



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 09:25 AM UTC

PDB ID : 5HAC / pdb_00005hac
Title : Crystal structure of Proliferating Cell Nuclear Antigen from Leishmania donovani at 2.95 Å resolution
Authors : Singh, P.K.; Yadav, S.P.; Sharma, P.; Kaur, P.; Sharma, S.; Singh, T.P.
Deposited on : 2015-12-30
Resolution : 2.95 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

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

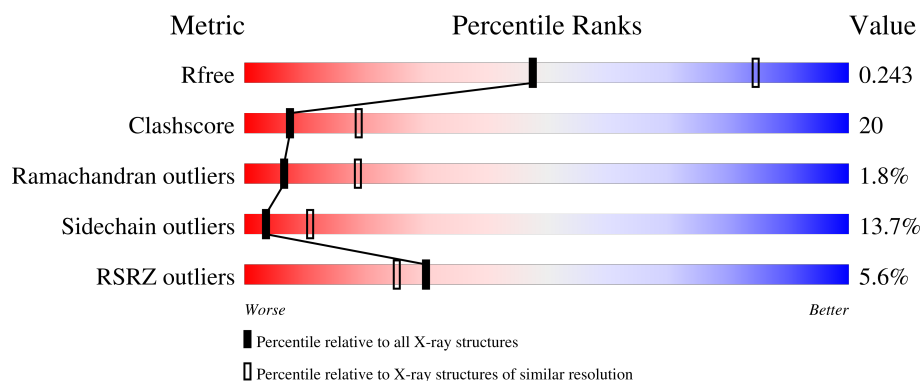
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.95 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	1130 (2.98-2.94)
Clashscore	190562	1157 (2.98-2.94)
Ramachandran outliers	187476	1101 (2.98-2.94)
Sidechain outliers	187428	1101 (2.98-2.94)
RSRZ outliers	180081	1130 (2.98-2.94)

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

Mol	Chain	Length	Quality of chain
1	A	300	5% 55% 22% 8% • 13%
1	B	300	6% 59% 23% • • 13%
1	C	300	3% 59% 19% 6% • 13%
1	D	300	5% 58% 21% 7% • 13%
1	E	300	5% 56% 23% 7% • 14%

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Mol	Chain	Length	Quality of chain
1	F	300	5% 59% 20% 6% • 13%

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 12076 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 Proliferating cell nuclear antigen.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	260	Total 2008	C 1263	N 337	O 393	S 15	0	0	0
1	B	261	Total 2012	C 1265	N 338	O 394	S 15	0	0	0
1	C	260	Total 2008	C 1263	N 337	O 393	S 15	0	0	0
1	D	261	Total 2012	C 1265	N 338	O 394	S 15	0	0	0
1	E	259	Total 2000	C 1257	N 336	O 392	S 15	0	0	0
1	F	261	Total 2012	C 1265	N 338	O 394	S 15	0	0	0

There are 48 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-7	GLY	-	expression tag	UNP B5TV91
A	-6	LEU	-	expression tag	UNP B5TV91
A	-5	VAL	-	expression tag	UNP B5TV91
A	-4	PRO	-	expression tag	UNP B5TV91
A	-3	ARG	-	expression tag	UNP B5TV91
A	-2	GLY	-	expression tag	UNP B5TV91
A	-1	SER	-	expression tag	UNP B5TV91
A	0	HIS	-	expression tag	UNP B5TV91
B	-7	GLY	-	expression tag	UNP B5TV91
B	-6	LEU	-	expression tag	UNP B5TV91
B	-5	VAL	-	expression tag	UNP B5TV91
B	-4	PRO	-	expression tag	UNP B5TV91
B	-3	ARG	-	expression tag	UNP B5TV91
B	-2	GLY	-	expression tag	UNP B5TV91
B	-1	SER	-	expression tag	UNP B5TV91
B	0	HIS	-	expression tag	UNP B5TV91
C	-7	GLY	-	expression tag	UNP B5TV91

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Chain	Residue	Modelled	Actual	Comment	Reference
C	-6	LEU	-	expression tag	UNP B5TV91
C	-5	VAL	-	expression tag	UNP B5TV91
C	-4	PRO	-	expression tag	UNP B5TV91
C	-3	ARG	-	expression tag	UNP B5TV91
C	-2	GLY	-	expression tag	UNP B5TV91
C	-1	SER	-	expression tag	UNP B5TV91
C	0	HIS	-	expression tag	UNP B5TV91
D	-7	GLY	-	expression tag	UNP B5TV91
D	-6	LEU	-	expression tag	UNP B5TV91
D	-5	VAL	-	expression tag	UNP B5TV91
D	-4	PRO	-	expression tag	UNP B5TV91
D	-3	ARG	-	expression tag	UNP B5TV91
D	-2	GLY	-	expression tag	UNP B5TV91
D	-1	SER	-	expression tag	UNP B5TV91
D	0	HIS	-	expression tag	UNP B5TV91
E	-7	GLY	-	expression tag	UNP B5TV91
E	-6	LEU	-	expression tag	UNP B5TV91
E	-5	VAL	-	expression tag	UNP B5TV91
E	-4	PRO	-	expression tag	UNP B5TV91
E	-3	ARG	-	expression tag	UNP B5TV91
E	-2	GLY	-	expression tag	UNP B5TV91
E	-1	SER	-	expression tag	UNP B5TV91
E	0	HIS	-	expression tag	UNP B5TV91
F	-7	GLY	-	expression tag	UNP B5TV91
F	-6	LEU	-	expression tag	UNP B5TV91
F	-5	VAL	-	expression tag	UNP B5TV91
F	-4	PRO	-	expression tag	UNP B5TV91
F	-3	ARG	-	expression tag	UNP B5TV91
F	-2	GLY	-	expression tag	UNP B5TV91
F	-1	SER	-	expression tag	UNP B5TV91
F	0	HIS	-	expression tag	UNP B5TV91

- Molecule 2 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	B	4	Total O 4 4	0	0
2	C	7	Total O 7 7	0	0
2	D	1	Total O 1 1	0	0
2	E	3	Total O 3 3	0	0

