



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 08:43 AM UTC

PDB ID : 2HAK / pdb\_00002hak  
Title : Catalytic and ubiquitin-associated domains of MARK1/PAR-1  
Authors : Marx, A.; Nugoor, C.; Mueller, J.; Panneerselvam, S.; Mandelkow, E.-M.;  
Mandelkow, E.  
Deposited on : 2006-06-13  
Resolution : 2.60 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4-5-2 with Phenix2.0  
Xtrriage (Phenix) : 2.0  
EDS : 3.0  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
CCP4 : 9.0.010 (Gargrove)  
Density-Fitness : 1.0.12  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.49

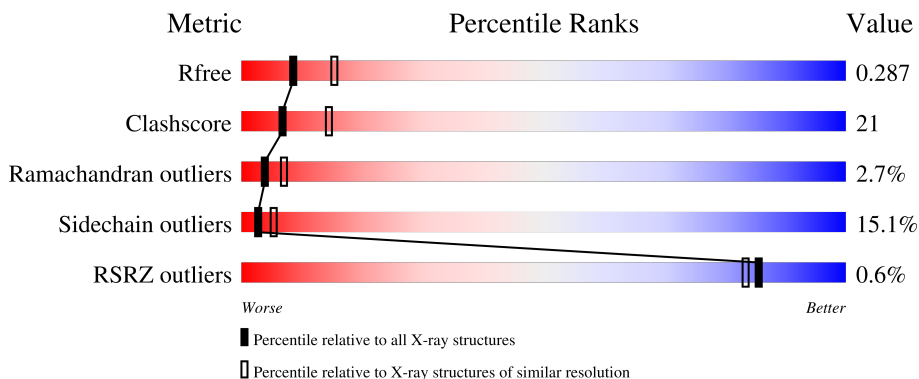
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.60 Å.

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



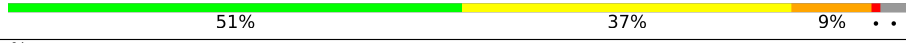
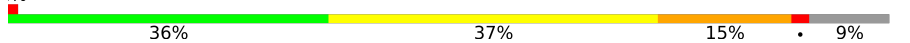

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	180053	4008 (2.60-2.60)
Clashscore	190562	4347 (2.60-2.60)
Ramachandran outliers	187476	4277 (2.60-2.60)
Sidechain outliers	187428	4277 (2.60-2.60)
RSRZ outliers	180081	4008 (2.60-2.60)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . 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	328	
1	B	328	
1	C	328	
1	D	328	
1	E	328	

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Mol	Chain	Length	Quality of chain
1	F	328	 51% 37% 9% . .
1	G	328	%  36% 37% 15% . 9%
1	H	328	 46% 32% 5% . 16%

## 2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 19579 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 Serine/threonine-protein kinase MARK1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	309	Total 2490	C 1599	N 426	O 453	S 12	0	0	0
1	B	279	Total 2231	C 1434	N 380	O 405	S 12	0	0	0
1	C	310	Total 2512	C 1612	N 432	O 456	S 12	0	0	0
1	D	309	Total 2503	C 1607	N 432	O 452	S 12	0	0	0
1	E	318	Total 2538	C 1627	N 437	O 461	S 13	0	0	0
1	F	318	Total 2562	C 1641	N 439	O 469	S 13	0	0	0
1	G	297	Total 2349	C 1506	N 402	O 429	S 12	0	0	0
1	H	277	Total 2184	C 1405	N 367	O 400	S 12	0	0	0

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	37	GLY	-	cloning artifact	UNP Q9P0L2
B	37	GLY	-	cloning artifact	UNP Q9P0L2
C	37	GLY	-	cloning artifact	UNP Q9P0L2
D	37	GLY	-	cloning artifact	UNP Q9P0L2
E	37	GLY	-	cloning artifact	UNP Q9P0L2
F	37	GLY	-	cloning artifact	UNP Q9P0L2
G	37	GLY	-	cloning artifact	UNP Q9P0L2
H	37	GLY	-	cloning artifact	UNP Q9P0L2

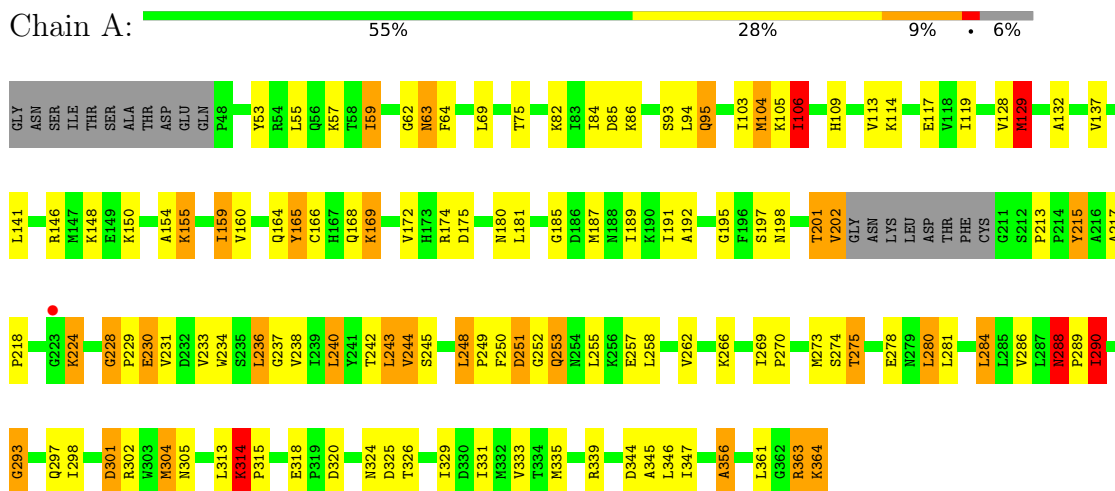
- Molecule 2 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	27	Total O 27 27	0	0
2	B	17	Total O 17 17	0	0
2	C	47	Total O 47 47	0	0
2	D	24	Total O 24 24	0	0
2	E	35	Total O 35 35	0	0
2	F	37	Total O 37 37	0	0
2	G	14	Total O 14 14	0	0
2	H	9	Total O 9 9	0	0

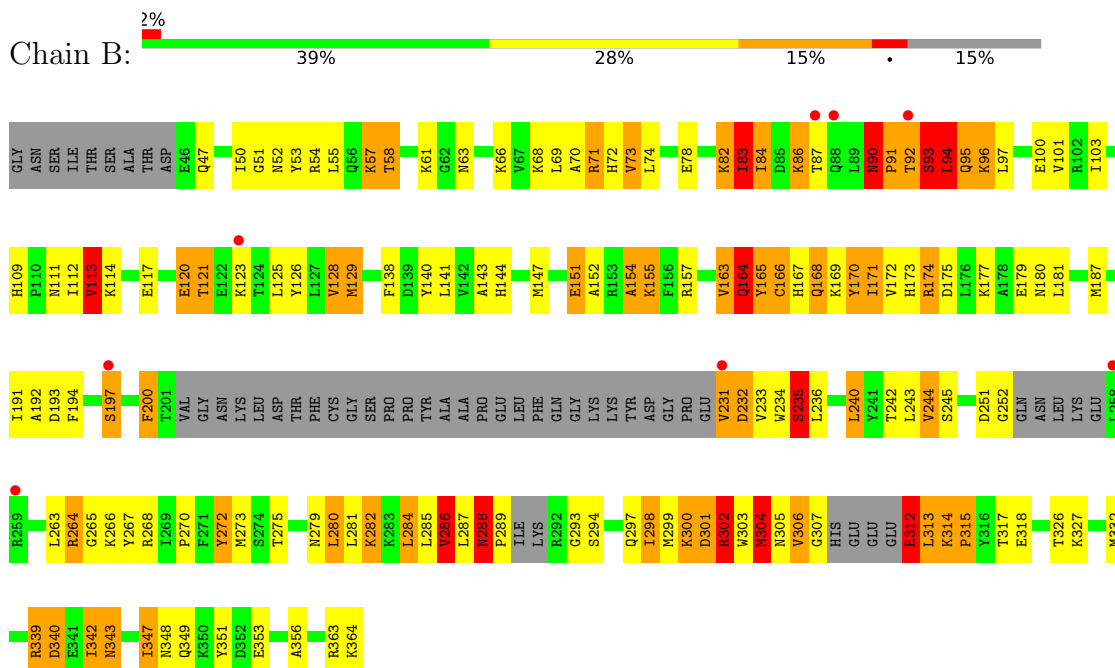
### 3 Residue-property plots [i](#)

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

- Molecule 1: Serine/threonine-protein kinase MARK1

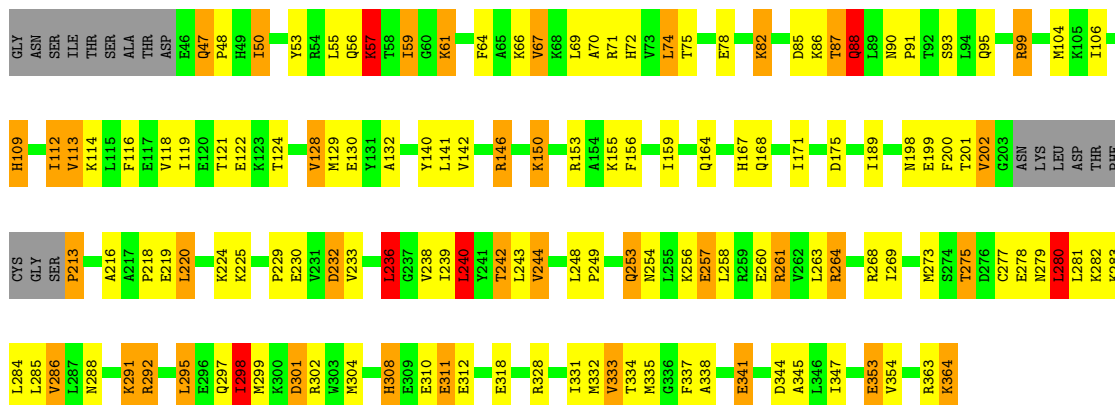


- Molecule 1: Serine/threonine-protein kinase MARK1



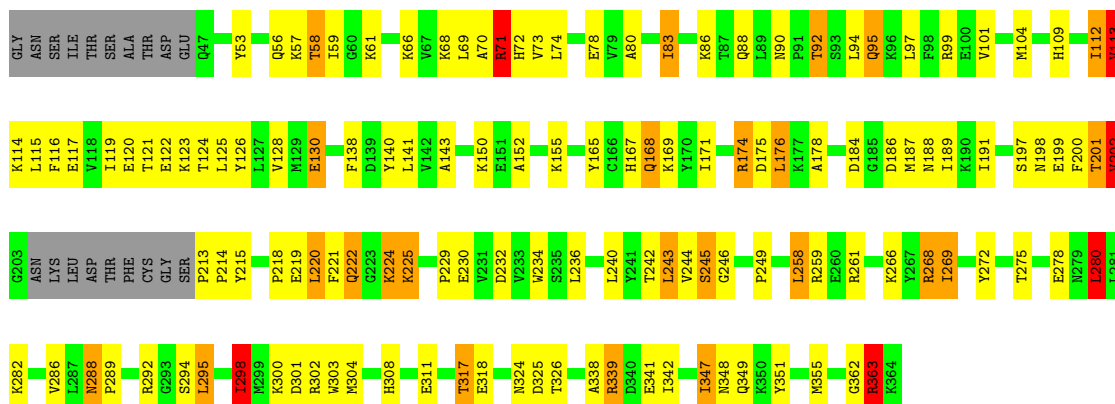
- Molecule 1: Serine/threonine-protein kinase MARK1

Chain C: 52% 29% 11% • 5%



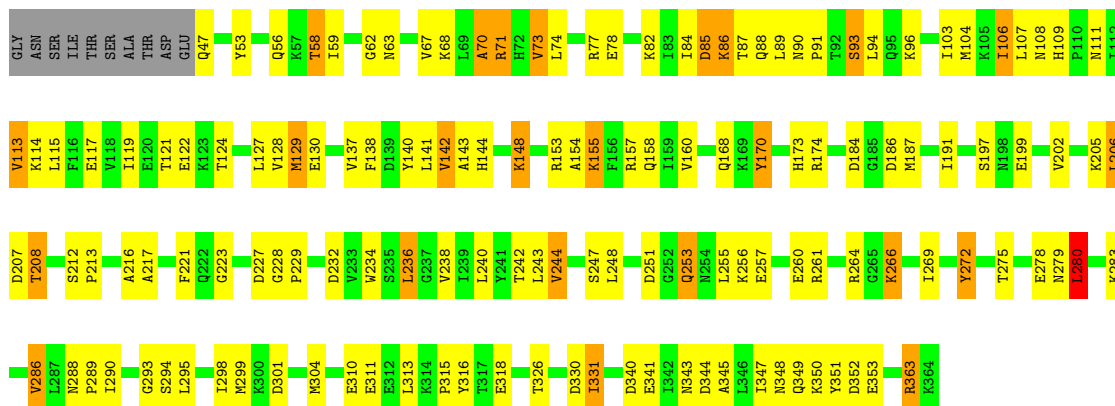
- Molecule 1: Serine/threonine-protein kinase MARK1

Chain D: 53% 32% 7% • 6%

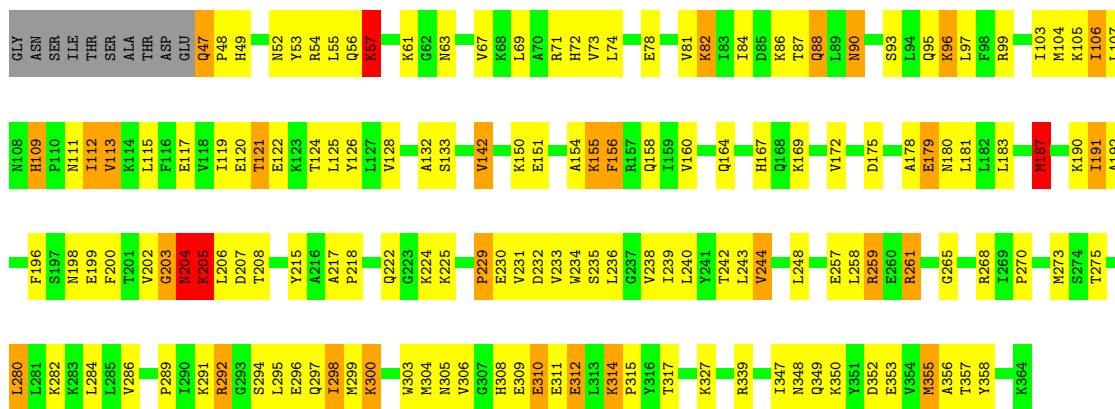


- Molecule 1: Serine/threonine-protein kinase MARK1

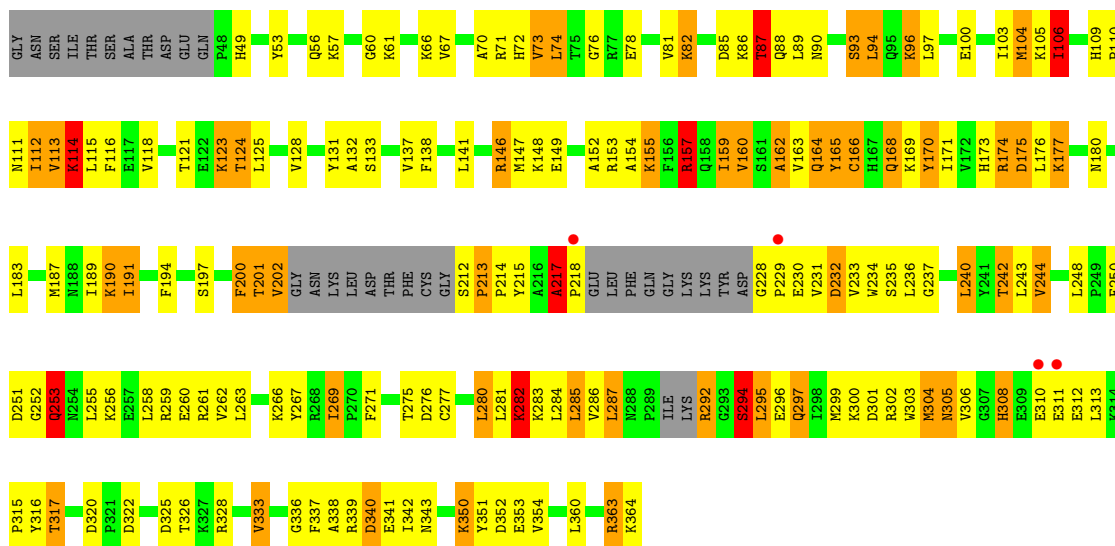
Chain E: 53% 36% 7% •



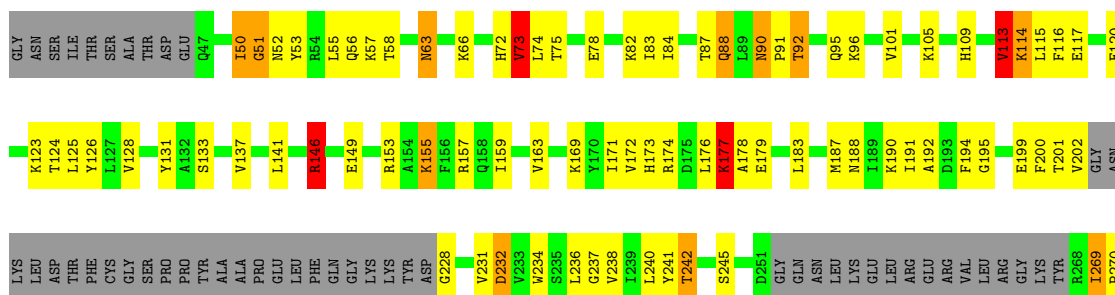
- Molecule 1: Serine/threonine-protein kinase MARK1

