



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 03:42 PM UTC

PDB ID : 6V4S / pdb\_00006v4s  
Title : A Closed pore conformation of a Pentameric ligand-gated ion channel with additional N-terminal domain  
Authors : Delarue, M.; Hu, H.D.  
Deposited on : 2019-11-29  
Resolution : 3.55 Å (reported)

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

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4-5-2 with Phenix2.0  
Mogul : 2022.3.0, CSD as543be (2022)  
Xtrriage (Phenix) : 2.0  
EDS : 3.0  
Buster-report : wwPDB partial adaption of 1.1.7 (2018)  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
CCP4 : 9.0.010 (Gargrove)  
Density-Fitness : 1.0.12  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.49

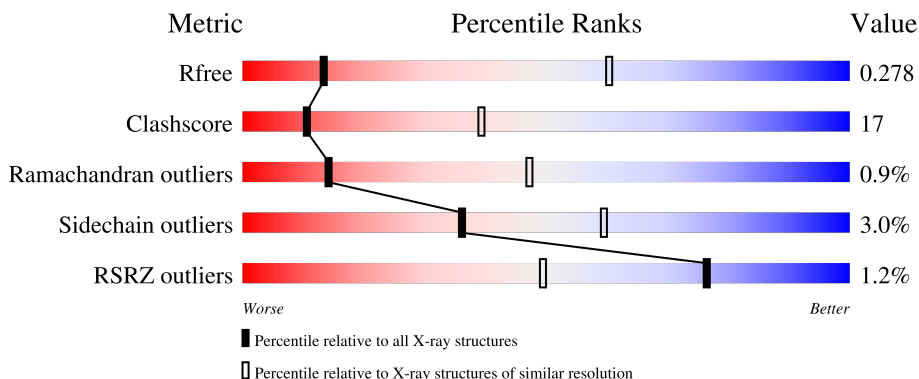
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.55 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	180053	1410 (3.62-3.50)
Clashscore	190562	1480 (3.62-3.50)
Ramachandran outliers	187476	1440 (3.62-3.50)
Sidechain outliers	187428	1441 (3.62-3.50)
RSRZ outliers	180081	1409 (3.62-3.50)

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

Mol	Chain	Length	Quality of chain
1	A	642	
1	B	642	
1	C	642	
1	D	642	
1	E	642	

## 2 Entry composition [i](#)

There are 6 unique types of molecules in this entry. The entry contains 23261 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 Neur\_chan\_LBD domain-containing protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	585	4576	2948	752	865	11	0	0	0
1	E	591	4613	2972	758	872	11	0	0	0
1	D	591	4613	2972	758	872	11	0	0	0
1	C	588	4597	2960	756	870	11	0	0	0
1	B	586	4584	2951	753	869	11	0	0	0

- Molecule 2 is CALCIUM ION (CCD ID: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	2	Total 2	Ca 2	2	0
2	E	1	Total 1	Ca 1	0	0
2	C	1	Total 1	Ca 1	1	0
2	B	1	Total 1	Ca 1	1	0

- Molecule 3 is SODIUM ION (CCD ID: NA) (formula: Na).

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

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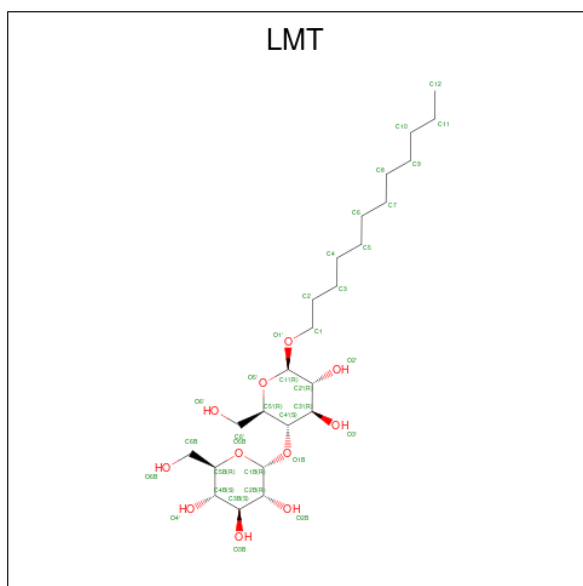
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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	1	Total Na 1 1	0	0

- Molecule 4 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total Cl 1 1	0	0
4	E	1	Total Cl 1 1	0	0
4	D	1	Total Cl 1 1	0	0
4	C	1	Total Cl 1 1	0	0
4	B	1	Total Cl 1 1	0	0

- Molecule 5 is DODECYL-BETA-D-MALTOSE (CCD ID: LMT) (formula: C<sub>24</sub>H<sub>46</sub>O<sub>11</sub>).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total C O 25 14 11	0	0
5	E	1	Total C O 25 14 11	0	0
5	E	1	Total C O 25 14 11	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	E	1	Total C O 25 14 11	0	0
5	D	1	Total C O 26 15 11	0	0
5	C	1	Total C O 25 14 11	0	0
5	C	1	Total C O 27 16 11	0	0
5	B	1	Total C O 25 14 11	0	0
5	B	1	Total C O 26 15 11	0	0
5	B	1	Total C O 27 16 11	0	0

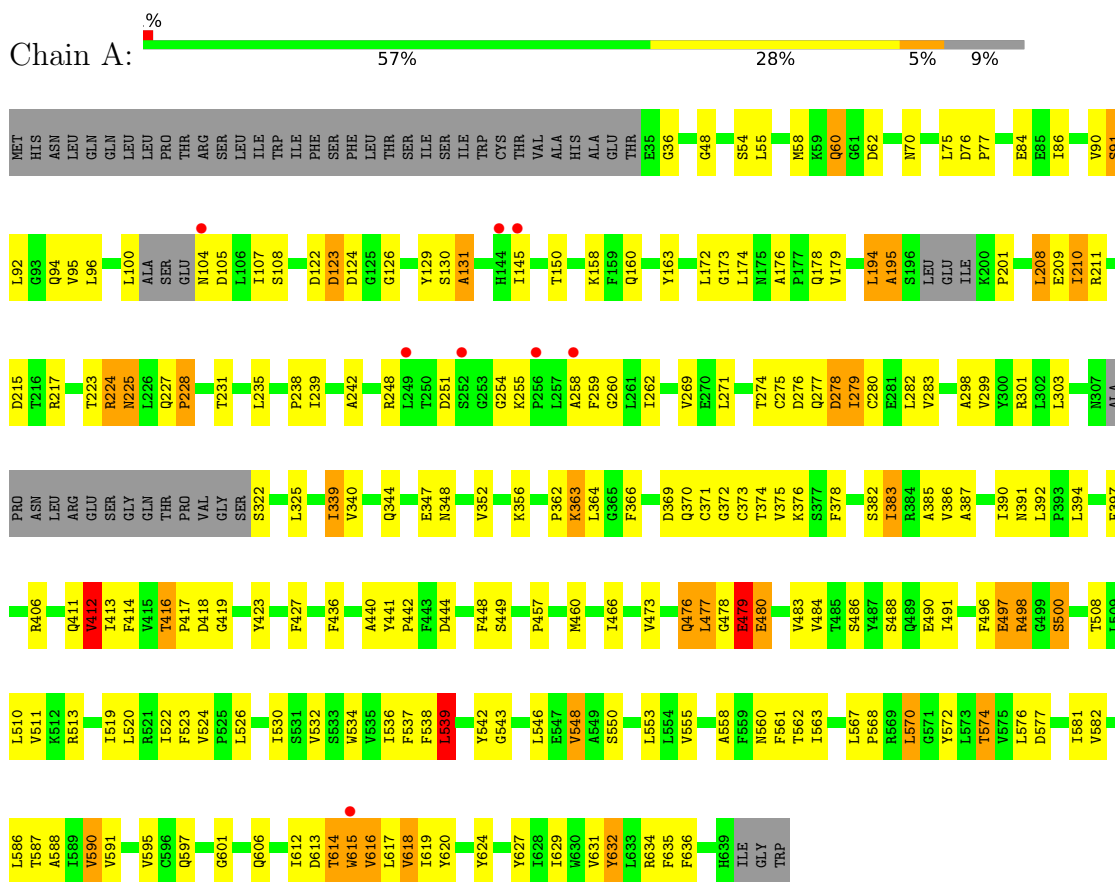
- Molecule 6 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	1	Total O 1 1	0	0
6	E	1	Total O 1 1	0	0
6	D	1	Total O 1 1	0	0
6	C	1	Total O 1 1	0	0
6	B	1	Total O 1 1	0	0

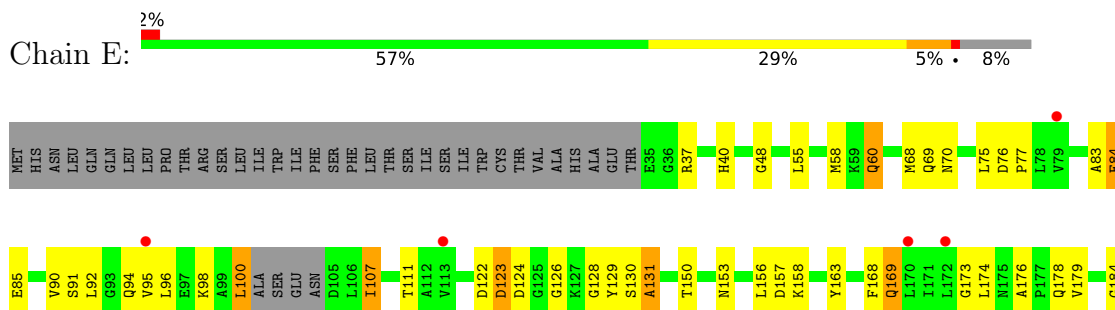
### 3 Residue-property plots

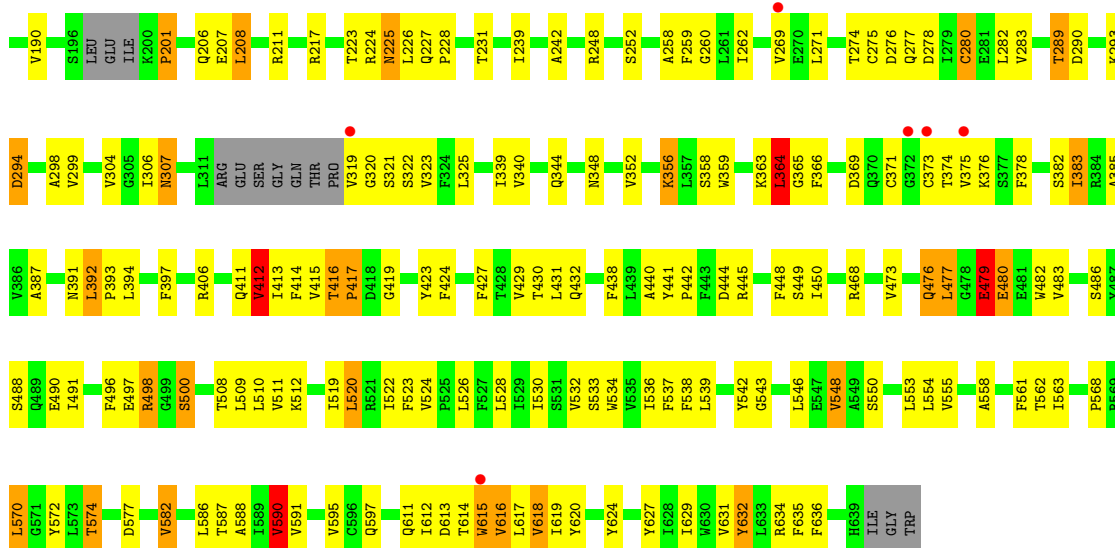
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: Neur\_chan\_LBD domain-containing protein

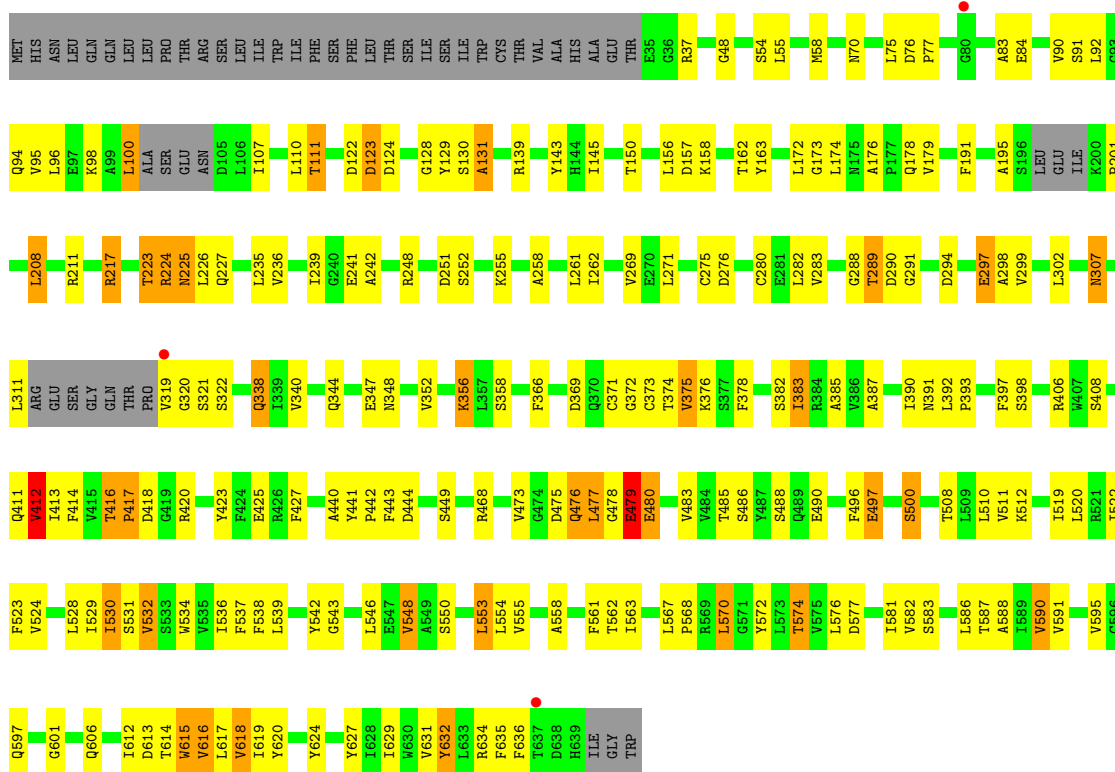


- Molecule 1: Neur\_chan\_LBD domain-containing protein





• Molecule 1: Neur\_chan\_LBD domain-containing protein



• Molecule 1: Neur\_chan\_LBD domain-containing protein





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	159.41Å 337.25Å 111.81Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	48.04 – 3.55 48.04 – 3.55	Depositor EDS
% Data completeness (in resolution range)	89.0 (48.04-3.55) 89.0 (48.04-3.55)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.42 (at 3.57Å)	Xtrriage
Refinement program	REFMAC 5.8.0158	Depositor
R, $R_{free}$	0.194 , 0.268 0.205 , 0.278	Depositor DCC
$R_{free}$ test set	3250 reflections (4.41%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	94.2	Xtrriage
Anisotropy	0.916	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.31 , 144.3	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	23261	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	145.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.15% of the height of the origin peak. No significant pseudotranslation is detected.*

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

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality i

### 5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: CA, LMT, CL, NA

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	1.18	19/4678 (0.4%)	1.47	71/6365 (1.1%)
1	B	1.17	15/4687 (0.3%)	1.47	68/6377 (1.1%)
1	C	1.17	17/4700 (0.4%)	1.51	78/6396 (1.2%)
1	D	1.18	17/4716 (0.4%)	1.46	70/6418 (1.1%)
1	E	1.21	19/4716 (0.4%)	1.47	78/6418 (1.2%)
All	All	1.18	87/23497 (0.4%)	1.48	365/31974 (1.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	5
1	B	0	4
1	C	0	5
1	D	0	4
1	E	0	4
All	All	0	22

All (87) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	364	LEU	C-N	-8.96	1.27	1.33
1	B	84	GLU	N-CA	8.21	1.56	1.46
1	E	84	GLU	N-CA	7.98	1.56	1.46
1	C	84	GLU	N-CA	7.75	1.55	1.46
1	D	84	GLU	CA-C	7.70	1.62	1.52
1	B	307	ASN	CA-C	7.69	1.63	1.52
1	A	84	GLU	CA-C	7.69	1.62	1.52
1	A	123	ASP	CA-C	7.49	1.61	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	123	ASP	CA-C	7.33	1.61	1.52
1	B	84	GLU	CA-C	7.31	1.62	1.52
1	C	84	GLU	CA-C	7.08	1.62	1.52
1	D	123	ASP	CA-C	7.02	1.61	1.52
1	A	473	VAL	C-N	-7.01	1.30	1.33
1	C	307	ASN	CA-C	6.93	1.62	1.52
1	C	123	ASP	N-CA	6.89	1.54	1.46
1	B	123	ASP	CA-C	6.87	1.61	1.52
1	C	295	SER	N-CA	6.75	1.54	1.46
1	C	217	ARG	CA-C	6.64	1.61	1.52
1	A	84	GLU	N-CA	6.62	1.53	1.45
1	C	123	ASP	CA-C	6.59	1.60	1.52
1	B	123	ASP	N-CA	6.56	1.54	1.46
1	D	307	ASN	CA-C	6.53	1.61	1.52
1	D	297	GLU	C-O	-6.41	1.16	1.24
1	E	294	ASP	CA-C	6.40	1.60	1.52
1	D	123	ASP	N-CA	6.34	1.53	1.46
1	E	84	GLU	CA-C	6.29	1.61	1.52
1	C	497	GLU	CA-C	6.28	1.61	1.52
1	C	290	ASP	CA-C	6.16	1.60	1.52
1	E	307	ASN	CA-C	6.12	1.60	1.52
1	E	476	GLN	N-CA	6.10	1.53	1.46
1	E	320	GLY	N-CA	6.06	1.51	1.45
1	D	320	GLY	N-CA	6.05	1.52	1.45
1	A	276	ASP	N-CA	6.02	1.53	1.46
1	A	217	ARG	N-CA	5.99	1.53	1.46
1	A	123	ASP	N-CA	5.98	1.53	1.46
1	E	123	ASP	N-CA	5.97	1.53	1.46
1	A	238	PRO	N-CD	5.96	1.56	1.47
1	A	457	PRO	N-CD	-5.85	1.39	1.47
1	D	290	ASP	CA-C	5.84	1.60	1.52
1	D	520	LEU	C-O	-5.84	1.17	1.24
1	A	276	ASP	CA-C	5.79	1.60	1.52
1	D	217	ARG	N-CA	5.76	1.53	1.46
1	E	90	VAL	CA-CB	5.75	1.60	1.54
1	D	84	GLU	N-CA	5.74	1.52	1.46
1	A	36	GLY	N-CA	5.67	1.53	1.45
1	E	365	GLY	N-CA	5.63	1.53	1.45
1	C	276	ASP	N-CA	5.57	1.53	1.46
1	C	98	LYS	C-O	-5.55	1.17	1.24
1	C	291	GLY	CA-C	5.52	1.56	1.51
1	A	476	GLN	N-CA	5.52	1.53	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	276	ASP	N-CA	5.50	1.52	1.46
1	E	520	LEU	C-O	-5.49	1.17	1.24
1	E	90	VAL	N-CA	5.46	1.53	1.46
1	E	289	THR	CA-C	5.46	1.60	1.52
1	C	632	TYR	C-O	-5.46	1.17	1.24
1	B	217	ARG	N-CA	5.43	1.53	1.46
1	A	90	VAL	CA-CB	5.38	1.60	1.54
1	B	86	ILE	N-CA	5.38	1.52	1.46
1	C	479	GLU	CA-C	5.36	1.60	1.52
1	D	347	GLU	CA-C	5.33	1.59	1.53
1	A	632	TYR	C-O	-5.32	1.17	1.24
1	B	632	TYR	C-O	-5.32	1.18	1.24
1	B	534	TRP	CA-C	5.30	1.59	1.52
1	B	479	GLU	CA-C	5.29	1.60	1.52
1	D	534	TRP	CA-C	5.29	1.59	1.52
1	C	520	LEU	C-O	-5.29	1.17	1.24
1	E	498	ARG	CA-CB	5.29	1.61	1.53
1	D	276	ASP	N-CA	5.27	1.52	1.46
1	D	476	GLN	N-CA	5.27	1.52	1.46
1	D	479	GLU	CA-C	5.24	1.60	1.52
1	E	276	ASP	N-CA	5.21	1.52	1.46
1	E	632	TYR	C-O	-5.20	1.18	1.24
1	A	90	VAL	N-CA	5.20	1.52	1.46
1	E	479	GLU	CA-C	5.17	1.60	1.52
1	C	307	ASN	N-CA	5.17	1.52	1.46
1	A	479	GLU	CA-C	5.16	1.60	1.52
1	B	498	ARG	CA-C	5.14	1.59	1.53
1	C	534	TRP	CA-C	5.12	1.59	1.52
1	E	534	TRP	CA-C	5.09	1.59	1.52
1	D	319	VAL	CA-C	5.08	1.63	1.52
1	A	534	TRP	CA-C	5.08	1.59	1.52
1	B	347	GLU	CA-C	5.08	1.59	1.53
1	B	490	GLU	CA-C	5.08	1.58	1.52
1	A	520	LEU	C-O	-5.06	1.18	1.24
1	B	225	ASN	CA-C	5.05	1.59	1.52
1	A	86	ILE	N-CA	5.04	1.51	1.46
1	D	632	TYR	C-O	-5.03	1.18	1.24

All (365) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	84	GLU	N-CA-C	19.97	139.81	109.25

