



Full wwPDB EM Validation Report ⓘ

Jul 15, 2025 – 10:33 AM JST

PDB ID : 8HAT / pdb_00008hat
EMDB ID : EMD-34608
Title : NARROW LEAF 1-open from Japonica
Authors : Zhang, S.J.; He, Y.J.; Wang, N.; Zhang, W.J.; Liu, C.M.
Deposited on : 2022-10-26
Resolution : 3.03 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : **FAILED**
MolProbity : 4-5-2 with Phenix2.0rc1
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : **FAILED**
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.44

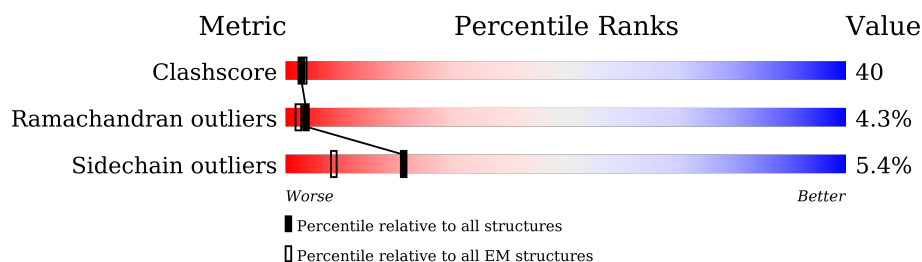
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.03 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)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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

Mol	Chain	Length	Quality of chain
1	A	409	
1	B	409	
1	C	409	
1	D	409	
1	E	409	
1	F	409	

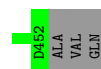
2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 16967 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

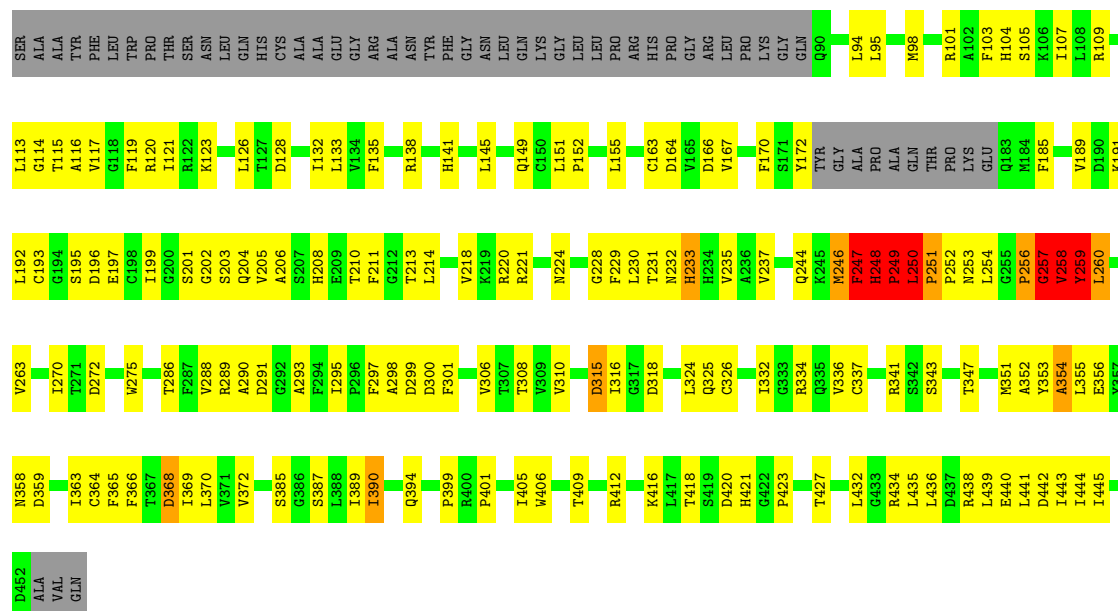
- Molecule 1 is a protein called Protein NARROW LEAF 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	F	396	Total	C	N	O	S	0	0
			3051	1935	534	570	12		
1	D	353	Total	C	N	O	S	0	0
			2714	1720	469	514	11		
1	E	353	Total	C	N	O	S	0	0
			2714	1720	469	514	11		
1	A	399	Total	C	N	O	S	0	0
			3072	1948	538	574	12		
1	B	353	Total	C	N	O	S	0	0
			2714	1720	469	514	11		
1	C	352	Total	C	N	O	S	0	0
			2702	1711	468	512	11		



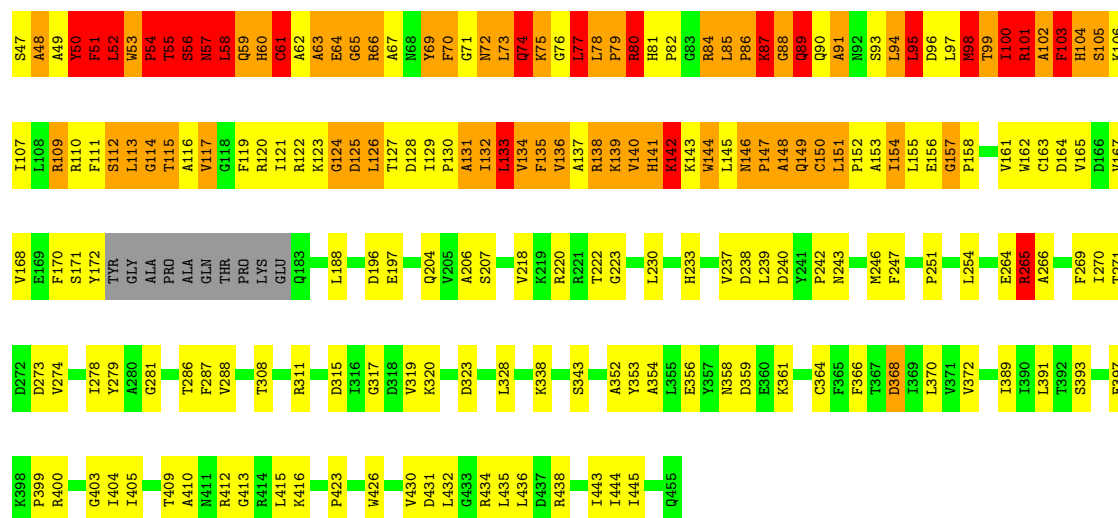
• Molecule 1: Protein NARROW LEAF 1

Chain E: 47% 35% 14%



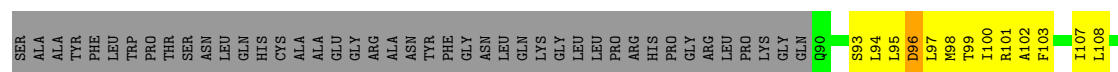
• Molecule 1: Protein NARROW LEAF 1

Chain A: 48% 31% 13% 5%



• Molecule 1: Protein NARROW LEAF 1

Chain B: 40% 44% 14%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C2	Depositor
Number of particles used	330894	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION; CTF amplitude correction was performed following 3D reconstruction	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	22500	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor

5 Model quality

5.1 Standard geometry

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	0.93	17/3139 (0.5%)	1.09	31/4261 (0.7%)
1	B	0.33	1/2769 (0.0%)	0.92	8/3758 (0.2%)
1	C	0.33	1/2756 (0.0%)	0.80	7/3740 (0.2%)
1	D	0.27	0/2769	0.76	1/3758 (0.0%)
1	E	0.31	0/2769	0.92	15/3758 (0.4%)
1	F	0.76	15/3118 (0.5%)	1.11	36/4232 (0.9%)
All	All	0.57	34/17320 (0.2%)	0.95	98/23507 (0.4%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	B	0	3
1	D	0	2
1	E	0	2
1	F	0	1
All	All	0	9

All (34) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	52	LEU	C-O	-10.95	1.10	1.24
1	B	152	PRO	CG-CD	-9.99	1.16	1.50
1	A	55	THR	CA-CB	9.33	1.64	1.52
1	A	101	ARG	CA-C	-9.14	1.40	1.52
1	F	57	ASN	CA-C	-8.85	1.43	1.53
1	A	50	TYR	CA-C	-8.48	1.41	1.52
1	F	51	PHE	C-O	-8.18	1.14	1.24
1	A	51	PHE	N-CA	7.92	1.56	1.46
1	A	95	LEU	CA-C	-7.17	1.45	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	52	LEU	CA-C	-6.95	1.43	1.53
1	A	51	PHE	C-O	-6.89	1.15	1.24
1	F	265	ARG	CA-C	-6.71	1.44	1.52
1	A	55	THR	CA-C	6.62	1.61	1.52
1	A	54	PRO	CA-C	6.60	1.61	1.52
1	C	259	TYR	CA-C	6.56	1.62	1.53
1	F	59	GLN	CA-C	6.55	1.61	1.52
1	A	59	GLN	N-CA	6.55	1.54	1.46
1	A	99	THR	CA-C	-6.38	1.46	1.53
1	F	50	TYR	N-CA	6.22	1.54	1.46
1	F	58	LEU	N-CA	-6.11	1.38	1.46
1	F	49	ALA	CA-C	6.10	1.60	1.52
1	A	57	ASN	N-CA	5.78	1.53	1.46
1	A	50	TYR	CA-CB	-5.75	1.43	1.53
1	F	49	ALA	C-O	5.72	1.31	1.24
1	F	50	TYR	C-O	-5.72	1.16	1.24
1	A	141	HIS	CA-C	-5.71	1.45	1.53
1	F	241	TYR	CA-C	5.63	1.59	1.52
1	A	265	ARG	C-O	-5.54	1.17	1.23
1	F	265	ARG	C-O	-5.52	1.17	1.23
1	F	49	ALA	C-N	5.26	1.41	1.33
1	F	265	ARG	CA-CB	-5.15	1.45	1.53
1	A	59	GLN	CA-C	5.12	1.59	1.52
1	A	50	TYR	C-O	-5.09	1.17	1.24
1	F	60	HIS	CA-C	-5.06	1.47	1.52

All (98) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	251	PRO	CA-C-N	-21.28	93.24	119.84
1	E	251	PRO	C-N-CA	-21.28	93.24	119.84
1	A	102	ALA	N-CA-C	-20.14	89.33	111.28
1	F	64	GLU	N-CA-C	-17.46	92.39	114.56
1	B	129	ILE	CA-C-N	-15.81	103.49	119.78
1	B	129	ILE	C-N-CA	-15.81	103.49	119.78
1	B	152	PRO	N-CD-CG	-14.26	81.81	103.20
1	A	95	LEU	N-CA-C	-14.23	94.01	112.93
1	F	235	VAL	N-CA-C	-13.83	93.06	113.39
1	F	244	GLN	N-CA-C	13.06	130.01	112.90
1	C	259	TYR	N-CA-C	11.92	125.91	110.53
1	A	52	LEU	N-CA-C	11.30	127.73	109.76
1	A	101	ARG	N-CA-C	-10.55	88.33	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	55	THR	N-CA-CB	10.53	125.51	110.24
1	F	96	ASP	CA-C-N	-10.03	108.23	123.17
1	F	96	ASP	C-N-CA	-10.03	108.23	123.17
1	A	65	GLY	N-CA-C	-9.88	98.61	115.80
1	F	93	SER	N-CA-C	9.88	124.50	108.99
1	A	51	PHE	N-CA-C	9.57	131.19	110.80
1	B	152	PRO	CA-N-CD	-9.34	98.92	112.00
1	F	98	MET	N-CA-C	-8.73	102.43	113.43
1	F	51	PHE	CB-CA-C	-8.67	97.50	110.67
1	A	131	ALA	N-CA-C	8.26	119.52	107.88
1	F	97	LEU	N-CA-C	8.23	124.48	111.81
1	A	98	MET	N-CA-C	-8.09	103.54	113.41
1	C	258	VAL	CA-C-O	-8.06	110.71	120.78
1	F	92	ASN	CA-C-N	-7.94	107.80	121.85
1	F	92	ASN	C-N-CA	-7.94	107.80	121.85
1	B	152	PRO	CA-CB-CG	-7.89	89.51	104.50
1	C	251	PRO	CA-N-CD	-7.78	101.11	112.00
1	F	95	LEU	N-CA-C	-7.39	103.30	111.36
1	F	232	ASN	O-C-N	-7.31	112.86	122.59
1	F	49	ALA	CA-C-N	7.31	135.50	121.54
1	F	49	ALA	C-N-CA	7.31	135.50	121.54
1	F	53	TRP	CB-CA-C	-7.26	95.86	110.17
1	E	251	PRO	C-N-CD	7.19	154.48	125.00
1	C	258	VAL	O-C-N	7.15	131.50	122.57
1	A	50	TYR	N-CA-CB	7.13	122.55	110.49
1	A	59	GLN	N-CA-C	6.98	125.67	110.80
1	F	50	TYR	N-CA-C	6.93	125.56	110.80
1	F	55	THR	N-CA-C	-6.92	103.34	112.34
1	A	51	PHE	CA-C-N	6.91	131.38	121.50
1	A	51	PHE	C-N-CA	6.91	131.38	121.50
1	A	50	TYR	CA-C-O	-6.88	110.67	120.51
1	E	247	PHE	N-CA-C	6.86	118.98	108.42
1	F	92	ASN	N-CA-C	6.82	125.33	110.80
1	E	368	ASP	CB-CA-C	-6.73	108.80	116.54
1	F	244	GLN	CA-C-N	-6.68	111.11	122.33
1	F	244	GLN	C-N-CA	-6.68	111.11	122.33
1	F	60	HIS	N-CA-C	6.51	121.34	112.68
1	A	50	TYR	N-CA-C	6.50	124.64	110.80
1	A	49	ALA	N-CA-C	-6.40	97.16	110.80
1	A	67	ALA	N-CA-C	-6.39	104.80	112.59
1	F	92	ASN	O-C-N	-6.38	114.10	122.59
1	A	144	TRP	N-CA-C	-6.37	105.89	113.21

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	59	GLN	CB-CA-C	6.36	123.08	110.42
1	E	251	PRO	N-CA-C	6.28	118.36	110.70
1	F	60	HIS	N-CA-CB	6.20	120.75	110.33
1	A	157	GLY	N-CA-C	6.19	124.97	112.34
1	A	150	CYS	N-CA-C	-6.15	93.39	107.48
1	C	258	VAL	CA-C-N	6.10	134.50	121.45
1	C	258	VAL	C-N-CA	6.10	134.50	121.45
1	E	257	GLY	CA-C-N	6.08	132.92	121.97
1	E	257	GLY	C-N-CA	6.08	132.92	121.97
1	E	259	TYR	N-CA-C	5.88	123.33	110.80
1	B	277	GLY	N-CA-C	-5.88	106.36	116.01
1	D	147	PRO	CA-N-CD	-5.81	103.86	112.00
1	F	58	LEU	N-CA-C	-5.79	98.46	110.80
1	A	71	GLY	N-CA-C	-5.79	106.03	115.46
1	F	94	LEU	N-CA-C	-5.75	105.09	111.36
1	F	98	MET	CA-C-N	-5.75	110.56	121.54
1	F	98	MET	C-N-CA	-5.75	110.56	121.54
1	F	65	GLY	N-CA-C	-5.74	108.19	115.31
1	A	55	THR	CA-CB-OG1	5.71	118.17	109.60
1	F	51	PHE	N-CA-C	5.69	117.35	109.15
1	A	55	THR	N-CA-C	-5.57	98.64	108.23
1	A	49	ALA	CA-C-N	5.47	131.99	121.54
1	A	49	ALA	C-N-CA	5.47	131.99	121.54
1	B	248	HIS	C-N-CD	-5.44	102.71	125.00
1	A	240	ASP	N-CA-C	-5.42	106.53	114.39
1	A	121	ILE	N-CA-C	-5.40	100.67	108.87
1	E	364	CYS	CA-C-N	-5.39	115.11	121.90
1	E	364	CYS	C-N-CA	-5.39	115.11	121.90
1	B	147	PRO	CA-N-CD	-5.38	104.47	112.00
1	F	67	ALA	N-CA-C	-5.36	106.33	112.92
1	A	151	LEU	CA-C-N	-5.35	114.22	119.99
1	A	151	LEU	C-N-CA	-5.35	114.22	119.99
1	A	94	LEU	N-CA-C	-5.28	105.54	112.41
1	C	247	PHE	N-CA-C	5.26	116.41	108.46
1	F	188	LEU	N-CA-C	-5.21	106.45	114.16
1	E	258	VAL	N-CA-CB	5.19	119.80	111.23
1	F	436	LEU	N-CA-C	-5.18	106.81	113.02
1	E	248	HIS	CA-C-N	5.11	126.23	119.84
1	E	248	HIS	C-N-CA	5.11	126.23	119.84
1	E	246	MET	O-C-N	-5.10	116.73	123.21
1	A	188	LEU	N-CA-C	-5.10	106.62	114.16
1	F	63	ALA	N-CA-C	-5.08	99.98	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	68	ASN	N-CA-C	-5.08	106.86	113.16

There are no chirality outliers.