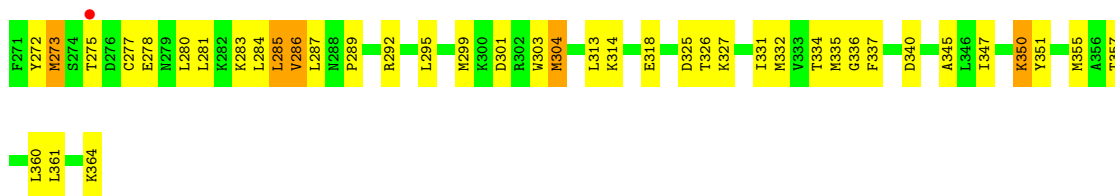


• Molecule 1: Serine/threonine-protein kinase MARK1



• Molecule 1: Serine/threonine-protein kinase MARK1





## 4 Data and refinement statistics i

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	110.68Å 116.47Å 285.75Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	10.00 – 2.60 10.00 – 2.60	Depositor EDS
% Data completeness (in resolution range)	99.3 (10.00-2.60) 97.3 (10.00-2.60)	Depositor EDS
$R_{merge}$	0.08	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.28 (at 2.61Å)	Xtrriage
Refinement program	REFMAC 5.2.0005	Depositor
R, $R_{free}$	0.212 , 0.290 0.213 , 0.287	Depositor DCC
$R_{free}$ test set	2844 reflections (2.50%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	50.7	Xtrriage
Anisotropy	0.181	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.39 , 55.0	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.47$ , $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	0.023 for k,h,-l	Xtrriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	19579	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	48.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 9.04% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

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

## 5 Model quality i

### 5.1 Standard geometry i

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	1.52	17/2539 (0.7%)	1.53	36/3421 (1.1%)
1	B	1.60	19/2269 (0.8%)	1.62	32/3055 (1.0%)
1	C	1.64	26/2561 (1.0%)	1.58	27/3448 (0.8%)
1	D	1.59	20/2552 (0.8%)	1.48	27/3436 (0.8%)
1	E	1.60	16/2589 (0.6%)	1.58	27/3496 (0.8%)
1	F	1.61	20/2613 (0.8%)	1.53	32/3524 (0.9%)
1	G	1.36	11/2394 (0.5%)	1.41	25/3232 (0.8%)
1	H	1.35	10/2225 (0.4%)	1.33	18/3007 (0.6%)
All	All	1.54	139/19742 (0.7%)	1.51	224/26619 (0.8%)

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	1
1	E	0	1
1	F	0	1
1	G	0	3
All	All	0	7

All (139) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	189	ILE	CA-CB	-10.35	1.43	1.54
1	C	113	VAL	CA-CB	10.17	1.64	1.54
1	H	269	ILE	CA-C	9.19	1.62	1.52
1	A	284	LEU	CA-C	-8.67	1.42	1.52
1	C	318	GLU	CA-C	-8.00	1.44	1.52
1	H	269	ILE	CA-CB	7.57	1.64	1.54
1	G	229	PRO	N-CA	7.50	1.54	1.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	121	THR	CA-CB	7.48	1.66	1.53
1	D	171	ILE	CA-CB	7.37	1.63	1.54
1	B	87	THR	CA-CB	7.27	1.64	1.53
1	H	269	ILE	N-CA	7.23	1.55	1.46
1	F	109	HIS	CA-C	7.17	1.61	1.52
1	H	113	VAL	CA-CB	7.16	1.62	1.53
1	C	275	THR	N-CA	-7.14	1.37	1.46
1	B	363	ARG	CG-CD	-7.04	1.31	1.52
1	F	282	LYS	C-O	-7.03	1.15	1.24
1	F	172	VAL	CA-CB	6.94	1.62	1.54
1	G	113	VAL	CA-CB	6.90	1.60	1.53
1	E	340	ASP	N-CA	6.85	1.54	1.46
1	B	171	ILE	CA-C	-6.84	1.45	1.52
1	C	112	ILE	C-O	-6.83	1.17	1.24
1	D	347	ILE	CG1-CD1	6.83	1.78	1.51
1	G	191	ILE	CA-CB	6.80	1.61	1.54
1	G	190	LYS	CA-C	-6.76	1.46	1.53
1	C	308	HIS	C-O	6.72	1.30	1.23
1	C	353	GLU	CG-CD	6.72	1.68	1.52
1	C	239	ILE	CA-CB	-6.64	1.46	1.54
1	A	356	ALA	CA-CB	-6.51	1.43	1.53
1	B	286	VAL	CA-CB	6.46	1.63	1.54
1	H	171	ILE	CA-CB	6.45	1.61	1.53
1	C	128	VAL	CA-CB	6.42	1.61	1.54
1	C	67	VAL	CA-CB	6.32	1.62	1.54
1	A	224	LYS	CE-NZ	6.26	1.68	1.49
1	F	133	SER	C-O	-6.26	1.16	1.24
1	D	130	GLU	C-O	-6.24	1.16	1.24
1	A	132	ALA	CA-CB	-6.19	1.45	1.53
1	C	353	GLU	CB-CG	6.17	1.71	1.52
1	F	244	VAL	CA-CB	6.15	1.62	1.54
1	F	47	GLN	CA-CB	6.13	1.65	1.53
1	A	275	THR	CA-CB	6.10	1.62	1.53
1	D	300	LYS	CA-C	-6.07	1.43	1.52
1	B	128	VAL	CA-CB	-6.03	1.46	1.54
1	C	67	VAL	N-CA	-6.01	1.38	1.46
1	A	165	TYR	N-CA	-6.00	1.39	1.46
1	C	168	GLN	CG-CD	5.97	1.67	1.52
1	E	213	PRO	CA-C	5.97	1.57	1.52
1	F	160	VAL	CA-CB	-5.95	1.47	1.54
1	F	106	ILE	CA-CB	-5.94	1.47	1.54
1	A	290	ILE	CA-CB	5.93	1.61	1.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	92	THR	CA-CB	5.92	1.62	1.53
1	F	191	ILE	CA-C	-5.92	1.45	1.52
1	A	55	LEU	CA-C	-5.91	1.45	1.52
1	D	325	ASP	N-CA	-5.89	1.38	1.46
1	H	75	THR	CA-CB	-5.87	1.45	1.54
1	G	160	VAL	CA-CB	5.83	1.61	1.54
1	D	317	THR	C-O	-5.81	1.16	1.23
1	B	82	LYS	N-CA	-5.78	1.38	1.46
1	D	152	ALA	CA-CB	-5.76	1.44	1.53
1	F	231	VAL	CA-CB	-5.75	1.47	1.54
1	D	362	GLY	C-O	-5.74	1.17	1.23
1	D	112	ILE	CA-CB	5.73	1.61	1.54
1	B	120	GLU	N-CA	5.71	1.53	1.46
1	E	160	VAL	CA-C	-5.71	1.44	1.52
1	E	341	GLU	N-CA	-5.68	1.39	1.46
1	F	187	MET	CA-C	5.68	1.60	1.52
1	C	236	LEU	N-CA	-5.67	1.39	1.46
1	D	275	THR	CA-CB	-5.66	1.44	1.53
1	G	228	GLY	C-N	5.65	1.38	1.33
1	C	268	ARG	CG-CD	5.64	1.69	1.52
1	B	340	ASP	CA-C	-5.63	1.45	1.52
1	D	71	ARG	CA-C	-5.61	1.45	1.52
1	E	106	ILE	CA-CB	-5.59	1.47	1.54
1	A	192	ALA	CA-CB	-5.58	1.44	1.53
1	B	123	LYS	CA-CB	5.57	1.62	1.53
1	F	229	PRO	N-CA	-5.57	1.40	1.47
1	E	272	TYR	N-CA	5.51	1.53	1.46
1	E	154	ALA	N-CA	5.50	1.52	1.46
1	A	361	LEU	C-O	-5.48	1.17	1.24
1	C	298	ILE	C-O	-5.47	1.17	1.24
1	G	113	VAL	CA-C	5.47	1.58	1.53
1	F	300	LYS	C-O	-5.45	1.16	1.24
1	B	54	ARG	CD-NE	5.44	1.53	1.46
1	E	70	ALA	CA-C	-5.44	1.46	1.52
1	C	233	VAL	CA-CB	-5.43	1.48	1.54
1	C	281	LEU	CA-C	5.43	1.60	1.52
1	E	119	ILE	CA-C	5.42	1.59	1.52
1	G	364	LYS	CA-CB	5.42	1.64	1.53
1	A	192	ALA	CA-C	-5.42	1.46	1.52
1	B	312	GLU	CG-CD	5.40	1.65	1.52
1	A	104	MET	C-O	-5.39	1.17	1.24
1	B	101	VAL	CA-CB	-5.37	1.47	1.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	66	LYS	CA-C	5.35	1.59	1.52
1	C	132	ALA	CA-CB	-5.35	1.45	1.53
1	E	115	LEU	CA-C	5.35	1.59	1.52
1	G	317	THR	CA-CB	5.34	1.63	1.53
1	B	54	ARG	CG-CD	5.33	1.68	1.52
1	A	243	LEU	C-O	-5.33	1.18	1.24
1	F	357	THR	C-O	5.33	1.30	1.24
1	A	63	ASN	N-CA	-5.32	1.40	1.46
1	B	94	LEU	CA-C	5.32	1.59	1.52
1	A	250	PHE	CA-C	-5.30	1.46	1.52
1	C	140	TYR	CA-CB	-5.28	1.45	1.53
1	D	298	ILE	CA-CB	5.28	1.61	1.54
1	F	198	ASN	CG-OD1	5.28	1.33	1.23
1	C	118	VAL	CA-CB	5.27	1.61	1.54
1	D	73	VAL	CA-CB	5.26	1.62	1.54
1	G	340	ASP	N-CA	5.26	1.52	1.46
1	G	162	ALA	CA-C	-5.24	1.46	1.52
1	A	129	MET	CA-C	-5.24	1.46	1.52
1	E	244	VAL	CA-CB	5.24	1.61	1.54
1	C	347	ILE	CA-CB	5.24	1.61	1.54
1	E	316	TYR	CA-C	5.23	1.59	1.52
1	C	168	GLN	CA-C	-5.23	1.45	1.52
1	B	47	GLN	CA-C	5.22	1.59	1.53
1	D	88	GLN	CA-C	5.18	1.59	1.52
1	C	168	GLN	CD-OE1	5.18	1.33	1.23
1	E	310	GLU	CA-CB	5.17	1.60	1.53
1	H	289	PRO	CA-C	5.17	1.60	1.52
1	A	297	GLN	CA-CB	5.16	1.61	1.53
1	B	347	ILE	CA-C	5.14	1.59	1.52
1	E	247	SER	CA-C	5.14	1.59	1.52
1	D	318	GLU	CA-C	-5.14	1.46	1.53
1	H	190	LYS	N-CA	-5.12	1.40	1.46
1	C	213	PRO	N-CA	5.10	1.54	1.47
1	E	140	TYR	N-CA	-5.10	1.40	1.46
1	C	295	LEU	CA-C	-5.10	1.45	1.52
1	F	178	ALA	CA-CB	-5.09	1.45	1.53
1	F	151	GLU	CA-C	5.09	1.59	1.52
1	F	81	VAL	C-O	5.08	1.29	1.24
1	F	112	ILE	C-O	-5.05	1.18	1.24
1	B	284	LEU	CA-C	-5.05	1.46	1.52
1	D	269	ILE	CA-CB	5.04	1.60	1.54
1	F	55	LEU	C-O	-5.04	1.17	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	80	ALA	C-O	-5.04	1.18	1.24
1	E	130	GLU	N-CA	-5.03	1.39	1.45
1	H	73	VAL	CA-CB	5.02	1.61	1.54
1	H	275	THR	CA-CB	5.01	1.61	1.53
1	C	345	ALA	N-CA	-5.01	1.39	1.46
1	D	355	MET	CA-C	-5.01	1.46	1.52

