



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 02:42 PM UTC

PDB ID : 1E7P / pdb_00001e7p
Title : QUINOL:FUMARATE REDUCTASE FROM WOLINELLA SUCCINOGENES
Authors : Lancaster, C.R.D.; Kroeger, A.
Deposited on : 2000-09-01
Resolution : 3.10 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

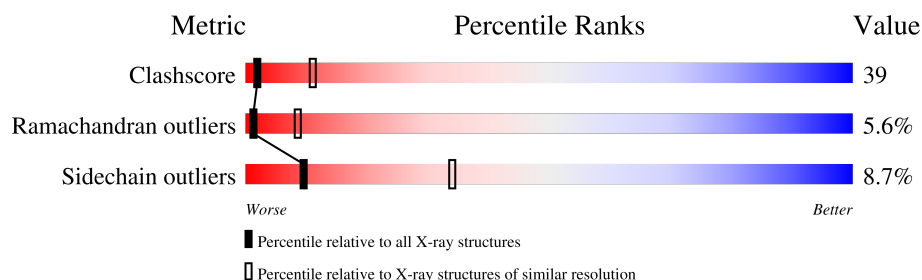
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.10 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))
Clashscore	190562	1539 (3.10-3.10)
Ramachandran outliers	187476	1467 (3.10-3.10)
Sidechain outliers	187428	1467 (3.10-3.10)

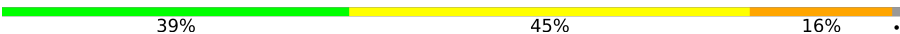
The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively.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

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	656	38% 49% 12% .
1	D	656	38% 49% 12% .
1	G	656	37% 49% 12% .
1	J	656	37% 49% 13% .
2	B	239	47% 44% 8% .
2	E	239	46% 44% 9% .
2	H	239	46% 44% 9% .
2	K	239	46% 44% 8% .

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Mol	Chain	Length	Quality of chain
3	C	256	 39% 45% 16% .
3	F	256	 39% 45% 16% .
3	I	256	 39% 44% 16% .
3	L	256	 39% 45% 15% .

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
5	MLA	A	702	-	-	X	-
5	MLA	D	702	-	-	X	-
5	MLA	G	702	-	-	X	-
5	MLA	J	702	-	-	X	-
8	F3S	B	302	-	-	X	-
8	F3S	E	302	-	-	X	-
8	F3S	H	302	-	-	X	-
8	F3S	K	302	-	-	X	-

2 Entry composition

There are 11 unique types of molecules in this entry. The entry contains 37072 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 Fumarate reductase flavoprotein subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	655	Total	C	N	O	S	33	0	0
			5093	3190	910	961	32			
1	D	655	Total	C	N	O	S	33	0	0
			5093	3190	910	961	32			
1	G	655	Total	C	N	O	S	33	0	0
			5093	3190	910	961	32			
1	J	655	Total	C	N	O	S	33	0	0
			5093	3190	910	961	32			

- Molecule 2 is a protein called Fumarate reductase iron-sulfur subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	239	Total	C	N	O	S	0	0	0
			1894	1194	322	355	23			
2	E	239	Total	C	N	O	S	0	0	0
			1894	1194	322	355	23			
2	H	239	Total	C	N	O	S	0	0	0
			1894	1194	322	355	23			
2	K	239	Total	C	N	O	S	0	0	0
			1894	1194	322	355	23			

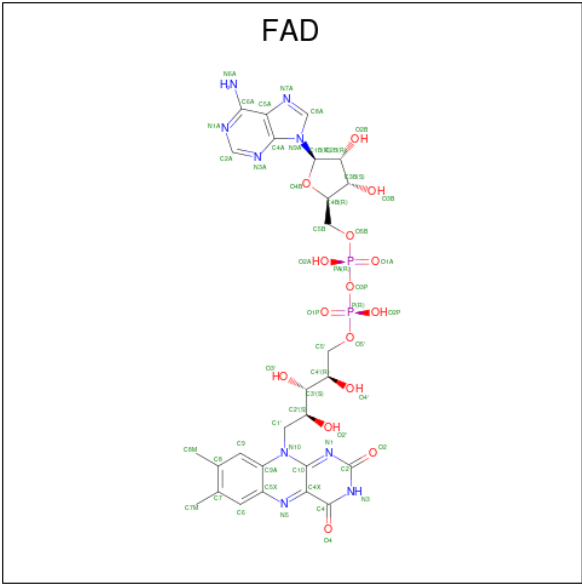
- Molecule 3 is a protein called Fumarate reductase cytochrome b subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	254	Total	C	N	O	S	24	0	0
			2080	1388	334	344	14			
3	F	254	Total	C	N	O	S	24	0	0
			2080	1388	334	344	14			
3	I	254	Total	C	N	O	S	24	0	0
			2080	1388	334	344	14			
3	L	254	Total	C	N	O	S	24	0	0
			2080	1388	334	344	14			

There are 4 discrepancies between the modelled and reference sequences:

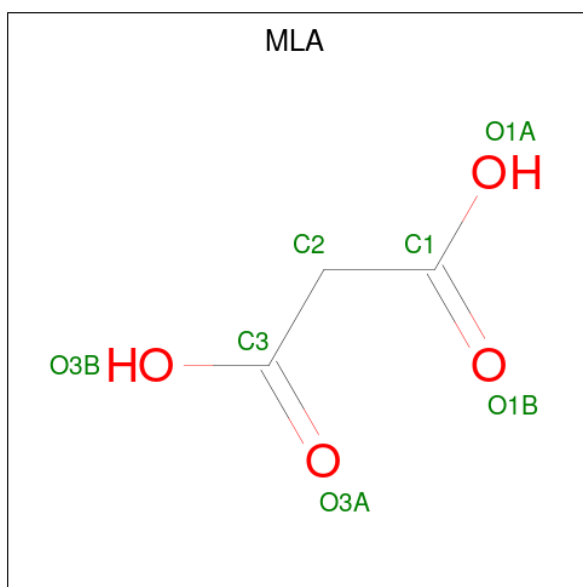
Chain	Residue	Modelled	Actual	Comment	Reference
C	66	GLN	GLU	engineered mutation	UNP P17413
F	66	GLN	GLU	engineered mutation	UNP P17413
I	66	GLN	GLU	engineered mutation	UNP P17413
L	66	GLN	GLU	engineered mutation	UNP P17413

- Molecule 4 is FLAVIN-ADENINE DINUCLEOTIDE (CCD ID: FAD) (formula: C₂₇H₃₃N₉O₁₅P₂).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	A	1	Total	C	N	O	P	0	0
			53	27	9	15	2		
4	D	1	Total	C	N	O	P	0	0
			53	27	9	15	2		
4	G	1	Total	C	N	O	P	0	0
			53	27	9	15	2		
4	J	1	Total	C	N	O	P	0	0
			53	27	9	15	2		

- Molecule 5 is MALONIC ACID (CCD ID: MLA) (formula: C₃H₄O₄).

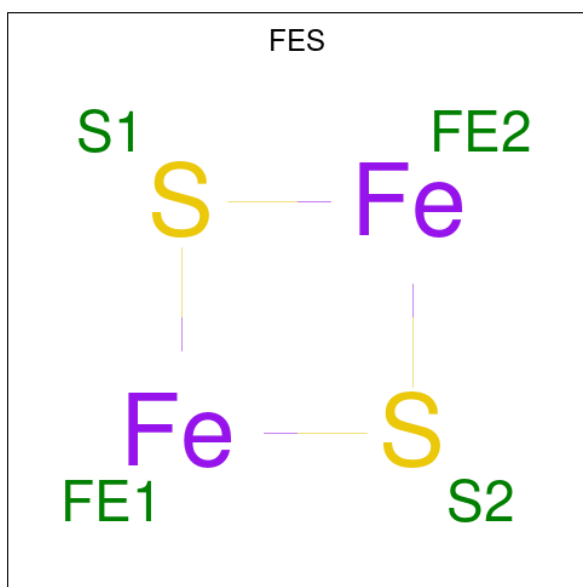


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total	C	O	0	0
			7	3	4		
5	D	1	Total	C	O	0	0
			7	3	4		
5	G	1	Total	C	O	0	0
			7	3	4		
5	J	1	Total	C	O	0	0
			7	3	4		

- Molecule 6 is SODIUM ION (CCD ID: NA) (formula: Na).

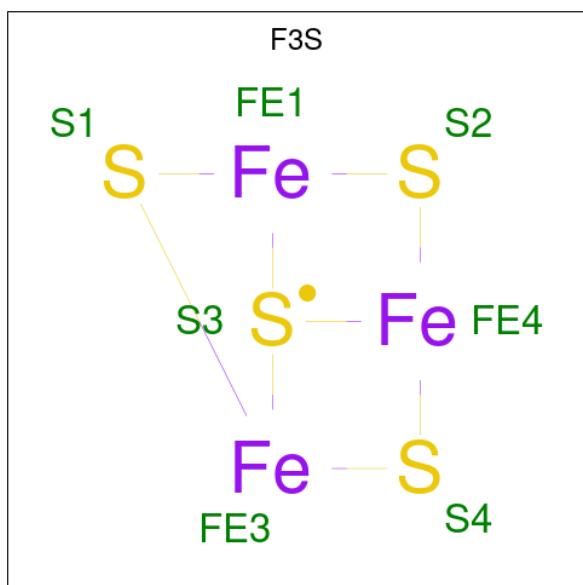
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	1	Total	Na	0	0
			1	1		
6	D	1	Total	Na	0	0
			1	1		
6	G	1	Total	Na	0	0
			1	1		
6	J	1	Total	Na	0	0
			1	1		

- Molecule 7 is FE2/S2 (INORGANIC) CLUSTER (CCD ID: FES) (formula: Fe₂S₂).



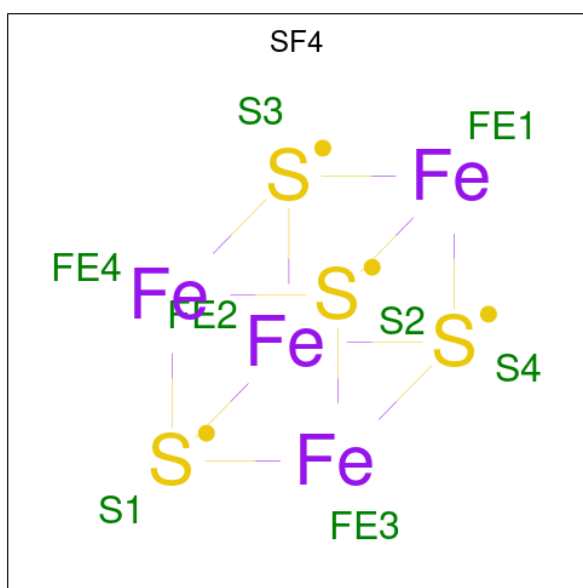
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	B	1	Total	Fe	S	0	0
			4	2	2		
7	E	1	Total	Fe	S	0	0
			4	2	2		
7	H	1	Total	Fe	S	0	0
			4	2	2		
7	K	1	Total	Fe	S	0	0
			4	2	2		

- Molecule 8 is FE3-S4 CLUSTER (CCD ID: F3S) (formula: Fe_3S_4).



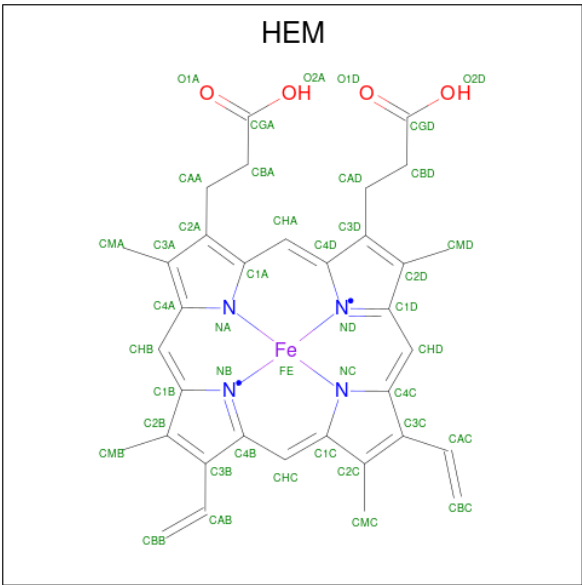
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
8	B	1	Total	Fe	S	0	0
			7	3	4		
8	E	1	Total	Fe	S	0	0
			7	3	4		
8	H	1	Total	Fe	S	0	0
			7	3	4		
8	K	1	Total	Fe	S	0	0
			7	3	4		

- Molecule 9 is IRON/SULFUR CLUSTER (CCD ID: SF4) (formula: Fe_4S_4).



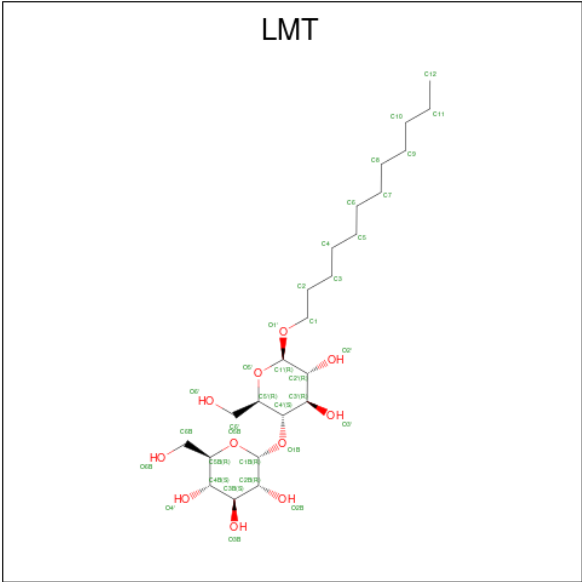
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
9	B	1	Total	Fe	S	0	0
			8	4	4		
9	E	1	Total	Fe	S	0	0
			8	4	4		
9	H	1	Total	Fe	S	0	0
			8	4	4		
9	K	1	Total	Fe	S	0	0
			8	4	4		

- Molecule 10 is PROTOPORPHYRIN IX CONTAINING FE (CCD ID: HEM) (formula: $\text{C}_{34}\text{H}_{32}\text{FeN}_4\text{O}_4$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
10	C	1	Total 43	C 34	Fe 1	N 4	O 4	0	0
10	C	1	Total 43	C 34	Fe 1	N 4	O 4	0	0
10	F	1	Total 43	C 34	Fe 1	N 4	O 4	0	0
10	F	1	Total 43	C 34	Fe 1	N 4	O 4	0	0
10	I	1	Total 43	C 34	Fe 1	N 4	O 4	0	0
10	I	1	Total 43	C 34	Fe 1	N 4	O 4	0	0
10	L	1	Total 43	C 34	Fe 1	N 4	O 4	0	0
10	L	1	Total 43	C 34	Fe 1	N 4	O 4	0	0

- Molecule 11 is DODECYL-BETA-D-MALTOSIDE (CCD ID: LMT) (formula: C₂₄H₄₆O₁₁).



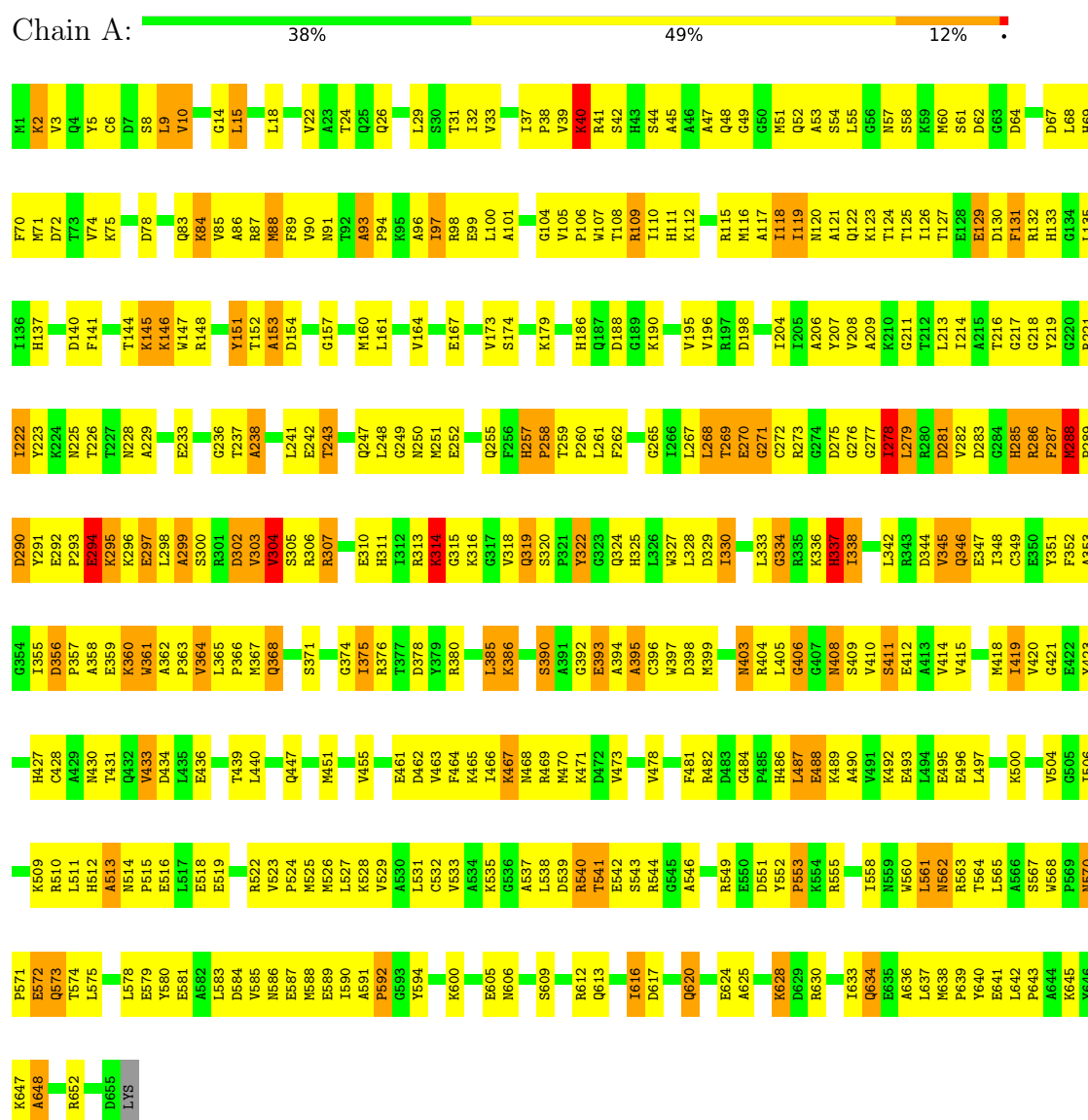
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
11	C	1	Total	C	O	17	0
			35	24	11		
11	F	1	Total	C	O	17	0
			35	24	11		
11	I	1	Total	C	O	17	0
			35	24	11		
11	L	1	Total	C	O	17	0
			35	24	11		

3 Residue-property plots

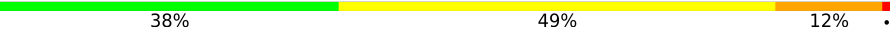
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded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

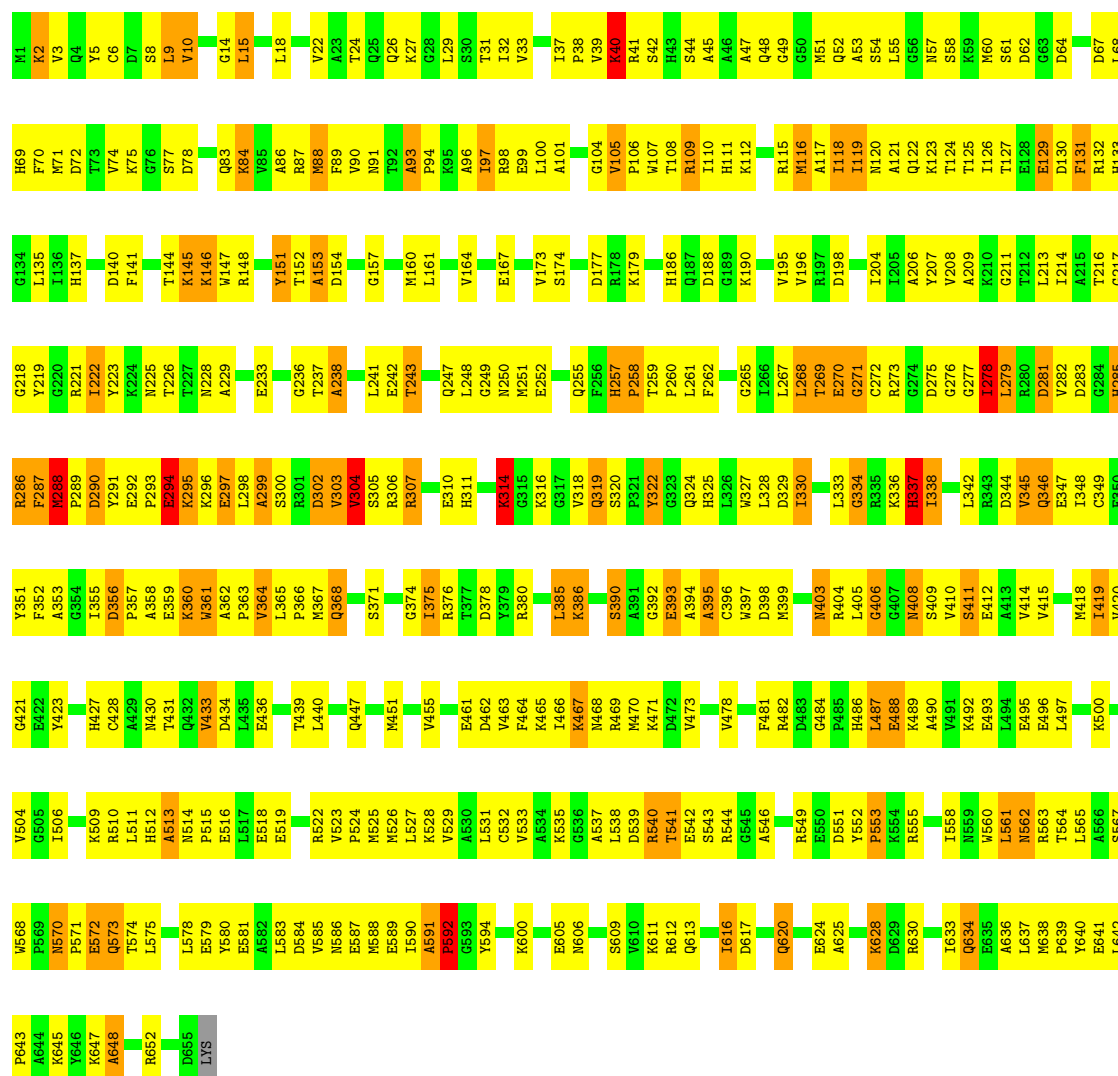
Note EDS was not executed.

- Molecule 1: Fumarate reductase flavoprotein subunit

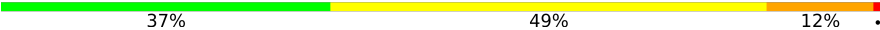


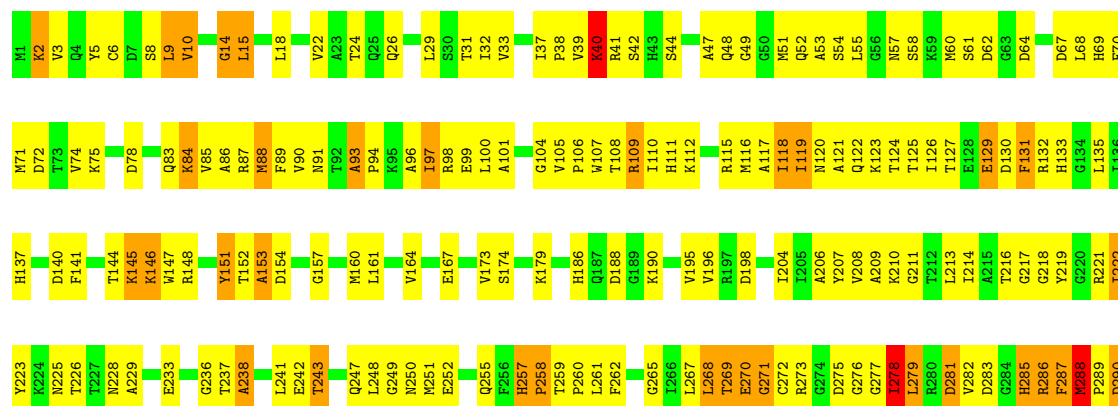
- Molecule 1: Fumarate reductase flavoprotein subunit

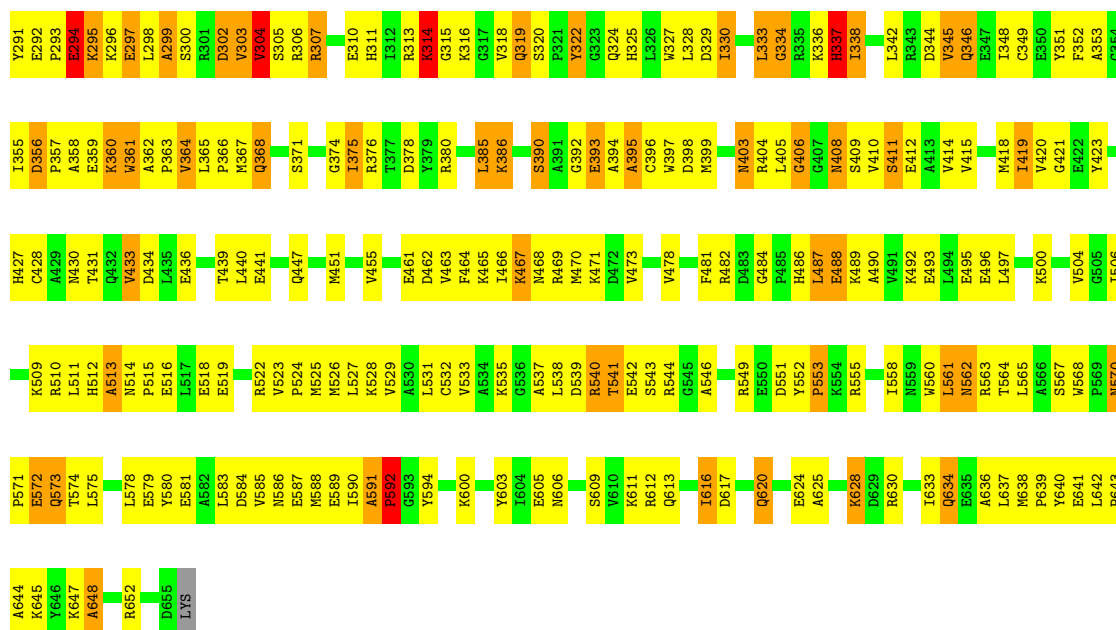
Chain D:  38% 49% 12%



• Molecule 1: Fumarate reductase flavoprotein subunit

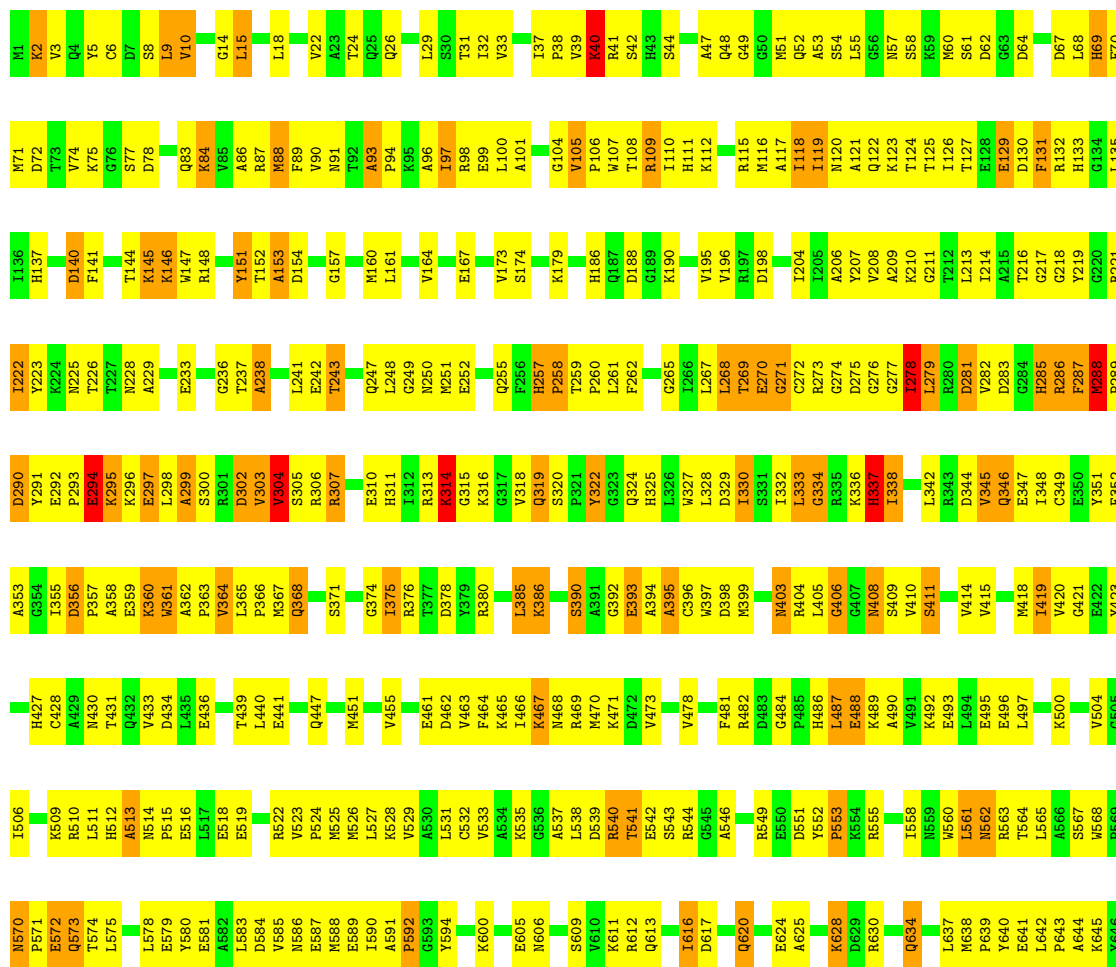
Chain G:  37% 49% 12%





• Molecule 1: Fumarate reductase flavoprotein subunit

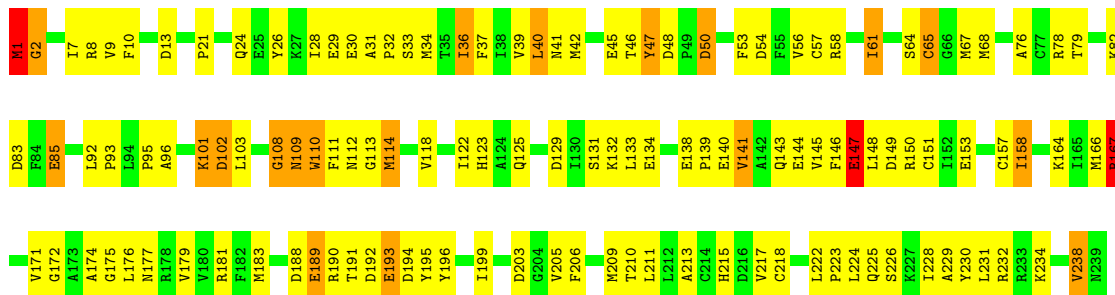
Chain J: 37% 49% 13%





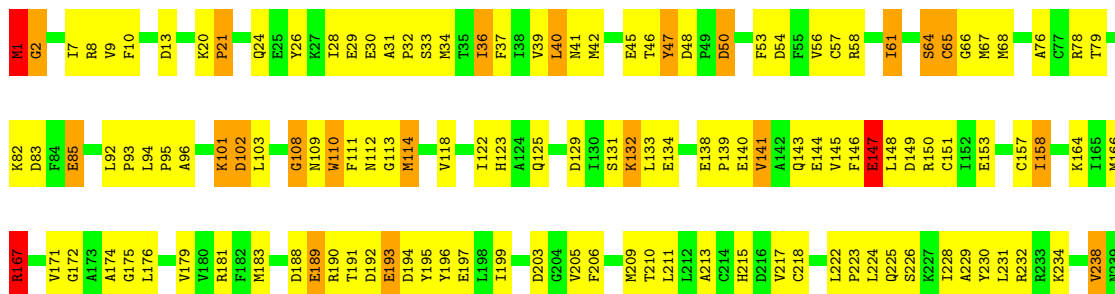
• Molecule 2: Fumarate reductase iron-sulfur subunit

Chain B: 47% 44% 8%



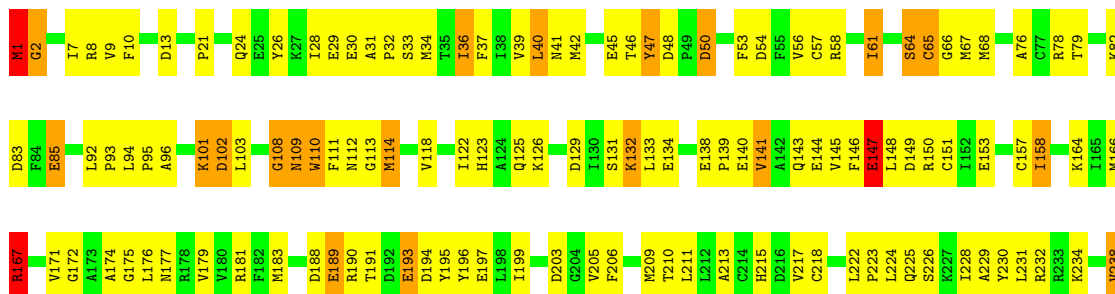
• Molecule 2: Fumarate reductase iron-sulfur subunit

Chain E: 46% 44% 9%



• Molecule 2: Fumarate reductase iron-sulfur subunit

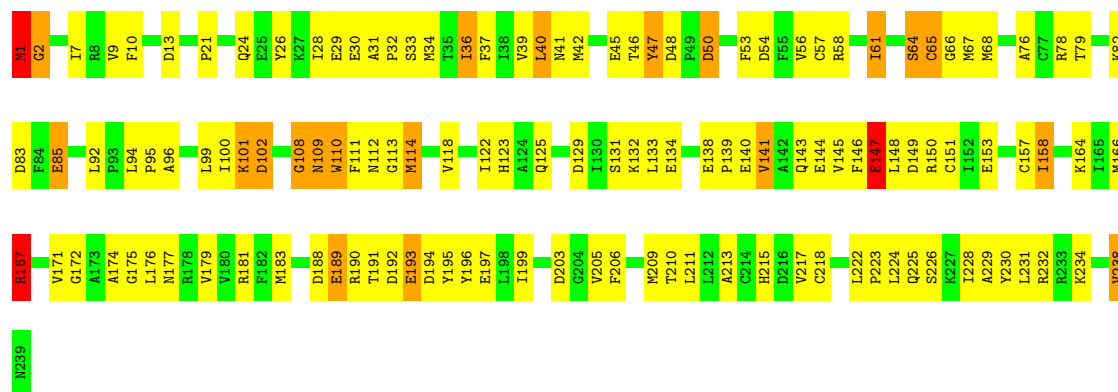
Chain H: 46% 44% 9%



• Molecule 2: Fumarate reductase iron-sulfur subunit

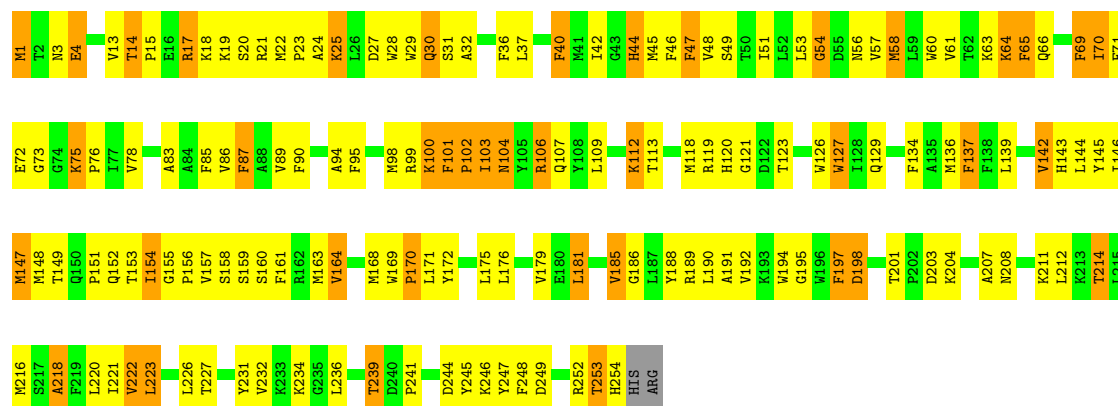
Chain K: 46% 44% 8%





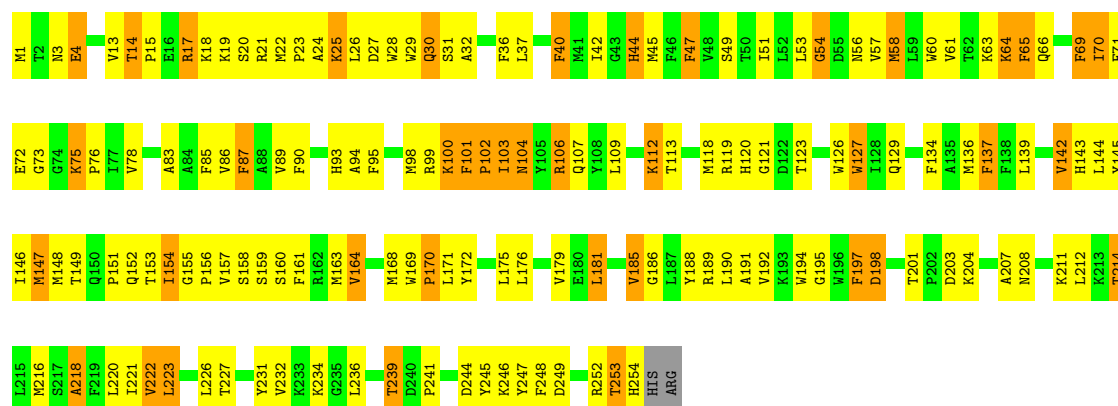
• Molecule 3: Fumarate reductase cytochrome b subunit

Chain C: 39% 45% 16%



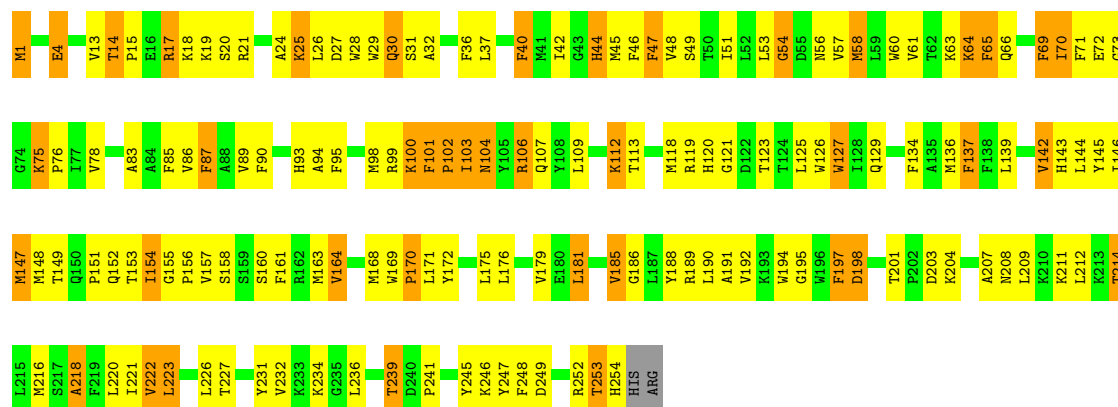
• Molecule 3: Fumarate reductase cytochrome b subunit

Chain F: 39% 45% 16%



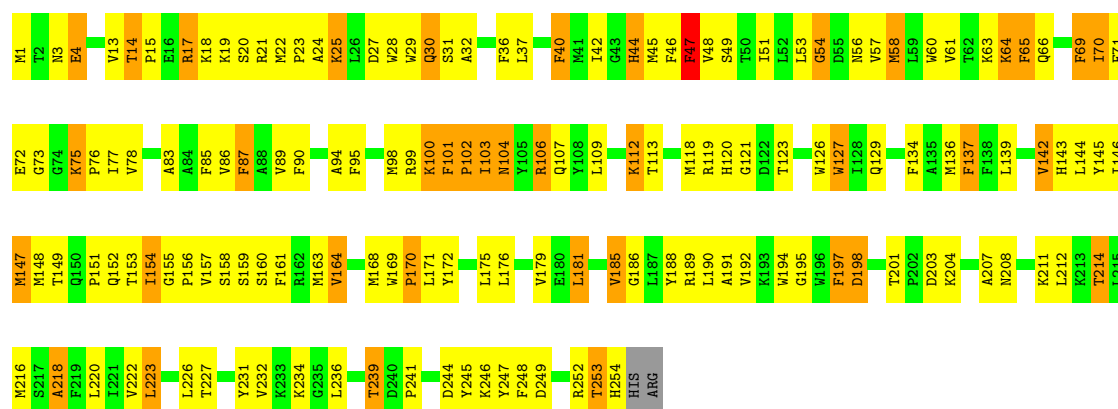
• Molecule 3: Fumarate reductase cytochrome b subunit

Chain I: 39% 44% 16%



• Molecule 3: Fumarate reductase cytochrome b subunit

Chain L: 39% 45% 15% .



4 Data and refinement statistics

Xtrriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	81.07Å 290.24Å 153.61Å 90.00° 95.73° 90.00°	Depositor
Resolution (Å)	30.00 – 3.10	Depositor
% Data completeness (in resolution range)	80.8 (30.00-3.10)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	0.06	Depositor
Refinement program	CNS 1.0	Depositor
R, R_{free}	0.283 , 0.291	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	37072	wwPDB-VP
Average B, all atoms (Å ²)	84.0	wwPDB-VP

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: NA, F3S, SF4, LMT, MLA, FES, HEM, FAD

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.66	0/5189	1.20	65/6996 (0.9%)
1	D	0.66	0/5189	1.20	65/6996 (0.9%)
1	G	0.66	0/5189	1.20	65/6996 (0.9%)
1	J	0.66	0/5189	1.20	64/6996 (0.9%)
2	B	0.58	1/1931 (0.1%)	1.13	15/2604 (0.6%)
2	E	0.58	1/1931 (0.1%)	1.13	14/2604 (0.5%)
2	H	0.58	1/1931 (0.1%)	1.13	15/2604 (0.6%)
2	K	0.58	1/1931 (0.1%)	1.13	15/2604 (0.6%)
3	C	0.65	0/2146	1.08	18/2904 (0.6%)
3	F	0.65	0/2146	1.08	18/2904 (0.6%)
3	I	0.65	0/2146	1.07	17/2904 (0.6%)
3	L	0.65	0/2146	1.08	17/2904 (0.6%)
All	All	0.64	4/37064 (0.0%)	1.16	388/50016 (0.8%)

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	H	1	MET	SD-CE	5.56	1.93	1.79
2	K	1	MET	SD-CE	5.54	1.93	1.79
2	B	1	MET	SD-CE	5.54	1.93	1.79
2	E	1	MET	SD-CE	5.53	1.93	1.79

All (388) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	J	411	SER	N-CA-C	-12.72	98.27	114.04
1	A	411	SER	N-CA-C	-12.70	98.30	114.04
1	D	411	SER	N-CA-C	-12.69	98.31	114.04
1	G	411	SER	N-CA-C	-12.67	98.33	114.04
1	J	287	PHE	N-CA-C	-11.20	99.82	113.15

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	287	PHE	N-CA-C	-11.18	99.84	113.15
1	A	287	PHE	N-CA-C	-11.16	99.87	113.15
1	G	287	PHE	N-CA-C	-11.12	99.92	113.15
1	A	399	MET	N-CA-C	-11.09	97.99	112.41
1	G	399	MET	N-CA-C	-11.09	98.00	112.41
1	J	399	MET	N-CA-C	-11.08	98.01	112.41
1	D	399	MET	N-CA-C	-11.07	98.02	112.41
1	A	283	ASP	N-CA-C	-11.04	99.33	111.36
1	D	283	ASP	N-CA-C	-11.04	99.33	111.36
1	G	283	ASP	N-CA-C	-11.04	99.33	111.36
1	J	283	ASP	N-CA-C	-11.03	99.34	111.36
2	K	158	ILE	N-CA-C	-10.47	102.49	112.96
2	H	158	ILE	N-CA-C	-10.45	102.52	112.96
2	B	158	ILE	N-CA-C	-10.44	102.52	112.96
2	E	158	ILE	N-CA-C	-10.42	102.54	112.96
3	L	42	ILE	N-CA-C	-9.82	103.36	111.81
3	I	42	ILE	N-CA-C	-9.79	103.39	111.81
3	C	42	ILE	N-CA-C	-9.77	103.40	111.81
3	F	42	ILE	N-CA-C	-9.76	103.42	111.81
1	D	257	HIS	CA-C-N	9.74	129.86	119.05
1	D	257	HIS	C-N-CA	9.74	129.86	119.05
1	G	257	HIS	CA-C-N	9.72	129.84	119.05
1	G	257	HIS	C-N-CA	9.72	129.84	119.05
1	A	257	HIS	CA-C-N	9.71	129.83	119.05
1	A	257	HIS	C-N-CA	9.71	129.83	119.05
1	J	257	HIS	CA-C-N	9.70	129.82	119.05
1	J	257	HIS	C-N-CA	9.70	129.82	119.05
1	D	568	TRP	CA-C-N	9.37	128.99	119.24
1	D	568	TRP	C-N-CA	9.37	128.99	119.24
1	G	568	TRP	CA-C-N	9.34	128.95	119.24
1	G	568	TRP	C-N-CA	9.34	128.95	119.24
1	A	568	TRP	CA-C-N	9.34	128.95	119.24
1	A	568	TRP	C-N-CA	9.34	128.95	119.24
1	J	568	TRP	CA-C-N	9.31	128.92	119.24
1	J	568	TRP	C-N-CA	9.31	128.92	119.24
1	G	616	ILE	N-CA-C	-8.91	103.16	111.45
1	J	616	ILE	N-CA-C	-8.88	103.19	111.45
1	D	616	ILE	N-CA-C	-8.87	103.20	111.45
1	A	616	ILE	N-CA-C	-8.87	103.20	111.45
1	G	591	ALA	CA-C-N	8.87	130.92	119.84
1	G	591	ALA	C-N-CA	8.87	130.92	119.84
1	D	591	ALA	CA-C-N	8.86	130.91	119.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	591	ALA	C-N-CA	8.86	130.91	119.84
1	A	591	ALA	CA-C-N	8.85	130.91	119.84
1	A	591	ALA	C-N-CA	8.85	130.91	119.84
1	J	591	ALA	CA-C-N	8.84	130.89	119.84
1	J	591	ALA	C-N-CA	8.84	130.89	119.84
1	G	271	GLY	N-CA-C	-8.39	105.09	114.40
1	A	271	GLY	N-CA-C	-8.37	105.11	114.40
1	D	271	GLY	N-CA-C	-8.36	105.12	114.40
1	J	271	GLY	N-CA-C	-8.36	105.12	114.40
3	L	102	PRO	N-CA-C	-8.22	98.30	111.38
3	F	102	PRO	N-CA-C	-8.22	98.31	111.38
3	C	102	PRO	N-CA-C	-8.22	98.32	111.38
3	I	102	PRO	N-CA-C	-8.21	98.32	111.38
2	K	149	ASP	N-CA-C	-8.16	102.89	113.17
2	B	149	ASP	N-CA-C	-8.14	102.91	113.17
2	H	149	ASP	N-CA-C	-8.13	102.93	113.17
2	E	149	ASP	N-CA-C	-8.12	102.94	113.17
1	J	292	GLU	CA-C-N	7.94	129.77	119.84
1	J	292	GLU	C-N-CA	7.94	129.77	119.84
1	A	292	GLU	CA-C-N	7.94	129.76	119.84
1	A	292	GLU	C-N-CA	7.94	129.76	119.84
1	D	292	GLU	CA-C-N	7.94	129.76	119.84
1	D	292	GLU	C-N-CA	7.94	129.76	119.84
1	G	292	GLU	CA-C-N	7.92	129.75	119.84
1	G	292	GLU	C-N-CA	7.92	129.75	119.84
1	G	397	TRP	N-CA-C	-7.78	102.80	111.82
1	D	397	TRP	N-CA-C	-7.74	102.84	111.82
1	A	397	TRP	N-CA-C	-7.74	102.84	111.82
1	J	397	TRP	N-CA-C	-7.74	102.85	111.82
2	H	167	ARG	N-CA-C	-7.43	97.13	109.46
2	E	167	ARG	N-CA-C	-7.42	97.15	109.46
2	K	167	ARG	N-CA-C	-7.42	97.15	109.46
2	B	167	ARG	N-CA-C	-7.41	97.16	109.46
1	J	222	ILE	N-CA-C	-7.03	103.86	113.00
1	D	222	ILE	N-CA-C	-7.02	103.88	113.00
1	D	314	LYS	N-CA-C	-7.00	105.09	112.93
1	G	314	LYS	N-CA-C	-7.00	105.09	112.93
1	A	222	ILE	N-CA-C	-6.99	103.91	113.00
1	G	222	ILE	N-CA-C	-6.99	103.91	113.00
1	A	314	LYS	N-CA-C	-6.97	105.12	112.93
1	J	314	LYS	N-CA-C	-6.95	105.14	112.93
1	G	61	SER	N-CA-C	-6.91	104.72	113.01