All (9) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	52	LEU	Mainchain
1	B	248	HIS	Peptide
1	B	366	PHE	Peptide
1	B	405	ILE	Peptide
1	D	248	HIS	Peptide
1	D	371	VAL	Peptide
1	E	248	HIS	Peptide
1	E	256	PRO	Mainchain
1	F	232	ASN	Mainchain

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3072	0	3040	354	0
1	B	2714	0	2689	186	0
1	C	2702	0	2680	182	0
1	D	2714	0	2688	212	0
1	E	2714	0	2689	217	0
1	F	3051	0	3018	294	0
All	All	16967	0	16804	1345	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 40.

All (1345) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:251:PRO:HG3	1:E:254:LEU:CD1	1.29	1.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:251:PRO:CD	1:E:254:LEU:HB2	1.16	1.60
1:F:244:GLN:CB	1:A:56:SER:HB2	1.33	1.58
1:D:245:LYS:HD2	1:D:259:TYR:CE2	1.06	1.57
1:D:245:LYS:CD	1:D:259:TYR:CE2	1.83	1.57
1:F:242:PRO:HB2	1:A:54:PRO:CB	1.32	1.57
1:F:244:GLN:HB2	1:A:56:SER:CB	1.11	1.55
1:C:247:PHE:CE1	1:C:251:PRO:HA	1.41	1.54
1:E:247:PHE:CA	1:E:260:LEU:CD1	1.84	1.51
1:C:247:PHE:CZ	1:C:251:PRO:CA	1.96	1.45
1:F:242:PRO:CB	1:A:54:PRO:HB3	0.97	1.44
1:C:247:PHE:CE1	1:C:251:PRO:CA	1.99	1.41
1:E:247:PHE:CE2	1:E:252:PRO:HD3	1.55	1.41
1:F:95:LEU:CD2	1:F:324:LEU:O	1.67	1.41
1:D:245:LYS:CA	1:D:259:TYR:OH	1.64	1.41
1:E:251:PRO:HG2	1:E:254:LEU:N	1.10	1.40
1:E:251:PRO:CG	1:E:254:LEU:CB	1.99	1.40
1:D:298:ALA:HB3	1:D:301:PHE:CD1	1.55	1.39
1:E:247:PHE:HA	1:E:260:LEU:CD1	0.92	1.38
1:E:251:PRO:CG	1:E:254:LEU:HB2	1.52	1.36
1:E:251:PRO:HG3	1:E:254:LEU:CG	1.55	1.35
1:C:247:PHE:CZ	1:C:251:PRO:HA	1.53	1.34
1:F:242:PRO:CB	1:A:54:PRO:CB	1.92	1.34
1:C:248:HIS:ND1	1:C:249:PRO:HD3	1.40	1.33
1:C:247:PHE:CZ	1:C:251:PRO:CB	2.11	1.31
1:D:259:TYR:O	1:D:301:PHE:CD2	1.81	1.30
1:E:248:HIS:ND1	1:E:249:PRO:HD3	1.46	1.30
1:F:94:LEU:O	1:F:98:MET:HG2	1.21	1.29
1:C:265:ARG:HG2	1:C:439:LEU:CD1	1.61	1.28
1:D:298:ALA:CB	1:D:301:PHE:CE1	2.18	1.27
1:C:247:PHE:CE1	1:C:251:PRO:CB	2.16	1.27
1:E:251:PRO:CD	1:E:254:LEU:CB	2.10	1.26
1:E:247:PHE:CA	1:E:260:LEU:HD11	1.54	1.25
1:D:302:ASP:OD1	1:D:305:THR:HG23	1.17	1.24
1:E:251:PRO:CG	1:E:254:LEU:CD1	2.15	1.22
1:E:247:PHE:CE2	1:E:252:PRO:CD	2.23	1.21
1:F:245:LYS:HD3	1:A:56:SER:OG	1.33	1.21
1:E:247:PHE:CZ	1:E:252:PRO:CD	2.23	1.21
1:E:251:PRO:CG	1:E:254:LEU:H	1.52	1.21
1:E:251:PRO:CG	1:E:254:LEU:N	2.04	1.20
1:C:248:HIS:ND1	1:C:249:PRO:CD	2.04	1.20
1:C:294:PHE:O	1:C:295:ILE:HG13	1.41	1.19