All (224) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	212	SER	CA-C-N	-12.04	107.98	120.38
1	E	212	SER	C-N-CA	-12.04	107.98	120.38
1	B	170	TYR	N-CA-C	11.83	124.56	107.88
1	E	47	GLN	CA-C-N	-10.78	108.66	119.76
1	E	47	GLN	C-N-CA	-10.78	108.66	119.76
1	B	166	CYS	N-CA-C	9.82	123.00	111.02
1	A	320	ASP	CA-C-N	-9.50	109.73	119.99
1	A	320	ASP	C-N-CA	-9.50	109.73	119.99
1	B	318	GLU	CA-C-N	-9.38	108.11	119.84
1	B	318	GLU	C-N-CA	-9.38	108.11	119.84
1	B	83	ILE	CB-CA-C	-9.37	97.36	111.33
1	D	168	GLN	N-CA-C	-9.34	101.89	113.28
1	G	228	GLY	CA-C-N	9.23	132.21	121.04
1	G	228	GLY	C-N-CA	9.23	132.21	121.04
1	A	160	VAL	N-CA-C	-9.11	101.07	111.00
1	D	90	ASN	CA-C-N	-8.94	110.38	120.04
1	D	90	ASN	C-N-CA	-8.94	110.38	120.04
1	C	280	LEU	N-CA-C	-8.66	101.92	111.36
1	F	296	GLU	N-CA-C	-8.44	102.16	111.36
1	C	311	GLU	N-CA-C	-8.35	98.10	109.54
1	A	248	LEU	CA-C-N	-8.23	109.55	119.84
1	A	248	LEU	C-N-CA	-8.23	109.55	119.84
1	B	140	TYR	N-CA-C	-8.22	103.19	113.55
1	E	318	GLU	CA-C-N	-8.05	112.42	120.31
1	E	318	GLU	C-N-CA	-8.05	112.42	120.31
1	F	268	ARG	CA-C-N	-8.05	116.80	122.59
1	F	268	ARG	C-N-CA	-8.05	116.80	122.59
1	E	223	GLY	N-CA-C	8.04	124.65	115.08
1	D	243	LEU	CA-C-N	-8.01	112.32	121.85
1	D	243	LEU	C-N-CA	-8.01	112.32	121.85
1	H	269	ILE	N-CA-C	7.98	126.11	108.88
1	D	143	ALA	N-CA-C	7.93	120.92	111.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	170	TYR	CA-C-N	-7.83	113.25	122.95
1	B	170	TYR	C-N-CA	-7.83	113.25	122.95
1	D	342	ILE	N-CA-C	-7.70	102.61	111.00
1	C	232	ASP	N-CA-C	-7.68	102.99	111.36
1	E	331	ILE	N-CA-C	-7.64	102.82	110.62
1	B	343	ASN	N-CA-C	7.58	119.18	111.07
1	H	90	ASN	CA-C-N	-7.50	110.73	119.05
1	H	90	ASN	C-N-CA	-7.50	110.73	119.05
1	E	293	GLY	N-CA-C	-7.48	102.50	112.82
1	F	67	VAL	N-CA-C	7.48	118.67	107.75
1	D	295	LEU	N-CA-C	-7.47	103.13	111.28
1	G	137	VAL	N-CA-C	7.40	117.52	110.42
1	F	327	LYS	N-CA-C	-7.36	103.19	111.07
1	B	163	VAL	N-CA-C	-7.35	102.99	111.00
1	E	148	LYS	N-CA-C	-7.17	100.59	110.35
1	A	137	VAL	N-CA-C	-7.14	103.22	111.00
1	F	358	TYR	N-CA-C	-7.13	103.50	111.28
1	C	331	ILE	N-CA-C	-7.02	103.46	110.62
1	B	231	VAL	CB-CA-C	-7.01	98.08	111.40
1	F	160	VAL	N-CA-C	-6.97	103.51	110.62
1	C	333	VAL	N-CA-C	-6.79	104.14	110.53
1	F	142	VAL	N-CA-C	-6.75	104.07	110.42
1	C	99	ARG	N-CA-C	-6.74	103.08	112.45
1	E	243	LEU	N-CA-C	-6.73	103.87	111.14
1	F	298	ILE	N-CA-C	-6.70	103.78	110.62
1	E	286	VAL	CB-CA-C	6.67	120.49	110.63
1	C	171	ILE	CB-CA-C	-6.66	103.29	111.08
1	B	265	GLY	N-CA-C	6.63	124.11	114.10
1	C	213	PRO	CA-C-N	-6.57	112.83	120.12
1	C	213	PRO	C-N-CA	-6.57	112.83	120.12
1	E	119	ILE	N-CA-C	6.56	117.56	107.99
1	C	347	ILE	N-CA-C	-6.52	102.94	111.09
1	B	120	GLU	N-CA-C	6.50	120.76	107.69
1	B	151	GLU	N-CA-C	-6.48	103.50	111.40
1	H	63	ASN	N-CA-C	6.46	120.02	111.75
1	C	335	MET	N-CA-C	-6.44	105.28	113.01
1	C	109	HIS	CA-C-N	-6.42	113.19	119.87
1	C	109	HIS	C-N-CA	-6.42	113.19	119.87
1	E	269	ILE	CA-C-N	-6.41	113.38	119.85
1	E	269	ILE	C-N-CA	-6.41	113.38	119.85
1	F	82	LYS	N-CA-C	-6.41	98.29	108.73
1	B	54	ARG	CA-CB-CG	6.37	126.85	114.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	160	VAL	CB-CA-C	6.37	120.12	111.97
1	C	264	ARG	N-CA-C	-6.37	103.86	111.69
1	F	124	THR	N-CA-C	6.36	118.85	108.55
1	F	350	LYS	N-CA-C	6.36	120.64	113.01
1	G	244	VAL	N-CA-C	6.32	121.28	112.50
1	C	283	LYS	N-CA-C	-6.28	104.88	113.30
1	G	248	LEU	CA-C-N	-6.28	113.21	119.56
1	G	248	LEU	C-N-CA	-6.28	113.21	119.56
1	F	99	ARG	N-CA-C	-6.24	104.40	111.14
1	B	314	LYS	N-CA-C	-6.21	101.52	110.40
1	C	297	GLN	N-CA-C	6.19	117.71	110.97
1	C	243	LEU	CA-C-N	-6.17	112.89	121.77
1	C	243	LEU	C-N-CA	-6.17	112.89	121.77
1	H	335	MET	N-CA-C	-6.14	105.75	113.18
1	A	215	TYR	CB-CA-C	-6.08	102.41	111.72
1	F	190	LYS	CA-C-N	-6.07	115.27	123.10
1	F	190	LYS	C-N-CA	-6.07	115.27	123.10
1	B	200	PHE	N-CA-C	6.06	119.39	112.97
1	B	288	ASN	N-CA-C	6.04	119.23	109.15
1	D	245	SER	N-CA-C	-6.03	105.00	112.90
1	F	47	GLN	CA-C-N	-6.01	114.42	120.31
1	F	47	GLN	C-N-CA	-6.01	114.42	120.31
1	C	168	GLN	N-CA-C	-6.00	105.44	112.89
1	F	309	GLU	N-CA-C	5.99	120.13	112.34
1	E	340	ASP	N-CA-CB	5.99	118.99	110.13
1	B	342	ILE	N-CA-C	-5.96	104.70	110.42
1	B	340	ASP	CB-CA-C	-5.90	100.83	110.85
1	G	340	ASP	N-CA-CB	5.89	118.77	109.82
1	A	95	GLN	N-CA-C	-5.88	104.87	111.28
1	A	228	GLY	CA-C-N	5.86	127.16	119.84
1	A	228	GLY	C-N-CA	5.86	127.16	119.84
1	F	95	GLN	N-CA-C	-5.84	105.24	112.90
1	E	108	ASN	N-CA-C	5.84	119.21	107.41
1	G	124	THR	N-CA-C	5.83	118.73	108.75
1	F	156	PHE	N-CA-C	-5.83	104.52	111.69
1	C	240	LEU	N-CA-C	-5.78	105.06	111.36
1	D	363	ARG	N-CA-CB	-5.75	101.25	111.08
1	F	105	LYS	N-CA-C	5.75	119.56	112.54
1	H	109	HIS	CA-C-N	-5.75	114.07	120.45
1	H	109	HIS	C-N-CA	-5.75	114.07	120.45
1	F	229	PRO	CA-C-N	-5.73	112.60	120.28
1	F	229	PRO	C-N-CA	-5.73	112.60	120.28

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	109	HIS	CA-C-N	-5.72	114.21	119.82
1	A	109	HIS	C-N-CA	-5.72	114.21	119.82
1	B	314	LYS	CA-C-N	5.71	126.98	119.84
1	B	314	LYS	C-N-CA	5.71	126.98	119.84
1	E	280	LEU	N-CA-C	-5.70	105.14	111.36
1	A	106	ILE	CB-CA-C	-5.69	104.15	111.20
1	G	232	ASP	N-CA-C	-5.69	104.77	110.97
1	C	242	THR	N-CA-C	-5.68	105.16	111.36
1	A	298	ILE	CB-CA-C	-5.68	104.47	112.14
1	D	355	MET	N-CA-C	-5.68	105.17	111.36
1	C	277	CYS	N-CA-C	-5.68	105.23	111.82
1	E	144	HIS	N-CA-C	-5.66	104.95	112.94
1	F	297	GLN	N-CA-C	5.66	117.12	111.07
1	H	88	GLN	N-CA-C	-5.64	98.78	110.80
1	F	358	TYR	CA-C-N	-5.64	113.34	120.56
1	F	358	TYR	C-N-CA	-5.64	113.34	120.56
1	D	174	ARG	N-CA-C	5.63	117.41	108.79
1	B	129	MET	N-CA-C	5.63	116.79	108.86
1	E	213	PRO	N-CA-C	5.62	117.56	110.70
1	D	80	ALA	N-CA-C	-5.62	99.27	108.76
1	A	75	THR	N-CA-C	-5.61	106.26	114.39
1	B	111	ASN	N-CA-C	5.61	119.43	112.59
1	F	243	LEU	N-CA-C	-5.60	105.25	111.36
1	D	317	THR	CB-CA-C	5.60	120.43	109.35
1	G	305	ASN	N-CA-C	5.59	119.68	112.41
1	D	298	ILE	N-CA-C	-5.59	104.92	110.62
1	G	231	VAL	N-CA-C	-5.58	105.49	113.07
1	E	124	THR	N-CA-C	5.56	117.84	109.23
1	A	251	ASP	N-CA-C	5.55	115.45	108.45
1	F	164	GLN	CA-C-O	5.55	126.84	120.90
1	A	314	LYS	CA-C-N	-5.54	114.25	119.90
1	A	314	LYS	C-N-CA	-5.54	114.25	119.90
1	H	228	GLY	CA-C-N	5.54	125.64	119.32
1	H	228	GLY	C-N-CA	5.54	125.64	119.32
1	G	74	LEU	N-CA-C	5.53	117.74	111.11
1	B	272	TYR	N-CA-C	-5.50	106.52	113.18
1	D	288	ASN	CA-C-N	-5.50	113.09	119.47
1	D	288	ASN	C-N-CA	-5.50	113.09	119.47
1	A	288	ASN	CB-CA-C	5.48	117.28	109.38
1	H	66	LYS	N-CA-C	-5.48	100.85	109.50
1	C	278	GLU	N-CA-C	-5.47	104.72	111.40
1	E	213	PRO	CA-C-N	-5.46	114.06	120.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	213	PRO	C-N-CA	-5.46	114.06	120.12
1	H	337	PHE	N-CA-C	-5.46	103.33	110.53
1	E	153	ARG	N-CA-C	5.46	117.66	111.11
1	G	213	PRO	N-CA-C	5.45	117.35	110.70
1	E	272	TYR	N-CA-C	5.44	119.76	113.18
1	G	104	MET	N-CA-C	-5.40	104.84	111.75
1	D	92	THR	N-CA-CB	5.40	118.24	110.20
1	G	282	LYS	N-CA-C	-5.39	106.75	113.38
1	B	113	VAL	N-CA-C	-5.38	102.57	109.30
1	D	246	GLY	N-CA-C	-5.38	108.22	115.21
1	C	341	GLU	N-CA-CB	5.37	118.12	110.06
1	A	293	GLY	N-CA-C	-5.37	105.76	111.93
1	A	325	ASP	N-CA-C	-5.37	101.70	109.59
1	C	91	PRO	CA-C-N	-5.36	111.41	120.58
1	C	91	PRO	C-N-CA	-5.36	111.41	120.58
1	G	294	SER	N-CA-C	5.34	117.44	108.73
1	G	118	VAL	CB-CA-C	-5.32	103.22	110.77
1	G	200	PHE	N-CA-C	5.32	120.04	113.50
1	G	253	GLN	N-CA-C	5.32	122.12	110.80
1	A	93	SER	N-CA-C	-5.31	105.57	111.36
1	A	230	GLU	N-CA-C	-5.31	104.39	112.04
1	C	354	VAL	CB-CA-C	-5.31	105.09	112.04
1	G	296	GLU	N-CA-C	-5.31	105.58	111.36
1	B	154	ALA	CA-C-N	-5.29	113.57	120.44
1	B	154	ALA	C-N-CA	-5.29	113.57	120.44
1	A	345	ALA	N-CA-C	-5.28	105.52	111.28
1	A	333	VAL	N-CA-C	-5.28	105.57	110.53
1	G	81	VAL	CB-CA-C	-5.26	104.15	110.99
1	D	280	LEU	N-CA-C	-5.24	105.46	111.07
1	H	191	ILE	CB-CA-C	5.23	118.38	111.21
1	G	275	THR	CB-CA-C	5.22	120.25	110.70
1	E	278	GLU	N-CA-C	-5.21	105.68	111.36
1	H	350	LYS	N-CA-C	5.20	117.85	111.82
1	B	123	LYS	N-CA-C	5.20	117.85	111.82
1	D	113	VAL	N-CA-CB	5.18	116.89	110.05
1	D	268	ARG	CB-CA-C	5.17	118.07	109.53
1	A	85	ASP	CA-C-N	-5.17	114.04	122.26
1	A	85	ASP	C-N-CA	-5.17	114.04	122.26
1	F	265	GLY	N-CA-C	5.17	122.24	115.47
1	G	106	ILE	CB-CA-C	-5.16	105.43	111.94
1	G	173	HIS	N-CA-C	5.16	119.57	113.12
1	A	344	ASP	N-CA-C	-5.14	105.76	111.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	104	MET	CB-CG-SD	-5.13	97.30	112.70
1	E	170	TYR	N-CA-C	-5.13	101.11	108.60
1	B	87	THR	N-CA-C	-5.13	105.60	111.14
1	A	159	ILE	N-CA-C	5.12	115.84	110.62
1	D	249	PRO	CA-C-N	-5.11	115.57	122.77
1	D	249	PRO	C-N-CA	-5.11	115.57	122.77
1	D	292	ARG	CA-C-N	-5.10	113.77	121.01
1	D	292	ARG	C-N-CA	-5.10	113.77	121.01
1	F	327	LYS	N-CA-CB	5.10	117.40	110.01
1	H	287	LEU	N-CA-C	5.09	116.83	111.28
1	F	204	ASN	N-CA-C	5.08	121.63	110.80
1	A	339	ARG	N-CA-C	5.08	117.47	111.33
1	A	119	ILE	N-CA-C	-5.07	101.02	108.11
1	A	305	ASN	N-CA-C	5.06	119.55	113.17
1	H	173	HIS	N-CA-C	5.06	119.51	113.23
1	B	302	ARG	CA-CB-CG	5.05	124.21	114.10
1	D	168	GLN	CA-CB-CG	5.05	124.20	114.10
1	A	274	SER	N-CA-C	5.05	117.05	110.43
1	B	339	ARG	CB-CG-CD	-5.05	99.69	111.30
1	A	154	ALA	N-CA-C	-5.05	105.86	111.36
1	A	197	SER	CA-C-N	-5.01	114.62	122.79
1	A	197	SER	C-N-CA	-5.01	114.62	122.79
1	H	334	THR	N-CA-C	-5.01	106.01	111.82
1	H	177	LYS	N-CA-C	5.00	116.99	109.23

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	363	ARG	Peptide
1	B	90	ASN	Peptide
1	E	363	ARG	Peptide
1	F	203	GLY	Peptide
1	G	114	LYS	Peptide
1	G	217	ALA	Peptide
1	G	292	ARG	Peptide

## 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	2490	0	2520	84	0
1	B	2231	0	2248	152	1
1	C	2512	0	2551	92	1
1	D	2503	0	2547	83	0
1	E	2538	0	2541	88	0
1	F	2562	0	2579	92	0
1	G	2349	0	2332	180	0
1	H	2184	0	2166	72	0
2	A	27	0	0	2	0
2	B	17	0	0	2	0
2	C	47	0	0	8	0
2	D	24	0	0	2	0
2	E	35	0	0	3	0
2	F	37	0	0	3	0
2	G	14	0	0	12	0
2	H	9	0	0	2	0
All	All	19579	0	19484	831	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 21.

