



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 07:35 AM GMT

PDB ID : 3BCC
Title : STIGMATELLIN AND ANTIMYCIN BOUND CYTOCHROME BC1 COMPLEX FROM CHICKEN
Authors : Zhang, Z.; Huang, L.; Shulmeister, V.M.; Chi, Y.-I.; Kim, K.K.; Hung, L.-W.; Crofts, A.R.; Berry, E.A.; Kim, S.-H.
Deposited on : 1998-03-23
Resolution : 3.70 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.
We welcome your comments at validation@mail.wwpdb.org
A user guide is available at
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.7 (RC4), CSD as536be (2015)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20026688
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac : 5.8.0135
CCP4 : 6.5.0
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk26865

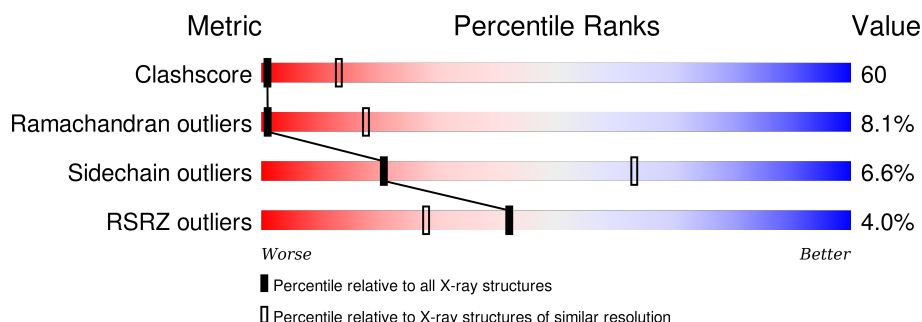
1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.70 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	102246	1224 (3.90-3.50)
Ramachandran outliers	100387	1172 (3.90-3.50)
Sidechain outliers	100360	1170 (3.90-3.50)
RSRZ outliers	91569	1108 (3.90-3.50)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. 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	446	<div> <div>3%</div> <div>29%</div> <div>61%</div> <div>8%</div> <div>..</div> </div>
2	B	422	<div> <div>7%</div> <div>30%</div> <div>56%</div> <div>10%</div> <div>..</div> </div>
3	C	380	<div> <div>%</div> <div>21%</div> <div>66%</div> <div>12%</div> <div>.</div> </div>
4	D	241	<div> <div>%</div> <div>29%</div> <div>63%</div> <div>8%</div> </div>
5	E	196	<div> <div>15%</div> <div>31%</div> <div>59%</div> <div>9%</div> <div>.</div> </div>
6	F	109	<div> <div>38%</div> <div>45%</div> <div>8%</div> <div>.</div> <div>8%</div> </div>
7	G	81	<div> <div>35%</div> <div>52%</div> <div>7%</div> <div>.</div> <div>.</div> </div>

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Mol	Chain	Length	Quality of chain
8	H	78	
9	I	33	
10	J	62	

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
12	FES	E	197	-	-	X	-
13	SIG	C	383	-	-	-	X

2 Entry composition

There are 14 unique types of molecules in this entry. The entry contains 15645 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 UBIQUINOL CYTOCHROME C OXIDOREDUCTASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	442	Total	C	N	O	S	0	0	0
			3423	2147	601	657	18			

There are 45 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	3	TYR	THR	CONFLICT	UNP P31800
A	23	VAL	LEU	CONFLICT	UNP P31800
A	59	LEU	VAL	CONFLICT	UNP P31800
A	72	GLN	GLY	CONFLICT	UNP P31800
A	91	SER	THR	CONFLICT	UNP P31800
A	106	VAL	LEU	CONFLICT	UNP P31800
A	135	VAL	LEU	CONFLICT	UNP P31800
A	136	ARG	GLN	CONFLICT	UNP P31800
A	147	GLU	ASP	CONFLICT	UNP P31800
A	162	GLY	PRO	CONFLICT	UNP P31800
A	174	ILE	VAL	CONFLICT	UNP P31800
A	188	THR	ARG	CONFLICT	UNP P31800
A	191	THR	LYS	CONFLICT	UNP P31800
A	203	VAL	LEU	CONFLICT	UNP P31800
A	206	GLN	ARG	CONFLICT	UNP P31800
A	210	GLU	ASP	CONFLICT	UNP P31800
A	217	GLY	SER	CONFLICT	UNP P31800
A	219	VAL	LEU	CONFLICT	UNP P31800
A	220	PRO	SER	CONFLICT	UNP P31800
A	221	PHE	GLY	CONFLICT	UNP P31800
A	225	ASP	GLU	CONFLICT	UNP P31800
A	233	LYS	PRO	CONFLICT	UNP P31800
A	242	ARG	CYS	CONFLICT	UNP P31800
A	267	LEU	ASN	CONFLICT	UNP P31800
A	282	ARG	CYS	CONFLICT	UNP P31800
A	288	LEU	ALA	CONFLICT	UNP P31800
A	290	SER	LEU	CONFLICT	UNP P31800

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Chain	Residue	Modelled	Actual	Comment	Reference
A	299	VAL	ALA	CONFLICT	UNP P31800
A	311	SER	ASN	CONFLICT	UNP P31800
A	315	SER	ALA	CONFLICT	UNP P31800
A	316	GLU	ASP	CONFLICT	UNP P31800
A	320	PHE	LEU	CONFLICT	UNP P31800
A	322	PHE	ALA	CONFLICT	UNP P31800
A	323	TYR	HIS	CONFLICT	UNP P31800
A	328	ARG	HIS	CONFLICT	UNP P31800
A	349	ILE	ALA	CONFLICT	UNP P31800
A	350	SER	THR	CONFLICT	UNP P31800
A	360	PHE	LEU	CONFLICT	UNP P31800
A	382	GLU	SER	CONFLICT	UNP P31800
A	393	GLU	ALA	CONFLICT	UNP P31800
A	397	GLU	SER	CONFLICT	UNP P31800
A	399	LEU	ILE	CONFLICT	UNP P31800
A	406	MET	VAL	CONFLICT	UNP P31800
A	415	ILE	PHE	CONFLICT	UNP P31800
A	425	PRO	PHE	CONFLICT	UNP P31800

- Molecule 2 is a protein called UBIQUINOL CYTOCHROME C OXIDOREDUCTASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	406	Total	C	N	O	S	0	0	0
			2994	1878	518	591	7			

There are 37 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	26	ILE	PHE	CONFLICT	UNP P23004
B	28	LYS	ARG	CONFLICT	UNP P23004
B	42	SER	ALA	CONFLICT	UNP P23004
B	44	GLY	ALA	CONFLICT	UNP P23004
B	46	THR	ARG	CONFLICT	UNP P23004
B	49	VAL	LEU	CONFLICT	UNP P23004
B	61	SER	ASN	CONFLICT	UNP P23004
B	99	GLU	THR	CONFLICT	UNP P23004
B	117	GLU	ASP	CONFLICT	UNP P23004
B	134	PRO	ARG	CONFLICT	UNP P23004
B	139	ASP	ALA	CONFLICT	UNP P23004
B	145	LYS	ARG	CONFLICT	UNP P23004
B	152	PHE	LEU	CONFLICT	UNP P23004
B	157	THR	ALA	CONFLICT	UNP P23004

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Chain	Residue	Modelled	Actual	Comment	Reference
B	174	ASP	ASN	CONFLICT	UNP P23004
B	188	SER	PRO	CONFLICT	UNP P23004
B	194	PHE	TYR	CONFLICT	UNP P23004
B	207	VAL	ILE	CONFLICT	UNP P23004
B	218	ASN	GLN	CONFLICT	UNP P23004
B	223	LEU	PHE	CONFLICT	UNP P23004
B	240	ARG	HIS	CONFLICT	UNP P23004
B	257	ILE	LEU	CONFLICT	UNP P23004
B	266	GLY	SER	CONFLICT	UNP P23004
B	282	ASN	GLY	CONFLICT	UNP P23004
B	304	LEU	SER	CONFLICT	UNP P23004
B	332	TYR	SER	CONFLICT	UNP P23004
B	335	GLN	ASP	CONFLICT	UNP P23004
B	352	VAL	LEU	CONFLICT	UNP P23004
B	355	GLU	PRO	CONFLICT	UNP P23004
B	356	ASN	ASP	CONFLICT	UNP P23004
B	367	LYS	GLY	CONFLICT	UNP P23004
B	380	GLU	ASP	CONFLICT	UNP P23004
B	393	ASN	THR	CONFLICT	UNP P23004
B	412	LYS	ASN	CONFLICT	UNP P23004
B	420	ARG	GLY	CONFLICT	UNP P23004
B	421	GLN	ARG	CONFLICT	UNP P23004
B	436	VAL	ILE	CONFLICT	UNP P23004

- Molecule 3 is a protein called UBIQUINOL CYTOCHROME C OXIDOREDUCTASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	379	Total	C	N	O	S	0	0	0
			3002	2013	473	504	12			

- Molecule 4 is a protein called UBIQUINOL CYTOCHROME C OXIDOREDUCTASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	D	241	Total	C	N	O	S	0	0	0
			1899	1214	326	345	14			

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	17	PRO	LEU	CONFLICT	UNP P00125
D	143	VAL	LEU	CONFLICT	UNP P00125
D	167	ASP	GLU	CONFLICT	UNP P00125

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Chain	Residue	Modelled	Actual	Comment	Reference
D	216	VAL	LEU	CONFLICT	UNP P00125
D	221	TYR	ALA	CONFLICT	UNP P00125

- Molecule 5 is a protein called UBIQUINOL CYTOCHROME C OXIDOREDUCTASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	E	196	Total	C	N	O	S	0	0	0
			1512	953	266	285	8			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	9	ASN	ASP	CONFLICT	UNP P13272
E	17	PRO	GLU	CONFLICT	UNP P13272
E	18	ASP	VAL	CONFLICT	UNP P13272
E	19	ASP	LEU	CONFLICT	UNP P13272
E	20	TYR	ASP	CONFLICT	UNP P13272
E	26	ARG	LYS	CONFLICT	UNP P13272
E	29	ASP	SER	CONFLICT	UNP P13272
E	30	PRO	GLU	CONFLICT	UNP P13272
E	31	SER	ALA	CONFLICT	UNP P13272
E	42	VAL	THR	CONFLICT	UNP P13272
E	45	LEU	VAL	CONFLICT	UNP P13272
E	56	THR	SER	CONFLICT	UNP P13272

- Molecule 6 is a protein called UBIQUINOL CYTOCHROME C OXIDOREDUCTASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	F	100	Total	C	N	O	S	0	0	0
			875	557	153	162	3			

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F	29	TYR	LEU	CONFLICT	UNP P00129
F	38	TYR	HIS	CONFLICT	UNP P00129
F	59	MET	VAL	CONFLICT	UNP P00129
F	69	ASN	SER	CONFLICT	UNP P00129
F	87	VAL	LYS	CONFLICT	UNP P00129
F	88	PRO	SER	CONFLICT	UNP P00129
F	108	ASP	ALA	CONFLICT	UNP P00129

- Molecule 7 is a protein called UBIQUINOL CYTOCHROME C OXIDOREDUCTASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	G	78	Total	C	N	O	S	0	0	0
			626	411	114	100	1			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	13	LEU	VAL	CONFLICT	UNP P13271
G	25	PRO	ALA	CONFLICT	UNP P13271
G	34	VAL	ILE	CONFLICT	UNP P13271
G	38	TRP	LEU	CONFLICT	UNP P13271
G	41	LEU	THR	CONFLICT	UNP P13271
G	53	LEU	VAL	CONFLICT	UNP P13271
G	58	LEU	VAL	CONFLICT	UNP P13271
G	78	VAL	GLU	CONFLICT	UNP P13271

- Molecule 8 is a protein called UBIQUINOL CYTOCHROME C OXIDOREDUCTASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	H	66	Total	C	N	O	S	0	0	0
			490	301	88	96	5			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
H	59	PHE	LEU	CONFLICT	UNP P00126

- Molecule 9 is a protein called UBIQUINOL CYTOCHROME C OXIDOREDUCTASE.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
9	I	33	Total	C	N	O	0	0	0
			159	92	33	34			

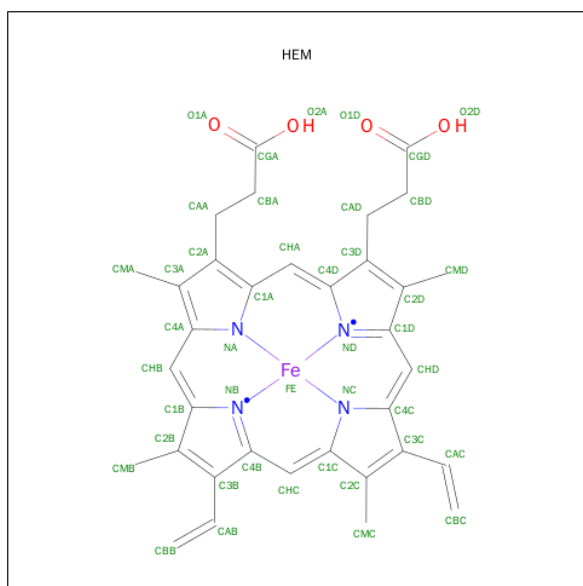
- Molecule 10 is a protein called UBIQUINOL CYTOCHROME C OXIDOREDUCTASE.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
10	J	59	Total	C	N	O	0	0	0
			459	299	78	82			

There is a discrepancy between the modelled and reference sequences:

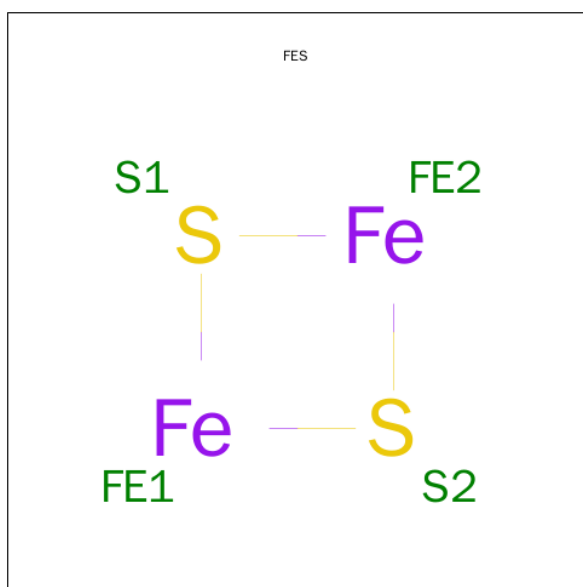
Chain	Residue	Modelled	Actual	Comment	Reference
J	30	LEU	PHE	CONFLICT	UNP P00130

- Molecule 11 is PROTOPORPHYRIN IX CONTAINING FE (three-letter code: HEM) (formula: $C_{34}H_{32}FeN_4O_4$).



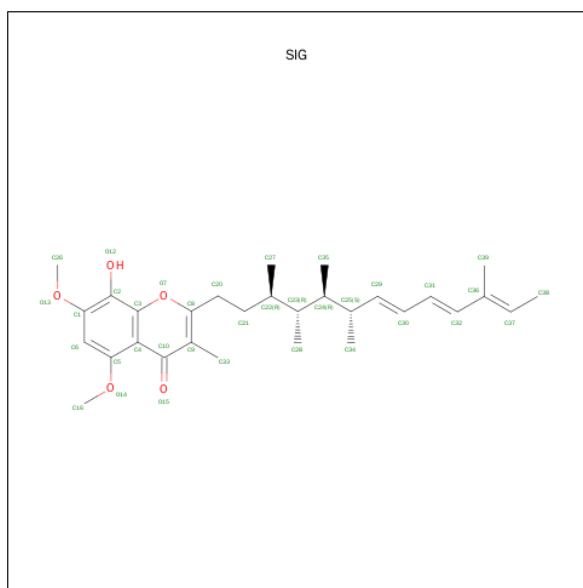
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
11	C	1	Total 43	C 34	Fe 1	N 4	O 4	0	0
11	C	1	Total 43	C 34	Fe 1	N 4	O 4	0	0
11	D	1	Total 43	C 34	Fe 1	N 4	O 4	0	0

- Molecule 12 is FE2/S2 (INORGANIC) CLUSTER (three-letter code: FES) (formula: Fe_2S_2).



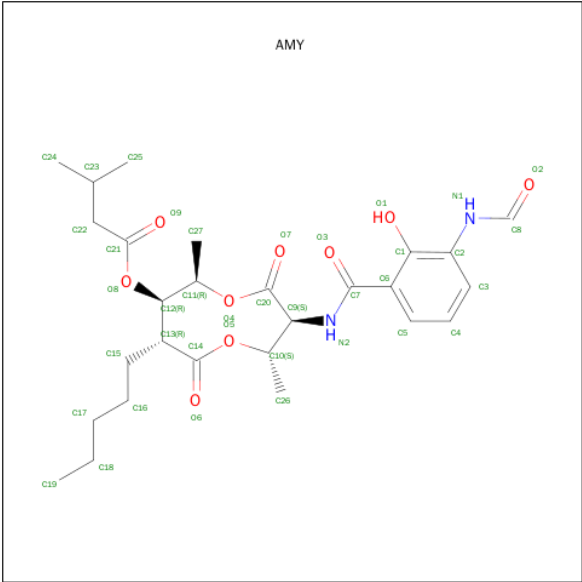
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
12	E	1	Total	Fe	S	0	0
			4	2	2		

- Molecule 13 is STIGMATELLIN (three-letter code: SIG) (formula: $C_{30}H_{42}O_5$).

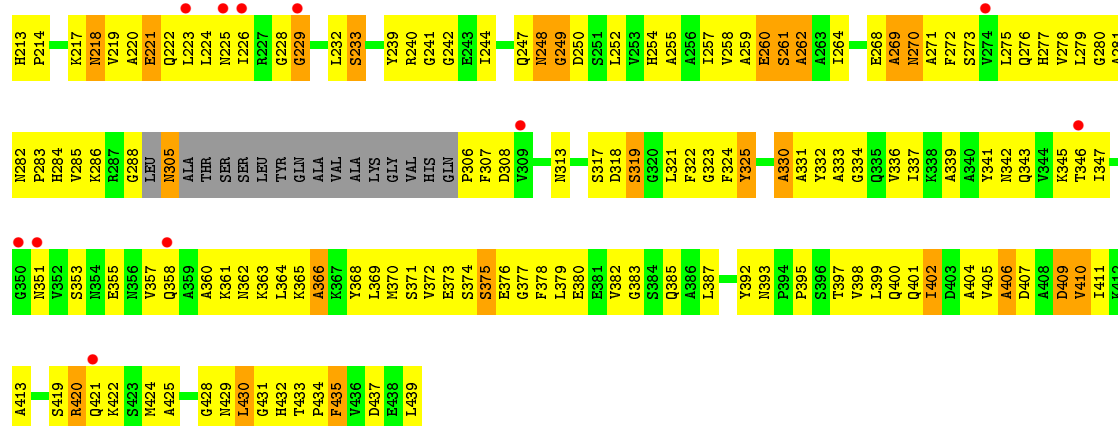


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
13	C	1	Total	C	O	0	0
			35	30	5		

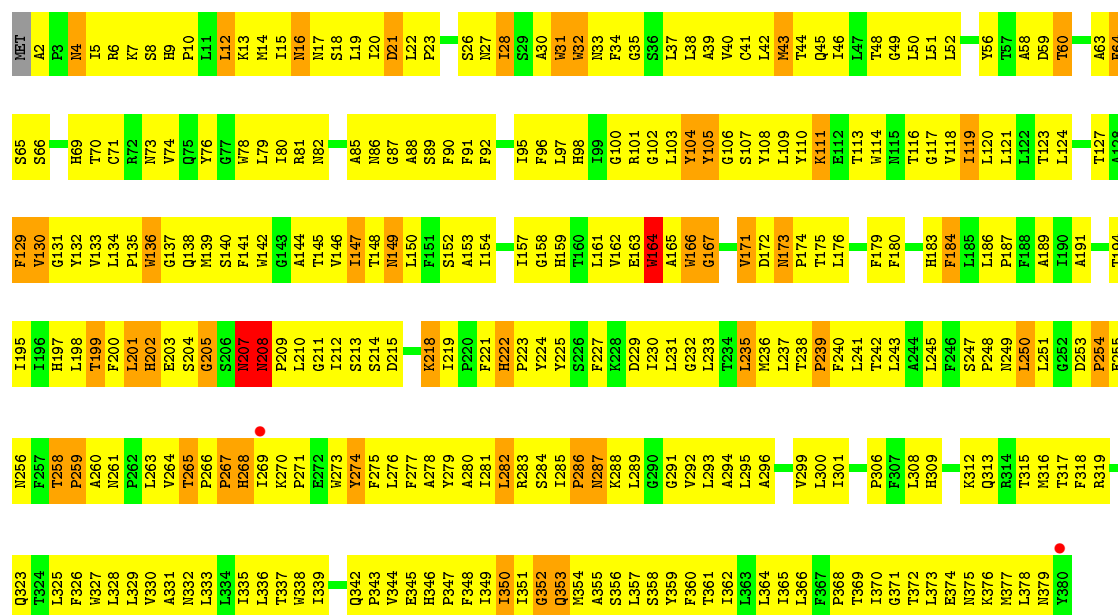
- Molecule 14 is ANTIMYCIN (three-letter code: AMY) (formula: $C_{27}H_{38}N_2O_9$).



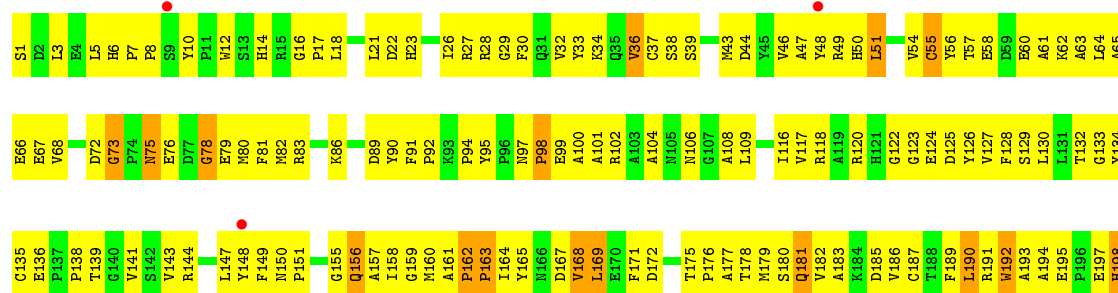
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
14	C	1	Total	C	N	O	0	0
			38	27	2	9		

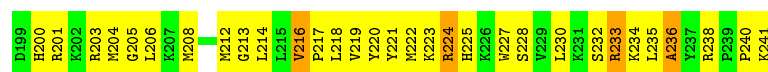


• Molecule 3: UBIQUINOL CYTOCHROME C OXIDOREDUCTASE

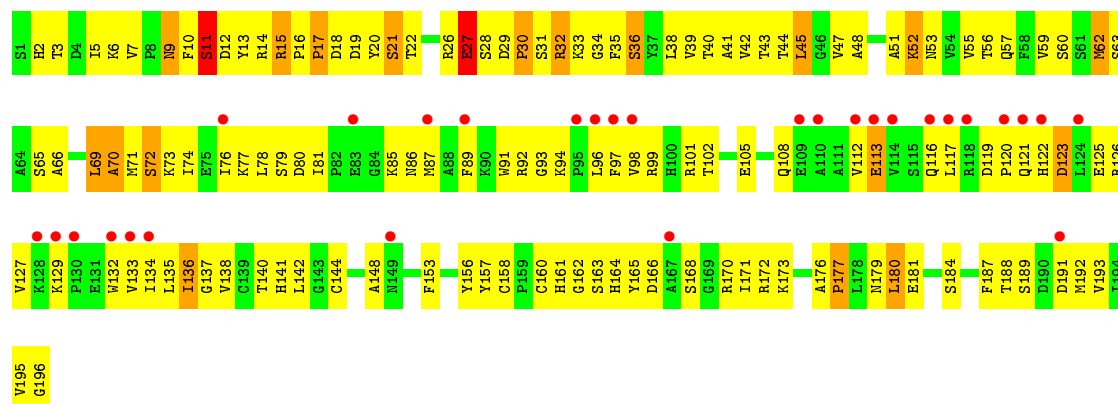


• Molecule 4: UBIQUINOL CYTOCHROME C OXIDOREDUCTASE

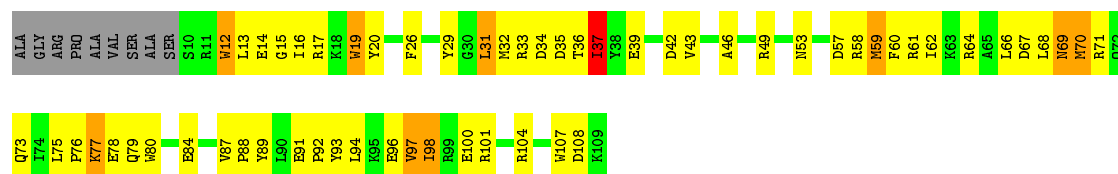




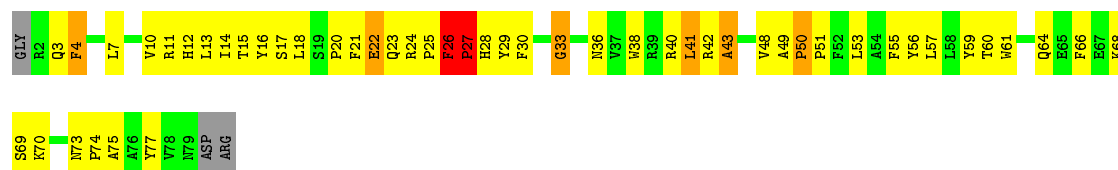
• Molecule 5: UBIQUINOL CYTOCHROME C OXIDOREDUCTASE