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:86:PRO:HB2	1:F:162:TRP:CD1	1.77	1.18
1:C:247:PHE:CE1	1:C:251:PRO:HB3	1.79	1.16
1:F:97:LEU:HD12	1:F:100:ILE:HD12	1.17	1.16
1:F:95:LEU:HD21	1:F:324:LEU:O	0.97	1.15
1:E:247:PHE:HA	1:E:260:LEU:HD13	1.24	1.15
1:D:298:ALA:HB3	1:D:301:PHE:CE1	1.77	1.14
1:C:265:ARG:CG	1:C:439:LEU:HD13	1.78	1.14
1:E:251:PRO:HG3	1:E:254:LEU:CB	1.70	1.13
1:F:94:LEU:O	1:F:98:MET:CG	1.97	1.13
1:D:245:LYS:HD2	1:D:259:TYR:CZ	1.82	1.13
1:E:251:PRO:HG3	1:E:254:LEU:HD13	1.15	1.13
1:C:265:ARG:CG	1:C:439:LEU:CD1	2.28	1.12
1:E:247:PHE:HB3	1:E:259:TYR:HA	1.20	1.11
1:E:251:PRO:CG	1:E:254:LEU:HD13	1.75	1.11
1:E:251:PRO:HD2	1:E:254:LEU:HB2	1.26	1.11
1:F:97:LEU:CD1	1:F:100:ILE:HD12	1.79	1.11
1:E:248:HIS:ND1	1:E:249:PRO:CD	2.12	1.11
1:C:245:LYS:HE2	1:C:259:TYR:CE2	1.85	1.10
1:E:251:PRO:HG2	1:E:254:LEU:CA	1.80	1.10
1:E:247:PHE:CA	1:E:260:LEU:HD12	1.64	1.09
1:E:251:PRO:HD3	1:E:254:LEU:HB2	1.28	1.09
1:D:259:TYR:O	1:D:301:PHE:CE2	2.06	1.09
1:F:244:GLN:CB	1:A:56:SER:CB	2.03	1.09
1:F:242:PRO:HB3	1:A:54:PRO:HB3	1.14	1.08
1:D:246:MET:N	1:D:259:TYR:HE1	1.51	1.08
1:F:244:GLN:CG	1:A:55:THR:O	2.01	1.08
1:D:302:ASP:OD1	1:D:305:THR:CG2	2.03	1.06
1:D:245:LYS:HA	1:D:259:TYR:CZ	1.91	1.05
1:A:100:ILE:HA	1:A:103:PHE:HB2	1.35	1.05
1:E:256:PRO:O	1:E:257:GLY:O	1.74	1.05
1:F:53:TRP:HZ3	1:A:237:VAL:HG12	1.16	1.04
1:E:247:PHE:CZ	1:E:252:PRO:HD2	1.92	1.04
1:A:103:PHE:CE1	1:A:157:GLY:HA2	1.93	1.04
1:E:247:PHE:HA	1:E:260:LEU:HD12	1.06	1.04
1:C:248:HIS:HB3	1:C:249:PRO:HD2	1.38	1.04
1:E:251:PRO:O	1:E:252:PRO:C	1.88	1.03
1:A:100:ILE:CA	1:A:103:PHE:HB2	1.87	1.03
1:D:245:LYS:HD2	1:D:259:TYR:CD2	1.93	1.03
1:F:244:GLN:CB	1:A:55:THR:O	2.07	1.02
1:F:244:GLN:HB2	1:A:56:SER:HB3	1.40	1.02
1:C:247:PHE:O	1:C:248:HIS:O	1.76	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:247:PHE:CZ	1:E:252:PRO:HD3	1.88	1.01
1:D:245:LYS:HD3	1:D:259:TYR:CE2	1.95	1.01
1:E:251:PRO:CG	1:E:254:LEU:CA	2.38	1.01
1:D:245:LYS:CD	1:D:259:TYR:CZ	2.41	1.01
1:E:247:PHE:C	1:E:260:LEU:HD11	1.86	1.01
1:C:218:VAL:HG21	1:C:294:PHE:CE1	1.95	1.00
1:D:245:LYS:CD	1:D:259:TYR:HE2	1.40	1.00
1:A:100:ILE:C	1:A:103:PHE:HB2	1.87	0.99
1:A:51:PHE:HE2	1:A:239:LEU:HD13	1.26	0.98
1:D:302:ASP:CG	1:D:305:THR:HG23	1.86	0.98
1:C:247:PHE:HZ	1:C:251:PRO:HB2	1.25	0.98
1:C:218:VAL:HG21	1:C:294:PHE:CD1	1.98	0.97
1:F:92:ASN:HB2	1:F:327:PRO:HA	1.47	0.97
1:F:94:LEU:HD12	1:F:324:LEU:HA	1.48	0.96
1:F:245:LYS:HD3	1:A:56:SER:HG	1.05	0.96
1:A:55:THR:O	1:A:56:SER:HB2	1.66	0.96
1:E:251:PRO:CB	1:E:254:LEU:HD13	1.96	0.95
1:C:248:HIS:CB	1:C:249:PRO:HD2	1.97	0.95
1:A:53:TRP:HE1	1:A:56:SER:N	1.65	0.95
1:E:202:GLY:H	1:E:214:LEU:HB3	1.29	0.94
1:F:244:GLN:HB3	1:A:56:SER:HB2	1.48	0.94
1:E:248:HIS:N	1:E:260:LEU:HD11	1.82	0.94
1:F:55:THR:OG1	1:A:243:ASN:ND2	2.00	0.94
1:F:242:PRO:HG2	1:A:55:THR:H	1.32	0.94
1:D:246:MET:N	1:D:259:TYR:CE1	2.28	0.94
1:E:247:PHE:HA	1:E:260:LEU:HD11	0.97	0.94
1:D:260:LEU:CD1	1:D:301:PHE:HB3	1.97	0.93
1:A:104:HIS:HB2	1:A:155:LEU:HD23	1.49	0.93
1:C:247:PHE:HE1	1:C:251:PRO:HB3	1.20	0.93
1:F:95:LEU:HD11	1:F:325:GLN:CD	1.94	0.93
1:F:245:LYS:CD	1:A:56:SER:OG	2.16	0.93
1:B:130:PRO:HG3	1:B:328:LEU:HD13	1.48	0.93
1:F:53:TRP:CZ3	1:A:237:VAL:HG12	2.02	0.93
1:F:53:TRP:H	1:F:54:PRO:HD3	1.33	0.92
1:C:247:PHE:HZ	1:C:251:PRO:CB	1.62	0.92
1:F:86:PRO:HB2	1:F:162:TRP:HD1	1.25	0.92
1:F:94:LEU:CD1	1:F:324:LEU:HA	2.00	0.91
1:F:242:PRO:HB2	1:A:54:PRO:HB2	1.51	0.91
1:C:247:PHE:HE1	1:C:251:PRO:CB	1.73	0.91
1:C:265:ARG:HG2	1:C:439:LEU:HD13	0.91	0.91
1:E:247:PHE:CB	1:E:260:LEU:HD12	2.01	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:207:SER:HB2	1:F:246:MET:HE3	1.51	0.91
1:D:259:TYR:O	1:D:301:PHE:HD2	1.37	0.90
1:A:86:PRO:HG2	1:A:162:TRP:HB3	1.53	0.90
1:F:240:ASP:O	1:F:241:TYR:HB2	1.72	0.90
1:D:298:ALA:CB	1:D:301:PHE:CD1	2.43	0.90
1:E:250:LEU:HB3	1:E:251:PRO:CD	2.02	0.90
1:F:235:VAL:HG12	1:F:246:MET:HE1	1.51	0.89
1:E:259:TYR:CZ	1:E:298:ALA:HB1	2.08	0.89
1:D:245:LYS:HA	1:D:259:TYR:OH	0.71	0.88
1:F:244:GLN:HB2	1:A:56:SER:OG	1.74	0.88
1:E:247:PHE:CB	1:E:259:TYR:HA	2.03	0.87
1:C:248:HIS:CG	1:C:249:PRO:HD2	2.10	0.87
1:E:247:PHE:HZ	1:E:252:PRO:HD2	1.36	0.86
1:D:260:LEU:HA	1:D:301:PHE:CD2	2.10	0.86
1:A:157:GLY:HA3	1:A:161:VAL:HG23	1.56	0.86
1:E:247:PHE:HB3	1:E:259:TYR:CA	2.05	0.86
1:A:286:THR:HA	1:A:364:CYS:HB2	1.57	0.86
1:C:265:ARG:CG	1:C:439:LEU:HD11	2.06	0.86
1:A:53:TRP:HE1	1:A:56:SER:H	1.19	0.85
1:F:71:GLY:C	1:F:75:LYS:HG3	2.02	0.85
1:F:60:HIS:O	1:F:60:HIS:ND1	2.08	0.85
1:A:113:LEU:HB3	1:A:135:PHE:CE1	2.12	0.84
1:E:247:PHE:HZ	1:E:252:PRO:CD	1.88	0.84
1:D:260:LEU:HA	1:D:301:PHE:HD2	1.42	0.84
1:F:69:TYR:HE2	1:F:102:ALA:HB1	1.41	0.84
1:D:245:LYS:CA	1:D:259:TYR:CZ	2.55	0.84
1:C:245:LYS:HE2	1:C:259:TYR:CD2	2.12	0.83
1:E:250:LEU:HD12	1:E:250:LEU:H	1.42	0.83
1:A:109:ARG:NH1	1:A:358:ASN:HB2	1.92	0.83
1:C:248:HIS:CG	1:C:249:PRO:CD	2.62	0.83
1:A:103:PHE:O	1:A:105:SER:N	2.11	0.83
1:C:247:PHE:HB3	1:C:259:TYR:HA	1.59	0.83
1:C:248:HIS:ND1	1:C:249:PRO:HD2	1.93	0.83
1:A:101:ARG:HG3	1:A:102:ALA:N	1.95	0.82
1:F:57:ASN:HB2	1:A:47:SER:N	1.94	0.82
1:D:260:LEU:HD12	1:D:301:PHE:HB3	1.59	0.82
1:E:121:ILE:H	1:E:133:LEU:HD11	1.44	0.82
1:A:97:LEU:HD21	1:A:131:ALA:O	1.80	0.82
1:F:244:GLN:HB3	1:A:55:THR:O	1.78	0.81
1:F:244:GLN:HG2	1:F:245:LYS:HG2	1.60	0.81
1:E:247:PHE:HE2	1:E:252:PRO:CD	1.88	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:53:TRP:H	1:F:54:PRO:CD	1.93	0.81
1:F:95:LEU:HD23	1:F:95:LEU:H	1.45	0.80
1:D:138:ARG:NE	1:E:250:LEU:HD11	1.96	0.80
1:A:109:ARG:CZ	1:A:358:ASN:HD22	1.95	0.80
1:F:71:GLY:H	1:F:75:LYS:HB2	1.47	0.80
1:C:265:ARG:HG3	1:C:439:LEU:HD11	1.63	0.80
1:D:298:ALA:HB1	1:D:301:PHE:CE1	2.14	0.80
1:C:248:HIS:HB3	1:C:249:PRO:CD	2.12	0.80
1:F:242:PRO:CG	1:A:54:PRO:HB3	2.06	0.79
1:A:94:LEU:HD21	1:A:117:VAL:HG21	1.65	0.79
1:F:86:PRO:HG2	1:F:162:TRP:HB3	1.63	0.79
1:E:289:ARG:HB3	1:E:406:TRP:HE1	1.46	0.79
1:C:248:HIS:CB	1:C:249:PRO:CD	2.59	0.79
1:E:251:PRO:HG3	1:E:254:LEU:HD12	1.59	0.78
1:D:302:ASP:CG	1:D:305:THR:CG2	2.53	0.78
1:E:247:PHE:CB	1:E:260:LEU:CD1	2.60	0.78
1:F:69:TYR:CE2	1:F:102:ALA:HB1	2.18	0.78
1:D:237:VAL:HG21	1:D:263:VAL:HG21	1.65	0.78
1:F:55:THR:HG21	1:A:242:PRO:O	1.83	0.78
1:C:187:GLU:HB3	1:C:191:LYS:HE2	1.64	0.77
1:E:251:PRO:HD2	1:E:254:LEU:CB	1.96	0.77
1:C:199:ILE:HG22	1:C:248:HIS:HE2	1.49	0.77
1:C:115:THR:HG22	1:C:134:VAL:HA	1.66	0.77
1:C:121:ILE:H	1:C:133:LEU:HD11	1.50	0.77
1:F:89:GLN:HB2	1:F:161:VAL:HG12	1.67	0.77
1:A:57:ASN:O	1:A:58:LEU:HB2	1.83	0.77
1:A:87:LYS:O	1:A:88:GLY:C	2.27	0.77
1:C:246:MET:HE1	1:C:295:ILE:HD13	1.64	0.77
1:D:95:LEU:HB2	1:D:278:ILE:HG22	1.67	0.77
1:D:138:ARG:HE	1:E:250:LEU:HD11	1.49	0.77
1:F:75:LYS:HG2	1:F:76:GLY:N	1.99	0.77
1:E:247:PHE:CE2	1:E:252:PRO:HD2	2.13	0.76
1:C:265:ARG:NH1	1:C:267:THR:HB	1.99	0.76
1:D:213:THR:OG1	1:D:385:SER:O	2.03	0.76
1:F:244:GLN:HG3	1:A:55:THR:O	1.82	0.76
1:D:318:ASP:OD1	1:D:319:VAL:N	2.19	0.76
1:E:251:PRO:HD2	1:E:254:LEU:C	2.11	0.76
1:D:259:TYR:C	1:D:301:PHE:CE2	2.63	0.76
1:A:145:LEU:HD23	1:B:256:PRO:HB3	1.66	0.76
1:E:230:LEU:HB2	1:E:293:ALA:HB1	1.67	0.76
1:A:136:VAL:HG21	1:A:167:VAL:HG13	1.68	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:238:ASP:CG	1:F:239:LEU:H	1.89	0.75
1:D:245:LYS:CB	1:D:259:TYR:CZ	2.70	0.75
1:A:136:VAL:CG2	1:A:167:VAL:HG13	2.16	0.75
1:C:219:LYS:HB2	1:C:442:ASP:HB3	1.68	0.75
1:F:244:GLN:HB2	1:A:56:SER:HB2	0.75	0.75
1:E:248:HIS:H	1:E:260:LEU:HD11	1.50	0.75
1:C:317:GLY:N	1:C:399:PRO:O	2.14	0.75
1:C:390:ILE:HA	1:C:401:PRO:HA	1.68	0.75
1:A:109:ARG:HH12	1:A:358:ASN:HB2	1.50	0.75
1:B:275:TRP:CD1	1:B:276:TYR:H	2.05	0.75
1:F:108:LEU:O	1:F:112:SER:OG	2.05	0.74
1:F:236:ALA:HB1	1:F:263:VAL:HG21	1.69	0.74
1:F:53:TRP:HZ3	1:A:237:VAL:CG1	1.99	0.74
1:F:244:GLN:CD	1:A:55:THR:O	2.30	0.74
1:A:103:PHE:HE1	1:A:158:PRO:HD3	1.51	0.74
1:F:431:ASP:OD2	1:F:434:ARG:NH1	2.21	0.73
1:C:202:GLY:H	1:C:214:LEU:HB3	1.53	0.73
1:A:51:PHE:CE2	1:A:239:LEU:HD13	2.18	0.73
1:D:245:LYS:HD3	1:D:259:TYR:HE2	1.35	0.73
1:B:316:ILE:HA	1:B:399:PRO:HD2	1.69	0.73
1:B:289:ARG:HB3	1:B:366:PHE:HB2	1.69	0.73
1:E:189:VAL:O	1:E:341:ARG:NH1	2.22	0.73
1:A:132:ILE:HG12	1:A:163:CYS:SG	2.29	0.73
1:A:135:PHE:C	1:A:135:PHE:CD1	2.64	0.73
1:E:247:PHE:HD2	1:E:259:TYR:N	1.87	0.73
1:A:66:ARG:HA	1:A:279:TYR:CE2	2.23	0.72
1:C:376:ARG:NH2	1:C:419:SER:OG	2.22	0.72
1:F:85:LEU:O	1:F:86:PRO:C	2.29	0.72
1:F:244:GLN:CG	1:A:56:SER:OG	2.36	0.72
1:E:246:MET:O	1:E:260:LEU:HD12	1.89	0.72
1:F:242:PRO:HB3	1:A:54:PRO:CB	1.90	0.72
1:D:100:ILE:HD11	1:D:161:VAL:HG23	1.71	0.72
1:E:250:LEU:CB	1:E:251:PRO:CD	2.66	0.72
1:E:250:LEU:HD12	1:E:250:LEU:N	2.04	0.72
1:E:247:PHE:HD2	1:E:259:TYR:H	1.34	0.72
1:B:233:HIS:HE2	1:B:406:TRP:CD1	2.07	0.72
1:E:250:LEU:HB3	1:E:251:PRO:HD2	1.71	0.72
1:D:404:ILE:HD12	1:D:435:LEU:HD12	1.72	0.72
1:E:316:ILE:HG13	1:E:445:ILE:HD13	1.71	0.72
1:B:274:VAL:O	1:B:438:ARG:NH2	2.23	0.72
1:A:100:ILE:HA	1:A:103:PHE:CB	2.16	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:240:ASP:O	1:F:241:TYR:CB	2.38	0.71
1:E:121:ILE:HG22	1:E:126:LEU:HB3	1.70	0.71
1:F:120:ARG:NH1	1:F:165:VAL:O	2.23	0.71
1:A:86:PRO:O	1:A:87:LYS:C	2.33	0.71
1:B:275:TRP:HD1	1:B:276:TYR:H	1.37	0.71
1:A:55:THR:O	1:A:56:SER:CB	2.38	0.71
1:A:99:THR:C	1:A:100:ILE:HG12	2.15	0.71
1:C:247:PHE:HB3	1:C:259:TYR:CA	2.20	0.71
1:F:66:ARG:HH11	1:F:284:PRO:HA	1.54	0.70
1:D:94:LEU:HG	1:D:328:LEU:HD21	1.73	0.70
1:D:371:VAL:HG12	1:D:427:THR:H	1.57	0.70
1:E:233:HIS:HB3	1:E:291:ASP:HB3	1.72	0.70
1:A:53:TRP:HD1	1:A:54:PRO:N	1.89	0.70
1:A:98:MET:O	1:A:102:ALA:HB2	1.91	0.70
1:C:245:LYS:CE	1:C:259:TYR:CD2	2.74	0.70
1:E:247:PHE:HB3	1:E:260:LEU:HD12	1.72	0.70
1:D:101:ARG:HH22	1:D:117:VAL:HG13	1.57	0.70
1:D:350:VAL:HA	1:D:371:VAL:HA	1.74	0.70
1:D:415:LEU:HD13	1:D:426:TRP:CD1	2.27	0.70
1:E:248:HIS:ND1	1:E:249:PRO:HD2	2.03	0.69
1:E:193:CYS:SG	1:E:341:ARG:NH1	2.65	0.69
1:A:94:LEU:O	1:A:98:MET:HB2	1.92	0.69
1:A:135:PHE:CD1	1:A:170:PHE:HB2	2.26	0.69
1:C:206:ALA:HB3	1:C:247:PHE:O	1.92	0.69
1:F:94:LEU:O	1:F:98:MET:SD	2.51	0.69
1:F:244:GLN:CG	1:A:56:SER:HB2	2.21	0.69
1:A:110:ARG:HG2	1:A:111:PHE:CE1	2.28	0.69
1:C:243:ASN:HD21	1:C:262:ALA:HB1	1.55	0.69
1:D:208:HIS:H	1:D:251:PRO:HG3	1.58	0.69
1:F:51:PHE:HD1	1:F:51:PHE:H	1.38	0.69
1:F:71:GLY:N	1:F:75:LYS:HB2	2.08	0.69
1:F:244:GLN:HG3	1:A:56:SER:OG	1.93	0.69
1:F:250:LEU:HD11	1:E:138:ARG:HG2	1.74	0.69
1:D:371:VAL:HG12	1:D:427:THR:N	2.07	0.69
1:E:232:ASN:HD21	1:E:235:VAL:HG23	1.58	0.69
1:A:60:HIS:CG	1:A:61:CYS:N	2.56	0.69
1:E:272:ASP:HB2	1:E:286:THR:HG21	1.74	0.69
1:C:120:ARG:HA	1:C:133:LEU:HD21	1.74	0.68
1:F:244:GLN:CG	1:A:56:SER:CB	2.71	0.68
1:E:247:PHE:CD2	1:E:259:TYR:N	2.60	0.68
1:F:54:PRO:O	1:A:47:SER:HB2	1.93	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:190:ASP:O	1:F:195:SER:OG	2.11	0.68
1:F:86:PRO:CB	1:F:162:TRP:CD1	2.68	0.68
1:D:288:VAL:HG11	1:D:434:ARG:HH21	1.58	0.68
1:E:251:PRO:CG	1:E:254:LEU:HD12	2.19	0.68
1:A:51:PHE:HE2	1:A:239:LEU:CD1	2.02	0.68
1:C:289:ARG:HG2	1:C:365:PHE:HB3	1.73	0.68
1:F:55:THR:HG22	1:A:48:ALA:O	1.92	0.68
1:D:357:TYR:OH	1:D:365:PHE:N	2.27	0.68
1:E:259:TYR:CE2	1:E:298:ALA:HB1	2.29	0.68
1:E:353:TYR:O	1:E:355:LEU:N	2.26	0.68
1:A:55:THR:HG22	1:A:287:PHE:CE2	2.29	0.68
1:A:53:TRP:NE1	1:A:56:SER:H	1.91	0.68
1:F:93:SER:HB2	1:F:96:ASP:H	1.59	0.67
1:A:103:PHE:CZ	1:A:157:GLY:HA2	2.29	0.67
1:A:77:LEU:HD23	1:A:78:LEU:H	1.58	0.67
1:F:66:ARG:NH1	1:F:284:PRO:HA	2.08	0.67
1:B:229:PHE:HD2	1:B:297:PHE:HE1	1.42	0.67
1:B:93:SER:O	1:B:97:LEU:N	2.27	0.67
1:B:289:ARG:HB2	1:B:365:PHE:CD1	2.30	0.67
1:B:350:VAL:HA	1:B:371:VAL:HA	1.75	0.67
1:C:236:ALA:O	1:C:244:GLN:NE2	2.24	0.67
1:F:234:HIS:HA	1:F:237:VAL:O	1.94	0.67
1:D:301:PHE:HD1	1:D:301:PHE:H	1.40	0.67
1:A:317:GLY:N	1:A:399:PRO:O	2.28	0.67
1:C:247:PHE:CB	1:C:259:TYR:HA	2.23	0.67
1:D:246:MET:H	1:D:259:TYR:HE1	0.76	0.67
1:C:287:PHE:O	1:C:288:VAL:HG23	1.95	0.67
1:C:291:ASP:OD1	1:C:406:TRP:NE1	2.27	0.67
1:D:232:ASN:HB3	1:D:385:SER:HB3	1.77	0.66
1:D:245:LYS:CE	1:D:259:TYR:HE2	2.07	0.66
1:A:80:ARG:HH12	1:A:152:PRO:HG2	1.58	0.66
1:A:113:LEU:HG	1:A:135:PHE:HZ	1.60	0.66
1:A:53:TRP:CD1	1:A:54:PRO:N	2.63	0.66
1:A:86:PRO:HG2	1:A:162:TRP:CB	2.24	0.66
1:A:66:ARG:HG3	1:A:66:ARG:O	1.95	0.66
1:D:259:TYR:C	1:D:301:PHE:HE2	2.02	0.66
1:C:230:LEU:HB2	1:C:293:ALA:HB1	1.78	0.66
1:A:136:VAL:HG12	1:A:137:ALA:H	1.59	0.66
1:E:251:PRO:HB3	1:E:254:LEU:HD13	1.78	0.65
1:D:357:TYR:HE1	1:D:366:PHE:HB3	1.61	0.65
1:E:94:LEU:HG	1:E:324:LEU:HB2	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:103:PHE:CE1	1:A:158:PRO:HD3	2.31	0.65
1:F:66:ARG:HG2	1:F:279:TYR:CE2	2.31	0.65
1:F:85:LEU:HG	1:F:86:PRO:O	1.96	0.65
1:F:430:VAL:HG21	1:F:435:LEU:HD22	1.78	0.65
1:D:245:LYS:CE	1:D:259:TYR:CE2	2.75	0.65
1:A:149:GLN:OE1	1:B:256:PRO:HA	1.96	0.65
1:C:317:GLY:HA2	1:C:398:LYS:HD2	1.78	0.65
1:F:95:LEU:HD23	1:F:95:LEU:N	2.11	0.65
1:F:244:GLN:OE1	1:A:55:THR:O	2.13	0.65
1:F:403:GLY:HA2	1:F:432:LEU:HB2	1.79	0.65
1:A:73:LEU:HD21	1:A:103:PHE:HA	1.78	0.65
1:E:113:LEU:HD22	1:E:358:ASN:HB2	1.79	0.65
1:A:101:ARG:N	1:A:103:PHE:H	1.95	0.65
1:B:96:ASP:O	1:B:100:ILE:HG12	1.96	0.65
1:D:259:TYR:C	1:D:301:PHE:CD2	2.73	0.64
1:D:406:TRP:N	1:D:428:SER:OG	2.31	0.64
1:A:103:PHE:O	1:A:104:HIS:C	2.37	0.64
1:D:132:ILE:HG22	1:D:165:VAL:HA	1.79	0.64
1:A:85:LEU:O	1:A:86:PRO:C	2.41	0.64
1:E:251:PRO:CD	1:E:254:LEU:CA	2.74	0.64
1:A:99:THR:O	1:A:100:ILE:HG12	1.98	0.64
1:F:233:HIS:NE2	1:F:237:VAL:HB	2.13	0.64
1:E:211:PHE:HE2	1:E:341:ARG:HE	1.43	0.64
1:F:431:ASP:O	1:F:433:GLY:N	2.31	0.64
1:C:221:ARG:NE	1:C:441:LEU:O	2.19	0.64
1:D:334:ARG:HH11	1:D:391:LEU:HD22	1.63	0.64
1:C:324:LEU:HD11	1:C:331:LEU:HD13	1.78	0.64
1:E:250:LEU:HB3	1:E:251:PRO:HD3	1.78	0.63
1:F:410:ALA:HB1	1:F:425:ASN:HB3	1.80	0.63
1:C:229:PHE:HB3	1:C:297:PHE:CE1	2.32	0.63
1:A:101:ARG:HG3	1:A:102:ALA:H	1.62	0.63
1:B:415:LEU:HB2	1:B:426:TRP:HD1	1.63	0.63
1:C:294:PHE:O	1:C:295:ILE:CG1	2.33	0.63
1:F:53:TRP:O	1:F:55:THR:N	2.30	0.63
1:E:359:ASP:HB3	1:E:363:ILE:HB	1.81	0.63
1:E:218:VAL:HG12	1:E:443:ILE:HA	1.81	0.63
1:E:221:ARG:HE	1:E:442:ASP:HB2	1.64	0.63
1:B:233:HIS:CG	1:B:234:HIS:H	2.17	0.63
1:F:70:PHE:HE2	1:F:282:THR:CG2	2.12	0.63