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	84	GLU	N-CA-C	17.51	137.60	109.76
1	E	84	GLU	N-CA-C	16.58	136.12	109.76
1	C	513	ARG	NE-CZ-NH2	16.51	134.06	119.20
1	C	276	ASP	N-CA-C	14.12	126.38	111.14
1	E	276	ASP	N-CA-C	14.07	126.34	111.14
1	B	276	ASP	N-CA-C	14.03	126.29	111.14
1	D	276	ASP	N-CA-C	13.99	126.25	111.14
1	C	497	GLU	N-CA-C	13.53	129.05	112.54
1	A	276	ASP	N-CA-C	13.27	125.76	111.03
1	E	275	CYS	N-CA-C	12.05	128.88	109.24
1	A	275	CYS	N-CA-C	11.97	128.75	109.24
1	C	490	GLU	N-CA-C	10.85	127.51	109.06
1	B	275	CYS	N-CA-C	10.85	126.41	108.73
1	A	513	ARG	NE-CZ-NH2	10.84	128.95	119.20
1	D	275	CYS	N-CA-C	10.84	126.39	108.73
1	C	217	ARG	N-CA-C	10.78	126.59	113.12
1	B	570	LEU	N-CA-C	-10.72	92.92	109.65
1	D	570	LEU	N-CA-C	-10.69	92.97	109.65
1	C	570	LEU	N-CA-C	-10.67	93.01	109.65
1	C	275	CYS	N-CA-C	10.64	126.08	108.73
1	A	570	LEU	N-CA-C	-10.62	93.09	109.65
1	E	570	LEU	N-CA-C	-10.46	93.33	109.65
1	A	614	THR	N-CA-C	-10.37	100.04	112.89
1	C	123	ASP	N-CA-C	10.25	125.94	109.24
1	C	92	LEU	N-CA-C	-10.20	100.25	111.36
1	E	92	LEU	N-CA-C	-10.18	100.26	111.36
1	C	615	TRP	N-CA-C	10.17	122.06	110.97
1	B	92	LEU	N-CA-C	-10.06	100.40	111.36
1	D	92	LEU	N-CA-C	-10.00	100.46	111.36
1	B	614	THR	N-CA-C	-9.98	100.51	112.89
1	D	123	ASP	N-CA-C	9.97	125.49	109.24
1	E	123	ASP	N-CA-C	9.95	125.45	109.24
1	A	92	LEU	N-CA-C	-9.93	100.54	111.36
1	E	614	THR	N-CA-C	-9.90	99.76	112.23
1	B	123	ASP	N-CA-C	9.89	125.36	109.24
1	A	123	ASP	N-CA-C	9.73	125.11	109.24
1	A	618	VAL	N-CA-C	9.66	119.73	111.90
1	B	280	CYS	N-CA-C	-9.65	94.05	109.59
1	E	363	LYS	N-CA-C	9.56	124.04	112.38
1	B	618	VAL	N-CA-C	9.52	119.61	111.90
1	B	293	LYS	N-CA-C	9.45	121.58	111.28
1	D	618	VAL	N-CA-C	9.40	119.51	111.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	614	THR	N-CA-C	-9.35	101.30	112.89
1	A	620	TYR	CA-C-N	-9.30	110.25	119.64
1	A	620	TYR	C-N-CA	-9.30	110.25	119.64
1	C	618	VAL	N-CA-C	9.30	119.44	111.90
1	E	615	TRP	N-CA-C	9.30	121.11	110.97
1	E	620	TYR	CA-C-N	-9.27	110.28	119.64
1	E	620	TYR	C-N-CA	-9.27	110.28	119.64
1	C	280	CYS	N-CA-C	-9.26	94.68	109.59
1	D	280	CYS	N-CA-C	-9.26	94.69	109.59
1	B	620	TYR	CA-C-N	-9.25	110.30	119.64
1	B	620	TYR	C-N-CA	-9.25	110.30	119.64
1	E	280	CYS	N-CA-C	-9.25	94.70	109.59
1	C	498	ARG	N-CA-CB	-9.21	97.81	110.42
1	C	225	ASN	N-CA-C	9.07	130.12	110.80
1	D	620	TYR	CA-C-N	-9.03	110.52	119.64
1	D	620	TYR	C-N-CA	-9.03	110.52	119.64
1	A	480	GLU	N-CA-C	8.98	127.38	113.28
1	D	84	GLU	N-CA-C	8.97	124.47	109.76
1	A	225	ASN	N-CA-C	8.97	129.90	110.80
1	E	289	THR	N-CA-C	8.94	124.41	112.88
1	E	225	ASN	N-CA-C	8.90	129.75	110.80
1	D	225	ASN	N-CA-C	8.88	129.72	110.80
1	B	225	ASN	N-CA-C	8.87	129.69	110.80
1	C	614	THR	N-CA-C	-8.85	101.08	112.23
1	B	615	TRP	N-CA-C	8.85	120.61	110.97
1	C	620	TYR	CA-C-N	-8.84	110.71	119.64
1	C	620	TYR	C-N-CA	-8.84	110.71	119.64
1	C	498	ARG	N-CA-C	8.83	123.65	111.55
1	E	618	VAL	N-CA-C	8.83	119.05	111.90
1	D	289	THR	N-CA-C	8.59	123.99	113.17
1	A	513	ARG	NE-CZ-NH1	-8.53	112.97	121.50
1	C	513	ARG	NH1-CZ-NH2	-8.41	108.37	119.30
1	D	539	LEU	N-CA-C	8.38	120.50	111.36
1	B	83	ALA	N-CA-C	-8.35	101.57	112.68
1	C	90	VAL	N-CA-C	8.26	118.31	110.30
1	D	90	VAL	N-CA-C	8.21	118.26	110.30
1	A	615	TRP	N-CA-C	8.17	119.88	110.97
1	C	480	GLU	N-CA-C	8.17	128.20	110.80
1	D	294	ASP	N-CA-C	8.10	121.65	111.69
1	B	416	THR	CA-C-N	8.10	129.96	119.84
1	B	416	THR	C-N-CA	8.10	129.96	119.84
1	C	416	THR	CA-C-N	8.07	129.93	119.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	416	THR	C-N-CA	8.07	129.93	119.84
1	B	90	VAL	N-CA-C	8.07	118.13	110.30
1	D	375	VAL	N-CA-C	8.04	119.42	108.17
1	B	480	GLU	N-CA-C	8.02	127.89	110.80
1	A	375	VAL	N-CA-C	8.02	119.39	108.17
1	C	217	ARG	CA-CB-CG	7.95	130.01	114.10
1	B	539	LEU	N-CA-C	7.93	119.92	111.28
1	E	322	SER	N-CA-C	7.92	122.89	111.56
1	B	530	ILE	N-CA-C	7.92	118.02	110.42
1	D	480	GLU	N-CA-C	7.92	127.66	110.80
1	E	480	GLU	N-CA-C	7.87	127.56	110.80
1	D	532	VAL	N-CA-C	-7.86	102.88	110.42
1	D	615	TRP	N-CA-C	7.83	119.50	110.97
1	A	90	VAL	N-CA-C	7.82	117.89	110.30
1	A	280	CYS	N-CA-C	-7.80	96.51	109.07
1	D	530	ILE	N-CA-C	7.80	117.91	110.42
1	D	538	PHE	N-CA-C	7.80	121.73	111.75
1	C	375	VAL	N-CA-C	7.80	119.09	108.17
1	C	201	PRO	N-CA-CB	7.79	111.56	103.00
1	D	416	THR	CA-C-N	7.77	129.56	119.84
1	D	416	THR	C-N-CA	7.77	129.56	119.84
1	C	499	GLY	N-CA-C	-7.75	102.40	114.10
1	E	90	VAL	N-CA-C	7.75	117.81	110.30
1	A	416	THR	CA-C-N	7.68	129.44	119.84
1	A	416	THR	C-N-CA	7.68	129.44	119.84
1	D	531	SER	N-CA-C	7.67	120.54	111.71
1	A	539	LEU	N-CA-C	7.67	119.28	111.07
1	C	83	ALA	N-CA-C	-7.66	102.49	112.68
1	C	290	ASP	CB-CA-C	-7.66	97.23	110.17
1	B	532	VAL	N-CA-C	-7.57	103.16	110.42
1	E	364	LEU	N-CA-C	-7.56	92.14	107.41
1	B	531	SER	N-CA-C	7.54	120.38	111.71
1	A	590	VAL	N-CA-CB	7.52	120.77	110.54
1	B	375	VAL	N-CA-C	7.51	118.68	108.17
1	C	539	LEU	N-CA-C	7.48	119.43	111.28
1	C	590	VAL	N-CA-CB	7.47	120.70	110.54
1	A	195	ALA	N-CA-CB	7.46	122.26	110.55
1	E	375	VAL	N-CA-C	7.46	118.61	108.17
1	A	412	VAL	CB-CA-C	-7.42	99.13	111.29
1	D	590	VAL	N-CA-CB	7.40	120.61	110.54
1	C	498	ARG	CB-CA-C	7.40	120.94	111.40
1	B	412	VAL	CB-CA-C	-7.39	99.16	111.29

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	321	SER	N-CA-C	7.39	123.46	107.49
1	E	616	VAL	N-CA-C	7.39	124.72	109.34
1	E	289	THR	CB-CA-C	-7.38	98.25	110.72
1	B	590	VAL	N-CA-CB	7.37	120.57	110.54
1	B	340	VAL	N-CA-C	7.34	120.10	112.83
1	D	201	PRO	N-CA-CB	7.32	110.93	103.25
1	A	84	GLU	N-CA-C	7.31	121.94	110.17
1	E	168	PHE	N-CA-C	7.31	120.28	109.24
1	A	616	VAL	N-CA-C	7.29	124.51	109.34
1	D	340	VAL	N-CA-C	7.27	120.03	112.83
1	E	83	ALA	N-CA-C	-7.26	103.02	112.68
1	D	412	VAL	CB-CA-C	-7.24	99.42	111.29
1	B	529	ILE	N-CA-C	-7.24	103.41	110.72
1	E	412	VAL	CB-CA-C	-7.24	99.42	111.29
1	E	208	LEU	N-CA-C	-7.23	96.84	108.55
1	E	340	VAL	N-CA-C	7.22	119.98	112.83
1	C	289	THR	N-CA-C	7.18	122.22	113.17
1	C	412	VAL	CB-CA-C	-7.17	99.53	111.29
1	A	208	LEU	N-CA-C	-7.13	97.70	108.46
1	D	529	ILE	N-CA-C	-7.11	103.54	110.72
1	A	279	ILE	N-CA-C	7.02	117.98	107.80
1	D	616	VAL	N-CA-C	6.99	123.88	109.34
1	B	616	VAL	N-CA-C	6.98	123.85	109.34
1	C	616	VAL	N-CA-C	6.94	123.77	109.34
1	C	500	SER	N-CA-C	-6.93	99.17	109.15
1	E	539	LEU	N-CA-C	6.92	118.83	111.28
1	B	208	LEU	N-CA-C	-6.92	97.33	108.55
1	B	85	GLU	N-CA-CB	6.92	120.27	110.24
1	C	340	VAL	N-CA-C	6.86	119.62	112.83
1	E	416	THR	CA-C-N	6.85	128.40	119.84
1	E	416	THR	C-N-CA	6.85	128.40	119.84
1	D	290	ASP	CA-C-O	6.85	127.47	119.32
1	A	340	VAL	N-CA-C	6.82	119.58	112.83
1	D	490	GLU	N-CA-C	6.82	120.41	108.75
1	A	280	CYS	N-CA-CB	6.78	121.22	110.57
1	D	208	LEU	N-CA-C	-6.78	97.56	108.55
1	C	534	TRP	N-CA-C	6.76	118.73	111.36
1	D	534	TRP	N-CA-C	6.75	118.72	111.36
1	B	328	ASP	CB-CA-C	6.72	120.62	109.53
1	D	290	ASP	CB-CA-C	-6.72	98.82	110.17
1	D	477	LEU	N-CA-CB	6.71	120.25	110.26
1	C	491	ILE	N-CA-CB	6.68	118.62	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	534	TRP	N-CA-C	6.67	118.63	111.36
1	C	529	ILE	N-CA-C	-6.66	103.99	110.72
1	E	590	VAL	N-CA-C	-6.66	103.83	110.62
1	D	211	ARG	N-CA-C	6.63	119.32	108.52
1	E	534	TRP	N-CA-C	6.61	118.56	111.36
1	D	500	SER	N-CA-C	-6.60	99.65	109.15
1	A	500	SER	N-CA-C	-6.54	99.73	109.15
1	D	347	GLU	CG-CD-OE2	6.52	133.39	118.40
1	B	534	TRP	N-CA-C	6.52	118.46	111.36
1	D	111	THR	N-CA-C	-6.52	103.87	110.97
1	E	290	ASP	CA-C-O	6.49	126.55	119.15
1	C	531	SER	N-CA-C	6.49	119.17	111.71
1	D	473	VAL	CB-CA-C	6.48	120.66	110.81
1	D	111	THR	N-CA-CB	6.48	119.36	109.91
1	A	364	LEU	N-CA-C	6.45	120.25	112.38
1	D	478	GLY	N-CA-C	6.43	120.67	112.83
1	E	500	SER	N-CA-C	-6.42	99.90	109.15
1	C	478	GLY	N-CA-C	6.41	120.65	112.83
1	C	208	LEU	N-CA-C	-6.39	98.20	108.55
1	A	478	GLY	N-CA-C	6.39	120.62	112.83
1	B	321	SER	N-CA-C	6.37	118.79	108.41
1	C	532	VAL	N-CA-C	-6.28	104.39	110.42
1	A	490	GLU	N-CA-C	6.27	119.48	108.75
1	B	490	GLU	N-CA-C	6.26	119.46	108.75
1	B	500	SER	N-CA-C	-6.25	100.15	109.15
1	E	490	GLU	N-CA-C	6.24	119.43	108.75
1	D	590	VAL	N-CA-C	-6.24	104.25	110.62
1	B	478	GLY	N-CA-C	6.22	120.42	112.83
1	E	497	GLU	CB-CA-C	6.22	120.28	109.65
1	D	497	GLU	CB-CA-C	6.22	120.28	109.65
1	D	217	ARG	N-CA-C	6.20	121.50	113.88
1	E	590	VAL	N-CA-CB	6.20	118.97	110.54
1	C	530	ILE	N-CA-C	6.19	116.36	110.42
1	A	215	ASP	CB-CA-C	-6.19	101.43	110.96
1	B	590	VAL	N-CA-C	-6.18	104.31	110.62
1	A	562	THR	CA-C-N	6.16	130.39	121.52
1	A	562	THR	C-N-CA	6.16	130.39	121.52
1	A	590	VAL	N-CA-C	-6.15	104.34	110.62
1	A	339	ILE	N-CA-C	-6.15	97.53	106.88
1	C	590	VAL	N-CA-C	-6.10	104.40	110.62
1	E	562	THR	CA-C-N	6.06	130.25	121.52
1	E	562	THR	C-N-CA	6.06	130.25	121.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	562	THR	CA-C-N	6.06	130.25	121.52
1	C	562	THR	C-N-CA	6.06	130.25	121.52
1	B	562	THR	CA-C-N	6.05	130.23	121.52
1	B	562	THR	C-N-CA	6.05	130.23	121.52
1	E	477	LEU	N-CA-CB	6.02	119.23	110.26
1	B	46	GLU	CB-CG-CD	6.02	122.83	112.60
1	E	574	THR	N-CA-C	-6.00	101.64	110.52
1	D	562	THR	CA-C-N	5.97	130.12	121.52
1	D	562	THR	C-N-CA	5.97	130.12	121.52
1	C	85	GLU	N-CA-CB	5.95	118.87	110.24
1	D	321	SER	N-CA-C	5.95	119.65	107.69
1	A	419	GLY	N-CA-C	-5.94	106.78	115.63
1	E	538	PHE	N-CA-C	5.94	119.35	111.75
1	C	307	ASN	N-CA-C	5.94	123.44	110.80
1	B	538	PHE	N-CA-C	5.91	119.31	111.75
1	A	210	ILE	N-CA-C	-5.90	99.80	109.12
1	C	538	PHE	N-CA-C	5.90	119.30	111.75
1	C	168	PHE	N-CA-C	5.90	118.14	109.24
1	E	632	TYR	N-CA-C	-5.89	104.86	111.28
1	C	122	ASP	N-CA-C	5.88	118.08	108.55
1	D	574	THR	N-CA-C	-5.87	101.83	110.52
1	D	532	VAL	N-CA-CB	5.87	117.42	110.55
1	A	538	PHE	N-CA-C	5.87	119.26	111.75
1	A	194	LEU	N-CA-C	5.87	119.10	110.30
1	C	582	VAL	N-CA-C	-5.87	105.02	110.53
1	A	497	GLU	CB-CA-C	5.85	120.30	109.54
1	E	290	ASP	N-CA-CB	5.83	119.22	110.53
1	B	328	ASP	N-CA-C	-5.81	100.19	109.96
1	E	217	ARG	N-CA-C	5.80	121.02	113.88
1	A	363	LYS	N-CA-C	-5.80	105.31	112.38
1	D	320	GLY	CA-C-O	-5.77	116.58	121.66
1	E	416	THR	C-N-CD	-5.76	101.36	125.00
1	A	457	PRO	N-CA-C	5.76	119.28	111.22
1	B	532	VAL	N-CA-CB	5.75	117.28	110.55
1	A	217	ARG	N-CA-C	5.75	120.95	113.88
1	B	574	THR	N-CA-C	-5.74	102.03	110.52
1	D	632	TYR	N-CA-C	-5.73	105.03	111.28
1	C	218	TYR	N-CA-C	5.73	119.25	110.20
1	C	490	GLU	N-CA-CB	-5.73	100.88	111.13
1	E	419	GLY	N-CA-C	-5.72	107.10	115.63
1	E	631	VAL	N-CA-CB	5.72	119.17	110.58
1	A	122	ASP	N-CA-C	5.72	117.82	108.55

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	480	GLU	N-CA-CB	-5.71	107.66	114.17
1	B	122	ASP	N-CA-C	5.71	117.80	108.55
1	A	634	ARG	CG-CD-NE	5.70	124.55	112.00
1	B	632	TYR	N-CA-C	-5.70	105.07	111.28
1	E	365	GLY	N-CA-C	-5.70	101.04	110.95
1	A	632	TYR	N-CA-C	-5.69	105.07	111.28
1	B	634	ARG	CG-CD-NE	5.68	124.50	112.00
1	E	85	GLU	N-CA-C	-5.68	98.46	108.23
1	C	632	TYR	N-CA-C	-5.68	105.09	111.28
1	E	498	ARG	CA-CB-CG	5.66	125.42	114.10
1	A	631	VAL	N-CA-CB	5.64	119.04	110.58
1	E	122	ASP	N-CA-C	5.64	117.68	108.55
1	B	416	THR	C-N-CD	-5.62	101.96	125.00
1	A	498	ARG	CB-CG-CD	5.62	124.22	111.30
1	C	634	ARG	CG-CD-NE	5.62	124.36	112.00
1	E	169	GLN	N-CA-C	5.61	117.80	108.20
1	E	282	LEU	N-CA-C	5.61	118.12	110.55
1	B	217	ARG	N-CA-C	5.60	120.77	113.88
1	B	307	ASN	N-CA-C	5.60	122.73	110.80
1	B	322	SER	N-CA-C	5.59	122.71	110.80
1	E	307	ASN	N-CA-C	5.59	122.71	110.80
1	B	107	ILE	N-CA-C	-5.58	105.06	110.42
1	C	339	ILE	N-CA-C	-5.58	98.61	107.15
1	D	122	ASP	N-CA-C	5.58	117.59	108.55
1	D	223	THR	N-CA-C	-5.58	103.02	110.55
1	E	190	VAL	N-CA-CB	-5.58	102.62	110.26
1	B	479	GLU	CB-CG-CD	5.56	122.06	112.60
1	A	484	VAL	N-CA-C	5.55	115.84	107.80
1	C	416	THR	C-N-CD	-5.54	102.27	125.00
1	A	477	LEU	N-CA-CB	5.54	118.52	110.26
1	D	307	ASN	N-CA-C	5.54	122.59	110.80
1	B	223	THR	N-CA-C	-5.54	103.08	110.55
1	B	631	VAL	N-CA-CB	5.53	118.88	110.58
1	E	392	LEU	CA-CB-CG	5.53	135.66	116.30
1	A	107	ILE	N-CA-C	-5.53	105.11	110.42
1	A	282	LEU	N-CA-C	5.53	118.01	110.55
1	B	263	ASP	N-CA-C	5.51	117.96	110.35
1	E	85	GLU	N-CA-CB	5.51	118.23	110.24
1	E	201	PRO	N-CA-CB	5.51	109.04	103.25
1	D	631	VAL	N-CA-CB	5.51	118.84	110.58
1	E	634	ARG	CG-CD-NE	5.47	124.03	112.00
1	C	631	VAL	N-CA-CB	5.46	118.77	110.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	634	ARG	CG-CD-NE	5.45	123.99	112.00
1	C	175	ASN	N-CA-C	5.45	119.21	112.24
1	B	85	GLU	N-CA-C	-5.44	98.87	108.23
1	D	107	ILE	N-CA-C	-5.44	105.20	110.42
1	A	548	VAL	CB-CA-C	-5.42	104.98	112.24
1	E	339	ILE	N-CA-C	-5.42	98.86	107.15
1	D	340	VAL	CB-CA-C	-5.41	102.29	111.37
1	A	479	GLU	CB-CG-CD	5.40	121.79	112.60
1	E	293	LYS	N-CA-C	-5.40	99.72	108.52
1	C	282	LEU	N-CA-C	5.37	117.79	110.55
1	D	282	LEU	N-CA-C	5.36	117.79	110.55
1	D	479	GLU	CB-CG-CD	5.36	121.71	112.60
1	A	574	THR	N-CA-C	-5.35	102.60	110.52
1	C	548	VAL	CB-CA-C	-5.35	105.07	112.24
1	B	282	LEU	N-CA-C	5.34	117.76	110.55
1	C	574	THR	N-CA-C	-5.33	102.62	110.52
1	C	479	GLU	CB-CG-CD	5.33	121.67	112.60
1	B	615	TRP	CA-C-N	5.33	131.57	121.97
1	B	615	TRP	C-N-CA	5.33	131.57	121.97
1	E	340	VAL	CB-CA-C	-5.33	102.42	111.37
1	A	416	THR	C-N-CD	-5.33	103.16	125.00
1	A	615	TRP	CA-C-N	5.32	131.54	121.97
1	A	615	TRP	C-N-CA	5.32	131.54	121.97
1	C	140	ASP	N-CA-C	5.31	117.93	110.23
1	E	107	ILE	N-CA-C	-5.29	105.34	110.42
1	A	340	VAL	CB-CA-C	-5.29	102.48	111.37
1	D	548	VAL	CB-CA-C	-5.29	105.16	112.24
1	B	548	VAL	CB-CA-C	-5.28	105.12	112.04
1	E	223	THR	N-CA-C	-5.27	103.44	110.55
1	E	615	TRP	CA-C-N	5.26	131.44	121.97
1	E	615	TRP	C-N-CA	5.26	131.44	121.97
1	C	107	ILE	N-CA-C	-5.26	105.37	110.42
1	E	290	ASP	CB-CA-C	-5.25	100.52	109.65
1	E	548	VAL	CB-CA-C	-5.24	105.22	112.24
1	C	210	ILE	N-CA-C	-5.24	100.85	108.97
1	C	223	THR	N-CA-C	-5.23	103.49	110.55
1	E	582	VAL	N-CA-C	-5.22	105.62	110.53
1	C	340	VAL	CB-CA-C	-5.22	102.60	111.37
1	A	194	LEU	CB-CA-C	-5.19	102.85	110.06
1	B	546	LEU	N-CA-C	5.19	116.94	111.28
1	B	340	VAL	CB-CA-C	-5.18	102.66	111.37
1	C	85	GLU	N-CA-C	-5.18	99.32	108.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	60	GLN	CB-CA-C	-5.14	102.91	110.06
1	D	289	THR	CB-CA-C	-5.14	101.51	110.09
1	A	634	ARG	CA-CB-CG	5.13	124.37	114.10
1	E	491	ILE	CB-CA-C	-5.13	104.55	110.91
1	E	479	GLU	CB-CG-CD	5.12	121.30	112.60
1	D	322	SER	N-CA-C	5.12	121.70	110.80
1	C	615	TRP	CA-C-N	5.12	131.18	121.97
1	C	615	TRP	C-N-CA	5.12	131.18	121.97
1	D	338	GLN	N-CA-C	5.11	117.68	108.48
1	A	275	CYS	N-CA-CB	-5.11	102.10	110.43
1	C	215	ASP	N-CA-CB	5.10	117.47	110.07
1	E	473	VAL	CB-CA-C	5.09	118.20	110.62
1	B	228	PRO	N-CA-C	-5.09	103.11	111.15
1	D	634	ARG	CA-CB-CG	5.08	124.27	114.10
1	A	60	GLN	CB-CA-C	-5.08	103.00	110.06
1	A	418	ASP	N-CA-C	5.08	117.55	111.71
1	C	497	GLU	O-C-N	-5.07	115.64	122.43
1	D	615	TRP	CA-C-N	5.07	131.09	121.97
1	D	615	TRP	C-N-CA	5.07	131.09	121.97
1	C	634	ARG	CA-CB-CG	5.05	124.19	114.10
1	E	190	VAL	N-CA-C	5.05	116.07	109.21
1	B	338	GLN	N-CA-C	5.04	117.56	108.48
1	A	228	PRO	N-CA-C	-5.04	103.19	111.15
1	A	370	GLN	N-CA-C	5.03	119.63	111.37
1	E	482	TRP	CA-C-N	-5.02	114.28	122.57
1	E	482	TRP	C-N-CA	-5.02	114.28	122.57
1	B	210	ILE	CB-CG1-CD1	-5.01	103.28	113.80
1	B	473	VAL	CB-CA-C	5.00	118.41	110.81

There are no chirality outliers.