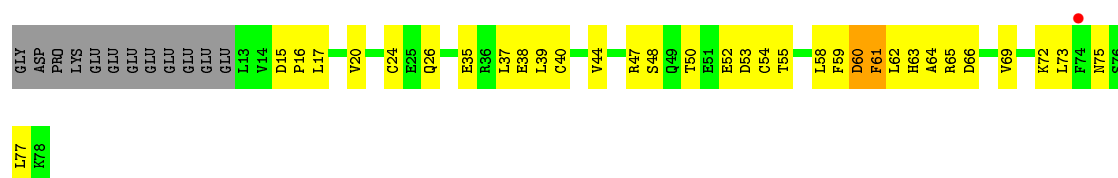
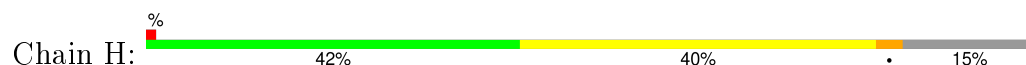
• Molecule 6: UBIQUINOL CYTOCHROME C OXIDOREDUCTASE



• Molecule 7: UBIQUINOL CYTOCHROME C OXIDOREDUCTASE



• Molecule 8: UBIQUINOL CYTOCHROME C OXIDOREDUCTASE



• Molecule 9: UBIQUINOL CYTOCHROME C OXIDOREDUCTASE

Chain I:

61%

39%



● Molecule 10: UBIQUINOL CYTOCHROME C OXIDOREDUCTASE

Chain J:

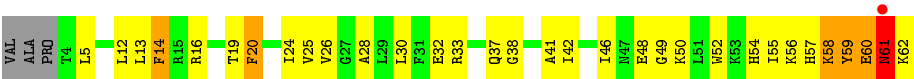
2%

44%

42%

8%

5%



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	173.18Å 179.73Å 238.22Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	12.00 – 3.70 86.13 – 3.20	Depositor EDS
% Data completeness (in resolution range)	91.8 (12.00-3.70) 77.4 (86.13-3.20)	Depositor EDS
R_{merge}	0.16	Depositor
R_{sym}	0.16	Depositor
$\langle I/\sigma(I) \rangle$ ¹	0.71 (at 3.19Å)	Xtriage
Refinement program	CNS 0.1	Depositor
R, R_{free}	0.289 , 0.321 0.280 , (Not available)	Depositor DCC
R_{free} test set	No test flags present.	DCC
Wilson B-factor (Å ²)	82.7	Xtriage
Anisotropy	0.446	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.27 , 50.8	EDS
Estimated twinning fraction	0.019 for k,h,-l	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtriage
Outliers	0 of 111796 reflections	Xtriage
F_o, F_c correlation	0.86	EDS
Total number of atoms	15645	wwPDB-VP
Average B, all atoms (Å ²)	73.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.79% 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, 0.375 respectively for untwinned datasets, and 0.333, 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: AMY, HEM, SIG, FES

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	0.50	0/3495	0.77	1/4742 (0.0%)
2	B	0.49	0/3046	0.73	0/4132
3	C	0.60	0/3104	0.86	1/4252 (0.0%)
4	D	0.54	0/1960	0.80	2/2665 (0.1%)
5	E	0.58	1/1548 (0.1%)	0.77	1/2095 (0.0%)
6	F	0.52	0/896	0.74	0/1206
7	G	0.57	0/648	1.16	3/882 (0.3%)
8	H	0.43	0/495	0.67	0/669
10	J	0.58	0/470	0.79	1/635 (0.2%)
All	All	0.54	1/15662 (0.0%)	0.80	9/21278 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	E	6	LYS	CD-CE	6.62	1.67	1.51

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	G	26	PHE	C-N-CD	-20.16	76.25	120.60
7	G	26	PHE	C-N-CA	12.85	175.99	122.00
7	G	27	PRO	CA-N-CD	-7.88	100.47	111.50
1	A	287	GLY	N-CA-C	-6.79	96.12	113.10
4	D	76	GLU	N-CA-C	-6.20	94.27	111.00
10	J	61	ASN	N-CA-C	6.19	127.72	111.00
3	C	267	PRO	N-CA-C	-6.18	96.04	112.10
4	D	216	VAL	C-N-CD	5.16	139.24	128.40
5	E	6	LYS	CB-CA-C	-5.11	100.18	110.40

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	3423	0	3286	448	0
2	B	2994	0	2906	327	0
3	C	3002	0	3036	487	0
4	D	1899	0	1822	254	1
5	E	1512	0	1483	185	0
6	F	875	0	839	88	1
7	G	626	0	591	67	0
8	H	490	0	445	45	0
9	I	159	0	43	21	0
10	J	459	0	424	55	0
11	C	86	0	60	23	0
11	D	43	0	30	6	0
12	E	4	0	0	2	0
13	C	35	0	42	13	0
14	C	38	0	36	15	0
All	All	15645	0	15043	1851	1

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 60.

All (1851) 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)
3:C:107:SER:HB3	11:C:382:HEM:HBD1	1.22	1.17
3:C:316:MET:SD	3:C:319:ARG:HG3	1.90	1.11
1:A:36:THR:HG22	1:A:100:LYS:HB3	1.31	1.11
3:C:146:VAL:HG23	3:C:147:ILE:H	1.15	1.08
2:B:168:TYR:HB2	2:B:173:ALA:HB2	1.14	1.07
3:C:327:TRP:HA	3:C:330:VAL:HG12	1.33	1.07
2:B:76:THR:HG22	2:B:82:SER:H	1.18	1.07
1:A:361:LEU:HD13	1:A:399:LEU:HD22	1.38	1.06
4:D:158:ILE:HG22	4:D:160:MET:H	1.05	1.05

