F:45:THR:HG22	2.48	0.48
1:I:36:ILE:HD13	1:I:163:LYS:HD2	1.95	0.48
1:B:192:ILE:HG12	1:B:214:LEU:HD21	1.95	0.48
1:J:324:LYS:O	1:J:326:GLY:N	2.47	0.48
1:A:291:MET:SD	1:D:291:MET:HE1	2.54	0.48
4:A:403:LMT:C3B	4:B:406:LMT:H6D	2.28	0.48
1:B:324:LYS:C	1:B:326:GLY:H	2.17	0.48
1:D:51:LEU:HD13	1:D:79:PHE:CD2	2.49	0.48
1:E:323:TRP:O	1:E:325:TRP:N	2.47	0.48
1:A:129:LEU:HD13	1:A:170:LEU:HD12	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:128:SER:HB2	1:D:139:PHE:HB2	1.95	0.47
1:H:319:PRO:HA	1:H:320:GLU:C	2.31	0.47
1:I:23:TYR:CD2	1:I:142:LYS:HD3	2.49	0.47
1:D:299:THR:HG21	1:D:345:PHE:CE2	2.49	0.47
1:F:336:VAL:O	1:F:340:ILE:HG23	2.15	0.47
1:B:51:LEU:HB3	1:B:79:PHE:CE2	2.49	0.47
1:C:12:LEU:HD22	1:C:16:THR:HG21	1.96	0.47
1:D:317:TYR:CG	1:D:318:MET:N	2.83	0.47
1:G:227:PRO:HA	7:G:521:HOH:O	2.13	0.47
1:H:51:LEU:HD22	1:H:79:PHE:CD2	2.50	0.47
1:I:320:GLU:C	1:I:322:ARG:N	2.68	0.47
1:J:292:LYS:HE2	1:J:348:LYS:O	2.14	0.47
1:A:5:ARG:O	1:A:5:ARG:NE	2.46	0.47
1:C:31:VAL:HG11	1:C:53:PHE:CE2	2.50	0.47
1:E:218:LEU:HD21	1:E:268:PHE:HB3	1.96	0.47
1:G:302:MET:HE1	1:H:302:MET:HG3	1.96	0.47
1:A:112:MET:HG3	1:A:177:LEU:HD11	1.97	0.47
1:D:327:TYR:HB2	1:D:330:VAL:HB	1.97	0.47
1:G:147:PHE:O	1:G:150:VAL:HB	2.15	0.47
1:H:271:ILE:HD13	1:J:216:ARG:NH1	2.30	0.47
1:I:68:HIS:CE1	1:I:69:ARG:HG2	2.50	0.47
1:I:80:PHE:CD2	1:I:137:LEU:HD11	2.50	0.47
1:I:239:VAL:HG11	1:I:248:VAL:HG22	1.97	0.47
1:I:314:ASN:O	1:I:316:GLU:N	2.45	0.47
1:C:167:ASP:HB2	1:C:242:LEU:HD23	1.97	0.47
1:C:319:PRO:CB	1:C:322:ARG:HB3	2.44	0.47
1:E:77:GLY:HA3	1:E:87:LEU:HD21	1.96	0.47
1:F:160:ILE:HG13	1:F:164:LYS:HG3	1.97	0.47
1:G:258:THR:HA	1:G:261:ILE:HD12	1.97	0.47
1:B:95:GLN:HG2	1:B:96:ARG:N	2.29	0.47
1:B:240:PRO:HB2	1:B:241:PRO:HD3	1.97	0.47
1:B:323:TRP:CE2	4:B:407:LMT:H6E	2.50	0.47
1:C:17:LEU:HG	1:C:91:LEU:HD12	1.97	0.47
1:C:196:GLU:OE1	1:E:212:HIS:NE2	2.46	0.47
1:C:236:TYR:CE1	1:C:252:ARG:HB2	2.50	0.47
1:F:311:TYR:CE2	1:F:330:VAL:HG21	2.40	0.47
1:H:154:ILE:HG12	1:H:161:ILE:HD13	1.97	0.47
1:H:316:GLU:O	1:H:319:PRO:HD2	2.13	0.47
1:I:170:LEU:O	1:I:174:ILE:HG13	2.14	0.47
1:I:330:VAL:HG12	1:I:331:LEU:N	2.29	0.47
1:J:95:GLN:HE22	1:J:98:LYS:HZ3	1.63	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:210:ARG:NH2	7:A:513:HOH:O	2.46	0.47
1:C:51:LEU:HD22	1:C:79:PHE:CG	2.50	0.47
1:C:101:PHE:H	5:C:406:PEG:H42	1.78	0.47
1:E:229:ARG:HA	1:E:258:THR:CG2	2.44	0.47
1:G:285:ASN:O	1:G:288:ASN:HB3	2.15	0.47
1:H:302:MET:HE1	1:J:298:ALA:HA	1.96	0.47
1:B:272:VAL:HA	1:B:275:LEU:HD22	1.97	0.47
1:D:19:TYR:CZ	1:D:21:GLY:HA3	2.50	0.47
1:F:13:PRO:HG3	1:I:153:ARG:CD	2.41	0.47
1:J:39:PHE:HE2	1:J:41:GLU:HG2	1.80	0.47
1:B:323:TRP:HE1	4:B:407:LMT:H6'	1.62	0.47
1:C:288:ASN:ND2	1:C:292:LYS:HE3	2.30	0.47
1:E:232:LEU:HD22	1:E:254:VAL:CG1	2.44	0.47
1:G:182:PHE:O	1:G:186:GLU:HG3	2.15	0.47
1:A:111:LYS:O	1:A:177:LEU:HD21	2.15	0.46
1:C:62:ILE:HB	1:C:137:LEU:HD23	1.96	0.46
1:E:140:GLN:HE21	1:E:140:GLN:HB3	1.55	0.46
1:G:230:GLU:HB2	7:G:521:HOH:O	2.14	0.46
1:H:12:LEU:HD13	1:H:16:THR:HG21	1.97	0.46
1:H:310:ILE:HA	1:H:313:MET:SD	2.55	0.46
1:I:99:VAL:HG13	1:I:108:ILE:HG12	1.97	0.46
1:J:154:ILE:HG12	1:J:161:ILE:HD13	1.97	0.46
1:A:34:TYR:O	1:A:59:PRO:HD2	2.15	0.46
1:B:225:ILE:HD13	1:B:265:VAL:HG21	1.97	0.46
1:C:316:GLU:HG2	1:E:321:LEU:O	2.14	0.46
1:E:30:GLU:HG3	1:E:43:LYS:HG2	1.96	0.46
1:E:345:PHE:O	1:E:349:LYS:HA	2.15	0.46
1:G:62:ILE:HB	1:G:137:LEU:HD23	1.97	0.46
1:H:110:LEU:HD22	1:H:228:LEU:HD13	1.98	0.46
1:A:120:HIS:ND1	1:A:191:GLU:OE2	2.47	0.46
1:B:286:LYS:O	1:B:290:VAL:N	2.48	0.46
1:E:235:LEU:HD12	1:E:242:LEU:HD11	1.97	0.46
1:F:188:ILE:HG21	1:F:218:LEU:HD11	1.96	0.46
1:F:307:ILE:HD11	1:F:334:MET:HE3	1.72	0.46
1:J:227:PRO:O	1:J:231:VAL:N	2.41	0.46
1:A:297:ILE:HG21	1:D:299:THR:HA	1.96	0.46
1:D:303:PRO:O	1:D:306:PHE:HB3	2.16	0.46
1:F:215:LYS:O	1:F:219:VAL:HG23	2.16	0.46
1:G:32:MET:HG2	1:G:41:GLU:HB2	1.96	0.46
1:I:328:PRO:HG2	1:I:329:VAL:N	2.30	0.46
1:A:323:TRP:HD1	1:A:324:LYS:O	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:116:ASP:O	1:D:120:HIS:HA	2.15	0.46
1:D:209:GLN:HE21	1:E:200:LEU:HD13	1.79	0.46
1:E:110:LEU:HD13	1:E:177:LEU:HD22	1.98	0.46
1:I:307:ILE:HA	1:I:310:ILE:HG22	1.97	0.46
1:J:86:VAL:HG13	1:J:107:PHE:CE2	2.51	0.46
1:C:225:ILE:HG12	1:C:261:ILE:HG22	1.97	0.46
1:D:304:LEU:HB3	1:E:306:PHE:CE1	2.51	0.46
1:F:82:ILE:HD11	1:F:130:ILE:HG21	1.97	0.46
1:A:69:ARG:HB3	1:A:71:ASP:OD1	2.16	0.46
1:D:320:GLU:H	1:D:322:ARG:N	2.13	0.46
1:F:271:ILE:HD11	1:G:216:ARG:HG2	1.97	0.46
1:G:65:THR:HG21	1:G:143:ILE:HA	1.98	0.46
1:I:115:TYR:OH	1:I:120:HIS:HB3	2.16	0.46
1:B:199:VAL:HG11	1:B:278:VAL:HB	1.98	0.46
1:C:232:LEU:HD13	1:C:254:VAL:CG1	2.46	0.46
1:D:300:ILE:O	1:D:303:PRO:HD2	2.15	0.46
1:E:113:PHE:HE2	1:E:224:THR:HG21	1.81	0.46
1:F:67:ILE:HG21	1:F:139:PHE:HB3	1.98	0.46
1:H:82:ILE:HG22	1:H:87:LEU:HG	1.98	0.46
1:I:89:ASP:OD2	1:I:98:LYS:NZ	2.32	0.46
1:A:145:ASP:HB2	1:A:147:PHE:HD2	1.81	0.46
1:E:131:LEU:HD22	1:E:170:LEU:HD22	1.98	0.46
1:E:164:LYS:HZ1	1:E:246:GLU:HB3	1.81	0.46
1:F:276:LEU:HD12	1:F:276:LEU:HA	1.56	0.46
1:I:65:THR:HG21	1:I:143:ILE:HA	1.98	0.46
1:I:314:ASN:HD21	1:J:314:ASN:ND2	2.14	0.46
1:J:185:LEU:HD11	1:J:261:ILE:HG23	1.98	0.46
1:A:165:ARG:NH2	1:A:243:ILE:HG21	2.31	0.46
1:B:324:LYS:CG	1:B:325:TRP:H	2.29	0.46
1:C:100:GLU:HB3	1:C:102:PHE:HE1	1.79	0.46
1:D:327:TYR:HB3	1:E:315:PHE:CD2	2.51	0.46
1:G:138:MET:SD	1:G:147:PHE:CE2	3.09	0.46
1:J:160:ILE:HG12	3:J:404:CL:CL	2.53	0.46
1:B:325:TRP:O	1:B:329:VAL:HB	2.15	0.45
1:D:27:PHE:CD2	1:D:45:THR:HG22	2.51	0.45
1:E:22:LYS:HE3	1:E:23:TYR:OH	2.17	0.45
1:E:93:VAL:O	1:E:111:LYS:NZ	2.48	0.45
1:E:174:ILE:HG21	1:E:232:LEU:HD21	1.99	0.45
1:G:23:TYR:CE2	1:G:142:LYS:HD3	2.51	0.45
1:G:110:LEU:HD12	1:G:177:LEU:HD13	1.97	0.45
5:G:408:PEG:H22	1:H:331:LEU:HD22	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:148:ASP:O	1:H:152:GLU:HG2	2.17	0.45
1:A:280:LEU:HD23	1:B:280:LEU:HD21	1.97	0.45
4:A:403:LMT:H3'	4:B:406:LMT:C2'	2.46	0.45
1:B:30:GLU:HG3	1:B:43:LYS:HG2	1.98	0.45
1:C:231:VAL:HG12	1:C:232:LEU:HG	1.97	0.45
1:C:239:VAL:HA	1:C:242:LEU:HD12	1.98	0.45
1:F:200:LEU:HD13	1:G:209:GLN:HE21	1.81	0.45
1:F:240:PRO:HB2	1:F:241:PRO:CD	2.46	0.45
1:G:337:ILE:HA	1:G:340:ILE:HG12	1.99	0.45
1:D:102:PHE:CD2	1:D:105:TYR:CE2	3.05	0.45
1:F:73:VAL:HG21	1:F:91:LEU:HD21	1.97	0.45
1:H:153:ARG:HG3	1:H:153:ARG:HH11	1.80	0.45
1:I:225:ILE:HG13	1:I:262:ALA:HB2	1.98	0.45
1:J:274:GLY:O	1:J:278:VAL:HG23	2.17	0.45
1:C:36:ILE:HD13	1:C:163:LYS:HG3	1.98	0.45
1:C:120:HIS:CD2	1:C:120:HIS:H	2.34	0.45
1:D:276:LEU:HD12	1:D:276:LEU:HA	1.74	0.45
1:D:296:ILE:HA	1:D:299:THR:HG22	1.98	0.45
1:E:22:LYS:NZ	1:E:123:GLU:OE2	2.38	0.45
1:H:99:VAL:CG2	1:H:231:VAL:HG13	2.47	0.45
1:E:228:LEU:O	1:E:231:VAL:HB	2.17	0.45
1:I:23:TYR:CE2	1:I:142:LYS:HD3	2.51	0.45
1:J:221:LEU:HA	1:J:221:LEU:HD12	1.61	0.45
1:A:240:PRO:HB2	1:A:241:PRO:CD	2.47	0.45
1:B:87:LEU:HA	1:B:87:LEU:HD23	1.73	0.45
1:B:299:THR:OG1	1:C:297:ILE:HG12	2.16	0.45
1:E:131:LEU:HD12	1:E:136:VAL:HG22	1.99	0.45
1:E:232:LEU:HD22	1:E:254:VAL:HG12	1.98	0.45
1:G:9:LYS:O	1:G:9:LYS:HG3	2.16	0.45
1:A:276:LEU:HD12	1:A:276:LEU:HA	1.85	0.45
1:B:51:LEU:HD13	1:B:79:PHE:CG	2.51	0.45
1:D:275:LEU:HD12	1:D:275:LEU:HA	1.70	0.45
1:F:113:PHE:HB2	1:F:184:LEU:HD22	1.97	0.45
1:H:153:ARG:HD3	1:J:13:PRO:HG3	1.98	0.45
1:J:195:LEU:HD21	1:J:211:THR:HA	1.99	0.45
1:C:235:LEU:HD12	1:C:235:LEU:HA	1.86	0.45
1:D:296:ILE:HG13	1:D:297:ILE:HD12	1.98	0.45
1:A:87:LEU:HD23	1:A:87:LEU:HA	1.76	0.45
1:B:16:THR:HG22	1:B:18:VAL:HG23	1.99	0.45
1:E:51:LEU:HB3	1:E:79:PHE:CE2	2.52	0.45
1:G:171:TYR:CZ	1:G:250:TYR:HB3	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:128:SER:HB2	1:H:139:PHE:HB2	1.99	0.45
1:B:160:ILE:HG12	3:B:404:CL:CL	2.54	0.45
1:B:295:THR:O	1:B:299:THR:HG22	2.17	0.45
1:C:337:ILE:HA	1:C:340:ILE:HG12	1.99	0.45
1:F:216:ARG:HG2	1:I:271:ILE:HG12	1.97	0.45
1:H:140:GLN:HE22	1:H:145:ASP:HB3	1.82	0.45
1:H:185:LEU:HD23	1:H:185:LEU:HA	1.70	0.45
1:J:218:LEU:HD12	1:J:218:LEU:HA	1.74	0.45
1:B:43:LYS:NZ	5:B:410:PEG:H22	2.32	0.44
