



# Full wwPDB X-ray Structure Validation Report ⓘ

May 16, 2020 – 08:36 pm BST

PDB ID : 1DO0  
Title : ORTHORHOMBIC CRYSTAL FORM OF HEAT SHOCK LOCUS U (HSLU)  
FROM ESCHERICHIA COLI  
Authors : Bochtler, M.; Hartmann, C.; Song, H.K.; Bourenkov, G.P.; Bartunik, H.D.  
Deposited on : 1999-12-18  
Resolution : 3.00 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtrriage (Phenix) : **NOT EXECUTED**  
EDS : **NOT EXECUTED**  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.11

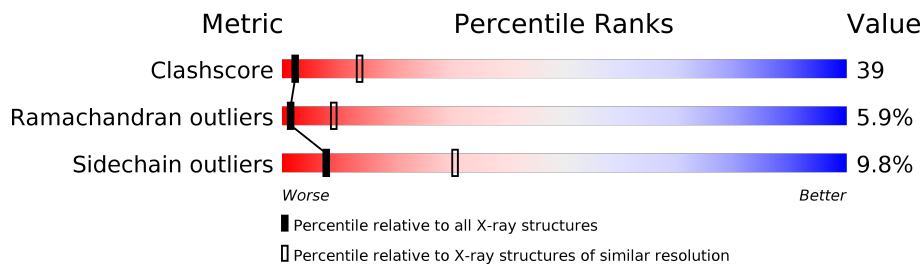
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.00 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	2416 (3.00-3.00)
Ramachandran outliers	138981	2333 (3.00-3.00)
Sidechain outliers	138945	2336 (3.00-3.00)

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 on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	442	
1	B	442	
1	C	442	
1	D	442	
1	E	442	
1	F	442	

## 2 Entry composition [i](#)

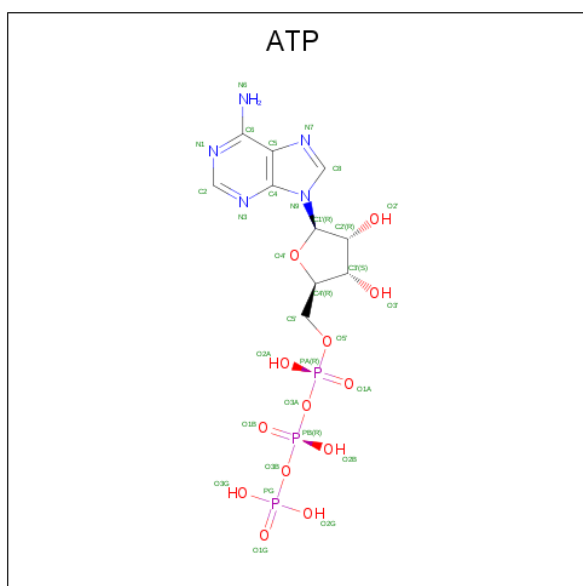
There are 4 unique types of molecules in this entry. The entry contains 19366 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 PROTEIN (HEAT SHOCK LOCUS U).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	406	Total 3205	C 2001	N 570	O 624	S 10	628	0	0
1	B	406	Total 3205	C 2001	N 570	O 624	S 10	143	0	0
1	C	406	Total 3205	C 2001	N 570	O 624	S 10	677	0	0
1	D	406	Total 3205	C 2001	N 570	O 624	S 10	579	0	0
1	E	406	Total 3205	C 2001	N 570	O 624	S 10	135	0	0
1	F	406	Total 3205	C 2001	N 570	O 624	S 10	600	0	0

- Molecule 2 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula:  $C_{10}H_{16}N_5O_{13}P_3$ ).

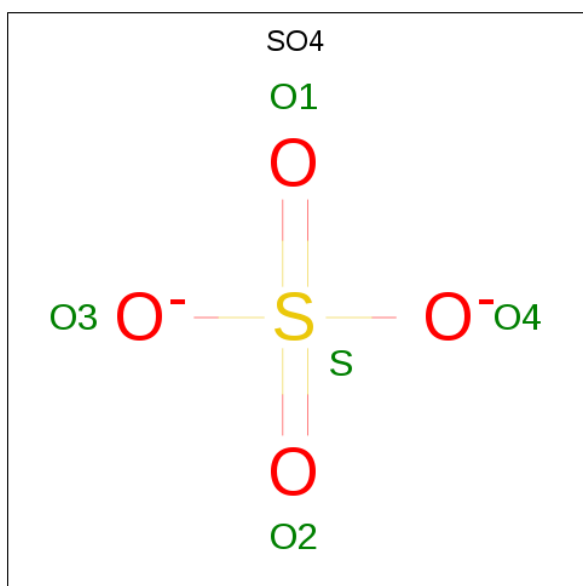


Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
2	A	1	Total	C	N	O	P	0	0
			31	10	5	13	3		
2	B	1	Total	C	N	O	P	0	0
			31	10	5	13	3		
2	D	1	Total	C	N	O	P	0	0
			31	10	5	13	3		
2	E	1	Total	C	N	O	P	0	0
			31	10	5	13	3		

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

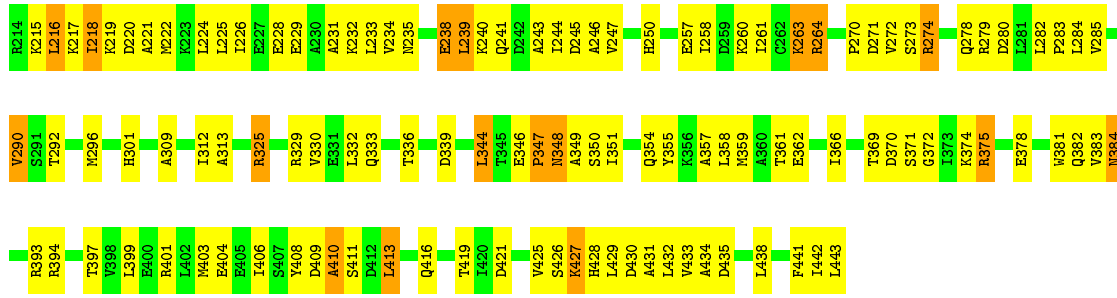
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	B	1	Total	Mg	0	0
			1	1		
3	E	1	Total	Mg	0	0
			1	1		

- Molecule 4 is SULFATE ION (three-letter code: SO4) (formula: O<sub>4</sub>S).

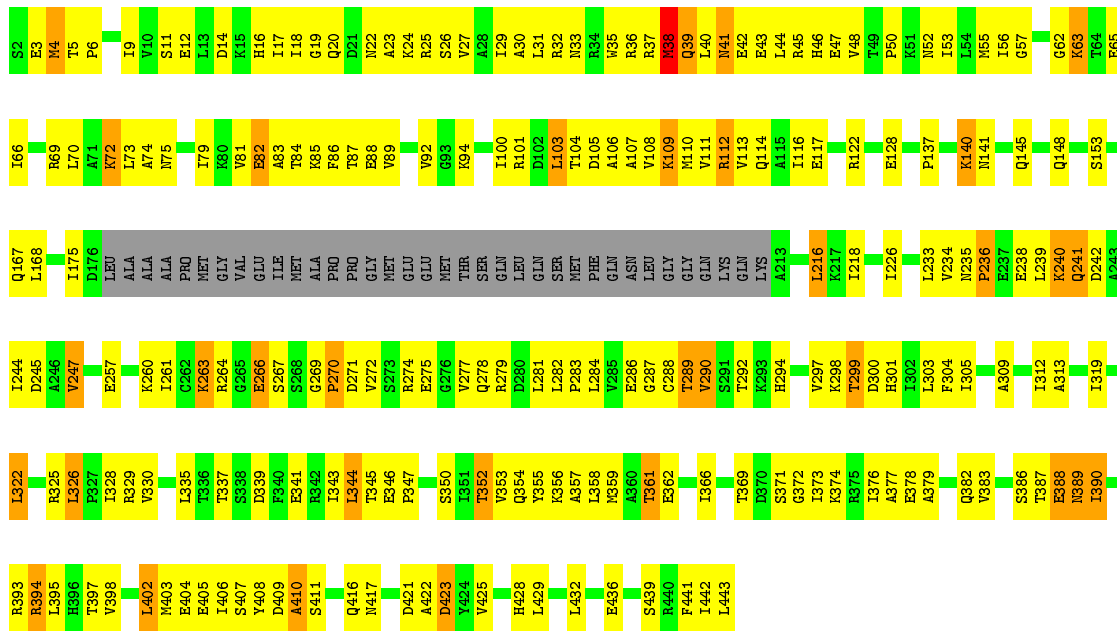


Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	
4	C	1	Total	O	S	0	0
			5	4	1		
4	F	1	Total	O	S	0	0
			5	4	1		

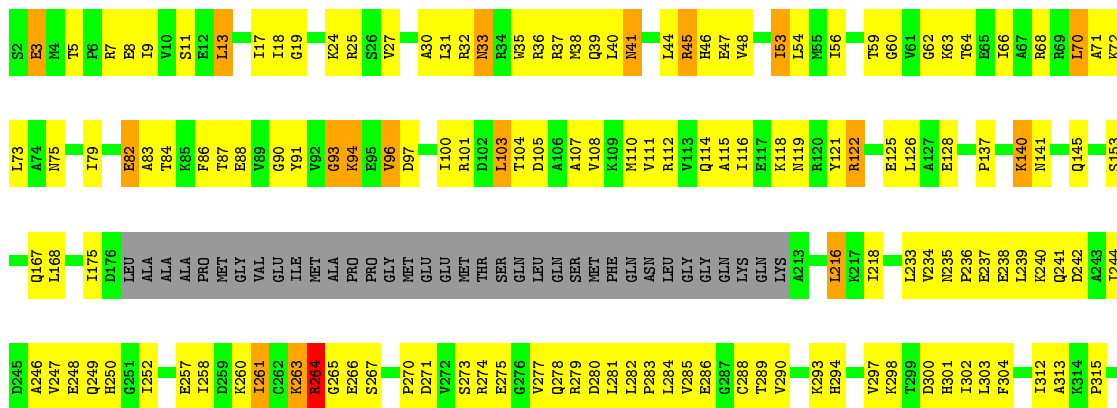


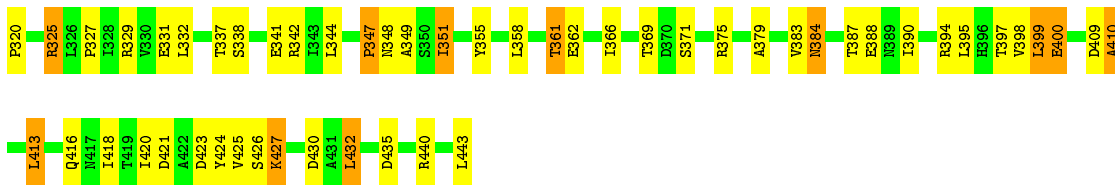


• Molecule 1: PROTEIN (HEAT SHOCK LOCUS U)



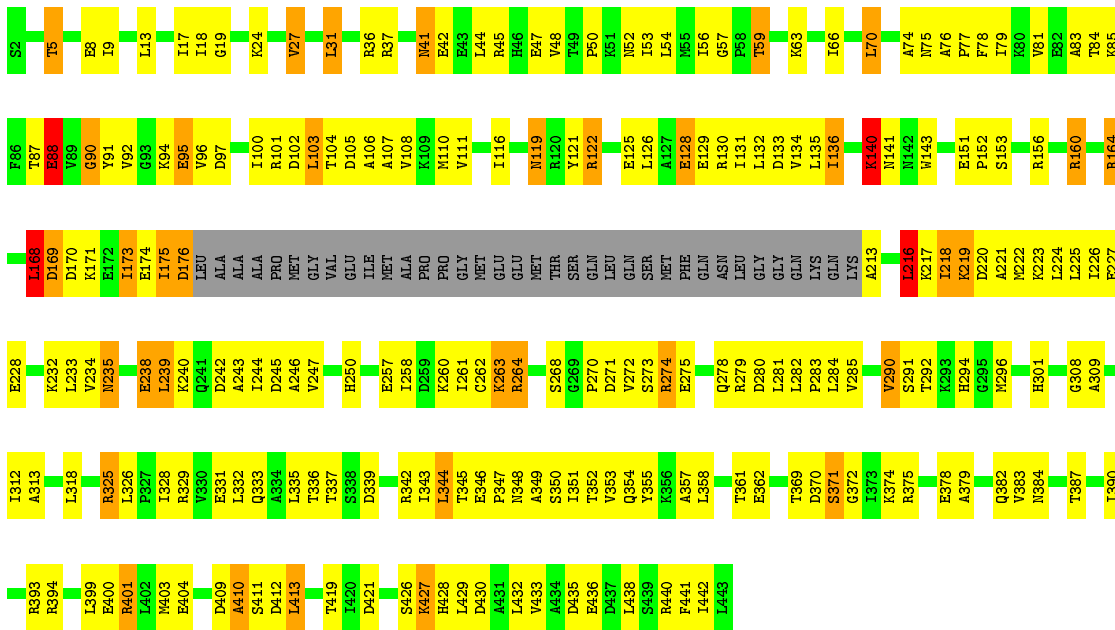
• Molecule 1: PROTEIN (HEAT SHOCK LOCUS U)





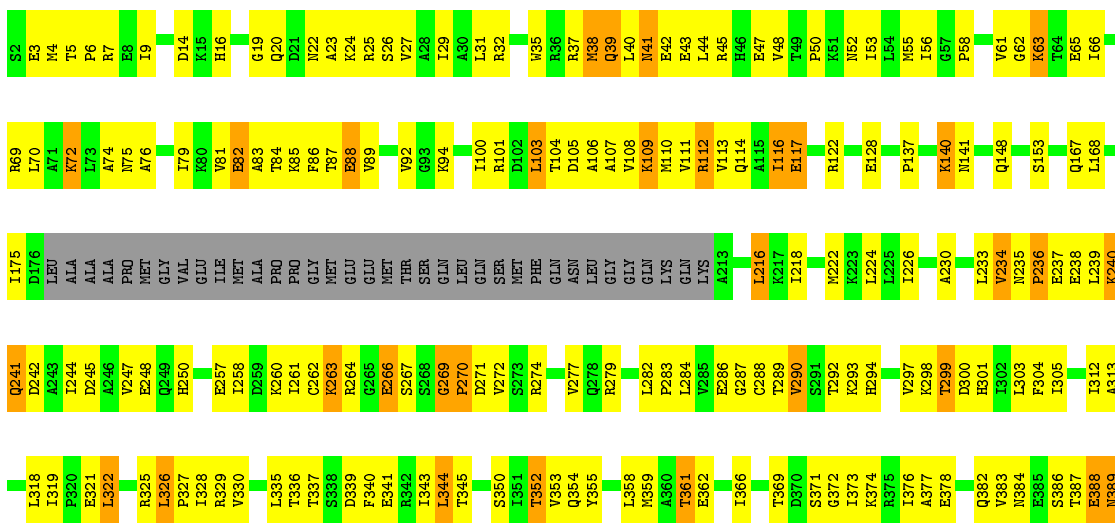
• Molecule 1: PROTEIN (HEAT SHOCK LOCUS U)

Chain E: 42% 41% 8% 8%



• Molecule 1: PROTEIN (HEAT SHOCK LOCUS U)

Chain F: 42% 42% 8% 8%



I390  
G391  
A392  
R393  
R394  
L395  
E396  
T397  
V398  
L399  
E400  
R401  
L402  
M403  
E404  
E405  
I406  
S407  
Y408  
D409  
A410  
S411  
Q416  
M417  
A422  
V425  
S426  
K427  
H428  
L429  
D430  
A431  
L432  
V433  
E436  
S439  
R440  
F441  
L442  
L443



## 4 Data and refinement statistics

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

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	208.15Å 167.70Å 108.19Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	25.00 – 3.00	Depositor
% Data completeness (in resolution range)	96.8 (25.00-3.00)	Depositor
$R_{merge}$	0.08	Depositor
$R_{sym}$	7.90	Depositor
Refinement program	CNS 0.9	Depositor
R, $R_{free}$	0.294 , 0.342	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	19366	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	55.0	wwPDB-VP

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MG, SO4, ATP

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	0.42	0/3244	0.65	0/4373
1	B	0.48	0/3244	0.79	7/4373 (0.2%)
1	C	0.41	0/3244	0.64	0/4373
1	D	0.42	0/3244	0.64	0/4373
1	E	0.46	0/3244	0.73	4/4373 (0.1%)
1	F	0.42	0/3244	0.64	0/4373
All	All	0.43	0/19464	0.68	11/26238 (0.0%)

There are no bond length outliers.

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	130	ARG	CG-CD-NE	14.79	142.86	111.80
1	B	109	LYS	CB-CG-CD	-9.55	86.78	111.60
1	B	165	GLU	CB-CA-C	-8.04	94.33	110.40
1	B	160	ARG	NE-CZ-NH2	6.98	123.79	120.30
1	E	160	ARG	NE-CZ-NH2	6.98	123.79	120.30
1	E	164	ARG	NE-CZ-NH2	6.89	123.74	120.30
1	B	164	ARG	NE-CZ-NH2	6.81	123.70	120.30
1	E	168	LEU	CB-CA-C	-6.61	97.63	110.20
1	E	168	LEU	C-N-CA	-5.20	108.71	121.70
1	B	167	GLN	O-C-N	5.18	130.99	122.70
1	B	166	GLY	N-CA-C	5.17	126.01	113.10

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3205	0	3265	215	0
1	B	3205	0	3265	239	0
1	C	3205	0	3265	231	0
1	D	3205	0	3265	209	0
1	E	3205	0	3265	231	0
1	F	3205	0	3265	229	0
2	A	31	0	12	5	0
2	B	31	0	12	3	0
2	D	31	0	12	5	0
2	E	31	0	12	4	0
3	B	1	0	0	0	0
3	E	1	0	0	0	0
4	C	5	0	0	0	0
4	F	5	0	0	0	0
All	All	19366	0	19638	1287	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 39.