All (831) 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:A:224:LYS:CE	1:A:224:LYS:NZ	1.68	1.55
1:D:347:ILE:CD1	1:D:347:ILE:CG1	1.78	1.54
1:G:164:GLN:NE2	1:G:315:PRO:HB3	1.37	1.37
1:B:125:LEU:HD12	1:B:126:TYR:N	1.56	1.21
1:A:290:ILE:HD12	1:A:290:ILE:O	1.51	1.11
1:G:165:TYR:CG	2:G:375:HOH:O	2.04	1.09
1:G:157:ARG:HH11	1:G:157:ARG:HG2	1.20	1.07
1:B:147:MET:CE	1:B:243:LEU:HD22	1.83	1.07
1:G:299:MET:HG2	1:G:313:LEU:HD23	1.37	1.06
1:B:147:MET:HE2	1:B:243:LEU:HD22	1.35	1.05
1:F:259:ARG:HD2	2:F:401:HOH:O	1.57	1.04
1:G:217:ALA:HB1	1:G:218:PRO:HD2	1.35	1.04
1:G:164:GLN:HE22	1:G:315:PRO:CB	1.72	1.03
1:B:86:LYS:HB2	1:B:94:LEU:HD13	1.42	1.02
1:G:146:ARG:HG3	1:G:146:ARG:HH11	1.20	1.01