All (22) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	123	ASP	Peptide
1	A	224	ARG	Peptide
1	A	278	ASP	Peptide
1	A	322	SER	Mainchain,Peptide
1	B	104	ASN	Peptide
1	B	123	ASP	Peptide
1	B	195	ALA	Peptide
1	B	224	ARG	Peptide
1	C	123	ASP	Peptide

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Mol	Chain	Res	Type	Group
1	C	217	ARG	Peptide
1	C	224	ARG	Peptide
1	C	321	SER	Peptide
1	C	497	GLU	Peptide
1	D	123	ASP	Peptide
1	D	224	ARG	Peptide
1	D	297	GLU	Peptide
1	D	475	ASP	Peptide
1	E	123	ASP	Peptide
1	E	224	ARG	Peptide
1	E	294	ASP	Peptide
1	E	364	LEU	Mainchain

## 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	4576	0	4462	158	0
1	B	4584	0	4469	175	3
1	C	4597	0	4484	172	3
1	D	4613	0	4502	161	3
1	E	4613	0	4502	168	3
2	A	2	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	E	1	0	0	0	0
3	A	3	0	0	0	0
3	B	1	0	0	0	0
3	C	2	0	0	0	0
3	D	1	0	0	0	0
4	A	1	0	0	1	0
4	B	1	0	0	0	0
4	C	1	0	0	0	0
4	D	1	0	0	0	0
4	E	1	0	0	0	0
5	A	25	0	23	0	0
5	B	78	0	75	10	0
5	C	52	0	50	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	D	26	0	25	0	0
5	E	75	0	69	0	0
6	A	1	0	0	0	0
6	B	1	0	0	0	0
6	C	1	0	0	0	0
6	D	1	0	0	0	0
6	E	1	0	0	0	0
All	All	23261	0	22661	773	6