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	61	SER	N-CA-C	-6.90	104.72	113.01
1	J	61	SER	N-CA-C	-6.88	104.75	113.01
1	D	61	SER	N-CA-C	-6.88	104.75	113.01
3	F	90	PHE	N-CA-C	-6.80	101.16	111.56
3	C	90	PHE	N-CA-C	-6.79	101.17	111.56
3	L	90	PHE	N-CA-C	-6.79	101.17	111.56
3	I	90	PHE	N-CA-C	-6.79	101.18	111.56
2	K	54	ASP	N-CA-C	6.75	119.53	108.52
2	B	54	ASP	N-CA-C	6.74	119.51	108.52
2	E	54	ASP	N-CA-C	6.73	119.49	108.52
2	H	54	ASP	N-CA-C	6.73	119.49	108.52
2	E	183	MET	N-CA-C	-6.73	103.64	110.97
1	J	278	ILE	N-CA-C	6.72	119.81	108.86
1	G	278	ILE	N-CA-C	6.71	119.80	108.86
1	A	278	ILE	N-CA-C	6.71	119.80	108.86
1	D	278	ILE	N-CA-C	6.69	119.77	108.86
2	B	183	MET	N-CA-C	-6.68	103.68	110.97
2	K	183	MET	N-CA-C	-6.67	103.70	110.97
2	H	183	MET	N-CA-C	-6.66	103.71	110.97
2	E	141	VAL	N-CA-C	-6.62	104.40	110.82
2	H	141	VAL	N-CA-C	-6.60	104.42	110.82
2	K	141	VAL	N-CA-C	-6.59	104.43	110.82
2	B	141	VAL	N-CA-C	-6.59	104.43	110.82
2	K	112	ASN	N-CA-C	-6.59	104.96	112.87
2	E	110	TRP	N-CA-C	-6.56	103.33	112.45
2	E	112	ASN	N-CA-C	-6.55	105.00	112.87
2	B	112	ASN	N-CA-C	-6.55	105.01	112.87
1	J	258	PRO	N-CA-C	6.53	122.61	113.53
2	H	112	ASN	N-CA-C	-6.52	105.04	112.87
2	B	110	TRP	N-CA-C	-6.52	103.38	112.45
1	A	258	PRO	N-CA-C	6.52	122.59	113.53
1	G	258	PRO	N-CA-C	6.51	122.58	113.53
2	K	110	TRP	N-CA-C	-6.51	103.40	112.45
1	D	258	PRO	N-CA-C	6.51	122.58	113.53
2	H	110	TRP	N-CA-C	-6.50	103.41	112.45
3	L	87	PHE	N-CA-C	-6.50	105.50	113.50
3	C	87	PHE	N-CA-C	-6.48	105.53	113.50
3	I	87	PHE	N-CA-C	-6.47	105.55	113.50
3	F	87	PHE	N-CA-C	-6.45	105.57	113.50
1	J	297	GLU	N-CA-C	-6.37	101.06	110.48
1	G	237	THR	N-CA-C	-6.35	104.28	111.14
1	A	237	THR	N-CA-C	-6.35	104.28	111.14

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	297	GLU	N-CA-C	-6.35	101.09	110.48
1	G	297	GLU	N-CA-C	-6.34	101.09	110.48
1	J	237	THR	N-CA-C	-6.34	104.29	111.14
1	D	297	GLU	N-CA-C	-6.34	101.10	110.48
1	D	237	THR	N-CA-C	-6.30	104.33	111.14
1	G	337	HIS	N-CA-C	-6.23	105.64	113.18
1	A	337	HIS	N-CA-C	-6.22	105.65	113.18
1	J	337	HIS	N-CA-C	-6.21	105.67	113.18
1	D	337	HIS	N-CA-C	-6.19	105.69	113.18
3	I	218	ALA	N-CA-C	-6.19	104.80	112.90
3	F	218	ALA	N-CA-C	-6.17	104.81	112.90
3	L	218	ALA	N-CA-C	-6.17	104.82	112.90
3	C	218	ALA	N-CA-C	-6.17	104.82	112.90
1	D	93	ALA	CA-C-N	6.05	125.53	119.24
1	D	93	ALA	C-N-CA	6.05	125.53	119.24
1	J	288	MET	CA-C-N	-6.04	112.29	119.84
1	J	288	MET	C-N-CA	-6.04	112.29	119.84
1	D	299	ALA	N-CA-C	-6.04	99.90	109.07
1	J	330	ILE	N-CA-C	-6.04	106.44	112.17
1	A	299	ALA	N-CA-C	-6.03	99.91	109.07
1	A	290	ASP	N-CA-C	-6.03	102.34	111.56
1	A	330	ILE	N-CA-C	-6.03	106.44	112.17
1	A	288	MET	CA-C-N	-6.02	112.32	119.84
1	A	288	MET	C-N-CA	-6.02	112.32	119.84
1	D	290	ASP	N-CA-C	-6.01	102.36	111.56
1	G	93	ALA	CA-C-N	6.01	125.50	119.24
1	G	93	ALA	C-N-CA	6.01	125.50	119.24
1	D	288	MET	CA-C-N	-6.01	112.33	119.84
1	D	288	MET	C-N-CA	-6.01	112.33	119.84
1	D	330	ILE	N-CA-C	-6.01	106.46	112.17
1	G	290	ASP	N-CA-C	-6.01	102.37	111.56
1	G	299	ALA	N-CA-C	-6.01	99.94	109.07
1	G	288	MET	CA-C-N	-6.00	112.33	119.84
1	G	288	MET	C-N-CA	-6.00	112.33	119.84
1	J	93	ALA	CA-C-N	6.00	125.48	119.24
1	J	93	ALA	C-N-CA	6.00	125.48	119.24
1	J	290	ASP	N-CA-C	-5.99	102.39	111.56
1	G	487	LEU	N-CA-C	-5.99	106.62	112.97
1	J	299	ALA	N-CA-C	-5.99	99.97	109.07
1	A	93	ALA	CA-C-N	5.99	125.47	119.24
1	A	93	ALA	C-N-CA	5.99	125.47	119.24
1	J	487	LEU	N-CA-C	-5.98	106.63	112.97

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	487	LEU	N-CA-C	-5.97	106.64	112.97
1	A	487	LEU	N-CA-C	-5.97	106.64	112.97
1	G	330	ILE	N-CA-C	-5.96	106.50	112.17
3	I	17	ARG	N-CA-C	5.94	117.86	110.91
3	L	17	ARG	N-CA-C	5.92	117.84	110.91
3	C	17	ARG	N-CA-C	5.92	117.84	110.91
3	F	17	ARG	N-CA-C	5.92	117.84	110.91
1	G	625	ALA	N-CA-C	-5.89	104.94	111.36
1	D	336	LYS	N-CA-C	-5.89	106.74	114.04
3	L	226	LEU	N-CA-C	-5.89	104.78	111.14
1	J	336	LYS	N-CA-C	-5.89	106.74	114.04
1	J	625	ALA	N-CA-C	-5.88	104.95	111.36
1	A	336	LYS	N-CA-C	-5.88	106.75	114.04
1	A	625	ALA	N-CA-C	-5.87	104.96	111.36
3	F	226	LEU	N-CA-C	-5.87	104.80	111.14
1	G	336	LYS	N-CA-C	-5.87	106.76	114.04
3	C	226	LEU	N-CA-C	-5.86	104.81	111.14
3	I	226	LEU	N-CA-C	-5.85	104.82	111.14
1	D	360	LYS	N-CA-C	5.84	118.76	109.65
1	D	625	ALA	N-CA-C	-5.83	105.00	111.36
1	D	270	GLU	N-CA-C	-5.83	106.17	113.28
1	J	360	LYS	N-CA-C	5.83	118.74	109.65
1	G	570	ASN	CA-C-N	5.83	125.20	118.85
1	G	570	ASN	C-N-CA	5.83	125.20	118.85
3	I	65	PHE	N-CA-C	-5.83	105.43	112.54
1	J	270	GLU	N-CA-C	-5.82	106.18	113.28
1	D	151	TYR	N-CA-C	5.82	117.91	109.07
1	A	151	TYR	N-CA-C	5.82	117.91	109.07
1	G	151	TYR	N-CA-C	5.81	117.91	109.07
1	G	270	GLU	N-CA-C	-5.81	106.19	113.28
1	A	270	GLU	N-CA-C	-5.81	106.19	113.28
1	A	360	LYS	N-CA-C	5.81	118.72	109.65
1	G	489	LYS	N-CA-C	-5.80	105.46	112.54
3	F	252	ARG	N-CA-C	-5.80	105.31	113.20
1	D	489	LYS	N-CA-C	-5.80	105.46	112.54
1	G	360	LYS	N-CA-C	5.80	118.70	109.65
1	A	489	LYS	N-CA-C	-5.80	105.47	112.54
1	J	151	TYR	N-CA-C	5.80	117.88	109.07
3	C	65	PHE	N-CA-C	-5.79	105.47	112.54
3	I	252	ARG	N-CA-C	-5.79	105.32	113.20
1	A	570	ASN	CA-C-N	5.79	125.16	118.85
1	A	570	ASN	C-N-CA	5.79	125.16	118.85

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	J	433	VAL	N-CA-C	5.79	117.77	108.85
3	C	252	ARG	N-CA-C	-5.78	105.33	113.20
3	L	252	ARG	N-CA-C	-5.78	105.34	113.20
3	F	65	PHE	N-CA-C	-5.78	105.49	112.54
1	J	570	ASN	CA-C-N	5.78	125.15	118.85
1	J	570	ASN	C-N-CA	5.78	125.15	118.85
1	D	88	MET	N-CA-C	-5.78	104.89	111.07
3	L	65	PHE	N-CA-C	-5.78	105.49	112.54
1	D	433	VAL	N-CA-C	5.76	117.72	108.85
1	J	489	LYS	N-CA-C	-5.76	105.51	112.54
1	A	433	VAL	N-CA-C	5.76	117.72	108.85
1	G	433	VAL	N-CA-C	5.75	117.70	108.85
1	D	570	ASN	CA-C-N	5.75	125.11	118.85
1	D	570	ASN	C-N-CA	5.75	125.11	118.85
1	A	88	MET	N-CA-C	-5.73	104.94	111.07
1	J	88	MET	N-CA-C	-5.72	104.94	111.07
2	H	218	CYS	CA-C-N	5.72	125.43	119.82
2	H	218	CYS	C-N-CA	5.72	125.43	119.82
2	B	218	CYS	CA-C-N	5.71	125.42	119.82
2	B	218	CYS	C-N-CA	5.71	125.42	119.82
1	G	88	MET	N-CA-C	-5.70	104.97	111.07
2	K	218	CYS	CA-C-N	5.68	125.39	119.82
2	K	218	CYS	C-N-CA	5.68	125.39	119.82
1	J	131	PHE	N-CA-C	-5.67	106.22	113.02
1	A	131	PHE	N-CA-C	-5.66	106.23	113.02
1	D	131	PHE	N-CA-C	-5.66	106.23	113.02
2	E	218	CYS	CA-C-N	5.66	125.36	119.82
2	E	218	CYS	C-N-CA	5.66	125.36	119.82
1	G	131	PHE	N-CA-C	-5.66	106.23	113.02
2	H	238	VAL	N-CA-C	5.66	117.77	109.63
2	B	238	VAL	N-CA-C	5.65	117.76	109.63
2	E	238	VAL	N-CA-C	5.63	117.74	109.63
3	C	164	VAL	N-CA-C	5.62	116.45	111.90
3	I	164	VAL	N-CA-C	5.62	116.45	111.90
2	K	238	VAL	N-CA-C	5.62	117.72	109.63
3	F	164	VAL	N-CA-C	5.61	116.45	111.90
3	L	164	VAL	N-CA-C	5.61	116.44	111.90
1	D	605	GLU	N-CA-C	5.60	118.40	110.50
1	A	605	GLU	N-CA-C	5.60	118.39	110.50
3	F	106	ARG	N-CA-C	5.59	117.07	110.97
3	L	106	ARG	N-CA-C	5.59	117.06	110.97
1	J	605	GLU	N-CA-C	5.58	118.37	110.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	I	106	ARG	N-CA-C	5.58	117.05	110.97
3	C	106	ARG	N-CA-C	5.57	117.04	110.97
1	G	605	GLU	N-CA-C	5.57	118.36	110.50
2	B	2	GLY	N-CA-C	-5.56	107.34	114.85
2	E	203	ASP	N-CA-C	-5.56	106.49	113.72
3	F	30	GLN	N-CA-C	-5.56	105.12	111.07
2	K	2	GLY	N-CA-C	-5.56	107.35	114.85
2	K	194	ASP	N-CA-C	-5.55	105.31	111.36
2	H	2	GLY	N-CA-C	-5.55	107.36	114.85
3	C	30	GLN	N-CA-C	-5.55	105.14	111.07
2	E	194	ASP	N-CA-C	-5.54	105.32	111.36
2	B	194	ASP	N-CA-C	-5.54	105.32	111.36
1	D	634	GLN	N-CA-C	-5.54	104.46	111.11
1	G	634	GLN	N-CA-C	-5.54	104.46	111.11
2	H	194	ASP	N-CA-C	-5.52	105.34	111.36
3	I	30	GLN	N-CA-C	-5.52	105.16	111.07
2	E	2	GLY	N-CA-C	-5.52	107.40	114.85
2	K	203	ASP	N-CA-C	-5.52	106.55	113.72
1	A	634	GLN	N-CA-C	-5.51	104.49	111.11
2	B	203	ASP	N-CA-C	-5.51	106.55	113.72
2	H	203	ASP	N-CA-C	-5.51	106.56	113.72
1	J	541	THR	N-CA-C	5.51	118.15	109.39
3	L	30	GLN	N-CA-C	-5.51	105.18	111.07
1	D	140	ASP	N-CA-C	-5.50	101.50	110.20
1	J	634	GLN	N-CA-C	-5.49	104.52	111.11
1	A	140	ASP	N-CA-C	-5.49	101.53	110.20
1	A	541	THR	N-CA-C	5.49	118.12	109.39
1	G	541	THR	N-CA-C	5.49	118.11	109.39
1	D	541	THR	N-CA-C	5.48	118.11	109.39
1	J	140	ASP	N-CA-C	-5.48	101.54	110.20
1	G	140	ASP	N-CA-C	-5.47	101.55	110.20
1	G	243	THR	N-CA-C	-5.47	106.45	113.23
1	J	243	THR	N-CA-C	-5.47	106.45	113.23
1	A	243	THR	N-CA-C	-5.47	106.45	113.23
1	D	243	THR	N-CA-C	-5.45	106.48	113.23
3	L	244	ASP	N-CA-C	-5.39	99.72	108.41
1	D	69	HIS	N-CA-C	-5.39	105.30	111.07
3	L	170	PRO	N-CA-C	-5.39	106.18	113.40
3	L	25	LYS	N-CA-C	-5.38	105.52	111.71
3	C	244	ASP	N-CA-C	-5.38	99.74	108.41
1	D	279	LEU	N-CA-C	5.38	117.49	109.59
3	F	25	LYS	N-CA-C	-5.37	105.54	111.71

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	69	HIS	N-CA-C	-5.37	105.33	111.07
3	C	25	LYS	N-CA-C	-5.36	105.54	111.71
3	C	170	PRO	N-CA-C	-5.36	106.21	113.40
3	F	244	ASP	N-CA-C	-5.36	99.78	108.41
1	J	69	HIS	N-CA-C	-5.36	105.33	111.07
1	A	69	HIS	N-CA-C	-5.36	105.34	111.07
3	I	170	PRO	N-CA-C	-5.35	106.23	113.40
1	J	584	ASP	N-CA-C	5.35	117.02	108.41
1	A	624	GLU	N-CA-C	-5.35	105.89	112.90
3	F	170	PRO	N-CA-C	-5.34	106.24	113.40
1	J	624	GLU	N-CA-C	-5.34	105.90	112.90
1	D	624	GLU	N-CA-C	-5.34	105.90	112.90
1	A	279	LEU	N-CA-C	5.34	117.44	109.59
3	I	25	LYS	N-CA-C	-5.34	105.57	111.71
1	D	204	ILE	N-CA-C	5.34	115.94	108.89
1	J	204	ILE	N-CA-C	5.34	115.94	108.89
1	G	624	GLU	N-CA-C	-5.33	105.91	112.90
1	D	584	ASP	N-CA-C	5.33	116.99	108.41
1	A	584	ASP	N-CA-C	5.33	116.99	108.41
1	D	587	GLU	N-CA-C	-5.33	106.54	114.64
1	A	204	ILE	N-CA-C	5.32	115.92	108.89
1	G	584	ASP	N-CA-C	5.32	116.97	108.41
1	J	279	LEU	N-CA-C	5.32	117.40	109.59
1	G	279	LEU	N-CA-C	5.31	117.40	109.59
1	G	587	GLU	N-CA-C	-5.31	106.56	114.64
1	G	204	ILE	N-CA-C	5.31	115.89	108.89
1	A	587	GLU	N-CA-C	-5.30	106.58	114.64
1	J	587	GLU	N-CA-C	-5.30	106.58	114.64
1	G	346	GLN	N-CA-C	-5.26	106.18	113.18
1	G	395	ALA	N-CA-C	5.26	118.27	109.96
1	J	346	GLN	N-CA-C	-5.25	106.20	113.18
1	A	346	GLN	N-CA-C	-5.24	106.21	113.18
1	D	395	ALA	N-CA-C	5.24	118.24	109.96
1	D	346	GLN	N-CA-C	-5.22	106.23	113.18
1	A	395	ALA	N-CA-C	5.22	118.21	109.96
1	D	579	GLU	N-CA-C	-5.22	101.37	109.72
1	A	579	GLU	N-CA-C	-5.22	101.37	109.72
1	G	356	ASP	CA-C-N	5.22	126.36	119.84
1	G	356	ASP	C-N-CA	5.22	126.36	119.84
1	G	579	GLU	N-CA-C	-5.22	101.37	109.72
1	D	356	ASP	CA-C-N	5.21	126.35	119.84
1	D	356	ASP	C-N-CA	5.21	126.35	119.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	181	LEU	N-CA-C	-5.21	105.75	112.68
3	L	181	LEU	N-CA-C	-5.21	105.75	112.68
1	J	356	ASP	CA-C-N	5.21	126.35	119.84
1	J	356	ASP	C-N-CA	5.21	126.35	119.84
1	J	395	ALA	N-CA-C	5.21	118.19	109.96
1	J	579	GLU	N-CA-C	-5.20	101.40	109.72
1	D	338	ILE	CB-CA-C	-5.20	106.50	111.44
3	F	47	PHE	N-CA-C	-5.19	105.59	112.34
1	A	356	ASP	CA-C-N	5.19	126.33	119.84
1	A	356	ASP	C-N-CA	5.19	126.33	119.84
3	I	181	LEU	N-CA-C	-5.19	105.78	112.68
3	F	181	LEU	N-CA-C	-5.19	105.78	112.68
1	G	338	ILE	CB-CA-C	-5.19	106.51	111.44
3	I	47	PHE	N-CA-C	-5.18	105.60	112.34
3	L	47	PHE	N-CA-C	-5.18	105.60	112.34
3	C	47	PHE	N-CA-C	-5.18	105.60	112.34
1	A	342	LEU	N-CA-C	-5.17	99.79	110.80
1	A	338	ILE	CB-CA-C	-5.16	106.53	111.44
1	D	342	LEU	N-CA-C	-5.16	99.80	110.80
1	G	342	LEU	N-CA-C	-5.16	99.80	110.80
1	J	338	ILE	CB-CA-C	-5.16	106.54	111.44
1	J	342	LEU	N-CA-C	-5.16	99.82	110.80
1	G	238	ALA	N-CA-C	5.15	117.56	111.33
1	J	396	CYS	N-CA-C	5.15	115.80	108.54
1	D	294	GLU	N-CA-C	-5.14	99.84	110.80
1	G	294	GLU	N-CA-C	-5.14	99.85	110.80
1	J	294	GLU	N-CA-C	-5.13	99.87	110.80
1	A	238	ALA	N-CA-C	5.13	117.54	111.33
1	A	294	GLU	N-CA-C	-5.13	99.88	110.80
1	D	238	ALA	N-CA-C	5.13	117.53	111.33
1	A	396	CYS	N-CA-C	5.11	115.74	108.54
1	J	238	ALA	N-CA-C	5.11	117.51	111.33
1	D	396	CYS	N-CA-C	5.10	115.74	108.54
1	G	396	CYS	N-CA-C	5.08	115.70	108.54
1	J	561	LEU	N-CA-C	-5.07	100.01	110.80
1	A	561	LEU	N-CA-C	-5.06	100.03	110.80
1	G	412	GLU	N-CA-C	-5.05	105.85	111.36
1	G	561	LEU	N-CA-C	-5.05	100.04	110.80
1	D	561	LEU	N-CA-C	-5.05	100.05	110.80
3	I	222	VAL	N-CA-C	-5.03	106.17	110.74
1	A	412	GLU	N-CA-C	-5.02	105.89	111.36
3	F	222	VAL	N-CA-C	-5.02	106.17	110.74

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	412	GLU	N-CA-C	-5.02	105.89	111.36
2	K	109	ASN	N-CA-C	5.01	121.48	110.80
2	H	109	ASN	N-CA-C	5.01	121.48	110.80
2	B	109	ASN	N-CA-C	5.00	121.46	110.80
3	C	222	VAL	N-CA-C	-5.00	106.19	110.74

There are no chirality outliers.

There are no planarity outliers.

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	5093	0	5069	437	11
1	D	5093	0	5069	439	16
1	G	5093	0	5069	446	13
1	J	5093	0	5069	442	14
2	B	1894	0	1861	116	0
2	E	1894	0	1861	116	0
2	H	1894	0	1861	118	0
2	K	1894	0	1861	114	0
3	C	2080	0	2103	174	0
3	F	2080	0	2103	174	0
3	I	2080	0	2103	178	0
3	L	2080	0	2103	173	0
4	A	53	0	29	4	0
4	D	53	0	29	4	0
4	G	53	0	29	4	0
4	J	53	0	29	4	0
5	A	7	0	2	5	0
5	D	7	0	2	5	0
5	G	7	0	2	6	0
5	J	7	0	2	5	0
6	A	1	0	0	0	0
6	D	1	0	0	0	0
6	G	1	0	0	0	0
6	J	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	B	4	0	0	0	0
7	E	4	0	0	0	0
7	H	4	0	0	0	0
7	K	4	0	0	0	0
8	B	7	0	0	2	0
8	E	7	0	0	2	0
8	H	7	0	0	2	0
8	K	7	0	0	2	0
9	B	8	0	0	0	0
9	E	8	0	0	0	0
9	H	8	0	0	0	0
9	K	8	0	0	0	0
10	C	86	0	60	12	0
10	F	86	0	60	13	0
10	I	86	0	60	12	0
10	L	86	0	60	12	0
11	C	35	0	46	3	0
11	F	35	0	46	3	0
11	I	35	0	46	3	0
11	L	35	0	46	3	0
All	All	37072	0	36680	2832	27

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 39.

All (2832) 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:D:216:THR:HG21	1:D:236:GLY:HA3	1.32	1.12
1:J:327:TRP:HB3	1:J:361:TRP:HB2	1.30	1.11
1:G:216:THR:HG21	1:G:236:GLY:HA3	1.32	1.09
3:L:152:GLN:HE21	3:L:153:THR:HG23	1.18	1.07
2:E:1:MET:HE3	2:E:31:ALA:HA	1.36	1.06
1:G:327:TRP:HB3	1:G:361:TRP:HB2	1.30	1.06
1:J:216:THR:HG21	1:J:236:GLY:HA3	1.32	1.06
1:D:327:TRP:HB3	1:D:361:TRP:HB2	1.30	1.06
3:C:152:GLN:HE21	3:C:153:THR:HG23	1.18	1.06
1:A:216:THR:HG21	1:A:236:GLY:HA3	1.32	1.05
1:A:327:TRP:HB3	1:A:361:TRP:HB2	1.30	1.05
3:I:152:GLN:HE21	3:I:153:THR:HG23	1.18	1.04
2:B:1:MET:HE3	2:B:31:ALA:HA	1.36	1.04