All (1287) 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:E:168:LEU:O	1:E:169:ASP:CB	1.77	1.20
1:B:169:ASP:O	1:B:170:ASP:CG	1.84	1.16
1:C:312:ILE:HG13	1:C:313:ALA:H	1.20	1.07
1:E:168:LEU:O	1:E:169:ASP:HB2	1.28	1.06
1:B:169:ASP:O	1:B:170:ASP:OD1	1.74	1.06
1:A:17:ILE:HD13	1:A:66:ILE:HG12	1.42	1.02
1:D:27:VAL:CG1	1:D:70:LEU:HG	1.94	0.98
1:F:312:ILE:HG13	1:F:313:ALA:H	1.26	0.97
1:C:282:LEU:HD11	1:C:319:ILE:HD11	1.47	0.97
1:E:264:ARG:HB2	1:E:274:ARG:HH12	1.29	0.95
1:F:371:SER:HB2	1:F:422:ALA:HB2	1.46	0.95
1:D:41:ASN:HD21	1:D:44:LEU:H	1.12	0.94
1:D:68:ARG:O	1:D:72:LYS:HD3	1.67	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:136:ILE:HD11	1:B:159:PHE:HD2	1.32	0.92
1:B:261:ILE:HG21	1:B:278:GLN:HG3	1.49	0.92
1:F:344:LEU:HD13	1:F:395:LEU:HD13	1.50	0.92
1:A:41:ASN:HD21	1:A:44:LEU:H	1.15	0.91
1:F:37:ARG:HD2	1:F:48:VAL:HG23	1.50	0.91
1:E:41:ASN:C	1:E:41:ASN:HD22	1.73	0.91
1:B:264:ARG:HB2	1:B:274:ARG:HH12	1.36	0.90
1:E:168:LEU:O	1:E:169:ASP:CG	2.09	0.89
1:D:17:ILE:HD13	1:D:66:ILE:HG12	1.55	0.89
1:C:108:VAL:HG21	1:C:294:HIS:CE1	2.08	0.89
1:A:110:MET:O	1:A:114:GLN:HB2	1.73	0.88
1:B:41:ASN:HD22	1:B:41:ASN:C	1.71	0.88
1:A:327:PRO:HA	1:F:397:THR:HG22	1.54	0.88
1:B:131:ILE:HG23	1:B:171:LYS:HE3	1.54	0.87
1:A:27:VAL:HG13	1:A:70:LEU:HG	1.57	0.87
1:A:3:GLU:HG2	1:A:35:TRP:HB2	1.57	0.86
1:D:27:VAL:HG13	1:D:70:LEU:HG	1.58	0.86
1:A:27:VAL:CG1	1:A:70:LEU:HG	2.06	0.85
1:C:344:LEU:HD13	1:C:395:LEU:HD13	1.57	0.85
1:B:344:LEU:CD1	1:B:351:ILE:HD11	2.07	0.85
1:D:3:GLU:HG2	1:D:35:TRP:HB2	1.59	0.85
1:B:261:ILE:HG22	1:B:278:GLN:HE21	1.42	0.84
1:B:84:THR:HA	1:B:87:THR:HG23	1.59	0.84
1:A:41:ASN:HD22	1:A:41:ASN:C	1.79	0.84
1:B:18:ILE:H	2:B:905:ATP:HN61	1.26	0.84
1:D:18:ILE:H	2:D:910:ATP:HN61	1.22	0.84
1:D:41:ASN:ND2	1:D:44:LEU:H	1.75	0.83
1:F:312:ILE:HG13	1:F:313:ALA:N	1.93	0.83
1:C:312:ILE:HG13	1:C:313:ALA:N	1.93	0.83
1:E:41:ASN:HD21	1:E:44:LEU:H	1.26	0.83
1:A:18:ILE:H	2:A:900:ATP:HN61	1.23	0.83
1:E:130:ARG:HH21	1:E:225:LEU:HD22	1.43	0.83
1:F:22:ASN:O	1:F:25:ARG:HG2	1.78	0.83
1:F:298:LYS:O	1:F:299:THR:HB	1.77	0.83
1:A:68:ARG:O	1:A:72:LYS:HD3	1.79	0.82
1:A:351:ILE:HD12	1:A:399:LEU:HD12	1.61	0.82
1:C:62:GLY:O	1:C:66:ILE:HG13	1.80	0.81
1:A:239:LEU:HA	1:A:242:ASP:HB2	1.62	0.81
1:C:397:THR:HG22	1:D:327:PRO:HA	1.62	0.81
1:B:101:ARG:HH11	1:B:101:ARG:HG3	1.44	0.81
1:C:240:LYS:O	1:C:244:ILE:HG12	1.81	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:108:VAL:HG21	1:D:294:HIS:CE1	2.16	0.81
1:E:122:ARG:NH2	1:E:126:LEU:HD21	1.95	0.81
1:A:239:LEU:HD12	1:A:240:LYS:N	1.96	0.80
1:C:298:LYS:O	1:C:299:THR:HB	1.81	0.80
1:C:371:SER:HB2	1:C:422:ALA:HB2	1.62	0.80
1:A:235:ASN:HB2	1:A:238:GLU:HB2	1.62	0.80
1:C:337:THR:O	1:C:341:GLU:HG3	1.82	0.79
1:E:84:THR:HA	1:E:87:THR:HG23	1.65	0.79
1:B:285:VAL:O	1:B:325:ARG:HD3	1.83	0.79
1:A:361:THR:HG21	1:B:36:ARG:HG2	1.63	0.79
1:B:17:ILE:HD13	1:B:66:ILE:HG12	1.66	0.78
1:A:282:LEU:O	1:A:286:GLU:HG3	1.83	0.78
1:B:172:GLU:HB3	1:B:215:LYS:HA	1.66	0.78
1:D:41:ASN:HD22	1:D:41:ASN:C	1.83	0.78
1:E:369:THR:HG22	1:E:371:SER:H	1.49	0.78
1:A:5:THR:OG1	1:A:8:GLU:HG3	1.84	0.78
1:E:344:LEU:CD1	1:E:351:ILE:HD11	2.14	0.78
1:D:325:ARG:HE	1:D:325:ARG:HA	1.49	0.78
1:C:257:GLU:HB2	1:C:260:LYS:HG2	1.64	0.77
1:D:298:LYS:HE3	1:D:300:ASP:OD1	1.84	0.77
1:B:261:ILE:CG2	1:B:278:GLN:HG3	2.15	0.77
1:E:175:ILE:HD13	1:E:224:LEU:HD11	1.66	0.77
1:A:41:ASN:ND2	1:A:44:LEU:H	1.82	0.77
1:C:37:ARG:HD2	1:C:48:VAL:HG23	1.65	0.77
1:F:235:ASN:HB3	1:F:238:GLU:HB2	1.68	0.76
1:A:108:VAL:HG21	1:A:294:HIS:CE1	2.20	0.76
1:A:288:CYS:O	1:A:298:LYS:HD2	1.85	0.76
1:C:5:THR:HB	1:C:6:PRO:HD2	1.68	0.76
1:D:239:LEU:HA	1:D:242:ASP:HB2	1.68	0.76
1:F:257:GLU:HB2	1:F:260:LYS:HG2	1.67	0.76
1:B:216:LEU:HD13	1:B:217:LYS:HG2	1.68	0.76
1:D:239:LEU:HD12	1:D:240:LYS:N	2.00	0.76
1:D:325:ARG:HE	1:D:325:ARG:CA	1.99	0.76
1:D:5:THR:OG1	1:D:8:GLU:HG3	1.86	0.76
1:D:88:GLU:OE2	1:D:93:GLY:HA3	1.85	0.75
1:B:168:LEU:O	1:B:169:ASP:CB	2.31	0.75
1:F:235:ASN:CB	1:F:238:GLU:HB2	2.16	0.75
1:F:303:LEU:HG	1:F:305:ILE:HD11	1.69	0.75
1:A:64:THR:HB	2:A:900:ATP:O2A	1.85	0.75
1:C:408:TYR:CE1	1:D:25:ARG:HG2	2.21	0.75
1:E:173:ILE:N	1:E:173:ILE:HD12	2.02	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:108:VAL:HG21	1:F:294:HIS:CE1	2.21	0.75
1:D:105:ASP:HB3	1:E:296:MET:CE	2.17	0.75
1:D:394:ARG:HG2	1:D:394:ARG:HH11	1.52	0.74
1:B:41:ASN:HD21	1:B:44:LEU:H	1.32	0.74
1:C:383:VAL:HB	1:C:394:ARG:HD3	1.68	0.74
1:E:101:ARG:HD3	1:E:292:THR:HG22	1.70	0.74
1:A:100:ILE:HB	1:A:290:VAL:HG21	1.70	0.74
1:A:62:GLY:O	1:A:66:ILE:HG13	1.86	0.74
1:A:263:LYS:O	1:A:264:ARG:HB2	1.86	0.74
1:D:105:ASP:HB3	1:E:296:MET:HE1	1.69	0.74
1:E:429:LEU:O	1:E:433:VAL:HG23	1.88	0.74
1:F:101:ARG:HG2	1:F:101:ARG:HH11	1.53	0.74
1:F:289:THR:O	1:F:290:VAL:HB	1.86	0.73
1:C:282:LEU:HB2	1:C:283:PRO:HD3	1.70	0.73
1:B:427:LYS:O	1:B:427:LYS:HD2	1.89	0.73
1:D:361:THR:HG21	1:E:36:ARG:HG2	1.70	0.73
1:A:387:THR:HG22	1:A:440:ARG:CZ	2.18	0.73
1:E:18:ILE:H	2:E:915:ATP:HN61	1.36	0.73
1:F:383:VAL:HB	1:F:394:ARG:HD3	1.69	0.73
1:C:84:THR:O	1:C:87:THR:HG22	1.89	0.73
1:A:298:LYS:HE3	1:A:300:ASP:OD1	1.88	0.72
1:D:100:ILE:HB	1:D:290:VAL:HG21	1.71	0.72
1:D:18:ILE:H	2:D:910:ATP:N6	1.88	0.72
1:F:416:GLN:C	1:F:417:ASN:HD22	1.92	0.72
1:B:151:GLU:HB3	1:B:152:PRO:HD3	1.71	0.72
1:E:216:LEU:HD13	1:E:217:LYS:HG2	1.70	0.72
1:C:108:VAL:HG13	1:C:239:LEU:HD21	1.71	0.72
1:D:288:CYS:O	1:D:298:LYS:HD2	1.90	0.72
1:C:288:CYS:O	1:C:298:LYS:O	2.07	0.72
1:D:282:LEU:O	1:D:286:GLU:HG3	1.90	0.71
1:F:240:LYS:O	1:F:244:ILE:HG12	1.89	0.71
1:A:19:GLY:O	1:A:24:LYS:HE3	1.90	0.71
1:B:427:LYS:HG3	1:B:428:HIS:CD2	2.25	0.71
1:E:101:ARG:HH11	1:E:101:ARG:HG3	1.56	0.71
1:E:261:ILE:O	1:E:261:ILE:HG22	1.89	0.71
1:C:339:ASP:O	1:C:343:ILE:HG13	1.91	0.71
1:C:393:ARG:HG3	1:C:393:ARG:HH11	1.54	0.71
1:B:171:LYS:HZ3	1:B:173:ILE:HD11	1.56	0.71
1:A:88:GLU:HB2	1:A:91:TYR:HB2	1.71	0.71
1:C:101:ARG:HH11	1:C:101:ARG:HG2	1.55	0.71
1:E:239:LEU:HD12	1:E:240:LYS:N	2.06	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:25:ARG:HG2	1:F:408:TYR:CE1	2.26	0.71
1:A:394:ARG:HG2	1:A:394:ARG:HH11	1.55	0.70
1:B:152:PRO:O	1:B:156:ARG:HB3	1.91	0.70
1:B:350:SER:O	1:B:354:GLN:HG3	1.91	0.70
1:D:100:ILE:HD11	1:D:284:LEU:HD22	1.73	0.70
1:F:84:THR:O	1:F:87:THR:HG22	1.91	0.70
1:C:22:ASN:O	1:C:25:ARG:HG2	1.90	0.70
1:E:312:ILE:HG13	1:E:313:ALA:H	1.55	0.70
1:F:62:GLY:O	1:F:66:ILE:HG13	1.90	0.70
1:B:222:MET:O	1:B:226:ILE:HG13	1.92	0.70
1:D:27:VAL:HG11	1:D:70:LEU:HG	1.72	0.70
1:A:88:GLU:OE2	1:A:93:GLY:HA3	1.91	0.70
1:C:402:LEU:HD11	1:C:425:VAL:HG22	1.73	0.70
1:C:72:LYS:O	1:C:72:LYS:HE3	1.91	0.70
1:E:362:GLU:HG3	1:E:410:ALA:HB1	1.72	0.70
1:B:173:ILE:HD12	1:B:173:ILE:H	1.56	0.70
1:F:402:LEU:HD11	1:F:425:VAL:HG22	1.74	0.70
1:B:264:ARG:CB	1:B:274:ARG:HH12	2.04	0.70
1:D:387:THR:HG22	1:D:440:ARG:CZ	2.22	0.70
1:C:389:ASN:HD22	1:C:389:ASN:C	1.95	0.70
1:D:19:GLY:O	1:D:24:LYS:HE3	1.90	0.70
1:E:79:ILE:HD11	1:E:102:ASP:HB3	1.73	0.69
1:B:172:GLU:CB	1:B:215:LYS:HA	2.22	0.69
1:C:85:LYS:HE2	1:C:94:LYS:HE2	1.74	0.69
1:A:107:ALA:O	1:A:111:VAL:HG23	1.91	0.69
1:B:239:LEU:HD12	1:B:240:LYS:N	2.07	0.69
1:E:427:LYS:O	1:E:427:LYS:HD2	1.91	0.69
1:F:339:ASP:O	1:F:343:ILE:HG13	1.93	0.69
1:A:18:ILE:H	2:A:900:ATP:N6	1.91	0.69
1:B:42:GLU:HA	1:B:45:ARG:NH1	2.08	0.69
1:F:389:ASN:HD22	1:F:389:ASN:C	1.94	0.69
1:F:393:ARG:HG3	1:F:393:ARG:HH11	1.55	0.69
1:C:303:LEU:HG	1:C:305:ILE:HD11	1.73	0.69
1:D:100:ILE:HG13	1:D:290:VAL:HG11	1.75	0.69
1:B:383:VAL:HG12	1:B:394:ARG:NH1	2.07	0.69
1:C:344:LEU:CD1	1:C:395:LEU:HD13	2.23	0.69
1:D:88:GLU:HB2	1:D:91:TYR:HB2	1.74	0.69
1:E:18:ILE:HD13	1:E:347:PRO:HG3	1.73	0.69
1:E:261:ILE:HG21	1:E:278:GLN:HG3	1.74	0.69
1:C:289:THR:O	1:C:290:VAL:HB	1.91	0.68
1:F:359:MET:HG3	1:F:366:ILE:HD11	1.74	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:79:ILE:HD11	1:B:102:ASP:HB3	1.76	0.68
1:A:30:ALA:HB2	1:A:53:ILE:HD11	1.74	0.68
1:E:103:LEU:HD13	1:E:247:VAL:HG13	1.76	0.68
1:B:344:LEU:HD12	1:B:351:ILE:HD11	1.76	0.68
1:E:5:THR:OG1	1:E:8:GLU:HG3	1.93	0.68
1:B:130:ARG:NH1	1:B:225:LEU:HD22	2.09	0.68
1:C:240:LYS:HD2	1:C:241:GLN:HG3	1.76	0.68
1:C:359:MET:HE2	1:C:406:ILE:HG22	1.76	0.68
1:B:168:LEU:O	1:B:169:ASP:CG	2.33	0.67
1:E:41:ASN:ND2	1:E:41:ASN:C	2.46	0.67
1:E:119:ASN:C	1:E:119:ASN:HD22	1.98	0.67
1:F:103:LEU:HD13	1:F:247:VAL:HG13	1.77	0.67
1:A:327:PRO:HA	1:F:397:THR:CG2	2.24	0.67
1:A:100:ILE:HD11	1:A:284:LEU:HD22	1.76	0.67
1:F:384:ASN:HD22	1:F:394:ARG:HH11	1.43	0.67
1:B:429:LEU:O	1:B:433:VAL:HG23	1.95	0.67
1:E:168:LEU:HB3	1:E:218:ILE:HB	1.76	0.67
1:F:335:LEU:HD22	1:F:339:ASP:HB3	1.77	0.67
1:A:100:ILE:HG13	1:A:290:VAL:HG11	1.76	0.67
1:D:375:ARG:HB3	1:D:425:VAL:HG11	1.77	0.67
1:E:369:THR:HG22	1:E:371:SER:N	2.10	0.67
1:F:359:MET:CE	1:F:406:ILE:HG22	2.24	0.67
1:B:173:ILE:HD12	1:B:173:ILE:N	2.09	0.67
1:D:263:LYS:O	1:D:264:ARG:HB2	1.95	0.67
1:D:64:THR:HB	2:D:910:ATP:O2A	1.95	0.67
1:D:108:VAL:HG21	1:D:294:HIS:ND1	2.10	0.67
1:F:337:THR:O	1:F:341:GLU:HG3	1.94	0.67
1:D:107:ALA:O	1:D:111:VAL:HG23	1.95	0.66
1:F:359:MET:HG3	1:F:366:ILE:CD1	2.24	0.66
1:F:42:GLU:H	1:F:42:GLU:CD	1.96	0.66
1:A:325:ARG:CA	1:A:325:ARG:HE	2.08	0.66
1:D:35:TRP:O	1:D:39:GLN:HG2	1.95	0.66
1:A:427:LYS:HD2	1:A:427:LYS:O	1.95	0.66
1:D:110:MET:O	1:D:114:GLN:HB2	1.95	0.66
1:F:282:LEU:HD11	1:F:319:ILE:HD11	1.76	0.66
1:B:132:LEU:HB2	1:B:156:ARG:NH1	2.11	0.66
1:E:383:VAL:HG12	1:E:394:ARG:NH1	2.09	0.66
1:B:27:VAL:HG22	1:B:70:LEU:HG	1.78	0.66
1:A:39:GLN:HB2	1:F:361:THR:OG1	1.96	0.66
1:E:427:LYS:HG3	1:E:428:HIS:CD2	2.31	0.65
1:D:349:ALA:HB3	1:E:47:GLU:HG3	1.76	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:128:GLU:OE2	1:B:164:ARG:HD3	1.96	0.65
1:B:312:ILE:HG13	1:B:313:ALA:H	1.60	0.65
1:C:106:ALA:HA	1:C:109:LYS:HE3	1.77	0.65
1:C:111:VAL:CG2	1:C:239:LEU:HD11	2.25	0.65
1:B:261:ILE:HG22	1:B:261:ILE:O	1.95	0.65
1:F:274:ARG:HA	1:F:277:VAL:HG23	1.78	0.65
1:B:136:ILE:CD1	1:B:156:ARG:HA	2.26	0.65
1:E:151:GLU:HB3	1:E:152:PRO:HD3	1.78	0.65
1:F:289:THR:HG22	1:F:290:VAL:H	1.62	0.65
1:F:85:LYS:HE2	1:F:94:LYS:HE2	1.79	0.65
1:E:285:VAL:O	1:E:325:ARG:HD3	1.97	0.65
1:F:374:LYS:O	1:F:378:GLU:HG3	1.96	0.65
1:B:131:ILE:HD12	1:B:222:MET:SD	2.37	0.64
1:B:85:LYS:HG2	1:B:85:LYS:O	1.96	0.64
1:E:350:SER:O	1:E:354:GLN:HG3	1.97	0.64
1:D:41:ASN:ND2	1:D:41:ASN:C	2.50	0.64
1:F:240:LYS:HD2	1:F:241:GLN:HG3	1.79	0.64
1:A:9:ILE:HG23	1:A:73:LEU:HD21	1.79	0.64
1:C:235:ASN:HB3	1:C:238:GLU:OE1	1.98	0.64
1:B:170:ASP:O	1:B:171:LYS:HB3	1.97	0.64
1:C:274:ARG:HA	1:C:277:VAL:HG23	1.78	0.64
1:C:55:MET:CE	1:C:63:LYS:HA	2.27	0.64
1:D:41:ASN:HD21	1:D:44:LEU:HD12	1.63	0.64
1:E:17:ILE:HD13	1:E:66:ILE:HG12	1.78	0.64
1:C:42:GLU:CD	1:C:42:GLU:H	1.99	0.64
1:D:54:LEU:HD23	1:D:329:ARG:HD2	1.80	0.64
1:C:37:ARG:O	1:C:39:GLN:N	2.30	0.64
1:E:393:ARG:HG2	1:E:393:ARG:HH11	1.62	0.64
1:A:90:GLY:O	1:B:90:GLY:HA2	1.97	0.63
1:D:384:ASN:ND2	1:D:394:ARG:NH1	2.46	0.63
1:D:41:ASN:ND2	1:D:44:LEU:HD12	2.12	0.63
1:C:359:MET:CE	1:C:406:ILE:HG22	2.28	0.63
1:F:106:ALA:HA	1:F:109:LYS:HE3	1.80	0.63
1:D:32:ARG:O	1:D:36:ARG:HG3	1.98	0.63
1:B:18:ILE:HD13	1:B:347:PRO:HG3	1.80	0.63
1:E:271:ASP:C	1:E:273:SER:H	2.00	0.63
1:E:312:ILE:HG13	1:E:313:ALA:N	2.13	0.63
1:F:390:ILE:HG21	1:F:393:ARG:HB2	1.81	0.63
1:B:369:THR:HG22	1:B:371:SER:H	1.64	0.63
1:E:173:ILE:HD12	1:E:173:ILE:H	1.62	0.63
1:E:9:ILE:HD13	1:E:31:LEU:HD12	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:336:THR:O	1:B:339:ASP:HB2	1.98	0.63
1:C:25:ARG:O	1:C:29:ILE:HG13	1.98	0.63
1:A:108:VAL:HG21	1:A:294:HIS:ND1	2.13	0.63
1:F:72:LYS:O	1:F:72:LYS:HE3	1.98	0.63
1:A:41:ASN:ND2	1:A:41:ASN:C	2.47	0.63
1:F:389:ASN:C	1:F:389:ASN:ND2	2.52	0.62
1:F:100:ILE:HG21	1:F:290:VAL:HG11	1.80	0.62
1:F:235:ASN:HB3	1:F:238:GLU:C	2.20	0.62
1:A:3:GLU:HG2	1:A:35:TRP:CB	2.30	0.62
1:B:263:LYS:O	1:B:264:ARG:HB3	1.99	0.62
1:C:23:ALA:HA	1:C:330:VAL:HG21	1.80	0.62
1:F:359:MET:HE1	1:F:407:SER:HA	1.80	0.62
1:B:174:GLU:HA	1:B:213:ALA:N	2.14	0.62
1:B:362:GLU:HG3	1:B:410:ALA:HB1	1.80	0.62
1:B:42:GLU:HA	1:B:45:ARG:HH12	1.64	0.62
1:C:335:LEU:HD22	1:C:339:ASP:HB3	1.80	0.62
1:E:27:VAL:HG22	1:E:70:LEU:HG	1.81	0.62
1:E:261:ILE:CG2	1:E:278:GLN:HG3	2.30	0.62
1:F:65:GLU:OE1	1:F:69:ARG:NH2	2.29	0.62
1:D:384:ASN:HA	1:D:394:ARG:HH12	1.64	0.62
1:B:18:ILE:N	2:B:905:ATP:HN61	1.95	0.62
1:C:389:ASN:ND2	1:C:389:ASN:C	2.53	0.62
1:B:106:ALA:O	1:B:110:MET:HG3	2.00	0.62
1:A:122:ARG:NH2	1:A:126:LEU:HD21	2.15	0.61
1:F:398:VAL:HG22	1:F:443:LEU:HD22	1.80	0.61
1:A:279:ARG:HH11	1:A:279:ARG:HG2	1.66	0.61
1:B:369:THR:HG22	1:B:371:SER:N	2.15	0.61
1:B:235:ASN:HB2	1:B:238:GLU:HB2	1.81	0.61
1:A:94:LYS:HE3	1:B:95:GLU:HG2	1.82	0.61
1:F:240:LYS:HD2	1:F:241:GLN:N	2.14	0.61
1:E:270:PRO:HA	1:E:273:SER:HB3	1.82	0.61
1:F:282:LEU:O	1:F:286:GLU:HG2	2.01	0.61
1:F:344:LEU:CD1	1:F:395:LEU:HD13	2.27	0.61
1:B:393:ARG:HG2	1:B:393:ARG:HH11	1.65	0.61
1:C:107:ALA:O	1:C:110:MET:HB2	2.00	0.61
1:C:87:THR:C	1:C:89:VAL:H	2.04	0.61
1:F:87:THR:C	1:F:89:VAL:H	2.04	0.61
1:C:264:ARG:HB3	1:C:271:ASP:OD2	2.00	0.61
1:C:83:ALA:HB1	1:C:261:ILE:HD13	1.82	0.61
1:E:264:ARG:CB	1:E:274:ARG:HH12	2.09	0.61
1:A:387:THR:HA	1:A:440:ARG:NH2	2.16	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:358:LEU:O	1:D:361:THR:HB	2.01	0.61
1:A:270:PRO:O	1:A:273:SER:HB3	2.01	0.61
1:B:271:ASP:C	1:B:273:SER:H	2.03	0.61
1:C:53:ILE:HG23	1:C:328:ILE:HG22	1.81	0.61
1:A:3:GLU:HG2	1:A:35:TRP:CD1	2.36	0.60
1:E:217:LYS:HE3	1:E:220:ASP:OD2	2.01	0.60
1:C:282:LEU:HD11	1:C:319:ILE:CD1	2.28	0.60
1:E:216:LEU:CD1	1:E:217:LYS:H	2.12	0.60
1:A:88:GLU:CB	1:A:91:TYR:HB2	2.32	0.60
1:C:20:GLN:O	1:C:24:LYS:HG3	2.01	0.60
1:F:111:VAL:CG2	1:F:239:LEU:HD11	2.32	0.60
1:A:366:ILE:HD13	1:A:418:ILE:HB	1.82	0.60
1:E:222:MET:O	1:E:226:ILE:HG13	2.01	0.60
1:F:266:GLU:HG3	1:F:270:PRO:HG2	1.83	0.60
1:C:441:PHE:HD1	1:D:56:ILE:HD13	1.66	0.60
1:D:40:LEU:CD1	1:D:48:VAL:HG21	2.32	0.60
1:B:101:ARG:NH1	1:B:101:ARG:HG3	2.16	0.60
1:B:27:VAL:CG2	1:B:70:LEU:HG	2.32	0.60
1:D:37:ARG:HG3	1:D:48:VAL:HG11	1.82	0.60
1:E:336:THR:O	1:E:339:ASP:HB2	2.01	0.60
1:B:103:LEU:HD13	1:B:247:VAL:HG13	1.82	0.60
1:B:41:ASN:ND2	1:B:41:ASN:C	2.45	0.60
1:C:289:THR:HG22	1:C:290:VAL:H	1.66	0.60
1:D:427:LYS:HD2	1:D:427:LYS:O	2.02	0.60
1:D:238:GLU:O	1:D:241:GLN:N	2.34	0.60
1:D:33:ASN:HD22	1:D:36:ARG:HD2	1.66	0.60
1:E:122:ARG:HH22	1:E:126:LEU:HD21	1.65	0.60
1:E:63:LYS:HG2	1:E:332:LEU:HD22	1.84	0.60
1:B:151:GLU:C	1:B:153:SER:H	2.04	0.60
1:B:161:LYS:HG3	1:B:165:GLU:HG3	1.84	0.60
1:C:266:GLU:HG3	1:C:270:PRO:HG2	1.82	0.60
1:C:397:THR:CG2	1:D:327:PRO:HA	2.32	0.60
1:E:59:THR:HG22	1:E:393:ARG:HE	1.67	0.60
1:A:298:LYS:HE3	1:A:300:ASP:CG	2.22	0.59
1:A:56:ILE:HD13	1:F:441:PHE:HD1	1.66	0.59
1:D:38:MET:CE	1:D:45:ARG:HE	2.14	0.59
1:E:263:LYS:O	1:E:264:ARG:HB3	2.01	0.59
1:B:312:ILE:HG13	1:B:313:ALA:N	2.17	0.59
1:E:85:LYS:O	1:E:85:LYS:HG2	2.01	0.59
1:C:240:LYS:HD2	1:C:241:GLN:N	2.17	0.59
1:C:388:GLU:N	1:C:388:GLU:OE1	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:417:ASN:HD22	1:F:417:ASN:N	2.01	0.59
1:A:51:LYS:O	1:A:328:ILE:HD12	2.02	0.59
1:C:103:LEU:HD13	1:C:247:VAL:HG13	1.85	0.59
1:E:216:LEU:HD12	1:E:217:LYS:H	1.65	0.59
1:A:413:LEU:HA	1:A:416:GLN:OE1	2.03	0.59
1:B:101:ARG:HD3	1:B:292:THR:HG22	1.83	0.59
1:D:298:LYS:HE3	1:D:300:ASP:CG	2.22	0.59
1:E:131:ILE:HD12	1:E:222:MET:SD	2.42	0.59
1:C:390:ILE:HG21	1:C:393:ARG:HB2	1.85	0.59
1:C:65:GLU:OE1	1:C:69:ARG:NH2	2.36	0.59
1:E:140:LYS:O	1:E:140:LYS:HD2	2.02	0.59
1:F:110:MET:O	1:F:114:GLN:HB2	2.02	0.59
1:B:413:LEU:O	1:B:416:GLN:HG3	2.02	0.59
1:D:361:THR:HG22	1:D:362:GLU:HG2	1.85	0.59
1:E:175:ILE:HG21	1:E:228:GLU:OE1	2.03	0.59
1:E:441:PHE:HD1	1:F:56:ILE:HD13	1.67	0.59
1:E:106:ALA:O	1:E:110:MET:HG3	2.02	0.59
1:C:111:VAL:HG21	1:C:239:LEU:HD11	1.83	0.59
1:B:132:LEU:HD11	1:B:160:ARG:HE	1.67	0.58
1:E:261:ILE:HG22	1:E:278:GLN:HE21	1.68	0.58
1:F:20:GLN:O	1:F:24:LYS:HG3	2.02	0.58
1:B:264:ARG:HB2	1:B:274:ARG:NH1	2.13	0.58
1:D:44:LEU:O	1:D:47:GLU:N	2.32	0.58
1:E:401:ARG:HA	1:E:404:GLU:HG3	1.86	0.58
1:E:79:ILE:CD1	1:E:102:ASP:HB3	2.32	0.58
1:C:372:GLY:O	1:C:376:ILE:HG13	2.03	0.58
1:B:383:VAL:CG1	1:B:394:ARG:NH1	2.66	0.58
1:D:88:GLU:CB	1:D:91:TYR:HB2	2.34	0.58
1:A:238:GLU:O	1:A:241:GLN:N	2.36	0.58
1:A:35:TRP:O	1:A:39:GLN:HG2	2.03	0.58
1:D:300:ASP:C	1:D:301:HIS:HD2	2.07	0.58
1:E:175:ILE:HG22	1:E:176:ASP:N	2.18	0.58
1:E:270:PRO:O	1:E:273:SER:HB3	2.03	0.58
1:F:352:THR:HG22	1:F:353:VAL:N	2.19	0.58
1:A:33:ASN:HD22	1:A:36:ARG:HD2	1.69	0.58
1:D:122:ARG:O	1:D:126:LEU:HG	2.04	0.58
1:F:9:ILE:HD13	1:F:31:LEU:HD23	1.85	0.58
1:A:384:ASN:ND2	1:A:390:ILE:H	2.02	0.58
1:A:88:GLU:HB2	1:A:91:TYR:CB	2.34	0.58
1:E:131:ILE:O	1:E:134:VAL:HG12	2.04	0.58
1:E:152:PRO:O	1:E:156:ARG:HB3	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:427:LYS:HD2	1:D:427:LYS:C	2.24	0.58
1:E:27:VAL:CG2	1:E:70:LEU:HG	2.33	0.58
1:A:312:ILE:HG13	1:A:313:ALA:N	2.19	0.57
1:B:234:VAL:CG1	1:B:239:LEU:HD23	2.34	0.57
1:E:262:CYS:SG	1:E:318:LEU:HD23	2.44	0.57
1:B:5:THR:HG23	1:B:8:GLU:CD	2.24	0.57
1:C:107:ALA:O	1:C:111:VAL:HG22	2.03	0.57
1:C:432:LEU:HG	1:C:442:ILE:HD11	1.86	0.57
1:C:74:ALA:O	1:C:75:ASN:C	2.43	0.57
1:B:270:PRO:HA	1:B:273:SER:HB3	1.86	0.57
1:C:266:GLU:HG2	1:C:271:ASP:HB2	1.85	0.57
1:C:55:MET:HE1	1:C:63:LYS:HA	1.85	0.57
1:E:42:GLU:HA	1:E:45:ARG:NH1	2.20	0.57
1:A:397:THR:HG21	1:A:443:LEU:C	2.25	0.57
1:E:41:ASN:ND2	1:E:44:LEU:H	1.99	0.57
1:F:282:LEU:HD12	1:F:322:LEU:HD13	1.87	0.57
1:E:122:ARG:HA	1:E:122:ARG:HE	1.70	0.57
1:E:101:ARG:NE	1:E:291:SER:O	2.35	0.57
1:F:402:LEU:HB2	1:F:429:LEU:HD21	1.86	0.57
1:F:345:THR:HG22	1:F:373:ILE:HD13	1.84	0.57
1:B:5:THR:OG1	1:B:8:GLU:HG3	2.05	0.57
1:E:174:GLU:HA	1:E:213:ALA:HA	1.86	0.57
1:F:345:THR:CG2	1:F:373:ILE:HD13	2.34	0.57
1:C:361:THR:OG1	1:D:39:GLN:HB2	2.05	0.57
1:E:342:ARG:HG2	1:E:346:GLU:OE1	2.05	0.57
1:F:5:THR:HB	1:F:6:PRO:HD2	1.85	0.57
1:C:359:MET:HG3	1:C:366:ILE:CD1	2.35	0.57
1:E:169:ASP:O	1:E:170:ASP:CG	2.43	0.57
1:F:83:ALA:HB1	1:F:261:ILE:HD13	1.87	0.57
1:B:152:PRO:O	1:B:153:SER:O	2.22	0.56
1:B:9:ILE:HD13	1:B:31:LEU:HD12	1.87	0.56
1:B:359:MET:HG3	1:B:366:ILE:HG13	1.87	0.56
1:C:345:THR:CG2	1:C:373:ILE:HD13	2.35	0.56
1:F:372:GLY:O	1:F:376:ILE:HG13	2.05	0.56
1:D:270:PRO:O	1:D:273:SER:HB3	2.05	0.56
1:D:325:ARG:NE	1:D:325:ARG:HA	2.19	0.56
1:F:303:LEU:HG	1:F:305:ILE:CD1	2.34	0.56
1:B:354:GLN:OE1	1:C:48:VAL:HG12	2.06	0.56
1:F:288:CYS:O	1:F:298:LYS:O	2.23	0.56
1:F:16:HIS:CD2	1:F:69:ARG:HD2	2.40	0.56
1:C:85:LYS:CE	1:C:94:LYS:HE2	2.35	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:266:GLU:HG3	1:D:267:SER:N	2.20	0.56
1:E:383:VAL:CG1	1:E:394:ARG:NH1	2.68	0.56
1:B:175:ILE:HD13	1:B:224:LEU:HD11	1.88	0.56
1:D:249:GLN:O	1:D:250:HIS:ND1	2.38	0.56
1:A:18:ILE:N	2:A:900:ATP:HN61	2.00	0.56