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:159:GLN:HE21	5:E:7:VAL:HG11	1.21	1.01
3:C:325:LEU:HD11	3:C:366:LEU:HB3	1.36	1.01
3:C:43:MET:HE2	3:C:43:MET:HA	1.42	1.01
5:E:101:ARG:HH22	5:E:127:VAL:HG21	1.27	1.00
2:B:280:GLY:H	2:B:283:PRO:HD2	1.28	0.98
3:C:167:GLY:N	3:C:175:THR:HG22	1.78	0.98
4:D:102:ARG:HH11	4:D:109:LEU:HB2	1.29	0.97
1:A:382:GLU:HG2	1:A:389:ARG:HA	1.46	0.97
4:D:54:VAL:HG21	4:D:192:TRP:CZ3	2.00	0.96
3:C:138:GLN:NE2	3:C:261:ASN:H	1.65	0.95
13:C:383:SIG:H353	13:C:383:SIG:H333	1.48	0.95
1:A:159:GLN:NE2	5:E:7:VAL:HG11	1.81	0.95
2:B:241:GLY:HA3	2:B:421:GLN:HE21	1.30	0.94
2:B:62:ASN:C	2:B:62:ASN:HD22	1.67	0.94
1:A:436:ARG:HD3	3:C:223:PRO:HD3	1.50	0.93
2:B:337:ILE:HD11	2:B:434:PRO:HD2	1.49	0.93
2:B:168:TYR:CB	2:B:173:ALA:HB2	1.98	0.93
1:A:281:ASP:HB3	1:A:284:TYR:HE1	1.34	0.93
4:D:158:ILE:CG2	4:D:160:MET:H	1.83	0.92
3:C:107:SER:CB	11:C:382:HEM:HBD1	2.00	0.92
3:C:120:LEU:HG	11:C:382:HEM:HBB2	1.52	0.90
1:A:297:ILE:HG21	1:A:337:VAL:HG11	1.49	0.90
2:B:258:VAL:HG13	2:B:322:PHE:H	1.34	0.90
4:D:158:ILE:HG22	4:D:160:MET:N	1.87	0.89
3:C:43:MET:CE	3:C:43:MET:HA	2.02	0.89
2:B:250:ASP:O	2:B:252:LEU:HD23	1.73	0.89
1:A:49:SER:H	1:A:52:ASN:HB3	1.37	0.89
3:C:319:ARG:CZ	3:C:374:GLU:HB2	2.03	0.88
3:C:147:ILE:O	3:C:150:LEU:HB3	1.73	0.88
5:E:45:LEU:HD11	10:J:28:ALA:HA	1.54	0.88
5:E:156:TYR:HB2	5:E:165:TYR:HB2	1.56	0.87
3:C:146:VAL:HG23	3:C:147:ILE:N	1.90	0.87
1:A:166:SER:OG	5:E:3:THR:HG23	1.74	0.87
2:B:69:LEU:HD12	2:B:105:MET:HE1	1.57	0.86
1:A:349:ILE:HG22	1:A:408:ARG:HG3	1.56	0.86
3:C:219:ILE:HG21	4:D:230:LEU:HD11	1.58	0.86
3:C:242:THR:HA	4:D:208:MET:HE1	1.58	0.86
4:D:164:ILE:HD11	4:D:182:VAL:HG13	1.55	0.85
2:B:101:THR:HB	2:B:104:ASN:OD1	1.76	0.85
3:C:106:GLY:HA2	3:C:108:TYR:CE2	2.11	0.85
3:C:167:GLY:H	3:C:175:THR:HG22	1.39	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:13:TYR:O	5:E:14:ARG:HD3	1.75	0.85
3:C:283:ARG:O	3:C:283:ARG:HG3	1.76	0.85
5:E:29:ASP:C	5:E:31:SER:H	1.79	0.84
2:B:75:LEU:HD22	2:B:136:GLU:HB3	1.59	0.84
1:A:346:CYS:HB3	1:A:411:CYS:HB2	1.57	0.84
10:J:57:HIS:O	10:J:61:ASN:N	2.11	0.84
3:C:207:ASN:O	3:C:208:ASN:HB3	1.76	0.83
1:A:210:GLU:O	1:A:214:LYS:HB2	1.78	0.83
1:A:345:LEU:HD12	1:A:349:ILE:HD12	1.60	0.83
3:C:166:TRP:HB2	3:C:175:THR:CG2	2.08	0.82
1:A:39:VAL:HG11	1:A:117:VAL:HG11	1.60	0.82
1:A:406:MET:O	1:A:410:VAL:HG23	1.80	0.82
4:D:28:ARG:HD2	4:D:171:PHE:CD2	2.14	0.82
2:B:62:ASN:C	2:B:62:ASN:ND2	2.32	0.81
2:B:258:VAL:HG11	2:B:321:LEU:HB3	1.60	0.81
4:D:165:TYR:O	4:D:168:VAL:HG23	1.79	0.81
1:A:37:VAL:HG12	1:A:199:ALA:CB	2.10	0.81
1:A:250:LEU:HD21	1:A:325:VAL:HG13	1.61	0.81
3:C:342:GLN:HB3	3:C:348:PHE:CE2	2.16	0.81
9:I:107:UNK:HA	9:I:115:UNK:O	1.80	0.81
2:B:96:LEU:HD23	2:B:97:SER:N	1.95	0.81
3:C:372:THR:HA	3:C:375:ASN:HD22	1.45	0.81
8:H:69:VAL:O	8:H:73:LEU:HB2	1.80	0.81
2:B:146:ILE:HG13	2:B:147:ASP:N	1.96	0.80
3:C:92:PHE:O	3:C:95:ILE:HG22	1.80	0.80
2:B:168:TYR:CE2	2:B:172:LEU:HD23	2.16	0.80
1:A:88:ALA:HB1	1:A:96:ALA:O	1.82	0.80
5:E:72:SER:O	5:E:196:GLY:HA3	1.82	0.80
10:J:57:HIS:HB2	10:J:61:ASN:C	2.02	0.80
3:C:90:PHE:HE1	3:C:236:MET:HB3	1.45	0.80
2:B:168:TYR:HB2	2:B:173:ALA:CB	2.06	0.80
1:A:333:ASP:O	1:A:337:VAL:HG23	1.82	0.79
3:C:27:ASN:HD22	6:F:69:ASN:ND2	1.79	0.79
4:D:214:LEU:O	4:D:218:LEU:HG	1.80	0.79
2:B:357:VAL:HG11	2:B:406:ALA:HB1	1.62	0.79
3:C:370:ILE:O	3:C:374:GLU:HG3	1.83	0.79
4:D:233:ARG:HB3	6:F:71:ARG:HH21	1.47	0.79
2:B:280:GLY:H	2:B:283:PRO:CD	1.95	0.79
1:A:36:THR:HG22	1:A:100:LYS:CB	2.11	0.79
3:C:327:TRP:HA	3:C:330:VAL:CG1	2.12	0.79
2:B:143:GLN:OE1	2:B:146:ILE:HD11	1.81	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:27:ASN:HB2	6:F:69:ASN:ND2	1.97	0.78
3:C:130:VAL:HG12	3:C:131:GLY:H	1.46	0.78
1:A:276:ILE:HD13	1:A:349:ILE:HD11	1.66	0.78
1:A:189:HIS:HD2	1:A:194:ARG:HH12	1.31	0.78
4:D:181:GLN:HG2	8:H:77:LEU:HD22	1.66	0.78
5:E:11:SER:HA	5:E:15:ARG:HD2	1.63	0.78
4:D:132:THR:HA	4:D:179:MET:HE1	1.64	0.78
1:A:37:VAL:HG12	1:A:199:ALA:HB1	1.64	0.78
3:C:285:ILE:HG23	3:C:291:GLY:HA2	1.63	0.77
2:B:132:PHE:CE2	2:B:191:LEU:HB3	2.20	0.77
1:A:291:SER:O	1:A:293:PRO:N	2.17	0.77
5:E:119:ASP:HB3	5:E:179:ASN:ND2	2.00	0.77
4:D:46:VAL:HG12	4:D:47:ALA:H	1.50	0.77
1:A:252:HIS:HB3	1:A:323:TYR:HE1	1.50	0.77
1:A:391:PRO:HG2	1:A:394:GLU:HB2	1.65	0.77
1:A:276:ILE:CD1	1:A:349:ILE:HD11	2.15	0.77
1:A:281:ASP:HB3	1:A:284:TYR:CE1	2.19	0.76
2:B:128:THR:C	2:B:130:PRO:HD3	2.04	0.76
1:A:88:ALA:HB2	1:A:97:TYR:HA	1.66	0.76
2:B:24:LEU:H	2:B:24:LEU:HD23	1.48	0.76
1:A:328:ARG:HG3	1:A:427:PRO:HB2	1.68	0.76
5:E:29:ASP:O	5:E:31:SER:N	2.19	0.76
1:A:4:TYR:CG	2:B:113:ARG:HB3	2.21	0.76
4:D:54:VAL:HG11	4:D:192:TRP:CH2	2.22	0.75
1:A:205:HIS:NE2	1:A:209:LEU:HD21	2.00	0.75
5:E:15:ARG:NH1	5:E:19:ASP:HB3	2.01	0.75
1:A:53:ASN:HD22	1:A:54:GLY:N	1.83	0.75
3:C:6:ARG:HA	3:C:12:LEU:HD22	1.67	0.75
4:D:233:ARG:HB3	6:F:71:ARG:NH2	2.00	0.75
3:C:145:THR:O	3:C:149:ASN:HB2	1.87	0.75
1:A:279:HIS:HA	1:A:307:PHE:CE1	2.22	0.75
1:A:342:TRP:O	1:A:345:LEU:HB3	1.86	0.75
4:D:167:ASP:O	4:D:169:LEU:N	2.20	0.75
5:E:76:ILE:HB	5:E:193:VAL:HG13	1.69	0.75
3:C:138:GLN:HE22	3:C:261:ASN:H	1.33	0.75
1:A:85:HIS:CB	9:I:314:UNK:HG1	2.16	0.75
2:B:272:PHE:O	2:B:276:GLN:N	2.20	0.75
8:H:66:ASP:HA	8:H:69:VAL:CG2	2.16	0.75
1:A:46:ARG:NH1	1:A:316:GLU:OE2	2.18	0.75
1:A:242:ARG:O	7:G:14:ILE:HA	1.87	0.75
3:C:131:GLY:HA2	3:C:134:LEU:HD22	1.69	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:61:HIS:HE2	1:A:137:GLU:CD	1.89	0.74
4:D:32:VAL:HG21	4:D:186:VAL:HG22	1.68	0.74
10:J:57:HIS:C	10:J:59:TYR:H	1.88	0.74
1:A:145:MET:HA	1:A:148:VAL:CG1	2.17	0.74
2:B:76:THR:CG2	2:B:82:SER:H	1.99	0.74
1:A:189:HIS:CD2	1:A:194:ARG:HH12	2.04	0.74
1:A:56:GLY:HA2	1:A:185:TYR:CE2	2.23	0.74
2:B:258:VAL:CG1	2:B:322:PHE:H	2.01	0.74
2:B:132:PHE:CD2	2:B:191:LEU:HB3	2.22	0.74
1:A:178:SER:HB2	1:A:181:ASP:OD1	1.88	0.74
1:A:102:LEU:H	1:A:102:LEU:HD12	1.53	0.74
4:D:12:TRP:CZ2	4:D:124:GLU:HB2	2.23	0.74
3:C:76:TYR:HE1	4:D:200:HIS:HE1	1.36	0.74
4:D:32:VAL:O	4:D:36:VAL:HG13	1.88	0.74
2:B:154:ASN:O	2:B:157:THR:HG22	1.88	0.74
4:D:120:ARG:HH11	4:D:120:ARG:HG2	1.53	0.74
10:J:57:HIS:HB2	10:J:61:ASN:O	1.87	0.73
2:B:379:LEU:HD13	2:B:379:LEU:O	1.88	0.73
2:B:76:THR:HG22	2:B:82:SER:N	2.01	0.73
4:D:224:ARG:HB3	4:D:224:ARG:HH11	1.53	0.73
3:C:12:LEU:HD23	3:C:12:LEU:O	1.89	0.73
4:D:102:ARG:NH1	4:D:109:LEU:HB2	2.03	0.72
3:C:138:GLN:NE2	3:C:261:ASN:N	2.37	0.72
4:D:212:MET:O	4:D:216:VAL:HG22	1.89	0.72
4:D:230:LEU:HB3	6:F:70:MET:HE3	1.72	0.72
5:E:5:ILE:HD13	7:G:14:ILE:HD13	1.70	0.72
3:C:253:ASP:OD1	3:C:255:GLU:N	2.21	0.72
2:B:341:TYR:OH	2:B:422:LYS:HE3	1.88	0.72
2:B:241:GLY:HA3	2:B:421:GLN:NE2	2.04	0.72
4:D:180:SER:HB2	8:H:17:LEU:HB2	1.71	0.72
3:C:313:GLN:NE2	6:F:36:THR:OG1	2.23	0.72
1:A:382:GLU:HG2	1:A:389:ARG:HD2	1.71	0.72
3:C:327:TRP:CA	3:C:330:VAL:HG12	2.17	0.72
1:A:369:LEU:HD12	1:A:392:LEU:HD21	1.71	0.72
3:C:325:LEU:HD12	3:C:370:ILE:HG13	1.70	0.72
3:C:127:THR:HG22	3:C:186:LEU:HB3	1.71	0.72
4:D:46:VAL:HG12	4:D:47:ALA:N	2.04	0.72
1:A:283:THR:HG21	9:I:114:UNK:CB	2.20	0.72
5:E:26:ARG:O	5:E:28:SER:N	2.20	0.71
2:B:209:LEU:HG	2:B:379:LEU:HD23	1.72	0.71
3:C:127:THR:HG22	3:C:186:LEU:HD13	1.70	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:75:ASN:HB2	4:D:78:GLY:N	2.04	0.71
3:C:282:LEU:HD22	3:C:291:GLY:O	1.90	0.71
3:C:271:PRO:HG2	3:C:276:LEU:HD23	1.73	0.71
3:C:319:ARG:NH2	3:C:371:GLY:HA2	2.05	0.71
1:A:161:THR:HG21	1:A:234:CYS:HA	1.72	0.71
1:A:250:LEU:C	1:A:250:LEU:HD22	2.11	0.71
1:A:108:LYS:O	1:A:112:LEU:HG	1.90	0.71
3:C:347:PRO:HG3	7:G:66:PHE:HD1	1.56	0.71
2:B:122:PHE:O	2:B:126:VAL:HG23	1.90	0.71
3:C:90:PHE:CE1	3:C:236:MET:HB3	2.26	0.70
3:C:378:LEU:O	6:F:33:ARG:NH1	2.24	0.70
7:G:50:PRO:HG2	7:G:51:PRO:HD2	1.73	0.70
2:B:92:VAL:HG11	2:B:115:ASP:HB3	1.73	0.70
3:C:46:ILE:HA	11:C:381:HEM:HMC2	1.72	0.70
1:A:33:PRO:HG3	2:B:369:LEU:HD22	1.72	0.70
1:A:250:LEU:CD2	1:A:325:VAL:HG13	2.21	0.70
1:A:23:VAL:HG23	1:A:192:ALA:HB1	1.72	0.70
3:C:107:SER:HB3	11:C:382:HEM:CBD	2.13	0.70
3:C:120:LEU:CG	11:C:382:HEM:HBB2	2.22	0.70
7:G:26:PHE:HD1	7:G:26:PHE:H	1.37	0.70
3:C:342:GLN:HE21	3:C:343:PRO:HD2	1.56	0.70
5:E:188:THR:OG1	5:E:192:MET:HB3	1.92	0.70
2:B:207:VAL:HG12	2:B:208:GLY:N	2.07	0.70
3:C:276:LEU:O	3:C:279:TYR:HB3	1.92	0.70
1:A:281:ASP:O	1:A:283:THR:N	2.24	0.70
1:A:282:ARG:HB2	9:I:203:UNK:CB	2.22	0.70
2:B:405:VAL:HG12	2:B:406:ALA:N	2.04	0.69
1:A:382:GLU:CG	1:A:389:ARG:HA	2.22	0.69
1:A:102:LEU:N	1:A:102:LEU:HD12	2.06	0.69
3:C:325:LEU:CD2	3:C:362:ILE:HG23	2.23	0.69
3:C:90:PHE:CZ	3:C:236:MET:O	2.45	0.69
1:A:85:HIS:CG	9:I:314:UNK:HG1	2.27	0.69
3:C:347:PRO:HG3	7:G:66:PHE:CD1	2.27	0.69
4:D:83:ARG:NH1	4:D:86:LYS:HG3	2.08	0.69
3:C:9:HIS:HB3	3:C:12:LEU:HB3	1.74	0.69
2:B:162:ASN:O	2:B:244:ILE:HD11	1.93	0.69
1:A:343:MET:O	1:A:347:THR:HG22	1.91	0.69
2:B:213:HIS:N	2:B:214:PRO:HD2	2.08	0.69
2:B:273:SER:O	2:B:276:GLN:HB3	1.92	0.69
3:C:150:LEU:HD12	3:C:292:VAL:HG22	1.74	0.69
1:A:191:THR:O	1:A:195:MET:HG3	1.92	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:62:LEU:HD11	1:A:127:ILE:HG12	1.73	0.69
4:D:32:VAL:HG11	4:D:186:VAL:HG22	1.75	0.69
1:A:297:ILE:HG22	1:A:303:LEU:HD11	1.74	0.69
4:D:225:HIS:CE1	7:G:20:PRO:HB2	2.27	0.69
5:E:136:ILE:HB	5:E:181:GLU:HB3	1.74	0.69
1:A:388:ARG:HG3	1:A:388:ARG:HH11	1.57	0.68
2:B:181:TYR:CE1	2:B:182:ARG:HG3	2.28	0.68
5:E:171:ILE:HG12	5:E:176:ALA:HB3	1.75	0.68
4:D:75:ASN:ND2	4:D:79:GLU:O	2.25	0.68
5:E:62:MET:HG3	5:E:63:SER:H	1.58	0.68
1:A:61:HIS:HD2	1:A:134:ILE:HG12	1.57	0.68
3:C:138:GLN:HE21	3:C:260:ALA:HA	1.59	0.68
1:A:106:VAL:O	1:A:110:VAL:HG23	1.93	0.68
3:C:289:LEU:O	3:C:293:LEU:HD23	1.94	0.68
4:D:138:PRO:HG3	8:H:55:THR:HA	1.75	0.68
3:C:316:MET:HE3	3:C:319:ARG:HE	1.57	0.68
1:A:159:GLN:OE1	1:A:237:THR:HG21	1.92	0.68
1:A:286:GLY:HA3	1:A:289:HIS:CD2	2.28	0.68
3:C:22:LEU:HD12	3:C:23:PRO:CD	2.23	0.68
5:E:161:HIS:HB2	12:E:197:FES:S1	2.34	0.68
3:C:27:ASN:ND2	3:C:208:ASN:OD1	2.26	0.68
3:C:90:PHE:CE1	3:C:236:MET:O	2.47	0.68
3:C:131:GLY:N	3:C:134:LEU:HD13	2.09	0.68
3:C:101:ARG:C	3:C:101:ARG:HD2	2.14	0.68
6:F:64:ARG:O	6:F:68:LEU:HD13	1.94	0.68
2:B:62:ASN:HD22	2:B:63:LEU:N	1.91	0.68
2:B:273:SER:HB3	2:B:364:LEU:HD11	1.74	0.68
2:B:111:CYS:HB3	2:B:119:LEU:HD22	1.75	0.68
2:B:248:ASN:HD22	2:B:248:ASN:C	1.97	0.68
3:C:323:GLN:O	3:C:326:PHE:HB3	1.94	0.68
2:B:357:VAL:HG12	2:B:361:LYS:HD2	1.74	0.68
3:C:372:THR:HA	3:C:375:ASN:ND2	2.07	0.67
1:A:245:GLU:HG3	7:G:11:ARG:HG2	1.75	0.67
5:E:101:ARG:NH2	5:E:127:VAL:HG21	2.05	0.67
3:C:271:PRO:HG2	3:C:276:LEU:CD2	2.24	0.67
3:C:146:VAL:CG2	3:C:147:ILE:H	1.98	0.67
1:A:134:ILE:HG21	1:A:174:ILE:HD13	1.75	0.67
1:A:86:LEU:HD13	1:A:99:ILE:CG1	2.25	0.67
3:C:348:PHE:O	3:C:350:ILE:N	2.28	0.67
1:A:16:VAL:HG13	1:A:26:ALA:HB2	1.76	0.67
5:E:10:PHE:O	5:E:11:SER:O	2.12	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:332:TYR:O	2:B:336:VAL:HG23	1.95	0.67
3:C:130:VAL:HG13	3:C:179:PHE:HB3	1.76	0.67
1:A:36:THR:HG23	1:A:372:THR:OG1	1.94	0.67
3:C:278:ALA:HB1	3:C:295:LEU:CD1	2.25	0.67
5:E:44:THR:HB	10:J:24:ILE:HD12	1.77	0.67
1:A:145:MET:HA	1:A:148:VAL:HG13	1.76	0.67
3:C:282:LEU:HD13	3:C:282:LEU:O	1.94	0.67
2:B:72:ALA:HB1	2:B:75:LEU:HD12	1.77	0.67
2:B:428:GLY:O	2:B:430:LEU:HG	1.95	0.67
3:C:148:THR:HG21	3:C:166:TRP:CE3	2.30	0.66
1:A:39:VAL:HG11	1:A:117:VAL:CG1	2.25	0.66
4:D:132:THR:HA	4:D:179:MET:CE	2.25	0.66
1:A:264:HIS:HD2	1:A:266:ASP:HB2	1.60	0.66
2:B:397:THR:O	2:B:401:GLN:HG2	1.94	0.66
2:B:258:VAL:HG13	2:B:322:PHE:N	2.08	0.66
4:D:164:ILE:HD11	4:D:182:VAL:CG1	2.25	0.66
5:E:29:ASP:C	5:E:31:SER:N	2.49	0.66
10:J:59:TYR:O	10:J:60:GLU:HG3	1.95	0.66
6:F:16:ILE:O	6:F:19:TRP:HB3	1.95	0.66
2:B:113:ARG:O	2:B:116:VAL:HG23	1.95	0.66
3:C:233:LEU:O	3:C:237:LEU:HB2	1.95	0.66
4:D:141:VAL:HG21	8:H:55:THR:HG23	1.77	0.66
1:A:19:LEU:HB2	1:A:21:ASN:HB3	1.77	0.66
3:C:327:TRP:CE3	3:C:330:VAL:HG11	2.31	0.66
4:D:116:ILE:HG23	4:D:117:VAL:N	2.11	0.66
3:C:131:GLY:H	3:C:134:LEU:HD13	1.61	0.66
3:C:319:ARG:NH2	3:C:374:GLU:HB2	2.11	0.66
5:E:113:GLU:OE2	5:E:116:GLN:HG3	1.95	0.66
3:C:166:TRP:HB2	3:C:175:THR:HB	1.78	0.66
3:C:41:CYS:HB3	3:C:91:PHE:CD2	2.31	0.66
3:C:131:GLY:CA	3:C:134:LEU:HD13	2.26	0.66
3:C:162:VAL:O	3:C:164:TRP:N	2.26	0.66
1:A:156:THR:HA	5:E:7:VAL:HG21	1.76	0.66
3:C:183:HIS:O	3:C:187:PRO:HD3	1.95	0.66
4:D:192:TRP:CD1	4:D:193:ALA:N	2.64	0.65
7:G:25:PRO:HG2	7:G:26:PHE:HD1	1.60	0.65
3:C:275:PHE:CD2	13:C:383:SIG:H331	2.30	0.65
2:B:280:GLY:N	2:B:283:PRO:HD2	2.08	0.65
4:D:178:THR:OG1	4:D:181:GLN:HB2	1.95	0.65
1:A:246:ASP:HA	1:A:427:PRO:HB3	1.77	0.65
2:B:209:LEU:O	2:B:211:VAL:HG22	1.96	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:313:GLN:HE21	6:F:36:THR:CB	2.08	0.65
1:A:416:TYR:CE1	1:A:442:PHE:HA	2.30	0.65
1:A:281:ASP:O	1:A:284:TYR:HD1	1.77	0.65
7:G:12:HIS:O	7:G:13:LEU:HD23	1.96	0.65
4:D:95:TYR:CD2	4:D:101:ALA:HA	2.30	0.65
1:A:431:LEU:HD23	1:A:432:PRO:CD	2.26	0.65
1:A:320:PHE:HE2	1:A:415:ILE:HD11	1.61	0.65
3:C:332:ASN:HD21	3:C:359:TYR:HA	1.61	0.65
1:A:57:TYR:O	1:A:59:LEU:N	2.30	0.65
1:A:26:ALA:O	1:A:198:ALA:HA	1.96	0.65
3:C:32:TRP:O	14:C:384:AMY:H8	1.96	0.65
4:D:230:LEU:HB3	6:F:70:MET:CE	2.26	0.65
3:C:267:PRO:O	3:C:268:HIS:HB2	1.97	0.65
2:B:111:CYS:SG	2:B:116:VAL:HA	2.37	0.65
1:A:291:SER:HB2	1:A:356:ARG:HH22	1.61	0.65
5:E:32:ARG:HH22	7:G:25:PRO:HD2	1.61	0.65
5:E:164:HIS:CD2	5:E:173:LYS:HB3	2.32	0.65
2:B:337:ILE:HD11	2:B:434:PRO:CD	2.25	0.65
2:B:150:VAL:HG23	2:B:151:ALA:N	2.11	0.65
3:C:166:TRP:HB2	3:C:175:THR:CB	2.27	0.65
1:A:349:ILE:HG22	1:A:408:ARG:CG	2.26	0.65
3:C:332:ASN:HD21	3:C:359:TYR:CA	2.10	0.65
3:C:365:ILE:HG23	3:C:366:LEU:HD22	1.78	0.65
3:C:142:TRP:CZ3	3:C:265:THR:HG22	2.31	0.65
4:D:43:MET:HE3	4:D:46:VAL:HG21	1.78	0.64
1:A:42:ASP:HB2	1:A:384:LEU:HD21	1.79	0.64
3:C:76:TYR:HE1	4:D:200:HIS:CE1	2.14	0.64
3:C:133:VAL:O	3:C:140:SER:HB3	1.97	0.64
4:D:75:ASN:H	4:D:79:GLU:H	1.42	0.64
4:D:75:ASN:OD1	4:D:79:GLU:HB2	1.97	0.64
1:A:264:HIS:CD2	1:A:266:ASP:HB2	2.31	0.64
3:C:5:ILE:HA	3:C:8:SER:OG	1.97	0.64
3:C:35:GLY:HA2	3:C:38:LEU:HD12	1.79	0.64
1:A:378:ASP:O	1:A:382:GLU:N	2.29	0.64
1:A:93:GLU:OE1	1:A:314:TYR:HB3	1.97	0.64
2:B:368:TYR:O	2:B:372:VAL:HG23	1.97	0.64
2:B:260:GLU:O	2:B:261:SER:HB3	1.97	0.64
1:A:294:LEU:HD13	1:A:338:LEU:HA	1.78	0.64
1:A:268:VAL:O	1:A:271:GLN:N	2.30	0.64
3:C:18:SER:C	3:C:19:LEU:HD12	2.17	0.64
3:C:261:ASN:HD22	3:C:264:VAL:HB	1.61	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:242:THR:HA	4:D:208:MET:CE	2.27	0.64
2:B:401:GLN:O	2:B:404:ALA:HB3	1.97	0.64
1:A:444:LEU:HD12	1:A:444:LEU:H	1.63	0.64
2:B:207:VAL:HG12	2:B:208:GLY:H	1.62	0.64
1:A:65:LYS:HD2	1:A:65:LYS:N	2.13	0.64
2:B:20:HIS:N	2:B:21:PRO:HD3	2.12	0.64
2:B:257:ILE:O	2:B:323:GLY:HA3	1.98	0.64
5:E:13:TYR:C	5:E:14:ARG:HD3	2.17	0.64
3:C:183:HIS:O	3:C:187:PRO:CD	2.46	0.64
8:H:50:THR:HG22	8:H:52:GLU:H	1.62	0.64
3:C:31:TRP:O	3:C:101:ARG:HG3	1.98	0.64
1:A:374:PRO:O	1:A:377:GLU:HB3	1.97	0.64
5:E:5:ILE:HD13	7:G:14:ILE:CD1	2.26	0.64
3:C:106:GLY:HA2	3:C:108:TYR:CD2	2.33	0.63
1:A:40:TRP:HZ3	1:A:89:TYR:HH	1.45	0.63
1:A:321:GLY:HA2	1:A:342:TRP:HZ2	1.62	0.63
2:B:342:ASN:O	2:B:345:LYS:HB3	1.97	0.63
4:D:5:LEU:HB2	8:H:59:PHE:CD1	2.33	0.63
3:C:51:LEU:HG	3:C:80:ILE:HD13	1.80	0.63
1:A:85:HIS:HB3	9:I:314:UNK:HG1	1.80	0.63
6:F:59:MET:HA	6:F:59:MET:CE	2.28	0.63
5:E:72:SER:HA	5:E:92:ARG:HD3	1.80	0.63
1:A:42:ASP:HB3	1:A:194:ARG:HB3	1.79	0.63
3:C:245:LEU:O	4:D:201:ARG:HD2	1.98	0.63
3:C:232:GLY:HA2	3:C:235:LEU:HD12	1.79	0.63
5:E:165:TYR:CE2	5:E:180:LEU:HG	2.34	0.63
3:C:130:VAL:HG12	3:C:131:GLY:N	2.12	0.63
4:D:227:TRP:O	4:D:230:LEU:N	2.29	0.63
1:A:253:VAL:HG11	1:A:335:MET:HE1	1.80	0.63
2:B:71:LEU:C	2:B:73:SER:H	1.99	0.63
1:A:130:GLU:O	1:A:134:ILE:HG13	1.98	0.63
3:C:289:LEU:HG	3:C:293:LEU:HD23	1.81	0.63
1:A:161:THR:HG21	1:A:235:ARG:H	1.62	0.63
5:E:119:ASP:HB3	5:E:179:ASN:CG	2.19	0.63
2:B:84:LYS:O	2:B:88:GLY:N	2.28	0.63
5:E:60:SER:C	5:E:62:MET:H	2.00	0.63
6:F:57:ASP:HB3	6:F:61:ARG:HH12	1.64	0.63
2:B:402:ILE:HD13	2:B:402:ILE:O	1.99	0.63
6:F:12:TRP:HB3	6:F:15:GLY:H	1.64	0.63
3:C:113:THR:HG21	3:C:201:LEU:HA	1.79	0.63
3:C:45:GLN:HG3	11:C:381:HEM:HAB	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:100:LYS:HE3	2:B:370:MET:HE3	1.80	0.62
2:B:56:ARG:NH2	2:B:318:ASP:OD2	2.32	0.62
1:A:64:PHE:CE1	1:A:86:LEU:HG	2.34	0.62
3:C:204:SER:O	3:C:205:GLY:O	2.17	0.62
3:C:52:LEU:HD13	3:C:80:ILE:HG22	1.81	0.62
5:E:45:LEU:CD1	10:J:28:ALA:HA	2.26	0.62
5:E:38:LEU:HA	10:J:14:PHE:CE2	2.34	0.62
8:H:66:ASP:HA	8:H:69:VAL:HB	1.81	0.62
4:D:12:TRP:CH2	4:D:124:GLU:HB2	2.34	0.62
1:A:307:PHE:C	1:A:307:PHE:CD1	2.73	0.62
2:B:272:PHE:HB3	2:B:322:PHE:CE2	2.34	0.62
1:A:16:VAL:HG22	1:A:26:ALA:CB	2.30	0.62
2:B:405:VAL:CG1	2:B:406:ALA:N	2.63	0.62
4:D:141:VAL:HG23	8:H:53:ASP:HB3	1.80	0.62
2:B:258:VAL:HG12	2:B:259:ALA:N	2.13	0.62
1:A:106:VAL:HB	1:A:107:PRO:CD	2.29	0.62
8:H:47:ARG:HD3	8:H:48:SER:H	1.63	0.62
3:C:365:ILE:O	3:C:368:PRO:HG2	1.99	0.62
4:D:14:HIS:CG	4:D:21:LEU:HD23	2.34	0.62
2:B:92:VAL:HG12	2:B:92:VAL:O	1.99	0.62
4:D:225:HIS:HA	7:G:25:PRO:HB3	1.81	0.62
2:B:146:ILE:HG13	2:B:147:ASP:H	1.63	0.62
7:G:29:TYR:O	7:G:30:PHE:HB2	2.00	0.62
3:C:28:ILE:HG23	3:C:32:TRP:HB2	1.82	0.62
4:D:55:CYS:SG	4:D:56:TYR:HD1	2.23	0.62
3:C:101:ARG:HE	3:C:102:GLY:N	1.98	0.62
3:C:148:THR:HG22	3:C:162:VAL:HG13	1.79	0.62
1:A:100:LYS:HE3	2:B:370:MET:CE	2.30	0.62
1:A:382:GLU:HG2	1:A:390:ILE:H	1.65	0.62
1:A:57:TYR:C	1:A:59:LEU:N	2.51	0.62
2:B:66:SER:O	2:B:69:LEU:HB3	2.00	0.62
1:A:431:LEU:HD23	1:A:432:PRO:HD2	1.81	0.62
3:C:104:TYR:CZ	3:C:316:MET:HB2	2.35	0.61
1:A:306:SER:HB2	9:I:206:UNK:CB	2.29	0.61
3:C:105:TYR:CD2	3:C:209:PRO:HA	2.35	0.61
3:C:377:MET:HE1	6:F:20:TYR:HB2	1.82	0.61
1:A:49:SER:N	1:A:52:ASN:HB3	2.13	0.61
2:B:112:LEU:N	2:B:112:LEU:HD23	2.16	0.61
1:A:116:ILE:O	1:A:120:CYS:SG	2.57	0.61
3:C:210:LEU:HD12	6:F:66:LEU:HD23	1.81	0.61
3:C:171:VAL:HA	3:C:175:THR:HG21	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:365:ILE:HG23	3:C:366:LEU:H	1.65	0.61
3:C:91:PHE:CE1	3:C:124:LEU:HG	2.35	0.61
4:D:232:SER:HB2	7:G:23:GLN:OE1	2.01	0.61
3:C:2:ALA:HB3	3:C:8:SER:HB3	1.82	0.61
1:A:429:GLU:OE2	7:G:7:LEU:HB2	2.00	0.61
8:H:17:LEU:HD13	8:H:73:LEU:HD11	1.81	0.61
3:C:282:LEU:HD22	3:C:291:GLY:C	2.20	0.61
1:A:159:GLN:NE2	5:E:7:VAL:CG1	2.61	0.61
1:A:46:ARG:NH1	1:A:93:GLU:OE2	2.32	0.61
3:C:27:ASN:ND2	6:F:69:ASN:HD22	1.98	0.61
1:A:291:SER:O	1:A:292:SER:C	2.38	0.61
2:B:272:PHE:O	2:B:275:LEU:N	2.34	0.61
4:D:221:TYR:CE2	5:E:36:SER:HA	2.35	0.61
5:E:26:ARG:C	5:E:28:SER:H	2.04	0.61
1:A:37:VAL:HG12	1:A:199:ALA:HB2	1.82	0.61
2:B:357:VAL:O	2:B:361:LYS:HG3	2.01	0.61
4:D:216:VAL:HG23	4:D:217:PRO:CD	2.31	0.61
4:D:134:TYR:CD2	4:D:162:PRO:HG3	2.36	0.61
1:A:40:TRP:CH2	1:A:377:GLU:HA	2.36	0.61
5:E:45:LEU:HD21	10:J:28:ALA:N	2.15	0.61
10:J:14:PHE:CD1	10:J:14:PHE:N	2.66	0.61
1:A:15:GLN:O	1:A:26:ALA:HA	2.01	0.61
5:E:112:VAL:HG21	5:E:170:ARG:NH2	2.15	0.61
5:E:71:MET:O	5:E:73:LYS:N	2.34	0.61
3:C:46:ILE:HA	11:C:381:HEM:CMC	2.31	0.61
1:A:291:SER:HB2	1:A:356:ARG:NH2	2.16	0.61
2:B:130:PRO:HB3	2:B:132:PHE:CE1	2.36	0.61
6:F:93:TYR:O	6:F:97:VAL:HG23	2.00	0.61
3:C:361:THR:HA	3:C:365:ILE:HG22	1.83	0.60
3:C:27:ASN:ND2	6:F:69:ASN:ND2	2.48	0.60
4:D:118:ARG:HD3	4:D:191:ARG:HH12	1.65	0.60
2:B:63:LEU:HB2	2:B:182:ARG:HD3	1.83	0.60
3:C:222:HIS:HB3	3:C:223:PRO:HD2	1.83	0.60
1:A:7:ALA:O	1:A:11:VAL:HG23	2.01	0.60
4:D:144:ARG:CZ	4:D:147:LEU:HD21	2.31	0.60
8:H:72:LYS:HA	8:H:75:ASN:ND2	2.16	0.60
2:B:45:SER:HB3	2:B:210:GLY:HA3	1.82	0.60
1:A:349:ILE:CG2	1:A:408:ARG:HG3	2.29	0.60
5:E:11:SER:O	5:E:15:ARG:HB2	2.00	0.60
3:C:22:LEU:HD12	3:C:23:PRO:HD2	1.83	0.60
2:B:19:PRO:C	2:B:21:PRO:HD3	2.22	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:52:LYS:C	5:E:52:LYS:HD3	2.22	0.60