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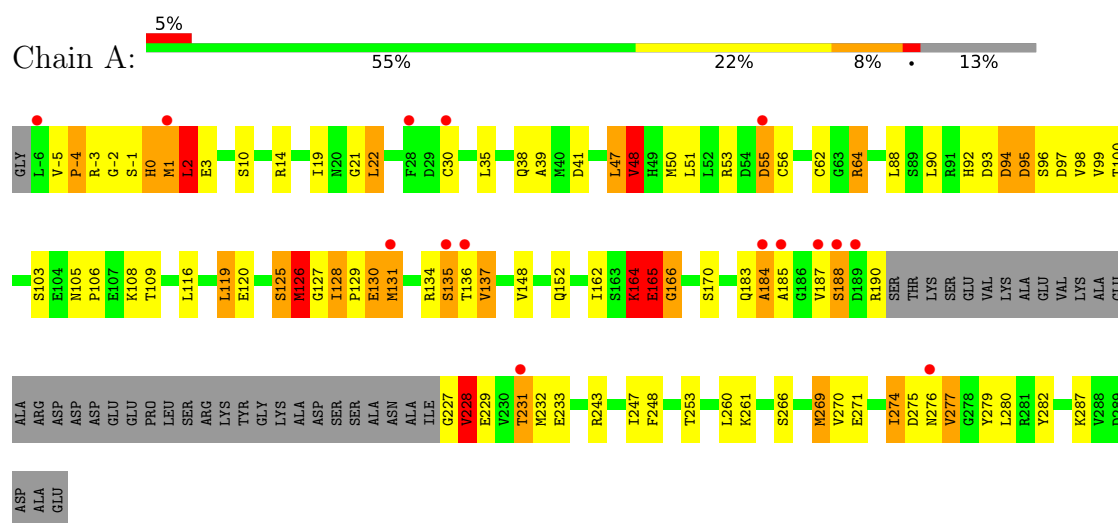
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	F	9	Total	O	0	0
			9	9		

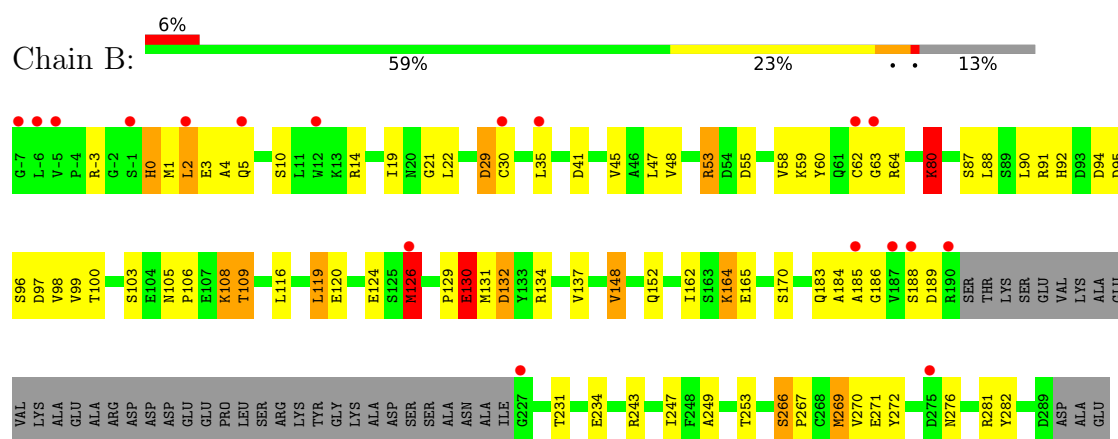
3 Residue-property plots [i](#)

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.

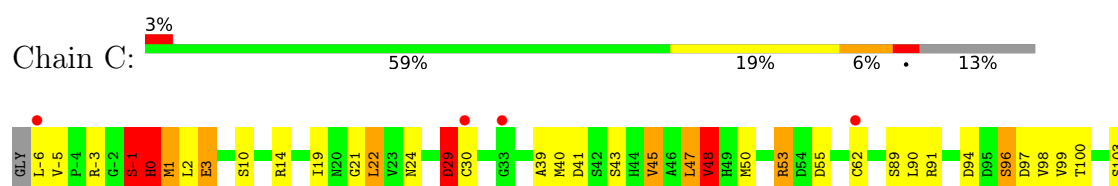
• Molecule 1: Proliferating cell nuclear antigen