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

All (773) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:476:GLN:CB	1:C:479:GLU:OE1	1.66	1.42
1:E:207:GLU:O	1:E:208:LEU:CD1	1.77	1.32
1:C:476:GLN:HB2	1:C:479:GLU:OE1	1.21	1.27
1:C:530:ILE:HD13	1:C:624:TYR:CE2	1.70	1.27
1:C:416:THR:OG1	1:C:417:PRO:HD2	1.12	1.23
1:B:530:ILE:HD13	1:B:624:TYR:CE2	1.77	1.19
1:B:416:THR:OG1	1:B:417:PRO:HD2	1.05	1.18
1:B:416:THR:OG1	1:B:417:PRO:CD	1.96	1.14
1:C:476:GLN:HB3	1:C:479:GLU:OE1	1.48	1.13
1:A:416:THR:HB	1:A:417:PRO:HD2	1.11	1.11
1:E:207:GLU:C	1:E:208:LEU:HD12	1.77	1.07
1:E:416:THR:CB	1:E:417:PRO:HD2	1.69	1.07
1:C:416:THR:OG1	1:C:417:PRO:CD	2.04	1.06
1:B:416:THR:CB	1:B:417:PRO:HD2	1.75	1.05
1:E:416:THR:HB	1:E:417:PRO:HD2	1.09	1.04
1:B:344:GLN:HE22	1:B:568:PRO:HG3	1.22	1.01
1:C:344:GLN:HE22	1:C:568:PRO:HG3	1.25	1.01
1:C:416:THR:CB	1:C:417:PRO:HD2	1.80	1.00
1:C:530:ILE:CD1	1:C:624:TYR:HE2	1.74	0.99
1:A:344:GLN:HE22	1:A:568:PRO:HG3	1.21	0.99
1:E:207:GLU:O	1:E:208:LEU:HD12	0.81	0.98
1:E:289:THR:O	1:E:289:THR:HG22	1.61	0.97
1:D:416:THR:OG1	1:D:417:PRO:HD2	1.63	0.97
1:A:416:THR:CB	1:A:417:PRO:HD2	1.75	0.97
1:C:476:GLN:HB3	1:C:479:GLU:CD	1.91	0.96
1:C:476:GLN:CB	1:C:479:GLU:CD	2.38	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:344:GLN:HE22	1:E:568:PRO:HG3	1.32	0.94
1:B:530:ILE:CD1	1:B:624:TYR:HE2	1.80	0.94
1:D:344:GLN:HE22	1:D:568:PRO:HG3	1.34	0.93
1:C:211:ARG:HG2	1:C:299:VAL:CG2	1.99	0.93
1:E:498:ARG:HE	1:D:414:PHE:HE2	0.97	0.93
1:C:530:ILE:HD13	1:C:624:TYR:HE2	1.12	0.92
1:B:599:ARG:HG2	5:B:706:LMT:O4'	1.70	0.91
1:A:555:VAL:HG11	1:B:553:LEU:HD23	1.54	0.89
1:E:498:ARG:NE	1:D:414:PHE:HE2	1.71	0.89
1:A:194:LEU:HD12	1:A:194:LEU:O	1.72	0.89
1:C:553:LEU:HD23	1:B:555:VAL:HG11	1.53	0.88
1:B:530:ILE:HD13	1:B:624:TYR:HE2	1.20	0.88
1:D:553:LEU:HD23	1:C:555:VAL:HG11	1.54	0.88
1:A:553:LEU:HD23	1:E:555:VAL:HG11	1.56	0.87
1:B:391:ASN:O	1:B:392:LEU:HD12	1.75	0.86
1:A:466:ILE:HG23	1:A:491:ILE:HD11	1.58	0.85
1:E:416:THR:HB	1:E:417:PRO:CD	2.03	0.85
1:C:211:ARG:HG2	1:C:299:VAL:HG23	1.56	0.85
1:E:553:LEU:HD23	1:D:555:VAL:HG11	1.56	0.84
1:A:62:ASP:HB3	1:A:174:LEU:HD11	1.60	0.83
1:E:526:LEU:O	1:E:530:ILE:HD12	1.80	0.82
1:D:289:THR:HG22	1:D:289:THR:O	1.81	0.80
1:A:441:TYR:HB3	1:A:574:THR:OG1	1.81	0.80
1:E:441:TYR:HB3	1:E:574:THR:OG1	1.82	0.80
1:D:441:TYR:HB3	1:D:574:THR:OG1	1.82	0.80
1:A:344:GLN:NE2	1:A:568:PRO:HG3	1.98	0.79
1:E:289:THR:O	1:E:289:THR:CG2	2.29	0.79
1:C:441:TYR:HB3	1:C:574:THR:OG1	1.82	0.79
1:B:599:ARG:CG	5:B:706:LMT:O4'	2.31	0.79
1:A:371:CYS:SG	1:A:373:CYS:N	2.56	0.79
1:E:498:ARG:NE	1:D:414:PHE:CE2	2.46	0.78
1:C:530:ILE:CD1	1:C:624:TYR:CE2	2.54	0.78
1:C:371:CYS:SG	1:C:373:CYS:N	2.57	0.78
1:D:391:ASN:O	1:D:392:LEU:HD12	1.84	0.78
1:E:371:CYS:SG	1:E:373:CYS:N	2.57	0.78
1:B:344:GLN:HE22	1:B:568:PRO:CG	1.97	0.77
1:B:344:GLN:NE2	1:B:568:PRO:HG3	1.98	0.77
1:A:526:LEU:O	1:A:530:ILE:HD12	1.85	0.77
1:B:441:TYR:HB3	1:B:574:THR:OG1	1.83	0.77
1:E:226:LEU:HB2	1:E:280:CYS:SG	2.25	0.77
1:C:289:THR:O	1:C:289:THR:HG22	1.84	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:496:PHE:N	1:B:500:SER:O	2.18	0.76
1:D:371:CYS:SG	1:D:373:CYS:N	2.57	0.76
1:D:441:TYR:HE2	1:D:567:LEU:HD22	1.49	0.76
1:B:441:TYR:HE2	1:B:567:LEU:HD12	1.51	0.76
1:C:496:PHE:N	1:C:500:SER:O	2.18	0.76
1:B:371:CYS:SG	1:B:373:CYS:N	2.57	0.76
1:A:441:TYR:HE2	1:A:567:LEU:HD12	1.52	0.75
1:C:344:GLN:NE2	1:C:568:PRO:HG3	2.01	0.75
1:E:364:LEU:HD22	1:E:415:VAL:HG11	1.68	0.75
1:B:382:SER:O	1:B:383:ILE:C	2.28	0.75
1:E:304:VAL:HG13	1:E:323:VAL:HG11	1.68	0.74
1:A:496:PHE:N	1:A:500:SER:O	2.19	0.74
1:D:496:PHE:N	1:D:500:SER:O	2.19	0.74
1:B:416:THR:HG1	1:B:417:PRO:HD2	1.48	0.74
1:C:476:GLN:HB2	1:C:479:GLU:CD	2.08	0.74
1:B:211:ARG:HG2	1:B:299:VAL:HG23	1.70	0.74
1:A:614:THR:HG21	5:B:706:LMT:H32	1.68	0.74
1:C:476:GLN:O	1:C:479:GLU:HG2	1.87	0.74
1:A:416:THR:HB	1:A:417:PRO:CD	2.06	0.73
1:A:344:GLN:HE22	1:A:568:PRO:CG	2.01	0.73
1:E:496:PHE:N	1:E:500:SER:O	2.19	0.73
1:C:227:GLN:HB3	1:C:228:PRO:HD2	1.70	0.73
1:B:211:ARG:HG2	1:B:299:VAL:CG2	2.20	0.72
1:C:211:ARG:HG2	1:C:299:VAL:HG21	1.71	0.72
1:C:258:ALA:CB	1:C:271:LEU:HD11	2.20	0.71
1:D:530:ILE:HD11	1:D:583:SER:OG	1.89	0.71
1:C:382:SER:O	1:C:383:ILE:C	2.33	0.71
1:A:283:VAL:HG11	1:E:156:LEU:HD22	1.71	0.71
1:B:289:THR:HG22	1:B:289:THR:O	1.90	0.71
1:B:546:LEU:HD11	1:B:595:VAL:CG2	2.20	0.71
1:A:382:SER:O	1:A:383:ILE:C	2.33	0.71
1:E:546:LEU:HD11	1:E:595:VAL:CG2	2.20	0.70
1:E:206:GLN:HG2	1:E:208:LEU:HD11	1.73	0.70
1:D:110:LEU:HD12	1:D:111:THR:N	2.05	0.70
1:C:289:THR:O	1:C:289:THR:CG2	2.39	0.70
1:E:382:SER:O	1:E:383:ILE:C	2.34	0.69
1:C:391:ASN:O	1:C:392:LEU:HD12	1.92	0.69
1:A:546:LEU:HD11	1:A:595:VAL:CG2	2.22	0.69
1:D:546:LEU:HD21	1:C:548:VAL:HG21	1.74	0.69
1:B:599:ARG:NE	5:B:706:LMT:O4'	2.24	0.69
1:E:211:ARG:HG3	1:E:299:VAL:HG12	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:530:ILE:CD1	1:B:624:TYR:CE2	2.59	0.69
1:C:546:LEU:HD11	1:C:595:VAL:CG2	2.22	0.69
1:C:429:VAL:HG22	1:C:431:LEU:CD1	2.23	0.69
1:E:206:GLN:HB2	1:E:323:VAL:HG12	1.73	0.68
1:D:289:THR:O	1:D:289:THR:CG2	2.40	0.68
1:C:476:GLN:O	1:C:479:GLU:CG	2.40	0.68
1:C:211:ARG:CG	1:C:299:VAL:HG23	2.24	0.68
1:D:344:GLN:HE22	1:D:568:PRO:CG	2.06	0.68
1:C:249:LEU:HB2	1:C:271:LEU:HD21	1.76	0.68
1:A:208:LEU:HD23	1:A:209:GLU:C	2.19	0.67
1:A:239:ILE:HD11	1:A:301:ARG:HG3	1.76	0.67
1:D:77:PRO:O	1:D:124:ASP:N	2.27	0.67
1:A:548:VAL:HG21	1:B:546:LEU:HD21	1.75	0.67
1:D:382:SER:O	1:D:383:ILE:C	2.36	0.67
1:A:391:ASN:O	1:A:392:LEU:HD12	1.94	0.67
1:A:77:PRO:O	1:A:124:ASP:N	2.28	0.67
1:C:429:VAL:HG22	1:C:431:LEU:HD12	1.76	0.67
1:C:60:GLN:HB3	1:C:139:ARG:HA	1.76	0.67
1:B:406:ARG:HD3	1:B:429:VAL:CG1	2.25	0.67
1:E:77:PRO:O	1:E:124:ASP:N	2.28	0.66
1:D:546:LEU:HD11	1:D:595:VAL:CG2	2.25	0.66
1:C:77:PRO:O	1:C:124:ASP:N	2.28	0.66
1:E:597:GLN:NE2	1:E:612:ILE:HG22	2.11	0.66
1:D:597:GLN:NE2	1:D:612:ILE:HG22	2.11	0.66
1:C:597:GLN:NE2	1:C:612:ILE:HG22	2.11	0.66
1:B:77:PRO:O	1:B:124:ASP:N	2.27	0.66
1:D:344:GLN:NE2	1:D:568:PRO:HG3	2.08	0.66
1:B:416:THR:HG21	1:B:420:ARG:HE	1.61	0.66
1:A:224:ARG:HB2	1:A:325:LEU:HB2	1.78	0.65
1:A:382:SER:O	1:A:385:ALA:N	2.29	0.65
1:A:390:ILE:HG22	1:A:392:LEU:HD13	1.77	0.65
1:A:548:VAL:CG2	1:B:546:LEU:HD21	2.26	0.65
1:A:597:GLN:NE2	1:A:612:ILE:HG22	2.11	0.65
1:D:546:LEU:HD21	1:C:548:VAL:CG2	2.25	0.65
1:B:597:GLN:NE2	1:B:612:ILE:HG22	2.10	0.65
1:A:77:PRO:N	1:A:124:ASP:CB	2.58	0.65
1:D:77:PRO:N	1:D:124:ASP:CB	2.59	0.65
1:E:77:PRO:N	1:E:124:ASP:CB	2.59	0.65
1:C:77:PRO:N	1:C:124:ASP:CB	2.60	0.65
1:B:77:PRO:N	1:B:124:ASP:CB	2.59	0.65
1:C:382:SER:O	1:C:385:ALA:N	2.29	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:382:SER:O	1:D:385:ALA:N	2.30	0.65
1:C:258:ALA:HB3	1:C:271:LEU:HD11	1.79	0.64
1:E:522:ILE:HG12	1:E:563:ILE:HD11	1.79	0.64
1:B:382:SER:O	1:B:385:ALA:N	2.30	0.64
1:B:406:ARG:CD	1:B:429:VAL:CG1	2.75	0.64
1:D:595:VAL:HG11	1:C:535:VAL:HG12	1.78	0.64
1:D:416:THR:HG21	1:D:420:ARG:HE	1.62	0.64
1:A:522:ILE:HG12	1:A:563:ILE:HD11	1.80	0.64
1:B:344:GLN:NE2	1:B:568:PRO:CG	2.60	0.64
1:D:522:ILE:HG12	1:D:563:ILE:HD11	1.80	0.64
1:E:382:SER:O	1:E:385:ALA:N	2.30	0.64
1:C:344:GLN:HE22	1:C:568:PRO:CG	2.04	0.64
1:C:574:THR:HG22	1:C:577:ASP:CG	2.23	0.64
1:B:522:ILE:HG12	1:B:563:ILE:HD11	1.80	0.63
1:A:546:LEU:HD21	1:E:548:VAL:CG2	2.29	0.63
1:D:546:LEU:HD11	1:D:595:VAL:HG22	1.80	0.63
1:C:522:ILE:HG12	1:C:563:ILE:HD11	1.79	0.63
1:E:546:LEU:HD21	1:D:548:VAL:CG2	2.28	0.63
1:B:391:ASN:C	1:B:392:LEU:HD12	2.24	0.63
1:C:416:THR:HG21	1:C:420:ARG:HE	1.62	0.63
1:A:586:LEU:HD12	1:A:624:TYR:CE1	2.33	0.62
1:C:546:LEU:HD21	1:B:548:VAL:CG2	2.29	0.62
1:B:329:LEU:HB2	1:B:464:ASN:HB2	1.81	0.62
1:B:546:LEU:HD11	1:B:595:VAL:HG22	1.82	0.62
1:E:211:ARG:HG3	1:E:299:VAL:CG1	2.30	0.62
1:A:546:LEU:HD21	1:E:548:VAL:HG21	1.82	0.62
1:E:429:VAL:HG22	1:E:431:LEU:HD12	1.82	0.61
1:D:248:ARG:HA	1:D:271:LEU:CD1	2.30	0.61
1:C:546:LEU:HD21	1:B:548:VAL:HG21	1.80	0.61
1:A:248:ARG:HA	1:A:271:LEU:CD1	2.30	0.61
1:D:242:ALA:HB1	1:D:298:ALA:HB1	1.83	0.61
1:C:546:LEU:HD11	1:C:595:VAL:HG22	1.82	0.61
1:B:248:ARG:HA	1:B:271:LEU:CD1	2.31	0.61
1:E:206:GLN:HG2	1:E:208:LEU:CD1	2.30	0.61
1:E:586:LEU:HD12	1:E:624:TYR:CE1	2.36	0.61
1:C:283:VAL:HG11	1:B:156:LEU:HD22	1.81	0.61
1:B:289:THR:O	1:B:289:THR:CG2	2.48	0.61
1:A:158:LYS:HE3	1:A:160:GLN:HG3	1.83	0.61
1:C:416:THR:HG1	1:C:417:PRO:HD2	1.57	0.61
1:A:344:GLN:NE2	1:A:568:PRO:CG	2.63	0.61
1:E:248:ARG:HA	1:E:271:LEU:CD1	2.31	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:546:LEU:HD11	1:E:595:VAL:HG23	1.82	0.61
1:D:374:THR:O	1:D:417:PRO:HD3	2.01	0.61
1:A:546:LEU:HD11	1:A:595:VAL:HG22	1.83	0.60
1:E:283:VAL:HG11	1:D:156:LEU:HD22	1.83	0.60
1:E:546:LEU:HD21	1:D:548:VAL:HG21	1.81	0.60
1:A:242:ALA:HB1	1:A:298:ALA:HB1	1.83	0.60
1:D:601:GLY:HA2	1:D:606:GLN:HG2	1.84	0.59
1:E:366:PHE:CZ	1:E:376:LYS:HD2	2.36	0.59
1:C:173:GLY:HA3	1:C:179:VAL:HG21	1.84	0.59
1:C:553:LEU:CD2	1:B:555:VAL:HG11	2.28	0.59
1:A:208:LEU:HD22	1:A:210:ILE:HG22	1.84	0.59
1:D:418:ASP:OD1	1:D:418:ASP:O	2.21	0.59
1:E:429:VAL:HG22	1:E:431:LEU:CD1	2.33	0.59
1:B:242:ALA:HB1	1:B:298:ALA:HB1	1.85	0.59
1:C:418:ASP:OD1	1:C:418:ASP:O	2.20	0.58
1:B:258:ALA:HB3	1:B:271:LEU:HD21	1.85	0.58
1:A:574:THR:HG22	1:A:577:ASP:CG	2.28	0.58
1:E:258:ALA:HB3	1:E:271:LEU:HD21	1.85	0.58
1:E:344:GLN:NE2	1:E:568:PRO:HG3	2.11	0.58
1:A:553:LEU:CD2	1:E:555:VAL:HG11	2.31	0.58
1:E:588:ALA:HB3	1:D:528:LEU:HD23	1.85	0.58
1:C:390:ILE:HG23	1:C:392:LEU:HD13	1.85	0.58
1:C:430:THR:C	1:C:431:LEU:HD12	2.29	0.58
1:C:444:ASP:OD1	1:C:513:ARG:NH1	2.36	0.58
1:E:476:GLN:HB3	1:E:479:GLU:OE1	2.03	0.58
1:A:476:GLN:HB3	1:A:479:GLU:OE1	2.04	0.58
1:D:173:GLY:HA3	1:D:179:VAL:HG21	1.85	0.58
1:E:546:LEU:HD11	1:E:595:VAL:HG22	1.86	0.58
1:C:290:ASP:OD1	1:C:290:ASP:C	2.44	0.58
1:B:366:PHE:CZ	1:B:376:LYS:HD2	2.39	0.58
1:B:522:ILE:CG1	1:B:563:ILE:HD11	2.34	0.58
1:A:173:GLY:HA3	1:A:179:VAL:HG21	1.85	0.57
1:A:522:ILE:CG1	1:A:563:ILE:HD11	2.34	0.57
1:D:574:THR:HG22	1:D:577:ASP:CG	2.29	0.57
1:C:391:ASN:C	1:C:392:LEU:HD12	2.28	0.57
1:B:173:GLY:HA3	1:B:179:VAL:HG21	1.85	0.57
1:E:430:THR:C	1:E:431:LEU:HD12	2.29	0.57
1:D:236:VAL:CG1	1:D:302:LEU:HD13	2.34	0.57
1:D:485:THR:OG1	1:D:510:LEU:HB2	2.04	0.57
1:D:391:ASN:C	1:D:392:LEU:HD12	2.29	0.57
1:A:386:VAL:HG23	1:A:394:LEU:CD1	2.34	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:174:LEU:HD12	1:C:174:LEU:O	2.04	0.57
1:C:476:GLN:HB3	1:C:479:GLU:OE2	2.05	0.57
1:E:344:GLN:HE22	1:E:568:PRO:CG	2.13	0.57
1:C:258:ALA:HB1	1:C:271:LEU:HD11	1.87	0.57
1:C:344:GLN:NE2	1:C:568:PRO:CG	2.67	0.57
1:C:366:PHE:CZ	1:C:376:LYS:HD2	2.39	0.57
1:E:522:ILE:CG1	1:E:563:ILE:HD11	2.34	0.57
1:E:574:THR:HG22	1:E:577:ASP:CG	2.29	0.57
1:D:522:ILE:CG1	1:D:563:ILE:HD11	2.35	0.57
1:B:416:THR:HG21	1:B:420:ARG:NE	2.19	0.57
1:A:519:ILE:HA	1:A:523:PHE:HB2	1.87	0.57
1:C:522:ILE:CG1	1:C:563:ILE:HD11	2.35	0.57
1:A:391:ASN:C	1:A:392:LEU:HD12	2.30	0.56
1:E:483:VAL:O	1:E:511:VAL:HA	2.05	0.56
1:E:546:LEU:HD12	1:E:595:VAL:N	2.20	0.56
1:A:258:ALA:HB3	1:A:271:LEU:HD21	1.86	0.56
1:A:555:VAL:HG11	1:B:553:LEU:CD2	2.31	0.56
1:A:612:ILE:HA	1:A:615:TRP:HB3	1.88	0.56
1:B:546:LEU:HD11	1:B:595:VAL:HG23	1.87	0.56
1:D:110:LEU:HD12	1:D:110:LEU:C	2.31	0.56
1:D:519:ILE:HA	1:D:523:PHE:HB2	1.86	0.56
1:C:416:THR:HG21	1:C:420:ARG:NE	2.20	0.56
1:C:485:THR:OG1	1:C:510:LEU:HB2	2.05	0.56
1:C:519:ILE:HA	1:C:523:PHE:HB2	1.87	0.56
1:D:416:THR:HG21	1:D:420:ARG:NE	2.20	0.56
1:E:206:GLN:CB	1:E:323:VAL:HG12	2.36	0.56
1:D:476:GLN:HB3	1:D:479:GLU:CG	2.36	0.55
1:A:211:ARG:HA	1:A:299:VAL:HG23	1.88	0.55
1:D:476:GLN:CB	1:D:479:GLU:HG2	2.36	0.55
1:A:466:ILE:HG23	1:A:491:ILE:CD1	2.34	0.55
1:D:542:TYR:O	1:D:543:GLY:C	2.49	0.55
1:C:91:SER:O	1:C:95:VAL:HG23	2.07	0.55
1:D:283:VAL:HG11	1:C:156:LEU:HD22	1.89	0.55
1:B:519:ILE:HA	1:B:523:PHE:HB2	1.87	0.55
1:A:588:ALA:HB3	1:E:528:LEU:HD23	1.88	0.55
1:E:519:ILE:HA	1:E:523:PHE:HB2	1.87	0.55
1:D:546:LEU:CD1	1:D:595:VAL:HA	2.36	0.55
1:B:201:PRO:HG2	1:B:307:ASN:HD22	1.71	0.55
1:D:91:SER:O	1:D:95:VAL:HG23	2.06	0.55
1:B:542:TYR:O	1:B:543:GLY:C	2.49	0.55
1:A:546:LEU:HD12	1:A:595:VAL:N	2.22	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:91:SER:O	1:E:95:VAL:HG23	2.07	0.55
1:B:476:GLN:HB3	1:B:479:GLU:OE1	2.07	0.55
1:B:488:SER:O	1:B:508:THR:HG22	2.06	0.55
1:E:553:LEU:CD2	1:D:555:VAL:HG11	2.35	0.54
1:D:366:PHE:CZ	1:D:376:LYS:HD2	2.41	0.54
1:C:542:TYR:O	1:C:543:GLY:C	2.49	0.54
1:A:542:TYR:O	1:A:543:GLY:C	2.49	0.54
1:A:546:LEU:CD1	1:A:595:VAL:HA	2.38	0.54
1:C:217:ARG:NH1	1:C:289:THR:HA	2.22	0.54
1:E:445:ARG:HH12	1:E:512:LYS:HD3	1.72	0.54
1:B:91:SER:O	1:B:95:VAL:HG23	2.06	0.54
1:A:91:SER:O	1:A:95:VAL:HG23	2.07	0.54
1:E:612:ILE:HA	1:E:615:TRP:HB3	1.88	0.54
1:D:553:LEU:CD2	1:C:555:VAL:HG11	2.32	0.54
1:C:546:LEU:HD11	1:C:595:VAL:HG23	1.89	0.54
1:B:582:VAL:HG21	1:B:627:TYR:CZ	2.42	0.54
1:A:372:GLY:O	1:B:252:SER:HB3	2.08	0.54
1:C:546:LEU:HD12	1:C:595:VAL:N	2.23	0.54
1:C:587:THR:O	1:C:590:VAL:HG22	2.08	0.54
1:C:582:VAL:HG21	1:C:627:TYR:CZ	2.43	0.54
1:A:546:LEU:HD11	1:A:595:VAL:HG23	1.90	0.54
1:E:582:VAL:HG21	1:E:627:TYR:CZ	2.42	0.54
1:D:587:THR:O	1:D:590:VAL:HG22	2.08	0.54
1:A:104:ASN:O	1:A:108:SER:HB2	2.08	0.54
1:A:587:THR:O	1:A:590:VAL:HG22	2.08	0.54
1:A:366:PHE:CZ	1:A:376:LYS:HD2	2.42	0.53
1:D:476:GLN:HB3	1:D:479:GLU:HG2	1.90	0.53
1:D:582:VAL:HG21	1:D:627:TYR:CZ	2.43	0.53
1:E:173:GLY:HA3	1:E:179:VAL:HG21	1.90	0.53
1:D:236:VAL:HG12	1:D:302:LEU:HD13	1.89	0.53
1:B:546:LEU:HD12	1:B:595:VAL:N	2.23	0.53
1:A:60:GLN:HG2	1:A:60:GLN:O	2.08	0.53
1:E:348:ASN:OD1	1:E:348:ASN:C	2.52	0.53
1:D:537:PHE:O	1:D:613:ASP:OD2	2.26	0.53
1:C:546:LEU:CD1	1:C:595:VAL:HA	2.38	0.53
1:A:348:ASN:C	1:A:348:ASN:OD1	2.52	0.53
1:E:498:ARG:CZ	1:D:375:VAL:HG11	2.38	0.53
1:E:537:PHE:O	1:E:613:ASP:OD2	2.26	0.53
1:A:582:VAL:HG21	1:A:627:TYR:CZ	2.43	0.53
1:B:587:THR:O	1:B:590:VAL:HG22	2.07	0.53
1:A:537:PHE:O	1:A:613:ASP:OD2	2.27	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:252:SER:HB3	1:D:372:GLY:O	2.09	0.53
1:B:537:PHE:O	1:B:613:ASP:OD2	2.27	0.53
1:E:60:GLN:O	1:E:60:GLN:HG2	2.09	0.53
1:D:488:SER:O	1:D:508:THR:HG22	2.09	0.53
1:C:488:SER:O	1:C:508:THR:HG22	2.09	0.52
1:C:497:GLU:HG2	1:B:424:PHE:CE2	2.44	0.52
1:B:479:GLU:OE2	1:B:479:GLU:N	2.42	0.52
1:B:574:THR:HG22	1:B:577:ASP:CG	2.35	0.52
1:B:406:ARG:HD3	1:B:429:VAL:HG12	1.90	0.52
5:B:706:LMT:O3'	5:B:706:LMT:H1B	2.08	0.52
1:D:344:GLN:NE2	1:D:568:PRO:CG	2.69	0.52
1:B:522:ILE:HG23	1:B:563:ILE:CD1	2.40	0.52
1:E:55:LEU:HD23	1:E:58:MET:SD	2.50	0.52
1:E:431:LEU:HD21	1:E:450:ILE:HG23	1.92	0.52
1:E:488:SER:O	1:E:508:THR:HG22	2.10	0.52
1:C:348:ASN:C	1:C:348:ASN:OD1	2.52	0.52
1:A:239:ILE:CD1	1:A:301:ARG:HG3	2.38	0.52
1:E:37:ARG:CZ	1:E:174:LEU:HD13	2.39	0.52
1:C:104:ASN:O	1:C:108:SER:HB2	2.09	0.52
1:C:553:LEU:HD12	1:C:587:THR:HG22	1.92	0.52
1:B:348:ASN:OD1	1:B:348:ASN:C	2.52	0.52
1:B:546:LEU:CD1	1:B:595:VAL:HA	2.39	0.52
1:D:55:LEU:HD23	1:D:58:MET:SD	2.50	0.52
1:C:537:PHE:O	1:C:613:ASP:OD2	2.27	0.52
1:B:174:LEU:HD12	1:B:174:LEU:O	2.10	0.52
1:A:248:ARG:HA	1:A:271:LEU:HD11	1.92	0.52
1:C:242:ALA:HB1	1:C:298:ALA:HB1	1.91	0.52
1:D:553:LEU:HD12	1:D:587:THR:HG22	1.92	0.52
1:D:217:ARG:NE	1:D:288:GLY:O	2.35	0.51
1:C:55:LEU:HD23	1:C:58:MET:SD	2.50	0.51
1:C:211:ARG:HA	1:C:299:VAL:HG23	1.92	0.51
1:B:211:ARG:HA	1:B:299:VAL:HG23	1.92	0.51
1:A:55:LEU:HD23	1:A:58:MET:SD	2.50	0.51
1:E:242:ALA:HB1	1:E:298:ALA:HB1	1.90	0.51
1:E:542:TYR:O	1:E:543:GLY:C	2.49	0.51
1:C:290:ASP:OD1	1:C:291:GLY:N	2.44	0.51
1:B:374:THR:O	1:B:417:PRO:HD3	2.11	0.51
1:B:601:GLY:HA2	1:B:606:GLN:HG2	1.92	0.51
1:E:277:GLN:NE2	1:D:128:GLY:O	2.44	0.51
1:E:304:VAL:HG13	1:E:323:VAL:CG1	2.38	0.51
1:D:348:ASN:OD1	1:D:348:ASN:C	2.52	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:476:GLN:HB3	1:D:479:GLU:OE1	2.09	0.51
1:C:522:ILE:HG23	1:C:563:ILE:CD1	2.41	0.51
1:B:616:VAL:O	1:B:617:LEU:C	2.54	0.51
1:A:374:THR:O	1:A:417:PRO:HD3	2.11	0.51
1:D:522:ILE:HG23	1:D:563:ILE:CD1	2.40	0.51
1:A:486:SER:OG	1:A:510:LEU:HD12	2.11	0.51
1:E:537:PHE:CD2	1:E:616:VAL:HG11	2.46	0.51
1:B:55:LEU:HD23	1:B:58:MET:SD	2.50	0.51
1:B:537:PHE:CD2	1:B:616:VAL:HG11	2.46	0.51
1:E:126:GLY:HA3	1:E:369:ASP:OD2	2.10	0.51
1:C:258:ALA:HB1	1:C:271:LEU:CD1	2.39	0.51
1:A:616:VAL:O	1:A:617:LEU:C	2.54	0.51
1:A:208:LEU:HD22	1:A:210:ILE:CG2	2.40	0.50
1:C:486:SER:OG	1:C:510:LEU:HD12	2.11	0.50
1:B:392:LEU:HB3	1:B:393:PRO:HD2	1.92	0.50
1:B:412:VAL:HG11	1:B:414:PHE:HE1	1.76	0.50
1:C:537:PHE:CD2	1:C:616:VAL:HG11	2.47	0.50
1:B:553:LEU:HD12	1:B:587:THR:HG22	1.94	0.50
1:B:635:PHE:C	1:B:636:PHE:HD1	2.19	0.50
1:A:488:SER:O	1:A:508:THR:HG22	2.11	0.50
1:A:537:PHE:CD2	1:A:616:VAL:HG11	2.47	0.50
1:E:522:ILE:HG23	1:E:563:ILE:CD1	2.41	0.50
1:A:479:GLU:N	1:A:479:GLU:OE2	2.45	0.50
1:A:601:GLY:HA2	1:A:606:GLN:HG2	1.94	0.50
1:A:522:ILE:HG23	1:A:563:ILE:CD1	2.40	0.50
1:A:62:ASP:HB3	1:A:174:LEU:CD1	2.38	0.50
1:E:248:ARG:HA	1:E:271:LEU:HD11	1.93	0.50
1:E:479:GLU:OE2	1:E:479:GLU:N	2.44	0.50
1:D:546:LEU:HD12	1:D:595:VAL:N	2.27	0.50
1:B:207:GLU:OE1	1:B:301:ARG:HD2	2.12	0.50
1:E:546:LEU:CD1	1:E:595:VAL:HA	2.42	0.50
1:D:479:GLU:N	1:D:479:GLU:OE2	2.45	0.50
1:A:277:GLN:HB3	1:A:279:ILE:O	2.12	0.50
1:D:486:SER:OG	1:D:510:LEU:HD12	2.12	0.50
1:C:374:THR:O	1:C:417:PRO:HD3	2.12	0.49
1:C:635:PHE:C	1:C:636:PHE:HD1	2.20	0.49
1:B:174:LEU:HD23	1:B:191:PHE:CD1	2.46	0.49
1:B:211:ARG:CG	1:B:299:VAL:HG23	2.41	0.49
1:B:612:ILE:HA	1:B:615:TRP:HB3	1.94	0.49
1:D:398:SER:HB2	1:C:409:GLN:HE21	1.77	0.49
1:E:616:VAL:HA	1:E:619:ILE:HG12	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:106:LEU:HD23	1:C:106:LEU:O	2.11	0.49
1:C:252:SER:HB3	1:B:372:GLY:O	2.12	0.49
1:C:574:THR:HG23	1:C:577:ASP:H	1.77	0.49
1:B:210:ILE:CD1	1:B:219:LEU:HD22	2.43	0.49
1:B:397:PHE:CD1	1:B:397:PHE:C	2.91	0.49
1:A:635:PHE:C	1:A:636:PHE:HD1	2.20	0.49
1:E:374:THR:O	1:E:417:PRO:HD3	2.12	0.49
1:D:174:LEU:O	1:D:174:LEU:HD12	2.12	0.49
1:B:241:GLU:OE1	1:B:241:GLU:HA	2.12	0.49
1:A:553:LEU:HD12	1:A:587:THR:HG22	1.93	0.49
1:E:48:GLY:HA3	1:E:163:TYR:HB3	1.95	0.49
1:D:217:ARG:NH1	1:D:291:GLY:O	2.46	0.49
1:D:248:ARG:HA	1:D:271:LEU:HD11	1.94	0.49
1:B:248:ARG:HA	1:B:271:LEU:HD11	1.95	0.49
1:A:616:VAL:HA	1:A:619:ILE:HG12	1.95	0.49
1:E:397:PHE:CD1	1:E:397:PHE:C	2.91	0.49
1:D:537:PHE:CD2	1:D:616:VAL:HG11	2.46	0.49
1:B:37:ARG:NH2	1:B:174:LEU:HD21	2.27	0.49
1:A:277:GLN:CD	1:E:128:GLY:HA2	2.38	0.49
1:E:344:GLN:HG2	1:E:438:PHE:CZ	2.47	0.49
1:D:635:PHE:C	1:D:636:PHE:HD1	2.20	0.49
1:A:208:LEU:HD23	1:A:209:GLU:O	2.12	0.49
1:E:635:PHE:C	1:E:636:PHE:HD1	2.20	0.49
1:D:616:VAL:HA	1:D:619:ILE:HG12	1.95	0.49
1:C:239:ILE:HB	1:C:299:VAL:HG13	1.95	0.49
1:A:397:PHE:CD1	1:A:397:PHE:C	2.91	0.48
1:E:259:PHE:C	1:E:271:LEU:HD12	2.38	0.48
1:B:616:VAL:HA	1:B:619:ILE:HG12	1.94	0.48
1:E:412:VAL:HG11	1:E:414:PHE:HE1	1.77	0.48
1:D:397:PHE:CD1	1:D:397:PHE:C	2.91	0.48
1:A:126:GLY:HA3	1:A:369:ASP:OD2	2.13	0.48
1:A:412:VAL:HG11	1:A:414:PHE:HE1	1.78	0.48
1:E:616:VAL:O	1:E:617:LEU:C	2.53	0.48
1:D:616:VAL:O	1:D:617:LEU:C	2.54	0.48
1:C:616:VAL:O	1:C:617:LEU:C	2.54	0.48
1:B:441:TYR:HD2	1:B:574:THR:HG21	1.78	0.48
1:A:497:GLU:HG2	1:E:424:PHE:CE2	2.48	0.48
1:E:476:GLN:CB	1:E:479:GLU:HG2	2.44	0.48
1:D:412:VAL:HG11	1:D:414:PHE:HE1	1.79	0.48
1:C:397:PHE:C	1:C:397:PHE:CD1	2.91	0.48
1:C:535:VAL:HG12	1:C:535:VAL:O	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:258:ALA:HB3	1:D:271:LEU:HD21	1.96	0.48
1:C:390:ILE:HG22	1:C:392:LEU:HB2	1.96	0.48
1:C:616:VAL:HA	1:C:619:ILE:HG12	1.96	0.48
5:B:706:LMT:O4'	5:B:706:LMT:O2B	2.24	0.48
1:E:553:LEU:HD12	1:E:587:THR:HG22	1.94	0.48
1:C:412:VAL:HG11	1:C:414:PHE:HE1	1.79	0.48
1:B:406:ARG:CD	1:B:429:VAL:HG12	2.43	0.48
1:D:595:VAL:CG1	1:C:535:VAL:HG12	2.41	0.48
1:D:37:ARG:NH2	1:D:174:LEU:HD21	2.29	0.47
1:D:174:LEU:HD23	1:D:191:PHE:CD1	2.49	0.47
1:B:382:SER:C	1:B:384:ARG:N	2.70	0.47
1:B:210:ILE:HD11	1:B:219:LEU:HD22	1.96	0.47
1:B:486:SER:OG	1:B:510:LEU:HD12	2.14	0.47
1:E:611:GLN:O	1:E:615:TRP:N	2.47	0.47
1:B:259:PHE:C	1:B:271:LEU:HD12	2.39	0.47
1:D:48:GLY:HA3	1:D:163:TYR:HB3	1.95	0.47
1:C:387:ALA:O	1:C:391:ASN:N	2.47	0.47
1:B:387:ALA:O	1:B:391:ASN:N	2.48	0.47
1:A:277:GLN:OE1	1:E:128:GLY:O	2.32	0.47
1:C:48:GLY:HA3	1:C:163:TYR:HB3	1.96	0.47
1:B:406:ARG:HD3	1:B:429:VAL:HG11	1.97	0.47
1:B:382:SER:O	1:B:384:ARG:N	2.48	0.47
1:D:558:ALA:HA	1:D:561:PHE:CE2	2.50	0.47
1:C:174:LEU:HD23	1:C:191:PHE:CD1	2.49	0.47
1:A:560:ASN:ND2	4:A:706:CL:CL	2.84	0.47
1:E:486:SER:OG	1:E:510:LEU:HD12	2.14	0.47
1:A:228:PRO:HD3	1:A:278:ASP:HA	1.97	0.47
1:A:259:PHE:C	1:A:271:LEU:HD12	2.40	0.47
1:A:378:PHE:HB2	1:A:413:ILE:HG23	1.97	0.47
1:A:449:SER:HA	1:A:508:THR:HA	1.96	0.47
1:A:558:ALA:HA	1:A:561:PHE:CE2	2.50	0.47
1:E:554:LEU:CD1	1:D:555:VAL:HG22	2.45	0.47
1:E:632:TYR:CD1	1:E:632:TYR:C	2.93	0.47
1:D:441:TYR:CD1	1:D:442:PRO:HA	2.50	0.47
1:C:632:TYR:CD1	1:C:632:TYR:C	2.93	0.47
1:B:586:LEU:HD23	1:B:624:TYR:CE1	2.50	0.47
1:B:392:LEU:HB3	1:B:393:PRO:CD	2.45	0.46
1:B:537:PHE:CE2	1:B:616:VAL:HG11	2.51	0.46
1:D:408:SER:OG	1:D:425:GLU:OE1	2.30	0.46
1:D:497:GLU:HG2	1:C:424:PHE:CE2	2.50	0.46
1:C:366:PHE:H	1:C:417:PRO:HA	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:558:ALA:HA	1:E:561:PHE:CE2	2.51	0.46
1:B:239:ILE:HB	1:B:299:VAL:HG13	1.97	0.46
1:D:252:SER:HB3	1:C:372:GLY:O	2.15	0.46
1:C:601:GLY:HA2	1:C:606:GLN:HG2	1.96	0.46
1:A:235:LEU:HG	1:A:303:LEU:HB3	1.97	0.46
1:A:632:TYR:CD1	1:A:632:TYR:C	2.93	0.46
1:E:441:TYR:CD1	1:E:442:PRO:HA	2.51	0.46
1:C:530:ILE:HD11	1:C:624:TYR:HE2	1.73	0.46
1:B:616:VAL:C	1:B:618:VAL:N	2.72	0.46
1:E:537:PHE:CE2	1:E:616:VAL:HG11	2.51	0.46
1:C:378:PHE:HB2	1:C:413:ILE:HG23	1.98	0.46
1:C:616:VAL:C	1:C:618:VAL:N	2.72	0.46
1:B:378:PHE:HB2	1:B:413:ILE:HG23	1.98	0.46
1:A:387:ALA:O	1:A:391:ASN:N	2.49	0.46
1:E:616:VAL:C	1:E:618:VAL:N	2.72	0.46
1:C:537:PHE:CE2	1:C:616:VAL:HG11	2.51	0.46
1:A:441:TYR:CD1	1:A:442:PRO:HA	2.51	0.46
1:A:537:PHE:CE2	1:A:616:VAL:HG11	2.51	0.46
1:D:387:ALA:O	1:D:391:ASN:N	2.49	0.46
1:B:211:ARG:HG2	1:B:299:VAL:HG21	1.96	0.46
1:B:558:ALA:HA	1:B:561:PHE:CE2	2.50	0.46
1:E:533:SER:HB3	1:E:590:VAL:HG21	1.98	0.46
1:B:449:SER:HA	1:B:508:THR:HA	1.98	0.46
1:D:483:VAL:O	1:D:511:VAL:HA	2.15	0.46
1:D:567:LEU:HD23	1:D:576:LEU:HD23	1.98	0.46
1:A:48:GLY:HA3	1:A:163:TYR:HB3	1.97	0.45
1:D:632:TYR:CD1	1:D:632:TYR:C	2.93	0.45
1:C:441:TYR:CD1	1:C:442:PRO:HA	2.51	0.45
1:C:558:ALA:HA	1:C:561:PHE:CE2	2.51	0.45
1:B:632:TYR:CD1	1:B:632:TYR:C	2.93	0.45
1:A:476:GLN:CB	1:A:479:GLU:HG2	2.46	0.45
1:E:387:ALA:O	1:E:391:ASN:N	2.49	0.45
1:E:570:LEU:HB3	1:E:572:TYR:CE1	2.51	0.45
1:C:477:LEU:O	1:C:480:GLU:HG3	2.16	0.45
1:E:258:ALA:CB	1:E:271:LEU:HD21	2.46	0.45
1:E:306:ILE:HG12	1:E:323:VAL:HG23	1.98	0.45
1:D:546:LEU:HD11	1:D:595:VAL:HG23	1.99	0.45
1:A:231:THR:HA	1:A:274:THR:HA	1.97	0.45
1:E:356:LYS:HA	1:E:423:TYR:O	2.16	0.45
1:D:76:ASP:O	1:D:150:THR:HG22	2.17	0.45
1:D:241:GLU:OE1	1:D:241:GLU:HA	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:48:GLY:HA3	1:B:163:TYR:HB3	1.98	0.45
1:B:262:ILE:HG13	1:B:269:VAL:HG22	1.99	0.45
1:A:279:ILE:O	1:A:279:ILE:HG13	2.17	0.45
1:A:363:LYS:HE2	1:A:363:LYS:HA	1.99	0.45
1:D:537:PHE:CE2	1:D:616:VAL:HG11	2.52	0.45
1:C:76:ASP:O	1:C:150:THR:HG22	2.17	0.45
1:C:498:ARG:HB2	1:B:414:PHE:CE2	2.51	0.45
1:B:69:GLN:HG2	1:B:169:GLN:HB3	1.98	0.45
1:B:477:LEU:O	1:B:480:GLU:HG3	2.17	0.45
1:A:477:LEU:O	1:A:480:GLU:HG3	2.17	0.45
1:E:378:PHE:HB2	1:E:413:ILE:HG23	1.99	0.45
1:D:369:ASP:OD1	1:D:369:ASP:N	2.50	0.45
1:D:449:SER:HA	1:D:508:THR:HA	1.98	0.45
1:C:369:ASP:N	1:C:369:ASP:OD1	2.50	0.45
1:E:449:SER:HA	1:E:508:THR:HA	1.98	0.45
1:B:237:GLU:OE1	1:B:301:ARG:NH2	2.50	0.45
1:A:406:ARG:HD2	1:A:427:PHE:HB2	1.99	0.45
1:E:77:PRO:CD	1:E:124:ASP:CB	2.95	0.45
1:E:344:GLN:NE2	1:E:568:PRO:CG	2.77	0.45
1:D:390:ILE:HG22	1:D:392:LEU:HD13	1.98	0.45
1:A:498:ARG:NH1	1:E:157:ASP:OD2	2.50	0.45
1:D:262:ILE:HG13	1:D:269:VAL:HG22	1.99	0.45
1:C:262:ILE:HG13	1:C:269:VAL:HG22	1.99	0.45
1:C:429:VAL:CG2	1:C:431:LEU:HD11	2.47	0.45
1:B:70:ASN:HD22	1:B:75:LEU:HB3	1.82	0.45
1:A:574:THR:HG23	1:A:577:ASP:H	1.82	0.44
1:D:98:LYS:HD3	1:D:100:LEU:HD11	1.99	0.44
1:C:406:ARG:HD2	1:C:427:PHE:HB2	2.00	0.44
1:A:77:PRO:CD	1:A:124:ASP:CB	2.95	0.44
1:A:262:ILE:HG13	1:A:269:VAL:HG22	1.99	0.44
1:D:477:LEU:O	1:D:480:GLU:HG3	2.17	0.44
1:A:258:ALA:CB	1:A:271:LEU:HD21	2.47	0.44
1:A:581:ILE:HD13	1:E:520:LEU:HB3	1.99	0.44
1:A:616:VAL:C	1:A:618:VAL:N	2.72	0.44
1:E:207:GLU:C	1:E:208:LEU:CD1	2.60	0.44
1:D:70:ASN:HD22	1:D:75:LEU:HB3	1.82	0.44
1:D:398:SER:HB2	1:C:409:GLN:NE2	2.31	0.44
1:D:406:ARG:HD2	1:D:427:PHE:HB2	1.99	0.44
1:B:258:ALA:CB	1:B:271:LEU:HD21	2.46	0.44
1:A:356:LYS:HA	1:A:423:TYR:O	2.17	0.44
1:E:477:LEU:O	1:E:480:GLU:HG3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:483:VAL:HG23	1:E:512:LYS:HG2	1.99	0.44
1:D:378:PHE:HB2	1:D:413:ILE:HG23	1.98	0.44
1:B:347:GLU:OE2	1:B:436:PHE:O	2.35	0.44
1:E:76:ASP:O	1:E:150:THR:HG22	2.17	0.44
1:D:586:LEU:HD23	1:D:624:TYR:CE1	2.52	0.44
1:B:441:TYR:CD1	1:B:442:PRO:HA	2.51	0.44
1:A:124:ASP:HA	1:A:131:ALA:HB2	2.00	0.44
1:A:239:ILE:HB	1:A:299:VAL:HG13	1.99	0.44
1:A:411:GLN:O	1:A:412:VAL:HG22	2.18	0.44
1:E:498:ARG:NE	1:D:375:VAL:HG11	2.32	0.44
1:E:574:THR:HG23	1:E:577:ASP:H	1.82	0.44
1:C:37:ARG:NH2	1:C:174:LEU:HD21	2.33	0.44
1:B:76:ASP:O	1:B:150:THR:HG22	2.16	0.44
1:B:616:VAL:HG12	1:B:617:LEU:N	2.33	0.44
1:C:70:ASN:HD22	1:C:75:LEU:HB3	1.82	0.44
1:C:347:GLU:OE2	1:C:436:PHE:O	2.36	0.44
1:C:411:GLN:O	1:C:412:VAL:HG22	2.18	0.44
1:C:449:SER:HA	1:C:508:THR:HA	1.98	0.44
1:A:536:ILE:HG21	1:A:548:VAL:HG11	2.00	0.44
1:A:616:VAL:HG12	1:A:617:LEU:N	2.33	0.44
1:E:231:THR:HA	1:E:274:THR:HA	2.00	0.44
1:E:406:ARG:HD2	1:E:427:PHE:HB2	1.99	0.44
1:D:124:ASP:HA	1:D:131:ALA:HB2	1.99	0.44
1:D:356:LYS:HA	1:D:423:TYR:O	2.17	0.44
1:D:597:GLN:NE2	1:D:612:ILE:CG2	2.81	0.44
1:B:77:PRO:CD	1:B:124:ASP:CB	2.96	0.44
1:A:347:GLU:OE2	1:A:436:PHE:O	2.36	0.44
1:A:539:LEU:CD1	1:B:595:VAL:HG13	2.48	0.44
1:B:49:ARG:NH2	1:B:202:GLU:OE1	2.51	0.44
1:B:536:ILE:HG21	1:B:548:VAL:HG11	2.00	0.44
1:A:76:ASP:O	1:A:150:THR:HG22	2.17	0.43
1:E:429:VAL:HG13	1:E:431:LEU:CD1	2.48	0.43
1:E:536:ILE:HG21	1:E:548:VAL:HG11	2.00	0.43
1:E:616:VAL:HG12	1:E:617:LEU:N	2.33	0.43
1:D:124:ASP:HA	1:D:131:ALA:CB	2.48	0.43
1:D:239:ILE:HB	1:D:299:VAL:HG13	2.00	0.43
1:D:411:GLN:O	1:D:412:VAL:HG22	2.18	0.43
1:C:356:LYS:HA	1:C:423:TYR:O	2.18	0.43
1:B:124:ASP:HA	1:B:131:ALA:HB2	1.99	0.43
1:B:210:ILE:HD11	1:B:219:LEU:CD2	2.48	0.43
1:B:329:LEU:O	1:B:329:LEU:HD12	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:522:ILE:HG23	1:B:563:ILE:HD11	2.00	0.43
1:A:522:ILE:HG23	1:A:563:ILE:HD11	2.00	0.43
1:D:77:PRO:CD	1:D:124:ASP:CB	2.96	0.43
1:C:211:ARG:CG	1:C:299:VAL:CG2	2.83	0.43
1:C:611:GLN:O	1:C:615:TRP:N	2.48	0.43
1:B:145:ILE:HD13	1:B:172:LEU:HD21	2.01	0.43
1:E:91:SER:HA	1:E:94:GLN:HB2	2.01	0.43
1:E:411:GLN:O	1:E:412:VAL:HG22	2.18	0.43
1:E:441:TYR:HD2	1:E:574:THR:HG21	1.83	0.43
1:B:356:LYS:HA	1:B:423:TYR:O	2.18	0.43
1:A:254:GLY:O	1:E:153:ASN:HB3	2.18	0.43
1:A:339:ILE:HG21	1:A:448:PHE:CE2	2.54	0.43
1:A:570:LEU:HB3	1:A:572:TYR:CE1	2.53	0.43
1:D:145:ILE:HD13	1:D:172:LEU:HD21	1.99	0.43
1:D:536:ILE:HG21	1:D:548:VAL:HG11	2.00	0.43
1:D:574:THR:HG23	1:D:577:ASP:H	1.83	0.43
1:C:616:VAL:HG12	1:C:617:LEU:N	2.33	0.43
1:B:107:ILE:O	1:B:111:THR:OG1	2.22	0.43
1:B:264:GLN:HB3	1:B:265:PRO:CD	2.48	0.43
1:B:406:ARG:HB2	1:B:429:VAL:HG12	2.00	0.43
1:B:411:GLN:O	1:B:412:VAL:HG22	2.18	0.43
1:E:359:TRP:HH2	1:E:394:LEU:HD22	1.84	0.43
1:C:124:ASP:HA	1:C:131:ALA:CB	2.49	0.43
1:A:260:GLY:N	1:A:271:LEU:HD12	2.33	0.43
1:E:570:LEU:HD23	1:E:572:TYR:CE1	2.53	0.43
1:D:616:VAL:C	1:D:618:VAL:N	2.72	0.43
1:C:124:ASP:HA	1:C:131:ALA:HB2	2.00	0.43
1:D:479:GLU:CD	1:D:479:GLU:H	2.26	0.43
1:C:570:LEU:HB3	1:C:572:TYR:CE1	2.53	0.43
1:B:530:ILE:HD13	1:B:624:TYR:CD2	2.44	0.43
1:E:69:GLN:HB2	1:E:169:GLN:HB3	2.00	0.43
1:C:429:VAL:HG22	1:C:431:LEU:HD11	2.00	0.43
1:C:612:ILE:HA	1:C:615:TRP:HB3	2.01	0.43
1:B:210:ILE:HD13	1:B:286:VAL:HG11	2.01	0.43
1:B:264:GLN:HB3	1:B:265:PRO:HD3	2.00	0.43
1:B:570:LEU:HD23	1:B:572:TYR:CE1	2.54	0.43
1:A:91:SER:HA	1:A:94:GLN:HB2	2.01	0.43
1:B:611:GLN:O	1:B:615:TRP:N	2.50	0.43
1:E:84:GLU:OE1	1:E:84:GLU:N	2.51	0.43
1:D:392:LEU:HB3	1:D:393:PRO:HD2	2.01	0.43
1:D:483:VAL:HG23	1:D:512:LYS:HG2	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:214:LYS:HD2	1:C:217:ARG:HD2	2.01	0.43
1:E:70:ASN:HD22	1:E:75:LEU:HB3	1.83	0.42
1:E:432:GLN:HB3	1:D:338:GLN:HE22	1.84	0.42
1:C:145:ILE:HD13	1:C:172:LEU:HD21	2.00	0.42
1:B:597:GLN:NE2	1:B:612:ILE:CG2	2.81	0.42
1:A:70:ASN:HD22	1:A:75:LEU:HB3	1.82	0.42
1:A:124:ASP:HA	1:A:131:ALA:CB	2.49	0.42
1:A:194:LEU:HD12	1:A:194:LEU:C	2.39	0.42
1:A:362:PRO:HG2	1:A:363:LYS:HD2	2.01	0.42
1:A:414:PHE:HD2	1:B:498:ARG:HE	1.67	0.42
1:B:406:ARG:HD2	1:B:427:PHE:HB2	2.00	0.42
1:A:145:ILE:HD13	1:A:172:LEU:HD21	2.01	0.42
1:E:228:PRO:HD3	1:E:278:ASP:HA	2.01	0.42
1:E:554:LEU:HD12	1:D:555:VAL:HG22	2.00	0.42
1:D:129:TYR:O	1:D:130:SER:C	2.62	0.42
1:D:476:GLN:CB	1:D:479:GLU:CG	2.96	0.42
1:D:581:ILE:HD13	1:C:520:LEU:HB3	2.01	0.42
1:C:223:THR:HG23	1:C:282:LEU:O	2.19	0.42
1:C:483:VAL:HG23	1:C:512:LYS:HG2	2.00	0.42
1:B:228:PRO:HD3	1:B:278:ASP:HA	2.01	0.42
1:E:124:ASP:HA	1:E:131:ALA:HB2	2.00	0.42
1:D:261:LEU:HD11	1:C:104:ASN:ND2	2.35	0.42
1:D:441:TYR:HE2	1:D:567:LEU:CD2	2.26	0.42
1:D:554:LEU:CD1	1:C:555:VAL:HG22	2.50	0.42
1:C:129:TYR:O	1:C:130:SER:C	2.62	0.42
1:C:536:ILE:HG21	1:C:548:VAL:HG11	2.00	0.42
1:B:129:TYR:O	1:B:130:SER:C	2.62	0.42
1:B:599:ARG:CD	5:B:706:LMT:O4'	2.67	0.42
1:A:54:SER:CB	1:A:195:ALA:HB2	2.50	0.42
1:E:262:ILE:HG13	1:E:269:VAL:HG22	2.00	0.42
1:D:223:THR:HG22	1:D:224:ARG:N	2.35	0.42
1:C:77:PRO:CD	1:C:124:ASP:CB	2.97	0.42
1:B:383:ILE:O	1:B:384:ARG:C	2.62	0.42
1:A:597:GLN:NE2	1:A:612:ILE:CG2	2.81	0.42
1:E:124:ASP:HA	1:E:131:ALA:CB	2.49	0.42
1:A:176:ALA:HB1	1:A:178:GLN:NE2	2.34	0.42
1:E:260:GLY:N	1:E:271:LEU:HD12	2.35	0.42
1:E:530:ILE:HG12	1:E:624:TYR:CE2	2.54	0.42
1:D:522:ILE:HG23	1:D:563:ILE:HD11	2.01	0.42
1:C:390:ILE:CG2	1:C:392:LEU:HB2	2.48	0.42
1:B:124:ASP:HA	1:B:131:ALA:CB	2.48	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:267:GLU:O	1:B:267:GLU:HG3	2.18	0.42
1:A:479:GLU:CD	1:A:479:GLU:H	2.28	0.42
1:E:445:ARG:NH1	1:E:512:LYS:HD3	2.34	0.42
1:D:546:LEU:HD12	1:D:595:VAL:HA	2.02	0.42
1:D:570:LEU:HB3	1:D:572:TYR:CE1	2.54	0.42
1:D:616:VAL:HG12	1:D:617:LEU:N	2.33	0.42
1:A:129:TYR:O	1:A:130:SER:C	2.62	0.42
1:D:588:ALA:HB3	1:C:528:LEU:HD23	2.02	0.42
1:B:91:SER:HA	1:B:94:GLN:HB2	2.01	0.42
1:A:614:THR:HB	5:B:706:LMT:O6'	2.19	0.42
1:E:129:TYR:O	1:E:130:SER:C	2.62	0.42
1:C:91:SER:HA	1:C:94:GLN:HB2	2.01	0.42
1:C:251:ASP:OD1	1:C:255:LYS:N	2.53	0.42
1:C:416:THR:CG2	1:C:420:ARG:HB2	2.50	0.42
1:C:483:VAL:O	1:C:511:VAL:HA	2.20	0.42
1:B:176:ALA:HB1	1:B:178:GLN:NE2	2.35	0.42
1:B:440:ALA:O	1:B:444:ASP:N	2.53	0.42
1:B:479:GLU:CD	1:B:479:GLU:H	2.26	0.42
1:A:441:TYR:HD2	1:A:574:THR:HG21	1.84	0.41
1:A:555:VAL:HG22	1:B:554:LEU:CD1	2.50	0.41
1:D:176:ALA:HB1	1:D:178:GLN:NE2	2.35	0.41
1:D:612:ILE:HA	1:D:615:TRP:HB3	2.01	0.41
1:C:584:PHE:CE2	1:B:525:PRO:HB3	2.55	0.41
1:E:40:HIS:NE2	1:E:184:GLY:O	2.47	0.41
1:E:479:GLU:CD	1:E:479:GLU:H	2.28	0.41
1:B:599:ARG:HG2	5:B:706:LMT:C4B	2.47	0.41
1:A:483:VAL:O	1:A:511:VAL:HA	2.20	0.41
1:E:157:ASP:O	1:E:158:LYS:HG3	2.21	0.41
1:E:176:ALA:HB1	1:E:178:GLN:NE2	2.36	0.41
1:D:91:SER:HA	1:D:94:GLN:HB2	2.01	0.41
1:D:440:ALA:O	1:D:444:ASP:N	2.53	0.41
1:C:588:ALA:HB3	1:B:528:LEU:HD23	2.01	0.41
1:A:70:ASN:ND2	1:A:75:LEU:HB3	2.35	0.41
1:E:107:ILE:O	1:E:111:THR:OG1	2.23	0.41
1:E:369:ASP:OD1	1:E:369:ASP:N	2.51	0.41
1:E:392:LEU:CD1	1:E:393:PRO:HD2	2.50	0.41
1:C:522:ILE:HG23	1:C:563:ILE:HD11	2.02	0.41
1:B:214:LYS:HA	1:B:217:ARG:HE	1.85	0.41
1:B:416:THR:OG1	1:B:417:PRO:CG	2.65	0.41
1:B:483:VAL:O	1:B:511:VAL:HA	2.21	0.41
1:B:540:LYS:NZ	5:B:705:LMT:O6'	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:440:ALA:O	1:E:444:ASP:N	2.53	0.41
1:D:70:ASN:ND2	1:D:75:LEU:HB3	2.36	0.41
1:D:570:LEU:HD23	1:D:572:TYR:CE1	2.55	0.41
1:C:440:ALA:O	1:C:444:ASP:N	2.53	0.41
1:A:550:SER:HA	1:A:591:VAL:HG21	2.02	0.41
1:E:448:PHE:O	1:E:509:LEU:N	2.50	0.41
1:A:440:ALA:O	1:A:444:ASP:N	2.53	0.41
1:E:37:ARG:NH2	1:E:174:LEU:HD13	2.36	0.41
1:B:70:ASN:ND2	1:B:75:LEU:HB3	2.36	0.41
1:B:344:GLN:NE2	1:B:568:PRO:CB	2.84	0.41
1:A:223:THR:HG22	1:A:224:ARG:N	2.36	0.41
1:E:68:MET:HA	1:E:169:GLN:O	2.20	0.41
1:E:70:ASN:ND2	1:E:75:LEU:HB3	2.36	0.41
1:E:392:LEU:HD13	1:E:393:PRO:HD2	2.01	0.41
1:E:522:ILE:HG23	1:E:563:ILE:HD11	2.01	0.41
1:E:550:SER:HA	1:E:591:VAL:HG21	2.03	0.41
1:C:530:ILE:HD13	1:C:624:TYR:CD2	2.42	0.41
1:B:570:LEU:HB3	1:B:572:TYR:CE1	2.55	0.41
1:A:251:ASP:OD1	1:A:255:LYS:N	2.53	0.41
1:A:555:VAL:HG22	1:B:554:LEU:HD12	2.02	0.41
1:E:239:ILE:HB	1:E:299:VAL:HG23	2.02	0.41
1:D:441:TYR:HD2	1:D:574:THR:HG21	1.84	0.41
1:E:98:LYS:HD3	1:E:100:LEU:HD11	2.03	0.41
1:C:70:ASN:ND2	1:C:75:LEU:HB3	2.36	0.41
1:C:550:SER:HA	1:C:591:VAL:HG21	2.03	0.41
1:C:570:LEU:HD23	1:C:572:TYR:CE1	2.55	0.41
1:B:54:SER:CB	1:B:195:ALA:HB2	2.51	0.41
1:A:104:ASN:O	1:A:108:SER:CB	2.69	0.40
1:E:476:GLN:HB3	1:E:479:GLU:CG	2.51	0.40
1:D:54:SER:CB	1:D:195:ALA:HB2	2.51	0.40
1:D:251:ASP:OD1	1:D:255:LYS:N	2.53	0.40
1:D:550:SER:HA	1:D:591:VAL:HG21	2.03	0.40
1:B:223:THR:HG22	1:B:224:ARG:N	2.36	0.40
1:A:211:ARG:CA	1:A:299:VAL:HG23	2.50	0.40
1:A:570:LEU:HD23	1:A:572:TYR:CE1	2.56	0.40
1:D:83:ALA:HB2	1:D:143:TYR:CE2	2.56	0.40
1:D:162:THR:HG22	1:D:163:TYR:N	2.36	0.40
1:C:431:LEU:HD21	1:C:450:ILE:HG23	2.04	0.40
1:B:441:TYR:CE2	1:B:567:LEU:HD12	2.42	0.40
1:D:440:ALA:O	1:D:443:PHE:N	2.55	0.40
1:D:476:GLN:HB3	1:D:479:GLU:CD	2.46	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:54:SER:CB	1:C:195:ALA:HB2	2.51	0.40
1:C:432:GLN:HB3	1:B:338:GLN:HE22	1.87	0.40
1:B:40:HIS:NE2	1:B:184:GLY:O	2.47	0.40
1:A:54:SER:OG	1:A:195:ALA:HB2	2.22	0.40
1:E:597:GLN:NE2	1:E:612:ILE:CG2	2.81	0.40
1:D:157:ASP:O	1:D:158:LYS:HG3	2.21	0.40
1:A:567:LEU:HD13	1:A:576:LEU:HD23	2.04	0.40
1:D:416:THR:HA	1:D:417:PRO:HD3	1.91	0.40
1:B:83:ALA:HB2	1:B:143:TYR:CE2	2.57	0.40