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:300:LYS:HE3	1:F:312:GLU:HG2	1.43	0.98
1:G:123:LYS:HG3	1:G:124:THR:HG22	1.43	0.98
1:G:282:LYS:HA	2:G:372:HOH:O	1.65	0.97
1:F:82:LYS:HD3	1:F:84:ILE:HD11	1.47	0.97
1:D:363:ARG:CG	1:D:363:ARG:HH11	1.79	0.96
1:G:164:GLN:HE22	1:G:315:PRO:HB3	0.81	0.95
1:B:125:LEU:HD12	1:B:126:TYR:H	1.27	0.95
1:F:121:THR:HG22	1:F:122:GLU:H	1.30	0.93
1:D:363:ARG:HH11	1:D:363:ARG:HG2	1.32	0.93
1:G:155:LYS:O	1:G:159:ILE:HG12	1.70	0.92
1:B:270:PRO:HD2	1:B:273:MET:HE3	1.52	0.91
1:G:165:TYR:HA	2:G:375:HOH:O	1.69	0.91
1:H:50:ILE:HD12	1:H:50:ILE:H	1.36	0.91
1:B:90:ASN:HB2	1:B:91:PRO:HD3	1.54	0.90
1:B:167:HIS:ND1	1:B:172:VAL:HG21	1.85	0.90
1:G:170:TYR:HD1	2:G:367:HOH:O	1.53	0.90
1:G:146:ARG:HG3	1:G:146:ARG:NH1	1.83	0.89
1:G:164:GLN:NE2	1:G:315:PRO:CB	2.32	0.88
1:G:258:LEU:O	1:G:262:VAL:HG23	1.74	0.88
1:B:171:ILE:HG22	1:B:173:HIS:CE1	2.08	0.87
1:C:146:ARG:HG3	1:C:146:ARG:HH11	1.40	0.86
1:D:167:HIS:HE1	1:D:232:ASP:OD2	1.58	0.86
1:B:90:ASN:CB	1:B:91:PRO:HD3	2.05	0.85
1:G:286:VAL:HG21	1:G:292:ARG:HB2	1.58	0.85
1:B:147:MET:HE2	1:B:243:LEU:CD2	2.07	0.85
1:G:283:LYS:O	1:G:284:LEU:HD23	1.77	0.85
1:G:157:ARG:HG2	1:G:157:ARG:NH1	1.90	0.85
1:B:299:MET:HG2	1:B:313:LEU:O	1.76	0.84
1:B:304:MET:HE3	1:B:304:MET:HA	1.58	0.84
1:A:331:ILE:O	1:A:335:MET:HG3	1.78	0.83
1:E:71:ARG:HG3	1:E:71:ARG:HH11	1.42	0.83
1:G:157:ARG:HH11	1:G:157:ARG:CG	1.92	0.82
1:D:120:GLU:HG3	1:D:125:LEU:HD12	1.63	0.81
1:B:280:LEU:HD22	1:B:284:LEU:HD12	1.61	0.81
1:B:305:ASN:O	1:B:307:GLY:N	2.11	0.81
2:G:368:HOH:O	1:H:146:ARG:HD2	1.81	0.81
1:B:300:LYS:HD3	1:B:312:GLU:OE1	1.81	0.79
1:B:293:GLY:HA2	1:B:297:GLN:NE2	1.97	0.79
1:G:109:HIS:HB3	1:G:112:ILE:HG13	1.62	0.79
1:G:316:TYR:HA	2:G:373:HOH:O	1.83	0.78
1:F:187:MET:HE2	1:F:187:MET:HA	1.63	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:234:TRP:HZ3	1:B:285:LEU:O	1.66	0.78
1:E:280:LEU:HG	1:E:301:ASP:OD1	1.83	0.77
1:E:155:LYS:HE3	1:E:187:MET:O	1.84	0.77
1:G:233:VAL:HA	1:G:236:LEU:HD23	1.65	0.76
1:E:71:ARG:HH11	1:E:71:ARG:CG	1.98	0.76
1:D:138:PHE:CZ	1:D:215:TYR:CE2	2.73	0.76
1:D:58:THR:OG1	1:D:68:LYS:HD3	1.86	0.76
1:G:217:ALA:HB1	1:G:218:PRO:CD	2.15	0.76
1:B:90:ASN:CG	1:B:91:PRO:HD3	2.11	0.76
1:H:105:LYS:HG2	1:H:115:LEU:HD23	1.66	0.76
1:E:157:ARG:HG2	1:E:304:MET:CE	2.16	0.76
1:A:217:ALA:CB	1:A:231:VAL:HG13	2.17	0.75
1:B:95:GLN:HE21	1:B:95:GLN:C	1.95	0.75
1:A:253:GLN:N	1:A:257:GLU:OE1	2.18	0.75
1:E:142:VAL:HG12	1:E:142:VAL:O	1.85	0.75
1:G:232:ASP:O	1:G:235:SER:HB2	1.86	0.75
1:D:168:GLN:HG2	2:D:370:HOH:O	1.87	0.75
1:B:280:LEU:HD12	1:B:303:TRP:HB3	1.68	0.75
1:G:146:ARG:HH11	1:G:146:ARG:CG	2.00	0.75
1:D:167:HIS:CE1	1:D:232:ASP:OD2	2.41	0.74
1:C:175:ASP:HB2	2:C:373:HOH:O	1.86	0.74
1:B:164:GLN:HE22	1:B:315:PRO:HB3	1.51	0.74
1:H:120:GLU:HG3	1:H:125:LEU:HD13	1.70	0.74
1:C:167:HIS:HE1	1:C:232:ASP:OD2	1.70	0.74
1:D:141:LEU:HD13	1:D:242:THR:HG22	1.70	0.74
1:H:155:LYS:HE2	1:H:187:MET:O	1.87	0.74
1:D:138:PHE:CZ	1:D:215:TYR:HE2	2.06	0.74
1:B:294:SER:O	1:B:297:GLN:HB2	1.87	0.74
1:B:171:ILE:CG2	1:B:173:HIS:CE1	2.72	0.73
1:G:165:TYR:HE1	1:G:316:TYR:HD2	1.37	0.73
1:G:299:MET:HG2	1:G:313:LEU:CD2	2.17	0.73
1:E:82:LYS:HD3	1:E:84:ILE:HD11	1.71	0.73
1:F:121:THR:CG2	1:F:122:GLU:H	1.93	0.72
1:B:282:LYS:O	1:B:286:VAL:HG12	1.89	0.72
1:D:363:ARG:CG	1:D:363:ARG:NH1	2.42	0.72
1:B:125:LEU:HD12	1:B:125:LEU:C	2.15	0.72
1:D:298:ILE:HG22	1:D:304:MET:CE	2.20	0.72
1:G:169:LYS:HB2	2:G:367:HOH:O	1.90	0.72
1:D:363:ARG:NH1	1:D:363:ARG:HG3	2.04	0.72
1:F:54:ARG:HG2	1:F:54:ARG:HH11	1.55	0.72
1:G:85:ASP:OD1	1:G:87:THR:OG1	2.08	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:293:GLY:HA2	1:B:297:GLN:HE21	1.54	0.71
1:A:228:GLY:C	1:A:230:GLU:H	1.97	0.71
1:G:114:LYS:HG3	1:G:363:ARG:NH2	2.05	0.71
1:B:50:ILE:HG21	1:B:126:TYR:CZ	2.25	0.70
1:C:156:PHE:CE2	1:C:304:MET:HE1	2.26	0.70
1:C:104:MET:HE1	2:C:368:HOH:O	1.90	0.70
1:E:56:GLN:HE21	1:E:70:ALA:CA	2.03	0.70
1:H:50:ILE:HD12	1:H:50:ILE:N	2.05	0.70
1:B:163:VAL:HG13	1:B:194:PHE:CE2	2.27	0.70
1:F:90:ASN:H	1:F:90:ASN:ND2	1.88	0.70
1:A:217:ALA:HB2	1:A:231:VAL:HG13	1.74	0.70
1:H:52:ASN:O	1:H:73:VAL:HG12	1.92	0.70
1:A:364:LYS:O	1:A:364:LYS:HG2	1.91	0.70
1:B:299:MET:CG	1:B:313:LEU:HG	2.21	0.70
1:F:121:THR:HG22	1:F:122:GLU:N	2.06	0.70
1:B:95:GLN:HG3	1:G:171:ILE:HG12	1.74	0.70
1:F:311:GLU:O	1:F:311:GLU:HG3	1.92	0.70
1:G:105:LYS:HD3	1:G:351:TYR:CD2	2.26	0.70
1:E:232:ASP:HA	2:E:389:HOH:O	1.92	0.69
1:A:290:ILE:HD12	1:A:290:ILE:C	2.17	0.69
1:D:280:LEU:HD12	1:D:303:TRP:CE3	2.28	0.69
1:G:169:LYS:O	1:G:170:TYR:HB3	1.92	0.69
1:A:104:MET:HE1	1:A:129:MET:CE	2.22	0.69
1:B:58:THR:HA	1:B:68:LYS:HG3	1.74	0.69
1:G:168:GLN:OE1	1:G:169:LYS:HG3	1.93	0.69
1:A:169:LYS:HE3	1:A:318:GLU:OE2	1.93	0.69
1:B:174:ARG:NH2	1:B:197:SER:OG	2.26	0.69
1:E:71:ARG:NH1	1:E:78:GLU:OE2	2.26	0.69
1:A:104:MET:HE1	1:A:129:MET:HE1	1.72	0.68
1:A:213:PRO:HB3	1:A:215:TYR:CZ	2.27	0.68
1:H:177:LYS:HG3	1:H:179:GLU:OE1	1.94	0.68
1:B:167:HIS:ND1	1:B:172:VAL:CG2	2.57	0.68
1:B:82:LYS:HD3	1:B:84:ILE:HD11	1.74	0.68
1:E:56:GLN:HE21	1:E:70:ALA:HA	1.58	0.68
1:C:338:ALA:HB3	1:C:341:GLU:HG2	1.75	0.68
1:F:86:LYS:HE3	1:F:120:GLU:OE1	1.94	0.68
1:D:202:VAL:HG12	1:D:202:VAL:O	1.92	0.68
1:F:294:SER:O	1:F:298:ILE:HG12	1.94	0.67
1:B:86:LYS:HB2	1:B:94:LEU:CD1	2.21	0.67
1:B:270:PRO:CD	1:B:273:MET:HE3	2.23	0.67
1:H:351:TYR:CE2	1:H:355:MET:HE1	2.29	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:206:LEU:HD13	1:F:142:VAL:HG23	1.75	0.67
1:B:339:ARG:NH2	2:B:376:HOH:O	2.14	0.67
1:D:56:GLN:HE21	1:D:70:ALA:CA	2.08	0.67
1:G:169:LYS:CB	2:G:367:HOH:O	2.42	0.66
1:B:93:SER:O	1:B:95:GLN:N	2.28	0.66
1:G:165:TYR:CE1	1:G:316:TYR:HD2	2.13	0.66
1:F:71:ARG:HB2	1:F:78:GLU:OE2	1.95	0.66
1:B:169:LYS:O	1:B:170:TYR:HB3	1.94	0.66
1:C:56:GLN:HE21	1:C:70:ALA:CA	2.07	0.66
1:D:120:GLU:HG3	1:D:125:LEU:CD1	2.26	0.66
1:G:159:ILE:O	1:G:163:VAL:HG23	1.95	0.66
1:G:299:MET:CG	1:G:313:LEU:HD23	2.21	0.66
1:E:157:ARG:HG2	1:E:304:MET:HE1	1.76	0.66
1:B:234:TRP:CZ3	1:B:285:LEU:O	2.48	0.65
1:C:93:SER:OG	1:C:199:GLU:OE1	2.08	0.65
1:C:156:PHE:CD2	1:C:304:MET:HE1	2.31	0.65
1:E:71:ARG:HG3	1:E:71:ARG:NH1	2.07	0.65
1:A:64:PHE:CE2	1:B:268:ARG:HD3	2.32	0.65
1:A:363:ARG:HE	1:A:364:LYS:NZ	1.94	0.65
1:G:109:HIS:CE1	1:G:162:ALA:HA	2.32	0.65
1:B:84:ILE:HG22	1:B:84:ILE:O	1.96	0.65
1:C:88:GLN:HE21	1:C:88:GLN:N	1.93	0.65
1:C:47:GLN:CB	1:C:48:PRO:HD2	2.26	0.65
1:G:105:LYS:HD3	1:G:351:TYR:CE2	2.31	0.65
1:A:218:PRO:HD3	1:A:234:TRP:CE2	2.32	0.64
1:B:306:VAL:HG12	1:B:306:VAL:O	1.95	0.64
1:C:64:PHE:HE2	1:D:268:ARG:HD2	1.62	0.64
1:G:165:TYR:CA	2:G:375:HOH:O	2.30	0.64
1:C:71:ARG:HD3	1:C:78:GLU:OE2	1.97	0.64
1:G:109:HIS:CB	1:G:112:ILE:HG13	2.28	0.64
1:H:238:VAL:O	1:H:242:THR:HG23	1.97	0.64
1:B:90:ASN:HB2	1:B:91:PRO:CD	2.27	0.64
1:B:90:ASN:O	1:B:94:LEU:HB3	1.97	0.64
1:H:270:PRO:HD2	1:H:273:MET:HE3	1.80	0.64
1:H:78:GLU:HB2	1:H:364:LYS:HZ1	1.62	0.63
1:B:232:ASP:HA	1:B:235:SER:OG	1.97	0.63
1:A:240:LEU:HD11	1:A:280:LEU:HD13	1.79	0.63
1:D:347:ILE:CD1	1:D:347:ILE:CB	2.75	0.63
1:B:71:ARG:NH2	1:B:78:GLU:OE2	2.31	0.63
1:A:224:LYS:NZ	1:A:224:LYS:CD	2.60	0.63
1:D:138:PHE:CD2	1:D:178:ALA:HB1	2.34	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:82:LYS:HE2	2:A:366:HOH:O	1.98	0.62
1:D:101:VAL:HA	1:D:104:MET:HE3	1.80	0.62
1:D:213:PRO:N	1:D:214:PRO:HD3	2.14	0.62
1:H:169:LYS:HE3	1:H:318:GLU:OE2	1.99	0.62
1:F:204:ASN:O	1:F:206:LEU:N	2.31	0.62
1:B:280:LEU:HD22	1:B:284:LEU:CD1	2.30	0.62
1:D:71:ARG:CG	1:D:78:GLU:OE2	2.47	0.62
1:B:301:ASP:OD1	1:B:303:TRP:N	2.28	0.62
1:A:64:PHE:HE2	1:B:268:ARG:NH1	1.97	0.62
1:A:240:LEU:CD1	1:A:280:LEU:HD13	2.29	0.62
1:C:150:LYS:HD2	2:C:391:HOH:O	1.99	0.62
1:C:167:HIS:CE1	1:C:232:ASP:OD2	2.51	0.62
1:D:221:PHE:HB3	1:D:259:ARG:HD3	1.81	0.62
1:H:304:MET:HE2	1:H:313:LEU:HD23	1.81	0.62
1:C:220:LEU:HD12	1:C:224:LYS:O	2.00	0.62
1:F:300:LYS:HE3	1:F:312:GLU:CG	2.25	0.62
1:A:253:GLN:HB2	1:A:257:GLU:OE1	1.99	0.61
1:G:157:ARG:NH2	1:G:308:HIS:CD2	2.68	0.61
1:G:236:LEU:H	1:G:236:LEU:HD22	1.66	0.61
1:H:72:HIS:CE1	1:H:74:LEU:HB2	2.34	0.61
1:G:322:ASP:OD1	1:G:322:ASP:C	2.43	0.61
1:F:96:LYS:HE3	1:F:199:GLU:OE2	2.01	0.61
1:B:179:GLU:OE2	1:B:179:GLU:N	2.27	0.61
1:D:109:HIS:HB3	1:D:112:ILE:HD12	1.83	0.61
1:B:52:ASN:O	1:B:73:VAL:HG13	2.00	0.61
1:D:280:LEU:HD12	1:D:303:TRP:HE3	1.65	0.61
1:F:88:GLN:O	1:F:88:GLN:HG2	2.00	0.61
1:G:280:LEU:HD11	1:G:304:MET:HG2	1.83	0.61
1:G:286:VAL:HG21	1:G:292:ARG:CB	2.29	0.61
1:C:47:GLN:CB	1:C:48:PRO:CD	2.79	0.60
1:F:155:LYS:HE3	1:F:187:MET:O	2.00	0.60
1:C:59:ILE:HG12	1:C:67:VAL:HG12	1.83	0.60
1:F:109:HIS:CE1	1:F:111:ASN:HB2	2.36	0.60
1:G:170:TYR:OH	1:G:194:PHE:O	2.12	0.60
1:B:179:GLU:CD	1:B:179:GLU:H	2.07	0.60
1:D:71:ARG:HG2	1:D:78:GLU:OE2	2.01	0.60
1:G:236:LEU:HD22	1:G:236:LEU:N	2.16	0.60
1:B:304:MET:CE	1:B:304:MET:CA	2.78	0.60
1:A:252:GLY:HA3	1:A:257:GLU:HB3	1.83	0.60
1:C:56:GLN:HE21	1:C:70:ALA:HA	1.65	0.60
1:F:175:ASP:HB2	2:F:372:HOH:O	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:183:LEU:HA	1:H:188:ASN:O	2.01	0.60
1:C:50:ILE:CD1	1:C:119:ILE:HG21	2.31	0.60
1:B:164:GLN:OE1	1:B:164:GLN:C	2.45	0.60
1:F:204:ASN:O	1:F:205:LYS:C	2.44	0.59
1:G:155:LYS:HE3	1:G:187:MET:O	2.01	0.59
1:D:86:LYS:NZ	1:D:121:THR:O	2.36	0.59
1:E:216:ALA:HB3	1:E:221:PHE:CE2	2.37	0.59
1:E:345:ALA:HA	1:E:350:LYS:CD	2.32	0.59
1:B:91:PRO:CG	1:B:92:THR:H	2.15	0.59
1:H:304:MET:HE1	1:H:313:LEU:HD22	1.85	0.59
1:A:238:VAL:O	1:A:242:THR:HG23	2.02	0.59
1:G:253:GLN:HE21	1:G:253:GLN:HA	1.67	0.59
1:B:299:MET:HG2	1:B:313:LEU:HG	1.84	0.59
1:C:200:PHE:HB2	2:C:379:HOH:O	2.01	0.59
1:E:93:SER:OG	1:E:199:GLU:OE1	2.20	0.59
1:B:301:ASP:OD1	1:B:302:ARG:N	2.36	0.59
1:C:56:GLN:O	1:C:57:LYS:C	2.45	0.59
1:C:88:GLN:HE21	1:C:88:GLN:CA	2.14	0.59
1:F:179:GLU:OE1	1:F:207:ASP:HB2	2.02	0.59
1:G:342:ILE:HA	1:G:354:VAL:HG11	1.85	0.59
1:B:266:LYS:HG3	1:B:267:TYR:H	1.68	0.59
1:F:96:LYS:CE	1:F:199:GLU:OE2	2.50	0.59
1:B:164:GLN:NE2	1:B:315:PRO:HB3	2.18	0.59
1:E:242:THR:HG22	1:E:248:LEU:HA	1.85	0.59
1:G:123:LYS:CG	1:G:124:THR:HG22	2.28	0.58
1:A:141:LEU:HD11	1:A:243:LEU:HD23	1.84	0.58
1:A:201:THR:HG23	1:A:202:VAL:N	2.18	0.58
1:B:91:PRO:CD	1:B:92:THR:H	2.15	0.58
1:B:103:ILE:HD13	1:B:170:TYR:CD2	2.38	0.58
1:D:115:LEU:HD23	1:D:351:TYR:CE1	2.38	0.58
1:F:295:LEU:O	1:F:299:MET:HG3	2.03	0.58
1:G:294:SER:HB3	1:G:297:GLN:OE1	2.02	0.58
1:E:157:ARG:HG2	1:E:304:MET:HE3	1.84	0.58
1:G:164:GLN:HB2	1:G:295:LEU:HD13	1.83	0.58
1:F:242:THR:HG21	1:F:248:LEU:HD23	1.85	0.58
1:G:237:GLY:HA3	1:G:285:LEU:HD23	1.85	0.58
1:G:280:LEU:C	1:G:282:LYS:H	2.11	0.58
1:A:64:PHE:CE2	1:B:268:ARG:NH1	2.71	0.58
1:A:213:PRO:HB3	1:A:215:TYR:CE1	2.38	0.58
1:E:103:ILE:O	1:E:106:ILE:HG12	2.03	0.58
1:E:184:ASP:OD1	1:E:184:ASP:C	2.45	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:295:LEU:O	1:H:299:MET:HG3	2.03	0.58
1:A:233:VAL:HG21	1:A:293:GLY:O	2.04	0.58
1:B:339:ARG:HG3	2:B:377:HOH:O	2.04	0.58
1:C:238:VAL:O	1:C:242:THR:HG23	2.04	0.58
1:D:187:MET:HE2	1:D:187:MET:HA	1.86	0.58
1:B:174:ARG:CZ	1:B:197:SER:HA	2.33	0.57
1:C:198:ASN:O	1:C:199:GLU:C	2.44	0.57
1:E:264:ARG:HG2	1:E:266:LYS:HG2	1.86	0.57
1:G:72:HIS:CE1	1:G:74:LEU:HB2	2.38	0.57
1:C:308:HIS:HB3	1:C:311:GLU:O	2.05	0.57
1:C:104:MET:CE	2:C:368:HOH:O	2.49	0.57
1:A:228:GLY:O	1:A:230:GLU:N	2.37	0.57
1:H:105:LYS:HG2	1:H:115:LEU:CD2	2.35	0.57
1:C:280:LEU:HD22	1:C:284:LEU:HD11	1.86	0.57
1:F:90:ASN:H	1:F:90:ASN:HD22	1.53	0.57
1:B:312:GLU:O	1:B:313:LEU:C	2.48	0.57
1:C:64:PHE:CE2	1:D:268:ARG:HD2	2.39	0.57
1:F:156:PHE:CE2	1:F:304:MET:HE1	2.40	0.57
1:F:280:LEU:HD22	1:F:284:LEU:HD11	1.86	0.57
1:B:167:HIS:CE1	1:B:172:VAL:HG21	2.40	0.56
1:G:286:VAL:CG2	1:G:292:ARG:HE	2.18	0.56
1:H:96:LYS:NZ	1:H:199:GLU:OE2	2.32	0.56
1:H:364:LYS:HG3	2:H:369:HOH:O	2.05	0.56
1:H:327:LYS:O	1:H:331:ILE:HG13	2.06	0.56
1:A:304:MET:HE1	1:A:313:LEU:HD22	1.86	0.56
1:C:219:GLU:CD	1:C:292:ARG:HH22	2.12	0.56
1:C:238:VAL:HG13	1:C:249:PRO:HD2	1.87	0.56
1:F:156:PHE:CD2	1:F:304:MET:HE1	2.40	0.56
1:G:109:HIS:HD2	1:G:110:PRO:CD	2.18	0.56
1:B:240:LEU:HD11	1:B:280:LEU:HD13	1.88	0.56
1:G:149:GLU:O	1:G:152:ALA:HB3	2.05	0.56
1:C:254:ASN:OD1	1:C:256:LYS:N	2.39	0.56
1:H:304:MET:CE	1:H:313:LEU:CD2	2.84	0.56
1:D:138:PHE:CE1	1:D:242:THR:HG21	2.41	0.56
1:G:106:ILE:HG22	1:G:169:LYS:HZ3	1.71	0.56
1:A:363:ARG:HE	1:A:364:LYS:HZ2	1.53	0.56
1:E:283:LYS:NZ	1:E:301:ASP:OD2	2.39	0.56
1:A:155:LYS:HE3	1:A:187:MET:O	2.06	0.55
1:E:53:TYR:OH	1:E:117:GLU:OE1	2.19	0.55
1:C:219:GLU:OE2	1:C:292:ARG:NH2	2.40	0.55
1:D:288:ASN:O	1:D:289:PRO:C	2.45	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:95:GLN:O	1:C:99:ARG:HB2	2.06	0.55
1:H:153:ARG:O	1:H:157:ARG:HG3	2.07	0.55
1:A:364:LYS:O	1:A:364:LYS:CG	2.54	0.55
1:G:294:SER:O	1:G:297:GLN:HB2	2.07	0.55
1:C:218:PRO:HB3	1:C:263:LEU:HD23	1.88	0.55
1:C:256:LYS:O	1:C:260:GLU:HG2	2.05	0.55
1:B:304:MET:HE3	1:B:304:MET:CA	2.27	0.55
1:A:228:GLY:C	1:A:230:GLU:N	2.66	0.54
1:A:164:GLN:NE2	1:A:315:PRO:HB3	2.21	0.54
1:C:47:GLN:HB3	1:C:48:PRO:CD	2.37	0.54
1:C:159:ILE:HG13	1:C:189:ILE:HG13	1.88	0.54
1:F:187:MET:HA	1:F:187:MET:CE	2.36	0.54
1:F:310:GLU:H	1:F:310:GLU:CD	2.16	0.54
1:H:141:LEU:HD13	1:H:242:THR:O	2.07	0.54
1:F:53:TYR:CZ	1:F:128:VAL:HG11	2.42	0.54
1:G:103:ILE:O	1:G:104:MET:C	2.51	0.54
1:C:213:PRO:HG2	1:C:216:ALA:HB2	1.90	0.54
1:E:71:ARG:HH11	1:E:71:ARG:CB	2.21	0.54
1:E:253:GLN:OE1	1:E:253:GLN:HA	2.07	0.54
1:H:345:ALA:HA	1:H:350:LYS:HD2	1.89	0.54
1:A:215:TYR:CD2	1:A:215:TYR:O	2.61	0.54
1:C:47:GLN:HB3	1:C:48:PRO:HD2	1.90	0.54
1:G:67:VAL:HG23	1:G:202:VAL:HG21	1.90	0.54
1:B:109:HIS:HB3	1:B:112:ILE:HD12	1.89	0.53
1:B:155:LYS:HE3	1:B:187:MET:O	2.08	0.53
1:C:333:VAL:HA	1:C:337:PHE:O	2.08	0.53
1:B:117:GLU:HB2	1:B:356:ALA:HB2	1.89	0.53
1:D:57:LYS:HE2	1:D:59:ILE:HG22	1.90	0.53
1:F:179:GLU:HG2	1:F:204:ASN:HB3	1.90	0.53
1:F:280:LEU:HD12	1:F:303:TRP:CE3	2.44	0.53
1:F:56:GLN:O	1:F:57:LYS:O	2.27	0.53
1:F:206:LEU:HD22	1:F:215:TYR:HE2	1.72	0.53
1:G:153:ARG:HH21	1:G:303:TRP:CD1	2.25	0.53
1:B:53:TYR:CE2	1:B:128:VAL:HG11	2.43	0.53
1:C:74:LEU:HD23	1:C:74:LEU:N	2.23	0.53
1:E:56:GLN:NE2	1:E:78:GLU:OE1	2.27	0.53
1:G:240:LEU:HB3	1:G:281:LEU:HD21	1.90	0.53
1:B:95:GLN:O	1:B:95:GLN:NE2	2.37	0.53
1:E:77:ARG:NH2	1:E:363:ARG:O	2.40	0.53
1:E:205:LYS:O	1:E:208:THR:HB	2.08	0.53
1:A:53:TYR:CZ	1:A:128:VAL:HG11	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:140:TYR:CD1	1:D:140:TYR:C	2.87	0.53
1:G:97:LEU:HD21	1:G:125:LEU:HD22	1.91	0.53
1:B:167:HIS:C	1:B:169:LYS:H	2.16	0.53
1:A:238:VAL:HG13	1:A:249:PRO:HD2	1.91	0.53
1:D:83:ILE:HG23	1:D:126:TYR:CE2	2.43	0.53
1:E:113:VAL:HG21	1:E:129:MET:HE3	1.91	0.53
1:E:238:VAL:O	1:E:242:THR:HG23	2.08	0.53
1:G:297:GLN:O	1:G:300:LYS:N	2.41	0.53
1:A:244:VAL:HG22	1:A:273:MET:HE2	1.91	0.52
1:B:171:ILE:CG2	1:B:173:HIS:HE1	2.22	0.52
1:B:280:LEU:HD11	1:B:304:MET:HG2	1.90	0.52
1:D:138:PHE:CE1	1:D:215:TYR:HE2	2.28	0.52
1:E:85:ASP:OD1	1:E:85:ASP:C	2.52	0.52
1:G:109:HIS:CE1	1:G:162:ALA:CA	2.91	0.52
1:D:56:GLN:HE21	1:D:70:ALA:HA	1.74	0.52
1:H:53:TYR:CE2	1:H:72:HIS:CD2	2.97	0.52
1:E:71:ARG:CG	1:E:71:ARG:NH1	2.65	0.52
1:F:56:GLN:O	1:F:57:LYS:C	2.53	0.52
1:D:141:LEU:HD11	1:D:243:LEU:HD23	1.91	0.52
1:G:325:ASP:OD2	1:G:328:ARG:HG3	2.08	0.52
1:E:142:VAL:O	1:E:142:VAL:CG1	2.52	0.52
1:G:232:ASP:O	1:G:235:SER:CB	2.56	0.52
1:C:150:LYS:NZ	2:C:387:HOH:O	2.43	0.52
1:G:109:HIS:HB3	1:G:112:ILE:CG1	2.34	0.52
1:A:198:ASN:HB2	1:A:201:THR:HB	1.91	0.52
1:A:245:SER:HB2	1:A:270:PRO:HG2	1.91	0.52
1:C:47:GLN:HB2	1:C:48:PRO:HD2	1.90	0.52
1:G:113:VAL:HG23	1:G:113:VAL:O	2.10	0.52
1:G:114:LYS:HG3	1:G:363:ARG:HH21	1.73	0.52
1:B:177:LYS:O	1:B:180:ASN:HB2	2.10	0.51
1:E:59:ILE:CG1	1:E:67:VAL:HG12	2.40	0.51
1:A:242:THR:HG21	1:A:248:LEU:HD23	1.92	0.51
1:B:339:ARG:HA	1:B:342:ILE:HD12	1.91	0.51
1:C:116:PHE:CE2	1:C:130:GLU:HA	2.46	0.51
1:G:165:TYR:CD2	2:G:375:HOH:O	2.44	0.51
1:G:253:GLN:HA	1:G:253:GLN:NE2	2.24	0.51
1:B:147:MET:HE1	1:B:243:LEU:HD22	1.83	0.51
1:C:109:HIS:HB3	1:C:112:ILE:HD12	1.91	0.51
1:G:53:TYR:HB3	1:G:70:ALA:HB1	1.93	0.51
1:G:138:PHE:CE1	1:G:242:THR:HG21	2.46	0.51
1:G:301:ASP:CG	1:G:302:ARG:N	2.67	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:237:GLY:HA2	1:A:284:LEU:CD1	2.41	0.51
1:A:238:VAL:HG13	1:A:249:PRO:CD	2.40	0.51
1:G:96:LYS:HZ3	1:G:197:SER:H	1.59	0.51
1:G:109:HIS:CE1	1:G:162:ALA:HB2	2.46	0.51
1:H:53:TYR:CE2	1:H:72:HIS:HD2	2.29	0.51
1:A:181:LEU:HD23	1:A:191:ILE:HD12	1.93	0.51
1:B:231:VAL:C	1:B:233:VAL:N	2.69	0.51
1:F:355:MET:O	1:F:356:ALA:C	2.53	0.51
1:G:342:ILE:HA	1:G:354:VAL:CG1	2.40	0.51
1:C:279:ASN:HD22	1:C:282:LYS:HE2	1.76	0.51
1:G:71:ARG:HD2	1:G:76:GLY:HA2	1.93	0.51
1:A:172:VAL:HG13	1:A:195:GLY:HA3	1.92	0.51
1:E:157:ARG:HA	1:E:304:MET:HE1	1.93	0.51
1:C:72:HIS:CE1	1:C:75:THR:HG23	2.46	0.51
1:G:157:ARG:NH2	1:G:308:HIS:HD2	2.07	0.51
1:G:286:VAL:HG23	1:G:292:ARG:HE	1.75	0.51
1:F:154:ALA:O	1:F:158:GLN:HG3	2.10	0.50
1:G:233:VAL:O	1:G:234:TRP:C	2.54	0.50
1:G:333:VAL:O	1:G:336:GLY:N	2.28	0.50
1:H:304:MET:CE	1:H:313:LEU:HD22	2.41	0.50
1:A:218:PRO:HD3	1:A:234:TRP:CD2	2.46	0.50
1:B:251:ASP:OD1	1:B:252:GLY:N	2.42	0.50
1:C:61:LYS:HD2	1:D:272:TYR:CD2	2.46	0.50
1:C:82:LYS:HE2	2:C:368:HOH:O	2.12	0.50
1:G:106:ILE:CG2	1:G:169:LYS:NZ	2.74	0.50
1:B:91:PRO:HD2	1:B:92:THR:H	1.76	0.50
1:B:303:TRP:C	1:B:305:ASN:H	2.19	0.50
1:H:179:GLU:H	1:H:179:GLU:CD	2.19	0.50
1:A:103:ILE:O	1:A:106:ILE:HG12	2.11	0.50
1:C:88:GLN:CA	1:C:88:GLN:NE2	2.75	0.50
1:E:294:SER:O	1:E:298:ILE:HG12	2.11	0.50
1:F:53:TYR:CE1	1:F:117:GLU:OE1	2.65	0.50
1:H:50:ILE:O	1:H:51:GLY:C	2.54	0.50
1:G:106:ILE:CG2	1:G:169:LYS:HZ3	2.25	0.50
1:A:258:LEU:O	1:A:262:VAL:HG23	2.12	0.50
1:H:277:CYS:O	1:H:281:LEU:HD12	2.12	0.50
1:D:184:ASP:OD1	1:D:188:ASN:HB2	2.12	0.50
1:E:58:THR:HB	1:E:68:LYS:HG3	1.93	0.50