1:C:263:LYS:O	1:C:264:ARG:HB3	2.06	0.56
1:F:233:LEU:O	1:F:235:ASN:N	2.39	0.56
1:B:81:VAL:HG11	1:B:99:ILE:HG12	1.87	0.56
1:D:387:THR:HA	1:D:440:ARG:NH2	2.20	0.56
1:D:366:ILE:HD13	1:D:418:ILE:HB	1.87	0.56
1:A:249:GLN:O	1:A:250:HIS:ND1	2.39	0.56
1:A:375:ARG:HB3	1:A:425:VAL:HG11	1.87	0.56
1:F:350:SER:O	1:F:354:GLN:HG3	2.06	0.56
1:B:270:PRO:O	1:B:273:SER:HB3	2.06	0.56
1:C:75:ASN:HD22	1:C:114:GLN:HE22	1.54	0.56
1:D:384:ASN:HD22	1:D:394:ARG:HH12	1.53	0.56
1:B:132:LEU:HD13	1:B:156:ARG:HG3	1.89	0.56
1:B:217:LYS:HG3	1:B:220:ASP:HB2	1.87	0.56
1:B:384:ASN:HD21	1:B:394:ARG:HB2	1.69	0.56
1:B:95:GLU:HA	1:B:95:GLU:OE1	2.06	0.56
1:E:125:GLU:O	1:E:128:GLU:HG3	2.06	0.56
1:E:358:LEU:O	1:E:361:THR:HB	2.05	0.56
1:F:389:ASN:HD22	1:F:390:ILE:N	2.03	0.56
1:B:136:ILE:HD11	1:B:159:PHE:CD2	2.25	0.55
1:D:115:ALA:O	1:D:118:LYS:HB3	2.05	0.55
1:D:266:GLU:HG3	1:D:267:SER:H	1.71	0.55
1:E:17:ILE:HD13	1:E:66:ILE:CG1	2.35	0.55
1:B:79:ILE:CD1	1:B:102:ASP:HB3	2.37	0.55
1:E:132:LEU:HB2	1:E:156:ARG:NH1	2.22	0.55
1:A:41:ASN:HD21	1:A:44:LEU:HD12	1.70	0.55
1:E:261:ILE:HG23	1:E:274:ARG:O	2.05	0.55
1:F:264:ARG:HB3	1:F:271:ASP:OD2	2.07	0.55
1:C:19:GLY:O	1:C:24:LYS:HE3	2.07	0.55
1:C:9:ILE:HD13	1:C:31:LEU:HD23	1.89	0.55
1:C:416:GLN:C	1:C:417:ASN:HD22	2.09	0.55
1:B:41:ASN:ND2	1:B:44:LEU:H	2.04	0.55
1:D:100:ILE:CB	1:D:290:VAL:HG21	2.37	0.55
1:E:107:ALA:O	1:E:111:VAL:HG23	2.06	0.55
1:E:271:ASP:C	1:E:273:SER:N	2.60	0.55
1:B:229:GLU:O	1:B:233:LEU:HD23	2.07	0.55
1:B:349:ALA:CB	1:C:47:GLU:HG3	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:3:GLU:HG3	1:C:35:TRP:HB2	1.89	0.55
1:E:435:ASP:CG	1:E:438:LEU:HD23	2.27	0.55
1:F:429:LEU:O	1:F:433:VAL:HG23	2.07	0.55
1:C:41:ASN:HD21	1:C:43:GLU:HB3	1.72	0.55
1:D:62:GLY:O	1:D:66:ILE:HG13	2.07	0.55
1:C:390:ILE:HG21	1:C:393:ARG:HG3	1.88	0.55
1:E:383:VAL:HB	1:E:394:ARG:HH11	1.72	0.55
1:F:222:MET:O	1:F:226:ILE:HG13	2.07	0.55
1:F:41:ASN:HD21	1:F:43:GLU:HB3	1.72	0.55
1:A:278:GLN:OE1	1:A:319:ILE:HG12	2.07	0.54
1:A:427:LYS:HD2	1:A:427:LYS:C	2.27	0.54
1:A:41:ASN:ND2	1:A:44:LEU:HD12	2.21	0.54
1:B:383:VAL:HB	1:B:394:ARG:HH11	1.72	0.54
1:C:359:MET:HE1	1:C:410:ALA:HB2	1.89	0.54
1:E:168:LEU:HB2	1:E:169:ASP:OD2	2.06	0.54
1:A:271:ASP:HA	1:A:274:ARG:HH11	1.70	0.54
1:F:100:ILE:CG2	1:F:290:VAL:HG11	2.37	0.54
1:F:384:ASN:ND2	1:F:394:ARG:HH11	2.03	0.54
1:F:304:PHE:C	1:F:305:ILE:HD12	2.27	0.54
1:A:82:GLU:O	1:A:84:THR:N	2.39	0.54
1:B:134:VAL:HG11	1:B:171:LYS:HD2	1.89	0.54
1:B:442:ILE:HG23	1:C:329:ARG:HB2	1.89	0.54
1:D:279:ARG:HG2	1:D:279:ARG:HH11	1.72	0.54
1:C:111:VAL:O	1:C:114:GLN:HB3	2.08	0.54
1:C:436:GLU:O	1:C:439:SER:HB2	2.08	0.54
1:D:119:ASN:HD22	1:D:233:LEU:HG	1.71	0.54
1:D:63:LYS:HG2	1:D:332:LEU:HD22	1.89	0.54
1:D:88:GLU:HB2	1:D:91:TYR:CB	2.38	0.54
1:E:383:VAL:HG12	1:E:394:ARG:HH12	1.72	0.54
1:A:100:ILE:CB	1:A:290:VAL:HG21	2.37	0.54
1:B:18:ILE:CD1	1:B:347:PRO:HG3	2.37	0.54
1:B:355:TYR:CZ	1:B:403:MET:HB2	2.42	0.54
1:C:41:ASN:ND2	1:C:43:GLU:H	2.05	0.54
1:C:5:THR:HB	1:C:6:PRO:CD	2.37	0.54
1:D:355:TYR:OH	1:D:400:GLU:HG2	2.07	0.54
1:E:50:PRO:O	1:E:325:ARG:NH2	2.36	0.54
1:F:359:MET:HE2	1:F:406:ILE:HG22	1.89	0.54
1:A:88:GLU:O	1:A:88:GLU:HG2	2.07	0.54
1:B:161:LYS:O	1:B:165:GLU:HG3	2.07	0.54
1:C:81:VAL:HG11	1:C:86:PHE:CE2	2.42	0.54
1:C:361:THR:HG21	1:D:36:ARG:CB	2.38	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:71:ALA:HA	1:D:252:ILE:HD12	1.90	0.54
1:E:128:GLU:OE2	1:E:164:ARG:HD3	2.06	0.54
1:A:84:THR:O	1:A:86:PHE:N	2.41	0.54
1:A:4:MET:HB2	1:A:8:GLU:OE1	2.07	0.54
1:D:384:ASN:ND2	1:D:390:ILE:H	2.06	0.54
1:D:63:LYS:HG2	1:D:332:LEU:HD13	1.90	0.54
1:F:266:GLU:HG2	1:F:271:ASP:HB2	1.89	0.54
1:F:305:ILE:HD12	1:F:305:ILE:N	2.22	0.54
1:F:81:VAL:HG11	1:F:86:PHE:CE2	2.43	0.54
1:A:266:GLU:HG3	1:A:267:SER:N	2.23	0.54
1:B:263:LYS:O	1:B:264:ARG:CB	2.55	0.54
1:D:270:PRO:HB2	1:D:274:ARG:HH12	1.73	0.54
1:F:284:LEU:HA	1:F:299:THR:HG21	1.90	0.54
1:F:402:LEU:HD23	1:F:403:MET:SD	2.48	0.54
1:A:384:ASN:ND2	1:A:394:ARG:NH1	2.55	0.54
1:D:90:GLY:O	1:E:90:GLY:HA2	2.08	0.54
1:E:261:ILE:O	1:E:261:ILE:CG2	2.56	0.54
1:F:48:VAL:HG23	1:F:48:VAL:O	2.08	0.54
1:D:94:LYS:HE3	1:E:95:GLU:HG2	1.90	0.53
1:F:288:CYS:SG	1:F:289:THR:N	2.81	0.53
1:B:59:THR:HG22	1:B:393:ARG:HE	1.72	0.53
1:F:108:VAL:O	1:F:112:ARG:HB2	2.07	0.53
1:B:100:ILE:HB	1:B:290:VAL:HG21	1.89	0.53
1:F:101:ARG:NH1	1:F:101:ARG:HG2	2.20	0.53
1:F:361:THR:HG22	1:F:362:GLU:HG2	1.91	0.53
1:A:44:LEU:O	1:A:47:GLU:N	2.37	0.53
1:C:240:LYS:CD	1:C:241:GLN:HG3	2.37	0.53
1:E:335:LEU:HD13	1:E:343:ILE:HD11	1.90	0.53
1:E:379:ALA:O	1:E:383:VAL:HG23	2.08	0.53
1:A:40:LEU:CD1	1:A:48:VAL:HG21	2.39	0.53
1:C:398:VAL:HG22	1:C:443:LEU:HD22	1.90	0.53
1:D:122:ARG:NH2	1:D:126:LEU:HD21	2.23	0.53
1:D:248:GLU:HG3	1:D:297:VAL:HG13	1.91	0.53
1:B:107:ALA:O	1:B:111:VAL:HG23	2.09	0.53
1:A:257:GLU:C	1:A:259:ASP:H	2.12	0.53
1:A:36:ARG:CB	1:F:361:THR:HG21	2.39	0.53
1:A:105:ASP:HB3	1:B:296:MET:CE	2.38	0.53
1:C:335:LEU:HD22	1:C:339:ASP:CB	2.38	0.53
1:F:100:ILE:HG21	1:F:290:VAL:CG1	2.38	0.53
1:A:275:GLU:O	1:A:279:ARG:HG3	2.08	0.53
1:D:79:ILE:CG2	1:D:103:LEU:HG	2.38	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:101:ARG:HG3	1:E:101:ARG:NH1	2.24	0.53
1:F:282:LEU:HB2	1:F:283:PRO:HD3	1.90	0.53
1:A:384:ASN:HD21	1:A:390:ILE:H	1.54	0.53
1:B:361:THR:HG23	1:C:39:GLN:HG2	1.89	0.53
1:E:270:PRO:C	1:E:273:SER:HB3	2.30	0.53
1:A:18:ILE:N	2:A:900:ATP:N6	2.56	0.53
1:F:388:GLU:OE1	1:F:388:GLU:N	2.42	0.53
1:A:325:ARG:HA	1:A:325:ARG:HE	1.72	0.52
1:A:3:GLU:HG2	1:A:35:TRP:CG	2.45	0.52
1:B:109:LYS:O	1:B:113:VAL:HG23	2.10	0.52
1:D:312:ILE:HG13	1:D:313:ALA:N	2.23	0.52
1:E:132:LEU:HD23	1:E:135:LEU:HD12	1.91	0.52
1:C:240:LYS:NZ	1:C:241:GLN:HG3	2.23	0.52
1:D:349:ALA:CB	1:E:47:GLU:HG3	2.39	0.52
1:E:18:ILE:N	2:E:915:ATP:HN61	2.06	0.52
1:F:240:LYS:CD	1:F:241:GLN:HG3	2.39	0.52
1:F:240:LYS:C	1:F:242:ASP:H	2.11	0.52
1:C:233:LEU:H	1:C:233:LEU:HD22	1.74	0.52
1:E:263:LYS:O	1:E:264:ARG:CB	2.57	0.52
1:E:95:GLU:OE1	1:E:95:GLU:HA	2.09	0.52
1:E:325:ARG:HA	1:E:325:ARG:HE	1.75	0.52
1:F:244:ILE:HG13	1:F:245:ASP:N	2.24	0.52
1:A:36:ARG:HG2	1:F:361:THR:HG21	1.92	0.52
1:C:359:MET:HE1	1:C:407:SER:HA	1.92	0.52
1:C:374:LYS:O	1:C:378:GLU:HG3	2.09	0.52
1:D:88:GLU:HG2	1:D:88:GLU:O	2.09	0.52
1:F:240:LYS:O	1:F:242:ASP:N	2.39	0.52
1:F:390:ILE:HG21	1:F:393:ARG:CB	2.40	0.52
1:F:394:ARG:O	1:F:394:ARG:HG3	2.08	0.52
1:F:3:GLU:HG3	1:F:35:TRP:HB2	1.91	0.52
1:A:361:THR:HG22	1:A:362:GLU:HG2	1.91	0.52
1:C:303:LEU:HG	1:C:305:ILE:CD1	2.40	0.52
1:F:111:VAL:HG21	1:F:239:LEU:HD11	1.92	0.52
1:F:257:GLU:HB2	1:F:260:LYS:CG	2.38	0.52
1:D:246:ALA:O	1:D:250:HIS:HB2	2.09	0.52
1:E:100:ILE:HB	1:E:290:VAL:HG21	1.90	0.52
1:B:261:ILE:HG22	1:B:278:GLN:NE2	2.20	0.52
1:B:435:ASP:CG	1:B:438:LEU:HD23	2.30	0.52
1:D:30:ALA:HB2	1:D:53:ILE:HD11	1.90	0.52
1:F:436:GLU:O	1:F:439:SER:HB2	2.09	0.52
1:F:74:ALA:O	1:F:75:ASN:C	2.48	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:248:GLU:OE1	1:A:297:VAL:HA	2.10	0.52
1:B:441:PHE:HD1	1:C:56:ILE:HD13	1.75	0.52
1:C:72:LYS:C	1:C:72:LYS:HE3	2.30	0.52
1:D:248:GLU:OE1	1:D:297:VAL:HA	2.10	0.52
1:A:32:ARG:O	1:A:36:ARG:HG3	2.09	0.52
1:C:282:LEU:O	1:C:286:GLU:HG2	2.10	0.52
1:C:402:LEU:HD23	1:C:403:MET:SD	2.50	0.52
1:E:126:LEU:HA	1:E:129:GLU:HB3	1.92	0.52
1:F:442:ILE:HD12	1:F:442:ILE:C	2.31	0.52
1:B:101:ARG:CG	1:B:101:ARG:HH11	2.20	0.51
1:B:384:ASN:HD22	1:B:394:ARG:NH1	2.07	0.51
1:F:359:MET:HE1	1:F:410:ALA:HB2	1.91	0.51
1:A:37:ARG:NE	1:A:301:HIS:CE1	2.78	0.51
1:C:108:VAL:HG21	1:C:294:HIS:ND1	2.24	0.51
1:D:18:ILE:N	2:D:910:ATP:N6	2.55	0.51
1:D:263:LYS:O	1:D:264:ARG:CB	2.57	0.51
1:D:37:ARG:NH1	1:D:37:ARG:HB3	2.26	0.51
1:F:390:ILE:CG2	1:F:393:ARG:HB2	2.41	0.51
1:B:104:THR:HA	1:B:247:VAL:HG21	1.91	0.51
1:E:279:ARG:HH11	1:E:279:ARG:HG2	1.75	0.51
1:E:41:ASN:O	1:E:45:ARG:HB2	2.10	0.51
1:B:151:GLU:C	1:B:153:SER:N	2.64	0.51
1:B:272:VAL:O	1:B:272:VAL:HG12	2.10	0.51
1:A:361:THR:CG2	1:B:36:ARG:HG2	2.38	0.51
1:C:103:LEU:O	1:C:106:ALA:HB3	2.11	0.51
1:C:361:THR:HG21	1:D:36:ARG:HB3	1.92	0.51
1:A:246:ALA:O	1:A:250:HIS:HB2	2.10	0.51
1:B:261:ILE:CG2	1:B:261:ILE:O	2.57	0.51
1:B:280:ASP:O	1:B:283:PRO:HD2	2.10	0.51
1:D:421:ASP:OD2	1:D:423:ASP:HB2	2.10	0.51
1:A:294:HIS:N	1:A:294:HIS:CD2	2.79	0.51
1:A:432:LEU:CD1	1:A:432:LEU:N	2.73	0.51
1:E:168:LEU:HD13	1:E:168:LEU:N	2.26	0.51
1:E:401:ARG:CZ	1:E:442:ILE:HG21	2.41	0.51
1:F:43:GLU:O	1:F:47:GLU:HG2	2.10	0.51
1:F:282:LEU:CD1	1:F:319:ILE:HD11	2.39	0.51
1:B:54:LEU:HD23	1:B:329:ARG:HD2	1.91	0.51
1:C:108:VAL:O	1:C:112:ARG:HB2	2.11	0.51
1:C:233:LEU:N	1:C:233:LEU:HD22	2.26	0.51
1:F:107:ALA:O	1:F:110:MET:HB2	2.11	0.51
1:A:361:THR:HG21	1:B:36:ARG:CG	2.37	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:63:LYS:HG2	1:A:332:LEU:HD13	1.93	0.51
1:E:17:ILE:CD1	1:E:66:ILE:HA	2.41	0.51
1:B:126:LEU:HA	1:B:129:GLU:HB3	1.93	0.51
1:B:243:ALA:O	1:B:246:ALA:HB3	2.11	0.51
1:B:37:ARG:O	1:B:45:ARG:HG3	2.10	0.51
1:D:351:ILE:HD12	1:D:399:LEU:HD12	1.92	0.51
1:E:169:ASP:O	1:E:170:ASP:OD1	2.28	0.51
1:F:266:GLU:HG3	1:F:267:SER:N	2.26	0.51
1:C:441:PHE:HA	1:D:315:PRO:HG2	1.93	0.50
1:F:230:ALA:O	1:F:234:VAL:HG23	2.10	0.50
1:D:247:VAL:HG12	1:D:302:ILE:HD11	1.93	0.50
1:D:37:ARG:HH11	1:D:37:ARG:HB3	1.76	0.50
1:D:384:ASN:HD21	1:D:390:ILE:H	1.59	0.50
1:F:267:SER:HB2	1:F:270:PRO:CG	2.42	0.50
1:A:302:ILE:HB	1:A:304:PHE:HE1	1.76	0.50
1:B:41:ASN:O	1:B:45:ARG:HB2	2.12	0.50
1:C:264:ARG:HB2	1:C:274:ARG:HH11	1.76	0.50
1:C:53:ILE:HG23	1:C:328:ILE:CG2	2.40	0.50
1:E:272:VAL:HG12	1:E:272:VAL:O	2.11	0.50
1:E:349:ALA:CB	1:F:47:GLU:HG3	2.42	0.50
1:F:393:ARG:CG	1:F:393:ARG:HH11	2.23	0.50
1:F:72:LYS:C	1:F:72:LYS:HE3	2.31	0.50
1:A:37:ARG:HB3	1:A:37:ARG:HH11	1.76	0.50
1:B:271:ASP:C	1:B:273:SER:N	2.63	0.50
1:B:435:ASP:HB3	1:B:438:LEU:HB2	1.94	0.50
1:D:105:ASP:HB3	1:E:296:MET:HE3	1.94	0.50
1:E:264:ARG:HB2	1:E:274:ARG:NH1	2.12	0.50
1:E:442:ILE:HG23	1:F:329:ARG:HB2	1.93	0.50
1:F:240:LYS:NZ	1:F:241:GLN:HG3	2.25	0.50
1:B:84:THR:HG22	1:B:87:THR:HG21	1.94	0.50
1:F:358:LEU:O	1:F:361:THR:HB	2.11	0.50
1:F:384:ASN:ND2	1:F:394:ARG:HD2	2.27	0.50
1:C:55:MET:HE2	1:C:63:LYS:HA	1.92	0.50
1:D:337:THR:O	1:D:341:GLU:HG3	2.11	0.50
1:F:52:ASN:HB2	1:F:325:ARG:O	2.11	0.50
1:A:300:ASP:C	1:A:301:HIS:HD2	2.15	0.50
1:B:383:VAL:HG12	1:B:394:ARG:HH12	1.74	0.50
1:D:82:GLU:O	1:D:84:THR:N	2.44	0.50
1:E:268:SER:O	1:E:272:VAL:HG23	2.12	0.50
1:E:96:VAL:HG12	1:E:284:LEU:HD11	1.93	0.50
1:F:336:THR:O	1:F:339:ASP:HB2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:240:LYS:HE2	1:D:294:HIS:O	2.11	0.50
1:E:168:LEU:HD23	1:E:219:LYS:CB	2.41	0.50
1:E:223:LYS:O	1:E:227:GLU:HG2	2.11	0.50
1:F:263:LYS:O	1:F:264:ARG:HB3	2.11	0.50
1:F:355:TYR:CE1	1:F:359:MET:HG3	2.46	0.50
1:B:346:GLU:O	1:B:347:PRO:C	2.49	0.50
1:D:257:GLU:HB3	1:D:260:LYS:CG	2.42	0.50
1:F:267:SER:HB2	1:F:270:PRO:CD	2.42	0.50
1:A:20:GLN:O	1:A:24:LYS:HG3	2.11	0.49
1:A:41:ASN:HD21	1:A:44:LEU:N	1.96	0.49
1:A:64:THR:HG21	1:A:68:ARG:HH11	1.76	0.49
1:B:131:ILE:O	1:B:134:VAL:HG12	2.11	0.49
1:B:168:LEU:HB3	1:B:219:LYS:HB2	1.94	0.49
1:C:355:TYR:CE1	1:C:359:MET:HG3	2.46	0.49
1:D:394:ARG:HG2	1:D:394:ARG:NH1	2.25	0.49
1:E:354:GLN:OE1	1:F:48:VAL:HG12	2.11	0.49
1:F:233:LEU:HD22	1:F:233:LEU:N	2.27	0.49
1:F:55:MET:CE	1:F:63:LYS:HA	2.41	0.49
1:A:34:ARG:HH12	1:A:250:HIS:C	2.16	0.49
1:C:282:LEU:HD12	1:C:322:LEU:HD13	1.94	0.49
1:D:369:THR:HG22	1:D:371:SER:H	1.77	0.49
1:E:168:LEU:N	1:E:168:LEU:CD1	2.76	0.49
1:A:38:MET:CE	1:A:45:ARG:HE	2.25	0.49
1:C:75:ASN:CG	1:C:75:ASN:O	2.51	0.49
1:E:54:LEU:HB2	1:E:326:LEU:HD13	1.93	0.49
1:F:369:THR:O	1:F:372:GLY:N	2.45	0.49
1:B:393:ARG:HG2	1:B:393:ARG:NH1	2.27	0.49
1:E:104:THR:HA	1:E:247:VAL:HG21	1.93	0.49
1:E:107:ALA:CB	1:E:247:VAL:HG23	2.42	0.49
1:B:233:LEU:N	1:B:233:LEU:HD22	2.28	0.49
1:D:280:ASP:O	1:D:283:PRO:HD2	2.12	0.49
1:E:332:LEU:N	1:E:332:LEU:HD12	2.27	0.49
1:A:79:ILE:CG2	1:A:103:LEU:HG	2.43	0.49
1:A:37:ARG:NH1	1:A:37:ARG:HB3	2.27	0.49
1:A:394:ARG:O	1:A:398:VAL:HG23	2.13	0.49
1:D:294:HIS:N	1:D:294:HIS:CD2	2.79	0.49
1:D:37:ARG:NE	1:D:301:HIS:CE1	2.80	0.49
1:D:394:ARG:CG	1:D:394:ARG:HH11	2.24	0.49
1:D:3:GLU:HG2	1:D:35:TRP:CB	2.37	0.49
1:E:175:ILE:HG22	1:E:176:ASP:H	1.77	0.49
1:F:350:SER:OG	1:F:353:VAL:HG23	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:17:ILE:HD13	1:B:66:ILE:CG1	2.41	0.49
1:C:393:ARG:CG	1:C:393:ARG:HH11	2.23	0.49
1:C:16:HIS:CD2	1:C:69:ARG:HD2	2.47	0.49
1:B:358:LEU:O	1:B:361:THR:HB	2.12	0.49
1:E:234:VAL:CG1	1:E:239:LEU:HD23	2.43	0.49
1:F:107:ALA:O	1:F:111:VAL:HG22	2.13	0.49
1:C:389:ASN:HD22	1:C:390:ILE:N	2.10	0.49
1:B:408:TYR:CD1	1:C:6:PRO:HB3	2.48	0.49
1:D:234:VAL:O	1:D:236:PRO:HD3	2.12	0.49
1:F:270:PRO:HG2	1:F:271:ASP:H	1.77	0.49
1:F:27:VAL:HB	1:F:70:LEU:HG	1.94	0.49
1:B:175:ILE:CD1	1:B:224:LEU:HD11	2.43	0.48
1:B:410:ALA:O	1:B:413:LEU:N	2.41	0.48
1:C:234:VAL:HG12	1:C:235:ASN:N	2.28	0.48
1:D:3:GLU:HG2	1:D:35:TRP:CD1	2.48	0.48
1:E:239:LEU:C	1:E:239:LEU:HD12	2.34	0.48
1:A:249:GLN:C	1:A:250:HIS:ND1	2.66	0.48
1:A:263:LYS:O	1:A:264:ARG:CB	2.59	0.48
1:B:426:SER:HB3	1:B:430:ASP:OD1	2.12	0.48
1:E:244:ILE:O	1:E:245:ASP:C	2.50	0.48
1:A:100:ILE:O	1:A:104:THR:OG1	2.26	0.48
1:B:21:ASP:OD2	1:B:25:ARG:NH1	2.47	0.48
1:B:369:THR:HB	1:B:421:ASP:HA	1.93	0.48
1:C:266:GLU:HG3	1:C:267:SER:N	2.29	0.48
1:D:325:ARG:CA	1:D:325:ARG:NE	2.74	0.48
1:D:38:MET:HE3	1:D:45:ARG:HE	1.76	0.48
1:A:41:ASN:O	1:A:45:ARG:HG3	2.14	0.48
1:A:17:ILE:HD11	1:A:66:ILE:HA	1.95	0.48
1:B:357:ALA:HB1	1:C:40:LEU:HD22	1.96	0.48
1:C:30:ALA:HB2	1:C:53:ILE:HD11	1.94	0.48
1:D:100:ILE:O	1:D:104:THR:OG1	2.28	0.48
1:F:103:LEU:O	1:F:106:ALA:HB3	2.13	0.48
1:B:83:ALA:HB1	1:B:261:ILE:HD11	1.93	0.48
1:A:104:THR:O	1:A:108:VAL:HG23	2.13	0.48
1:B:84:THR:HA	1:B:87:THR:CG2	2.36	0.48
1:C:288:CYS:SG	1:C:289:THR:N	2.86	0.48
1:C:390:ILE:HG21	1:C:393:ARG:CB	2.43	0.48
1:C:394:ARG:HG3	1:C:394:ARG:O	2.12	0.48
1:D:17:ILE:HD11	1:D:66:ILE:HA	1.94	0.48
1:A:302:ILE:HB	1:A:304:PHE:CE1	2.48	0.48
1:B:136:ILE:CD1	1:B:159:PHE:HD2	2.16	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:369:THR:HG22	1:B:372:GLY:H	1.79	0.48
1:C:32:ARG:O	1:C:36:ARG:HG3	2.13	0.48
1:C:41:ASN:HD21	1:C:43:GLU:CB	2.26	0.48
1:A:394:ARG:HG2	1:A:394:ARG:NH1	2.25	0.48
1:D:70:LEU:O	1:D:70:LEU:HD22	2.13	0.48
1:E:9:ILE:CD1	1:E:31:LEU:HD12	2.44	0.48
1:A:257:GLU:C	1:A:259:ASP:N	2.67	0.48
1:A:265:GLY:O	1:A:266:GLU:C	2.52	0.48
1:A:266:GLU:HG3	1:A:267:SER:H	1.79	0.48
1:B:375:ARG:HB3	1:B:425:VAL:HG11	1.96	0.48
1:B:401:ARG:CZ	1:B:442:ILE:HG21	2.43	0.48
1:C:272:VAL:C	1:C:274:ARG:N	2.66	0.48
1:C:292:THR:C	1:C:294:HIS:H	2.16	0.48
1:D:342:ARG:O	1:D:347:PRO:HD3	2.13	0.48
1:A:384:ASN:HD22	1:A:384:ASN:HA	1.48	0.48
1:B:23:ALA:HB2	1:B:332:LEU:HG	1.96	0.48
1:C:104:THR:O	1:C:107:ALA:N	2.47	0.48
1:C:299:THR:CG2	1:C:299:THR:O	2.62	0.48
1:C:359:MET:HG3	1:C:366:ILE:HD11	1.95	0.48
1:D:33:ASN:ND2	1:D:36:ARG:HD2	2.29	0.48
1:C:366:ILE:HD13	1:C:403:MET:CE	2.45	0.47
1:C:81:VAL:HG11	1:C:86:PHE:HE2	1.79	0.47
1:D:244:ILE:HG23	1:D:297:VAL:HG22	1.96	0.47
1:E:111:VAL:HG21	1:E:243:ALA:HA	1.95	0.47
1:F:108:VAL:HG13	1:F:239:LEU:HD21	1.95	0.47
1:F:19:GLY:O	1:F:24:LYS:HE3	2.14	0.47
1:F:55:MET:HE2	1:F:63:LYS:HA	1.95	0.47
1:A:280:ASP:O	1:A:283:PRO:HD2	2.13	0.47
1:A:71:ALA:HA	1:A:252:ILE:HD12	1.96	0.47
1:C:369:THR:OG1	1:C:421:ASP:HA	2.14	0.47
1:D:384:ASN:HD22	1:D:394:ARG:NH1	2.10	0.47
1:E:133:ASP:OD1	1:E:156:ARG:NH2	2.47	0.47
1:F:282:LEU:CB	1:F:283:PRO:HD3	2.44	0.47
1:A:325:ARG:HA	1:A:325:ARG:NE	2.30	0.47
1:C:32:ARG:HG3	1:C:36:ARG:HE	1.79	0.47
1:C:44:LEU:O	1:C:47:GLU:N	2.47	0.47
1:D:59:THR:HG22	1:D:60:GLY:N	2.30	0.47
1:E:175:ILE:CD1	1:E:224:LEU:HD11	2.39	0.47
1:E:393:ARG:HG2	1:E:393:ARG:NH1	2.27	0.47
1:E:400:GLU:HG3	1:F:327:PRO:HB2	1.97	0.47
1:F:81:VAL:HG11	1:F:86:PHE:HE2	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:284:LEU:HA	1:C:299:THR:HG21	1.96	0.47
1:C:361:THR:HG22	1:C:362:GLU:HG2	1.97	0.47
1:E:74:ALA:O	1:E:75:ASN:C	2.53	0.47
1:F:282:LEU:HD21	1:F:321:GLU:HG2	1.96	0.47
1:B:73:LEU:C	1:B:73:LEU:HD12	2.35	0.47
1:C:43:GLU:O	1:C:47:GLU:HG2	2.14	0.47
1:E:108:VAL:HG21	1:E:294:HIS:CE1	2.49	0.47
1:D:79:ILE:HG22	1:D:103:LEU:HG	1.96	0.47
1:E:216:LEU:CD1	1:E:217:LYS:HG2	2.39	0.47
1:B:151:GLU:O	1:B:153:SER:N	2.48	0.47
1:C:341:GLU:HG2	1:C:377:ALA:CB	2.44	0.47
1:C:44:LEU:O	1:C:45:ARG:C	2.53	0.47
1:D:271:ASP:O	1:D:275:GLU:HG3	2.14	0.47
1:D:361:THR:HG21	1:E:36:ARG:CG	2.42	0.47
1:A:277:VAL:O	1:A:281:LEU:HB2	2.15	0.47
1:A:248:GLU:O	1:A:301:HIS:HB2	2.14	0.47
1:A:65:GLU:HA	1:A:65:GLU:OE2	2.15	0.47
1:B:77:PRO:HB2	1:B:103:LEU:CD2	2.43	0.47
1:C:240:LYS:C	1:C:242:ASP:H	2.17	0.47
1:C:52:ASN:HB2	1:C:325:ARG:O	2.15	0.47
1:D:300:ASP:C	1:D:301:HIS:CD2	2.86	0.47
1:D:105:ASP:CB	1:E:296:MET:HE1	2.41	0.47
1:D:361:THR:CG2	1:E:36:ARG:HG2	2.44	0.47
1:F:108:VAL:HG21	1:F:294:HIS:ND1	2.30	0.47
1:F:38:MET:O	1:F:39:GLN:HB2	2.14	0.47
1:A:409:ASP:O	1:A:410:ALA:C	2.54	0.47
1:A:96:VAL:CG1	1:A:284:LEU:HD11	2.45	0.47
1:B:103:LEU:O	1:B:106:ALA:HB3	2.15	0.47
1:B:374:LYS:O	1:B:378:GLU:HG3	2.14	0.47
1:C:41:ASN:OD1	1:C:44:LEU:HG	2.15	0.47
1:D:303:LEU:HD12	1:D:304:PHE:N	2.29	0.47
1:C:390:ILE:HG23	1:D:320:PRO:HB3	1.96	0.47
1:D:384:ASN:ND2	1:D:394:ARG:HH12	2.11	0.47
1:E:345:THR:HG22	1:E:352:THR:HG21	1.97	0.47
1:F:272:VAL:C	1:F:274:ARG:N	2.67	0.47
1:A:64:THR:CG2	1:A:68:ARG:HH11	2.28	0.47
1:B:234:VAL:HG11	1:B:239:LEU:HD23	1.97	0.47
1:D:233:LEU:H	1:D:233:LEU:HD22	1.79	0.47
1:D:384:ASN:CA	1:D:394:ARG:HH12	2.25	0.47
1:E:84:THR:HA	1:E:87:THR:CG2	2.40	0.47
1:F:25:ARG:O	1:F:29:ILE:HG13	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:7:ARG:NH2	1:F:409:ASP:OD1	2.47	0.47
1:B:136:ILE:HD12	1:B:156:ARG:HA	1.97	0.47
1:B:241:GLN:NE2	1:B:245:ASP:OD2	2.48	0.47
1:C:305:ILE:HD12	1:C:305:ILE:N	2.30	0.47
1:C:374:LYS:O	1:C:377:ALA:HB3	2.15	0.47
1:D:87:THR:C	1:D:88:GLU:OE2	2.53	0.47
1:E:107:ALA:HB2	1:E:247:VAL:HG23	1.96	0.47
1:E:56:ILE:HA	1:E:308:GLY:O	2.16	0.47
1:F:344:LEU:O	1:F:350:SER:HB2	2.15	0.47
1:F:81:VAL:HG12	1:F:82:GLU:N	2.30	0.47
1:A:44:LEU:O	1:A:45:ARG:C	2.53	0.46
1:A:94:LYS:HE3	1:B:95:GLU:CG	2.45	0.46
1:C:101:ARG:HG2	1:C:101:ARG:NH1	2.26	0.46
1:C:329:ARG:HG3	1:C:329:ARG:HH11	1.80	0.46
1:D:44:LEU:O	1:D:46:HIS:N	2.48	0.46
1:D:72:LYS:N	1:D:72:LYS:CD	2.78	0.46
1:E:280:ASP:O	1:E:283:PRO:HD2	2.15	0.46
1:F:23:ALA:HA	1:F:330:VAL:HG21	1.97	0.46
1:F:279:ARG:HH11	1:F:279:ARG:HG2	1.80	0.46
1:A:17:ILE:CD1	1:A:66:ILE:HA	2.45	0.46
1:A:31:LEU:HG	1:A:70:LEU:HD21	1.96	0.46
1:C:402:LEU:HB2	1:C:429:LEU:HD21	1.95	0.46
1:D:249:GLN:C	1:D:250:HIS:ND1	2.68	0.46
1:E:335:LEU:HD11	2:E:915:ATP:C2	2.50	0.46
1:F:293:LYS:O	1:F:293:LYS:HG3	2.15	0.46
1:B:432:LEU:HD23	1:B:443:LEU:HD21	1.98	0.46
1:C:104:THR:O	1:C:105:ASP:C	2.52	0.46
1:C:43:GLU:O	1:C:43:GLU:HG2	2.15	0.46