All (6) 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:E:468:ARG:NH2	1:B:262:ILE:CG2[4_479]	1.05	1.15
1:D:468:ARG:NH2	1:C:262:ILE:CG2[4_4710]	1.27	0.93
1:D:468:ARG:NH2	1:C:262:ILE:CB[4_4710]	1.40	0.80
1:D:468:ARG:NH2	1:C:262:ILE:CG1[4_4710]	1.88	0.32
1:E:468:ARG:CZ	1:B:262:ILE:CG2[4_479]	2.00	0.20
1:E:468:ARG:NH2	1:B:262:ILE:CB[4_479]	2.12	0.08

## 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	577/642 (90%)	544 (94%)	28 (5%)	5 (1%)	14 47
1	B	578/642 (90%)	545 (94%)	27 (5%)	6 (1%)	12 45
1	C	580/642 (90%)	548 (94%)	28 (5%)	4 (1%)	18 51
1	D	583/642 (91%)	551 (94%)	27 (5%)	5 (1%)	14 47
1	E	583/642 (91%)	554 (95%)	23 (4%)	6 (1%)	12 45

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
All	All	2901/3210 (90%)	2742 (94%)	133 (5%)	26 (1%)	14 47

All (26) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	131	ALA
1	A	383	ILE
1	E	131	ALA
1	E	307	ASN
1	E	383	ILE
1	D	131	ALA
1	D	307	ASN
1	D	383	ILE
1	C	131	ALA
1	C	307	ASN
1	B	131	ALA
1	B	307	ASN
1	A	225	ASN
1	E	225	ASN
1	D	225	ASN
1	C	225	ASN
1	C	383	ILE
1	B	225	ASN
1	A	201	PRO
1	B	322	SER
1	B	383	ILE
1	A	105	ASP
1	E	201	PRO
1	B	201	PRO
1	D	417	PRO
1	E	417	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	496/557 (89%)	484 (98%)	12 (2%)	43	63
1	B	498/557 (89%)	480 (96%)	18 (4%)	31	56
1	C	499/557 (90%)	485 (97%)	14 (3%)	38	60
1	D	500/557 (90%)	483 (97%)	17 (3%)	32	57
1	E	500/557 (90%)	486 (97%)	14 (3%)	38	60
All	All	2493/2785 (90%)	2418 (97%)	75 (3%)	36	59