1:F:207:SER:HB3	1:F:243:ASN:HD21	1.64	0.63
1:E:152:PRO:HG2	1:E:155:LEU:HD11	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:251:PRO:HD2	1:E:254:LEU:CA	2.29	0.63
1:A:53:TRP:CD1	1:A:53:TRP:C	2.75	0.63
1:A:76:GLY:O	1:A:77:LEU:HB2	1.99	0.63
1:F:75:LYS:H	1:F:75:LYS:HD3	1.64	0.63
1:F:233:HIS:CD2	1:F:237:VAL:HB	2.34	0.63
1:D:172:TYR:O	1:D:414:ARG:N	2.32	0.63
1:A:95:LEU:O	1:A:96:ASP:C	2.39	0.63
1:A:197:GLU:OE1	1:A:197:GLU:N	2.29	0.62
1:A:73:LEU:CD2	1:A:103:PHE:HA	2.29	0.62
1:E:247:PHE:CB	1:E:259:TYR:N	2.61	0.62
1:C:117:VAL:HG12	1:C:132:ILE:HA	1.80	0.62
1:F:166:ASP:OD1	1:F:167:VAL:N	2.32	0.62
1:C:194:GLY:N	1:C:249:PRO:HG3	2.15	0.62
1:F:204:GLN:OE1	1:E:138:ARG:NH2	2.32	0.62
1:F:242:PRO:HB2	1:A:54:PRO:HB3	0.62	0.62
1:D:221:ARG:HH21	1:D:440:GLU:HG3	1.65	0.62
1:A:359:ASP:OD2	1:A:361:LYS:NZ	2.33	0.62
1:B:95:LEU:N	1:B:324:LEU:O	2.30	0.62
1:F:97:LEU:CD1	1:F:100:ILE:CD1	2.69	0.62
1:D:245:LYS:HB3	1:D:259:TYR:CZ	2.35	0.62
1:E:256:PRO:O	1:E:257:GLY:C	2.42	0.62
1:A:109:ARG:CZ	1:A:358:ASN:HB2	2.29	0.62
1:A:338:LYS:NZ	1:A:343:SER:OG	2.28	0.62
1:E:94:LEU:H	1:E:325:GLN:HA	1.65	0.62
1:E:199:ILE:HG22	1:E:248:HIS:CD2	2.35	0.62
1:A:113:LEU:HB3	1:A:135:PHE:CZ	2.34	0.62
1:C:247:PHE:CZ	1:C:251:PRO:HB2	2.04	0.62
1:C:245:LYS:HG3	1:C:259:TYR:HD2	1.64	0.62
1:E:117:VAL:HG12	1:E:132:ILE:HG23	1.81	0.61
1:F:244:GLN:CB	1:A:56:SER:OG	2.36	0.61
1:D:376:ARG:HH12	1:D:421:HIS:CG	2.18	0.61
1:C:245:LYS:NZ	1:C:259:TYR:CD2	2.68	0.61
1:F:242:PRO:CG	1:A:55:THR:H	2.08	0.61
1:A:358:ASN:OD1	1:A:364:CYS:HA	2.01	0.61
1:F:413:GLY:O	1:F:426:TRP:NE1	2.30	0.61
1:B:361:LYS:HZ3	1:B:363:ILE:HB	1.65	0.61
1:F:47:SER:O	1:A:271:THR:HG22	1.99	0.61
1:C:135:PHE:HB3	1:C:170:PHE:HB2	1.81	0.61
1:E:201:SER:HB2	1:E:310:VAL:HA	1.82	0.61
1:B:415:LEU:N	1:B:424:GLU:O	2.33	0.61
1:D:308:THR:HG21	1:D:447:ASN:HA	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:100:ILE:C	1:A:103:PHE:CB	2.69	0.61
1:A:52:LEU:HG	1:A:52:LEU:O	2.01	0.61
1:B:101:ARG:CZ	1:B:155:LEU:HD13	2.31	0.61
1:B:445:ILE:HD12	1:B:445:ILE:H	1.66	0.61
1:D:260:LEU:HD12	1:D:301:PHE:CB	2.30	0.61
1:A:80:ARG:HH22	1:A:152:PRO:HB3	1.66	0.61
1:A:97:LEU:HD23	1:A:117:VAL:HG12	1.83	0.61
1:A:132:ILE:HD11	1:A:163:CYS:HB3	1.83	0.60
1:B:130:PRO:HG3	1:B:328:LEU:CD1	2.25	0.60
1:C:192:LEU:HB3	1:C:203:SER:HA	1.83	0.60
1:D:204:GLN:HA	1:D:213:THR:HA	1.82	0.60
1:E:204:GLN:HE21	1:E:206:ALA:HB2	1.66	0.60
1:A:153:ALA:HA	1:A:165:VAL:HB	1.83	0.60
1:C:202:GLY:N	1:C:214:LEU:HB3	2.16	0.60
1:F:92:ASN:O	1:F:93:SER:OG	2.19	0.60
1:B:400:ARG:HD2	1:B:402:ILE:HD11	1.83	0.60
1:F:242:PRO:CB	1:A:54:PRO:CA	2.76	0.60
1:E:250:LEU:CB	1:E:251:PRO:HD2	2.30	0.60
1:B:289:ARG:HH21	1:B:368:ASP:H	1.48	0.60
1:F:92:ASN:CB	1:F:327:PRO:HA	2.28	0.60
1:A:109:ARG:HH22	1:A:358:ASN:H	1.48	0.60
1:A:114:GLY:HA3	1:A:135:PHE:CE2	2.37	0.60
1:C:204:GLN:HB2	1:C:341:ARG:HG3	1.83	0.60
1:A:85:LEU:O	1:A:87:LYS:N	2.34	0.60
1:D:421:HIS:HA	1:E:185:PHE:HB3	1.83	0.60
1:B:101:ARG:O	1:B:101:ARG:HG2	2.00	0.60
1:C:228:GLY:HA3	1:C:296:PRO:HA	1.83	0.60
1:F:53:TRP:N	1:F:54:PRO:HD3	2.12	0.60
1:F:94:LEU:HD13	1:F:324:LEU:HA	1.82	0.60
1:B:288:VAL:HG22	1:B:366:PHE:CG	2.36	0.60
1:E:316:ILE:HG22	1:E:399:PRO:HG2	1.84	0.60
1:A:100:ILE:O	1:A:103:PHE:HB2	2.01	0.60
1:B:135:PHE:CE1	1:B:168:VAL:HB	2.37	0.60
1:F:238:ASP:CG	1:F:239:LEU:N	2.59	0.59
1:D:237:VAL:HG22	1:D:244:GLN:HE21	1.67	0.59
1:D:298:ALA:HB2	1:D:301:PHE:CE1	2.30	0.59
1:A:136:VAL:HG21	1:A:167:VAL:CG1	2.32	0.59
1:B:123:LYS:HE2	1:B:125:ASP:HB2	1.84	0.59
1:F:136:VAL:O	1:F:170:PHE:N	2.33	0.59
1:E:353:TYR:C	1:E:355:LEU:H	2.09	0.59
1:B:95:LEU:HA	1:B:278:ILE:HD11	1.82	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:416:LYS:HB3	1:B:423:PRO:HD3	1.83	0.59
1:D:121:ILE:HG22	1:D:126:LEU:HA	1.85	0.59
1:E:237:VAL:HG22	1:E:263:VAL:HG11	1.84	0.59
1:E:352:ALA:HB3	1:E:370:LEU:HB3	1.83	0.59
1:B:355:LEU:HB3	1:B:367:THR:HB	1.83	0.59
1:F:48:ALA:O	1:A:53:TRP:CD2	2.56	0.59
1:F:207:SER:CB	1:F:243:ASN:ND2	2.65	0.59
1:D:288:VAL:HG11	1:D:434:ARG:NH2	2.18	0.59
1:A:53:TRP:CD1	1:A:54:PRO:O	2.55	0.59
1:D:270:ILE:O	1:D:288:VAL:N	2.35	0.59
1:E:101:ARG:NH2	1:E:356:GLU:OE2	2.25	0.59
1:C:347:THR:OG1	1:C:374:GLU:OE1	2.18	0.59
1:D:101:ARG:NH2	1:D:117:VAL:HG13	2.18	0.59
1:A:107:ILE:O	1:A:110:ARG:HB3	2.02	0.59
1:A:416:LYS:HE3	1:A:423:PRO:HB3	1.83	0.59
1:B:219:LYS:O	1:B:442:ASP:N	2.36	0.59
1:A:69:TYR:CD1	1:A:279:TYR:HD2	2.21	0.59
1:A:133:LEU:O	1:A:135:PHE:N	2.33	0.59
1:D:298:ALA:HB1	1:D:301:PHE:HE1	1.62	0.58
1:B:166:ASP:OD1	1:B:167:VAL:N	2.36	0.58
1:F:90:GLN:O	1:F:91:ALA:HB2	2.03	0.58
1:D:415:LEU:O	1:D:424:GLU:N	2.31	0.58
1:D:319:VAL:HB	1:D:432:LEU:HD23	1.85	0.58
1:C:352:ALA:HB3	1:C:370:LEU:HB3	1.85	0.58
1:A:109:ARG:CZ	1:A:358:ASN:ND2	2.66	0.58
1:A:135:PHE:HD1	1:A:136:VAL:N	2.02	0.58
1:B:289:ARG:HB2	1:B:365:PHE:CE1	2.39	0.58
1:E:247:PHE:CB	1:E:259:TYR:H	2.16	0.58
1:A:72:ASN:C	1:A:74:GLN:H	2.11	0.58
1:D:144:TRP:HE3	1:E:258:VAL:HG21	1.69	0.58
1:D:357:TYR:CD1	1:D:357:TYR:N	2.72	0.58
1:A:60:HIS:C	1:A:60:HIS:CD2	2.81	0.58
1:F:90:GLN:HA	1:F:90:GLN:OE1	2.03	0.58
1:F:113:LEU:HD23	1:F:170:PHE:HB3	1.85	0.58
1:D:276:TYR:HB2	1:D:278:ILE:HG12	1.86	0.58
1:E:101:ARG:HD2	1:E:117:VAL:HG11	1.84	0.58
1:F:87:LYS:HD3	1:F:87:LYS:N	2.18	0.58
1:E:390:ILE:HA	1:E:401:PRO:HA	1.85	0.58
1:A:393:SER:OG	1:A:397:GLU:O	2.17	0.58
1:B:140:VAL:HG13	1:C:194:GLY:HA2	1.86	0.58
1:B:409:THR:OG1	1:B:410:ALA:N	2.35	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:334:ARG:O	1:D:349:THR:OG1	2.16	0.58
1:C:265:ARG:CZ	1:C:267:THR:HB	2.33	0.58
1:C:390:ILE:HG22	1:C:401:PRO:HB3	1.85	0.58
1:F:51:PHE:CD1	1:F:51:PHE:N	2.71	0.57
1:A:73:LEU:CG	1:A:103:PHE:HA	2.33	0.57
1:A:100:ILE:C	1:A:103:PHE:H	2.12	0.57
1:B:233:HIS:NE2	1:B:291:ASP:OD2	2.37	0.57
1:C:201:SER:HB2	1:C:310:VAL:HA	1.86	0.57
1:F:207:SER:HB3	1:F:243:ASN:ND2	2.19	0.57
1:D:357:TYR:CE1	1:D:366:PHE:HB3	2.38	0.57
1:B:316:ILE:HG13	1:B:445:ILE:HG23	1.86	0.57
1:F:54:PRO:C	1:F:56:SER:N	2.59	0.57
1:D:434:ARG:HG3	1:D:434:ARG:HH11	1.70	0.57
1:E:275:TRP:HD1	1:E:366:PHE:HD2	1.52	0.57
1:A:273:ASP:OD1	1:A:273:ASP:N	2.35	0.57
1:B:138:ARG:NH1	1:B:169:GLU:OE2	2.34	0.57
1:F:48:ALA:N	1:A:53:TRP:CZ3	2.72	0.57
1:F:242:PRO:CG	1:A:54:PRO:CB	2.73	0.57
1:B:401:PRO:O	1:B:432:LEU:HD22	2.04	0.57
1:C:368:ASP:OD2	1:C:434:ARG:NH1	2.38	0.57
1:D:245:LYS:HD3	1:D:259:TYR:CZ	2.29	0.57
1:A:125:ASP:O	1:A:126:LEU:C	2.43	0.57
1:A:143:LYS:C	1:A:145:LEU:H	2.12	0.57
1:B:101:ARG:O	1:B:103:PHE:N	2.37	0.57
1:F:168:VAL:O	1:F:169:GLU:HB3	2.05	0.57
1:F:146:ASN:O	1:F:148:ALA:N	2.38	0.57
1:A:119:PHE:CE1	1:A:328:LEU:HD22	2.39	0.57
1:A:146:ASN:O	1:A:147:PRO:C	2.48	0.57
1:F:55:THR:C	1:F:57:ASN:H	2.12	0.57
1:A:251:PRO:HD2	1:A:254:LEU:HB2	1.87	0.57
1:D:204:GLN:NE2	1:D:249:PRO:O	2.38	0.56
1:A:101:ARG:C	1:A:103:PHE:N	2.49	0.56
1:A:409:THR:O	1:A:412:ARG:N	2.30	0.56
1:F:242:PRO:HG2	1:A:55:THR:N	2.12	0.56
1:B:409:THR:HB	1:B:425:ASN:OD1	2.05	0.56
1:F:372:VAL:HG22	1:F:426:TRP:HB3	1.87	0.56
1:A:53:TRP:CH2	1:A:57:ASN:O	2.58	0.56
1:A:72:ASN:HB3	1:A:75:LYS:HB3	1.86	0.56
1:A:87:LYS:H	1:A:87:LYS:HE2	1.70	0.56
1:B:355:LEU:HD22	1:B:367:THR:HG21	1.87	0.56
1:C:259:TYR:CD1	1:C:259:TYR:C	2.84	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:114:GLY:HA3	1:E:135:PHE:H	1.71	0.56
1:A:94:LEU:HD21	1:A:117:VAL:CG2	2.34	0.56
1:B:336:VAL:HG22	1:B:348:GLY:O	2.05	0.56
1:B:394:GLN:N	1:B:397:GLU:OE2	2.29	0.56
1:C:275:TRP:CZ2	1:C:438:ARG:HB2	2.40	0.56
1:D:96:ASP:O	1:D:100:ILE:HG13	2.06	0.56
1:C:218:VAL:HG11	1:C:228:GLY:H	1.70	0.56
1:F:92:ASN:C	1:F:93:SER:OG	2.49	0.56
1:B:289:ARG:H	1:B:366:PHE:H	1.52	0.56
1:D:260:LEU:HD12	1:D:301:PHE:CD2	2.40	0.56
1:D:319:VAL:HG21	1:D:432:LEU:HB3	1.88	0.56
1:A:220:ARG:HH11	1:A:265:ARG:HD2	1.71	0.56
1:B:289:ARG:NH2	1:B:368:ASP:H	2.02	0.56
1:F:71:GLY:CA	1:F:75:LYS:HG3	2.36	0.56
1:F:354:ALA:N	1:F:368:ASP:O	2.38	0.56
1:D:204:GLN:O	1:D:248:HIS:ND1	2.39	0.56
1:D:409:THR:OG1	1:D:410:ALA:N	2.38	0.56
1:F:48:ALA:HB1	1:A:270:ILE:HD13	1.87	0.55
1:A:73:LEU:HG	1:A:103:PHE:HA	1.88	0.55
1:D:121:ILE:N	1:D:166:ASP:OD2	2.25	0.55
1:A:106:LYS:HD2	1:A:107:ILE:HG13	1.88	0.55
1:F:231:THR:OG1	1:F:235:VAL:HG21	2.07	0.55
1:E:213:THR:HG21	1:E:387:SER:HB3	1.89	0.55
1:F:338:LYS:HE3	1:F:380:ASP:HB3	1.87	0.55
1:D:318:ASP:O	1:D:400:ARG:HD2	2.06	0.55
1:F:138:ARG:NH2	1:D:193:CYS:O	2.39	0.55
1:F:414:ARG:HH21	1:F:423:PRO:HG2	1.70	0.55
1:D:371:VAL:CG1	1:D:427:THR:HG23	2.37	0.55
1:D:108:LEU:HD11	1:D:155:LEU:HD12	1.88	0.55
1:E:270:ILE:HB	1:E:288:VAL:HB	1.88	0.55
1:A:100:ILE:HA	1:A:103:PHE:CD1	2.41	0.55
1:B:103:PHE:HD2	1:B:158:PRO:HG3	1.72	0.55
1:B:267:THR:HG23	1:B:439:LEU:HB3	1.89	0.55
1:F:336:VAL:HG12	1:F:391:LEU:HD23	1.89	0.55
1:E:120:ARG:HA	1:E:133:LEU:HD21	1.87	0.55
1:E:247:PHE:HE2	1:E:252:PRO:HD3	1.41	0.55
1:A:50:TYR:CD1	1:A:50:TYR:C	2.85	0.55
1:A:197:GLU:HB3	1:C:141:HIS:CE1	2.42	0.55
1:A:270:ILE:O	1:A:288:VAL:N	2.38	0.55
1:B:217:ILE:HG22	1:B:444:ILE:HD12	1.88	0.55
1:B:232:ASN:HD21	1:B:406:TRP:CD1	2.25	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:121:ILE:HD11	1:B:168:VAL:HG13	1.89	0.55
1:B:204:GLN:HE21	1:B:249:PRO:HA	1.72	0.55
1:C:218:VAL:HG23	1:C:441:LEU:HD23	1.88	0.55
1:C:270:ILE:HD11	1:C:438:ARG:HG2	1.87	0.55
1:C:446:THR:HB	1:C:448:GLU:OE1	2.06	0.55
1:D:245:LYS:HD3	1:D:259:TYR:OH	2.07	0.55
1:A:113:LEU:HG	1:A:135:PHE:CZ	2.39	0.55
1:A:149:GLN:CD	1:B:256:PRO:HA	2.32	0.55
1:B:231:THR:OG1	1:B:232:ASN:N	2.39	0.55
1:F:95:LEU:HD23	1:F:324:LEU:O	1.95	0.54
1:D:232:ASN:HD21	1:D:406:TRP:CD1	2.25	0.54
1:A:62:ALA:C	1:A:64:GLU:H	2.15	0.54
1:A:80:ARG:C	1:A:82:PRO:HD3	2.32	0.54
1:B:372:VAL:HG21	1:B:415:LEU:HD22	1.88	0.54
1:D:394:GLN:N	1:D:397:GLU:OE2	2.35	0.54
1:B:204:GLN:OE1	1:B:341:ARG:NH1	2.40	0.54
1:B:264:GLU:O	1:B:266:ALA:N	2.39	0.54
1:B:414:ARG:NH1	1:B:425:ASN:HB2	2.22	0.54
1:F:71:GLY:N	1:F:75:LYS:CB	2.70	0.54
1:D:95:LEU:HB3	1:D:324:LEU:HB2	1.89	0.54
1:E:105:SER:O	1:E:109:ARG:HG2	2.07	0.54
1:E:199:ILE:CG2	1:E:248:HIS:CD2	2.90	0.54
1:B:415:LEU:HB2	1:B:426:TRP:CD1	2.43	0.54
1:C:445:ILE:HG13	1:C:446:THR:HG23	1.88	0.54
1:F:66:ARG:HG2	1:F:279:TYR:CD2	2.43	0.54
1:A:320:LYS:HG2	1:A:400:ARG:HE	1.72	0.54
1:A:103:PHE:CE1	1:A:157:GLY:CA	2.79	0.54
1:A:144:TRP:CD1	1:A:144:TRP:N	2.73	0.54
1:F:72:ASN:O	1:F:73:LEU:C	2.50	0.54
1:D:94:LEU:O	1:D:97:LEU:N	2.39	0.54
1:D:232:ASN:HD21	1:D:406:TRP:HD1	1.56	0.54
1:A:145:LEU:CD1	1:A:150:CYS:HB3	2.38	0.54
1:A:220:ARG:NH1	1:A:265:ARG:HD2	2.23	0.54
1:F:140:VAL:HG11	1:D:256:PRO:HG2	1.89	0.54
1:D:231:THR:HB	1:D:293:ALA:HB3	1.90	0.54
1:E:247:PHE:CD1	1:E:247:PHE:N	2.72	0.54
1:A:431:ASP:OD2	1:A:434:ARG:NH2	2.41	0.54
1:F:75:LYS:O	1:F:76:GLY:C	2.50	0.54
1:F:93:SER:O	1:F:97:LEU:N	2.34	0.54
1:F:95:LEU:CD2	1:F:95:LEU:H	2.12	0.54
1:E:247:PHE:CE1	1:E:251:PRO:HA	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:141:HIS:O	1:A:145:LEU:HG	2.08	0.54
1:F:220:ARG:HG2	1:F:222:THR:H	1.72	0.54
1:A:134:VAL:HG23	1:A:165:VAL:HG13	1.90	0.54
1:B:129:ILE:O	1:B:130:PRO:C	2.44	0.54
1:C:218:VAL:CG1	1:C:228:GLY:H	2.21	0.54
1:F:80:ARG:HH21	1:F:82:PRO:HD3	1.72	0.54
1:F:82:PRO:O	1:F:83:GLY:C	2.50	0.54
1:F:85:LEU:HD12	1:F:86:PRO:HD2	1.90	0.53
1:E:337:CYS:HA	1:E:347:THR:HG22	1.90	0.53
1:A:53:TRP:NE1	1:A:54:PRO:O	2.41	0.53
1:B:355:LEU:HD13	1:B:370:LEU:HD13	1.89	0.53
1:F:55:THR:OG1	1:A:243:ASN:CG	2.51	0.53
1:F:431:ASP:OD1	1:F:431:ASP:N	2.33	0.53
1:E:141:HIS:O	1:E:141:HIS:ND1	2.41	0.53
1:A:146:ASN:O	1:A:148:ALA:N	2.41	0.53
1:B:338:LYS:HB3	1:B:379:PHE:CZ	2.43	0.53
1:C:294:PHE:C	1:C:295:ILE:HG13	2.29	0.53
1:F:50:TYR:C	1:F:50:TYR:CD1	2.86	0.53
1:D:357:TYR:HD1	1:D:357:TYR:H	1.56	0.53
1:E:315:ASP:OD1	1:E:315:ASP:N	2.37	0.53
1:B:276:TYR:HH	1:B:366:PHE:HE1	1.56	0.53
1:F:51:PHE:HD1	1:F:51:PHE:N	2.04	0.53
1:F:57:ASN:CB	1:A:47:SER:N	2.68	0.53
1:B:421:HIS:ND1	1:B:422:GLY:N	2.57	0.53
1:D:260:LEU:HD11	1:D:301:PHE:HB3	1.84	0.53
1:E:166:ASP:OD1	1:E:167:VAL:N	2.36	0.53
1:A:233:HIS:HE1	1:A:266:ALA:HB1	1.74	0.53
1:F:212:GLY:HA3	1:F:235:VAL:HG22	1.90	0.53
1:F:235:VAL:HG12	1:F:235:VAL:O	2.09	0.53
1:F:361:LYS:NZ	1:F:363:ILE:HD11	2.24	0.53
1:D:203:SER:HB2	1:D:248:HIS:CE1	2.44	0.53
1:D:336:VAL:HG12	1:D:391:LEU:HD23	1.91	0.53
1:D:406:TRP:H	1:D:428:SER:HG	1.57	0.53
1:A:72:ASN:HA	1:A:75:LYS:HB3	1.90	0.53
1:A:101:ARG:CG	1:A:102:ALA:N	2.70	0.53
1:B:191:LYS:HD3	1:B:195:SER:HB3	1.90	0.53
1:B:388:LEU:HD23	1:B:404:ILE:HG12	1.91	0.53
1:C:353:TYR:O	1:C:355:LEU:N	2.42	0.53
1:F:55:THR:O	1:F:57:ASN:N	2.42	0.53
1:E:133:LEU:HD22	1:E:166:ASP:HB3	1.89	0.53
1:E:247:PHE:HB2	1:E:259:TYR:N	2.24	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:104:HIS:HB2	1:A:155:LEU:CD2	2.32	0.53
1:A:111:PHE:CE1	1:A:151:LEU:HD11	2.44	0.53
1:C:251:PRO:HD2	1:C:251:PRO:O	2.08	0.53
1:F:316:ILE:HG21	1:F:401:PRO:HG3	1.89	0.53
1:D:94:LEU:C	1:D:98:MET:HE3	2.34	0.53
1:E:193:CYS:O	1:E:249:PRO:HG3	2.09	0.53
1:A:96:ASP:O	1:A:100:ILE:HD11	2.09	0.53
1:A:393:SER:HB2	1:A:399:PRO:HG3	1.91	0.53
1:C:104:HIS:ND1	1:C:155:LEU:HD12	2.24	0.53
1:C:353:TYR:C	1:C:355:LEU:H	2.17	0.53
1:F:73:LEU:O	1:F:75:LYS:HD3	2.09	0.53
1:A:111:PHE:O	1:A:112:SER:OG	2.27	0.53
1:A:150:CYS:O	1:A:150:CYS:SG	2.67	0.53
1:A:372:VAL:HG21	1:A:415:LEU:HD23	1.90	0.53
1:C:229:PHE:HB3	1:C:297:PHE:HE1	1.72	0.53
1:F:86:PRO:HG2	1:F:162:TRP:CB	2.37	0.53
1:F:272:ASP:OD2	1:F:286:THR:HG22	2.09	0.53
1:D:376:ARG:HH12	1:D:421:HIS:CD2	2.27	0.53
1:E:275:TRP:HD1	1:E:366:PHE:CD2	2.26	0.53
1:B:103:PHE:CD2	1:B:158:PRO:HG3	2.44	0.52
1:B:213:THR:OG1	1:B:385:SER:O	2.27	0.52
1:F:439:LEU:HB2	1:F:441:LEU:HD22	1.90	0.52
1:B:421:HIS:HD1	1:B:422:GLY:N	2.07	0.52
1:F:80:ARG:HE	1:F:81:HIS:N	2.07	0.52
1:F:135:PHE:HB3	1:F:170:PHE:CG	2.44	0.52
1:F:244:GLN:CG	1:F:245:LYS:HG2	2.34	0.52
1:A:122:ARG:O	1:A:124:GLY:N	2.37	0.52
1:B:94:LEU:HA	1:B:97:LEU:HB3	1.91	0.52
1:B:305:THR:O	1:B:305:THR:OG1	2.26	0.52
1:E:250:LEU:H	1:E:250:LEU:CD1	2.15	0.52
1:B:116:ALA:HB2	1:B:355:LEU:HB2	1.92	0.52
1:C:95:LEU:HD22	1:C:278:ILE:HD13	1.91	0.52
1:D:210:THR:OG1	1:D:235:VAL:O	2.25	0.52
1:A:69:TYR:CD1	1:A:279:TYR:CD2	2.98	0.52
1:C:193:CYS:SG	1:C:249:PRO:HB3	2.50	0.52
1:F:86:PRO:O	1:F:87:LYS:C	2.52	0.52
1:D:205:VAL:HG12	1:D:246:MET:HG3	1.91	0.52