3:C:9:HIS:HD2	3:C:10:PRO:HG2	1.65	0.60
1:A:239:SER:HB2	7:G:17:SER:O	2.01	0.60
1:A:270:LEU:O	1:A:273:ALA:HB3	2.01	0.60
5:E:43:THR:O	5:E:47:VAL:HG23	2.00	0.60
3:C:32:TRP:HZ2	3:C:207:ASN:HB3	1.67	0.60
8:H:66:ASP:O	8:H:69:VAL:HB	2.02	0.60
2:B:399:LEU:HA	2:B:402:ILE:HG22	1.83	0.60
2:B:92:VAL:CG1	2:B:115:ASP:HB3	2.31	0.60
7:G:25:PRO:O	7:G:26:PHE:C	2.40	0.60
1:A:279:HIS:HB3	1:A:308:GLN:HA	1.84	0.60
1:A:371:GLY:O	1:A:375:VAL:HG23	2.01	0.60
9:I:313:UNK:CB	9:I:314:UNK:CD	2.80	0.60
3:C:109:LEU:C	3:C:111:LYS:H	2.04	0.60
3:C:278:ALA:HB1	3:C:295:LEU:HD12	1.84	0.60
2:B:180:ASP:O	2:B:183:ILE:HG12	2.02	0.60
1:A:147:GLU:O	1:A:150:PHE:N	2.30	0.60
1:A:4:TYR:O	1:A:7:ALA:N	2.34	0.60
1:A:120:CYS:O	1:A:122:LEU:HG	2.02	0.60
2:B:95:LYS:HB2	2:B:110:GLU:HG2	1.84	0.60
1:A:293:PRO:O	1:A:294:LEU:C	2.40	0.59
1:A:235:ARG:NH1	5:E:15:ARG:CZ	2.65	0.59
4:D:120:ARG:NH1	4:D:120:ARG:HG2	2.16	0.59
1:A:265:PRO:O	1:A:268:VAL:HG23	2.02	0.59
2:B:31:ASN:HB3	2:B:201:SER:CB	2.31	0.59
3:C:316:MET:SD	3:C:319:ARG:CG	2.80	0.59
3:C:92:PHE:CZ	3:C:124:LEU:HD13	2.38	0.59
4:D:233:ARG:C	6:F:71:ARG:HH22	2.05	0.59
5:E:136:ILE:O	5:E:136:ILE:HG22	2.01	0.59
4:D:169:LEU:HD23	4:D:169:LEU:N	2.17	0.59
2:B:109:VAL:HG13	2:B:119:LEU:CD2	2.32	0.59
4:D:27:ARG:NH2	4:D:60:GLU:OE2	2.25	0.59
3:C:377:MET:CE	6:F:20:TYR:HB2	2.32	0.59
5:E:70:ALA:C	5:E:72:SER:H	2.05	0.59
6:F:101:ARG:HG3	6:F:104:ARG:HH21	1.67	0.59
2:B:374:SER:O	2:B:376:GLU:N	2.35	0.59
3:C:319:ARG:NH1	3:C:374:GLU:HB2	2.16	0.59
6:F:71:ARG:O	6:F:73:GLN:HG2	2.02	0.59
1:A:62:LEU:CD1	1:A:127:ILE:HG12	2.31	0.59
3:C:20:ILE:HA	3:C:222:HIS:HB2	1.83	0.59
2:B:357:VAL:HG12	2:B:361:LYS:CD	2.31	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:174:PRO:O	3:C:175:THR:C	2.41	0.59
3:C:325:LEU:HD22	3:C:362:ILE:HG23	1.84	0.59
3:C:235:LEU:O	3:C:239:PRO:HD3	2.01	0.59
3:C:247:SER:O	3:C:250:LEU:HB2	2.03	0.59
1:A:61:HIS:NE2	1:A:137:GLU:OE1	2.31	0.59
2:B:286:LYS:CB	2:B:343:GLN:HG3	2.33	0.59
3:C:222:HIS:HB3	3:C:223:PRO:CD	2.32	0.59
5:E:32:ARG:HD3	5:E:32:ARG:C	2.23	0.59
2:B:89:ILE:HD13	2:B:96:LEU:HB2	1.85	0.59
2:B:400:GLN:O	2:B:404:ALA:HB2	2.02	0.59
4:D:134:TYR:CG	4:D:162:PRO:HG3	2.38	0.59
3:C:332:ASN:ND2	3:C:359:TYR:HA	2.17	0.59
6:F:68:LEU:O	6:F:71:ARG:N	2.24	0.59
1:A:196:VAL:HG11	1:A:383:LEU:HD12	1.85	0.59
7:G:24:ARG:HH21	7:G:28:HIS:CE1	2.21	0.59
1:A:364:ALA:O	1:A:368:HIS:HB2	2.03	0.59
4:D:232:SER:O	4:D:233:ARG:O	2.21	0.59
3:C:20:ILE:O	3:C:21:ASP:HB2	2.02	0.59
1:A:332:ASP:O	1:A:334:MET:N	2.35	0.59
4:D:218:LEU:O	4:D:222:MET:HG3	2.02	0.59
3:C:127:THR:CG2	3:C:186:LEU:HB3	2.33	0.59
6:F:57:ASP:HB3	6:F:61:ARG:NH1	2.16	0.59
3:C:373:LEU:C	3:C:373:LEU:HD23	2.24	0.59
4:D:235:LEU:HD12	6:F:64:ARG:HA	1.85	0.58
1:A:102:LEU:C	1:A:104:LYS:H	2.07	0.58
1:A:110:VAL:HA	1:A:113:LEU:HD12	1.85	0.58
2:B:131:GLU:O	2:B:132:PHE:C	2.41	0.58
5:E:69:LEU:N	5:E:69:LEU:HD12	2.18	0.58
3:C:219:ILE:HD11	3:C:225:TYR:HE1	1.68	0.58
2:B:277:HIS:HB2	2:B:360:ALA:HB1	1.84	0.58
10:J:52:TRP:O	10:J:56:LYS:HB2	2.03	0.58
1:A:36:THR:CG2	1:A:100:LYS:HB3	2.20	0.58
1:A:19:LEU:C	1:A:21:ASN:H	2.06	0.58
2:B:39:GLU:HG3	2:B:41:TYR:CE1	2.39	0.58
1:A:67:THR:HG21	1:A:115:ASP:OD2	2.04	0.58
3:C:362:ILE:HA	3:C:366:LEU:HB2	1.86	0.58
1:A:75:LEU:O	1:A:79:VAL:HG23	2.03	0.58
3:C:292:VAL:O	3:C:295:LEU:HB3	2.03	0.58
7:G:73:ASN:O	7:G:75:ALA:N	2.36	0.58
2:B:187:THR:OG1	2:B:190:GLU:HG3	2.02	0.58
3:C:346:HIS:N	3:C:347:PRO:HD2	2.18	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:25:GLU:HB2	2:B:213:HIS:ND1	2.18	0.58
4:D:149:PHE:CE1	4:D:156:GLN:HB3	2.39	0.58
3:C:211:GLY:HA3	3:C:315:THR:HG23	1.85	0.58
3:C:277:PHE:CG	3:C:278:ALA:N	2.69	0.58
2:B:58:GLU:HB3	2:B:62:ASN:HD21	1.68	0.58
1:A:109:ALA:HA	1:A:112:LEU:HD12	1.85	0.58
2:B:159:VAL:HG21	2:B:254:HIS:HB3	1.84	0.58
4:D:34:LYS:O	4:D:38:SER:OG	2.21	0.58
3:C:342:GLN:HB3	3:C:348:PHE:CD2	2.38	0.58
1:A:250:LEU:N	1:A:250:LEU:HD13	2.19	0.58
5:E:144:CYS:HB2	5:E:158:CYS:SG	2.43	0.58
3:C:101:ARG:NH1	11:C:382:HEM:O2A	2.31	0.58
1:A:381:ARG:O	1:A:382:GLU:C	2.42	0.58
1:A:292:SER:O	1:A:295:ALA:HB3	2.04	0.58
1:A:253:VAL:HG11	1:A:335:MET:CE	2.34	0.58
7:G:68:LYS:C	7:G:70:LYS:H	2.07	0.58
1:A:438:ARG:C	1:A:440:GLY:H	2.07	0.58
14:C:384:AMY:H262	14:C:384:AMY:O6	2.03	0.57
1:A:85:HIS:HB2	1:A:100:LYS:HG3	1.85	0.57
5:E:164:HIS:O	5:E:171:ILE:HD12	2.03	0.57
4:D:94:PRO:HB2	4:D:95:TYR:CD1	2.39	0.57
6:F:12:TRP:HA	6:F:12:TRP:CE3	2.38	0.57
5:E:170:ARG:HA	5:E:179:ASN:HB3	1.86	0.57
1:A:46:ARG:HD3	1:A:231:LEU:HD13	1.84	0.57
2:B:31:ASN:HB3	2:B:201:SER:HB2	1.87	0.57
1:A:85:HIS:HB2	1:A:100:LYS:CG	2.35	0.57
1:A:297:ILE:CG2	1:A:337:VAL:HG11	2.29	0.57
1:A:145:MET:HB3	1:A:252:HIS:CD2	2.38	0.57
3:C:43:MET:CE	3:C:43:MET:CA	2.80	0.57
3:C:261:ASN:HD21	3:C:264:VAL:HG23	1.69	0.57
2:B:272:PHE:HA	2:B:275:LEU:HB3	1.85	0.57
4:D:216:VAL:HG23	4:D:217:PRO:HD3	1.86	0.57
5:E:136:ILE:O	5:E:138:VAL:N	2.35	0.57
5:E:171:ILE:HD11	5:E:173:LYS:O	2.04	0.57
3:C:149:ASN:O	3:C:152:SER:HB2	2.03	0.57
1:A:16:VAL:HG22	1:A:26:ALA:HB1	1.87	0.57
4:D:180:SER:OG	8:H:73:LEU:HD21	2.04	0.57
2:B:46:THR:HG22	2:B:110:GLU:HB2	1.87	0.57
3:C:164:TRP:O	3:C:165:ALA:C	2.42	0.57
1:A:86:LEU:HD13	1:A:99:ILE:HG13	1.86	0.57
5:E:11:SER:OG	5:E:12:ASP:N	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:113:GLU:CD	5:E:116:GLN:HG3	2.25	0.57
1:A:272:VAL:O	1:A:275:ALA:HB3	2.05	0.57
10:J:57:HIS:CE1	10:J:58:LYS:HG3	2.40	0.57
2:B:83:PHE:CE1	2:B:87:ARG:HD2	2.40	0.57
1:A:343:MET:HE2	1:A:343:MET:HA	1.85	0.57
3:C:355:ALA:C	3:C:357:LEU:H	2.07	0.57
1:A:90:SER:O	1:A:167:VAL:HG11	2.05	0.57
8:H:16:PRO:O	8:H:20:VAL:HG23	2.05	0.57
2:B:385:GLN:C	2:B:387:LEU:H	2.08	0.57
2:B:133:ARG:HD3	2:B:135:TRP:CH2	2.39	0.57
3:C:219:ILE:HD11	3:C:225:TYR:CE1	2.40	0.57
1:A:391:PRO:HG2	1:A:394:GLU:CB	2.34	0.57
8:H:66:ASP:HA	8:H:69:VAL:CB	2.35	0.57
2:B:85:ILE:HA	2:B:122:PHE:CD1	2.39	0.57
1:A:33:PRO:HG2	1:A:34:THR:H	1.70	0.57
4:D:32:VAL:HG21	4:D:186:VAL:CG2	2.35	0.57
7:G:4:PHE:HA	7:G:7:LEU:HD21	1.87	0.57
2:B:146:ILE:O	2:B:149:ALA:N	2.38	0.57
2:B:109:VAL:HG13	2:B:119:LEU:HD21	1.86	0.57
3:C:201:LEU:O	3:C:203:GLU:N	2.37	0.57
4:D:203:ARG:O	4:D:206:LEU:HB3	2.05	0.57
4:D:62:LYS:O	4:D:66:GLU:HG2	2.05	0.57
1:A:39:VAL:O	1:A:39:VAL:HG13	2.04	0.56
4:D:63:ALA:HA	4:D:66:GLU:CG	2.34	0.56
3:C:15:ILE:C	3:C:17:ASN:H	2.08	0.56
5:E:93:GLY:O	5:E:94:LYS:HE3	2.05	0.56
1:A:153:LEU:C	1:A:153:LEU:HD23	2.25	0.56
7:G:68:LYS:O	7:G:70:LYS:N	2.38	0.56
2:B:20:HIS:N	2:B:21:PRO:CD	2.68	0.56
2:B:358:GLN:O	2:B:362:ASN:ND2	2.38	0.56
5:E:16:PRO:O	5:E:18:ASP:N	2.37	0.56
1:A:191:THR:C	1:A:195:MET:HG3	2.26	0.56
1:A:399:LEU:HD12	1:A:399:LEU:C	2.25	0.56
1:A:339:GLN:OE1	1:A:437:ILE:O	2.24	0.56
2:B:130:PRO:CB	2:B:132:PHE:CE1	2.88	0.56
3:C:137:GLY:H	3:C:140:SER:HB2	1.70	0.56
6:F:87:VAL:O	6:F:87:VAL:HG23	2.04	0.56
5:E:140:THR:OG1	5:E:177:PRO:HD2	2.05	0.56
3:C:95:ILE:HD13	3:C:121:LEU:HD12	1.86	0.56
3:C:95:ILE:CG2	3:C:96:PHE:N	2.68	0.56
3:C:283:ARG:NH2	3:C:342:GLN:O	2.32	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:123:THR:O	3:C:127:THR:HG23	2.05	0.56
4:D:72:ASP:O	4:D:73:GLY:O	2.23	0.56
5:E:55:VAL:O	5:E:56:THR:C	2.43	0.56
2:B:57:TYR:CD1	2:B:57:TYR:N	2.73	0.56
3:C:142:TRP:CH2	3:C:265:THR:HG22	2.41	0.56
1:A:332:ASP:O	1:A:333:ASP:C	2.42	0.56
4:D:222:MET:HE3	5:E:40:THR:HG23	1.88	0.56
1:A:15:GLN:HB3	1:A:205:HIS:ND1	2.20	0.56
1:A:393:GLU:O	1:A:396:GLU:HB3	2.06	0.56
3:C:150:LEU:CD1	3:C:292:VAL:HG22	2.35	0.56
1:A:345:LEU:CD1	1:A:349:ILE:HD12	2.32	0.56
1:A:49:SER:HB2	1:A:52:ASN:HB3	1.87	0.56
1:A:4:TYR:CB	2:B:113:ARG:HB3	2.35	0.56
1:A:19:LEU:C	1:A:21:ASN:N	2.59	0.56
4:D:240:PRO:O	4:D:241:LYS:CB	2.53	0.56
14:C:384:AMY:C21	14:C:384:AMY:H272	2.36	0.56
3:C:27:ASN:CB	6:F:69:ASN:HD22	2.19	0.56
1:A:250:LEU:HD21	1:A:325:VAL:CG1	2.33	0.56
3:C:316:MET:HE3	3:C:319:ARG:NE	2.20	0.56
2:B:282:ASN:HB3	2:B:343:GLN:NE2	2.21	0.56
4:D:109:LEU:O	4:D:109:LEU:HG	2.05	0.56
10:J:57:HIS:C	10:J:59:TYR:N	2.57	0.56
2:B:162:ASN:HB3	2:B:244:ILE:CD1	2.36	0.56
6:F:42:ASP:OD2	6:F:101:ARG:NH1	2.38	0.56
4:D:29:GLY:HA3	4:D:189:PHE:HB2	1.88	0.56
1:A:369:LEU:CD1	1:A:392:LEU:HD21	2.34	0.56
10:J:13:LEU:HA	10:J:19:THR:HG21	1.88	0.55
3:C:365:ILE:HG23	3:C:366:LEU:CD2	2.36	0.55
1:A:100:LYS:HB2	1:A:100:LYS:HZ2	1.71	0.55
1:A:280:TYR:CG	1:A:281:ASP:N	2.73	0.55
1:A:274:ASN:ND2	1:A:320:PHE:CE1	2.75	0.55
5:E:160:CYS:HB2	12:E:197:FES:S2	2.46	0.55
3:C:26:SER:HA	3:C:219:ILE:CD1	2.36	0.55
14:C:384:AMY:H253	14:C:384:AMY:O9	2.06	0.55
1:A:345:LEU:O	1:A:349:ILE:HB	2.06	0.55
10:J:57:HIS:O	10:J:59:TYR:N	2.39	0.55
1:A:153:LEU:HD23	1:A:157:ALA:HB2	1.88	0.55
6:F:12:TRP:HA	6:F:12:TRP:HE3	1.71	0.55
3:C:344:VAL:O	3:C:344:VAL:HG23	2.06	0.55
1:A:40:TRP:HE3	1:A:94:HIS:HE1	1.54	0.55
1:A:395:TRP:HA	1:A:395:TRP:CE3	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:25:PRO:HG2	7:G:26:PHE:CD1	2.41	0.55
1:A:244:ARG:NH2	1:A:429:GLU:HB2	2.20	0.55
4:D:61:ALA:O	4:D:64:LEU:HB3	2.07	0.55
3:C:30:ALA:C	3:C:32:TRP:H	2.08	0.55
4:D:186:VAL:HG11	11:D:242:HEM:CBB	2.36	0.55
2:B:58:GLU:CB	2:B:62:ASN:HD21	2.19	0.55
1:A:297:ILE:HG22	1:A:303:LEU:CD1	2.37	0.55
3:C:78:TRP:CG	4:D:197:GLU:HG2	2.41	0.55
6:F:100:GLU:O	6:F:104:ARG:HG3	2.07	0.55
6:F:97:VAL:O	6:F:100:GLU:HB2	2.07	0.55
5:E:129:LYS:HB2	5:E:187:PHE:CZ	2.42	0.55
3:C:319:ARG:HA	6:F:20:TYR:OH	2.07	0.55
10:J:61:ASN:O	10:J:62:LYS:CB	2.55	0.55
5:E:126:ARG:NH2	5:E:168:SER:O	2.39	0.55
2:B:68:LEU:HD23	2:B:186:VAL:HG11	1.89	0.55
3:C:184:PHE:HD1	3:C:184:PHE:O	1.89	0.55
3:C:209:PRO:HG2	6:F:69:ASN:HD21	1.72	0.55
2:B:38:LEU:HD23	2:B:378:PHE:HZ	1.72	0.55
4:D:217:PRO:O	4:D:220:TYR:N	2.40	0.55
10:J:42:ILE:O	10:J:46:ILE:HG13	2.07	0.55
2:B:200:THR:HG22	2:B:226:ILE:HG21	1.89	0.55
4:D:195:GLU:O	4:D:195:GLU:HG3	2.07	0.55
4:D:102:ARG:NH1	4:D:109:LEU:CB	2.69	0.55
1:A:298:ALA:HA	1:A:303:LEU:HB2	1.89	0.55
3:C:378:LEU:O	3:C:379:ASN:HB2	2.07	0.55
4:D:169:LEU:HD23	4:D:169:LEU:H	1.72	0.54
3:C:19:LEU:N	3:C:19:LEU:HD12	2.22	0.54
2:B:51:ILE:HG12	2:B:204:MET:HG2	1.88	0.54
2:B:372:VAL:O	2:B:378:PHE:HB2	2.06	0.54
3:C:222:HIS:CB	3:C:223:PRO:CD	2.85	0.54
10:J:54:HIS:O	10:J:57:HIS:CD2	2.60	0.54
1:A:246:ASP:OD2	7:G:10:VAL:N	2.34	0.54
1:A:251:ALA:HB1	1:A:428:ILE:CG2	2.37	0.54
6:F:36:THR:O	6:F:37:ILE:C	2.46	0.54
3:C:326:PHE:O	3:C:329:LEU:HB3	2.08	0.54
5:E:122:HIS:O	5:E:125:GLU:HG2	2.06	0.54
3:C:95:ILE:HG23	3:C:96:PHE:N	2.22	0.54
7:G:26:PHE:HD1	7:G:26:PHE:N	2.03	0.54
1:A:45:SER:HA	1:A:48:GLU:HG3	1.88	0.54
3:C:308:LEU:CD1	3:C:364:LEU:HA	2.38	0.54
3:C:167:GLY:H	3:C:175:THR:CG2	2.16	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:43:MET:CE	4:D:46:VAL:HG21	2.37	0.54
5:E:85:LYS:HE2	5:E:86:ASN:O	2.07	0.54
2:B:141:GLN:N	2:B:142:PRO:HD2	2.22	0.54
2:B:406:ALA:O	2:B:407:ASP:C	2.45	0.54
3:C:131:GLY:O	3:C:134:LEU:HB2	2.08	0.54
3:C:289:LEU:HG	3:C:293:LEU:CD2	2.38	0.54
14:C:384:AMY:O7	14:C:384:AMY:H271	2.08	0.54
1:A:36:THR:HA	1:A:100:LYS:HA	1.90	0.54
4:D:117:VAL:CG2	4:D:190:LEU:HB3	2.37	0.54
1:A:321:GLY:HA2	1:A:342:TRP:CZ2	2.41	0.54
2:B:405:VAL:HG11	2:B:409:ASP:OD1	2.06	0.54
3:C:113:THR:O	3:C:197:HIS:CE1	2.59	0.54
4:D:66:GLU:O	4:D:68:VAL:N	2.40	0.54
3:C:60:THR:HG23	3:C:136:TRP:CZ3	2.42	0.54
4:D:123:GLY:O	4:D:126:TYR:N	2.41	0.54
5:E:34:GLY:O	5:E:38:LEU:N	2.33	0.54
2:B:81:SER:O	2:B:85:ILE:HG22	2.08	0.54
3:C:213:SER:HB2	6:F:39:GLU:OE2	2.08	0.54
5:E:69:LEU:N	5:E:69:LEU:CD1	2.71	0.54
6:F:31:LEU:H	6:F:31:LEU:HD23	1.73	0.54
3:C:92:PHE:CZ	3:C:124:LEU:CD1	2.91	0.54
4:D:191:ARG:O	4:D:192:TRP:C	2.45	0.54
7:G:24:ARG:NH2	7:G:28:HIS:CE1	2.76	0.54
3:C:343:PRO:O	3:C:348:PHE:HD2	1.91	0.54
5:E:166:ASP:OD2	5:E:170:ARG:HB2	2.08	0.54
1:A:45:SER:HB3	1:A:167:VAL:HA	1.88	0.54
3:C:295:LEU:HD11	13:C:383:SIG:H273	1.88	0.54
2:B:169:ARG:O	2:B:170:ASN:CB	2.56	0.54
1:A:255:ILE:HA	1:A:421:ALA:O	2.08	0.54
2:B:100:SER:O	9:I:106:UNK:HA	2.08	0.54
1:A:294:LEU:O	1:A:298:ALA:HB2	2.08	0.54
3:C:376:LYS:C	3:C:378:LEU:H	2.11	0.54
1:A:443:TRP:O	1:A:445:ARG:N	2.37	0.54
3:C:201:LEU:O	3:C:204:SER:N	2.33	0.54
1:A:114:ALA:HA	1:A:216:PHE:HE1	1.73	0.54
6:F:31:LEU:N	6:F:31:LEU:HD23	2.22	0.54
2:B:239:TYR:CD1	2:B:260:GLU:HB2	2.43	0.53
4:D:102:ARG:HA	4:D:108:ALA:O	2.08	0.53
1:A:27:SER:HB2	1:A:199:ALA:O	2.08	0.53
4:D:47:ALA:O	4:D:50:HIS:ND1	2.30	0.53
5:E:33:LYS:HG2	7:G:21:PHE:CD1	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:354:MET:O	3:C:357:LEU:N	2.41	0.53
3:C:231:LEU:HD12	4:D:219:VAL:HG23	1.90	0.53
1:A:241:ILE:HG23	1:A:241:ILE:O	2.07	0.53
1:A:123:GLU:HB3	1:A:126:GLN:HB2	1.89	0.53
1:A:64:PHE:C	1:A:66:GLY:H	2.11	0.53
1:A:250:LEU:C	1:A:250:LEU:CD2	2.77	0.53
5:E:76:ILE:HB	5:E:193:VAL:CG1	2.37	0.53
1:A:65:LYS:NZ	9:I:311:UNK:N	2.57	0.53
10:J:46:ILE:HG22	10:J:46:ILE:O	2.08	0.53
3:C:130:VAL:O	3:C:132:TYR:N	2.40	0.53
1:A:388:ARG:HG3	1:A:388:ARG:NH1	2.23	0.53
1:A:394:GLU:O	1:A:395:TRP:C	2.47	0.53
2:B:163:LEU:HD21	2:B:258:VAL:HG21	1.89	0.53
3:C:350:ILE:O	3:C:351:ILE:C	2.44	0.53
10:J:56:LYS:O	10:J:60:GLU:HB2	2.08	0.53
4:D:149:PHE:HA	4:D:156:GLN:O	2.08	0.53
3:C:338:TRP:CE3	3:C:339:ILE:HG12	2.44	0.53
3:C:342:GLN:NE2	3:C:343:PRO:HD2	2.22	0.53
1:A:45:SER:OG	1:A:92:ARG:HA	2.09	0.53
4:D:75:ASN:HB2	4:D:78:GLY:H	1.74	0.53
1:A:146:ARG:HH11	1:A:146:ARG:HG2	1.73	0.53
2:B:435:PHE:N	2:B:435:PHE:CD1	2.77	0.53
13:C:383:SIG:C33	13:C:383:SIG:H282	2.38	0.53
4:D:48:TYR:CE2	4:D:65:ALA:HA	2.43	0.53
4:D:181:GLN:HE21	4:D:181:GLN:C	2.12	0.53
2:B:85:ILE:HG23	2:B:86:THR:N	2.23	0.53
1:A:23:VAL:HG23	1:A:192:ALA:CB	2.38	0.53
3:C:95:ILE:HD11	3:C:121:LEU:HA	1.90	0.53
2:B:278:VAL:O	2:B:282:ASN:ND2	2.42	0.53
1:A:356:ARG:HG3	2:B:90:GLU:O	2.09	0.53
5:E:91:TRP:O	5:E:94:LYS:O	2.27	0.53
2:B:339:ALA:HA	2:B:342:ASN:HD22	1.74	0.53
3:C:312:LYS:HB3	6:F:37:ILE:HG22	1.90	0.53
8:H:50:THR:HG22	8:H:52:GLU:N	2.23	0.53
4:D:57:THR:HB	4:D:60:GLU:HB2	1.91	0.53
6:F:49:ARG:NH1	6:F:97:VAL:HG22	2.24	0.53
4:D:30:PHE:CE2	4:D:64:LEU:HD21	2.44	0.53
2:B:129:ALA:N	2:B:130:PRO:HD3	2.24	0.53
3:C:4:ASN:O	3:C:5:ILE:HB	2.09	0.53
4:D:61:ALA:HA	4:D:64:LEU:HB3	1.91	0.53
4:D:197:GLU:O	4:D:198:HIS:C	2.47	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:162:VAL:O	3:C:165:ALA:N	2.42	0.53
6:F:70:MET:O	6:F:70:MET:HG2	2.08	0.53
1:A:373:THR:N	1:A:374:PRO:HD2	2.23	0.53
4:D:158:ILE:CG2	4:D:159:GLY:N	2.71	0.53
4:D:117:VAL:HG23	4:D:190:LEU:HB3	1.91	0.53
5:E:85:LYS:HG2	5:E:86:ASN:H	1.74	0.53
2:B:333:ALA:O	2:B:337:ILE:HG12	2.10	0.52
1:A:290:SER:O	1:A:291:SER:C	2.46	0.52
2:B:258:VAL:HG11	2:B:321:LEU:HD22	1.90	0.52
10:J:59:TYR:CD1	10:J:59:TYR:N	2.78	0.52
3:C:365:ILE:HG23	3:C:366:LEU:N	2.23	0.52
1:A:383:LEU:HD23	1:A:388:ARG:HA	1.91	0.52
4:D:118:ARG:HD3	4:D:191:ARG:NH1	2.25	0.52
1:A:418:GLN:O	1:A:420:PRO:HD3	2.10	0.52
3:C:342:GLN:HA	3:C:342:GLN:HE21	1.75	0.52
3:C:350:ILE:HD13	3:C:350:ILE:N	2.25	0.52
7:G:29:TYR:HA	7:G:33:GLY:HA3	1.92	0.52
6:F:75:LEU:HG	6:F:79:GLN:HB2	1.90	0.52
2:B:221:GLU:HG3	2:B:222:GLN:N	2.24	0.52
2:B:137:VAL:HG23	2:B:138:ALA:N	2.24	0.52
2:B:255:ALA:O	2:B:325:TYR:HA	2.09	0.52
2:B:170:ASN:O	2:B:171:ALA:O	2.27	0.52
4:D:165:TYR:CZ	4:D:168:VAL:HG22	2.43	0.52
2:B:132:PHE:CD2	2:B:191:LEU:CB	2.93	0.52
5:E:164:HIS:HD2	5:E:173:LYS:HB3	1.74	0.52
3:C:199:THR:HG22	3:C:200:PHE:N	2.24	0.52
1:A:351:GLU:HA	1:A:354:VAL:HG22	1.91	0.52
4:D:223:LYS:HD2	4:D:223:LYS:O	2.09	0.52
2:B:170:ASN:C	2:B:170:ASN:HD22	2.12	0.52
4:D:21:LEU:HD13	4:D:26:ILE:HD11	1.91	0.52
1:A:178:SER:O	1:A:179:ARG:C	2.47	0.52
2:B:85:ILE:HG23	2:B:86:THR:H	1.75	0.52
3:C:15:ILE:O	3:C:17:ASN:N	2.39	0.52
2:B:324:PHE:O	2:B:324:PHE:CD1	2.62	0.52
3:C:293:LEU:O	3:C:296:ALA:HB3	2.10	0.52
3:C:104:TYR:CE2	3:C:316:MET:HB2	2.45	0.52
3:C:32:TRP:C	14:C:384:AMY:H8	2.30	0.52
3:C:45:GLN:OE1	3:C:45:GLN:HA	2.10	0.52
1:A:123:GLU:O	1:A:126:GLN:N	2.40	0.52
8:H:66:ASP:HA	8:H:69:VAL:HG21	1.91	0.52
1:A:4:TYR:HB2	2:B:113:ARG:HB3	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:137:GLY:H	3:C:140:SER:CB	2.22	0.52
1:A:343:MET:O	1:A:344:ARG:C	2.48	0.52
1:A:86:LEU:HB2	1:A:99:ILE:HG12	1.91	0.52
4:D:117:VAL:O	4:D:123:GLY:HA2	2.10	0.52
4:D:221:TYR:HE2	5:E:36:SER:HA	1.74	0.52
5:E:39:VAL:O	5:E:42:VAL:HB	2.10	0.52
5:E:13:TYR:O	7:G:28:HIS:HD2	1.93	0.52
4:D:224:ARG:HH22	7:G:27:PRO:HG3	1.75	0.52
8:H:58:LEU:O	8:H:58:LEU:HD12	2.10	0.52
3:C:111:LYS:O	3:C:114:TRP:N	2.42	0.52
1:A:361:LEU:HD13	1:A:399:LEU:CD2	2.27	0.52
3:C:352:GLY:O	3:C:354:MET:N	2.43	0.52
2:B:405:VAL:CG1	2:B:409:ASP:OD1	2.58	0.52
8:H:59:PHE:O	8:H:60:ASP:C	2.48	0.52
3:C:101:ARG:CD	3:C:101:ARG:C	2.78	0.52
3:C:219:ILE:CD1	3:C:225:TYR:HE1	2.22	0.52
1:A:64:PHE:O	1:A:75:LEU:HD23	2.10	0.52
1:A:87:ASN:HB3	1:A:98:TYR:CE1	2.45	0.52
4:D:165:TYR:CE2	4:D:168:VAL:HG22	2.45	0.52
1:A:91:SER:O	1:A:167:VAL:HG22	2.10	0.52
3:C:101:ARG:NE	3:C:102:GLY:N	2.58	0.52
1:A:239:SER:O	1:A:421:ALA:HA	2.09	0.52
10:J:14:PHE:HD1	10:J:14:PHE:N	2.06	0.52
5:E:112:VAL:HG21	5:E:170:ARG:HH22	1.75	0.52
2:B:209:LEU:O	2:B:211:VAL:HG13	2.10	0.52
5:E:22:THR:HG22	5:E:22:THR:O	2.10	0.52
3:C:131:GLY:HA2	3:C:134:LEU:HD13	1.90	0.52
3:C:38:LEU:HD21	3:C:95:ILE:N	2.25	0.52
2:B:260:GLU:O	2:B:261:SER:CB	2.58	0.52
3:C:245:LEU:O	4:D:201:ARG:CD	2.58	0.52
1:A:338:LEU:O	1:A:341:GLN:N	2.43	0.52
1:A:4:TYR:HB2	2:B:113:ARG:CB	2.40	0.52
2:B:182:ARG:NH2	2:B:190:GLU:OE1	2.42	0.51
3:C:238:THR:OG1	4:D:212:MET:HG3	2.09	0.51
10:J:13:LEU:HD12	10:J:13:LEU:N	2.25	0.51
10:J:49:GLY:N	10:J:54:HIS:ND1	2.57	0.51
2:B:361:LYS:O	2:B:365:LYS:HG3	2.10	0.51
3:C:105:TYR:CE2	3:C:209:PRO:HA	2.45	0.51
11:C:382:HEM:O2D	11:C:382:HEM:HBA1	2.10	0.51
3:C:191:ALA:HB1	14:C:384:AMY:H251	1.92	0.51
3:C:85:ALA:O	3:C:88:ALA:HB3	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:39:VAL:HA	1:A:196:VAL:O	2.10	0.51
4:D:29:GLY:O	4:D:32:VAL:CG1	2.58	0.51
2:B:150:VAL:CG2	2:B:151:ALA:N	2.72	0.51
1:A:294:LEU:HG	1:A:307:PHE:CE2	2.46	0.51
4:D:182:VAL:HG13	4:D:183:ALA:H	1.75	0.51
1:A:416:TYR:HE1	1:A:443:TRP:H	1.58	0.51
2:B:402:ILE:HD13	2:B:402:ILE:C	2.30	0.51
3:C:335:ILE:O	3:C:336:LEU:C	2.48	0.51
3:C:157:ILE:O	3:C:161:LEU:HB2	2.10	0.51
3:C:166:TRP:HB2	3:C:175:THR:HG22	1.91	0.51
3:C:274:TYR:HE1	3:C:275:PHE:CE2	2.28	0.51
3:C:295:LEU:O	3:C:296:ALA:C	2.47	0.51
3:C:41:CYS:O	3:C:42:LEU:C	2.46	0.51
1:A:87:ASN:O	1:A:88:ALA:HB2	2.10	0.51
1:A:356:ARG:O	1:A:357:GLY:C	2.49	0.51
4:D:169:LEU:HD11	4:D:171:PHE:HE1	1.75	0.51
3:C:215:ASP:HB3	7:G:7:LEU:HB3	1.91	0.51
2:B:189:VAL:O	2:B:191:LEU:N	2.43	0.51
1:A:438:ARG:HD3	1:A:438:ARG:O	2.11	0.51
3:C:18:SER:HB2	3:C:19:LEU:HD12	1.92	0.51
4:D:57:THR:H	4:D:60:GLU:HB3	1.75	0.51
4:D:63:ALA:HA	4:D:66:GLU:HG2	1.93	0.51
3:C:30:ALA:C	3:C:32:TRP:N	2.64	0.51
1:A:123:GLU:OE1	1:A:123:GLU:HA	2.09	0.51
1:A:58:PHE:CE1	1:A:127:ILE:HG23	2.45	0.51
4:D:186:VAL:O	4:D:190:LEU:HG	2.10	0.51
2:B:71:LEU:C	2:B:73:SER:N	2.63	0.51
1:A:228:VAL:HG13	1:A:228:VAL:O	2.10	0.51
3:C:275:PHE:CG	13:C:383:SIG:H332	2.45	0.51
3:C:281:ILE:O	3:C:285:ILE:HG22	2.11	0.51
4:D:230:LEU:C	6:F:70:MET:HE1	2.31	0.51
6:F:67:ASP:OD1	6:F:71:ARG:CZ	2.59	0.51
4:D:47:ALA:N	4:D:50:HIS:CE1	2.78	0.51
5:E:76:ILE:HD13	5:E:98:VAL:HG21	1.93	0.51
4:D:56:TYR:HD2	4:D:60:GLU:HG2	1.74	0.51
4:D:134:TYR:O	4:D:135:CYS:HB3	2.10	0.51
1:A:88:ALA:CB	1:A:97:TYR:HA	2.38	0.51
1:A:282:ARG:NH2	2:B:146:ILE:HG21	2.25	0.51
1:A:65:LYS:CD	1:A:65:LYS:N	2.73	0.51
7:G:55:PHE:O	7:G:56:TYR:C	2.49	0.51
2:B:202:ALA:HB3	2:B:229:GLY:O	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:57:TYR:C	1:A:59:LEU:H	2.13	0.51
4:D:32:VAL:CG2	4:D:186:VAL:HG22	2.37	0.51
4:D:189:PHE:O	4:D:191:ARG:N	2.44	0.51
4:D:46:VAL:CG1	4:D:47:ALA:N	2.74	0.51
5:E:19:ASP:C	5:E:20:TYR:CD1	2.84	0.51
1:A:395:TRP:HA	1:A:395:TRP:HE3	1.73	0.51
4:D:124:GLU:OE1	4:D:124:GLU:N	2.37	0.51
5:E:11:SER:HA	5:E:15:ARG:CD	2.36	0.51
2:B:146:ILE:CG1	2:B:147:ASP:N	2.72	0.51
5:E:163:SER:OG	5:E:176:ALA:HB2	2.11	0.51
6:F:32:MET:CE	6:F:87:VAL:HG22	2.41	0.51
7:G:73:ASN:C	7:G:75:ALA:N	2.65	0.51