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:152:GLN:HE21	3:F:153:THR:HG23	1.18	1.04
2:H:1:MET:HE3	2:H:31:ALA:HA	1.36	1.03
2:K:1:MET:HE3	2:K:31:ALA:HA	1.36	1.03
3:L:30:GLN:HE22	3:L:100:LYS:HE3	1.26	1.01
3:C:30:GLN:HE22	3:C:100:LYS:HE3	1.26	1.00
3:F:30:GLN:HE22	3:F:100:LYS:HE3	1.26	0.99
3:I:30:GLN:HE22	3:I:100:LYS:HE3	1.26	0.99
1:J:281:ASP:HB2	1:J:285:HIS:CD2	2.01	0.96
3:F:142:VAL:HG21	3:F:171:LEU:HD11	1.48	0.95
1:A:281:ASP:HB2	1:A:285:HIS:CD2	2.01	0.95
1:A:269:THR:HG22	1:A:345:VAL:HG21	1.49	0.95
3:I:142:VAL:HG21	3:I:171:LEU:HD11	1.48	0.95
1:G:281:ASP:HB2	1:G:285:HIS:CD2	2.01	0.95
1:D:269:THR:HG22	1:D:345:VAL:HG21	1.49	0.95
1:D:281:ASP:HB2	1:D:285:HIS:CD2	2.01	0.94
3:L:142:VAL:HG21	3:L:171:LEU:HD11	1.48	0.94
1:G:269:THR:HG22	1:G:345:VAL:HG21	1.49	0.94
3:I:142:VAL:HG23	3:I:143:HIS:H	1.33	0.94
2:E:67:MET:HE3	2:E:76:ALA:HB2	1.50	0.93
3:F:142:VAL:HG23	3:F:143:HIS:H	1.33	0.93
2:H:67:MET:HE3	2:H:76:ALA:HB2	1.50	0.93
1:J:48:GLN:HG3	1:J:267:LEU:HD23	1.51	0.93
1:A:48:GLN:HG3	1:A:267:LEU:HD23	1.51	0.93
1:A:307:ARG:H	1:A:307:ARG:NH1	1.66	0.93
1:J:47:ALA:HB3	1:J:157:GLY:HA3	1.51	0.93
1:D:307:ARG:H	1:D:307:ARG:NH1	1.67	0.93
1:A:47:ALA:HB3	1:A:157:GLY:HA3	1.51	0.93
1:J:269:THR:HG22	1:J:345:VAL:HG21	1.49	0.93
2:B:67:MET:HE3	2:B:76:ALA:HB2	1.50	0.92
1:D:288:MET:HB3	1:D:289:PRO:CD	1.99	0.92
2:K:67:MET:HE3	2:K:76:ALA:HB2	1.51	0.92
3:C:142:VAL:HG21	3:C:171:LEU:HD11	1.48	0.92
1:G:48:GLN:HG3	1:G:267:LEU:HD23	1.51	0.92
3:C:142:VAL:HG23	3:C:143:HIS:H	1.33	0.91
1:G:288:MET:HB3	1:G:289:PRO:CD	1.99	0.91
1:G:307:ARG:H	1:G:307:ARG:NH1	1.67	0.91
3:L:142:VAL:HG23	3:L:143:HIS:H	1.33	0.91
1:A:288:MET:HB3	1:A:289:PRO:CD	1.99	0.91
1:D:48:GLN:HG3	1:D:267:LEU:HD23	1.51	0.91
1:J:288:MET:HB3	1:J:289:PRO:CD	1.99	0.91
1:A:119:ILE:HG22	1:A:120:ASN:H	1.35	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:47:ALA:HB3	1:G:157:GLY:HA3	1.51	0.90
1:G:279:LEU:HD23	1:G:328:LEU:HD13	1.54	0.90
1:J:307:ARG:H	1:J:307:ARG:NH1	1.66	0.90
1:J:404:ARG:HE	1:J:409:SER:HB2	1.36	0.90
1:D:47:ALA:HB3	1:D:157:GLY:HA3	1.51	0.90
1:G:404:ARG:HE	1:G:409:SER:HB2	1.36	0.90
1:D:344:ASP:O	1:D:348:ILE:HG12	1.71	0.90
1:A:344:ASP:O	1:A:348:ILE:HG12	1.71	0.90
1:A:346:GLN:HA	1:A:357:PRO:HG2	1.54	0.90
1:D:119:ILE:HG22	1:D:120:ASN:H	1.35	0.90
1:D:346:GLN:HA	1:D:357:PRO:HG2	1.54	0.90
1:J:346:GLN:HA	1:J:357:PRO:HG2	1.54	0.90
1:A:107:TRP:HA	1:A:152:THR:HG22	1.53	0.90
1:A:404:ARG:HE	1:A:409:SER:HB2	1.36	0.90
1:A:279:LEU:HD23	1:A:328:LEU:HD13	1.54	0.90
1:J:307:ARG:HH11	1:J:307:ARG:N	1.70	0.90
1:J:258:PRO:HA	1:J:366:PRO:HG3	1.54	0.89
1:J:119:ILE:HG22	1:J:120:ASN:H	1.35	0.89
1:D:279:LEU:HD23	1:D:328:LEU:HD13	1.54	0.89
1:J:107:TRP:HA	1:J:152:THR:HG22	1.53	0.89
1:G:307:ARG:HH11	1:G:307:ARG:N	1.70	0.89
1:G:344:ASP:O	1:G:348:ILE:HG12	1.71	0.89
1:J:344:ASP:O	1:J:348:ILE:HG12	1.72	0.89
1:G:346:GLN:HA	1:G:357:PRO:HG2	1.54	0.89
1:D:258:PRO:HA	1:D:366:PRO:HG3	1.54	0.89
1:D:307:ARG:HH11	1:D:307:ARG:N	1.70	0.89
1:G:119:ILE:HG22	1:G:120:ASN:H	1.36	0.89
3:I:142:VAL:HG12	3:L:142:VAL:HA	1.52	0.89
1:D:107:TRP:HA	1:D:152:THR:HG22	1.53	0.88
1:A:258:PRO:HA	1:A:366:PRO:HG3	1.54	0.88
1:G:258:PRO:HA	1:G:366:PRO:HG3	1.54	0.88
3:I:142:VAL:HA	3:L:142:VAL:HG12	1.54	0.88
1:A:307:ARG:HH11	1:A:307:ARG:N	1.70	0.88
1:J:279:LEU:HD23	1:J:328:LEU:HD13	1.54	0.88
3:C:142:VAL:HG12	3:F:142:VAL:HA	1.53	0.88
1:D:404:ARG:HE	1:D:409:SER:HB2	1.36	0.88
1:G:107:TRP:HA	1:G:152:THR:HG22	1.53	0.88
3:C:142:VAL:HA	3:F:142:VAL:HG12	1.54	0.87
3:C:30:GLN:NE2	3:C:100:LYS:HE3	1.90	0.87
3:F:30:GLN:NE2	3:F:100:LYS:HE3	1.90	0.87
2:K:138:GLU:HB2	2:K:141:VAL:HG23	1.56	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:30:GLN:NE2	3:I:100:LYS:HE3	1.90	0.86
1:J:262:PHE:HB3	1:J:363:PRO:O	1.76	0.86
1:A:262:PHE:HB3	1:A:363:PRO:O	1.76	0.85
1:J:482:ARG:HB3	1:J:487:LEU:HD11	1.58	0.85
2:H:138:GLU:HB2	2:H:141:VAL:HG23	1.56	0.85
1:A:482:ARG:HB3	1:A:487:LEU:HD11	1.58	0.85
2:E:138:GLU:HB2	2:E:141:VAL:HG23	1.56	0.85
1:D:262:PHE:HB3	1:D:363:PRO:O	1.76	0.85
2:B:138:GLU:HB2	2:B:141:VAL:HG23	1.56	0.85
1:D:482:ARG:HB3	1:D:487:LEU:HD11	1.58	0.85
1:G:262:PHE:HB3	1:G:363:PRO:O	1.77	0.85
3:L:30:GLN:NE2	3:L:100:LYS:HE3	1.90	0.85
3:C:253:THR:HG22	3:C:254:HIS:H	1.42	0.84
1:D:287:PHE:CE1	1:D:291:TYR:HB2	2.13	0.84
1:G:287:PHE:CE1	1:G:291:TYR:HB2	2.13	0.84
1:A:287:PHE:CE1	1:A:291:TYR:HB2	2.13	0.83
1:J:225:ASN:HB3	1:J:367:MET:HE3	1.61	0.83
3:F:253:THR:HG22	3:F:254:HIS:H	1.41	0.83
1:G:482:ARG:HB3	1:G:487:LEU:HD11	1.58	0.83
3:L:253:THR:HG22	3:L:254:HIS:H	1.41	0.83
1:A:225:ASN:HB3	1:A:367:MET:HE3	1.61	0.83
3:F:100:LYS:HG2	10:F:302:HEM:O1A	1.79	0.83
1:J:287:PHE:CE1	1:J:291:TYR:HB2	2.13	0.83
3:I:66:GLN:HB3	3:I:75:LYS:H	1.44	0.82
3:C:100:LYS:HG2	10:C:301:HEM:O1A	1.79	0.82
3:F:66:GLN:HB3	3:F:75:LYS:H	1.45	0.82
1:D:225:ASN:HB3	1:D:367:MET:HE3	1.60	0.82
3:I:253:THR:HG22	3:I:254:HIS:H	1.41	0.82
1:A:87:ARG:HD2	1:A:640:TYR:CE2	2.15	0.81
1:D:87:ARG:HD2	1:D:640:TYR:CE2	2.15	0.81
1:G:87:ARG:HD2	1:G:640:TYR:CE2	2.15	0.81
1:J:87:ARG:HD2	1:J:640:TYR:CE2	2.15	0.81
1:G:252:GLU:HA	1:G:533:VAL:HG13	1.63	0.81
1:A:118:ILE:HD13	1:A:123:LYS:HE3	1.63	0.81
1:J:118:ILE:HD13	1:J:123:LYS:HE3	1.63	0.81
1:G:225:ASN:HB3	1:G:367:MET:HE3	1.60	0.81
1:J:83:GLN:NE2	1:J:588:MET:HB3	1.95	0.81
1:D:83:GLN:NE2	1:D:588:MET:HB3	1.95	0.81
3:C:66:GLN:HB3	3:C:75:LYS:H	1.44	0.81
1:D:287:PHE:HB3	1:D:296:LYS:NZ	1.96	0.81
3:I:100:LYS:HG2	10:I:301:HEM:O1A	1.79	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:83:GLN:NE2	1:A:588:MET:HB3	1.95	0.80
3:L:100:LYS:HG2	10:L:302:HEM:O1A	1.79	0.80
3:F:142:VAL:HG23	3:F:143:HIS:N	1.96	0.80
1:G:83:GLN:NE2	1:G:588:MET:HB3	1.95	0.80
1:J:252:GLU:HA	1:J:533:VAL:HG13	1.63	0.80
3:I:142:VAL:HG23	3:I:143:HIS:N	1.96	0.80
1:D:118:ILE:HD13	1:D:123:LYS:HE3	1.63	0.80
1:J:87:ARG:HB3	1:J:640:TYR:CD2	2.17	0.80
1:A:287:PHE:HB3	1:A:296:LYS:NZ	1.96	0.80
3:L:66:GLN:HB3	3:L:75:LYS:H	1.45	0.80
1:D:252:GLU:HA	1:D:533:VAL:HG13	1.63	0.80
1:J:287:PHE:HB3	1:J:296:LYS:NZ	1.96	0.80
3:L:142:VAL:HG23	3:L:143:HIS:N	1.96	0.80
1:G:87:ARG:HB3	1:G:640:TYR:CD2	2.17	0.79
1:A:252:GLU:HA	1:A:533:VAL:HG13	1.63	0.79
1:G:208:VAL:HG11	1:G:440:LEU:HD11	1.64	0.79
1:J:208:VAL:HG11	1:J:440:LEU:HD11	1.64	0.79
1:D:208:VAL:HG11	1:D:440:LEU:HD11	1.64	0.79
1:G:287:PHE:HB3	1:G:296:LYS:NZ	1.96	0.79
1:A:216:THR:CG2	1:A:236:GLY:HA3	2.13	0.79
3:C:142:VAL:HG23	3:C:143:HIS:N	1.96	0.79
1:D:87:ARG:HB3	1:D:640:TYR:CD2	2.17	0.79
1:J:233:GLU:HB3	1:J:526:MET:HE3	1.65	0.79
1:A:208:VAL:HG11	1:A:440:LEU:HD11	1.64	0.78
1:G:118:ILE:HD13	1:G:123:LYS:HE3	1.63	0.78
1:A:83:GLN:HE21	1:A:588:MET:HB3	1.48	0.78
1:A:286:ARG:HD2	1:A:288:MET:HE3	1.66	0.78
1:J:286:ARG:HD2	1:J:288:MET:HE3	1.66	0.78
1:D:286:ARG:HD2	1:D:288:MET:HE3	1.66	0.78
1:G:286:ARG:HD2	1:G:288:MET:HE3	1.66	0.78
1:G:87:ARG:HD2	1:G:640:TYR:HE2	1.48	0.78
1:J:87:ARG:HD2	1:J:640:TYR:HE2	1.48	0.78
1:A:87:ARG:HB3	1:A:640:TYR:CD2	2.17	0.78
3:C:36:PHE:HD2	3:C:89:VAL:HG11	1.49	0.78
1:D:87:ARG:HD2	1:D:640:TYR:HE2	1.48	0.78
1:J:216:THR:CG2	1:J:236:GLY:HA3	2.13	0.77
1:G:233:GLU:HB3	1:G:526:MET:HE3	1.65	0.77
1:J:83:GLN:HE21	1:J:588:MET:HB3	1.48	0.77
1:A:360:LYS:CG	1:A:361:TRP:H	1.97	0.77
1:D:360:LYS:CG	1:D:361:TRP:H	1.97	0.77
1:G:241:LEU:HB2	1:G:248:LEU:HD21	1.66	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:233:GLU:HB3	1:A:526:MET:HE3	1.65	0.77
1:J:307:ARG:H	1:J:307:ARG:HH11	0.84	0.77
1:D:233:GLU:HB3	1:D:526:MET:HE3	1.65	0.77
1:D:327:TRP:CB	1:D:361:TRP:HB2	2.14	0.77
2:K:179:VAL:HG21	2:K:199:ILE:HD13	1.67	0.77
1:G:360:LYS:CG	1:G:361:TRP:H	1.97	0.77
3:L:36:PHE:HD2	3:L:89:VAL:HG11	1.49	0.77
2:H:179:VAL:HG21	2:H:199:ILE:HD13	1.67	0.76
1:J:360:LYS:CG	1:J:361:TRP:H	1.97	0.76
1:A:612:ARG:O	1:A:616:ILE:HG13	1.86	0.76
1:A:241:LEU:HB2	1:A:248:LEU:HD21	1.66	0.76
2:B:179:VAL:HG21	2:B:199:ILE:HD13	1.67	0.76
1:G:83:GLN:HE21	1:G:588:MET:HB3	1.48	0.76
1:D:241:LEU:HB2	1:D:248:LEU:HD21	1.66	0.76
3:L:69:PHE:HD1	3:L:70:ILE:HG13	1.50	0.76
1:D:216:THR:CG2	1:D:236:GLY:HA3	2.13	0.76
1:J:241:LEU:HB2	1:J:248:LEU:HD21	1.66	0.76
1:J:612:ARG:O	1:J:616:ILE:HG13	1.86	0.76
1:D:83:GLN:HE21	1:D:588:MET:HB3	1.48	0.76
1:D:404:ARG:NE	1:D:409:SER:HB2	2.00	0.76
3:F:36:PHE:HD2	3:F:89:VAL:HG11	1.49	0.76
1:G:540:ARG:HH22	1:G:562:ASN:ND2	1.84	0.76
1:J:294:GLU:O	1:J:295:LYS:HG2	1.86	0.76
1:A:404:ARG:NE	1:A:409:SER:HB2	2.00	0.76
1:D:294:GLU:O	1:D:295:LYS:HG2	1.86	0.76
1:G:404:ARG:NE	1:G:409:SER:HB2	2.00	0.76
3:C:179:VAL:HG21	10:C:302:HEM:HAC	1.66	0.76
3:F:69:PHE:HD1	3:F:70:ILE:HG13	1.50	0.76
1:G:294:GLU:O	1:G:295:LYS:HG2	1.86	0.76
1:J:404:ARG:NE	1:J:409:SER:HB2	2.00	0.76
1:G:612:ARG:O	1:G:616:ILE:HG13	1.86	0.76
3:I:179:VAL:HG21	10:I:302:HEM:HAC	1.66	0.76
3:C:29:TRP:HA	3:C:32:ALA:HB3	1.68	0.75
3:I:69:PHE:HD1	3:I:70:ILE:HG13	1.50	0.75
1:J:540:ARG:HH22	1:J:562:ASN:ND2	1.84	0.75
3:C:69:PHE:HD1	3:C:70:ILE:HG13	1.50	0.75
1:D:540:ARG:HH22	1:D:562:ASN:ND2	1.84	0.75
1:G:327:TRP:CB	1:G:361:TRP:HB2	2.14	0.75
3:I:36:PHE:HD2	3:I:89:VAL:HG11	1.49	0.75
1:A:286:ARG:HD2	1:A:288:MET:CE	2.17	0.75
1:D:286:ARG:HD2	1:D:288:MET:CE	2.17	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:286:ARG:HD2	1:J:288:MET:CE	2.17	0.75
3:L:146:ILE:C	3:L:148:MET:H	1.95	0.75
3:F:179:VAL:HG21	10:F:303:HEM:HAC	1.66	0.75
3:L:179:VAL:HG21	10:L:303:HEM:HAC	1.66	0.75
1:A:87:ARG:HD2	1:A:640:TYR:HE2	1.48	0.75
1:A:294:GLU:O	1:A:295:LYS:HG2	1.86	0.75
3:I:146:ILE:C	3:I:148:MET:H	1.95	0.75
3:C:146:ILE:C	3:C:148:MET:H	1.95	0.75
1:A:540:ARG:HH22	1:A:562:ASN:ND2	1.84	0.74
3:F:134:PHE:O	3:F:137:PHE:HB2	1.87	0.74
3:F:146:ILE:C	3:F:148:MET:H	1.95	0.74
1:G:286:ARG:HD2	1:G:288:MET:CE	2.17	0.74
3:I:134:PHE:O	3:I:137:PHE:HB2	1.87	0.74
3:C:134:PHE:O	3:C:137:PHE:HB2	1.87	0.74
1:J:277:GLY:HA3	1:J:330:ILE:HG22	1.70	0.74
3:L:29:TRP:HA	3:L:32:ALA:HB3	1.68	0.74
1:A:327:TRP:CB	1:A:361:TRP:HB2	2.14	0.74
2:E:179:VAL:HG21	2:E:199:ILE:HD13	1.67	0.74
3:F:76:PRO:HB2	3:F:151:PRO:HG2	1.70	0.74
1:G:277:GLY:HA3	1:G:330:ILE:HG22	1.70	0.74
1:J:327:TRP:CB	1:J:361:TRP:HB2	2.14	0.74
1:D:612:ARG:O	1:D:616:ILE:HG13	1.86	0.74
1:G:216:THR:CG2	1:G:236:GLY:HA3	2.13	0.74
1:G:307:ARG:H	1:G:307:ARG:HH11	0.84	0.74
3:I:29:TRP:HA	3:I:32:ALA:HB3	1.68	0.74
3:F:152:GLN:NE2	3:F:153:THR:HG23	2.00	0.73
3:F:29:TRP:HA	3:F:32:ALA:HB3	1.68	0.73
3:L:134:PHE:O	3:L:137:PHE:HB2	1.87	0.73
3:L:76:PRO:HB2	3:L:151:PRO:HG2	1.70	0.73
3:C:76:PRO:HB2	3:C:151:PRO:HG2	1.70	0.73
1:G:282:VAL:HG21	1:G:316:LYS:O	1.89	0.73
3:L:152:GLN:NE2	3:L:153:THR:HG23	2.00	0.73
1:D:307:ARG:H	1:D:307:ARG:HH11	0.84	0.73
1:G:282:VAL:HG22	1:G:318:VAL:HG12	1.71	0.73
1:G:141:PHE:CZ	5:G:702:MLA:HC22	2.24	0.72
1:A:141:PHE:CZ	5:A:702:MLA:HC22	2.24	0.72
3:F:249:ASP:HA	3:F:254:HIS:HB3	1.71	0.72
3:L:249:ASP:HA	3:L:254:HIS:HB3	1.71	0.72
3:I:249:ASP:HA	3:I:254:HIS:HB3	1.71	0.72
1:J:141:PHE:CZ	5:J:702:MLA:HC22	2.24	0.72
1:J:282:VAL:HG21	1:J:316:LYS:O	1.89	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:282:VAL:HG22	1:A:318:VAL:HG12	1.71	0.72
3:C:249:ASP:HA	3:C:254:HIS:HB3	1.71	0.72
1:D:2:LYS:HB2	1:D:2:LYS:NZ	2.05	0.72
1:G:327:TRP:HA	1:G:362:ALA:O	1.90	0.72
1:D:282:VAL:HG21	1:D:316:LYS:O	1.88	0.72
1:D:277:GLY:HA3	1:D:330:ILE:HG22	1.70	0.72
1:D:282:VAL:HG22	1:D:318:VAL:HG12	1.71	0.72
3:F:36:PHE:CD2	3:F:89:VAL:HG11	2.25	0.72
3:F:142:VAL:HG21	3:F:171:LEU:CD1	2.20	0.72
1:J:48:GLN:CG	1:J:267:LEU:HD23	2.19	0.72
1:A:2:LYS:HB2	1:A:2:LYS:NZ	2.05	0.72
1:A:277:GLY:HA3	1:A:330:ILE:HG22	1.70	0.72
1:A:307:ARG:H	1:A:307:ARG:HH11	0.84	0.72
1:J:2:LYS:NZ	1:J:2:LYS:HB2	2.05	0.72
3:C:36:PHE:CD2	3:C:89:VAL:HG11	2.25	0.72
1:D:327:TRP:HA	1:D:362:ALA:O	1.90	0.72
3:I:36:PHE:CD2	3:I:89:VAL:HG11	2.25	0.72
1:A:282:VAL:HG21	1:A:316:LYS:O	1.89	0.71
2:B:58:ARG:O	2:B:58:ARG:HG2	1.89	0.71
1:D:48:GLN:CG	1:D:267:LEU:HD23	2.19	0.71
1:D:141:PHE:CZ	5:D:702:MLA:HC22	2.24	0.71
1:J:282:VAL:HG22	1:J:318:VAL:HG12	1.71	0.71
1:J:299:ALA:HB1	1:J:303:VAL:HG11	1.72	0.71
1:A:327:TRP:HA	1:A:362:ALA:O	1.90	0.71
1:G:469:ARG:O	1:G:473:VAL:HG23	1.90	0.71
3:L:36:PHE:CD2	3:L:89:VAL:HG11	2.25	0.71
3:I:142:VAL:HG21	3:I:171:LEU:CD1	2.20	0.71
1:A:52:GLN:HG3	1:A:148:ARG:HG3	1.73	0.71
2:H:167:ARG:HH11	2:H:167:ARG:HG3	1.56	0.71
1:A:48:GLN:CG	1:A:267:LEU:HD23	2.19	0.71
1:A:252:GLU:HB2	1:A:537:ALA:HB2	1.72	0.71
1:D:252:GLU:HB2	1:D:537:ALA:HB2	1.72	0.71
1:D:287:PHE:HB3	1:D:296:LYS:HZ2	1.53	0.71
1:G:252:GLU:HB2	1:G:537:ALA:HB2	1.72	0.71
1:J:327:TRP:HA	1:J:362:ALA:O	1.90	0.71
1:A:299:ALA:HB1	1:A:303:VAL:HG11	1.72	0.71
1:D:469:ARG:O	1:D:473:VAL:HG23	1.90	0.71
2:E:58:ARG:O	2:E:58:ARG:HG2	1.89	0.71
1:G:48:GLN:CG	1:G:267:LEU:HD23	2.20	0.71
2:E:167:ARG:HH11	2:E:167:ARG:HG3	1.55	0.71
1:G:52:GLN:HG3	1:G:148:ARG:HG3	1.73	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:76:PRO:HB2	3:I:151:PRO:HG2	1.70	0.71
1:J:469:ARG:O	1:J:473:VAL:HG23	1.90	0.71
3:C:139:LEU:O	3:C:142:VAL:HG22	1.91	0.71
2:H:58:ARG:O	2:H:58:ARG:HG2	1.89	0.71
3:L:139:LEU:O	3:L:142:VAL:HG22	1.91	0.71
1:D:286:ARG:C	1:D:288:MET:H	1.99	0.70
3:F:4:GLU:HB3	3:F:15:PRO:HG2	1.73	0.70
1:A:300:SER:O	1:A:304:VAL:HG23	1.91	0.70
2:B:167:ARG:HH11	2:B:167:ARG:HG3	1.56	0.70
1:D:558:ILE:HA	1:D:606:ASN:HD22	1.56	0.70
3:I:139:LEU:O	3:I:142:VAL:HG22	1.91	0.70
3:L:142:VAL:CG2	3:L:143:HIS:H	2.04	0.70
1:D:52:GLN:HE22	1:D:144:THR:HG21	1.56	0.70
1:G:2:LYS:HB2	1:G:2:LYS:NZ	2.05	0.70
1:G:299:ALA:HB3	1:G:304:VAL:HG22	1.74	0.70
1:J:9:LEU:HD23	1:J:10:VAL:H	1.56	0.70
1:J:558:ILE:HA	1:J:606:ASN:HD22	1.56	0.70
1:A:9:LEU:HD23	1:A:10:VAL:H	1.56	0.70
3:F:18:LYS:HE3	3:F:21:ARG:HH12	1.57	0.70
3:F:189:ARG:HG3	3:F:189:ARG:HH11	1.57	0.70
1:J:252:GLU:HB2	1:J:537:ALA:HB2	1.72	0.70
1:J:414:VAL:O	1:J:418:MET:HG3	1.92	0.70
1:D:52:GLN:HG3	1:D:148:ARG:HG3	1.73	0.70
1:J:299:ALA:HB3	1:J:304:VAL:HG22	1.74	0.70
1:J:562:ASN:H	1:J:562:ASN:HD22	1.40	0.70
3:C:4:GLU:HB3	3:C:15:PRO:HG2	1.73	0.70
3:F:139:LEU:O	3:F:142:VAL:HG22	1.91	0.70
2:K:167:ARG:HH11	2:K:167:ARG:HG3	1.56	0.70
1:D:300:SER:O	1:D:304:VAL:HG23	1.91	0.70
1:G:52:GLN:HE22	1:G:144:THR:HG21	1.56	0.70
1:J:52:GLN:HG3	1:J:148:ARG:HG3	1.73	0.70
1:D:414:VAL:O	1:D:418:MET:HG3	1.92	0.70
1:G:286:ARG:C	1:G:288:MET:H	2.00	0.70
1:J:52:GLN:HE22	1:J:144:THR:HG21	1.56	0.70
1:J:300:SER:O	1:J:304:VAL:HG23	1.91	0.70
1:A:47:ALA:HB3	1:A:157:GLY:CA	2.22	0.70
3:C:152:GLN:NE2	3:C:153:THR:HG23	2.00	0.70
1:G:269:THR:CG2	1:G:345:VAL:HG21	2.22	0.70
3:I:4:GLU:HB3	3:I:15:PRO:HG2	1.73	0.70
3:I:189:ARG:HG3	3:I:189:ARG:HH11	1.57	0.70
2:K:58:ARG:HG2	2:K:58:ARG:O	1.89	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:414:VAL:O	1:A:418:MET:HG3	1.92	0.69
3:C:18:LYS:HE3	3:C:21:ARG:HH12	1.57	0.69
3:I:18:LYS:HE3	3:I:21:ARG:HH12	1.57	0.69
1:A:469:ARG:O	1:A:473:VAL:HG23	1.90	0.69
1:G:300:SER:O	1:G:304:VAL:HG23	1.91	0.69
1:A:299:ALA:HB3	1:A:304:VAL:HG22	1.74	0.69
3:F:175:LEU:HG	10:F:303:HEM:HMD3	1.75	0.69
1:G:562:ASN:H	1:G:562:ASN:HD22	1.39	0.69
3:I:142:VAL:CG2	3:I:143:HIS:H	2.04	0.69
3:I:152:GLN:NE2	3:I:153:THR:HG23	2.00	0.69
1:J:286:ARG:C	1:J:288:MET:H	2.00	0.69
1:A:558:ILE:HA	1:A:606:ASN:HD22	1.56	0.69
1:G:47:ALA:HB3	1:G:157:GLY:CA	2.22	0.69
1:G:141:PHE:HZ	5:G:702:MLA:HC22	1.58	0.69
1:G:558:ILE:HA	1:G:606:ASN:HD22	1.56	0.69
2:B:179:VAL:HG13	2:B:195:TYR:HD2	1.58	0.69
1:A:52:GLN:HE22	1:A:144:THR:HG21	1.56	0.69
3:C:142:VAL:HG21	3:C:171:LEU:CD1	2.20	0.69
3:C:175:LEU:HG	10:C:302:HEM:HMD3	1.75	0.69
1:D:288:MET:C	1:D:290:ASP:H	2.01	0.69
1:D:299:ALA:HB1	1:D:303:VAL:HG11	1.72	0.69
1:G:299:ALA:HB1	1:G:303:VAL:HG11	1.72	0.69
1:J:269:THR:CG2	1:J:345:VAL:HG21	2.22	0.69
1:A:269:THR:CG2	1:A:345:VAL:HG21	2.21	0.69
3:F:142:VAL:CG2	3:F:143:HIS:H	2.04	0.69
3:C:189:ARG:HH11	3:C:189:ARG:HG3	1.57	0.69
1:D:9:LEU:HD23	1:D:10:VAL:H	1.56	0.69
1:G:52:GLN:NE2	1:G:144:THR:HG21	2.08	0.69
1:D:47:ALA:HB3	1:D:157:GLY:CA	2.22	0.68
1:D:52:GLN:NE2	1:D:144:THR:HG21	2.08	0.68
1:D:287:PHE:C	1:D:290:ASP:HB3	2.18	0.68
1:J:287:PHE:C	1:J:290:ASP:HB3	2.18	0.68
2:K:179:VAL:HG13	2:K:195:TYR:HD2	1.58	0.68
3:L:142:VAL:HG21	3:L:171:LEU:CD1	2.20	0.68
3:L:189:ARG:HG3	3:L:189:ARG:HH11	1.57	0.68
1:G:9:LEU:HD23	1:G:10:VAL:H	1.56	0.68
1:G:287:PHE:C	1:G:290:ASP:HB3	2.18	0.68
1:G:535:LYS:HG3	1:G:578:LEU:HD11	1.75	0.68
3:I:156:PRO:HD2	3:I:254:HIS:NE2	2.08	0.68
3:L:18:LYS:HE3	3:L:21:ARG:HH12	1.57	0.68
3:L:94:ALA:HB2	10:L:302:HEM:HAB	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:287:PHE:C	1:A:290:ASP:HB3	2.18	0.68
1:A:288:MET:HB3	1:A:289:PRO:HD3	1.76	0.68
3:C:126:TRP:O	3:C:129:GLN:N	2.27	0.68
1:D:299:ALA:HB3	1:D:304:VAL:HG22	1.74	0.68
1:D:325:HIS:HB2	1:D:364:VAL:O	1.93	0.68
1:D:540:ARG:NH2	1:D:562:ASN:ND2	2.42	0.68
1:G:414:VAL:O	1:G:418:MET:HG3	1.92	0.68
1:D:141:PHE:HZ	5:D:702:MLA:HC22	1.58	0.68
2:E:68:MET:HB2	2:E:92:LEU:HB2	1.76	0.68
1:G:154:ASP:OD2	1:G:345:VAL:HG23	1.94	0.68
1:G:325:HIS:HB2	1:G:364:VAL:O	1.93	0.68
3:I:175:LEU:HD12	3:I:175:LEU:O	1.94	0.68
1:J:447:GLN:OE1	1:J:447:GLN:HA	1.94	0.68
1:A:314:LYS:NZ	1:A:314:LYS:HB2	2.09	0.68
1:G:288:MET:HB3	1:G:289:PRO:HD3	1.76	0.68
3:I:126:TRP:O	3:I:129:GLN:N	2.27	0.68
3:L:126:TRP:O	3:L:129:GLN:N	2.27	0.68
1:A:52:GLN:NE2	1:A:144:THR:HG21	2.08	0.68
1:D:24:THR:OG1	1:D:31:THR:HG21	1.94	0.68
1:D:360:LYS:HG3	1:D:361:TRP:H	1.58	0.68
2:E:179:VAL:HG13	2:E:195:TYR:HD2	1.58	0.68
3:F:156:PRO:HD2	3:F:254:HIS:NE2	2.09	0.68
1:G:288:MET:C	1:G:290:ASP:H	2.01	0.68
1:J:52:GLN:NE2	1:J:144:THR:HG21	2.08	0.68
1:J:288:MET:C	1:J:290:ASP:H	2.01	0.68
1:A:24:THR:OG1	1:A:31:THR:HG21	1.94	0.68
1:A:286:ARG:C	1:A:288:MET:H	2.00	0.68
1:A:360:LYS:HG3	1:A:361:TRP:H	1.58	0.68
1:D:447:GLN:OE1	1:D:447:GLN:HA	1.94	0.68
1:G:293:PRO:C	1:G:294:GLU:HG3	2.19	0.68
1:G:314:LYS:HB2	1:G:314:LYS:NZ	2.09	0.68
1:J:293:PRO:C	1:J:294:GLU:HG3	2.19	0.68
1:J:325:HIS:HB2	1:J:364:VAL:O	1.93	0.68
3:L:4:GLU:HB3	3:L:15:PRO:HG2	1.73	0.68
1:A:535:LYS:HG3	1:A:578:LEU:HD11	1.75	0.68
3:C:94:ALA:HB2	10:C:301:HEM:HAB	1.75	0.68
3:F:94:ALA:HB2	10:F:302:HEM:HAB	1.75	0.68
1:J:141:PHE:HZ	5:J:702:MLA:HC22	1.58	0.68
1:J:314:LYS:HB2	1:J:314:LYS:NZ	2.09	0.68
1:A:540:ARG:NH2	1:A:562:ASN:ND2	2.42	0.68
1:D:314:LYS:HB2	1:D:314:LYS:NZ	2.09	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:540:ARG:NH2	1:G:562:ASN:ND2	2.42	0.68
2:H:2:GLY:HA2	2:H:29:GLU:OE2	1.94	0.68
2:K:68:MET:HB2	2:K:92:LEU:HB2	1.76	0.68
1:A:562:ASN:H	1:A:562:ASN:HD22	1.39	0.67
2:B:2:GLY:HA2	2:B:29:GLU:OE2	1.94	0.67
3:C:156:PRO:HD2	3:C:254:HIS:NE2	2.08	0.67
1:D:269:THR:CG2	1:D:345:VAL:HG21	2.22	0.67
1:D:293:PRO:C	1:D:294:GLU:HG3	2.19	0.67
3:F:175:LEU:O	3:F:175:LEU:HD12	1.94	0.67
2:H:68:MET:HB2	2:H:92:LEU:HB2	1.76	0.67
2:H:179:VAL:HG13	2:H:195:TYR:HD2	1.58	0.67
1:J:47:ALA:HB3	1:J:157:GLY:CA	2.22	0.67
1:J:154:ASP:OD2	1:J:345:VAL:HG23	1.94	0.67
1:A:303:VAL:HG12	1:A:304:VAL:N	2.09	0.67
2:B:179:VAL:HG13	2:B:195:TYR:CD2	2.30	0.67
1:D:574:THR:O	1:D:575:LEU:HD23	1.95	0.67
2:E:179:VAL:HG13	2:E:195:TYR:CD2	2.30	0.67
2:H:179:VAL:HG13	2:H:195:TYR:CD2	2.30	0.67
3:I:94:ALA:HB2	10:I:301:HEM:HAB	1.75	0.67
1:J:360:LYS:CG	1:J:361:TRP:N	2.57	0.67
3:L:156:PRO:HD2	3:L:254:HIS:NE2	2.08	0.67
3:L:175:LEU:HG	10:L:303:HEM:HMD3	1.75	0.67
1:A:141:PHE:HZ	5:A:702:MLA:HC22	1.58	0.67
1:A:288:MET:C	1:A:290:ASP:H	2.01	0.67
1:D:535:LYS:HG3	1:D:578:LEU:HD11	1.75	0.67
1:G:273:ARG:HA	1:G:277:GLY:O	1.95	0.67
3:C:175:LEU:HD12	3:C:175:LEU:O	1.94	0.67
1:D:562:ASN:H	1:D:562:ASN:HD22	1.40	0.67
1:G:314:LYS:HB2	1:G:314:LYS:HZ2	1.58	0.67
1:J:574:THR:O	1:J:575:LEU:HD23	1.95	0.67
2:K:2:GLY:HA2	2:K:29:GLU:OE2	1.94	0.67
1:A:496:GLU:O	1:A:500:LYS:HG3	1.95	0.67
1:J:216:THR:HG21	1:J:236:GLY:CA	2.19	0.67
1:A:325:HIS:HB2	1:A:364:VAL:O	1.93	0.67
1:G:303:VAL:HG12	1:G:304:VAL:N	2.09	0.67
1:J:24:THR:OG1	1:J:31:THR:HG21	1.94	0.67
1:A:154:ASP:OD2	1:A:345:VAL:HG23	1.94	0.67
1:G:447:GLN:OE1	1:G:447:GLN:HA	1.94	0.67
1:J:540:ARG:NH2	1:J:562:ASN:ND2	2.42	0.67
3:L:175:LEU:HD12	3:L:175:LEU:O	1.94	0.67
1:A:574:THR:O	1:A:575:LEU:HD23	1.95	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:2:GLY:HA2	2:E:29:GLU:OE2	1.94	0.67
1:G:24:THR:OG1	1:G:31:THR:HG21	1.94	0.67
1:D:154:ASP:OD2	1:D:345:VAL:HG23	1.94	0.67
3:F:157:VAL:HB	3:F:254:HIS:HE1	1.60	0.67
1:J:303:VAL:HG12	1:J:304:VAL:N	2.09	0.67
2:K:179:VAL:HG13	2:K:195:TYR:CD2	2.30	0.67
3:F:126:TRP:O	3:F:129:GLN:N	2.27	0.67
1:J:535:LYS:HG3	1:J:578:LEU:HD11	1.75	0.67
1:A:447:GLN:OE1	1:A:447:GLN:HA	1.94	0.66
3:C:142:VAL:CG2	3:C:143:HIS:H	2.04	0.66
1:A:64:ASP:HA	1:A:68:LEU:HD12	1.78	0.66
1:D:303:VAL:HG12	1:D:304:VAL:N	2.09	0.66
1:G:289:PRO:HG3	1:G:295:LYS:HA	1.77	0.66
3:I:175:LEU:HG	10:I:302:HEM:HMD3	1.75	0.66
1:A:360:LYS:CG	1:A:361:TRP:N	2.57	0.66
2:B:68:MET:HB2	2:B:92:LEU:HB2	1.76	0.66
1:D:273:ARG:HA	1:D:277:GLY:O	1.95	0.66
1:D:289:PRO:HG3	1:D:295:LYS:HA	1.77	0.66
1:D:496:GLU:O	1:D:500:LYS:HG3	1.95	0.66
1:J:288:MET:HB3	1:J:289:PRO:HD3	1.76	0.66
1:A:287:PHE:HB3	1:A:296:LYS:HZ2	1.56	0.66
1:D:360:LYS:CG	1:D:361:TRP:N	2.58	0.66
1:J:285:HIS:CD2	1:J:285:HIS:N	2.64	0.66
1:J:360:LYS:HG3	1:J:361:TRP:H	1.58	0.66
3:L:157:VAL:HB	3:L:254:HIS:HE1	1.60	0.66
1:A:289:PRO:HG3	1:A:295:LYS:HA	1.77	0.66
1:G:360:LYS:CG	1:G:361:TRP:N	2.57	0.66
1:J:289:PRO:HG3	1:J:295:LYS:HA	1.77	0.66
1:J:496:GLU:O	1:J:500:LYS:HG3	1.95	0.66
3:C:157:VAL:HB	3:C:254:HIS:HE1	1.60	0.66
1:D:463:VAL:HB	1:D:504:VAL:HG11	1.78	0.66
1:G:216:THR:HG21	1:G:236:GLY:CA	2.19	0.66
1:J:540:ARG:HH22	1:J:562:ASN:HD22	1.44	0.66
1:D:288:MET:HB3	1:D:289:PRO:HD3	1.76	0.66
1:G:64:ASP:HA	1:G:68:LEU:HD12	1.78	0.66
1:G:285:HIS:CD2	1:G:285:HIS:N	2.64	0.66
1:A:289:PRO:HB3	1:A:293:PRO:HA	1.78	0.66
1:G:287:PHE:HB3	1:G:296:LYS:HZ2	1.59	0.66
1:G:360:LYS:HG3	1:G:361:TRP:H	1.58	0.66
1:G:496:GLU:O	1:G:500:LYS:HG3	1.95	0.66
1:G:574:THR:O	1:G:575:LEU:HD23	1.95	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:67:MET:HE3	2:H:76:ALA:CB	2.24	0.66
1:A:273:ARG:HA	1:A:277:GLY:O	1.95	0.66
2:B:125:GLN:HB2	2:B:189:GLU:OE1	1.96	0.66
2:H:125:GLN:HB2	2:H:189:GLU:OE1	1.96	0.66
1:J:273:ARG:HA	1:J:277:GLY:O	1.95	0.66
1:G:289:PRO:HB3	1:G:293:PRO:HA	1.78	0.66
3:L:83:ALA:HA	10:L:303:HEM:HBB1	1.78	0.66
2:E:125:GLN:HB2	2:E:189:GLU:OE1	1.96	0.65
3:C:175:LEU:HG	10:C:302:HEM:CMD	2.26	0.65
3:C:181:LEU:O	3:C:185:VAL:HG23	1.96	0.65
1:J:463:VAL:HB	1:J:504:VAL:HG11	1.77	0.65
3:F:40:PHE:CE1	3:F:86:VAL:HG21	2.32	0.65
1:A:195:VAL:HG11	1:A:447:GLN:HG3	1.78	0.65
3:C:40:PHE:CE1	3:C:86:VAL:HG21	2.31	0.65
3:F:13:VAL:HG22	3:F:18:LYS:N	2.12	0.65
3:L:40:PHE:CE1	3:L:86:VAL:HG21	2.32	0.65
1:J:64:ASP:HA	1:J:68:LEU:HD12	1.78	0.65
1:J:289:PRO:HB3	1:J:293:PRO:HA	1.78	0.65
3:L:181:LEU:O	3:L:185:VAL:HG23	1.96	0.65
3:I:83:ALA:HA	10:I:302:HEM:HBB1	1.78	0.65
3:I:157:VAL:HB	3:I:254:HIS:HE1	1.60	0.65
1:J:287:PHE:CD1	1:J:291:TYR:HB2	2.32	0.65
3:C:103:ILE:O	3:C:104:ASN:HB3	1.97	0.65
1:D:64:ASP:HA	1:D:68:LEU:HD12	1.78	0.65
1:D:285:HIS:CD2	1:D:285:HIS:N	2.64	0.65
3:F:175:LEU:HG	10:F:303:HEM:CMD	2.27	0.65
1:G:330:ILE:O	1:G:338:ILE:HD11	1.97	0.65
3:I:13:VAL:HG22	3:I:18:LYS:N	2.12	0.65
1:A:285:HIS:CD2	1:A:285:HIS:N	2.64	0.65
2:E:67:MET:HE3	2:E:76:ALA:CB	2.25	0.65
3:I:103:ILE:O	3:I:104:ASN:HB3	1.97	0.65
1:A:293:PRO:C	1:A:294:GLU:HG3	2.19	0.65
1:D:287:PHE:CD1	1:D:291:TYR:HB2	2.32	0.65
3:F:181:LEU:O	3:F:185:VAL:HG23	1.96	0.65
3:I:40:PHE:CE1	3:I:86:VAL:HG21	2.32	0.65
1:J:330:ILE:O	1:J:338:ILE:HD11	1.97	0.65
1:A:241:LEU:HD12	1:A:248:LEU:CD2	2.27	0.64
3:F:103:ILE:O	3:F:104:ASN:HB3	1.97	0.64
1:G:241:LEU:HD12	1:G:248:LEU:CD2	2.28	0.64
2:H:1:MET:CE	2:H:31:ALA:HA	2.22	0.64
3:I:142:VAL:CG2	3:I:171:LEU:HD11	2.25	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:67:MET:HE3	2:K:76:ALA:CB	2.25	0.64
3:C:87:PHE:CD2	3:C:144:LEU:HD13	2.32	0.64
1:J:195:VAL:HG11	1:J:447:GLN:HG3	1.78	0.64
1:A:287:PHE:CD1	1:A:291:TYR:HB2	2.32	0.64
2:B:67:MET:HE3	2:B:76:ALA:CB	2.25	0.64
3:L:175:LEU:HG	10:L:303:HEM:CMD	2.26	0.64
1:A:119:ILE:HG22	1:A:120:ASN:N	2.10	0.64
1:A:463:VAL:HB	1:A:504:VAL:HG11	1.77	0.64
3:C:13:VAL:HG22	3:C:18:LYS:N	2.12	0.64
1:D:242:GLU:HG2	1:D:528:LYS:NZ	2.13	0.64
1:D:289:PRO:HB3	1:D:293:PRO:HA	1.78	0.64
1:G:287:PHE:CD1	1:G:291:TYR:HB2	2.32	0.64
1:G:463:VAL:HB	1:G:504:VAL:HG11	1.78	0.64
3:I:181:LEU:O	3:I:185:VAL:HG23	1.96	0.64
1:A:330:ILE:O	1:A:338:ILE:HD11	1.97	0.64
1:D:195:VAL:HG11	1:D:447:GLN:HG3	1.78	0.64
1:D:540:ARG:HH22	1:D:562:ASN:HD22	1.44	0.64
3:I:145:TYR:CE2	3:I:149:THR:HG21	2.33	0.64
1:A:242:GLU:HG2	1:A:528:LYS:NZ	2.13	0.64
3:C:83:ALA:HA	10:C:302:HEM:HBB1	1.78	0.64
3:C:145:TYR:CE2	3:C:149:THR:HG21	2.33	0.64
1:D:330:ILE:O	1:D:338:ILE:HD11	1.97	0.64
3:I:175:LEU:HG	10:I:302:HEM:CMD	2.26	0.64
3:L:103:ILE:O	3:L:103:ILE:HG12	1.98	0.64
1:G:540:ARG:HH22	1:G:562:ASN:HD22	1.44	0.64
2:K:125:GLN:HB2	2:K:189:GLU:OE1	1.96	0.64
3:L:13:VAL:HG22	3:L:18:LYS:N	2.12	0.64
1:D:241:LEU:HD12	1:D:248:LEU:CD2	2.27	0.64
3:F:142:VAL:CG2	3:F:171:LEU:HD11	2.25	0.64
1:G:195:VAL:HG11	1:G:447:GLN:HG3	1.78	0.64
1:G:265:GLY:HA3	1:G:367:MET:HE1	1.80	0.64
1:G:242:GLU:HG2	1:G:528:LYS:NZ	2.13	0.64
1:J:241:LEU:HD12	1:J:248:LEU:CD2	2.28	0.64
3:L:145:TYR:CE2	3:L:149:THR:HG21	2.33	0.64
1:A:265:GLY:HA3	1:A:367:MET:HE1	1.80	0.63
1:A:540:ARG:HH22	1:A:562:ASN:HD22	1.44	0.63
3:F:83:ALA:HA	10:F:303:HEM:HBB1	1.78	0.63
1:G:570:ASN:CG	1:G:571:PRO:HD2	2.24	0.63
1:J:265:GLY:HA3	1:J:367:MET:HE1	1.80	0.63
3:L:142:VAL:CG2	3:L:171:LEU:HD11	2.25	0.63
3:F:145:TYR:CE2	3:F:149:THR:HG21	2.33	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:87:PHE:CD2	3:I:144:LEU:HD13	2.32	0.63
3:L:87:PHE:CD2	3:L:144:LEU:HD13	2.32	0.63
1:J:570:ASN:CG	1:J:571:PRO:HD2	2.24	0.63
3:L:103:ILE:O	3:L:104:ASN:HB3	1.97	0.63
1:A:360:LYS:HG2	1:A:361:TRP:O	1.99	0.63
1:D:265:GLY:HA3	1:D:367:MET:HE1	1.80	0.63
1:G:41:ARG:HG2	1:G:41:ARG:HH11	1.63	0.63
1:D:41:ARG:HH11	1:D:41:ARG:HG2	1.63	0.63
1:G:15:LEU:HB2	1:G:44:SER:OG	1.98	0.63
1:A:15:LEU:HB2	1:A:44:SER:OG	1.98	0.63
1:D:15:LEU:HB2	1:D:44:SER:OG	1.98	0.63
1:A:41:ARG:HG2	1:A:41:ARG:HH11	1.63	0.63
1:A:216:THR:HG21	1:A:236:GLY:CA	2.19	0.63
3:F:87:PHE:CD2	3:F:144:LEU:HD13	2.32	0.63
2:H:166:MET:HE1	3:I:102:PRO:HG3	1.81	0.63
1:D:570:ASN:CG	1:D:571:PRO:HD2	2.24	0.63
1:J:41:ARG:HG2	1:J:41:ARG:HH11	1.63	0.63
1:J:570:ASN:ND2	1:J:571:PRO:HD2	2.14	0.63
1:D:288:MET:CB	1:D:289:PRO:CD	2.76	0.62
2:B:205:VAL:HG13	2:B:206:PHE:CD2	2.34	0.62
1:D:463:VAL:HG21	1:D:519:GLU:O	1.99	0.62
2:E:166:MET:HE1	3:F:102:PRO:HG3	1.81	0.62
1:G:302:ASP:O	1:G:306:ARG:HD3	1.99	0.62
2:K:205:VAL:HG13	2:K:206:PHE:CD2	2.34	0.62
1:A:570:ASN:CG	1:A:571:PRO:HD2	2.24	0.62
1:D:570:ASN:ND2	1:D:571:PRO:HD2	2.14	0.62
2:H:193:GLU:H	2:H:193:GLU:CD	2.07	0.62
1:J:242:GLU:HG2	1:J:528:LYS:NZ	2.13	0.62
1:J:288:MET:CB	1:J:289:PRO:CD	2.76	0.62
1:A:316:LYS:HE2	1:A:316:LYS:HA	1.82	0.62
1:D:216:THR:HG21	1:D:236:GLY:CA	2.19	0.62
2:K:193:GLU:H	2:K:193:GLU:CD	2.07	0.62
1:A:419:ILE:HG22	1:A:420:VAL:N	2.15	0.62
2:B:193:GLU:CD	2:B:193:GLU:H	2.07	0.62
1:D:360:LYS:HG2	1:D:361:TRP:O	1.99	0.62
2:E:46:THR:HG1	2:E:47:TYR:HD1	1.46	0.62
2:E:205:VAL:HG13	2:E:206:PHE:CD2	2.34	0.62
2:H:205:VAL:HG13	2:H:206:PHE:CD2	2.34	0.62
1:J:119:ILE:HG22	1:J:120:ASN:N	2.10	0.62
1:G:570:ASN:ND2	1:G:571:PRO:HD2	2.14	0.62
1:J:15:LEU:HB2	1:J:44:SER:OG	1.98	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:316:LYS:HE2	1:D:316:LYS:HA	1.82	0.62
1:D:462:ASP:HB3	1:D:465:LYS:HG3	1.82	0.62
1:G:213:LEU:HD23	1:G:214:ILE:N	2.15	0.62
1:G:281:ASP:HB2	1:G:285:HIS:HD2	1.61	0.62
1:G:287:PHE:HB3	1:G:296:LYS:HZ3	1.64	0.62
2:B:210:THR:HA	8:B:302:F3S:S1	2.40	0.62
1:D:302:ASP:O	1:D:306:ARG:HD3	1.99	0.62
1:D:411:SER:O	1:D:415:VAL:HG23	2.00	0.62
1:G:411:SER:O	1:G:415:VAL:HG23	2.00	0.62
1:G:463:VAL:HG21	1:G:519:GLU:O	1.99	0.62
1:J:302:ASP:O	1:J:306:ARG:HD3	1.99	0.62
3:C:103:ILE:O	3:C:103:ILE:HG12	1.98	0.62
1:D:272:CYS:HB3	1:D:328:LEU:HD21	1.82	0.62
1:D:314:LYS:HB2	1:D:314:LYS:HZ2	1.65	0.62
3:F:103:ILE:O	3:F:103:ILE:HG12	1.98	0.62
1:G:272:CYS:HB3	1:G:328:LEU:HD21	1.82	0.62
1:G:462:ASP:HB3	1:G:465:LYS:HG3	1.82	0.62
1:J:360:LYS:HG2	1:J:361:TRP:O	1.99	0.62
1:J:462:ASP:HB3	1:J:465:LYS:HG3	1.82	0.62
2:K:46:THR:HG1	2:K:47:TYR:HD1	1.47	0.62
1:A:302:ASP:O	1:A:306:ARG:HD3	1.99	0.62
1:A:463:VAL:HG21	1:A:519:GLU:O	1.99	0.62
2:B:215:HIS:HA	2:B:224:LEU:HD12	1.82	0.62
1:D:88:MET:HE3	1:D:641:GLU:O	2.00	0.62
2:H:210:THR:HA	8:H:302:F3S:S1	2.40	0.62
1:A:462:ASP:HB3	1:A:465:LYS:HG3	1.82	0.61
3:C:146:ILE:O	3:C:148:MET:N	2.33	0.61
2:E:193:GLU:H	2:E:193:GLU:CD	2.07	0.61
1:G:360:LYS:HG2	1:G:361:TRP:O	1.99	0.61
3:I:57:VAL:O	3:I:60:TRP:HB3	2.00	0.61
1:J:271:GLY:O	1:J:275:ASP:HB2	2.00	0.61
3:L:146:ILE:O	3:L:148:MET:N	2.33	0.61
1:A:213:LEU:HD23	1:A:214:ILE:N	2.15	0.61
1:A:411:SER:O	1:A:415:VAL:HG23	2.00	0.61
3:C:142:VAL:CG2	3:C:171:LEU:HD11	2.25	0.61
1:J:463:VAL:HG21	1:J:519:GLU:O	1.99	0.61
2:K:166:MET:HE1	3:L:102:PRO:HG3	1.81	0.61
3:L:57:VAL:O	3:L:60:TRP:HB3	2.00	0.61
1:A:279:LEU:N	1:A:288:MET:HE1	2.16	0.61
1:A:570:ASN:ND2	1:A:571:PRO:HD2	2.14	0.61
1:D:145:LYS:O	1:D:146:LYS:HB2	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:271:GLY:O	1:D:275:ASP:HB2	2.01	0.61
1:J:88:MET:HE3	1:J:641:GLU:O	2.00	0.61
1:J:287:PHE:HB3	1:J:296:LYS:HZ2	1.61	0.61
1:J:411:SER:O	1:J:415:VAL:HG23	2.00	0.61
1:A:272:CYS:HB3	1:A:328:LEU:HD21	1.82	0.61
2:E:210:THR:HA	8:E:302:F3S:S1	2.40	0.61
2:E:215:HIS:HA	2:E:224:LEU:HD12	1.82	0.61
3:I:146:ILE:O	3:I:148:MET:N	2.33	0.61
1:J:272:CYS:HB3	1:J:328:LEU:HD21	1.82	0.61
1:J:288:MET:HG3	1:J:297:GLU:OE2	2.00	0.61
2:K:215:HIS:HA	2:K:224:LEU:HD12	1.82	0.61
1:G:119:ILE:HG22	1:G:120:ASN:N	2.10	0.61
3:I:103:ILE:O	3:I:103:ILE:HG12	1.98	0.61
2:K:210:THR:HA	8:K:302:F3S:S1	2.40	0.61
1:A:271:GLY:O	1:A:275:ASP:HB2	2.01	0.61
1:G:279:LEU:N	1:G:288:MET:HE1	2.16	0.61
1:G:316:LYS:HE2	1:G:316:LYS:HA	1.82	0.61
1:J:287:PHE:HB3	1:J:296:LYS:HZ3	1.62	0.61
1:D:119:ILE:HG22	1:D:120:ASN:N	2.10	0.61
1:D:213:LEU:HD23	1:D:214:ILE:N	2.15	0.61
1:D:565:LEU:HD11	1:D:581:GLU:OE2	2.01	0.61
3:F:146:ILE:O	3:F:148:MET:N	2.33	0.61
3:F:147:MET:HE2	10:F:303:HEM:CHB	2.31	0.61
1:G:271:GLY:O	1:G:275:ASP:HB2	2.01	0.61
1:J:213:LEU:HD23	1:J:214:ILE:N	2.15	0.61
1:J:279:LEU:N	1:J:288:MET:HE1	2.16	0.61
1:J:281:ASP:HB2	1:J:285:HIS:HD2	1.61	0.61
1:J:565:LEU:HD11	1:J:581:GLU:OE2	2.01	0.61
1:J:570:ASN:OD1	1:J:572:GLU:N	2.34	0.61
1:A:288:MET:HG3	1:A:297:GLU:OE2	2.00	0.61
3:C:57:VAL:O	3:C:60:TRP:HB3	2.00	0.61
3:F:57:VAL:O	3:F:60:TRP:HB3	2.00	0.61
1:G:285:HIS:O	1:G:286:ARG:HG2	2.01	0.61
1:J:217:GLY:H	1:J:394:ALA:HB2	1.66	0.61
1:J:285:HIS:O	1:J:286:ARG:HG2	2.01	0.61
1:J:289:PRO:O	1:J:293:PRO:HG3	2.01	0.61
1:J:493:GLU:O	1:J:497:LEU:HD13	2.01	0.61
1:G:117:ALA:O	1:G:123:LYS:HA	2.01	0.61
1:A:88:MET:HE3	1:A:641:GLU:O	2.00	0.61
1:A:117:ALA:O	1:A:123:LYS:HA	2.01	0.61
1:A:404:ARG:HE	1:A:409:SER:CB	2.13	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:281:ASP:HB2	1:D:285:HIS:HD2	1.61	0.61
1:D:288:MET:HA	1:D:296:LYS:CB	2.31	0.61
2:E:213:ALA:O	2:E:217:VAL:HG22	2.01	0.61
1:G:145:LYS:O	1:G:146:LYS:HB2	2.00	0.61
1:G:208:VAL:CG1	1:G:440:LEU:HD11	2.31	0.61
2:H:46:THR:HG1	2:H:47:TYR:HD1	1.47	0.61
1:J:208:VAL:CG1	1:J:440:LEU:HD11	2.31	0.61
1:J:288:MET:CB	1:J:289:PRO:HD3	2.31	0.61
1:J:288:MET:HA	1:J:296:LYS:CB	2.31	0.61
2:B:213:ALA:O	2:B:217:VAL:HG22	2.01	0.60
1:D:288:MET:HG3	1:D:297:GLU:OE2	2.00	0.60
1:G:419:ILE:HG22	1:G:420:VAL:N	2.15	0.60
1:J:117:ALA:O	1:J:123:LYS:HA	2.01	0.60
1:J:419:ILE:HG22	1:J:420:VAL:N	2.15	0.60
1:A:145:LYS:O	1:A:146:LYS:HB2	2.00	0.60
1:A:217:GLY:H	1:A:394:ALA:HB2	1.66	0.60
1:A:288:MET:CB	1:A:289:PRO:HD3	2.31	0.60
1:A:565:LEU:HD11	1:A:581:GLU:OE2	2.01	0.60
1:A:570:ASN:OD1	1:A:572:GLU:N	2.34	0.60
2:B:210:THR:HG22	2:B:210:THR:O	2.00	0.60
1:D:493:GLU:O	1:D:497:LEU:HD13	2.01	0.60
1:G:288:MET:HA	1:G:296:LYS:HB2	1.83	0.60
1:G:493:GLU:O	1:G:497:LEU:HD13	2.01	0.60
2:H:210:THR:HG22	2:H:210:THR:O	2.00	0.60
2:H:215:HIS:HA	2:H:224:LEU:HD12	1.82	0.60
1:A:288:MET:HA	1:A:296:LYS:HB2	1.83	0.60
1:D:561:LEU:O	1:D:583:LEU:HD13	2.01	0.60
1:G:67:ASP:OD2	1:G:630:ARG:HD2	2.02	0.60
1:J:561:LEU:O	1:J:583:LEU:HD13	2.01	0.60
1:A:281:ASP:OD2	1:A:287:PHE:HB2	2.01	0.60
1:A:285:HIS:O	1:A:286:ARG:HG2	2.01	0.60
2:B:166:MET:HE1	3:C:102:PRO:HG3	1.81	0.60
3:C:147:MET:HE2	10:C:302:HEM:CHB	2.31	0.60
1:D:117:ALA:O	1:D:123:LYS:HA	2.01	0.60
1:D:288:MET:HA	1:D:296:LYS:HB2	1.83	0.60
1:D:510:ARG:HD2	1:D:512:HIS:O	2.02	0.60
1:G:288:MET:HA	1:G:296:LYS:CB	2.31	0.60
1:G:288:MET:CB	1:G:289:PRO:CD	2.76	0.60
1:G:565:LEU:HD11	1:G:581:GLU:OE2	2.01	0.60
1:G:652:ARG:HH11	1:G:652:ARG:HG3	1.67	0.60
2:K:210:THR:O	2:K:210:THR:HG22	2.00	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:213:ALA:O	2:K:217:VAL:HG22	2.01	0.60
3:L:147:MET:HE2	10:L:303:HEM:CHB	2.31	0.60
1:A:67:ASP:OD2	1:A:630:ARG:HD2	2.01	0.60
1:A:208:VAL:CG1	1:A:440:LEU:HD11	2.31	0.60
1:A:288:MET:HA	1:A:296:LYS:CB	2.31	0.60
1:A:561:LEU:O	1:A:583:LEU:HD13	2.02	0.60
1:A:652:ARG:HH11	1:A:652:ARG:HG3	1.67	0.60
11:C:303:LMT:H101	11:C:303:LMT:H61	1.84	0.60
1:D:281:ASP:OD2	1:D:287:PHE:HB2	2.01	0.60
2:B:46:THR:HG1	2:B:47:TYR:HD1	1.49	0.60
1:G:288:MET:HG3	1:G:297:GLU:OE2	2.00	0.60
1:J:316:LYS:HE2	1:J:316:LYS:HA	1.82	0.60
1:D:67:ASP:OD2	1:D:630:ARG:HD2	2.01	0.60
1:D:208:VAL:CG1	1:D:440:LEU:HD11	2.31	0.60
1:D:217:GLY:H	1:D:394:ALA:HB2	1.66	0.60
1:G:289:PRO:O	1:G:293:PRO:HG3	2.01	0.60
1:J:145:LYS:O	1:J:146:LYS:HB2	2.00	0.60
2:B:144:GLU:C	2:B:146:PHE:H	2.10	0.60
1:D:344:ASP:C	1:D:346:GLN:H	2.10	0.60
1:D:570:ASN:OD1	1:D:572:GLU:N	2.34	0.60
3:I:157:VAL:HB	3:I:254:HIS:CE1	2.37	0.60
1:J:186:HIS:HA	1:J:190:LYS:O	2.02	0.60
1:A:344:ASP:C	1:A:346:GLN:H	2.10	0.60
2:B:1:MET:CE	2:B:31:ALA:HA	2.22	0.60
3:C:75:LYS:HE2	3:C:75:LYS:HA	1.84	0.60
1:D:279:LEU:N	1:D:288:MET:HE1	2.16	0.60
1:D:285:HIS:O	1:D:286:ARG:HG2	2.01	0.60
1:D:419:ILE:HG22	1:D:420:VAL:N	2.15	0.60
1:D:652:ARG:HH11	1:D:652:ARG:HG3	1.67	0.60
1:G:561:LEU:O	1:G:583:LEU:HD13	2.02	0.60
1:J:67:ASP:OD2	1:J:630:ARG:HD2	2.01	0.60
3:L:157:VAL:HB	3:L:254:HIS:CE1	2.37	0.60
1:A:278:ILE:HD12	1:A:286:ARG:HH11	1.67	0.60
1:A:288:MET:CB	1:A:289:PRO:CD	2.76	0.60
1:D:289:PRO:O	1:D:293:PRO:HG3	2.01	0.60
2:E:210:THR:HG22	2:E:210:THR:O	2.00	0.60
11:F:301:LMT:H101	11:F:301:LMT:H61	1.84	0.60
1:G:88:MET:HE3	1:G:641:GLU:O	2.00	0.60
3:I:75:LYS:HE2	3:I:75:LYS:HA	1.84	0.60
1:J:344:ASP:C	1:J:346:GLN:H	2.10	0.60
2:K:1:MET:CE	2:K:31:ALA:HA	2.22	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:75:LYS:HE2	3:L:75:LYS:HA	1.84	0.60
1:A:289:PRO:O	1:A:293:PRO:HG3	2.01	0.59
1:G:186:HIS:HA	1:G:190:LYS:O	2.02	0.59
1:G:314:LYS:NZ	1:G:314:LYS:CB	2.65	0.59
2:H:213:ALA:O	2:H:217:VAL:HG22	2.01	0.59
1:J:288:MET:HA	1:J:296:LYS:HB2	1.83	0.59
1:J:652:ARG:HH11	1:J:652:ARG:HG3	1.67	0.59
1:A:186:HIS:HA	1:A:190:LYS:O	2.02	0.59
1:D:186:HIS:HA	1:D:190:LYS:O	2.02	0.59
1:D:288:MET:CB	1:D:289:PRO:HD3	2.31	0.59
1:G:281:ASP:OD2	1:G:287:PHE:HB2	2.01	0.59
1:G:288:MET:CB	1:G:289:PRO:HD3	2.31	0.59
1:G:570:ASN:OD1	1:G:572:GLU:N	2.34	0.59
3:I:147:MET:HE2	10:I:302:HEM:CHB	2.31	0.59
1:J:281:ASP:OD2	1:J:287:PHE:HB2	2.01	0.59
3:L:249:ASP:CA	3:L:254:HIS:HB3	2.32	0.59
1:A:493:GLU:O	1:A:497:LEU:HD13	2.01	0.59
1:G:404:ARG:HE	1:G:409:SER:CB	2.13	0.59
1:J:214:ILE:HG23	1:J:216:THR:HG23	1.85	0.59
1:A:314:LYS:NZ	1:A:314:LYS:CB	2.65	0.59
1:A:539:ASP:O	1:A:541:THR:HG23	2.02	0.59
1:D:70:PHE:O	1:D:74:VAL:HG23	2.03	0.59
2:H:143:GLN:O	2:H:146:PHE:HB3	2.03	0.59
1:A:265:GLY:CA	1:A:367:MET:HE1	2.33	0.59
1:D:233:GLU:CB	1:D:526:MET:HE3	2.32	0.59
1:G:344:ASP:C	1:G:346:GLN:H	2.10	0.59
1:G:510:ARG:HD2	1:G:512:HIS:O	2.02	0.59
2:H:144:GLU:C	2:H:146:PHE:H	2.10	0.59
2:B:143:GLN:O	2:B:146:PHE:HB3	2.03	0.59
1:G:214:ILE:HG23	1:G:216:THR:HG23	1.85	0.59
11:I:303:LMT:H101	11:I:303:LMT:H61	1.84	0.59
1:J:233:GLU:CB	1:J:526:MET:HE3	2.32	0.59
1:J:404:ARG:HE	1:J:409:SER:CB	2.13	0.59
1:A:295:LYS:HD2	1:A:298:LEU:HD12	1.85	0.59
2:B:145:VAL:O	2:B:145:VAL:HG12	2.03	0.59
3:F:75:LYS:HE2	3:F:75:LYS:HA	1.84	0.59
3:F:157:VAL:HB	3:F:254:HIS:CE1	2.37	0.59
3:I:249:ASP:CA	3:I:254:HIS:HB3	2.32	0.59
1:A:510:ARG:HD2	1:A:512:HIS:O	2.02	0.59
1:D:214:ILE:HG23	1:D:216:THR:HG23	1.85	0.59
1:D:539:ASP:O	1:D:541:THR:HG23	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:652:ARG:HG3	1:D:652:ARG:NH1	2.18	0.59
1:G:539:ASP:O	1:G:541:THR:HG23	2.03	0.59
1:J:392:GLY:O	1:J:394:ALA:N	2.36	0.59
3:L:208:ASN:HA	3:L:211:LYS:HG2	1.85	0.59
3:F:86:VAL:HG12	3:F:86:VAL:O	2.03	0.59
1:G:217:GLY:H	1:G:394:ALA:HB2	1.66	0.59
1:G:278:ILE:HD12	1:G:286:ARG:HH11	1.67	0.59
1:J:70:PHE:O	1:J:74:VAL:HG23	2.03	0.59
1:J:265:GLY:CA	1:J:367:MET:HE1	2.33	0.59
1:A:392:GLY:O	1:A:394:ALA:N	2.36	0.59
1:D:461:GLU:O	1:D:504:VAL:HG13	2.03	0.59
1:J:510:ARG:HD2	1:J:512:HIS:O	2.02	0.59
3:C:86:VAL:O	3:C:86:VAL:HG12	2.03	0.58
1:D:93:ALA:HB3	1:D:94:PRO:HD3	1.85	0.58
1:D:295:LYS:HD2	1:D:298:LEU:HD12	1.85	0.58
2:E:171:VAL:HG12	2:E:175:GLY:HA3	1.85	0.58
1:J:98:ARG:NH2	2:K:133:LEU:HD12	2.18	0.58
1:J:461:GLU:O	1:J:504:VAL:HG13	2.03	0.58
1:A:2:LYS:HB2	1:A:2:LYS:HZ2	1.68	0.58
1:A:346:GLN:CA	1:A:357:PRO:HG2	2.31	0.58
1:D:98:ARG:NH2	2:E:133:LEU:HD12	2.18	0.58
2:K:144:GLU:C	2:K:146:PHE:H	2.10	0.58
1:A:98:ARG:NH2	2:B:133:LEU:HD12	2.18	0.58
1:G:392:GLY:O	1:G:394:ALA:N	2.36	0.58
1:J:179:LYS:HG3	1:J:196:VAL:HG11	1.85	0.58
3:L:146:ILE:C	3:L:148:MET:N	2.61	0.58
3:C:208:ASN:HA	3:C:211:LYS:HG2	1.85	0.58
1:D:179:LYS:HG3	1:D:196:VAL:HG11	1.86	0.58
1:D:265:GLY:CA	1:D:367:MET:HE1	2.33	0.58
2:E:143:GLN:O	2:E:146:PHE:HB3	2.03	0.58
2:E:145:VAL:O	2:E:145:VAL:HG12	2.03	0.58
1:J:93:ALA:HB3	1:J:94:PRO:HD3	1.85	0.58
1:A:652:ARG:HG3	1:A:652:ARG:NH1	2.17	0.58
1:D:52:GLN:HE22	1:D:144:THR:CG2	2.17	0.58
1:G:265:GLY:CA	1:G:367:MET:HE1	2.33	0.58
2:H:171:VAL:HG12	2:H:175:GLY:HA3	1.85	0.58
3:I:188:TYR:O	3:I:192:VAL:HG22	2.04	0.58
1:D:122:GLN:O	1:D:124:THR:HG23	2.04	0.58
2:H:145:VAL:HG12	2:H:145:VAL:O	2.03	0.58
2:K:143:GLN:O	2:K:146:PHE:HB3	2.03	0.58
1:A:70:PHE:O	1:A:74:VAL:HG23	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:278:ILE:HD12	1:D:286:ARG:HH11	1.67	0.58
1:G:122:GLN:O	1:G:124:THR:HG23	2.04	0.58
1:G:652:ARG:HG3	1:G:652:ARG:NH1	2.18	0.58
1:J:652:ARG:HG3	1:J:652:ARG:NH1	2.18	0.58
2:K:145:VAL:O	2:K:145:VAL:HG12	2.03	0.58
1:A:93:ALA:HB3	1:A:94:PRO:HD3	1.84	0.58
3:F:223:LEU:HD23	3:F:223:LEU:C	2.29	0.58
1:G:98:ARG:NH2	2:H:133:LEU:HD12	2.18	0.58
2:B:171:VAL:HG12	2:B:175:GLY:HA3	1.85	0.58
3:C:145:TYR:O	3:C:148:MET:HB3	2.04	0.58
1:D:314:LYS:NZ	1:D:314:LYS:CB	2.65	0.58
1:D:392:GLY:O	1:D:394:ALA:N	2.36	0.58
1:J:278:ILE:HD12	1:J:286:ARG:HH11	1.67	0.58
1:J:314:LYS:NZ	1:J:314:LYS:CB	2.65	0.58
1:A:78:ASP:OD2	1:A:544:ARG:HG3	2.04	0.58
1:A:179:LYS:HG3	1:A:196:VAL:HG11	1.86	0.58
1:A:233:GLU:CB	1:A:526:MET:HE3	2.32	0.58
3:C:157:VAL:HB	3:C:254:HIS:CE1	2.37	0.58
3:C:188:TYR:O	3:C:192:VAL:HG22	2.04	0.58
3:C:223:LEU:C	3:C:223:LEU:HD23	2.29	0.58
3:C:249:ASP:CA	3:C:254:HIS:HB3	2.32	0.58
3:F:145:TYR:O	3:F:148:MET:HB3	2.04	0.58
1:G:78:ASP:OD2	1:G:544:ARG:HG3	2.04	0.58
1:G:93:ALA:HB3	1:G:94:PRO:HD3	1.85	0.58
1:A:410:VAL:HG22	4:A:701:FAD:O2	2.04	0.57
2:E:108:GLY:O	2:E:110:TRP:N	2.37	0.57
3:F:249:ASP:CA	3:F:254:HIS:HB3	2.32	0.57
11:L:301:LMT:H101	11:L:301:LMT:H61	1.84	0.57
1:A:287:PHE:HB3	1:A:296:LYS:HZ3	1.67	0.57
2:B:108:GLY:O	2:B:110:TRP:N	2.38	0.57
3:C:58:MET:O	3:C:61:VAL:HG22	2.04	0.57
3:I:145:TYR:O	3:I:148:MET:HB3	2.04	0.57
3:I:223:LEU:HD23	3:I:223:LEU:C	2.29	0.57
1:J:78:ASP:OD2	1:J:544:ARG:HG3	2.04	0.57
3:L:188:TYR:O	3:L:192:VAL:HG22	2.04	0.57
2:E:144:GLU:C	2:E:146:PHE:H	2.10	0.57
1:G:52:GLN:HE22	1:G:144:THR:CG2	2.17	0.57
1:G:286:ARG:C	1:G:288:MET:N	2.62	0.57
1:J:346:GLN:CA	1:J:357:PRO:HG2	2.31	0.57
1:D:78:ASP:OD2	1:D:544:ARG:HG3	2.04	0.57
1:G:295:LYS:HD2	1:G:298:LEU:HD12	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:295:LYS:HD2	1:J:298:LEU:HD12	1.85	0.57
1:A:242:GLU:HG2	1:A:528:LYS:HZ1	1.69	0.57
3:F:188:TYR:O	3:F:192:VAL:HG22	2.04	0.57
1:G:461:GLU:O	1:G:504:VAL:HG13	2.03	0.57
2:H:138:GLU:HB2	2:H:141:VAL:CG2	2.33	0.57
1:J:52:GLN:HE22	1:J:144:THR:CG2	2.17	0.57
1:J:122:GLN:O	1:J:124:THR:HG23	2.04	0.57
1:J:462:ASP:OD2	1:J:465:LYS:HG3	2.05	0.57
1:J:539:ASP:O	1:J:541:THR:HG23	2.02	0.57
3:L:86:VAL:O	3:L:86:VAL:HG12	2.03	0.57
3:L:145:TYR:O	3:L:148:MET:HB3	2.04	0.57
1:A:461:GLU:O	1:A:504:VAL:HG13	2.03	0.57
3:F:208:ASN:HA	3:F:211:LYS:HG2	1.85	0.57
1:G:70:PHE:O	1:G:74:VAL:HG23	2.03	0.57
3:L:223:LEU:HD23	3:L:223:LEU:C	2.29	0.57
1:D:93:ALA:O	1:D:96:ALA:HB3	2.05	0.57
1:G:233:GLU:CB	1:G:526:MET:HE3	2.32	0.57
1:A:214:ILE:HG23	1:A:216:THR:HG23	1.85	0.57
1:A:286:ARG:C	1:A:288:MET:N	2.62	0.57
3:F:58:MET:O	3:F:61:VAL:HG22	2.04	0.57
1:G:179:LYS:HG3	1:G:196:VAL:HG11	1.86	0.57
3:I:86:VAL:O	3:I:86:VAL:HG12	2.03	0.57
3:I:208:ASN:HA	3:I:211:LYS:HG2	1.85	0.57
2:K:171:VAL:HG12	2:K:175:GLY:HA3	1.85	0.57
