



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 15, 2026 – 12:28 AM UTC

PDB ID : 3W1J / pdb_00003w1j
Title : Crystal structure of the N-terminal truncated selenocysteine synthase SelA in complex with thiosulfate
Authors : Itoh, Y.; Sekine, S.; Yokoyama, S.
Deposited on : 2012-11-15
Resolution : 3.25 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)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

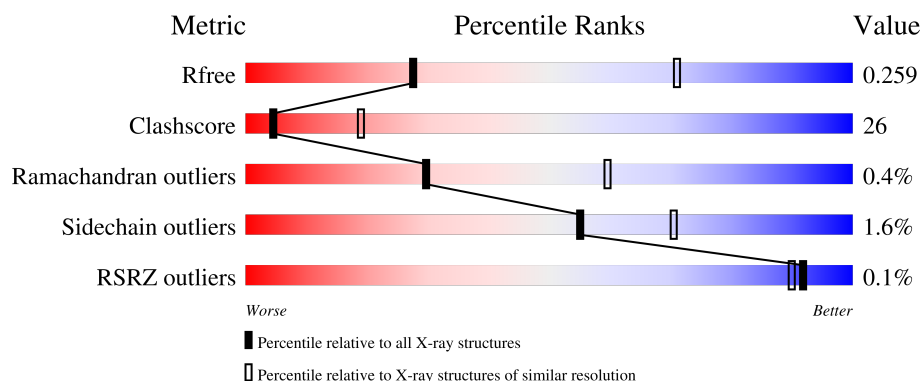
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.25 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	1605 (3.30-3.22)
Clashscore	190562	1660 (3.30-3.22)
Ramachandran outliers	187476	1630 (3.30-3.22)
Sidechain outliers	187428	1629 (3.30-3.22)
RSRZ outliers	180081	1605 (3.30-3.22)

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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	392	 57% 41% .
1	B	392	 57% 40% ...
1	C	392	 49% 47% .
1	D	392	 54% 43% ..
1	E	392	 49% 48% .

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Mol	Chain	Length	Quality of chain
1	F	392	 57%41%.
1	G	392	 54%43%..
1	H	392	 51%47%.
1	I	392	 53%45%.
1	J	392	 61%36%.

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
1	LLP	B	285	-	-	X	-
1	LLP	E	285	-	-	X	-
1	LLP	J	285	-	-	X	-
3	THJ	A	2003	-	-	X	-
3	THJ	E	502	-	-	X	-
3	THJ	H	501	-	-	X	-
3	THJ	J	501	-	-	X	-

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 30888 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called L-seryl-tRNA(Sec) selenium transferase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	392	Total	C	N	O	P	S	0	0	0
			3086	1962	535	577	1	11			
1	B	390	Total	C	N	O	P	S	0	0	0
			3069	1951	532	575	1	10			
1	C	392	Total	C	N	O	P	S	0	0	0
			3086	1962	535	577	1	11			
1	D	390	Total	C	N	O	P	S	0	0	0
			3069	1951	532	575	1	10			
1	E	392	Total	C	N	O	P	S	0	0	0
			3086	1962	535	577	1	11			
1	F	392	Total	C	N	O	P	S	0	0	0
			3086	1962	535	577	1	11			
1	G	389	Total	C	N	O	P	S	0	0	0
			3063	1948	531	573	1	10			
1	H	392	Total	C	N	O	P	S	0	0	0
			3086	1962	535	577	1	11			
1	I	392	Total	C	N	O	P	S	0	0	0
			3086	1962	535	577	1	11			
1	J	392	Total	C	N	O	P	S	0	0	0
			3086	1962	535	577	1	11			

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	61	MET	-	expression tag	UNP O67140
B	61	MET	-	expression tag	UNP O67140
C	61	MET	-	expression tag	UNP O67140
D	61	MET	-	expression tag	UNP O67140
E	61	MET	-	expression tag	UNP O67140
F	61	MET	-	expression tag	UNP O67140
G	61	MET	-	expression tag	UNP O67140
H	61	MET	-	expression tag	UNP O67140
I	61	MET	-	expression tag	UNP O67140

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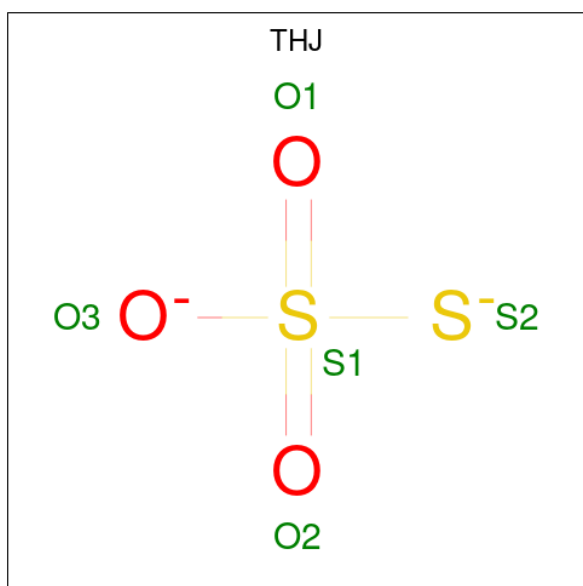
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Chain	Residue	Modelled	Actual	Comment	Reference
J	61	MET	-	expression tag	UNP O67140

- Molecule 2 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total K 1 1	0	0
2	D	1	Total K 1 1	0	0
2	E	1	Total K 1 1	0	0
2	G	1	Total K 1 1	0	0
2	I	1	Total K 1 1	0	0

- Molecule 3 is THIOSULFATE (CCD ID: THJ) (formula: O₃S₂).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total O S 5 3 2	0	0
3	A	1	Total O S 5 3 2	0	0
3	A	1	Total O S 5 3 2	0	0
3	B	1	Total O S 5 3 2	0	0

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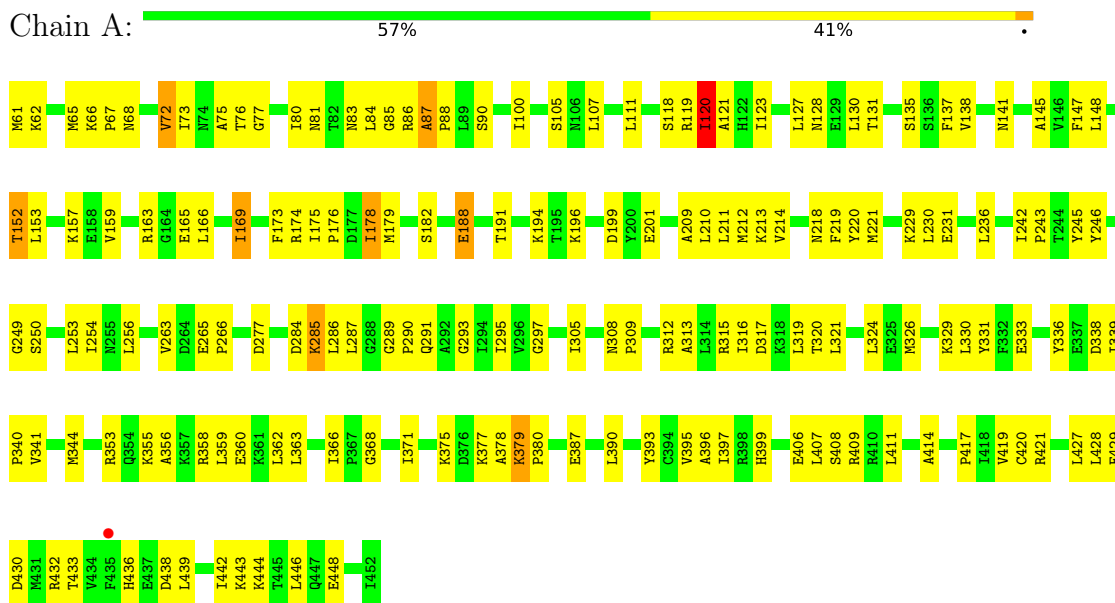
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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	C	1	Total	O	S	0	0
			5	3	2		
3	D	1	Total	O	S	0	0
			5	3	2		
3	D	1	Total	O	S	0	0
			5	3	2		
3	E	1	Total	O	S	0	0
			5	3	2		
3	E	1	Total	O	S	0	0
			5	3	2		
3	E	1	Total	O	S	0	0
			5	3	2		
3	H	1	Total	O	S	0	0
			5	3	2		
3	I	1	Total	O	S	0	0
			5	3	2		
3	I	1	Total	O	S	0	0
			5	3	2		
3	J	1	Total	O	S	0	0
			5	3	2		
3	J	1	Total	O	S	0	0
			5	3	2		
3	J	1	Total	O	S	0	0
			5	3	2		

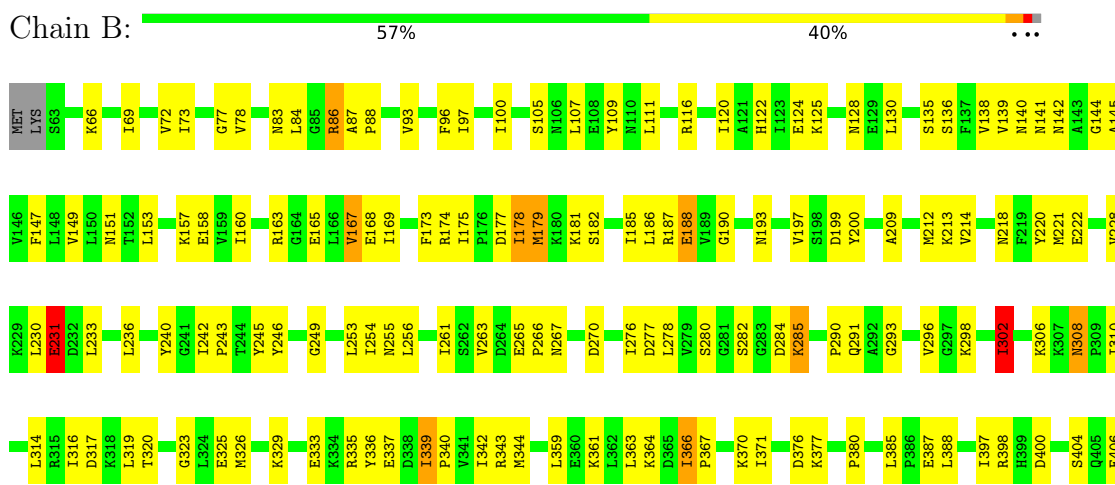
3 Residue-property plots

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

- Molecule 1: L-seryl-tRNA(Sec) selenium transferase

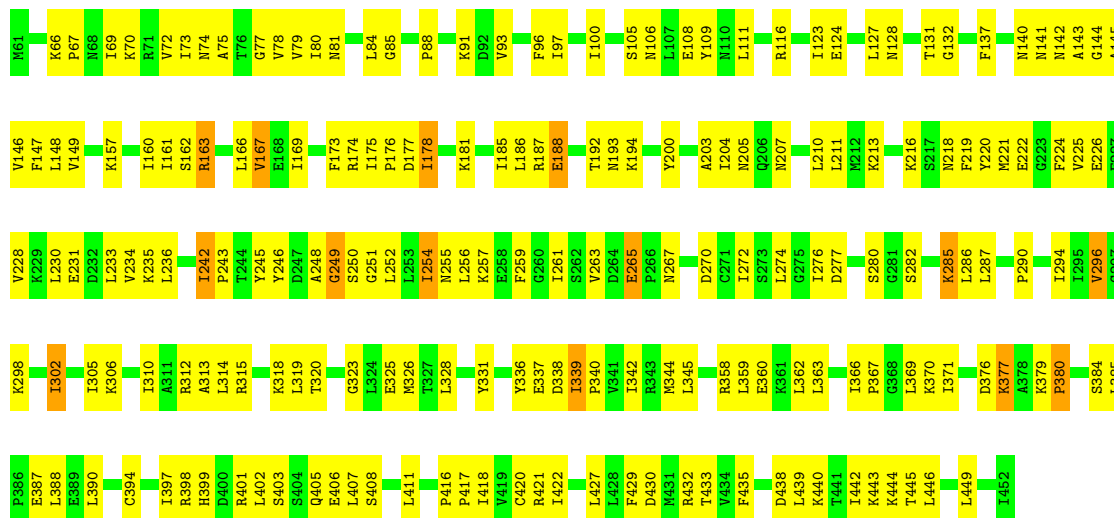


- Molecule 1: L-seryl-tRNA(Sec) selenium transferase

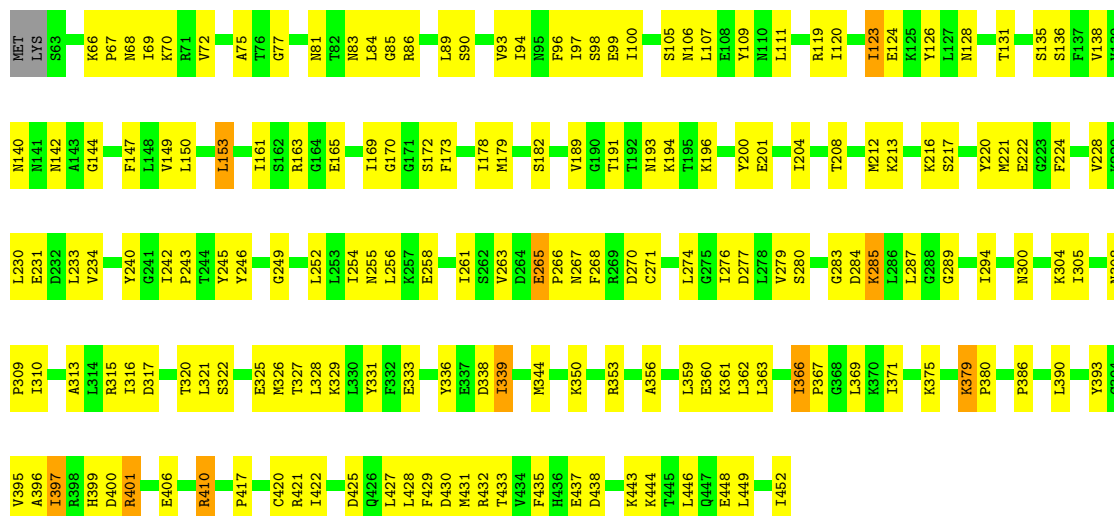




- Molecule 1: L-seryl-tRNA(Sec) selenium transferase

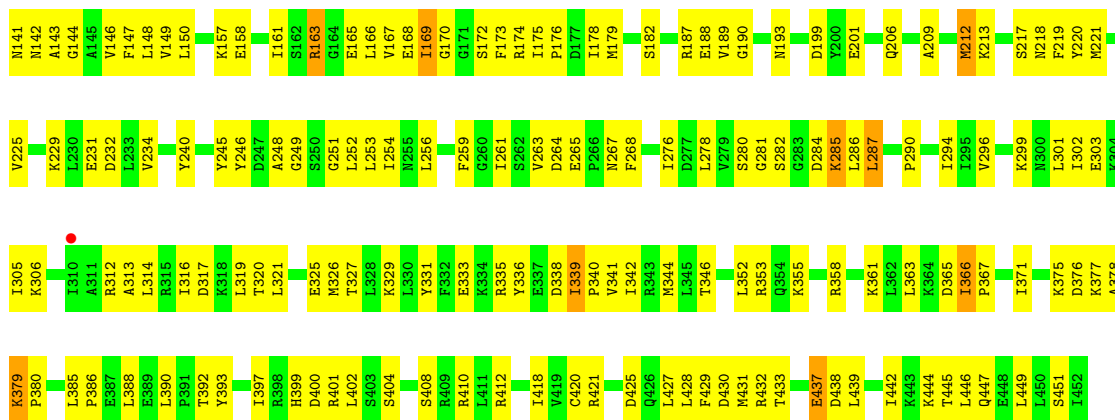


- Molecule 1: L-seryl-tRNA(Sec) selenium transferase



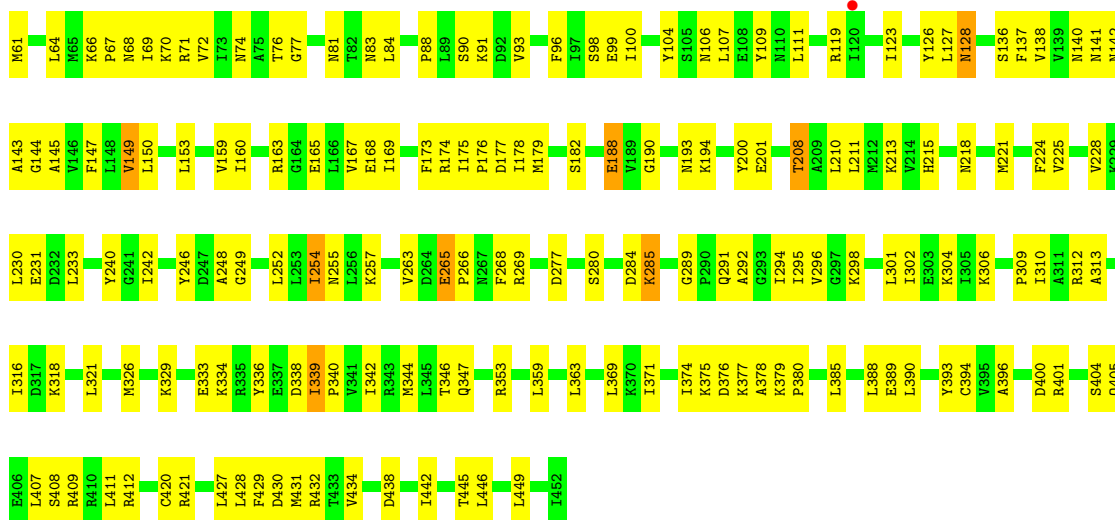
- Molecule 1: L-seryl-tRNA(Sec) selenium transferase





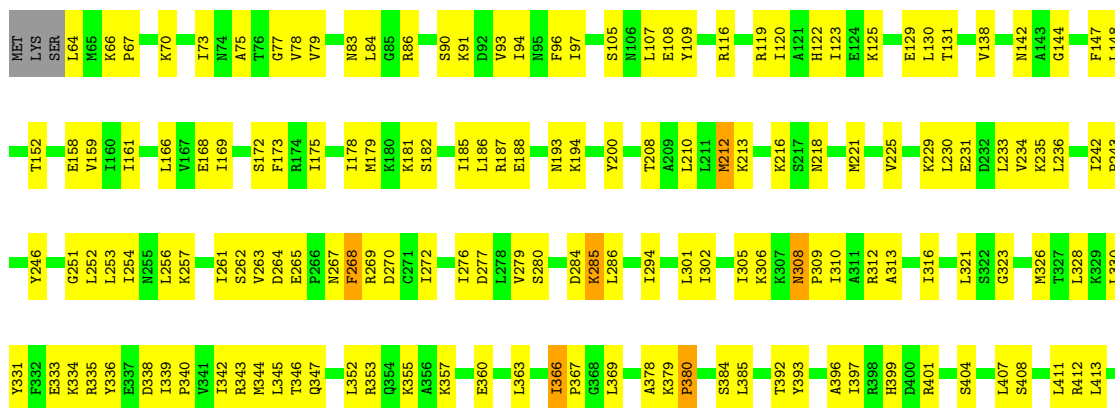
• Molecule 1: L-seryl-tRNA(Sec) selenium transferase

Chain F: 57% 41%



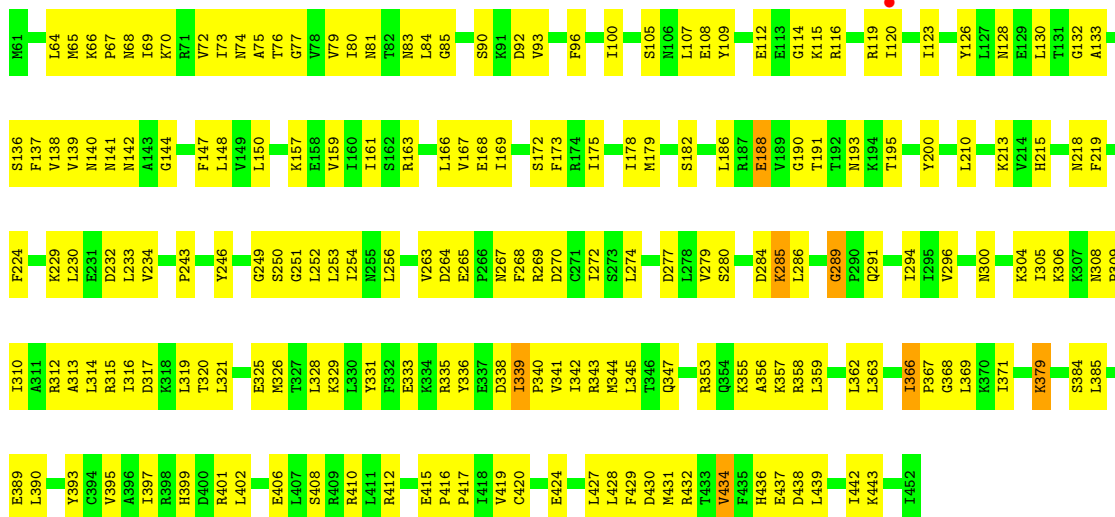
• Molecule 1: L-seryl-tRNA(Sec) selenium transferase

Chain G: 54% 43%

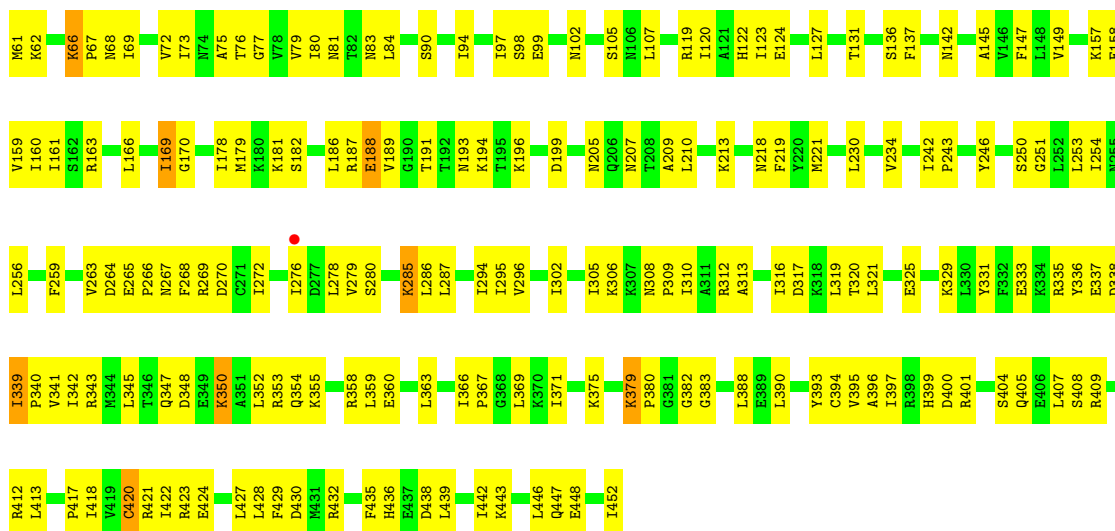




• Molecule 1: L-seryl-tRNA(Sec) selenium transferase

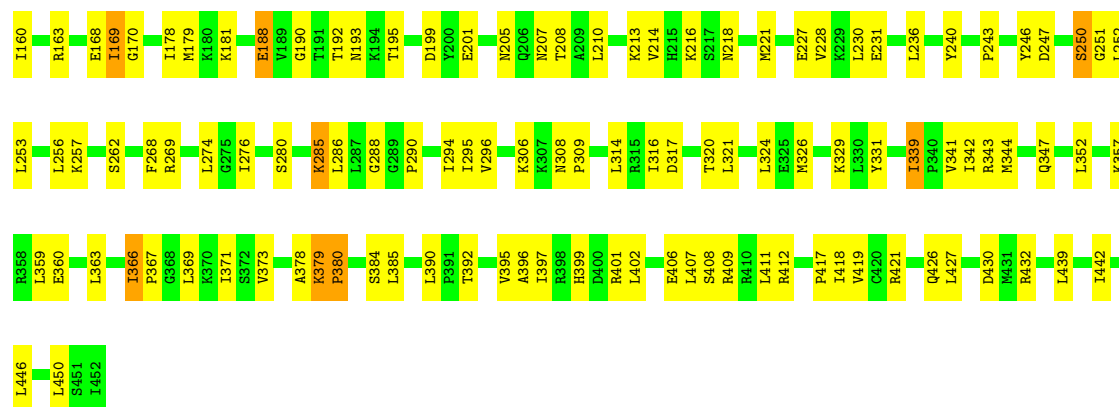


• Molecule 1: L-seryl-tRNA(Sec) selenium transferase



• Molecule 1: L-seryl-tRNA(Sec) selenium transferase





4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	92.44Å 116.37Å 124.79Å 102.09° 93.39° 106.06°	Depositor
Resolution (Å)	38.52 – 3.25 38.52 – 3.25	Depositor EDS
% Data completeness (in resolution range)	98.9 (38.52-3.25) 99.0 (38.52-3.25)	Depositor EDS
R_{merge}	0.13	Depositor
R_{sym}	0.13	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.01 (at 3.25Å)	Xtriage
Refinement program	PHENIX 1.7.1 _743	Depositor
R, R_{free}	0.200 , 0.266 0.195 , 0.259	Depositor DCC
R_{free} test set	3814 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	91.5	Xtriage
Anisotropy	0.708	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.29 , 83.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	30888	wwPDB-VP
Average B, all atoms (Å ²)	123.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.59% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: K, LLP, THJ