1:D:23:TYR:CE2	1:D:142:LYS:HD3	2.52	0.44
1:D:225:ILE:HD13	1:D:265:VAL:HG21	1.97	0.44
1:D:295:THR:O	1:D:299:THR:HG22	2.16	0.44
1:E:48:GLU:HA	1:E:51:LEU:HD12	1.99	0.44
1:H:23:TYR:CE2	1:H:142:LYS:HD3	2.51	0.44
1:I:327:TYR:O	1:I:327:TYR:CD2	2.70	0.44
1:J:339:VAL:O	1:J:342:VAL:HB	2.17	0.44
1:B:228:LEU:HD12	1:B:228:LEU:O	2.16	0.44
1:B:312:GLY:H	1:B:313:MET:CB	2.30	0.44
1:C:34:TYR:CE2	1:C:154:ILE:HD13	2.53	0.44
1:D:241:PRO:HA	7:D:522:HOH:O	2.17	0.44
1:F:99:VAL:HG23	1:F:231:VAL:HG22	1.99	0.44
1:F:307:ILE:CD1	1:F:334:MET:HG3	2.47	0.44
1:H:240:PRO:HB2	1:H:241:PRO:HD3	1.99	0.44
1:I:307:ILE:HD11	1:I:334:MET:CE	2.47	0.44
1:B:16:THR:O	1:B:88:GLU:HG3	2.16	0.44
1:B:71:ASP:OD1	1:B:71:ASP:N	2.47	0.44
1:B:252:ARG:CZ	1:C:100:GLU:HG2	2.48	0.44
1:G:39:PHE:CZ	1:G:155:ARG:HG2	2.52	0.44
1:I:337:ILE:HA	1:I:340:ILE:HG12	2.00	0.44
1:A:17:LEU:HD23	1:A:74:GLN:HB2	1.99	0.44
4:A:403:LMT:H1'	4:B:406:LMT:H32	1.99	0.44
4:A:403:LMT:C2'	4:B:406:LMT:O3'	2.65	0.44
1:B:103:GLU:HG2	7:B:508:HOH:O	2.16	0.44
1:E:218:LEU:HD12	1:E:218:LEU:HA	1.74	0.44
1:H:167:ASP:HB2	1:H:242:LEU:HD23	1.99	0.44
1:H:199:VAL:HG13	1:H:279:TYR:HB2	1.99	0.44
1:J:261:ILE:O	1:J:265:VAL:HG23	2.18	0.44
1:A:22:LYS:HG3	1:A:23:TYR:CD1	2.53	0.44
1:A:301:PHE:CE2	1:D:303:PRO:HG3	2.52	0.44
1:D:288:ASN:ND2	1:D:292:LYS:HE3	2.32	0.44
1:E:16:THR:O	1:E:88:GLU:HG3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:55:ASP:HA	7:G:527:HOH:O	2.18	0.44
1:G:157:ASN:ND2	1:G:162:ARG:HG3	2.32	0.44
1:G:236:TYR:CE1	1:G:252:ARG:HB2	2.53	0.44
1:G:296:ILE:HB	1:G:345:PHE:CE2	2.53	0.44
1:I:308:ALA:HA	1:J:313:MET:HE2	2.00	0.44
1:A:32:MET:HE2	1:A:154:ILE:HG21	1.98	0.44
1:A:272:VAL:HA	1:A:275:LEU:HD22	2.00	0.44
1:B:77:GLY:HA3	1:B:87:LEU:HD11	1.99	0.44
1:B:248:VAL:N	1:B:249:PRO:HD2	2.33	0.44
1:D:307:ILE:HG13	1:D:334:MET:HE3	2.00	0.44
1:F:170:LEU:O	1:F:174:ILE:HG13	2.17	0.44
1:G:307:ILE:HA	1:G:310:ILE:HG12	1.99	0.44
1:H:185:LEU:HD23	1:H:188:ILE:HD12	1.99	0.44
1:I:222:ARG:HA	1:I:225:ILE:HG22	1.99	0.44
1:I:331:LEU:HA	1:I:331:LEU:HD23	1.74	0.44
1:A:221:LEU:HD12	1:A:221:LEU:HA	1.70	0.44
1:B:10:LYS:C	1:B:12:LEU:H	2.20	0.44
1:C:292:LYS:O	1:C:296:ILE:HG23	2.18	0.44
1:C:306:PHE:CE1	1:E:304:LEU:HD23	2.53	0.44
1:D:33:ASN:ND2	1:D:60:THR:OG1	2.50	0.44
1:D:298:ALA:O	1:D:302:MET:HB2	2.17	0.44
1:D:322:ARG:O	1:D:323:TRP:HB2	2.16	0.44
1:D:337:ILE:O	1:D:341:MET:HG2	2.17	0.44
1:E:185:LEU:HD23	1:E:185:LEU:HA	1.72	0.44
1:E:240:PRO:HB2	1:E:241:PRO:HD3	1.99	0.44
1:I:99:VAL:HG23	1:I:231:VAL:HG22	1.99	0.44
1:J:148:ASP:N	1:J:149:PRO:HD2	2.33	0.44
1:J:272:VAL:HA	1:J:275:LEU:HD22	2.00	0.44
1:C:34:TYR:O	1:C:58:THR:HB	2.17	0.44
1:C:240:PRO:HB2	1:C:241:PRO:HD3	2.00	0.44
1:C:307:ILE:C	1:C:309:GLY:HA3	2.38	0.44
1:D:301:PHE:CE2	1:E:303:PRO:HG3	2.53	0.44
1:E:47:VAL:O	1:E:51:LEU:HG	2.18	0.44
1:F:222:ARG:HD2	1:F:226:TRP:HE1	1.83	0.44
1:H:119:LEU:H	1:H:119:LEU:HG	1.56	0.44
1:H:311:TYR:CD2	1:H:330:VAL:HG21	2.53	0.44
1:J:169:LEU:O	1:J:173:LEU:HG	2.17	0.44
1:J:345:PHE:O	1:J:348:LYS:HD3	2.18	0.44
1:A:225:ILE:O	1:A:228:LEU:HB3	2.17	0.44
1:B:55:ASP:HB3	5:B:411:PEG:H31	2.00	0.44
1:B:319:PRO:HA	1:B:320:GLU:C	2.38	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:323:TRP:CZ3	1:B:325:TRP:HB2	2.53	0.44
1:G:206:GLU:HG3	1:G:207:THR:N	2.33	0.44
1:G:291:MET:HE1	1:H:291:MET:HG2	2.00	0.44
1:H:214:LEU:HD23	1:H:272:VAL:HG21	1.99	0.44
1:C:125:GLU:HG3	1:C:141:GLU:HB2	2.00	0.43
1:A:148:ASP:N	1:A:149:PRO:HD2	2.33	0.43
1:B:302:MET:HE1	1:C:298:ALA:HA	2.00	0.43
1:E:339:VAL:O	1:E:343:VAL:N	2.41	0.43
1:G:105:TYR:HB3	1:G:132:THR:HB	2.00	0.43
1:G:318:MET:SD	1:G:318:MET:N	2.92	0.43
1:H:15:GLY:O	1:H:17:LEU:HD13	2.18	0.43
1:H:82:ILE:HA	1:H:105:TYR:CE2	2.53	0.43
1:I:56:SER:OG	1:I:58:THR:O	2.34	0.43
1:J:100:GLU:HB3	1:J:102:PHE:HE1	1.84	0.43
1:J:244:GLU:HA	1:J:248:VAL:HG23	1.99	0.43
1:J:301:PHE:HA	1:J:304:LEU:HB2	1.99	0.43
1:B:6:LEU:HD13	1:B:20:THR:O	2.18	0.43
1:B:86:VAL:HG13	1:B:107:PHE:CG	2.53	0.43
1:B:113:PHE:CE1	1:B:124:SER:HB3	2.53	0.43
1:B:245:LYS:HD3	1:B:245:LYS:HA	1.63	0.43
1:C:252:ARG:O	1:C:252:ARG:HG2	2.18	0.43
1:C:296:ILE:HG22	1:C:345:PHE:CE2	2.53	0.43
1:E:257:HIS:O	1:E:261:ILE:HG13	2.19	0.43
1:F:56:SER:HG	1:F:58:THR:H	1.66	0.43
1:F:307:ILE:CG1	1:F:334:MET:CE	2.97	0.43
1:G:222:ARG:HD3	1:G:269:ARG:CD	2.48	0.43
1:I:317:TYR:HD1	1:I:317:TYR:O	2.02	0.43
1:A:102:PHE:HD2	1:A:105:TYR:CZ	2.36	0.43
1:A:160:ILE:HG22	1:A:164:LYS:HG2	2.00	0.43
5:C:406:PEG:H12	5:C:406:PEG:H32	1.57	0.43
1:G:239:VAL:HG11	1:G:248:VAL:HG22	2.00	0.43
1:I:112:MET:HE2	1:I:112:MET:HB2	1.82	0.43
1:J:148:ASP:O	1:J:152:GLU:HG2	2.18	0.43
1:A:314:ASN:O	1:B:321:LEU:HD22	2.19	0.43
3:A:402:CL:CL	1:B:14:PRO:HD2	2.56	0.43
1:C:347:LYS:HE3	1:C:348:LYS:HB3	1.99	0.43
1:H:226:TRP:CE2	1:H:229:ARG:NH2	2.87	0.43
1:J:110:LEU:CD2	1:J:228:LEU:HD13	2.48	0.43
1:I:108:ILE:HD12	1:I:174:ILE:HD11	2.01	0.43
1:J:180:ASP:HB2	5:J:405:PEG:H41	2.00	0.43
1:A:95:GLN:HE22	1:A:98:LYS:CE	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:178:VAL:HG21	1:F:254:VAL:CG1	2.48	0.43
1:G:51:LEU:HB3	1:G:79:PHE:CE2	2.54	0.43
1:G:260:GLN:OE1	1:H:95:GLN:HA	2.19	0.43
1:I:31:VAL:HG11	1:I:53:PHE:CE2	2.54	0.43
1:I:61:TRP:HE1	1:I:138:MET:HE2	1.83	0.43
1:J:225:ILE:O	1:J:228:LEU:HB3	2.19	0.43
1:B:12:LEU:HA	1:B:13:PRO:HD3	1.91	0.43
1:B:23:TYR:CZ	1:B:142:LYS:HD3	2.54	0.43
1:B:297:ILE:HD12	1:B:297:ILE:HA	1.85	0.43
1:D:249:PRO:O	1:D:252:ARG:HB3	2.18	0.43
1:E:346:LYS:HZ2	1:E:347:LYS:HG3	1.82	0.43
1:F:184:LEU:HD21	1:F:221:LEU:HD11	2.00	0.43
1:G:208:VAL:HG13	1:G:276:LEU:HD11	2.00	0.43
1:H:337:ILE:HA	1:H:340:ILE:HG12	2.01	0.43
1:I:200:LEU:HD12	1:I:201:GLU:HG3	2.01	0.43
1:I:218:LEU:HD12	1:I:218:LEU:HA	1.75	0.43
1:I:293:VAL:HA	1:I:296:ILE:HG12	2.00	0.43
1:A:99:VAL:HG13	1:A:108:ILE:HG12	2.01	0.43
1:A:233:SER:HB2	1:A:255:TYR:CE1	2.54	0.43
1:F:82:ILE:HG12	1:F:130:ILE:HD13	2.00	0.43
1:I:276:LEU:HA	1:I:276:LEU:HD12	1.59	0.43
1:J:185:LEU:HD13	1:J:264:THR:CG2	2.48	0.43
1:A:316:GLU:HA	1:A:317:TYR:HA	1.71	0.43
1:C:39:PHE:CZ	1:C:155:ARG:HA	2.54	0.43
1:D:337:ILE:HA	1:D:340:ILE:HG12	2.01	0.43
1:F:233:SER:HB2	1:F:255:TYR:CE1	2.54	0.43
1:G:83:HIS:HD2	1:G:85:LEU:HB2	1.84	0.43
1:H:19:TYR:CE1	1:H:21:GLY:HA3	2.53	0.43
1:I:9:LYS:HB2	1:I:12:LEU:HD12	2.00	0.43
1:J:111:LYS:O	1:J:177:LEU:HD21	2.19	0.43
1:A:324:LYS:CE	1:A:325:TRP:H	2.30	0.42
4:A:403:LMT:H12	4:B:406:LMT:H52	1.98	0.42
1:B:299:THR:HA	1:C:297:ILE:HG21	2.01	0.42
1:D:202:ARG:HA	1:D:203:PRO:HD3	1.82	0.42
1:E:51:LEU:O	1:E:79:PHE:HE2	2.02	0.42
1:E:202:ARG:HA	1:E:203:PRO:HD3	1.82	0.42
1:F:291:MET:HE2	1:G:290:VAL:HG12	1.99	0.42
1:H:89:ASP:OD1	7:H:502:HOH:O	2.21	0.42
1:I:100:GLU:HB3	1:I:102:PHE:CE1	2.53	0.42
1:J:41:GLU:OE2	1:J:155:ARG:NE	2.47	0.42
1:J:325:TRP:C	1:J:328:PRO:HD2	2.39	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:35:SER:HB3	1:A:58:THR:HG21	2.02	0.42
1:A:163:LYS:HD2	1:A:163:LYS:N	2.34	0.42
1:B:233:SER:HB2	1:B:255:TYR:CE1	2.54	0.42
1:C:41:GLU:OE2	1:C:155:ARG:NE	2.52	0.42
1:D:143:ILE:HD12	1:D:144:GLY:H	1.84	0.42
1:E:243:ILE:HG13	1:E:246:GLU:HB2	2.00	0.42
1:F:303:PRO:HG2	1:F:304:LEU:N	2.34	0.42
1:F:307:ILE:HG13	1:F:334:MET:HE2	2.01	0.42
1:G:148:ASP:N	1:G:149:PRO:HD2	2.34	0.42
1:G:221:LEU:HD23	1:G:265:VAL:CG2	2.49	0.42
1:H:105:TYR:CB	1:H:132:THR:HB	2.46	0.42
1:B:129:LEU:HD21	1:B:138:MET:HG3	2.01	0.42
1:B:218:LEU:HD21	1:B:268:PHE:HB3	2.01	0.42
1:C:304:LEU:HD11	1:C:338:ALA:HB2	2.01	0.42
1:D:115:TYR:HE2	1:D:191:GLU:HG3	1.83	0.42
1:F:9:LYS:HB2	1:F:9:LYS:HE3	1.83	0.42
1:G:91:LEU:HA	1:G:91:LEU:HD23	1.71	0.42
1:I:94:HIS:O	1:J:260:GLN:NE2	2.53	0.42
1:C:339:VAL:O	1:C:343:VAL:HG23	2.19	0.42
1:H:103:GLU:H	1:H:103:GLU:HG2	1.59	0.42
1:H:115:TYR:OH	1:H:120:HIS:HB3	2.19	0.42
1:H:198:GLU:O	1:H:202:ARG:N	2.52	0.42
1:H:298:ALA:O	1:H:302:MET:HB2	2.19	0.42
1:J:347:LYS:HD3	1:J:349:LYS:HG3	2.01	0.42
1:C:12:LEU:HA	1:C:13:PRO:HD3	1.89	0.42
1:C:221:LEU:O	1:C:225:ILE:HG22	2.20	0.42
1:E:198:GLU:O	1:E:202:ARG:N	2.52	0.42
1:E:340:ILE:HA	1:E:343:VAL:HB	2.01	0.42
1:F:51:LEU:N	1:F:52:PRO:HD2	2.34	0.42
1:F:111:LYS:HB2	1:F:224:THR:HG21	2.02	0.42
1:F:153:ARG:CD	1:G:13:PRO:HG3	2.49	0.42