1:A:122:GLN:O	1:A:124:THR:HG23	2.04	0.57
2:E:138:GLU:HB2	2:E:141:VAL:CG2	2.33	0.57
3:I:71:PHE:HB3	3:I:75:LYS:HG3	1.87	0.57
1:J:410:VAL:HG22	4:J:701:FAD:O2	2.04	0.57
1:D:337:HIS:ND1	1:D:337:HIS:N	2.53	0.57
1:G:410:VAL:HG22	4:G:701:FAD:O2	2.04	0.57
1:J:296:LYS:O	1:J:304:VAL:HG22	2.05	0.57
1:A:93:ALA:O	1:A:96:ALA:HB3	2.05	0.56
1:D:346:GLN:CA	1:D:357:PRO:HG2	2.31	0.56
1:D:462:ASP:OD2	1:D:465:LYS:HG3	2.05	0.56
1:D:410:VAL:HG22	4:D:701:FAD:O2	2.04	0.56
1:J:93:ALA:O	1:J:96:ALA:HB3	2.05	0.56
2:K:108:GLY:O	2:K:110:TRP:N	2.38	0.56
3:L:71:PHE:HB3	3:L:75:LYS:HG3	1.87	0.56
1:A:278:ILE:HB	1:A:288:MET:HE3	1.87	0.56
1:A:296:LYS:O	1:A:304:VAL:HG22	2.05	0.56
1:D:287:PHE:HB3	1:D:296:LYS:HZ3	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:58:MET:O	3:I:61:VAL:HG22	2.04	0.56
3:I:103:ILE:HG21	3:L:103:ILE:HD13	1.86	0.56
1:J:634:GLN:NE2	1:J:638:MET:O	2.37	0.56
2:K:147:GLU:HA	2:K:150:ARG:CD	2.36	0.56
1:D:296:LYS:O	1:D:304:VAL:HG22	2.05	0.56
1:D:329:ASP:CG	1:D:361:TRP:HD1	2.14	0.56
2:H:108:GLY:O	2:H:110:TRP:N	2.37	0.56
2:H:123:HIS:CD2	2:H:190:ARG:CZ	2.89	0.56
1:A:52:GLN:HE22	1:A:144:THR:CG2	2.17	0.56
1:A:229:ALA:HB1	2:B:56:VAL:O	2.06	0.56
3:C:239:THR:O	3:C:241:PRO:HD3	2.06	0.56
2:E:123:HIS:CD2	2:E:190:ARG:CZ	2.89	0.56
1:J:281:ASP:HB2	1:J:285:HIS:NE2	2.21	0.56
1:A:462:ASP:OD2	1:A:465:LYS:HG3	2.05	0.56
1:A:634:GLN:NE2	1:A:638:MET:O	2.37	0.56
2:B:123:HIS:CD2	2:B:190:ARG:CZ	2.89	0.56
1:D:221:ARG:O	1:D:471:LYS:HE3	2.05	0.56
3:F:239:THR:O	3:F:241:PRO:HD3	2.06	0.56
1:G:93:ALA:O	1:G:96:ALA:HB3	2.05	0.56
1:J:344:ASP:C	1:J:348:ILE:HG12	2.31	0.56
2:K:123:HIS:CD2	2:K:190:ARG:CZ	2.89	0.56
3:L:58:MET:O	3:L:61:VAL:HG22	2.04	0.56
3:L:239:THR:O	3:L:241:PRO:HD3	2.06	0.56
1:A:179:LYS:HG3	1:A:196:VAL:CG1	2.36	0.56
1:G:221:ARG:O	1:G:471:LYS:HE3	2.05	0.56
1:G:296:LYS:O	1:G:304:VAL:HG22	2.05	0.56
1:G:329:ASP:CG	1:G:361:TRP:HD1	2.14	0.56
1:G:344:ASP:C	1:G:348:ILE:HG12	2.31	0.56
1:J:337:HIS:ND1	1:J:337:HIS:N	2.53	0.56
2:B:147:GLU:HA	2:B:150:ARG:CD	2.36	0.56
1:G:462:ASP:OD2	1:G:465:LYS:HG3	2.05	0.56
1:J:286:ARG:C	1:J:288:MET:N	2.62	0.56
1:J:380:ARG:HB2	1:J:423:TYR:CD1	2.41	0.56
1:D:179:LYS:HG3	1:D:196:VAL:CG1	2.36	0.56
1:D:404:ARG:HE	1:D:409:SER:CB	2.13	0.56
3:F:151:PRO:HA	3:F:154:ILE:HD11	1.88	0.56
1:G:278:ILE:HB	1:G:288:MET:HE3	1.87	0.56
2:H:147:GLU:HA	2:H:150:ARG:CD	2.36	0.56
1:J:179:LYS:HG3	1:J:196:VAL:CG1	2.36	0.56
2:H:234:LYS:O	2:H:238:VAL:HG23	2.07	0.56
3:I:103:ILE:HG13	3:L:99:ARG:HA	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:103:ILE:HD13	3:L:103:ILE:HG21	1.88	0.56
3:C:136:MET:HE1	3:C:179:VAL:HA	1.88	0.55
2:E:234:LYS:O	2:E:238:VAL:HG23	2.07	0.55
1:G:380:ARG:HB2	1:G:423:TYR:CD1	2.41	0.55
3:L:176:LEU:HD12	3:L:176:LEU:O	2.06	0.55
1:A:32:ILE:HG22	1:A:33:VAL:N	2.21	0.55
1:A:221:ARG:O	1:A:471:LYS:HE3	2.05	0.55
1:A:337:HIS:ND1	1:A:337:HIS:N	2.53	0.55
1:A:482:ARG:HB3	1:A:487:LEU:CD1	2.34	0.55
3:C:49:SER:HA	3:C:227:THR:CG2	2.36	0.55
3:C:176:LEU:HD12	3:C:176:LEU:O	2.06	0.55
1:D:32:ILE:HG22	1:D:33:VAL:N	2.21	0.55
1:D:257:HIS:O	1:D:366:PRO:HA	2.07	0.55
1:D:278:ILE:HB	1:D:288:MET:HE3	1.88	0.55
1:D:392:GLY:C	1:D:394:ALA:N	2.64	0.55
3:F:71:PHE:HB3	3:F:75:LYS:HG3	1.87	0.55
1:G:179:LYS:HG3	1:G:196:VAL:CG1	2.36	0.55
3:I:49:SER:HA	3:I:227:THR:CG2	2.36	0.55
1:J:221:ARG:O	1:J:471:LYS:HE3	2.06	0.55
1:A:329:ASP:CG	1:A:361:TRP:HD1	2.14	0.55
2:B:111:PHE:C	2:B:113:GLY:H	2.15	0.55
3:C:58:MET:HE1	3:C:155:GLY:O	2.07	0.55
3:C:71:PHE:HB3	3:C:75:LYS:HG3	1.87	0.55
3:F:136:MET:HE1	3:F:179:VAL:HA	1.88	0.55
1:G:270:GLU:N	5:G:702:MLA:O3B	2.40	0.55
3:I:151:PRO:HA	3:I:154:ILE:HD11	1.88	0.55
1:J:229:ALA:HB1	2:K:56:VAL:O	2.06	0.55
1:J:270:GLU:N	5:J:702:MLA:O3B	2.40	0.55
1:J:278:ILE:HB	1:J:288:MET:HE3	1.87	0.55
3:L:49:SER:HA	3:L:227:THR:CG2	2.37	0.55
3:L:51:ILE:HD13	3:L:58:MET:HE3	1.89	0.55
3:L:89:VAL:HG12	3:L:89:VAL:O	2.06	0.55
2:E:1:MET:CE	2:E:31:ALA:HA	2.22	0.55
3:F:49:SER:HA	3:F:227:THR:CG2	2.36	0.55
3:I:89:VAL:O	3:I:89:VAL:HG12	2.06	0.55
3:I:176:LEU:O	3:I:176:LEU:HD12	2.06	0.55
2:K:111:PHE:C	2:K:113:GLY:N	2.63	0.55
2:K:234:LYS:O	2:K:238:VAL:HG23	2.07	0.55
1:A:270:GLU:N	5:A:702:MLA:O3B	2.40	0.55
3:C:51:ILE:HD13	3:C:58:MET:HE3	1.89	0.55
2:E:147:GLU:HA	2:E:150:ARG:CD	2.36	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:248:PHE:O	3:F:254:HIS:HB3	2.07	0.55
1:G:229:ALA:HB1	2:H:56:VAL:O	2.06	0.55
1:G:337:HIS:ND1	1:G:337:HIS:N	2.53	0.55
1:J:329:ASP:CG	1:J:361:TRP:HD1	2.14	0.55
3:L:58:MET:HE1	3:L:155:GLY:O	2.07	0.55
1:A:241:LEU:HD12	1:A:248:LEU:HD21	1.88	0.55
1:A:278:ILE:HG21	1:A:286:ARG:NH1	2.22	0.55
2:B:234:LYS:O	2:B:238:VAL:HG23	2.07	0.55
1:D:229:ALA:HB1	2:E:56:VAL:O	2.06	0.55
1:D:270:GLU:N	5:D:702:MLA:O3B	2.40	0.55
1:G:281:ASP:HB2	1:G:285:HIS:NE2	2.21	0.55
1:G:490:ALA:C	1:G:492:LYS:N	2.64	0.55
2:H:8:ARG:HH12	3:L:3:ASN:HD21	1.54	0.55
3:I:51:ILE:HD13	3:I:58:MET:HE3	1.89	0.55
1:J:32:ILE:HG22	1:J:33:VAL:N	2.21	0.55
1:A:281:ASP:HB2	1:A:285:HIS:NE2	2.21	0.55
1:A:380:ARG:HB2	1:A:423:TYR:CD1	2.41	0.55
1:A:392:GLY:C	1:A:394:ALA:N	2.64	0.55
3:C:191:ALA:O	3:C:195:GLY:HA2	2.07	0.55
1:D:380:ARG:HB2	1:D:423:TYR:CD1	2.41	0.55
3:L:248:PHE:O	3:L:254:HIS:HB3	2.07	0.55
1:D:281:ASP:HB2	1:D:285:HIS:NE2	2.21	0.55
2:E:111:PHE:C	2:E:113:GLY:H	2.15	0.55
3:F:176:LEU:O	3:F:176:LEU:HD12	2.06	0.55
1:G:48:GLN:HG3	1:G:267:LEU:CD2	2.32	0.55
3:I:136:MET:HE1	3:I:179:VAL:HA	1.88	0.55
3:I:239:THR:O	3:I:241:PRO:HD3	2.06	0.55
1:J:302:ASP:HB2	1:J:546:ALA:HA	1.89	0.55
3:C:223:LEU:HD23	3:C:223:LEU:O	2.07	0.55
1:D:88:MET:HA	1:D:642:LEU:HD21	1.88	0.55
1:D:99:GLU:OE1	1:D:418:MET:HE3	2.07	0.55
1:G:88:MET:HA	1:G:642:LEU:HD21	1.89	0.55
1:G:241:LEU:HD12	1:G:248:LEU:HD21	1.88	0.55
2:K:138:GLU:HB2	2:K:141:VAL:CG2	2.33	0.55
3:C:53:LEU:O	3:C:57:VAL:HB	2.07	0.55
1:D:344:ASP:C	1:D:348:ILE:HG12	2.31	0.55
3:F:197:PHE:O	3:F:198:ASP:C	2.50	0.55
1:G:53:ALA:O	1:G:55:LEU:N	2.38	0.55
1:G:99:GLU:OE1	1:G:418:MET:HE3	2.07	0.55
3:I:53:LEU:O	3:I:57:VAL:HB	2.07	0.55
1:J:106:PRO:O	1:J:152:THR:HG22	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:53:LEU:O	3:L:57:VAL:HB	2.07	0.55
1:A:344:ASP:C	1:A:348:ILE:HG12	2.31	0.54
1:D:106:PRO:O	1:D:152:THR:HG22	2.07	0.54
1:D:278:ILE:HG21	1:D:286:ARG:NH1	2.22	0.54
1:D:303:VAL:O	1:D:307:ARG:CZ	2.55	0.54
3:F:51:ILE:HD13	3:F:58:MET:HE3	1.89	0.54
3:I:223:LEU:HD23	3:I:223:LEU:O	2.07	0.54
1:J:278:ILE:HG21	1:J:286:ARG:NH1	2.22	0.54
1:J:303:VAL:O	1:J:307:ARG:CZ	2.56	0.54
3:L:40:PHE:C	3:L:40:PHE:CD2	2.85	0.54
1:A:257:HIS:O	1:A:366:PRO:HA	2.06	0.54
1:A:302:ASP:HB2	1:A:546:ALA:HA	1.89	0.54
3:C:40:PHE:C	3:C:40:PHE:CD2	2.85	0.54
3:C:89:VAL:O	3:C:89:VAL:HG12	2.06	0.54
3:C:248:PHE:O	3:C:254:HIS:HB3	2.07	0.54
1:D:241:LEU:HD12	1:D:248:LEU:HD21	1.88	0.54
3:F:89:VAL:O	3:F:89:VAL:HG12	2.06	0.54
1:G:32:ILE:HG22	1:G:33:VAL:N	2.21	0.54
1:G:106:PRO:O	1:G:152:THR:HG22	2.07	0.54
3:I:197:PHE:O	3:I:198:ASP:C	2.50	0.54
1:J:88:MET:HA	1:J:642:LEU:HD21	1.89	0.54
1:J:99:GLU:OE1	1:J:418:MET:HE3	2.07	0.54
3:L:246:LYS:HE3	3:L:247:TYR:CZ	2.43	0.54
1:A:288:MET:CG	1:A:297:GLU:OE2	2.56	0.54
3:F:191:ALA:O	3:F:195:GLY:HA2	2.07	0.54
3:F:223:LEU:HD23	3:F:223:LEU:O	2.07	0.54
1:G:257:HIS:O	1:G:366:PRO:HA	2.07	0.54
1:G:278:ILE:HG21	1:G:286:ARG:NH1	2.22	0.54
3:I:40:PHE:C	3:I:40:PHE:CD2	2.85	0.54
1:A:281:ASP:HB2	1:A:285:HIS:HD2	1.61	0.54
2:B:8:ARG:HH12	3:F:3:ASN:HD21	1.55	0.54
1:D:267:LEU:HD22	4:D:701:FAD:H6	1.90	0.54
1:J:288:MET:CG	1:J:297:GLU:OE2	2.56	0.54
3:L:136:MET:HE1	3:L:179:VAL:HA	1.88	0.54
3:L:191:ALA:O	3:L:195:GLY:HA2	2.07	0.54
1:A:53:ALA:O	1:A:55:LEU:N	2.38	0.54
1:A:99:GLU:OE1	1:A:418:MET:HE3	2.07	0.54
1:A:267:LEU:HD22	4:A:701:FAD:H6	1.90	0.54
1:A:423:TYR:CE2	1:A:643:PRO:HG3	2.43	0.54
3:F:40:PHE:C	3:F:40:PHE:CD2	2.85	0.54
3:F:58:MET:HE1	3:F:155:GLY:O	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:257:HIS:O	1:J:366:PRO:HA	2.06	0.54
3:L:151:PRO:HA	3:L:154:ILE:HD11	1.88	0.54
3:C:103:ILE:HG21	3:F:103:ILE:HD13	1.89	0.54
2:E:57:CYS:O	2:E:58:ARG:HB3	2.08	0.54
3:I:191:ALA:O	3:I:195:GLY:HA2	2.07	0.54
1:J:53:ALA:O	1:J:55:LEU:N	2.38	0.54
1:J:104:GLY:O	1:J:105:VAL:C	2.50	0.54
1:J:241:LEU:HD11	1:J:532:CYS:SG	2.48	0.54
1:J:423:TYR:CE2	1:J:643:PRO:HG3	2.43	0.54
1:A:106:PRO:O	1:A:152:THR:HG22	2.07	0.54
1:A:241:LEU:HD11	1:A:532:CYS:SG	2.48	0.54
2:B:196:TYR:OH	3:C:21:ARG:HA	2.08	0.54
3:C:136:MET:HB2	10:C:301:HEM:HBB2	1.90	0.54
3:C:249:ASP:OD1	3:C:253:THR:HA	2.08	0.54
1:D:8:SER:OG	1:D:31:THR:HG22	2.08	0.54
1:D:32:ILE:CG2	1:D:33:VAL:N	2.71	0.54
1:D:286:ARG:C	1:D:288:MET:N	2.62	0.54
3:F:53:LEU:O	3:F:57:VAL:HB	2.07	0.54
3:I:136:MET:HB2	10:I:301:HEM:HBB2	1.90	0.54
3:I:249:ASP:OD1	3:I:253:THR:HA	2.08	0.54
1:J:272:CYS:CB	1:J:328:LEU:HD21	2.38	0.54
3:L:223:LEU:HD23	3:L:223:LEU:O	2.07	0.54
3:L:249:ASP:OD1	3:L:253:THR:HA	2.08	0.54
1:A:88:MET:HA	1:A:642:LEU:HD21	1.89	0.54
1:A:259:THR:N	1:A:260:PRO:HD3	2.23	0.54
1:A:303:VAL:O	1:A:307:ARG:CZ	2.55	0.54
3:C:151:PRO:HA	3:C:154:ILE:HD11	1.88	0.54
1:G:302:ASP:HB2	1:G:546:ALA:HA	1.89	0.54
1:G:303:VAL:O	1:G:307:ARG:CZ	2.55	0.54
1:J:259:THR:N	1:J:260:PRO:HD3	2.23	0.54
1:J:436:GLU:O	1:J:440:LEU:HD23	2.08	0.54
1:A:378:ASP:OD1	1:A:380:ARG:HG2	2.08	0.54
1:A:490:ALA:C	1:A:492:LYS:N	2.64	0.54
3:C:197:PHE:O	3:C:198:ASP:C	2.50	0.54
1:D:634:GLN:NE2	1:D:638:MET:O	2.37	0.54
2:H:57:CYS:O	2:H:58:ARG:HB3	2.08	0.54
2:H:111:PHE:C	2:H:113:GLY:N	2.63	0.54
2:H:196:TYR:OH	3:I:21:ARG:HA	2.08	0.54
3:I:248:PHE:O	3:I:254:HIS:HB3	2.07	0.54
2:B:57:CYS:O	2:B:58:ARG:HB3	2.08	0.54
3:C:60:TRP:CE2	3:C:64:LYS:HD2	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:246:LYS:HE3	3:C:247:TYR:CZ	2.43	0.54
3:F:126:TRP:O	3:F:127:TRP:C	2.51	0.54
1:J:241:LEU:HD12	1:J:248:LEU:HD21	1.88	0.54
1:J:314:LYS:HB2	1:J:314:LYS:HZ2	1.72	0.54
1:J:490:ALA:C	1:J:492:LYS:N	2.64	0.54
1:A:349:CYS:HB2	1:A:357:PRO:HG3	1.90	0.53
1:D:272:CYS:CB	1:D:328:LEU:HD21	2.38	0.53
1:D:288:MET:CG	1:D:297:GLU:OE2	2.56	0.53
1:G:32:ILE:CG2	1:G:33:VAL:N	2.71	0.53
3:I:60:TRP:CE2	3:I:64:LYS:HD2	2.44	0.53
1:J:392:GLY:C	1:J:394:ALA:N	2.64	0.53
3:L:197:PHE:O	3:L:198:ASP:C	2.50	0.53
1:A:104:GLY:O	1:A:105:VAL:C	2.50	0.53
1:A:272:CYS:CB	1:A:328:LEU:HD21	2.38	0.53
3:C:103:ILE:HG13	3:F:99:ARG:HA	1.89	0.53
1:D:104:GLY:O	1:D:105:VAL:C	2.50	0.53
1:D:302:ASP:HB2	1:D:546:ALA:HA	1.89	0.53
1:D:436:GLU:O	1:D:440:LEU:HD23	2.08	0.53
1:G:8:SER:OG	1:G:31:THR:HG22	2.08	0.53
1:G:259:THR:N	1:G:260:PRO:HD3	2.23	0.53
1:G:288:MET:CG	1:G:297:GLU:OE2	2.56	0.53
1:A:334:GLY:O	1:A:338:ILE:HG13	2.09	0.53
3:C:103:ILE:HD13	3:F:103:ILE:HG21	1.89	0.53
1:D:259:THR:N	1:D:260:PRO:HD3	2.23	0.53
2:H:111:PHE:C	2:H:113:GLY:H	2.15	0.53
3:L:126:TRP:O	3:L:127:TRP:C	2.51	0.53
1:D:251:MET:CE	1:D:529:VAL:HG13	2.39	0.53
1:G:272:CYS:CB	1:G:328:LEU:HD21	2.38	0.53
1:J:2:LYS:HB2	1:J:2:LYS:HZ2	1.71	0.53
3:L:60:TRP:CE2	3:L:64:LYS:HD2	2.44	0.53
1:A:32:ILE:CG2	1:A:33:VAL:N	2.71	0.53
1:D:241:LEU:HD11	1:D:532:CYS:SG	2.48	0.53
3:F:249:ASP:OD1	3:F:253:THR:HA	2.08	0.53
1:G:3:VAL:HB	1:J:5:TYR:CD2	2.42	0.53
1:G:104:GLY:O	1:G:105:VAL:C	2.50	0.53
3:I:58:MET:HE1	3:I:155:GLY:O	2.07	0.53
1:J:267:LEU:HD21	5:J:702:MLA:O3A	2.09	0.53
1:J:378:ASP:OD1	1:J:380:ARG:HG2	2.08	0.53
2:K:111:PHE:C	2:K:113:GLY:H	2.15	0.53
3:C:126:TRP:O	3:C:127:TRP:C	2.51	0.53
2:E:167:ARG:HG3	2:E:167:ARG:NH1	2.23	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:196:TYR:OH	3:F:21:ARG:HA	2.08	0.53
3:I:246:LYS:HE3	3:I:247:TYR:CZ	2.43	0.53
3:L:136:MET:HB2	10:L:302:HEM:HBB2	1.90	0.53
1:D:390:SER:OG	1:D:395:ALA:HB2	2.09	0.53
1:G:423:TYR:CE2	1:G:643:PRO:HG3	2.43	0.53
1:J:8:SER:OG	1:J:31:THR:HG22	2.08	0.53
1:J:349:CYS:HB2	1:J:357:PRO:HG3	1.91	0.53
1:A:390:SER:OG	1:A:395:ALA:HB2	2.09	0.53
1:A:436:GLU:O	1:A:440:LEU:HD23	2.08	0.53
1:D:423:TYR:CE2	1:D:643:PRO:HG3	2.43	0.53
3:F:246:LYS:HE3	3:F:247:TYR:CZ	2.43	0.53
1:G:251:MET:CE	1:G:529:VAL:HG13	2.39	0.53
1:G:267:LEU:HD22	4:G:701:FAD:H6	1.90	0.53
1:G:319:GLN:HA	1:G:324:GLN:HA	1.91	0.53
2:H:10:PHE:HB2	2:H:92:LEU:HD23	1.91	0.53
2:K:167:ARG:HG3	2:K:167:ARG:NH1	2.23	0.53
2:K:196:TYR:OH	3:L:21:ARG:HA	2.08	0.53
3:L:36:PHE:CD2	3:L:37:LEU:HD23	2.44	0.53
3:L:246:LYS:HE3	3:L:247:TYR:CE2	2.44	0.53
1:A:542:GLU:HA	1:A:552:TYR:HB3	1.91	0.53
1:G:241:LEU:HD11	1:G:532:CYS:SG	2.48	0.53
1:G:461:GLU:HB2	1:G:504:VAL:HA	1.91	0.53
1:G:634:GLN:NE2	1:G:638:MET:O	2.37	0.53
1:A:251:MET:CE	1:A:529:VAL:HG13	2.39	0.53
1:A:314:LYS:HB2	1:A:314:LYS:HZ2	1.72	0.53
1:D:213:LEU:HD23	1:D:213:LEU:C	2.34	0.53
3:F:136:MET:HB2	10:F:302:HEM:HBB2	1.90	0.53
1:G:267:LEU:HD21	5:G:702:MLA:O3A	2.09	0.53
1:J:32:ILE:CG2	1:J:33:VAL:N	2.71	0.53
1:J:267:LEU:HD22	4:J:701:FAD:H6	1.90	0.53
1:J:334:GLY:O	1:J:338:ILE:HG13	2.09	0.53
2:K:57:CYS:O	2:K:58:ARG:HB3	2.08	0.53
1:A:8:SER:OG	1:A:31:THR:HG22	2.08	0.52
1:D:378:ASP:OD1	1:D:380:ARG:HG2	2.08	0.52
2:E:144:GLU:C	2:E:146:PHE:N	2.68	0.52
3:F:60:TRP:CE2	3:F:64:LYS:HD2	2.44	0.52
3:I:126:TRP:O	3:I:127:TRP:C	2.51	0.52
1:A:84:LYS:O	1:A:88:MET:HG3	2.10	0.52
1:D:319:GLN:HA	1:D:324:GLN:HA	1.91	0.52
1:D:562:ASN:HD22	1:D:562:ASN:N	2.03	0.52
1:G:378:ASP:OD1	1:G:380:ARG:HG2	2.08	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:214:ILE:CG2	1:J:216:THR:HG23	2.39	0.52
1:A:213:LEU:HD23	1:A:213:LEU:C	2.34	0.52
1:A:267:LEU:HD21	5:A:702:MLA:O3A	2.09	0.52
1:D:349:CYS:HB2	1:D:357:PRO:HG3	1.90	0.52
1:G:390:SER:OG	1:G:395:ALA:HB2	2.09	0.52
1:G:436:GLU:O	1:G:440:LEU:HD23	2.08	0.52
1:D:214:ILE:CG2	1:D:216:THR:HG23	2.39	0.52
3:F:53:LEU:O	3:F:54:GLY:O	2.27	0.52
1:G:334:GLY:O	1:G:338:ILE:HG13	2.09	0.52
3:I:197:PHE:N	3:I:197:PHE:CD2	2.78	0.52
1:J:461:GLU:HB2	1:J:504:VAL:HA	1.91	0.52
1:J:586:ASN:HA	1:J:612:ARG:HD3	1.92	0.52
1:A:3:VAL:HB	1:D:5:TYR:CD2	2.45	0.52
2:B:138:GLU:HB2	2:B:141:VAL:CG2	2.33	0.52
1:D:84:LYS:O	1:D:88:MET:HG3	2.10	0.52
1:D:267:LEU:HD21	5:D:702:MLA:O3A	2.09	0.52
1:G:349:CYS:HB2	1:G:357:PRO:HG3	1.90	0.52
2:H:167:ARG:HG3	2:H:167:ARG:NH1	2.23	0.52
3:I:36:PHE:CD2	3:I:37:LEU:HD23	2.44	0.52
1:J:390:SER:OG	1:J:395:ALA:HB2	2.09	0.52
3:C:71:PHE:CB	3:C:75:LYS:HG3	2.39	0.52
1:D:586:ASN:HA	1:D:612:ARG:HD3	1.92	0.52
3:F:71:PHE:CB	3:F:75:LYS:HG3	2.39	0.52
1:G:482:ARG:HB3	1:G:487:LEU:CD1	2.34	0.52
2:H:144:GLU:C	2:H:146:PHE:N	2.68	0.52
3:I:53:LEU:O	3:I:54:GLY:O	2.27	0.52
3:I:249:ASP:HA	3:I:254:HIS:CB	2.39	0.52
1:A:357:PRO:C	1:A:359:GLU:H	2.18	0.52
1:A:461:GLU:HB2	1:A:504:VAL:HA	1.91	0.52
2:B:111:PHE:C	2:B:113:GLY:N	2.63	0.52
1:D:334:GLY:O	1:D:338:ILE:HG13	2.09	0.52
3:F:249:ASP:HA	3:F:254:HIS:CB	2.40	0.52
1:G:368:GLN:NE2	1:G:368:GLN:C	2.68	0.52
3:I:246:LYS:HE3	3:I:247:TYR:CE2	2.44	0.52
1:J:84:LYS:O	1:J:88:MET:HG3	2.10	0.52
1:J:251:MET:CE	1:J:529:VAL:HG13	2.39	0.52
1:J:295:LYS:CD	1:J:298:LEU:HD12	2.40	0.52
3:L:53:LEU:O	3:L:54:GLY:O	2.27	0.52
1:A:214:ILE:CG2	1:A:216:THR:HG23	2.39	0.52
1:G:5:TYR:CD2	1:J:3:VAL:HB	2.45	0.52
1:G:84:LYS:O	1:G:88:MET:HG3	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:213:LEU:HD23	1:G:213:LEU:C	2.34	0.52
1:G:214:ILE:CG2	1:G:216:THR:HG23	2.39	0.52
1:G:360:LYS:HG2	1:G:361:TRP:N	2.25	0.52
1:J:285:HIS:N	1:J:285:HIS:HD2	2.08	0.52
1:D:37:ILE:O	1:D:38:PRO:C	2.53	0.52
1:D:461:GLU:HB2	1:D:504:VAL:HA	1.91	0.52
1:D:490:ALA:C	1:D:492:LYS:N	2.64	0.52
1:G:346:GLN:CA	1:G:357:PRO:HG2	2.31	0.52
1:J:368:GLN:NE2	1:J:368:GLN:C	2.68	0.52
2:K:10:PHE:HB2	2:K:92:LEU:HD23	1.91	0.52
3:L:28:TRP:HE3	3:L:29:TRP:CD1	2.28	0.52
1:A:217:GLY:N	1:A:394:ALA:HB2	2.25	0.52
3:F:246:LYS:HE3	3:F:247:TYR:CE2	2.44	0.52
1:G:295:LYS:CD	1:G:298:LEU:HD12	2.40	0.52
1:G:542:GLU:HA	1:G:552:TYR:HB3	1.91	0.52
3:I:254:HIS:ND1	3:I:254:HIS:O	2.43	0.52
1:J:213:LEU:HD23	1:J:213:LEU:C	2.34	0.52
1:J:303:VAL:HG13	1:J:307:ARG:NH2	2.25	0.52
3:L:71:PHE:CB	3:L:75:LYS:HG3	2.39	0.52
2:B:144:GLU:C	2:B:146:PHE:N	2.68	0.51
3:C:28:TRP:HE3	3:C:29:TRP:CD1	2.28	0.51
3:C:36:PHE:CD2	3:C:37:LEU:HD23	2.44	0.51
2:E:85:GLU:HA	2:E:85:GLU:OE2	2.10	0.51
1:G:285:HIS:N	1:G:285:HIS:HD2	2.08	0.51
3:L:249:ASP:HA	3:L:254:HIS:CB	2.40	0.51
1:A:132:ARG:HG2	1:A:132:ARG:HH11	1.76	0.51
1:A:295:LYS:CD	1:A:298:LEU:HD12	2.40	0.51
1:A:319:GLN:HA	1:A:324:GLN:HA	1.91	0.51
2:B:10:PHE:HB2	2:B:92:LEU:HD23	1.91	0.51
2:B:167:ARG:HG3	2:B:167:ARG:NH1	2.23	0.51
3:C:53:LEU:O	3:C:54:GLY:O	2.28	0.51
1:D:90:VAL:HG23	1:D:91:ASN:N	2.25	0.51
3:F:18:LYS:HE3	3:F:21:ARG:NH1	2.23	0.51
3:F:28:TRP:HE3	3:F:29:TRP:CD1	2.28	0.51
1:G:132:ARG:HG2	1:G:132:ARG:HH11	1.76	0.51
3:I:18:LYS:HE3	3:I:21:ARG:NH1	2.23	0.51
3:I:87:PHE:HD2	3:I:144:LEU:HD13	1.76	0.51
1:J:643:PRO:O	1:J:647:LYS:HG2	2.11	0.51
3:L:197:PHE:HD2	3:L:197:PHE:N	2.08	0.51
1:A:303:VAL:HG13	1:A:307:ARG:NH2	2.25	0.51
1:D:355:ILE:C	1:D:355:ILE:HD12	2.35	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:37:ILE:O	1:G:38:PRO:C	2.53	0.51
1:J:242:GLU:HG2	1:J:528:LYS:HZ1	1.75	0.51
1:J:319:GLN:HA	1:J:324:GLN:HA	1.91	0.51
1:J:360:LYS:HG2	1:J:361:TRP:N	2.25	0.51
2:K:85:GLU:HA	2:K:85:GLU:OE2	2.10	0.51
1:A:360:LYS:HG2	1:A:361:TRP:N	2.25	0.51
1:A:543:SER:OG	1:A:553:PRO:HA	2.11	0.51
1:A:586:ASN:HA	1:A:612:ARG:HD3	1.92	0.51
2:B:37:PHE:O	2:B:41:ASN:HB2	2.11	0.51
1:D:37:ILE:O	1:D:37:ILE:HD12	2.11	0.51
1:D:295:LYS:HG3	1:D:298:LEU:HB2	1.93	0.51
1:D:357:PRO:C	1:D:359:GLU:H	2.18	0.51
1:D:368:GLN:C	1:D:368:GLN:NE2	2.68	0.51
3:F:36:PHE:CD2	3:F:37:LEU:HD23	2.44	0.51
3:F:197:PHE:N	3:F:197:PHE:CD2	2.78	0.51
3:F:254:HIS:ND1	3:F:254:HIS:O	2.43	0.51
1:G:217:GLY:N	1:G:394:ALA:HB2	2.25	0.51
1:G:543:SER:OG	1:G:553:PRO:HA	2.11	0.51
2:H:37:PHE:O	2:H:41:ASN:HB2	2.11	0.51
3:I:71:PHE:CB	3:I:75:LYS:HG3	2.39	0.51
1:J:552:TYR:N	1:J:553:PRO:CD	2.73	0.51
2:K:37:PHE:O	2:K:41:ASN:HB2	2.11	0.51
1:A:281:ASP:CG	1:A:287:PHE:HB2	2.36	0.51
1:A:368:GLN:NE2	1:A:368:GLN:C	2.68	0.51
1:A:552:TYR:N	1:A:553:PRO:CD	2.73	0.51
2:B:85:GLU:HA	2:B:85:GLU:OE2	2.10	0.51
3:C:99:ARG:HA	3:F:103:ILE:HG13	1.92	0.51
3:C:246:LYS:HE3	3:C:247:TYR:CE2	2.44	0.51
1:D:217:GLY:N	1:D:394:ALA:HB2	2.25	0.51
1:D:542:GLU:HA	1:D:552:TYR:HB3	1.91	0.51
1:G:643:PRO:O	1:G:647:LYS:HG2	2.11	0.51
1:J:217:GLY:N	1:J:394:ALA:HB2	2.25	0.51
1:J:281:ASP:CG	1:J:287:PHE:HB2	2.36	0.51
1:J:318:VAL:HG13	1:J:318:VAL:O	2.11	0.51
1:A:37:ILE:HD12	1:A:37:ILE:O	2.11	0.51
1:A:314:LYS:CB	1:A:314:LYS:HZ3	2.24	0.51
1:A:325:HIS:HE1	1:A:327:TRP:CZ2	2.29	0.51
1:A:355:ILE:C	1:A:355:ILE:HD12	2.35	0.51
1:A:462:ASP:HB3	1:A:465:LYS:CG	2.40	0.51
1:A:594:TYR:CZ	1:A:600:LYS:HG2	2.46	0.51
1:D:53:ALA:O	1:D:55:LEU:N	2.38	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:543:SER:OG	1:D:553:PRO:HA	2.11	0.51
2:E:31:ALA:HB3	2:E:34:MET:HE3	1.92	0.51
3:F:197:PHE:N	3:F:197:PHE:HD2	2.08	0.51
1:G:318:VAL:HG13	1:G:318:VAL:O	2.11	0.51
1:G:594:TYR:CZ	1:G:600:LYS:HG2	2.46	0.51
2:H:146:PHE:O	2:H:148:LEU:N	2.44	0.51
1:J:37:ILE:O	1:J:38:PRO:C	2.53	0.51
1:J:132:ARG:HG2	1:J:132:ARG:HH11	1.76	0.51
1:J:462:ASP:HB3	1:J:465:LYS:CG	2.40	0.51
1:J:542:GLU:HA	1:J:552:TYR:HB3	1.91	0.51
2:K:215:HIS:CG	2:K:225:GLN:HB2	2.46	0.51
1:A:318:VAL:O	1:A:318:VAL:HG13	2.11	0.51
2:B:31:ALA:HB3	2:B:34:MET:HE3	1.92	0.51
2:B:95:PRO:O	2:B:96:ALA:HB3	2.11	0.51
1:D:594:TYR:CZ	1:D:600:LYS:HG2	2.46	0.51
1:D:643:PRO:O	1:D:647:LYS:HG2	2.11	0.51
2:E:10:PHE:HB2	2:E:92:LEU:HD23	1.91	0.51
2:E:37:PHE:O	2:E:41:ASN:HB2	2.11	0.51
2:E:146:PHE:O	2:E:148:LEU:N	2.44	0.51
1:G:242:GLU:HG2	1:G:528:LYS:HZ1	1.73	0.51
2:H:85:GLU:HA	2:H:85:GLU:OE2	2.10	0.51
2:H:215:HIS:CG	2:H:225:GLN:HB2	2.46	0.51
3:I:28:TRP:HE3	3:I:29:TRP:CD1	2.28	0.51
1:J:482:ARG:HB3	1:J:487:LEU:CD1	2.34	0.51
3:C:254:HIS:ND1	3:C:254:HIS:O	2.43	0.51
1:D:86:ALA:O	1:D:90:VAL:HG13	2.11	0.51
1:G:295:LYS:HG3	1:G:298:LEU:HB2	1.93	0.51
1:G:441:GLU:OE2	1:J:210:LYS:NZ	2.43	0.51
1:G:462:ASP:HB3	1:G:465:LYS:CG	2.41	0.51
1:J:543:SER:OG	1:J:553:PRO:HA	2.11	0.51
1:A:60:MET:HB3	1:A:147:TRP:CG	2.46	0.51
1:A:295:LYS:HG3	1:A:298:LEU:HB2	1.93	0.51
1:A:643:PRO:O	1:A:647:LYS:HG2	2.11	0.51
1:D:295:LYS:CD	1:D:298:LEU:HD12	2.40	0.51
1:G:60:MET:HB3	1:G:147:TRP:CG	2.46	0.51
2:H:31:ALA:HB3	2:H:34:MET:HE3	1.92	0.51
3:I:75:LYS:HA	3:I:75:LYS:CE	2.41	0.51
1:J:90:VAL:HG23	1:J:91:ASN:N	2.25	0.51
3:L:63:LYS:O	3:L:66:GLN:HB2	2.11	0.51
3:L:227:THR:HG22	3:L:231:TYR:HE1	1.76	0.51
1:A:562:ASN:HD22	1:A:562:ASN:N	2.03	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:215:HIS:CG	2:B:225:GLN:HB2	2.46	0.51
3:C:197:PHE:N	3:C:197:PHE:HD2	2.08	0.51
1:D:303:VAL:HG13	1:D:307:ARG:NH2	2.25	0.51
1:D:325:HIS:HE1	1:D:327:TRP:CZ2	2.29	0.51
1:G:37:ILE:O	1:G:37:ILE:HD12	2.11	0.51
1:G:303:VAL:HG13	1:G:307:ARG:NH2	2.25	0.51
1:G:325:HIS:HE1	1:G:327:TRP:CZ2	2.29	0.51
1:G:355:ILE:C	1:G:355:ILE:HD12	2.35	0.51
1:G:495:GLU:HG3	1:G:574:THR:HB	1.93	0.51
1:G:552:TYR:N	1:G:553:PRO:CD	2.73	0.51
1:G:586:ASN:HA	1:G:612:ARG:HD3	1.92	0.51
1:A:5:TYR:CD2	1:D:3:VAL:HB	2.46	0.50
3:C:18:LYS:HE3	3:C:21:ARG:NH1	2.23	0.50
1:D:48:GLN:HG3	1:D:267:LEU:CD2	2.32	0.50
1:D:462:ASP:HB3	1:D:465:LYS:CG	2.41	0.50
1:D:552:TYR:N	1:D:553:PRO:CD	2.73	0.50
3:F:63:LYS:O	3:F:66:GLN:HB2	2.11	0.50
3:F:146:ILE:C	3:F:148:MET:N	2.61	0.50
3:F:227:THR:HG22	3:F:231:TYR:HE1	1.76	0.50
1:G:90:VAL:HG23	1:G:91:ASN:N	2.25	0.50
3:I:169:TRP:CD1	3:I:170:PRO:HD3	2.46	0.50
1:J:37:ILE:O	1:J:37:ILE:HD12	2.11	0.50
1:J:295:LYS:HG3	1:J:298:LEU:HB2	1.93	0.50
3:L:75:LYS:HA	3:L:75:LYS:CE	2.41	0.50
1:A:214:ILE:HG23	1:A:216:THR:CG2	2.42	0.50
2:B:28:ILE:HD12	2:B:42:MET:HE2	1.93	0.50
2:B:146:PHE:O	2:B:148:LEU:N	2.44	0.50
3:C:169:TRP:CD1	3:C:170:PRO:HD3	2.47	0.50
1:D:360:LYS:HG2	1:D:361:TRP:N	2.25	0.50
2:E:95:PRO:O	2:E:96:ALA:HB3	2.11	0.50
2:E:111:PHE:C	2:E:113:GLY:N	2.63	0.50
1:G:267:LEU:HG	1:G:268:LEU:N	2.26	0.50
3:I:99:ARG:HA	3:L:103:ILE:HG13	1.92	0.50
2:K:31:ALA:HB3	2:K:34:MET:HE3	1.92	0.50
3:L:87:PHE:HD2	3:L:144:LEU:HD13	1.76	0.50
1:A:37:ILE:O	1:A:38:PRO:C	2.53	0.50
1:A:628:LYS:HA	1:A:628:LYS:HE3	1.94	0.50
1:D:132:ARG:HG2	1:D:132:ARG:HH11	1.76	0.50
2:E:215:HIS:CG	2:E:225:GLN:HB2	2.46	0.50
3:F:14:THR:O	3:F:17:ARG:N	2.43	0.50
3:F:85:PHE:C	3:F:87:PHE:H	2.19	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:270:GLU:HB2	5:G:702:MLA:O3B	2.12	0.50
1:J:225:ASN:CB	1:J:367:MET:HE3	2.39	0.50
1:J:357:PRO:C	1:J:359:GLU:H	2.18	0.50
2:K:28:ILE:HD12	2:K:42:MET:HE2	1.93	0.50
2:K:146:PHE:O	2:K:148:LEU:N	2.44	0.50
1:A:90:VAL:HG23	1:A:91:ASN:N	2.25	0.50
1:A:101:ALA:HB2	1:A:107:TRP:CD1	2.47	0.50
3:C:249:ASP:HA	3:C:254:HIS:CB	2.40	0.50
3:F:75:LYS:HA	3:F:75:LYS:CE	2.41	0.50
3:F:249:ASP:HA	3:F:254:HIS:N	2.27	0.50
1:J:270:GLU:HB2	5:J:702:MLA:O3B	2.12	0.50
1:J:495:GLU:HG3	1:J:574:THR:HB	1.93	0.50
3:L:31:SER:HB3	3:L:190:LEU:HD11	1.94	0.50
3:L:197:PHE:N	3:L:197:PHE:CD2	2.78	0.50
3:L:254:HIS:ND1	3:L:254:HIS:O	2.43	0.50
1:A:107:TRP:O	1:A:109:ARG:HD2	2.12	0.50
1:A:225:ASN:CB	1:A:367:MET:HE3	2.39	0.50
3:C:31:SER:HB3	3:C:190:LEU:HD11	1.94	0.50
3:C:227:THR:HG22	3:C:231:TYR:HE1	1.76	0.50
3:C:249:ASP:HA	3:C:254:HIS:N	2.27	0.50
1:D:60:MET:HB3	1:D:147:TRP:CG	2.46	0.50
1:D:267:LEU:HG	1:D:268:LEU:N	2.26	0.50
1:D:270:GLU:HB2	5:D:702:MLA:O3B	2.12	0.50
1:G:392:GLY:C	1:G:394:ALA:N	2.64	0.50
3:C:63:LYS:O	3:C:66:GLN:HB2	2.11	0.50
1:D:242:GLU:HG2	1:D:528:LYS:HZ1	1.74	0.50
1:D:288:MET:CG	1:D:289:PRO:HD3	2.42	0.50
1:D:628:LYS:HA	1:D:628:LYS:HE3	1.94	0.50
1:G:86:ALA:O	1:G:90:VAL:HG13	2.11	0.50
1:G:107:TRP:O	1:G:109:ARG:HD2	2.12	0.50
2:H:46:THR:OG1	2:H:47:TYR:HD1	1.95	0.50
1:J:101:ALA:HB2	1:J:107:TRP:CD1	2.47	0.50
1:J:355:ILE:C	1:J:355:ILE:HD12	2.35	0.50
1:J:616:ILE:HG23	1:J:637:LEU:HD22	1.94	0.50
1:A:48:GLN:HG3	1:A:267:LEU:CD2	2.32	0.50
3:C:75:LYS:HA	3:C:75:LYS:CE	2.41	0.50
1:D:40:LYS:HD3	2:E:153:GLU:OE1	2.12	0.50
2:E:199:ILE:HD12	2:E:231:LEU:HD21	1.94	0.50
3:F:169:TRP:CD1	3:F:170:PRO:HD3	2.47	0.50
1:G:288:MET:CG	1:G:289:PRO:HD3	2.42	0.50
1:G:461:GLU:HB3	1:G:466:ILE:HD11	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:227:THR:HG22	3:I:231:TYR:HE1	1.76	0.50
1:J:60:MET:HB3	1:J:147:TRP:CG	2.46	0.50
1:J:325:HIS:HE1	1:J:327:TRP:CZ2	2.29	0.50
3:L:95:PHE:CE1	11:L:301:LMT:H82	2.47	0.50
1:A:288:MET:CG	1:A:289:PRO:HD3	2.42	0.50
3:C:85:PHE:C	3:C:87:PHE:H	2.19	0.50
3:C:197:PHE:N	3:C:197:PHE:CD2	2.78	0.50
1:D:281:ASP:CG	1:D:287:PHE:HB2	2.36	0.50
1:D:318:VAL:HG13	1:D:318:VAL:O	2.11	0.50
3:F:31:SER:HB3	3:F:190:LEU:HD11	1.94	0.50
1:G:40:LYS:HD3	2:H:153:GLU:OE1	2.12	0.50
1:J:40:LYS:HD3	2:K:153:GLU:OE1	2.12	0.50
1:J:48:GLN:HG3	1:J:267:LEU:CD2	2.32	0.50
1:J:241:LEU:HD12	1:J:248:LEU:HD23	1.94	0.50
1:A:267:LEU:HG	1:A:268:LEU:N	2.26	0.50
1:A:285:HIS:N	1:A:285:HIS:HD2	2.08	0.50
1:A:512:HIS:O	1:A:513:ALA:C	2.55	0.50
2:B:199:ILE:HD12	2:B:231:LEU:HD21	1.94	0.50
1:D:303:VAL:O	1:D:307:ARG:NH1	2.45	0.50
1:D:523:VAL:HB	1:D:524:PRO:HD3	1.94	0.50
2:H:95:PRO:O	2:H:96:ALA:HB3	2.11	0.50
3:I:63:LYS:O	3:I:66:GLN:HB2	2.11	0.50
1:J:86:ALA:O	1:J:90:VAL:HG13	2.11	0.50
1:A:52:GLN:CG	1:A:148:ARG:HG3	2.42	0.49
1:A:86:ALA:O	1:A:90:VAL:HG13	2.11	0.49
1:A:278:ILE:HG21	1:A:286:ARG:HH11	1.77	0.49
1:A:616:ILE:HG23	1:A:637:LEU:HD22	1.93	0.49
1:A:642:LEU:HB2	1:A:647:LYS:HE3	1.94	0.49
1:D:141:PHE:O	1:D:298:LEU:HD22	2.12	0.49
2:E:191:THR:O	2:E:195:TYR:HD1	1.95	0.49
1:G:101:ALA:HB2	1:G:107:TRP:CD1	2.47	0.49
1:G:141:PHE:O	1:G:298:LEU:HD22	2.12	0.49
1:G:214:ILE:HG23	1:G:216:THR:CG2	2.42	0.49
1:G:281:ASP:CG	1:G:287:PHE:HB2	2.36	0.49
1:J:314:LYS:CB	1:J:314:LYS:HZ3	2.24	0.49
1:J:594:TYR:CZ	1:J:600:LYS:HG2	2.46	0.49
3:L:85:PHE:C	3:L:87:PHE:H	2.19	0.49
3:L:248:PHE:HB3	3:L:254:HIS:HD1	1.77	0.49
1:A:40:LYS:HD3	2:B:153:GLU:OE1	2.12	0.49
1:D:101:ALA:HB2	1:D:107:TRP:CD1	2.47	0.49
1:D:512:HIS:O	1:D:513:ALA:C	2.55	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:303:VAL:O	1:G:307:ARG:NH1	2.45	0.49
3:I:197:PHE:N	3:I:197:PHE:HD2	2.08	0.49
1:J:307:ARG:HA	1:J:310:GLU:HB2	1.94	0.49
1:J:628:LYS:HA	1:J:628:LYS:HE3	1.94	0.49
3:L:169:TRP:CD1	3:L:170:PRO:HD3	2.46	0.49
1:A:303:VAL:O	1:A:307:ARG:NH1	2.45	0.49
3:C:248:PHE:HB3	3:C:254:HIS:HD1	1.77	0.49
1:D:214:ILE:HG23	1:D:216:THR:CG2	2.42	0.49
1:D:490:ALA:C	1:D:492:LYS:H	2.20	0.49
3:I:31:SER:HB3	3:I:190:LEU:HD11	1.94	0.49
1:J:211:GLY:HA3	1:J:428:CYS:SG	2.53	0.49
1:J:214:ILE:HG23	1:J:216:THR:CG2	2.42	0.49
1:J:512:HIS:O	1:J:513:ALA:C	2.55	0.49
1:J:642:LEU:HB2	1:J:647:LYS:HE3	1.94	0.49
1:G:523:VAL:HB	1:G:524:PRO:HD3	1.94	0.49
1:J:303:VAL:O	1:J:307:ARG:NH1	2.45	0.49
2:K:95:PRO:O	2:K:96:ALA:HB3	2.11	0.49
3:L:249:ASP:HA	3:L:254:HIS:N	2.27	0.49
1:G:585:VAL:HA	1:G:588:MET:HG3	1.95	0.49
1:G:616:ILE:HG23	1:G:637:LEU:HD22	1.93	0.49
2:H:28:ILE:HD12	2:H:42:MET:HE2	1.93	0.49
3:I:189:ARG:HG3	3:I:189:ARG:NH1	2.26	0.49
3:I:249:ASP:HA	3:I:254:HIS:N	2.27	0.49
2:B:48:ASP:OD1	2:B:50:ASP:HB3	2.13	0.49
1:D:285:HIS:N	1:D:285:HIS:HD2	2.08	0.49
1:D:482:ARG:HB3	1:D:487:LEU:CD1	2.34	0.49
2:E:28:ILE:HD12	2:E:42:MET:HE2	1.93	0.49
1:J:111:HIS:CD2	2:K:139:PRO:HG3	2.48	0.49
1:A:306:ARG:HB2	1:A:307:ARG:HH12	1.78	0.49
1:A:461:GLU:HB3	1:A:466:ILE:HD11	1.94	0.49
3:C:169:TRP:N	3:C:170:PRO:CD	2.76	0.49
1:D:211:GLY:HA3	1:D:428:CYS:SG	2.53	0.49
1:D:495:GLU:HG3	1:D:574:THR:HB	1.93	0.49
2:E:181:ARG:HD3	2:E:181:ARG:C	2.38	0.49
1:G:111:HIS:CD2	2:H:139:PRO:HG3	2.48	0.49
1:G:357:PRO:C	1:G:359:GLU:H	2.18	0.49
2:H:36:ILE:HG22	2:H:76:ALA:HB1	1.95	0.49
2:H:191:THR:O	2:H:195:TYR:HD1	1.95	0.49
2:H:215:HIS:CD2	2:H:225:GLN:HB2	2.48	0.49
1:J:267:LEU:HG	1:J:268:LEU:N	2.26	0.49
1:J:410:VAL:HG13	4:J:701:FAD:N1	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:523:VAL:HB	1:A:524:PRO:HD3	1.94	0.49
1:A:585:VAL:HA	1:A:588:MET:HG3	1.95	0.49
2:B:36:ILE:HG22	2:B:76:ALA:HB1	1.95	0.49
1:D:74:VAL:O	1:D:77:SER:OG	2.28	0.49
1:D:307:ARG:HA	1:D:310:GLU:HB2	1.94	0.49
11:F:301:LMT:H101	11:F:301:LMT:C6	2.43	0.49
1:G:2:LYS:HB2	1:G:2:LYS:HZ2	1.74	0.49
1:G:57:ASN:OD1	1:G:135:LEU:HB3	2.13	0.49
1:G:241:LEU:HD12	1:G:248:LEU:HD23	1.93	0.49
1:G:278:ILE:HG21	1:G:286:ARG:HH11	1.77	0.49
1:G:512:HIS:O	1:G:513:ALA:C	2.55	0.49
1:J:107:TRP:O	1:J:109:ARG:HD2	2.12	0.49
2:K:48:ASP:OD1	2:K:50:ASP:HB3	2.13	0.49
2:K:191:THR:O	2:K:195:TYR:HD1	1.95	0.49
3:L:189:ARG:HG3	3:L:189:ARG:NH1	2.26	0.49
11:L:301:LMT:H101	11:L:301:LMT:C6	2.43	0.49
1:A:51:MET:SD	1:A:97:ILE:HG13	2.53	0.49
1:A:307:ARG:HA	1:A:310:GLU:HB2	1.94	0.49
3:C:146:ILE:C	3:C:148:MET:N	2.61	0.49
1:D:642:LEU:HB2	1:D:647:LYS:HE3	1.94	0.49
1:G:306:ARG:HB2	1:G:307:ARG:HH12	1.78	0.49
1:G:307:ARG:HA	1:G:310:GLU:HB2	1.94	0.49
1:G:405:LEU:O	1:G:408:ASN:HB2	2.13	0.49
1:G:628:LYS:HA	1:G:628:LYS:HE3	1.94	0.49
1:J:141:PHE:O	1:J:298:LEU:HD22	2.13	0.49
3:L:161:PHE:CE2	3:L:246:LYS:HB2	2.48	0.49
3:L:169:TRP:N	3:L:170:PRO:CD	2.76	0.49
1:D:111:HIS:CD2	2:E:139:PRO:HG3	2.48	0.49
2:E:36:ILE:HG22	2:E:76:ALA:HB1	1.95	0.49
2:E:46:THR:OG1	2:E:47:TYR:HD1	1.95	0.49
2:E:48:ASP:OD1	2:E:50:ASP:HB3	2.13	0.49
1:G:48:GLN:HA	1:G:154:ASP:O	2.13	0.49
1:G:118:ILE:CD1	1:G:123:LYS:HE3	2.41	0.49
1:G:211:GLY:HA3	1:G:428:CYS:SG	2.53	0.49
1:G:410:VAL:HG13	4:G:701:FAD:N1	2.28	0.49
2:H:48:ASP:OD1	2:H:50:ASP:HB3	2.13	0.49
3:I:14:THR:O	3:I:17:ARG:N	2.42	0.49
1:J:288:MET:CG	1:J:289:PRO:HD3	2.42	0.49
2:K:181:ARG:C	2:K:181:ARG:HD3	2.38	0.49
3:L:18:LYS:HE3	3:L:21:ARG:NH1	2.23	0.49
1:A:141:PHE:O	1:A:298:LEU:HD22	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:57:ASN:OD1	1:D:135:LEU:HB3	2.13	0.48
1:D:241:LEU:HD12	1:D:248:LEU:HD23	1.94	0.48
2:E:215:HIS:CD2	2:E:225:GLN:HB2	2.48	0.48
3:F:169:TRP:N	3:F:170:PRO:CD	2.76	0.48
2:H:199:ILE:HD12	2:H:231:LEU:HD21	1.94	0.48
1:J:57:ASN:OD1	1:J:135:LEU:HB3	2.13	0.48
1:J:306:ARG:HB2	1:J:307:ARG:HH12	1.78	0.48
2:K:215:HIS:CD2	2:K:225:GLN:HB2	2.48	0.48
1:A:241:LEU:HD12	1:A:248:LEU:HD23	1.94	0.48
1:A:270:GLU:HB2	5:A:702:MLA:O3B	2.12	0.48
1:A:495:GLU:HG3	1:A:574:THR:HB	1.93	0.48
2:B:166:MET:HE3	3:C:107:GLN:O	2.13	0.48
2:B:181:ARG:HD3	2:B:181:ARG:C	2.38	0.48
1:D:111:HIS:HD2	2:E:139:PRO:HG3	1.78	0.48
1:D:112:LYS:HG3	1:D:133:HIS:HB2	1.95	0.48
1:D:303:VAL:O	1:D:305:SER:N	2.46	0.48
1:D:461:GLU:HB3	1:D:466:ILE:HD11	1.94	0.48
1:G:247:GLN:HG2	1:G:567:SER:HB3	1.95	0.48
1:J:48:GLN:NE2	1:J:345:VAL:HG22	2.28	0.48
1:A:111:HIS:CD2	2:B:139:PRO:HG3	2.48	0.48
1:A:405:LEU:O	1:A:408:ASN:HB2	2.13	0.48
2:B:209:MET:SD	3:C:100:LYS:HG3	2.53	0.48
1:D:107:TRP:O	1:D:109:ARG:HD2	2.12	0.48
2:H:209:MET:SD	3:I:100:LYS:HG3	2.53	0.48
3:I:161:PHE:CE2	3:I:246:LYS:HB2	2.48	0.48
3:I:169:TRP:N	3:I:170:PRO:CD	2.76	0.48
1:J:48:GLN:HA	1:J:154:ASP:O	2.13	0.48
1:J:464:PHE:CD1	2:K:45:GLU:HA	2.48	0.48
1:J:523:VAL:HB	1:J:524:PRO:HD3	1.94	0.48
2:K:166:MET:HE3	3:L:107:GLN:O	2.13	0.48
1:A:374:GLY:O	1:A:375:ILE:C	2.57	0.48
1:A:589:GLU:HB2	1:A:638:MET:HE2	1.96	0.48
2:B:57:CYS:SG	2:B:61:ILE:HD12	2.53	0.48
2:B:215:HIS:CD2	2:B:225:GLN:HB2	2.48	0.48
11:C:303:LMT:H101	11:C:303:LMT:C6	2.43	0.48
1:D:306:ARG:HB2	1:D:307:ARG:HH12	1.78	0.48
3:F:112:LYS:O	3:F:113:THR:C	2.56	0.48
3:F:161:PHE:CE2	3:F:246:LYS:HB2	2.48	0.48
1:G:112:LYS:HG3	1:G:133:HIS:HB2	1.95	0.48
2:H:157:CYS:SG	2:H:174:ALA:HB2	2.54	0.48
3:I:85:PHE:C	3:I:87:PHE:H	2.19	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:74:VAL:O	1:J:77:SER:OG	2.28	0.48
2:K:36:ILE:HG22	2:K:76:ALA:HB1	1.95	0.48
3:L:83:ALA:CA	10:L:303:HEM:HBB1	2.42	0.48
2:B:157:CYS:SG	2:B:174:ALA:HB2	2.54	0.48
1:D:278:ILE:HG21	1:D:286:ARG:HH11	1.78	0.48
1:D:410:VAL:HG13	4:D:701:FAD:N1	2.28	0.48
1:D:464:PHE:CD1	2:E:45:GLU:HA	2.48	0.48
1:D:616:ILE:HG23	1:D:637:LEU:HD22	1.94	0.48
2:E:209:MET:SD	3:F:100:LYS:HG3	2.53	0.48
3:F:87:PHE:HD2	3:F:144:LEU:HD13	1.76	0.48
1:G:108:THR:HG21	1:G:151:TYR:HE1	1.79	0.48
1:G:589:GLU:HB2	1:G:638:MET:HE2	1.96	0.48
3:I:248:PHE:HB3	3:I:254:HIS:HD1	1.77	0.48
11:I:303:LMT:H101	11:I:303:LMT:C6	2.43	0.48
1:J:247:GLN:HG2	1:J:567:SER:HB3	1.95	0.48
1:J:539:ASP:HB3	1:J:580:TYR:OH	2.14	0.48
1:A:410:VAL:HG13	4:A:701:FAD:N1	2.28	0.48
3:C:161:PHE:CE2	3:C:246:LYS:HB2	2.48	0.48
1:D:115:ARG:HG2	1:D:115:ARG:HH11	1.79	0.48
1:D:589:GLU:HB2	1:D:638:MET:HE2	1.96	0.48
1:G:51:MET:SD	1:G:97:ILE:HG13	2.53	0.48
1:G:464:PHE:CD1	2:H:45:GLU:HA	2.48	0.48
1:G:490:ALA:C	1:G:492:LYS:H	2.20	0.48
1:J:286:ARG:HD2	1:J:288:MET:HE2	1.94	0.48
1:J:461:GLU:HB3	1:J:466:ILE:HD11	1.94	0.48
2:K:46:THR:OG1	2:K:47:TYR:HD1	1.95	0.48
2:K:199:ILE:HD12	2:K:231:LEU:HD21	1.94	0.48
1:A:48:GLN:HA	1:A:154:ASP:O	2.13	0.48
1:A:48:GLN:NE2	1:A:345:VAL:HG22	2.28	0.48
1:A:57:ASN:OD1	1:A:135:LEU:HB3	2.13	0.48
1:A:211:GLY:HA3	1:A:428:CYS:SG	2.53	0.48
1:A:303:VAL:O	1:A:305:SER:N	2.46	0.48
2:B:46:THR:OG1	2:B:47:TYR:HD1	1.95	0.48
3:C:87:PHE:HD2	3:C:144:LEU:HD13	1.76	0.48
1:D:51:MET:SD	1:D:97:ILE:HG13	2.53	0.48
2:E:57:CYS:SG	2:E:61:ILE:HD12	2.53	0.48
1:G:303:VAL:O	1:G:305:SER:N	2.46	0.48
1:J:115:ARG:HG2	1:J:115:ARG:HH11	1.79	0.48
1:J:303:VAL:O	1:J:305:SER:N	2.46	0.48
2:K:57:CYS:SG	2:K:61:ILE:HD12	2.53	0.48
1:A:247:GLN:HG2	1:A:567:SER:HB3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:490:ALA:C	1:A:492:LYS:H	2.21	0.48
1:D:48:GLN:HA	1:D:154:ASP:O	2.13	0.48
1:D:48:GLN:NE2	1:D:345:VAL:HG22	2.28	0.48
1:D:52:GLN:CG	1:D:148:ARG:HG3	2.42	0.48
1:D:518:GLU:O	1:D:522:ARG:HG3	2.14	0.48
3:F:95:PHE:CE1	11:F:301:LMT:H82	2.49	0.48
3:F:248:PHE:HB3	3:F:254:HIS:HD1	1.77	0.48
1:G:111:HIS:HD2	2:H:139:PRO:HG3	1.78	0.48
2:H:181:ARG:HD3	2:H:181:ARG:C	2.38	0.48
1:J:585:VAL:HA	1:J:588:MET:HG3	1.95	0.48
2:B:191:THR:O	2:B:195:TYR:HD1	1.95	0.48
1:D:539:ASP:HB3	1:D:580:TYR:OH	2.14	0.48
1:D:585:VAL:HA	1:D:588:MET:HG3	1.95	0.48
2:E:157:CYS:SG	2:E:174:ALA:HB2	2.54	0.48
2:E:166:MET:HE2	3:F:107:GLN:HB3	1.95	0.48
2:E:166:MET:HE3	3:F:107:GLN:O	2.13	0.48
3:F:13:VAL:HG22	3:F:18:LYS:H	1.79	0.48
4:G:701:FAD:H9	4:G:701:FAD:H1'1	1.63	0.48
1:J:51:MET:SD	1:J:97:ILE:HG13	2.53	0.48
1:J:111:HIS:HD2	2:K:139:PRO:HG3	1.78	0.48
1:J:490:ALA:C	1:J:492:LYS:H	2.20	0.48
1:A:112:LYS:HG3	1:A:133:HIS:HB2	1.95	0.48
1:A:288:MET:HB3	1:A:289:PRO:HD2	1.89	0.48
3:C:248:PHE:HB3	3:C:254:HIS:ND1	2.29	0.48
1:D:405:LEU:O	1:D:408:ASN:HB2	2.13	0.48
3:F:69:PHE:CD1	3:F:70:ILE:HG13	2.40	0.48
1:G:115:ARG:HH11	1:G:115:ARG:HG2	1.79	0.48
3:I:112:LYS:O	3:I:113:THR:C	2.56	0.48
1:J:518:GLU:O	1:J:522:ARG:HG3	2.14	0.48
2:K:209:MET:SD	3:L:100:LYS:HG3	2.53	0.48
1:A:5:TYR:HD1	1:A:208:VAL:HG23	1.79	0.47
1:A:115:ARG:HG2	1:A:115:ARG:HH11	1.79	0.47
1:D:374:GLY:O	1:D:375:ILE:C	2.57	0.47
3:F:36:PHE:HD2	3:F:89:VAL:CG1	2.25	0.47
1:G:374:GLY:O	1:G:375:ILE:C	2.57	0.47
1:G:642:LEU:HB2	1:G:647:LYS:HE3	1.94	0.47
1:A:349:CYS:O	1:A:353:ALA:HB3	2.14	0.47
1:A:419:ILE:C	1:A:421:GLY:N	2.72	0.47
1:G:48:GLN:NE2	1:G:345:VAL:HG22	2.28	0.47
1:G:52:GLN:CG	1:G:148:ARG:HG3	2.42	0.47
2:H:57:CYS:SG	2:H:61:ILE:HD12	2.53	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:248:PHE:HB3	3:I:254:HIS:ND1	2.29	0.47
1:J:112:LYS:HG3	1:J:133:HIS:HB2	1.95	0.47
1:J:405:LEU:O	1:J:408:ASN:HB2	2.13	0.47
2:K:34:MET:SD	2:K:39:VAL:HG22	2.55	0.47
2:K:157:CYS:SG	2:K:174:ALA:HB2	2.54	0.47
3:C:112:LYS:O	3:C:113:THR:C	2.56	0.47
1:G:278:ILE:HD12	1:G:286:ARG:NH1	2.29	0.47
2:H:166:MET:HE3	3:I:107:GLN:O	2.13	0.47
3:I:136:MET:CE	3:I:179:VAL:HA	2.45	0.47
1:J:278:ILE:CD1	1:J:286:ARG:HH11	2.28	0.47
1:J:451:MET:O	1:J:455:VAL:HG23	2.15	0.47
1:A:255:GLN:HE21	1:A:403:ASN:ND2	2.12	0.47
1:A:464:PHE:CD1	2:B:45:GLU:HA	2.48	0.47
1:A:518:GLU:O	1:A:522:ARG:HG3	2.14	0.47
1:D:247:GLN:HG2	1:D:567:SER:HB3	1.95	0.47
1:D:255:GLN:HE21	1:D:403:ASN:ND2	2.12	0.47
1:D:319:GLN:CA	1:D:324:GLN:HA	2.45	0.47
1:D:349:CYS:O	1:D:353:ALA:HB3	2.14	0.47
3:F:204:LYS:O	3:F:207:ALA:HB3	2.15	0.47
3:F:218:ALA:O	3:F:222:VAL:HG23	2.15	0.47
1:G:286:ARG:HD2	1:G:288:MET:HE2	1.94	0.47
3:I:69:PHE:CD1	3:I:70:ILE:HG13	2.40	0.47
1:J:589:GLU:HB2	1:J:638:MET:HE2	1.96	0.47
3:L:168:MET:HB3	3:L:172:TYR:CE1	2.50	0.47
1:A:152:THR:O	1:A:153:ALA:HB3	2.15	0.47
1:A:319:GLN:CA	1:A:324:GLN:HA	2.45	0.47
1:A:540:ARG:NH2	1:A:562:ASN:HD22	2.08	0.47
1:D:186:HIS:CD2	1:D:243:THR:HB	2.50	0.47
3:F:136:MET:CE	3:F:179:VAL:HA	2.45	0.47
3:F:168:MET:HB3	3:F:172:TYR:CE1	2.50	0.47
1:G:186:HIS:CD2	1:G:243:THR:HB	2.50	0.47
1:G:219:TYR:O	1:G:222:ILE:HG12	2.15	0.47
1:G:349:CYS:O	1:G:353:ALA:HB3	2.14	0.47
3:I:204:LYS:O	3:I:207:ALA:HB3	2.15	0.47
1:J:152:THR:O	1:J:153:ALA:HB3	2.15	0.47
1:J:278:ILE:HG21	1:J:286:ARG:HH11	1.77	0.47
1:J:356:ASP:HA	1:J:357:PRO:HD3	1.71	0.47
2:K:166:MET:HE2	3:L:107:GLN:HB3	1.95	0.47
3:L:218:ALA:O	3:L:222:VAL:HG23	2.15	0.47
1:A:32:ILE:HD13	1:A:207:TYR:HE2	1.80	0.47
1:A:351:TYR:CD2	2:B:78:ARG:HD3	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:539:ASP:HB3	1:A:580:TYR:OH	2.14	0.47
2:B:166:MET:HE2	3:C:107:GLN:HB3	1.95	0.47
3:C:14:THR:O	3:C:17:ARG:N	2.43	0.47
3:C:36:PHE:HD2	3:C:89:VAL:CG1	2.25	0.47
3:C:136:MET:CE	3:C:179:VAL:HA	2.45	0.47
1:D:5:TYR:HD1	1:D:208:VAL:HG23	1.79	0.47
1:D:286:ARG:HD2	1:D:288:MET:HE2	1.94	0.47
1:D:540:ARG:NH2	1:D:562:ASN:HD22	2.08	0.47
1:G:71:MET:O	1:G:75:LYS:HG3	2.15	0.47
1:G:518:GLU:O	1:G:522:ARG:HG3	2.14	0.47
2:H:34:MET:SD	2:H:39:VAL:HG22	2.55	0.47
1:J:41:ARG:NH2	2:K:153:GLU:O	2.42	0.47
1:J:108:THR:HG21	1:J:151:TYR:HE1	1.79	0.47
1:J:349:CYS:O	1:J:353:ALA:HB3	2.15	0.47
2:K:144:GLU:C	2:K:146:PHE:N	2.67	0.47
3:L:14:THR:O	3:L:17:ARG:N	2.42	0.47
3:L:136:MET:CE	3:L:179:VAL:HA	2.44	0.47
1:A:71:MET:O	1:A:75:LYS:HG3	2.15	0.47
1:A:111:HIS:HD2	2:B:139:PRO:HG3	1.78	0.47
1:A:487:LEU:O	1:A:538:LEU:HD22	2.15	0.47
1:D:278:ILE:CD1	1:D:286:ARG:HH11	2.28	0.47
2:E:31:ALA:CB	2:E:34:MET:HE3	2.44	0.47
2:E:34:MET:SD	2:E:39:VAL:HG22	2.55	0.47
1:G:32:ILE:HD13	1:G:207:TYR:HE2	1.80	0.47
1:G:152:THR:O	1:G:153:ALA:HB3	2.15	0.47
1:G:255:GLN:HE21	1:G:403:ASN:ND2	2.12	0.47
1:G:319:GLN:CA	1:G:324:GLN:HA	2.45	0.47
1:G:492:LYS:O	1:G:492:LYS:HD3	2.15	0.47
2:H:31:ALA:CB	2:H:34:MET:HE3	2.45	0.47
2:H:166:MET:HE2	3:I:107:GLN:HB3	1.95	0.47
3:I:83:ALA:CA	10:I:302:HEM:HBB1	2.42	0.47
3:I:168:MET:HB3	3:I:172:TYR:CE1	2.50	0.47
3:I:218:ALA:O	3:I:222:VAL:HG23	2.15	0.47
1:J:5:TYR:HD1	1:J:208:VAL:HG23	1.79	0.47
1:J:58:SER:HA	1:J:110:ILE:CD1	2.45	0.47
1:J:319:GLN:CA	1:J:324:GLN:HA	2.45	0.47
2:K:31:ALA:CB	2:K:34:MET:HE3	2.45	0.47
1:A:451:MET:O	1:A:455:VAL:HG23	2.15	0.47
2:B:31:ALA:CB	2:B:34:MET:HE3	2.45	0.47
2:B:147:GLU:HA	2:B:150:ARG:HD3	1.97	0.47
1:G:539:ASP:HB3	1:G:580:TYR:OH	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:171:LEU:HD12	3:L:145:TYR:CE1	2.49	0.47
1:J:219:TYR:O	1:J:222:ILE:HG12	2.15	0.47
1:J:255:GLN:HE21	1:J:403:ASN:ND2	2.12	0.47
1:J:487:LEU:O	1:J:538:LEU:HD22	2.15	0.47
2:B:34:MET:SD	2:B:39:VAL:HG22	2.55	0.47
3:C:72:GLU:HB3	3:C:73:GLY:H	1.47	0.47
1:D:2:LYS:HB2	1:D:2:LYS:HZ3	1.76	0.47
1:D:351:TYR:CD2	2:E:78:ARG:HD3	2.50	0.47
2:E:232:ARG:HG2	3:F:194:TRP:CZ3	2.50	0.47
1:G:617:ASP:HA	1:G:620:GLN:HB2	1.97	0.47
3:I:103:ILE:H	3:I:107:GLN:HE21	1.62	0.47
1:J:10:VAL:O	1:J:10:VAL:HG12	2.15	0.47
1:J:32:ILE:HD13	1:J:207:TYR:HE2	1.80	0.47
1:J:270:GLU:C	1:J:272:CYS:N	2.73	0.47
1:J:288:MET:HB3	1:J:289:PRO:HD2	1.89	0.47
1:A:10:VAL:O	1:A:10:VAL:HG12	2.15	0.47
1:A:108:THR:HG21	1:A:151:TYR:HE1	1.79	0.47
1:A:186:HIS:CD2	1:A:243:THR:HB	2.50	0.47
1:D:10:VAL:HG12	1:D:10:VAL:O	2.15	0.47
1:D:32:ILE:HD13	1:D:207:TYR:HE2	1.80	0.47
1:D:108:THR:HG21	1:D:151:TYR:HE1	1.79	0.47
1:D:278:ILE:HD12	1:D:286:ARG:NH1	2.29	0.47
3:F:69:PHE:C	3:F:70:ILE:HG13	2.40	0.47
3:F:248:PHE:HB3	3:F:254:HIS:ND1	2.29	0.47
1:G:5:TYR:HD1	1:G:208:VAL:HG23	1.79	0.47
1:J:71:MET:O	1:J:75:LYS:HG3	2.15	0.47
1:J:374:GLY:O	1:J:375:ILE:C	2.57	0.47
2:K:114:MET:O	2:K:118:VAL:HG22	2.15	0.47
3:L:103:ILE:H	3:L:107:GLN:HE21	1.62	0.47
3:L:248:PHE:HB3	3:L:254:HIS:ND1	2.29	0.47
3:C:204:LYS:O	3:C:207:ALA:HB3	2.15	0.46
1:D:487:LEU:O	1:D:538:LEU:HD22	2.15	0.46
1:G:57:ASN:O	1:G:132:ARG:NH1	2.48	0.46
2:H:114:MET:O	2:H:118:VAL:HG22	2.15	0.46
2:H:147:GLU:HA	2:H:150:ARG:HD3	1.97	0.46
1:J:52:GLN:CG	1:J:148:ARG:HG3	2.42	0.46
1:J:278:ILE:HD12	1:J:286:ARG:NH1	2.29	0.46
3:F:186:GLY:O	3:F:190:LEU:HB2	2.15	0.46
1:G:18:LEU:O	1:G:22:VAL:HG23	2.15	0.46
1:G:451:MET:O	1:G:455:VAL:HG23	2.15	0.46
2:H:222:LEU:HB3	2:H:223:PRO:HD2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:230:TYR:CE1	2:H:234:LYS:HD2	2.50	0.46
2:H:232:ARG:HG2	3:I:194:TRP:CZ3	2.50	0.46
3:I:69:PHE:C	3:I:70:ILE:HG13	2.40	0.46
1:J:57:ASN:O	1:J:132:ARG:NH1	2.48	0.46
2:K:147:GLU:HA	2:K:150:ARG:HD3	1.97	0.46
3:L:13:VAL:HG22	3:L:18:LYS:H	1.79	0.46
3:L:186:GLY:O	3:L:190:LEU:HB2	2.15	0.46
3:L:204:LYS:O	3:L:207:ALA:HB3	2.15	0.46
3:C:13:VAL:HG22	3:C:18:LYS:H	1.79	0.46
3:C:83:ALA:CA	10:C:302:HEM:HBB1	2.42	0.46
3:C:168:MET:HB3	3:C:172:TYR:CE1	2.50	0.46
3:C:253:THR:HG22	3:C:254:HIS:N	2.21	0.46
1:D:58:SER:HA	1:D:110:ILE:CD1	2.45	0.46
1:D:110:ILE:HA	1:D:137:HIS:HD2	1.80	0.46
1:D:219:TYR:O	1:D:222:ILE:HG12	2.15	0.46
2:E:150:ARG:O	2:E:151:CYS:C	2.59	0.46
3:F:45:MET:HA	3:F:45:MET:HE2	1.98	0.46
1:G:58:SER:HA	1:G:110:ILE:CD1	2.45	0.46
1:G:278:ILE:CD1	1:G:286:ARG:HH11	2.28	0.46
1:G:288:MET:HB3	1:G:289:PRO:HD2	1.89	0.46
1:G:351:TYR:CD2	2:H:78:ARG:HD3	2.50	0.46
1:J:296:LYS:HG3	1:J:307:ARG:HE	1.81	0.46