All (75) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	91	SER
1	A	96	LEU
1	A	100	LEU
1	A	227	GLN
1	A	352	VAL
1	A	412	VAL
1	A	460	MET
1	A	479	GLU
1	A	524	VAL
1	A	532	VAL
1	A	539	LEU
1	A	629	ILE
1	E	96	LEU
1	E	100	LEU
1	E	227	GLN
1	E	319	VAL
1	E	325	LEU
1	E	352	VAL
1	E	356	LYS
1	E	358	SER
1	E	412	VAL
1	E	479	GLU
1	E	524	VAL
1	E	532	VAL
1	E	590	VAL
1	E	629	ILE
1	D	96	LEU
1	D	100	LEU
1	D	139	ARG
1	D	208	LEU
1	D	226	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	D	227	GLN
1	D	235	LEU
1	D	311	LEU
1	D	352	VAL
1	D	356	LYS
1	D	358	SER
1	D	412	VAL
1	D	479	GLU
1	D	524	VAL
1	D	532	VAL
1	D	553	LEU
1	D	629	ILE
1	C	96	LEU
1	C	106	LEU
1	C	208	LEU
1	C	352	VAL
1	C	356	LYS
1	C	358	SER
1	C	390	ILE
1	C	412	VAL
1	C	450	ILE
1	C	479	GLU
1	C	524	VAL
1	C	532	VAL
1	C	553	LEU
1	C	629	ILE
1	B	46	GLU
1	B	96	LEU
1	B	208	LEU
1	B	235	LEU
1	B	295	SER
1	B	330	VAL
1	B	352	VAL
1	B	356	LYS
1	B	358	SER
1	B	390	ILE
1	B	409	GLN
1	B	412	VAL
1	B	445	ARG
1	B	479	GLU
1	B	524	VAL
1	B	532	VAL

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Mol	Chain	Res	Type
1	B	553	LEU
1	B	629	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (61) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	39	GLN
1	A	70	ASN
1	A	104	ASN
1	A	160	GLN
1	A	175	ASN
1	A	178	GLN
1	A	344	GLN
1	A	403	GLN
1	A	409	GLN
1	A	432	GLN
1	A	514	ASN
1	A	545	GLN
1	A	552	ASN
1	A	597	GLN
1	E	39	GLN
1	E	70	ASN
1	E	74	ASN
1	E	178	GLN
1	E	277	GLN
1	E	338	GLN
1	E	344	GLN
1	E	403	GLN
1	E	409	GLN
1	E	432	GLN
1	E	471	GLN
1	E	502	ASN
1	E	545	GLN
1	E	597	GLN
1	D	70	ASN
1	D	178	GLN
1	D	264	GLN
1	D	338	GLN
1	D	344	GLN
1	D	403	GLN
1	D	432	GLN
1	D	545	GLN

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Mol	Chain	Res	Type
1	D	552	ASN
1	D	560	ASN
1	D	597	GLN
1	C	39	GLN
1	C	70	ASN
1	C	104	ASN
1	C	178	GLN
1	C	344	GLN
1	C	403	GLN
1	C	432	GLN
1	C	545	GLN
1	C	552	ASN
1	C	597	GLN
1	B	39	GLN
1	B	70	ASN
1	B	153	ASN
1	B	160	GLN
1	B	178	GLN
1	B	338	GLN
1	B	344	GLN
1	B	403	GLN
1	B	432	GLN
1	B	545	GLN
1	B	552	ASN
1	B	597	GLN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry

Of 27 ligands modelled in this entry, 17 are monoatomic - leaving 10 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
5	LMT	B	705	-	27,27,36	1.23	1 (3%)	38,38,47	1.82	10 (26%)
5	LMT	C	706	-	28,28,36	1.26	1 (3%)	39,39,47	2.17	12 (30%)
5	LMT	A	707	-	26,26,36	1.24	2 (7%)	37,37,47	2.02	9 (24%)
5	LMT	E	704	-	26,26,36	0.98	1 (3%)	37,37,47	2.05	13 (35%)
5	LMT	B	706	-	28,28,36	0.50	0	39,39,47	1.25	6 (15%)
5	LMT	C	705	-	26,26,36	1.14	1 (3%)	37,37,47	1.81	9 (24%)
5	LMT	E	703	-	26,26,36	1.05	1 (3%)	37,37,47	1.65	5 (13%)
5	LMT	D	703	-	27,27,36	1.30	1 (3%)	38,38,47	2.39	9 (23%)
5	LMT	E	705	-	26,26,36	1.41	3 (11%)	37,37,47	2.30	10 (27%)
5	LMT	B	704	-	26,26,36	1.10	1 (3%)	37,37,47	1.63	7 (18%)

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
5	LMT	B	705	-	-	6/12/52/61	0/2/2/2
5	LMT	C	706	-	-	3/13/53/61	0/2/2/2
5	LMT	A	707	-	-	6/11/51/61	0/2/2/2
5	LMT	E	704	-	-	10/11/51/61	0/2/2/2
5	LMT	B	706	-	-	5/13/53/61	0/2/2/2
5	LMT	C	705	-	-	5/11/51/61	0/2/2/2
5	LMT	E	703	-	-	5/11/51/61	0/2/2/2
5	LMT	D	703	-	-	6/12/52/61	0/2/2/2
5	LMT	E	705	-	-	5/11/51/61	0/2/2/2
5	LMT	B	704	-	-	5/11/51/61	0/2/2/2

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	E	705	LMT	O1'-C1'	4.70	1.48	1.40
5	D	703	LMT	O1'-C1'	4.58	1.47	1.40
5	A	707	LMT	O1'-C1'	4.22	1.47	1.40
5	B	705	LMT	O1'-C1'	4.16	1.47	1.40
5	C	705	LMT	O1'-C1'	4.08	1.47	1.40
5	C	706	LMT	O1'-C1'	3.89	1.46	1.40
5	B	704	LMT	O1'-C1'	3.70	1.46	1.40
5	E	703	LMT	O1'-C1'	2.98	1.45	1.40
5	E	704	LMT	O1'-C1'	2.92	1.45	1.40
5	E	705	LMT	O1B-C1B	2.40	1.48	1.41
5	A	707	LMT	O1B-C1B	2.10	1.47	1.41
5	E	705	LMT	O5B-C1B	2.07	1.47	1.41

All (90) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	D	703	LMT	C1B-O5B-C5B	7.65	128.66	113.72
5	D	703	LMT	C1-O1'-C1'	7.06	125.73	113.68
5	E	705	LMT	C1B-O5B-C5B	6.74	126.89	113.72
5	C	706	LMT	C1B-O5B-C5B	5.86	125.17	113.72
5	A	707	LMT	O1B-C1B-C2B	5.78	122.32	108.09
5	E	705	LMT	C1'-O5'-C5'	5.53	124.52	113.72
5	A	707	LMT	C1B-O1B-C4'	5.24	130.41	117.98
5	E	703	LMT	O1B-C1B-C2B	5.05	120.51	108.09
5	E	705	LMT	O5'-C5'-C4'	4.99	120.05	109.72
5	A	707	LMT	C1'-O5'-C5'	4.67	122.85	113.72
5	E	703	LMT	C1B-O1B-C4'	4.45	128.53	117.98
5	D	703	LMT	C1'-O5'-C5'	4.43	122.37	113.72
5	C	705	LMT	O1B-C1B-C2B	4.39	118.89	108.09
5	E	703	LMT	C1'-O5'-C5'	4.36	122.23	113.72
5	B	705	LMT	C1B-O5B-C5B	4.29	122.11	113.72
5	B	704	LMT	C1'-O5'-C5'	4.25	122.03	113.72
5	B	705	LMT	C1-O1'-C1'	4.21	120.87	113.68
5	C	706	LMT	C1-O1'-C1'	4.03	120.56	113.68
5	C	706	LMT	O1'-C1'-C2'	4.00	114.35	108.27
5	A	707	LMT	C1B-O5B-C5B	3.92	121.38	113.72
5	C	706	LMT	O1B-C4'-C3'	3.89	117.12	107.23
5	C	706	LMT	C3B-C4B-C5B	3.88	117.26	110.23
5	C	705	LMT	O2B-C2B-C1B	3.79	119.12	110.08
5	E	704	LMT	C1B-O1B-C4'	3.79	126.96	117.98
5	E	704	LMT	C4B-C3B-C2B	3.78	117.46	110.83
5	B	704	LMT	O5'-C5'-C4'	3.77	117.52	109.72

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	B	704	LMT	C1B-O1B-C4'	3.76	126.89	117.98
5	C	706	LMT	O5'-C1'-C2'	-3.64	102.89	110.37
5	E	704	LMT	C3B-C4B-C5B	3.59	116.75	110.23
5	C	705	LMT	O1'-C1'-C2'	3.57	113.69	108.27
5	B	705	LMT	C3B-C4B-C5B	3.56	116.68	110.23
5	E	705	LMT	O5B-C5B-C4B	3.54	116.08	109.70
5	C	706	LMT	O5B-C5B-C6B	3.52	115.16	106.44
5	B	706	LMT	O1B-C4'-C3'	3.47	116.06	107.23
5	E	704	LMT	O1B-C1B-C2B	-3.47	99.55	108.09
5	E	705	LMT	C2'-C3'-C4'	3.44	117.48	109.68
5	E	704	LMT	C1B-O5B-C5B	3.43	120.42	113.72
5	D	703	LMT	O5'-C1'-C2'	-3.41	103.37	110.37
5	E	704	LMT	O5B-C5B-C6B	3.36	114.77	106.44
5	B	704	LMT	O1B-C1B-C2B	3.33	116.29	108.09
5	D	703	LMT	O5'-C5'-C4'	3.29	116.53	109.72
5	C	705	LMT	C1B-O1B-C4'	3.25	125.69	117.98
5	E	704	LMT	O1'-C1'-C2'	3.19	113.11	108.27
5	B	706	LMT	C1B-O5B-C5B	3.18	119.92	113.72
5	B	706	LMT	C4B-C3B-C2B	-3.16	105.29	110.83
5	B	705	LMT	O1'-C1'-C2'	3.13	113.03	108.27
5	D	703	LMT	C2'-C3'-C4'	3.12	116.77	109.68
5	C	706	LMT	C2'-C3'-C4'	3.11	116.74	109.68
5	B	705	LMT	O5'-C1'-C2'	-3.09	104.02	110.37
5	D	703	LMT	C3B-C4B-C5B	3.07	115.80	110.23
5	E	704	LMT	O5'-C1'-C2'	-3.04	104.12	110.37
5	C	706	LMT	O5'-C5'-C4'	2.93	115.79	109.72
5	B	706	LMT	O5B-C5B-C4B	2.93	114.97	109.70
5	E	703	LMT	O2B-C2B-C1B	2.89	116.97	110.08
5	E	705	LMT	C1B-O1B-C4'	2.89	124.82	117.98
5	C	705	LMT	O5'-C5'-C4'	2.84	115.58	109.72
5	C	706	LMT	C1B-O1B-C4'	2.78	124.56	117.98
5	B	705	LMT	C2'-C3'-C4'	2.74	115.89	109.68
5	E	704	LMT	C1'-O5'-C5'	2.73	119.04	113.72
5	D	703	LMT	O1B-C1B-C2B	2.70	114.74	108.09
5	C	705	LMT	C1'-O5'-C5'	2.70	118.99	113.72
5	E	705	LMT	O1'-C1'-C2'	2.68	112.35	108.27
5	E	705	LMT	C1'-C2'-C3'	2.64	115.56	110.01
5	B	705	LMT	C1B-O1B-C4'	2.60	124.14	117.98
5	B	705	LMT	O1B-C4'-C3'	2.55	113.70	107.23
5	E	704	LMT	C1B-C2B-C3B	2.54	115.34	110.01
5	B	704	LMT	O2B-C2B-C1B	2.51	116.06	110.08
5	B	704	LMT	O1'-C1'-C2'	2.50	112.08	108.27

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	C	705	LMT	O5'-C1'-C2'	-2.48	105.28	110.37
5	A	707	LMT	O2B-C2B-C1B	2.47	115.97	110.08
5	B	705	LMT	O5'-C5'-C4'	2.42	114.73	109.72
5	B	704	LMT	O5B-C5B-C6B	2.41	112.42	106.44
5	C	706	LMT	O5B-C5B-C4B	2.40	114.03	109.70
5	A	707	LMT	O5'-C5'-C4'	2.39	114.66	109.72
5	E	703	LMT	O5'-C5'-C4'	2.38	114.65	109.72
5	E	704	LMT	O5'-C5'-C6'	2.38	112.33	106.44
5	E	705	LMT	C1-O1'-C1'	2.34	119.03	113.91
5	A	707	LMT	O1'-C1'-C2'	2.34	111.82	108.27
5	E	705	LMT	O1B-C4'-C3'	2.21	112.86	107.23
5	E	704	LMT	O1B-C4'-C3'	2.19	112.79	107.23
5	C	705	LMT	C1-O1'-C1'	2.17	118.66	113.91
5	B	706	LMT	O5B-C1B-C2B	2.15	114.79	110.37
5	C	705	LMT	O5B-C5B-C6B	2.13	111.72	106.44
5	E	704	LMT	C1-O1'-C1'	2.10	118.50	113.91
5	B	706	LMT	C6B-C5B-C4B	-2.09	107.88	113.02
5	C	706	LMT	C1'-C2'-C3'	2.06	114.34	110.01
5	A	707	LMT	C1-O1'-C1'	2.03	118.35	113.91
5	D	703	LMT	O5B-C5B-C4B	2.03	113.35	109.70
5	A	707	LMT	O5B-C5B-C4B	2.02	113.34	109.70
5	B	705	LMT	O5B-C5B-C4B	2.02	113.33	109.70

There are no chirality outliers.

All (56) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	707	LMT	C2B-C1B-O1B-C4'
5	E	703	LMT	C2B-C1B-O1B-C4'
5	E	704	LMT	C2'-C1'-O1'-C1
5	E	704	LMT	O5'-C1'-O1'-C1
5	C	705	LMT	C2B-C1B-O1B-C4'
5	B	706	LMT	C3'-C4'-O1B-C1B
5	B	704	LMT	C2B-C1B-O1B-C4'
5	B	705	LMT	O5B-C5B-C6B-O6B
5	B	706	LMT	O5'-C5'-C6'-O6'
5	B	706	LMT	C4B-C5B-C6B-O6B
5	C	706	LMT	O5B-C5B-C6B-O6B
5	B	706	LMT	C4'-C5'-C6'-O6'
5	B	706	LMT	O5B-C5B-C6B-O6B
5	E	703	LMT	O5B-C5B-C6B-O6B
5	D	703	LMT	C4B-C5B-C6B-O6B

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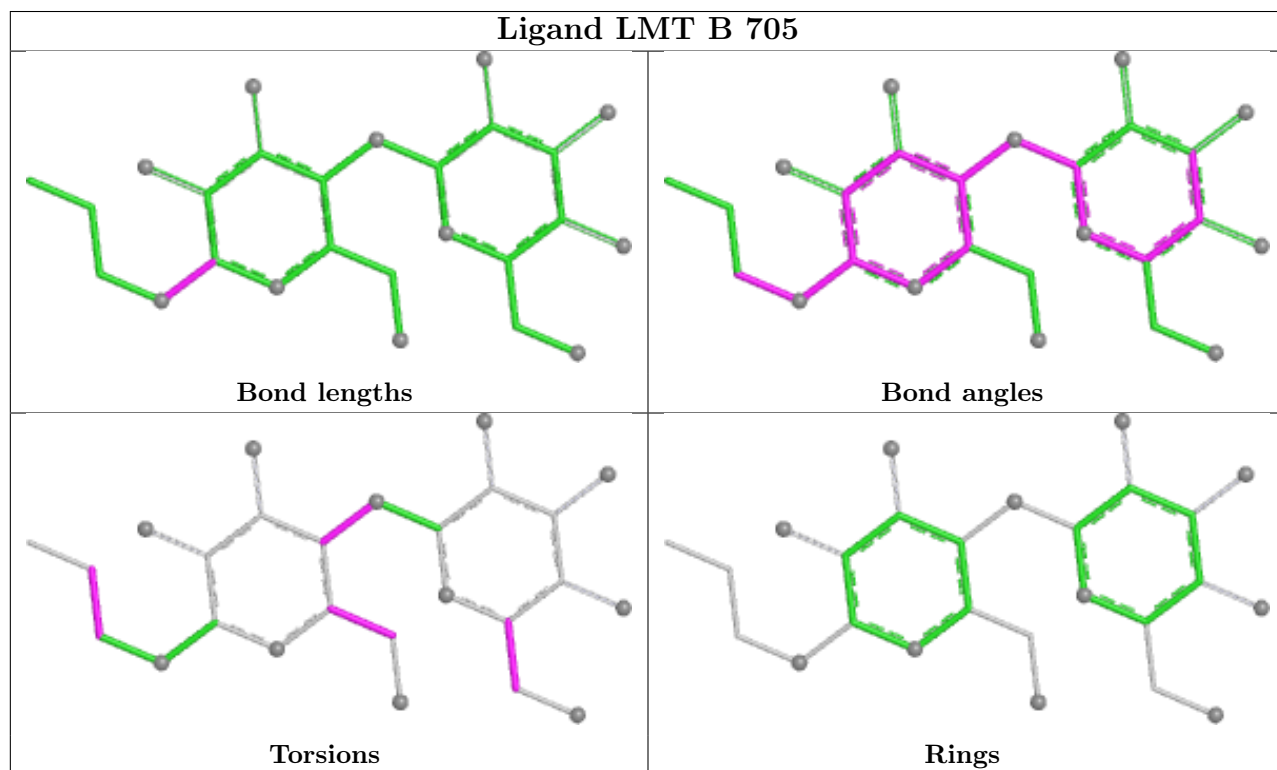
Mol	Chain	Res	Type	Atoms
5	D	703	LMT	O5'-C1'-O1'-C1
5	B	704	LMT	O5'-C1'-O1'-C1
5	E	703	LMT	C4'-C5'-C6'-O6'
5	B	705	LMT	C4B-C5B-C6B-O6B
5	D	703	LMT	C2'-C1'-O1'-C1
5	B	704	LMT	C2'-C1'-O1'-C1
5	E	704	LMT	O5'-C5'-C6'-O6'
5	E	703	LMT	C4B-C5B-C6B-O6B
5	C	705	LMT	O5B-C5B-C6B-O6B
5	E	705	LMT	C4'-C5'-C6'-O6'
5	C	706	LMT	O5'-C1'-O1'-C1
5	D	703	LMT	O5B-C5B-C6B-O6B
5	E	704	LMT	O5B-C1B-O1B-C4'
5	C	706	LMT	C2'-C1'-O1'-C1
5	E	704	LMT	O5B-C5B-C6B-O6B
5	D	703	LMT	O1'-C1-C2-C3
5	E	703	LMT	O5'-C5'-C6'-O6'
5	E	705	LMT	O5'-C5'-C6'-O6'
5	E	704	LMT	C5'-C4'-O1B-C1B
5	E	704	LMT	C3'-C4'-O1B-C1B
5	B	704	LMT	O5'-C5'-C6'-O6'
5	A	707	LMT	O5B-C5B-C6B-O6B
5	E	705	LMT	O5B-C5B-C6B-O6B
5	B	705	LMT	C3'-C4'-O1B-C1B
5	B	704	LMT	O5B-C5B-C6B-O6B
5	C	705	LMT	O5'-C5'-C6'-O6'
5	A	707	LMT	O5'-C5'-C6'-O6'
5	B	705	LMT	C5'-C4'-O1B-C1B
5	B	705	LMT	C4'-C5'-C6'-O6'
5	B	705	LMT	O1'-C1-C2-C3
5	E	704	LMT	C2-C1-O1'-C1'
5	C	705	LMT	C4B-C5B-C6B-O6B
5	E	705	LMT	C2'-C1'-O1'-C1
5	E	705	LMT	O5'-C1'-O1'-C1
5	A	707	LMT	O5B-C1B-O1B-C4'
5	A	707	LMT	C5'-C4'-O1B-C1B
5	C	705	LMT	O5'-C1'-O1'-C1
5	E	704	LMT	C4'-C5'-C6'-O6'
5	E	704	LMT	C2B-C1B-O1B-C4'
5	D	703	LMT	C3'-C4'-O1B-C1B
5	A	707	LMT	C3'-C4'-O1B-C1B

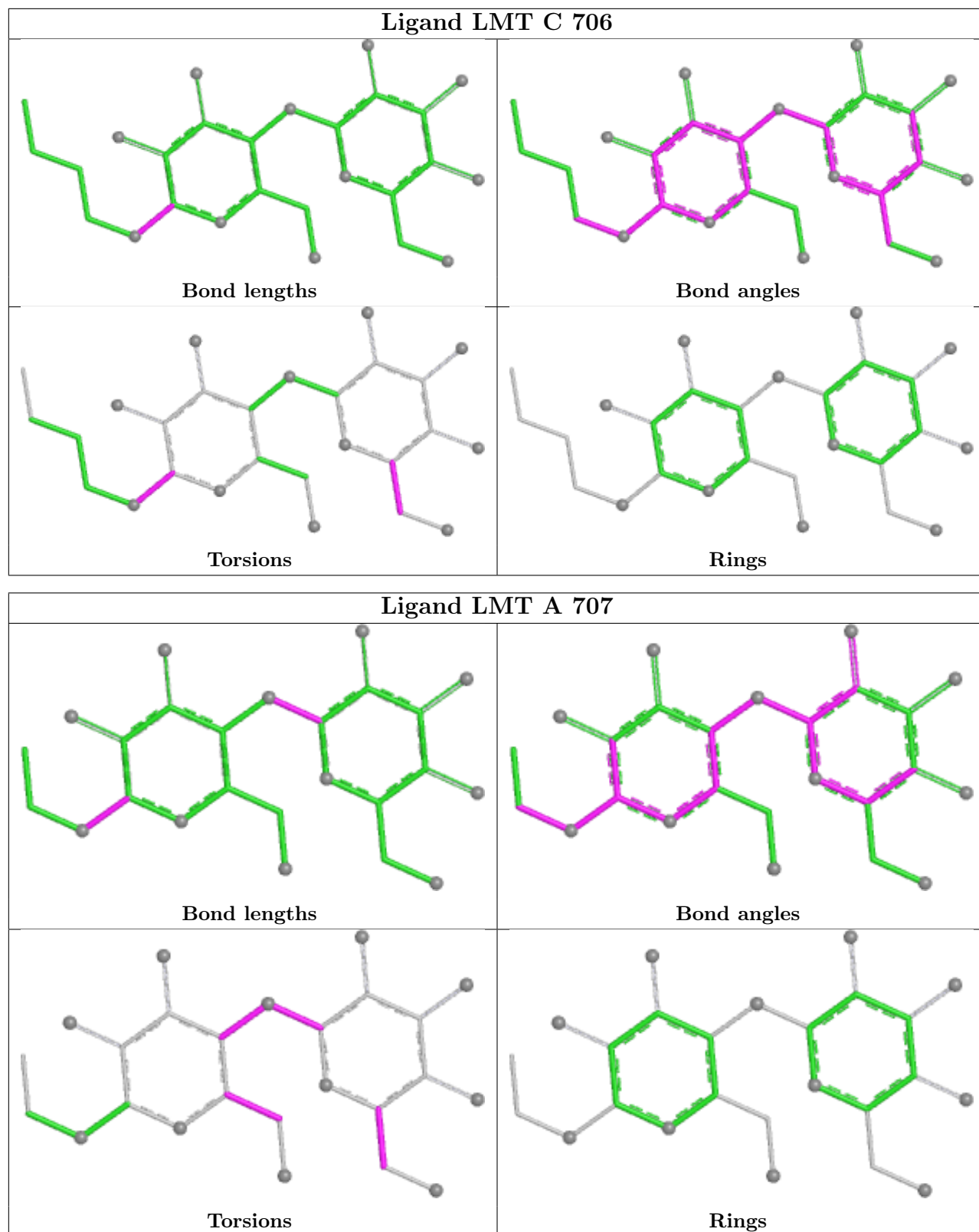
There are no ring outliers.