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	0.61	0/3101	0.99	5/4165 (0.1%)
1	B	0.65	1/3084 (0.0%)	1.02	10/4144 (0.2%)
1	C	0.61	0/3101	1.02	8/4165 (0.2%)
1	D	0.60	0/3084	1.03	10/4144 (0.2%)
1	E	0.55	0/3101	0.97	9/4165 (0.2%)
1	F	0.53	0/3101	0.96	8/4165 (0.2%)
1	G	0.52	0/3078	0.94	5/4136 (0.1%)
1	H	0.53	1/3101 (0.0%)	0.97	12/4165 (0.3%)
1	I	0.50	0/3101	0.97	7/4165 (0.2%)
1	J	0.59	0/3101	0.97	9/4165 (0.2%)
All	All	0.57	2/30953 (0.0%)	0.98	83/41579 (0.2%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	302	ILE	CA-CB	-6.07	1.46	1.54
1	H	175	ILE	CA-CB	5.19	1.56	1.54

All (83) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	I	379	LYS	CA-C-N	13.87	133.65	119.64
1	I	379	LYS	C-N-CA	13.87	133.65	119.64
1	E	339	ILE	CA-C-N	8.09	128.54	119.32
1	E	339	ILE	C-N-CA	8.09	128.54	119.32
1	J	339	ILE	CA-C-N	7.45	129.15	119.84
1	J	339	ILE	C-N-CA	7.45	129.15	119.84
1	H	175	ILE	CB-CA-C	-7.36	106.71	113.70
1	B	339	ILE	CA-C-N	7.36	129.04	119.84
1	B	339	ILE	C-N-CA	7.36	129.04	119.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	265	GLU	CA-C-N	7.30	127.06	119.76
1	D	265	GLU	C-N-CA	7.30	127.06	119.76
1	F	339	ILE	CA-C-N	7.00	126.83	119.05
1	F	339	ILE	C-N-CA	7.00	126.83	119.05
1	J	80	ILE	CB-CA-C	-6.87	104.85	112.68
1	H	289	GLY	CA-C-N	6.85	126.81	120.03
1	H	289	GLY	C-N-CA	6.85	126.81	120.03
1	H	339	ILE	CA-C-N	6.80	128.34	119.84
1	H	339	ILE	C-N-CA	6.80	128.34	119.84
1	D	366	ILE	CA-C-N	6.79	127.17	119.83
1	D	366	ILE	C-N-CA	6.79	127.17	119.83
1	F	254	ILE	N-CA-C	6.34	116.56	108.82
1	D	123	ILE	CB-CA-C	-6.31	103.76	112.02
1	I	339	ILE	CA-C-N	6.28	126.48	119.32
1	I	339	ILE	C-N-CA	6.28	126.48	119.32
1	E	366	ILE	CA-C-N	6.26	126.02	119.76
1	E	366	ILE	C-N-CA	6.26	126.02	119.76
1	J	379	LYS	CA-C-N	6.25	127.65	119.84
1	J	379	LYS	C-N-CA	6.25	127.65	119.84
1	J	250	SER	N-CA-C	-6.22	105.69	113.28
1	I	66	LYS	CA-C-N	6.21	126.18	119.78
1	I	66	LYS	C-N-CA	6.21	126.18	119.78
1	B	175	ILE	CB-CA-C	-6.17	107.84	113.70
1	C	167	VAL	N-CA-C	6.15	118.24	108.89
1	G	366	ILE	CA-C-N	6.14	125.90	119.76
1	G	366	ILE	C-N-CA	6.14	125.90	119.76
1	F	265	GLU	CA-C-N	6.11	126.08	119.78
1	F	265	GLU	C-N-CA	6.11	126.08	119.78
1	C	416	PRO	CA-C-N	6.00	126.19	120.31
1	C	416	PRO	C-N-CA	6.00	126.19	120.31
1	D	379	LYS	CA-C-N	6.00	127.34	119.84
1	D	379	LYS	C-N-CA	6.00	127.34	119.84
1	D	261	ILE	CB-CA-C	-5.87	103.80	111.25
1	C	265	GLU	CA-C-N	5.83	126.28	119.99
1	C	265	GLU	C-N-CA	5.83	126.28	119.99
1	G	308	ASN	CA-C-N	5.76	125.45	119.05
1	G	308	ASN	C-N-CA	5.76	125.45	119.05
1	A	297	GLY	N-CA-C	5.75	118.35	110.58
1	E	379	LYS	CA-C-N	5.75	127.03	119.84
1	E	379	LYS	C-N-CA	5.75	127.03	119.84
1	A	379	LYS	CA-C-N	5.72	126.99	119.84
1	A	379	LYS	C-N-CA	5.72	126.99	119.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	384	SER	N-CA-C	5.71	121.12	114.04
1	D	153	LEU	N-CA-C	5.70	118.43	111.82
1	B	385	LEU	CA-C-N	5.68	125.21	119.19
1	B	385	LEU	C-N-CA	5.68	125.21	119.19
1	I	97	ILE	CB-CA-C	-5.61	104.71	111.88
1	H	175	ILE	N-CA-CB	5.56	114.25	110.52
1	B	366	ILE	CA-C-N	5.50	125.26	119.76
1	B	366	ILE	C-N-CA	5.50	125.26	119.76
1	H	366	ILE	CA-C-N	5.48	125.24	119.76
1	H	366	ILE	C-N-CA	5.48	125.24	119.76
1	J	366	ILE	CA-C-N	5.43	125.60	119.90
1	J	366	ILE	C-N-CA	5.43	125.60	119.90
1	E	167	VAL	N-CA-C	5.42	117.14	108.89
1	A	87	ALA	CA-C-N	5.41	125.61	120.31
1	A	87	ALA	C-N-CA	5.41	125.61	120.31
1	E	138	VAL	N-CA-C	5.36	116.00	108.17
1	F	379	LYS	CA-C-N	5.36	124.69	118.85
1	F	379	LYS	C-N-CA	5.36	124.69	118.85
1	C	242	ILE	CA-C-N	5.35	125.25	119.85
1	C	242	ILE	C-N-CA	5.35	125.25	119.85
1	H	379	LYS	CA-C-N	5.32	126.48	119.84
1	H	379	LYS	C-N-CA	5.32	126.48	119.84
1	F	149	VAL	CB-CA-C	-5.30	105.19	111.97
1	J	79	VAL	N-CA-C	5.28	115.49	110.42
1	C	132	GLY	N-CA-C	-5.25	107.86	115.27
1	B	167	VAL	N-CA-C	5.25	117.25	109.17
1	B	308	ASN	CA-C-N	5.24	125.05	119.28
1	B	308	ASN	C-N-CA	5.24	125.05	119.28
1	E	287	LEU	N-CA-C	-5.23	106.90	113.28
1	H	434	VAL	N-CA-C	5.22	116.10	108.53
1	D	97	ILE	CB-CA-C	-5.22	105.20	111.88
1	H	167	VAL	N-CA-C	5.09	116.63	108.89

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3086	0	3237	182	0
1	B	3069	0	3215	167	0
1	C	3086	0	3237	198	0
1	D	3069	0	3215	180	0
1	E	3086	0	3237	202	0
1	F	3086	0	3237	172	0
1	G	3063	0	3210	181	0
1	H	3086	0	3237	183	0
1	I	3086	0	3237	187	0
1	J	3086	0	3237	164	0
2	A	1	0	0	0	0
2	D	1	0	0	0	0
2	E	1	0	0	0	0
2	G	1	0	0	0	0
2	I	1	0	0	0	0
3	A	15	0	0	5	0
3	B	5	0	0	1	0
3	C	5	0	0	0	0
3	D	10	0	0	1	0
3	E	15	0	0	5	0
3	H	5	0	0	4	0
3	I	10	0	0	2	0
3	J	15	0	0	4	0
All	All	30888	0	32299	1646	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 26.