1:D:239:LEU:HD12	1:D:240:LYS:H	1.76	0.46
1:A:96:VAL:HG13	1:A:99:ILE:HD12	1.96	0.46
1:B:435:ASP:OD1	1:B:438:LEU:HD23	2.15	0.46
1:C:75:ASN:ND2	1:C:114:GLN:HE22	2.14	0.46
1:E:19:GLY:O	1:E:24:LYS:HE3	2.16	0.46
1:F:37:ARG:O	1:F:39:GLN:N	2.47	0.46
1:B:101:ARG:CG	1:B:101:ARG:NH1	2.78	0.46
1:B:325:ARG:HE	1:B:325:ARG:HA	1.79	0.46
1:D:271:ASP:HA	1:D:274:ARG:HH11	1.81	0.46
1:E:83:ALA:HB1	1:E:261:ILE:HD11	1.98	0.46
1:D:105:ASP:O	1:E:296:MET:HE1	2.16	0.46
1:E:382:GLN:HG2	1:E:433:VAL:CG1	2.45	0.46
1:A:351:ILE:HA	1:A:354:GLN:HB2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:130:ARG:HH12	1:B:225:LEU:CD2	2.29	0.46
1:B:96:VAL:HG12	1:B:284:LEU:HD11	1.97	0.46
1:B:401:ARG:HD2	1:B:432:LEU:HD21	1.98	0.46
1:B:76:ALA:HB1	1:B:250:HIS:O	2.16	0.46
1:D:96:VAL:O	1:D:97:ASP:C	2.54	0.46
1:F:116:ILE:HG22	1:F:117:GLU:N	2.30	0.46
1:F:292:THR:C	1:F:294:HIS:H	2.18	0.46
1:A:372:GLY:O	1:A:376:ILE:HG13	2.16	0.46
1:C:18:ILE:HG21	1:C:339:ASP:HA	1.97	0.46
1:D:240:LYS:HE3	1:D:294:HIS:HA	1.97	0.46
1:D:383:VAL:O	1:D:387:THR:OG1	2.33	0.46
1:D:88:GLU:CD	1:D:93:GLY:HA3	2.36	0.46
1:E:270:PRO:CA	1:E:273:SER:HB3	2.46	0.46
1:B:403:MET:HE3	1:B:406:ILE:HD12	1.98	0.46
1:C:409:ASP:OD1	1:D:7:ARG:NH2	2.49	0.46
1:F:267:SER:O	1:F:270:PRO:HD2	2.16	0.46
1:A:54:LEU:HD23	1:A:329:ARG:HD2	1.98	0.46
1:B:168:LEU:O	1:B:169:ASP:HB2	2.12	0.46
1:C:57:GLY:O	1:C:309:ALA:HA	2.16	0.46
1:C:359:MET:HG3	1:C:366:ILE:HD12	1.98	0.46
1:C:358:LEU:O	1:C:361:THR:HB	2.15	0.46
1:C:442:ILE:HD12	1:C:442:ILE:C	2.36	0.46
1:E:44:LEU:O	1:E:48:VAL:HG23	2.16	0.46
1:F:104:THR:HA	1:F:247:VAL:HG21	1.98	0.46
1:F:235:ASN:HB3	1:F:238:GLU:CB	2.43	0.46
1:F:41:ASN:OD1	1:F:44:LEU:HG	2.15	0.46
1:B:346:GLU:O	1:B:347:PRO:O	2.33	0.46
1:D:17:ILE:CD1	1:D:66:ILE:HA	2.46	0.46
1:D:275:GLU:O	1:D:279:ARG:HG3	2.16	0.46
1:E:132:LEU:O	1:E:136:ILE:HD12	2.15	0.46
1:E:235:ASN:HB2	1:E:238:GLU:HB2	1.98	0.46
1:A:105:ASP:HB3	1:B:296:MET:HE2	1.98	0.45
1:A:244:ILE:HG23	1:A:297:VAL:HG22	1.97	0.45
1:B:348:ASN:O	1:B:350:SER:N	2.45	0.45
1:A:349:ALA:HB3	1:B:47:GLU:HG3	1.96	0.45
1:C:359:MET:CE	1:C:410:ALA:HB2	2.46	0.45
1:C:17:ILE:HB	1:C:24:LYS:NZ	2.31	0.45
1:E:130:ARG:NH2	1:E:225:LEU:HD22	2.22	0.45
1:F:282:LEU:CD1	1:F:322:LEU:HD13	2.47	0.45
1:A:114:GLN:O	1:A:118:LYS:HB2	2.16	0.45
1:A:257:GLU:HB3	1:A:260:LYS:CG	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:344:LEU:O	1:A:352:THR:HB	2.16	0.45
1:F:426:SER:HB3	1:F:430:ASP:OD1	2.15	0.45
1:F:53:ILE:O	1:F:305:ILE:HA	2.16	0.45
1:A:234:VAL:O	1:A:236:PRO:HD3	2.16	0.45
1:B:431:ALA:O	1:B:434:ALA:HB3	2.16	0.45
1:C:25:ARG:HG2	1:C:26:SER:N	2.32	0.45
1:D:96:VAL:CG1	1:D:284:LEU:HD11	2.46	0.45
1:E:130:ARG:HA	1:E:133:ASP:OD2	2.16	0.45
1:E:224:LEU:C	1:E:224:LEU:HD13	2.37	0.45
1:F:4:MET:O	1:F:32:ARG:NH1	2.50	0.45
1:F:406:ILE:O	1:F:410:ALA:N	2.49	0.45
1:B:171:LYS:NZ	1:B:218:ILE:HG12	2.32	0.45
1:B:270:PRO:C	1:B:273:SER:HB3	2.36	0.45
1:B:44:LEU:O	1:B:48:VAL:HG23	2.16	0.45
1:C:100:ILE:HG21	1:C:290:VAL:HG11	1.97	0.45
1:D:300:ASP:O	1:D:301:HIS:HD2	2.00	0.45
1:D:44:LEU:O	1:D:45:ARG:C	2.55	0.45
1:F:248:GLU:OE1	1:F:297:VAL:HA	2.16	0.45
1:B:130:ARG:HH12	1:B:225:LEU:HD22	1.80	0.45
1:B:274:ARG:HG3	1:B:274:ARG:NH1	2.31	0.45
1:C:257:GLU:HB2	1:C:260:LYS:CG	2.43	0.45
1:D:289:THR:OG1	1:D:298:LYS:HD3	2.17	0.45
1:D:94:LYS:HE3	1:E:95:GLU:CG	2.47	0.45
1:E:52:ASN:HB2	1:E:325:ARG:O	2.17	0.45
1:A:312:ILE:HG13	1:A:313:ALA:H	1.82	0.45
1:A:3:GLU:CG	1:A:35:TRP:HB2	2.38	0.45
1:B:130:ARG:NH1	1:B:225:LEU:CD2	2.79	0.45
1:B:132:LEU:HD13	1:B:156:ARG:CG	2.47	0.45
1:B:432:LEU:HB3	1:B:443:LEU:HD11	1.97	0.45
1:C:104:THR:HA	1:C:247:VAL:HG21	1.99	0.45
1:D:413:LEU:O	1:D:416:GLN:HG3	2.17	0.45
1:E:281:LEU:O	1:E:285:VAL:HG22	2.17	0.45
1:F:258:ILE:HG13	1:F:261:ILE:HD11	1.99	0.45
1:F:335:LEU:HD22	1:F:339:ASP:CB	2.45	0.45
1:F:341:GLU:HG2	1:F:377:ALA:CB	2.47	0.45
1:A:122:ARG:O	1:A:126:LEU:HG	2.17	0.45
1:B:241:GLN:HA	1:B:241:GLN:OE1	2.17	0.45
1:B:244:ILE:O	1:B:245:ASP:C	2.54	0.45
1:B:332:LEU:N	1:B:332:LEU:HD12	2.31	0.45
1:B:403:MET:CE	1:B:406:ILE:HD12	2.46	0.45
1:C:81:VAL:HG12	1:C:82:GLU:N	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:265:GLY:O	1:D:266:GLU:C	2.55	0.45
1:D:266:GLU:CG	1:D:267:SER:H	2.30	0.45
1:D:400:GLU:OE1	1:E:328:ILE:HG12	2.17	0.45
1:E:57:GLY:O	1:E:309:ALA:HA	2.17	0.45
1:F:270:PRO:C	1:F:272:VAL:H	2.19	0.45
1:F:337:THR:O	1:F:341:GLU:N	2.44	0.45
1:F:359:MET:CE	1:F:410:ALA:HB2	2.47	0.45
1:A:25:ARG:HG3	1:A:25:ARG:HH11	1.81	0.45
1:A:87:THR:C	1:A:88:GLU:OE2	2.56	0.45
1:C:350:SER:OG	1:C:353:VAL:HG23	2.17	0.45
1:D:101:ARG:HG3	1:D:101:ARG:HH11	1.82	0.45
1:E:37:ARG:O	1:E:45:ARG:HG3	2.17	0.45
1:F:108:VAL:HA	1:F:111:VAL:HG22	1.98	0.45
1:F:274:ARG:HA	1:F:277:VAL:CG2	2.47	0.45
1:A:27:VAL:HG11	1:A:70:LEU:HG	1.92	0.45
1:A:73:LEU:HD12	1:A:74:ALA:N	2.32	0.45
1:B:382:GLN:HG2	1:B:433:VAL:CG1	2.47	0.45
1:C:109:LYS:O	1:C:113:VAL:HG23	2.16	0.45
1:A:235:ASN:CB	1:A:238:GLU:HB2	2.42	0.44
1:A:336:THR:O	1:A:339:ASP:HB2	2.17	0.44
1:A:335:LEU:HD13	1:A:343:ILE:HD11	1.98	0.44
1:A:38:MET:CE	1:A:38:MET:HA	2.47	0.44
1:C:393:ARG:NH1	1:C:393:ARG:HG3	2.28	0.44
1:C:371:SER:CB	1:C:422:ALA:HB2	2.39	0.44
1:E:171:LYS:O	1:E:216:LEU:N	2.50	0.44
1:E:409:ASP:HB3	1:E:413:LEU:HD22	1.99	0.44
1:E:88:GLU:HB2	1:E:91:TYR:H	1.82	0.44
1:F:35:TRP:CG	1:F:35:TRP:O	2.69	0.44
1:B:16:HIS:C	1:B:17:ILE:HG13	2.37	0.44
1:E:221:ALA:O	1:E:225:LEU:HG	2.18	0.44
1:F:41:ASN:ND2	1:F:43:GLU:H	2.14	0.44
1:A:261:ILE:HG23	1:A:278:GLN:HE21	1.83	0.44
1:B:216:LEU:CD1	1:B:217:LYS:H	2.30	0.44
1:C:356:LYS:HE3	1:C:356:LYS:HB2	1.72	0.44
1:C:390:ILE:CG2	1:C:393:ARG:HB2	2.48	0.44
1:E:78:PHE:CG	1:E:79:ILE:N	2.86	0.44
1:C:345:THR:HG22	1:C:373:ILE:HD13	2.00	0.44
1:C:52:ASN:CB	1:C:326:LEU:HD12	2.48	0.44
1:D:18:ILE:N	2:D:910:ATP:HN61	2.01	0.44
1:E:409:ASP:O	1:E:411:SER:N	2.50	0.44
1:F:37:ARG:HD2	1:F:48:VAL:CG2	2.35	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:271:ASP:O	1:A:275:GLU:HG3	2.17	0.44
1:D:432:LEU:N	1:D:432:LEU:CD1	2.81	0.44
1:E:173:ILE:N	1:E:173:ILE:CD1	2.73	0.44
1:A:325:ARG:NE	1:A:325:ARG:CA	2.79	0.44
1:A:379:ALA:O	1:A:383:VAL:HG23	2.18	0.44
1:A:84:THR:O	1:A:85:LYS:C	2.56	0.44
1:B:239:LEU:C	1:B:239:LEU:HD12	2.37	0.44
1:C:350:SER:O	1:C:354:GLN:HG3	2.17	0.44
1:D:13:LEU:HA	1:D:13:LEU:HD12	1.78	0.44
1:D:119:ASN:ND2	1:D:233:LEU:HG	2.32	0.44
1:A:241:GLN:NE2	1:A:245:ASP:OD2	2.51	0.44
1:A:261:ILE:HG21	1:A:278:GLN:HG2	2.00	0.44
1:A:358:LEU:O	1:A:361:THR:HB	2.16	0.44
1:B:216:LEU:HD12	1:B:221:ALA:HB2	2.00	0.44
1:B:216:LEU:HD13	1:B:217:LYS:CG	2.45	0.44
1:B:50:PRO:O	1:B:325:ARG:NH2	2.43	0.44
1:E:435:ASP:OD2	1:E:438:LEU:HD23	2.18	0.44
1:A:282:LEU:O	1:A:286:GLU:N	2.48	0.44
1:D:233:LEU:N	1:D:233:LEU:HD22	2.32	0.44
1:E:346:GLU:O	1:E:347:PRO:C	2.55	0.44
1:E:374:LYS:O	1:E:378:GLU:HG3	2.18	0.44
1:F:112:ARG:C	1:F:114:GLN:N	2.71	0.44
1:B:19:GLY:O	1:B:24:LYS:HE3	2.17	0.44
1:E:56:ILE:O	1:E:331:GLU:HA	2.18	0.44
1:F:233:LEU:O	1:F:234:VAL:C	2.54	0.44
1:F:248:GLU:OE1	1:F:298:LYS:N	2.48	0.44
1:F:289:THR:O	1:F:290:VAL:CB	2.59	0.44
1:C:282:LEU:HB2	1:C:283:PRO:CD	2.45	0.43
1:C:48:VAL:O	1:C:48:VAL:HG23	2.18	0.43
1:D:293:LYS:C	1:D:294:HIS:HD2	2.21	0.43
1:D:293:LYS:HB2	1:D:294:HIS:HD2	1.83	0.43
1:D:379:ALA:O	1:D:383:VAL:HG23	2.18	0.43
1:E:410:ALA:O	1:E:413:LEU:HB2	2.18	0.43
1:F:224:LEU:C	1:F:224:LEU:HD13	2.38	0.43
1:A:36:ARG:CG	1:F:361:THR:HG21	2.47	0.43
1:F:58:PRO:O	1:F:61:VAL:HG22	2.17	0.43
1:A:56:ILE:HB	1:A:331:GLU:HG2	2.00	0.43
1:C:25:ARG:CG	1:C:26:SER:N	2.80	0.43
1:C:100:ILE:HG21	1:C:290:VAL:CG1	2.48	0.43
1:D:68:ARG:O	1:D:71:ALA:HB3	2.19	0.43
1:E:37:ARG:NH2	1:E:301:HIS:CE1	2.86	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:42:GLU:HA	1:E:45:ARG:HH12	1.82	0.43
1:F:104:THR:O	1:F:105:ASP:C	2.56	0.43
1:F:262:CYS:SG	1:F:318:LEU:HD23	2.58	0.43
1:F:359:MET:HE3	1:F:406:ILE:HG22	1.99	0.43
1:B:274:ARG:HG3	1:B:274:ARG:HH11	1.84	0.43
1:C:32:ARG:HG3	1:C:36:ARG:NE	2.33	0.43
1:C:29:ILE:HG22	1:C:33:ASN:OD1	2.19	0.43
1:D:18:ILE:HG23	1:D:342:ARG:CZ	2.48	0.43
1:D:8:GLU:O	1:D:11:SER:HB2	2.19	0.43
1:E:128:GLU:C	1:E:130:ARG:N	2.72	0.43
1:A:282:LEU:C	1:A:286:GLU:HG3	2.38	0.43
1:A:384:ASN:HA	1:A:394:ARG:HH12	1.82	0.43
1:A:72:LYS:N	1:A:72:LYS:CD	2.81	0.43
1:C:346:GLU:HB2	1:C:347:PRO:HD3	1.99	0.43
1:D:394:ARG:O	1:D:398:VAL:HG23	2.18	0.43
1:E:233:LEU:HD22	1:E:233:LEU:N	2.34	0.43
1:E:355:TYR:CZ	1:E:403:MET:HB2	2.54	0.43
1:F:14:ASP:HA	1:F:24:LYS:NZ	2.34	0.43
1:F:266:GLU:CG	1:F:270:PRO:HG2	2.47	0.43
1:F:312:ILE:CG1	1:F:313:ALA:N	2.72	0.43
1:F:85:LYS:O	1:F:88:GLU:HG2	2.17	0.43
1:B:384:ASN:HD22	1:B:394:ARG:CZ	2.31	0.43
1:B:54:LEU:HB3	1:B:329:ARG:HD3	2.01	0.43
1:C:264:ARG:HB2	1:C:274:ARG:NH1	2.34	0.43
1:C:4:MET:O	1:C:32:ARG:NH1	2.51	0.43
1:F:108:VAL:HA	1:F:111:VAL:CG2	2.48	0.43
1:A:51:LYS:HE3	1:F:400:GLU:OE1	2.19	0.43
1:B:130:ARG:HD2	1:B:130:ARG:HH11	1.66	0.43
1:B:133:ASP:OD1	1:B:156:ARG:NH2	2.51	0.43
1:A:105:ASP:O	1:B:296:MET:HE2	2.19	0.43
1:B:57:GLY:O	1:B:309:ALA:HA	2.18	0.43
1:E:131:ILE:O	1:E:135:LEU:HG	2.19	0.43
1:F:401:ARG:HD3	1:F:432:LEU:HD21	2.01	0.43
1:A:64:THR:HG21	1:A:68:ARG:NH1	2.33	0.43
1:B:155:ALA:O	1:B:158:ALA:HB3	2.19	0.43
1:B:261:ILE:HG23	1:B:274:ARG:O	2.18	0.43
1:C:279:ARG:HG2	1:C:279:ARG:HH11	1.82	0.43
1:E:77:PRO:HB2	1:E:103:LEU:HD22	2.00	0.43
1:E:344:LEU:HD12	1:E:351:ILE:HD11	1.93	0.43
1:A:18:ILE:HG23	1:A:342:ARG:CZ	2.49	0.43
1:B:153:SER:O	1:B:155:ALA:N	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:397:THR:HG21	1:D:443:LEU:C	2.39	0.43
1:E:17:ILE:CD1	1:E:66:ILE:HG12	2.46	0.43
1:E:78:PHE:O	1:E:79:ILE:HB	2.19	0.43
1:F:354:GLN:HE21	1:F:354:GLN:HB3	1.66	0.43
1:A:37:ARG:CZ	1:A:301:HIS:CE1	3.02	0.43
1:B:132:LEU:HD12	1:B:156:ARG:HH11	1.84	0.43
1:B:107:ALA:CB	1:B:247:VAL:HG23	2.47	0.43
1:B:107:ALA:HB2	1:B:247:VAL:HG23	2.00	0.43
1:B:427:LYS:C	1:B:427:LYS:HD2	2.39	0.43
1:C:319:ILE:HG13	1:C:319:ILE:O	2.18	0.43
1:C:409:ASP:O	1:C:410:ALA:C	2.57	0.43
1:C:44:LEU:O	1:C:46:HIS:N	2.52	0.43
1:C:87:THR:O	1:C:89:VAL:N	2.51	0.43
1:D:266:GLU:CG	1:D:267:SER:N	2.81	0.43
1:D:271:ASP:N	1:D:271:ASP:OD2	2.51	0.43
1:D:56:ILE:O	1:D:331:GLU:HA	2.19	0.43
1:C:361:THR:HG21	1:D:36:ARG:HG2	2.01	0.43
1:D:409:ASP:O	1:D:410:ALA:C	2.57	0.43
1:D:426:SER:HB3	1:D:430:ASP:OD1	2.18	0.43
1:E:270:PRO:HA	1:E:273:SER:CB	2.49	0.43
1:E:63:LYS:HB2	2:E:915:ATP:O1B	2.19	0.43
1:A:23:ALA:HA	1:A:330:VAL:HG21	2.01	0.43
1:B:96:VAL:HG13	1:B:99:ILE:HD12	2.01	0.43
1:C:244:ILE:HG13	1:C:245:ASP:OD2	2.19	0.43
1:C:38:MET:O	1:C:39:GLN:HB2	2.18	0.43
1:C:12:GLU:HG3	1:C:73:LEU:HD11	2.01	0.43
1:E:128:GLU:C	1:E:130:ARG:H	2.21	0.43
1:F:390:ILE:HG21	1:F:393:ARG:HG3	2.00	0.43
1:A:314:LYS:O	1:A:315:PRO:C	2.56	0.42
1:A:93:GLY:O	1:A:94:LYS:O	2.37	0.42
1:B:124:GLU:O	1:B:127:ALA:HB3	2.19	0.42
1:C:393:ARG:CG	1:C:393:ARG:NH1	2.80	0.42
1:E:282:LEU:HA	1:E:282:LEU:HD23	1.81	0.42
1:E:427:LYS:HE3	1:E:428:HIS:NE2	2.34	0.42
1:E:436:GLU:O	1:E:440:ARG:HG3	2.19	0.42
1:F:75:ASN:O	1:F:75:ASN:CG	2.56	0.42
1:C:84:THR:HG23	1:C:260:LYS:HB2	2.01	0.42
1:D:427:LYS:C	1:D:427:LYS:CD	2.86	0.42
1:D:72:LYS:O	1:D:75:ASN:N	2.52	0.42
1:E:103:LEU:O	1:E:106:ALA:HB3	2.19	0.42
1:F:240:LYS:HE3	1:F:240:LYS:HB3	1.95	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:5:THR:O	1:F:6:PRO:C	2.57	0.42
1:A:266:GLU:CG	1:A:267:SER:N	2.83	0.42
1:A:83:ALA:HB1	1:A:261:ILE:HD12	2.01	0.42
1:B:381:TRP:C	1:B:381:TRP:CD1	2.92	0.42
1:B:62:GLY:O	1:B:66:ILE:HG13	2.18	0.42
1:D:277:VAL:O	1:D:281:LEU:HB2	2.19	0.42
1:D:413:LEU:HA	1:D:416:GLN:OE1	2.20	0.42
1:E:279:ARG:O	1:E:282:LEU:HB2	2.19	0.42
1:F:236:PRO:HG2	1:F:237:GLU:H	1.84	0.42
1:A:57:GLY:O	1:A:309:ALA:HA	2.20	0.42
1:A:73:LEU:C	1:A:73:LEU:HD12	2.39	0.42
1:B:88:GLU:HB2	1:B:91:TYR:H	1.84	0.42
1:C:423:ASP:N	1:C:423:ASP:OD2	2.53	0.42
1:D:9:ILE:HG23	1:D:73:LEU:HD21	2.01	0.42
1:E:101:ARG:HH11	1:E:101:ARG:CG	2.30	0.42
1:E:84:THR:HG22	1:E:87:THR:HG21	2.01	0.42
1:F:274:ARG:O	1:F:277:VAL:N	2.46	0.42
1:A:122:ARG:HH22	1:A:126:LEU:HD21	1.84	0.42
1:A:34:ARG:CZ	1:A:250:HIS:HA	2.49	0.42
1:A:87:THR:HG22	1:A:277:VAL:HG21	2.02	0.42
1:A:300:ASP:C	1:A:301:HIS:CD2	2.93	0.42
1:A:384:ASN:HD22	1:A:394:ARG:HH12	1.68	0.42
1:B:279:ARG:HG2	1:B:279:ARG:HH11	1.85	0.42
1:B:23:ALA:HA	1:B:330:VAL:HG21	2.00	0.42
1:A:348:ASN:HD22	1:A:348:ASN:HA	1.58	0.42
1:B:224:LEU:O	1:B:228:GLU:HG3	2.20	0.42
1:B:245:ASP:O	1:B:246:ALA:C	2.58	0.42
1:C:282:LEU:O	1:C:283:PRO:C	2.58	0.42
1:E:169:ASP:OD2	1:E:219:LYS:HB2	2.20	0.42
1:E:312:ILE:CG1	1:E:313:ALA:H	2.30	0.42
1:B:70:LEU:HD13	1:B:70:LEU:O	2.20	0.42
1:C:329:ARG:HG3	1:C:329:ARG:NH1	2.35	0.42
1:D:257:GLU:HB3	1:D:260:LYS:HG2	2.00	0.42
1:D:285:VAL:HG12	1:D:304:PHE:CG	2.54	0.42
1:D:395:LEU:O	1:D:399:LEU:HB2	2.20	0.42
1:F:282:LEU:HD21	1:F:321:GLU:CG	2.49	0.42
1:A:79:ILE:HG22	1:A:103:LEU:HG	2.02	0.42
1:B:172:GLU:O	1:B:172:GLU:HG3	2.20	0.42
1:C:20:GLN:HA	1:C:20:GLN:OE1	2.20	0.42
1:C:87:THR:C	1:C:89:VAL:N	2.72	0.42
1:D:84:THR:O	1:D:86:PHE:N	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:369:THR:HG22	1:E:372:GLY:H	1.85	0.42
1:E:96:VAL:HG11	1:E:281:LEU:HD23	2.02	0.42
1:F:25:ARG:CG	1:F:26:SER:N	2.83	0.42
1:E:412:ASP:OD2	1:F:7:ARG:NH1	2.53	0.42
1:B:344:LEU:HD11	1:B:351:ILE:HD11	1.96	0.42
1:C:233:LEU:CD2	1:C:233:LEU:H	2.32	0.42
1:C:304:PHE:C	1:C:305:ILE:HD12	2.40	0.42
1:C:57:GLY:O	1:C:63:LYS:NZ	2.46	0.42
1:B:231:ALA:O	1:B:233:LEU:N	2.53	0.42
1:C:432:LEU:HB3	1:C:443:LEU:HD12	2.00	0.42
1:E:217:LYS:HG3	1:E:220:ASP:OD2	2.19	0.42
1:F:393:ARG:NH1	1:F:393:ARG:CG	2.81	0.42
1:F:74:ALA:O	1:F:75:ASN:OD1	2.37	0.42
1:B:78:PHE:CG	1:B:79:ILE:N	2.88	0.41
1:D:31:LEU:HG	1:D:70:LEU:HD21	2.01	0.41
1:D:349:ALA:HB1	1:E:44:LEU:HD23	2.01	0.41
1:E:76:ALA:HB1	1:E:250:HIS:O	2.20	0.41
1:A:44:LEU:O	1:A:46:HIS:N	2.53	0.41
1:C:379:ALA:O	1:C:383:VAL:HG23	2.20	0.41
1:C:5:THR:O	1:C:9:ILE:HG13	2.20	0.41
1:E:53:ILE:HG22	1:E:54:LEU:N	2.35	0.41
1:A:239:LEU:HD12	1:A:240:LYS:H	1.78	0.41
1:A:33:ASN:ND2	1:A:36:ARG:HD2	2.32	0.41
1:A:84:THR:C	1:A:86:PHE:N	2.71	0.41
1:A:93:GLY:O	1:A:94:LYS:C	2.59	0.41
1:C:275:GLU:O	1:C:278:GLN:HB2	2.21	0.41
1:A:72:LYS:O	1:A:75:ASN:N	2.53	0.41
1:F:233:LEU:HD22	1:F:233:LEU:H	1.84	0.41
1:A:279:ARG:NH1	1:A:279:ARG:HG2	2.32	0.41
1:A:33:ASN:HA	1:A:33:ASN:HD22	1.50	0.41
1:A:427:LYS:CD	1:A:427:LYS:C	2.86	0.41
1:B:18:ILE:N	2:B:905:ATP:N6	2.65	0.41
1:B:257:GLU:HB3	1:B:260:LYS:HG3	2.02	0.41
1:C:22:ASN:O	1:C:23:ALA:C	2.59	0.41
1:C:50:PRO:HD3	1:C:301:HIS:HB3	2.02	0.41
1:D:263:LYS:HE2	1:D:263:LYS:HB3	1.87	0.41
1:E:357:ALA:HB1	1:F:40:LEU:HD22	2.01	0.41
1:E:411:SER:C	1:E:413:LEU:H	2.24	0.41
1:F:264:ARG:HB2	1:F:274:ARG:NH1	2.35	0.41
1:F:76:ALA:HB1	1:F:250:HIS:O	2.20	0.41
1:B:409:ASP:O	1:B:411:SER:N	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:66:ILE:O	1:B:70:LEU:HB2	2.21	0.41
1:C:100:ILE:CD1	1:C:284:LEU:HD22	2.50	0.41
1:C:352:THR:HG22	1:C:353:VAL:N	2.35	0.41
1:C:441:PHE:CD1	1:D:56:ILE:HG21	2.55	0.41
1:E:104:THR:O	1:E:105:ASP:C	2.58	0.41
1:E:412:ASP:O	1:E:413:LEU:HD12	2.21	0.41
1:F:53:ILE:HG23	1:F:328:ILE:HG22	2.01	0.41
1:F:384:ASN:HD22	1:F:394:ARG:NH1	2.13	0.41
1:F:340:PHE:CE1	1:F:392:ALA:HA	2.56	0.41
1:A:298:LYS:HE3	1:A:300:ASP:OD2	2.21	0.41
1:A:31:LEU:HD23	1:A:31:LEU:HA	1.91	0.41
1:B:384:ASN:ND2	1:B:394:ARG:CZ	2.83	0.41
1:C:390:ILE:CG2	1:C:393:ARG:HG3	2.49	0.41
1:E:369:THR:HB	1:E:421:ASP:HA	2.02	0.41
1:F:384:ASN:HD22	1:F:384:ASN:HA	1.64	0.41
1:A:105:ASP:HB3	1:B:296:MET:HE1	2.02	0.41
1:C:108:VAL:HA	1:C:111:VAL:CG2	2.51	0.41
1:C:266:GLU:CG	1:C:270:PRO:HG2	2.47	0.41
1:E:239:LEU:HA	1:E:242:ASP:HB2	2.01	0.41
1:E:243:ALA:O	1:E:246:ALA:HB3	2.20	0.41
1:E:54:LEU:HB3	1:E:329:ARG:HD3	2.03	0.41
1:F:113:VAL:HG12	1:F:113:VAL:O	2.21	0.41
1:F:52:ASN:HB3	1:F:326:LEU:HD12	2.03	0.41
1:F:69:ARG:HD3	1:F:69:ARG:HA	1.93	0.41
1:A:369:THR:HG22	1:A:371:SER:H	1.84	0.41
1:B:134:VAL:HG13	1:B:135:LEU:N	2.35	0.41
1:B:153:SER:C	1:B:155:ALA:N	2.74	0.41
1:C:27:VAL:HB	1:C:70:LEU:HG	2.02	0.41
1:D:293:LYS:HB2	1:D:294:HIS:CD2	2.56	0.41
1:E:175:ILE:CG2	1:E:176:ASP:H	2.32	0.41
1:E:350:SER:OG	1:E:353:VAL:HG23	2.21	0.41
1:E:387:THR:HA	1:E:440:ARG:NH2	2.36	0.41
1:E:390:ILE:O	1:E:393:ARG:HD2	2.21	0.41
1:F:282:LEU:HD21	1:F:321:GLU:CB	2.51	0.41
1:A:355:TYR:CE2	1:A:399:LEU:HD13	2.55	0.41
1:B:384:ASN:ND2	1:B:394:ARG:HB2	2.35	0.41
1:B:401:ARG:HA	1:B:404:GLU:HG3	2.01	0.41
1:C:390:ILE:HG21	1:C:393:ARG:CG	2.51	0.41
1:D:41:ASN:HD21	1:D:44:LEU:N	1.95	0.41
1:F:269:GLY:N	1:F:270:PRO:HD2	2.36	0.41
1:A:36:ARG:HB3	1:F:361:THR:HG21	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:390:ILE:HG22	1:F:391:GLY:N	2.36	0.41
1:A:13:LEU:HD12	1:A:13:LEU:HA	1.88	0.41
1:A:25:ARG:O	1:A:29:ILE:HG13	2.20	0.41
1:B:111:VAL:HG21	1:B:243:ALA:HA	2.01	0.41
1:B:169:ASP:C	1:B:170:ASP:CG	2.73	0.41
1:B:17:ILE:CD1	1:B:66:ILE:HA	2.51	0.41
1:B:37:ARG:NH2	1:B:301:HIS:CE1	2.89	0.41
1:C:267:SER:HB2	1:C:270:PRO:CG	2.51	0.41
1:D:420:ILE:HD12	1:D:424:TYR:CE1	2.56	0.41
1:E:275:GLU:O	1:E:278:GLN:HB2	2.21	0.41
1:D:105:ASP:CA	1:E:296:MET:HE1	2.51	0.41
1:F:50:PRO:HD3	1:F:301:HIS:HB3	2.02	0.41
1:B:229:GLU:O	1:B:233:LEU:CD2	2.69	0.40
1:B:282:LEU:HA	1:B:282:LEU:HD23	1.90	0.40
1:B:361:THR:HG22	1:C:35:TRP:CH2	2.56	0.40
1:C:270:PRO:HG2	1:C:271:ASP:H	1.85	0.40
1:D:72:LYS:N	1:D:72:LYS:HD2	2.36	0.40
1:E:426:SER:HB3	1:E:430:ASP:OD1	2.21	0.40
1:A:315:PRO:HG2	1:F:441:PHE:HA	2.04	0.40
1:C:274:ARG:HA	1:C:277:VAL:CG2	2.48	0.40
1:C:247:VAL:HG11	1:C:297:VAL:HG11	2.03	0.40
1:C:354:GLN:O	1:C:357:ALA:HB3	2.21	0.40
1:D:84:THR:C	1:D:86:PHE:N	2.75	0.40
1:A:110:MET:O	1:A:114:GLN:N	2.54	0.40
1:A:384:ASN:HD22	1:A:394:ARG:NH1	2.19	0.40
1:A:413:LEU:O	1:A:416:GLN:HG3	2.21	0.40
1:C:11:SER:O	1:C:14:ASP:HB2	2.21	0.40
1:C:234:VAL:CG1	1:C:235:ASN:N	2.84	0.40
1:D:261:ILE:HG21	1:D:278:GLN:HG2	2.03	0.40
1:D:56:ILE:HB	1:D:331:GLU:HG2	2.03	0.40
1:E:77:PRO:HB2	1:E:103:LEU:CD2	2.50	0.40
1:E:53:ILE:HD13	1:E:328:ILE:HB	2.03	0.40
1:F:85:LYS:CE	1:F:94:LYS:HE2	2.49	0.40
1:A:100:ILE:H	1:A:100:ILE:HG12	1.74	0.40
1:A:432:LEU:N	1:A:432:LEU:HD12	2.36	0.40
1:C:240:LYS:HZ2	1:C:241:GLN:HG3	1.85	0.40
1:C:277:VAL:O	1:C:281:LEU:HG	2.21	0.40
1:C:284:LEU:O	1:C:299:THR:CG2	2.70	0.40
1:D:121:TYR:O	1:D:125:GLU:HB2	2.22	0.40
1:D:37:ARG:CZ	1:D:301:HIS:CE1	3.05	0.40
1:C:361:THR:HG21	1:D:36:ARG:CG	2.52	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:119:ASN:C	1:E:119:ASN:ND2	2.70	0.40
1:E:257:GLU:HB3	1:E:260:LYS:HG3	2.04	0.40
1:F:355:TYR:CE1	1:F:359:MET:CG	3.05	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	402/442 (91%)	328 (82%)	50 (12%)	24 (6%)	1	9
1	B	402/442 (91%)	337 (84%)	46 (11%)	19 (5%)	2	14
1	C	402/442 (91%)	297 (74%)	72 (18%)	33 (8%)	1	4
1	D	402/442 (91%)	332 (83%)	49 (12%)	21 (5%)	2	12
1	E	402/442 (91%)	343 (85%)	42 (10%)	17 (4%)	3	16
1	F	402/442 (91%)	305 (76%)	68 (17%)	29 (7%)	1	5
All	All	2412/2652 (91%)	1942 (80%)	327 (14%)	143 (6%)	1	9