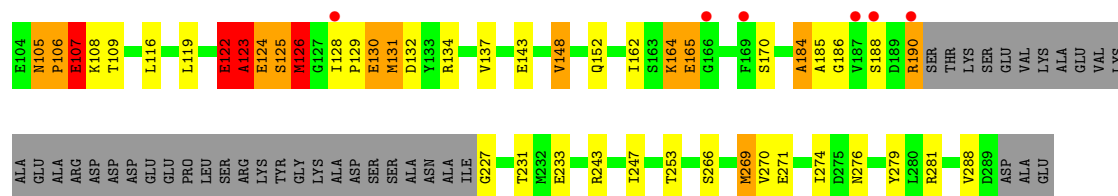


• Molecule 1: Proliferating cell nuclear antigen

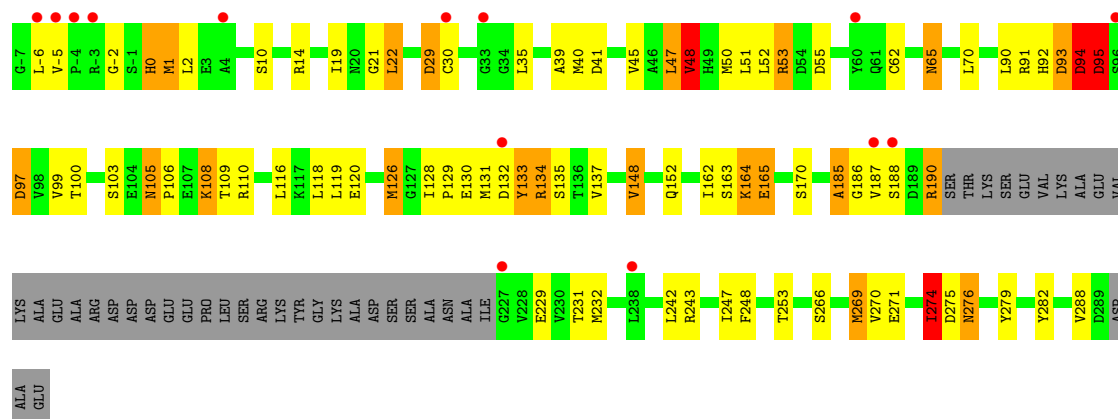


• Molecule 1: Proliferating cell nuclear antigen

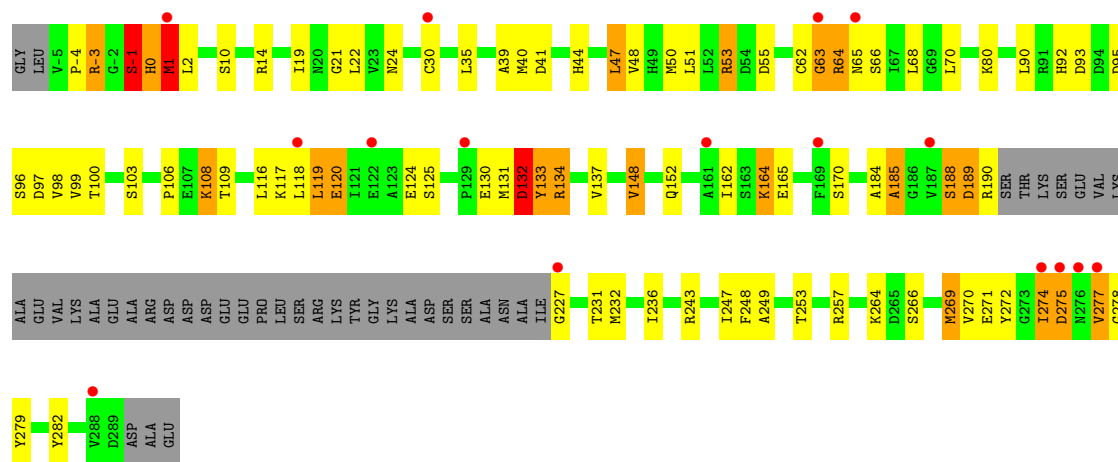




• Molecule 1: Proliferating cell nuclear antigen

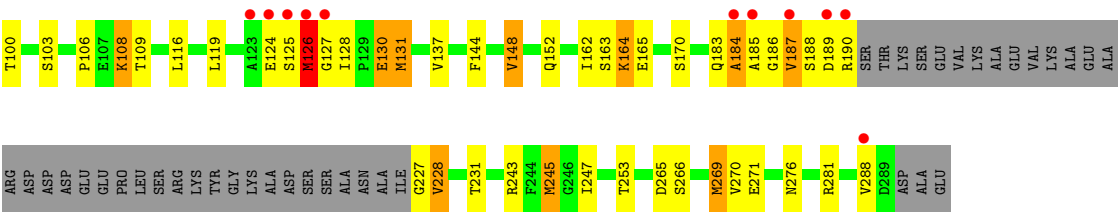


• Molecule 1: Proliferating cell nuclear antigen



• Molecule 1: Proliferating cell nuclear antigen





4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	133.99Å 150.19Å 170.08Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	50.00 – 2.95 50.00 – 2.95	Depositor EDS
% Data completeness (in resolution range)	88.4 (50.00-2.95) 88.5 (50.00-2.95)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.19 (at 2.95Å)	Xtriage
Refinement program	REFMAC 5.8.0135	Depositor
R, R_{free}	0.205 , 0.232 0.217 , 0.243	Depositor DCC
R_{free} test set	966 reflections (1.32%)	wwPDB-VP
Wilson B-factor (Å ²)	91.4	Xtriage
Anisotropy	0.267	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 65.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	12076	wwPDB-VP
Average B, all atoms (Å ²)	107.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.61% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

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	0.98	4/2038 (0.2%)	1.33	19/2750 (0.7%)
1	B	1.07	5/2042 (0.2%)	1.24	17/2755 (0.6%)
1	C	1.06	4/2038 (0.2%)	1.33	24/2750 (0.9%)
1	D	1.09	11/2042 (0.5%)	1.36	27/2755 (1.0%)
1	E	1.01	6/2030 (0.3%)	1.28	19/2739 (0.7%)
1	F	1.05	4/2042 (0.2%)	1.26	19/2755 (0.7%)
All	All	1.05	34/12232 (0.3%)	1.30	125/16504 (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	3
1	B	0	1
1	C	0	5
1	D	0	3
1	E	0	1
1	F	0	4
All	All	0	17

All (34) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	186	GLY	N-CA	10.21	1.54	1.44
1	F	119	LEU	C-O	8.08	1.34	1.23
1	C	-5	VAL	CA-C	7.59	1.60	1.52
1	D	275	ASP	CA-C	7.46	1.62	1.52
1	C	0	HIS	CA-C	6.47	1.66	1.52
1	D	187	VAL	N-CA	6.45	1.52	1.46
1	D	0	HIS	CA-C	6.33	1.61	1.52
1	F	288	VAL	CA-C	5.92	1.60	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	119	LEU	C-O	5.88	1.31	1.23
1	E	164	LYS	N-CA	5.86	1.53	1.46
1	D	187	VAL	CA-C	5.78	1.59	1.52
1	A	185	ALA	N-CA	5.74	1.54	1.46
1	D	-6	LEU	CA-C	5.69	1.60	1.53
1	E	119	LEU	CA-C	5.67	1.59	1.52
1	A	55	ASP	CA-CB	5.65	1.63	1.53
1	C	-5	VAL	N-CA	5.64	1.53	1.46
1	A	119	LEU	C-O	-5.59	1.16	1.23
1	B	188	SER	CA-C	5.57	1.59	1.52
1	E	119	LEU	C-O	-5.53	1.16	1.23
1	B	130	GLU	N-CA	5.52	1.53	1.46
1	F	-3	ARG	CA-C	5.51	1.59	1.52
1	D	-5	VAL	CA-CB	5.49	1.59	1.54
1	D	-2	GLY	N-CA	5.41	1.49	1.44
1	A	187	VAL	CA-C	5.39	1.59	1.52
1	B	188	SER	N-CA	5.39	1.52	1.46
1	D	165	GLU	N-CA	5.38	1.53	1.46
1	E	185	ALA	CA-C	5.35	1.59	1.52
1	D	276	ASN	N-CA	5.29	1.52	1.45
1	D	274	ILE	CA-C	5.28	1.58	1.53
1	B	126	MET	CA-C	5.22	1.59	1.52
1	E	189	ASP	N-CA	5.17	1.56	1.46
1	F	97	ASP	N-CA	5.14	1.51	1.46
1	E	189	ASP	CA-C	5.14	1.63	1.52
1	C	-1	SER	CA-C	5.09	1.59	1.52