All (1646) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:405:GLN:HE22	1:C:422:ILE:HG21	0.92	1.04
1:C:405:GLN:NE2	1:C:422:ILE:HG21	1.73	1.03
1:I:102:ASN:HB3	1:J:71:ARG:HH22	1.25	1.02
1:I:61:MET:HG2	1:I:62:LYS:H	1.25	1.01
1:J:72:VAL:HG22	1:J:417:PRO:HG2	1.40	1.01
1:F:147:PHE:HB2	1:F:178:ILE:HD11	1.42	1.00
1:A:407:LEU:HD23	1:A:427:LEU:HD22	1.43	0.99
1:C:200:TYR:HE2	1:C:228:VAL:HG21	1.24	0.99
1:J:230:LEU:HD22	1:J:276:ILE:HD11	1.44	0.99
1:B:256:LEU:HD23	1:B:263:VAL:HG22	1.44	0.96
1:G:423:ARG:HH12	1:G:428:LEU:HD11	1.27	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:290:PRO:HB2	1:J:320:THR:HG22	1.49	0.94
1:I:405:GLN:HE22	1:I:422:ILE:HG21	1.31	0.94
1:G:125:LYS:HB2	1:H:64:LEU:HD21	1.50	0.93
1:C:200:TYR:CE2	1:C:228:VAL:HG21	2.03	0.93
1:G:408:SER:HB3	1:G:422:ILE:HD11	1.50	0.93
1:A:221:MET:HG2	1:J:221:MET:HG2	1.52	0.92
1:A:100:ILE:HD12	1:B:69:ILE:HG22	1.47	0.92
1:I:369:LEU:HD11	1:I:397:ILE:HB	1.52	0.91
1:G:147:PHE:HB2	1:G:178:ILE:HD11	1.54	0.90
1:I:66:LYS:HG2	1:I:67:PRO:HD2	1.51	0.90
1:F:316:ILE:HD11	1:F:321:LEU:HD13	1.55	0.89
1:D:350:LYS:HE3	1:D:353:ARG:HH21	1.34	0.89
1:G:363:LEU:HD21	1:G:446:LEU:HD12	1.54	0.89
1:E:102:ASN:HB3	1:F:71:ARG:HH22	1.35	0.89
1:H:359:LEU:HD23	1:H:395:VAL:HG21	1.54	0.88
1:B:221:MET:HG2	1:C:221:MET:HG2	1.54	0.87
1:B:147:PHE:HB2	1:B:178:ILE:HD11	1.56	0.87
1:D:212:MET:HE3	1:D:245:TYR:CE1	2.08	0.87
1:H:93:VAL:HA	1:H:326:MET:HG2	1.55	0.86
1:I:102:ASN:CB	1:J:71:ARG:HH22	1.89	0.86
1:A:290:PRO:HB2	1:A:320:THR:HG22	1.57	0.85
1:D:77:GLY:HA2	1:D:433:THR:HG23	1.57	0.85
1:I:355:LYS:HD2	1:I:436:HIS:CE1	2.12	0.85
1:D:224:PHE:HD1	1:E:218:ASN:HB2	1.42	0.84
1:E:259:PHE:HE2	1:E:336:TYR:CD2	1.95	0.84
1:G:423:ARG:NH1	1:G:428:LEU:HD11	1.91	0.84
1:D:375:LYS:HB2	1:D:393:TYR:HE2	1.42	0.84
1:J:93:VAL:HA	1:J:326:MET:HG2	1.58	0.84
1:A:159:VAL:HG22	1:A:210:LEU:HB3	1.60	0.84
1:B:231:GLU:OE2	1:B:231:GLU:N	2.10	0.84
1:A:375:LYS:HB2	1:A:393:TYR:HE1	1.41	0.83
1:F:224:PHE:HB2	1:G:218:ASN:HD22	1.43	0.83
1:G:420:CYS:SG	1:G:427:LEU:HD11	2.17	0.83
1:G:423:ARG:HH22	1:G:428:LEU:HD21	1.42	0.83
1:H:130:LEU:HD13	1:H:253:LEU:HD21	1.60	0.83
1:C:312:ARG:HD3	1:D:172:SER:OG	1.79	0.83
1:E:420:CYS:SG	1:E:427:LEU:HD11	2.18	0.82
1:B:86:ARG:NH2	1:B:285:LLP:HE2	1.95	0.82
1:D:161:ILE:HD11	1:D:212:MET:SD	2.19	0.82
1:B:439:LEU:HA	1:B:442:ILE:HD12	1.61	0.82
1:C:66:LYS:HG3	1:C:67:PRO:HD2	1.62	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:359:LEU:HD23	1:A:395:VAL:HG11	1.62	0.81
1:D:350:LYS:CE	1:D:353:ARG:HH21	1.94	0.81
1:C:402:LEU:HD11	1:C:406:GLU:HB3	1.63	0.81
1:G:169:ILE:HG22	1:G:218:ASN:OD1	1.81	0.81
1:E:252:LEU:HD13	1:E:286:LEU:HD13	1.61	0.81
1:C:173:PHE:HE1	1:C:178:ILE:HD12	1.44	0.81
1:A:309:PRO:HG2	1:B:181:LYS:HG3	1.61	0.81
1:H:420:CYS:SG	1:H:427:LEU:HD11	2.21	0.80
1:A:118:SER:OG	1:A:120:ILE:HG12	1.81	0.80
1:A:316:ILE:HD11	1:A:321:LEU:HD13	1.63	0.80
1:J:316:ILE:HD11	1:J:321:LEU:HD13	1.63	0.80
1:E:142:ASN:HB3	1:E:285:LLP:OP4	1.80	0.80
1:G:159:VAL:HG22	1:G:210:LEU:HB3	1.60	0.80
1:C:344:MET:HE1	1:C:435:PHE:HE1	1.46	0.80
1:C:169:ILE:HG13	1:C:173:PHE:HD2	1.47	0.80
1:H:108:GLU:O	1:H:116:ARG:HG3	1.82	0.80
1:D:119:ARG:HD2	1:D:315:ARG:HD2	1.63	0.79
1:G:73:ILE:HB	1:G:418:ILE:HG12	1.65	0.79
1:C:96:PHE:O	1:C:100:ILE:HG12	1.83	0.79
1:G:193:ASN:HA	1:G:221:MET:HE1	1.64	0.79
1:H:353:ARG:HE	1:H:357:LYS:HE3	1.47	0.79
1:B:138:VAL:HG12	1:B:316:ILE:HG21	1.64	0.79
1:H:371:ILE:HG12	1:H:397:ILE:HG22	1.64	0.79
1:H:141:ASN:HB3	1:H:291:GLN:HE21	1.48	0.79
1:J:201:GLU:HG3	1:J:236:LEU:HD11	1.65	0.78
1:I:339:ILE:HD11	1:I:342:ILE:HG13	1.65	0.78
1:J:137:PHE:CD1	1:J:306:LYS:HG2	2.18	0.78
1:A:166:LEU:HD13	1:A:176:PRO:HG3	1.65	0.78
1:G:439:LEU:HA	1:G:442:ILE:HD12	1.66	0.78
1:A:147:PHE:HB2	1:A:178:ILE:HD11	1.66	0.78
1:F:163:ARG:HD2	1:F:190:GLY:O	1.84	0.78
1:C:325:GLU:OE1	1:D:69:ILE:HG13	1.84	0.77
1:E:73:ILE:HB	1:E:418:ILE:HG12	1.66	0.77
1:D:212:MET:HE3	1:D:245:TYR:HE1	1.48	0.77
1:A:326:MET:O	1:A:330:LEU:HG	1.85	0.77
1:B:263:VAL:HG23	1:B:265:GLU:H	1.50	0.77
1:C:376:ASP:OD1	1:C:377:LYS:N	2.18	0.77
1:C:167:VAL:H	1:C:175:ILE:HG13	1.48	0.77
1:D:131:THR:HG22	1:D:268:PHE:HB3	1.67	0.77
1:E:130:LEU:HD13	1:E:253:LEU:HD21	1.64	0.77
1:B:96:PHE:O	1:B:100:ILE:HG12	1.85	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:440:LYS:O	1:C:444:LYS:HG3	1.85	0.76
1:D:353:ARG:HB2	1:D:393:TYR:CE1	2.20	0.76
1:I:73:ILE:HB	1:I:418:ILE:HG12	1.66	0.76
1:E:147:PHE:HB2	1:E:178:ILE:HD11	1.68	0.76
1:H:168:GLU:OE2	1:I:194:LYS:HE3	1.87	0.75
1:E:363:LEU:HB3	1:E:371:ILE:HD11	1.69	0.75
1:D:359:LEU:HD23	1:D:395:VAL:HG21	1.68	0.75
1:E:86:ARG:NH2	3:E:502:THJ:S2	2.59	0.75
1:A:312:ARG:HH22	1:B:285:LLP:P	2.10	0.75
1:I:76:THR:O	1:I:421:ARG:NE	2.20	0.74
1:B:285:LLP:H4'1	1:B:285:LLP:OP4	1.86	0.74
1:A:61:MET:HE1	1:B:125:LYS:HB3	1.69	0.74
1:F:420:CYS:SG	1:F:427:LEU:HD11	2.27	0.74
1:I:99:GLU:O	1:J:71:ARG:NH2	2.20	0.74
1:C:445:THR:O	1:C:449:LEU:HG	1.85	0.74
1:D:390:LEU:HB3	1:D:432:ARG:HH22	1.53	0.74
1:H:408:SER:O	1:H:412:ARG:HG3	1.87	0.74
1:I:131:THR:HG22	1:I:268:PHE:HB3	1.69	0.74
1:A:375:LYS:HB2	1:A:393:TYR:CE1	2.22	0.74
1:B:174:ARG:HG3	1:B:177:ASP:HB2	1.68	0.74
1:J:344:MET:O	1:J:432:ARG:HD2	1.88	0.74
1:C:181:LYS:HG3	1:D:309:PRO:HG2	1.68	0.73
1:A:173:PHE:HE1	1:A:178:ILE:HD12	1.51	0.73
1:B:420:CYS:HB2	1:B:428:LEU:O	1.87	0.73
1:G:363:LEU:CD2	1:G:446:LEU:HD12	2.19	0.73
1:I:81:ASN:ND2	3:I:503:THJ:S2	2.60	0.73
1:J:169:ILE:HA	1:J:218:ASN:HD21	1.52	0.73
1:E:106:ASN:ND2	1:F:68:ASN:O	2.20	0.73
1:G:93:VAL:HA	1:G:326:MET:HG2	1.71	0.73
1:C:285:LLP:H4'1	1:C:285:LLP:OP4	1.87	0.73
1:F:378:ALA:CB	1:F:421:ARG:HH12	2.00	0.73
1:I:102:ASN:HB3	1:J:71:ARG:NH2	2.02	0.73
1:E:93:VAL:HG22	1:E:326:MET:HG3	1.70	0.73
1:J:210:LEU:HD23	1:J:243:PRO:HG2	1.70	0.73
1:I:408:SER:O	1:I:412:ARG:HG3	1.89	0.72
1:D:437:GLU:N	1:D:437:GLU:OE1	2.21	0.72
1:C:360:GLU:HG3	1:C:371:ILE:HG21	1.72	0.72
1:D:336:TYR:O	1:D:339:ILE:HG12	1.90	0.72
1:J:366:ILE:HG23	1:J:367:PRO:HD2	1.71	0.72
1:A:88:PRO:O	1:A:340:PRO:HG2	1.90	0.72
1:B:254:ILE:C	1:B:267:ASN:HD22	1.98	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:69:ILE:HG13	1:D:325:GLU:OE1	1.89	0.72
1:D:375:LYS:HB2	1:D:393:TYR:CE2	2.24	0.71
1:C:193:ASN:ND2	1:C:194:LYS:HG3	2.06	0.71
1:I:169:ILE:HD11	1:I:285:LLP:H5'1	1.72	0.71
1:A:83:ASN:ND2	3:A:2003:THJ:O3	2.20	0.71
1:B:145:ALA:O	1:B:149:VAL:HG23	1.89	0.71
1:B:165:GLU:O	1:B:167:VAL:HG13	1.89	0.71
1:G:138:VAL:HG12	1:G:316:ILE:HG21	1.72	0.71
1:A:147:PHE:HE1	1:A:182:SER:HA	1.56	0.71
1:D:267:ASN:OD1	1:D:270:ASP:HB2	1.91	0.71
1:G:378:ALA:CB	1:G:421:ARG:HH12	2.03	0.71
1:J:402:LEU:HD22	1:J:406:GLU:HG2	1.72	0.71
1:E:229:LYS:HB3	1:E:231:GLU:OE1	1.90	0.71
1:B:109:TYR:CD1	1:B:111:LEU:HD23	2.25	0.70
1:B:255:ASN:N	1:B:267:ASN:HD22	1.89	0.70
1:J:339:ILE:HD11	1:J:342:ILE:HG13	1.73	0.70
1:E:302:ILE:HG22	1:E:306:LYS:HE2	1.73	0.70
1:I:397:ILE:HD11	1:I:427:LEU:HD23	1.73	0.70
1:H:66:LYS:HG3	1:H:67:PRO:HD2	1.74	0.70
1:H:169:ILE:HD11	1:H:285:LLP:H5'1	1.74	0.70
1:J:360:GLU:HG3	1:J:371:ILE:HG21	1.73	0.70
1:D:147:PHE:HB2	1:D:178:ILE:HD11	1.73	0.70
1:F:179:MET:O	1:F:182:SER:HB3	1.92	0.70
1:E:102:ASN:HB3	1:F:71:ARG:NH2	2.06	0.70
1:H:75:ALA:N	1:H:419:VAL:O	2.22	0.70
1:C:77:GLY:HA3	1:C:430:ASP:OD2	1.92	0.70
1:D:165:GLU:OE1	1:D:213:LYS:HG3	1.92	0.70
1:E:375:LYS:HB2	1:E:393:TYR:CE2	2.27	0.70
1:G:179:MET:O	1:G:182:SER:HB3	1.91	0.70
1:C:405:GLN:HE22	1:C:422:ILE:CG2	1.87	0.70
1:D:72:VAL:HG22	1:D:417:PRO:HG2	1.74	0.70
1:G:253:LEU:HA	1:G:268:PHE:HD2	1.56	0.70
1:I:68:ASN:HB2	1:J:122:HIS:CD2	2.26	0.70
1:A:360:GLU:HG3	1:A:371:ILE:HG21	1.73	0.70
1:C:127:LEU:O	1:C:131:THR:HG23	1.92	0.70
1:G:252:LEU:HG	1:G:267:ASN:HB3	1.74	0.70
1:E:358:ARG:HG3	1:E:361:LYS:HE2	1.72	0.69
1:I:69:ILE:HG22	1:J:100:ILE:HD12	1.72	0.69
1:I:420:CYS:SG	1:I:427:LEU:HD11	2.32	0.69
1:J:230:LEU:HD22	1:J:276:ILE:CD1	2.22	0.69
1:B:218:ASN:HB2	1:C:224:PHE:HD1	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:308:ASN:OD1	1:I:310:ILE:N	2.23	0.69
1:B:407:LEU:HD23	1:B:427:LEU:HD22	1.74	0.69
1:A:81:ASN:ND2	3:A:2003:THJ:S2	2.64	0.69
1:I:61:MET:HG2	1:I:62:LYS:N	2.03	0.69
1:A:312:ARG:NH2	1:B:285:LLP:OP3	2.26	0.69
1:I:181:LYS:HG3	1:J:309:PRO:HG2	1.75	0.68
1:C:66:LYS:CG	1:C:67:PRO:HD2	2.23	0.68
1:H:402:LEU:HD22	1:H:406:GLU:HG2	1.74	0.68
1:J:170:GLY:HA3	3:J:501:THJ:S1	2.33	0.68
1:D:90:SER:HB2	1:D:338:ASP:O	1.93	0.68
1:D:96:PHE:HD2	1:D:326:MET:HB2	1.58	0.68
1:A:72:VAL:HG22	1:A:417:PRO:HG2	1.75	0.68
1:D:75:ALA:HB3	1:D:420:CYS:HB3	1.73	0.68
1:G:286:LEU:HD11	1:G:385:LEU:HD21	1.76	0.68
1:C:344:MET:HE1	1:C:435:PHE:CE1	2.27	0.68
1:F:221:MET:HG2	1:G:221:MET:HG2	1.75	0.68
1:E:93:VAL:HA	1:E:326:MET:HG2	1.76	0.68
1:J:213:LYS:HG2	1:J:246:TYR:CE1	2.28	0.68
1:C:213:LYS:HD3	1:C:230:LEU:HD21	1.75	0.68
1:I:369:LEU:HG	1:I:371:ILE:HG13	1.76	0.68
1:G:96:PHE:HB2	1:G:326:MET:HE2	1.76	0.68
1:G:161:ILE:HD12	1:G:212:MET:HG2	1.76	0.68
1:I:61:MET:CG	1:I:62:LYS:H	2.04	0.68
1:A:123:ILE:HG12	1:A:321:LEU:HD11	1.76	0.67
1:B:397:ILE:HD11	1:B:427:LEU:HD23	1.76	0.67
1:G:97:ILE:HD11	1:G:323:GLY:HA3	1.77	0.67
1:I:251:GLY:HA2	1:I:268:PHE:CZ	2.30	0.67
1:B:109:TYR:HD1	1:B:111:LEU:HD23	1.60	0.67
1:E:169:ILE:HD11	1:E:285:LLP:C5'	2.24	0.67
1:F:81:ASN:ND2	1:F:84:LEU:HG	2.09	0.67
1:G:408:SER:HB3	1:G:422:ILE:CD1	2.25	0.67
1:C:66:LYS:HG3	1:C:67:PRO:CD	2.25	0.67
1:E:333:GLU:OE1	1:E:335:ARG:HD2	1.95	0.67
1:G:308:ASN:OD1	1:G:310:ILE:N	2.27	0.67
1:A:359:LEU:HD13	1:A:439:LEU:HD22	1.76	0.67
1:A:312:ARG:CZ	1:A:315:ARG:HH21	2.08	0.67
1:I:120:ILE:HD12	1:I:316:ILE:HD11	1.77	0.67
1:C:267:ASN:OD1	1:C:270:ASP:HB2	1.94	0.67
1:E:438:ASP:O	1:E:442:ILE:HG13	1.94	0.66
1:G:344:MET:O	1:G:432:ARG:HD2	1.95	0.66
1:H:439:LEU:HA	1:H:442:ILE:HD12	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:169:ILE:HD11	1:A:285:LLP:H5'1	1.76	0.66
1:C:147:PHE:HB2	1:C:178:ILE:HD11	1.76	0.66
1:C:344:MET:CE	1:C:435:PHE:HE1	2.08	0.66
1:E:173:PHE:HB2	1:F:312:ARG:HG2	1.75	0.66
1:F:407:LEU:O	1:F:411:LEU:HG	1.95	0.66
1:J:72:VAL:HG22	1:J:417:PRO:CG	2.22	0.66
1:E:252:LEU:HD13	1:E:286:LEU:CD1	2.25	0.66
1:F:445:THR:O	1:F:449:LEU:HG	1.96	0.66
1:G:125:LYS:HB3	1:H:64:LEU:HD11	1.78	0.66
1:H:246:TYR:HB3	1:H:279:VAL:HG22	1.77	0.66
1:I:423:ARG:CZ	1:I:428:LEU:HD11	2.26	0.66
1:A:317:ASP:OD2	1:A:319:LEU:HB2	1.96	0.66
1:E:352:LEU:HD13	1:E:392:THR:OG1	1.96	0.66
1:I:179:MET:O	1:I:182:SER:HB3	1.94	0.66
1:A:308:ASN:OD1	1:A:309:PRO:HD2	1.96	0.66
1:A:163:ARG:NH1	1:J:188:GLU:OE1	2.29	0.66
1:C:397:ILE:HD11	1:C:427:LEU:HD23	1.76	0.66
1:G:147:PHE:CE1	1:H:310:ILE:HG12	2.31	0.66
1:H:148:LEU:HG	1:H:305:ILE:HG23	1.78	0.66
1:G:186:LEU:HD12	1:G:187:ARG:N	2.11	0.65
1:J:170:GLY:HA3	3:J:501:THJ:O1	1.95	0.65
1:A:359:LEU:CD2	1:A:395:VAL:HG11	2.26	0.65
1:D:96:PHE:CD2	1:D:326:MET:HB2	2.31	0.65
1:D:149:VAL:HG22	1:D:305:ILE:HD11	1.77	0.65
1:D:224:PHE:CD1	1:E:218:ASN:HB2	2.29	0.65
1:E:355:LYS:HG3	1:E:358:ARG:HH12	1.61	0.65
1:F:141:ASN:OD1	1:F:143:ALA:HB3	1.96	0.65
1:H:136:SER:HB3	1:H:296:VAL:HG12	1.79	0.65
1:A:75:ALA:HB3	1:A:420:CYS:HB3	1.77	0.65
1:B:179:MET:O	1:B:182:SER:HB3	1.95	0.65
1:F:150:LEU:HD13	1:F:179:MET:HG3	1.79	0.65
1:I:159:VAL:HG22	1:I:210:LEU:HB3	1.78	0.65
1:I:399:HIS:HE1	1:I:401:ARG:HD3	1.61	0.65
1:J:80:ILE:HG13	1:J:384:SER:OG	1.96	0.65
1:J:373:VAL:HG22	1:J:395:VAL:HG22	1.77	0.65
1:H:270:ASP:O	1:H:274:LEU:HG	1.97	0.65
1:A:141:ASN:HB3	1:A:291:GLN:HE21	1.60	0.65
1:E:259:PHE:HE2	1:E:336:TYR:CE2	2.15	0.65
1:C:290:PRO:HB2	1:C:320:THR:HG22	1.78	0.65
1:D:123:ILE:O	1:D:126:TYR:HB2	1.96	0.65
1:E:246:TYR:HE2	1:E:248:ALA:HA	1.60	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:128:ASN:HD21	1:D:135:SER:HA	1.62	0.65
1:D:437:GLU:CD	1:D:437:GLU:H	2.02	0.65
1:A:147:PHE:CE1	1:A:182:SER:HA	2.32	0.65
1:F:168:GLU:CD	1:G:194:LYS:HE3	2.22	0.65
1:G:122:HIS:CD2	1:H:68:ASN:HB3	2.32	0.65
1:I:147:PHE:HB2	1:I:178:ILE:HD11	1.78	0.65
1:F:263:VAL:HG12	1:F:265:GLU:H	1.61	0.64
1:G:83:ASN:OD1	1:H:116:ARG:HD3	1.98	0.64
1:C:370:LYS:HD2	1:C:398:ARG:HH21	1.61	0.64
1:E:313:ALA:HB1	1:F:144:GLY:HA2	1.79	0.64
1:A:380:PRO:HG2	1:A:390:LEU:HD12	1.79	0.64
1:D:230:LEU:HD21	1:D:246:TYR:CD1	2.32	0.64
1:D:359:LEU:HD23	1:D:395:VAL:HG11	1.79	0.64
1:F:340:PRO:O	1:F:344:MET:HG3	1.97	0.64
1:F:380:PRO:HG2	1:F:390:LEU:HD12	1.79	0.64
1:H:83:ASN:HB2	3:H:501:THJ:O3	1.98	0.64
1:B:220:TYR:CD1	1:B:387:GLU:HG2	2.32	0.64
1:J:169:ILE:HD11	1:J:285:LLP:H5'1	1.80	0.64
1:A:85:GLY:HA2	1:B:107:LEU:HD23	1.80	0.64
1:F:280:SER:HA	1:F:294:ILE:O	1.98	0.64
1:F:145:ALA:O	1:F:149:VAL:HG23	1.98	0.64
1:C:186:LEU:HD12	1:C:187:ARG:N	2.13	0.64
1:G:254:ILE:HG22	1:G:269:ARG:HE	1.63	0.64
1:J:407:LEU:O	1:J:411:LEU:HG	1.98	0.64
1:D:246:TYR:HB3	1:D:279:VAL:HG22	1.79	0.64
1:E:136:SER:HB3	1:E:296:VAL:HG12	1.80	0.64
1:G:90:SER:HB3	1:G:338:ASP:O	1.97	0.64
1:J:378:ALA:HB1	1:J:421:ARG:HH12	1.63	0.64
1:A:148:LEU:HG	1:A:305:ILE:HG23	1.81	0.63
1:D:128:ASN:ND2	1:D:135:SER:HA	2.14	0.63
1:H:96:PHE:O	1:H:100:ILE:HG12	1.98	0.63
1:I:76:THR:O	1:I:421:ARG:NH2	2.31	0.63
1:I:287:LEU:HD23	1:I:287:LEU:O	1.98	0.63
1:J:326:MET:HE3	1:J:329:LYS:HD3	1.79	0.63
1:I:405:GLN:OE1	1:I:422:ILE:HD13	1.98	0.63
1:C:167:VAL:O	1:C:175:ILE:HG12	1.98	0.63
1:C:231:GLU:O	1:C:235:LYS:HG3	1.98	0.63
1:F:374:ILE:HD11	1:F:428:LEU:HD22	1.79	0.63
1:G:378:ALA:HB1	1:G:421:ARG:HH12	1.63	0.63
1:C:193:ASN:O	1:C:225:VAL:HG13	1.98	0.63
1:C:210:LEU:HD12	1:C:243:PRO:O	1.97	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:254:ILE:HG22	1:H:269:ARG:HE	1.62	0.63
1:I:119:ARG:HG3	1:I:120:ILE:HG12	1.79	0.63
1:E:397:ILE:HD11	1:E:427:LEU:HD23	1.79	0.63
1:H:123:ILE:HG23	1:H:328:LEU:HD11	1.79	0.63
1:I:77:GLY:HA3	1:I:430:ASP:CG	2.23	0.63
1:E:339:ILE:HD11	1:E:342:ILE:HG13	1.79	0.63
1:G:108:GLU:O	1:G:116:ARG:HG3	1.99	0.63
1:E:252:LEU:HD22	1:E:265:GLU:CG	2.29	0.62
1:E:445:THR:O	1:E:449:LEU:HG	1.97	0.62
1:E:363:LEU:HB3	1:E:371:ILE:CD1	2.29	0.62
1:G:252:LEU:HD11	1:G:254:ILE:O	1.99	0.62
1:B:243:PRO:HA	1:B:277:ASP:OD1	1.99	0.62
1:I:263:VAL:HG12	1:I:264:ASP:N	2.13	0.62
1:E:158:GLU:OE1	1:E:187:ARG:NH1	2.32	0.62
1:G:357:LYS:NZ	1:G:360:GLU:OE1	2.32	0.62
1:C:399:HIS:HE1	1:C:401:ARG:HD3	1.64	0.62
1:J:122:HIS:CE1	1:J:126:TYR:CE2	2.87	0.62
1:G:173:PHE:HB2	1:H:312:ARG:HG2	1.82	0.62
1:E:234:VAL:CG2	1:E:276:ILE:HD13	2.30	0.62
1:G:312:ARG:NH2	1:H:285:LLP:OP3	2.24	0.62
1:A:256:LEU:HD12	1:A:263:VAL:CG2	2.30	0.61
1:E:358:ARG:O	1:E:361:LYS:HG2	2.00	0.61
1:G:66:LYS:HG2	1:G:67:PRO:HD2	1.82	0.61
1:H:355:LYS:HE2	1:H:431:MET:HB3	1.81	0.61
1:C:358:ARG:NH2	1:C:439:LEU:HD12	2.16	0.61
1:D:169:ILE:HD11	1:D:285:LLP:H5'1	1.81	0.61
1:G:83:ASN:HB3	1:H:109:TYR:HD2	1.65	0.61
1:G:321:LEU:HG	1:H:69:ILE:HD11	1.81	0.61
1:G:442:ILE:O	1:G:446:LEU:HG	2.00	0.61
1:C:169:ILE:CG1	1:C:173:PHE:HD2	2.13	0.61
1:D:107:LEU:HD21	1:D:119:ARG:NH2	2.15	0.61
1:F:221:MET:CG	1:G:221:MET:HG2	2.29	0.61
1:A:353:ARG:HB2	1:A:393:TYR:CE2	2.35	0.61
1:E:335:ARG:NH1	1:E:338:ASP:OD2	2.33	0.61
1:G:253:LEU:HD23	1:G:331:TYR:CD1	2.36	0.61
1:B:285:LLP:OP4	1:B:285:LLP:C4'	2.49	0.61
1:F:66:LYS:HD2	1:F:67:PRO:HD2	1.83	0.61
1:H:138:VAL:HG12	1:H:316:ILE:HG21	1.82	0.61
1:H:161:ILE:CG2	1:H:186:LEU:HD11	2.31	0.61
1:B:267:ASN:ND2	1:B:270:ASP:OD2	2.33	0.61
1:E:169:ILE:HD11	1:E:285:LLP:H5'1	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:84:LEU:HA	1:D:105:SER:O	2.01	0.61
1:D:222:GLU:HB3	1:E:220:TYR:CE2	2.35	0.61
1:E:120:ILE:HG22	1:E:124:GLU:HG3	1.82	0.61
1:G:343:ARG:O	1:G:347:GLN:HG3	1.99	0.61
1:H:108:GLU:OE2	1:H:119:ARG:NH2	2.32	0.61
1:I:329:LYS:HE2	1:I:333:GLU:OE2	2.00	0.61
1:A:253:LEU:HD23	1:A:331:TYR:CD1	2.36	0.61
1:I:263:VAL:HG12	1:I:265:GLU:H	1.65	0.61
1:C:109:TYR:CD1	1:C:111:LEU:HD23	2.35	0.61
1:C:246:TYR:CE1	1:C:248:ALA:HB2	2.36	0.61
1:H:92:ASP:O	1:H:326:MET:HE2	2.01	0.61
1:H:169:ILE:HG13	1:H:173:PHE:HD2	1.64	0.61
1:A:317:ASP:HA	1:B:291:GLN:OE1	2.01	0.60
1:A:329:LYS:HE2	1:A:333:GLU:OE2	2.01	0.60
1:C:145:ALA:O	1:C:149:VAL:HG23	2.02	0.60
1:C:169:ILE:HA	1:C:218:ASN:ND2	2.15	0.60
1:C:173:PHE:CE1	1:C:178:ILE:HD12	2.33	0.60
1:F:165:GLU:OE2	1:F:213:LYS:NZ	2.29	0.60
1:G:242:ILE:HG23	1:G:243:PRO:HD2	1.83	0.60
1:A:169:ILE:O	1:A:169:ILE:HG13	2.01	0.60
1:A:265:GLU:OE1	1:A:265:GLU:HA	2.01	0.60
1:E:144:GLY:HA2	1:F:313:ALA:HB1	1.83	0.60
1:F:90:SER:HB3	1:F:338:ASP:O	2.02	0.60
1:H:243:PRO:HA	1:H:277:ASP:OD2	2.01	0.60
1:J:122:HIS:CE1	1:J:126:TYR:HE2	2.18	0.60
1:J:316:ILE:CD1	1:J:321:LEU:HD13	2.31	0.60
1:A:250:SER:HB2	1:A:286:LEU:HD12	1.83	0.60
1:A:406:GLU:O	1:A:406:GLU:HG3	1.99	0.60
1:E:169:ILE:HD13	1:E:285:LLP:C4	2.32	0.60
1:D:135:SER:OG	1:D:136:SER:N	2.33	0.60
1:E:119:ARG:NH1	1:E:316:ILE:O	2.35	0.60
1:E:329:LYS:NZ	1:E:333:GLU:OE2	2.25	0.60
1:G:408:SER:HA	1:G:411:LEU:HD12	1.83	0.60
1:B:246:TYR:OH	1:B:266:PRO:HG3	2.01	0.60
1:C:325:GLU:OE2	1:D:68:ASN:N	2.32	0.60
1:H:141:ASN:HB3	1:H:291:GLN:NE2	2.17	0.60
1:C:420:CYS:SG	1:C:427:LEU:HD11	2.41	0.60
1:D:150:LEU:CD1	1:D:179:MET:HE2	2.32	0.60
1:D:369:LEU:HD23	1:D:399:HIS:HD2	1.66	0.60
1:D:400:ASP:OD1	1:D:401:ARG:N	2.34	0.60
1:E:163:ARG:NH1	1:E:188:GLU:HG3	2.17	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:119:ARG:O	1:G:122:HIS:ND1	2.32	0.60
1:I:230:LEU:O	1:I:234:VAL:HG23	2.01	0.60
1:C:402:LEU:HD11	1:C:406:GLU:CB	2.32	0.60
1:D:150:LEU:HD13	1:D:179:MET:HE2	1.84	0.60
1:E:111:LEU:CD1	1:F:70:LYS:HE2	2.32	0.60
1:E:259:PHE:CE2	1:E:336:TYR:CD2	2.84	0.60
1:E:263:VAL:HG12	1:E:265:GLU:H	1.66	0.60
1:F:353:ARG:HB2	1:F:393:TYR:CE1	2.37	0.60
1:H:340:PRO:O	1:H:344:MET:HG3	2.02	0.60
1:A:355:LYS:HD3	1:A:436:HIS:NE2	2.17	0.59
1:B:188:GLU:OE1	1:C:163:ARG:NH1	2.34	0.59
1:B:72:VAL:HG22	1:B:417:PRO:HG2	1.84	0.59
1:G:408:SER:O	1:G:412:ARG:HG3	2.01	0.59
1:I:69:ILE:HG22	1:J:100:ILE:CD1	2.32	0.59
1:I:423:ARG:NH2	1:I:428:LEU:HD11	2.17	0.59
1:J:378:ALA:CB	1:J:421:ARG:HH12	2.15	0.59
1:I:355:LYS:HD2	1:I:436:HIS:HE1	1.63	0.59
1:A:175:ILE:HB	1:A:176:PRO:HD3	1.85	0.59
1:A:359:LEU:HD23	1:A:395:VAL:HG21	1.84	0.59
1:B:120:ILE:HG22	1:B:124:GLU:HG3	1.84	0.59
1:B:256:LEU:HG	1:B:261:ILE:HB	1.83	0.59
1:C:109:TYR:HD1	1:C:111:LEU:HD23	1.66	0.59
1:D:149:VAL:HG22	1:D:305:ILE:CD1	2.33	0.59
1:E:69:ILE:HG22	1:F:100:ILE:HD12	1.85	0.59
1:G:181:LYS:HG3	1:H:309:PRO:HG2	1.83	0.59
1:H:66:LYS:CG	1:H:67:PRO:HD2	2.31	0.59
1:E:84:LEU:HG	3:E:503:THJ:S2	2.42	0.59