1:A:310:PHE:CE1	1:A:322:PHE:N	2.79	0.51
2:B:345:LYS:O	2:B:347:ILE:N	2.43	0.51
6:F:75:LEU:O	6:F:80:TRP:NE1	2.41	0.51
1:A:295:ALA:O	1:A:298:ALA:HB3	2.11	0.50
4:D:213:GLY:O	4:D:217:PRO:CD	2.59	0.50
4:D:182:VAL:HG13	4:D:183:ALA:N	2.25	0.50
5:E:29:ASP:O	5:E:32:ARG:N	2.44	0.50
4:D:94:PRO:HB2	4:D:95:TYR:CE1	2.46	0.50
4:D:98:PRO:O	4:D:101:ALA:N	2.44	0.50
6:F:94:LEU:O	6:F:97:VAL:HB	2.11	0.50
1:A:351:GLU:O	1:A:354:VAL:HG22	2.11	0.50
8:H:40:CYS:C	8:H:54:CYS:SG	2.89	0.50
3:C:166:TRP:O	3:C:167:GLY:O	2.29	0.50
3:C:273:TRP:CD2	3:C:274:TYR:N	2.79	0.50
1:A:57:TYR:O	1:A:60:GLU:N	2.45	0.50
2:B:170:ASN:ND2	2:B:170:ASN:C	2.65	0.50
1:A:429:GLU:CD	7:G:7:LEU:HB2	2.31	0.50
1:A:46:ARG:CD	1:A:231:LEU:HD13	2.41	0.50
1:A:180:ALA:O	1:A:183:THR:N	2.45	0.50
1:A:343:MET:SD	1:A:441:MET:O	2.69	0.50
2:B:288:GLY:O	2:B:305:ASN:CB	2.59	0.50
3:C:273:TRP:HA	3:C:276:LEU:HG	1.93	0.50
3:C:138:GLN:HE21	3:C:261:ASN:H	1.55	0.50
1:A:410:VAL:O	1:A:413:LYS:HB3	2.12	0.50
6:F:16:ILE:O	6:F:19:TRP:N	2.45	0.50
3:C:13:LYS:O	3:C:14:MET:C	2.49	0.50
6:F:29:TYR:HB2	6:F:31:LEU:CD2	2.42	0.50
1:A:24:ARG:HH11	1:A:24:ARG:HG3	1.76	0.50
1:A:100:LYS:HZ2	1:A:100:LYS:CB	2.25	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:382:GLU:HG2	1:A:389:ARG:CA	2.30	0.50
5:E:32:ARG:NH2	7:G:25:PRO:HD2	2.26	0.50
1:A:212:ALA:C	1:A:214:LYS:N	2.64	0.50
2:B:248:ASN:ND2	2:B:248:ASN:C	2.64	0.50
5:E:71:MET:C	5:E:73:LYS:H	2.14	0.50
3:C:101:ARG:HE	3:C:102:GLY:CA	2.24	0.50
2:B:363:LYS:O	2:B:366:ALA:HB3	2.11	0.50
2:B:430:LEU:O	2:B:432:HIS:N	2.45	0.50
10:J:26:VAL:O	10:J:30:LEU:HG	2.11	0.50
3:C:34:PHE:CD1	3:C:37:LEU:HD12	2.47	0.50
4:D:54:VAL:HG21	4:D:192:TRP:CE3	2.43	0.50
2:B:92:VAL:CG1	2:B:92:VAL:O	2.60	0.50
3:C:230:ILE:O	3:C:233:LEU:HB3	2.12	0.50
1:A:343:MET:HA	1:A:343:MET:CE	2.42	0.50
1:A:444:LEU:O	1:A:445:ARG:O	2.29	0.50
3:C:285:ILE:CG2	3:C:291:GLY:HA2	2.37	0.50
3:C:354:MET:HA	3:C:354:MET:CE	2.42	0.50
10:J:55:ILE:C	10:J:57:HIS:N	2.64	0.50
1:A:250:LEU:HD22	1:A:250:LEU:O	2.10	0.50
1:A:53:ASN:C	1:A:53:ASN:HD22	2.11	0.50
4:D:47:ALA:HB1	4:D:89:ASP:O	2.11	0.50
5:E:123:ASP:O	5:E:127:VAL:HG22	2.12	0.50
3:C:242:THR:CA	4:D:208:MET:HE1	2.36	0.50
1:A:153:LEU:O	1:A:153:LEU:HD23	2.12	0.50
3:C:27:ASN:O	3:C:209:PRO:HD2	2.12	0.50
2:B:250:ASP:O	2:B:252:LEU:CD2	2.54	0.50
2:B:102:ARG:NE	2:B:164:HIS:CD2	2.80	0.50
1:A:53:ASN:C	1:A:53:ASN:ND2	2.64	0.50
7:G:60:THR:HG22	7:G:64:GLN:HE21	1.77	0.50
3:C:273:TRP:CG	3:C:274:TYR:N	2.80	0.49
9:I:314:UNK:O	9:I:314:UNK:HG2	2.12	0.49
4:D:14:HIS:HB3	4:D:21:LEU:HA	1.93	0.49
2:B:66:SER:OG	2:B:67:HIS:N	2.44	0.49
10:J:57:HIS:HA	10:J:60:GLU:C	2.32	0.49
6:F:26:PHE:O	6:F:31:LEU:HD23	2.12	0.49
3:C:261:ASN:ND2	3:C:264:VAL:HB	2.26	0.49
3:C:353:GLN:HA	3:C:356:SER:HB3	1.94	0.49
5:E:171:ILE:HG22	5:E:179:ASN:OD1	2.12	0.49
4:D:141:VAL:HG21	8:H:55:THR:CG2	2.42	0.49
1:A:267:LEU:O	1:A:271:GLN:HB2	2.12	0.49
9:I:310:UNK:O	9:I:311:UNK:C	2.59	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:134:ILE:O	5:E:135:LEU:HD23	2.13	0.49
2:B:285:VAL:HG12	2:B:285:VAL:O	2.12	0.49
3:C:108:TYR:HE1	3:C:309:HIS:HB2	1.77	0.49
4:D:116:ILE:CG2	4:D:117:VAL:N	2.75	0.49
3:C:138:GLN:OE1	3:C:266:PRO:HD3	2.11	0.49
3:C:222:HIS:CG	3:C:223:PRO:N	2.80	0.49
10:J:57:HIS:HB2	10:J:61:ASN:CA	2.42	0.49
1:A:212:ALA:C	1:A:214:LYS:H	2.16	0.49
4:D:138:PRO:HD3	8:H:58:LEU:CD2	2.42	0.49
2:B:218:ASN:O	2:B:221:GLU:HG2	2.12	0.49
3:C:30:ALA:HA	3:C:33:ASN:OD1	2.12	0.49
3:C:222:HIS:O	3:C:223:PRO:C	2.49	0.49
5:E:15:ARG:O	7:G:24:ARG:HD3	2.13	0.49
1:A:430:GLN:O	1:A:430:GLN:HG2	2.13	0.49
3:C:339:ILE:HG22	3:C:339:ILE:O	2.11	0.49
7:G:60:THR:O	7:G:61:TRP:C	2.49	0.49
2:B:232:LEU:O	2:B:233:SER:O	2.30	0.49
3:C:30:ALA:O	3:C:32:TRP:N	2.45	0.49
1:A:40:TRP:CE3	1:A:96:ALA:HB2	2.46	0.49
1:A:235:ARG:HB2	5:E:21:SER:HA	1.95	0.49
1:A:208:LEU:O	1:A:209:LEU:C	2.50	0.49
7:G:27:PRO:HD2	7:G:29:TYR:HD1	1.78	0.49
7:G:68:LYS:C	7:G:70:LYS:N	2.65	0.49
2:B:250:ASP:C	2:B:252:LEU:H	2.16	0.49
4:D:164:ILE:CD1	4:D:182:VAL:HG13	2.35	0.49
1:A:161:THR:HG21	1:A:235:ARG:N	2.28	0.49
5:E:91:TRP:CE2	5:E:92:ARG:HG3	2.48	0.49
3:C:127:THR:HG22	3:C:186:LEU:CB	2.42	0.49
3:C:102:GLY:HA2	3:C:107:SER:HB2	1.94	0.49
2:B:370:MET:O	2:B:373:GLU:HG3	2.12	0.49
4:D:12:TRP:NE1	4:D:125:ASP:OD1	2.34	0.49
2:B:128:THR:HG21	2:B:223:LEU:HD12	1.94	0.49
2:B:31:ASN:HB3	2:B:201:SER:OG	2.12	0.49
6:F:13:LEU:HD12	6:F:13:LEU:N	2.27	0.49
4:D:175:THR:O	4:D:177:ALA:N	2.46	0.49
3:C:273:TRP:C	3:C:275:PHE:H	2.16	0.49
3:C:295:LEU:CG	13:C:383:SIG:H273	2.43	0.49
1:A:103:SER:O	1:A:106:VAL:HG23	2.12	0.49
5:E:62:MET:HG3	5:E:63:SER:N	2.26	0.49
8:H:35:GLU:O	8:H:39:LEU:HD13	2.12	0.49
3:C:270:LYS:O	3:C:270:LYS:HG3	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:184:PHE:HA	11:C:381:HEM:CBC	2.43	0.49
1:A:204:GLU:O	1:A:205:HIS:C	2.50	0.49
2:B:430:LEU:O	2:B:433:THR:N	2.42	0.49
1:A:266:ASP:C	1:A:268:VAL:N	2.66	0.49
1:A:41:ILE:HD12	1:A:195:MET:SD	2.53	0.49
4:D:130:LEU:HD11	4:D:158:ILE:CD1	2.43	0.49
2:B:62:ASN:O	2:B:65:THR:HG22	2.13	0.49
4:D:181:GLN:NE2	4:D:181:GLN:C	2.67	0.49
1:A:210:GLU:O	1:A:214:LYS:CB	2.56	0.49
1:A:145:MET:O	1:A:149:VAL:HG12	2.12	0.49
2:B:83:PHE:CZ	2:B:87:ARG:HD2	2.48	0.49
4:D:155:GLY:C	4:D:156:GLN:NE2	2.66	0.49
3:C:198:LEU:HD11	14:C:384:AMY:H9	1.93	0.48
1:A:64:PHE:O	1:A:66:GLY:N	2.45	0.48
2:B:181:TYR:CZ	2:B:182:ARG:HG3	2.48	0.48
10:J:12:LEU:O	10:J:19:THR:HG21	2.13	0.48
1:A:16:VAL:HG22	1:A:26:ALA:HB2	1.95	0.48
2:B:345:LYS:C	2:B:347:ILE:H	2.15	0.48
2:B:305:ASN:CB	2:B:306:PRO:HD2	2.43	0.48
1:A:77:LYS:O	1:A:81:SER:OG	2.23	0.48
1:A:94:HIS:NE2	1:A:381:ARG:HG2	2.29	0.48
2:B:72:ALA:CB	2:B:75:LEU:HD12	2.42	0.48
6:F:59:MET:HA	6:F:59:MET:HE2	1.95	0.48
4:D:147:LEU:N	4:D:147:LEU:HD22	2.28	0.48
3:C:271:PRO:HB3	13:C:383:SIG:C5	2.42	0.48
1:A:79:VAL:O	1:A:80:GLU:C	2.51	0.48
3:C:142:TRP:CE3	3:C:265:THR:HG22	2.48	0.48
3:C:9:HIS:CD2	3:C:10:PRO:HG2	2.46	0.48
8:H:58:LEU:O	8:H:61:PHE:HB3	2.14	0.48
8:H:72:LYS:HA	8:H:75:ASN:HD21	1.77	0.48
5:E:166:ASP:HB3	5:E:172:ARG:HH11	1.76	0.48
3:C:137:GLY:N	3:C:140:SER:HB2	2.28	0.48
3:C:345:GLU:HB3	3:C:347:PRO:HD2	1.96	0.48
7:G:49:ALA:O	7:G:50:PRO:C	2.52	0.48
8:H:61:PHE:O	8:H:62:LEU:C	2.50	0.48
3:C:63:ALA:HB2	3:C:176:LEU:HD21	1.95	0.48
1:A:240:GLN:HB3	1:A:422:VAL:HG12	1.95	0.48
1:A:40:TRP:HZ3	1:A:89:TYR:OH	1.96	0.48
2:B:102:ARG:NH1	2:B:174:ASP:O	2.47	0.48
1:A:4:TYR:O	1:A:7:ALA:HB3	2.14	0.48
1:A:438:ARG:O	1:A:441:MET:HG2	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:64:PHE:CE2	3:C:259:PRO:HG3	2.48	0.48
3:C:31:TRP:N	3:C:31:TRP:CD1	2.80	0.48
5:E:184:SER:O	5:E:196:GLY:N	2.36	0.48
5:E:166:ASP:OD2	5:E:172:ARG:HD3	2.13	0.48
2:B:24:LEU:CD2	2:B:24:LEU:H	2.23	0.48
1:A:53:ASN:ND2	1:A:54:GLY:N	2.58	0.48
6:F:58:ARG:HA	6:F:61:ARG:CZ	2.43	0.48
4:D:144:ARG:NH1	4:D:147:LEU:HD21	2.28	0.48
5:E:51:ALA:O	5:E:52:LYS:C	2.52	0.48
4:D:63:ALA:HA	4:D:66:GLU:HG3	1.95	0.48
2:B:137:VAL:CG2	2:B:138:ALA:N	2.77	0.48
3:C:107:SER:C	3:C:109:LEU:H	2.17	0.48
3:C:285:ILE:O	3:C:285:ILE:HG13	2.13	0.48
1:A:89:TYR:O	1:A:95:THR:HG23	2.13	0.48
3:C:282:LEU:C	3:C:282:LEU:HD13	2.33	0.48
2:B:171:ALA:O	2:B:172:LEU:HB3	2.14	0.48
2:B:70:ARG:HD3	2:B:100:SER:HB3	1.95	0.48
3:C:40:VAL:HG21	3:C:233:LEU:HD23	1.95	0.48
10:J:19:THR:O	10:J:20:PHE:C	2.51	0.48
5:E:32:ARG:HH11	5:E:32:ARG:HG3	1.78	0.48
2:B:146:ILE:O	2:B:147:ASP:C	2.52	0.48
2:B:405:VAL:HG11	2:B:409:ASP:CG	2.34	0.48
2:B:111:CYS:SG	2:B:112:LEU:N	2.87	0.48
2:B:281:ALA:O	2:B:285:VAL:HB	2.14	0.48
3:C:104:TYR:O	3:C:105:TYR:CD1	2.67	0.48
4:D:122:GLY:O	4:D:123:GLY:C	2.51	0.48
11:D:242:HEM:HMC1	11:D:242:HEM:CBC	2.44	0.48
2:B:69:LEU:CD1	2:B:105:MET:HE1	2.39	0.48
3:C:127:THR:HG22	3:C:186:LEU:CD1	2.40	0.48
5:E:60:SER:C	5:E:62:MET:N	2.67	0.48
1:A:131:ARG:HH11	1:A:131:ARG:HG3	1.77	0.48
4:D:33:TYR:HA	4:D:37:CYS:SG	2.53	0.48
1:A:40:TRP:CD1	1:A:40:TRP:N	2.81	0.48
3:C:267:PRO:O	3:C:268:HIS:CB	2.62	0.48
3:C:342:GLN:HA	3:C:342:GLN:NE2	2.28	0.48
4:D:127:VAL:HG12	4:D:187:CYS:SG	2.54	0.48
4:D:81:PHE:C	4:D:81:PHE:CD1	2.88	0.48
4:D:233:ARG:O	6:F:71:ARG:NH2	2.46	0.47
4:D:117:VAL:HG21	4:D:190:LEU:C	2.34	0.47
4:D:32:VAL:CG1	4:D:186:VAL:HG22	2.42	0.47
2:B:130:PRO:HB2	2:B:132:PHE:CE1	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:217:LYS:C	2:B:219:VAL:H	2.17	0.47
1:A:36:THR:HG21	1:A:373:THR:OG1	2.13	0.47
1:A:341:GLN:O	1:A:342:TRP:C	2.51	0.47
4:D:216:VAL:CG2	4:D:217:PRO:CD	2.92	0.47
5:E:11:SER:CA	5:E:15:ARG:HD2	2.39	0.47
7:G:3:GLN:O	7:G:7:LEU:HD21	2.13	0.47
4:D:56:TYR:CD2	4:D:60:GLU:HG2	2.49	0.47
6:F:101:ARG:O	6:F:104:ARG:N	2.47	0.47
2:B:195:VAL:HG13	2:B:199:PHE:HB2	1.95	0.47
3:C:118:VAL:O	3:C:119:ILE:C	2.53	0.47
3:C:184:PHE:HA	11:C:381:HEM:HBC2	1.95	0.47
3:C:191:ALA:CA	14:C:384:AMY:H251	2.44	0.47
1:A:60:GLU:OE1	1:A:89:TYR:HA	2.13	0.47
3:C:40:VAL:HG21	3:C:233:LEU:CD2	2.44	0.47
4:D:217:PRO:O	4:D:218:LEU:C	2.52	0.47
7:G:26:PHE:CD1	7:G:26:PHE:N	2.71	0.47
4:D:167:ASP:C	4:D:169:LEU:N	2.67	0.47
5:E:170:ARG:HA	5:E:179:ASN:CB	2.43	0.47
3:C:59:ASP:O	3:C:60:THR:C	2.53	0.47
3:C:161:LEU:HD23	3:C:161:LEU:O	2.13	0.47
3:C:64:PHE:CD2	3:C:259:PRO:HG3	2.49	0.47
3:C:251:LEU:HD23	3:C:273:TRP:NE1	2.29	0.47
5:E:153:PHE:HD2	5:E:172:ARG:NH1	2.11	0.47
4:D:224:ARG:NH2	7:G:27:PRO:HG3	2.29	0.47
4:D:97:ASN:O	4:D:100:ALA:HB3	2.13	0.47
8:H:72:LYS:O	8:H:75:ASN:ND2	2.47	0.47
3:C:191:ALA:HA	14:C:384:AMY:H251	1.96	0.47
1:A:62:LEU:CD2	1:A:126:GLN:HG3	2.44	0.47
5:E:35:PHE:O	5:E:38:LEU:HB3	2.14	0.47
5:E:17:PRO:HA	5:E:20:TYR:CE1	2.50	0.47
8:H:55:THR:O	8:H:58:LEU:HB3	2.14	0.47
4:D:155:GLY:C	4:D:157:ALA:H	2.18	0.47
2:B:378:PHE:C	2:B:380:GLU:N	2.68	0.47
4:D:21:LEU:HB3	4:D:26:ILE:HD11	1.95	0.47
5:E:127:VAL:HG11	5:E:133:VAL:HA	1.96	0.47
1:A:26:ALA:O	1:A:27:SER:HB3	2.14	0.47
3:C:318:PHE:CG	6:F:26:PHE:HB3	2.50	0.47
2:B:161:GLU:HA	2:B:161:GLU:OE1	2.14	0.47
1:A:111:GLU:HB2	1:A:215:HIS:CD2	2.50	0.47
3:C:241:LEU:HA	3:C:241:LEU:HD23	1.58	0.47
3:C:153:ALA:HB1	3:C:289:LEU:HD12	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:99:ILE:HG22	1:A:100:LYS:N	2.30	0.47
1:A:138:LEU:HA	1:A:141:ASN:HD22	1.79	0.47
2:B:171:ALA:O	2:B:172:LEU:CB	2.63	0.47
4:D:83:ARG:O	4:D:83:ARG:HD2	2.13	0.47
2:B:284:HIS:C	2:B:286:LYS:H	2.17	0.47
2:B:180:ASP:O	2:B:182:ARG:N	2.48	0.47
1:A:335:MET:O	1:A:336:PHE:C	2.53	0.47
5:E:44:THR:HG22	10:J:24:ILE:HG21	1.96	0.47
1:A:252:HIS:HB3	1:A:323:TYR:CE1	2.40	0.47
5:E:78:LEU:HB3	5:E:132:TRP:CZ2	2.49	0.47
2:B:213:HIS:O	2:B:213:HIS:HD2	1.97	0.47
5:E:77:LYS:HB3	5:E:80:ASP:OD2	2.14	0.47
2:B:47:ILE:HD13	2:B:120:MET:SD	2.54	0.47
3:C:103:LEU:C	3:C:103:LEU:HD13	2.34	0.47
13:C:383:SIG:H332	13:C:383:SIG:H282	1.97	0.47
4:D:235:LEU:O	4:D:236:ALA:HB2	2.13	0.47
1:A:291:SER:O	1:A:293:PRO:CD	2.62	0.47
10:J:20:PHE:CE1	10:J:24:ILE:HD11	2.50	0.47
4:D:178:THR:O	4:D:182:VAL:HG12	2.15	0.47
3:C:350:ILE:H	3:C:350:ILE:HD13	1.80	0.47
7:G:7:LEU:N	7:G:7:LEU:HD22	2.30	0.47
2:B:96:LEU:C	2:B:96:LEU:HD23	2.35	0.47
5:E:153:PHE:CD2	5:E:172:ARG:HG3	2.50	0.47
5:E:53:ASN:O	5:E:57:GLN:HG3	2.15	0.47
2:B:31:ASN:HD21	2:B:224:LEU:HD13	1.80	0.47
3:C:277:PHE:CD2	3:C:278:ALA:N	2.83	0.47
1:A:61:HIS:CD2	1:A:134:ILE:HG12	2.45	0.47
4:D:195:GLU:OE2	4:D:201:ARG:NH2	2.47	0.47
3:C:135:PRO:HG2	3:C:140:SER:OG	2.15	0.47
3:C:318:PHE:CD2	6:F:26:PHE:HB3	2.49	0.47
2:B:424:MET:HG2	2:B:425:ALA:N	2.29	0.47
2:B:307:PHE:CD2	2:B:308:ASP:N	2.82	0.47
3:C:43:MET:CE	14:C:384:AMY:H242	2.45	0.47
2:B:318:ASP:O	2:B:319:SER:HB2	2.14	0.47
3:C:149:ASN:O	3:C:152:SER:CB	2.63	0.47
3:C:138:GLN:HE21	3:C:261:ASN:N	2.09	0.47
1:A:320:PHE:CE2	1:A:415:ILE:HD11	2.46	0.47
4:D:169:LEU:CD2	4:D:169:LEU:N	2.78	0.47
5:E:119:ASP:O	5:E:179:ASN:ND2	2.47	0.47
1:A:8:LEU:O	1:A:11:VAL:HG23	2.15	0.47
1:A:72:GLN:HG2	1:A:76:GLU:OE1	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:287:ASN:O	3:C:288:LYS:C	2.51	0.47
6:F:84:GLU:H	6:F:84:GLU:CD	2.18	0.47
4:D:235:LEU:HB3	6:F:60:PHE:HE1	1.80	0.46
2:B:170:ASN:O	2:B:171:ALA:C	2.54	0.46
4:D:86:LYS:N	4:D:89:ASP:OD1	2.47	0.46
3:C:359:TYR:CD2	3:C:360:PHE:HD1	2.34	0.46
7:G:73:ASN:C	7:G:75:ALA:H	2.19	0.46
10:J:38:GLY:O	10:J:42:ILE:HG13	2.15	0.46
1:A:382:GLU:CG	1:A:390:ILE:H	2.26	0.46
1:A:41:ILE:C	1:A:43:ALA:H	2.18	0.46
4:D:191:ARG:O	4:D:194:ALA:N	2.48	0.46
4:D:46:VAL:CG1	4:D:47:ALA:H	2.23	0.46
10:J:57:HIS:HA	10:J:60:GLU:CA	2.46	0.46
5:E:170:ARG:HG2	5:E:179:ASN:ND2	2.30	0.46
4:D:238:ARG:HG3	7:G:14:ILE:HD12	1.98	0.46
3:C:299:VAL:C	3:C:301:ILE:H	2.18	0.46
3:C:162:VAL:C	3:C:164:TRP:N	2.68	0.46
3:C:280:ALA:O	3:C:281:ILE:C	2.54	0.46
3:C:285:ILE:N	3:C:286:PRO:HD3	2.30	0.46
1:A:64:PHE:CZ	1:A:86:LEU:HG	2.50	0.46
2:B:67:HIS:O	2:B:70:ARG:HB3	2.15	0.46
3:C:223:PRO:O	3:C:227:PHE:HD2	1.97	0.46
2:B:258:VAL:CG1	2:B:259:ALA:N	2.77	0.46
3:C:354:MET:O	3:C:357:LEU:CB	2.63	0.46
5:E:72:SER:CA	5:E:92:ARG:HD3	2.46	0.46
2:B:248:ASN:HD22	2:B:249:GLY:N	2.12	0.46
3:C:338:TRP:CE2	7:G:59:TYR:HD1	2.34	0.46
4:D:7:PRO:HA	4:D:8:PRO:HD2	1.76	0.46
1:A:236:PHE:HB2	1:A:258:GLU:OE1	2.15	0.46
3:C:89:SER:HB3	3:C:273:TRP:HZ2	1.80	0.46
3:C:45:GLN:CB	11:C:381:HEM:HAB	2.46	0.46
2:B:58:GLU:HB3	2:B:62:ASN:ND2	2.30	0.46
8:H:73:LEU:O	8:H:73:LEU:HD23	2.16	0.46
3:C:335:ILE:O	3:C:337:THR:N	2.48	0.46
7:G:56:TYR:O	7:G:59:TYR:HB3	2.15	0.46
4:D:16:GLY:O	4:D:18:LEU:N	2.48	0.46
1:A:280:TYR:CD2	1:A:281:ASP:N	2.84	0.46
5:E:38:LEU:HA	10:J:14:PHE:HE2	1.79	0.46
1:A:178:SER:O	1:A:182:LEU:HD23	2.16	0.46
2:B:385:GLN:C	2:B:387:LEU:N	2.68	0.46
3:C:172:ASP:O	3:C:173:ASN:C	2.54	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:353:SER:C	2:B:355:GLU:H	2.19	0.46
1:A:85:HIS:CD2	9:I:314:UNK:CB	2.98	0.46
1:A:105:ASP:O	1:A:106:VAL:C	2.54	0.46
2:B:209:LEU:O	2:B:210:GLY:C	2.53	0.46
5:E:189:SER:OG	5:E:192:MET:HB2	2.15	0.46
2:B:162:ASN:HB3	2:B:244:ILE:HD11	1.97	0.46
1:A:266:ASP:O	1:A:268:VAL:N	2.48	0.46
1:A:30:SER:N	1:A:201:GLY:O	2.45	0.46
4:D:43:MET:HG2	4:D:43:MET:O	2.15	0.46
2:B:334:GLY:HA2	2:B:434:PRO:HD3	1.98	0.46
3:C:350:ILE:HA	3:C:353:GLN:HE21	1.80	0.46
4:D:55:CYS:HG	4:D:56:TYR:HD1	1.54	0.46
2:B:140:LEU:HD12	2:B:140:LEU:O	2.16	0.46
2:B:307:PHE:CG	2:B:308:ASP:N	2.80	0.46
1:A:142:ASP:OD1	5:E:2:HIS:HB3	2.16	0.46
3:C:138:GLN:O	3:C:142:TRP:HD1	1.98	0.46
2:B:258:VAL:HG11	2:B:321:LEU:CB	2.38	0.46
3:C:253:ASP:C	3:C:253:ASP:OD1	2.53	0.46
2:B:207:VAL:CG1	2:B:208:GLY:N	2.75	0.46
2:B:213:HIS:N	2:B:214:PRO:CD	2.79	0.46
4:D:135:CYS:O	4:D:149:PHE:HD2	1.98	0.46
6:F:96:GLU:O	6:F:97:VAL:C	2.54	0.46
4:D:44:ASP:O	4:D:90:TYR:HD2	1.98	0.46
7:G:40:ARG:O	7:G:41:LEU:C	2.53	0.46
2:B:261:SER:O	2:B:262:ALA:O	2.33	0.46
4:D:130:LEU:HD11	4:D:158:ILE:HD11	1.98	0.46
1:A:156:THR:HG1	1:A:239:SER:HG	1.59	0.46
2:B:105:MET:HE2	2:B:107:TYR:HE1	1.81	0.46
1:A:405:ARG:HA	1:A:408:ARG:HE	1.81	0.46
2:B:101:THR:HG22	2:B:102:ARG:N	2.31	0.46
5:E:28:SER:O	5:E:31:SER:HB3	2.15	0.46
10:J:58:LYS:HB2	10:J:59:TYR:CE1	2.51	0.46
10:J:57:HIS:CB	10:J:61:ASN:O	2.59	0.46
3:C:34:PHE:O	3:C:98:HIS:ND1	2.49	0.46
7:G:36:ASN:O	7:G:40:ARG:HG3	2.16	0.46
5:E:87:MET:HG2	5:E:89:PHE:CZ	2.51	0.46
3:C:293:LEU:O	3:C:294:ALA:C	2.55	0.46
3:C:97:LEU:O	3:C:100:GLY:N	2.49	0.46
1:A:59:LEU:O	1:A:60:GLU:C	2.54	0.46
2:B:330:ALA:O	2:B:333:ALA:N	2.48	0.46
5:E:26:ARG:C	5:E:28:SER:N	2.68	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:103:SER:C	1:A:105:ASP:H	2.18	0.46
5:E:153:PHE:CE2	5:E:172:ARG:HB3	2.51	0.46
2:B:24:LEU:HD11	2:B:392:TYR:CG	2.51	0.46
4:D:144:ARG:HG3	4:D:147:LEU:HD23	1.98	0.46
3:C:184:PHE:C	3:C:184:PHE:CD1	2.90	0.45
3:C:207:ASN:O	3:C:208:ASN:CB	2.54	0.45
3:C:325:LEU:O	3:C:328:LEU:HB3	2.16	0.45
4:D:123:GLY:O	4:D:124:GLU:C	2.54	0.45
5:E:29:ASP:N	5:E:30:PRO:HD2	2.30	0.45
3:C:254:PRO:HG2	3:C:255:GLU:N	2.31	0.45
2:B:207:VAL:HG21	2:B:383:GLY:HA2	1.98	0.45
7:G:38:TRP:C	7:G:40:ARG:N	2.70	0.45
1:A:259:GLY:HA3	1:A:318:GLY:HA3	1.98	0.45
3:C:282:LEU:C	3:C:282:LEU:CD1	2.85	0.45
3:C:191:ALA:CB	14:C:384:AMY:H251	2.46	0.45
3:C:27:ASN:HB3	6:F:70:MET:HB2	1.98	0.45
1:A:373:THR:HB	1:A:374:PRO:CD	2.45	0.45
5:E:148:ALA:HB2	5:E:156:TYR:HE1	1.80	0.45
2:B:141:GLN:C	2:B:143:GLN:H	2.19	0.45
2:B:84:LYS:HG2	2:B:122:PHE:HE1	1.82	0.45
1:A:445:ARG:NH1	10:J:16:ARG:HG2	2.31	0.45
3:C:266:PRO:HA	3:C:267:PRO:HD3	1.87	0.45
3:C:16:ASN:HA	3:C:20:ILE:HB	1.98	0.45
1:A:278:GLY:O	1:A:307:PHE:HE1	1.99	0.45
1:A:209:LEU:O	1:A:213:GLN:N	2.37	0.45
4:D:138:PRO:HD3	8:H:58:LEU:HD23	1.99	0.45
6:F:29:TYR:HB2	6:F:31:LEU:HD21	1.98	0.45
3:C:73:ASN:O	5:E:66:ALA:HB3	2.16	0.45
3:C:116:THR:O	3:C:117:GLY:C	2.55	0.45
2:B:260:GLU:OE1	2:B:319:SER:OG	2.31	0.45
4:D:29:GLY:O	4:D:32:VAL:HG12	2.16	0.45
3:C:138:GLN:HA	3:C:138:GLN:NE2	2.32	0.45
3:C:261:ASN:ND2	3:C:264:VAL:N	2.65	0.45
10:J:48:GLU:HA	10:J:54:HIS:CE1	2.51	0.45
2:B:341:TYR:OH	2:B:439:LEU:HD22	2.16	0.45
3:C:113:THR:HG22	3:C:200:PHE:C	2.36	0.45
4:D:57:THR:O	4:D:60:GLU:HB3	2.16	0.45
4:D:148:TYR:CD1	4:D:148:TYR:N	2.84	0.45
3:C:52:LEU:HB3	11:C:381:HEM:HMD2	1.98	0.45
4:D:116:ILE:HG23	4:D:117:VAL:H	1.80	0.45
2:B:146:ILE:HA	2:B:149:ALA:HB3	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:207:VAL:CG1	2:B:208:GLY:H	2.29	0.45
6:F:97:VAL:O	6:F:98:ILE:C	2.54	0.45
2:B:135:TRP:N	2:B:135:TRP:CD1	2.83	0.45
2:B:177:TYR:O	2:B:178:CYS:C	2.54	0.45
3:C:275:PHE:CD2	13:C:383:SIG:C33	2.98	0.45
4:D:223:LYS:HD2	4:D:227:TRP:CD1	2.51	0.45
2:B:272:PHE:O	2:B:273:SER:C	2.55	0.45
7:G:24:ARG:HA	7:G:25:PRO:HD2	1.67	0.45
1:A:328:ARG:CG	1:A:427:PRO:HB2	2.44	0.45
1:A:146:ARG:NH2	9:I:206:UNK:HA	2.31	0.45
3:C:339:ILE:O	3:C:339:ILE:CG2	2.64	0.45
2:B:43:PRO:HG2	2:B:44:GLY:H	1.81	0.45
3:C:258:THR:HG22	3:C:258:THR:O	2.16	0.45
3:C:39:ALA:O	3:C:42:LEU:N	2.49	0.45
1:A:255:ILE:HG12	1:A:420:PRO:HB2	1.98	0.45
1:A:152:TYR:OH	5:E:5:ILE:HD12	2.16	0.45
3:C:338:TRP:CZ3	3:C:339:ILE:HD11	2.50	0.45
3:C:120:LEU:O	3:C:121:LEU:C	2.54	0.45
3:C:110:TYR:OH	3:C:207:ASN:HA	2.16	0.45
5:E:91:TRP:NE1	5:E:92:ARG:HG3	2.32	0.45
8:H:40:CYS:O	8:H:44:VAL:HG23	2.17	0.45
1:A:77:LYS:O	1:A:81:SER:CB	2.65	0.45
3:C:81:ARG:O	3:C:82:ASN:C	2.55	0.45
4:D:189:PHE:O	4:D:190:LEU:C	2.55	0.45
4:D:47:ALA:O	4:D:48:TYR:C	2.54	0.45
4:D:48:TYR:CD2	4:D:65:ALA:HB2	2.52	0.45
3:C:142:TRP:HA	3:C:145:THR:OG1	2.17	0.45
1:A:150:PHE:O	1:A:153:LEU:HB3	2.17	0.45
1:A:154:HIS:NE2	1:A:314:TYR:OH	2.34	0.45
1:A:438:ARG:C	1:A:440:GLY:N	2.70	0.45
8:H:55:THR:O	8:H:58:LEU:N	2.49	0.45
3:C:110:TYR:CD2	11:C:382:HEM:HBD2	2.52	0.45
2:B:277:HIS:CD2	2:B:363:LYS:HB2	2.52	0.45
5:E:45:LEU:CD2	10:J:24:ILE:O	2.65	0.45
2:B:101:THR:O	2:B:103:GLU:N	2.50	0.45
1:A:354:VAL:HG11	1:A:404:ALA:HA	1.98	0.45
6:F:91:GLU:HB3	6:F:92:PRO:HD3	1.98	0.45
3:C:179:PHE:O	3:C:180:PHE:C	2.54	0.44
3:C:295:LEU:HD21	13:C:383:SIG:H273	1.98	0.44
3:C:32:TRP:O	11:C:382:HEM:O1A	2.35	0.44
3:C:358:SER:O	3:C:362:ILE:HG13	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:167:ASP:C	4:D:169:LEU:H	2.21	0.44
1:A:104:LYS:O	1:A:104:LYS:HG2	2.17	0.44
2:B:112:LEU:CD2	2:B:112:LEU:N	2.81	0.44
4:D:161:ALA:O	4:D:163:PRO:HD3	2.17	0.44
2:B:395:PRO:O	2:B:398:VAL:HG12	2.17	0.44
3:C:132:TYR:HA	11:C:381:HEM:HAA2	1.99	0.44
1:A:59:LEU:O	1:A:61:HIS:N	2.49	0.44
5:E:86:ASN:HB2	5:E:99:ARG:HG3	1.98	0.44
5:E:35:PHE:O	5:E:38:LEU:N	2.50	0.44
5:E:15:ARG:HH12	5:E:19:ASP:HB3	1.74	0.44
5:E:71:MET:C	5:E:73:LYS:N	2.71	0.44
3:C:15:ILE:C	3:C:17:ASN:N	2.70	0.44
3:C:214:SER:OG	3:C:218:LYS:HE3	2.16	0.44
3:C:42:LEU:HD23	14:C:384:AMY:H23	1.98	0.44
1:A:36:THR:CG2	1:A:100:LYS:HZ3	2.30	0.44
1:A:61:HIS:NE2	1:A:137:GLU:OE2	2.50	0.44
1:A:85:HIS:CD2	9:I:314:UNK:HB2	2.52	0.44
1:A:391:PRO:CG	1:A:394:GLU:HB2	2.42	0.44
1:A:297:ILE:HG21	1:A:337:VAL:CG1	2.35	0.44
1:A:334:MET:O	1:A:335:MET:C	2.54	0.44
2:B:141:GLN:O	2:B:143:GLN:N	2.50	0.44
1:A:182:LEU:O	1:A:185:TYR:HB3	2.17	0.44
2:B:35:ILE:HD11	2:B:220:ALA:CB	2.48	0.44
1:A:57:TYR:O	1:A:58:PHE:C	2.56	0.44
2:B:56:ARG:O	2:B:171:ALA:HB1	2.17	0.44
1:A:395:TRP:O	1:A:399:LEU:HG	2.17	0.44