All (125) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1	MET	N-CA-C	16.67	129.46	111.28
1	D	275	ASP	N-CA-C	-15.63	94.24	111.28
1	A	2	LEU	N-CA-C	15.00	131.53	111.28
1	D	187	VAL	N-CA-C	14.70	123.23	111.62
1	C	1	MET	N-CA-C	11.65	125.73	112.57
1	F	95	ASP	N-CA-C	-10.43	97.59	110.41
1	E	0	HIS	CB-CA-C	10.06	129.22	110.10
1	C	186	GLY	N-CA-C	-10.03	97.46	110.29
1	C	106	PRO	N-CA-C	-9.82	95.82	111.14
1	F	97	ASP	N-CA-C	-9.61	97.51	112.99
1	A	166	GLY	N-CA-C	9.27	126.78	112.60
1	E	63	GLY	N-CA-C	-8.73	95.78	111.15

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	126	MET	N-CA-C	8.62	120.30	111.07
1	D	126	MET	N-CA-C	8.46	123.50	109.46
1	F	96	SER	CB-CA-C	8.44	127.21	110.42
1	E	164	LYS	N-CA-CB	8.37	122.61	110.06
1	A	48	VAL	CB-CA-C	-8.25	98.27	110.81
1	C	48	VAL	CB-CA-C	-8.12	98.47	110.81
1	F	48	VAL	CB-CA-C	-8.04	98.59	110.81
1	D	19	ILE	CB-CA-C	-8.01	101.17	112.22
1	D	130	GLU	N-CA-C	7.93	122.87	112.72
1	A	119	LEU	O-C-N	-7.88	112.94	123.10
1	D	1	MET	N-CA-CB	-7.85	97.15	110.50
1	D	48	VAL	CB-CA-C	-7.80	98.96	110.81
1	E	119	LEU	O-C-N	-7.66	113.22	123.10
1	B	105	ASN	CB-CA-C	-7.55	96.17	109.61
1	B	95	ASP	CB-CA-C	7.55	121.28	110.79
1	C	185	ALA	N-CA-C	7.54	122.48	107.62
1	C	107	GLU	N-CA-CB	7.40	122.99	110.49
1	D	0	HIS	CA-C-N	7.32	134.88	121.70
1	D	0	HIS	C-N-CA	7.32	134.88	121.70
1	F	-5	VAL	N-CA-CB	7.32	121.46	111.21
1	E	134	ARG	N-CA-C	7.29	122.71	111.56
1	D	165	GLU	N-CA-C	7.16	120.92	111.75
1	A	228	VAL	CB-CA-C	-7.15	102.22	110.73
1	F	-6	LEU	CB-CA-C	7.13	124.62	110.42
1	A	185	ALA	N-CA-C	7.08	120.91	107.75
1	F	95	ASP	CB-CA-C	-7.01	94.90	110.19
1	B	119	LEU	O-C-N	-6.89	114.21	123.10
1	D	95	ASP	N-CA-C	6.84	125.36	110.80
1	D	133	TYR	N-CA-C	-6.76	97.95	109.24
1	B	45	VAL	CB-CA-C	-6.71	105.16	111.06
1	F	164	LYS	N-CA-C	-6.71	100.50	110.23
1	C	-5	VAL	N-CA-C	6.69	123.33	108.88
1	C	130	GLU	N-CA-C	6.59	118.15	108.86
1	E	1	MET	N-CA-C	6.59	124.84	110.80
1	D	0	HIS	N-CA-C	-6.57	96.81	110.80
1	F	288	VAL	CB-CA-C	6.53	122.01	111.29
1	A	165	GLU	N-CA-C	-6.51	96.94	110.80
1	A	2	LEU	CB-CA-C	-6.32	102.89	112.11
1	C	96	SER	N-CA-C	6.28	120.26	112.59
1	B	148	VAL	N-CA-CB	6.23	117.84	110.55
1	C	122	GLU	CA-C-N	6.23	132.92	121.70
1	C	122	GLU	C-N-CA	6.23	132.92	121.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	126	MET	CB-CG-SD	6.22	131.35	112.70
1	E	277	VAL	N-CA-C	6.21	116.96	110.62
1	D	94	ASP	N-CA-C	-6.21	97.57	110.80
1	A	131	MET	N-CA-C	-6.17	103.83	113.02
1	C	105	ASN	CB-CA-C	-6.14	98.08	110.17
1	F	-5	VAL	N-CA-C	-6.08	95.75	108.88
1	D	93	ASP	N-CA-C	6.05	117.95	111.36
1	D	148	VAL	N-CA-CB	6.00	117.16	110.62
1	A	164	LYS	N-CA-C	-5.99	100.98	109.96
1	D	274	ILE	N-CA-C	5.94	115.88	106.32
1	B	119	LEU	CA-C-N	5.93	132.38	121.70
1	B	119	LEU	C-N-CA	5.93	132.38	121.70
1	E	-1	SER	CA-C-N	5.92	132.37	121.70
1	E	-1	SER	C-N-CA	5.92	132.37	121.70
1	E	148	VAL	N-CA-CB	5.88	117.03	110.62
1	A	128	ILE	CB-CA-C	5.87	122.04	111.36
1	F	148	VAL	N-CA-CB	5.84	117.38	110.55
1	E	165	GLU	N-CA-C	5.83	119.21	111.75
1	D	164	LYS	CG-CD-CE	5.74	124.50	111.30
1	B	29	ASP	CB-CA-C	-5.72	102.11	110.06
1	D	0	HIS	CB-CA-C	-5.70	99.07	110.42
1	F	29	ASP	CB-CA-C	-5.70	102.14	110.06
1	B	130	GLU	N-CA-C	5.66	118.30	111.40
1	A	95	ASP	N-CA-C	-5.65	95.19	111.00
1	C	128	ILE	CB-CA-C	5.63	116.40	110.88
1	D	45	VAL	CB-CA-C	-5.62	106.11	111.06
1	F	29	ASP	CA-C-O	-5.62	114.73	120.80
1	B	188	SER	CA-C-N	5.59	131.76	121.70
1	B	188	SER	C-N-CA	5.59	131.76	121.70
1	C	106	PRO	CB-CA-C	-5.57	104.27	111.46
1	D	119	LEU	O-C-N	5.57	130.29	123.10
1	C	122	GLU	N-CA-C	-5.50	101.23	109.15
1	D	135	SER	N-CA-CB	-5.48	101.18	110.50
1	B	188	SER	O-C-N	-5.42	117.61	123.42
1	C	148	VAL	N-CA-CB	5.42	116.90	110.55
1	C	143	GLU	N-CA-C	-5.42	105.45	111.36
1	A	3	GLU	N-CA-CB	-5.42	101.22	110.16
1	A	128	ILE	N-CA-C	-5.42	97.18	108.88
1	A	277	VAL	N-CA-C	5.40	118.18	112.83
1	A	119	LEU	CA-C-N	5.40	131.42	121.70
1	A	119	LEU	C-N-CA	5.40	131.42	121.70
1	D	276	ASN	N-CA-C	5.38	121.25	114.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	80	LYS	CB-CG-CD	5.37	123.65	111.30
1	B	88	LEU	N-CA-C	5.36	116.18	107.23
1	F	96	SER	N-CA-C	-5.36	99.39	110.80
1	C	0	HIS	CA-CB-CG	5.34	119.14	113.80
1	E	132	ASP	N-CA-CB	5.34	117.71	109.91
1	B	29	ASP	CA-C-O	-5.33	115.04	120.80
1	B	80	LYS	CB-CG-CD	5.33	123.56	111.30
1	F	119	LEU	O-C-N	5.29	130.20	123.11
1	E	133	TYR	N-CA-C	5.29	122.07	110.80
1	C	29	ASP	CB-CA-C	-5.26	102.75	110.06
1	E	117	LYS	CA-CB-CG	5.24	124.58	114.10
1	F	45	VAL	CB-CA-C	-5.24	106.45	111.06
1	E	124	GLU	N-CA-C	5.19	117.68	111.71
1	B	129	PRO	CA-C-N	5.18	129.37	120.71
1	B	129	PRO	C-N-CA	5.18	129.37	120.71
1	D	274	ILE	CA-C-O	-5.18	115.37	121.64
1	C	288	VAL	N-CA-C	5.15	115.32	108.11
1	F	88	LEU	N-CA-C	5.15	115.83	107.23
1	D	288	VAL	N-CA-C	5.14	116.77	108.85
1	C	125	SER	N-CA-C	5.12	116.55	111.07
1	E	119	LEU	CA-C-N	5.11	130.91	121.70
1	E	119	LEU	C-N-CA	5.11	130.91	121.70
1	D	91	ARG	N-CA-C	5.11	117.01	108.99
1	C	122	GLU	CA-C-O	-5.11	114.54	120.62
1	A	88	LEU	N-CA-C	5.07	115.70	107.23
1	E	66	SER	N-CA-CB	5.04	119.13	110.77
1	C	119	LEU	O-C-N	5.03	129.59	123.10
1	D	29	ASP	CB-CA-C	-5.03	103.07	110.06
1	E	275	ASP	N-CA-C	5.02	121.48	110.80