1:E:375:LYS:HB2	1:E:393:TYR:HE2	1.65	0.59
1:H:179:MET:O	1:H:182:SER:HB3	2.01	0.59
1:E:161:ILE:HG21	1:E:166:LEU:HD21	1.85	0.59
1:I:313:ALA:HB1	1:J:144:GLY:HA2	1.84	0.59
1:B:361:LYS:HA	1:B:364:LYS:HE3	1.85	0.59
1:C:256:LEU:HD12	1:C:265:GLU:HB3	1.85	0.59
1:J:121:ALA:O	1:J:124:GLU:HG2	2.03	0.59
1:A:65:MET:O	1:B:329:LYS:HE2	2.03	0.59
1:C:97:ILE:HD11	1:C:323:GLY:HA3	1.85	0.59
1:D:208:THR:HG21	1:D:242:ILE:HD13	1.85	0.59
1:F:375:LYS:HB2	1:F:393:TYR:HE2	1.66	0.59
1:H:66:LYS:NZ	1:H:415:GLU:OE2	2.36	0.59
1:A:77:GLY:HA2	1:A:433:THR:HG23	1.84	0.58
1:A:344:MET:O	1:A:432:ARG:HD2	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:254:ILE:HD12	1:C:259:PHE:CZ	2.38	0.58
1:E:136:SER:CB	1:E:296:VAL:HG12	2.32	0.58
1:E:141:ASN:HB2	1:E:285:LLP:OP2	2.03	0.58
1:I:353:ARG:HB2	1:I:393:TYR:CE1	2.38	0.58
1:B:169:ILE:CG1	1:B:173:PHE:HD2	2.16	0.58
1:B:339:ILE:O	1:B:339:ILE:HG13	2.02	0.58
1:D:270:ASP:O	1:D:274:LEU:HG	2.03	0.58
1:G:147:PHE:HE1	1:H:310:ILE:HG12	1.67	0.58
1:H:200:TYR:CE1	1:H:233:LEU:HD21	2.38	0.58
1:I:280:SER:HA	1:I:294:ILE:O	2.03	0.58
1:J:280:SER:HA	1:J:294:ILE:O	2.03	0.58
1:A:242:ILE:CG2	1:A:243:PRO:HD2	2.32	0.58
1:E:342:ILE:O	1:E:346:THR:HG23	2.03	0.58
1:A:243:PRO:HA	1:A:277:ASP:OD2	2.03	0.58
1:G:313:ALA:O	1:H:140:ASN:ND2	2.36	0.58
1:J:122:HIS:ND1	1:J:126:TYR:HE2	2.01	0.58
1:C:124:GLU:O	1:C:128:ASN:ND2	2.36	0.58
1:E:102:ASN:HB3	1:F:71:ARG:HH12	1.67	0.58
1:F:142:ASN:ND2	1:F:249:GLY:HA2	2.19	0.58
1:A:285:LLP:OP4	1:A:285:LLP:H4'1	2.04	0.58
1:A:309:PRO:CG	1:B:181:LYS:HG3	2.33	0.58
1:C:230:LEU:HD11	1:C:246:TYR:CE2	2.39	0.58
1:F:231:GLU:CD	1:F:231:GLU:H	2.12	0.58
1:G:75:ALA:HB3	1:G:420:CYS:HB3	1.84	0.58
1:G:84:LEU:HA	1:H:105:SER:O	2.03	0.58
1:G:256:LEU:HD12	1:G:265:GLU:HB3	1.86	0.58
1:B:256:LEU:HD23	1:B:263:VAL:CG2	2.26	0.58
1:B:317:ASP:OD1	1:B:319:LEU:HB2	2.04	0.58
1:E:149:VAL:HG22	1:E:305:ILE:CD1	2.34	0.58
1:H:263:VAL:HG12	1:H:265:GLU:H	1.69	0.58
1:I:412:ARG:NH1	1:J:114:GLY:HA3	2.19	0.58
1:J:399:HIS:HE1	1:J:401:ARG:HD3	1.68	0.58
1:A:174:ARG:NH2	1:J:199:ASP:OD2	2.30	0.57
1:C:73:ILE:HB	1:C:418:ILE:HG12	1.85	0.57
1:G:413:LEU:HD21	1:H:112:GLU:OE2	2.03	0.57
1:C:359:LEU:HD13	1:C:439:LEU:HD22	1.85	0.57
1:E:254:ILE:HD11	1:E:259:PHE:HZ	1.70	0.57
1:F:265:GLU:OE1	1:F:266:PRO:HD2	2.04	0.57
1:D:89:LEU:HB2	1:D:94:ILE:HD11	1.87	0.57
1:H:142:ASN:HB3	1:H:285:LLP:OP4	2.04	0.57
1:H:252:LEU:HG	1:H:267:ASN:HB3	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:75:ALA:HB1	1:A:429:PHE:HD2	1.69	0.57
1:B:124:GLU:O	1:B:128:ASN:ND2	2.37	0.57
1:B:255:ASN:N	1:B:267:ASN:ND2	2.52	0.57
1:B:376:ASP:OD1	1:B:377:LYS:N	2.38	0.57
1:C:137:PHE:CD1	1:C:306:LYS:HG2	2.40	0.57
1:D:212:MET:HE3	1:D:245:TYR:CD1	2.39	0.57
1:D:280:SER:HA	1:D:294:ILE:O	2.04	0.57
1:G:64:LEU:HD13	1:H:126:TYR:CD1	2.40	0.57
1:G:79:VAL:HG21	1:G:345:LEU:CD2	2.34	0.57
1:I:145:ALA:HB1	1:I:295:ILE:HD11	1.85	0.57
1:D:353:ARG:HB2	1:D:393:TYR:HE1	1.67	0.57
1:A:128:ASN:HD21	1:A:135:SER:HA	1.69	0.57
1:C:169:ILE:HA	1:C:218:ASN:HD21	1.69	0.57
1:C:358:ARG:HH21	1:C:439:LEU:HD12	1.70	0.57
1:E:399:HIS:CE1	1:E:401:ARG:HB2	2.40	0.57
1:F:390:LEU:HB2	1:F:432:ARG:NH2	2.20	0.57
1:H:168:GLU:HB2	1:I:191:THR:HG21	1.87	0.57
1:B:169:ILE:HD11	1:B:285:LLP:H5'1	1.87	0.57
1:I:169:ILE:HD13	1:I:285:LLP:C4	2.35	0.57
1:B:163:ARG:NH1	1:C:188:GLU:OE1	2.37	0.57
1:B:265:GLU:OE1	1:B:266:PRO:HD2	2.05	0.57
1:B:245:TYR:HH	1:B:280:SER:HG	1.52	0.57
1:H:344:MET:O	1:H:432:ARG:HD2	2.05	0.57
1:H:399:HIS:CE1	1:H:401:ARG:HB2	2.40	0.57
1:D:147:PHE:HB2	1:D:178:ILE:CD1	2.35	0.57
1:E:103:GLY:HA2	1:F:88:PRO:HB3	1.87	0.57
1:F:336:TYR:O	1:F:339:ILE:HG12	2.05	0.57
1:G:144:GLY:HA2	1:H:313:ALA:HB1	1.87	0.57
1:G:421:ARG:HH21	1:G:430:ASP:HB2	1.69	0.57
1:D:77:GLY:CA	1:D:433:THR:HG23	2.32	0.56
1:E:172:SER:OG	1:F:312:ARG:HD3	2.05	0.56
1:F:137:PHE:CE1	1:F:306:LYS:HG2	2.40	0.56
1:F:376:ASP:OD1	1:F:377:LYS:N	2.37	0.56
1:G:109:TYR:HE2	3:H:501:THJ:O2	1.87	0.56
1:C:336:TYR:O	1:C:339:ILE:HG12	2.05	0.56
1:J:230:LEU:HD11	1:J:246:TYR:CE1	2.41	0.56
1:A:90:SER:HB3	1:A:338:ASP:O	2.05	0.56
1:A:212:MET:HE3	1:A:245:TYR:CE1	2.40	0.56
1:D:429:PHE:HB3	1:D:431:MET:HE2	1.86	0.56
1:F:339:ILE:HD11	1:F:342:ILE:HG13	1.86	0.56
1:I:435:PHE:O	1:I:438:ASP:HB2	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:169:ILE:CD1	1:J:285:LLP:H5'1	2.35	0.56
1:B:83:ASN:HB2	3:B:501:THJ:O3	2.05	0.56
1:E:105:SER:O	1:F:84:LEU:HA	2.05	0.56
1:E:317:ASP:HB2	1:F:291:GLN:HB3	1.88	0.56
1:G:107:LEU:HD23	1:H:85:GLY:HA2	1.87	0.56
1:I:122:HIS:CG	1:J:68:ASN:HB2	2.40	0.56
1:B:73:ILE:HB	1:B:418:ILE:HG12	1.87	0.56
1:C:408:SER:OG	1:C:422:ILE:HD11	2.05	0.56
1:J:73:ILE:HB	1:J:418:ILE:HG23	1.85	0.56
1:C:336:TYR:C	1:C:338:ASP:H	2.14	0.56
1:D:316:ILE:HD11	1:D:321:LEU:HD13	1.87	0.56
1:E:408:SER:O	1:E:412:ARG:HG3	2.06	0.56
1:F:213:LYS:CD	1:F:230:LEU:HD21	2.36	0.56
1:G:109:TYR:HD2	1:H:83:ASN:HB3	1.71	0.56
1:I:80:ILE:HG22	1:I:383:GLY:H	1.71	0.56
1:E:280:SER:HA	1:E:294:ILE:O	2.05	0.56
1:E:363:LEU:HD21	1:E:446:LEU:CD1	2.36	0.56
1:J:216:LYS:HE2	1:J:221:MET:HE2	1.87	0.56
1:A:213:LYS:HD3	1:A:230:LEU:HD21	1.88	0.56
1:B:165:GLU:OE2	1:B:213:LYS:HE3	2.06	0.56
1:F:145:ALA:HB1	1:F:295:ILE:HD11	1.87	0.56
1:G:251:GLY:HA2	1:G:268:PHE:CZ	2.41	0.56
1:G:397:ILE:HD11	1:G:427:LEU:HD23	1.86	0.56
1:G:399:HIS:NE2	1:G:450:LEU:HD13	2.21	0.56
1:E:96:PHE:O	1:E:100:ILE:HG12	2.05	0.56
1:F:159:VAL:HG22	1:F:210:LEU:HB3	1.87	0.56
1:C:169:ILE:HG22	1:C:218:ASN:ND2	2.21	0.56
1:D:86:ARG:NH1	1:D:284:ASP:OD1	2.39	0.56
1:E:128:ASN:OD1	1:E:135:SER:HA	2.05	0.56
1:A:316:ILE:CD1	1:A:321:LEU:HD13	2.35	0.55
1:H:126:TYR:HE2	1:H:325:GLU:HG3	1.70	0.55
1:B:222:GLU:HB3	1:C:220:TYR:CE2	2.42	0.55
1:D:213:LYS:HD3	1:D:246:TYR:HE1	1.72	0.55
1:H:355:LYS:NZ	1:H:434:VAL:O	2.39	0.55
1:I:363:LEU:HD21	1:I:446:LEU:CD1	2.35	0.55
1:D:163:ARG:NH1	1:E:188:GLU:OE1	2.39	0.55
1:G:312:ARG:HG2	1:H:173:PHE:HB2	1.88	0.55
1:I:170:GLY:HA3	3:I:502:THJ:O2	2.07	0.55
1:A:212:MET:HE3	1:A:245:TYR:CD1	2.42	0.55
1:A:213:LYS:O	1:A:246:TYR:HD1	1.89	0.55
1:E:256:LEU:HD23	1:E:263:VAL:HB	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:447:GLN:O	1:E:451:SER:HB2	2.06	0.55
1:F:363:LEU:HB2	1:F:371:ILE:HD13	1.87	0.55
1:I:149:VAL:HG22	1:I:305:ILE:CD1	2.37	0.55
1:I:405:GLN:HE22	1:I:422:ILE:CG2	2.11	0.55
1:J:145:ALA:O	1:J:149:VAL:HG23	2.06	0.55
1:A:390:LEU:HB3	1:A:432:ARG:HH22	1.72	0.55
1:H:424:GLU:HG3	1:H:424:GLU:O	2.07	0.55
1:C:142:ASN:ND2	1:C:249:GLY:HA2	2.21	0.55
1:D:255:ASN:HA	1:D:267:ASN:ND2	2.21	0.55
1:H:390:LEU:CB	1:H:432:ARG:HH22	2.20	0.55
1:I:336:TYR:O	1:I:339:ILE:HG12	2.06	0.55
1:J:148:LEU:HD22	1:J:314:LEU:HD12	1.87	0.55
1:J:169:ILE:HD13	1:J:285:LLP:C4	2.37	0.55
1:C:248:ALA:O	1:C:250:SER:N	2.38	0.55
1:D:268:PHE:HE2	1:D:294:ILE:HG21	1.72	0.55
1:G:122:HIS:HD2	1:H:68:ASN:HB3	1.68	0.55
1:I:268:PHE:HD1	1:I:279:VAL:HG11	1.72	0.55
1:C:160:ILE:CG2	1:C:200:TYR:HD1	2.20	0.55
1:A:130:LEU:HD13	1:A:253:LEU:HD21	1.88	0.55
1:B:193:ASN:HB3	1:C:219:PHE:CE2	2.42	0.55
1:E:86:ARG:NH2	1:E:285:LLP:HE2	2.22	0.55
1:E:282:SER:HB2	1:E:285:LLP:HD3	1.88	0.55
1:J:366:ILE:HB	1:J:369:LEU:CD1	2.37	0.55
1:D:193:ASN:ND2	1:E:168:GLU:O	2.40	0.55
1:D:284:ASP:HA	1:D:289:GLY:O	2.07	0.55
1:E:252:LEU:HD22	1:E:265:GLU:HG2	1.89	0.55
1:F:342:ILE:O	1:F:346:THR:HG23	2.07	0.55
1:H:280:SER:HA	1:H:294:ILE:O	2.07	0.55
1:I:309:PRO:HG2	1:J:181:LYS:HG3	1.89	0.55
1:F:77:GLY:HA3	1:F:430:ASP:CG	2.31	0.54
1:D:410:ARG:HB3	1:D:449:LEU:HD13	1.88	0.54
1:F:224:PHE:HB2	1:G:218:ASN:ND2	2.18	0.54
1:G:86:ARG:HD2	1:G:284:ASP:OD2	2.07	0.54
1:G:308:ASN:OD1	1:G:310:ILE:HB	2.06	0.54
1:I:363:LEU:HD21	1:I:446:LEU:HD12	1.88	0.54
1:J:326:MET:CE	1:J:329:LYS:HD3	2.36	0.54
1:A:191:THR:HG21	1:J:168:GLU:HB2	1.88	0.54
1:G:243:PRO:HA	1:G:277:ASP:OD2	2.06	0.54
1:H:437:GLU:CD	1:H:437:GLU:H	2.15	0.54
1:C:439:LEU:HA	1:C:442:ILE:HD12	1.89	0.54
1:J:137:PHE:CE1	1:J:306:LYS:HG2	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:308:ASN:OD1	1:B:310:ILE:N	2.23	0.54
1:A:355:LYS:HD3	1:A:436:HIS:CD2	2.42	0.54
1:A:438:ASP:O	1:A:442:ILE:HG13	2.08	0.54
1:C:66:LYS:CD	1:C:67:PRO:HD2	2.37	0.54
1:D:90:SER:HB3	1:D:93:VAL:HG23	1.90	0.54
1:D:194:LYS:HD3	1:E:168:GLU:OE2	2.08	0.54
1:D:200:TYR:CD2	1:D:228:VAL:HG21	2.43	0.54
1:F:396:ALA:HA	1:F:427:LEU:O	2.07	0.54
1:H:70:LYS:O	1:H:72:VAL:HG23	2.07	0.54
1:I:354:GLN:O	1:I:358:ARG:HG3	2.08	0.54
1:B:302:ILE:HG22	1:B:306:LYS:HD2	1.90	0.54
1:D:256:LEU:HD12	1:D:263:VAL:CG2	2.38	0.54
1:E:251:GLY:HA2	1:E:268:PHE:CE2	2.42	0.54
1:I:119:ARG:HG3	1:I:120:ILE:N	2.23	0.54
1:A:68:ASN:N	1:B:325:GLU:OE2	2.41	0.54
1:B:407:LEU:O	1:B:411:LEU:HG	2.08	0.54
1:E:170:GLY:HA3	3:E:502:THJ:O3	2.08	0.54
1:H:65:MET:HG3	1:H:66:LYS:N	2.23	0.54
1:J:137:PHE:HD1	1:J:306:LYS:HE2	1.73	0.54
1:J:201:GLU:OE2	1:J:240:TYR:OH	2.26	0.54
1:A:83:ASN:OD1	1:B:116:ARG:HG3	2.08	0.54
1:E:344:MET:O	1:E:432:ARG:HD2	2.08	0.54
1:J:231:GLU:HG3	1:J:274:LEU:HD11	1.88	0.54
1:C:167:VAL:HG12	1:C:219:PHE:HE2	1.73	0.54
1:E:193:ASN:HA	1:E:221:MET:HE1	1.90	0.54
1:G:79:VAL:HG21	1:G:345:LEU:HD21	1.90	0.54
1:G:333:GLU:HB3	1:G:335:ARG:HG3	1.90	0.54
1:F:329:LYS:O	1:F:333:GLU:HG3	2.08	0.53
1:I:124:GLU:OE2	1:I:306:LYS:HE2	2.08	0.53
1:A:444:LYS:NZ	1:A:448:GLU:OE1	2.42	0.53
1:C:245:TYR:C	1:C:245:TYR:CD2	2.87	0.53
1:D:120:ILE:O	1:D:124:GLU:HG2	2.09	0.53
1:D:329:LYS:HE2	1:D:333:GLU:OE2	2.08	0.53
1:E:77:GLY:HA2	1:E:433:THR:HG23	1.91	0.53
1:F:138:VAL:HG12	1:F:316:ILE:HG21	1.90	0.53
1:F:169:ILE:HG13	1:F:173:PHE:HD2	1.72	0.53
1:H:80:ILE:HD11	1:H:341:VAL:HG11	1.89	0.53
1:I:161:ILE:HG23	1:I:166:LEU:HD21	1.89	0.53
1:I:205:ASN:HD21	1:I:207:ASN:HB2	1.72	0.53
1:B:218:ASN:HB2	1:C:224:PHE:CD1	2.42	0.53
1:C:186:LEU:HD12	1:C:186:LEU:C	2.32	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:353:ARG:HB2	1:D:393:TYR:CD1	2.43	0.53
1:G:246:TYR:HB3	1:G:279:VAL:HG22	1.89	0.53
1:H:406:GLU:O	1:H:410:ARG:HG3	2.09	0.53
1:I:79:VAL:N	1:I:380:PRO:O	2.36	0.53
1:A:329:LYS:CE	1:A:333:GLU:OE2	2.57	0.53
1:E:246:TYR:CE2	1:E:248:ALA:HA	2.43	0.53
1:I:120:ILE:CD1	1:I:316:ILE:HD11	2.39	0.53
1:A:100:ILE:HD12	1:B:69:ILE:CG2	2.30	0.53
1:E:252:LEU:HD22	1:E:265:GLU:HG3	1.90	0.53
1:F:200:TYR:CE2	1:F:228:VAL:HG21	2.44	0.53
1:J:130:LEU:HD22	1:J:253:LEU:HD21	1.91	0.53
1:J:169:ILE:HD11	1:J:285:LLP:C5'	2.38	0.53
1:B:77:GLY:HA3	1:B:430:ASP:CG	2.34	0.53
1:C:77:GLY:HA3	1:C:430:ASP:CG	2.34	0.53
1:E:79:VAL:N	1:E:380:PRO:O	2.38	0.53
1:F:257:LYS:HE3	1:F:263:VAL:O	2.08	0.53
1:I:72:VAL:HG22	1:I:417:PRO:HG2	1.90	0.53
1:A:166:LEU:HD12	1:J:163:ARG:HD3	1.91	0.53
1:A:375:LYS:HD2	1:A:393:TYR:CE1	2.44	0.53
1:B:240:TYR:HB2	1:B:242:ILE:HD12	1.90	0.53
1:E:141:ASN:OD1	1:E:143:ALA:HB3	2.09	0.53
1:F:153:LEU:HD11	1:F:301:LEU:HD22	1.91	0.53
1:F:169:ILE:HG22	1:F:218:ASN:ND2	2.24	0.53
1:G:91:LYS:HA	1:G:94:ILE:HD12	1.90	0.53
1:I:339:ILE:HD11	1:I:342:ILE:CG1	2.36	0.53
1:J:142:ASN:HB3	1:J:285:LLP:OP4	2.08	0.53
1:A:395:VAL:HG12	1:A:395:VAL:O	2.08	0.53
1:E:87:ALA:HB2	1:E:341:VAL:HG21	1.90	0.53
1:E:129:GLU:OE2	1:F:61:MET:N	2.41	0.53
1:F:81:ASN:OD1	1:F:81:ASN:C	2.52	0.53
1:H:300:ASN:O	1:H:304:LYS:HG3	2.08	0.53
1:I:142:ASN:HB3	1:I:285:LLP:OP4	2.09	0.53
1:A:119:ARG:C	1:A:121:ALA:H	2.17	0.53
1:B:97:ILE:HD11	1:B:323:GLY:HA3	1.90	0.53
1:E:142:ASN:HD22	1:E:285:LLP:C5	2.21	0.53
1:G:316:ILE:HD11	1:G:321:LEU:HD13	1.91	0.53
1:G:334:LYS:NZ	1:G:336:TYR:OH	2.35	0.53
1:I:234:VAL:HG22	1:I:276:ILE:HD13	1.91	0.53
1:C:116:ARG:HG3	1:D:83:ASN:OD1	2.09	0.53
1:C:390:LEU:HB2	1:C:432:ARG:NH2	2.24	0.53
1:H:133:ALA:HB2	1:H:272:ILE:HD12	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:353:ARG:HB2	1:H:393:TYR:CE1	2.44	0.53
1:I:339:ILE:O	1:I:339:ILE:HG13	2.09	0.53
1:J:169:ILE:HA	1:J:218:ASN:ND2	2.22	0.53
1:J:257:LYS:HE3	1:J:262:SER:HB2	1.91	0.53
1:C:193:ASN:HA	1:C:221:MET:HE1	1.91	0.52
1:I:66:LYS:CG	1:I:67:PRO:HD2	2.33	0.52
1:C:246:TYR:HE1	1:C:248:ALA:HB2	1.74	0.52
1:D:100:ILE:HG13	1:D:322:SER:OG	2.09	0.52
1:D:255:ASN:HA	1:D:267:ASN:HD22	1.75	0.52
1:J:75:ALA:HB3	1:J:419:VAL:O	2.09	0.52
1:E:425:ASP:O	1:E:425:ASP:CG	2.52	0.52
1:F:127:LEU:O	1:F:128:ASN:C	2.52	0.52
1:C:254:ILE:HD12	1:C:259:PHE:CE1	2.45	0.52
1:E:263:VAL:HG12	1:E:264:ASP:N	2.24	0.52
1:H:169:ILE:HA	1:H:218:ASN:ND2	2.24	0.52
1:H:355:LYS:NZ	1:H:431:MET:O	2.27	0.52
1:J:79:VAL:HG12	1:J:341:VAL:HG13	1.92	0.52
1:J:122:HIS:HD1	1:J:126:TYR:HE2	1.56	0.52
1:G:148:LEU:HG	1:G:305:ILE:HG23	1.92	0.52
1:G:312:ARG:HD3	1:H:172:SER:OG	2.08	0.52
1:A:368:GLY:O	1:A:399:HIS:HD2	1.92	0.52
1:D:86:ARG:HH11	1:D:284:ASP:CG	2.18	0.52
1:D:216:LYS:HE2	1:D:221:MET:HE2	1.90	0.52
1:D:252:LEU:HD21	1:D:256:LEU:HG	1.92	0.52
1:E:169:ILE:CD1	1:E:285:LLP:C5	2.88	0.52
1:H:90:SER:HB3	1:H:338:ASP:O	2.10	0.52
1:A:360:GLU:HG3	1:A:371:ILE:CG2	2.38	0.52
1:B:380:PRO:HG2	1:B:388:LEU:HD23	1.92	0.52
1:C:72:VAL:HG22	1:C:417:PRO:HG2	1.91	0.52
1:G:404:SER:OG	1:G:425:ASP:HA	2.08	0.52
1:H:251:GLY:HA2	1:H:268:PHE:CE2	2.45	0.52
1:B:109:TYR:HD1	1:B:111:LEU:CD2	2.22	0.52
1:D:208:THR:CG2	1:D:242:ILE:HD13	2.39	0.52
1:D:231:GLU:CD	1:D:231:GLU:H	2.18	0.52
1:D:448:GLU:O	1:D:452:ILE:HB	2.10	0.52
1:F:145:ALA:CB	1:F:295:ILE:HD11	2.39	0.52
1:B:200:TYR:CE2	1:B:228:VAL:HG21	2.45	0.52
1:G:301:LEU:O	1:G:305:ILE:HG13	2.10	0.52
1:H:215:HIS:HB2	1:H:246:TYR:OH	2.10	0.52
1:I:123:ILE:HD11	1:I:325:GLU:HB2	1.92	0.52
1:J:73:ILE:HG13	1:J:418:ILE:HG12	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:218:ASN:OD1	1:J:218:ASN:N	2.38	0.52
1:G:308:ASN:CG	1:G:309:PRO:HD2	2.35	0.52
1:G:439:LEU:O	1:G:442:ILE:HB	2.10	0.52
1:A:100:ILE:CD1	1:B:69:ILE:HG22	2.30	0.51
1:A:141:ASN:HB3	1:A:291:GLN:NE2	2.26	0.51
1:A:174:ARG:HH22	1:J:199:ASP:CG	2.18	0.51
1:C:318:LYS:NZ	1:D:85:GLY:O	2.35	0.51
1:F:213:LYS:HB3	1:F:246:TYR:HD1	1.74	0.51
1:F:265:GLU:OE1	1:F:265:GLU:HA	2.10	0.51
1:A:84:LEU:HA	1:B:105:SER:O	2.10	0.51
1:C:200:TYR:HE2	1:C:228:VAL:CG2	2.11	0.51
1:F:265:GLU:CD	1:F:266:PRO:HD2	2.35	0.51
1:B:139:VAL:HG23	1:B:293:GLY:HA3	1.91	0.51
1:C:147:PHE:HE2	1:C:310:ILE:HG21	1.76	0.51
1:C:169:ILE:HG22	1:C:218:ASN:HD21	1.74	0.51
1:C:312:ARG:HG2	1:D:173:PHE:HB2	1.92	0.51
1:H:75:ALA:HB3	1:H:419:VAL:O	2.11	0.51
1:I:142:ASN:HD22	1:I:285:LLP:C5	2.23	0.51
1:J:150:LEU:HD13	1:J:179:MET:HG3	1.92	0.51
1:C:362:LEU:HB3	1:C:443:LYS:HD2	1.91	0.51
1:G:267:ASN:ND2	1:G:270:ASP:HB2	2.25	0.51
1:I:81:ASN:OD1	1:I:83:ASN:N	2.43	0.51
1:J:82:THR:N	3:J:503:THJ:S2	2.67	0.51
1:J:286:LEU:HD21	1:J:384:SER:OG	2.10	0.51
1:B:186:LEU:HD12	1:B:187:ARG:N	2.25	0.51
1:E:252:LEU:O	1:E:267:ASN:HB2	2.09	0.51
1:E:313:ALA:HB1	1:F:144:GLY:CA	2.40	0.51
1:F:96:PHE:O	1:F:100:ILE:HG12	2.11	0.51
1:H:161:ILE:HG21	1:H:186:LEU:HD11	1.93	0.51
1:H:359:LEU:HD23	1:H:395:VAL:CG2	2.34	0.51
1:I:265:GLU:CD	1:I:266:PRO:HD2	2.35	0.51
1:J:268:PHE:HD1	1:J:296:VAL:HG21	1.76	0.51
1:B:230:LEU:O	1:B:231:GLU:C	2.52	0.51
1:C:267:ASN:ND2	1:C:270:ASP:OD2	2.34	0.51
1:G:78:VAL:HG13	1:G:380:PRO:O	2.11	0.51
1:I:131:THR:HG22	1:I:268:PHE:CB	2.39	0.51
1:I:161:ILE:CG2	1:I:166:LEU:HD21	2.41	0.51
1:J:251:GLY:HA2	1:J:268:PHE:HE2	1.75	0.51
1:A:120:ILE:HG21	1:A:137:PHE:HD1	1.76	0.51
1:B:193:ASN:HB3	1:C:219:PHE:CZ	2.46	0.51
1:C:286:LEU:HG	1:C:384:SER:OG	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:342:ILE:O	1:G:346:THR:HG23	2.11	0.51
1:H:317:ASP:OD1	1:H:319:LEU:HB2	2.11	0.51
1:J:360:GLU:HG3	1:J:371:ILE:CG2	2.39	0.51
1:C:75:ALA:HB1	1:C:429:PHE:HA	1.91	0.51
1:C:280:SER:HA	1:C:294:ILE:O	2.11	0.51
1:I:263:VAL:CG1	1:I:264:ASP:N	2.74	0.51
1:I:360:GLU:HG3	1:I:371:ILE:HG21	1.93	0.51
1:A:291:GLN:OE1	1:B:317:ASP:HA	2.10	0.51
1:E:251:GLY:O	1:E:287:LEU:HB2	2.10	0.51
1:F:396:ALA:HB2	1:F:428:LEU:HD23	1.93	0.51
1:G:200:TYR:CD1	1:G:233:LEU:HD21	2.46	0.51
1:I:163:ARG:HG3	1:I:189:VAL:O	2.11	0.51
1:I:359:LEU:HD23	1:I:395:VAL:HG21	1.93	0.51
1:A:340:PRO:O	1:A:344:MET:HG3	2.11	0.51
1:D:255:ASN:N	1:D:267:ASN:ND2	2.59	0.51
1:G:169:ILE:HD11	1:G:285:LLP:C5	2.41	0.51
1:H:163:ARG:NH1	1:H:188:GLU:HG3	2.25	0.51
1:I:285:LLP:NZ	1:I:285:LLP:O3	2.39	0.51
1:B:78:VAL:HA	1:B:380:PRO:O	2.11	0.50
1:B:165:GLU:HG2	1:B:214:VAL:O	2.11	0.50
1:E:102:ASN:HD21	1:F:91:LYS:HG2	1.76	0.50
1:E:142:ASN:O	1:E:146:VAL:HG23	2.12	0.50
1:I:337:GLU:H	1:I:337:GLU:CD	2.19	0.50
1:A:67:PRO:HD3	1:B:329:LYS:CE	2.41	0.50
1:B:169:ILE:HG13	1:B:173:PHE:HD2	1.76	0.50
1:I:253:LEU:HD23	1:I:331:TYR:CD1	2.46	0.50
1:A:219:PHE:CE1	1:J:193:ASN:HB3	2.46	0.50
1:C:175:ILE:HB	1:C:176:PRO:CD	2.41	0.50
1:F:378:ALA:HB1	1:F:421:ARG:HH12	1.76	0.50
1:G:123:ILE:HG23	1:G:328:LEU:CD1	2.42	0.50
1:G:130:LEU:HD13	1:G:253:LEU:HD21	1.92	0.50
1:H:200:TYR:CD1	1:H:233:LEU:HD21	2.46	0.50
1:I:68:ASN:HB2	1:J:122:HIS:CG	2.46	0.50
1:I:397:ILE:CD1	1:I:427:LEU:HD23	2.39	0.50
1:A:284:ASP:HA	1:A:289:GLY:O	2.12	0.50
1:C:407:LEU:O	1:C:411:LEU:HG	2.11	0.50
1:F:168:GLU:OE1	1:G:194:LYS:HB2	2.10	0.50
1:C:88:PRO:O	1:C:340:PRO:HG2	2.12	0.50
1:D:221:MET:HG2	1:E:221:MET:HG2	1.93	0.50
1:E:88:PRO:HG3	1:F:104:TYR:CE1	2.46	0.50
1:F:160:ILE:HB	1:F:211:LEU:HD23	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:169:ILE:HG22	1:F:218:ASN:CG	2.37	0.50
1:G:435:PHE:HB3	1:G:437:GLU:OE1	2.11	0.50
1:C:245:TYR:HD2	1:C:246:TYR:N	2.09	0.50
1:I:205:ASN:ND2	1:I:207:ASN:HB2	2.26	0.50
1:I:267:ASN:HD21	1:I:270:ASP:CG	2.20	0.50
1:J:357:LYS:NZ	1:J:360:GLU:OE1	2.44	0.50
1:J:359:LEU:HD23	1:J:395:VAL:HG11	1.93	0.50
1:E:144:GLY:CA	1:F:313:ALA:HB1	2.41	0.50
1:F:136:SER:CB	1:F:296:VAL:HG12	2.42	0.50
1:H:437:GLU:OE1	1:H:437:GLU:N	2.42	0.50
1:J:136:SER:HB3	1:J:296:VAL:HG12	1.93	0.50
1:A:107:LEU:HD21	1:A:119:ARG:NH2	2.27	0.50
1:C:175:ILE:HB	1:C:176:PRO:HD3	1.93	0.50
1:E:104:TYR:HB3	1:F:84:LEU:HB3	1.94	0.50
1:G:208:THR:HG22	1:G:242:ILE:HD13	1.94	0.50
1:G:333:GLU:OE1	1:G:335:ARG:HD3	2.10	0.50
1:A:355:LYS:CD	1:A:436:HIS:CD2	2.95	0.50
1:B:147:PHE:HB2	1:B:178:ILE:CD1	2.36	0.50
1:C:109:TYR:HD2	1:D:83:ASN:HB3	1.76	0.50
1:D:163:ARG:HG3	1:D:189:VAL:O	2.12	0.50
1:D:204:ILE:HG21	1:D:240:TYR:CD1	2.46	0.50
1:H:230:LEU:O	1:H:234:VAL:HG23	2.12	0.50
1:B:245:TYR:CD2	1:B:246:TYR:N	2.80	0.49
1:C:402:LEU:HD12	1:C:403:SER:H	1.76	0.49
1:E:212:MET:HE3	1:E:245:TYR:CE2	2.47	0.49
1:I:397:ILE:CG1	1:I:427:LEU:HD23	2.42	0.49
1:J:190:GLY:HA3	1:J:195:THR:HG23	1.94	0.49
1:E:99:GLU:O	1:F:71:ARG:NH2	2.44	0.49
1:E:179:MET:O	1:E:182:SER:HB3	2.12	0.49