All (143) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	83	ALA
1	A	116	ILE
1	A	167	GLN
1	A	264	ARG
1	B	153	SER
1	B	169	ASP
1	B	171	LYS
1	B	263	LYS
1	B	264	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	348	ASN
1	C	39	GLN
1	C	167	GLN
1	C	236	PRO
1	C	263	LYS
1	C	290	VAL
1	D	83	ALA
1	D	167	GLN
1	D	264	ARG
1	E	169	ASP
1	E	263	LYS
1	E	264	ARG
1	E	348	ASN
1	E	410	ALA
1	F	39	GLN
1	F	116	ILE
1	F	167	GLN
1	F	234	VAL
1	F	263	LYS
1	F	290	VAL
1	F	387	THR
1	A	85	LYS
1	A	93	GLY
1	A	94	LYS
1	A	96	VAL
1	A	153	SER
1	A	263	LYS
1	A	410	ALA
1	B	175	ILE
1	B	232	LYS
1	B	410	ALA
1	C	4	MET
1	C	63	LYS
1	C	88	GLU
1	C	92	VAL
1	C	116	ILE
1	C	153	SER
1	C	175	ILE
1	C	266	GLU
1	C	287	GLY
1	C	390	ILE
1	C	428	HIS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	D	93	GLY
1	D	94	LYS
1	D	96	VAL
1	D	116	ILE
1	D	153	SER
1	D	175	ILE
1	D	263	LYS
1	D	410	ALA
1	E	116	ILE
1	E	175	ILE
1	E	232	LYS
1	F	63	LYS
1	F	92	VAL
1	F	153	SER
1	F	175	ILE
1	F	236	PRO
1	F	266	GLU
1	F	386	SER
1	F	390	ILE
1	F	428	HIS
1	A	112	ARG
1	A	141	ASN
1	A	175	ILE
1	B	143	TRP
1	C	140	LYS
1	C	141	ASN
1	C	387	THR
1	D	45	ARG
1	D	141	ASN
1	E	140	LYS
1	E	141	ASN
1	E	143	TRP
1	E	216	LEU
1	F	88	GLU
1	F	141	ASN
1	F	241	GLN
1	F	287	GLY
1	A	140	LYS
1	A	435	ASP
1	B	88	GLU
1	B	90	GLY
1	B	141	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	170	ASP
1	C	112	ARG
1	C	117	GLU
1	C	168	LEU
1	C	218	ILE
1	C	241	GLN
1	D	140	LYS
1	D	168	LEU
1	D	435	ASP
1	E	90	GLY
1	E	153	SER
1	F	117	GLU
1	F	270	PRO
1	A	45	ARG
1	A	168	LEU
1	A	216	LEU
1	C	38	MET
1	C	137	PRO
1	C	216	LEU
1	C	269	GLY
1	C	270	PRO
1	C	386	SER
1	C	410	ALA
1	D	112	ARG
1	D	347	PRO
1	E	88	GLU
1	F	112	ARG
1	F	137	PRO
1	F	140	LYS
1	F	168	LEU
1	F	216	LEU
1	F	269	GLY
1	A	137	PRO
1	A	143	TRP
1	A	247	VAL
1	B	154	ALA
1	B	218	ILE
1	C	247	VAL
1	D	137	PRO
1	D	216	LEU
1	A	50	PRO
1	A	218	ILE