1:J:351:TYR:CD2	2:K:78:ARG:HD3	2.50	0.46
2:K:222:LEU:HB3	2:K:223:PRO:HD2	1.97	0.46
2:B:114:MET:O	2:B:118:VAL:HG22	2.15	0.46
2:B:222:LEU:HB3	2:B:223:PRO:HD2	1.97	0.46
2:B:232:ARG:HG2	3:C:194:TRP:CZ3	2.50	0.46
2:E:145:VAL:O	2:E:145:VAL:CG1	2.64	0.46
2:E:230:TYR:CE1	2:E:234:LYS:HD2	2.51	0.46
1:J:186:HIS:CD2	1:J:243:THR:HB	2.50	0.46
1:J:492:LYS:O	1:J:492:LYS:HD3	2.15	0.46
3:L:36:PHE:HD2	3:L:89:VAL:CG1	2.25	0.46
3:L:112:LYS:O	3:L:113:THR:C	2.56	0.46
1:A:279:LEU:H	1:A:288:MET:HE1	1.80	0.46
1:A:542:GLU:HG2	1:A:560:TRP:CD1	2.51	0.46
2:B:150:ARG:O	2:B:151:CYS:C	2.59	0.46
2:B:206:PHE:CE1	3:C:24:ALA:HB2	2.51	0.46
2:B:209:MET:O	2:B:210:THR:C	2.59	0.46
1:D:18:LEU:O	1:D:22:VAL:HG23	2.15	0.46
1:D:119:ILE:CG2	1:D:120:ASN:H	2.15	0.46
1:D:617:ASP:HA	1:D:620:GLN:HB2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:206:PHE:CE1	3:F:24:ALA:HB2	2.51	0.46
2:E:222:LEU:HB3	2:E:223:PRO:HD2	1.97	0.46
3:F:83:ALA:CA	10:F:303:HEM:HBB1	2.42	0.46
1:G:487:LEU:O	1:G:538:LEU:HD22	2.15	0.46
2:H:145:VAL:O	2:H:145:VAL:CG1	2.64	0.46
3:I:98:MET:O	3:I:101:PHE:HB2	2.16	0.46
1:J:279:LEU:H	1:J:288:MET:HE1	1.80	0.46
3:L:69:PHE:C	3:L:70:ILE:HG13	2.40	0.46
1:D:57:ASN:O	1:D:132:ARG:NH1	2.48	0.46
1:D:152:THR:O	1:D:153:ALA:HB3	2.15	0.46
1:G:173:VAL:HG12	1:G:174:SER:N	2.31	0.46
1:G:296:LYS:HG3	1:G:307:ARG:HE	1.81	0.46
3:I:186:GLY:O	3:I:190:LEU:HB2	2.15	0.46
1:J:18:LEU:O	1:J:22:VAL:HG23	2.15	0.46
1:J:41:ARG:HH11	1:J:41:ARG:CG	2.29	0.46
1:A:226:THR:OG1	1:A:368:GLN:NE2	2.49	0.46
1:A:296:LYS:HG3	1:A:307:ARG:HE	1.81	0.46
3:C:103:ILE:H	3:C:107:GLN:HE21	1.62	0.46
1:D:451:MET:O	1:D:455:VAL:HG23	2.15	0.46
2:E:114:MET:O	2:E:118:VAL:HG22	2.15	0.46
1:G:10:VAL:O	1:G:10:VAL:HG12	2.15	0.46
1:G:225:ASN:CB	1:G:367:MET:HE3	2.39	0.46
3:I:253:THR:HG22	3:I:254:HIS:N	2.21	0.46
1:J:84:LYS:HE3	1:J:638:MET:HG3	1.97	0.46
1:J:93:ALA:N	1:J:94:PRO:CD	2.79	0.46
1:J:478:VAL:O	1:J:478:VAL:HG12	2.16	0.46
2:K:150:ARG:O	2:K:151:CYS:C	2.59	0.46
1:A:219:TYR:O	1:A:222:ILE:HG12	2.15	0.46
1:A:281:ASP:CB	1:A:285:HIS:NE2	2.79	0.46
4:A:701:FAD:H9	4:A:701:FAD:H1'1	1.63	0.46
3:C:45:MET:HE2	3:C:45:MET:HA	1.98	0.46
1:D:295:LYS:HG3	1:D:297:GLU:O	2.16	0.46
1:D:478:VAL:O	1:D:478:VAL:HG12	2.16	0.46
1:G:288:MET:O	1:G:290:ASP:N	2.48	0.46
1:G:295:LYS:HG3	1:G:297:GLU:O	2.16	0.46
1:G:419:ILE:C	1:G:421:GLY:N	2.72	0.46
1:J:617:ASP:HA	1:J:620:GLN:HB2	1.97	0.46
2:K:209:MET:O	2:K:210:THR:C	2.59	0.46
3:L:49:SER:HA	3:L:227:THR:HG21	1.98	0.46
1:A:295:LYS:HG3	1:A:297:GLU:O	2.16	0.46
2:B:82:LYS:HE3	2:B:83:ASP:OD2	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:61:VAL:HA	3:C:64:LYS:HG3	1.98	0.46
3:C:218:ALA:O	3:C:222:VAL:HG23	2.15	0.46
1:D:84:LYS:HE3	1:D:638:MET:HG3	1.97	0.46
1:D:281:ASP:CB	1:D:285:HIS:NE2	2.79	0.46
1:D:288:MET:HB3	1:D:289:PRO:HD2	1.89	0.46
1:D:296:LYS:HG3	1:D:307:ARG:HE	1.81	0.46
1:D:419:ILE:C	1:D:421:GLY:N	2.72	0.46
3:F:64:LYS:HE2	3:F:64:LYS:HB3	1.79	0.46
1:G:110:ILE:HA	1:G:137:HIS:HD2	1.80	0.46
1:G:281:ASP:CB	1:G:285:HIS:NE2	2.79	0.46
2:H:1:MET:HE2	2:H:30:GLU:O	2.16	0.46
3:I:248:PHE:O	3:I:254:HIS:ND1	2.49	0.46
1:J:118:ILE:CD1	1:J:123:LYS:HE3	2.41	0.46
1:J:288:MET:O	1:J:290:ASP:N	2.48	0.46
2:K:230:TYR:CE1	2:K:234:LYS:HD2	2.50	0.46
3:L:69:PHE:CD1	3:L:70:ILE:HG13	2.40	0.46
1:A:57:ASN:O	1:A:132:ARG:NH1	2.48	0.46
1:A:60:MET:C	1:A:62:ASP:H	2.24	0.46
1:A:110:ILE:HA	1:A:137:HIS:HD2	1.80	0.46
1:A:173:VAL:HG12	1:A:174:SER:N	2.31	0.46
2:B:46:THR:OG1	2:B:47:TYR:N	2.49	0.46
2:B:230:TYR:CE1	2:B:234:LYS:HD2	2.51	0.46
1:D:93:ALA:N	1:D:94:PRO:CD	2.79	0.46
3:F:103:ILE:H	3:F:107:GLN:HE21	1.62	0.46
1:G:110:ILE:HA	1:G:137:HIS:CD2	2.51	0.46
1:G:238:ALA:CB	1:G:525:MET:HB3	2.46	0.46
1:G:288:MET:C	1:G:290:ASP:N	2.71	0.46
3:I:1:MET:HB3	3:L:112:LYS:NZ	2.31	0.46
3:I:151:PRO:O	3:I:154:ILE:HG13	2.16	0.46
1:J:226:THR:OG1	1:J:368:GLN:NE2	2.49	0.46
1:J:288:MET:C	1:J:290:ASP:N	2.71	0.46
1:A:18:LEU:O	1:A:22:VAL:HG23	2.15	0.45
1:A:84:LYS:HE3	1:A:638:MET:HG3	1.97	0.45
1:A:238:ALA:CB	1:A:525:MET:HB3	2.46	0.45
1:A:270:GLU:C	1:A:272:CYS:N	2.73	0.45
1:A:589:GLU:C	1:A:590:ILE:HG13	2.41	0.45
1:D:71:MET:O	1:D:75:LYS:HG3	2.15	0.45
1:G:39:VAL:C	1:G:41:ARG:H	2.24	0.45
1:G:112:LYS:NZ	1:G:130:ASP:HB3	2.32	0.45
1:J:542:GLU:HG2	1:J:560:TRP:CD1	2.51	0.45
1:J:589:GLU:C	1:J:590:ILE:HG13	2.41	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:1:MET:HE2	2:K:30:GLU:O	2.16	0.45
3:L:151:PRO:O	3:L:154:ILE:HG13	2.16	0.45
1:A:112:LYS:NZ	1:A:130:ASP:HB3	2.31	0.45
2:B:145:VAL:O	2:B:145:VAL:CG1	2.64	0.45
3:C:49:SER:HA	3:C:227:THR:HG21	1.98	0.45
3:C:109:LEU:HD12	3:C:109:LEU:O	2.16	0.45
1:D:238:ALA:CB	1:D:525:MET:HB3	2.46	0.45
1:D:613:GLN:O	1:D:616:ILE:HB	2.17	0.45
1:G:9:LEU:CD2	1:G:10:VAL:H	2.28	0.45
1:G:540:ARG:NH2	1:G:562:ASN:HD22	2.08	0.45
1:G:562:ASN:HD22	1:G:562:ASN:N	2.03	0.45
2:H:190:ARG:HB3	2:H:195:TYR:CE1	2.51	0.45
1:J:173:VAL:HG12	1:J:174:SER:N	2.31	0.45
1:J:238:ALA:CB	1:J:525:MET:HB3	2.46	0.45
1:J:295:LYS:HG3	1:J:297:GLU:O	2.16	0.45
1:J:311:HIS:HA	1:J:314:LYS:HD3	1.99	0.45
1:A:112:LYS:HZ2	1:A:130:ASP:HB3	1.81	0.45
1:A:345:VAL:O	1:A:345:VAL:HG12	2.17	0.45
1:A:380:ARG:CB	1:A:423:TYR:CD1	3.00	0.45
2:B:122:ILE:HD13	2:B:188:ASP:HB2	1.99	0.45
3:C:69:PHE:C	3:C:70:ILE:HG13	2.40	0.45
1:D:112:LYS:HZ2	1:D:130:ASP:HB3	1.82	0.45
1:D:129:GLU:HG2	1:D:131:PHE:HE2	1.82	0.45
1:D:226:THR:OG1	1:D:368:GLN:NE2	2.49	0.45
1:D:288:MET:O	1:D:290:ASP:N	2.48	0.45
1:D:345:VAL:O	1:D:345:VAL:HG12	2.17	0.45
2:E:82:LYS:HE3	2:E:83:ASP:OD2	2.16	0.45
3:F:19:LYS:O	3:F:20:SER:C	2.60	0.45
3:F:98:MET:O	3:F:101:PHE:HB2	2.16	0.45
3:F:248:PHE:O	3:F:254:HIS:ND1	2.49	0.45
1:G:60:MET:C	1:G:62:ASP:N	2.73	0.45
1:G:392:GLY:O	1:G:393:GLU:C	2.60	0.45
1:G:589:GLU:C	1:G:590:ILE:HG13	2.41	0.45
1:J:39:VAL:C	1:J:41:ARG:H	2.24	0.45
1:J:129:GLU:HG2	1:J:131:PHE:HE2	1.82	0.45
3:L:13:VAL:CG2	3:L:18:LYS:N	2.79	0.45
3:L:63:LYS:O	3:L:66:GLN:N	2.45	0.45
3:L:248:PHE:O	3:L:254:HIS:ND1	2.49	0.45
1:A:93:ALA:N	1:A:94:PRO:CD	2.79	0.45
1:A:478:VAL:O	1:A:478:VAL:HG12	2.16	0.45
3:C:19:LYS:O	3:C:20:SER:C	2.60	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:380:ARG:CB	1:D:423:TYR:CD1	3.00	0.45
1:D:427:HIS:O	1:D:431:THR:HG22	2.17	0.45
2:E:1:MET:HE2	2:E:30:GLU:O	2.16	0.45
3:F:13:VAL:CG2	3:F:18:LYS:N	2.79	0.45
1:G:478:VAL:O	1:G:478:VAL:HG12	2.16	0.45
2:H:46:THR:OG1	2:H:47:TYR:N	2.49	0.45
2:H:206:PHE:CE1	3:I:24:ALA:HB2	2.51	0.45
1:J:120:ASN:CG	1:J:121:ALA:H	2.25	0.45
1:J:392:GLY:O	1:J:393:GLU:C	2.59	0.45
1:J:427:HIS:O	1:J:431:THR:HG22	2.17	0.45
1:A:58:SER:HA	1:A:110:ILE:CD1	2.45	0.45
1:A:311:HIS:HA	1:A:314:LYS:HD3	1.99	0.45
1:A:492:LYS:O	1:A:492:LYS:HD3	2.15	0.45
1:A:613:GLN:O	1:A:616:ILE:HB	2.16	0.45
3:C:160:SER:O	3:C:163:MET:HB3	2.17	0.45
1:D:41:ARG:NH2	2:E:153:GLU:O	2.42	0.45
2:E:7:ILE:HG22	2:E:9:VAL:HG23	1.99	0.45
2:E:141:VAL:C	2:E:143:GLN:H	2.25	0.45
3:F:49:SER:HA	3:F:227:THR:HG21	1.98	0.45
1:G:84:LYS:HE3	1:G:638:MET:HG3	1.97	0.45
2:H:7:ILE:HG22	2:H:9:VAL:HG23	1.99	0.45
3:I:19:LYS:O	3:I:20:SER:C	2.60	0.45
3:I:49:SER:HA	3:I:227:THR:HG21	1.98	0.45
3:I:161:PHE:CD1	3:I:245:TYR:HB2	2.52	0.45
1:J:22:VAL:O	1:J:26:GLN:HG2	2.17	0.45
1:J:60:MET:HB2	1:J:147:TRP:HB2	1.99	0.45
1:J:110:ILE:HA	1:J:137:HIS:CD2	2.51	0.45
1:J:385:LEU:O	1:J:386:LYS:C	2.59	0.45
1:J:419:ILE:C	1:J:421:GLY:N	2.72	0.45
2:K:145:VAL:O	2:K:145:VAL:CG1	2.64	0.45
3:L:98:MET:O	3:L:101:PHE:HB2	2.16	0.45
3:L:161:PHE:CD1	3:L:245:TYR:HB2	2.52	0.45
1:A:467:LYS:HG3	1:A:468:ASN:N	2.31	0.45
3:C:40:PHE:HE1	3:C:86:VAL:HG21	1.81	0.45
3:C:51:ILE:HG21	3:C:231:TYR:CE1	2.52	0.45
3:C:186:GLY:O	3:C:190:LEU:HB2	2.15	0.45
1:D:123:LYS:H	1:D:123:LYS:HG2	1.59	0.45
1:D:470:MET:SD	1:D:527:LEU:HD23	2.57	0.45
1:D:589:GLU:C	1:D:590:ILE:HG13	2.41	0.45
1:G:345:VAL:O	1:G:345:VAL:HG12	2.17	0.45
1:G:380:ARG:CB	1:G:423:TYR:CD1	3.00	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:82:LYS:HE3	2:H:83:ASP:OD2	2.16	0.45
3:I:61:VAL:HA	3:I:64:LYS:HG3	1.98	0.45
3:I:95:PHE:CE1	11:I:303:LMT:H82	2.52	0.45
1:J:112:LYS:NZ	1:J:130:ASP:HB3	2.32	0.45
1:J:281:ASP:CB	1:J:285:HIS:NE2	2.79	0.45
1:J:562:ASN:HD22	1:J:562:ASN:N	2.03	0.45
1:J:562:ASN:HA	1:J:583:LEU:CD1	2.47	0.45
1:J:613:GLN:O	1:J:616:ILE:HB	2.17	0.45
2:K:190:ARG:HB3	2:K:195:TYR:CE1	2.51	0.45
2:K:206:PHE:CE1	3:L:24:ALA:HB2	2.51	0.45
3:L:19:LYS:O	3:L:20:SER:C	2.60	0.45
1:A:60:MET:HB2	1:A:147:TRP:HB2	1.99	0.45
1:A:278:ILE:HD12	1:A:286:ARG:NH1	2.29	0.45
1:A:286:ARG:HD2	1:A:288:MET:HE2	1.94	0.45
1:A:385:LEU:O	1:A:386:LYS:C	2.59	0.45
1:A:562:ASN:ND2	1:A:562:ASN:H	2.12	0.45
1:A:617:ASP:HA	1:A:620:GLN:HB2	1.97	0.45
2:B:190:ARG:HB3	2:B:195:TYR:CE1	2.51	0.45
2:B:226:SER:O	2:B:229:ALA:HB3	2.17	0.45
3:C:151:PRO:O	3:C:154:ILE:HG13	2.16	0.45
1:D:60:MET:C	1:D:62:ASP:H	2.24	0.45
1:D:110:ILE:HA	1:D:137:HIS:CD2	2.51	0.45
1:D:492:LYS:O	1:D:492:LYS:HD3	2.15	0.45
2:E:190:ARG:HB3	2:E:195:TYR:CE1	2.51	0.45
2:E:213:ALA:HA	3:F:120:HIS:CE1	2.52	0.45
3:F:151:PRO:O	3:F:154:ILE:HG13	2.16	0.45
1:G:60:MET:C	1:G:62:ASP:H	2.24	0.45
1:G:93:ALA:N	1:G:94:PRO:CD	2.79	0.45
1:G:226:THR:OG1	1:G:368:GLN:NE2	2.49	0.45
1:G:613:GLN:O	1:G:616:ILE:HB	2.17	0.45
3:I:85:PHE:C	3:I:87:PHE:N	2.75	0.45
1:J:281:ASP:OD1	1:J:287:PHE:HB2	2.17	0.45
2:K:65:CYS:O	2:K:65:CYS:SG	2.75	0.45
2:K:82:LYS:HE3	2:K:83:ASP:OD2	2.16	0.45
2:K:122:ILE:HD13	2:K:188:ASP:HB2	1.99	0.45
2:K:141:VAL:C	2:K:143:GLN:N	2.75	0.45
2:K:232:ARG:HG2	3:L:194:TRP:CZ3	2.50	0.45
1:A:67:ASP:O	1:A:70:PHE:HB3	2.17	0.45
1:A:110:ILE:HA	1:A:137:HIS:CD2	2.51	0.45
1:A:278:ILE:CD1	1:A:286:ARG:HH11	2.28	0.45
1:A:392:GLY:O	1:A:393:GLU:C	2.60	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:562:ASN:HA	1:A:583:LEU:CD1	2.47	0.45
2:B:1:MET:HE2	2:B:30:GLU:O	2.16	0.45
2:B:209:MET:O	2:B:211:LEU:HD23	2.17	0.45
3:C:85:PHE:C	3:C:87:PHE:N	2.75	0.45
3:C:95:PHE:CE1	11:C:303:LMT:H82	2.52	0.45
1:D:561:LEU:C	1:D:583:LEU:HD13	2.42	0.45
2:E:226:SER:O	2:E:229:ALA:HB3	2.17	0.45
1:G:225:ASN:HB3	1:G:367:MET:CE	2.41	0.45
1:G:288:MET:HA	1:G:296:LYS:HB3	1.99	0.45
1:G:348:ILE:O	1:G:352:PHE:HD1	2.00	0.45
1:G:385:LEU:O	1:G:386:LYS:C	2.59	0.45
1:G:427:HIS:O	1:G:431:THR:HG22	2.17	0.45
1:J:345:VAL:O	1:J:345:VAL:HG12	2.17	0.45
1:J:467:LYS:HG3	1:J:468:ASN:N	2.31	0.45
2:K:213:ALA:HA	3:L:120:HIS:CE1	2.52	0.45
3:L:45:MET:HE2	3:L:45:MET:HA	1.98	0.45
3:L:51:ILE:HG21	3:L:231:TYR:CE1	2.52	0.45
3:L:109:LEU:HD12	3:L:109:LEU:O	2.16	0.45
1:A:120:ASN:CG	1:A:121:ALA:H	2.25	0.45
1:A:348:ILE:O	1:A:352:PHE:HD1	2.00	0.45
3:C:87:PHE:HA	3:C:144:LEU:HD13	1.99	0.45
3:C:98:MET:O	3:C:101:PHE:HB2	2.16	0.45
3:C:161:PHE:CD1	3:C:245:TYR:HB2	2.52	0.45
3:C:248:PHE:O	3:C:254:HIS:ND1	2.49	0.45
1:D:22:VAL:O	1:D:26:GLN:HG2	2.17	0.45
1:D:39:VAL:C	1:D:41:ARG:H	2.24	0.45
1:D:60:MET:HB2	1:D:147:TRP:HB2	1.99	0.45
1:D:542:GLU:HG2	1:D:560:TRP:CD1	2.51	0.45
2:E:65:CYS:O	2:E:65:CYS:SG	2.75	0.45
2:E:122:ILE:HD13	2:E:188:ASP:HB2	1.99	0.45
2:E:209:MET:O	2:E:211:LEU:HD23	2.17	0.45
3:F:61:VAL:HA	3:F:64:LYS:HG3	1.98	0.45
1:G:542:GLU:HG2	1:G:560:TRP:CD1	2.51	0.45
2:H:126:LYS:HE3	2:H:126:LYS:HB3	1.88	0.45
2:H:213:ALA:HA	3:I:120:HIS:CE1	2.52	0.45
3:I:36:PHE:HD2	3:I:89:VAL:CG1	2.25	0.45
3:I:142:VAL:CG2	3:I:143:HIS:N	2.66	0.45
3:I:160:SER:O	3:I:163:MET:HB3	2.17	0.45
1:J:9:LEU:CD2	1:J:10:VAL:H	2.28	0.45
2:K:158:ILE:CD1	2:K:172:GLY:HA3	2.47	0.45
1:A:111:HIS:CD2	1:A:133:HIS:HE1	2.35	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:356:ASP:HA	1:A:357:PRO:HD3	1.71	0.45
2:B:213:ALA:HA	3:C:120:HIS:CE1	2.52	0.45
1:D:348:ILE:O	1:D:352:PHE:HD1	2.00	0.45
3:F:158:SER:H	3:F:254:HIS:CE1	2.35	0.45
3:F:161:PHE:CD1	3:F:245:TYR:HB2	2.52	0.45
1:G:84:LYS:HE2	1:G:639:PRO:O	2.17	0.45
1:G:112:LYS:HZ2	1:G:130:ASP:HB3	1.81	0.45
1:G:118:ILE:HB	1:G:276:GLY:HA3	1.99	0.45
1:G:120:ASN:CG	1:G:121:ALA:H	2.25	0.45
1:G:306:ARG:HB2	1:G:307:ARG:NH1	2.32	0.45
1:G:562:ASN:HA	1:G:583:LEU:CD1	2.47	0.45
3:I:25:LYS:O	3:I:29:TRP:HD1	2.00	0.45
3:I:51:ILE:HG21	3:I:231:TYR:CE1	2.52	0.45
1:J:67:ASP:O	1:J:70:PHE:HB3	2.17	0.45
1:J:110:ILE:HA	1:J:137:HIS:HD2	1.80	0.45
1:A:22:VAL:O	1:A:26:GLN:HG2	2.17	0.44
1:A:281:ASP:OD1	1:A:287:PHE:HB2	2.17	0.44
2:B:141:VAL:C	2:B:143:GLN:H	2.25	0.44
1:D:98:ARG:NH2	2:E:133:LEU:CD1	2.81	0.44
1:D:111:HIS:CD2	1:D:133:HIS:HE1	2.35	0.44
1:D:112:LYS:NZ	1:D:130:ASP:HB3	2.32	0.44
1:D:173:VAL:HG12	1:D:174:SER:N	2.31	0.44
1:D:270:GLU:C	1:D:272:CYS:N	2.73	0.44
1:D:288:MET:HA	1:D:296:LYS:HB3	1.99	0.44
1:D:311:HIS:HA	1:D:314:LYS:HD3	1.99	0.44
1:D:542:GLU:OE1	1:D:544:ARG:NH1	2.50	0.44
2:E:147:GLU:HA	2:E:150:ARG:HD3	1.97	0.44
3:F:51:ILE:HG21	3:F:231:TYR:CE1	2.52	0.44
3:F:109:LEU:O	3:F:109:LEU:HD12	2.16	0.44
3:F:160:SER:O	3:F:163:MET:HB3	2.17	0.44
1:G:41:ARG:NH2	2:H:153:GLU:O	2.42	0.44
1:G:512:HIS:O	1:G:514:ASN:N	2.50	0.44
2:H:209:MET:O	2:H:211:LEU:HD23	2.16	0.44
3:I:72:GLU:HB3	3:I:73:GLY:H	1.47	0.44
1:J:98:ARG:NH2	2:K:133:LEU:CD1	2.80	0.44
1:J:118:ILE:HB	1:J:276:GLY:HA3	1.99	0.44
1:J:297:GLU:O	1:J:298:LEU:HB2	2.17	0.44
2:K:226:SER:O	2:K:229:ALA:HB3	2.17	0.44
3:L:25:LYS:O	3:L:29:TRP:HD1	2.00	0.44
3:L:61:VAL:HA	3:L:64:LYS:HG3	1.98	0.44
3:L:152:GLN:C	3:L:154:ILE:H	2.25	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:561:LEU:C	1:A:583:LEU:HD13	2.42	0.44
2:B:7:ILE:HG22	2:B:9:VAL:HG23	1.99	0.44
2:B:65:CYS:O	2:B:65:CYS:SG	2.75	0.44
2:B:133:LEU:HD12	2:B:133:LEU:HA	1.84	0.44
3:C:158:SER:H	3:C:254:HIS:CE1	2.35	0.44
1:D:120:ASN:CG	1:D:121:ALA:H	2.24	0.44
1:D:281:ASP:OD1	1:D:287:PHE:HB2	2.17	0.44
1:D:392:GLY:O	1:D:393:GLU:C	2.59	0.44
1:D:512:HIS:O	1:D:514:ASN:N	2.50	0.44
1:G:405:LEU:O	1:G:406:GLY:C	2.60	0.44
2:H:141:VAL:C	2:H:143:GLN:H	2.25	0.44
3:I:109:LEU:O	3:I:109:LEU:HD12	2.16	0.44
1:J:405:LEU:O	1:J:406:GLY:C	2.60	0.44
1:J:540:ARG:NH2	1:J:562:ASN:HD22	2.08	0.44
1:D:297:GLU:O	1:D:298:LEU:HB2	2.17	0.44
2:E:46:THR:OG1	2:E:47:TYR:N	2.49	0.44
2:E:209:MET:O	2:E:210:THR:C	2.59	0.44
3:F:25:LYS:O	3:F:29:TRP:HD1	2.00	0.44
1:G:129:GLU:HG2	1:G:131:PHE:HE2	1.82	0.44
2:H:122:ILE:HD13	2:H:188:ASP:HB2	1.99	0.44
2:H:209:MET:O	2:H:210:THR:C	2.59	0.44
2:H:226:SER:O	2:H:229:ALA:HB3	2.17	0.44
3:I:158:SER:H	3:I:254:HIS:CE1	2.35	0.44
1:J:84:LYS:HE2	1:J:639:PRO:O	2.18	0.44
1:J:306:ARG:HB2	1:J:307:ARG:NH1	2.32	0.44
1:J:512:HIS:O	1:J:514:ASN:N	2.50	0.44
1:J:561:LEU:C	1:J:583:LEU:HD13	2.42	0.44
2:K:7:ILE:HG22	2:K:9:VAL:HG23	1.99	0.44
2:K:141:VAL:C	2:K:143:GLN:H	2.25	0.44
2:K:209:MET:O	2:K:211:LEU:HD23	2.17	0.44
1:A:288:MET:HA	1:A:296:LYS:HB3	1.99	0.44
1:A:470:MET:SD	1:A:527:LEU:HD23	2.57	0.44
1:D:84:LYS:HE2	1:D:639:PRO:O	2.17	0.44
1:D:118:ILE:HB	1:D:276:GLY:HA3	1.99	0.44
3:F:85:PHE:C	3:F:87:PHE:N	2.75	0.44
1:G:67:ASP:O	1:G:70:PHE:HB3	2.17	0.44
1:G:287:PHE:CA	1:G:290:ASP:HB3	2.48	0.44
2:H:150:ARG:O	2:H:151:CYS:C	2.59	0.44
2:H:158:ILE:CD1	2:H:172:GLY:HA3	2.47	0.44
3:I:45:MET:HA	3:I:45:MET:HE2	1.98	0.44
3:I:232:VAL:O	3:I:236:LEU:HG	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:111:HIS:CD2	1:J:133:HIS:HE1	2.35	0.44
1:J:112:LYS:HZ2	1:J:130:ASP:HB3	1.83	0.44
1:J:147:TRP:N	1:J:147:TRP:CD1	2.86	0.44
3:L:160:SER:O	3:L:163:MET:HB3	2.17	0.44
1:A:84:LYS:HE2	1:A:639:PRO:O	2.17	0.44
1:A:118:ILE:HB	1:A:276:GLY:HA3	1.99	0.44
1:A:297:GLU:O	1:A:298:LEU:HB2	2.17	0.44
3:C:63:LYS:O	3:C:66:GLN:N	2.45	0.44
1:D:385:LEU:O	1:D:386:LYS:C	2.59	0.44
1:D:562:ASN:HA	1:D:583:LEU:CD1	2.47	0.44
2:E:158:ILE:CD1	2:E:172:GLY:HA3	2.47	0.44
1:G:111:HIS:CD2	1:G:133:HIS:HE1	2.35	0.44
1:G:281:ASP:OD1	1:G:287:PHE:HB2	2.17	0.44
1:G:311:HIS:HA	1:G:314:LYS:HD3	1.99	0.44
1:G:467:LYS:HG3	1:G:468:ASN:N	2.31	0.44
1:G:470:MET:SD	1:G:527:LEU:HD23	2.57	0.44
1:J:542:GLU:OE1	1:J:544:ARG:NH1	2.50	0.44
1:A:542:GLU:OE1	1:A:544:ARG:NH1	2.50	0.44
3:C:25:LYS:O	3:C:29:TRP:HD1	2.00	0.44
1:D:278:ILE:HD12	1:D:286:ARG:HD3	2.00	0.44
3:F:40:PHE:HE1	3:F:86:VAL:HG21	1.81	0.44
1:G:542:GLU:OE1	1:G:544:ARG:NH1	2.50	0.44
1:J:287:PHE:CA	1:J:290:ASP:HB3	2.48	0.44
3:L:126:TRP:HE1	10:L:302:HEM:HBA1	1.83	0.44
3:L:158:SER:H	3:L:254:HIS:CE1	2.35	0.44
1:A:427:HIS:O	1:A:431:THR:HG22	2.17	0.44
3:C:232:VAL:O	3:C:236:LEU:HG	2.18	0.44
1:D:225:ASN:CB	1:D:367:MET:HE3	2.39	0.44
1:D:467:LYS:HG3	1:D:468:ASN:N	2.31	0.44
1:G:60:MET:HB2	1:G:147:TRP:HB2	1.99	0.44
1:G:98:ARG:NH2	2:H:133:LEU:CD1	2.81	0.44
1:J:60:MET:C	1:J:62:ASP:H	2.24	0.44
1:J:380:ARG:CB	1:J:423:TYR:CD1	3.00	0.44
1:A:39:VAL:C	1:A:41:ARG:H	2.24	0.44
1:A:606:ASN:HB3	1:A:609:SER:OG	2.18	0.44
2:B:158:ILE:CD1	2:B:172:GLY:HA3	2.47	0.44
1:G:22:VAL:O	1:G:26:GLN:HG2	2.17	0.44
3:I:40:PHE:HE1	3:I:86:VAL:HG21	1.81	0.44
3:I:87:PHE:HA	3:I:144:LEU:HD13	1.99	0.44
1:J:348:ILE:O	1:J:352:PHE:HD1	2.00	0.44
1:J:430:ASN:O	1:J:431:THR:C	2.61	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:470:MET:SD	1:J:527:LEU:HD23	2.57	0.44
1:J:606:ASN:HB3	1:J:609:SER:OG	2.18	0.44
2:K:46:THR:OG1	2:K:47:TYR:N	2.49	0.44
1:A:129:GLU:HG2	1:A:131:PHE:HE2	1.82	0.44
2:B:110:TRP:HZ3	2:B:111:PHE:CE2	2.36	0.44
2:E:40:LEU:HD22	2:E:53:PHE:CD2	2.53	0.44
3:F:126:TRP:HE1	10:F:302:HEM:HBA1	1.83	0.44
1:G:238:ALA:HB1	1:G:525:MET:HB3	2.00	0.44
1:G:279:LEU:H	1:G:288:MET:HE1	1.80	0.44
2:H:65:CYS:O	2:H:65:CYS:SG	2.75	0.44
1:J:376:ARG:NH2	1:J:563:ARG:NH1	2.66	0.44
1:J:562:ASN:ND2	1:J:562:ASN:N	2.66	0.44
1:A:87:ARG:HG3	1:A:638:MET:HE3	2.00	0.43
1:A:278:ILE:HD12	1:A:286:ARG:HD3	2.00	0.43
1:A:306:ARG:HB2	1:A:307:ARG:NH1	2.32	0.43
1:A:430:ASN:O	1:A:431:THR:C	2.61	0.43
1:A:512:HIS:O	1:A:514:ASN:N	2.50	0.43
2:B:101:LYS:O	2:B:102:ASP:C	2.61	0.43
2:B:141:VAL:C	2:B:143:GLN:N	2.74	0.43
1:D:238:ALA:HB1	1:D:525:MET:HB3	2.00	0.43
1:D:279:LEU:H	1:D:288:MET:HE1	1.81	0.43
3:F:152:GLN:C	3:F:154:ILE:H	2.25	0.43
1:G:297:GLU:O	1:G:298:LEU:HB2	2.17	0.43
1:G:376:ARG:NH2	1:G:563:ARG:NH1	2.66	0.43
1:G:551:ASP:OD1	1:G:551:ASP:N	2.51	0.43
2:H:101:LYS:O	2:H:102:ASP:C	2.61	0.43
3:I:64:LYS:HB3	3:I:64:LYS:HE2	1.79	0.43
3:I:75:LYS:HE2	3:I:75:LYS:CA	2.48	0.43
2:K:110:TRP:HZ3	2:K:111:PHE:CE2	2.36	0.43
1:A:241:LEU:HD23	1:A:241:LEU:C	2.44	0.43
1:A:287:PHE:CA	1:A:290:ASP:HB3	2.48	0.43
1:A:562:ASN:ND2	1:A:562:ASN:N	2.66	0.43
3:C:152:GLN:C	3:C:154:ILE:H	2.25	0.43
1:D:67:ASP:O	1:D:70:PHE:HB3	2.17	0.43
1:D:306:ARG:HB2	1:D:307:ARG:NH1	2.32	0.43
3:F:87:PHE:HA	3:F:144:LEU:HD13	1.99	0.43
1:G:147:TRP:N	1:G:147:TRP:CD1	2.86	0.43
1:G:484:GLY:HA2	1:G:549:ARG:HH12	1.83	0.43
1:G:606:ASN:HB3	1:G:609:SER:OG	2.18	0.43
2:H:141:VAL:C	2:H:143:GLN:N	2.75	0.43
3:I:13:VAL:CG2	3:I:18:LYS:N	2.79	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:232:VAL:O	3:L:236:LEU:HG	2.18	0.43
1:A:419:ILE:C	1:A:421:GLY:H	2.27	0.43
1:D:405:LEU:O	1:D:406:GLY:C	2.60	0.43
2:E:101:LYS:O	2:E:102:ASP:C	2.61	0.43
3:F:221:ILE:HD13	3:F:221:ILE:HA	1.90	0.43
2:K:179:VAL:HG11	2:K:199:ILE:HD11	2.01	0.43
3:L:40:PHE:HE1	3:L:86:VAL:HG21	1.81	0.43
1:A:250:ASN:OD1	1:A:563:ARG:HG3	2.18	0.43
2:B:40:LEU:HD22	2:B:53:PHE:CD2	2.53	0.43
2:B:179:VAL:HG11	2:B:199:ILE:HD11	2.01	0.43
1:D:60:MET:C	1:D:62:ASP:N	2.73	0.43
1:D:147:TRP:N	1:D:147:TRP:CD1	2.86	0.43
1:D:164:VAL:O	1:D:167:GLU:HB2	2.19	0.43
1:D:250:ASN:OD1	1:D:563:ARG:HG3	2.19	0.43
3:F:118:MET:O	3:F:119:ARG:HB2	2.18	0.43
1:G:242:GLU:HG2	1:G:528:LYS:HZ3	1.84	0.43
1:G:356:ASP:HA	1:G:357:PRO:HD3	1.71	0.43
2:H:40:LEU:HD22	2:H:53:PHE:CD2	2.53	0.43
3:I:221:ILE:HD13	3:I:221:ILE:HA	1.90	0.43
1:J:188:ASP:O	1:J:190:LYS:HG3	2.19	0.43
1:J:278:ILE:HD12	1:J:286:ARG:HD3	2.00	0.43
2:K:40:LEU:HD22	2:K:53:PHE:CD2	2.53	0.43
3:L:87:PHE:HA	3:L:144:LEU:HD13	1.99	0.43
1:A:9:LEU:CD2	1:A:10:VAL:H	2.28	0.43
1:A:41:ARG:HH11	1:A:41:ARG:CG	2.29	0.43
1:A:60:MET:C	1:A:62:ASP:N	2.73	0.43
1:A:405:LEU:O	1:A:406:GLY:C	2.60	0.43
3:C:46:PHE:C	3:C:48:VAL:N	2.75	0.43
1:D:120:ASN:CG	1:D:121:ALA:N	2.77	0.43
1:D:314:LYS:CB	1:D:314:LYS:HZ3	2.30	0.43
1:D:356:ASP:HA	1:D:357:PRO:HD3	1.71	0.43
1:G:2:LYS:HB2	1:G:2:LYS:HZ3	1.82	0.43
1:G:562:ASN:ND2	1:G:562:ASN:H	2.12	0.43
3:I:126:TRP:HE1	10:I:301:HEM:HBA1	1.83	0.43
1:J:60:MET:C	1:J:62:ASP:N	2.73	0.43
3:C:189:ARG:HG3	3:C:189:ARG:NH1	2.26	0.43
1:D:376:ARG:NH2	1:D:563:ARG:NH1	2.66	0.43
1:D:594:TYR:CE1	1:D:600:LYS:HG2	2.54	0.43
2:E:110:TRP:HZ3	2:E:111:PHE:CE2	2.36	0.43
1:G:188:ASP:O	1:G:190:LYS:HG3	2.19	0.43
1:G:278:ILE:HD12	1:G:286:ARG:HD3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:415:VAL:O	1:G:418:MET:N	2.52	0.43
1:G:430:ASN:O	1:G:431:THR:C	2.61	0.43
1:G:594:TYR:CE1	1:G:600:LYS:HG2	2.54	0.43
2:H:179:VAL:HG11	2:H:199:ILE:HD11	2.01	0.43
1:J:288:MET:HA	1:J:296:LYS:HB3	1.99	0.43
1:J:419:ILE:C	1:J:421:GLY:H	2.27	0.43
1:J:464:PHE:HE2	1:J:519:GLU:HG3	1.84	0.43
2:K:213:ALA:N	8:K:302:F3S:S4	2.91	0.43
1:A:41:ARG:NH2	2:B:153:GLU:O	2.42	0.43
1:A:164:VAL:O	1:A:167:GLU:HB2	2.19	0.43
1:A:238:ALA:HB1	1:A:525:MET:HB3	2.00	0.43
1:A:464:PHE:HE2	1:A:519:GLU:HG3	1.84	0.43
1:A:515:PRO:O	1:A:518:GLU:HB2	2.19	0.43
1:D:562:ASN:ND2	1:D:562:ASN:N	2.66	0.43
1:G:164:VAL:O	1:G:167:GLU:HB2	2.19	0.43
1:G:270:GLU:C	1:G:272:CYS:N	2.73	0.43
3:I:152:GLN:C	3:I:154:ILE:H	2.25	0.43
1:J:515:PRO:O	1:J:518:GLU:HB2	2.19	0.43
1:J:562:ASN:ND2	1:J:562:ASN:H	2.12	0.43
2:K:176:LEU:HD13	2:K:228:ILE:HG23	2.01	0.43
3:L:118:MET:O	3:L:119:ARG:HB2	2.18	0.43
1:A:376:ARG:NH2	1:A:563:ARG:NH1	2.66	0.43
2:B:232:ARG:HH21	3:C:27:ASP:CG	2.27	0.43
1:D:484:GLY:HA2	1:D:549:ARG:HH12	1.83	0.43
1:D:515:PRO:O	1:D:518:GLU:HB2	2.19	0.43
1:G:120:ASN:CG	1:G:121:ALA:N	2.77	0.43
1:G:392:GLY:C	1:G:394:ALA:H	2.27	0.43
1:G:419:ILE:C	1:G:421:GLY:H	2.27	0.43
2:H:110:TRP:HZ3	2:H:111:PHE:CE2	2.36	0.43
3:I:118:MET:O	3:I:119:ARG:HB2	2.18	0.43
1:J:287:PHE:O	1:J:290:ASP:HB3	2.19	0.43
1:J:531:LEU:O	1:J:535:LYS:HB3	2.19	0.43
3:L:85:PHE:C	3:L:87:PHE:N	2.75	0.43
1:A:29:LEU:O	1:A:31:THR:HG23	2.19	0.43
1:A:98:ARG:NH2	2:B:133:LEU:CD1	2.81	0.43
1:A:288:MET:O	1:A:290:ASP:N	2.48	0.43
1:A:594:TYR:CE1	1:A:600:LYS:HG2	2.54	0.43
2:B:167:ARG:NH1	2:B:167:ARG:CG	2.82	0.43
3:C:69:PHE:CD1	3:C:70:ILE:HG13	2.40	0.43
1:D:430:ASN:O	1:D:431:THR:C	2.61	0.43
1:D:531:LEU:O	1:D:535:LYS:HB3	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:551:ASP:OD1	1:D:551:ASP:N	2.51	0.43
1:D:591:ALA:HA	1:D:592:PRO:HD3	1.83	0.43
2:E:179:VAL:HG11	2:E:199:ILE:HD11	2.01	0.43
1:G:561:LEU:C	1:G:583:LEU:HD13	2.42	0.43
1:J:611:LYS:HB3	1:J:611:LYS:HE2	1.84	0.43
1:A:120:ASN:CG	1:A:121:ALA:N	2.77	0.43
1:D:464:PHE:HE2	1:D:519:GLU:HG3	1.84	0.43
1:G:250:ASN:OD1	1:G:563:ARG:HG3	2.18	0.43
1:G:611:LYS:HE2	1:G:611:LYS:HB3	1.84	0.43
3:I:104:ASN:OD1	3:I:107:GLN:HB2	2.19	0.43
3:I:171:LEU:HB2	3:L:145:TYR:OH	2.18	0.43
3:C:253:THR:CG2	3:C:254:HIS:H	2.20	0.42
2:E:191:THR:O	2:E:195:TYR:CD1	2.72	0.42
3:F:253:THR:CG2	3:F:254:HIS:H	2.20	0.42
3:I:63:LYS:O	3:I:66:GLN:N	2.45	0.42
1:J:120:ASN:CG	1:J:121:ALA:N	2.77	0.42
1:J:241:LEU:C	1:J:241:LEU:HD23	2.44	0.42
1:A:484:GLY:HA2	1:A:549:ARG:HH12	1.83	0.42
1:D:241:LEU:HD23	1:D:241:LEU:C	2.44	0.42
2:E:176:LEU:HD13	2:E:228:ILE:HG23	2.01	0.42
1:G:531:LEU:O	1:G:535:LYS:HB3	2.19	0.42
3:I:13:VAL:HG22	3:I:18:LYS:H	1.79	0.42
1:J:328:LEU:O	1:J:361:TRP:HA	2.20	0.42
1:J:392:GLY:C	1:J:394:ALA:H	2.27	0.42
1:A:147:TRP:N	1:A:147:TRP:CD1	2.86	0.42
1:A:392:GLY:C	1:A:394:ALA:H	2.27	0.42
1:A:512:HIS:C	1:A:514:ASN:N	2.78	0.42
1:D:6:CYS:O	1:D:209:ALA:CB	2.68	0.42
1:D:392:GLY:C	1:D:394:ALA:H	2.27	0.42
2:E:20:LYS:HA	2:E:21:PRO:HD3	1.93	0.42
3:F:75:LYS:HE2	3:F:75:LYS:CA	2.48	0.42
3:F:104:ASN:OD1	3:F:107:GLN:HB2	2.19	0.42
2:H:176:LEU:HD13	2:H:228:ILE:HG23	2.01	0.42
1:J:250:ASN:OD1	1:J:563:ARG:HG3	2.18	0.42
1:J:338:ILE:HD13	1:J:358:ALA:HA	2.02	0.42
2:K:101:LYS:O	2:K:102:ASP:C	2.61	0.42
2:K:191:THR:O	2:K:195:TYR:CD1	2.72	0.42
2:K:232:ARG:HH21	3:L:27:ASP:CG	2.27	0.42
3:L:104:ASN:OD1	3:L:107:GLN:HB2	2.19	0.42
1:A:551:ASP:OD1	1:A:551:ASP:N	2.51	0.42
3:C:118:MET:O	3:C:119:ARG:HB2	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:87:ARG:HG3	1:D:638:MET:HE3	2.01	0.42
3:F:188:TYR:CD1	3:F:188:TYR:C	2.97	0.42
3:F:189:ARG:HG3	3:F:189:ARG:NH1	2.26	0.42
3:F:232:VAL:O	3:F:236:LEU:HG	2.18	0.42
1:G:338:ILE:HD13	1:G:358:ALA:HA	2.01	0.42
1:G:344:ASP:C	1:G:346:GLN:N	2.77	0.42
1:G:572:GLU:O	1:G:573:GLN:C	2.63	0.42
1:J:164:VAL:O	1:J:167:GLU:HB2	2.19	0.42
1:J:225:ASN:HB3	1:J:367:MET:HG2	2.01	0.42
1:J:238:ALA:HB1	1:J:525:MET:HB3	2.00	0.42
1:J:478:VAL:CG1	1:J:482:ARG:HE	2.33	0.42
2:K:146:PHE:C	2:K:148:LEU:H	2.28	0.42
1:A:188:ASP:O	1:A:190:LYS:HG3	2.19	0.42
1:A:344:ASP:C	1:A:346:GLN:N	2.77	0.42
2:B:176:LEU:HD13	2:B:228:ILE:HG23	2.01	0.42
1:D:2:LYS:HB2	1:D:2:LYS:HZ2	1.80	0.42
1:D:287:PHE:CA	1:D:290:ASP:HB3	2.48	0.42
1:D:606:ASN:HB3	1:D:609:SER:OG	2.18	0.42
2:E:199:ILE:O	2:E:205:VAL:HG12	2.20	0.42
2:E:213:ALA:N	8:E:302:F3S:S4	2.91	0.42
3:F:72:GLU:HB3	3:F:73:GLY:H	1.47	0.42
1:G:512:HIS:C	1:G:514:ASN:N	2.78	0.42
1:G:515:PRO:O	1:G:518:GLU:HB2	2.19	0.42
2:H:199:ILE:O	2:H:205:VAL:HG12	2.20	0.42
2:H:232:ARG:HH21	3:I:27:ASP:CG	2.27	0.42
3:I:29:TRP:HA	3:I:32:ALA:CB	2.45	0.42
1:J:87:ARG:HG3	1:J:638:MET:HE3	2.00	0.42
1:J:126:ILE:CG2	1:J:127:THR:N	2.83	0.42
1:J:484:GLY:HA2	1:J:549:ARG:HH12	1.83	0.42
1:J:594:TYR:CE1	1:J:600:LYS:HG2	2.54	0.42
2:K:129:ASP:OD1	2:K:131:SER:HB3	2.20	0.42
3:L:75:LYS:HE2	3:L:75:LYS:CA	2.48	0.42
3:C:75:LYS:HE2	3:C:75:LYS:CA	2.48	0.42
2:H:146:PHE:C	2:H:148:LEU:H	2.28	0.42
3:I:209:LEU:HD23	3:I:209:LEU:HA	1.92	0.42
2:K:199:ILE:O	2:K:205:VAL:HG12	2.20	0.42
1:A:126:ILE:CG2	1:A:127:THR:N	2.83	0.42
1:A:294:GLU:C	1:A:295:LYS:HG2	2.45	0.42
2:B:146:PHE:C	2:B:148:LEU:H	2.27	0.42
3:C:13:VAL:CG2	3:C:18:LYS:N	2.79	0.42
3:C:21:ARG:HD2	3:C:21:ARG:N	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:104:ASN:OD1	3:C:107:GLN:HB2	2.19	0.42
1:D:126:ILE:CG2	1:D:127:THR:N	2.83	0.42
1:D:160:MET:O	1:D:161:LEU:C	2.63	0.42
1:D:287:PHE:O	1:D:290:ASP:HB3	2.19	0.42
1:D:320:SER:C	1:D:322:TYR:H	2.28	0.42
1:D:419:ILE:C	1:D:421:GLY:H	2.27	0.42
1:D:420:VAL:O	1:D:420:VAL:HG12	2.19	0.42
2:E:188:ASP:OD1	2:E:190:ARG:HB2	2.20	0.42
1:G:160:MET:O	1:G:161:LEU:C	2.63	0.42
1:J:6:CYS:O	1:J:209:ALA:CB	2.68	0.42
1:J:228:ASN:N	1:J:228:ASN:HD22	2.17	0.42
1:J:512:HIS:C	1:J:514:ASN:N	2.78	0.42
1:A:316:LYS:HA	1:A:316:LYS:CE	2.49	0.42
1:A:531:LEU:O	1:A:535:LYS:HB3	2.19	0.42
1:A:572:GLU:O	1:A:573:GLN:C	2.63	0.42
3:C:103:ILE:O	3:C:104:ASN:CB	2.67	0.42
3:F:21:ARG:HD2	3:F:21:ARG:N	2.35	0.42
1:G:225:ASN:HB3	1:G:367:MET:HG2	2.01	0.42
1:G:241:LEU:C	1:G:241:LEU:HD23	2.44	0.42
1:G:287:PHE:O	1:G:290:ASP:HB3	2.19	0.42
1:G:490:ALA:O	1:G:492:LYS:N	2.53	0.42
2:H:32:PRO:O	2:H:33:SER:C	2.63	0.42
2:H:197:GLU:HA	3:I:19:LYS:HD3	2.02	0.42
3:I:21:ARG:HD2	3:I:21:ARG:N	2.35	0.42
3:I:58:MET:SD	3:I:58:MET:C	3.03	0.42
1:J:249:GLY:O	1:J:250:ASN:C	2.63	0.42
1:J:316:LYS:HA	1:J:316:LYS:CE	2.49	0.42
1:J:420:VAL:O	1:J:420:VAL:HG12	2.19	0.42
2:K:67:MET:HA	2:K:94:LEU:HD23	2.02	0.42
1:A:83:GLN:HE21	1:A:588:MET:CB	2.26	0.42
1:A:225:ASN:HB3	1:A:367:MET:HG2	2.01	0.42
1:A:490:ALA:O	1:A:492:LYS:N	2.53	0.42
2:B:164:LYS:O	2:B:164:LYS:HD3	2.20	0.42
3:C:188:TYR:CD1	3:C:188:TYR:C	2.97	0.42
3:C:223:LEU:C	3:C:223:LEU:CD2	2.93	0.42
1:D:29:LEU:O	1:D:31:THR:HG23	2.19	0.42
1:D:562:ASN:ND2	1:D:562:ASN:H	2.12	0.42
2:E:141:VAL:C	2:E:143:GLN:N	2.74	0.42
2:E:197:GLU:HA	3:F:19:LYS:HD3	2.02	0.42
1:G:41:ARG:HG2	1:G:41:ARG:NH1	2.33	0.42
1:G:87:ARG:HG3	1:G:638:MET:HE3	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:141:PHE:HZ	5:G:702:MLA:C2	2.31	0.42
1:G:249:GLY:O	1:G:250:ASN:C	2.63	0.42
1:G:591:ALA:HA	1:G:592:PRO:HD3	1.83	0.42
2:H:123:HIS:HD2	2:H:190:ARG:CZ	2.32	0.42
1:A:6:CYS:O	1:A:209:ALA:CB	2.68	0.42
1:A:287:PHE:O	1:A:290:ASP:HB3	2.19	0.42
1:A:478:VAL:CG1	1:A:482:ARG:HE	2.33	0.42
2:B:32:PRO:O	2:B:33:SER:C	2.63	0.42
1:D:249:GLY:O	1:D:250:ASN:C	2.63	0.42
3:F:44:HIS:CE1	10:F:303:HEM:ND	2.88	0.42
1:G:328:LEU:O	1:G:361:TRP:HA	2.19	0.42
3:I:103:ILE:O	3:I:104:ASN:CB	2.67	0.42
3:I:216:MET:O	3:I:220:LEU:HG	2.20	0.42
3:L:46:PHE:C	3:L:48:VAL:N	2.75	0.42
3:L:253:THR:HG22	3:L:254:HIS:N	2.21	0.42
1:A:380:ARG:HA	1:A:423:TYR:CD1	2.55	0.41
1:D:188:ASP:O	1:D:190:LYS:HG3	2.19	0.41
1:D:490:ALA:O	1:D:492:LYS:N	2.53	0.41
1:D:572:GLU:O	1:D:573:GLN:C	2.62	0.41
3:F:63:LYS:O	3:F:66:GLN:N	2.45	0.41
3:F:216:MET:O	3:F:220:LEU:HG	2.20	0.41
1:G:41:ARG:HH11	1:G:41:ARG:CG	2.29	0.41
1:G:294:GLU:C	1:G:295:LYS:HG2	2.45	0.41
1:G:320:SER:C	1:G:322:TYR:H	2.28	0.41
1:G:464:PHE:HE2	1:G:519:GLU:HG3	1.84	0.41
2:H:188:ASP:OD1	2:H:190:ARG:HB2	2.20	0.41
1:J:164:VAL:O	1:J:167:GLU:N	2.53	0.41
1:J:380:ARG:HA	1:J:423:TYR:CD1	2.55	0.41
1:J:551:ASP:OD1	1:J:551:ASP:N	2.51	0.41
4:J:701:FAD:H9	4:J:701:FAD:H1'1	1.63	0.41
2:K:188:ASP:OD1	2:K:190:ARG:HB2	2.20	0.41
1:A:249:GLY:O	1:A:250:ASN:C	2.63	0.41
1:A:306:ARG:HG2	1:A:481:PHE:CZ	2.55	0.41
1:A:486:HIS:C	1:A:488:GLU:H	2.28	0.41
1:D:228:ASN:HD22	1:D:228:ASN:N	2.17	0.41
1:D:288:MET:C	1:D:290:ASP:N	2.72	0.41
2:E:129:ASP:OD1	2:E:131:SER:HB3	2.20	0.41
2:E:146:PHE:C	2:E:148:LEU:H	2.27	0.41
3:F:29:TRP:HA	3:F:32:ALA:CB	2.45	0.41
3:F:136:MET:HE2	3:F:179:VAL:N	2.35	0.41
1:G:6:CYS:O	1:G:209:ALA:CB	2.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:29:LEU:O	1:G:31:THR:HG23	2.19	0.41
1:G:251:MET:O	1:G:533:VAL:HG13	2.21	0.41
1:G:633:ILE:O	1:G:636:ALA:HB3	2.20	0.41
2:H:191:THR:O	2:H:195:TYR:CD1	2.72	0.41
2:H:213:ALA:N	8:H:302:F3S:S4	2.91	0.41
1:J:29:LEU:O	1:J:31:THR:HG23	2.19	0.41
3:L:21:ARG:N	3:L:21:ARG:HD2	2.35	0.41
1:A:320:SER:C	1:A:322:TYR:H	2.28	0.41
1:A:338:ILE:HD13	1:A:358:ALA:HA	2.01	0.41
2:B:129:ASP:OD1	2:B:131:SER:HB3	2.20	0.41
3:C:136:MET:HE2	3:C:179:VAL:N	2.35	0.41
3:C:216:MET:O	3:C:220:LEU:HG	2.20	0.41
1:D:222:ILE:HG13	1:D:223:TYR:CD1	2.56	0.41
1:D:338:ILE:HD13	1:D:358:ALA:HA	2.01	0.41
1:D:423:TYR:CZ	1:D:643:PRO:HG3	2.55	0.41
1:D:531:LEU:HD13	1:D:574:THR:O	2.21	0.41
3:F:58:MET:SD	3:F:58:MET:C	3.03	0.41
1:G:85:VAL:C	1:G:87:ARG:N	2.78	0.41
1:G:164:VAL:O	1:G:167:GLU:N	2.53	0.41
1:G:281:ASP:HB3	1:G:282:VAL:H	1.74	0.41
1:G:303:VAL:CG1	1:G:304:VAL:N	2.80	0.41
3:I:44:HIS:CE1	10:I:302:HEM:ND	2.88	0.41
3:I:223:LEU:C	3:I:223:LEU:CD2	2.93	0.41
1:J:306:ARG:HG2	1:J:481:PHE:CZ	2.55	0.41
1:J:347:GLU:O	1:J:351:TYR:HD1	2.03	0.41
1:J:490:ALA:O	1:J:492:LYS:N	2.53	0.41
2:K:13:ASP:OD1	2:K:13:ASP:C	2.64	0.41
3:L:72:GLU:HB3	3:L:73:GLY:H	1.47	0.41
1:A:420:VAL:O	1:A:420:VAL:HG12	2.20	0.41
2:B:191:THR:O	2:B:195:TYR:CD1	2.72	0.41
3:C:44:HIS:CE1	10:C:302:HEM:ND	2.88	0.41
3:C:58:MET:C	3:C:58:MET:SD	3.03	0.41
1:D:164:VAL:O	1:D:167:GLU:N	2.53	0.41
1:D:486:HIS:C	1:D:488:GLU:H	2.28	0.41
2:E:232:ARG:HH21	3:F:27:ASP:CG	2.27	0.41
3:F:175:LEU:HG	10:F:303:HEM:HMD2	2.02	0.41
1:G:126:ILE:CG2	1:G:127:THR:N	2.83	0.41
1:G:216:THR:CB	1:G:236:GLY:HA3	2.51	0.41
1:G:478:VAL:CG1	1:G:482:ARG:HE	2.33	0.41
2:H:167:ARG:NH1	2:H:167:ARG:CG	2.82	0.41
3:I:188:TYR:CD1	3:I:188:TYR:C	2.97	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:58:MET:SD	3:L:58:MET:C	3.03	0.41
3:L:175:LEU:HG	10:L:303:HEM:HMD2	2.01	0.41
1:A:5:TYR:CG	1:A:6:CYS:N	2.89	0.41
1:A:164:VAL:O	1:A:167:GLU:N	2.53	0.41
1:A:375:ILE:O	1:A:395:ALA:HB1	2.21	0.41
1:A:423:TYR:CZ	1:A:643:PRO:HG3	2.55	0.41
1:A:433:VAL:CG1	1:A:434:ASP:N	2.84	0.41
1:A:506:ILE:HG22	1:A:516:GLU:HG2	2.03	0.41
1:A:647:LYS:O	1:A:648:ALA:C	2.63	0.41
2:B:188:ASP:OD1	2:B:190:ARG:HB2	2.20	0.41
3:C:126:TRP:HE1	10:C:301:HEM:HBA1	1.83	0.41
1:D:225:ASN:HB3	1:D:367:MET:HG2	2.01	0.41
1:D:415:VAL:O	1:D:418:MET:N	2.52	0.41
1:D:523:VAL:O	1:D:524:PRO:C	2.63	0.41
4:D:701:FAD:H1'1	4:D:701:FAD:H9	1.63	0.41
2:E:67:MET:HA	2:E:94:LEU:HD23	2.02	0.41
3:F:253:THR:HG22	3:F:254:HIS:N	2.20	0.41
1:G:486:HIS:C	1:G:488:GLU:H	2.28	0.41
1:G:506:ILE:HG22	1:G:516:GLU:HG2	2.03	0.41
1:J:320:SER:C	1:J:322:TYR:H	2.28	0.41
1:J:506:ILE:HG22	1:J:516:GLU:HG2	2.03	0.41
3:L:22:MET:HB2	3:L:23:PRO:HD3	2.02	0.41
1:A:222:ILE:HG13	1:A:223:TYR:CD1	2.56	0.41
1:A:228:ASN:HD22	1:A:228:ASN:N	2.17	0.41
1:A:251:MET:O	1:A:533:VAL:HG13	2.21	0.41
1:A:408:ASN:HD22	1:A:408:ASN:HA	1.65	0.41
1:A:419:ILE:O	1:A:421:GLY:N	2.54	0.41
2:B:146:PHE:C	2:B:148:LEU:N	2.79	0.41
1:D:41:ARG:NH1	1:D:41:ARG:CG	2.83	0.41
1:D:380:ARG:HA	1:D:423:TYR:CD1	2.55	0.41
1:D:486:HIS:CD2	1:D:486:HIS:N	2.88	0.41
3:F:22:MET:HB2	3:F:23:PRO:HD3	2.03	0.41
1:G:222:ILE:HG13	1:G:223:TYR:CD1	2.56	0.41
1:G:306:ARG:HG2	1:G:481:PHE:CZ	2.55	0.41
1:G:419:ILE:O	1:G:421:GLY:N	2.54	0.41
1:G:423:TYR:CZ	1:G:643:PRO:HG3	2.55	0.41
2:H:24:GLN:HG2	2:H:26:TYR:CZ	2.56	0.41
3:I:44:HIS:ND1	3:I:44:HIS:C	2.79	0.41
1:J:294:GLU:C	1:J:295:LYS:HG2	2.45	0.41
2:K:32:PRO:O	2:K:33:SER:C	2.63	0.41
3:L:44:HIS:CE1	10:L:303:HEM:ND	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:136:MET:HE2	3:L:179:VAL:N	2.35	0.41
1:A:100:LEU:CD1	1:A:160:MET:HE3	2.51	0.41
2:B:13:ASP:OD1	2:B:13:ASP:C	2.64	0.41
2:B:199:ILE:O	2:B:205:VAL:HG12	2.20	0.41
3:C:175:LEU:HG	10:C:302:HEM:HMD2	2.02	0.41
1:D:3:VAL:HG22	1:D:206:ALA:HB3	2.02	0.41
2:E:24:GLN:HG2	2:E:26:TYR:CZ	2.56	0.41
2:E:32:PRO:O	2:E:33:SER:C	2.63	0.41
2:E:123:HIS:HD2	2:E:190:ARG:CZ	2.32	0.41
3:F:22:MET:CB	3:F:23:PRO:HD3	2.51	0.41
3:F:223:LEU:C	3:F:223:LEU:CD2	2.93	0.41
1:G:111:HIS:HD2	2:H:139:PRO:CG	2.34	0.41
1:G:210:LYS:NZ	1:J:441:GLU:OE2	2.52	0.41
2:H:13:ASP:OD1	2:H:13:ASP:C	2.63	0.41
2:H:129:ASP:OD1	2:H:131:SER:HB3	2.20	0.41
1:J:39:VAL:O	1:J:41:ARG:N	2.54	0.41
1:J:64:ASP:OD1	1:J:148:ARG:HB3	2.21	0.41
1:J:222:ILE:HG13	1:J:223:TYR:CD1	2.56	0.41
1:J:375:ILE:O	1:J:395:ALA:HB1	2.21	0.41
1:J:423:TYR:CZ	1:J:643:PRO:HG3	2.55	0.41
3:L:22:MET:CB	3:L:23:PRO:HD3	2.51	0.41
1:A:3:VAL:HG22	1:A:206:ALA:HB3	2.02	0.41
1:A:328:LEU:O	1:A:361:TRP:HA	2.20	0.41
1:A:415:VAL:O	1:A:418:MET:N	2.52	0.41
1:D:100:LEU:CD1	1:D:160:MET:HE3	2.51	0.41
1:D:216:THR:CB	1:D:236:GLY:HA3	2.51	0.41
1:D:375:ILE:O	1:D:395:ALA:HB1	2.21	0.41
1:D:433:VAL:CG1	1:D:434:ASP:N	2.84	0.41
1:D:647:LYS:O	1:D:648:ALA:C	2.63	0.41
3:I:46:PHE:C	3:I:48:VAL:N	2.75	0.41
3:I:253:THR:CG2	3:I:254:HIS:H	2.20	0.41
1:J:3:VAL:HG22	1:J:206:ALA:HB3	2.03	0.41
1:J:463:VAL:O	1:J:467:LYS:HB3	2.21	0.41
1:J:523:VAL:O	1:J:524:PRO:C	2.63	0.41
1:J:572:GLU:O	1:J:573:GLN:C	2.62	0.41
1:A:41:ARG:CG	1:A:41:ARG:NH1	2.83	0.41
1:A:107:TRP:HA	1:A:152:THR:CG2	2.38	0.41
1:A:111:HIS:HD2	2:B:139:PRO:CG	2.34	0.41
1:A:216:THR:CB	1:A:236:GLY:HA3	2.51	0.41
1:A:531:LEU:HD13	1:A:574:THR:O	2.21	0.41
3:C:64:LYS:HE2	3:C:64:LYS:HB3	1.79	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:64:ASP:OD1	1:D:148:ARG:HB3	2.21	0.41
1:D:141:PHE:CE1	1:D:270:GLU:HB3	2.56	0.41
1:D:347:GLU:O	1:D:351:TYR:HD1	2.03	0.41
1:D:463:VAL:O	1:D:467:LYS:HB3	2.21	0.41
1:D:478:VAL:CG1	1:D:482:ARG:HE	2.33	0.41
1:D:512:HIS:C	1:D:514:ASN:N	2.78	0.41
1:D:611:LYS:HB3	1:D:611:LYS:HE2	1.84	0.41
2:E:146:PHE:C	2:E:148:LEU:N	2.79	0.41
3:F:93:HIS:CD2	10:F:302:HEM:NB	2.89	0.41
1:G:3:VAL:HG22	1:G:206:ALA:HB3	2.03	0.41
1:G:41:ARG:NH1	1:G:41:ARG:CG	2.83	0.41
1:G:380:ARG:HA	1:G:423:TYR:CD1	2.56	0.41
1:G:433:VAL:CG1	1:G:434:ASP:N	2.84	0.41
1:G:463:VAL:O	1:G:467:LYS:HB3	2.21	0.41
1:G:644:ALA:HA	1:G:647:LYS:HG3	2.03	0.41
2:H:206:PHE:HE1	3:I:24:ALA:HB2	1.86	0.41
1:J:141:PHE:CE1	1:J:270:GLU:HB3	2.56	0.41
1:J:160:MET:O	1:J:161:LEU:C	2.63	0.41
1:J:216:THR:CB	1:J:236:GLY:HA3	2.51	0.41
1:J:415:VAL:O	1:J:418:MET:N	2.52	0.41
1:J:486:HIS:C	1:J:488:GLU:H	2.28	0.41
1:J:542:GLU:HG2	1:J:560:TRP:CG	2.56	0.41
2:K:146:PHE:C	2:K:148:LEU:N	2.79	0.41
2:K:197:GLU:HA	3:L:19:LYS:HD3	2.02	0.41
1:A:64:ASP:OD1	1:A:148:ARG:HB3	2.21	0.41
1:A:349:CYS:CB	1:A:357:PRO:HG3	2.51	0.41
2:B:24:GLN:HG2	2:B:26:TYR:CZ	2.56	0.41
2:B:148:LEU:HD22	2:B:177:ASN:OD1	2.21	0.41
2:B:192:ASP:OD2	2:B:234:LYS:HE2	2.21	0.41
2:B:213:ALA:N	8:B:302:F3S:S4	2.91	0.41
3:C:1:MET:HB3	3:F:112:LYS:NZ	2.35	0.41
1:D:87:ARG:HD2	1:D:640:TYR:CD2	2.56	0.41
1:D:306:ARG:HG2	1:D:481:PHE:CZ	2.55	0.41
1:D:328:LEU:O	1:D:361:TRP:HA	2.20	0.41
1:D:542:GLU:HG2	1:D:560:TRP:CG	2.56	0.41
2:E:164:LYS:HD3	2:E:164:LYS:O	2.20	0.41
2:E:192:ASP:OD2	2:E:234:LYS:HE2	2.21	0.41
1:G:64:ASP:OD1	1:G:148:ARG:HB3	2.21	0.41
1:G:100:LEU:CD1	1:G:160:MET:HE3	2.51	0.41
1:G:250:ASN:CG	1:G:563:ARG:HG3	2.46	0.41
1:G:313:ARG:C	1:G:315:GLY:H	2.29	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:146:PHE:C	2:H:148:LEU:N	2.79	0.41
1:J:251:MET:O	1:J:533:VAL:HG13	2.21	0.41
1:J:644:ALA:HA	1:J:647:LYS:HG3	2.03	0.41
1:A:85:VAL:C	1:A:87:ARG:N	2.78	0.40
1:A:160:MET:O	1:A:161:LEU:C	2.63	0.40
1:A:262:PHE:H	1:A:364:VAL:HA	1.86	0.40
1:A:347:GLU:O	1:A:351:TYR:HD1	2.03	0.40
1:A:633:ILE:O	1:A:636:ALA:HB3	2.20	0.40
2:B:93:PRO:HB3	2:B:103:LEU:HA	2.03	0.40
3:C:3:ASN:HD21	2:E:8:ARG:HH12	1.69	0.40
3:C:71:PHE:HB3	3:C:75:LYS:CG	2.51	0.40
1:D:118:ILE:CD1	1:D:123:LYS:HE3	2.41	0.40
1:D:282:VAL:HG13	1:D:318:VAL:HB	2.03	0.40
1:G:141:PHE:CE1	1:G:270:GLU:HB3	2.56	0.40
1:G:228:ASN:HD22	1:G:228:ASN:N	2.17	0.40
1:G:278:ILE:HG22	1:G:297:GLU:HG3	2.03	0.40
1:G:542:GLU:HG2	1:G:560:TRP:CG	2.56	0.40
2:H:93:PRO:HB3	2:H:103:LEU:HA	2.03	0.40
3:I:26:LEU:HB3	3:I:99:ARG:HH12	1.86	0.40
1:J:100:LEU:CD1	1:J:160:MET:HE3	2.51	0.40
1:J:333:LEU:O	1:J:337:HIS:HB2	2.21	0.40
2:K:164:LYS:HD3	2:K:164:LYS:O	2.20	0.40
1:A:141:PHE:CE1	1:A:270:GLU:HB3	2.56	0.40
1:A:268:LEU:HA	1:A:345:VAL:HG13	2.04	0.40
1:A:313:ARG:C	1:A:315:GLY:H	2.29	0.40
1:A:463:VAL:O	1:A:467:LYS:HB3	2.21	0.40
3:C:22:MET:HB2	3:C:23:PRO:HD3	2.02	0.40
3:C:171:LEU:C	3:C:171:LEU:HD23	2.46	0.40
2:E:13:ASP:OD1	2:E:13:ASP:C	2.63	0.40
2:E:93:PRO:HB3	2:E:103:LEU:HA	2.03	0.40
2:E:129:ASP:HB3	2:E:132:LYS:HB2	2.04	0.40
3:F:171:LEU:C	3:F:171:LEU:HD23	2.46	0.40
1:G:333:LEU:O	1:G:337:HIS:HB2	2.21	0.40
1:G:420:VAL:O	1:G:420:VAL:HG12	2.20	0.40
1:G:603:TYR:O	1:G:603:TYR:CD1	2.74	0.40
3:I:145:TYR:CE1	3:L:171:LEU:HD12	2.56	0.40
1:J:5:TYR:CG	1:J:6:CYS:N	2.89	0.40
1:J:69:HIS:O	1:J:70:PHE:C	2.64	0.40
1:J:111:HIS:HD2	2:K:139:PRO:CG	2.34	0.40
1:J:299:ALA:HB1	1:J:303:VAL:CG1	2.48	0.40
1:J:313:ARG:C	1:J:315:GLY:H	2.29	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:24:GLN:HG2	2:K:26:TYR:CZ	2.56	0.40
2:K:148:LEU:HD22	2:K:177:ASN:OD1	2.21	0.40
3:L:44:HIS:ND1	3:L:44:HIS:C	2.79	0.40
3:L:47:PHE:CD1	3:L:47:PHE:C	3.00	0.40
3:L:155:GLY:O	3:L:159:SER:HB2	2.22	0.40
1:A:540:ARG:NH2	1:A:562:ASN:O	2.54	0.40
2:B:123:HIS:HD2	2:B:190:ARG:CZ	2.32	0.40
2:B:176:LEU:CD1	2:B:228:ILE:HG23	2.52	0.40
3:C:155:GLY:O	3:C:159:SER:HB2	2.21	0.40
1:D:5:TYR:CG	1:D:6:CYS:N	2.89	0.40
1:D:39:VAL:O	1:D:41:ARG:N	2.54	0.40
1:D:349:CYS:CB	1:D:357:PRO:HG3	2.51	0.40
1:D:633:ILE:O	1:D:636:ALA:HB3	2.20	0.40
2:E:176:LEU:CD1	2:E:228:ILE:HG23	2.52	0.40
3:F:26:LEU:HB3	3:F:99:ARG:HH12	1.86	0.40
1:G:87:ARG:HA	1:G:87:ARG:HD3	1.95	0.40
1:G:375:ILE:O	1:G:395:ALA:HB1	2.21	0.40
1:G:434:ASP:OD1	1:J:434:ASP:OD1	2.39	0.40
1:G:531:LEU:HD13	1:G:574:THR:O	2.21	0.40
1:G:647:LYS:O	1:G:648:ALA:C	2.64	0.40
2:H:67:MET:HA	2:H:94:LEU:HD23	2.02	0.40
2:H:164:LYS:O	2:H:164:LYS:HD3	2.20	0.40
3:I:125:LEU:HD23	3:I:125:LEU:HA	1.91	0.40
1:J:107:TRP:HA	1:J:152:THR:CG2	2.38	0.40
1:J:140:ASP:O	1:J:274:GLY:HA3	2.22	0.40
1:J:258:PRO:C	1:J:260:PRO:HD3	2.46	0.40
1:J:262:PHE:H	1:J:364:VAL:HA	1.86	0.40
1:J:268:LEU:HA	1:J:345:VAL:HG13	2.04	0.40
1:J:282:VAL:HG13	1:J:318:VAL:HB	2.03	0.40
1:J:531:LEU:HD13	1:J:574:THR:O	2.21	0.40
3:L:77:ILE:O	3:L:77:ILE:HG12	2.22	0.40
3:L:99:ARG:HH21	3:L:100:LYS:NZ	2.20	0.40
1:A:542:GLU:HG2	1:A:560:TRP:CG	2.56	0.40
2:B:206:PHE:HE1	3:C:24:ALA:HB2	1.86	0.40
1:D:44:SER:O	1:D:45:ALA:C	2.65	0.40
1:D:177:ASP:OD1	1:D:177:ASP:C	2.65	0.40
1:D:250:ASN:CG	1:D:563:ARG:HG3	2.47	0.40
1:D:506:ILE:HG22	1:D:516:GLU:HG2	2.03	0.40
3:F:44:HIS:ND1	3:F:44:HIS:C	2.79	0.40
1:G:129:GLU:HG2	1:G:131:PHE:CE2	2.57	0.40
1:G:258:PRO:C	1:G:260:PRO:HD3	2.46	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:262:PHE:H	1:G:364:VAL:HA	1.86	0.40
2:H:64:SER:O	2:H:66:GLY:N	2.54	0.40
2:H:129:ASP:HB3	2:H:132:LYS:HB2	2.04	0.40
2:H:148:LEU:HD22	2:H:177:ASN:OD1	2.21	0.40
3:I:99:ARG:HH21	3:I:100:LYS:NZ	2.20	0.40
3:I:171:LEU:C	3:I:171:LEU:HD23	2.46	0.40
1:J:419:ILE:O	1:J:421:GLY:N	2.54	0.40
1:J:647:LYS:O	1:J:648:ALA:C	2.64	0.40
2:K:99:LEU:HD12	2:K:100:ILE:H	1.87	0.40
2:K:167:ARG:NH1	2:K:167:ARG:CG	2.82	0.40
2:K:192:ASP:OD2	2:K:234:LYS:HE2	2.21	0.40
3:L:216:MET:O	3:L:220:LEU:HG	2.20	0.40
1:A:44:SER:O	1:A:45:ALA:C	2.65	0.40
1:A:118:ILE:CD1	1:A:123:LYS:HE3	2.41	0.40
1:A:344:ASP:O	1:A:346:GLN:N	2.53	0.40
3:C:29:TRP:HA	3:C:32:ALA:CB	2.45	0.40
3:C:44:HIS:O	3:C:48:VAL:HB	2.22	0.40
3:C:221:ILE:HD13	3:C:221:ILE:HA	1.90	0.40
1:D:9:LEU:CD2	1:D:10:VAL:H	2.28	0.40
1:D:26:GLN:HE21	1:D:27:LYS:HE3	1.87	0.40
1:D:129:GLU:HG2	1:D:131:PHE:CE2	2.57	0.40
1:D:251:MET:O	1:D:533:VAL:HG13	2.21	0.40
1:D:419:ILE:O	1:D:421:GLY:N	2.54	0.40
2:E:64:SER:O	2:E:66:GLY:N	2.54	0.40
3:F:155:GLY:O	3:F:159:SER:HB2	2.22	0.40
1:G:14:GLY:O	1:G:18:LEU:HG	2.22	0.40
3:I:93:HIS:CD2	10:I:301:HEM:NB	2.89	0.40
3:I:136:MET:HE2	3:I:179:VAL:N	2.35	0.40
1:J:257:HIS:CE1	1:J:267:LEU:HD11	2.57	0.40
2:K:64:SER:O	2:K:66:GLY:N	2.54	0.40
3:L:103:ILE:O	3:L:104:ASN:CB	2.67	0.40