1:E:217:SER:O	1:E:386:PRO:HD3	2.12	0.49
1:I:263:VAL:HG21	1:I:388:LEU:HD13	1.94	0.49
1:D:249:GLY:HA3	1:D:285:LLP:H2'3	1.93	0.49
1:D:444:LYS:NZ	1:D:448:GLU:OE1	2.28	0.49
1:I:325:GLU:OE2	1:J:68:ASN:N	2.40	0.49
1:I:407:LEU:CD2	1:I:427:LEU:HD22	2.42	0.49
1:J:286:LEU:HD11	1:J:385:LEU:HD21	1.94	0.49
1:J:359:LEU:HD13	1:J:439:LEU:HD23	1.94	0.49
1:C:174:ARG:HD3	1:C:177:ASP:OD2	2.13	0.49
1:C:204:ILE:HG23	1:C:242:ILE:HD11	1.94	0.49
1:F:169:ILE:HD11	1:F:285:LLP:H5'1	1.94	0.49
1:G:125:LYS:CB	1:H:64:LEU:HD11	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:312:ARG:CZ	1:H:315:ARG:NH2	2.75	0.49
1:I:335:ARG:NH1	1:I:338:ASP:OD2	2.36	0.49
1:I:396:ALA:HB2	1:I:428:LEU:HD23	1.94	0.49
1:J:366:ILE:CG2	1:J:367:PRO:HD2	2.43	0.49
1:A:77:GLY:HA3	1:A:430:ASP:CG	2.38	0.49
1:A:219:PHE:CD1	1:J:193:ASN:HB3	2.47	0.49
1:B:370:LYS:HG3	1:B:398:ARG:O	2.13	0.49
1:C:161:ILE:CG2	1:C:166:LEU:HD21	2.42	0.49
1:D:161:ILE:CG1	1:D:212:MET:HB3	2.42	0.49
1:E:190:GLY:HA2	1:E:199:ASP:OD2	2.13	0.49
1:F:430:ASP:C	1:F:431:MET:HE2	2.38	0.49
1:I:76:THR:O	1:I:421:ARG:CZ	2.59	0.49
1:I:169:ILE:HG13	1:I:169:ILE:O	2.13	0.49
1:J:343:ARG:O	1:J:347:GLN:HG3	2.12	0.49
1:A:256:LEU:HD12	1:A:263:VAL:HG21	1.94	0.49
1:F:353:ARG:HB2	1:F:393:TYR:CD1	2.47	0.49
1:G:399:HIS:HE1	1:G:401:ARG:HD3	1.77	0.49
1:H:137:PHE:CD1	1:H:306:LYS:HG2	2.47	0.49
1:H:362:LEU:HB3	1:H:443:LYS:HD2	1.94	0.49
1:H:390:LEU:HB2	1:H:432:ARG:HH22	1.78	0.49
1:I:285:LLP:OP4	1:I:285:LLP:H4'1	2.13	0.49
1:J:163:ARG:NH1	1:J:188:GLU:HG3	2.27	0.49
1:B:290:PRO:HB2	1:B:320:THR:HG22	1.95	0.49
1:D:243:PRO:HA	1:D:277:ASP:OD2	2.13	0.49
1:E:102:ASN:CB	1:F:71:ARG:HH22	2.17	0.49
1:F:141:ASN:HB2	1:F:285:LLP:OP1	2.13	0.49
1:F:409:ARG:HA	1:F:412:ARG:HG3	1.94	0.49
1:I:407:LEU:HD23	1:I:427:LEU:HD22	1.94	0.49
1:C:79:VAL:HG21	1:C:345:LEU:HD23	1.93	0.49
1:D:268:PHE:HE2	1:D:294:ILE:CG2	2.26	0.49
1:D:366:ILE:HG23	1:D:367:PRO:HD2	1.94	0.49
1:I:157:LYS:HB2	1:I:209:ALA:HB2	1.95	0.49
1:I:256:LEU:HD12	1:I:265:GLU:HB3	1.95	0.49
1:A:152:THR:HG22	1:A:153:LEU:HD23	1.93	0.49
1:B:169:ILE:HG12	1:B:173:PHE:HD2	1.78	0.49
1:I:160:ILE:HA	1:I:187:ARG:O	2.12	0.49
1:B:333:GLU:OE1	1:B:335:ARG:HD2	2.13	0.48
1:G:397:ILE:HG13	1:G:427:LEU:HB3	1.95	0.48
1:I:80:ILE:HG22	1:I:80:ILE:O	2.12	0.48
1:I:394:CYS:HA	1:I:429:PHE:O	2.13	0.48
1:B:135:SER:OG	1:B:136:SER:N	2.45	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:363:LEU:HD22	1:C:446:LEU:HD12	1.95	0.48
1:C:402:LEU:HD21	1:C:406:GLU:HG3	1.94	0.48
1:G:407:LEU:O	1:G:411:LEU:HG	2.13	0.48
1:J:439:LEU:HA	1:J:442:ILE:HD12	1.94	0.48
1:E:169:ILE:HD11	1:E:285:LLP:C5	2.43	0.48
1:H:366:ILE:HB	1:H:369:LEU:CD1	2.43	0.48
1:H:438:ASP:O	1:H:442:ILE:HG13	2.13	0.48
1:I:137:PHE:CD1	1:I:306:LYS:HG2	2.48	0.48
1:J:252:LEU:HD21	1:J:256:LEU:HG	1.96	0.48
1:A:188:GLU:OE1	1:J:163:ARG:NH1	2.47	0.48
1:B:233:LEU:O	1:B:236:LEU:HB3	2.13	0.48
1:C:149:VAL:HG11	1:C:245:TYR:CD1	2.48	0.48
1:C:255:ASN:N	1:C:267:ASN:HD22	2.11	0.48
1:C:263:VAL:HG23	1:C:265:GLU:H	1.78	0.48
1:D:390:LEU:HB3	1:D:432:ARG:NH2	2.25	0.48
1:D:420:CYS:SG	1:D:429:PHE:HE1	2.36	0.48
1:E:102:ASN:HB3	1:F:71:ARG:NH1	2.29	0.48
1:H:76:THR:HG21	3:H:501:THJ:S2	2.54	0.48
1:H:133:ALA:HB2	1:H:272:ILE:CD1	2.44	0.48
1:I:77:GLY:HA3	1:I:430:ASP:CB	2.44	0.48
1:J:76:THR:HA	1:J:421:ARG:HG3	1.95	0.48
1:B:86:ARG:HD3	1:B:284:ASP:CG	2.39	0.48
1:E:102:ASN:ND2	1:F:91:LYS:HG2	2.28	0.48
1:E:148:LEU:HD13	1:E:314:LEU:HD12	1.95	0.48
1:G:313:ALA:HB1	1:H:144:GLY:HA2	1.95	0.48
1:G:399:HIS:CD2	1:G:450:LEU:HD13	2.49	0.48
1:H:316:ILE:HD11	1:H:321:LEU:HD13	1.95	0.48
1:I:127:LEU:O	1:I:131:THR:OG1	2.28	0.48
1:A:265:GLU:CD	1:A:266:PRO:HD2	2.37	0.48
1:B:151:ASN:ND2	1:B:310:ILE:HD12	2.28	0.48
1:B:169:ILE:HG13	1:B:169:ILE:O	2.14	0.48
1:B:409:ARG:O	1:B:413:LEU:HG	2.14	0.48
1:C:285:LLP:OP4	1:C:285:LLP:C4'	2.58	0.48
1:D:406:GLU:O	1:D:410:ARG:HD2	2.13	0.48
1:F:277:ASP:OD1	1:F:298:LYS:HE2	2.14	0.48
1:H:114:GLY:O	1:H:115:LYS:HG3	2.13	0.48
1:H:420:CYS:HB2	1:H:428:LEU:O	2.14	0.48
1:J:317:ASP:OD1	1:J:320:THR:OG1	2.31	0.48
1:A:68:ASN:HB2	1:B:122:HIS:CD2	2.49	0.48
1:G:193:ASN:O	1:G:225:VAL:HG13	2.13	0.48
1:I:77:GLY:HA3	1:I:430:ASP:HB3	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:105:SER:O	1:B:84:LEU:HA	2.13	0.48
1:A:165:GLU:HG2	1:A:214:VAL:O	2.14	0.48
1:B:141:ASN:HB3	1:B:291:GLN:HE21	1.79	0.48
1:E:74:ASN:O	1:E:433:THR:OG1	2.25	0.48
1:E:105:SER:HA	1:F:72:VAL:HG23	1.94	0.48
1:F:61:MET:HB2	1:F:64:LEU:HG	1.94	0.48
1:F:175:ILE:N	1:F:176:PRO:HD2	2.29	0.48
1:G:77:GLY:HA3	1:G:430:ASP:HB3	1.95	0.48
1:G:285:LLP:NZ	1:G:285:LLP:O3	2.39	0.48
1:H:79:VAL:CG1	1:H:341:VAL:HG13	2.44	0.48
1:I:157:LYS:CB	1:I:209:ALA:HB2	2.43	0.48
1:I:169:ILE:HD11	1:I:285:LLP:C5'	2.42	0.48
1:J:250:SER:HB2	1:J:286:LEU:HG	1.95	0.48
1:A:427:LEU:C	1:A:428:LEU:HD23	2.39	0.48
1:B:157:LYS:HB3	1:B:209:ALA:HB2	1.95	0.48
1:E:118:SER:HB3	1:E:121:ALA:HB2	1.96	0.48
1:F:147:PHE:HE2	1:F:310:ILE:HG21	1.79	0.48
1:G:366:ILE:HB	1:G:369:LEU:HD12	1.96	0.48
1:H:213:LYS:HB3	1:H:246:TYR:HD2	1.79	0.48
1:H:263:VAL:HG12	1:H:264:ASP:N	2.28	0.48
1:D:90:SER:O	1:D:94:ILE:HG13	2.14	0.48
1:D:379:LYS:HA	1:D:380:PRO:HD3	1.56	0.48
1:E:358:ARG:HH11	1:E:439:LEU:HD11	1.78	0.48
1:H:329:LYS:NZ	1:H:333:GLU:OE2	2.44	0.48
1:I:287:LEU:HD23	1:I:287:LEU:C	2.38	0.48
1:A:157:LYS:CB	1:A:209:ALA:HB2	2.44	0.47
1:D:234:VAL:CG2	1:D:276:ILE:HD13	2.44	0.47
1:D:267:ASN:O	1:D:271:CYS:HB2	2.13	0.47
1:E:138:VAL:HG12	1:E:316:ILE:HG21	1.96	0.47
1:E:363:LEU:HD21	1:E:446:LEU:HD13	1.96	0.47
1:I:253:LEU:CD2	1:I:331:TYR:CD1	2.97	0.47
1:C:70:LYS:N	1:D:106:ASN:OD1	2.42	0.47
1:C:163:ARG:HG3	1:C:188:GLU:HB2	1.96	0.47
1:F:137:PHE:CD1	1:F:306:LYS:HG2	2.49	0.47
1:F:213:LYS:HD2	1:F:230:LEU:HD21	1.95	0.47
1:J:169:ILE:HD13	1:J:285:LLP:C5	2.43	0.47
1:D:360:GLU:HG3	1:D:371:ILE:HG21	1.96	0.47
1:E:123:ILE:HG13	1:E:321:LEU:CD1	2.44	0.47
1:I:268:PHE:O	1:I:269:ARG:C	2.56	0.47
1:I:448:GLU:O	1:I:452:ILE:HB	2.14	0.47
1:J:205:ASN:OD1	1:J:207:ASN:HB2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:230:LEU:O	1:A:231:GLU:C	2.58	0.47
1:B:96:PHE:CE1	1:B:100:ILE:HD11	2.49	0.47
1:B:220:TYR:CD1	1:B:387:GLU:CG	2.97	0.47
1:C:231:GLU:OE1	1:C:231:GLU:N	2.41	0.47
1:D:285:LLP:NZ	1:D:285:LLP:O3	2.46	0.47
1:H:427:LEU:HD12	1:H:428:LEU:N	2.29	0.47
1:I:256:LEU:CD1	1:I:265:GLU:HB3	2.45	0.47
1:J:145:ALA:HB1	1:J:295:ILE:HD11	1.96	0.47
1:J:236:LEU:HD12	1:J:240:TYR:CE2	2.48	0.47
1:A:336:TYR:O	1:A:339:ILE:HG12	2.14	0.47
1:B:359:LEU:HD13	1:B:439:LEU:CD2	2.45	0.47
1:C:108:GLU:HB2	1:D:83:ASN:HA	1.96	0.47
1:E:246:TYR:HE2	1:E:248:ALA:CA	2.27	0.47
1:F:213:LYS:HD3	1:F:230:LEU:HD21	1.96	0.47
1:G:93:VAL:HG22	1:G:326:MET:CG	2.45	0.47
1:H:229:LYS:HB2	1:H:232:ASP:OD2	2.14	0.47
1:I:312:ARG:HD2	1:I:312:ARG:O	2.14	0.47
1:A:420:CYS:HB2	1:A:428:LEU:O	2.15	0.47
1:C:81:ASN:OD1	1:C:81:ASN:C	2.58	0.47
1:C:252:LEU:HD21	1:C:256:LEU:HG	1.96	0.47
1:C:257:LYS:HE3	1:C:263:VAL:N	2.30	0.47
1:D:353:ARG:N	1:D:393:TYR:HD1	2.12	0.47
1:E:178:ILE:O	1:E:178:ILE:HG12	2.15	0.47
1:F:400:ASP:OD1	1:F:401:ARG:N	2.47	0.47
1:H:190:GLY:HA3	1:H:195:THR:HG23	1.97	0.47
1:H:218:ASN:OD1	1:H:219:PHE:HD2	1.98	0.47
1:H:431:MET:HE2	1:H:431:MET:HA	1.96	0.47
1:J:390:LEU:HB3	1:J:432:ARG:HH22	1.78	0.47
1:C:261:ILE:HD11	1:C:345:LEU:O	2.15	0.47
1:C:302:ILE:HA	1:C:305:ILE:HD12	1.96	0.47
1:C:394:CYS:SG	1:C:421:ARG:NH2	2.87	0.47
1:D:254:ILE:C	1:D:267:ASN:HD22	2.22	0.47
1:D:359:LEU:CD2	1:D:395:VAL:HG11	2.44	0.47
1:D:425:ASP:OD1	1:D:425:ASP:O	2.32	0.47
1:E:138:VAL:HG12	1:E:316:ILE:HD13	1.97	0.47
1:E:206:GLN:CD	1:E:206:GLN:H	2.22	0.47
1:F:408:SER:O	1:F:412:ARG:HG3	2.14	0.47
1:F:438:ASP:O	1:F:442:ILE:HG13	2.14	0.47
1:G:138:VAL:HG12	1:G:316:ILE:CG2	2.43	0.47
1:G:339:ILE:HG13	1:G:342:ILE:HG12	1.97	0.47
1:H:284:ASP:HA	1:H:289:GLY:O	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:122:HIS:ND1	1:J:68:ASN:HB2	2.30	0.47
1:J:78:VAL:HA	1:J:380:PRO:O	2.14	0.47
1:B:66:LYS:NZ	1:B:415:GLU:HG2	2.29	0.47
1:B:212:MET:HE2	1:B:214:VAL:CG2	2.45	0.47
1:D:170:GLY:HA3	3:D:502:THJ:S1	2.55	0.47
1:D:234:VAL:HG23	1:D:276:ILE:HD13	1.97	0.47
1:E:234:VAL:HG22	1:E:276:ILE:HD13	1.97	0.47
1:I:179:MET:SD	1:I:186:LEU:HB2	2.55	0.47
1:A:77:GLY:CA	1:A:430:ASP:HB3	2.45	0.47
1:A:127:LEU:O	1:A:131:THR:HG23	2.15	0.47
1:A:212:MET:CE	1:A:245:TYR:CE1	2.97	0.47
1:A:287:LEU:HD23	1:A:287:LEU:C	2.40	0.47
1:F:431:MET:CE	1:F:434:VAL:HG21	2.44	0.47
1:H:191:THR:HB	1:I:166:LEU:O	2.15	0.47
1:I:149:VAL:HG22	1:I:305:ILE:HD11	1.96	0.47
1:J:268:PHE:O	1:J:269:ARG:C	2.58	0.47
1:A:363:LEU:HD21	1:A:446:LEU:HD12	1.97	0.47
1:B:86:ARG:NH2	1:B:285:LLP:CE	2.73	0.47
1:C:251:GLY:O	1:C:287:LEU:HB2	2.14	0.47
1:D:283:GLY:O	1:D:287:LEU:HB3	2.15	0.47
1:E:67:PRO:HD3	1:F:329:LYS:HE3	1.97	0.47
1:E:149:VAL:HG22	1:E:305:ILE:HD11	1.96	0.47
1:E:201:GLU:HG3	1:E:240:TYR:CE2	2.50	0.47
1:G:257:LYS:HD3	1:G:262:SER:HA	1.97	0.47
1:G:421:ARG:NH2	1:G:430:ASP:OD2	2.48	0.47
1:H:139:VAL:HB	1:H:314:LEU:HB3	1.97	0.47
1:A:242:ILE:HG23	1:A:243:PRO:HD2	1.96	0.46
1:A:363:LEU:HB3	1:A:371:ILE:HD11	1.96	0.46
1:A:368:GLY:O	1:A:399:HIS:CD2	2.67	0.46
1:B:245:TYR:CD2	1:B:245:TYR:C	2.93	0.46
1:H:150:LEU:HB3	1:H:182:SER:OG	2.14	0.46
1:I:250:SER:HB2	1:I:286:LEU:HD12	1.97	0.46
1:J:288:GLY:HA2	1:J:341:VAL:HG21	1.98	0.46
1:C:366:ILE:HG23	1:C:367:PRO:HD2	1.96	0.46
1:F:123:ILE:O	1:F:126:TYR:HB2	2.15	0.46
1:G:86:ARG:NH1	1:G:285:LLP:OP3	2.30	0.46
1:H:126:TYR:HD2	1:H:328:LEU:HD12	1.80	0.46
1:I:409:ARG:O	1:I:413:LEU:HG	2.15	0.46
1:A:75:ALA:CB	1:A:420:CYS:HB3	2.44	0.46
1:C:93:VAL:HA	1:C:326:MET:HG2	1.97	0.46
1:C:144:GLY:HA2	1:D:313:ALA:HB1	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:378:ALA:CB	1:E:421:ARG:HH12	2.27	0.46
1:F:193:ASN:O	1:F:225:VAL:HG13	2.16	0.46
1:F:404:SER:OG	1:F:405:GLN:NE2	2.48	0.46
1:A:308:ASN:OD1	1:A:309:PRO:CD	2.64	0.46
1:C:225:VAL:HG12	1:C:226:GLU:N	2.31	0.46
1:D:336:TYR:N	1:D:336:TYR:CD1	2.82	0.46
1:E:165:GLU:OE1	1:E:213:LYS:HG3	2.15	0.46
1:F:284:ASP:HA	1:F:289:GLY:O	2.16	0.46
1:G:97:ILE:HD11	1:G:323:GLY:CA	2.44	0.46
1:J:236:LEU:HD12	1:J:240:TYR:HE2	1.80	0.46
1:A:169:ILE:HA	1:A:218:ASN:ND2	2.31	0.46
1:B:404:SER:HG	1:B:425:ASP:CG	2.23	0.46
1:C:379:LYS:HA	1:C:380:PRO:HD3	1.73	0.46
1:E:392:THR:HG21	1:E:430:ASP:OD2	2.16	0.46
1:E:402:LEU:HD11	1:E:410:ARG:NH1	2.30	0.46
1:H:137:PHE:CE1	1:H:306:LYS:HG2	2.50	0.46
1:H:353:ARG:HE	1:H:357:LYS:CE	2.24	0.46
1:C:106:ASN:HD21	1:D:69:ILE:HA	1.81	0.46
1:C:147:PHE:HB2	1:C:178:ILE:CD1	2.46	0.46
1:F:230:LEU:O	1:F:231:GLU:C	2.58	0.46
1:F:378:ALA:O	1:F:380:PRO:HD3	2.15	0.46
1:H:120:ILE:HG21	1:H:137:PHE:CD1	2.51	0.46
1:I:79:VAL:HG12	1:I:341:VAL:HG13	1.98	0.46
1:I:254:ILE:HD11	1:I:259:PHE:CZ	2.50	0.46
1:J:169:ILE:CD1	1:J:285:LLP:C5	2.93	0.46
1:A:173:PHE:CE2	1:A:285:LLP:H6	2.51	0.46
1:B:140:ASN:N	1:B:314:LEU:O	2.48	0.46
1:B:277:ASP:OD2	1:B:298:LYS:HE2	2.16	0.46
1:C:245:TYR:CD2	1:C:246:TYR:N	2.83	0.46
1:C:312:ARG:CZ	1:C:315:ARG:NH2	2.78	0.46
1:E:325:GLU:OE2	1:F:69:ILE:HG13	2.16	0.46
1:E:404:SER:HB3	1:E:425:ASP:OD1	2.16	0.46
1:E:420:CYS:HB2	1:E:428:LEU:O	2.15	0.46
1:E:429:PHE:O	1:E:431:MET:HE2	2.16	0.46
1:F:165:GLU:O	1:F:167:VAL:HG13	2.16	0.46
1:G:83:ASN:HB3	1:H:109:TYR:CD2	2.48	0.46
1:G:334:LYS:HD3	1:G:336:TYR:HE2	1.81	0.46
1:H:336:TYR:O	1:H:339:ILE:HG12	2.15	0.46
1:H:368:GLY:O	1:H:399:HIS:HD2	1.99	0.46
1:A:353:ARG:O	1:A:356:ALA:N	2.48	0.46
1:A:379:LYS:HA	1:A:380:PRO:HD3	1.67	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:213:LYS:HG2	1:B:246:TYR:CD2	2.51	0.46
1:B:213:LYS:HG2	1:B:246:TYR:CE2	2.51	0.46
1:C:390:LEU:HB2	1:C:432:ARG:HH22	1.81	0.46
1:E:252:LEU:HD13	1:E:286:LEU:HB3	1.98	0.46
1:F:255:ASN:HD21	1:F:257:LYS:HB2	1.79	0.46
1:C:80:ILE:HD11	1:C:286:LEU:HD23	1.98	0.46
1:E:253:LEU:HD23	1:E:331:TYR:CD1	2.51	0.46
1:F:107:LEU:HD21	1:F:119:ARG:CZ	2.46	0.46
1:G:316:ILE:HD12	1:G:321:LEU:HB2	1.97	0.46
1:J:251:GLY:HA2	1:J:268:PHE:CE2	2.51	0.46
1:B:448:GLU:O	1:B:452:ILE:HB	2.16	0.46
1:C:402:LEU:CD1	1:C:406:GLU:HB3	2.41	0.46
1:G:229:LYS:HB3	1:G:231:GLU:OE1	2.15	0.46
1:H:356:ALA:O	1:H:359:LEU:HB3	2.16	0.46
1:B:267:ASN:OD1	1:B:270:ASP:HB2	2.16	0.45
1:B:282:SER:HB2	1:B:285:LLP:HD3	1.98	0.45
1:C:181:LYS:HG3	1:D:309:PRO:CG	2.43	0.45
1:D:179:MET:O	1:D:182:SER:HB3	2.16	0.45
1:D:363:LEU:HB2	1:D:371:ILE:CD1	2.45	0.45
1:E:379:LYS:HA	1:E:380:PRO:HD3	1.67	0.45
1:F:334:LYS:O	1:F:336:TYR:CD2	2.69	0.45
1:F:375:LYS:HB2	1:F:393:TYR:CE2	2.48	0.45
1:I:105:SER:O	1:J:84:LEU:HA	2.17	0.45
1:J:120:ILE:CD1	1:J:316:ILE:HD11	2.46	0.45
1:J:359:LEU:HB2	1:J:439:LEU:HD22	1.98	0.45
1:J:408:SER:O	1:J:412:ARG:HG3	2.16	0.45
1:D:390:LEU:CB	1:D:432:ARG:NH2	2.79	0.45
1:E:256:LEU:HG	1:E:261:ILE:HB	1.97	0.45
1:E:376:ASP:OD1	1:E:377:LYS:N	2.49	0.45
1:H:343:ARG:O	1:H:347:GLN:HG3	2.16	0.45
1:I:317:ASP:OD1	1:I:319:LEU:N	2.50	0.45
1:E:229:LYS:HB2	1:E:232:ASP:OD2	2.16	0.45
1:E:333:GLU:OE1	1:E:335:ARG:CD	2.64	0.45
1:G:216:LYS:H	1:G:216:LYS:HG2	1.58	0.45
1:G:254:ILE:HD11	1:G:336:TYR:CE1	2.51	0.45
1:G:366:ILE:HG23	1:G:367:PRO:HD2	1.98	0.45
1:I:430:ASP:OD1	1:I:432:ARG:HB3	2.15	0.45
1:C:78:VAL:HA	1:C:380:PRO:O	2.16	0.45
1:D:254:ILE:C	1:D:267:ASN:ND2	2.74	0.45
1:E:91:LYS:O	1:E:95:ASN:ND2	2.50	0.45
1:E:175:ILE:HB	1:E:176:PRO:HD3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:312:ARG:HG2	1:F:173:PHE:HB2	1.98	0.45
1:F:394:CYS:HA	1:F:429:PHE:O	2.16	0.45
1:I:268:PHE:CD1	1:I:279:VAL:HG11	2.50	0.45
1:B:97:ILE:HG23	1:B:319:LEU:HD22	1.98	0.45
1:C:213:LYS:HG2	1:C:246:TYR:CE2	2.51	0.45
1:E:106:ASN:HD21	1:F:69:ILE:HA	1.80	0.45
1:J:359:LEU:HB2	1:J:439:LEU:CD2	2.46	0.45
1:A:166:LEU:HD13	1:A:176:PRO:CG	2.41	0.45
1:A:211:LEU:CD1	1:A:236:LEU:HD23	2.46	0.45
1:B:200:TYR:HE2	1:B:228:VAL:HG21	1.81	0.45
1:C:73:ILE:HD13	1:C:438:ASP:HB3	1.98	0.45
1:C:85:GLY:HA2	1:D:107:LEU:CD2	2.47	0.45
1:C:123:ILE:HG23	1:C:328:LEU:CD1	2.47	0.45
1:C:157:LYS:O	1:C:185:ILE:HB	2.17	0.45
1:C:233:LEU:HD23	1:C:233:LEU:HA	1.68	0.45
1:D:77:GLY:HA3	1:D:430:ASP:HB3	1.98	0.45
1:D:217:SER:O	1:D:386:PRO:HD3	2.17	0.45
1:D:267:ASN:OD1	1:D:270:ASP:CB	2.62	0.45
1:E:278:LEU:HG	1:E:301:LEU:HD12	1.98	0.45
1:G:268:PHE:O	1:G:269:ARG:C	2.60	0.45
1:H:79:VAL:HG21	1:H:345:LEU:CD2	2.46	0.45
1:A:75:ALA:HB3	1:A:419:VAL:O	2.17	0.45
1:A:313:ALA:HB1	1:B:144:GLY:HA2	1.97	0.45
1:A:375:LYS:CB	1:A:393:TYR:CE1	2.97	0.45
1:B:130:LEU:HD13	1:B:253:LEU:HD21	1.97	0.45
1:B:168:GLU:OE1	1:B:174:ARG:NH2	2.50	0.45
1:B:242:ILE:HG23	1:B:243:PRO:HD2	1.99	0.45
1:C:277:ASP:OD1	1:C:298:LYS:HE3	2.17	0.45
1:E:77:GLY:HA3	1:E:430:ASP:HB3	1.99	0.45
1:F:224:PHE:CD1	1:G:218:ASN:HB2	2.52	0.45
1:G:186:LEU:HD12	1:G:186:LEU:C	2.41	0.45
1:G:339:ILE:HA	1:G:340:PRO:HD3	1.82	0.45
1:H:173:PHE:HE1	1:H:178:ILE:HD13	1.80	0.45
1:I:137:PHE:CE1	1:I:306:LYS:HG2	2.52	0.45
1:A:178:ILE:HG23	1:A:179:MET:N	2.31	0.45
1:A:178:ILE:CG2	1:A:179:MET:N	2.79	0.45
1:D:435:PHE:O	1:D:438:ASP:HB2	2.17	0.45
1:G:172:SER:OG	1:H:312:ARG:HD3	2.17	0.45
1:H:339:ILE:HD11	1:H:342:ILE:HG13	1.98	0.45
1:A:230:LEU:HD23	1:A:230:LEU:HA	1.83	0.45
1:C:359:LEU:HD13	1:C:439:LEU:CD2	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:142:ASN:HD22	1:D:285:LLP:C6	2.30	0.45
1:E:87:ALA:CB	1:E:341:VAL:HG21	2.46	0.45
1:G:326:MET:O	1:G:330:LEU:HG	2.17	0.45
1:I:375:LYS:HB2	1:I:393:TYR:CE2	2.52	0.45
1:A:68:ASN:HB2	1:B:122:HIS:CG	2.52	0.45
1:B:73:ILE:HD12	1:B:418:ILE:HG12	1.99	0.45
1:B:438:ASP:O	1:B:442:ILE:HG13	2.17	0.45
1:C:385:LEU:HD13	1:C:388:LEU:HD22	1.99	0.45
1:D:317:ASP:OD1	1:D:320:THR:OG1	2.27	0.45
1:E:86:ARG:HD3	1:E:284:ASP:CG	2.42	0.45
1:E:302:ILE:CG2	1:E:306:LYS:HE2	2.42	0.45
1:E:385:LEU:HD13	1:E:388:LEU:HD22	1.99	0.45
1:F:339:ILE:HA	1:F:340:PRO:HD3	1.76	0.45
1:G:261:ILE:HG22	1:G:263:VAL:HG23	1.97	0.45
1:G:355:LYS:HE3	1:G:436:HIS:ND1	2.32	0.45
1:G:435:PHE:O	1:G:438:ASP:HB2	2.16	0.45
1:H:427:LEU:HD12	1:H:428:LEU:H	1.82	0.45
1:A:123:ILE:CG1	1:A:321:LEU:HD11	2.46	0.44
1:C:74:ASN:O	1:C:433:THR:OG1	2.35	0.44
1:D:287:LEU:O	1:D:331:TYR:OH	2.27	0.44
1:D:446:LEU:HD23	1:D:446:LEU:HA	1.77	0.44
1:F:411:LEU:HD11	1:F:427:LEU:HD21	1.99	0.44
1:I:80:ILE:O	1:I:382:GLY:HA3	2.17	0.44
1:J:147:PHE:CD1	1:J:178:ILE:HD11	2.52	0.44
1:E:147:PHE:HB2	1:E:178:ILE:CD1	2.44	0.44
1:I:119:ARG:NH1	1:I:316:ILE:O	2.50	0.44
1:I:319:LEU:O	1:I:320:THR:C	2.59	0.44
1:J:145:ALA:CB	1:J:295:ILE:HD11	2.47	0.44
1:A:77:GLY:HA3	1:A:430:ASP:HB3	2.00	0.44
1:A:87:ALA:HA	1:A:88:PRO:HD2	1.79	0.44
1:A:249:GLY:HA3	1:A:285:LLP:C3	2.47	0.44
1:C:123:ILE:CD1	1:C:325:GLU:HB2	2.47	0.44
1:C:231:GLU:H	1:C:231:GLU:CD	2.24	0.44
1:D:153:LEU:HA	1:D:153:LEU:HD23	1.55	0.44
1:F:376:ASP:CG	1:F:377:LYS:N	2.75	0.44
1:G:122:HIS:HD2	1:H:68:ASN:CB	2.30	0.44
1:H:159:VAL:HG22	1:H:210:LEU:HB3	1.98	0.44
1:H:169:ILE:HG13	1:H:173:PHE:CD2	2.50	0.44
1:H:173:PHE:HE1	1:H:178:ILE:CD1	2.30	0.44
1:I:254:ILE:HD11	1:I:259:PHE:HZ	1.81	0.44
1:J:352:LEU:HD13	1:J:392:THR:OG1	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:81:ASN:HA	3:A:2004:THJ:O3	2.18	0.44
1:A:194:LYS:HD2	1:J:168:GLU:HG2	2.00	0.44
1:A:211:LEU:HD13	1:A:236:LEU:HD23	1.98	0.44
1:A:363:LEU:CD2	1:A:446:LEU:HD12	2.47	0.44
1:B:188:GLU:H	1:B:188:GLU:HG2	1.17	0.44
1:B:249:GLY:O	1:B:285:LLP:HD3	2.17	0.44
1:C:75:ALA:HB3	1:C:420:CYS:HA	1.98	0.44
1:C:188:GLU:H	1:C:188:GLU:HG2	1.59	0.44
1:C:272:ILE:C	1:C:274:LEU:H	2.25	0.44
1:D:191:THR:OG1	1:D:194:LYS:O	2.28	0.44
1:D:256:LEU:CD1	1:D:263:VAL:HG21	2.48	0.44
1:G:252:LEU:HD21	1:G:256:LEU:HG	2.00	0.44
1:H:77:GLY:HA3	1:H:430:ASP:HB3	2.00	0.44
1:I:379:LYS:HA	1:I:380:PRO:HD3	1.44	0.44
1:J:213:LYS:HB3	1:J:246:TYR:CD1	2.53	0.44
1:A:86:ARG:NH2	3:A:2002:THJ:S2	2.90	0.44
1:B:278:LEU:HD23	1:B:278:LEU:HA	1.78	0.44
1:C:79:VAL:HG21	1:C:345:LEU:CD2	2.47	0.44
1:C:140:ASN:N	1:C:314:LEU:O	2.51	0.44
1:C:160:ILE:HG21	1:C:200:TYR:HD1	1.83	0.44
1:D:196:LYS:NZ	1:E:174:ARG:HH21	2.16	0.44
1:F:167:VAL:H	1:F:175:ILE:HG13	1.82	0.44
1:H:399:HIS:CE1	1:H:401:ARG:HD3	2.52	0.44
1:I:310:ILE:HG22	1:I:310:ILE:O	2.16	0.44
1:J:77:GLY:HA3	1:J:430:ASP:CG	2.43	0.44
1:A:119:ARG:O	1:A:121:ALA:N	2.51	0.44
1:A:329:LYS:NZ	1:A:333:GLU:OE2	2.51	0.44
1:B:93:VAL:HA	1:B:326:MET:HG2	1.99	0.44
1:B:135:SER:O	1:B:136:SER:HB3	2.17	0.44
1:B:178:ILE:CG2	1:B:179:MET:N	2.80	0.44
1:B:339:ILE:HD11	1:B:342:ILE:CG1	2.48	0.44
1:B:443:LYS:O	1:B:444:LYS:C	2.60	0.44