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Mol	Chain	Res	Type
1	B	92	VAL
1	B	116	ILE
1	C	226	ILE
1	E	218	ILE
1	F	218	ILE
1	B	347	PRO
1	D	218	ILE
1	E	92	VAL

### 5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	348/376 (93%)	316 (91%)	32 (9%)	9 34
1	B	348/376 (93%)	312 (90%)	36 (10%)	7 28
1	C	348/376 (93%)	316 (91%)	32 (9%)	9 34
1	D	348/376 (93%)	317 (91%)	31 (9%)	9 35
1	E	348/376 (93%)	303 (87%)	45 (13%)	4 19
1	F	348/376 (93%)	319 (92%)	29 (8%)	11 39
All	All	2088/2256 (93%)	1883 (90%)	205 (10%)	8 30

All (205) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	GLU
1	A	13	LEU
1	A	31	LEU
1	A	33	ASN
1	A	41	ASN
1	A	53	ILE
1	A	82	GLU
1	A	103	LEU
1	A	114	GLN
1	A	121	TYR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	122	ARG
1	A	128	GLU
1	A	140	LYS
1	A	148	GLN
1	A	171	LYS
1	A	216	LEU
1	A	235	ASN
1	A	237	GLU
1	A	258	ILE
1	A	261	ILE
1	A	264	ARG
1	A	325	ARG
1	A	338	SER
1	A	344	LEU
1	A	348	ASN
1	A	352	THR
1	A	361	THR
1	A	370	ASP
1	A	384	ASN
1	A	388	GLU
1	A	399	LEU
1	A	432	LEU
1	B	5	THR
1	B	13	LEU
1	B	27	VAL
1	B	31	LEU
1	B	41	ASN
1	B	59	THR
1	B	81	VAL
1	B	88	GLU
1	B	95	GLU
1	B	97	ASP
1	B	103	LEU
1	B	121	TYR
1	B	122	ARG
1	B	128	GLU
1	B	140	LYS
1	B	145	GLN
1	B	148	GLN
1	B	168	LEU
1	B	173	ILE
1	B	216	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	238	GLU
1	B	239	LEU
1	B	258	ILE
1	B	274	ARG
1	B	290	VAL
1	B	325	ARG
1	B	333	GLN
1	B	344	LEU
1	B	370	ASP
1	B	375	ARG
1	B	384	ASN
1	B	397	THR
1	B	399	LEU
1	B	413	LEU
1	B	419	THR
1	B	427	LYS
1	C	38	MET
1	C	41	ASN
1	C	72	LYS
1	C	79	ILE
1	C	82	GLU
1	C	103	LEU
1	C	109	LYS
1	C	122	ARG
1	C	128	GLU
1	C	140	LYS
1	C	145	GLN
1	C	148	GLN
1	C	216	LEU
1	C	236	PRO
1	C	240	LYS
1	C	289	THR
1	C	299	THR
1	C	300	ASP
1	C	322	LEU
1	C	326	LEU
1	C	344	LEU
1	C	352	THR
1	C	361	THR
1	C	382	GLN
1	C	388	GLU
1	C	389	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	C	394	ARG
1	C	402	LEU
1	C	404	GLU
1	C	405	GLU
1	C	411	SER
1	C	423	ASP
1	D	3	GLU
1	D	13	LEU
1	D	33	ASN
1	D	41	ASN
1	D	53	ILE
1	D	70	LEU
1	D	82	GLU
1	D	103	LEU
1	D	122	ARG
1	D	128	GLU
1	D	140	LYS
1	D	145	GLN
1	D	216	LEU
1	D	235	ASN
1	D	237	GLU
1	D	258	ILE
1	D	261	ILE
1	D	264	ARG
1	D	325	ARG
1	D	338	SER
1	D	344	LEU
1	D	348	ASN
1	D	351	ILE
1	D	361	THR
1	D	384	ASN
1	D	388	GLU
1	D	399	LEU
1	D	400	GLU
1	D	413	LEU
1	D	427	LYS
1	D	432	LEU
1	E	5	THR
1	E	13	LEU
1	E	27	VAL
1	E	31	LEU
1	E	41	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	E	59	THR
1	E	70	LEU
1	E	81	VAL
1	E	88	GLU
1	E	94	LYS
1	E	95	GLU
1	E	97	ASP
1	E	103	LEU
1	E	119	ASN
1	E	121	TYR
1	E	122	ARG
1	E	128	GLU
1	E	136	ILE
1	E	140	LYS
1	E	160	ARG
1	E	168	LEU
1	E	173	ILE
1	E	176	ASP
1	E	216	LEU
1	E	219	LYS
1	E	235	ASN
1	E	238	GLU
1	E	239	LEU
1	E	258	ILE
1	E	274	ARG
1	E	290	VAL
1	E	325	ARG
1	E	333	GLN
1	E	337	THR
1	E	344	LEU
1	E	370	ASP
1	E	371	SER
1	E	375	ARG
1	E	384	ASN
1	E	399	LEU
1	E	401	ARG
1	E	413	LEU
1	E	419	THR
1	E	427	LYS
1	E	432	LEU
1	F	38	MET
1	F	41	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	F	45	ARG
1	F	72	LYS
1	F	79	ILE
1	F	82	GLU
1	F	103	LEU
1	F	109	LYS
1	F	122	ARG
1	F	128	GLU
1	F	140	LYS
1	F	148	GLN
1	F	216	LEU
1	F	240	LYS
1	F	299	THR
1	F	300	ASP
1	F	322	LEU
1	F	326	LEU
1	F	344	LEU
1	F	352	THR
1	F	361	THR
1	F	382	GLN
1	F	388	GLU
1	F	389	ASN
1	F	400	GLU
1	F	402	LEU
1	F	405	GLU
1	F	411	SER
1	F	417	ASN