1:G:199:VAL:HG12	1:G:278:VAL:HG12	2.02	0.42
1:H:232:LEU:HD13	1:H:254:VAL:HG12	2.02	0.42
1:I:80:PHE:CE2	1:I:137:LEU:HD21	2.55	0.42
1:I:328:PRO:O	1:I:332:ALA:N	2.53	0.42
1:A:295:THR:O	1:A:299:THR:N	2.42	0.42
1:A:315:PHE:HD2	1:B:321:LEU:HA	1.85	0.42
1:B:269:ARG:HB3	1:B:269:ARG:NH2	2.35	0.42
4:B:407:LMT:H31	4:B:407:LMT:H61	1.68	0.42
1:C:41:GLU:CD	1:C:155:ARG:HE	2.23	0.42
1:C:61:TRP:CZ3	1:C:151:ARG:HG2	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:83:HIS:HA	1:D:84:PRO:HD3	1.96	0.42
1:F:235:LEU:HD12	1:F:235:LEU:HA	1.96	0.42
1:I:34:TYR:O	1:I:59:PRO:HD2	2.19	0.42
1:C:276:LEU:HD12	1:C:276:LEU:HA	1.88	0.42
1:E:67:ILE:HG23	1:E:140:GLN:O	2.19	0.42
1:E:212:HIS:O	1:E:216:ARG:HG3	2.18	0.42
1:F:86:VAL:O	1:F:90:ILE:HG13	2.20	0.42
1:G:78:GLU:OE1	7:G:525:HOH:O	2.21	0.42
1:J:17:LEU:HD23	1:J:74:GLN:HB2	2.01	0.42
1:J:240:PRO:HB2	1:J:241:PRO:HD3	2.00	0.42
1:J:300:ILE:HG13	1:J:301:PHE:CD1	2.55	0.42
1:A:167:ASP:N	1:A:167:ASP:OD1	2.52	0.42
1:C:181:TYR:N	1:C:181:TYR:CD1	2.88	0.42
1:C:225:ILE:O	1:C:228:LEU:HB3	2.19	0.42
1:D:272:VAL:O	1:D:275:LEU:HB2	2.20	0.42
1:E:306:PHE:O	1:E:310:ILE:HG12	2.19	0.42
1:G:153:ARG:HA	1:G:158:ARG:HB2	2.00	0.42
1:I:296:ILE:HG13	1:I:297:ILE:HD12	2.01	0.42
1:J:232:LEU:HD13	1:J:254:VAL:O	2.20	0.42
1:H:300:ILE:HG13	1:H:301:PHE:CD1	2.54	0.42
1:J:125:GLU:OE1	1:J:141:GLU:N	2.52	0.42
1:J:185:LEU:HD13	1:J:264:THR:HG21	2.01	0.42
1:B:55:ASP:OD1	7:B:519:HOH:O	2.21	0.42
1:C:275:LEU:HD12	1:C:275:LEU:HA	1.75	0.42
1:F:312:GLY:CA	1:I:314:ASN:HD22	2.33	0.42
1:G:145:ASP:HB2	1:G:147:PHE:CD2	2.55	0.42
1:G:276:LEU:HD12	1:G:276:LEU:HA	1.72	0.42
1:I:166:ALA:O	1:I:169:LEU:HB3	2.20	0.42
1:I:213:GLN:HA	1:I:213:GLN:NE2	2.35	0.42
1:I:319:PRO:C	1:I:320:GLU:HG3	2.41	0.42
1:A:30:GLU:HG2	1:A:43:LYS:HG2	2.02	0.41
1:B:165:ARG:N	1:B:165:ARG:HD2	2.35	0.41
1:G:12:LEU:HD13	1:G:16:THR:CG2	2.50	0.41
1:G:27:PHE:CZ	1:G:72:VAL:HG21	2.56	0.41
1:G:252:ARG:O	1:G:255:TYR:HB3	2.20	0.41
1:G:310:ILE:O	1:G:313:MET:HB3	2.20	0.41
1:I:316:GLU:HA	1:I:317:TYR:HB3	2.02	0.41
1:J:195:LEU:HD23	1:J:275:LEU:HD23	2.02	0.41
1:A:204:GLU:HG2	1:A:205:LYS:N	2.35	0.41
1:D:300:ILE:O	1:D:304:LEU:HG	2.21	0.41
1:F:61:TRP:HB2	1:F:169:LEU:CD2	2.47	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:236:TYR:CE1	1:F:252:ARG:HB2	2.55	0.41
1:G:211:THR:HG21	1:G:276:LEU:HD13	2.02	0.41
1:H:229:ARG:HA	1:H:258:THR:CG2	2.50	0.41
1:H:311:TYR:HD2	1:H:330:VAL:HG21	1.85	0.41
1:J:47:VAL:CG2	1:J:72:VAL:HG13	2.50	0.41
1:A:296:ILE:HG22	1:A:345:PHE:CZ	2.55	0.41
4:A:403:LMT:C4B	4:B:406:LMT:H6D	2.50	0.41
1:C:19:TYR:OH	1:C:141:GLU:OE1	2.32	0.41
1:C:86:VAL:HG13	1:C:107:PHE:CZ	2.55	0.41
1:C:337:ILE:O	1:C:341:MET:HG2	2.20	0.41
1:D:165:ARG:CZ	1:D:243:ILE:HG21	2.50	0.41
1:F:24:ARG:HA	1:F:68:HIS:CD2	2.55	0.41
1:G:115:TYR:OH	1:G:120:HIS:HB3	2.20	0.41
1:I:307:ILE:CG1	1:I:334:MET:HE2	2.50	0.41
1:J:327:TYR:HB3	1:J:328:PRO:HD3	2.02	0.41
1:A:105:TYR:HB3	1:A:132:THR:HB	2.03	0.41
4:B:407:LMT:O2'	4:B:407:LMT:H61	2.20	0.41
1:C:130:ILE:HB	1:C:137:LEU:HB2	2.02	0.41
1:C:147:PHE:CZ	1:C:177:LEU:HD12	2.55	0.41
1:D:302:MET:HG3	1:E:302:MET:HE1	2.02	0.41
1:F:222:ARG:HD2	1:F:226:TRP:NE1	2.35	0.41
1:F:288:ASN:ND2	1:F:292:LYS:HE3	2.33	0.41
1:F:292:LYS:HG2	1:F:348:LYS:HD3	2.02	0.41
1:G:139:PHE:N	1:G:139:PHE:CD1	2.87	0.41
1:H:347:LYS:HG3	1:H:348:LYS:HD2	2.02	0.41
1:A:83:HIS:O	1:A:86:VAL:HB	2.21	0.41
1:A:149:PRO:CB	1:B:11:GLY:HA2	2.51	0.41
1:B:9:LYS:O	1:B:9:LYS:HG3	2.20	0.41
1:F:16:THR:O	1:F:88:GLU:HG3	2.21	0.41
1:F:188:ILE:O	1:F:192:ILE:HG13	2.20	0.41
1:G:240:PRO:HB2	1:G:241:PRO:CD	2.50	0.41
1:I:131:LEU:HD22	1:I:170:LEU:HB2	2.02	0.41
1:J:254:VAL:O	1:J:258:THR:HB	2.20	0.41
1:A:294:LEU:HD12	1:A:294:LEU:O	2.20	0.41
1:A:315:PHE:N	1:A:315:PHE:CD1	2.88	0.41
1:C:87:LEU:HD23	1:C:87:LEU:HA	1.90	0.41
1:D:77:GLY:HA3	1:D:87:LEU:HD21	2.02	0.41
1:E:280:LEU:HD12	1:E:280:LEU:HA	1.83	0.41
1:E:283:VAL:O	1:E:287:THR:N	2.49	0.41
1:F:302:MET:HG3	1:I:302:MET:HE3	2.00	0.41
1:G:75:ARG:HA	7:G:525:HOH:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:143:ILE:HD13	1:G:144:GLY:N	2.35	0.41
1:G:224:THR:O	1:G:227:PRO:HG2	2.20	0.41
1:G:244:GLU:HB3	1:G:245:LYS:HE2	2.03	0.41
1:I:136:VAL:CG2	1:I:169:LEU:HD23	2.50	0.41
1:C:347:LYS:CD	1:C:348:LYS:H	2.34	0.41
1:E:307:ILE:HD11	1:E:334:MET:HG2	2.02	0.41
1:E:334:MET:HE2	1:E:334:MET:HB2	1.77	0.41
1:F:86:VAL:HG13	1:F:107:PHE:CD2	2.55	0.41
1:F:160:ILE:HD12	1:F:164:LYS:HE3	2.02	0.41
1:F:304:LEU:HD12	1:F:304:LEU:HA	1.85	0.41
1:G:32:MET:O	1:G:60:THR:HA	2.20	0.41
1:G:322:ARG:O	1:G:324:LYS:N	2.53	0.41
1:G:324:LYS:HD3	1:G:324:LYS:HA	1.87	0.41
1:H:328:PRO:HA	1:H:331:LEU:HB2	2.03	0.41
1:I:211:THR:O	1:I:214:LEU:N	2.54	0.41
1:J:23:TYR:CD2	1:J:142:LYS:HD3	2.55	0.41
1:A:218:LEU:HD12	1:A:218:LEU:HA	1.85	0.41
1:A:255:TYR:O	1:A:258:THR:HG22	2.21	0.41
1:B:116:ASP:O	1:B:120:HIS:HA	2.20	0.41
4:B:406:LMT:H6'2	4:B:406:LMT:H1B	1.87	0.41
1:C:244:GLU:HA	1:C:248:VAL:HG23	2.03	0.41
1:F:257:HIS:O	1:F:260:GLN:HB3	2.21	0.41
1:G:164:LYS:HA	1:G:164:LYS:HD2	2.00	0.41
1:H:93:VAL:HA	1:H:126:GLN:OE1	2.21	0.41
1:H:164:LYS:NZ	1:H:246:GLU:HB3	2.36	0.41
1:I:148:ASP:N	1:I:149:PRO:HD2	2.36	0.41
1:A:71:ASP:OD1	1:A:72:VAL:HG23	2.21	0.41
1:B:218:LEU:HD12	1:B:218:LEU:HA	1.75	0.41
1:C:54:ARG:HD3	1:C:80:PHE:HA	2.03	0.41
1:C:164:LYS:HE2	1:C:246:GLU:HB3	2.03	0.41
1:D:60:THR:HB	1:D:135:CYS:SG	2.61	0.41
1:D:321:LEU:HB3	1:D:322:ARG:H	1.60	0.41
1:E:165:ARG:CZ	1:E:243:ILE:HG21	2.51	0.41
1:F:82:ILE:HG22	1:F:87:LEU:HG	2.01	0.41
1:F:138:MET:SD	1:F:147:PHE:CE2	3.14	0.41
1:F:171:TYR:OH	1:G:14:PRO:HG3	2.21	0.41
1:F:272:VAL:O	1:F:275:LEU:HB2	2.20	0.41
1:F:311:TYR:O	1:I:314:ASN:N	2.49	0.41
1:G:93:VAL:HG21	1:G:141:GLU:OE1	2.21	0.41
1:G:333:VAL:O	1:G:337:ILE:HG22	2.21	0.41
1:J:185:LEU:HD23	1:J:185:LEU:HA	1.65	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:99:VAL:HG12	1:B:100:GLU:N	2.35	0.41
1:D:185:LEU:HD11	1:D:261:ILE:HG23	2.03	0.41
1:E:113:PHE:CE2	1:E:224:THR:HG21	2.56	0.41
1:E:229:ARG:HA	1:E:258:THR:HG23	2.03	0.41
1:J:300:ILE:HG22	1:J:341:MET:CB	2.51	0.41
1:A:239:VAL:HG23	1:A:239:VAL:O	2.22	0.40
1:D:229:ARG:HA	1:D:258:THR:HG23	2.03	0.40
1:G:204:GLU:HG2	1:G:205:LYS:H	1.87	0.40
1:H:23:TYR:CD2	1:H:142:LYS:HD3	2.56	0.40
1:I:264:THR:O	1:I:267:THR:HB	2.21	0.40
1:J:68:HIS:CE1	1:J:69:ARG:HG2	2.56	0.40
1:B:196:GLU:O	1:B:200:LEU:HG	2.22	0.40
1:B:199:VAL:HG21	1:B:275:LEU:HG	2.02	0.40
1:C:110:LEU:HB3	1:C:177:LEU:HD22	2.03	0.40
1:D:257:HIS:HE1	7:D:503:HOH:O	2.03	0.40
1:F:120:HIS:CD2	1:F:120:HIS:H	2.38	0.40
1:G:99:VAL:HG13	1:G:108:ILE:HG12	2.04	0.40
1:H:153:ARG:HG3	1:H:153:ARG:NH1	2.36	0.40
1:G:30:GLU:OE1	1:G:151:ARG:NH2	2.54	0.40
1:G:278:VAL:HA	1:H:276:LEU:HD21	2.03	0.40
1:I:29:ILE:HG12	1:I:64:ILE:HG12	2.03	0.40
1:I:315:PHE:O	7:I:521:HOH:O	2.22	0.40
1:J:184:LEU:HD21	1:J:221:LEU:HD11	2.04	0.40
1:A:267:THR:O	1:A:271:ILE:HG13	2.22	0.40
1:F:95:GLN:HA	1:I:260:GLN:HE22	1.85	0.40
1:F:196:GLU:HB3	1:F:275:LEU:HD11	2.04	0.40
1:H:129:LEU:HD21	1:H:138:MET:SD	2.61	0.40
1:A:200:LEU:HD12	1:A:201:GLU:HG3	2.04	0.40
1:B:236:TYR:CE1	1:B:252:ARG:HG3	2.57	0.40
1:D:103:GLU:H	1:D:103:GLU:HG2	1.53	0.40
1:E:276:LEU:HA	1:E:276:LEU:HD12	1.63	0.40
1:F:236:TYR:CD1	1:F:252:ARG:HB2	2.56	0.40
1:F:322:ARG:O	1:F:324:LYS:HA	2.21	0.40
1:F:342:VAL:O	1:F:345:PHE:N	2.55	0.40
1:I:328:PRO:C	1:I:330:VAL:N	2.73	0.40
1:J:177:LEU:HD23	1:J:177:LEU:O	2.22	0.40
1:J:236:TYR:OH	1:J:252:ARG:HD2	2.21	0.40
1:J:325:TRP:O	1:J:329:VAL:HG22	2.21	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	345/351 (98%)	323 (94%)	19 (6%)	3 (1%)	17	40
1	B	346/351 (99%)	320 (92%)	24 (7%)	2 (1%)	25	50
1	C	345/351 (98%)	321 (93%)	22 (6%)	2 (1%)	25	50
1	D	341/351 (97%)	316 (93%)	22 (6%)	3 (1%)	17	40
1	E	344/351 (98%)	321 (93%)	22 (6%)	1 (0%)	41	66
1	F	344/351 (98%)	318 (92%)	22 (6%)	4 (1%)	13	32
1	G	344/351 (98%)	317 (92%)	21 (6%)	6 (2%)	9	23
1	H	341/351 (97%)	322 (94%)	17 (5%)	2 (1%)	25	50
1	I	343/351 (98%)	315 (92%)	25 (7%)	3 (1%)	17	40
1	J	343/351 (98%)	322 (94%)	17 (5%)	4 (1%)	13	32
All	All	3436/3510 (98%)	3195 (93%)	211 (6%)	30 (1%)	17	40