1:D:66:LYS:HG2	1:D:67:PRO:HD2	1.98	0.44
1:D:252:LEU:HG	1:D:267:ASN:HB3	1.98	0.44
1:D:328:LEU:O	1:D:329:LYS:C	2.60	0.44
1:E:102:ASN:HD21	1:F:91:LYS:CG	2.31	0.44
1:F:201:GLU:OE2	1:F:240:TYR:HE2	2.01	0.44
1:G:77:GLY:HA3	1:G:430:ASP:CG	2.43	0.44
1:G:352:LEU:HD13	1:G:392:THR:HA	2.00	0.44
1:H:188:GLU:H	1:H:188:GLU:HG2	1.39	0.44
1:H:379:LYS:HG2	1:H:389:GLU:HG3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:331:TYR:CZ	1:J:339:ILE:CD1	3.00	0.44
1:B:86:ARG:HB3	1:B:87:ALA:H	1.66	0.44
1:B:302:ILE:H	1:B:302:ILE:HG12	1.59	0.44
1:E:175:ILE:HB	1:E:176:PRO:CD	2.47	0.44
1:E:287:LEU:O	1:E:287:LEU:HD23	2.18	0.44
1:F:153:LEU:HD23	1:F:153:LEU:HA	1.71	0.44
1:I:188:GLU:H	1:I:188:GLU:HG2	1.57	0.44
1:I:423:ARG:HG2	1:I:424:GLU:HG3	2.00	0.44
1:B:363:LEU:HD21	1:B:446:LEU:HD12	1.99	0.44
1:C:267:ASN:OD1	1:C:267:ASN:O	2.35	0.44
1:C:376:ASP:CG	1:C:377:LYS:N	2.76	0.44
1:D:131:THR:CG2	1:D:268:PHE:HB3	2.44	0.44
1:I:404:SER:O	1:I:407:LEU:HB3	2.17	0.44
1:A:111:LEU:HD23	1:A:111:LEU:N	2.31	0.44
1:A:120:ILE:HG21	1:A:137:PHE:CD1	2.52	0.44
1:A:242:ILE:HG22	1:A:243:PRO:HD2	1.99	0.44
1:E:249:GLY:HA2	1:E:281:GLY:HA2	2.00	0.44
1:F:188:GLU:H	1:F:188:GLU:HG2	1.51	0.44
1:G:231:GLU:CD	1:G:231:GLU:H	2.26	0.44
1:G:234:VAL:CG2	1:G:276:ILE:HD13	2.48	0.44
1:H:384:SER:O	1:H:385:LEU:HD23	2.18	0.44
1:I:136:SER:HB3	1:I:296:VAL:HG12	1.99	0.44
1:J:71:ARG:HG2	1:J:72:VAL:N	2.32	0.44
1:A:86:ARG:HB3	1:A:87:ALA:H	1.71	0.43
1:D:344:MET:CE	1:D:435:PHE:CE1	3.01	0.43
1:E:290:PRO:HB2	1:E:320:THR:HG22	2.00	0.43
1:F:74:ASN:ND2	1:F:84:LEU:HD12	2.33	0.43
1:F:109:TYR:HD1	1:F:111:LEU:HD23	1.83	0.43
1:F:169:ILE:HD11	1:F:285:LLP:C5	2.48	0.43
1:F:390:LEU:CB	1:F:432:ARG:NH2	2.81	0.43
1:I:423:ARG:NH1	1:I:428:LEU:HD11	2.33	0.43
1:C:69:ILE:HG22	1:D:100:ILE:HD12	2.00	0.43
1:D:230:LEU:HD21	1:D:246:TYR:HD1	1.82	0.43
1:D:230:LEU:O	1:D:231:GLU:C	2.61	0.43
1:D:344:MET:O	1:D:432:ARG:HD2	2.18	0.43
1:E:146:VAL:HG12	1:E:150:LEU:HD12	2.00	0.43
1:E:259:PHE:CE2	1:E:336:TYR:CE2	3.03	0.43
1:F:390:LEU:CB	1:F:432:ARG:HH22	2.31	0.43
1:G:66:LYS:CG	1:G:67:PRO:HD2	2.47	0.43
1:I:396:ALA:HB2	1:I:428:LEU:CD2	2.48	0.43
1:J:379:LYS:HA	1:J:380:PRO:HD3	1.69	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:73:ILE:HD12	1:A:438:ASP:CG	2.43	0.43
1:A:363:LEU:HD22	1:A:366:ILE:HD12	2.01	0.43
1:A:411:LEU:HD23	1:A:411:LEU:HA	1.89	0.43
1:D:265:GLU:HA	1:D:266:PRO:HD2	1.87	0.43
1:G:125:LYS:CB	1:H:64:LEU:HD21	2.34	0.43
1:J:366:ILE:HB	1:J:369:LEU:HD12	1.99	0.43
1:J:369:LEU:HD21	1:J:450:LEU:HD13	2.00	0.43
1:A:397:ILE:HG12	1:A:427:LEU:HD23	2.00	0.43
1:B:86:ARG:CZ	1:B:285:LLP:HE2	2.49	0.43
1:C:318:LYS:HG2	1:C:319:LEU:HD23	2.00	0.43
1:F:363:LEU:HD22	1:F:446:LEU:HD12	2.00	0.43
1:G:142:ASN:HB3	1:G:285:LLP:OP4	2.19	0.43
1:G:447:GLN:O	1:G:451:SER:HB2	2.17	0.43
1:H:272:ILE:C	1:H:274:LEU:H	2.27	0.43
1:I:348:ASP:OD2	1:I:350:LYS:HE3	2.19	0.43
1:I:400:ASP:OD1	1:I:400:ASP:N	2.43	0.43
1:J:122:HIS:ND1	1:J:126:TYR:CE2	2.84	0.43
1:A:390:LEU:CB	1:A:432:ARG:NH2	2.82	0.43
1:B:190:GLY:HA2	1:B:199:ASP:OD2	2.19	0.43
1:E:170:GLY:HA2	3:E:502:THJ:O1	2.19	0.43
1:E:319:LEU:HD23	1:E:319:LEU:N	2.32	0.43
1:F:230:LEU:HD23	1:F:230:LEU:HA	1.66	0.43
1:G:366:ILE:CD1	1:G:447:GLN:HB3	2.48	0.43
1:H:169:ILE:HA	1:H:218:ASN:HD21	1.83	0.43
1:H:193:ASN:HB3	1:I:219:PHE:CZ	2.53	0.43
1:H:399:HIS:HE1	1:H:401:ARG:HB2	1.83	0.43
1:I:390:LEU:HB3	1:I:432:ARG:HH22	1.84	0.43
1:J:70:LYS:HE2	1:J:70:LYS:HB3	1.88	0.43
1:D:193:ASN:HB3	1:E:219:PHE:CE2	2.53	0.43
1:D:200:TYR:CE2	1:D:228:VAL:HG21	2.54	0.43
1:E:327:THR:O	1:E:331:TYR:HD2	2.02	0.43
1:E:378:ALA:HB1	1:E:421:ARG:HH12	1.83	0.43
1:G:144:GLY:CA	1:H:313:ALA:HB1	2.49	0.43
1:G:423:ARG:CZ	1:G:423:ARG:HB3	2.47	0.43
1:H:142:ASN:ND2	1:H:249:GLY:HA2	2.33	0.43
1:I:90:SER:HB3	1:I:340:PRO:HD3	2.00	0.43
1:I:412:ARG:O	1:I:417:PRO:HB3	2.17	0.43
1:J:213:LYS:HE3	1:J:246:TYR:HE1	1.83	0.43
1:A:201:GLU:HB2	1:A:236:LEU:HD11	2.00	0.43
1:A:230:LEU:HD11	1:A:246:TYR:CE2	2.54	0.43
1:A:396:ALA:HA	1:A:427:LEU:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:420:CYS:SG	1:A:429:PHE:CE2	3.11	0.43
1:B:153:LEU:HA	1:B:153:LEU:HD23	1.73	0.43
1:B:160:ILE:HG22	1:B:200:TYR:CD1	2.53	0.43
1:C:287:LEU:C	1:C:287:LEU:HD23	2.44	0.43
1:D:256:LEU:HD12	1:D:263:VAL:HG21	1.99	0.43
1:D:308:ASN:OD1	1:D:310:ILE:HB	2.18	0.43
1:E:188:GLU:H	1:E:188:GLU:HG2	1.66	0.43
1:E:189:VAL:HB	1:E:199:ASP:HB3	1.99	0.43
1:F:93:VAL:HA	1:F:326:MET:HG2	2.00	0.43
1:F:194:LYS:HD2	1:G:168:GLU:OE2	2.18	0.43
1:G:105:SER:O	1:H:84:LEU:HA	2.18	0.43
1:B:245:TYR:HD2	1:B:246:TYR:N	2.15	0.43
1:E:142:ASN:HD22	1:E:285:LLP:C6	2.30	0.43
1:G:64:LEU:HD22	1:H:126:TYR:CE1	2.53	0.43
1:G:122:HIS:HB3	1:H:68:ASN:HB3	2.01	0.43
1:H:253:LEU:HD23	1:H:331:TYR:CD1	2.54	0.43
1:I:193:ASN:OD1	1:I:193:ASN:N	2.49	0.43
1:J:227:GLU:CG	1:J:228:VAL:N	2.81	0.43
1:A:80:ILE:HD11	1:A:341:VAL:HG11	2.01	0.43
1:B:366:ILE:HA	1:B:367:PRO:HD2	1.86	0.43
1:D:228:VAL:HG11	1:D:233:LEU:HG	2.00	0.43
1:D:421:ARG:NH2	1:D:430:ASP:OD2	2.52	0.43
1:F:104:TYR:CD1	1:F:104:TYR:N	2.87	0.43
1:H:77:GLY:CA	1:H:430:ASP:HB3	2.48	0.43
1:H:390:LEU:HB3	1:H:432:ARG:HH22	1.83	0.43
1:I:81:ASN:OD1	1:I:81:ASN:C	2.62	0.43
1:I:263:VAL:CG1	1:I:264:ASP:H	2.32	0.43
1:I:352:LEU:HD21	1:I:432:ARG:HA	2.00	0.43
1:J:201:GLU:HG3	1:J:236:LEU:CD1	2.44	0.43
1:B:96:PHE:CZ	1:B:100:ILE:HD11	2.54	0.43
1:C:439:LEU:O	1:C:442:ILE:HB	2.19	0.43
1:D:220:TYR:CD1	1:D:220:TYR:C	2.96	0.43
1:D:353:ARG:CA	1:D:393:TYR:HD1	2.31	0.43
1:F:208:THR:O	1:F:208:THR:HG22	2.19	0.43
1:G:125:LYS:O	1:G:129:GLU:HG2	2.19	0.43
1:G:429:PHE:O	1:G:431:MET:HE2	2.19	0.43
1:G:442:ILE:HG22	1:G:446:LEU:HD11	2.01	0.43
1:H:250:SER:HB2	1:H:286:LEU:HD12	2.00	0.43
1:I:80:ILE:CG2	1:I:383:GLY:H	2.32	0.43
1:J:89:LEU:HA	1:J:89:LEU:HD23	1.77	0.43
1:J:339:ILE:O	1:J:339:ILE:HG13	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:396:ALA:HB1	1:J:426:GLN:HG3	2.01	0.43
1:C:397:ILE:HD13	1:C:429:PHE:HE2	1.83	0.42
1:D:362:LEU:HB3	1:D:443:LYS:HD2	2.00	0.42
1:F:359:LEU:O	1:F:363:LEU:HG	2.19	0.42
1:G:252:LEU:HD12	1:G:253:LEU:N	2.34	0.42
1:H:193:ASN:HB3	1:I:219:PHE:CE2	2.54	0.42
1:I:102:ASN:HB2	1:J:71:ARG:HH22	1.81	0.42
1:I:354:GLN:HE21	1:I:358:ARG:HH21	1.67	0.42
1:B:178:ILE:HG23	1:B:179:MET:N	2.34	0.42
1:B:343:ARG:HG2	1:B:343:ARG:HH21	1.84	0.42
1:C:336:TYR:C	1:C:338:ASP:N	2.74	0.42
1:D:353:ARG:O	1:D:356:ALA:N	2.52	0.42
1:E:213:LYS:HG2	1:E:246:TYR:CE1	2.54	0.42
1:E:390:LEU:HB3	1:E:432:ARG:HH22	1.83	0.42
1:F:233:LEU:HD23	1:F:233:LEU:HA	1.74	0.42
1:F:302:ILE:HG22	1:F:306:LYS:HE3	2.01	0.42
1:G:131:THR:HG22	1:G:268:PHE:HB3	2.01	0.42
1:G:316:ILE:CD1	1:G:321:LEU:HB2	2.48	0.42
1:G:378:ALA:HB2	1:G:421:ARG:HH12	1.80	0.42
1:H:150:LEU:HD13	1:H:179:MET:HG3	2.01	0.42
1:J:73:ILE:HG12	1:J:417:PRO:O	2.19	0.42
1:J:193:ASN:OD1	1:J:193:ASN:N	2.49	0.42
1:B:336:TYR:O	1:B:339:ILE:HG12	2.18	0.42
1:C:105:SER:O	1:D:84:LEU:HA	2.19	0.42
1:C:248:ALA:C	1:C:250:SER:H	2.26	0.42
1:C:359:LEU:HB2	1:C:439:LEU:HD22	2.02	0.42
1:D:131:THR:HG22	1:D:268:PHE:CB	2.43	0.42
1:D:327:THR:O	1:D:331:TYR:HD2	2.02	0.42
1:F:81:ASN:OD1	1:F:83:ASN:N	2.52	0.42
1:F:431:MET:HE1	1:F:434:VAL:HG21	2.01	0.42
1:G:119:ARG:HG3	1:G:120:ILE:N	2.35	0.42
1:H:79:VAL:HG11	1:H:341:VAL:HG13	2.01	0.42
1:H:147:PHE:HB2	1:H:178:ILE:HD11	2.00	0.42
1:H:397:ILE:CD1	1:H:429:PHE:HE1	2.32	0.42
1:H:415:GLU:HA	1:H:416:PRO:HA	1.87	0.42
1:I:98:SER:OG	1:J:94:ILE:HG21	2.19	0.42
1:A:358:ARG:O	1:A:362:LEU:HG	2.19	0.42
1:B:245:TYR:OH	1:B:280:SER:OG	2.30	0.42
1:C:160:ILE:HD12	1:C:211:LEU:CD2	2.49	0.42
1:C:167:VAL:CG1	1:C:219:PHE:HE2	2.31	0.42
1:D:138:VAL:HG12	1:D:316:ILE:HG21	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:300:ASN:O	1:D:304:LYS:HG3	2.18	0.42
1:F:140:ASN:O	1:F:292:ALA:HA	2.19	0.42
1:F:215:HIS:HB3	1:F:248:ALA:O	2.19	0.42
1:G:90:SER:O	1:G:94:ILE:HG13	2.19	0.42
1:G:411:LEU:HD11	1:G:427:LEU:HD21	2.01	0.42
1:H:320:THR:O	1:H:321:LEU:C	2.62	0.42
1:H:342:ILE:HD12	1:H:342:ILE:HG23	1.79	0.42
1:I:169:ILE:HD11	1:I:285:LLP:C5	2.50	0.42
1:I:196:LYS:N	1:I:199:ASP:OD2	2.42	0.42
1:I:302:ILE:CG2	1:I:306:LYS:HE3	2.49	0.42
1:J:230:LEU:HD21	1:J:246:TYR:CD1	2.54	0.42
1:A:62:LYS:O	1:A:65:MET:HG3	2.18	0.42
1:B:339:ILE:HD11	1:B:342:ILE:HG12	2.01	0.42
1:C:256:LEU:CD1	1:C:265:GLU:HB3	2.47	0.42
1:C:272:ILE:HD11	1:C:296:VAL:HG23	2.01	0.42
1:C:377:LYS:HB3	1:C:377:LYS:HE2	1.89	0.42
1:I:158:GLU:OE2	1:I:187:ARG:HD3	2.19	0.42
1:I:339:ILE:HA	1:I:340:PRO:HD3	1.79	0.42
1:I:366:ILE:HG23	1:I:367:PRO:HD2	2.02	0.42
1:C:81:ASN:ND2	1:C:84:LEU:HG	2.34	0.42
1:C:369:LEU:HD23	1:C:369:LEU:HA	1.89	0.42
1:D:81:ASN:OD1	1:D:81:ASN:C	2.63	0.42
1:D:390:LEU:CB	1:D:432:ARG:HH22	2.26	0.42
1:G:268:PHE:O	1:G:272:ILE:HG12	2.18	0.42
1:G:379:LYS:HA	1:G:380:PRO:HD3	1.78	0.42
1:H:358:ARG:NH2	1:H:436:HIS:ND1	2.68	0.42
1:H:366:ILE:HG23	1:H:367:PRO:HD2	2.01	0.42
1:J:118:SER:HB3	1:J:121:ALA:HB2	2.01	0.42
1:A:67:PRO:HD3	1:B:329:LYS:HD2	2.01	0.42
1:B:179:MET:HB2	1:B:179:MET:HE2	1.46	0.42
1:C:234:VAL:CG2	1:C:276:ILE:HD13	2.49	0.42
1:C:407:LEU:CD2	1:C:427:LEU:HD22	2.50	0.42
1:E:86:ARG:HD3	1:E:284:ASP:OD2	2.20	0.42
1:G:396:ALA:HA	1:G:427:LEU:O	2.20	0.42
1:J:148:LEU:HD22	1:J:314:LEU:CD1	2.50	0.42
1:A:77:GLY:HA3	1:A:430:ASP:CB	2.49	0.42
1:A:353:ARG:HB2	1:A:393:TYR:CD2	2.55	0.42
1:A:408:SER:OG	1:A:409:ARG:N	2.51	0.42
1:B:212:MET:HE2	1:B:214:VAL:HG22	2.02	0.42
1:C:148:LEU:HD13	1:C:310:ILE:HG22	2.01	0.42
1:D:201:GLU:HA	1:D:204:ILE:HD12	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:68:ASN:O	1:F:106:ASN:ND2	2.43	0.42
1:F:211:LEU:HD23	1:F:211:LEU:HA	1.89	0.42
1:G:399:HIS:CE1	1:G:401:ARG:HD3	2.53	0.42
1:H:128:ASN:O	1:H:132:GLY:N	2.45	0.42
1:H:161:ILE:HD13	1:H:166:LEU:HD23	2.01	0.42
1:J:397:ILE:HD11	1:J:427:LEU:HD23	2.02	0.42
1:A:66:LYS:HG2	1:A:67:PRO:HD2	2.01	0.42
1:B:319:LEU:HA	1:B:319:LEU:HD23	1.50	0.42
1:B:406:GLU:CD	1:B:409:ARG:HH21	2.28	0.42
1:C:141:ASN:OD1	1:C:143:ALA:HB3	2.19	0.42
1:D:421:ARG:C	1:D:422:ILE:HG13	2.44	0.42
1:F:385:LEU:HD23	1:F:385:LEU:HA	1.85	0.42
1:F:394:CYS:SG	1:F:421:ARG:NH2	2.90	0.42
1:H:366:ILE:HB	1:H:369:LEU:HD12	2.02	0.42
1:I:83:ASN:HB3	1:J:109:TYR:HD2	1.84	0.42
1:I:443:LYS:HE2	1:I:447:GLN:OE1	2.19	0.42
1:J:94:ILE:HA	1:J:97:ILE:HD12	2.02	0.42
1:J:141:ASN:HB2	1:J:285:LLP:OP2	2.19	0.42
1:C:230:LEU:HD23	1:C:230:LEU:HA	1.90	0.42
1:D:406:GLU:O	1:D:406:GLU:HG3	2.20	0.42
1:E:81:ASN:CG	3:E:504:THJ:O2	2.63	0.42
1:E:193:ASN:O	1:E:225:VAL:HG13	2.20	0.42
1:E:437:GLU:H	1:E:437:GLU:CD	2.28	0.42
1:F:178:ILE:O	1:F:182:SER:N	2.51	0.42
1:G:235:LYS:O	1:G:236:LEU:C	2.62	0.42
1:H:72:VAL:HG22	1:H:417:PRO:HG2	2.01	0.42
1:I:278:LEU:HD23	1:I:278:LEU:HA	1.87	0.42
1:J:268:PHE:HD1	1:J:296:VAL:CG2	2.32	0.42
1:J:285:LLP:NZ	1:J:285:LLP:O3	2.51	0.42
1:J:363:LEU:HD21	1:J:446:LEU:HD12	2.01	0.42
1:A:212:MET:CE	1:A:245:TYR:HE1	2.33	0.41
1:E:163:ARG:HH11	1:E:188:GLU:HG3	1.85	0.41
1:E:366:ILE:HA	1:E:367:PRO:HD2	1.83	0.41
1:F:221:MET:HB3	1:F:225:VAL:HG21	2.01	0.41
1:G:147:PHE:C	1:G:147:PHE:CD2	2.98	0.41
1:J:192:THR:HG22	1:J:193:ASN:N	2.35	0.41
1:B:339:ILE:HA	1:B:340:PRO:HD3	1.82	0.41
1:C:187:ARG:HE	1:C:203:ALA:HB1	1.84	0.41
1:C:320:THR:HG23	1:D:317:ASP:OD2	2.19	0.41
1:D:285:LLP:C	1:D:287:LEU:H	2.32	0.41
1:D:396:ALA:C	1:D:397:ILE:CG2	2.93	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:302:ILE:O	1:E:306:LYS:HG3	2.20	0.41
1:F:136:SER:HB3	1:F:296:VAL:HG12	2.02	0.41
1:F:224:PHE:HD1	1:G:218:ASN:O	2.03	0.41
1:H:73:ILE:HG12	1:H:438:ASP:OD1	2.19	0.41
1:C:205:ASN:OD1	1:C:207:ASN:N	2.49	0.41
1:C:302:ILE:H	1:C:302:ILE:HG12	1.67	0.41
1:E:363:LEU:CB	1:E:371:ILE:CD1	2.97	0.41
1:F:66:LYS:CD	1:F:67:PRO:HD2	2.49	0.41
1:F:76:THR:HA	1:F:421:ARG:HG3	2.03	0.41
1:F:268:PHE:O	1:F:269:ARG:C	2.63	0.41
1:F:388:LEU:HD12	1:F:389:GLU:N	2.35	0.41
1:G:70:LYS:HB3	1:G:70:LYS:HE2	1.82	0.41
1:G:169:ILE:HD11	1:G:285:LLP:H5'1	2.01	0.41
1:I:81:ASN:OD1	1:I:84:LEU:N	2.53	0.41
1:J:188:GLU:H	1:J:188:GLU:HG2	1.50	0.41
1:B:169:ILE:HG12	1:B:173:PHE:CD2	2.54	0.41
1:C:313:ALA:HB1	1:D:144:GLY:CA	2.51	0.41
1:D:191:THR:HG21	1:E:168:GLU:N	2.35	0.41
1:E:157:LYS:HE2	1:E:209:ALA:HB2	2.03	0.41
1:I:75:ALA:HB3	1:I:420:CYS:HB3	2.03	0.41
1:A:119:ARG:C	1:A:121:ALA:N	2.75	0.41
1:A:157:LYS:HB2	1:A:209:ALA:HB2	2.01	0.41
1:B:276:ILE:HD13	1:B:276:ILE:HA	1.86	0.41
1:C:220:TYR:CE1	1:C:387:GLU:HG3	2.55	0.41
1:C:282:SER:HB2	1:C:285:LLP:HD3	2.01	0.41
1:E:109:TYR:HD2	1:F:83:ASN:HB3	1.85	0.41
1:E:340:PRO:O	1:E:344:MET:HG3	2.20	0.41
1:F:74:ASN:OD1	1:F:74:ASN:C	2.63	0.41
1:G:166:LEU:HD23	1:G:175:ILE:HG21	2.01	0.41
1:G:263:VAL:HG12	1:G:264:ASP:N	2.35	0.41
1:G:353:ARG:HB2	1:G:393:TYR:CE1	2.55	0.41
1:J:123:ILE:HG22	1:J:127:LEU:CD1	2.50	0.41
1:A:138:VAL:HA	1:A:293:GLY:O	2.19	0.41
1:A:355:LYS:HD2	1:A:436:HIS:HD2	1.86	0.41
1:E:136:SER:HB2	1:E:296:VAL:HG12	2.01	0.41
1:F:208:THR:CG2	1:F:242:ILE:HD13	2.49	0.41
1:H:74:ASN:OD1	1:H:76:THR:HG23	2.20	0.41
1:I:90:SER:O	1:I:94:ILE:HG13	2.19	0.41
1:I:193:ASN:HA	1:I:221:MET:HE1	2.02	0.41
1:I:242:ILE:HG23	1:I:243:PRO:HD2	2.03	0.41
1:I:439:LEU:O	1:I:442:ILE:HB	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:312:ARG:NH1	1:B:141:ASN:ND2	2.68	0.41
1:B:142:ASN:ND2	1:B:249:GLY:HA2	2.35	0.41
1:B:344:MET:HE1	1:B:435:PHE:CZ	2.55	0.41
1:C:160:ILE:HG22	1:C:200:TYR:CD1	2.56	0.41
1:E:77:GLY:CA	1:E:430:ASP:HB3	2.50	0.41
1:E:94:ILE:HA	1:E:97:ILE:HD12	2.03	0.41
1:H:179:MET:HE3	1:H:179:MET:HB2	1.81	0.41
1:H:213:LYS:HE3	1:H:230:LEU:HD21	2.02	0.41
1:I:272:ILE:HD13	1:I:272:ILE:HA	1.94	0.41
1:J:79:VAL:N	1:J:380:PRO:O	2.51	0.41
1:A:76:THR:HG21	3:A:2003:THJ:S2	2.60	0.41
1:A:145:ALA:HB1	1:A:295:ILE:HD11	2.02	0.41
1:A:359:LEU:HD23	1:A:395:VAL:CG1	2.43	0.41
1:C:80:ILE:CD1	1:C:286:LEU:HD23	2.51	0.41
1:C:236:LEU:HD12	1:C:236:LEU:HA	1.68	0.41
1:D:285:LLP:C	1:D:287:LEU:N	2.83	0.41
1:D:361:LYS:HG3	1:D:361:LYS:O	2.21	0.41
1:E:246:TYR:CD2	1:E:246:TYR:C	2.99	0.41
1:E:397:ILE:CD1	1:E:429:PHE:HE1	2.34	0.41
1:F:88:PRO:O	1:F:340:PRO:HG2	2.20	0.41
1:F:174:ARG:HB2	1:F:177:ASP:HB2	2.02	0.41
1:F:369:LEU:HG	1:F:371:ILE:CG1	2.51	0.41
1:H:363:LEU:HB3	1:H:371:ILE:CD1	2.51	0.41
1:I:77:GLY:CA	1:I:430:ASP:HB3	2.51	0.41
1:I:107:LEU:HD11	1:I:321:LEU:HD23	2.02	0.41
1:J:163:ARG:HH12	1:J:188:GLU:HG3	1.84	0.41
1:A:196:LYS:N	1:A:199:ASP:OD2	2.49	0.41
1:A:378:ALA:HB1	1:A:421:ARG:HH12	1.85	0.41
1:A:414:ALA:HB3	1:A:417:PRO:HA	2.03	0.41
1:A:427:LEU:HD12	1:A:427:LEU:HA	1.80	0.41
1:B:158:GLU:HA	1:B:185:ILE:O	2.20	0.41
1:B:160:ILE:HG22	1:B:200:TYR:HD1	1.86	0.41
1:B:329:LYS:NZ	1:B:333:GLU:OE2	2.32	0.41
1:C:230:LEU:O	1:C:231:GLU:C	2.63	0.41
1:D:98:SER:O	1:D:99:GLU:C	2.63	0.41
1:D:109:TYR:CD1	1:D:111:LEU:HD23	2.56	0.41
1:D:255:ASN:CA	1:D:267:ASN:ND2	2.83	0.41
1:D:420:CYS:HB2	1:D:428:LEU:O	2.20	0.41
1:E:84:LEU:HD23	1:E:84:LEU:HA	1.82	0.41
1:E:138:VAL:CG1	1:E:316:ILE:HD13	2.50	0.41
1:E:358:ARG:HD2	1:E:439:LEU:HD13	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:365:ASP:OD1	1:E:365:ASP:N	2.54	0.41
1:E:400:ASP:N	1:E:400:ASP:OD1	2.54	0.41
1:E:444:LYS:HD3	1:E:444:LYS:C	2.45	0.41
1:F:174:ARG:O	1:F:178:ILE:HG22	2.21	0.41
1:F:252:LEU:HD11	1:F:254:ILE:O	2.21	0.41
1:G:152:THR:HG21	1:G:305:ILE:HG12	2.03	0.41
1:G:158:GLU:HA	1:G:185:ILE:O	2.21	0.41
1:H:81:ASN:ND2	3:H:501:THJ:S2	2.91	0.41
1:H:169:ILE:CD1	1:H:285:LLP:H5'1	2.45	0.41
1:H:308:ASN:HA	1:H:309:PRO:HD2	1.95	0.41
1:I:343:ARG:O	1:I:347:GLN:HG3	2.20	0.41
1:J:83:ASN:ND2	3:J:502:THJ:O3	2.46	0.41
1:J:120:ILE:HD13	1:J:316:ILE:HD11	2.01	0.41
1:J:308:ASN:HA	1:J:309:PRO:HD2	1.80	0.41
1:J:331:TYR:OH	1:J:339:ILE:HD12	2.21	0.41
1:A:254:ILE:HD13	1:A:336:TYR:CE1	2.56	0.41
1:B:86:ARG:HB3	1:B:284:ASP:O	2.21	0.41
1:B:163:ARG:O	1:C:192:THR:OG1	2.38	0.41
1:B:169:ILE:CD1	1:B:285:LLP:H5'1	2.51	0.41
1:C:205:ASN:OD1	1:C:205:ASN:C	2.63	0.41
1:D:427:LEU:C	1:D:428:LEU:HD23	2.46	0.41
1:E:313:ALA:CB	1:F:144:GLY:HA2	2.50	0.41
1:F:169:ILE:HD11	1:F:285:LLP:C5'	2.51	0.41
1:F:200:TYR:CD2	1:F:228:VAL:HG21	2.56	0.41
1:G:233:LEU:HD23	1:G:233:LEU:HA	1.81	0.41
1:G:285:LLP:OP4	1:G:285:LLP:H4'1	2.20	0.41
1:H:256:LEU:HD12	1:H:265:GLU:HB3	2.03	0.41
1:I:163:ARG:NH1	1:I:188:GLU:HG3	2.36	0.41
1:J:160:ILE:HD12	1:J:208:THR:HG21	2.03	0.41
1:J:366:ILE:HB	1:J:369:LEU:HD11	2.02	0.41
1:A:67:PRO:HD3	1:B:329:LYS:HE3	2.03	0.40
1:B:73:ILE:HD12	1:B:418:ILE:CG1	2.51	0.40
1:B:363:LEU:HB3	1:B:371:ILE:CD1	2.52	0.40
1:E:66:LYS:HG3	1:E:67:PRO:HD2	2.03	0.40
1:F:363:LEU:CD2	1:F:446:LEU:HD12	2.50	0.40
1:G:280:SER:HA	1:G:294:ILE:O	2.22	0.40
1:H:390:LEU:HB2	1:H:432:ARG:NH2	2.36	0.40
1:J:409:ARG:HG3	1:J:412:ARG:NH2	2.36	0.40
1:A:169:ILE:HD13	1:A:285:LLP:C4	2.51	0.40
1:A:287:LEU:HD23	1:A:287:LEU:O	2.21	0.40
1:C:161:ILE:HG23	1:C:166:LEU:HD21	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:261:ILE:HG22	1:C:263:VAL:HG13	2.03	0.40
1:D:165:GLU:CD	1:D:213:LYS:HG3	2.46	0.40
1:D:179:MET:HE3	1:D:179:MET:HB2	1.91	0.40
1:D:268:PHE:CE2	1:D:294:ILE:CG2	3.04	0.40
1:F:136:SER:HB2	1:F:296:VAL:HG12	2.04	0.40
1:H:157:LYS:HE2	1:H:157:LYS:HB3	1.95	0.40
1:H:224:PHE:CD1	1:I:218:ASN:HB2	2.56	0.40
1:H:335:ARG:NE	1:H:338:ASP:OD2	2.54	0.40
1:I:363:LEU:CD2	1:I:446:LEU:CD1	3.00	0.40
1:J:214:VAL:HG22	1:J:247:ASP:HB3	2.03	0.40
1:B:88:PRO:O	1:B:340:PRO:HG2	2.21	0.40
1:B:415:GLU:HA	1:B:416:PRO:HA	1.94	0.40
1:E:87:ALA:CB	1:E:341:VAL:CG2	3.00	0.40
1:E:353:ARG:HB2	1:E:393:TYR:CE1	2.54	0.40
1:G:200:TYR:CE1	1:G:233:LEU:HD21	2.57	0.40
1:G:252:LEU:HG	1:G:267:ASN:CB	2.46	0.40
1:H:272:ILE:C	1:H:274:LEU:N	2.79	0.40
1:I:79:VAL:HG21	1:I:345:LEU:CD2	2.52	0.40
1:I:149:VAL:HG22	1:I:305:ILE:HD13	2.03	0.40
1:A:165:GLU:HB3	1:A:214:VAL:HB	2.03	0.40
1:A:220:TYR:CE1	1:A:387:GLU:HG3	2.57	0.40
1:B:400:ASP:OD1	1:B:400:ASP:N	2.48	0.40
1:F:98:SER:O	1:F:99:GLU:C	2.64	0.40
1:G:213:LYS:HE2	1:G:230:LEU:CD2	2.52	0.40
1:H:107:LEU:CD1	1:H:321:LEU:HD23	2.52	0.40
1:H:263:VAL:CG1	1:H:264:ASP:N	2.85	0.40
1:H:369:LEU:HD13	1:H:371:ILE:HD11	2.03	0.40
1:I:213:LYS:HG2	1:I:246:TYR:CE1	2.57	0.40
1:I:313:ALA:HB1	1:J:144:GLY:CA	2.51	0.40
1:J:320:THR:O	1:J:324:LEU:HB2	2.21	0.40
1:C:287:LEU:O	1:C:331:TYR:OH	2.35	0.40
1:D:256:LEU:C	1:D:258:GLU:N	2.80	0.40
1:E:73:ILE:CB	1:E:418:ILE:HG12	2.45	0.40
1:E:299:LYS:O	1:E:303:GLU:HG2	2.22	0.40
1:F:167:VAL:HG22	1:F:175:ILE:CG1	2.50	0.40
1:G:302:ILE:HG22	1:G:306:LYS:HE2	2.04	0.40