All (27) 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:D:580:TYR:C	1:G:122:GLN:NE2[1_455]	0.81	1.39
1:A:122:GLN:NE2	1:J:581:GLU:N[1_554]	0.84	1.36
1:D:581:GLU:N	1:G:122:GLN:NE2[1_455]	1.03	1.17
1:A:122:GLN:NE2	1:J:580:TYR:C[1_554]	1.10	1.10

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:122:GLN:OE1	1:J:581:GLU:CA[1_554]	1.30	0.90
1:D:580:TYR:C	1:G:122:GLN:CD[1_455]	1.35	0.85
1:D:580:TYR:O	1:G:122:GLN:CD[1_455]	1.38	0.82
1:D:581:GLU:CA	1:G:122:GLN:OE1[1_455]	1.44	0.76
1:D:116:MET:CE	1:J:332:ILE:CD1[2_546]	1.45	0.75
1:A:122:GLN:CD	1:J:581:GLU:N[1_554]	1.62	0.58
1:A:122:GLN:CD	1:J:580:TYR:C[1_554]	1.62	0.58
1:D:581:GLU:N	1:G:122:GLN:CD[1_455]	1.63	0.57
1:D:580:TYR:CA	1:G:122:GLN:NE2[1_455]	1.68	0.52
1:A:122:GLN:CD	1:J:580:TYR:O[1_554]	1.70	0.50
1:D:116:MET:CE	1:J:332:ILE:CG1[2_546]	1.71	0.49
1:A:122:GLN:CD	1:J:581:GLU:CA[1_554]	1.80	0.40
1:D:122:GLN:NE2	1:J:359:GLU:CB[2_546]	1.83	0.37
1:D:580:TYR:O	1:G:122:GLN:OE1[1_455]	1.87	0.33
1:D:580:TYR:O	1:G:122:GLN:NE2[1_455]	1.90	0.30
1:D:581:GLU:N	1:G:122:GLN:OE1[1_455]	1.96	0.24
1:D:581:GLU:CA	1:G:122:GLN:CD[1_455]	2.03	0.17
1:A:122:GLN:NE2	1:J:581:GLU:CA[1_554]	2.04	0.16
1:A:122:GLN:NE2	1:J:580:TYR:CA[1_554]	2.05	0.15
1:A:122:GLN:OE1	1:J:581:GLU:N[1_554]	2.07	0.13
1:D:580:TYR:O	1:G:122:GLN:CG[1_455]	2.08	0.12
1:A:122:GLN:NE2	1:J:580:TYR:O[1_554]	2.09	0.11
1:D:580:TYR:C	1:G:122:GLN:OE1[1_455]	2.13	0.07