All (30) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	F	302	MET
1	I	327	TYR
1	B	325	TRP
1	D	324	LYS
1	H	67	ILE
1	I	328	PRO
1	A	241	PRO
1	B	241	PRO
1	C	241	PRO
1	G	317	TYR
1	H	241	PRO
1	I	241	PRO
1	J	322	ARG
1	J	323	TRP

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Mol	Chain	Res	Type
1	J	325	TRP
1	F	241	PRO
1	G	322	ARG
1	J	241	PRO
1	F	240	PRO
1	G	241	PRO
1	G	318	MET
1	A	325	TRP
1	D	240	PRO
1	D	241	PRO
1	F	319	PRO
1	A	240	PRO
1	E	241	PRO
1	C	240	PRO
1	G	319	PRO
1	G	240	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	326/330 (99%)	294 (90%)	32 (10%)	8 18
1	B	327/330 (99%)	298 (91%)	29 (9%)	9 22
1	C	323/330 (98%)	299 (93%)	24 (7%)	13 32
1	D	322/330 (98%)	292 (91%)	30 (9%)	9 21
1	E	320/330 (97%)	291 (91%)	29 (9%)	9 21
1	F	321/330 (97%)	287 (89%)	34 (11%)	6 15
1	G	319/330 (97%)	289 (91%)	30 (9%)	8 20
1	H	318/330 (96%)	287 (90%)	31 (10%)	8 19
1	I	320/330 (97%)	290 (91%)	30 (9%)	8 20
1	J	320/330 (97%)	298 (93%)	22 (7%)	15 35
All	All	3216/3300 (98%)	2925 (91%)	291 (9%)	9 22