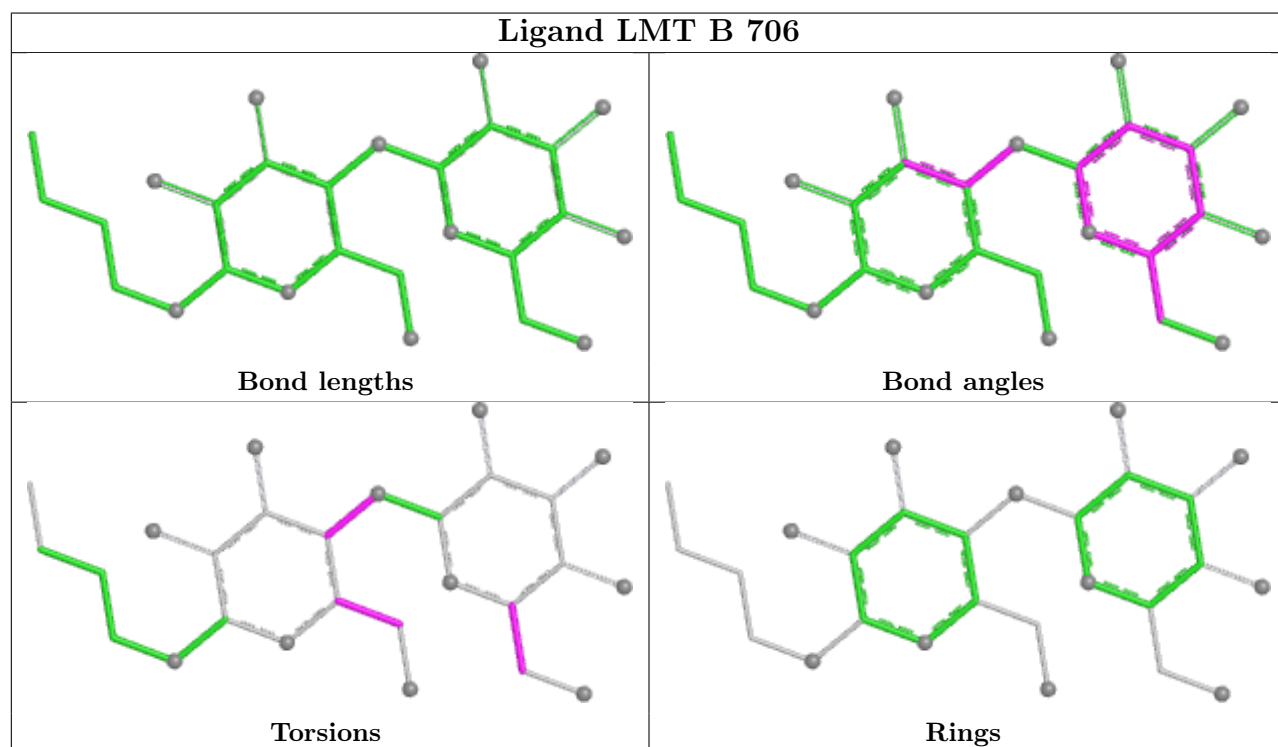
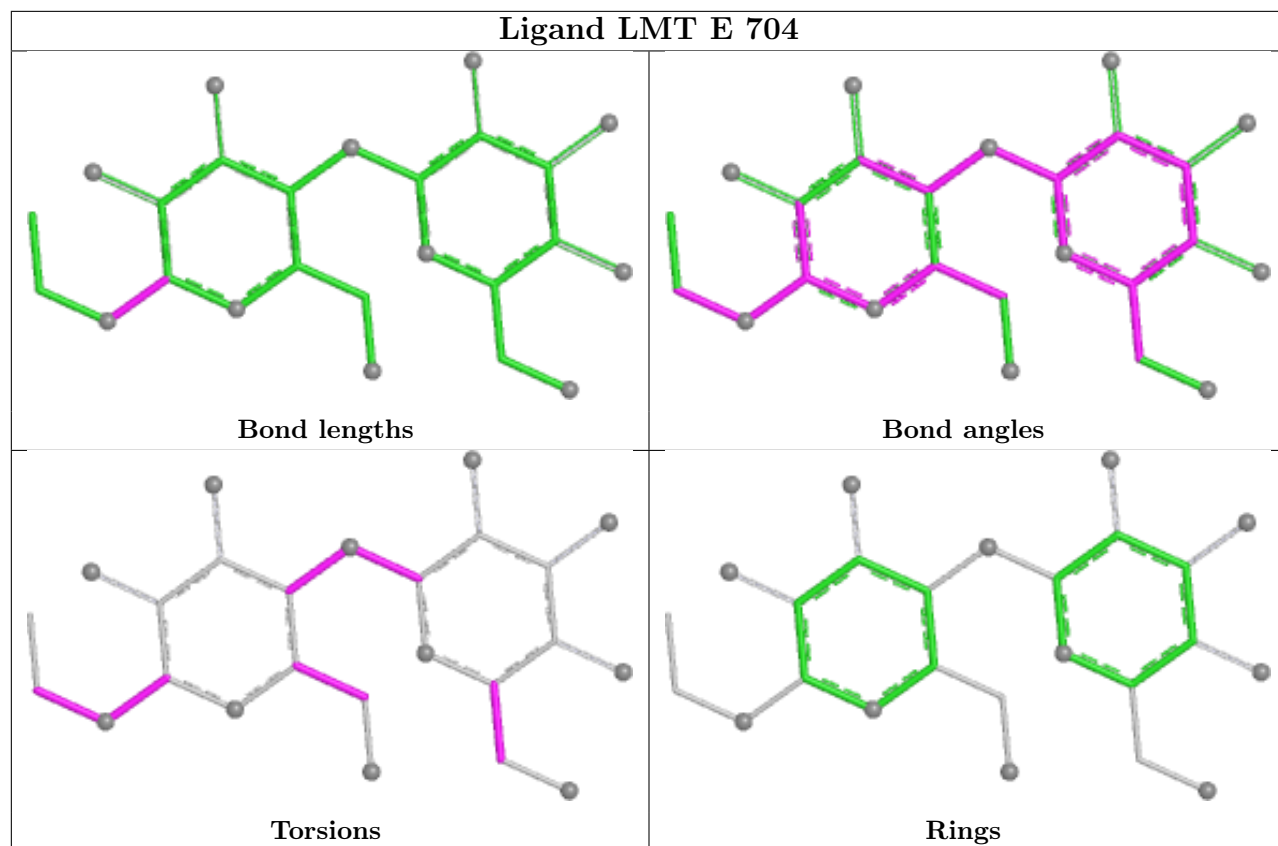
2 monomers are involved in 10 short contacts:

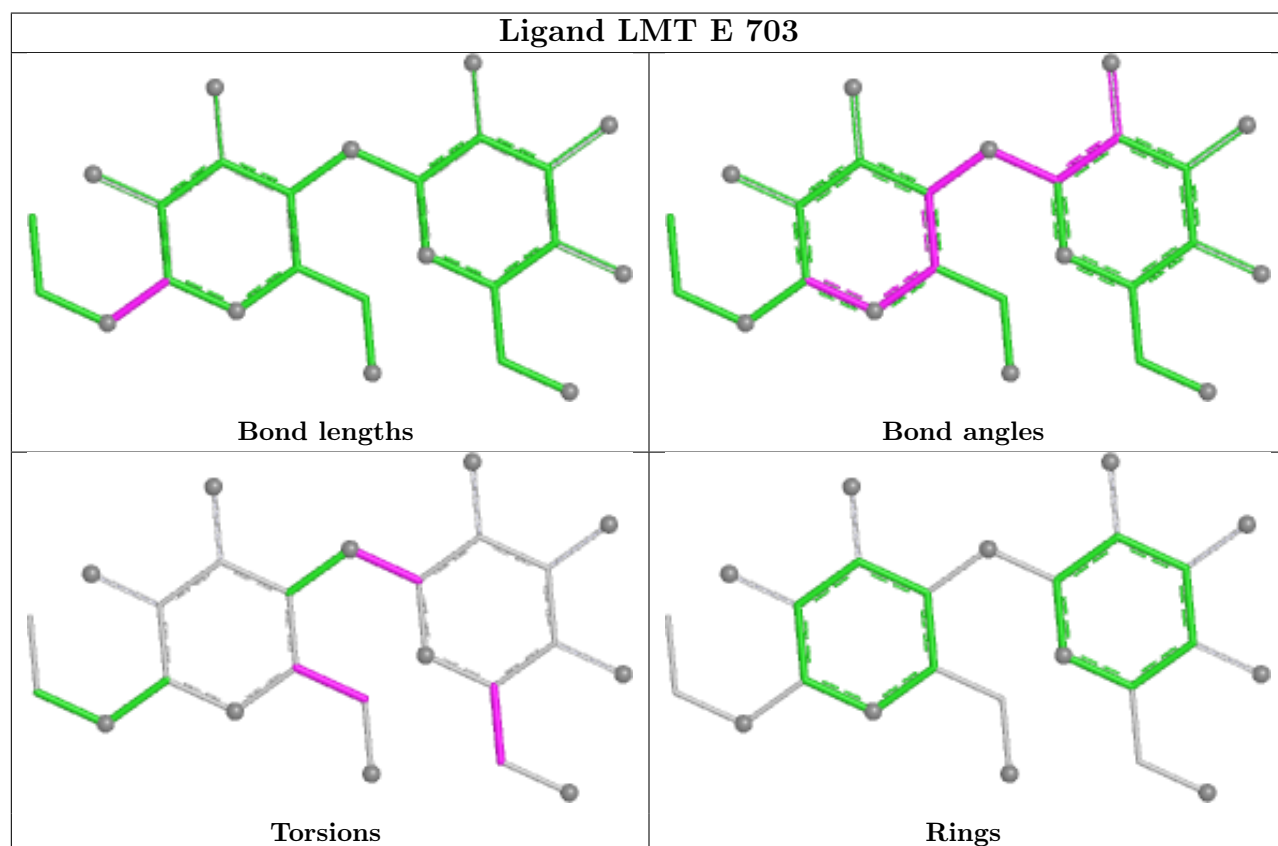
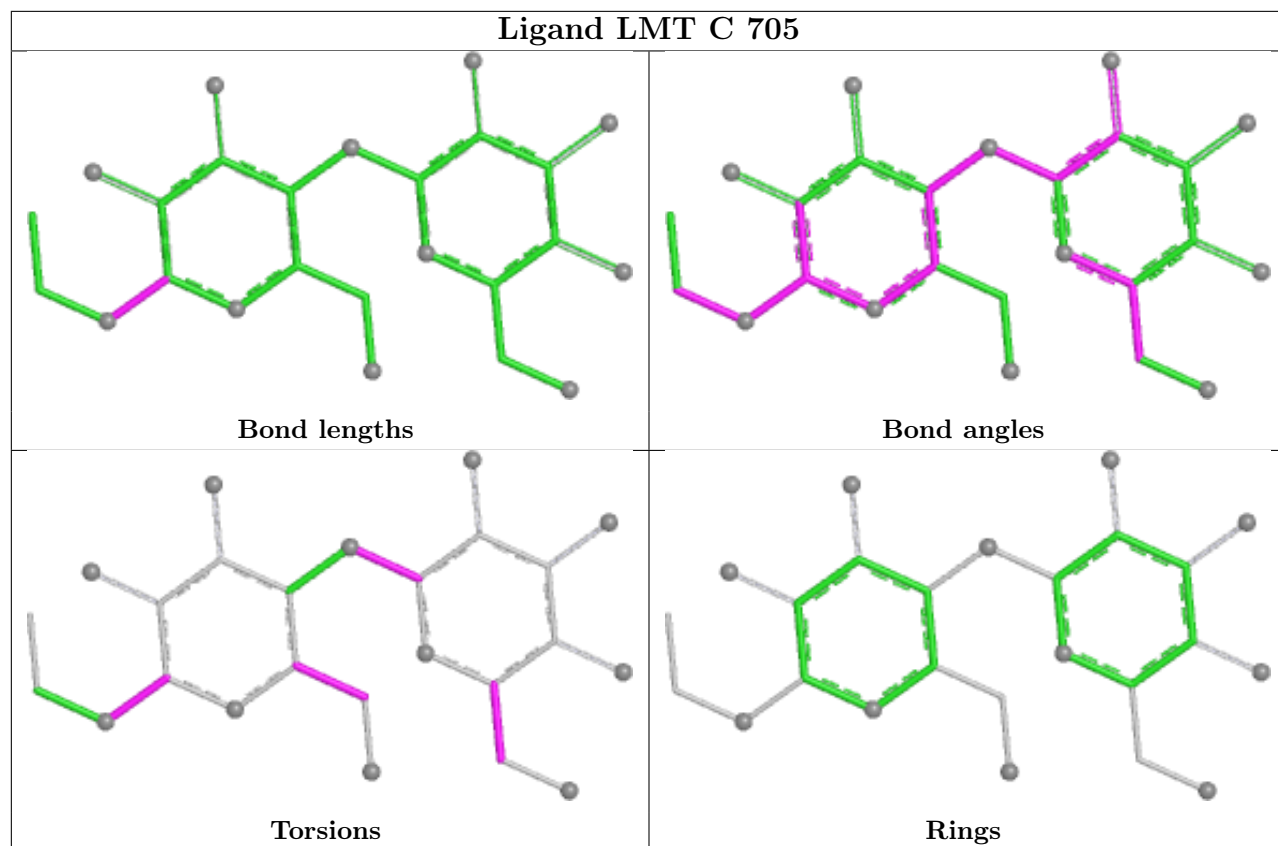
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	B	705	LMT	1	0
5	B	706	LMT	9	0

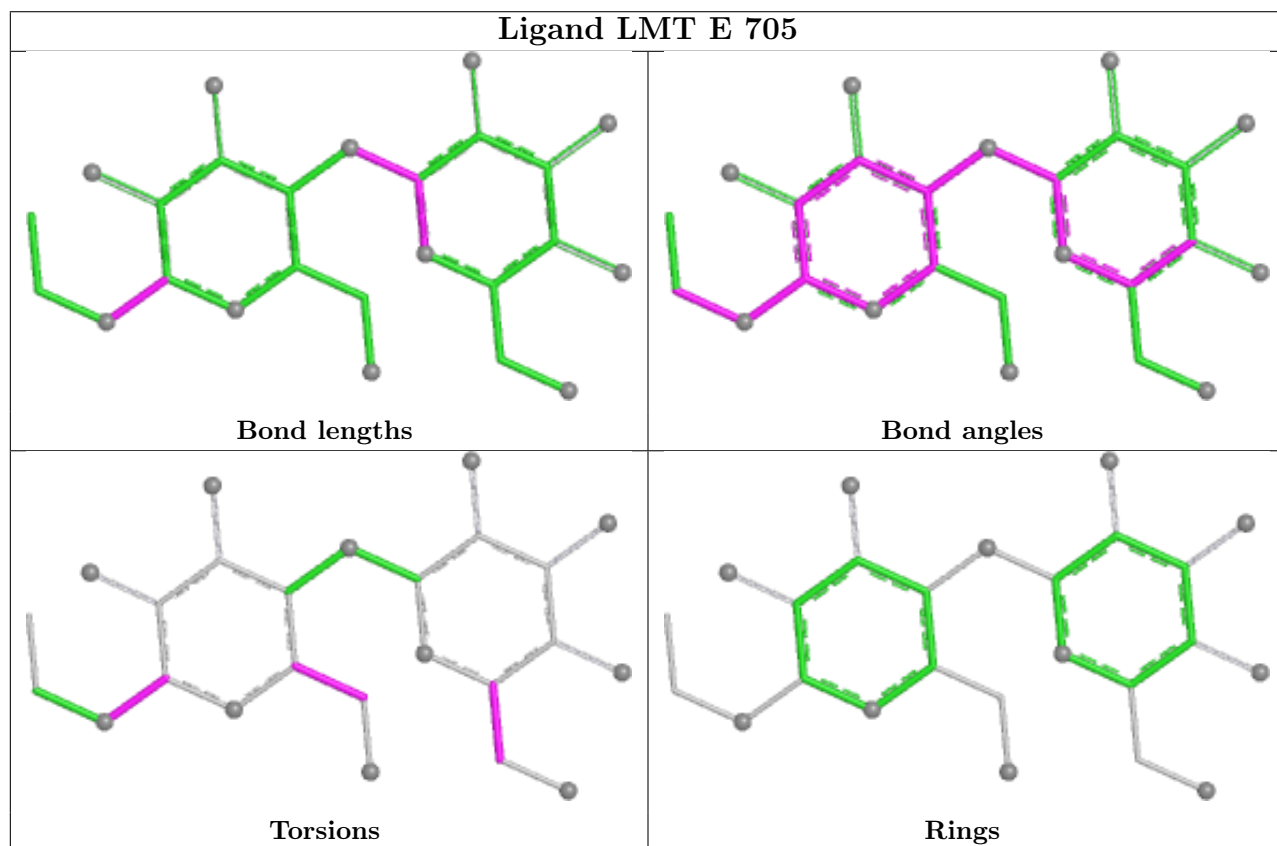
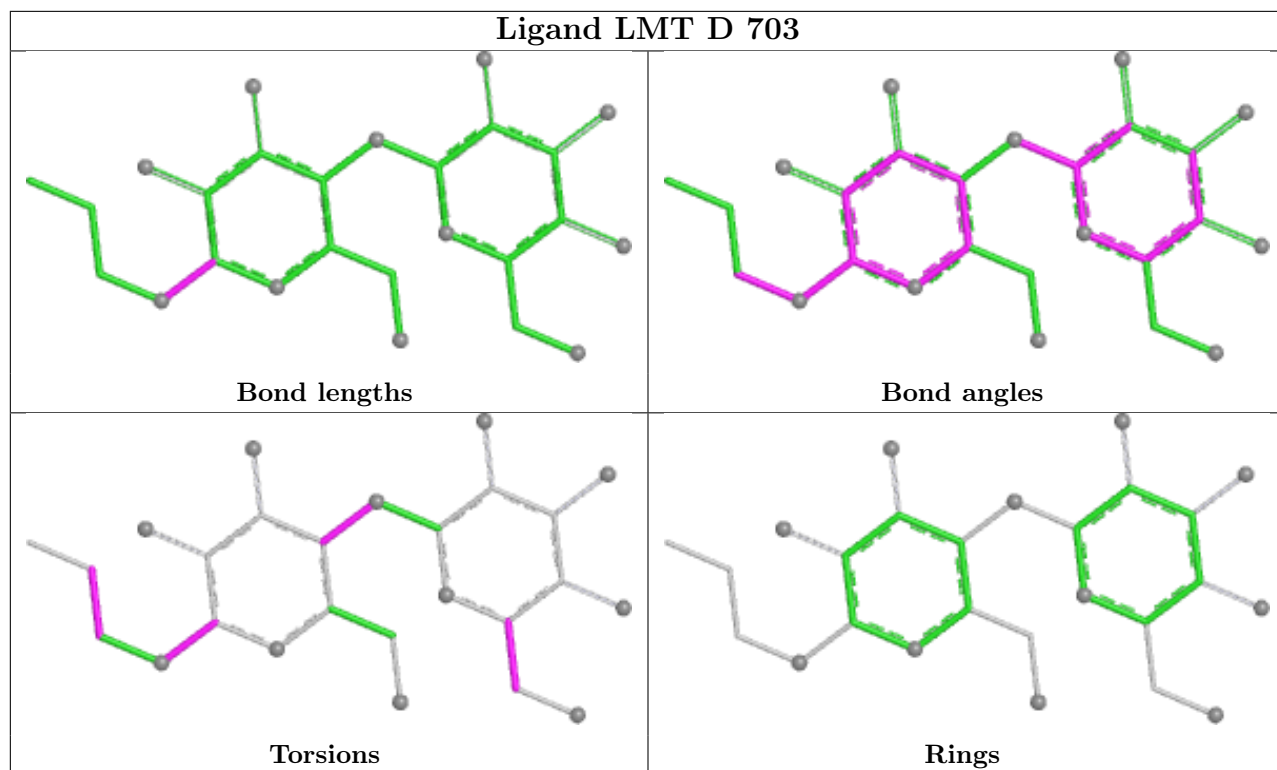
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 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.

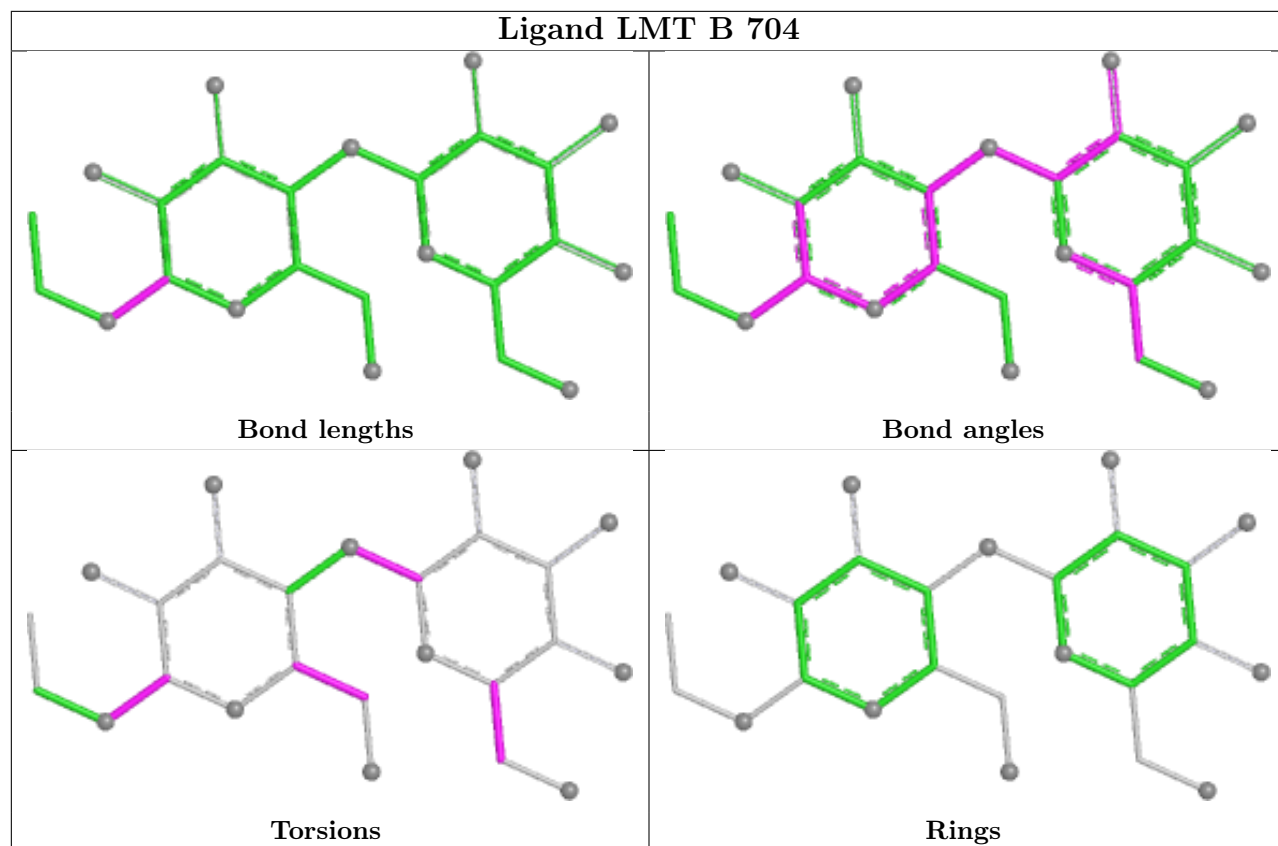












## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	A	585/642 (91%)	-0.10	8 (1%) 73 45	58, 149, 242, 288	0
1	B	586/642 (91%)	-0.31	4 (0%) 84 61	55, 137, 203, 228	0
1	C	588/642 (91%)	-0.25	9 (1%) 72 44	57, 133, 208, 238	0
1	D	591/642 (92%)	-0.28	3 (0%) 87 66	53, 136, 216, 239	0
1	E	591/642 (92%)	-0.19	11 (1%) 66 38	52, 146, 238, 265	0
All	All	2941/3210 (91%)	-0.23	35 (1%) 76 49	52, 139, 226, 288	0

All (35) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	418	ASP	4.0
1	C	171	ILE	3.4
1	D	80	GLY	3.3
1	A	256	PRO	3.3
1	A	145	ILE	2.9
1	D	637	THR	2.9
1	C	86	ILE	2.8
1	C	163	TYR	2.8
1	C	67	SER	2.7
1	E	372	GLY	2.6
1	D	319	VAL	2.6
1	A	252	SER	2.5
1	C	196	SER	2.5
1	A	104	ASN	2.4
1	A	144	HIS	2.4
1	E	172	LEU	2.4
1	B	52	PHE	2.4
1	A	615	TRP	2.3
1	E	319	VAL	2.3
1	E	170	LEU	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	258	ALA	2.3
1	E	79	VAL	2.3
1	B	615	TRP	2.2
1	B	255	LYS	2.2
1	C	46	GLU	2.2
1	B	80	GLY	2.2
1	E	95	VAL	2.2
1	E	615	TRP	2.2
1	A	249	LEU	2.1
1	C	423	TYR	2.1
1	E	373	CYS	2.1
1	E	269	VAL	2.1
1	E	113	VAL	2.0
1	C	66	ALA	2.0
1	E	375	VAL	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 oligosaccharides in this entry.