There are no chirality outliers.

All (17) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	130	GLU	Peptide
1	A	94	ASP	Peptide
1	A	95	ASP	Peptide
1	B	130	GLU	Peptide
1	C	0	HIS	Peptide
1	C	122	GLU	Peptide
1	C	123	ALA	Peptide
1	C	184	ALA	Peptide

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Mol	Chain	Res	Type	Group
1	C	29	ASP	Mainchain
1	D	129	PRO	Peptide
1	D	134	ARG	Peptide
1	D	274	ILE	Peptide
1	E	130	GLU	Peptide
1	F	130	GLU	Peptide
1	F	227	GLY	Peptide
1	F	94	ASP	Peptide
1	F	95	ASP	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2008	0	2003	129	1
1	B	2012	0	2005	75	1
1	C	2008	0	2002	44	0
1	D	2012	0	2006	51	0
1	E	2000	0	1992	85	0
1	F	2012	0	2006	105	0
2	B	4	0	0	0	0
2	C	7	0	0	0	0
2	D	1	0	0	0	0
2	E	3	0	0	1	0
2	F	9	0	0	0	0
All	All	12076	0	12014	488	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 20.

All (488) 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:F:47:LEU:HD11	1:F:126:MET:CE	1.08	1.54
1:F:47:LEU:CD1	1:F:126:MET:HE3	1.10	1.53
1:B:30:CYS:SG	1:B:35:LEU:CD2	2.04	1.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:30:CYS:SG	1:D:35:LEU:CD2	2.06	1.43
1:E:30:CYS:SG	1:E:35:LEU:CD2	2.11	1.37
1:D:30:CYS:SG	1:D:35:LEU:HD21	1.64	1.37
1:A:30:CYS:SG	1:A:35:LEU:CD2	2.12	1.36
1:E:30:CYS:SG	1:E:35:LEU:HD21	1.67	1.33
1:B:30:CYS:SG	1:B:35:LEU:HD21	1.62	1.33
1:F:30:CYS:SG	1:F:35:LEU:CD2	2.16	1.33
1:A:135:SER:HB3	1:A:232:MET:CA	1.60	1.30
1:F:30:CYS:SG	1:F:35:LEU:HD21	1.73	1.29
1:A:2:LEU:HD22	1:A:2:LEU:O	1.12	1.27
1:A:1:MET:O	1:A:92:HIS:O	1.52	1.25
1:A:135:SER:CB	1:A:232:MET:HA	1.65	1.24
1:A:30:CYS:SG	1:A:35:LEU:HD21	1.73	1.24
1:A:-4:PRO:CD	1:A:-3:ARG:HA	1.71	1.20
1:A:136:THR:HG23	1:A:260:LEU:O	1.43	1.19
1:A:2:LEU:O	1:A:2:LEU:CD2	1.89	1.19
1:B:48:VAL:HG22	1:B:282:TYR:CD1	1.78	1.18
1:F:-1:SER:HB3	1:F:0:HIS:CB	1.75	1.16
1:F:126:MET:HE2	1:F:127:GLY:O	1.45	1.14
1:F:-1:SER:CB	1:F:0:HIS:HB2	1.80	1.11
1:A:0:HIS:HB2	1:A:94:ASP:HB2	1.16	1.11
1:A:274:ILE:HD13	1:A:279:TYR:HA	1.33	1.11
1:F:185:ALA:HA	1:F:187:VAL:HG12	1.24	1.10
1:E:134:ARG:NH2	1:E:264:LYS:H	1.47	1.10
1:A:-1:SER:HB2	1:A:0:HIS:HB3	1.11	1.10
1:C:131:MET:HB2	1:C:132:ASP:HA	1.27	1.09
1:A:136:THR:CG2	1:A:260:LEU:O	1.99	1.09
1:B:30:CYS:O	1:B:62:CYS:SG	2.11	1.09
1:F:186:GLY:HA2	1:F:187:VAL:HG12	1.14	1.08
1:B:48:VAL:HG22	1:B:282:TYR:HD1	1.11	1.08
1:A:-4:PRO:HD2	1:A:-3:ARG:HA	1.22	1.08
1:A:274:ILE:HD13	1:A:279:TYR:CA	1.83	1.07
1:F:-1:SER:H	1:F:0:HIS:HB3	1.18	1.05
1:F:47:LEU:CG	1:F:126:MET:HE3	1.87	1.03
1:F:127:GLY:O	1:F:128:ILE:HG13	1.58	1.02
1:F:186:GLY:HA2	1:F:187:VAL:CG1	1.90	1.02
1:A:30:CYS:O	1:A:62:CYS:SG	2.17	1.02
1:A:0:HIS:CB	1:A:94:ASP:HB2	1.90	1.01
1:E:274:ILE:HD12	1:E:274:ILE:H	1.25	1.00
1:A:1:MET:HG2	1:A:93:ASP:OD1	1.62	1.00
1:E:134:ARG:HH21	1:E:264:LYS:N	1.58	0.99