2:B:272:PHE:HB3	2:B:322:PHE:CD2	2.53	0.44
2:B:111:CYS:CB	2:B:119:LEU:HD22	2.46	0.44
5:E:62:MET:O	5:E:63:SER:C	2.56	0.44
4:D:139:THR:C	4:D:141:VAL:H	2.20	0.44
4:D:5:LEU:HB2	8:H:59:PHE:CE1	2.53	0.44
2:B:71:LEU:O	2:B:73:SER:N	2.51	0.44
2:B:399:LEU:O	2:B:402:ILE:HG22	2.18	0.44
3:C:81:ARG:HG3	3:C:81:ARG:HH11	1.82	0.44
3:C:146:VAL:O	3:C:147:ILE:C	2.56	0.44
3:C:92:PHE:HA	3:C:95:ILE:HG22	2.00	0.44
4:D:235:LEU:CD1	6:F:64:ARG:HA	2.48	0.44
2:B:169:ARG:O	2:B:170:ASN:HB3	2.17	0.44
1:A:279:HIS:HB2	1:A:307:PHE:O	2.18	0.44
2:B:273:SER:CB	2:B:364:LEU:HD11	2.45	0.44
1:A:305:GLN:HB3	9:I:203:UNK:HA	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:193:VAL:HG13	5:E:193:VAL:O	2.18	0.44
2:B:31:ASN:CB	2:B:201:SER:HB2	2.47	0.44
2:B:395:PRO:C	2:B:398:VAL:HG12	2.38	0.44
4:D:128:PHE:O	4:D:129:SER:C	2.56	0.44
7:G:42:ARG:HG2	7:G:42:ARG:HH11	1.82	0.44
3:C:108:TYR:HB2	3:C:306:PRO:HG3	1.99	0.44
3:C:88:ALA:O	3:C:91:PHE:HB3	2.17	0.44
1:A:370:ASP:O	1:A:374:PRO:HG3	2.17	0.44
2:B:70:ARG:HE	9:I:107:UNK:CB	2.31	0.44
2:B:90:GLU:C	2:B:92:VAL:H	2.20	0.44
3:C:354:MET:O	3:C:357:LEU:HB3	2.18	0.44
10:J:57:HIS:O	10:J:60:GLU:N	2.33	0.44
2:B:409:ASP:O	2:B:411:ILE:N	2.51	0.44
1:A:147:GLU:O	1:A:148:VAL:C	2.56	0.44
3:C:9:HIS:HD2	3:C:10:PRO:CG	2.29	0.44
2:B:83:PHE:O	2:B:84:LYS:C	2.55	0.44
4:D:57:THR:HG22	4:D:58:GLU:N	2.33	0.44
1:A:74:ALA:O	1:A:78:GLU:N	2.46	0.44
4:D:16:GLY:C	4:D:18:LEU:N	2.69	0.44
3:C:202:HIS:H	3:C:202:HIS:HD1	1.63	0.44
3:C:109:LEU:C	3:C:111:LYS:N	2.71	0.44
3:C:369:THR:C	3:C:371:GLY:N	2.69	0.44
3:C:27:ASN:CB	6:F:69:ASN:ND2	2.72	0.44
1:A:159:GLN:HE21	5:E:7:VAL:CG1	2.09	0.44
1:A:49:SER:HB2	1:A:52:ASN:CB	2.46	0.44
2:B:207:VAL:HG11	2:B:382:VAL:HG23	1.99	0.44
3:C:113:THR:CG2	3:C:201:LEU:HA	2.47	0.44
3:C:78:TRP:CD2	3:C:79:LEU:N	2.86	0.44
3:C:70:THR:HA	3:C:74:VAL:HG23	2.00	0.44
3:C:105:TYR:O	3:C:106:GLY:C	2.56	0.44
3:C:46:ILE:O	3:C:50:LEU:HB2	2.18	0.44
4:D:228:SER:O	4:D:232:SER:HB3	2.18	0.44
2:B:56:ARG:NH1	2:B:56:ARG:HG3	2.32	0.44
10:J:13:LEU:HA	10:J:19:THR:CG2	2.48	0.44
5:E:15:ARG:HH11	5:E:19:ASP:HB3	1.80	0.44
1:A:327:ASP:O	1:A:328:ARG:C	2.56	0.44
4:D:238:ARG:HD2	5:E:5:ILE:HD11	2.00	0.44
8:H:61:PHE:O	8:H:64:ALA:N	2.49	0.44
4:D:95:TYR:HE2	4:D:104:ALA:CB	2.30	0.44
2:B:395:PRO:HA	2:B:398:VAL:CG1	2.48	0.44
7:G:42:ARG:O	7:G:43:ALA:HB2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:166:TRP:C	3:C:166:TRP:CD1	2.91	0.44
4:D:29:GLY:HA3	4:D:185:ASP:O	2.18	0.44
3:C:352:GLY:O	3:C:353:GLN:C	2.56	0.44
2:B:405:VAL:CG1	2:B:406:ALA:H	2.28	0.44
1:A:153:LEU:C	1:A:153:LEU:CD2	2.86	0.44
3:C:136:TRP:CD1	3:C:176:LEU:HD13	2.53	0.44
3:C:110:TYR:O	3:C:111:LYS:C	2.56	0.43
3:C:184:PHE:C	3:C:184:PHE:HD1	2.21	0.43
3:C:282:LEU:HD23	3:C:295:LEU:HD22	2.00	0.43
3:C:92:PHE:O	3:C:96:PHE:CD2	2.71	0.43
1:A:123:GLU:HB3	1:A:126:GLN:CB	2.48	0.43
11:D:242:HEM:CMB	11:D:242:HEM:HBB2	2.48	0.43
10:J:57:HIS:HA	10:J:60:GLU:HB2	1.99	0.43
1:A:250:LEU:CD2	1:A:325:VAL:CG1	2.93	0.43
2:B:147:ASP:O	2:B:150:VAL:HG22	2.18	0.43
2:B:189:VAL:C	2:B:191:LEU:N	2.71	0.43
3:C:326:PHE:O	3:C:329:LEU:N	2.51	0.43
3:C:113:THR:HG22	3:C:201:LEU:N	2.32	0.43
1:A:114:ALA:HB2	1:A:216:PHE:CE1	2.52	0.43
3:C:56:TYR:OH	3:C:134:LEU:O	2.31	0.43
1:A:134:ILE:O	1:A:138:LEU:N	2.50	0.43
1:A:382:GLU:OE2	1:A:390:ILE:HB	2.19	0.43
1:A:335:MET:HG3	1:A:339:GLN:HE21	1.82	0.43
1:A:15:GLN:HB3	1:A:205:HIS:CE1	2.53	0.43
3:C:139:MET:O	3:C:140:SER:C	2.56	0.43
2:B:199:PHE:CA	2:B:204:MET:HE2	2.48	0.43
2:B:240:ARG:NH1	2:B:242:GLY:HA3	2.33	0.43
3:C:95:ILE:HD13	3:C:121:LEU:CD1	2.47	0.43
1:A:382:GLU:HG2	1:A:390:ILE:N	2.32	0.43
5:E:40:THR:O	5:E:41:ALA:C	2.56	0.43
1:A:411:CYS:O	1:A:415:ILE:HG13	2.17	0.43
2:B:33:LEU:HD21	2:B:223:LEU:HD23	2.00	0.43
5:E:166:ASP:OD2	5:E:170:ARG:NE	2.51	0.43
5:E:171:ILE:N	5:E:179:ASN:OD1	2.44	0.43
4:D:204:MET:O	4:D:205:GLY:C	2.57	0.43
3:C:186:LEU:O	3:C:189:ALA:N	2.45	0.43
8:H:62:LEU:O	8:H:63:HIS:C	2.56	0.43
6:F:32:MET:SD	6:F:87:VAL:HG22	2.59	0.43
3:C:148:THR:C	3:C:150:LEU:H	2.21	0.43
3:C:44:THR:O	3:C:48:THR:HG23	2.19	0.43
1:A:36:THR:HG21	1:A:100:LYS:HZ3	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:134:ILE:CG2	1:A:174:ILE:HD13	2.44	0.43
1:A:85:HIS:O	1:A:99:ILE:HA	2.18	0.43
1:A:365:LEU:HD21	1:A:395:TRP:CB	2.48	0.43
2:B:65:THR:O	2:B:69:LEU:HB2	2.18	0.43
2:B:163:LEU:O	2:B:166:ALA:N	2.52	0.43
5:E:26:ARG:O	5:E:27:GLU:HG3	2.19	0.43
3:C:342:GLN:CA	3:C:342:GLN:HE21	2.30	0.43
4:D:169:LEU:HD11	4:D:171:PHE:CE1	2.53	0.43
1:A:206:GLN:HA	1:A:209:LEU:HD12	2.00	0.43
5:E:157:TYR:CE1	5:E:162:GLY:HA2	2.54	0.43
3:C:361:THR:CA	3:C:365:ILE:HG22	2.47	0.43
11:C:382:HEM:HAA2	11:C:382:HEM:HMA1	1.87	0.43
1:A:358:LYS:O	1:A:361:LEU:N	2.51	0.43
4:D:160:MET:HB2	11:D:242:HEM:C2D	2.54	0.43
4:D:91:PHE:HA	4:D:92:PRO:HD3	1.80	0.43
2:B:276:GLN:OE1	2:B:313:ASN:HB3	2.18	0.43
4:D:218:LEU:CD1	5:E:42:VAL:HG12	2.48	0.43
5:E:42:VAL:O	5:E:45:LEU:HB3	2.18	0.43
10:J:57:HIS:ND1	10:J:58:LYS:N	2.66	0.43
1:A:106:VAL:HG21	1:A:203:VAL:HG13	2.01	0.43
1:A:428:ILE:O	1:A:429:GLU:C	2.57	0.43
7:G:50:PRO:CG	7:G:51:PRO:HD2	2.46	0.43
3:C:332:ASN:HD21	3:C:359:TYR:N	2.15	0.43
3:C:7:LYS:O	3:C:13:LYS:HD2	2.18	0.43
1:A:404:ALA:O	1:A:407:VAL:N	2.52	0.43
2:B:419:SER:O	2:B:420:ARG:O	2.36	0.43
4:D:234:LYS:O	7:G:15:THR:HA	2.19	0.43
3:C:117:GLY:O	3:C:120:LEU:HB2	2.19	0.43
3:C:276:LEU:HA	3:C:279:TYR:HB3	2.01	0.43
4:D:51:LEU:O	4:D:54:VAL:HG12	2.19	0.43
5:E:9:ASN:ND2	5:E:11:SER:HB3	2.33	0.43
10:J:55:ILE:C	10:J:57:HIS:H	2.21	0.43
1:A:27:SER:CB	1:A:199:ALA:O	2.67	0.43
8:H:17:LEU:HD13	8:H:73:LEU:CD1	2.45	0.43
1:A:351:GLU:OE1	1:A:404:ALA:HB2	2.19	0.43
3:C:157:ILE:O	3:C:157:ILE:HG13	2.18	0.43
2:B:202:ALA:CB	2:B:229:GLY:HA2	2.48	0.43
1:A:296:SER:O	1:A:299:VAL:N	2.46	0.43
4:D:48:TYR:O	4:D:49:ARG:C	2.56	0.43
5:E:32:ARG:HH22	7:G:25:PRO:CD	2.27	0.43
5:E:170:ARG:HA	5:E:179:ASN:CG	2.39	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:22:LEU:HB3	3:C:221:PHE:HB2	1.99	0.43
6:F:61:ARG:NH2	6:F:89:TYR:CE2	2.87	0.43
4:D:143:VAL:CG2	4:D:147:LEU:HB2	2.49	0.43
5:E:74:ILE:CG2	5:E:195:VAL:HB	2.48	0.43
3:C:146:VAL:HG23	3:C:147:ILE:HG13	2.00	0.43
2:B:53:ALA:O	2:B:104:ASN:N	2.52	0.43
5:E:17:PRO:HA	5:E:20:TYR:HE1	1.83	0.43
10:J:57:HIS:HA	10:J:60:GLU:CB	2.49	0.43
1:A:178:SER:C	1:A:180:ALA:N	2.67	0.43
1:A:178:SER:O	1:A:180:ALA:N	2.52	0.43
10:J:41:ALA:O	10:J:42:ILE:C	2.55	0.43
3:C:158:GLY:O	3:C:159:HIS:C	2.57	0.43
3:C:100:GLY:O	3:C:101:ARG:C	2.56	0.43
3:C:148:THR:O	3:C:150:LEU:N	2.51	0.43
3:C:52:LEU:CD2	11:C:381:HEM:HBD1	2.49	0.43
1:A:35:CYS:HA	1:A:372:THR:HG21	2.00	0.43
2:B:58:GLU:OE2	2:B:64:GLY:N	2.51	0.43
1:A:49:SER:CB	1:A:52:ASN:HB3	2.48	0.43
5:E:9:ASN:HD21	5:E:11:SER:HB3	1.83	0.43
4:D:168:VAL:HG12	4:D:168:VAL:O	2.18	0.43
1:A:21:ASN:HD21	1:A:218:GLY:HA3	1.84	0.43
8:H:47:ARG:CD	8:H:48:SER:H	2.30	0.43
5:E:47:VAL:O	5:E:48:ALA:C	2.57	0.43
5:E:16:PRO:C	5:E:18:ASP:H	2.19	0.43
1:A:73:ASN:O	1:A:77:LYS:HB2	2.18	0.43
3:C:154:ILE:O	3:C:158:GLY:HA3	2.19	0.43
3:C:141:PHE:O	3:C:144:ALA:HB3	2.18	0.43
1:A:388:ARG:HG2	1:A:389:ARG:N	2.34	0.43
1:A:86:LEU:CB	1:A:99:ILE:HG12	2.49	0.43
3:C:266:PRO:O	3:C:269:ILE:HG13	2.19	0.43
2:B:187:THR:HG1	2:B:190:GLU:HG3	1.82	0.43
3:C:243:LEU:HD22	3:C:243:LEU:N	2.34	0.43
3:C:186:LEU:O	3:C:187:PRO:C	2.57	0.43
3:C:5:ILE:C	3:C:7:LYS:H	2.21	0.43
1:A:24:ARG:NH1	1:A:24:ARG:HG3	2.33	0.43
2:B:160:ILE:O	2:B:161:GLU:C	2.56	0.43
5:E:117:LEU:O	5:E:120:PRO:HD3	2.19	0.43
1:A:39:VAL:HG22	1:A:41:ILE:HD13	2.01	0.42
2:B:370:MET:C	2:B:372:VAL:H	2.22	0.42
2:B:37:SER:O	2:B:38:LEU:HB2	2.19	0.42
4:D:158:ILE:HG22	4:D:159:GLY:N	2.32	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:83:ARG:HH12	4:D:86:LYS:HG3	1.80	0.42
5:E:85:LYS:HG2	5:E:86:ASN:N	2.32	0.42
9:I:105:UNK:O	9:I:106:UNK:CB	2.67	0.42
2:B:277:HIS:C	2:B:279:LEU:N	2.69	0.42
5:E:33:LYS:O	5:E:34:GLY:C	2.57	0.42
1:A:274:ASN:O	1:A:309:THR:HG21	2.19	0.42
5:E:91:TRP:CE3	5:E:96:LEU:HD22	2.54	0.42
2:B:209:LEU:O	2:B:211:VAL:N	2.52	0.42
3:C:139:MET:HE2	3:C:255:GLU:HB3	2.00	0.42
1:A:431:LEU:HD23	1:A:432:PRO:N	2.33	0.42
6:F:59:MET:HE3	6:F:59:MET:HA	1.99	0.42
4:D:230:LEU:CB	6:F:70:MET:HE3	2.43	0.42
5:E:19:ASP:O	5:E:20:TYR:CD1	2.72	0.42
3:C:359:TYR:CD2	3:C:360:PHE:CD1	3.07	0.42
3:C:184:PHE:CD1	3:C:184:PHE:O	2.71	0.42
3:C:191:ALA:O	3:C:195:ILE:HG12	2.19	0.42
3:C:48:THR:O	3:C:51:LEU:HB3	2.19	0.42
3:C:87:GLY:O	3:C:88:ALA:C	2.57	0.42
5:E:70:ALA:C	5:E:72:SER:N	2.73	0.42
2:B:345:LYS:C	2:B:347:ILE:N	2.72	0.42
3:C:247:SER:N	3:C:248:PRO:HD3	2.35	0.42
8:H:37:LEU:O	8:H:38:GLU:C	2.57	0.42
3:C:175:THR:O	3:C:179:PHE:CD1	2.72	0.42
5:E:29:ASP:OD2	7:G:22:GLU:OE1	2.38	0.42
6:F:16:ILE:O	6:F:17:ARG:C	2.57	0.42
1:A:443:TRP:C	1:A:445:ARG:H	2.19	0.42
3:C:5:ILE:C	3:C:7:LYS:N	2.72	0.42
1:A:146:ARG:NH1	1:A:146:ARG:HG2	2.35	0.42
3:C:148:THR:C	3:C:150:LEU:N	2.72	0.42
3:C:130:VAL:CG1	3:C:179:PHE:HB3	2.46	0.42
3:C:42:LEU:HD21	3:C:191:ALA:HA	2.02	0.42
2:B:372:VAL:O	2:B:372:VAL:HG12	2.18	0.42
1:A:294:LEU:HD11	1:A:334:MET:CE	2.50	0.42
1:A:269:ALA:CB	1:A:410:VAL:HG21	2.49	0.42
1:A:91:SER:OG	1:A:92:ARG:N	2.52	0.42
1:A:92:ARG:NE	1:A:154:HIS:CD2	2.87	0.42
1:A:310:PHE:HE1	1:A:322:PHE:N	2.17	0.42
2:B:117:GLU:O	2:B:120:MET:HB2	2.19	0.42
2:B:395:PRO:HA	2:B:398:VAL:HG12	2.00	0.42
1:A:262:TRP:HH2	1:A:381:ARG:HH21	1.66	0.42
3:C:233:LEU:CD1	3:C:237:LEU:HD22	2.48	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:146:ARG:NH2	9:I:206:UNK:CB	2.82	0.42
1:A:236:PHE:CD2	1:A:258:GLU:HB2	2.54	0.42
1:A:350:SER:O	1:A:353:GLU:HB2	2.19	0.42
3:C:129:PHE:C	3:C:129:PHE:CD1	2.89	0.42
1:A:165:GLN:HB2	1:A:165:GLN:HE21	1.66	0.42
3:C:42:LEU:O	3:C:46:ILE:HG13	2.20	0.42
3:C:89:SER:O	3:C:90:PHE:C	2.58	0.42
2:B:37:SER:O	2:B:38:LEU:CB	2.67	0.42
2:B:284:HIS:C	2:B:286:LYS:N	2.73	0.42
2:B:270:ASN:O	2:B:273:SER:HB2	2.20	0.42
3:C:238:THR:N	3:C:239:PRO:CD	2.83	0.42
1:A:102:LEU:H	1:A:102:LEU:CD1	2.26	0.42
2:B:410:VAL:O	2:B:411:ILE:C	2.57	0.42
5:E:171:ILE:HG23	5:E:171:ILE:O	2.19	0.42
1:A:167:VAL:HB	1:A:168:GLU:OE2	2.20	0.42
2:B:137:VAL:C	2:B:139:ASP:H	2.22	0.42
3:C:161:LEU:HD23	3:C:161:LEU:C	2.40	0.42
3:C:327:TRP:HE3	3:C:330:VAL:HG11	1.84	0.42
4:D:160:MET:HB2	11:D:242:HEM:C1D	2.55	0.42
2:B:276:GLN:O	2:B:279:LEU:O	2.38	0.42
2:B:277:HIS:CB	2:B:360:ALA:HB1	2.48	0.42
3:C:239:PRO:O	3:C:243:LEU:HD23	2.19	0.42
10:J:54:HIS:O	10:J:57:HIS:NE2	2.53	0.42
1:A:343:MET:CA	1:A:343:MET:CE	2.97	0.42
4:D:144:ARG:NH1	4:D:147:LEU:CD2	2.83	0.42
2:B:374:SER:O	2:B:377:GLY:N	2.50	0.42
5:E:121:GLN:OE1	5:E:126:ARG:HD2	2.20	0.42
4:D:33:TYR:CD1	4:D:37:CYS:HB2	2.55	0.42
1:A:177:LEU:HA	1:A:177:LEU:HD23	1.85	0.42
3:C:69:HIS:O	3:C:71:CYS:N	2.53	0.42
3:C:107:SER:C	3:C:109:LEU:N	2.72	0.42
3:C:130:VAL:HG13	3:C:179:PHE:CD2	2.55	0.42
3:C:27:ASN:HD22	6:F:69:ASN:HD21	1.61	0.42
13:C:383:SIG:H343	13:C:383:SIG:H23	1.97	0.42
1:A:250:LEU:HD23	1:A:251:ALA:O	2.19	0.42
4:D:98:PRO:HG2	4:D:99:GLU:OE2	2.20	0.42
3:C:308:LEU:HD13	3:C:364:LEU:HA	2.01	0.42
1:A:114:ALA:HA	1:A:216:PHE:CE1	2.53	0.42
6:F:77:LYS:HA	6:F:80:TRP:CE2	2.55	0.42
3:C:117:GLY:O	3:C:118:VAL:C	2.58	0.42
3:C:295:LEU:CD1	13:C:383:SIG:H273	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:D:242:HEM:CMB	11:D:242:HEM:CBB	2.97	0.42
4:D:83:ARG:C	4:D:83:ARG:HD2	2.40	0.42
5:E:35:PHE:O	5:E:36:SER:C	2.58	0.42
5:E:136:ILE:O	5:E:180:LEU:HD22	2.20	0.42
10:J:57:HIS:C	10:J:60:GLU:H	2.17	0.42
1:A:65:LYS:HZ1	9:I:310:UNK:C	2.33	0.42
3:C:63:ALA:CB	3:C:176:LEU:HD21	2.50	0.42
3:C:108:TYR:CE1	3:C:109:LEU:CD2	3.03	0.41
3:C:147:ILE:O	3:C:150:LEU:CB	2.56	0.41
3:C:162:VAL:HA	3:C:165:ALA:HB2	2.01	0.41
3:C:316:MET:HB3	3:C:319:ARG:HB2	2.02	0.41
13:C:383:SIG:H282	13:C:383:SIG:H333	2.01	0.41
4:D:227:TRP:O	4:D:228:SER:C	2.56	0.41
1:A:59:LEU:C	1:A:61:HIS:N	2.72	0.41
1:A:294:LEU:HA	1:A:294:LEU:HD12	1.79	0.41
1:A:293:PRO:C	1:A:295:ALA:N	2.70	0.41
5:E:12:ASP:O	5:E:13:TYR:C	2.58	0.41
1:A:8:LEU:O	1:A:11:VAL:HB	2.20	0.41
1:A:419:CYS:SG	1:A:438:ARG:NH2	2.78	0.41
1:A:396:GLU:O	1:A:400:ALA:N	2.53	0.41
2:B:269:ALA:O	2:B:271:ALA:N	2.53	0.41
1:A:405:ARG:HG2	1:A:405:ARG:NH1	2.35	0.41
4:D:214:LEU:O	4:D:217:PRO:HG2	2.20	0.41
1:A:14:THR:HG23	1:A:27:SER:O	2.21	0.41
5:E:171:ILE:HD12	5:E:172:ARG:H	1.85	0.41
5:E:78:LEU:HD11	5:E:193:VAL:HB	2.02	0.41
6:F:89:TYR:C	6:F:89:TYR:CD1	2.93	0.41
6:F:12:TRP:CB	6:F:15:GLY:H	2.32	0.41
3:C:194:THR:O	3:C:197:HIS:HB3	2.19	0.41
9:I:117:UNK:O	9:I:118:UNK:CB	2.67	0.41
2:B:264:ILE:HD11	2:B:317:SER:HA	2.02	0.41
3:C:166:TRP:HB2	3:C:175:THR:HG21	1.96	0.41
6:F:67:ASP:O	6:F:71:ARG:HG3	2.20	0.41
2:B:56:ARG:HH11	2:B:56:ARG:HG3	1.85	0.41
5:E:14:ARG:O	5:E:15:ARG:O	2.38	0.41
3:C:139:MET:HB2	3:C:256:ASN:OD1	2.21	0.41
1:A:23:VAL:CG2	1:A:192:ALA:HB1	2.46	0.41
1:A:192:ALA:N	1:A:193:PRO:HD2	2.34	0.41
6:F:58:ARG:HA	6:F:61:ARG:NH2	2.35	0.41
6:F:62:ILE:O	6:F:66:LEU:HG	2.20	0.41
2:B:268:GLU:HG2	2:B:268:GLU:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:23:HIS:HB2	10:J:50:LYS:O	2.20	0.41
3:C:120:LEU:H	3:C:120:LEU:HD22	1.86	0.41
1:A:39:VAL:O	1:A:39:VAL:CG1	2.68	0.41
1:A:40:TRP:CE3	1:A:96:ALA:CB	3.03	0.41
1:A:161:THR:HG21	1:A:234:CYS:CA	2.47	0.41
10:J:58:LYS:C	10:J:59:TYR:CG	2.94	0.41
8:H:59:PHE:O	8:H:61:PHE:N	2.54	0.41
1:A:266:ASP:C	1:A:268:VAL:H	2.23	0.41
5:E:126:ARG:HH11	5:E:126:ARG:HG2	1.85	0.41
7:G:53:LEU:O	7:G:57:LEU:HD23	2.20	0.41
3:C:65:SER:O	3:C:66:SER:C	2.59	0.41
3:C:271:PRO:HG3	3:C:279:TYR:CG	2.56	0.41
1:A:64:PHE:CE1	1:A:86:LEU:CG	3.03	0.41
2:B:169:ARG:O	2:B:170:ASN:CG	2.58	0.41
1:A:155:ALA:O	5:E:7:VAL:HG21	2.20	0.41
5:E:127:VAL:CG1	5:E:133:VAL:HA	2.49	0.41
5:E:91:TRP:CZ2	5:E:92:ARG:NE	2.89	0.41
6:F:32:MET:N	6:F:35:ASP:OD2	2.52	0.41
2:B:200:THR:HG22	2:B:226:ILE:CG2	2.50	0.41
5:E:97:PHE:O	5:E:134:ILE:HA	2.21	0.41
3:C:325:LEU:HD21	3:C:362:ILE:HG23	2.00	0.41
1:A:261:GLY:O	1:A:262:TRP:C	2.59	0.41
2:B:168:TYR:N	2:B:168:TYR:CD1	2.87	0.41
3:C:235:LEU:C	3:C:237:LEU:H	2.24	0.41
1:A:251:ALA:HB1	1:A:428:ILE:HG22	2.02	0.41
2:B:146:ILE:C	2:B:148:LYS:N	2.73	0.41
3:C:9:HIS:HA	3:C:10:PRO:HD2	1.72	0.41
3:C:76:TYR:CE2	5:E:57:GLN:HG2	2.56	0.41
3:C:210:LEU:HA	3:C:210:LEU:HD23	1.87	0.41
2:B:39:GLU:HG3	2:B:41:TYR:CD1	2.55	0.41
8:H:15:ASP:HA	8:H:16:PRO:HD2	1.82	0.41
3:C:335:ILE:O	3:C:338:TRP:N	2.53	0.41
4:D:150:ASN:HA	4:D:151:PRO:HD2	1.81	0.41
10:J:33:ARG:O	10:J:37:GLN:HG3	2.21	0.41
3:C:229:ASP:OD2	14:C:384:AMY:O1	2.39	0.41
3:C:52:LEU:HD21	11:C:381:HEM:O2D	2.21	0.41
4:D:118:ARG:NH1	4:D:195:GLU:OE1	2.54	0.41
4:D:26:ILE:HG23	4:D:189:PHE:HA	2.02	0.41
2:B:282:ASN:HB2	2:B:283:PRO:CD	2.51	0.41
3:C:239:PRO:O	3:C:240:PHE:C	2.59	0.41
4:D:220:TYR:O	4:D:221:TYR:C	2.57	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:102:LEU:O	1:A:103:SER:OG	2.37	0.41
2:B:410:VAL:O	2:B:413:ALA:N	2.54	0.41
7:G:11:ARG:O	7:G:12:HIS:HB2	2.20	0.41
2:B:430:LEU:C	2:B:432:HIS:N	2.74	0.41
3:C:249:ASN:O	3:C:250:LEU:C	2.59	0.41
4:D:66:GLU:C	4:D:68:VAL:H	2.23	0.41
1:A:114:ALA:CB	1:A:216:PHE:CE1	3.04	0.41
3:C:146:VAL:O	3:C:150:LEU:N	2.52	0.41
1:A:106:VAL:HB	1:A:107:PRO:HD3	2.02	0.41
5:E:78:LEU:HD13	5:E:132:TRP:CE2	2.55	0.41
4:D:200:HIS:O	4:D:204:MET:HB2	2.21	0.41
5:E:57:GLN:C	5:E:59:VAL:H	2.23	0.41
6:F:87:VAL:O	6:F:89:TYR:N	2.47	0.41
6:F:87:VAL:HA	6:F:88:PRO:HD2	1.91	0.41
3:C:204:SER:O	3:C:205:GLY:C	2.57	0.41
7:G:53:LEU:O	7:G:56:TYR:HB3	2.21	0.41
2:B:221:GLU:HG3	2:B:222:GLN:H	1.86	0.41
4:D:22:ASP:HA	10:J:50:LYS:HB3	2.02	0.41
3:C:331:ALA:C	3:C:333:LEU:N	2.74	0.41
3:C:319:ARG:HH21	3:C:371:GLY:HA2	1.84	0.41
3:C:104:TYR:CZ	3:C:316:MET:CB	3.02	0.41
3:C:374:GLU:HB3	6:F:20:TYR:CZ	2.56	0.41
3:C:319:ARG:NH2	3:C:374:GLU:OE2	2.53	0.41
3:C:45:GLN:CG	11:C:381:HEM:HAB	2.46	0.41
1:A:36:THR:CG2	1:A:100:LYS:NZ	2.83	0.41
1:A:365:LEU:HD21	1:A:395:TRP:HB3	2.02	0.41
4:D:46:VAL:HB	4:D:91:PHE:CE2	2.56	0.41
1:A:239:SER:CB	7:G:18:LEU:HA	2.51	0.41
5:E:99:ARG:HB3	5:E:133:VAL:CG1	2.50	0.41
2:B:101:THR:O	2:B:102:ARG:C	2.59	0.41
3:C:355:ALA:C	3:C:357:LEU:N	2.72	0.41
1:A:250:LEU:HB2	1:A:326:CYS:O	2.21	0.41
1:A:428:ILE:O	1:A:430:GLN:N	2.54	0.41
5:E:153:PHE:CD2	5:E:172:ARG:NH1	2.88	0.41
1:A:145:MET:CB	1:A:252:HIS:CD2	3.04	0.41
2:B:24:LEU:HD11	2:B:392:TYR:CD2	2.55	0.41
5:E:78:LEU:HG	5:E:193:VAL:CG1	2.51	0.41
3:C:76:TYR:CE1	4:D:200:HIS:HE1	2.25	0.41
4:D:79:GLU:O	4:D:80:MET:C	2.60	0.41
1:A:438:ARG:HD3	1:A:438:ARG:C	2.40	0.41
3:C:221:PHE:C	3:C:221:PHE:CD1	2.93	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:97:ASN:HB2	4:D:98:PRO:HD2	2.03	0.41
1:A:431:LEU:HA	1:A:432:PRO:HD2	1.83	0.41
3:C:4:ASN:OD1	3:C:7:LYS:CB	2.69	0.41
3:C:212:ILE:HD12	6:F:62:ILE:HG23	2.03	0.41
2:B:31:ASN:ND2	2:B:224:LEU:HD13	2.35	0.41
1:A:72:GLN:O	1:A:74:ALA:N	2.54	0.41
8:H:24:CYS:C	8:H:26:GLN:H	2.24	0.41
3:C:131:GLY:HA2	3:C:134:LEU:CD2	2.46	0.41
3:C:134:LEU:H	3:C:134:LEU:CD1	2.33	0.41
11:C:382:HEM:HMA2	14:C:384:AMY:O7	2.21	0.41
2:B:277:HIS:HD2	2:B:363:LYS:HB2	1.86	0.41
5:E:10:PHE:O	5:E:11:SER:C	2.59	0.41
1:A:48:GLU:OE1	1:A:53:ASN:ND2	2.54	0.41
7:G:48:VAL:O	7:G:51:PRO:HG2	2.21	0.41
1:A:32:GLN:HA	1:A:33:PRO:HD2	1.71	0.41
6:F:80:TRP:CD1	6:F:80:TRP:N	2.89	0.41
5:E:102:THR:H	5:E:105:GLU:HB2	1.86	0.41
6:F:43:VAL:O	6:F:46:ALA:HB3	2.20	0.41
2:B:176:LEU:HD12	2:B:176:LEU:O	2.20	0.41
3:C:26:SER:HA	3:C:219:ILE:HD13	2.03	0.40
1:A:37:VAL:HG23	1:A:113:LEU:HD11	2.03	0.40
3:C:212:ILE:O	3:C:213:SER:C	2.59	0.40
1:A:67:THR:HG21	1:A:115:ASP:CG	2.41	0.40
2:B:385:GLN:OE1	2:B:393:ASN:N	2.48	0.40
2:B:120:MET:O	2:B:121:GLU:C	2.59	0.40
4:D:16:GLY:HA2	4:D:17:PRO:HD2	1.90	0.40
8:H:37:LEU:C	8:H:37:LEU:HD13	2.42	0.40
2:B:206:LEU:HG	2:B:206:LEU:O	2.20	0.40
3:C:86:ASN:HA	3:C:86:ASN:HD22	1.70	0.40
1:A:433:ASP:OD2	1:A:435:ASN:ND2	2.54	0.40
3:C:117:GLY:HA2	3:C:120:LEU:HD23	2.04	0.40
1:A:378:ASP:O	1:A:382:GLU:HB2	2.22	0.40
1:A:405:ARG:HG2	1:A:405:ARG:HH11	1.87	0.40
1:A:48:GLU:HB3	1:A:53:ASN:HA	2.03	0.40
2:B:341:TYR:O	2:B:342:ASN:C	2.59	0.40
7:G:66:PHE:CZ	7:G:70:LYS:HE3	2.56	0.40
8:H:20:VAL:O	8:H:20:VAL:HG12	2.19	0.40
5:E:121:GLN:HA	5:E:125:GLU:OE2	2.21	0.40
2:B:137:VAL:HA	2:B:140:LEU:HB3	2.03	0.40
4:D:6:HIS:HA	4:D:7:PRO:HD2	1.69	0.40
6:F:76:PRO:O	6:F:78:GLU:N	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:10:TYR:CD1	4:D:10:TYR:N	2.89	0.40
4:D:1:SER:C	4:D:3:LEU:H	2.24	0.40
3:C:198:LEU:HD23	3:C:198:LEU:HA	1.78	0.40
4:D:233:ARG:CB	6:F:71:ARG:NH2	2.80	0.40
4:D:51:LEU:C	4:D:54:VAL:HG12	2.42	0.40
1:A:294:LEU:HD23	1:A:307:PHE:CE1	2.57	0.40
3:C:238:THR:HG21	4:D:212:MET:HG3	2.03	0.40
10:J:13:LEU:CD1	10:J:13:LEU:N	2.84	0.40
2:B:223:LEU:O	2:B:223:LEU:HG	2.22	0.40
3:C:9:HIS:HB3	3:C:12:LEU:CB	2.47	0.40
2:B:157:THR:HG23	2:B:158:HIS:N	2.36	0.40
4:D:98:PRO:O	4:D:100:ALA:N	2.55	0.40
4:D:148:TYR:CZ	4:D:161:ALA:HB2	2.56	0.40
2:B:59:ASN:C	2:B:61:SER:N	2.73	0.40
5:E:142:LEU:HA	5:E:142:LEU:HD23	1.88	0.40
3:C:100:GLY:O	3:C:103:LEU:N	2.55	0.40
2:B:375:SER:HA	2:B:378:PHE:HB3	2.04	0.40
4:D:189:PHE:C	4:D:191:ARG:N	2.74	0.40
4:D:50:HIS:O	4:D:51:LEU:C	2.60	0.40
1:A:335:MET:O	1:A:338:LEU:N	2.54	0.40
4:D:218:LEU:HD22	5:E:39:VAL:HG13	2.03	0.40
5:E:108:GLN:O	5:E:112:VAL:HG23	2.21	0.40
3:C:6:ARG:HA	3:C:12:LEU:CD2	2.44	0.40
5:E:78:LEU:HD13	5:E:132:TRP:NE1	2.36	0.40
3:C:173:ASN:O	3:C:176:LEU:HB3	2.21	0.40
1:A:72:GLN:O	1:A:73:ASN:C	2.60	0.40
4:D:37:CYS:C	4:D:39:SER:H	2.25	0.40
1:A:318:GLY:O	1:A:319:LEU:HD23	2.22	0.40
3:C:49:GLY:HA3	11:C:381:HEM:C4C	2.55	0.40
4:D:51:LEU:HA	4:D:54:VAL:CG1	2.51	0.40
2:B:145:LYS:HG3	2:B:183:ILE:HG21	2.03	0.40
1:A:428:ILE:C	1:A:430:GLN:N	2.73	0.40
1:A:244:ARG:NE	7:G:10:VAL:HB	2.37	0.40
1:A:252:HIS:HB2	1:A:425:PRO:HD2	2.03	0.40
2:B:162:ASN:O	2:B:165:ALA:HB3	2.22	0.40
2:B:199:PHE:HA	2:B:204:MET:HE2	2.03	0.40
1:A:310:PHE:N	1:A:310:PHE:CD1	2.89	0.40
3:C:263:LEU:CD1	3:C:263:LEU:N	2.84	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:165:TYR:OH	6:F:14:GLU:OE2[3_555]	2.18	0.02