1:E:202:GLY:N	1:E:214:LEU:HB3	2.11	0.52
1:E:210:THR:OG1	1:E:211:PHE:N	2.38	0.52
1:A:128:ASP:C	1:A:129:ILE:HG13	2.34	0.52
1:A:352:ALA:O	1:A:370:LEU:HB2	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:361:LYS:HZ2	1:F:363:ILE:HD11	1.75	0.52
1:A:144:TRP:HZ3	1:B:248:HIS:HE2	1.55	0.52
1:A:218:VAL:HG11	1:A:230:LEU:HB2	1.92	0.52
1:C:93:SER:HB3	1:C:96:ASP:HB2	1.91	0.52
1:F:80:ARG:HH21	1:F:81:HIS:HA	1.74	0.52
1:D:414:ARG:HB3	1:D:423:PRO:HB3	1.91	0.52
1:D:431:ASP:OD1	1:D:431:ASP:N	2.42	0.52
1:E:228:GLY:HA2	1:E:297:PHE:CD2	2.45	0.52
1:A:132:ILE:HG13	1:A:164:ASP:O	2.08	0.52
1:A:138:ARG:O	1:A:140:VAL:HG22	2.10	0.52
1:B:289:ARG:HH22	1:B:367:THR:HA	1.75	0.52
1:B:371:VAL:HG13	1:B:427:THR:OG1	2.10	0.52
1:B:141:HIS:HB2	1:C:195:SER:HA	1.91	0.52
1:F:81:HIS:HB2	1:F:84:ARG:HG2	1.92	0.51
1:D:138:ARG:HE	1:E:250:LEU:CD1	2.22	0.51
1:D:206:ALA:N	1:D:247:PHE:O	2.41	0.51
1:A:94:LEU:O	1:A:94:LEU:HD23	2.10	0.51
1:A:142:LYS:HB3	1:A:142:LYS:HZ2	1.75	0.51
1:B:328:LEU:O	1:B:332:ILE:HG22	2.10	0.51
1:C:113:LEU:HD23	1:C:113:LEU:H	1.76	0.51
1:F:87:LYS:N	1:F:87:LYS:CD	2.71	0.51
1:A:130:PRO:HG3	1:A:328:LEU:HD13	1.92	0.51
1:B:107:ILE:HG22	1:B:108:LEU:HD23	1.91	0.51
1:A:65:GLY:O	1:A:279:TYR:HE2	1.93	0.51
1:F:93:SER:HB3	1:F:325:GLN:OE1	2.09	0.51
1:F:95:LEU:HD11	1:F:325:GLN:OE1	2.09	0.51
1:F:244:GLN:C	1:F:245:LYS:HG2	2.35	0.51
1:A:323:ASP:OD1	1:A:323:ASP:N	2.42	0.51
1:F:145:LEU:HD13	1:F:150:CYS:H	1.75	0.51
1:F:319:VAL:HA	1:F:401:PRO:HD2	1.92	0.51
1:F:170:PHE:CD2	1:F:413:GLY:HA3	2.45	0.51
1:D:220:ARG:HH21	1:D:224:ASN:H	1.59	0.51
1:C:94:LEU:H	1:C:325:GLN:HA	1.74	0.51
1:C:320:LYS:HG3	1:C:400:ARG:HD2	1.93	0.51
1:D:200:GLY:O	1:D:203:SER:OG	2.27	0.51
1:E:251:PRO:O	1:E:253:ASN:N	2.39	0.51
1:A:56:SER:O	1:A:57:ASN:ND2	2.42	0.51
1:A:116:ALA:O	1:A:117:VAL:HG13	2.09	0.51
1:A:354:ALA:N	1:A:368:ASP:O	2.36	0.51
1:D:141:HIS:CD2	1:D:143:LYS:H	2.29	0.51
1:D:417:LEU:H	1:D:422:GLY:HA2	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:97:LEU:HA	1:A:100:ILE:HG13	1.93	0.51
1:C:216:ALA:HB3	1:C:443:ILE:HD11	1.91	0.51
1:F:72:ASN:C	1:F:75:LYS:HD2	2.36	0.51
1:E:259:TYR:CE2	1:E:298:ALA:CB	2.94	0.51
1:B:216:ALA:HB2	1:B:388:LEU:HD11	1.93	0.51
1:F:81:HIS:HD2	1:F:84:ARG:O	1.94	0.51
1:E:298:ALA:O	1:E:301:PHE:N	2.29	0.51
1:B:389:ILE:N	1:B:403:GLY:O	2.43	0.51
1:E:251:PRO:C	1:E:253:ASN:N	2.62	0.50
1:A:62:ALA:O	1:A:64:GLU:N	2.41	0.50
1:C:104:HIS:O	1:C:108:LEU:N	2.44	0.50
1:C:315:ASP:OD1	1:C:315:ASP:N	2.40	0.50
1:A:97:LEU:HD23	1:A:117:VAL:CG1	2.39	0.50
1:B:271:THR:OG1	1:B:272:ASP:N	2.43	0.50
1:B:414:ARG:HA	1:B:414:ARG:HH11	1.75	0.50
1:C:320:LYS:HE2	1:C:400:ARG:HD2	1.93	0.50
1:D:100:ILE:HA	1:D:158:PRO:HD3	1.94	0.50
1:E:259:TYR:OH	1:E:298:ALA:HB1	2.11	0.50
1:E:385:SER:HA	1:E:405:ILE:HB	1.93	0.50
1:B:101:ARG:NH1	1:B:155:LEU:HD13	2.26	0.50
1:A:136:VAL:HG23	1:A:168:VAL:O	2.10	0.50
1:F:97:LEU:HD11	1:F:100:ILE:HD12	1.86	0.50
1:B:385:SER:HA	1:B:405:ILE:HG22	1.93	0.50
1:D:245:LYS:C	1:D:259:TYR:OH	2.48	0.50
1:D:433:GLY:HA2	1:D:436:LEU:HD11	1.93	0.50
1:F:205:VAL:CG1	1:F:235:VAL:HG11	2.41	0.50
1:F:236:ALA:CB	1:F:263:VAL:HG21	2.39	0.50
1:D:289:ARG:HD3	1:D:364:CYS:O	2.11	0.50
1:A:70:PHE:CE1	1:A:73:LEU:HD13	2.47	0.50
1:C:247:PHE:O	1:C:247:PHE:HD1	1.95	0.50
1:C:353:TYR:CD1	1:C:354:ALA:N	2.80	0.50
1:D:289:ARG:HG2	1:D:365:PHE:CD2	2.47	0.50
1:A:134:VAL:O	1:A:135:PHE:C	2.52	0.50
1:C:193:CYS:C	1:C:249:PRO:HG3	2.37	0.50
1:F:73:LEU:O	1:F:75:LYS:N	2.41	0.49
1:D:207:SER:HB3	1:D:247:PHE:H	1.77	0.49
1:D:233:HIS:NE2	1:D:291:ASP:HB2	2.27	0.49
1:E:193:CYS:C	1:E:249:PRO:HG3	2.37	0.49
1:E:416:LYS:HG3	1:E:418:THR:H	1.75	0.49
1:B:301:PHE:O	1:B:301:PHE:CG	2.65	0.49
1:F:48:ALA:O	1:A:53:TRP:CE3	2.65	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:50:TYR:C	1:F:50:TYR:HD1	2.21	0.49
1:D:265:ARG:HH21	1:D:439:LEU:HB3	1.77	0.49
1:A:66:ARG:HA	1:A:279:TYR:HE2	1.75	0.49
1:A:101:ARG:O	1:A:102:ALA:C	2.49	0.49
1:A:151:LEU:HB3	1:A:152:PRO:CD	2.42	0.49
1:C:338:LYS:HE2	1:C:387:SER:OG	2.12	0.49
1:B:97:LEU:HA	1:B:100:ILE:HG12	1.94	0.49
1:D:112:SER:HB2	1:D:134:VAL:O	2.12	0.49
1:E:251:PRO:CG	1:E:254:LEU:CG	2.43	0.49
1:A:145:LEU:HD22	1:A:149:GLN:HB3	1.95	0.49
1:C:121:ILE:HG22	1:C:126:LEU:HB3	1.95	0.49
1:C:121:ILE:N	1:C:133:LEU:HD11	2.23	0.49
1:C:233:HIS:CG	1:C:233:HIS:O	2.65	0.49
1:F:232:ASN:OD1	1:F:235:VAL:HG23	2.12	0.49
1:E:199:ILE:CG2	1:E:248:HIS:HD2	2.25	0.49
1:B:198:CYS:HB3	1:B:307:THR:HB	1.94	0.49
1:F:265:ARG:O	1:F:266:ALA:HB2	2.12	0.49
1:D:207:SER:OG	1:D:245:LYS:O	2.29	0.49
1:E:440:GLU:O	1:E:441:LEU:HD23	2.13	0.49
1:A:103:PHE:CD2	1:A:104:HIS:CE1	3.00	0.49
1:C:316:ILE:HD12	1:C:401:PRO:HG3	1.94	0.49
1:C:317:GLY:O	1:C:445:ILE:HD13	2.12	0.49
1:F:319:VAL:HG13	1:F:432:LEU:HD23	1.94	0.49
1:A:87:LYS:O	1:A:89:GLN:N	2.45	0.49
1:A:135:PHE:CD1	1:A:136:VAL:N	2.80	0.49
1:B:101:ARG:HG3	1:B:156:GLU:O	2.13	0.49
1:F:207:SER:OG	1:F:243:ASN:ND2	2.45	0.49
1:E:436:LEU:HD11	1:E:442:ASP:HA	1.94	0.49
1:F:87:LYS:CD	1:F:87:LYS:H	2.26	0.49
1:E:155:LEU:HB2	1:E:163:CYS:SG	2.53	0.49
1:A:66:ARG:HD3	1:A:279:TYR:CD2	2.48	0.49
1:A:93:SER:HG	1:A:96:ASP:H	1.56	0.49
1:A:109:ARG:NH2	1:A:358:ASN:HB2	2.28	0.49
1:B:130:PRO:CG	1:B:328:LEU:HD13	2.32	0.49
1:C:363:ILE:HG13	1:C:363:ILE:O	2.12	0.49
1:A:264:GLU:HG3	1:A:265:ARG:HG3	1.94	0.49
1:F:55:THR:CA	1:A:48:ALA:O	2.60	0.48
1:D:439:LEU:HD13	1:D:441:LEU:HD11	1.95	0.48
1:A:100:ILE:O	1:A:103:PHE:CB	2.61	0.48
1:A:103:PHE:HD2	1:A:104:HIS:H	1.61	0.48
1:B:209:GLU:OE1	1:B:210:THR:HG23	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:389:ILE:HB	1:B:403:GLY:HA3	1.94	0.48
1:F:249:PRO:HB2	1:F:250:LEU:HD12	1.94	0.48
1:D:144:TRP:CE3	1:E:258:VAL:HG21	2.48	0.48
1:D:331:LEU:HD21	1:D:353:TYR:HD2	1.79	0.48
1:A:79:PRO:O	1:A:80:ARG:C	2.56	0.48
1:A:100:ILE:HG22	1:A:156:GLU:O	2.13	0.48
1:A:101:ARG:HH12	1:A:356:GLU:HB3	1.79	0.48
1:A:147:PRO:O	1:A:148:ALA:HB2	2.12	0.48
1:B:222:THR:HG23	1:B:440:GLU:HG2	1.95	0.48
1:F:242:PRO:CG	1:A:55:THR:N	2.74	0.48
1:A:101:ARG:N	1:A:103:PHE:N	2.60	0.48
1:A:156:GLU:HA	1:A:162:TRP:HA	1.94	0.48
1:B:114:GLY:HA2	1:B:357:TYR:HA	1.94	0.48
1:B:446:THR:O	1:B:449:SER:OG	2.31	0.48
1:F:84:ARG:O	1:F:85:LEU:C	2.57	0.48
1:F:245:LYS:CG	1:A:56:SER:OG	2.60	0.48
1:D:103:PHE:HB2	1:D:158:PRO:HG3	1.94	0.48
1:D:139:LYS:HA	1:D:169:GLU:OE2	2.14	0.48
1:D:371:VAL:HG22	1:D:372:VAL:C	2.39	0.48
1:E:247:PHE:HD2	1:E:259:TYR:CA	2.27	0.48
1:F:53:TRP:HH2	1:A:238:ASP:H	1.60	0.48
1:F:141:HIS:NE2	1:D:196:ASP:O	2.47	0.48
1:D:116:ALA:HB2	1:D:355:LEU:HA	1.95	0.48
1:D:260:LEU:CA	1:D:301:PHE:CD2	2.89	0.48
1:D:436:LEU:HA	1:D:441:LEU:HD12	1.95	0.48
1:E:248:HIS:CE1	1:E:249:PRO:HD3	2.37	0.48
1:A:50:TYR:CD1	1:A:50:TYR:O	2.67	0.48
1:A:149:GLN:NE2	1:B:256:PRO:HA	2.27	0.48
1:B:237:VAL:HG21	1:B:263:VAL:HG21	1.95	0.48
1:B:323:ASP:OD1	1:B:326:CYS:HB2	2.13	0.48
1:F:416:LYS:HE2	1:F:423:PRO:HG3	1.95	0.48
1:E:288:VAL:HG12	1:E:290:ALA:HB2	1.94	0.48
1:B:232:ASN:HD21	1:B:406:TRP:HD1	1.60	0.48
1:A:97:LEU:CD2	1:A:117:VAL:HG12	2.43	0.48
1:B:233:HIS:O	1:B:237:VAL:N	2.47	0.48
1:B:433:GLY:HA2	1:B:436:LEU:HG	1.96	0.48
1:E:120:ARG:NH1	1:E:164:ASP:OD1	2.47	0.48
1:B:274:VAL:HG12	1:B:438:ARG:HE	1.78	0.48
1:C:216:ALA:HB2	1:C:388:LEU:HD11	1.95	0.48
1:C:275:TRP:HZ2	1:C:438:ARG:HB2	1.76	0.48
1:F:92:ASN:O	1:F:93:SER:CB	2.52	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:233:HIS:HE2	1:D:291:ASP:HB2	1.78	0.48
1:D:237:VAL:HG11	1:D:263:VAL:HG11	1.96	0.48
1:E:318:ASP:O	1:E:401:PRO:HD2	2.13	0.48
1:E:220:ARG:NH2	1:E:224:ASN:OD1	2.42	0.48
1:A:114:GLY:O	1:A:115:THR:C	2.57	0.48
1:A:119:PHE:CZ	1:A:328:LEU:HD22	2.49	0.48
1:D:432:LEU:O	1:D:436:LEU:HG	2.14	0.47
1:F:207:SER:HA	1:F:246:MET:HA	1.96	0.47
1:E:114:GLY:HA3	1:E:135:PHE:HB2	1.96	0.47
1:A:119:PHE:O	1:A:120:ARG:C	2.57	0.47
1:B:392:THR:OG1	1:B:393:SER:N	2.47	0.47
1:D:136:VAL:HG23	1:D:169:GLU:HG2	1.95	0.47
1:D:270:ILE:O	1:D:288:VAL:HG12	2.15	0.47
1:D:294:PHE:CE2	1:D:441:LEU:HD22	2.48	0.47
1:A:308:THR:HG21	1:A:444:ILE:HG22	1.96	0.47
1:B:289:ARG:NH2	1:B:367:THR:HA	2.29	0.47
1:F:71:GLY:O	1:F:75:LYS:HG3	2.12	0.47
1:F:94:LEU:HD22	1:F:353:TYR:CD2	2.49	0.47
1:F:343:SER:OG	1:F:384:ASP:OD2	2.24	0.47
1:F:48:ALA:N	1:A:53:TRP:CE3	2.80	0.47
1:F:234:HIS:CD2	1:F:238:ASP:HB3	2.50	0.47
1:D:319:VAL:HG11	1:D:436:LEU:HD21	1.97	0.47
1:A:319:VAL:O	1:A:400:ARG:NH2	2.47	0.47
1:A:404:ILE:HD11	1:A:432:LEU:HD13	1.96	0.47
1:C:218:VAL:CG2	1:C:294:PHE:CE1	2.84	0.47
1:F:48:ALA:HB1	1:A:269:PHE:O	2.14	0.47
1:F:71:GLY:C	1:F:75:LYS:CG	2.81	0.47
1:F:93:SER:CA	1:F:96:ASP:HB2	2.45	0.47
1:F:170:PHE:CE2	1:F:413:GLY:HA3	2.50	0.47
1:D:94:LEU:HB2	1:D:324:LEU:O	2.14	0.47
1:D:144:TRP:NE1	1:E:196:ASP:O	2.40	0.47
1:D:221:ARG:NH2	1:D:440:GLU:HG3	2.29	0.47
1:E:288:VAL:HA	1:E:366:PHE:HB2	1.97	0.47
1:E:334:ARG:NH1	1:E:394:GLN:OE1	2.42	0.47
1:E:363:ILE:HG23	1:E:365:PHE:CE2	2.49	0.47
1:A:60:HIS:O	1:A:62:ALA:N	2.47	0.47
1:A:153:ALA:HA	1:A:165:VAL:CG2	2.45	0.47
1:B:99:THR:HG23	1:B:278:ILE:HG23	1.96	0.47
1:C:127:THR:HG22	1:C:128:ASP:H	1.78	0.47
1:C:196:ASP:OD2	1:C:311:ARG:NH2	2.47	0.47
1:C:247:PHE:HE1	1:C:251:PRO:CA	1.88	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:55:THR:HG1	1:A:243:ASN:ND2	2.09	0.47
1:A:93:SER:OG	1:A:96:ASP:N	2.42	0.47
1:B:130:PRO:O	1:B:164:ASP:OD1	2.32	0.47
1:B:191:LYS:CD	1:B:195:SER:HB3	2.44	0.47
1:B:376:ARG:HH22	1:B:421:HIS:CD2	2.32	0.47
1:C:324:LEU:C	1:C:326:CYS:H	2.21	0.47
1:F:358:ASN:OD1	1:F:358:ASN:N	2.48	0.47
1:D:130:PRO:HB3	1:D:328:LEU:HD12	1.97	0.47
1:A:51:PHE:HD1	1:A:51:PHE:O	1.98	0.47
1:A:91:ALA:O	1:A:130:PRO:HG2	2.15	0.47
1:A:103:PHE:HE1	1:A:158:PRO:CD	2.24	0.47
1:D:406:TRP:N	1:D:428:SER:HG	2.11	0.47
1:C:187:GLU:OE1	1:C:187:GLU:N	2.48	0.47
1:A:196:ASP:OD2	1:A:311:ARG:NH1	2.48	0.46
1:B:135:PHE:HE2	1:B:355:LEU:HD11	1.80	0.46
1:B:227:VAL:HG12	1:B:297:PHE:CE2	2.49	0.46
1:B:319:VAL:HG11	1:B:436:LEU:HD11	1.97	0.46
1:C:243:ASN:OD1	1:C:263:VAL:N	2.49	0.46
1:F:325:GLN:OE1	1:F:325:GLN:HA	2.15	0.46
1:E:119:PHE:CD2	1:E:126:LEU:HB2	2.50	0.46
1:E:199:ILE:HG12	1:E:306:VAL:HG22	1.98	0.46
1:E:286:THR:HA	1:E:365:PHE:CD1	2.49	0.46
1:A:60:HIS:O	1:A:61:CYS:C	2.57	0.46
1:A:233:HIS:CE1	1:A:266:ALA:HB1	2.50	0.46
1:C:385:SER:O	1:C:385:SER:OG	2.26	0.46
1:A:51:PHE:O	1:A:51:PHE:CD1	2.68	0.46
1:D:289:ARG:HG2	1:D:365:PHE:CG	2.50	0.46
1:F:80:ARG:NH2	1:F:82:PRO:HD3	2.30	0.46
1:F:100:ILE:HG21	1:F:163:CYS:HB2	1.98	0.46
1:E:199:ILE:HG22	1:E:248:HIS:NE2	2.30	0.46
1:A:271:THR:HG23	1:A:274:VAL:HG12	1.96	0.46
1:C:109:ARG:NE	1:C:115:THR:OG1	2.48	0.46
1:F:47:SER:HB3	1:A:53:TRP:HE3	1.81	0.46
1:F:51:PHE:HB2	1:A:266:ALA:HB3	1.98	0.46
1:F:268:SER:HA	1:F:290:ALA:O	2.16	0.46
1:E:145:LEU:HD22	1:E:149:GLN:HG3	1.96	0.46
1:A:206:ALA:O	1:A:247:PHE:N	2.39	0.46
1:B:95:LEU:HB2	1:B:324:LEU:HB2	1.97	0.46
1:B:97:LEU:HD11	1:B:130:PRO:CB	2.45	0.46
1:B:112:SER:HB2	1:B:134:VAL:O	2.16	0.46
1:B:374:GLU:O	1:B:377:GLN:HG2	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:199:ILE:HG22	1:C:248:HIS:NE2	2.24	0.46
1:D:125:ASP:N	1:D:125:ASP:OD1	2.37	0.46
1:D:233:HIS:O	1:D:236:ALA:N	2.30	0.46
1:D:259:TYR:HB3	1:D:301:PHE:HE2	1.79	0.46
1:A:95:LEU:C	1:A:97:LEU:N	2.73	0.46
1:A:158:PRO:HD2	1:A:161:VAL:CG2	2.46	0.46
1:C:338:LYS:HB2	1:C:379:PHE:CE1	2.51	0.46
1:E:233:HIS:ND1	1:E:233:HIS:C	2.73	0.46
1:E:416:LYS:HE3	1:E:423:PRO:HD3	1.98	0.46
1:C:298:ALA:O	1:C:300:ASP:N	2.49	0.46
1:F:242:PRO:CG	1:A:54:PRO:CA	2.93	0.46
1:D:371:VAL:HG11	1:D:427:THR:HG23	1.98	0.46
1:A:128:ASP:O	1:A:129:ILE:HG13	2.16	0.46
1:A:389:ILE:HG13	1:A:405:ILE:HG13	1.97	0.46
1:F:207:SER:CB	1:F:243:ASN:HD21	2.26	0.46
1:D:245:LYS:CB	1:D:259:TYR:OH	2.47	0.46
1:E:135:PHE:HB3	1:E:170:PHE:HB2	1.98	0.46
1:E:151:LEU:HD12	1:E:151:LEU:H	1.81	0.46
1:E:275:TRP:O	1:E:434:ARG:NH1	2.43	0.46
1:B:276:TYR:HD1	1:B:324:LEU:HD22	1.81	0.46
1:B:301:PHE:O	1:B:302:ASP:C	2.59	0.45
1:B:421:HIS:HA	1:C:185:PHE:HB3	1.98	0.45
1:F:80:ARG:H	1:F:80:ARG:HG3	1.54	0.45
1:D:220:ARG:NH2	1:D:224:ASN:H	2.14	0.45
1:E:246:MET:HE1	1:E:295:ILE:HG13	1.97	0.45
1:B:285:GLU:OE1	1:B:363:ILE:HA	2.17	0.45
1:C:205:VAL:HG21	1:C:229:PHE:CE2	2.51	0.45
1:C:319:VAL:HG23	1:C:432:LEU:HG	1.97	0.45
1:A:65:GLY:O	1:A:279:TYR:CE2	2.69	0.45
1:A:98:MET:HE1	1:A:354:ALA:HB1	1.97	0.45
1:A:139:LYS:HG3	1:A:167:VAL:CG1	2.47	0.45
1:A:141:HIS:CD2	1:B:195:SER:O	2.69	0.45
1:A:153:ALA:HA	1:A:165:VAL:CB	2.46	0.45
1:F:75:LYS:CG	1:F:76:GLY:N	2.69	0.45
1:F:414:ARG:HE	1:F:423:PRO:HB2	1.80	0.45
1:D:246:MET:N	1:D:259:TYR:CZ	2.80	0.45
1:D:390:ILE:HD13	1:D:401:PRO:HA	1.99	0.45
1:E:259:TYR:O	1:E:259:TYR:CD1	2.70	0.45
1:A:113:LEU:CB	1:A:135:PHE:CZ	2.98	0.45
1:F:50:TYR:CD1	1:F:50:TYR:O	2.70	0.45
1:A:60:HIS:CG	1:A:61:CYS:H	2.33	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:111:PHE:CD1	1:A:151:LEU:HD21	2.52	0.45
1:B:116:ALA:O	1:B:132:ILE:HD12	2.16	0.45
1:B:347:THR:HG22	1:B:348:GLY:H	1.80	0.45
1:B:428:SER:O	1:B:428:SER:OG	2.31	0.45
1:F:50:TYR:HD1	1:F:50:TYR:O	2.00	0.45
1:F:238:ASP:O	1:A:239:LEU:HD21	2.17	0.45
1:D:444:ILE:HG23	1:D:449:SER:OG	2.16	0.45
1:A:233:HIS:CE1	1:A:237:VAL:HG21	2.51	0.45
1:C:338:LYS:HB2	1:C:379:PHE:CZ	2.51	0.45
1:F:54:PRO:O	1:F:55:THR:C	2.60	0.45
1:D:328:LEU:HD23	1:D:328:LEU:HA	1.75	0.45
1:A:135:PHE:CD1	1:A:170:PHE:CB	2.98	0.45
1:D:439:LEU:HB2	1:D:441:LEU:HD11	1.98	0.45
1:A:103:PHE:CZ	1:A:157:GLY:CA	2.99	0.45
1:C:260:LEU:O	1:C:297:PHE:C	2.60	0.45
1:F:78:LEU:O	1:F:79:PRO:C	2.60	0.45
1:F:355:LEU:HD12	1:F:356:GLU:H	1.81	0.45
1:E:221:ARG:NE	1:E:442:ASP:HB2	2.32	0.45
1:A:286:THR:HG23	1:A:364:CYS:HB3	1.99	0.45
1:B:98:MET:HE1	1:B:280:ALA:HB3	1.98	0.45
1:D:232:ASN:ND2	1:D:406:TRP:HD1	2.14	0.45
1:D:330:SER:O	1:D:334:ARG:HG3	2.16	0.45
1:E:298:ALA:O	1:E:300:ASP:N	2.49	0.45
1:B:291:ASP:O	1:B:435:LEU:HD11	2.17	0.45
1:B:333:GLY:O	1:B:334:ARG:HG2	2.16	0.45
1:C:232:ASN:HD21	1:C:235:VAL:HG23	1.81	0.45
1:C:245:LYS:HE2	1:C:259:TYR:HE2	1.66	0.45
1:C:247:PHE:HA	1:C:260:LEU:HD12	1.99	0.45
1:F:93:SER:CB	1:F:325:GLN:OE1	2.65	0.44
1:F:337:CYS:HG	1:F:392:THR:HG1	1.45	0.44
1:F:412:ARG:O	1:F:412:ARG:HG3	2.17	0.44
1:D:172:TYR:HD1	1:D:172:TYR:HA	1.66	0.44
1:E:270:ILE:HD12	1:E:290:ALA:HB3	1.99	0.44
1:A:91:ALA:HB1	1:A:97:LEU:HB2	1.99	0.44
1:A:141:HIS:NE2	1:B:195:SER:O	2.49	0.44
1:E:205:VAL:HG11	1:E:229:PHE:CZ	2.52	0.44