1:G:159:ILE:HD11	1:G:189:ILE:HD12	1.92	0.50
1:G:174:ARG:HH21	1:G:197:SER:HA	1.76	0.50
1:H:78:GLU:HB2	1:H:364:LYS:NZ	2.25	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:50:ILE:HG21	1:B:126:TYR:CE2	2.47	0.50
1:D:119:ILE:HB	1:D:126:TYR:HB2	1.93	0.50
1:E:71:ARG:HH11	1:E:71:ARG:HB2	1.76	0.50
1:B:299:MET:HG3	1:B:313:LEU:HG	1.93	0.49
1:A:59:ILE:HD13	1:A:69:LEU:HB2	1.93	0.49
1:G:280:LEU:C	1:G:282:LYS:N	2.70	0.49
1:H:149:GLU:OE1	1:H:303:TRP:NE1	2.40	0.49
1:B:304:MET:HA	1:B:304:MET:CE	2.34	0.49
1:F:52:ASN:O	1:F:73:VAL:HG22	2.12	0.49
1:F:119:ILE:HB	1:F:126:TYR:HB2	1.93	0.49
1:F:181:LEU:HD11	1:F:239:ILE:HD13	1.93	0.49
1:D:109:HIS:CB	1:D:112:ILE:HD12	2.43	0.49
1:F:86:LYS:O	1:F:87:THR:C	2.54	0.49
1:G:350:LYS:HG2	1:G:352:ASP:OD2	2.13	0.49
1:H:50:ILE:HD11	1:H:55:LEU:HD21	1.94	0.49
1:H:113:VAL:CG1	1:H:192:ALA:HB2	2.41	0.49
1:H:304:MET:HE1	1:H:313:LEU:CD2	2.41	0.49
1:B:100:GLU:O	1:B:103:ILE:N	2.45	0.49
1:D:95:GLN:HB3	1:D:99:ARG:NH2	2.27	0.49
1:F:54:ARG:HH11	1:F:54:ARG:CG	2.25	0.49
1:G:236:LEU:H	1:G:236:LEU:CD2	2.26	0.49
1:H:146:ARG:NH2	1:H:272:TYR:OH	2.45	0.49
1:C:280:LEU:HG	1:C:301:ASP:CG	2.37	0.49
1:E:104:MET:HE1	1:E:127:LEU:HD13	1.93	0.49
1:G:159:ILE:CD1	1:G:189:ILE:HD12	2.43	0.49
1:G:232:ASP:O	1:G:235:SER:N	2.46	0.49
1:A:269:ILE:HD13	1:A:278:GLU:HG3	1.95	0.49
1:A:314:LYS:HE2	1:A:315:PRO:HD2	1.94	0.49
1:B:301:ASP:O	1:B:305:ASN:HB2	2.13	0.49
1:G:141:LEU:HD11	1:G:243:LEU:HD23	1.94	0.49
1:H:53:TYR:OH	1:H:117:GLU:OE1	2.26	0.49
1:H:83:ILE:C	1:H:84:ILE:HG13	2.38	0.49
1:B:154:ALA:O	1:B:155:LYS:C	2.53	0.49
1:A:240:LEU:HD22	1:A:244:VAL:CG1	2.43	0.48
1:D:218:PRO:HD3	1:D:234:TRP:CE2	2.48	0.48
1:F:47:GLN:N	1:F:48:PRO:CD	2.76	0.48
1:F:109:HIS:HB3	1:F:112:ILE:HD12	1.95	0.48
1:F:97:LEU:HB2	1:F:200:PHE:CE1	2.48	0.48
1:G:60:GLY:O	1:G:66:LYS:HG2	2.12	0.48
1:G:165:TYR:HD1	1:G:316:TYR:HB3	1.77	0.48
1:A:155:LYS:O	1:A:159:ILE:HG13	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:72:HIS:CE1	1:F:74:LEU:HB2	2.48	0.48
1:G:103:ILE:C	1:G:105:LYS:N	2.70	0.48
1:D:218:PRO:O	1:D:219:GLU:C	2.53	0.48
1:G:237:GLY:HA3	1:G:285:LEU:CD2	2.42	0.48
1:B:90:ASN:CB	1:B:91:PRO:CD	2.79	0.48
1:B:303:TRP:C	1:B:305:ASN:N	2.70	0.48
1:G:109:HIS:HD2	1:G:110:PRO:HD2	1.79	0.48
1:G:217:ALA:CB	1:G:218:PRO:HD2	2.23	0.48
1:D:201:THR:O	1:D:202:VAL:HG23	2.13	0.48
1:D:218:PRO:O	1:D:221:PHE:N	2.45	0.48
1:D:225:LYS:CE	1:D:225:LYS:H	2.25	0.48
1:E:304:MET:HE2	1:E:313:LEU:HD22	1.96	0.48
1:E:353:GLU:HG2	2:E:388:HOH:O	2.13	0.48
1:F:47:GLN:N	1:F:48:PRO:HD2	2.29	0.48
1:G:312:GLU:O	1:G:313:LEU:C	2.56	0.48
1:H:50:ILE:HG21	1:H:126:TYR:CE1	2.47	0.48
1:G:86:LYS:NZ	1:G:121:THR:O	2.43	0.48
1:G:363:ARG:HG3	1:G:363:ARG:HH11	1.79	0.48
1:D:53:TYR:CE2	1:D:128:VAL:HG11	2.49	0.48
1:D:339:ARG:HG2	2:D:382:HOH:O	2.12	0.48
1:D:66:LYS:NZ	1:D:68:LYS:NZ	2.61	0.48
1:F:208:THR:HG22	2:F:384:HOH:O	2.13	0.48
1:G:263:LEU:O	1:G:287:LEU:HD21	2.13	0.48
1:B:164:GLN:O	1:B:165:TYR:C	2.57	0.48
1:B:192:ALA:O	1:B:193:ASP:HB2	2.13	0.48
1:B:93:SER:HB3	1:B:94:LEU:H	1.45	0.47
1:D:294:SER:O	1:D:295:LEU:C	2.56	0.47
1:E:58:THR:HA	1:E:68:LYS:HA	1.96	0.47
1:G:90:ASN:CG	1:G:93:SER:HB2	2.38	0.47
1:B:53:TYR:N	1:B:53:TYR:CD1	2.82	0.47
1:G:280:LEU:HD22	1:G:284:LEU:HD11	1.95	0.47
1:E:56:GLN:NE2	1:E:70:ALA:CA	2.76	0.47
1:F:206:LEU:HD22	1:F:215:TYR:CE2	2.49	0.47
1:G:160:VAL:C	1:G:162:ALA:H	2.21	0.47
1:D:219:GLU:O	1:D:222:GLN:HB2	2.15	0.47
1:H:120:GLU:HG3	1:H:125:LEU:CD1	2.42	0.47
1:D:57:LYS:HE2	1:D:59:ILE:CG2	2.43	0.47
1:G:159:ILE:HD11	1:G:189:ILE:CD1	2.45	0.47
1:G:286:VAL:HG22	1:G:292:ARG:HG3	1.97	0.47
1:A:304:MET:CE	1:A:313:LEU:HD22	2.45	0.47
1:B:55:LEU:HD23	1:B:70:ALA:HB2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:55:LEU:HD23	1:C:70:ALA:HB2	1.97	0.47
1:D:97:LEU:HB2	1:D:200:PHE:CZ	2.49	0.47
1:B:151:GLU:O	1:B:152:ALA:C	2.58	0.47
1:C:164:GLN:HG3	1:C:299:MET:HE3	1.96	0.47
1:D:116:PHE:CE2	1:D:130:GLU:HA	2.50	0.47
1:D:186:ASP:O	1:D:187:MET:HB2	2.13	0.47
1:F:69:LEU:HD12	1:F:69:LEU:HA	1.64	0.47
1:G:56:GLN:NE2	1:G:70:ALA:C	2.73	0.47
1:G:165:TYR:O	1:G:168:GLN:HG3	2.14	0.47
1:G:255:LEU:O	1:G:259:ARG:CB	2.63	0.47
1:B:91:PRO:CD	1:B:92:THR:N	2.76	0.47
1:B:281:LEU:HA	1:B:284:LEU:HB2	1.96	0.47
1:B:304:MET:HB3	1:B:304:MET:HE2	1.57	0.47
1:E:85:ASP:OD1	1:E:87:THR:N	2.46	0.47
1:H:155:LYS:O	1:H:159:ILE:HG13	2.15	0.47
1:H:177:LYS:O	1:H:178:ALA:C	2.57	0.47
1:B:97:LEU:N	1:B:200:PHE:CE1	2.83	0.47
1:C:257:GLU:OE2	1:C:261:ARG:NH1	2.48	0.47
1:F:305:ASN:O	1:F:306:VAL:C	2.57	0.47
1:G:53:TYR:CZ	1:G:128:VAL:HG11	2.49	0.47
1:E:90:ASN:ND2	1:E:90:ASN:H	2.13	0.47
1:E:304:MET:HE2	1:E:313:LEU:CD2	2.45	0.47
1:F:115:LEU:HD12	1:F:128:VAL:O	2.14	0.47
1:A:240:LEU:HD13	1:A:281:LEU:HG	1.96	0.46
1:A:288:ASN:HA	1:A:289:PRO:HD3	1.83	0.46
1:E:121:THR:O	1:E:122:GLU:C	2.58	0.46
1:F:53:TYR:OH	1:F:117:GLU:OE1	2.26	0.46
1:F:117:GLU:OE2	1:F:353:GLU:HA	2.15	0.46
1:H:114:LYS:HG2	2:H:370:HOH:O	2.15	0.46
1:C:53:TYR:CZ	1:C:128:VAL:HG11	2.51	0.46
1:F:270:PRO:HD2	1:F:273:MET:HE3	1.97	0.46
1:B:147:MET:HE3	1:B:152:ALA:HA	1.97	0.46
1:C:141:LEU:O	1:C:142:VAL:C	2.55	0.46
1:D:347:ILE:CD1	1:D:347:ILE:HG21	2.45	0.46
1:E:352:ASP:HB2	2:E:388:HOH:O	2.15	0.46
1:F:167:HIS:NE2	1:F:232:ASP:OD2	2.35	0.46
1:G:132:ALA:HB1	1:G:183:LEU:O	2.14	0.46
1:D:258:LEU:HD23	1:D:258:LEU:HA	1.70	0.46
1:F:181:LEU:HD11	1:F:239:ILE:CD1	2.46	0.46
1:F:352:ASP:OD1	1:F:352:ASP:C	2.57	0.46
1:G:109:HIS:HD2	1:G:110:PRO:N	2.13	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:213:PRO:O	1:G:215:TYR:N	2.46	0.46
1:G:294:SER:OG	1:G:297:GLN:N	2.48	0.46
1:H:281:LEU:C	1:H:283:LYS:N	2.74	0.46
1:B:240:LEU:O	1:B:244:VAL:HG13	2.16	0.46
1:E:345:ALA:HA	1:E:350:LYS:HD3	1.97	0.46
1:G:105:LYS:HG2	1:G:115:LEU:HD23	1.98	0.46
1:G:157:ARG:HH12	1:G:313:LEU:HB2	1.80	0.46
1:F:238:VAL:O	1:F:242:THR:HG23	2.15	0.46
1:G:109:HIS:CD2	1:G:111:ASN:H	2.33	0.46
1:D:348:ASN:O	1:D:349:GLN:C	2.59	0.46
1:B:312:GLU:O	1:B:314:LYS:N	2.49	0.46
1:H:163:VAL:HG13	1:H:194:PHE:HE2	1.81	0.46
1:H:325:ASP:C	1:H:325:ASP:OD1	2.55	0.46
1:E:111:ASN:CG	1:E:158:GLN:HB3	2.41	0.46
1:F:53:TYR:CE2	1:F:128:VAL:HG11	2.51	0.46
1:G:109:HIS:HE1	1:G:162:ALA:CA	2.28	0.46
1:B:90:ASN:OD1	1:B:91:PRO:CD	2.63	0.46
1:B:181:LEU:HD23	1:B:191:ILE:HG12	1.98	0.46
1:C:164:GLN:HG3	1:C:299:MET:CE	2.46	0.46
1:C:298:ILE:HG22	1:C:304:MET:HE3	1.98	0.46
1:F:53:TYR:HE1	1:F:117:GLU:OE1	1.99	0.46
1:F:93:SER:HB3	1:F:199:GLU:OE1	2.16	0.46
1:G:109:HIS:CD2	1:G:110:PRO:HD2	2.50	0.46
1:B:168:GLN:O	1:B:168:GLN:HG2	2.17	0.45
1:D:221:PHE:CD1	1:D:259:ARG:HB2	2.51	0.45
1:G:154:ALA:O	1:G:155:LYS:C	2.56	0.45
1:G:157:ARG:HH21	1:G:308:HIS:CD2	2.34	0.45
1:H:56:GLN:NE2	1:H:78:GLU:OE1	2.40	0.45
1:H:82:LYS:HE2	1:H:200:PHE:O	2.16	0.45
1:C:328:ARG:O	1:C:332:MET:HG3	2.16	0.45
1:E:227:ASP:OD2	1:E:227:ASP:C	2.59	0.45
1:F:103:ILE:O	1:F:106:ILE:HG12	2.16	0.45
1:G:175:ASP:O	1:G:176:LEU:C	2.60	0.45
1:A:242:THR:HG22	1:A:248:LEU:HA	1.98	0.45
1:B:143:ALA:HB3	1:B:144:HIS:HD2	1.82	0.45
1:B:245:SER:HA	1:B:272:TYR:OH	2.16	0.45
1:C:53:TYR:CE2	1:C:128:VAL:HG11	2.52	0.45
1:C:333:VAL:O	1:C:334:THR:C	2.57	0.45
1:E:86:LYS:HA	1:E:89:LEU:HD12	1.97	0.45
1:E:205:LYS:O	1:E:206:LEU:C	2.57	0.45
1:D:269:ILE:HG12	1:D:278:GLU:HG3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:109:HIS:CE1	1:E:111:ASN:HB2	2.52	0.45
1:F:229:PRO:O	1:F:230:GLU:C	2.56	0.45
1:F:233:VAL:HG13	1:F:284:LEU:CD2	2.47	0.45
1:A:64:PHE:CZ	1:B:268:ARG:HD3	2.52	0.45
1:A:164:GLN:HE22	1:A:315:PRO:HB3	1.80	0.45
1:C:159:ILE:HG22	1:C:236:LEU:HD11	1.98	0.45
1:G:267:TYR:N	1:G:267:TYR:CD2	2.84	0.45
1:G:333:VAL:HA	1:G:337:PHE:O	2.17	0.45
1:A:180:ASN:O	1:A:191:ILE:HA	2.17	0.45
1:E:141:LEU:C	1:E:143:ALA:H	2.25	0.45
1:F:257:GLU:OE2	1:F:261:ARG:NH1	2.41	0.45
1:G:160:VAL:C	1:G:162:ALA:N	2.75	0.45
1:G:160:VAL:O	1:G:162:ALA:N	2.50	0.45
1:G:165:TYR:O	1:G:166:CYS:C	2.59	0.45
1:H:157:ARG:HA	1:H:304:MET:HE1	1.99	0.45
1:F:218:PRO:HD3	1:F:234:TRP:CE2	2.52	0.45
1:B:95:GLN:C	1:B:95:GLN:NE2	2.70	0.44
1:E:217:ALA:HA	1:E:234:TRP:CD1	2.51	0.44
1:H:237:GLY:HA2	1:H:284:LEU:CD1	2.47	0.44
1:C:286:VAL:HG21	1:C:291:LYS:HB2	2.00	0.44
1:D:72:HIS:CE1	1:D:74:LEU:HB2	2.52	0.44
1:D:224:LYS:HD3	1:D:224:LYS:N	2.32	0.44
1:D:288:ASN:OD1	1:D:288:ASN:C	2.59	0.44
1:F:289:PRO:O	1:F:292:ARG:HG3	2.17	0.44
1:G:276:ASP:O	1:G:277:CYS:C	2.58	0.44
1:B:92:THR:O	1:B:93:SER:O	2.36	0.44
1:D:57:LYS:CE	1:D:59:ILE:HG22	2.47	0.44
1:D:69:LEU:HD12	1:D:69:LEU:HA	1.83	0.44
1:E:137:VAL:O	1:E:138:PHE:C	2.60	0.44
1:G:103:ILE:HD13	1:G:170:TYR:CD2	2.52	0.44
1:G:131:TYR:CE2	1:G:133:SER:HB3	2.52	0.44
1:B:90:ASN:O	1:B:94:LEU:CB	2.64	0.44
1:C:146:ARG:HG3	1:C:146:ARG:NH1	2.17	0.44
1:C:240:LEU:O	1:C:244:VAL:HG13	2.16	0.44
1:C:280:LEU:HG	1:C:301:ASP:OD1	2.16	0.44
1:D:218:PRO:O	1:D:220:LEU:N	2.50	0.44
1:F:120:GLU:HB2	1:F:125:LEU:CD1	2.47	0.44
1:G:90:ASN:ND2	1:G:93:SER:HB2	2.32	0.44
1:H:131:TYR:CZ	1:H:133:SER:HA	2.52	0.44
1:C:304:MET:HE2	1:C:304:MET:HB2	1.92	0.44
1:E:304:MET:CE	1:E:313:LEU:HD22	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:71:ARG:HG2	2:C:400:HOH:O	2.17	0.44
1:C:90:ASN:OD1	1:C:90:ASN:N	2.47	0.44
1:G:71:ARG:CZ	1:G:78:GLU:OE2	2.65	0.44
1:H:53:TYR:CZ	1:H:128:VAL:HG11	2.51	0.44
1:A:217:ALA:HB2	1:A:231:VAL:CG1	2.46	0.44
1:C:229:PRO:O	1:C:230:GLU:C	2.58	0.44
1:E:228:GLY:O	1:E:229:PRO:C	2.60	0.44
1:F:348:ASN:O	1:F:349:GLN:C	2.61	0.44
1:C:50:ILE:HD11	1:C:119:ILE:HG21	1.98	0.44
1:D:53:TYR:OH	1:D:117:GLU:OE1	2.32	0.44
1:G:180:ASN:N	1:G:180:ASN:HD22	2.14	0.44
1:G:256:LYS:O	1:G:260:GLU:CB	2.66	0.44
1:C:159:ILE:CG2	1:C:236:LEU:HD11	2.48	0.44
1:F:54:ARG:HG2	1:F:54:ARG:NH1	2.30	0.44
1:B:279:ASN:O	1:B:280:LEU:C	2.61	0.43
1:F:180:ASN:O	1:F:191:ILE:HA	2.18	0.43
1:G:74:LEU:N	1:G:74:LEU:HD23	2.33	0.43
1:G:100:GLU:OE2	1:G:200:PHE:HD1	2.01	0.43
1:G:141:LEU:HD13	1:G:242:THR:HG23	2.00	0.43
1:H:286:VAL:HB	1:H:292:ARG:HG2	1.99	0.43
1:G:286:VAL:CG2	1:G:292:ARG:HG3	2.47	0.43
1:G:338:ALA:HB3	1:G:341:GLU:HG2	2.01	0.43
1:B:171:ILE:HG22	1:B:173:HIS:ND1	2.31	0.43
1:C:240:LEU:HD11	1:C:280:LEU:HD13	2.00	0.43
1:D:347:ILE:HG21	1:D:347:ILE:HD13	2.00	0.43
1:E:207:ASP:HB3	1:F:142:VAL:HG13	2.00	0.43
1:G:113:VAL:HG12	1:G:190:LYS:HB3	1.99	0.43
1:G:165:TYR:CE2	1:G:169:LYS:HD3	2.52	0.43
1:G:213:PRO:C	1:G:215:TYR:H	2.26	0.43
1:H:87:THR:HG21	1:H:123:LYS:HG2	1.99	0.43
1:H:304:MET:HE2	1:H:313:LEU:CD2	2.46	0.43
1:A:57:LYS:HE3	1:A:59:ILE:HG22	1.99	0.43
1:B:82:LYS:HB2	1:B:129:MET:HE2	1.99	0.43
1:D:112:ILE:O	1:D:113:VAL:C	2.58	0.43
1:E:216:ALA:O	1:E:221:PHE:HE2	2.02	0.43
1:F:97:LEU:HB2	1:F:200:PHE:CZ	2.53	0.43
1:B:231:VAL:HB	1:B:232:ASP:H	1.33	0.43
1:C:285:LEU:HD23	1:C:285:LEU:HA	1.66	0.43
1:E:288:ASN:HA	1:E:289:PRO:HD3	1.80	0.43
1:G:171:ILE:HG22	1:G:171:ILE:O	2.18	0.43
1:G:174:ARG:HB2	1:G:175:ASP:H	1.74	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:90:ASN:O	1:H:91:PRO:C	2.57	0.43
1:A:165:TYR:O	1:A:168:GLN:HB2	2.18	0.43
1:A:237:GLY:HA2	1:A:284:LEU:HD13	2.01	0.43
1:C:121:THR:HG1	1:C:124:THR:H	1.67	0.43
1:E:304:MET:HE3	1:E:304:MET:HB3	1.75	0.43
1:G:155:LYS:O	1:G:159:ILE:CG1	2.55	0.43
1:B:157:ARG:NH1	1:B:313:LEU:HB2	2.33	0.43
1:D:280:LEU:HG	1:D:301:ASP:CG	2.43	0.43
1:D:347:ILE:CD1	1:D:347:ILE:CG2	2.96	0.43
1:F:112:ILE:O	1:F:113:VAL:C	2.61	0.43
1:G:337:PHE:CD2	1:G:354:VAL:HG22	2.54	0.43
1:B:53:TYR:HA	1:B:71:ARG:O	2.19	0.43
1:C:242:THR:HG22	1:C:248:LEU:HA	2.01	0.43
1:G:106:ILE:HG21	1:G:169:LYS:NZ	2.32	0.43
1:B:57:LYS:H	1:B:57:LYS:HG3	1.45	0.43
1:B:279:ASN:O	1:B:282:LYS:N	2.49	0.43
1:C:82:LYS:HZ3	1:C:82:LYS:HG3	1.74	0.43
1:E:73:VAL:HG23	1:E:74:LEU:HD23	2.00	0.43
1:E:232:ASP:O	1:E:236:LEU:HD22	2.19	0.43
1:G:82:LYS:HE2	1:G:200:PHE:O	2.18	0.43
1:G:176:LEU:HD12	1:G:176:LEU:HA	1.80	0.43
1:G:217:ALA:CB	1:G:218:PRO:CD	2.90	0.43
1:G:303:TRP:C	1:G:305:ASN:N	2.72	0.43
1:H:231:VAL:O	1:H:232:ASP:C	2.62	0.43
1:B:83:ILE:H	1:B:83:ILE:HG12	1.43	0.42
1:B:175:ASP:O	1:B:177:LYS:NZ	2.51	0.42
1:B:288:ASN:HA	1:B:289:PRO:HD3	1.81	0.42
1:B:348:ASN:O	1:B:349:GLN:C	2.62	0.42
1:C:253:GLN:H	1:C:253:GLN:HE21	1.67	0.42
1:G:177:LYS:HZ2	1:G:177:LYS:HG3	1.60	0.42
1:G:252:GLY:HA3	1:G:261:ARG:HH21	1.84	0.42
1:B:138:PHE:CD2	1:B:138:PHE:C	2.98	0.42
1:D:280:LEU:HG	1:D:301:ASP:OD1	2.19	0.42
1:E:206:LEU:HB3	1:F:142:VAL:HG22	2.01	0.42
1:G:86:LYS:HB2	1:G:86:LYS:HE3	1.89	0.42
1:B:171:ILE:HG21	1:B:173:HIS:HE1	1.83	0.42
1:E:113:VAL:O	1:E:113:VAL:CG2	2.65	0.42
1:E:173:HIS:C	1:E:174:ARG:HG3	2.44	0.42
1:H:101:VAL:O	1:H:105:LYS:HG3	2.19	0.42
1:H:172:VAL:HG13	1:H:195:GLY:HA3	2.01	0.42
1:A:258:LEU:HD23	1:A:262:VAL:HG23	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:269:ILE:HD13	1:A:278:GLU:CG	2.48	0.42
1:B:166:CYS:O	1:B:170:TYR:CD1	2.72	0.42
1:B:280:LEU:HG	1:B:301:ASP:CG	2.44	0.42
1:E:345:ALA:HA	1:E:350:LYS:HD2	2.01	0.42
1:F:109:HIS:C	1:F:111:ASN:H	2.28	0.42
1:G:89:LEU:HB3	1:G:94:LEU:HD12	2.00	0.42
1:A:364:LYS:HB3	1:A:364:LYS:HE3	1.91	0.42
1:C:56:GLN:HE21	1:C:70:ALA:C	2.28	0.42
1:C:59:ILE:CG1	1:C:67:VAL:HG12	2.49	0.42
1:E:53:TYR:CE2	1:E:128:VAL:HG11	2.54	0.42
1:B:113:VAL:HG11	1:B:192:ALA:HB2	2.01	0.42
1:B:284:LEU:HA	1:B:284:LEU:HD23	1.70	0.42
1:C:244:VAL:CG2	1:C:273:MET:HE2	2.49	0.42
1:D:302:ARG:NH1	1:D:302:ARG:HG2	2.35	0.42
1:E:85:ASP:OD1	1:E:86:LYS:N	2.53	0.42
1:G:304:MET:HE2	1:G:304:MET:HB3	1.92	0.42
1:H:234:TRP:CD1	1:H:234:TRP:C	2.98	0.42
1:B:264:ARG:NH1	1:B:264:ARG:HB2	2.35	0.42
1:E:272:TYR:HA	1:H:336:GLY:O	2.19	0.42
1:C:244:VAL:HG22	1:C:273:MET:HE2	2.02	0.42
1:G:269:ILE:HD12	1:G:269:ILE:HA	1.68	0.42
1:H:115:LEU:HD12	1:H:128:VAL:O	2.20	0.42
1:C:201:THR:HB	1:C:202:VAL:H	1.64	0.42
1:E:96:LYS:HD3	1:E:197:SER:OG	2.20	0.42
1:E:113:VAL:HG13	1:E:191:ILE:O	2.20	0.42
1:E:299:MET:HE1	1:E:315:PRO:HA	2.02	0.42
1:A:57:LYS:HE3	1:A:59:ILE:CG2	2.50	0.42
1:B:69:LEU:HD12	1:B:69:LEU:HA	1.93	0.42
1:G:271:PHE:CD1	1:G:271:PHE:C	2.98	0.42
1:G:316:TYR:CD1	2:G:373:HOH:O	2.57	0.42
1:H:116:PHE:CD2	1:H:360:LEU:HD21	2.55	0.42
1:H:332:MET:HE3	1:H:357:THR:HB	2.01	0.42
1:A:346:LEU:HD23	1:A:346:LEU:HA	1.82	0.41
1:F:117:GLU:HB3	1:F:128:VAL:HB	2.02	0.41
1:F:132:ALA:HB1	1:F:183:LEU:O	2.20	0.41
1:H:92:THR:HA	1:H:95:GLN:HB2	2.01	0.41
1:H:241:TYR:CD1	1:H:241:TYR:C	2.97	0.41
1:H:361:LEU:HD23	1:H:361:LEU:HA	1.90	0.41
1:A:248:LEU:HG	2:A:387:HOH:O	2.19	0.41
1:B:91:PRO:HG2	1:B:92:THR:H	1.85	0.41
1:B:95:GLN:HE21	1:B:96:LYS:HA	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:306:VAL:O	1:B:306:VAL:CG1	2.67	0.41
1:F:113:VAL:CG1	1:F:192:ALA:HB2	2.50	0.41
1:F:314:LYS:O	1:F:315:PRO:C	2.62	0.41
1:G:116:PHE:CD2	1:G:360:LEU:HD21	2.55	0.41
1:G:183:LEU:HD13	1:G:187:MET:HE1	2.01	0.41
1:A:129:MET:HE3	1:A:129:MET:HB3	1.45	0.41
1:B:83:ILE:HG23	1:B:126:TYR:CE2	2.55	0.41
1:C:280:LEU:HD22	1:C:284:LEU:CD1	2.50	0.41
1:E:71:ARG:NH1	1:E:71:ARG:HB2	2.35	0.41
1:G:169:LYS:C	2:G:367:HOH:O	2.62	0.41
1:B:91:PRO:CG	1:B:92:THR:N	2.82	0.41
1:B:141:LEU:HD13	1:B:242:THR:O	2.20	0.41
1:B:301:ASP:CG	1:B:302:ARG:N	2.78	0.41
1:F:179:GLU:CG	1:F:204:ASN:HB3	2.51	0.41
1:A:313:LEU:HD12	1:A:313:LEU:HA	1.93	0.41
1:C:288:ASN:OD1	1:C:288:ASN:C	2.63	0.41
1:D:97:LEU:HD21	1:D:125:LEU:HD22	2.02	0.41
1:D:229:PRO:O	1:D:230:GLU:C	2.63	0.41
1:F:233:VAL:HG13	1:F:284:LEU:HD23	2.02	0.41
1:B:72:HIS:CE1	1:B:74:LEU:HB2	2.55	0.41
1:E:107:LEU:HD21	1:E:170:TYR:CE1	2.56	0.41
1:E:295:LEU:HD23	1:E:295:LEU:HA	1.87	0.41
1:E:313:LEU:HD12	1:E:313:LEU:HA	1.81	0.41
1:E:348:ASN:O	1:E:349:GLN:C	2.64	0.41
1:G:159:ILE:HD13	1:G:189:ILE:HG21	2.01	0.41
1:A:236:LEU:HD12	1:A:236:LEU:HA	1.77	0.41
1:B:266:LYS:HG3	1:B:267:TYR:N	2.35	0.41
1:G:49:HIS:HE1	1:G:73:VAL:HG11	1.86	0.41
1:G:106:ILE:HG21	1:G:169:LYS:HZ1	1.86	0.41
1:H:50:ILE:HG12	1:H:126:TYR:CE2	2.54	0.41
1:A:165:TYR:O	1:A:166:CYS:C	2.62	0.41
1:A:217:ALA:HA	1:A:234:TRP:CD1	2.55	0.41
1:B:53:TYR:OH	1:B:117:GLU:OE1	2.36	0.41
1:C:298:ILE:N	1:C:298:ILE:HD13	2.36	0.41
1:D:56:GLN:NE2	1:D:70:ALA:C	2.79	0.41
1:E:56:GLN:HE21	1:E:70:ALA:N	2.18	0.41
1:F:242:THR:CG2	1:F:248:LEU:HD23	2.50	0.41
1:G:176:LEU:HD13	1:G:194:PHE:CD1	2.56	0.41
1:A:314:LYS:O	1:A:315:PRO:C	2.61	0.41
1:C:198:ASN:O	1:C:200:PHE:N	2.54	0.41
1:E:186:ASP:O	1:E:187:MET:HB2	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:90:ASN:O	1:G:94:LEU:HB2	2.21	0.41
1:G:109:HIS:CE1	1:G:162:ALA:CB	3.03	0.41
1:H:234:TRP:CZ3	1:H:285:LEU:O	2.74	0.41
1:B:84:ILE:HG21	1:B:97:LEU:HD21	2.03	0.41
1:G:250:PHE:HE2	1:G:285:LEU:CD1	2.34	0.41
1:C:273:MET:HE3	1:C:273:MET:HB2	2.00	0.40
1:D:214:PRO:HD2	1:D:215:TYR:CE1	2.57	0.40
1:D:338:ALA:HB3	1:D:341:GLU:HG2	2.02	0.40
1:E:62:GLY:O	1:E:63:ASN:C	2.61	0.40
1:E:330:ASP:O	1:E:331:ILE:C	2.64	0.40
1:F:49:HIS:CD2	1:F:49:HIS:N	2.89	0.40
1:A:304:MET:HE1	1:A:313:LEU:CD2	2.52	0.40
1:F:107:LEU:HD13	1:F:112:ILE:HG21	2.02	0.40
1:F:217:ALA:O	1:F:218:PRO:C	2.63	0.40
1:B:90:ASN:CG	1:B:91:PRO:CD	2.88	0.40
1:B:93:SER:O	1:B:96:LYS:N	2.53	0.40
1:B:96:LYS:O	1:B:97:LEU:C	2.65	0.40
1:B:231:VAL:C	1:B:233:VAL:H	2.29	0.40
1:C:295:LEU:O	1:C:299:MET:HG3	2.22	0.40
1:G:97:LEU:O	1:G:97:LEU:HG	2.20	0.40
1:G:236:LEU:N	1:G:236:LEU:CD2	2.84	0.40
1:G:294:SER:HB3	1:G:297:GLN:CD	2.46	0.40
1:A:62:GLY:O	1:A:63:ASN:C	2.63	0.40
1:B:180:ASN:O	1:B:191:ILE:HA	2.21	0.40
1:C:69:LEU:HD12	1:C:69:LEU:HA	1.94	0.40
1:E:257:GLU:OE2	1:E:261:ARG:NH2	2.54	0.40
1:E:279:ASN:HD22	1:E:279:ASN:HA	1.77	0.40
1:H:176:LEU:HD12	1:H:176:LEU:HA	1.92	0.40
1:A:117:GLU:HB2	1:A:356:ALA:HB2	2.04	0.40
1:A:159:ILE:HG12	1:A:189:ILE:HG21	2.02	0.40
1:A:301:ASP:CG	1:A:302:ARG:N	2.78	0.40
1:A:324:ASN:HA	1:A:329:ILE:HD11	2.04	0.40
1:B:332:MET:HE2	1:B:332:MET:HB3	1.98	0.40
1:C:85:ASP:OD1	1:C:87:THR:OG1	2.36	0.40
1:D:165:TYR:CZ	1:D:169:LYS:HD2	2.57	0.40
1:E:56:GLN:NE2	1:E:70:ALA:C	2.80	0.40
1:F:196:PHE:N	1:F:196:PHE:CD2	2.90	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)
1:B:327:LYS:NZ	1:C:364:LYS:O[4_455]	2.11	0.09