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:30:CYS:O	1:C:62:CYS:SG	2.20	0.99
1:D:30:CYS:SG	1:D:35:LEU:HD23	2.02	0.98
1:B:30:CYS:SG	1:B:35:LEU:HD23	2.01	0.97
1:F:185:ALA:HA	1:F:187:VAL:CG1	1.96	0.95
1:F:184:ALA:HA	1:F:187:VAL:HG11	1.48	0.95
1:B:164:LYS:HD2	1:B:165:GLU:H	1.31	0.95
1:A:-1:SER:CB	1:A:0:HIS:HB3	1.97	0.94
1:D:30:CYS:O	1:D:62:CYS:SG	2.26	0.94
1:A:136:THR:HG22	1:A:137:VAL:H	1.32	0.94
1:F:126:MET:SD	1:F:127:GLY:HA2	2.08	0.94
1:E:30:CYS:O	1:E:62:CYS:SG	2.25	0.94
1:E:134:ARG:HH22	1:E:236:ILE:HD12	1.31	0.93
1:A:274:ILE:CD1	1:A:279:TYR:HA	1.97	0.93
1:F:30:CYS:O	1:F:62:CYS:SG	2.26	0.93
1:A:275:ASP:OD2	1:A:276:ASN:N	2.02	0.93
1:C:130:GLU:N	1:C:130:GLU:OE1	2.01	0.93
1:E:30:CYS:SG	1:E:35:LEU:HD23	2.07	0.93
1:A:64:ARG:HH11	1:A:64:ARG:HG2	1.33	0.91
1:F:47:LEU:HD11	1:F:126:MET:HE2	1.51	0.91
1:A:30:CYS:SG	1:A:35:LEU:HD23	2.06	0.91
1:A:135:SER:HB3	1:A:232:MET:HA	0.90	0.90
1:A:135:SER:HB3	1:A:232:MET:CB	2.01	0.90
1:F:-1:SER:N	1:F:0:HIS:HB3	1.87	0.89
1:A:135:SER:OG	1:A:233:GLU:N	2.05	0.89
1:F:30:CYS:SG	1:F:35:LEU:HD23	2.12	0.88
1:A:-1:SER:HB2	1:A:0:HIS:CB	2.01	0.88
1:D:65:ASN:HD22	1:D:65:ASN:C	1.80	0.88
1:F:184:ALA:CB	1:F:187:VAL:HG11	2.05	0.87
1:D:0:HIS:CB	1:D:1:MET:HB2	2.04	0.87
1:E:274:ILE:HD13	1:E:278:GLY:C	1.98	0.87
1:F:184:ALA:CA	1:F:187:VAL:HG11	2.06	0.86
1:B:22:LEU:CD2	1:B:48:VAL:HG23	2.05	0.86
1:E:190:ARG:HB2	1:E:227:GLY:O	1.75	0.86
1:F:184:ALA:O	1:F:228:VAL:HG22	1.75	0.86
1:C:131:MET:CB	1:C:132:ASP:HA	2.04	0.86
1:F:124:GLU:OE2	1:F:124:GLU:N	2.09	0.86
1:A:2:LEU:CD2	1:A:2:LEU:C	2.49	0.85
1:F:124:GLU:HA	1:F:125:SER:HB2	1.58	0.85
1:A:1:MET:C	1:A:92:HIS:O	2.19	0.85
1:A:0:HIS:HB2	1:A:94:ASP:CB	2.04	0.85
1:E:53:ARG:HB2	1:E:277:VAL:O	1.76	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:184:ALA:HA	1:F:187:VAL:CG1	2.07	0.84
1:E:70:LEU:HD21	1:E:118:LEU:CD2	2.09	0.83
1:A:2:LEU:HD22	1:A:2:LEU:C	2.03	0.83
1:D:0:HIS:HB2	1:D:1:MET:HB2	1.57	0.83
1:F:-1:SER:HB3	1:F:0:HIS:HB2	0.89	0.83
1:B:3:GLU:HB2	1:B:91:ARG:HG3	1.59	0.82
1:A:-4:PRO:HD2	1:A:-3:ARG:CA	2.10	0.81
1:E:70:LEU:CD2	1:E:118:LEU:CD2	2.58	0.81
1:B:22:LEU:HD23	1:B:48:VAL:HG23	1.63	0.80
1:E:189:ASP:O	1:E:190:ARG:O	1.98	0.80
1:A:136:THR:HG22	1:A:137:VAL:N	1.97	0.80
1:F:185:ALA:CA	1:F:187:VAL:HG12	2.11	0.80
1:C:105:ASN:HB3	1:C:106:PRO:O	1.81	0.79
1:F:126:MET:CG	1:F:127:GLY:HA2	2.13	0.79
1:E:134:ARG:NH2	1:E:264:LYS:N	2.21	0.79
1:F:245:MET:HE3	1:F:245:MET:HA	1.63	0.79
1:B:5:GLN:HE21	1:B:87:SER:HB2	1.46	0.79
1:A:1:MET:HA	1:A:92:HIS:O	1.83	0.78
1:F:124:GLU:HB2	1:F:125:SER:C	2.10	0.77
1:E:134:ARG:HH22	1:E:236:ILE:CD1	1.96	0.77
1:D:0:HIS:HB3	1:D:1:MET:HE2	1.67	0.77
1:B:164:LYS:HD2	1:B:165:GLU:N	1.99	0.76
1:F:186:GLY:CA	1:F:187:VAL:HG12	2.08	0.75
1:A:-4:PRO:CG	1:A:-3:ARG:HA	2.16	0.74
1:F:47:LEU:HD21	1:F:126:MET:CE	2.17	0.74
1:B:48:VAL:CG2	1:B:282:TYR:CD1	2.67	0.74
1:A:2:LEU:O	1:A:2:LEU:CG	2.35	0.74
1:F:124:GLU:CA	1:F:125:SER:HB2	2.17	0.74
1:B:164:LYS:NZ	1:B:165:GLU:HG3	2.02	0.74
1:E:274:ILE:HD12	1:E:274:ILE:N	2.02	0.73