5.3 Torsion angles

5.3.1 Protein backbone

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	653/656 (100%)	499 (76%)	113 (17%)	41 (6%)	1	6
1	D	653/656 (100%)	499 (76%)	112 (17%)	42 (6%)	1	6
1	G	653/656 (100%)	499 (76%)	113 (17%)	41 (6%)	1	6
1	J	653/656 (100%)	499 (76%)	112 (17%)	42 (6%)	1	6

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	B	237/239 (99%)	190 (80%)	37 (16%)	10 (4%)	2	13
2	E	237/239 (99%)	190 (80%)	37 (16%)	10 (4%)	2	13
2	H	237/239 (99%)	190 (80%)	37 (16%)	10 (4%)	2	13
2	K	237/239 (99%)	190 (80%)	37 (16%)	10 (4%)	2	13
3	C	252/256 (98%)	200 (79%)	40 (16%)	12 (5%)	2	11
3	F	252/256 (98%)	200 (79%)	40 (16%)	12 (5%)	2	11
3	I	252/256 (98%)	200 (79%)	40 (16%)	12 (5%)	2	11
3	L	252/256 (98%)	200 (79%)	40 (16%)	12 (5%)	2	11
All	All	4568/4604 (99%)	3556 (78%)	758 (17%)	254 (6%)	1	8

All (254) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	269	THR
1	A	288	MET
1	A	294	GLU
1	A	319	GLN
1	A	333	LEU
1	A	345	VAL
2	B	65	CYS
2	B	85	GLU
2	B	109	ASN
2	B	132	LYS
3	C	54	GLY
3	C	103	ILE
3	C	104	ASN
3	C	147	MET
1	D	269	THR
1	D	288	MET
1	D	294	GLU
1	D	319	GLN
1	D	333	LEU
1	D	345	VAL
2	E	65	CYS
2	E	85	GLU
2	E	109	ASN
2	E	132	LYS
3	F	54	GLY
3	F	103	ILE

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Mol	Chain	Res	Type
3	F	104	ASN
3	F	147	MET
1	G	269	THR
1	G	288	MET
1	G	294	GLU
1	G	319	GLN
1	G	333	LEU
1	G	345	VAL
2	H	65	CYS
2	H	85	GLU
2	H	109	ASN
2	H	132	LYS
3	I	54	GLY
3	I	103	ILE
3	I	104	ASN
3	I	147	MET
1	J	269	THR
1	J	288	MET
1	J	294	GLU
1	J	319	GLN
1	J	333	LEU
1	J	345	VAL
2	K	65	CYS
2	K	85	GLU
2	K	109	ASN
2	K	132	LYS
3	L	54	GLY
3	L	103	ILE
3	L	104	ASN
3	L	147	MET
1	A	14	GLY
1	A	49	GLY
1	A	119	ILE
1	A	129	GLU
1	A	218	GLY
1	A	304	VAL
1	A	334	GLY
1	A	375	ILE
1	A	393	GLU
1	A	513	ALA
1	A	573	GLN
2	B	47	TYR

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Mol	Chain	Res	Type
2	B	108	GLY
2	B	147	GLU
3	C	253	THR
1	D	14	GLY
1	D	49	GLY
1	D	119	ILE
1	D	129	GLU
1	D	218	GLY
1	D	304	VAL
1	D	334	GLY
1	D	375	ILE
1	D	393	GLU
1	D	513	ALA
1	D	573	GLN
2	E	47	TYR
2	E	108	GLY
2	E	147	GLU
3	F	253	THR
1	G	14	GLY
1	G	49	GLY
1	G	119	ILE
1	G	129	GLU
1	G	218	GLY
1	G	304	VAL
1	G	334	GLY
1	G	375	ILE
1	G	393	GLU
1	G	513	ALA
1	G	573	GLN
2	H	47	TYR
2	H	108	GLY
2	H	147	GLU
3	I	253	THR
1	J	14	GLY
1	J	49	GLY
1	J	119	ILE
1	J	129	GLU
1	J	218	GLY
1	J	304	VAL
1	J	334	GLY
1	J	375	ILE
1	J	393	GLU

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Mol	Chain	Res	Type
1	J	513	ALA
1	J	573	GLN
2	K	47	TYR
2	K	108	GLY
2	K	147	GLU
3	L	253	THR
1	A	10	VAL
1	A	40	LYS
1	A	42	SER
1	A	54	SER
1	A	125	THR
1	A	146	LYS
1	A	540	ARG
1	A	553	PRO
1	A	555	ARG
1	A	620	GLN
1	A	648	ALA
2	B	64	SER
2	B	102	ASP
3	C	198	ASP
1	D	10	VAL
1	D	40	LYS
1	D	42	SER
1	D	54	SER
1	D	125	THR
1	D	146	LYS
1	D	540	ARG
1	D	553	PRO
1	D	555	ARG
1	D	620	GLN
1	D	648	ALA
2	E	64	SER
2	E	102	ASP
3	F	198	ASP
1	G	10	VAL
1	G	40	LYS
1	G	42	SER
1	G	54	SER
1	G	125	THR
1	G	146	LYS
1	G	540	ARG
1	G	553	PRO

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Mol	Chain	Res	Type
1	G	555	ARG
1	G	620	GLN
1	G	648	ALA
2	H	64	SER
2	H	102	ASP
3	I	198	ASP
1	J	10	VAL
1	J	40	LYS
1	J	42	SER
1	J	54	SER
1	J	125	THR
1	J	146	LYS
1	J	540	ARG
1	J	553	PRO
1	J	555	ARG
1	J	620	GLN
1	J	648	ALA
2	K	64	SER
2	K	102	ASP
3	L	198	ASP
1	A	89	PHE
1	A	261	LEU
1	A	286	ARG
1	A	564	THR
3	C	214	THR
1	D	89	PHE
1	D	261	LEU
1	D	286	ARG
1	D	564	THR
3	F	214	THR
1	G	89	PHE
1	G	261	LEU
1	G	286	ARG
1	G	564	THR
3	I	214	THR
1	J	89	PHE
1	J	261	LEU
1	J	286	ARG
1	J	564	THR
3	L	214	THR
1	A	198	ASP
1	A	281	ASP

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Mol	Chain	Res	Type
1	A	295	LYS
1	A	365	LEU
3	C	70	ILE
3	C	112	LYS
1	D	198	ASP
1	D	281	ASP
1	D	295	LYS
1	D	365	LEU
3	F	70	ILE
1	G	198	ASP
1	G	281	ASP
1	G	295	LYS
1	G	365	LEU
3	I	70	ILE
3	I	112	LYS
1	J	198	ASP
1	J	281	ASP
1	J	295	LYS
1	J	365	LEU
3	L	70	ILE
3	L	112	LYS
1	A	153	ALA
3	C	121	GLY
3	C	127	TRP
1	D	153	ALA
3	F	112	LYS
3	F	121	GLY
3	F	127	TRP
1	G	153	ALA
3	I	121	GLY
3	I	127	TRP
1	J	153	ALA
3	L	121	GLY
3	L	127	TRP
1	A	419	ILE
1	D	419	ILE
1	G	419	ILE
1	J	419	ILE
1	A	303	VAL
1	A	406	GLY
1	D	303	VAL
1	D	406	GLY

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Mol	Chain	Res	Type
1	G	303	VAL
1	G	406	GLY
1	J	303	VAL
1	J	406	GLY
2	B	21	PRO
3	C	142	VAL
2	E	21	PRO
3	F	142	VAL
2	H	21	PRO
3	I	142	VAL
2	K	21	PRO
3	L	142	VAL
1	A	592	PRO
1	D	592	PRO
1	G	592	PRO
1	J	592	PRO
1	D	105	VAL
1	J	105	VAL

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	532/533 (100%)	491 (92%)	41 (8%)	12	38
1	D	532/533 (100%)	491 (92%)	41 (8%)	12	38
1	G	532/533 (100%)	491 (92%)	41 (8%)	12	38
1	J	532/533 (100%)	491 (92%)	41 (8%)	12	38
2	B	211/211 (100%)	197 (93%)	14 (7%)	15	43
2	E	211/211 (100%)	197 (93%)	14 (7%)	15	43
2	H	211/211 (100%)	197 (93%)	14 (7%)	15	43
2	K	211/211 (100%)	197 (93%)	14 (7%)	15	43
3	C	221/223 (99%)	192 (87%)	29 (13%)	4	17
3	F	221/223 (99%)	192 (87%)	29 (13%)	4	17

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	I	221/223 (99%)	192 (87%)	29 (13%)	4	17
3	L	221/223 (99%)	192 (87%)	29 (13%)	4	17
All	All	3856/3868 (100%)	3520 (91%)	336 (9%)	9	34

All (336) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	LYS
1	A	9	LEU
1	A	15	LEU
1	A	40	LYS
1	A	72	ASP
1	A	84	LYS
1	A	97	ILE
1	A	109	ARG
1	A	116	MET
1	A	118	ILE
1	A	145	LYS
1	A	268	LEU
1	A	278	ILE
1	A	285	HIS
1	A	294	GLU
1	A	302	ASP
1	A	304	VAL
1	A	307	ARG
1	A	314	LYS
1	A	322	TYR
1	A	337	HIS
1	A	361	TRP
1	A	364	VAL
1	A	368	GLN
1	A	371	SER
1	A	385	LEU
1	A	386	LYS
1	A	390	SER
1	A	398	ASP
1	A	403	ASN
1	A	408	ASN
1	A	439	THR
1	A	467	LYS
1	A	488	GLU

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Mol	Chain	Res	Type
1	A	509	LYS
1	A	511	LEU
1	A	562	ASN
1	A	572	GLU
1	A	592	PRO
1	A	628	LYS
1	A	645	LYS
2	B	1	MET
2	B	36	ILE
2	B	40	LEU
2	B	50	ASP
2	B	61	ILE
2	B	79	THR
2	B	101	LYS
2	B	114	MET
2	B	134	GLU
2	B	140	GLU
2	B	147	GLU
2	B	167	ARG
2	B	189	GLU
2	B	193	GLU
3	C	1	MET
3	C	4	GLU
3	C	14	THR
3	C	40	PHE
3	C	44	HIS
3	C	47	PHE
3	C	56	ASN
3	C	58	MET
3	C	64	LYS
3	C	65	PHE
3	C	69	PHE
3	C	75	LYS
3	C	78	VAL
3	C	100	LYS
3	C	101	PHE
3	C	106	ARG
3	C	123	THR
3	C	137	PHE
3	C	154	ILE
3	C	164	VAL
3	C	185	VAL

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Mol	Chain	Res	Type
3	C	197	PHE
3	C	201	THR
3	C	203	ASP
3	C	212	LEU
3	C	214	THR
3	C	223	LEU
3	C	234	LYS
3	C	239	THR
1	D	2	LYS
1	D	9	LEU
1	D	15	LEU
1	D	40	LYS
1	D	72	ASP
1	D	84	LYS
1	D	97	ILE
1	D	109	ARG
1	D	116	MET
1	D	118	ILE
1	D	145	LYS
1	D	268	LEU
1	D	278	ILE
1	D	285	HIS
1	D	294	GLU
1	D	302	ASP
1	D	304	VAL
1	D	307	ARG
1	D	314	LYS
1	D	322	TYR
1	D	337	HIS
1	D	361	TRP
1	D	364	VAL
1	D	368	GLN
1	D	371	SER
1	D	385	LEU
1	D	386	LYS
1	D	390	SER
1	D	398	ASP
1	D	403	ASN
1	D	408	ASN
1	D	439	THR
1	D	467	LYS
1	D	488	GLU

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Mol	Chain	Res	Type
1	D	509	LYS
1	D	511	LEU
1	D	562	ASN
1	D	572	GLU
1	D	592	PRO
1	D	628	LYS
1	D	645	LYS
2	E	1	MET
2	E	36	ILE
2	E	40	LEU
2	E	50	ASP
2	E	61	ILE
2	E	79	THR
2	E	101	LYS
2	E	114	MET
2	E	134	GLU
2	E	140	GLU
2	E	147	GLU
2	E	167	ARG
2	E	189	GLU
2	E	193	GLU
3	F	1	MET
3	F	4	GLU
3	F	14	THR
3	F	40	PHE
3	F	44	HIS
3	F	47	PHE
3	F	56	ASN
3	F	58	MET
3	F	64	LYS
3	F	65	PHE
3	F	69	PHE
3	F	75	LYS
3	F	78	VAL
3	F	100	LYS
3	F	101	PHE
3	F	106	ARG
3	F	123	THR
3	F	137	PHE
3	F	154	ILE
3	F	164	VAL
3	F	185	VAL

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Mol	Chain	Res	Type
3	F	197	PHE
3	F	201	THR
3	F	203	ASP
3	F	212	LEU
3	F	214	THR
3	F	223	LEU
3	F	234	LYS
3	F	239	THR
1	G	2	LYS
1	G	9	LEU
1	G	15	LEU
1	G	40	LYS
1	G	72	ASP
1	G	84	LYS
1	G	97	ILE
1	G	109	ARG
1	G	116	MET
1	G	118	ILE
1	G	145	LYS
1	G	268	LEU
1	G	278	ILE
1	G	285	HIS
1	G	294	GLU
1	G	302	ASP
1	G	304	VAL
1	G	307	ARG
1	G	314	LYS
1	G	322	TYR
1	G	337	HIS
1	G	361	TRP
1	G	364	VAL
1	G	368	GLN
1	G	371	SER
1	G	385	LEU
1	G	386	LYS
1	G	390	SER
1	G	398	ASP
1	G	403	ASN
1	G	408	ASN
1	G	439	THR
1	G	467	LYS
1	G	488	GLU

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Mol	Chain	Res	Type
1	G	509	LYS
1	G	511	LEU
1	G	562	ASN
1	G	572	GLU
1	G	592	PRO
1	G	628	LYS
1	G	645	LYS
2	H	1	MET
2	H	36	ILE
2	H	40	LEU
2	H	50	ASP
2	H	61	ILE
2	H	79	THR
2	H	101	LYS
2	H	114	MET
2	H	134	GLU
2	H	140	GLU
2	H	147	GLU
2	H	167	ARG
2	H	189	GLU
2	H	193	GLU
3	I	1	MET
3	I	4	GLU
3	I	14	THR
3	I	40	PHE
3	I	44	HIS
3	I	47	PHE
3	I	56	ASN
3	I	58	MET
3	I	64	LYS
3	I	65	PHE
3	I	69	PHE
3	I	75	LYS
3	I	78	VAL
3	I	100	LYS
3	I	101	PHE
3	I	106	ARG
3	I	123	THR
3	I	137	PHE
3	I	154	ILE
3	I	164	VAL
3	I	185	VAL

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Mol	Chain	Res	Type
3	I	197	PHE
3	I	201	THR
3	I	203	ASP
3	I	212	LEU
3	I	214	THR
3	I	223	LEU
3	I	234	LYS
3	I	239	THR
1	J	2	LYS
1	J	9	LEU
1	J	15	LEU
1	J	40	LYS
1	J	72	ASP
1	J	84	LYS
1	J	97	ILE
1	J	109	ARG
1	J	116	MET
1	J	118	ILE
1	J	145	LYS
1	J	268	LEU
1	J	278	ILE
1	J	285	HIS
1	J	294	GLU
1	J	302	ASP
1	J	304	VAL
1	J	307	ARG
1	J	314	LYS
1	J	322	TYR
1	J	337	HIS
1	J	361	TRP
1	J	364	VAL
1	J	368	GLN
1	J	371	SER
1	J	385	LEU
1	J	386	LYS
1	J	390	SER
1	J	398	ASP
1	J	403	ASN
1	J	408	ASN
1	J	439	THR
1	J	467	LYS
1	J	488	GLU

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Mol	Chain	Res	Type
1	J	509	LYS
1	J	511	LEU
1	J	562	ASN
1	J	572	GLU
1	J	592	PRO
1	J	628	LYS
1	J	645	LYS
2	K	1	MET
2	K	36	ILE
2	K	40	LEU
2	K	50	ASP
2	K	61	ILE
2	K	79	THR
2	K	101	LYS
2	K	114	MET
2	K	134	GLU
2	K	140	GLU
2	K	147	GLU
2	K	167	ARG
2	K	189	GLU
2	K	193	GLU
3	L	1	MET
3	L	4	GLU
3	L	14	THR
3	L	40	PHE
3	L	44	HIS
3	L	47	PHE
3	L	56	ASN
3	L	58	MET
3	L	64	LYS
3	L	65	PHE
3	L	69	PHE
3	L	75	LYS
3	L	78	VAL
3	L	100	LYS
3	L	101	PHE
3	L	106	ARG
3	L	123	THR
3	L	137	PHE
3	L	154	ILE
3	L	164	VAL
3	L	185	VAL

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Mol	Chain	Res	Type
3	L	197	PHE
3	L	201	THR
3	L	203	ASP
3	L	212	LEU
3	L	214	THR
3	L	223	LEU
3	L	234	LYS
3	L	239	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (111) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	26	GLN
1	A	48	GLN
1	A	52	GLN
1	A	83	GLN
1	A	91	ASN
1	A	111	HIS
1	A	186	HIS
1	A	225	ASN
1	A	228	ASN
1	A	257	HIS
1	A	325	HIS
1	A	341	ASN
1	A	368	GLN
1	A	403	ASN
1	A	408	ASN
1	A	468	ASN
1	A	486	HIS
1	A	547	HIS
1	A	548	ASN
1	A	562	ASN
1	A	586	ASN
1	A	631	HIS
2	B	116	GLN
2	B	225	GLN
3	C	3	ASN
3	C	30	GLN
3	C	107	GLN
3	C	152	GLN
1	D	26	GLN
1	D	48	GLN

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Mol	Chain	Res	Type
1	D	52	GLN
1	D	83	GLN
1	D	91	ASN
1	D	111	HIS
1	D	186	HIS
1	D	225	ASN
1	D	228	ASN
1	D	257	HIS
1	D	325	HIS
1	D	341	ASN
1	D	368	GLN
1	D	403	ASN
1	D	408	ASN
1	D	468	ASN
1	D	486	HIS
1	D	547	HIS
1	D	548	ASN
1	D	562	ASN
1	D	586	ASN
1	D	631	HIS
2	E	116	GLN
2	E	225	GLN
3	F	3	ASN
3	F	30	GLN
3	F	107	GLN
3	F	152	GLN
1	G	26	GLN
1	G	48	GLN
1	G	52	GLN
1	G	83	GLN
1	G	91	ASN
1	G	111	HIS
1	G	186	HIS
1	G	225	ASN
1	G	228	ASN
1	G	257	HIS
1	G	325	HIS
1	G	341	ASN
1	G	368	GLN
1	G	403	ASN
1	G	408	ASN
1	G	468	ASN

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Mol	Chain	Res	Type
1	G	486	HIS
1	G	547	HIS
1	G	548	ASN
1	G	562	ASN
1	G	586	ASN
1	G	631	HIS
2	H	116	GLN
2	H	225	GLN
3	I	3	ASN
3	I	30	GLN
3	I	107	GLN
3	I	152	GLN
1	J	26	GLN
1	J	48	GLN
1	J	83	GLN
1	J	91	ASN
1	J	111	HIS
1	J	186	HIS
1	J	225	ASN
1	J	228	ASN
1	J	257	HIS
1	J	325	HIS
1	J	341	ASN
1	J	368	GLN
1	J	403	ASN
1	J	408	ASN
1	J	468	ASN
1	J	486	HIS
1	J	547	HIS
1	J	548	ASN
1	J	562	ASN
1	J	586	ASN
1	J	631	HIS
2	K	116	GLN
2	K	225	GLN
3	L	3	ASN
3	L	30	GLN
3	L	107	GLN
3	L	152	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 36 ligands modelled in this entry, 4 are monoatomic - leaving 32 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	MLA	A	702	-	6,6,6	1.94	2 (33%)	7,7,7	0.76	0
4	FAD	G	701	1	58,58,58	2.14	15 (25%)	85,89,89	1.20	6 (7%)
5	MLA	G	702	-	6,6,6	1.93	2 (33%)	7,7,7	0.76	0
8	F3S	E	302	2	0,9,9	-	-	-	-	-
4	FAD	D	701	1	58,58,58	2.15	15 (25%)	85,89,89	1.20	6 (7%)
10	HEM	C	301	3	50,50,50	1.45	8 (16%)	67,82,82	1.18	6 (8%)
11	LMT	C	303	-	36,36,36	1.14	2 (5%)	47,47,47	1.24	4 (8%)
7	FES	B	301	2	0,4,4	-	-	-	-	-
9	SF4	B	303	2	0,12,12	-	-	-	-	-
10	HEM	C	302	3	50,50,50	1.49	8 (16%)	67,82,82	0.96	2 (2%)
10	HEM	I	301	3	50,50,50	1.45	8 (16%)	67,82,82	1.17	7 (10%)
9	SF4	E	303	2	0,12,12	-	-	-	-	-
7	FES	E	301	2	0,4,4	-	-	-	-	-
11	LMT	I	303	-	36,36,36	1.14	2 (5%)	47,47,47	1.24	4 (8%)
8	F3S	B	302	2	0,9,9	-	-	-	-	-

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
10	HEM	I	302	3	50,50,50	1.49	8 (16%)	67,82,82	0.96	2 (2%)
10	HEM	F	302	3	50,50,50	1.45	8 (16%)	67,82,82	1.18	6 (8%)
7	FES	H	301	2	0,4,4	-	-	-		
7	FES	K	301	2	0,4,4	-	-	-		
10	HEM	L	302	3	50,50,50	1.45	8 (16%)	67,82,82	1.17	7 (10%)
4	FAD	J	701	1	58,58,58	2.15	15 (25%)	85,89,89	1.20	6 (7%)
9	SF4	K	303	2	0,12,12	-	-	-		
5	MLA	D	702	-	6,6,6	1.93	2 (33%)	7,7,7	0.77	0
5	MLA	J	702	-	6,6,6	1.95	2 (33%)	7,7,7	0.76	0
4	FAD	A	701	1	58,58,58	2.15	15 (25%)	85,89,89	1.20	6 (7%)
10	HEM	F	303	3	50,50,50	1.49	8 (16%)	67,82,82	0.96	2 (2%)
11	LMT	F	301	-	36,36,36	1.14	2 (5%)	47,47,47	1.24	4 (8%)
8	F3S	K	302	2	0,9,9	-	-	-		
10	HEM	L	303	3	50,50,50	1.49	8 (16%)	67,82,82	0.96	2 (2%)
11	LMT	L	301	-	36,36,36	1.14	2 (5%)	47,47,47	1.25	4 (8%)
8	F3S	H	302	2	0,9,9	-	-	-		
9	SF4	H	303	2	0,12,12	-	-	-		

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	MLA	A	702	-	-	2/4/4/4	-
4	FAD	G	701	1	-	7/34/50/50	0/6/6/6
5	MLA	G	702	-	-	2/4/4/4	-
8	F3S	E	302	2	-	-	0/3/3/3
4	FAD	D	701	1	-	7/34/50/50	0/6/6/6
11	LMT	C	303	-	-	10/21/61/61	0/2/2/2
10	HEM	C	301	3	-	9/14/54/54	-
10	HEM	C	302	3	-	8/14/54/54	-
7	FES	B	301	2	-	-	0/1/1/1
9	SF4	B	303	2	-	-	0/6/5/5
10	HEM	I	301	3	-	9/14/54/54	-
9	SF4	E	303	2	-	-	0/6/5/5
11	LMT	I	303	-	-	10/21/61/61	0/2/2/2
7	FES	E	301	2	-	-	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
10	HEM	I	302	3	-	8/14/54/54	-
8	F3S	B	302	2	-	-	0/3/3/3
10	HEM	F	302	3	-	9/14/54/54	-
7	FES	H	301	2	-	-	0/1/1/1
7	FES	K	301	2	-	-	0/1/1/1
10	HEM	L	302	3	-	9/14/54/54	-
4	FAD	J	701	1	-	7/34/50/50	0/6/6/6
9	SF4	K	303	2	-	-	0/6/5/5
5	MLA	D	702	-	-	2/4/4/4	-
5	MLA	J	702	-	-	2/4/4/4	-
10	HEM	F	303	3	-	8/14/54/54	-
4	FAD	A	701	1	-	7/34/50/50	0/6/6/6
11	LMT	F	301	-	-	10/21/61/61	0/2/2/2
8	F3S	K	302	2	-	-	0/3/3/3
10	HEM	L	303	3	-	8/14/54/54	-
11	LMT	L	301	-	-	10/21/61/61	0/2/2/2
8	F3S	H	302	2	-	-	0/3/3/3
9	SF4	H	303	2	-	-	0/6/5/5

All (140) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	D	701	FAD	P-O3P	-9.01	1.49	1.59
4	J	701	FAD	P-O3P	-9.00	1.49	1.59
4	A	701	FAD	P-O3P	-8.97	1.49	1.59
4	G	701	FAD	P-O3P	-8.94	1.49	1.59
10	F	303	HEM	FE-NB	4.63	2.09	1.94
10	C	302	HEM	FE-NB	4.63	2.09	1.94
10	I	302	HEM	FE-NB	4.62	2.09	1.94
10	L	303	HEM	FE-NB	4.62	2.09	1.94
4	J	701	FAD	O5'-C5'	4.22	1.60	1.44
4	G	701	FAD	O5'-C5'	4.21	1.60	1.44
4	A	701	FAD	O5'-C5'	4.21	1.60	1.44
4	D	701	FAD	O5'-C5'	4.20	1.60	1.44
4	A	701	FAD	PA-O2A	-4.20	1.35	1.55
4	J	701	FAD	PA-O2A	-4.19	1.35	1.55
4	G	701	FAD	PA-O2A	-4.19	1.35	1.55
4	D	701	FAD	PA-O2A	-4.19	1.35	1.55
10	F	302	HEM	CAB-C3B	-3.89	1.37	1.47
10	L	302	HEM	CAB-C3B	-3.88	1.37	1.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
10	C	301	HEM	CAB-C3B	-3.88	1.37	1.47
10	I	301	HEM	CAB-C3B	-3.88	1.37	1.47
10	L	303	HEM	CBB-CAB	3.79	1.48	1.30
10	C	302	HEM	CBB-CAB	3.78	1.48	1.30
10	I	302	HEM	CBB-CAB	3.78	1.48	1.30
10	F	303	HEM	CBB-CAB	3.78	1.48	1.30
4	G	701	FAD	P-O2P	-3.52	1.39	1.55
4	J	701	FAD	P-O2P	-3.52	1.39	1.55
4	A	701	FAD	P-O2P	-3.52	1.39	1.55
4	D	701	FAD	P-O2P	-3.52	1.39	1.55
10	F	302	HEM	CBC-CAC	3.52	1.47	1.30
4	J	701	FAD	C1'-C2'	3.51	1.57	1.52
10	C	301	HEM	CBC-CAC	3.51	1.47	1.30
10	L	303	HEM	CAC-C3C	-3.50	1.38	1.47
10	I	301	HEM	CBC-CAC	3.50	1.47	1.30
10	L	302	HEM	CBC-CAC	3.50	1.47	1.30
10	F	303	HEM	CAC-C3C	-3.48	1.38	1.47
10	C	302	HEM	CAC-C3C	-3.48	1.38	1.47
4	A	701	FAD	C1'-C2'	3.47	1.57	1.52
4	G	701	FAD	C1'-C2'	3.47	1.57	1.52
10	I	302	HEM	CAC-C3C	-3.46	1.38	1.47
4	D	701	FAD	C1'-C2'	3.41	1.57	1.52
11	C	303	LMT	O5B-C1B	3.29	1.50	1.41
10	F	302	HEM	CBB-CAB	3.29	1.46	1.30
11	I	303	LMT	O5B-C1B	3.29	1.50	1.41
10	L	302	HEM	CBB-CAB	3.29	1.46	1.30
10	I	301	HEM	CBB-CAB	3.28	1.46	1.30
11	F	301	LMT	O5B-C1B	3.28	1.50	1.41
11	L	301	LMT	O5B-C1B	3.28	1.50	1.41
10	C	301	HEM	CBB-CAB	3.28	1.46	1.30
10	L	302	HEM	FE-NB	3.20	2.04	1.94
10	F	302	HEM	FE-NB	3.20	2.04	1.94
10	C	301	HEM	FE-NB	3.20	2.04	1.94
10	I	301	HEM	FE-NB	3.18	2.04	1.94
4	D	701	FAD	C5'-C4'	3.07	1.56	1.51
4	G	701	FAD	C5'-C4'	3.06	1.56	1.51
4	A	701	FAD	O2-C2	-3.06	1.18	1.24
4	D	701	FAD	O2-C2	-3.05	1.18	1.24
4	J	701	FAD	O2-C2	-3.04	1.18	1.24
4	A	701	FAD	C5'-C4'	3.04	1.55	1.51
4	G	701	FAD	O2-C2	-3.03	1.18	1.24
10	C	302	HEM	CMB-C2B	3.03	1.57	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	J	701	FAD	C5'-C4'	3.01	1.55	1.51
10	L	303	HEM	CMB-C2B	3.00	1.56	1.50
10	F	303	HEM	CMB-C2B	3.00	1.56	1.50
10	I	302	HEM	CMB-C2B	2.99	1.56	1.50
5	J	702	MLA	C2-C1	2.99	1.55	1.51
5	G	702	MLA	C2-C1	2.97	1.55	1.51
5	A	702	MLA	C2-C1	2.94	1.55	1.51
11	C	303	LMT	C3'-C4'	2.94	1.60	1.52
11	L	301	LMT	C3'-C4'	2.93	1.60	1.52
11	F	301	LMT	C3'-C4'	2.93	1.60	1.52
11	I	303	LMT	C3'-C4'	2.92	1.60	1.52
5	D	702	MLA	C2-C1	2.91	1.55	1.51
10	F	303	HEM	CBC-CAC	2.83	1.44	1.30
10	I	301	HEM	CAC-C3C	-2.82	1.39	1.47
10	I	302	HEM	CBC-CAC	2.82	1.43	1.30
10	C	301	HEM	CAC-C3C	-2.82	1.39	1.47
10	C	302	HEM	CBC-CAC	2.82	1.43	1.30
10	F	302	HEM	CAC-C3C	-2.82	1.39	1.47
10	L	303	HEM	CBC-CAC	2.81	1.43	1.30
4	G	701	FAD	C5A-C6A	2.81	1.48	1.41
10	L	302	HEM	CAC-C3C	-2.80	1.39	1.47
4	J	701	FAD	C5A-C6A	2.79	1.48	1.41
4	D	701	FAD	C5A-C6A	2.78	1.48	1.41
4	A	701	FAD	C5A-C6A	2.78	1.48	1.41
10	I	301	HEM	FE-NA	2.72	2.04	1.95
10	L	302	HEM	FE-NA	2.72	2.04	1.95
10	F	302	HEM	FE-NA	2.71	2.04	1.95
10	C	301	HEM	FE-NA	2.71	2.04	1.95
4	D	701	FAD	O4B-C1B	2.67	1.48	1.42
4	G	701	FAD	O4B-C1B	2.65	1.48	1.42
4	A	701	FAD	O4B-C1B	2.65	1.48	1.42
10	I	302	HEM	FE-NA	2.63	2.03	1.95
4	J	701	FAD	O4B-C1B	2.62	1.48	1.42
10	C	302	HEM	FE-NA	2.61	2.03	1.95
10	L	303	HEM	FE-NA	2.61	2.03	1.95
5	J	702	MLA	C2-C3	2.61	1.55	1.51
5	A	702	MLA	C2-C3	2.61	1.55	1.51
10	F	303	HEM	FE-NA	2.60	2.03	1.95
5	D	702	MLA	C2-C3	2.60	1.55	1.51
4	J	701	FAD	C4X-N5	2.57	1.36	1.30
4	G	701	FAD	C4X-N5	2.56	1.36	1.30
5	G	702	MLA	C2-C3	2.56	1.55	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	701	FAD	C4X-N5	2.56	1.36	1.30
4	D	701	FAD	C4X-N5	2.53	1.36	1.30
4	A	701	FAD	PA-O3P	2.51	1.62	1.59
4	J	701	FAD	PA-O3P	2.51	1.62	1.59
10	I	301	HEM	FE-NC	2.51	2.03	1.95
10	C	301	HEM	FE-NC	2.50	2.03	1.95
10	F	302	HEM	FE-NC	2.50	2.03	1.95
10	L	302	HEM	FE-NC	2.48	2.03	1.95
4	G	701	FAD	C9A-N10	2.45	1.45	1.41
4	D	701	FAD	PA-O3P	2.45	1.62	1.59
4	J	701	FAD	C9A-N10	2.44	1.45	1.41
4	G	701	FAD	PA-O3P	2.42	1.62	1.59
4	A	701	FAD	C9A-N10	2.41	1.45	1.41
4	D	701	FAD	C9A-N10	2.40	1.45	1.41
4	J	701	FAD	C8-C7	2.33	1.46	1.40
4	G	701	FAD	C8-C7	2.33	1.46	1.40
4	D	701	FAD	C8-C7	2.33	1.46	1.40
4	A	701	FAD	C8-C7	2.31	1.46	1.40
10	I	302	HEM	CAB-C3B	-2.27	1.41	1.47
10	C	302	HEM	CAB-C3B	-2.26	1.41	1.47
4	G	701	FAD	C4A-N3A	2.26	1.38	1.34
10	L	303	HEM	CAB-C3B	-2.26	1.41	1.47
10	F	303	HEM	CAB-C3B	-2.26	1.41	1.47
10	L	302	HEM	CAA-C2A	2.23	1.57	1.51
10	I	301	HEM	CAA-C2A	2.22	1.57	1.51
10	F	302	HEM	CAA-C2A	2.21	1.57	1.51
4	A	701	FAD	C4A-N3A	2.21	1.38	1.34
4	D	701	FAD	C4A-N3A	2.21	1.38	1.34
10	C	301	HEM	CAA-C2A	2.21	1.57	1.51
4	J	701	FAD	C4A-N3A	2.19	1.38	1.34
4	G	701	FAD	C6-C5X	2.17	1.43	1.40
4	A	701	FAD	C6-C5X	2.16	1.43	1.40
4	D	701	FAD	C6-C5X	2.15	1.43	1.40
4	J	701	FAD	C6-C5X	2.14	1.43	1.40
10	F	303	HEM	FE-NC	2.05	2.01	1.95
10	L	303	HEM	FE-NC	2.05	2.01	1.95
10	I	302	HEM	FE-NC	2.04	2.01	1.95
10	C	302	HEM	FE-NC	2.04	2.01	1.95

All (74) bond angle outliers are listed below:

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	L	301	LMT	C1-O1'-C1'	4.84	121.95	113.68
11	F	301	LMT	C1-O1'-C1'	4.83	121.93	113.68
11	I	303	LMT	C1-O1'-C1'	4.83	121.93	113.68
11	C	303	LMT	C1-O1'-C1'	4.83	121.93	113.68
4	G	701	FAD	C1'-N10-C9A	-3.96	112.94	120.63
10	I	301	HEM	CBA-CAA-C2A	3.95	123.46	112.53
4	D	701	FAD	C1'-N10-C9A	-3.95	112.95	120.63
10	L	302	HEM	CBA-CAA-C2A	3.95	123.45	112.53
4	A	701	FAD	C1'-N10-C9A	-3.95	112.96	120.63
10	C	301	HEM	CBA-CAA-C2A	3.95	123.44	112.53
4	J	701	FAD	C1'-N10-C9A	-3.94	112.97	120.63
10	F	302	HEM	CBA-CAA-C2A	3.94	123.42	112.53
10	I	302	HEM	CMD-C2D-C1D	3.33	130.24	125.03
10	F	303	HEM	CMD-C2D-C1D	3.32	130.23	125.03
10	C	302	HEM	CMD-C2D-C1D	3.31	130.21	125.03
4	J	701	FAD	C5'-C4'-C3'	-3.31	105.97	112.22
4	A	701	FAD	C5'-C4'-C3'	-3.31	105.97	112.22
4	G	701	FAD	C5'-C4'-C3'	-3.31	105.98	112.22
4	D	701	FAD	C5'-C4'-C3'	-3.29	106.00	112.22
10	L	303	HEM	CMD-C2D-C1D	3.29	130.18	125.03
11	I	303	LMT	C3'-C4'-C5'	-3.21	103.82	110.93
11	L	301	LMT	C3'-C4'-C5'	-3.20	103.83	110.93
11	F	301	LMT	C3'-C4'-C5'	-3.20	103.84	110.93
11	C	303	LMT	C3'-C4'-C5'	-3.19	103.86	110.93
10	I	302	HEM	CBA-CAA-C2A	3.01	120.84	112.53
10	C	302	HEM	CBA-CAA-C2A	3.00	120.84	112.53
10	L	303	HEM	CBA-CAA-C2A	3.00	120.82	112.53
10	F	303	HEM	CBA-CAA-C2A	2.99	120.80	112.53
4	D	701	FAD	C4-N3-C2	-2.66	120.91	125.64
4	J	701	FAD	C4-N3-C2	-2.64	120.95	125.64
4	A	701	FAD	C4-N3-C2	-2.63	120.98	125.64
4	G	701	FAD	C4-N3-C2	-2.62	120.98	125.64
10	C	301	HEM	CAC-C3C-C4C	2.59	130.99	124.82
10	L	302	HEM	CAC-C3C-C4C	2.58	130.97	124.82
10	F	302	HEM	CAC-C3C-C4C	2.57	130.97	124.82
10	I	301	HEM	CAC-C3C-C4C	2.57	130.96	124.82
4	D	701	FAD	O4B-C1B-N9A	-2.56	103.18	108.09
4	A	701	FAD	O4B-C1B-N9A	-2.53	103.22	108.09
4	G	701	FAD	O4B-C1B-N9A	-2.53	103.22	108.09
4	J	701	FAD	O4B-C1B-N9A	-2.52	103.25	108.09
10	I	301	HEM	CMC-C2C-C1C	2.37	128.91	124.73

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
10	F	302	HEM	CHA-C4D-ND	2.36	127.28	124.37
10	F	302	HEM	CMC-C2C-C1C	2.36	128.88	124.73
10	C	301	HEM	CMC-C2C-C1C	2.35	128.86	124.73
10	L	302	HEM	CMB-C2B-C1B	2.34	128.70	125.03
11	F	301	LMT	O1'-C1'-C2'	-2.34	104.72	108.27
10	C	301	HEM	CHA-C4D-ND	2.34	127.26	124.37
10	L	302	HEM	CMC-C2C-C1C	2.34	128.84	124.73
10	C	301	HEM	CMB-C2B-C1B	2.34	128.68	125.03
11	L	301	LMT	O1'-C1'-C2'	-2.33	104.73	108.27
11	I	303	LMT	O1'-C1'-C2'	-2.33	104.73	108.27
11	C	303	LMT	O1'-C1'-C2'	-2.33	104.73	108.27
10	I	301	HEM	CMB-C2B-C1B	2.33	128.67	125.03
10	L	302	HEM	CHA-C4D-ND	2.32	127.24	124.37
10	F	302	HEM	CMB-C2B-C1B	2.32	128.66	125.03
4	D	701	FAD	C2A-N1A-C6A	2.30	122.50	118.73
4	A	701	FAD	C2A-N1A-C6A	2.29	122.49	118.73
10	I	301	HEM	CHA-C4D-ND	2.28	127.19	124.37
4	J	701	FAD	C2A-N1A-C6A	2.28	122.47	118.73
4	G	701	FAD	C2A-N1A-C6A	2.27	122.46	118.73
11	F	301	LMT	O1B-C4'-C3'	2.14	112.67	107.23
11	L	301	LMT	O1B-C4'-C3'	2.14	112.66	107.23
11	I	303	LMT	O1B-C4'-C3'	2.13	112.66	107.23
11	C	303	LMT	O1B-C4'-C3'	2.13	112.64	107.23
4	J	701	FAD	C4X-C10-N1	-2.12	119.40	124.59
4	A	701	FAD	C4X-C10-N1	-2.11	119.43	124.59
4	G	701	FAD	C4X-C10-N1	-2.10	119.43	124.59
4	D	701	FAD	C4X-C10-N1	-2.10	119.45	124.59
10	C	301	HEM	C3D-C4D-ND	-2.08	107.89	110.17
10	F	302	HEM	C3D-C4D-ND	-2.07	107.90	110.17
10	I	301	HEM	C3D-C4D-ND	-2.05	107.92	110.17
10	L	302	HEM	C3D-C4D-ND	-2.05	107.92	110.17
10	I	301	HEM	CMD-C2D-C1D	2.01	128.18	125.03
10	L	302	HEM	CMD-C2D-C1D	2.01	128.17	125.03

There are no chirality outliers.

All (144) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	701	FAD	C5'-O5'-P-O1P
4	A	701	FAD	C5'-O5'-P-O3P
4	D	701	FAD	C5'-O5'-P-O1P
4	D	701	FAD	C5'-O5'-P-O3P

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Mol	Chain	Res	Type	Atoms
4	G	701	FAD	C5'-O5'-P-O1P
4	G	701	FAD	C5'-O5'-P-O3P
4	J	701	FAD	C5'-O5'-P-O1P
4	J	701	FAD	C5'-O5'-P-O3P
10	C	301	HEM	C2B-C3B-CAB-CBB
10	C	301	HEM	C4B-C3B-CAB-CBB
10	C	302	HEM	C2C-C3C-CAC-CBC
10	C	302	HEM	C4C-C3C-CAC-CBC
10	F	302	HEM	C2B-C3B-CAB-CBB
10	F	302	HEM	C4B-C3B-CAB-CBB
10	F	303	HEM	C2C-C3C-CAC-CBC
10	F	303	HEM	C4C-C3C-CAC-CBC
10	I	301	HEM	C2B-C3B-CAB-CBB
10	I	301	HEM	C4B-C3B-CAB-CBB
10	I	302	HEM	C2C-C3C-CAC-CBC
10	I	302	HEM	C4C-C3C-CAC-CBC
10	L	302	HEM	C2B-C3B-CAB-CBB
10	L	302	HEM	C4B-C3B-CAB-CBB
10	L	303	HEM	C2C-C3C-CAC-CBC
10	L	303	HEM	C4C-C3C-CAC-CBC
11	C	303	LMT	O5'-C5'-C6'-O6'
11	F	301	LMT	O5'-C5'-C6'-O6'
11	I	303	LMT	O5'-C5'-C6'-O6'
11	L	301	LMT	O5'-C5'-C6'-O6'
11	C	303	LMT	C4'-C5'-C6'-O6'
11	F	301	LMT	C4'-C5'-C6'-O6'
11	I	303	LMT	C4'-C5'-C6'-O6'
11	L	301	LMT	C4'-C5'-C6'-O6'
11	L	301	LMT	O1'-C1-C2-C3
11	C	303	LMT	O1'-C1-C2-C3
11	F	301	LMT	O1'-C1-C2-C3
11	I	303	LMT	O1'-C1-C2-C3
11	L	301	LMT	C2-C3-C4-C5
11	C	303	LMT	C2-C3-C4-C5
11	F	301	LMT	C2-C3-C4-C5
11	I	303	LMT	C2-C3-C4-C5
10	C	301	HEM	C2C-C3C-CAC-CBC
10	F	302	HEM	C2C-C3C-CAC-CBC
10	I	301	HEM	C2C-C3C-CAC-CBC
10	L	302	HEM	C2C-C3C-CAC-CBC
10	C	302	HEM	C2B-C3B-CAB-CBB
10	F	303	HEM	C2B-C3B-CAB-CBB

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Mol	Chain	Res	Type	Atoms
10	I	302	HEM	C2B-C3B-CAB-CBB
10	L	303	HEM	C2B-C3B-CAB-CBB
11	C	303	LMT	C5'-C4'-O1B-C1B
11	F	301	LMT	C5'-C4'-O1B-C1B
11	I	303	LMT	C5'-C4'-O1B-C1B
11	L	301	LMT	C5'-C4'-O1B-C1B
4	A	701	FAD	P-O3P-PA-O2A
4	D	701	FAD	P-O3P-PA-O2A
4	G	701	FAD	P-O3P-PA-O2A
4	J	701	FAD	P-O3P-PA-O2A
10	C	301	HEM	C4D-C3D-CAD-CBD
10	F	302	HEM	C4D-C3D-CAD-CBD
10	I	301	HEM	C4D-C3D-CAD-CBD
10	L	302	HEM	C4D-C3D-CAD-CBD
4	A	701	FAD	C4'-C5'-O5'-P
4	D	701	FAD	C4'-C5'-O5'-P
4	G	701	FAD	C4'-C5'-O5'-P
4	J	701	FAD	C4'-C5'-O5'-P
4	A	701	FAD	C2'-C1'-N10-C10
4	D	701	FAD	C2'-C1'-N10-C10
4	G	701	FAD	C2'-C1'-N10-C10
4	J	701	FAD	C2'-C1'-N10-C10
11	I	303	LMT	C2B-C1B-O1B-C4'
11	C	303	LMT	C2B-C1B-O1B-C4'
11	F	301	LMT	C2B-C1B-O1B-C4'
11	L	301	LMT	C2B-C1B-O1B-C4'
11	L	301	LMT	O5B-C1B-O1B-C4'
11	C	303	LMT	O5B-C1B-O1B-C4'
11	F	301	LMT	O5B-C1B-O1B-C4'
11	I	303	LMT	O5B-C1B-O1B-C4'
4	A	701	FAD	P-O3P-PA-O1A
4	D	701	FAD	P-O3P-PA-O1A
4	G	701	FAD	P-O3P-PA-O1A
4	J	701	FAD	P-O3P-PA-O1A
10	C	301	HEM	C4C-C3C-CAC-CBC
10	F	302	HEM	C4C-C3C-CAC-CBC
10	I	301	HEM	C4C-C3C-CAC-CBC
10	L	302	HEM	C4C-C3C-CAC-CBC
10	C	302	HEM	CAD-CBD-CGD-O1D
10	F	303	HEM	CAD-CBD-CGD-O1D
10	I	302	HEM	CAD-CBD-CGD-O1D
10	L	303	HEM	CAD-CBD-CGD-O1D

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Mol	Chain	Res	Type	Atoms
11	L	301	LMT	C7-C8-C9-C10
11	I	303	LMT	C7-C8-C9-C10
11	C	303	LMT	C7-C8-C9-C10
11	F	301	LMT	C7-C8-C9-C10
11	F	301	LMT	C3'-C4'-O1B-C1B
11	C	303	LMT	C3'-C4'-O1B-C1B
11	I	303	LMT	C3'-C4'-O1B-C1B
11	L	301	LMT	C3'-C4'-O1B-C1B
10	C	302	HEM	CAD-CBD-CGD-O2D
10	F	303	HEM	CAD-CBD-CGD-O2D
10	I	302	HEM	CAD-CBD-CGD-O2D
10	L	303	HEM	CAD-CBD-CGD-O2D
11	C	303	LMT	C9-C10-C11-C12
11	F	301	LMT	C9-C10-C11-C12
11	I	303	LMT	C9-C10-C11-C12
11	L	301	LMT	C9-C10-C11-C12
5	A	702	MLA	C1-C2-C3-O3A
5	D	702	MLA	C1-C2-C3-O3A
10	I	301	HEM	CAD-CBD-CGD-O2D
10	C	301	HEM	CAD-CBD-CGD-O2D
10	F	302	HEM	CAD-CBD-CGD-O2D
10	L	302	HEM	CAD-CBD-CGD-O2D
10	C	302	HEM	C4B-C3B-CAB-CBB
10	F	303	HEM	C4B-C3B-CAB-CBB
10	I	302	HEM	C4B-C3B-CAB-CBB
10	L	303	HEM	C4B-C3B-CAB-CBB
5	G	702	MLA	C1-C2-C3-O3A
5	J	702	MLA	C1-C2-C3-O3A
4	A	701	FAD	PA-O3P-P-O2P
4	D	701	FAD	PA-O3P-P-O2P
4	G	701	FAD	PA-O3P-P-O2P
4	J	701	FAD	PA-O3P-P-O2P
10	I	301	HEM	CAD-CBD-CGD-O1D
10	C	301	HEM	CAD-CBD-CGD-O1D
10	F	302	HEM	CAD-CBD-CGD-O1D
10	C	302	HEM	CAA-CBA-CGA-O2A
10	F	302	HEM	CAA-CBA-CGA-O2A
10	F	303	HEM	CAA-CBA-CGA-O2A
10	I	302	HEM	CAA-CBA-CGA-O2A
10	L	302	HEM	CAA-CBA-CGA-O2A
10	L	302	HEM	CAD-CBD-CGD-O1D
10	L	303	HEM	CAA-CBA-CGA-O2A

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Mol	Chain	Res	Type	Atoms
10	C	301	HEM	CAA-CBA-CGA-O2A
10	I	301	HEM	CAA-CBA-CGA-O2A
5	A	702	MLA	C1-C2-C3-O3B
5	D	702	MLA	C1-C2-C3-O3B
5	G	702	MLA	C1-C2-C3-O3B
10	C	302	HEM	CAA-CBA-CGA-O1A
10	F	303	HEM	CAA-CBA-CGA-O1A
10	I	302	HEM	CAA-CBA-CGA-O1A
10	L	303	HEM	CAA-CBA-CGA-O1A
5	J	702	MLA	C1-C2-C3-O3B
10	C	301	HEM	CAA-CBA-CGA-O1A
10	F	302	HEM	CAA-CBA-CGA-O1A
10	I	301	HEM	CAA-CBA-CGA-O1A
10	L	302	HEM	CAA-CBA-CGA-O1A

There are no ring outliers.