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (54) such sidechains are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	22	ASN
1	A	33	ASN
1	A	41	ASN
1	A	75	ASN
1	A	294	HIS
1	A	348	ASN
1	A	365	ASN
1	A	384	ASN
1	A	428	HIS
1	B	22	ASN
1	B	41	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	119	ASN
1	B	150	GLN
1	B	249	GLN
1	B	348	ASN
1	B	365	ASN
1	B	384	ASN
1	B	428	HIS
1	C	16	HIS
1	C	22	ASN
1	C	114	GLN
1	C	294	HIS
1	C	311	GLN
1	C	354	GLN
1	C	389	ASN
1	C	416	GLN
1	C	417	ASN
1	D	22	ASN
1	D	33	ASN
1	D	41	ASN
1	D	119	ASN
1	D	294	HIS
1	D	333	GLN
1	D	348	ASN
1	D	365	ASN
1	D	384	ASN
1	E	22	ASN
1	E	41	ASN
1	E	119	ASN
1	E	249	GLN
1	E	333	GLN
1	E	348	ASN
1	E	365	ASN
1	E	384	ASN
1	E	416	GLN
1	E	428	HIS
1	F	16	HIS
1	F	22	ASN
1	F	311	GLN
1	F	354	GLN
1	F	384	ASN
1	F	389	ASN
1	F	416	GLN