1:F:-1:SER:CB	1:F:0:HIS:CB	2.54	0.73
1:F:95:ASP:O	1:F:96:SER:HB2	1.87	0.73
1:E:133:TYR:O	1:E:133:TYR:HD1	1.72	0.73
1:A:136:THR:HG22	1:A:260:LEU:O	1.89	0.73
1:F:188:SER:HB3	1:F:189:ASP:OD2	1.88	0.73
1:A:-3:ARG:HD2	1:A:-3:ARG:C	2.15	0.72
1:D:30:CYS:SG	1:D:35:LEU:HD22	2.24	0.72
1:E:24:ASN:HB3	2:E:303:HOH:O	1.89	0.72
1:A:30:CYS:SG	1:A:35:LEU:HD22	2.29	0.72
1:A:135:SER:CA	1:A:232:MET:HA	2.20	0.72
1:F:47:LEU:HD11	1:F:126:MET:SD	2.29	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:133:TYR:O	1:E:133:TYR:CD1	2.43	0.71
1:A:136:THR:HG21	1:A:261:LYS:HG2	1.71	0.71
1:F:183:GLN:O	1:F:184:ALA:HB3	1.88	0.71
1:A:64:ARG:N	1:A:64:ARG:HD2	2.05	0.71
1:F:126:MET:HG2	1:F:127:GLY:CA	2.20	0.71
1:D:65:ASN:O	1:D:65:ASN:ND2	2.23	0.71
1:E:274:ILE:H	1:E:274:ILE:CD1	2.01	0.70
1:A:136:THR:HG23	1:A:261:LYS:HA	1.72	0.70
1:E:30:CYS:SG	1:E:35:LEU:HD22	2.29	0.70
1:B:30:CYS:SG	1:B:35:LEU:HD22	2.23	0.70
1:F:127:GLY:O	1:F:128:ILE:CG1	2.38	0.70
1:B:0:HIS:CE1	1:B:2:LEU:HD23	2.27	0.70
1:E:99:VAL:CG1	1:E:118:LEU:HD21	2.22	0.70
1:E:134:ARG:HH21	1:E:264:LYS:H	0.75	0.70
1:A:274:ILE:HD12	1:A:274:ILE:N	2.06	0.69
1:B:48:VAL:HG22	1:B:282:TYR:CE1	2.28	0.69
1:A:0:HIS:CE1	1:A:1:MET:HG3	2.27	0.69
1:E:64:ARG:HG3	1:E:65:ASN:N	2.06	0.69
1:F:-3:ARG:HH12	1:F:-1:SER:C	2.02	0.68
1:C:39:ALA:HA	1:C:126:MET:HE2	1.75	0.67
1:D:0:HIS:HB3	1:D:1:MET:HB2	1.75	0.67
1:F:0:HIS:H	1:F:94:ASP:HB2	1.58	0.67
1:B:22:LEU:HD22	1:B:48:VAL:CG2	2.25	0.67
1:E:99:VAL:HG12	1:E:118:LEU:HD21	1.76	0.67
1:E:274:ILE:CD1	1:E:279:TYR:HA	2.24	0.67
1:E:70:LEU:HD23	1:E:118:LEU:CD2	2.25	0.67
1:A:275:ASP:OD2	1:A:277:VAL:N	2.27	0.66
1:C:43:SER:OG	1:C:45:VAL:HG13	1.95	0.66
1:B:22:LEU:HD22	1:B:48:VAL:HG23	1.76	0.66
1:D:190:ARG:O	1:D:229:GLU:HG3	1.96	0.65
1:F:47:LEU:CD1	1:F:126:MET:CE	2.01	0.65
1:B:3:GLU:CD	1:B:91:ARG:NE	2.55	0.65
1:F:-3:ARG:NH1	1:F:-2:GLY:HA3	2.12	0.65
1:F:-1:SER:CA	1:F:0:HIS:CB	2.75	0.65
1:D:134:ARG:NH2	1:D:232:MET:O	2.30	0.64
1:A:64:ARG:HG2	1:A:64:ARG:NH1	2.09	0.64
1:A:135:SER:CB	1:A:232:MET:CA	2.45	0.64
1:A:274:ILE:HD13	1:A:279:TYR:C	2.22	0.64
1:B:30:CYS:C	1:B:62:CYS:SG	2.81	0.64
1:E:70:LEU:HD21	1:E:118:LEU:HD21	1.78	0.63
1:A:30:CYS:C	1:A:62:CYS:SG	2.82	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:274:ILE:CD1	1:A:279:TYR:CA	2.63	0.63
1:B:48:VAL:CG2	1:B:282:TYR:CE1	2.81	0.63
1:E:63:GLY:O	1:E:64:ARG:HG2	1.98	0.63
1:A:125:SER:O	1:A:126:MET:HE3	1.99	0.63
1:A:136:THR:CG2	1:A:137:VAL:H	2.08	0.63
1:B:5:GLN:HE21	1:B:87:SER:CB	2.10	0.63
1:F:47:LEU:HD21	1:F:126:MET:HE1	1.78	0.63
1:A:-3:ARG:HB2	1:A:-2:GLY:O	1.98	0.63
1:A:-4:PRO:CD	1:A:-3:ARG:CA	2.65	0.63
1:C:0:HIS:HB3	1:C:94:ASP:HB2	1.80	0.63
1:C:131:MET:HB2	1:C:132:ASP:CA	2.18	0.63
1:D:70:LEU:HD21	1:D:118:LEU:CD2	2.29	0.62
1:B:22:LEU:CD2	1:B:48:VAL:CG2	2.77	0.62
1:B:3:GLU:CB	1:B:91:ARG:HG3	2.30	0.62
1:B:80:LYS:HE2	1:B:80:LYS:N	2.15	0.62
1:B:119:LEU:HB3	1:B:120:GLU:HB2	1.82	0.62
1:A:64:ARG:HH11	1:A:64:ARG:CG	2.11	0.62
1:A:135:SER:HA	1:A:231:THR:O	2.00	0.62