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	440/446 (99%)	310 (70%)	103 (23%)	27 (6%)	2	26
2	B	404/422 (96%)	281 (70%)	83 (20%)	40 (10%)	1	13
3	C	377/380 (99%)	235 (62%)	106 (28%)	36 (10%)	1	14
4	D	239/241 (99%)	175 (73%)	47 (20%)	17 (7%)	1	22
5	E	194/196 (99%)	141 (73%)	39 (20%)	14 (7%)	1	22
6	F	98/109 (90%)	74 (76%)	17 (17%)	7 (7%)	1	22
7	G	76/81 (94%)	52 (68%)	17 (22%)	7 (9%)	1	15
8	H	64/78 (82%)	42 (66%)	19 (30%)	3 (5%)	3	33
10	J	57/62 (92%)	37 (65%)	13 (23%)	7 (12%)	0	8
All	All	1949/2015 (97%)	1347 (69%)	444 (23%)	158 (8%)	1	18

All (158) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	71	PRO
1	A	282	ARG
1	A	284	TYR
1	A	289	HIS
2	B	19	PRO
2	B	20	HIS
2	B	38	LEU
2	B	113	ARG
2	B	170	ASN
2	B	171	ALA
2	B	228	GLY

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Mol	Chain	Res	Type
2	B	233	SER
2	B	262	ALA
2	B	305	ASN
2	B	330	ALA
2	B	375	SER
2	B	406	ALA
2	B	410	VAL
2	B	420	ARG
3	C	60	THR
3	C	111	LYS
3	C	167	GLY
3	C	202	HIS
3	C	207	ASN
3	C	208	ASN
3	C	218	LYS
3	C	284	SER
3	C	349	ILE
4	D	67	GLU
4	D	73	GLY
4	D	106	ASN
4	D	168	VAL
4	D	198	HIS
4	D	233	ARG
5	E	11	SER
5	E	15	ARG
5	E	72	SER
7	G	27	PRO
7	G	43	ALA
10	J	5	LEU
10	J	60	GLU
10	J	61	ASN
1	A	58	PHE
1	A	65	LYS
1	A	72	GLN
1	A	81	SER
1	A	205	HIS
1	A	222	THR
1	A	281	ASP
1	A	291	SER
1	A	292	SER
1	A	333	ASP
1	A	382	GLU