24 monomers are involved in 106 short contacts:

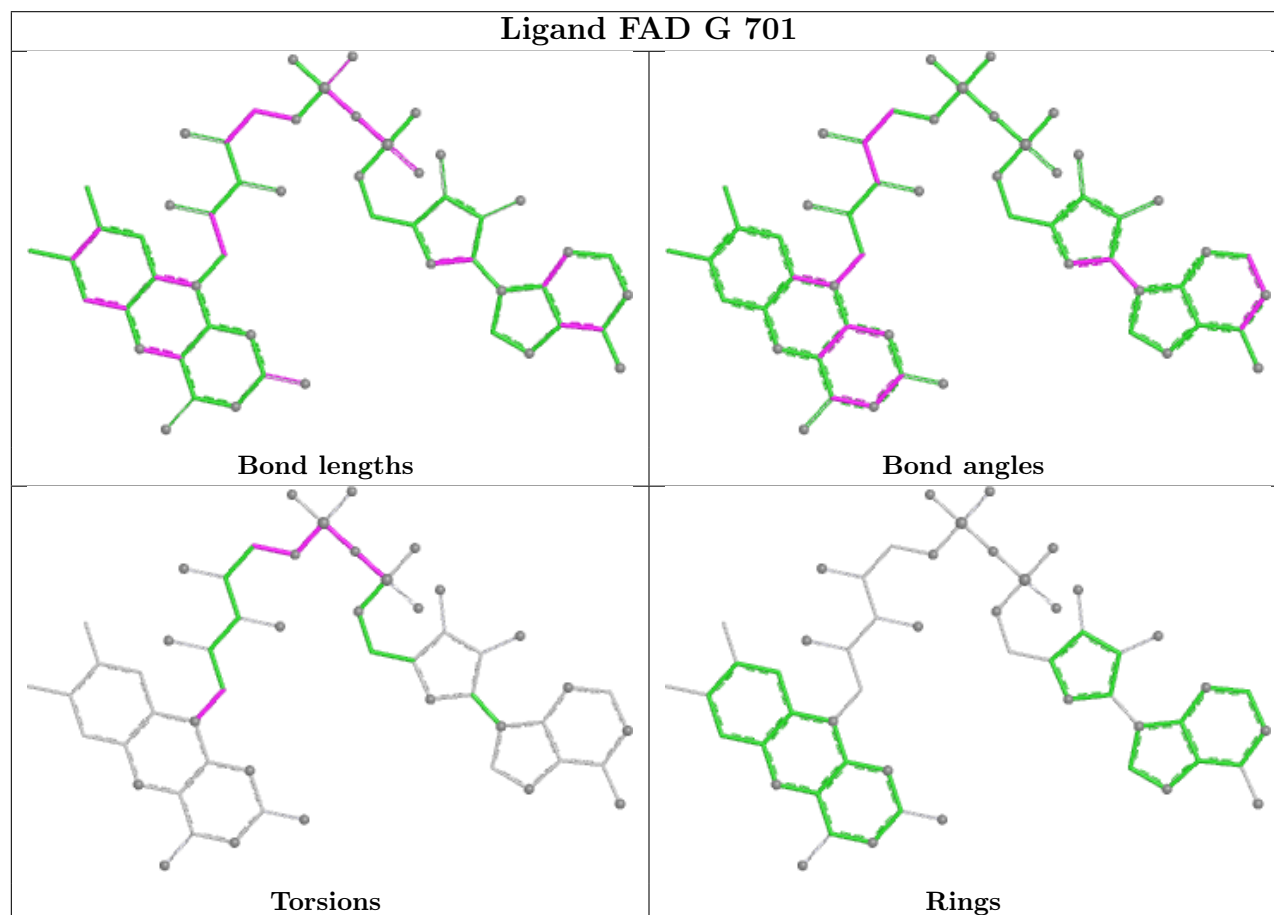
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	702	MLA	5	0
4	G	701	FAD	4	0
5	G	702	MLA	6	0
8	E	302	F3S	2	0
4	D	701	FAD	4	0
10	C	301	HEM	4	0
11	C	303	LMT	3	0
10	C	302	HEM	8	0
10	I	301	HEM	5	0
11	I	303	LMT	3	0
8	B	302	F3S	2	0
10	I	302	HEM	7	0
10	F	302	HEM	5	0
10	L	302	HEM	4	0
4	J	701	FAD	4	0
5	D	702	MLA	5	0
5	J	702	MLA	5	0
4	A	701	FAD	4	0
10	F	303	HEM	8	0
11	F	301	LMT	3	0
8	K	302	F3S	2	0
10	L	303	HEM	8	0
11	L	301	LMT	3	0

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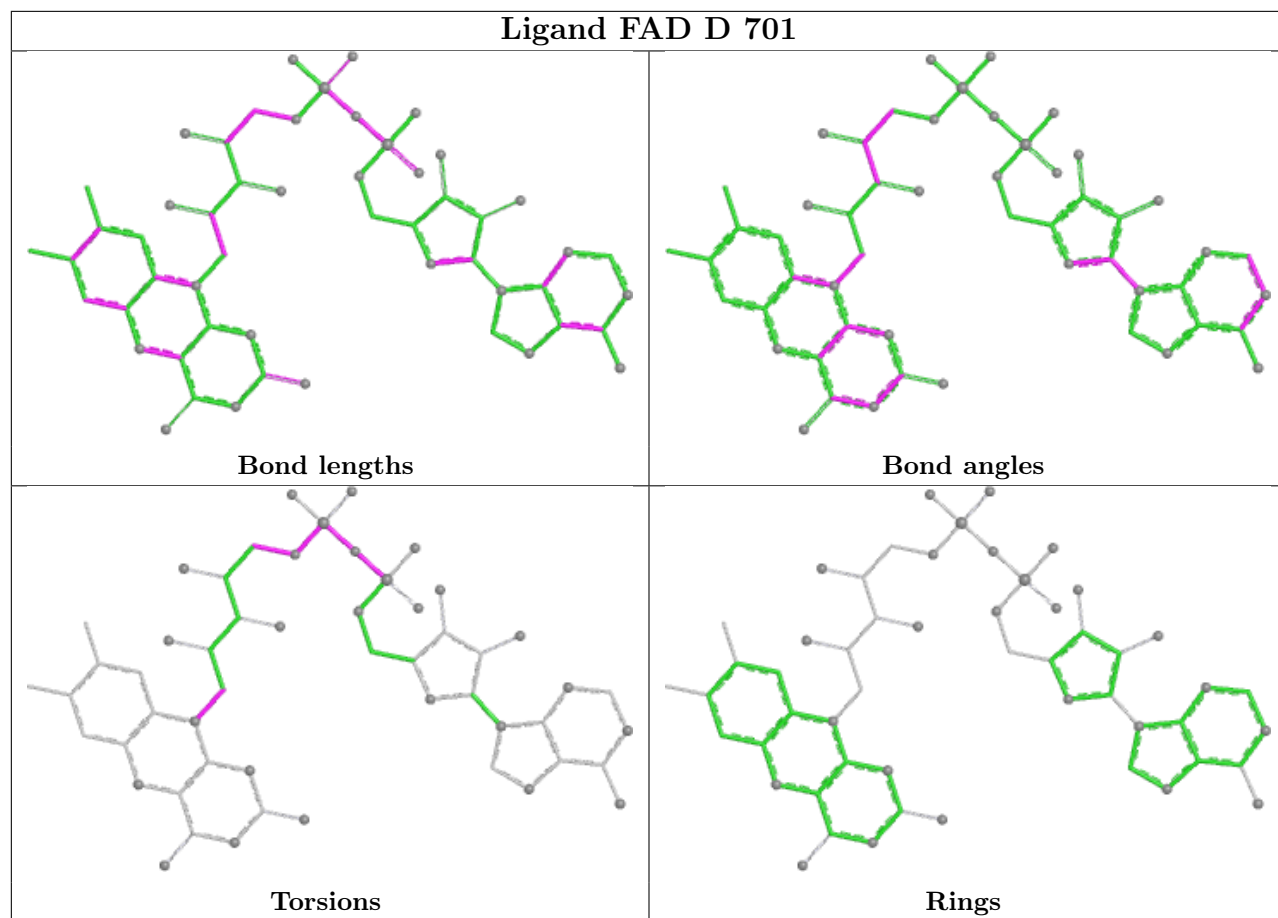
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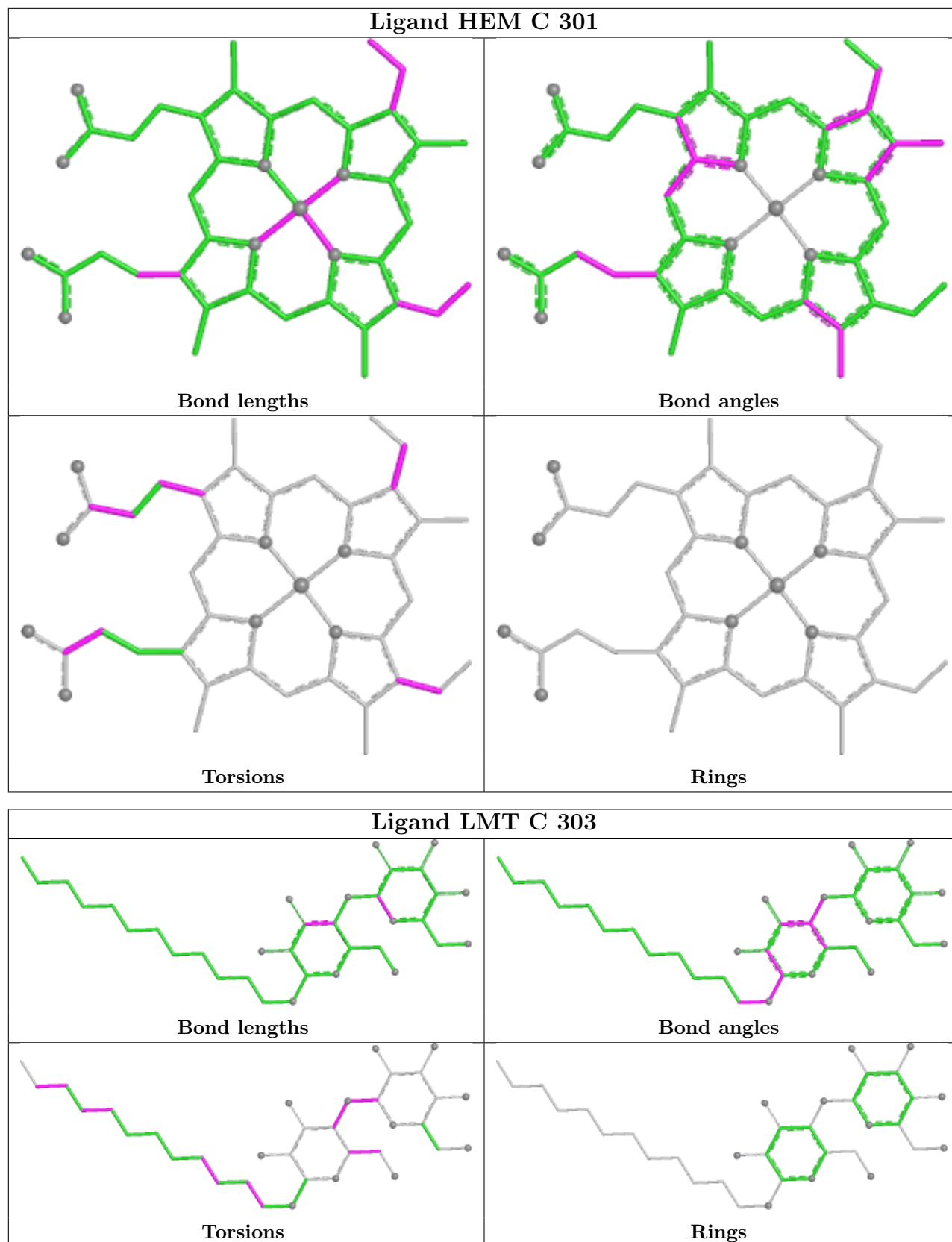
Mol	Chain	Res	Type	Clashes	Symm-Clashes
8	H	302	F3S	2	0

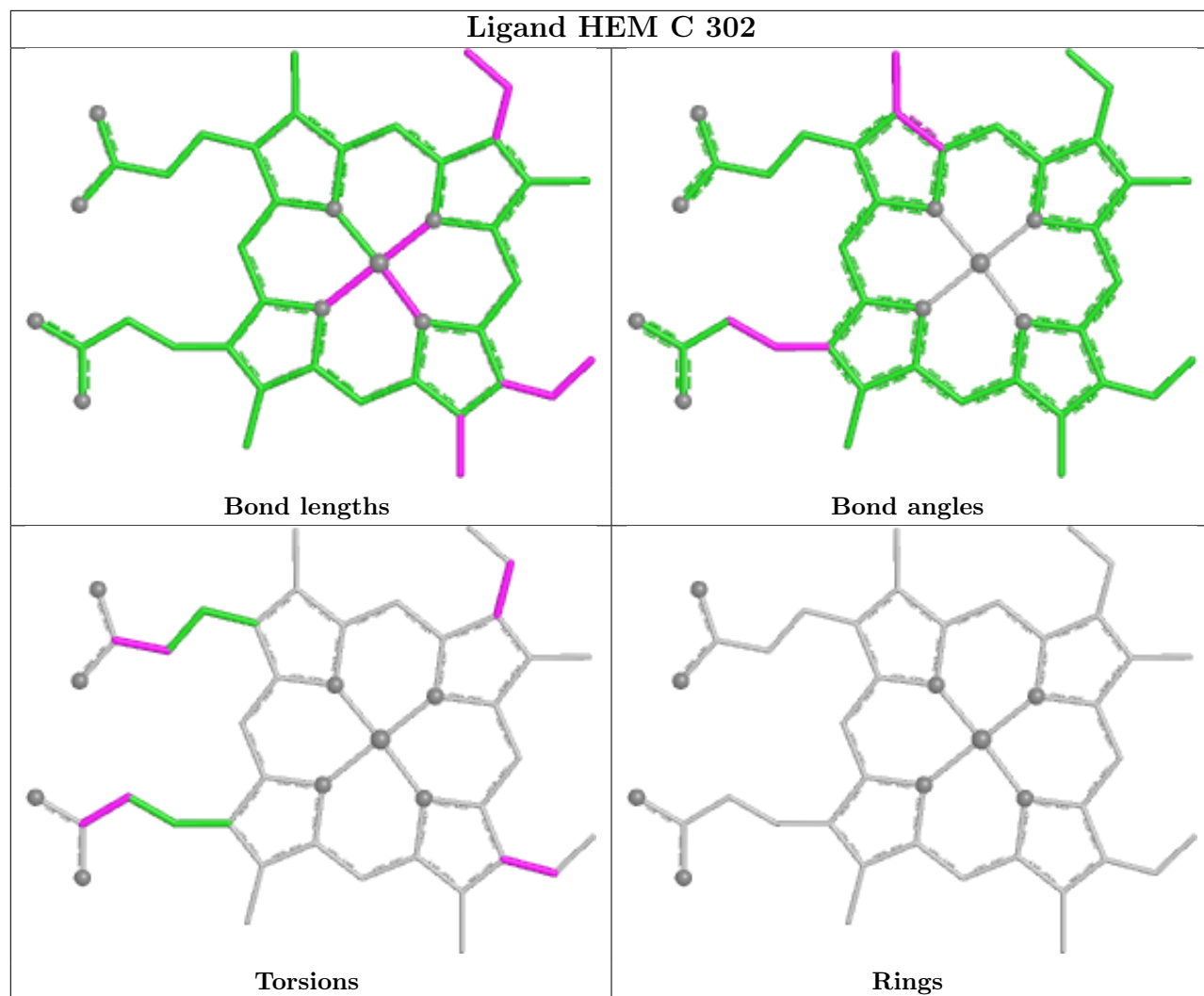
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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



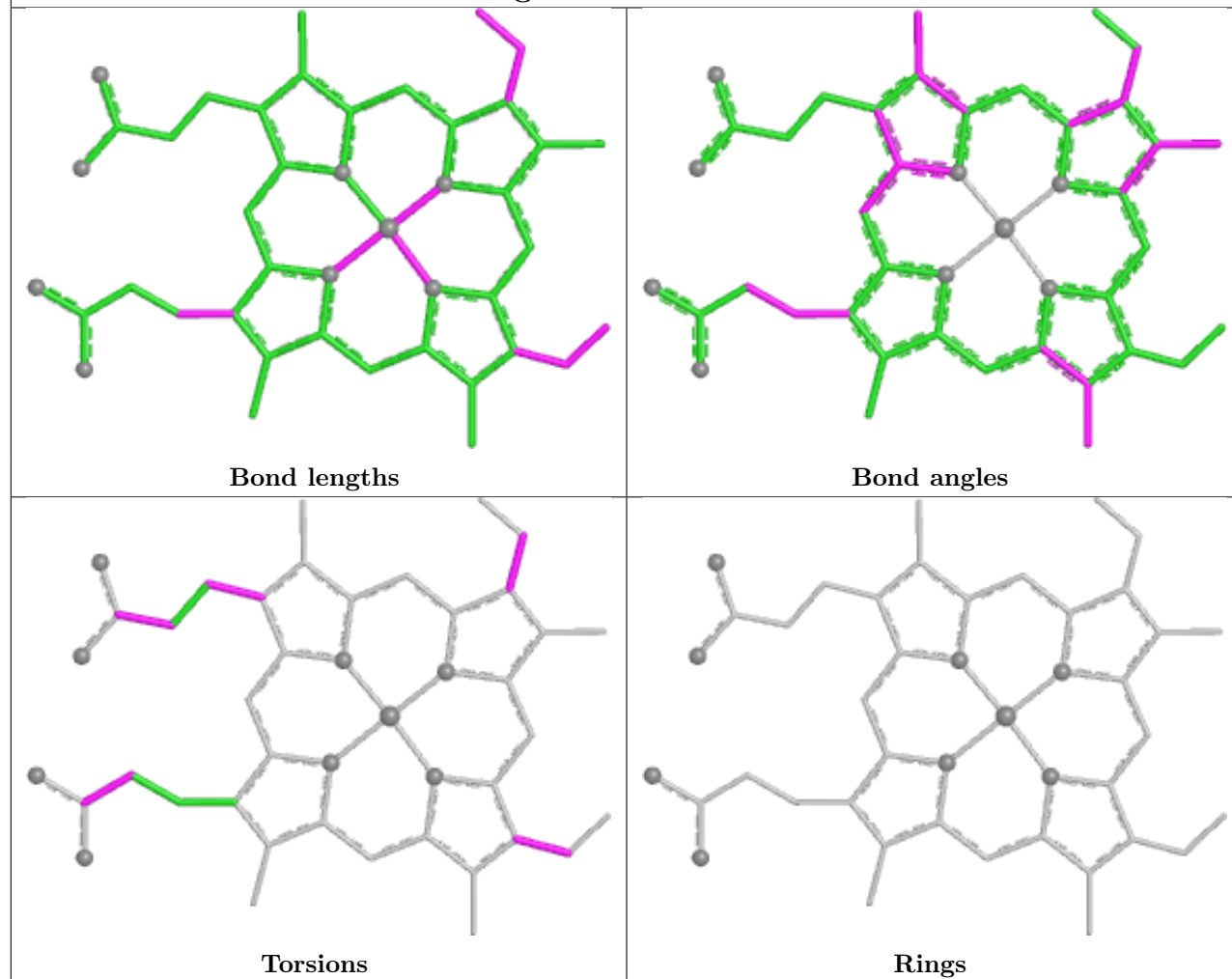
Ligand FAD D 701



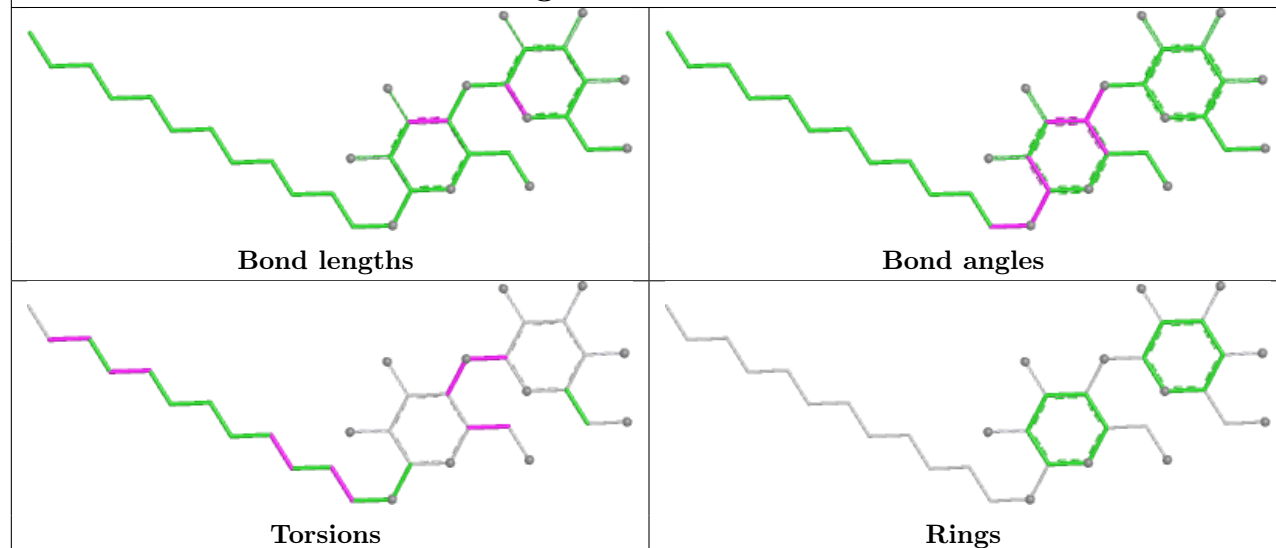




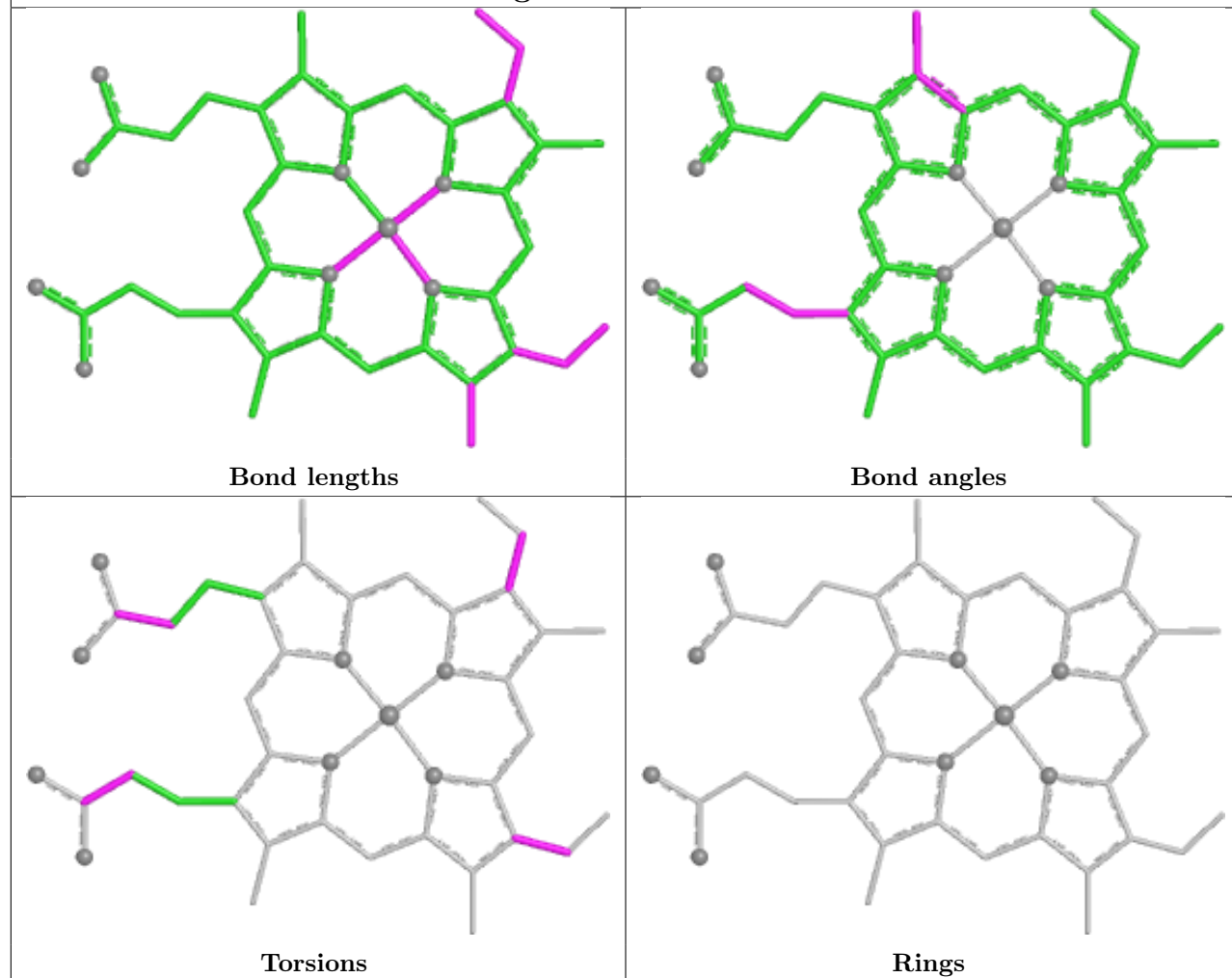
Ligand HEM I 301

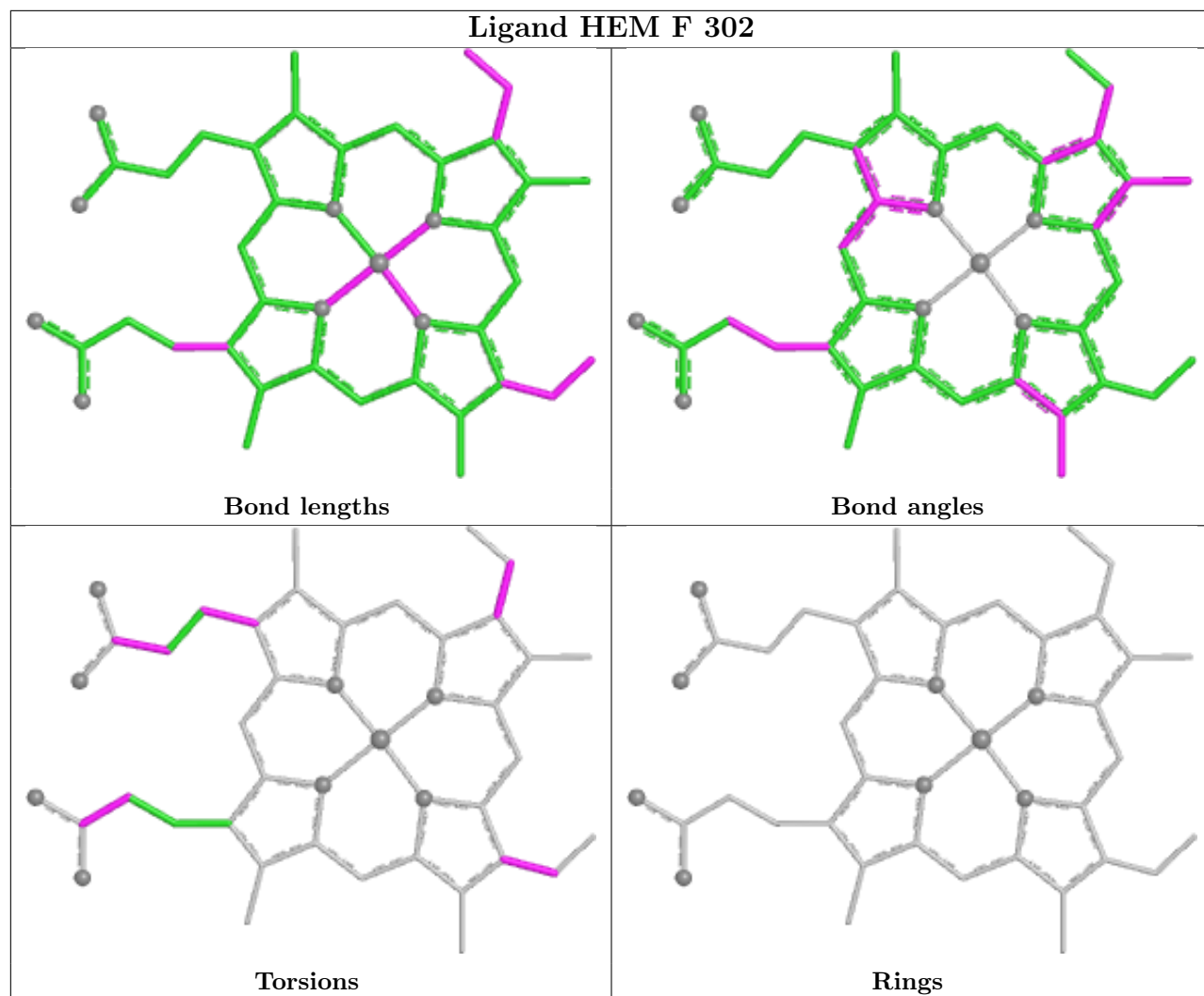


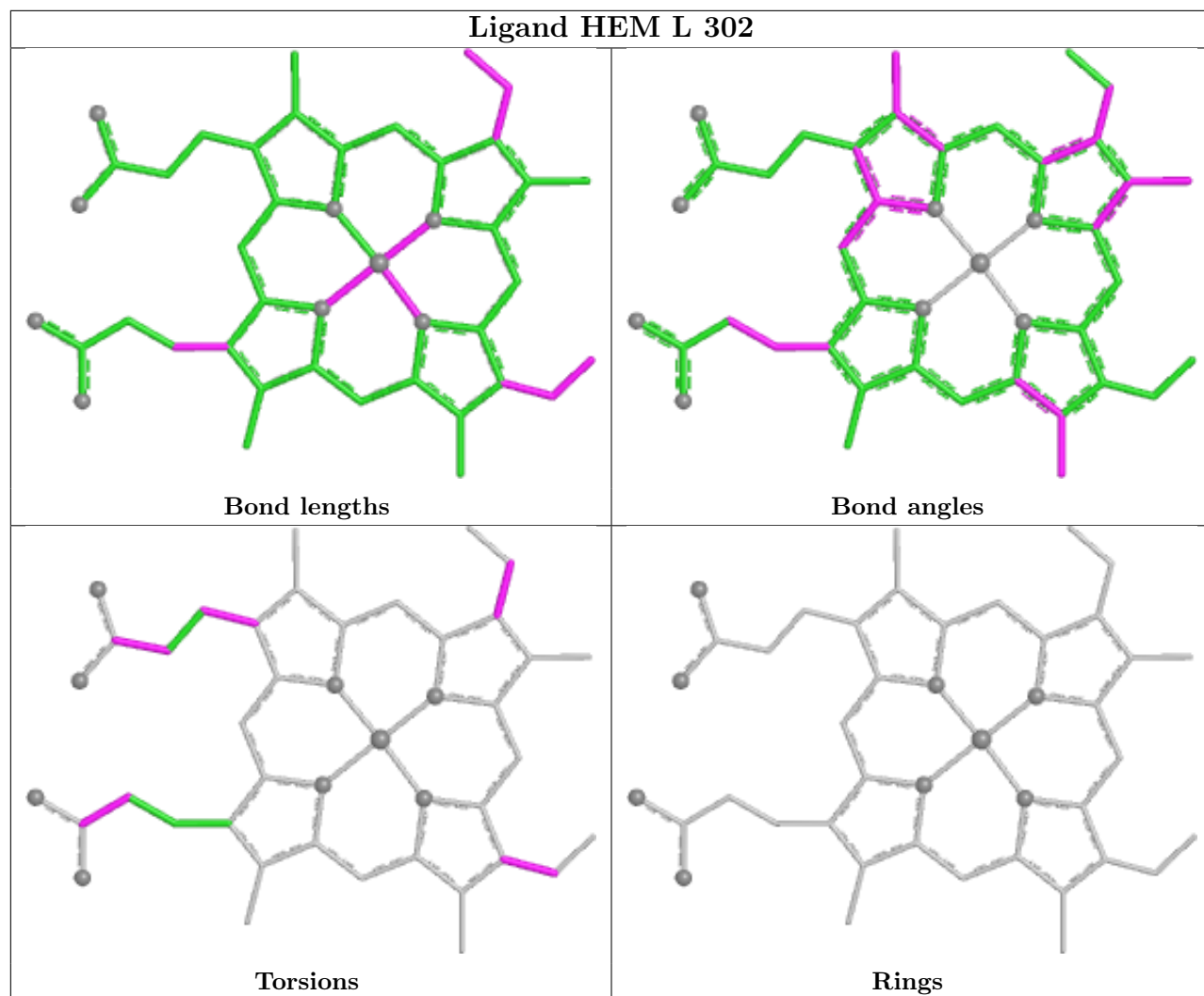
Ligand LMT I 303



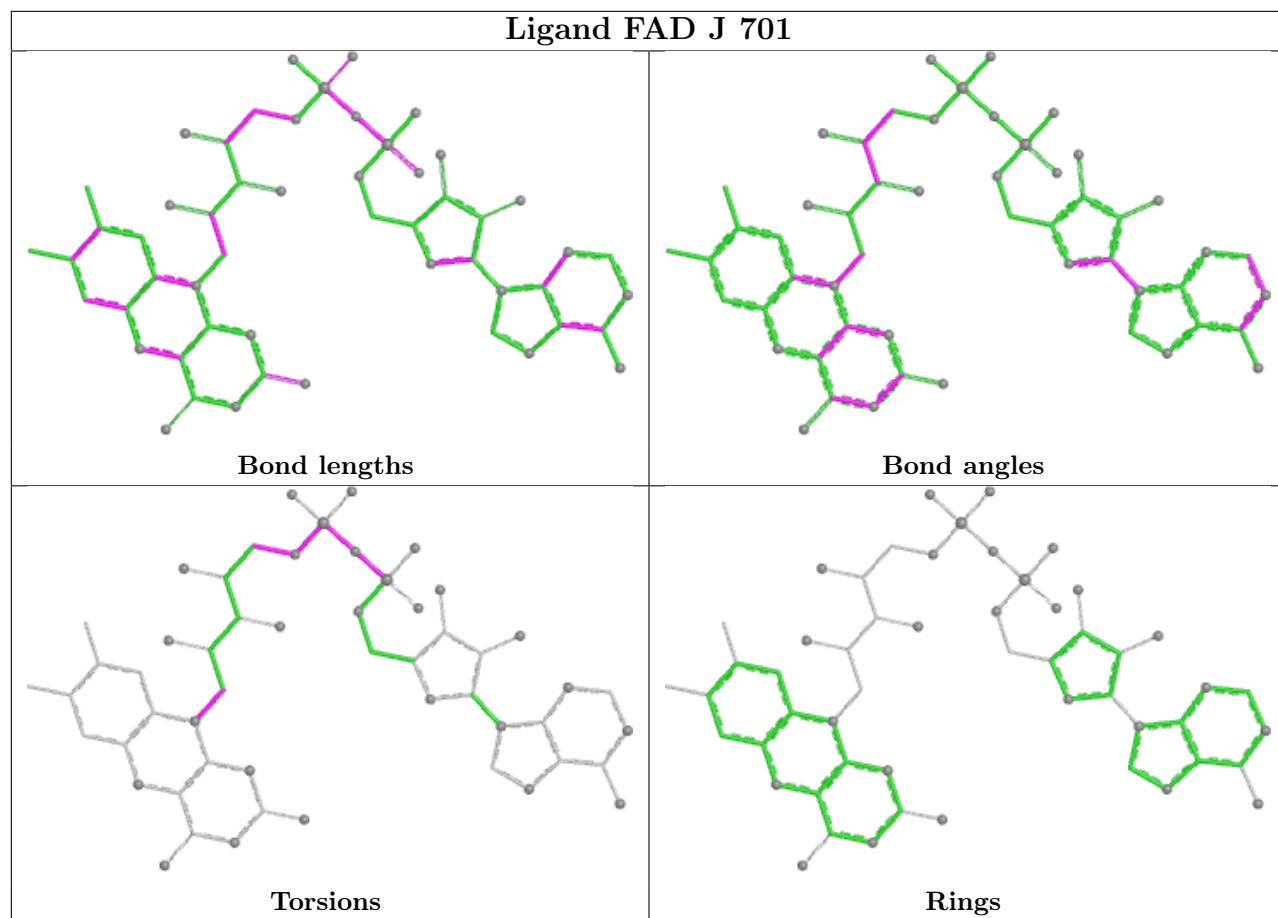
Ligand HEM I 302

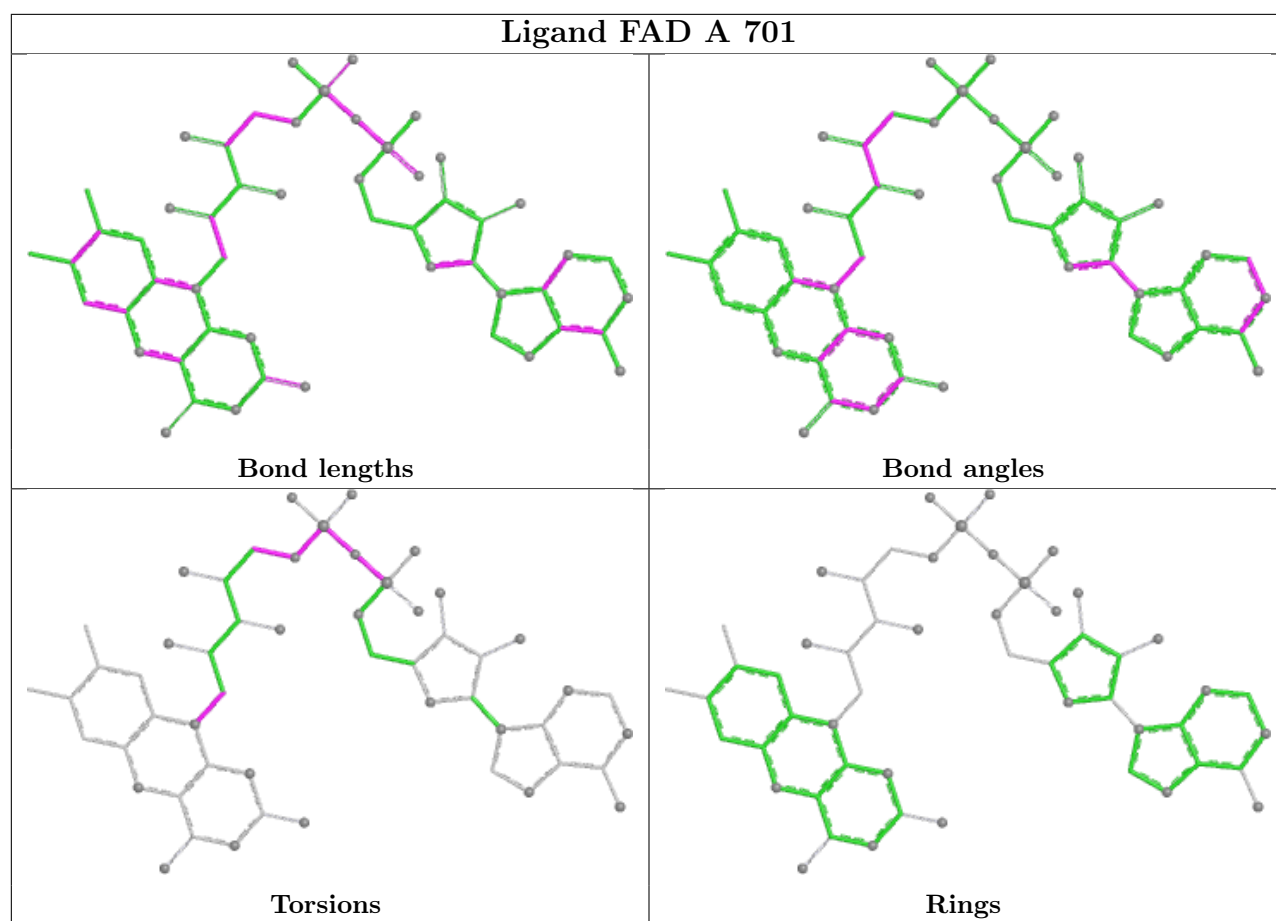


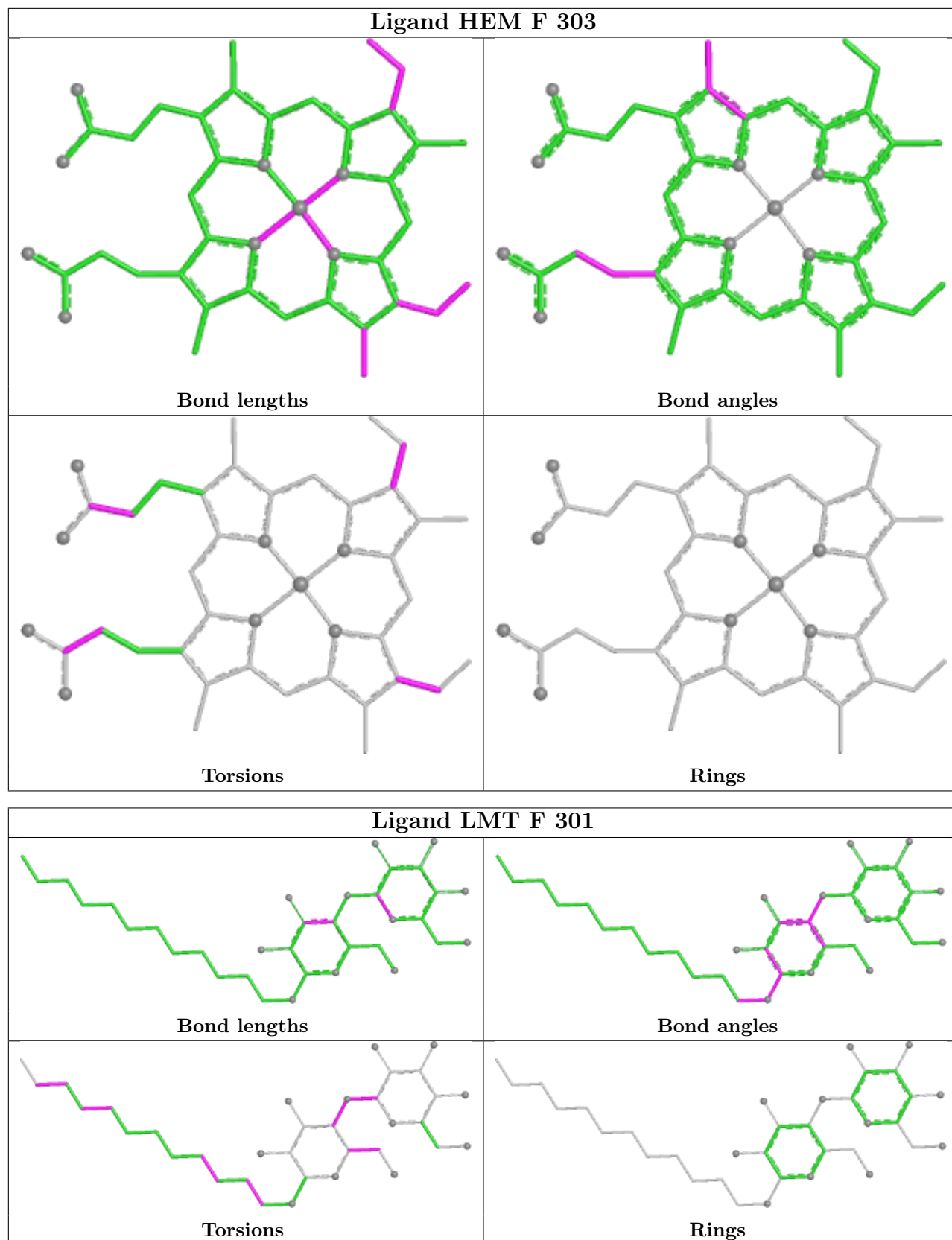


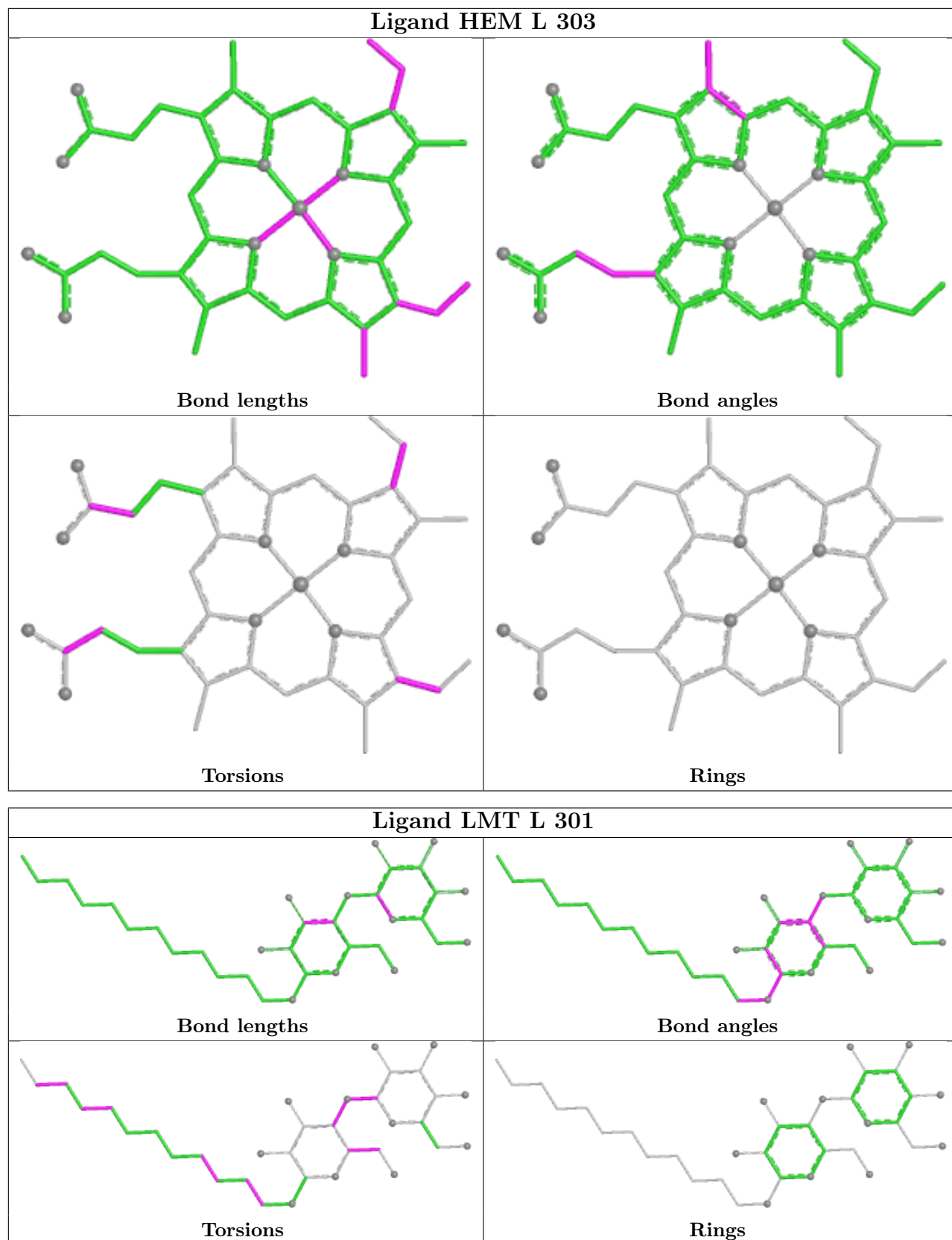


Ligand FAD J 701









5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.