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Mol	Chain	Res	Type
1	F	417	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

### 5.6 Ligand geometry [i](#)

Of 8 ligands modelled in this entry, 2 are monoatomic - leaving 6 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z  > 2$	Counts	RMSZ	# $ Z  > 2$
4	SO4	C	800	-	4,4,4	1.89	2 (50%)	6,6,6	0.96	0
4	SO4	F	805	-	4,4,4	1.81	1 (25%)	6,6,6	0.99	0
2	ATP	A	900	-	26,33,33	0.83	0	31,52,52	0.90	1 (3%)
2	ATP	E	915	3	26,33,33	0.77	0	31,52,52	0.88	0
2	ATP	D	910	-	26,33,33	0.77	0	31,52,52	0.87	0
2	ATP	B	905	3	26,33,33	0.82	0	31,52,52	0.85	1 (3%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	ATP	D	910	-	-	2/18/38/38	0/3/3/3
2	ATP	E	915	3	-	2/18/38/38	0/3/3/3
2	ATP	A	900	-	-	2/18/38/38	0/3/3/3
2	ATP	B	905	3	-	2/18/38/38	0/3/3/3

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	C	800	SO4	O1-S	3.12	1.62	1.46
4	F	805	SO4	O1-S	3.00	1.62	1.46
4	C	800	SO4	O3-S	-2.06	1.31	1.47

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	900	ATP	C5-C6-N6	2.16	123.63	120.35
2	B	905	ATP	C5-C6-N6	2.06	123.48	120.35

There are no chirality outliers.

All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	900	ATP	O4'-C4'-C5'-O5'
2	E	915	ATP	O4'-C4'-C5'-O5'
2	D	910	ATP	O4'-C4'-C5'-O5'
2	B	905	ATP	O4'-C4'-C5'-O5'
2	A	900	ATP	C3'-C4'-C5'-O5'
2	D	910	ATP	C3'-C4'-C5'-O5'
2	E	915	ATP	C3'-C4'-C5'-O5'
2	B	905	ATP	C3'-C4'-C5'-O5'

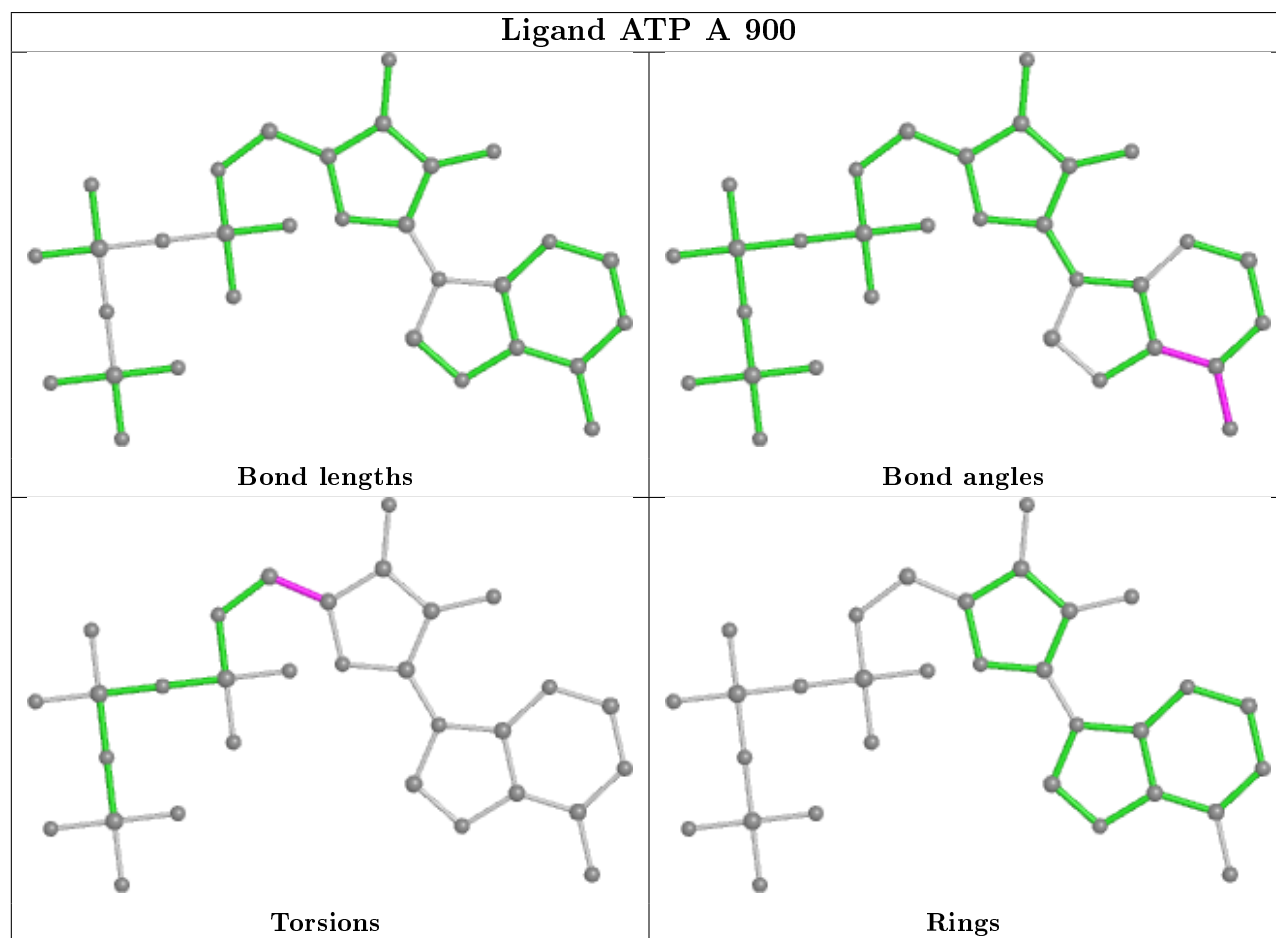
There are no ring outliers.

4 monomers are involved in 17 short contacts:

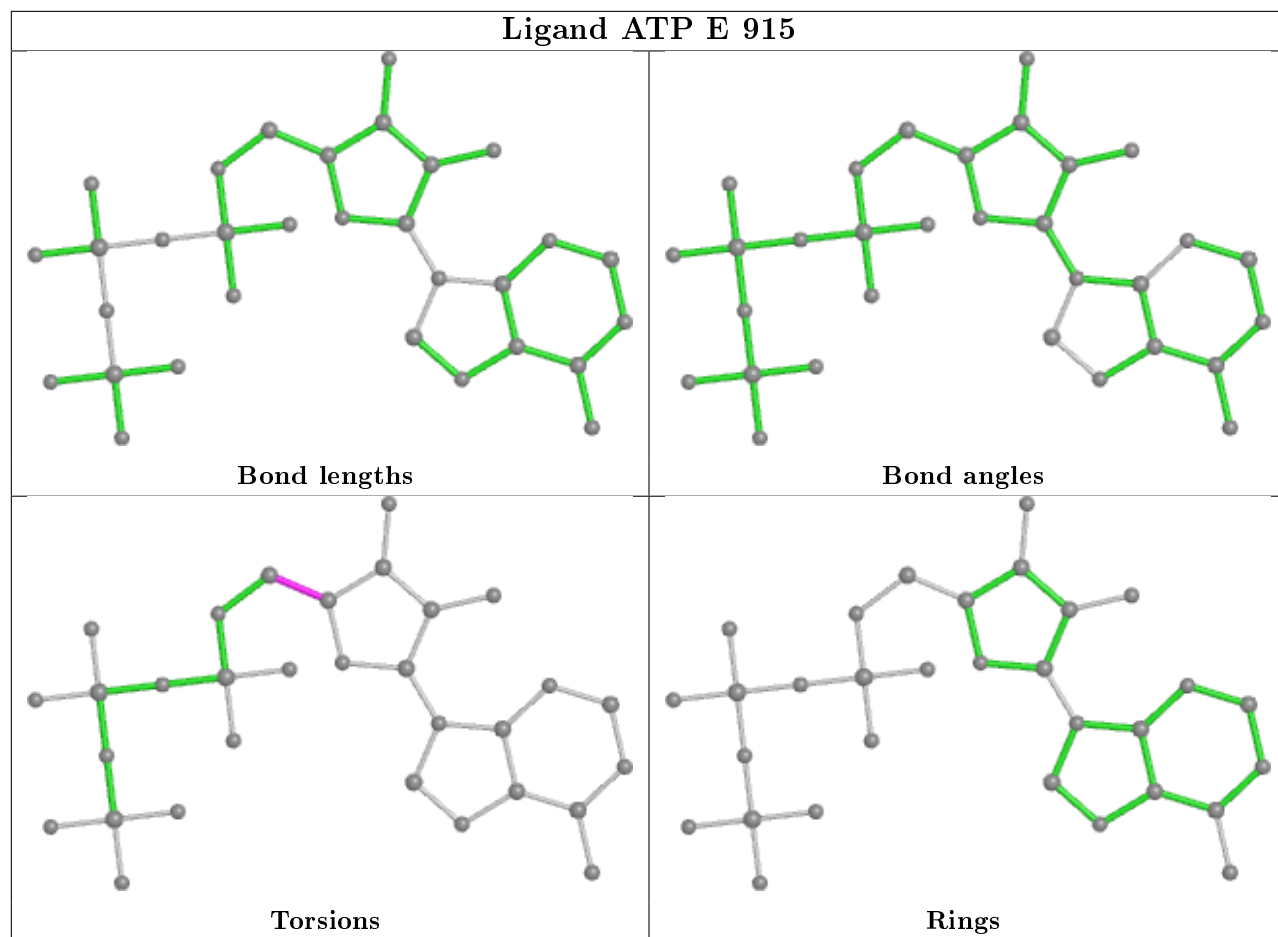
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	900	ATP	5	0
2	E	915	ATP	4	0
2	D	910	ATP	5	0
2	B	905	ATP	3	0

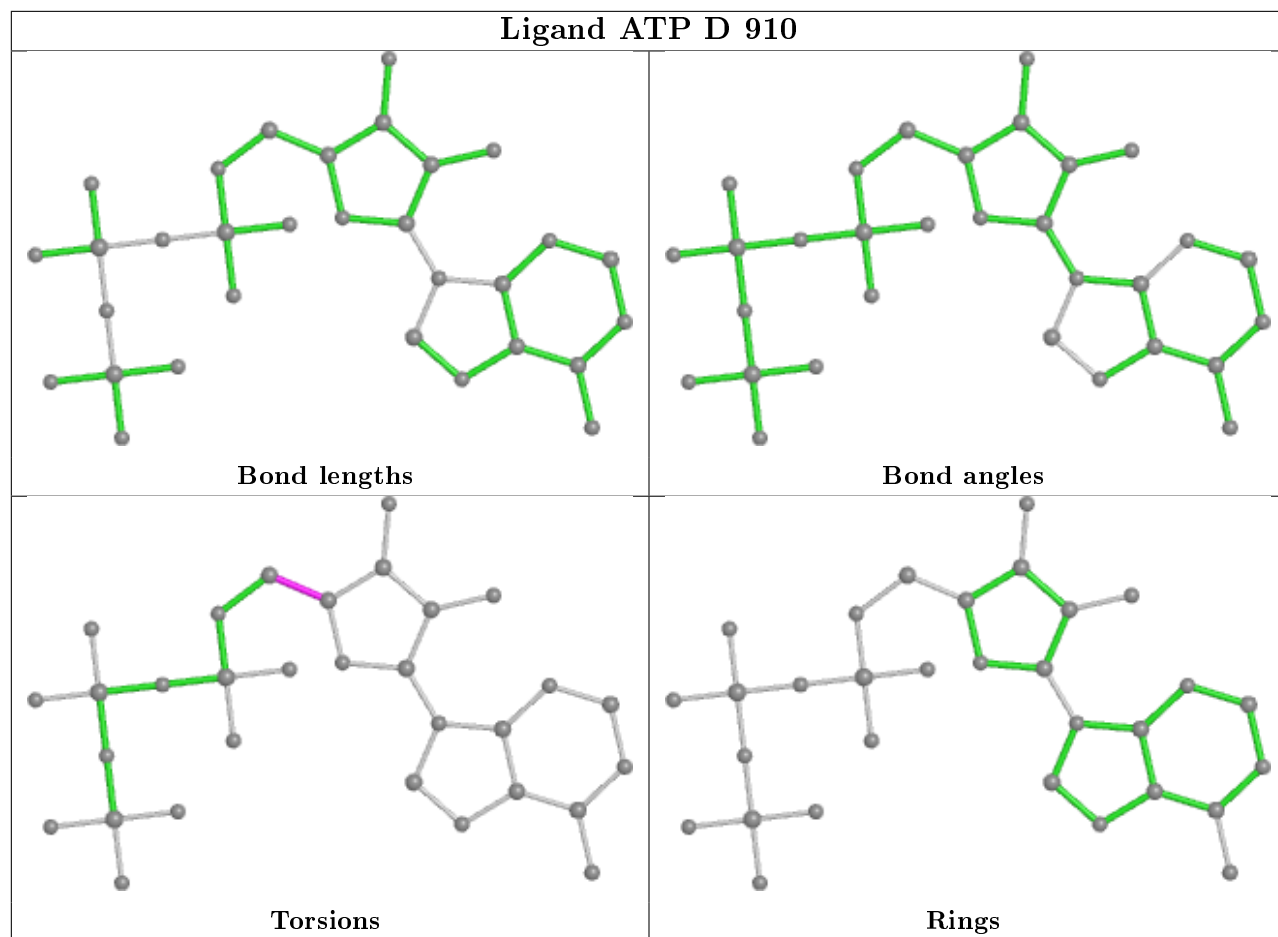
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths,

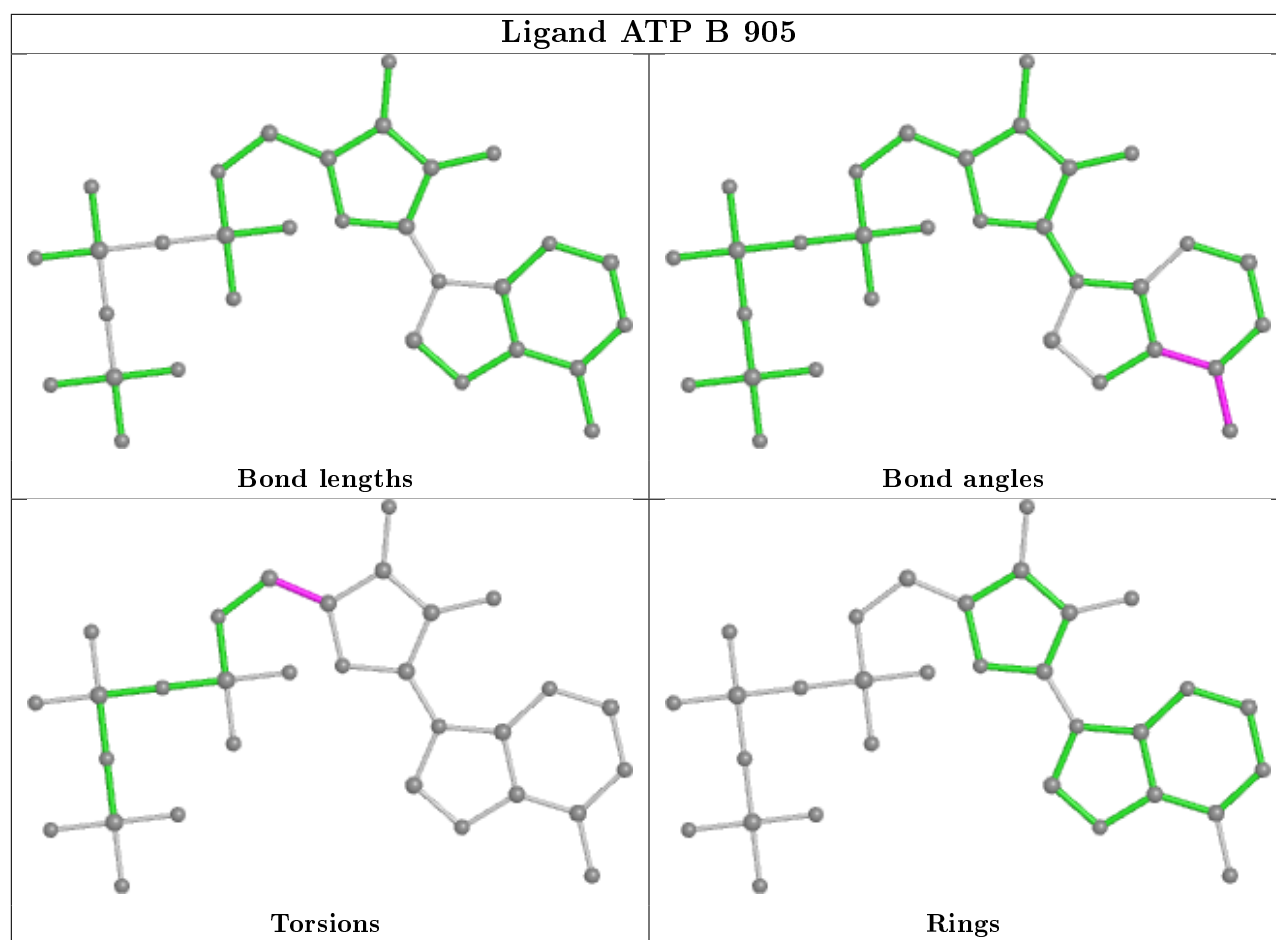
bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within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











## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

### 6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

### 6.4 Ligands

EDS was not executed - this section is therefore empty.

### 6.5 Other polymers

EDS was not executed - this section is therefore empty.