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Mol	Chain	Res	Type
1	A	433	ASP
1	A	444	LEU
2	B	132	PHE
2	B	181	TYR
2	B	229	GLY
2	B	261	SER
2	B	346	THR
3	C	164	TRP
3	C	205	GLY
3	C	224	TYR
3	C	268	HIS
3	C	352	GLY
4	D	75	ASN
4	D	78	GLY
4	D	190	LEU
4	D	236	ALA
5	E	21	SER
5	E	27	GLU
5	E	65	SER
5	E	70	ALA
5	E	180	LEU
6	F	53	ASN
6	F	97	VAL
7	G	33	GLY
7	G	69	SER
10	J	32	GLU
1	A	73	ASN
1	A	245	GLU
2	B	76	THR
2	B	102	ARG
2	B	111	CYS
2	B	190	GLU
2	B	201	SER
2	B	210	GLY
2	B	218	ASN
2	B	249	GLY
2	B	260	GLU
2	B	270	ASN
2	B	431	GLY
3	C	31	TRP
3	C	58	ALA
3	C	149	ASN

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Mol	Chain	Res	Type
3	C	201	LEU
3	C	222	HIS
3	C	274	TYR
3	C	287	ASN
3	C	353	GLN
4	D	133	GLY
4	D	172	ASP
5	E	30	PRO
5	E	141	HIS
6	F	19	TRP
6	F	77	LYS
8	H	61	PHE
10	J	25	VAL
10	J	58	LYS
1	A	159	GLN
1	A	181	ASP
1	A	209	LEU
1	A	268	VAL
1	A	332	ASP
1	A	405	ARG
2	B	23	ASP
2	B	269	ALA
2	B	319	SER
2	B	331	ALA
2	B	371	SER
2	B	430	LEU
3	C	16	ASN
3	C	64	PHE
3	C	105	TYR
3	C	163	GLU
3	C	235	LEU
4	D	55	CYS
5	E	17	PRO
5	E	177	PRO
6	F	37	ILE
8	H	65	ARG
10	J	20	PHE
2	B	72	ALA
2	B	366	ALA
3	C	12	LEU
3	C	173	ASN
3	C	286	PRO

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Mol	Chain	Res	Type
3	C	300	LEU
4	D	51	LEU
4	D	176	PRO
5	E	62	MET
6	F	69	ASN
1	A	60	GLU
3	C	239	PRO
7	G	74	PRO
8	H	60	ASP
3	C	147	ILE
3	C	171	VAL
4	D	162	PRO
5	E	137	GLY
2	B	21	PRO
7	G	26	PHE
1	A	312	ILE
7	G	50	PRO
3	C	119	ILE
3	C	130	VAL
6	F	98	ILE
4	D	98	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	359/376 (96%)	336 (94%)	23 (6%)	22	64
2	B	307/336 (91%)	286 (93%)	21 (7%)	20	62
3	C	326/329 (99%)	304 (93%)	22 (7%)	20	63
4	D	201/207 (97%)	192 (96%)	9 (4%)	34	74
5	E	165/169 (98%)	151 (92%)	14 (8%)	13	53
6	F	90/98 (92%)	82 (91%)	8 (9%)	12	51
7	G	60/72 (83%)	53 (88%)	7 (12%)	7	36
8	H	51/74 (69%)	51 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
10	J	41/52 (79%)	39 (95%)	2 (5%)	31	71
All	All	1600/1713 (93%)	1494 (93%)	106 (7%)	21	63

All (106) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	53	ASN
1	A	69	ASN
1	A	100	LYS
1	A	102	LEU
1	A	108	LYS
1	A	148	VAL
1	A	168	GLU
1	A	220	PRO
1	A	250	LEU
1	A	279	HIS
1	A	281	ASP
1	A	307	PHE
1	A	316	GLU
1	A	333	ASP
1	A	361	LEU
1	A	382	GLU
1	A	384	LEU
1	A	388	ARG
1	A	395	TRP
1	A	409	GLU
1	A	438	ARG
1	A	443	TRP
1	A	444	LEU
2	B	21	PRO
2	B	56	ARG
2	B	57	TYR
2	B	62	ASN
2	B	109	VAL
2	B	112	LEU
2	B	135	TRP
2	B	170	ASN
2	B	181	TYR
2	B	193	ASP
2	B	221	GLU
2	B	225	ASN
2	B	247	GLN

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Mol	Chain	Res	Type
2	B	248	ASN
2	B	325	TYR
2	B	351	ASN
2	B	402	ILE
2	B	409	ASP
2	B	429	ASN
2	B	435	PHE
2	B	437	ASP
3	C	4	ASN
3	C	21	ASP
3	C	28	ILE
3	C	32	TRP
3	C	43	MET
3	C	104	TYR
3	C	129	PHE
3	C	136	TRP
3	C	164	TRP
3	C	166	TRP
3	C	184	PHE
3	C	199	THR
3	C	207	ASN
3	C	208	ASN
3	C	250	LEU
3	C	254	PRO
3	C	258	THR
3	C	259	PRO
3	C	265	THR
3	C	282	LEU
3	C	317	THR
3	C	350	ILE
4	D	36	VAL
4	D	82	MET
4	D	136	GLU
4	D	156	GLN
4	D	163	PRO
4	D	169	LEU
4	D	181	GLN
4	D	192	TRP
4	D	224	ARG
5	E	9	ASN
5	E	11	SER
5	E	27	GLU

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Mol	Chain	Res	Type
5	E	32	ARG
5	E	36	SER
5	E	45	LEU
5	E	52	LYS
5	E	69	LEU
5	E	79	SER
5	E	81	ILE
5	E	113	GLU
5	E	123	ASP
5	E	136	ILE
5	E	191	ASP
6	F	12	TRP
6	F	31	LEU
6	F	34	ASP
6	F	37	ILE
6	F	59	MET
6	F	70	MET
6	F	107	TRP
6	F	108	ASP
7	G	4	PHE
7	G	16	TYR
7	G	22	GLU
7	G	26	PHE
7	G	27	PRO
7	G	41	LEU
7	G	77	TYR
10	J	14	PHE
10	J	59	TYR

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (52) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	29	GLN
1	A	53	ASN
1	A	69	ASN
1	A	85	HIS
1	A	87	ASN
1	A	118	GLN
1	A	141	ASN
1	A	165	GLN
1	A	173	ASN
1	A	189	HIS

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Mol	Chain	Res	Type
1	A	252	HIS
1	A	274	ASN
1	A	279	HIS
1	A	339	GLN
1	A	341	GLN
2	B	22	GLN
2	B	62	ASN
2	B	225	ASN
2	B	248	ASN
2	B	277	HIS
2	B	342	ASN
2	B	343	GLN
2	B	351	ASN
2	B	356	ASN
2	B	393	ASN
2	B	421	GLN
2	B	429	ASN
3	C	9	HIS
3	C	16	ASN
3	C	17	ASN
3	C	73	ASN
3	C	82	ASN
3	C	86	ASN
3	C	138	GLN
3	C	222	HIS
3	C	261	ASN
3	C	313	GLN
3	C	332	ASN
3	C	342	GLN
3	C	353	GLN
4	D	35	GLN
4	D	156	GLN
4	D	181	GLN
4	D	200	HIS
5	E	9	ASN
5	E	57	GLN
5	E	86	ASN
5	E	164	HIS
6	F	69	ASN
7	G	64	GLN
7	G	79	ASN
8	H	75	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

5.6 Ligand geometry ⓘ

6 ligands 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	$\# Z > 2$
11	HEM	C	381	3	30,50,50	3.42	14 (46%)	24,82,82	2.51	13 (54%)
11	HEM	C	382	3	30,50,50	3.25	9 (30%)	24,82,82	2.80	11 (45%)
13	SIG	C	383	-	32,36,36	1.59	5 (15%)	34,50,50	2.06	7 (20%)
14	AMY	C	384	-	39,39,39	3.89	16 (41%)	33,53,53	4.08	10 (30%)
11	HEM	D	242	4	30,50,50	2.73	10 (33%)	24,82,82	4.33	9 (37%)
12	FES	E	197	5	0,4,4	0.00	-	0,4,4	0.00	-

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
11	HEM	C	381	3	-	0/10/54/54	0/0/8/8
11	HEM	C	382	3	-	0/10/54/54	0/0/8/8
13	SIG	C	383	-	-	0/29/30/30	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	AMY	C	384	-	-	1/35/52/52	0/1/2/2
11	HEM	D	242	4	-	0/10/54/54	0/0/8/8
12	FES	E	197	5	-	0/0/4/4	0/1/1/1

All (54) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	D	242	HEM	C3B-C4B	-8.31	1.44	1.51
11	C	382	HEM	C3B-CAB	-8.06	1.36	1.51
11	C	381	HEM	C2D-C3D	-7.89	1.30	1.54
11	C	381	HEM	C3B-CAB	-7.76	1.36	1.51
14	C	384	AMY	C27-C11	-7.61	1.33	1.51
11	C	382	HEM	C3B-C4B	-7.50	1.45	1.51
11	D	242	HEM	C2D-C3D	-6.82	1.34	1.54
11	C	382	HEM	C3C-CAC	-6.67	1.38	1.51
11	C	382	HEM	C2D-C3D	-6.59	1.34	1.54
11	C	382	HEM	C3D-C4D	-6.50	1.43	1.51
11	C	381	HEM	C3C-CAC	-6.30	1.39	1.51
11	C	381	HEM	C3B-C4B	-5.72	1.46	1.51
11	C	381	HEM	C3D-C4D	-5.11	1.45	1.51
11	C	382	HEM	C2C-C1C	-4.63	1.43	1.52
11	D	242	HEM	C3D-C4D	-4.34	1.46	1.51
14	C	384	AMY	C26-C10	-4.28	1.41	1.51
14	C	384	AMY	C8-N1	-4.11	1.28	1.34
11	C	381	HEM	FE-NB	-4.06	1.76	1.97
11	C	381	HEM	FE-NC	-3.82	1.80	1.95
11	D	242	HEM	C2C-C1C	-3.50	1.45	1.52
11	C	382	HEM	C2A-C3A	-3.18	1.28	1.37
11	C	382	HEM	FE-ND	-2.74	1.83	1.97
11	D	242	HEM	C2A-C3A	-2.45	1.30	1.37
11	C	381	HEM	C2C-C1C	-2.43	1.48	1.52
11	C	382	HEM	C1A-CHA	-2.29	1.33	1.39
11	C	381	HEM	C2B-C1B	-2.20	1.44	1.51
11	C	381	HEM	C4A-CHB	-2.17	1.33	1.39
11	C	381	HEM	C2D-C1D	-2.14	1.44	1.51
11	C	381	HEM	C2A-C3A	-2.12	1.31	1.37
11	D	242	HEM	C2B-C1B	-2.09	1.45	1.51
14	C	384	AMY	C4-C3	2.12	1.43	1.38
11	D	242	HEM	C4C-NC	2.13	1.38	1.36
13	C	383	SIG	O7-C3	2.32	1.40	1.36
14	C	384	AMY	O5-C10	2.42	1.50	1.46
11	D	242	HEM	C1C-NC	2.70	1.39	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
13	C	383	SIG	C20-C8	2.86	1.54	1.50
14	C	384	AMY	O3-C7	3.12	1.29	1.23
13	C	383	SIG	C1-C2	3.15	1.44	1.40
14	C	384	AMY	C13-C12	3.19	1.59	1.53
14	C	384	AMY	C12-C11	3.24	1.59	1.52
14	C	384	AMY	C6-C1	3.35	1.47	1.41
13	C	383	SIG	O14-C5	3.49	1.43	1.36
14	C	384	AMY	C4-C5	3.74	1.46	1.38
14	C	384	AMY	C15-C13	3.79	1.61	1.54
11	C	381	HEM	C1C-NC	3.97	1.40	1.36
11	D	242	HEM	CBC-CAC	4.05	1.52	1.29
13	C	383	SIG	C10-C9	4.06	1.53	1.41
11	D	242	HEM	CBB-CAB	4.07	1.52	1.29
14	C	384	AMY	O9-C21	5.32	1.38	1.22
14	C	384	AMY	O4-C20	5.99	1.48	1.34
11	C	381	HEM	C4C-NC	6.47	1.44	1.36
14	C	384	AMY	O5-C14	8.47	1.54	1.34
14	C	384	AMY	O7-C20	10.29	1.47	1.21
14	C	384	AMY	O6-C14	12.04	1.51	1.21

All (50) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
14	C	384	AMY	O5-C14-O6	-12.33	107.56	124.19
14	C	384	AMY	O4-C20-O7	-12.10	107.87	124.19
11	D	242	HEM	C3C-CAC-CBC	-11.63	106.61	124.46
11	D	242	HEM	C3B-CAB-CBB	-9.95	109.19	124.46
14	C	384	AMY	O7-C20-C9	-9.60	108.75	125.20
14	C	384	AMY	O8-C21-O9	-6.24	106.92	123.67
14	C	384	AMY	O2-C8-N1	-6.19	118.19	125.84
14	C	384	AMY	O9-C21-C22	-5.84	111.26	124.69
11	D	242	HEM	CAA-C2A-C1A	-5.26	121.30	127.01
11	C	382	HEM	C3B-CAB-CBB	-4.42	117.67	124.46
11	C	381	HEM	C1D-CHD-C4C	-3.91	119.29	125.82
13	C	383	SIG	C39-C36-C32	-3.70	111.94	118.10
11	C	381	HEM	C3C-CAC-CBC	-3.01	119.83	124.46
14	C	384	AMY	O8-C21-C22	-2.85	106.02	111.54
11	C	381	HEM	C3B-CAB-CBB	-2.84	120.09	124.46
14	C	384	AMY	O3-C7-C6	-2.66	115.84	120.95
11	C	381	HEM	CBA-CAA-C2A	-2.64	107.80	112.53
13	C	383	SIG	C9-C10-C4	-2.39	118.04	121.35
11	C	382	HEM	CAA-C2A-C3A	-2.21	122.68	129.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
13	C	383	SIG	C6-C5-C4	-2.06	117.52	120.93
14	C	384	AMY	C2-N1-C8	-2.01	123.50	126.99
13	C	383	SIG	C10-C9-C8	2.02	120.66	117.73
11	C	381	HEM	CMD-C2D-C3D	2.08	123.54	114.35
11	C	382	HEM	CMB-C2B-C3B	2.10	121.76	116.53
11	C	381	HEM	C3B-C4B-NB	2.13	115.70	111.63
13	C	383	SIG	C33-C9-C8	2.21	125.64	122.06
11	C	381	HEM	CBD-CAD-C3D	2.24	120.07	113.55
11	C	381	HEM	CAA-C2A-C1A	2.32	129.53	127.01
13	C	383	SIG	O14-C5-C4	2.34	119.58	115.89
11	C	382	HEM	CMD-C2D-C3D	2.38	124.88	114.35
11	C	382	HEM	C2C-C1C-NC	2.42	114.29	110.21
11	D	242	HEM	C3B-C4B-CHC	2.47	126.64	123.16
11	D	242	HEM	CMB-C2B-C3B	2.74	123.37	116.53
11	C	381	HEM	CMB-C2B-C3B	3.04	124.13	116.53
11	C	381	HEM	CAD-C3D-C2D	3.16	122.29	113.22
11	D	242	HEM	CAD-C3D-C2D	3.31	122.73	113.22
11	C	382	HEM	CBA-CAA-C2A	3.33	118.51	112.53
11	C	381	HEM	C2C-C1C-NC	3.36	115.87	110.21
14	C	384	AMY	C16-C15-C13	3.53	121.20	114.38
11	D	242	HEM	CBD-CAD-C3D	3.53	123.84	113.55
11	C	381	HEM	CMC-C2C-C3C	3.54	125.36	116.53
11	C	382	HEM	CBD-CAD-C3D	3.69	124.30	113.55
11	C	382	HEM	CMC-C2C-C3C	3.90	126.26	116.53
11	C	382	HEM	CAD-C3D-C2D	4.44	126.00	113.22
11	C	382	HEM	CAD-C3D-C4D	5.12	130.52	112.47
11	C	381	HEM	CAD-C3D-C4D	6.17	134.22	112.47
11	D	242	HEM	CAD-C3D-C4D	6.56	135.60	112.47
11	C	382	HEM	CAA-C2A-C1A	6.99	134.60	127.01
13	C	383	SIG	C20-C8-C9	8.99	132.42	120.56
11	D	242	HEM	CBA-CAA-C2A	9.78	130.05	112.53

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
14	C	384	AMY	C11-O4-C20-C9

There are no ring outliers.

6 monomers are involved in 58 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	C	381	HEM	12	0
11	C	382	HEM	11	0
13	C	383	SIG	13	0
14	C	384	AMY	15	0
11	D	242	HEM	6	0
12	E	197	FES	2	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 ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	442/446 (99%)	0.15	13 (2%) 55 39	36, 84, 100, 100	0
2	B	406/422 (96%)	0.41	29 (7%) 19 11	58, 95, 100, 100	0
3	C	379/380 (99%)	-0.14	2 (0%) 91 86	13, 43, 72, 92	0
4	D	241/241 (100%)	-0.03	3 (1%) 81 68	27, 65, 95, 100	0
5	E	196/196 (100%)	0.56	29 (14%) 3 3	32, 95, 100, 100	0
6	F	100/109 (91%)	-0.17	0 100 100	39, 64, 93, 99	0
7	G	78/81 (96%)	-0.19	0 100 100	35, 74, 97, 99	0
8	H	66/78 (84%)	-0.16	1 (1%) 76 62	63, 91, 98, 100	0
9	I	0/33	-	-	-	-
10	J	59/62 (95%)	-0.10	1 (1%) 73 58	56, 71, 95, 100	0
All	All	1967/2048 (96%)	0.12	78 (3%) 42 28	13, 78, 100, 100	0

All (78) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
5	E	117	LEU	5.1
1	A	42	ASP	4.8
2	B	351	ASN	4.4
5	E	97	PHE	4.3
1	A	194	ARG	4.2
2	B	46	THR	4.1
5	E	95	PRO	4.0
5	E	112	VAL	3.9
1	A	132	ASP	3.7
2	B	206	LEU	3.6
5	E	114	VAL	3.6
2	B	223	LEU	3.4
5	E	76	ILE	3.4
5	E	109	GLU	3.3

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Mol	Chain	Res	Type	RSRZ
2	B	100	SER	3.2
5	E	116	GLN	3.2
5	E	113	GLU	3.2
10	J	61	ASN	3.2
4	D	48	TYR	3.2
1	A	69	ASN	3.1
2	B	208	GLY	3.1
5	E	110	ALA	3.0
5	E	132	TRP	2.9
5	E	122	HIS	2.9
4	D	9	SER	2.8
5	E	118	ARG	2.8
5	E	98	VAL	2.8
2	B	35	ILE	2.8
5	E	167	ALA	2.7
5	E	121	GLN	2.7
2	B	199	PHE	2.7
4	D	148	TYR	2.7
5	E	124	LEU	2.6
2	B	346	THR	2.6
2	B	421	GLN	2.6
3	C	380	TYR	2.6
5	E	133	VAL	2.6
5	E	120	PRO	2.6
2	B	47	ILE	2.6
2	B	350	GLY	2.6
1	A	363	ASN	2.5
2	B	33	LEU	2.5
5	E	191	ASP	2.5
5	E	96	LEU	2.5
2	B	209	LEU	2.4
1	A	41	ILE	2.4
1	A	34	THR	2.4
2	B	309	VAL	2.4
2	B	229	GLY	2.4
1	A	6	GLN	2.4
2	B	38	LEU	2.4
1	A	197	LEU	2.3
2	B	177	TYR	2.3
5	E	129	LYS	2.3
3	C	269	ILE	2.3
5	E	134	ILE	2.3

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Mol	Chain	Res	Type	RSRZ
5	E	149	ASN	2.3
1	A	101	ALA	2.3
2	B	205	ALA	2.3
2	B	204	MET	2.2
2	B	41	TYR	2.2
2	B	27	THR	2.2
8	H	74	PHE	2.2
5	E	130	PRO	2.1
2	B	358	GLN	2.1
2	B	225	ASN	2.1
2	B	210	GLY	2.1
2	B	198	HIS	2.1
1	A	23	VAL	2.1
2	B	226	ILE	2.1
1	A	43	ALA	2.1
1	A	22	GLY	2.0
5	E	83	GLU	2.0
5	E	128	LYS	2.0
5	E	89	PHE	2.0
2	B	274	VAL	2.0
2	B	125	ASN	2.0
5	E	87	MET	2.0

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

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

6.3 Carbohydrates [i](#)

There are no carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. 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	LLDF	B-factors(\AA^2)	Q<0.9
13	SIG	C	383	35/35	0.91	0.45	1.49	17,37,61,71	0
14	AMY	C	384	38/38	0.93	0.32	0.94	15,37,60,64	0
11	HEM	C	381	43/43	0.97	0.30	0.77	22,34,42,44	0
11	HEM	C	382	43/43	0.98	0.29	0.49	22,34,43,47	0
12	FES	E	197	4/4	0.98	0.20	-0.39	71,84,87,88	0
11	HEM	D	242	43/43	0.98	0.25	-0.51	34,40,53,61	0

6.5 Other polymers [i](#)

There are no such residues in this entry.