All (291) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	5	ARG
1	A	40	ARG
1	A	58	THR
1	A	96	ARG
1	A	104	ASN
1	A	122	LEU
1	A	127	VAL
1	A	128	SER
1	A	143	ILE
1	A	161	ILE
1	A	195	LEU
1	A	200	LEU
1	A	206	GLU
1	A	215	LYS
1	A	218	LEU
1	A	223	LYS
1	A	234	SER
1	A	235	LEU
1	A	238	ASP
1	A	243	ILE
1	A	266	GLU
1	A	275	LEU
1	A	299	THR
1	A	302	MET
1	A	315	PHE
1	A	317	TYR
1	A	324	LYS
1	A	325	TRP
1	A	329	VAL
1	A	331	LEU
1	A	333	VAL
1	A	339	VAL
1	B	26	ASP
1	B	36	ILE
1	B	60	THR
1	B	82	ILE
1	B	95	GLN
1	B	96	ARG
1	B	104	ASN
1	B	127	VAL
1	B	131	LEU
1	B	143	ILE

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Mol	Chain	Res	Type
1	B	146	VAL
1	B	157	ASN
1	B	160	ILE
1	B	165	ARG
1	B	200	LEU
1	B	206	GLU
1	B	215	LYS
1	B	218	LEU
1	B	223	LYS
1	B	224	THR
1	B	243	ILE
1	B	258	THR
1	B	270	ASP
1	B	275	LEU
1	B	291	MET
1	B	297	ILE
1	B	315	PHE
1	B	329	VAL
1	B	339	VAL
1	C	6	LEU
1	C	26	ASP
1	C	50	VAL
1	C	60	THR
1	C	104	ASN
1	C	118	ASN
1	C	120	HIS
1	C	123	GLU
1	C	128	SER
1	C	143	ILE
1	C	177	LEU
1	C	218	LEU
1	C	222	ARG
1	C	235	LEU
1	C	258	THR
1	C	265	VAL
1	C	273	SER
1	C	275	LEU
1	C	297	ILE
1	C	299	THR
1	C	307	ILE
1	C	321	LEU
1	C	322	ARG

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Mol	Chain	Res	Type
1	C	347	LYS
1	D	39	PHE
1	D	44	THR
1	D	45	THR
1	D	50	VAL
1	D	96	ARG
1	D	99	VAL
1	D	103	GLU
1	D	106	VAL
1	D	120	HIS
1	D	122	LEU
1	D	162	ARG
1	D	206	GLU
1	D	215	LYS
1	D	218	LEU
1	D	221	LEU
1	D	229	ARG
1	D	232	LEU
1	D	235	LEU
1	D	253	ASP
1	D	258	THR
1	D	260	GLN
1	D	267	THR
1	D	275	LEU
1	D	282	SER
1	D	315	PHE
1	D	322	ARG
1	D	323	TRP
1	D	325	TRP
1	D	327	TYR
1	D	349	LYS
1	E	17	LEU
1	E	24	ARG
1	E	39	PHE
1	E	44	THR
1	E	60	THR
1	E	82	ILE
1	E	109	VAL
1	E	114	THR
1	E	120	HIS
1	E	127	VAL
1	E	128	SER