### 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	305/328 (93%)	290 (95%)	12 (4%)	3 (1%)	12	28
1	B	269/328 (82%)	230 (86%)	20 (7%)	19 (7%)	1	1
1	C	306/328 (93%)	290 (95%)	12 (4%)	4 (1%)	9	21
1	D	305/328 (93%)	279 (92%)	22 (7%)	4 (1%)	9	21
1	E	316/328 (96%)	294 (93%)	18 (6%)	4 (1%)	9	21
1	F	316/328 (96%)	293 (93%)	17 (5%)	6 (2%)	6	13
1	G	289/328 (88%)	241 (83%)	33 (11%)	15 (5%)	1	2
1	H	271/328 (83%)	237 (88%)	25 (9%)	9 (3%)	3	5
All	All	2377/2624 (91%)	2154 (91%)	159 (7%)	64 (3%)	4	7

All (64) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	90	ASN
1	B	93	SER
1	B	94	LEU
1	B	301	ASP
1	B	306	VAL
1	B	313	LEU
1	C	87	THR
1	D	202	VAL
1	E	142	VAL
1	F	204	ASN
1	F	205	LYS
1	G	57	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	G	87	THR
1	G	201	THR
1	G	217	ALA
1	G	230	GLU
1	G	253	GLN
1	A	185	GLY
1	A	229	PRO
1	B	51	GLY
1	B	91	PRO
1	B	174	ARG
1	B	232	ASP
1	B	304	MET
1	B	351	TYR
1	E	88	GLN
1	F	57	LYS
1	F	203	GLY
1	G	165	TYR
1	G	214	PRO
1	H	57	LYS
1	H	146	ARG
1	H	232	ASP
1	H	286	VAL
1	H	301	ASP
1	B	235	SER
1	B	315	PRO
1	B	353	GLU
1	C	57	LYS
1	D	122	GLU
1	D	176	LEU
1	F	121	THR
1	G	311	GLU
1	H	51	GLY
1	H	88	GLN
1	H	273	MET
1	H	285	LEU
1	B	121	THR
1	B	165	TYR
1	F	222	GLN
1	G	157	ARG
1	G	166	CYS
1	G	251	ASP
1	A	105	LYS