1:A:101:ARG:HB3	1:A:132:ILE:CG2	2.47	0.44
1:A:372:VAL:HG22	1:A:426:TRP:HB3	1.99	0.44
1:A:430:VAL:HG21	1:A:435:LEU:HD22	1.99	0.44
1:B:133:LEU:HB3	1:B:135:PHE:CE1	2.51	0.44
1:C:132:ILE:O	1:C:132:ILE:HG22	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:317:GLY:O	1:C:445:ILE:HG21	2.17	0.44
1:F:115:THR:HG22	1:F:134:VAL:HG23	1.98	0.44
1:E:439:LEU:O	1:E:441:LEU:HG	2.17	0.44
1:A:139:LYS:C	1:A:140:VAL:HG22	2.42	0.44
1:B:101:ARG:NE	1:B:155:LEU:HB3	2.32	0.44
1:B:141:HIS:CE1	1:C:197:GLU:HG3	2.52	0.44
1:B:319:VAL:O	1:B:320:LYS:C	2.61	0.44
1:C:202:GLY:CA	1:C:214:LEU:HB3	2.46	0.44
1:C:322:ILE:HD12	1:C:322:ILE:O	2.17	0.44
1:D:155:LEU:HD23	1:D:155:LEU:HA	1.81	0.44
1:A:142:LYS:NZ	1:A:143:LYS:HG2	2.33	0.44
1:A:144:TRP:CZ2	1:B:197:GLU:HA	2.52	0.44
1:A:403:GLY:HA2	1:A:432:LEU:HB3	1.99	0.44
1:B:221:ARG:NE	1:B:440:GLU:OE2	2.51	0.44
1:B:233:HIS:CG	1:B:234:HIS:N	2.83	0.44
1:B:316:ILE:HG21	1:B:390:ILE:HD11	2.00	0.44
1:B:348:GLY:HA2	1:B:374:GLU:HB2	1.99	0.44
1:C:101:ARG:NH2	1:C:356:GLU:OE2	2.51	0.44
1:F:98:MET:C	1:F:100:ILE:H	2.25	0.44
1:A:274:VAL:HG22	1:A:438:ARG:NH2	2.31	0.44
1:C:336:VAL:O	1:C:348:GLY:N	2.49	0.44
1:F:67:ALA:O	1:F:72:ASN:HB2	2.18	0.44
1:F:235:VAL:O	1:F:246:MET:HE1	2.18	0.44
1:F:322:ILE:O	1:F:434:ARG:NH2	2.51	0.44
1:D:207:SER:HB3	1:D:247:PHE:N	2.32	0.44
1:E:251:PRO:HG2	1:E:254:LEU:H	0.62	0.44
1:A:143:LYS:C	1:A:145:LEU:N	2.75	0.44
1:A:353:TYR:OH	1:A:434:ARG:NH2	2.48	0.44
1:C:338:LYS:O	1:C:345:HIS:HA	2.18	0.44
1:C:414:ARG:HB2	1:C:423:PRO:HB2	2.00	0.44
1:F:139:LYS:HE3	1:F:167:VAL:HB	2.00	0.44
1:E:119:PHE:HB2	1:E:332:ILE:HG21	2.00	0.44
1:E:251:PRO:CB	1:E:254:LEU:CD1	2.74	0.44
1:E:336:VAL:HB	1:E:389:ILE:HG22	1.99	0.44
1:A:60:HIS:O	1:A:63:ALA:N	2.51	0.44
1:A:106:LYS:HD2	1:A:107:ILE:N	2.33	0.44
1:B:134:VAL:HB	1:B:167:VAL:HG12	1.98	0.44
1:B:248:HIS:CD2	1:B:249:PRO:HD3	2.53	0.44
1:F:245:LYS:HG2	1:A:56:SER:OG	2.17	0.44
1:E:163:CYS:SG	1:E:164:ASP:N	2.91	0.44
1:E:288:VAL:HG22	1:E:366:PHE:CG	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:117:VAL:HG23	1:C:117:VAL:O	2.17	0.44
1:C:218:VAL:O	1:C:219:LYS:HG2	2.18	0.44
1:F:75:LYS:HG2	1:F:76:GLY:H	1.78	0.44
1:F:155:LEU:HD12	1:F:155:LEU:H	1.82	0.44
1:D:220:ARG:HD3	1:D:265:ARG:HH12	1.83	0.44
1:D:301:PHE:O	1:D:302:ASP:C	2.61	0.44
1:E:444:ILE:HD12	1:E:444:ILE:HA	1.82	0.44
1:A:133:LEU:C	1:A:135:PHE:N	2.75	0.44
1:B:135:PHE:HE1	1:B:168:VAL:HB	1.81	0.44
1:F:53:TRP:CZ2	1:A:238:ASP:O	2.70	0.43
1:E:247:PHE:CZ	1:E:251:PRO:HA	2.53	0.43
1:E:247:PHE:CD2	1:E:259:TYR:CA	3.01	0.43
1:A:72:ASN:C	1:A:74:GLN:N	2.74	0.43
1:B:260:LEU:HD22	1:B:301:PHE:HA	2.00	0.43
1:F:93:SER:HB2	1:F:96:ASP:HB2	2.01	0.43
1:F:239:LEU:HB2	1:F:240:ASP:OD1	2.18	0.43
1:F:244:GLN:HG3	1:A:56:SER:CB	2.43	0.43
1:A:103:PHE:HD2	1:A:104:HIS:CG	2.36	0.43
1:A:207:SER:HA	1:A:246:MET:HA	2.00	0.43
1:B:209:GLU:CD	1:B:210:THR:HG23	2.43	0.43
1:B:335:GLN:HB2	1:B:392:THR:HG21	2.00	0.43
1:F:94:LEU:CD2	1:F:353:TYR:CD2	3.01	0.43
1:E:192:LEU:HB3	1:E:203:SER:HA	1.99	0.43
1:B:206:ALA:HB3	1:B:249:PRO:O	2.18	0.43
1:B:227:VAL:HG13	1:B:444:ILE:CD1	2.48	0.43
1:D:95:LEU:HD23	1:D:325:GLN:HB3	2.00	0.43
1:E:172:TYR:OH	1:E:412:ARG:NH1	2.51	0.43
1:A:55:THR:HG22	1:A:287:PHE:CD2	2.53	0.43
1:A:204:GLN:OE1	1:C:138:ARG:NH1	2.44	0.43
1:B:130:PRO:CG	1:B:328:LEU:CD1	2.95	0.43
1:F:201:SER:HB2	1:F:216:ALA:HA	2.00	0.43
1:F:326:CYS:SG	1:F:327:PRO:HD2	2.58	0.43
1:D:135:PHE:CE2	1:D:355:LEU:HD12	2.53	0.43
1:E:98:MET:HE2	1:E:98:MET:HB2	1.96	0.43
1:A:84:ARG:HB3	1:A:85:LEU:H	1.65	0.43
1:A:145:LEU:HD11	1:A:150:CYS:HB3	2.00	0.43
1:A:436:LEU:HD11	1:A:443:ILE:HG12	1.99	0.43
1:B:376:ARG:HH22	1:B:421:HIS:CE1	2.37	0.43
1:C:192:LEU:HD13	1:C:202:GLY:C	2.43	0.43
1:F:55:THR:CB	1:A:48:ALA:O	2.67	0.43
1:D:192:LEU:HD11	1:D:341:ARG:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:102:ALA:O	1:A:103:PHE:O	2.36	0.43
1:A:119:PHE:HB3	1:A:127:THR:O	2.18	0.43
1:B:237:VAL:CG2	1:B:244:GLN:HB3	2.48	0.43
1:F:92:ASN:C	1:F:93:SER:HG	2.21	0.43
1:F:310:VAL:HG21	1:F:316:ILE:HD11	2.01	0.43
1:A:144:TRP:N	1:A:144:TRP:HD1	2.16	0.43
1:B:404:ILE:HG13	1:B:432:LEU:CD1	2.49	0.43
1:D:409:THR:HG22	1:D:426:TRP:O	2.18	0.43
1:E:259:TYR:O	1:E:259:TYR:CG	2.70	0.43
1:A:143:LYS:HG3	1:A:144:TRP:CD1	2.54	0.43
1:B:288:VAL:HG22	1:B:366:PHE:CD2	2.54	0.43
1:F:237:VAL:HG12	1:F:238:ASP:N	2.32	0.43
1:E:104:HIS:O	1:E:107:ILE:HG22	2.18	0.43
1:E:208:HIS:HB3	1:E:244:GLN:NE2	2.33	0.43
1:E:288:VAL:HG13	1:E:366:PHE:HB3	2.00	0.43
1:A:120:ARG:NH2	1:A:165:VAL:O	2.50	0.43
1:A:122:ARG:HG2	1:A:123:LYS:HG2	2.01	0.43
1:B:371:VAL:HG13	1:B:427:THR:HG1	1.83	0.43
1:C:337:CYS:SG	1:C:390:ILE:HG12	2.58	0.43
1:C:409:THR:OG1	1:C:427:THR:HA	2.18	0.43
1:C:415:LEU:HD23	1:C:426:TRP:CD1	2.54	0.43
1:F:220:ARG:HB2	1:F:294:PHE:CE2	2.54	0.43
1:F:416:LYS:HG3	1:F:423:PRO:HB3	2.00	0.43
1:D:170:PHE:CD1	1:D:415:LEU:HD12	2.54	0.43
1:E:324:LEU:C	1:E:326:CYS:H	2.27	0.43
1:B:336:VAL:HG12	1:B:391:LEU:HD23	2.01	0.43
1:C:247:PHE:HB3	1:C:259:TYR:CB	2.49	0.43
1:C:297:PHE:HD1	1:C:297:PHE:HA	1.65	0.43
1:A:143:LYS:HG3	1:A:144:TRP:HD1	1.83	0.42
1:A:264:GLU:O	1:A:265:ARG:HG2	2.18	0.42
1:A:423:PRO:HD3	1:B:185:PHE:CE2	2.54	0.42
1:B:100:ILE:O	1:B:158:PRO:HD3	2.19	0.42
1:B:252:PRO:HD3	1:B:257:GLY:HA3	2.01	0.42
1:B:266:ALA:HB1	1:B:293:ALA:HA	2.01	0.42
1:B:437:ASP:C	1:B:438:ARG:HD2	2.44	0.42
1:C:322:ILE:H	1:C:322:ILE:HG13	1.71	0.42
1:C:361:LYS:HB2	1:C:361:LYS:HE3	1.66	0.42
1:C:444:ILE:HD12	1:C:444:ILE:HA	1.83	0.42
1:F:93:SER:CB	1:F:96:ASP:HB2	2.48	0.42
1:D:334:ARG:HH22	1:D:392:THR:HG23	1.83	0.42
1:D:369:ILE:HG22	1:D:427:THR:OG1	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:416:LYS:HB3	1:D:423:PRO:HD3	2.01	0.42
1:B:93:SER:HB3	1:B:325:GLN:HA	2.01	0.42
1:F:58:LEU:HB3	1:F:59:GLN:H	1.57	0.42
1:F:242:PRO:HB3	1:A:54:PRO:CA	2.48	0.42
1:D:98:MET:HE2	1:D:98:MET:HB3	1.90	0.42
1:E:95:LEU:HD12	1:E:95:LEU:H	1.83	0.42
1:E:438:ARG:HD2	1:E:438:ARG:HA	1.65	0.42
1:A:98:MET:HE1	1:A:354:ALA:CB	2.49	0.42
1:B:421:HIS:HA	1:C:185:PHE:CG	2.54	0.42
1:C:204:GLN:OE1	1:C:341:ARG:NE	2.38	0.42
1:F:55:THR:C	1:F:57:ASN:N	2.70	0.42
1:F:250:LEU:CD1	1:E:138:ARG:HG2	2.45	0.42
1:D:115:THR:H	1:D:356:GLU:H	1.68	0.42
1:D:316:ILE:HG22	1:D:399:PRO:HD2	2.00	0.42
1:D:434:ARG:HH12	1:D:438:ARG:HG2	1.85	0.42
1:E:107:ILE:HD12	1:E:107:ILE:HA	1.88	0.42
1:A:142:LYS:O	1:A:145:LEU:HB2	2.20	0.42
1:C:318:ASP:O	1:C:400:ARG:HG2	2.19	0.42
1:F:55:THR:CG2	1:A:48:ALA:O	2.64	0.42
1:F:94:LEU:HD22	1:F:353:TYR:CE2	2.54	0.42
1:F:239:LEU:O	1:F:240:ASP:C	2.62	0.42
1:D:98:MET:O	1:D:280:ALA:HB2	2.20	0.42
1:D:246:MET:HB3	1:D:261:GLY:O	2.19	0.42
1:D:334:ARG:NH1	1:D:391:LEU:HD22	2.31	0.42
1:E:248:HIS:CG	1:E:249:PRO:CD	2.99	0.42
1:E:351:MET:HG2	1:E:372:VAL:HG12	2.02	0.42
1:A:111:PHE:CD1	1:A:151:LEU:HD11	2.54	0.42
1:A:113:LEU:CG	1:A:135:PHE:CZ	3.03	0.42
1:B:386:GLY:N	1:B:405:ILE:O	2.35	0.42
1:C:247:PHE:HB3	1:C:259:TYR:HB2	2.00	0.42
1:C:318:ASP:O	1:C:401:PRO:HD2	2.19	0.42
1:F:87:LYS:HD3	1:F:88:GLY:H	1.83	0.42
1:F:404:ILE:HG12	1:F:432:LEU:HD13	2.01	0.42
1:D:119:PHE:CD1	1:D:332:ILE:HG21	2.54	0.42
1:D:132:ILE:HD12	1:D:132:ILE:HA	1.88	0.42
1:D:198:CYS:O	1:D:311:ARG:NH1	2.50	0.42
1:D:297:PHE:O	1:D:298:ALA:O	2.37	0.42
1:A:62:ALA:C	1:A:64:GLU:N	2.77	0.42
1:B:118:GLY:HA2	1:B:332:ILE:HD11	2.01	0.42
1:B:207:SER:HB3	1:B:247:PHE:H	1.85	0.42
1:C:120:ARG:HB3	1:C:129:ILE:O	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:217:ILE:HB	1:C:444:ILE:HG22	2.01	0.42
1:C:270:ILE:HD13	1:C:275:TRP:CE2	2.54	0.42
1:F:53:TRP:HD1	1:F:55:THR:CG2	2.33	0.42
1:D:116:ALA:O	1:D:132:ILE:HD12	2.19	0.42
1:D:221:ARG:HE	1:D:440:GLU:HG3	1.85	0.42
1:E:247:PHE:CD2	1:E:259:TYR:HA	2.54	0.42
1:A:72:ASN:CA	1:A:75:LYS:HB3	2.49	0.42
1:B:120:ARG:HE	1:B:120:ARG:HB2	1.73	0.42
1:B:320:LYS:HD3	1:B:400:ARG:HD3	2.02	0.42
1:C:379:PHE:HD2	1:C:427:THR:HG21	1.85	0.42
1:F:245:LYS:HD2	1:F:259:TYR:OH	2.20	0.42
1:F:246:MET:HB3	1:F:246:MET:HE2	1.41	0.42
1:A:70:PHE:CE2	1:A:281:GLY:O	2.73	0.42
1:A:73:LEU:C	1:A:74:GLN:HG3	2.44	0.42
1:C:448:GLU:OE1	1:C:448:GLU:N	2.42	0.42
1:F:53:TRP:CH2	1:A:238:ASP:O	2.72	0.42
1:F:70:PHE:CE2	1:F:282:THR:HG23	2.54	0.42
1:F:320:LYS:HD3	1:F:320:LYS:HA	1.92	0.42
1:F:358:ASN:HB3	1:F:364:CYS:SG	2.59	0.42
1:E:192:LEU:HD23	1:E:202:GLY:C	2.44	0.42
1:E:229:PHE:CE2	1:E:231:THR:HB	2.55	0.42
1:E:416:LYS:HA	1:E:423:PRO:HA	2.02	0.42
1:A:112:SER:HB3	1:A:113:LEU:H	1.55	0.42
1:B:264:GLU:HB3	1:B:265:ARG:H	1.69	0.42
1:C:337:CYS:SG	1:C:338:LYS:N	2.93	0.42
1:F:70:PHE:CE2	1:F:282:THR:CG2	2.98	0.42
1:F:89:GLN:O	1:F:89:GLN:CG	2.68	0.42
1:F:432:LEU:HG	1:F:436:LEU:HD23	2.02	0.42
1:E:249:PRO:CB	1:E:250:LEU:HD12	2.49	0.42
1:A:220:ARG:NH2	1:A:222:THR:OG1	2.45	0.42
1:B:94:LEU:HD12	1:B:94:LEU:H	1.84	0.42
1:B:192:LEU:HD23	1:B:311:ARG:HE	1.84	0.42
1:B:422:GLY:O	1:B:423:PRO:C	2.63	0.42
1:F:145:LEU:HA	1:D:256:PRO:HB3	2.02	0.41
1:D:245:LYS:CD	1:D:259:TYR:OH	2.59	0.41
1:A:88:GLY:C	1:A:89:GLN:HG2	2.45	0.41
1:A:101:ARG:NH1	1:A:356:GLU:HB3	2.35	0.41
1:A:315:ASP:O	1:A:399:PRO:HD2	2.20	0.41
1:A:391:LEU:HD12	1:A:391:LEU:HA	1.91	0.41
1:B:218:VAL:HG12	1:B:443:ILE:HD13	2.01	0.41
1:C:123:LYS:HD3	1:C:123:LYS:HA	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:343:SER:OG	1:C:380:ASP:HA	2.20	0.41
1:C:350:VAL:HG22	1:C:371:VAL:HG12	2.02	0.41
1:F:90:GLN:CD	1:F:90:GLN:H	2.28	0.41
1:F:111:PHE:HB2	1:F:151:LEU:HD21	2.01	0.41
1:E:353:TYR:CG	1:E:354:ALA:N	2.89	0.41
1:E:409:THR:OG1	1:E:427:THR:HA	2.19	0.41
1:A:73:LEU:HG	1:A:103:PHE:CG	2.55	0.41
1:A:288:VAL:HG22	1:A:366:PHE:HB2	2.02	0.41
1:B:389:ILE:H	1:B:403:GLY:C	2.28	0.41
1:C:225:LYS:H	1:C:225:LYS:HD2	1.85	0.41
1:D:191:LYS:HA	1:D:191:LYS:HD3	1.85	0.41
1:D:368:ASP:HB2	1:D:430:VAL:HA	2.02	0.41
1:D:414:ARG:NH1	1:D:423:PRO:O	2.50	0.41
1:A:413:GLY:HA3	1:A:426:TRP:CZ2	2.55	0.41
1:D:422:GLY:O	1:D:423:PRO:C	2.63	0.41
1:E:119:PHE:CZ	1:E:128:ASP:HA	2.56	0.41
1:E:247:PHE:CB	1:E:259:TYR:CA	2.80	0.41
1:B:232:ASN:ND2	1:B:406:TRP:HD1	2.18	0.41
1:B:417:LEU:HG	1:B:418:THR:H	1.85	0.41
1:F:110:ARG:HG2	1:F:111:PHE:CD2	2.55	0.41
1:D:268:SER:HB2	1:D:269:PHE:H	1.70	0.41
1:A:100:ILE:HA	1:A:103:PHE:HD1	1.84	0.41
1:A:110:ARG:HG2	1:A:110:ARG:HH11	1.84	0.41
1:C:94:LEU:HG	1:C:324:LEU:HB2	2.03	0.41
1:F:208:HIS:HA	1:F:251:PRO:HG3	2.02	0.41
1:D:220:ARG:HH22	1:D:226:GLN:HB2	1.85	0.41
1:D:260:LEU:HA	1:D:260:LEU:HD12	1.50	0.41
1:A:72:ASN:OD1	1:A:72:ASN:N	2.54	0.41
1:A:112:SER:O	1:A:113:LEU:HB2	2.21	0.41
1:A:317:GLY:O	1:A:445:ILE:HG21	2.20	0.41
1:B:115:THR:HB	1:B:356:GLU:HG2	2.03	0.41
1:B:220:ARG:O	1:B:225:LYS:HA	2.20	0.41
1:B:308:THR:HG21	1:B:447:ASN:HA	2.02	0.41
1:F:74:GLN:HG2	1:F:158:PRO:CB	2.51	0.41
1:F:135:PHE:HB3	1:F:170:PHE:HB2	2.02	0.41
1:D:119:PHE:HD1	1:D:332:ILE:HG21	1.85	0.41
1:D:122:ARG:O	1:D:123:LYS:HG2	2.21	0.41
1:A:106:LYS:HD2	1:A:107:ILE:H	1.84	0.41
1:A:142:LYS:HZ3	1:A:143:LYS:HG2	1.86	0.41
1:B:297:PHE:CD2	1:B:301:PHE:HE2	2.38	0.41
1:C:389:ILE:HD12	1:C:403:GLY:C	2.45	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:438:ARG:HA	1:C:438:ARG:HD2	1.81	0.41
1:F:47:SER:CB	1:A:53:TRP:CE3	3.03	0.41
1:F:143:LYS:HB3	1:F:143:LYS:HE2	1.85	0.41
1:D:246:MET:CA	1:D:259:TYR:HE1	2.28	0.41
1:B:422:GLY:HA3	1:B:423:PRO:HD2	1.85	0.41
1:B:438:ARG:HD2	1:B:438:ARG:N	2.35	0.41
1:F:63:ALA:H	1:F:65:GLY:H	1.69	0.41
1:F:205:VAL:HG11	1:F:235:VAL:HG11	2.02	0.41
1:F:205:VAL:HG13	1:F:235:VAL:CG1	2.50	0.41
1:F:239:LEU:HB3	1:A:239:LEU:CD2	2.50	0.41
1:D:141:HIS:HB3	1:E:195:SER:HA	2.01	0.41
1:D:259:TYR:HB3	1:D:301:PHE:CE2	2.55	0.41
1:E:115:THR:O	1:E:355:LEU:HA	2.21	0.41
1:E:191:LYS:HB3	1:E:196:ASP:OD2	2.21	0.41
1:E:249:PRO:HB3	1:E:250:LEU:HD12	2.03	0.41
1:A:50:TYR:O	1:A:50:TYR:CG	2.69	0.41
1:A:80:ARG:NH2	1:A:152:PRO:HB3	2.33	0.41
1:A:155:LEU:CD1	1:A:165:VAL:HG21	2.51	0.41
1:A:222:THR:HB	1:A:223:GLY:H	1.70	0.41
1:B:116:ALA:HB3	1:B:133:LEU:HD12	2.02	0.41
1:B:186:SER:HB3	1:B:189:VAL:HG23	2.03	0.41
1:B:198:CYS:HB2	1:B:311:ARG:HH12	1.86	0.41
1:B:347:THR:HG22	1:B:348:GLY:N	2.36	0.41
1:C:132:ILE:HB	1:C:165:VAL:HG22	2.03	0.41
1:F:251:PRO:HB2	1:F:253:ASN:OD1	2.20	0.41
1:D:222:THR:OG1	1:D:223:GLY:N	2.54	0.41
1:E:229:PHE:HB3	1:E:297:PHE:CZ	2.56	0.41
1:E:368:ASP:HB3	1:E:369:ILE:H	1.59	0.41
1:A:139:LYS:HD2	1:A:167:VAL:O	2.20	0.41
1:C:202:GLY:H	1:C:214:LEU:CB	2.30	0.41
1:C:303:ILE:HG12	1:C:451:GLN:NE2	2.36	0.41
1:F:391:LEU:HD23	1:F:391:LEU:HA	1.95	0.40
1:E:116:ALA:HB2	1:E:135:PHE:CE2	2.55	0.40
1:A:132:ILE:CG1	1:A:163:CYS:SG	3.06	0.40
1:A:171:SER:OG	1:A:172:TYR:N	2.55	0.40
1:B:138:ARG:HA	1:B:138:ARG:HD2	1.83	0.40
1:B:262:ALA:O	1:B:296:PRO:HD2	2.21	0.40
1:B:404:ILE:HG13	1:B:432:LEU:HD12	2.03	0.40
1:C:397:GLU:H	1:C:397:GLU:HG3	1.76	0.40
1:F:54:PRO:C	1:F:56:SER:H	2.27	0.40
1:F:238:ASP:N	1:F:238:ASP:OD1	2.53	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:289:ARG:NH1	1:D:364:CYS:O	2.53	0.40
1:E:420:ASP:O	1:E:421:HIS:ND1	2.54	0.40
1:A:64:GLU:CD	1:A:64:GLU:O	2.63	0.40
1:A:98:MET:HG2	1:A:278:ILE:HD11	2.02	0.40
1:C:247:PHE:C	1:C:248:HIS:O	2.48	0.40
1:F:66:ARG:NH2	1:F:273:ASP:OD1	2.54	0.40
1:F:110:ARG:HG2	1:F:111:PHE:CE2	2.56	0.40
1:D:98:MET:SD	1:D:278:ILE:HG21	2.61	0.40
1:D:221:ARG:HB2	1:D:440:GLU:O	2.22	0.40
1:E:123:LYS:HA	1:E:123:LYS:HD3	1.81	0.40
1:E:197:GLU:OE1	1:E:197:GLU:N	2.51	0.40
1:E:432:LEU:HA	1:E:435:LEU:HB3	2.03	0.40
1:A:93:SER:O	1:A:328:LEU:HD12	2.22	0.40
1:B:100:ILE:CG2	1:B:163:CYS:HB3	2.52	0.40
1:C:143:LYS:O	1:C:143:LYS:HG3	2.21	0.40
1:C:288:VAL:HG12	1:C:289:ARG:C	2.46	0.40
1:F:89:GLN:HB2	1:F:161:VAL:CG1	2.44	0.40
1:F:135:PHE:HE2	1:F:355:LEU:HD13	1.86	0.40
1:F:165:VAL:HG12	1:F:166:ASP:H	1.86	0.40
1:F:270:ILE:HB	1:F:288:VAL:HB	2.03	0.40
1:D:241:TYR:HB3	1:D:244:GLN:HB3	2.04	0.40
1:E:308:THR:O	1:E:308:THR:OG1	2.37	0.40
1:A:93:SER:OG	1:A:96:ASP:HB2	2.20	0.40
1:A:134:VAL:O	1:A:136:VAL:HG22	2.22	0.40
1:F:101:ARG:NH1	1:F:115:THR:O	2.54	0.40
1:F:113:LEU:HD12	1:F:113:LEU:HA	1.96	0.40
1:D:143:LYS:HA	1:D:143:LYS:HD2	1.89	0.40
1:A:101:ARG:HB3	1:A:132:ILE:HG21	2.03	0.40
1:A:132:ILE:O	1:A:134:VAL:N	2.54	0.40
1:A:308:THR:O	1:A:308:THR:HG22	2.21	0.40
1:B:389:ILE:HB	1:B:403:GLY:CA	2.52	0.40
1:C:247:PHE:O	1:C:247:PHE:CD1	2.74	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM

entries.

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	395/409 (97%)	300 (76%)	57 (14%)	38 (10%)	0	2
1	B	349/409 (85%)	272 (78%)	69 (20%)	8 (2%)	5	23
1	C	348/409 (85%)	289 (83%)	54 (16%)	5 (1%)	9	34
1	D	349/409 (85%)	275 (79%)	65 (19%)	9 (3%)	4	20
1	E	349/409 (85%)	276 (79%)	64 (18%)	9 (3%)	4	20
1	F	392/409 (96%)	316 (81%)	52 (13%)	24 (6%)	1	6
All	All	2182/2454 (89%)	1728 (79%)	361 (16%)	93 (4%)	3	11

All (93) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	F	50	TYR
1	F	53	TRP
1	F	63	ALA
1	F	82	PRO
1	F	90	GLN
1	F	91	ALA
1	F	92	ASN
1	F	140	VAL
1	F	432	LEU
1	D	237	VAL
1	D	249	PRO
1	D	298	ALA
1	D	301	PHE
1	D	302	ASP
1	D	410	ALA
1	D	411	ASN
1	D	423	PRO
1	E	249	PRO
1	E	250	LEU
1	E	257	GLY
1	E	258	VAL
1	E	259	TYR
1	E	354	ALA
1	A	50	TYR
1	A	56	SER
1	A	58	LEU