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Mol	Chain	Res	Type
1	E	135	CYS
1	E	143	ILE
1	E	199	VAL
1	E	222	ARG
1	E	226	TRP
1	E	234	SER
1	E	235	LEU
1	E	244	GLU
1	E	258	THR
1	E	265	VAL
1	E	267	THR
1	E	276	LEU
1	E	282	SER
1	E	286	LYS
1	E	287	THR
1	E	300	ILE
1	E	346	LYS
1	E	347	LYS
1	F	5	ARG
1	F	9	LYS
1	F	10	LYS
1	F	40	ARG
1	F	45	THR
1	F	60	THR
1	F	70	THR
1	F	96	ARG
1	F	104	ASN
1	F	120	HIS
1	F	122	LEU
1	F	143	ILE
1	F	172	SER
1	F	177	LEU
1	F	200	LEU
1	F	202	ARG
1	F	213	GLN
1	F	215	LYS
1	F	218	LEU
1	F	222	ARG
1	F	223	LYS
1	F	235	LEU
1	F	243	ILE
1	F	258	THR

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Mol	Chain	Res	Type
1	F	263	ASP
1	F	271	ILE
1	F	275	LEU
1	F	276	LEU
1	F	299	THR
1	F	304	LEU
1	F	313	MET
1	F	315	PHE
1	F	320	GLU
1	F	324	LYS
1	G	40	ARG
1	G	41	GLU
1	G	44	THR
1	G	50	VAL
1	G	67	ILE
1	G	96	ARG
1	G	118	ASN
1	G	142	LYS
1	G	143	ILE
1	G	161	ILE
1	G	164	LYS
1	G	185	LEU
1	G	202	ARG
1	G	206	GLU
1	G	215	LYS
1	G	218	LEU
1	G	223	LYS
1	G	229	ARG
1	G	235	LEU
1	G	246	GLU
1	G	247	THR
1	G	258	THR
1	G	265	VAL
1	G	267	THR
1	G	275	LEU
1	G	276	LEU
1	G	282	SER
1	G	296	ILE
1	G	307	ILE
1	G	318	MET
1	H	26	ASP
1	H	39	PHE

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Mol	Chain	Res	Type
1	H	52	PRO
1	H	60	THR
1	H	69	ARG
1	H	82	ILE
1	H	96	ARG
1	H	114	THR
1	H	118	ASN
1	H	119	LEU
1	H	140	GLN
1	H	143	ILE
1	H	150	VAL
1	H	162	ARG
1	H	174	ILE
1	H	177	LEU
1	H	200	LEU
1	H	206	GLU
1	H	213	GLN
1	H	215	LYS
1	H	218	LEU
1	H	226	TRP
1	H	229	ARG
1	H	235	LEU
1	H	253	ASP
1	H	258	THR
1	H	287	THR
1	H	320	GLU
1	H	322	ARG
1	H	330	VAL
1	H	341	MET
1	I	10	LYS
1	I	17	LEU
1	I	36	ILE
1	I	39	PHE
1	I	50	VAL
1	I	104	ASN
1	I	122	LEU
1	I	128	SER
1	I	204	GLU
1	I	213	GLN
1	I	215	LYS
1	I	218	LEU
1	I	222	ARG

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Mol	Chain	Res	Type
1	I	229	ARG
1	I	233	SER
1	I	235	LEU
1	I	243	ILE
1	I	258	THR
1	I	260	GLN
1	I	271	ILE
1	I	275	LEU
1	I	276	LEU
1	I	281	SER
1	I	313	MET
1	I	315	PHE
1	I	317	TYR
1	I	320	GLU
1	I	323	TRP
1	I	325	TRP
1	I	336	VAL
1	J	5	ARG
1	J	9	LYS
1	J	17	LEU
1	J	24	ARG
1	J	96	ARG
1	J	108	ILE
1	J	124	SER
1	J	128	SER
1	J	143	ILE
1	J	164	LYS
1	J	204	GLU
1	J	218	LEU
1	J	222	ARG
1	J	234	SER
1	J	235	LEU
1	J	258	THR
1	J	275	LEU
1	J	296	ILE
1	J	304	LEU
1	J	315	PHE
1	J	320	GLU
1	J	348	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (40) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	95	GLN
1	A	157	ASN
1	B	74	GLN
1	B	209	GLN
1	C	33	ASN
1	C	94	HIS
1	C	126	GLN
1	C	288	ASN
1	D	33	ASN
1	D	95	GLN
1	D	140	GLN
1	D	288	ASN
1	D	314	ASN
1	E	83	HIS
1	E	118	ASN
1	E	126	GLN
1	E	209	GLN
1	E	260	GLN
1	F	118	ASN
1	F	288	ASN
1	G	63	ASN
1	G	74	GLN
1	G	95	GLN
1	G	118	ASN
1	G	140	GLN
1	G	157	ASN
1	G	209	GLN
1	H	95	GLN
1	H	213	GLN
1	H	288	ASN
1	H	314	ASN
1	I	63	ASN
1	I	95	GLN
1	I	213	GLN
1	I	260	GLN
1	I	314	ASN
1	J	33	ASN
1	J	95	GLN
1	J	260	GLN
1	J	314	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 monosaccharides in this entry.

5.6 Ligand geometry

Of 62 ligands modelled in this entry, 37 are monoatomic - leaving 25 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	$\#\|Z\| > 2$
4	LMT	B	406	-	36,36,36	0.42	0	47,47,47	0.81	2 (4%)
4	LMT	A	403	-	36,36,36	0.40	0	47,47,47	0.69	1 (2%)
5	PEG	H	402	-	6,6,6	0.33	0	5,5,5	0.26	0
5	PEG	B	411	-	6,6,6	0.55	0	5,5,5	1.37	1 (20%)
5	PEG	B	409	-	6,6,6	0.35	0	5,5,5	0.45	0
5	PEG	C	406	-	6,6,6	0.64	0	5,5,5	0.94	0
5	PEG	E	405	-	6,6,6	0.60	0	5,5,5	0.61	0
5	PEG	E	406	-	6,6,6	0.54	0	5,5,5	1.29	1 (20%)
5	PEG	J	406	-	6,6,6	0.58	0	5,5,5	0.78	0
5	PEG	B	410	-	6,6,6	0.37	0	5,5,5	0.43	0
5	PEG	J	405	-	6,6,6	0.50	0	5,5,5	0.79	0
5	PEG	G	412	-	6,6,6	0.57	0	5,5,5	1.12	0
6	PG0	E	409	-	7,7,7	0.41	0	6,6,6	1.09	1 (16%)
5	PEG	G	408	-	6,6,6	0.56	0	5,5,5	0.71	0
5	PEG	E	407	-	6,6,6	0.59	0	5,5,5	0.51	0
4	LMT	B	407	-	33,33,36	0.44	0	44,44,47	0.84	2 (4%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
5	PEG	I	404	-	6,6,6	0.57	0	5,5,5	0.71	0
5	PEG	E	408	-	6,6,6	0.44	0	5,5,5	1.33	1 (20%)
5	PEG	G	411	-	6,6,6	0.36	0	5,5,5	0.28	0
5	PEG	C	405	-	6,6,6	0.29	0	5,5,5	0.45	0
5	PEG	G	409	-	6,6,6	0.54	0	5,5,5	0.87	0
5	PEG	D	405	-	6,6,6	0.38	0	5,5,5	0.99	0
5	PEG	F	404	-	6,6,6	0.57	0	5,5,5	0.88	0
5	PEG	G	410	-	6,6,6	0.33	0	5,5,5	0.46	0
5	PEG	B	408	-	6,6,6	0.55	0	5,5,5	0.73	0

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
4	LMT	B	406	-	-	13/21/61/61	0/2/2/2
4	LMT	A	403	-	-	12/21/61/61	0/2/2/2
5	PEG	H	402	-	-	2/4/4/4	-
5	PEG	B	411	-	-	4/4/4/4	-
5	PEG	B	409	-	-	2/4/4/4	-
5	PEG	C	406	-	-	1/4/4/4	-
5	PEG	E	405	-	-	1/4/4/4	-
5	PEG	E	406	-	-	2/4/4/4	-
5	PEG	J	406	-	-	1/4/4/4	-
5	PEG	B	410	-	-	3/4/4/4	-
5	PEG	J	405	-	-	2/4/4/4	-
5	PEG	G	412	-	-	2/4/4/4	-
6	PG0	E	409	-	-	2/5/5/5	-
5	PEG	G	408	-	-	3/4/4/4	-
5	PEG	E	407	-	-	2/4/4/4	-
4	LMT	B	407	-	-	9/18/58/61	0/2/2/2
5	PEG	I	404	-	-	3/4/4/4	-
5	PEG	E	408	-	-	1/4/4/4	-
5	PEG	G	411	-	-	2/4/4/4	-
5	PEG	C	405	-	-	3/4/4/4	-
5	PEG	G	409	-	-	4/4/4/4	-
5	PEG	D	405	-	-	2/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	PEG	F	404	-	-	1/4/4/4	-
5	PEG	G	410	-	-	2/4/4/4	-
5	PEG	B	408	-	-	4/4/4/4	-

There are no bond length outliers.

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	E	408	PEG	C3-O2-C2	2.91	125.89	113.29
5	E	406	PEG	C3-O2-C2	2.79	125.37	113.29
4	A	403	LMT	C1B-O1B-C4'	-2.49	111.79	117.96
4	B	407	LMT	C1B-O1B-C4'	-2.48	111.82	117.96
4	B	406	LMT	C1B-O1B-C4'	-2.27	112.35	117.96
5	B	411	PEG	C3-O2-C2	2.26	123.07	113.29
6	E	409	PG0	C2-O1-C3	2.22	122.89	113.29
4	B	407	LMT	C3B-C4B-C5B	2.07	113.93	110.24
4	B	406	LMT	C3B-C4B-C5B	2.01	113.83	110.24

There are no chirality outliers.