## 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
2	CA	A	701	1/1	-	-	170,170,170,170	1
2	CA	A	702	1/1	-	-	170,170,170,170	1
5	LMT	B	706	27/35	0.74	0.13	93,198,233,234	0
2	CA	C	701	1/1	-	-	170,170,170,170	1
2	CA	B	701	1/1	-	-	170,170,170,170	1
5	LMT	C	706	27/35	0.78	0.12	113,203,240,250	0
5	LMT	C	705	25/35	0.81	0.10	100,190,244,259	0
3	NA	A	704	1/1	0.81	0.39	107,107,107,107	0

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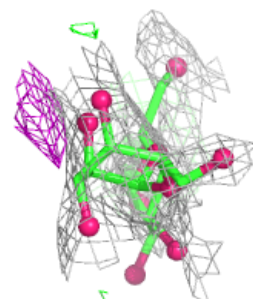
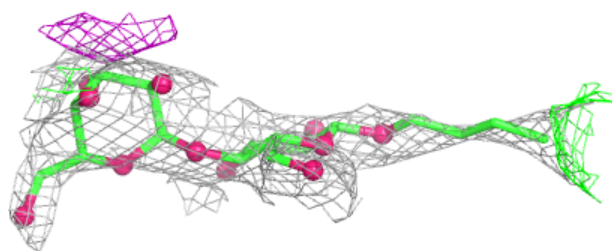
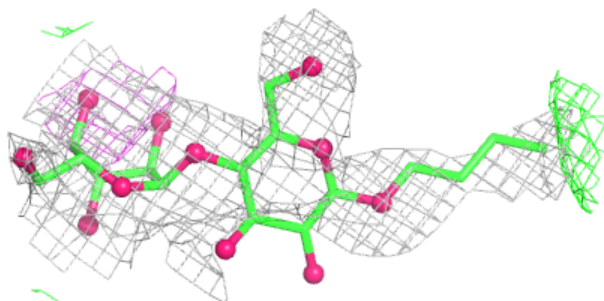
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
5	LMT	A	707	25/35	0.81	0.10	105,209,252,279	0
3	NA	C	702	1/1	-	-	170,170,170,170	1
5	LMT	B	704	25/35	0.82	0.10	129,211,244,265	0
5	LMT	E	704	25/35	0.82	0.10	94,203,246,254	0
5	LMT	E	705	25/35	0.88	0.08	108,205,239,256	0
5	LMT	B	705	26/35	0.88	0.09	100,211,240,272	0
5	LMT	D	703	26/35	0.88	0.09	120,205,232,245	0
4	CL	E	702	1/1	0.89	0.21	121,121,121,121	0
5	LMT	E	703	25/35	0.89	0.08	111,219,250,271	0
4	CL	A	706	1/1	0.91	0.16	119,119,119,119	0
3	NA	A	705	1/1	0.92	0.14	71,71,71,71	0
3	NA	A	703	1/1	0.93	0.04	66,66,66,66	0
3	NA	B	702	1/1	0.95	0.13	88,88,88,88	0
4	CL	C	704	1/1	0.96	0.15	105,105,105,105	0
4	CL	B	703	1/1	0.96	0.17	104,104,104,104	0
4	CL	D	702	1/1	0.97	0.11	110,110,110,110	0
3	NA	D	701	1/1	0.98	0.12	63,63,63,63	0
3	NA	C	703	1/1	0.98	0.25	79,79,79,79	0
2	CA	E	701	1/1	0.99	0.03	140,140,140,140	0

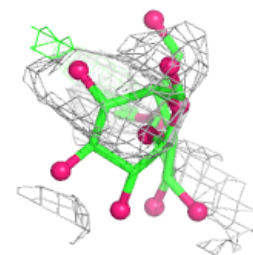
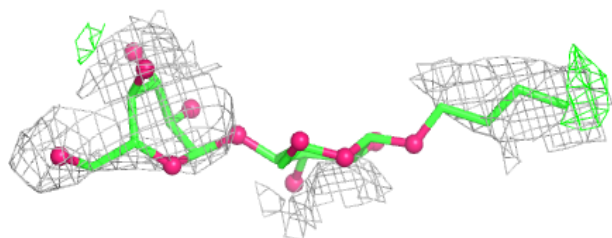
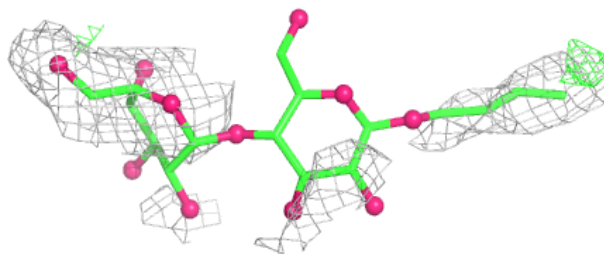
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

**Electron density around LMT B 706:**

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

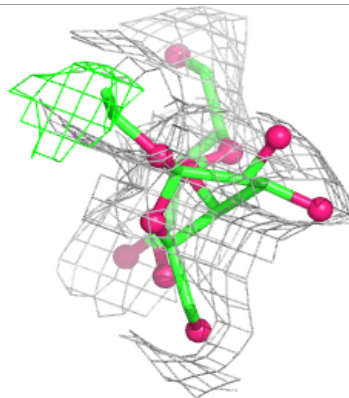
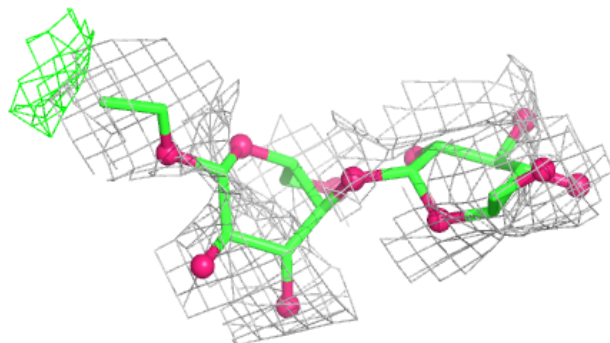
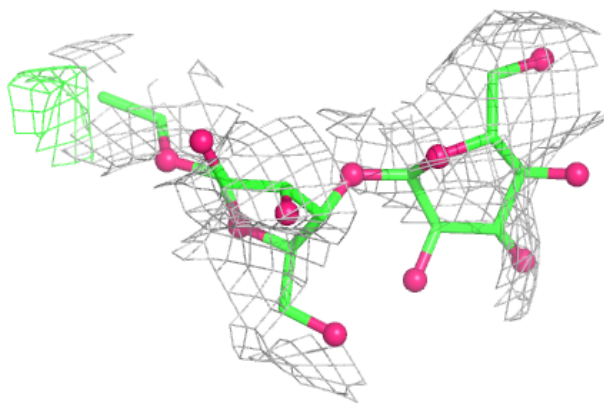
**Electron density around LMT C 706:**

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

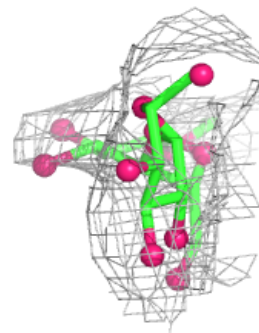
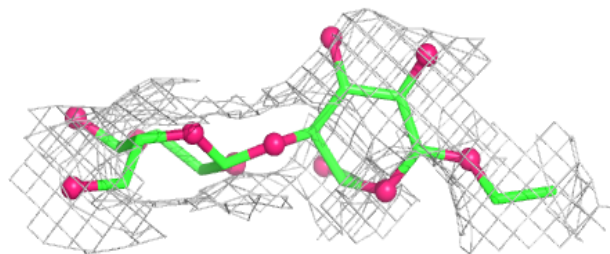
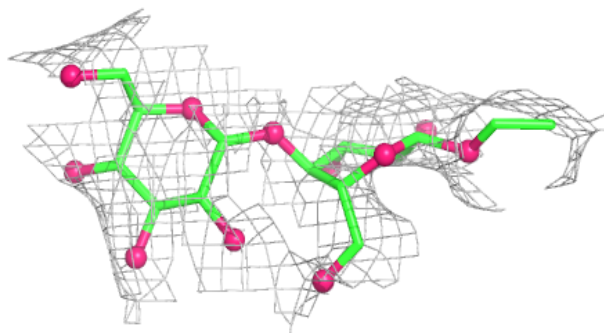


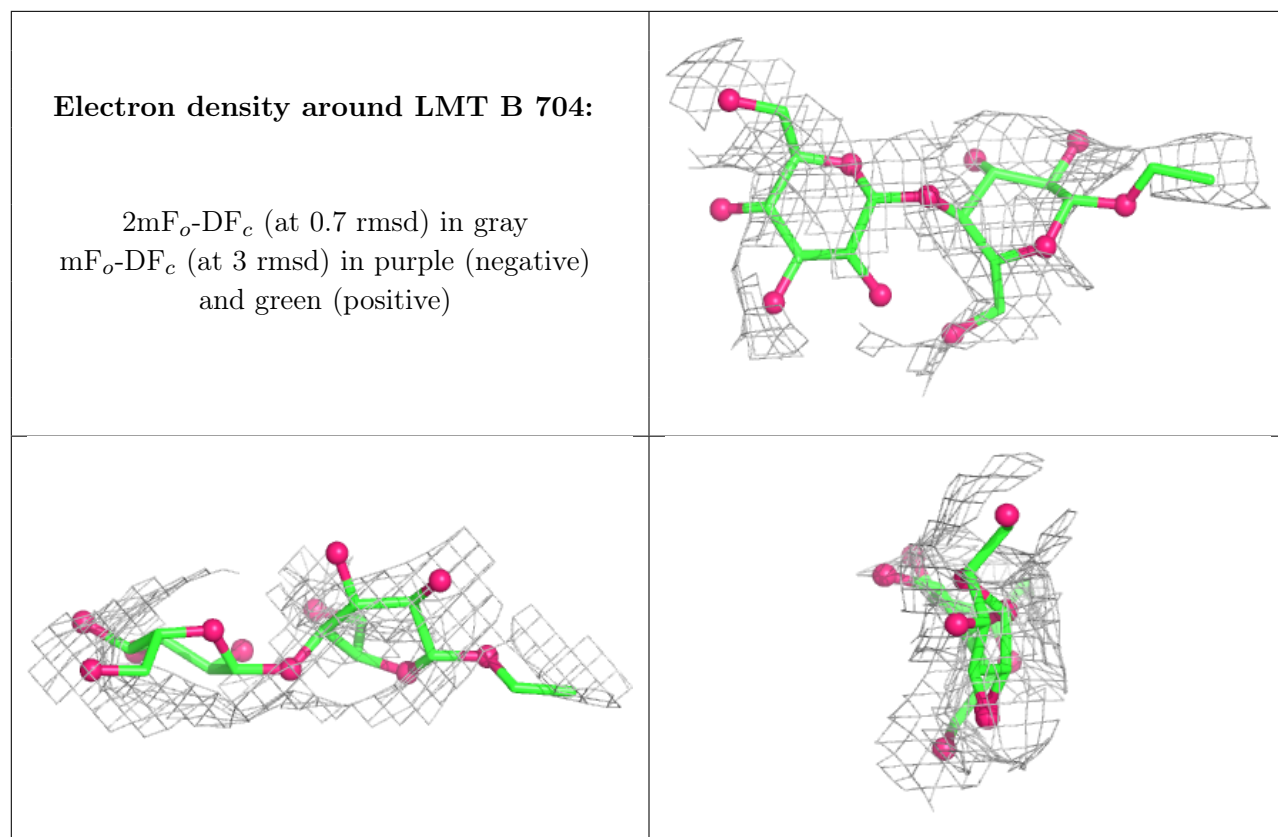
**Electron density around LMT C 705:**

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

**Electron density around LMT A 707:**

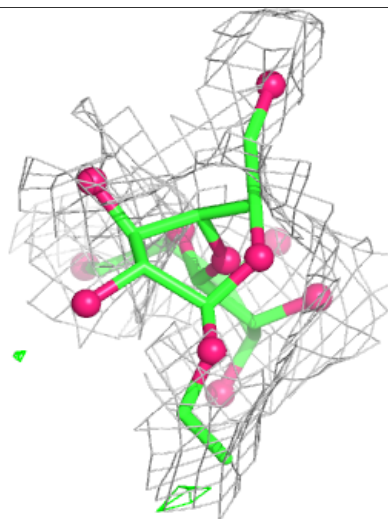
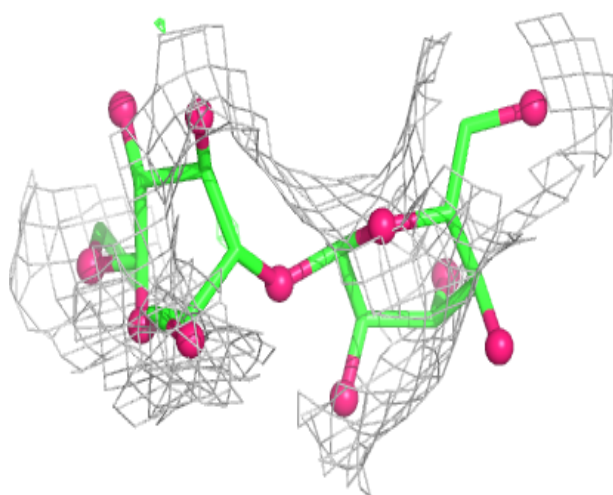
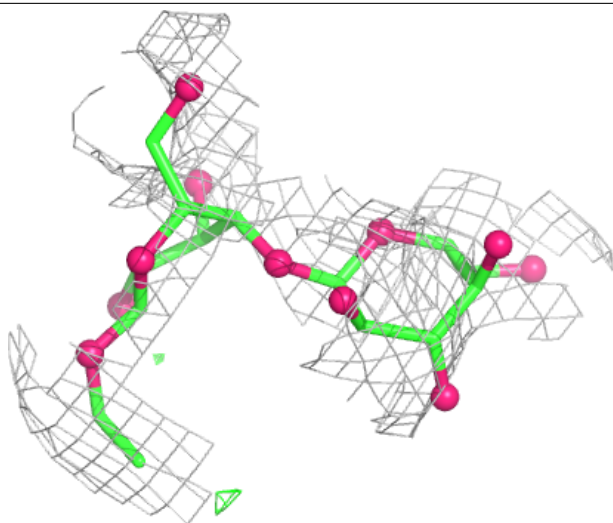
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

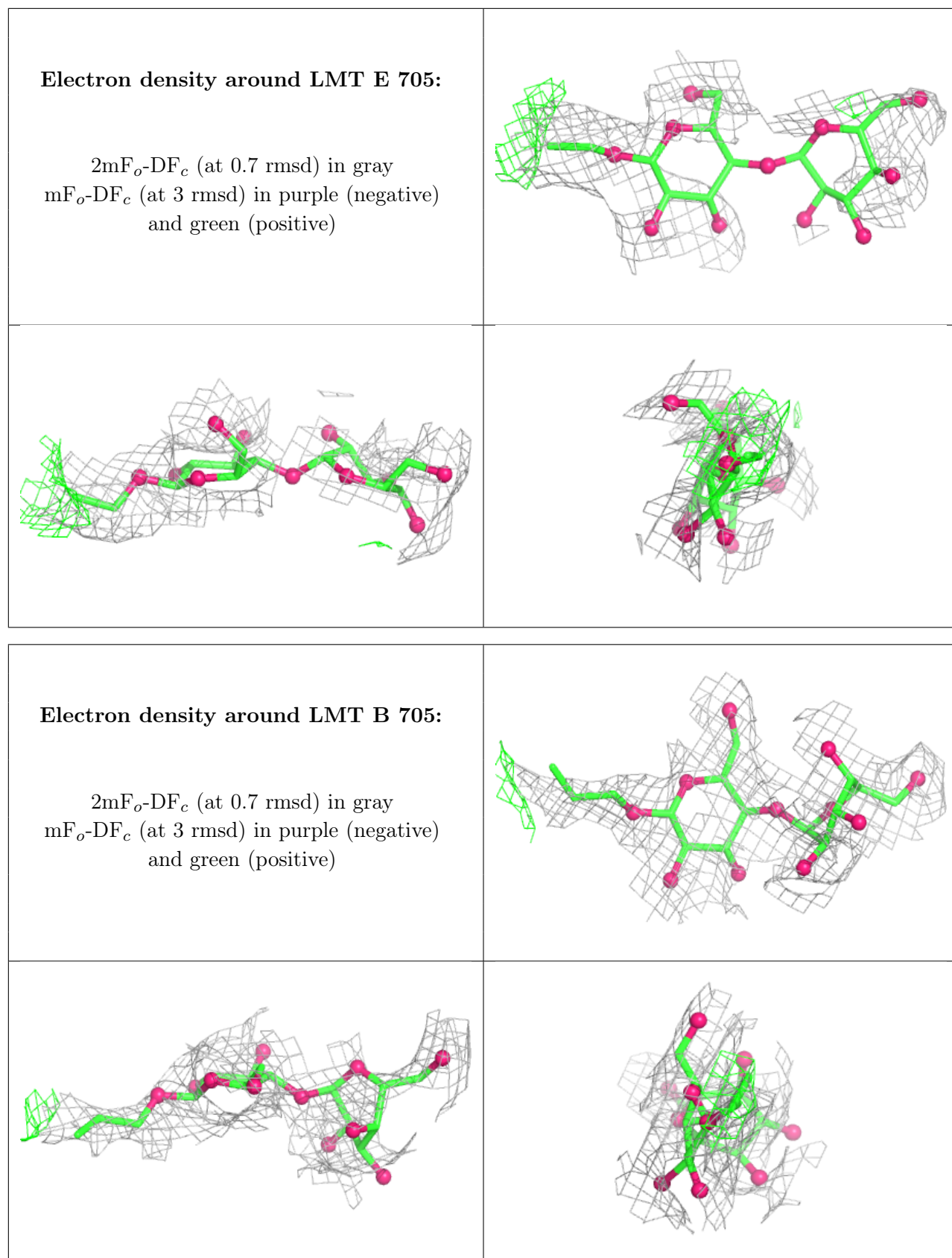




**Electron density around LMT E 704:**

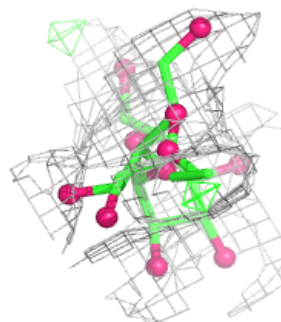
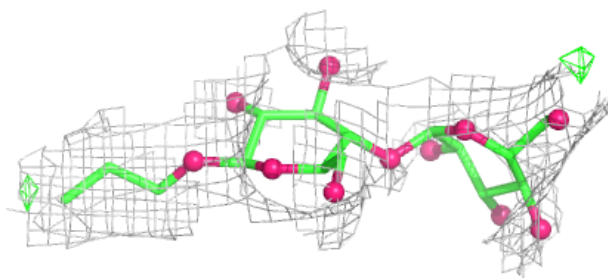
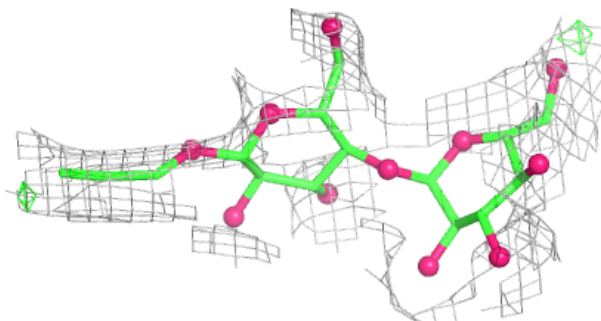
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



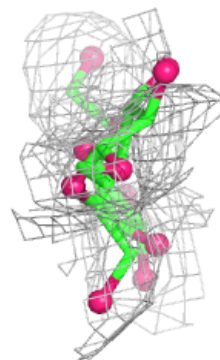
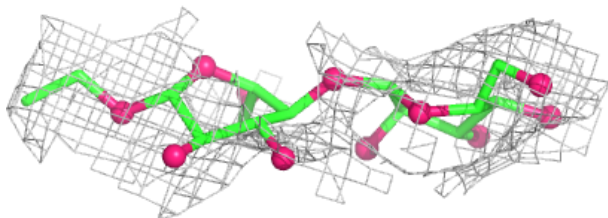
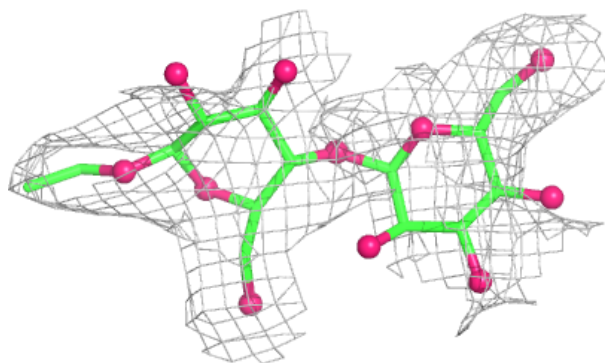


**Electron density around LMT D 703:**

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

**Electron density around LMT E 703:**

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



## 6.5 Other polymers [i](#)

There are no such residues in this entry.