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Mol	Chain	Res	Type
1	C	86	LYS
1	D	311	GLU
1	E	311	GLU
1	E	351	TYR
1	G	148	LYS
1	G	310	GLU
1	B	164	GLN
1	C	88	GLN
1	G	170	TYR
1	B	298	ILE

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

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	269/290 (93%)	233 (87%)	36 (13%)	4	7
1	B	240/290 (83%)	197 (82%)	43 (18%)	2	3
1	C	272/290 (94%)	228 (84%)	44 (16%)	2	4
1	D	271/290 (93%)	228 (84%)	43 (16%)	2	4
1	E	271/290 (93%)	237 (88%)	34 (12%)	4	9
1	F	277/290 (96%)	241 (87%)	36 (13%)	4	8
1	G	249/290 (86%)	197 (79%)	52 (21%)	1	2
1	H	232/290 (80%)	205 (88%)	27 (12%)	5	11
All	All	2081/2320 (90%)	1766 (85%)	315 (15%)	3	5

All (315) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	59	ILE
1	A	84	ILE
1	A	86	LYS
1	A	94	LEU
1	A	95	GLN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	106	ILE
1	A	113	VAL
1	A	114	LYS
1	A	129	MET
1	A	146	ARG
1	A	148	LYS
1	A	150	LYS
1	A	155	LYS
1	A	169	LYS
1	A	174	ARG
1	A	175	ASP
1	A	201	THR
1	A	202	VAL
1	A	236	LEU
1	A	240	LEU
1	A	244	VAL
1	A	251	ASP
1	A	253	GLN
1	A	255	LEU
1	A	266	LYS
1	A	275	THR
1	A	280	LEU
1	A	286	VAL
1	A	288	ASN
1	A	290	ILE
1	A	301	ASP
1	A	304	MET
1	A	314	LYS
1	A	326	THR
1	A	347	ILE
1	A	364	LYS
1	B	57	LYS
1	B	58	THR
1	B	61	LYS
1	B	63	ASN
1	B	71	ARG
1	B	73	VAL
1	B	83	ILE
1	B	84	ILE
1	B	86	LYS
1	B	92	THR
1	B	93	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	95	GLN
1	B	96	LYS
1	B	113	VAL
1	B	114	LYS
1	B	120	GLU
1	B	155	LYS
1	B	164	GLN
1	B	168	GLN
1	B	197	SER
1	B	235	SER
1	B	236	LEU
1	B	240	LEU
1	B	244	VAL
1	B	263	LEU
1	B	264	ARG
1	B	275	THR
1	B	280	LEU
1	B	282	LYS
1	B	286	VAL
1	B	287	LEU
1	B	288	ASN
1	B	298	ILE
1	B	300	LYS
1	B	302	ARG
1	B	304	MET
1	B	312	GLU
1	B	317	THR
1	B	326	THR
1	B	340	ASP
1	B	343	ASN
1	B	347	ILE
1	B	364	LYS
1	C	47	GLN
1	C	50	ILE
1	C	57	LYS
1	C	59	ILE
1	C	61	LYS
1	C	66	LYS
1	C	74	LEU
1	C	82	LYS
1	C	88	GLN
1	C	106	ILE

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	C	113	VAL
1	C	114	LYS
1	C	122	GLU
1	C	129	MET
1	C	146	ARG
1	C	150	LYS
1	C	153	ARG
1	C	155	LYS
1	C	202	VAL
1	C	220	LEU
1	C	225	LYS
1	C	236	LEU
1	C	240	LEU
1	C	244	VAL
1	C	253	GLN
1	C	257	GLU
1	C	258	LEU
1	C	261	ARG
1	C	264	ARG
1	C	269	ILE
1	C	275	THR
1	C	280	LEU
1	C	286	VAL
1	C	291	LYS
1	C	292	ARG
1	C	298	ILE
1	C	301	ASP
1	C	302	ARG
1	C	310	GLU
1	C	312	GLU
1	C	344	ASP
1	C	353	GLU
1	C	363	ARG
1	C	364	LYS
1	D	58	THR
1	D	61	LYS
1	D	71	ARG
1	D	83	ILE
1	D	92	THR
1	D	94	LEU
1	D	95	GLN
1	D	113	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	D	114	LYS
1	D	123	LYS
1	D	124	THR
1	D	150	LYS
1	D	155	LYS
1	D	174	ARG
1	D	175	ASP
1	D	176	LEU
1	D	191	ILE
1	D	197	SER
1	D	198	ASN
1	D	199	GLU
1	D	201	THR
1	D	202	VAL
1	D	220	LEU
1	D	222	GLN
1	D	224	LYS
1	D	225	LYS
1	D	236	LEU
1	D	240	LEU
1	D	244	VAL
1	D	245	SER
1	D	258	LEU
1	D	261	ARG
1	D	266	LYS
1	D	280	LEU
1	D	282	LYS
1	D	286	VAL
1	D	298	ILE
1	D	308	HIS
1	D	317	THR
1	D	324	ASN
1	D	326	THR
1	D	339	ARG
1	D	363	ARG
1	E	58	THR
1	E	71	ARG
1	E	73	VAL
1	E	85	ASP
1	E	86	LYS
1	E	91	PRO
1	E	93	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	E	94	LEU
1	E	113	VAL
1	E	114	LYS
1	E	129	MET
1	E	148	LYS
1	E	155	LYS
1	E	168	GLN
1	E	202	VAL
1	E	206	LEU
1	E	208	THR
1	E	236	LEU
1	E	240	LEU
1	E	244	VAL
1	E	251	ASP
1	E	253	GLN
1	E	255	LEU
1	E	256	LYS
1	E	260	GLU
1	E	266	LYS
1	E	275	THR
1	E	280	LEU
1	E	286	VAL
1	E	290	ILE
1	E	326	THR
1	E	343	ASN
1	E	344	ASP
1	E	347	ILE
1	F	57	LYS
1	F	61	LYS
1	F	63	ASN
1	F	88	GLN
1	F	90	ASN
1	F	96	LYS
1	F	113	VAL
1	F	150	LYS
1	F	155	LYS
1	F	169	LYS
1	F	179	GLU
1	F	187	MET
1	F	202	VAL
1	F	205	LYS
1	F	224	LYS

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Mol	Chain	Res	Type
1	F	225	LYS
1	F	235	SER
1	F	236	LEU
1	F	240	LEU
1	F	244	VAL
1	F	258	LEU
1	F	259	ARG
1	F	261	ARG
1	F	275	THR
1	F	280	LEU
1	F	286	VAL
1	F	291	LYS
1	F	292	ARG
1	F	308	HIS
1	F	310	GLU
1	F	312	GLU
1	F	314	LYS
1	F	317	THR
1	F	339	ARG
1	F	347	ILE
1	F	355	MET
1	G	61	LYS
1	G	73	VAL
1	G	82	LYS
1	G	87	THR
1	G	88	GLN
1	G	93	SER
1	G	94	LEU
1	G	96	LYS
1	G	106	ILE
1	G	112	ILE
1	G	114	LYS
1	G	123	LYS
1	G	146	ARG
1	G	147	MET
1	G	155	LYS
1	G	157	ARG
1	G	159	ILE
1	G	164	GLN
1	G	168	GLN
1	G	174	ARG
1	G	175	ASP

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	G	177	LYS
1	G	191	ILE
1	G	201	THR
1	G	202	VAL
1	G	212	SER
1	G	240	LEU
1	G	242	THR
1	G	244	VAL
1	G	253	GLN
1	G	266	LYS
1	G	269	ILE
1	G	280	LEU
1	G	282	LYS
1	G	285	LEU
1	G	287	LEU
1	G	294	SER
1	G	295	LEU
1	G	297	GLN
1	G	304	MET
1	G	306	VAL
1	G	308	HIS
1	G	317	THR
1	G	320	ASP
1	G	326	THR
1	G	333	VAL
1	G	339	ARG
1	G	340	ASP
1	G	343	ASN
1	G	350	LYS
1	G	353	GLU
1	G	363	ARG
1	H	50	ILE
1	H	58	THR
1	H	63	ASN
1	H	73	VAL
1	H	92	THR
1	H	113	VAL
1	H	114	LYS
1	H	124	THR
1	H	137	VAL
1	H	146	ARG
1	H	155	LYS

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Mol	Chain	Res	Type
1	H	174	ARG
1	H	177	LYS
1	H	201	THR
1	H	202	VAL
1	H	236	LEU
1	H	240	LEU
1	H	242	THR
1	H	245	SER
1	H	269	ILE
1	H	278	GLU
1	H	280	LEU
1	H	304	MET
1	H	314	LYS
1	H	326	THR
1	H	340	ASP
1	H	347	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (56) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	63	ASN
1	A	111	ASN
1	A	168	GLN
1	A	279	ASN
1	B	56	GLN
1	B	95	GLN
1	B	144	HIS
1	B	173	HIS
1	B	297	GLN
1	C	47	GLN
1	C	49	HIS
1	C	52	ASN
1	C	56	GLN
1	C	63	ASN
1	C	88	GLN
1	C	144	HIS
1	C	158	GLN
1	C	167	HIS
1	C	168	GLN
1	C	222	GLN
1	C	253	GLN
1	C	279	ASN

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Mol	Chain	Res	Type
1	C	308	HIS
1	C	349	GLN
1	D	56	GLN
1	D	95	GLN
1	D	167	HIS
1	D	308	HIS
1	D	343	ASN
1	E	52	ASN
1	E	56	GLN
1	E	63	ASN
1	E	90	ASN
1	E	144	HIS
1	E	279	ASN
1	E	308	HIS
1	E	343	ASN
1	F	49	HIS
1	F	63	ASN
1	F	88	GLN
1	F	90	ASN
1	F	144	HIS
1	F	254	ASN
1	F	279	ASN
1	G	49	HIS
1	G	56	GLN
1	G	88	GLN
1	G	109	HIS
1	G	144	HIS
1	G	164	GLN
1	G	180	ASN
1	G	198	ASN
1	G	279	ASN
1	G	305	ASN
1	H	95	GLN
1	H	343	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.

## 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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	309/328 (94%)	-0.86	1 (0%) 90 88	25, 42, 77, 89	0
1	B	279/328 (85%)	-0.39	8 (2%) 53 48	25, 52, 81, 93	0
1	C	310/328 (94%)	-0.96	0 100 100	20, 36, 62, 73	0
1	D	309/328 (94%)	-0.82	0 100 100	26, 43, 72, 84	0
1	E	318/328 (96%)	-0.88	0 100 100	23, 40, 59, 72	0
1	F	318/328 (96%)	-0.88	0 100 100	20, 39, 64, 75	0
1	G	297/328 (90%)	-0.25	4 (1%) 75 71	38, 62, 95, 101	0
1	H	277/328 (84%)	-0.52	1 (0%) 88 86	34, 60, 87, 94	0
All	All	2417/2624 (92%)	-0.71	14 (0%) 85 83	20, 46, 81, 101	0

All (14) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	123	LYS	3.7
1	G	218	PRO	3.6
1	B	258	LEU	3.0
1	B	231	VAL	2.7
1	B	88	GLN	2.6
1	B	259	ARG	2.5
1	B	87	THR	2.2
1	B	197	SER	2.2
1	G	311	GLU	2.2
1	H	275	THR	2.1
1	G	229	PRO	2.1
1	A	223	GLY	2.1
1	G	310	GLU	2.0
1	B	92	THR	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 oligosaccharides in this entry.

## 6.4 Ligands [i](#)

There are no ligands in this entry.

## 6.5 Other polymers [i](#)

There are no such residues in this entry.