All (83) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	403	LMT	C2'-C1'-O1'-C1
4	A	403	LMT	O5'-C1'-O1'-C1
4	B	406	LMT	C2-C1-O1'-C1'
4	B	407	LMT	C2'-C1'-O1'-C1
4	B	407	LMT	O5'-C1'-O1'-C1
4	B	407	LMT	C2-C1-O1'-C1'
5	J	405	PEG	C1-C2-O2-C3
4	A	403	LMT	O5B-C5B-C6B-O6B
4	A	403	LMT	O5'-C5'-C6'-O6'
4	B	406	LMT	O5B-C5B-C6B-O6B
5	B	411	PEG	C1-C2-O2-C3
4	A	403	LMT	C4'-C5'-C6'-O6'
4	B	406	LMT	C4B-C5B-C6B-O6B
4	A	403	LMT	C4B-C5B-C6B-O6B
5	C	406	PEG	C1-C2-O2-C3
4	B	407	LMT	O5B-C5B-C6B-O6B
5	B	409	PEG	O2-C3-C4-O4
5	B	410	PEG	O1-C1-C2-O2
5	B	411	PEG	O1-C1-C2-O2

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Mol	Chain	Res	Type	Atoms
5	B	411	PEG	O2-C3-C4-O4
5	E	408	PEG	O2-C3-C4-O4
5	G	410	PEG	O1-C1-C2-O2
5	J	405	PEG	O1-C1-C2-O2
5	B	408	PEG	O1-C1-C2-O2
5	G	409	PEG	O1-C1-C2-O2
5	G	411	PEG	O2-C3-C4-O4
5	G	409	PEG	C1-C2-O2-C3
4	A	403	LMT	C2-C3-C4-C5
4	B	406	LMT	C3'-C4'-O1B-C1B
4	B	406	LMT	C5'-C4'-O1B-C1B
4	B	407	LMT	O1'-C1-C2-C3
5	E	406	PEG	C1-C2-O2-C3
4	A	403	LMT	O1'-C1-C2-C3
4	A	403	LMT	C4-C5-C6-C7
5	B	410	PEG	C1-C2-O2-C3
4	B	406	LMT	C7-C8-C9-C10
4	B	406	LMT	O1'-C1-C2-C3
4	B	406	LMT	C11-C10-C9-C8
5	H	402	PEG	O1-C1-C2-O2
4	B	406	LMT	C6-C7-C8-C9
4	A	403	LMT	C1-C2-C3-C4
5	B	410	PEG	C4-C3-O2-C2
4	B	406	LMT	C2'-C1'-O1'-C1
5	F	404	PEG	O1-C1-C2-O2
5	G	409	PEG	O2-C3-C4-O4
5	G	410	PEG	O2-C3-C4-O4
5	G	411	PEG	O1-C1-C2-O2
5	I	404	PEG	O2-C3-C4-O4
4	B	406	LMT	C3-C4-C5-C6
4	B	407	LMT	C3'-C4'-O1B-C1B
4	B	407	LMT	C5'-C4'-O1B-C1B
5	E	405	PEG	O2-C3-C4-O4
5	E	406	PEG	C4-C3-O2-C2
5	C	405	PEG	C4-C3-O2-C2
4	B	407	LMT	C4-C5-C6-C7
5	J	406	PEG	C4-C3-O2-C2
5	G	408	PEG	C1-C2-O2-C3
5	C	405	PEG	O1-C1-C2-O2
5	G	412	PEG	O2-C3-C4-O4
6	E	409	PG0	OTT-C1-C2-O1
5	D	405	PEG	C4-C3-O2-C2

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Mol	Chain	Res	Type	Atoms
5	G	408	PEG	C4-C3-O2-C2
6	E	409	PG0	C1-C2-O1-C3
5	B	408	PEG	C1-C2-O2-C3
5	B	408	PEG	O2-C3-C4-O4
5	H	402	PEG	C1-C2-O2-C3
5	B	409	PEG	C4-C3-O2-C2
5	E	407	PEG	O2-C3-C4-O4
5	C	405	PEG	C1-C2-O2-C3
4	A	403	LMT	C7-C8-C9-C10
4	B	406	LMT	C9-C10-C11-C12
4	A	403	LMT	C6-C7-C8-C9
5	I	404	PEG	C1-C2-O2-C3
5	B	408	PEG	C4-C3-O2-C2
5	G	409	PEG	C4-C3-O2-C2
5	G	412	PEG	C1-C2-O2-C3
4	B	407	LMT	C3-C4-C5-C6
5	I	404	PEG	O1-C1-C2-O2
5	D	405	PEG	C1-C2-O2-C3
4	B	406	LMT	C2-C3-C4-C5
5	B	411	PEG	C4-C3-O2-C2
5	E	407	PEG	C4-C3-O2-C2
5	G	408	PEG	O2-C3-C4-O4

There are no ring outliers.

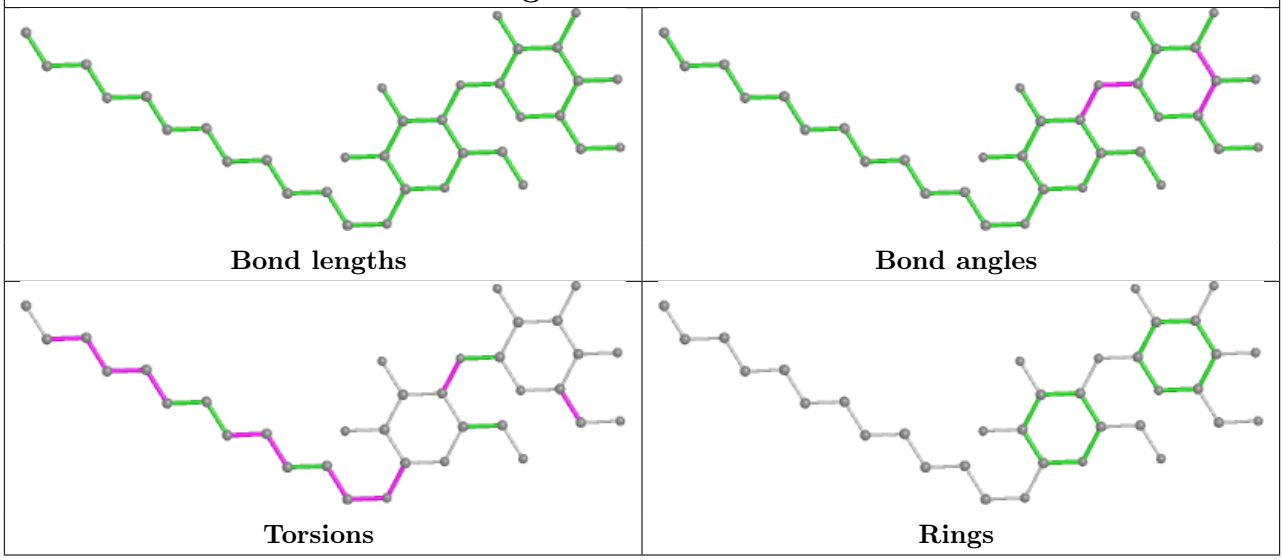
12 monomers are involved in 57 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	B	406	LMT	26	0
4	A	403	LMT	27	0
5	B	411	PEG	2	0
5	C	406	PEG	4	0
5	E	405	PEG	1	0
5	B	410	PEG	2	0
5	J	405	PEG	2	0
5	G	408	PEG	3	0
4	B	407	LMT	9	0
5	G	411	PEG	3	0
5	G	409	PEG	2	0
5	B	408	PEG	1	0

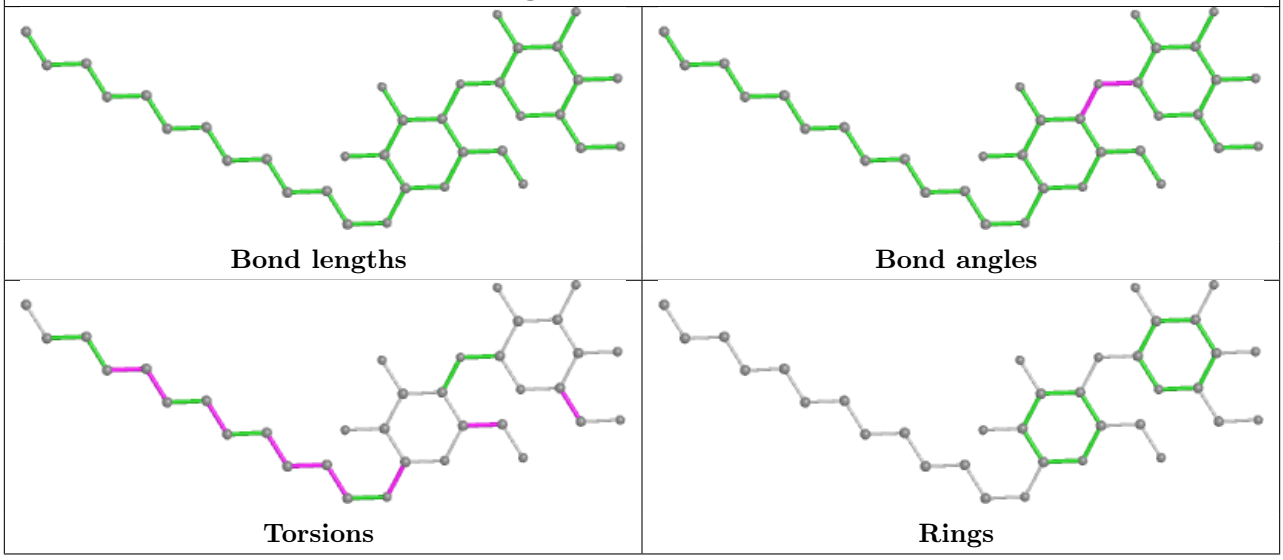
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In

addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

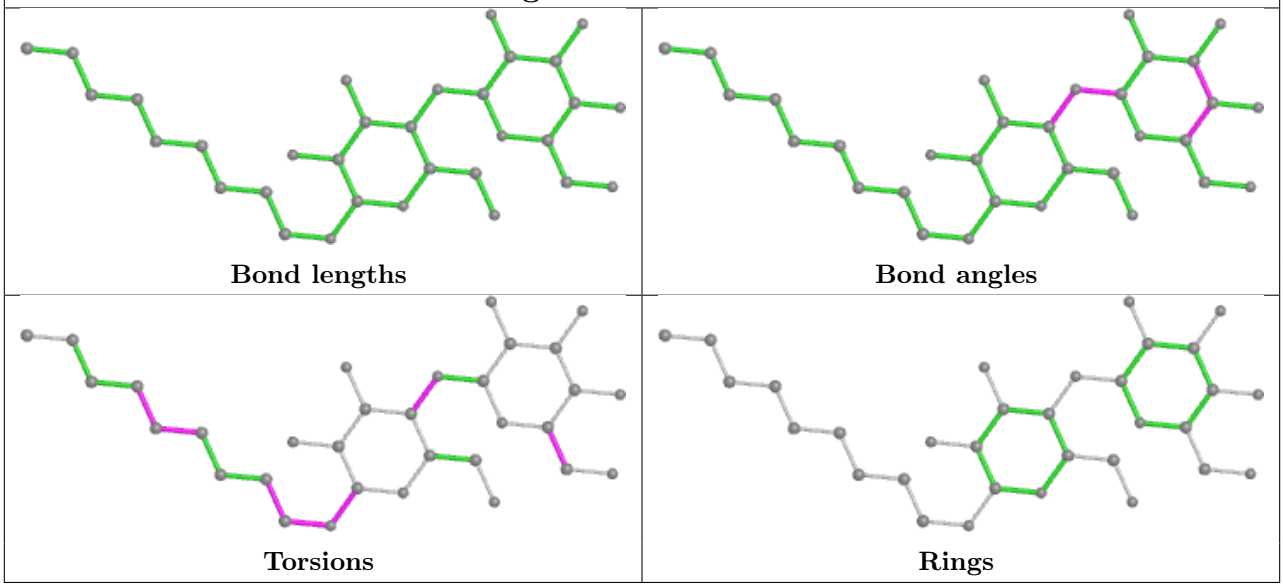
Ligand LMT B 406



Ligand LMT A 403



Ligand LMT B 407



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

Unable to reproduce the depositors R factor - this section is therefore empty.