There are no symmetry-related clashes.

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	389/392 (99%)	362 (93%)	24 (6%)	3 (1%)	16	44
1	B	387/392 (99%)	369 (95%)	16 (4%)	2 (0%)	24	55
1	C	389/392 (99%)	369 (95%)	16 (4%)	4 (1%)	12	40
1	D	387/392 (99%)	359 (93%)	28 (7%)	0	100	100
1	E	389/392 (99%)	374 (96%)	15 (4%)	0	100	100
1	F	389/392 (99%)	376 (97%)	12 (3%)	1 (0%)	36	66
1	G	386/392 (98%)	372 (96%)	12 (3%)	2 (0%)	24	55
1	H	389/392 (99%)	371 (95%)	18 (5%)	0	100	100
1	I	389/392 (99%)	376 (97%)	13 (3%)	0	100	100
1	J	389/392 (99%)	371 (95%)	16 (4%)	2 (0%)	24	55
All	All	3883/3920 (99%)	3699 (95%)	170 (4%)	14 (0%)	30	59

All (14) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	120	ILE
1	C	337	GLU
1	B	86	ARG
1	A	152	THR
1	C	249	GLY
1	F	128	ASN
1	G	268	PHE
1	J	121	ALA
1	A	443	LYS
1	B	231	GLU
1	C	380	PRO
1	J	380	PRO
1	C	146	VAL
1	G	380	PRO