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Mol	Chain	Res	Type
1	A	60	HIS
1	A	61	CYS
1	A	74	GLN
1	A	80	ARG
1	A	86	PRO
1	A	87	LYS
1	A	88	GLY
1	A	89	GLN
1	A	100	ILE
1	A	103	PHE
1	A	104	HIS
1	A	113	LEU
1	A	117	VAL
1	A	146	ASN
1	A	147	PRO
1	A	148	ALA
1	A	149	GLN
1	A	410	ALA
1	B	209	GLU
1	B	233	HIS
1	B	249	PRO
1	B	411	ASN
1	B	423	PRO
1	C	248	HIS
1	C	299	ASP
1	C	354	ALA
1	F	48	ALA
1	F	56	SER
1	F	73	LEU
1	F	76	GLY
1	D	209	GLU
1	E	103	PHE
1	A	48	ALA
1	A	63	ALA
1	A	77	LEU
1	A	114	GLY
1	A	134	VAL
1	A	154	ILE
1	A	368	ASP
1	B	410	ALA
1	C	103	PHE
1	F	59	GLN

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Mol	Chain	Res	Type
1	F	74	GLN
1	F	78	LEU
1	F	268	SER
1	E	390	ILE
1	A	53	TRP
1	A	64	GLU
1	A	91	ALA
1	A	112	SER
1	A	133	LEU
1	F	238	ASP
1	F	240	ASP
1	F	241	TYR
1	A	54	PRO
1	A	124	GLY
1	F	88	GLY
1	F	169	GLU
1	F	368	ASP
1	A	142	LYS
1	B	102	ALA
1	B	291	ASP
1	F	54	PRO
1	E	299	ASP
1	A	57	ASN
1	A	79	PRO
1	C	249	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 PDB entries followed by that with respect to all EM entries.

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	331/338 (98%)	287 (87%)	44 (13%)	3	13
1	B	296/338 (88%)	294 (99%)	2 (1%)	81	90
1	C	295/338 (87%)	289 (98%)	6 (2%)	50	75
1	D	296/338 (88%)	291 (98%)	5 (2%)	56	78
1	E	296/338 (88%)	288 (97%)	8 (3%)	40	68

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	F	329/338 (97%)	294 (89%)	35 (11%)	5	21
All	All	1843/2028 (91%)	1743 (95%)	100 (5%)	21	47

All (100) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	F	51	PHE
1	F	52	LEU
1	F	55	THR
1	F	58	LEU
1	F	59	GLN
1	F	61	CYS
1	F	64	GLU
1	F	69	TYR
1	F	74	GLN
1	F	75	LYS
1	F	77	LEU
1	F	78	LEU
1	F	80	ARG
1	F	81	HIS
1	F	84	ARG
1	F	85	LEU
1	F	87	LYS
1	F	89	GLN
1	F	90	GLN
1	F	92	ASN
1	F	93	SER
1	F	95	LEU
1	F	97	LEU
1	F	98	MET
1	F	233	HIS
1	F	239	LEU
1	F	240	ASP
1	F	241	TYR
1	F	243	ASN
1	F	244	GLN
1	F	245	LYS
1	F	246	MET
1	F	264	GLU
1	F	324	LEU
1	F	346	THR
1	D	95	LEU

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Mol	Chain	Res	Type
1	D	172	TYR
1	D	260	LEU
1	D	299	ASP
1	D	301	PHE
1	E	233	HIS
1	E	247	PHE
1	E	249	PRO
1	E	250	LEU
1	E	259	TYR
1	E	260	LEU
1	E	315	ASP
1	E	343	SER
1	A	51	PHE
1	A	52	LEU
1	A	55	THR
1	A	56	SER
1	A	57	ASN
1	A	58	LEU
1	A	59	GLN
1	A	61	CYS
1	A	66	ARG
1	A	69	TYR
1	A	70	PHE
1	A	72	ASN
1	A	73	LEU
1	A	74	GLN
1	A	75	LYS
1	A	77	LEU
1	A	78	LEU
1	A	80	ARG
1	A	81	HIS
1	A	84	ARG
1	A	85	LEU
1	A	87	LYS
1	A	89	GLN
1	A	90	GLN
1	A	95	LEU
1	A	98	MET
1	A	100	ILE
1	A	101	ARG
1	A	103	PHE
1	A	105	SER

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Mol	Chain	Res	Type
1	A	109	ARG
1	A	115	THR
1	A	125	ASP
1	A	126	LEU
1	A	132	ILE
1	A	133	LEU
1	A	135	PHE
1	A	136	VAL
1	A	138	ARG
1	A	139	LYS
1	A	140	VAL
1	A	142	LYS
1	A	154	ILE
1	A	265	ARG
1	B	96	ASP
1	B	151	LEU
1	C	119	PHE
1	C	247	PHE
1	C	259	TYR
1	C	265	ARG
1	C	297	PHE
1	C	447	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (20) such sidechains are listed below:

Mol	Chain	Res	Type
1	F	59	GLN
1	F	68	ASN
1	F	81	HIS
1	F	243	ASN
1	F	425	ASN
1	D	232	ASN
1	D	335	GLN
1	D	447	ASN
1	E	244	GLN
1	E	425	ASN
1	A	60	HIS
1	A	68	ASN
1	A	74	GLN
1	A	89	GLN
1	A	233	HIS
1	A	244	GLN

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Mol	Chain	Res	Type
1	B	104	HIS
1	B	183	GLN
1	C	232	ASN
1	C	283	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

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.