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

Unable to reproduce the depositors R factor - this section is therefore empty.

6.3 Carbohydrates

Unable to reproduce the depositors R factor - this section is therefore empty.

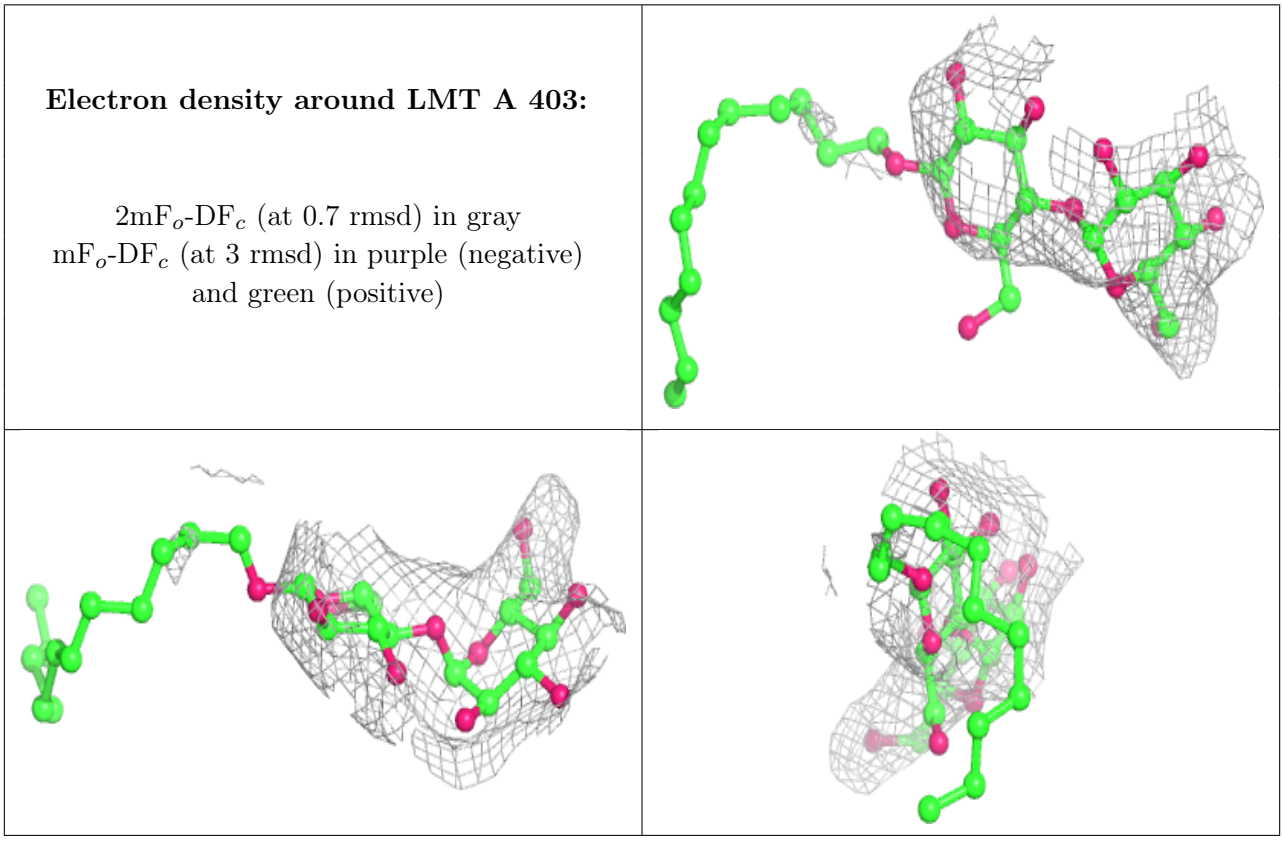
6.4 Ligands

Unable to reproduce the depositors R factor - this section is therefore empty.

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

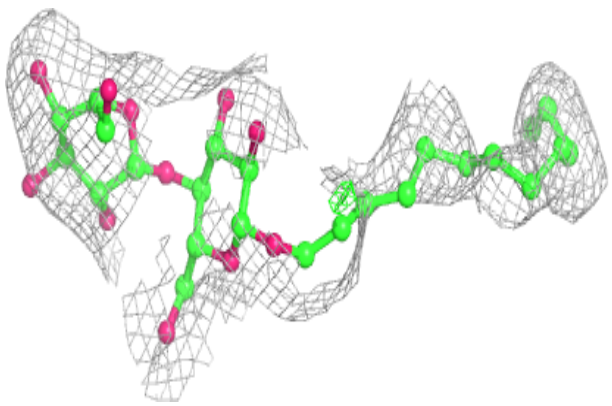
Electron density around LMT A 403:

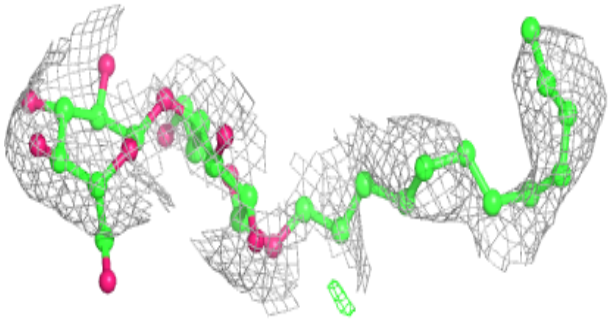
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

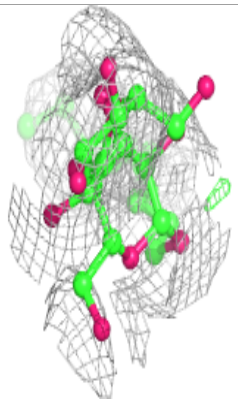


Electron density around LMT B 406:

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

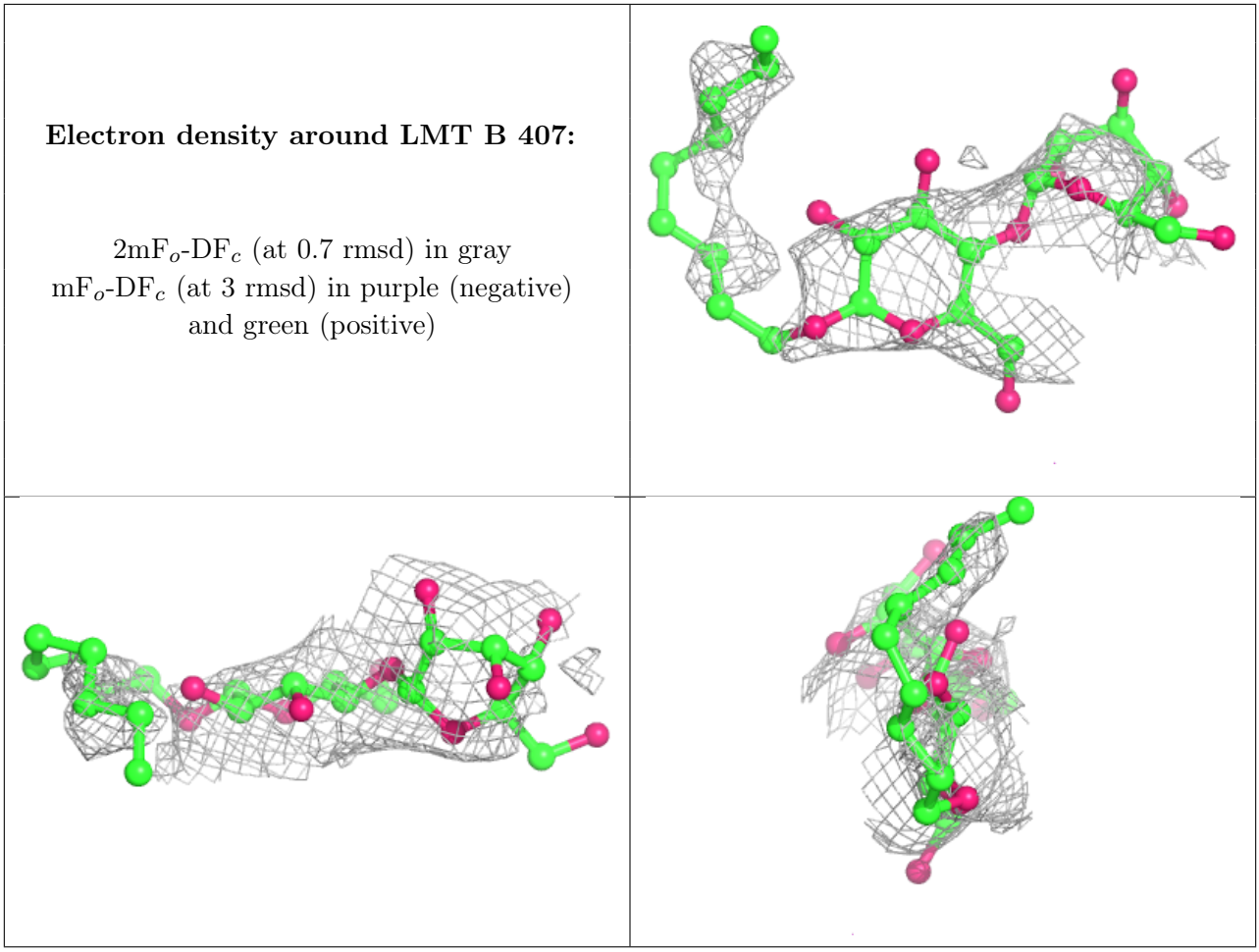






Electron density around LMT B 407:

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



6.5 Other polymers (i)

Unable to reproduce the depositors R factor - this section is therefore empty.