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	339/339 (100%)	331 (98%)	8 (2%)	43	64
1	B	337/339 (99%)	329 (98%)	8 (2%)	43	64
1	C	339/339 (100%)	326 (96%)	13 (4%)	29	55
1	D	337/339 (99%)	331 (98%)	6 (2%)	51	69
1	E	339/339 (100%)	335 (99%)	4 (1%)	63	74
1	F	339/339 (100%)	333 (98%)	6 (2%)	51	69
1	G	336/339 (99%)	334 (99%)	2 (1%)	78	81
1	H	339/339 (100%)	338 (100%)	1 (0%)	86	86
1	I	339/339 (100%)	335 (99%)	4 (1%)	63	74
1	J	339/339 (100%)	337 (99%)	2 (1%)	78	81
All	All	3383/3390 (100%)	3329 (98%)	54 (2%)	55	70

All (54) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	72	VAL
1	A	120	ILE
1	A	169	ILE
1	A	178	ILE
1	A	188	GLU
1	A	229	LYS
1	A	324	LEU
1	A	377	LYS
1	B	178	ILE
1	B	179	MET
1	B	188	GLU
1	B	197	VAL
1	B	231	GLU
1	B	296	VAL
1	B	302	ILE
1	B	337	GLU

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Mol	Chain	Res	Type
1	C	91	LYS
1	C	162	SER
1	C	163	ARG
1	C	178	ILE
1	C	188	GLU
1	C	216	LYS
1	C	222	GLU
1	C	254	ILE
1	C	296	VAL
1	C	302	ILE
1	C	339	ILE
1	C	342	ILE
1	C	377	LYS
1	D	70	LYS
1	D	140	ASN
1	D	339	ILE
1	D	397	ILE
1	D	401	ARG
1	D	410	ARG
1	E	163	ARG
1	E	169	ILE
1	E	212	MET
1	E	437	GLU
1	F	188	GLU
1	F	208	THR
1	F	304	LYS
1	F	309	PRO
1	F	318	LYS
1	F	347	GLN
1	G	188	GLU
1	G	212	MET
1	H	188	GLU
1	I	169	ILE
1	I	188	GLU
1	I	350	LYS
1	I	420	CYS
1	J	169	ILE
1	J	188	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (45) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	102	ASN
1	A	207	ASN
1	A	300	ASN
1	A	399	HIS
1	A	436	HIS
1	B	95	ASN
1	B	151	ASN
1	B	291	GLN
1	C	68	ASN
1	C	122	HIS
1	C	193	ASN
1	C	215	HIS
1	C	218	ASN
1	C	405	GLN
1	D	140	ASN
1	D	142	ASN
1	D	215	HIS
1	D	347	GLN
1	D	399	HIS
1	E	95	ASN
1	E	102	ASN
1	E	110	ASN
1	E	142	ASN
1	E	215	HIS
1	F	110	ASN
1	F	215	HIS
1	F	405	GLN
1	F	426	GLN
1	G	399	HIS
1	H	128	ASN
1	H	215	HIS
1	H	291	GLN
1	H	399	HIS
1	I	95	ASN
1	I	102	ASN
1	I	110	ASN
1	I	142	ASN
1	I	267	ASN
1	I	354	GLN
1	I	399	HIS
1	I	405	GLN
1	I	436	HIS
1	J	122	HIS

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Mol	Chain	Res	Type
1	J	399	HIS
1	J	447	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

10 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	LLP	D	285	1	23,24,25	1.60	4 (17%)	25,32,34	1.14	3 (12%)
1	LLP	F	285	1	23,24,25	1.64	6 (26%)	25,32,34	1.37	3 (12%)
1	LLP	C	285	1	23,24,25	1.77	5 (21%)	25,32,34	1.45	3 (12%)
1	LLP	B	285	1	23,24,25	1.88	7 (30%)	25,32,34	1.36	3 (12%)
1	LLP	H	285	1	23,24,25	1.54	5 (21%)	25,32,34	1.22	2 (8%)
1	LLP	I	285	1	23,24,25	1.59	5 (21%)	25,32,34	1.19	2 (8%)
1	LLP	E	285	1	23,24,25	1.64	6 (26%)	25,32,34	1.63	3 (12%)
1	LLP	J	285	1	23,24,25	1.54	5 (21%)	25,32,34	1.51	5 (20%)
1	LLP	G	285	1	23,24,25	1.73	6 (26%)	25,32,34	1.29	3 (12%)
1	LLP	A	285	1	23,24,25	1.56	4 (17%)	25,32,34	1.42	4 (16%)

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
1	LLP	D	285	1	-	5/16/17/19	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	LLP	F	285	1	-	2/16/17/19	0/1/1/1
1	LLP	C	285	1	-	6/16/17/19	0/1/1/1
1	LLP	B	285	1	-	5/16/17/19	0/1/1/1
1	LLP	H	285	1	-	1/16/17/19	0/1/1/1
1	LLP	I	285	1	-	4/16/17/19	0/1/1/1
1	LLP	E	285	1	-	4/16/17/19	0/1/1/1
1	LLP	J	285	1	-	3/16/17/19	0/1/1/1
1	LLP	G	285	1	-	5/16/17/19	0/1/1/1
1	LLP	A	285	1	-	3/16/17/19	0/1/1/1

All (53) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	285	LLP	C2'-C2	4.21	1.57	1.50
1	G	285	LLP	C2'-C2	3.85	1.56	1.50
1	D	285	LLP	C2'-C2	3.81	1.56	1.50
1	J	285	LLP	C2'-C2	3.78	1.56	1.50
1	C	285	LLP	C2'-C2	3.68	1.56	1.50
1	C	285	LLP	C4-C4'	3.55	1.54	1.46
1	B	285	LLP	C4'-NZ	3.51	1.38	1.27
1	F	285	LLP	C4-C4'	3.45	1.54	1.46
1	E	285	LLP	C2'-C2	3.43	1.55	1.50
1	B	285	LLP	CE-NZ	-3.34	1.39	1.46
1	G	285	LLP	C3-C2	-3.21	1.37	1.41
1	C	285	LLP	CE-NZ	-3.20	1.39	1.46
1	I	285	LLP	C4-C4'	3.12	1.53	1.46
1	B	285	LLP	C4-C4'	3.10	1.53	1.46
1	J	285	LLP	C4-C4'	3.06	1.53	1.46
1	I	285	LLP	C2'-C2	3.06	1.55	1.50
1	A	285	LLP	C2'-C2	3.05	1.55	1.50
1	I	285	LLP	CE-NZ	-3.05	1.40	1.46
1	B	285	LLP	C2'-C2	3.02	1.55	1.50
1	C	285	LLP	C4'-NZ	2.97	1.37	1.27
1	E	285	LLP	C4-C4'	2.94	1.52	1.46
1	H	285	LLP	C2'-C2	2.94	1.55	1.50
1	G	285	LLP	CE-NZ	-2.93	1.40	1.46
1	I	285	LLP	C4'-NZ	2.93	1.37	1.27
1	H	285	LLP	C4-C4'	2.90	1.52	1.46
1	A	285	LLP	C4-C4'	2.84	1.52	1.46
1	D	285	LLP	C4'-NZ	2.84	1.36	1.27

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	H	285	LLP	C3-C2	-2.79	1.38	1.41
1	A	285	LLP	C4'-NZ	2.74	1.36	1.27
1	D	285	LLP	C4-C4'	2.73	1.52	1.46
1	G	285	LLP	C4-C4'	2.70	1.52	1.46
1	E	285	LLP	C4'-NZ	2.57	1.35	1.27
1	F	285	LLP	CE-NZ	-2.55	1.41	1.46
1	E	285	LLP	CE-NZ	-2.55	1.41	1.46
1	H	285	LLP	C4'-NZ	2.53	1.35	1.27
1	H	285	LLP	CE-NZ	-2.50	1.41	1.46
1	J	285	LLP	OP4-C5'	-2.48	1.35	1.44
1	B	285	LLP	C3-C2	-2.47	1.38	1.41
1	B	285	LLP	C4-C3	-2.45	1.37	1.41
1	B	285	LLP	OP4-C5'	-2.37	1.36	1.44
1	A	285	LLP	CE-NZ	-2.32	1.41	1.46
1	F	285	LLP	C4'-NZ	2.28	1.34	1.27
1	J	285	LLP	C4'-NZ	2.28	1.34	1.27
1	F	285	LLP	OP4-C5'	-2.16	1.36	1.44
1	C	285	LLP	OP4-C5'	-2.15	1.36	1.44
1	D	285	LLP	CE-NZ	-2.14	1.42	1.46
1	E	285	LLP	CB-CA	2.13	1.56	1.53
1	G	285	LLP	CB-CA	2.12	1.56	1.53
1	E	285	LLP	OP4-C5'	-2.11	1.37	1.44
1	J	285	LLP	CE-NZ	-2.09	1.42	1.46
1	I	285	LLP	OP4-C5'	-2.08	1.37	1.44
1	G	285	LLP	OP4-C5'	-2.06	1.37	1.44
1	F	285	LLP	C2-N1	2.04	1.37	1.33

All (31) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	285	LLP	OP4-C5'-C5	5.88	120.38	109.36
1	C	285	LLP	OP4-C5'-C5	4.07	116.98	109.36
1	A	285	LLP	OP4-C5'-C5	3.94	116.74	109.36
1	B	285	LLP	C5-C6-N1	-3.81	117.63	123.83
1	J	285	LLP	C4-C3-C2	-3.55	118.15	120.14
1	J	285	LLP	OP4-C5'-C5	3.54	115.99	109.36
1	F	285	LLP	C4-C3-C2	-3.32	118.27	120.14
1	G	285	LLP	C5-C6-N1	-2.97	119.00	123.83
1	J	285	LLP	C5-C6-N1	-2.97	119.01	123.83
1	C	285	LLP	C5-C6-N1	-2.90	119.11	123.83
1	A	285	LLP	C5-C6-N1	-2.87	119.17	123.83
1	F	285	LLP	C5-C6-N1	-2.86	119.18	123.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	285	LLP	C5-C6-N1	-2.80	119.27	123.83
1	H	285	LLP	OP4-C5'-C5	2.79	114.59	109.36
1	A	285	LLP	C4-C3-C2	-2.66	118.65	120.14
1	E	285	LLP	C4-C3-C2	-2.66	118.65	120.14
1	I	285	LLP	C5-C6-N1	-2.61	119.58	123.83
1	J	285	LLP	CG-CD-CE	2.59	122.39	113.38
1	B	285	LLP	C6-C5-C4	2.53	122.56	118.21
1	F	285	LLP	OP4-C5'-C5	2.52	114.09	109.36
1	D	285	LLP	OP4-C5'-C5	2.47	113.98	109.36
1	E	285	LLP	C5-C6-N1	-2.40	119.92	123.83
1	D	285	LLP	C5-C6-N1	-2.34	120.03	123.83
1	D	285	LLP	O3-C3-C2	2.31	122.37	117.58
1	G	285	LLP	C4-C3-C2	-2.30	118.85	120.14
1	C	285	LLP	C6-C5-C4	2.27	122.11	118.21
1	I	285	LLP	C4-C3-C2	-2.19	118.91	120.14
1	A	285	LLP	O3-C3-C2	2.17	122.09	117.58
1	B	285	LLP	C4-C3-C2	-2.14	118.94	120.14
1	J	285	LLP	O3-C3-C2	2.09	121.92	117.58
1	G	285	LLP	C2'-C2-C3	-2.04	118.42	120.80

There are no chirality outliers.

All (38) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	285	LLP	C4-C5-C5'-OP4
1	A	285	LLP	C6-C5-C5'-OP4
1	A	285	LLP	O-C-CA-CB
1	B	285	LLP	C4-C5-C5'-OP4
1	B	285	LLP	C6-C5-C5'-OP4
1	B	285	LLP	C5'-OP4-P-OP2
1	B	285	LLP	C5'-OP4-P-OP3
1	B	285	LLP	O-C-CA-CB
1	C	285	LLP	C4-C5-C5'-OP4
1	C	285	LLP	C6-C5-C5'-OP4
1	C	285	LLP	C5'-OP4-P-OP1
1	C	285	LLP	C5'-OP4-P-OP2
1	C	285	LLP	C5'-OP4-P-OP3
1	C	285	LLP	O-C-CA-CB
1	D	285	LLP	C4-C5-C5'-OP4
1	D	285	LLP	O-C-CA-CB
1	D	285	LLP	CG-CD-CE-NZ
1	E	285	LLP	O-C-CA-CB

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Mol	Chain	Res	Type	Atoms
1	F	285	LLP	O-C-CA-CB
1	G	285	LLP	C4-C5-C5'-OP4
1	G	285	LLP	C6-C5-C5'-OP4
1	G	285	LLP	C5'-OP4-P-OP2
1	G	285	LLP	C5'-OP4-P-OP3
1	G	285	LLP	O-C-CA-CB
1	H	285	LLP	O-C-CA-CB
1	I	285	LLP	C4-C5-C5'-OP4
1	I	285	LLP	C6-C5-C5'-OP4
1	I	285	LLP	O-C-CA-CB
1	J	285	LLP	O-C-CA-CB
1	D	285	LLP	C6-C5-C5'-OP4
1	E	285	LLP	CA-CB-CG-CD
1	E	285	LLP	C-CA-CB-CG
1	F	285	LLP	C-CA-CB-CG
1	E	285	LLP	CG-CD-CE-NZ
1	J	285	LLP	C5'-OP4-P-OP2
1	I	285	LLP	C-CA-CB-CG
1	J	285	LLP	C-CA-CB-CG
1	D	285	LLP	CD-CE-NZ-C4'

There are no ring outliers.

10 monomers are involved in 67 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	D	285	LLP	6	0
1	F	285	LLP	4	0
1	C	285	LLP	3	0
1	B	285	LLP	11	0
1	H	285	LLP	4	0
1	I	285	LLP	8	0
1	E	285	LLP	11	0
1	J	285	LLP	9	0
1	G	285	LLP	6	0
1	A	285	LLP	5	0

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 21 ligands modelled in this entry, 5 are monoatomic - leaving 16 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
3	THJ	J	503	-	3,4,4	0.43	0	2,6,6	0.52	0
3	THJ	A	2004	-	3,4,4	0.46	0	2,6,6	0.29	0
3	THJ	H	501	-	3,4,4	0.47	0	2,6,6	0.59	0
3	THJ	J	501	-	3,4,4	0.51	0	2,6,6	0.41	0
3	THJ	E	502	-	3,4,4	0.46	0	2,6,6	0.70	0
3	THJ	D	503	-	3,4,4	0.52	0	2,6,6	0.41	0
3	THJ	E	504	-	3,4,4	0.47	0	2,6,6	0.56	0
3	THJ	I	502	-	3,4,4	0.47	0	2,6,6	0.45	0
3	THJ	B	501	-	3,4,4	0.52	0	2,6,6	0.58	0
3	THJ	D	502	-	3,4,4	0.46	0	2,6,6	0.66	0
3	THJ	C	501	-	3,4,4	0.46	0	2,6,6	0.41	0
3	THJ	E	503	-	3,4,4	0.43	0	2,6,6	0.44	0
3	THJ	A	2003	-	3,4,4	0.50	0	2,6,6	0.54	0
3	THJ	A	2002	-	3,4,4	0.42	0	2,6,6	0.36	0
3	THJ	I	503	-	3,4,4	0.47	0	2,6,6	0.56	0
3	THJ	J	502	-	3,4,4	0.49	0	2,6,6	0.48	0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

14 monomers are involved in 22 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	J	503	THJ	1	0
3	A	2004	THJ	1	0
3	H	501	THJ	4	0
3	J	501	THJ	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	E	502	THJ	3	0
3	E	504	THJ	1	0
3	I	502	THJ	1	0
3	B	501	THJ	1	0
3	D	502	THJ	1	0
3	E	503	THJ	1	0
3	A	2003	THJ	3	0
3	A	2002	THJ	1	0
3	I	503	THJ	1	0
3	J	502	THJ	1	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	391/392 (99%)	-0.55	1 (0%) 90 82	56, 93, 146, 182	0
1	B	389/392 (99%)	-0.57	0 100 100	52, 97, 178, 213	0
1	C	391/392 (99%)	-0.52	0 100 100	55, 106, 194, 235	0
1	D	389/392 (99%)	-0.56	0 100 100	75, 110, 165, 195	0
1	E	391/392 (99%)	-0.53	1 (0%) 90 82	73, 116, 176, 204	0
1	F	391/392 (99%)	-0.38	1 (0%) 90 82	73, 124, 202, 235	0
1	G	388/392 (98%)	-0.38	0 100 100	83, 142, 208, 251	0
1	H	391/392 (99%)	-0.40	1 (0%) 90 82	85, 135, 196, 236	0
1	I	391/392 (99%)	-0.50	1 (0%) 90 82	62, 122, 196, 221	0
1	J	391/392 (99%)	-0.58	0 100 100	58, 102, 175, 212	0
All	All	3903/3920 (99%)	-0.50	5 (0%) 92 90	52, 115, 191, 251	0

All (5) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	I	276	ILE	2.3
1	A	435	PHE	2.3
1	E	310	ILE	2.2
1	F	120	ILE	2.0
1	H	120	ILE	2.0

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

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
1	LLP	A	285	24/25	0.96	0.07	46,74,89,91	0
1	LLP	B	285	24/25	0.96	0.08	51,71,90,97	0
1	LLP	D	285	24/25	0.96	0.08	61,89,117,130	0
1	LLP	E	285	24/25	0.96	0.08	69,98,126,134	0
1	LLP	F	285	24/25	0.96	0.06	80,96,111,118	0
1	LLP	C	285	24/25	0.97	0.07	67,83,106,112	0
1	LLP	H	285	24/25	0.97	0.07	96,114,127,131	0
1	LLP	G	285	24/25	0.98	0.06	97,107,129,165	0
1	LLP	I	285	24/25	0.98	0.06	76,94,111,120	0
1	LLP	J	285	24/25	0.98	0.07	56,77,98,145	0

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	K	G	501	1/1	0.70	0.23	170,170,170,170	0
3	THJ	J	501	5/5	0.72	0.12	182,184,187,187	0
3	THJ	E	504	5/5	0.74	0.17	143,181,184,186	0
3	THJ	I	503	5/5	0.78	0.08	188,189,192,226	0
3	THJ	E	503	5/5	0.79	0.23	123,135,148,148	0
2	K	E	501	1/1	0.80	0.19	142,142,142,142	0
3	THJ	A	2003	5/5	0.81	0.24	113,168,172,175	0
3	THJ	C	501	5/5	0.82	0.09	152,161,167,168	0
3	THJ	H	501	5/5	0.82	0.09	137,207,207,208	0
2	K	A	2001	1/1	0.83	0.18	117,117,117,117	0
3	THJ	A	2002	5/5	0.84	0.13	127,139,151,160	0
3	THJ	I	502	5/5	0.84	0.08	164,190,194,196	0
2	K	I	501	1/1	0.85	0.20	136,136,136,136	0
3	THJ	A	2004	5/5	0.88	0.08	171,175,180,224	0
3	THJ	D	502	5/5	0.88	0.09	117,130,149,151	0
3	THJ	E	502	5/5	0.88	0.11	173,175,178,333	0
3	THJ	J	502	5/5	0.90	0.25	115,121,128,168	0
3	THJ	J	503	5/5	0.91	0.16	148,157,160,161	0
3	THJ	B	501	5/5	0.92	0.12	112,125,134,139	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	K	D	501	1/1	0.92	0.19	140,140,140,140	0
3	THJ	D	503	5/5	0.93	0.16	78,94,109,110	0

6.5 Other polymers [i](#)

There are no such residues in this entry.