1:A:136:THR:HG23	1:A:260:LEU:C	2.22	0.62
1:A:274:ILE:CD1	1:A:279:TYR:C	2.72	0.62
1:C:-1:SER:HB3	1:C:0:HIS:CG	2.35	0.62
1:F:187:VAL:O	1:F:187:VAL:HG13	1.99	0.61
1:F:124:GLU:HA	1:F:125:SER:CB	2.30	0.61
1:E:99:VAL:HB	1:E:118:LEU:HD11	1.82	0.61
1:F:124:GLU:CB	1:F:125:SER:HB2	2.31	0.61
1:A:190:ARG:HB3	1:A:227:GLY:HA2	1.82	0.60
1:D:99:VAL:CG1	1:D:118:LEU:HD21	2.31	0.60
1:B:130:GLU:N	1:B:131:MET:HB3	2.17	0.60
1:A:275:ASP:OD2	1:A:277:VAL:HG22	2.01	0.60
1:F:47:LEU:CD2	1:F:126:MET:CE	2.80	0.60
1:F:30:CYS:SG	1:F:35:LEU:HD22	2.33	0.60
1:E:164:LYS:HG3	1:E:232:MET:HE2	1.84	0.60
1:A:1:MET:CA	1:A:92:HIS:O	2.50	0.60
1:E:119:LEU:HA	1:E:120:GLU:HG2	1.84	0.60
1:A:274:ILE:HD11	1:A:280:LEU:N	2.16	0.59
1:F:126:MET:HG2	1:F:127:GLY:C	2.27	0.59
1:A:184:ALA:HB3	1:A:228:VAL:HG23	1.85	0.59
1:F:-3:ARG:NH1	1:F:-2:GLY:CA	2.66	0.59
1:F:80:LYS:N	1:F:80:LYS:HE2	2.18	0.58
1:F:126:MET:SD	1:F:126:MET:N	2.75	0.58
1:A:-3:ARG:HD2	1:A:-3:ARG:O	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:183:GLN:O	1:F:184:ALA:CB	2.51	0.58
1:E:119:LEU:HB3	1:E:120:GLU:HB2	1.86	0.58
1:E:274:ILE:HD13	1:E:279:TYR:N	2.18	0.58
1:D:30:CYS:C	1:D:62:CYS:SG	2.87	0.57
1:E:40:MET:HE3	1:E:44:HIS:HD2	1.69	0.57
1:E:274:ILE:HG22	1:E:277:VAL:CG2	2.34	0.57
1:A:130:GLU:HB3	1:A:131:MET:HB2	1.87	0.57
1:F:-1:SER:CA	1:F:0:HIS:HB3	2.33	0.57
1:E:70:LEU:CD2	1:E:118:LEU:HD22	2.35	0.57
1:D:190:ARG:C	1:D:229:GLU:HG3	2.29	0.57
1:E:51:LEU:HD23	1:E:279:TYR:CE1	2.40	0.57
1:F:30:CYS:C	1:F:62:CYS:SG	2.87	0.57
1:A:0:HIS:CE1	1:A:1:MET:CG	2.87	0.56
1:C:43:SER:OG	1:C:45:VAL:CG1	2.53	0.56
1:A:188:SER:H	1:A:229:GLU:HG2	1.69	0.56
1:B:4:ALA:HB2	1:B:60:TYR:HD1	1.71	0.56
1:A:274:ILE:HD13	1:A:279:TYR:N	2.20	0.56
1:E:70:LEU:HD23	1:E:118:LEU:HD23	1.86	0.56
1:A:136:THR:CG2	1:A:261:LYS:HG2	2.36	0.56
1:D:269:MET:HE3	1:D:271:GLU:HB2	1.88	0.55
1:F:124:GLU:CA	1:F:125:SER:CB	2.85	0.55
1:B:4:ALA:CB	1:B:60:TYR:HD1	2.20	0.55
1:B:5:GLN:NE2	1:B:87:SER:HB2	2.20	0.55
1:C:269:MET:HE3	1:C:271:GLU:HB2	1.89	0.55
1:B:164:LYS:CD	1:B:165:GLU:HG3	2.37	0.55
1:A:275:ASP:CG	1:A:277:VAL:HG22	2.32	0.54
1:E:48:VAL:O	1:E:48:VAL:HG13	2.06	0.54
1:A:90:LEU:HD11	1:A:99:VAL:HG21	1.89	0.54
1:B:4:ALA:HB2	1:B:60:TYR:CD1	2.42	0.54
1:D:92:HIS:CE1	1:D:94:ASP:O	2.60	0.54
1:A:269:MET:HE3	1:A:271:GLU:HB2	1.89	0.54
1:F:184:ALA:HB2	1:F:187:VAL:HG11	1.85	0.54
1:C:129:PRO:C	1:C:130:GLU:OE1	2.49	0.54
1:D:70:LEU:CD2	1:D:118:LEU:CD2	2.85	0.54
1:B:130:GLU:CD	1:B:130:GLU:H	2.16	0.54
1:C:30:CYS:C	1:C:62:CYS:SG	2.89	0.54
1:E:90:LEU:HD11	1:E:99:VAL:HG21	1.89	0.54
1:B:269:MET:HE3	1:B:271:GLU:HB2	1.90	0.54
1:F:47:LEU:CD2	1:F:126:MET:HE3	2.37	0.54
1:F:124:GLU:HB2	1:F:125:SER:HB2	1.90	0.54
1:B:90:LEU:HD11	1:B:99:VAL:HG21	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:269:MET:HE3	1:E:271:GLU:HB2	1.90	0.53
1:F:126:MET:CG	1:F:127:GLY:CA	2.81	0.53
1:C:134:ARG:CZ	1:C:233:GLU:OE1	2.56	0.53
1:D:51:LEU:HD23	1:D:279:TYR:CE1	2.43	0.53
1:F:269:MET:HE3	1:F:271:GLU:HB2	1.90	0.53
1:E:274:ILE:CG2	1:E:277:VAL:CG2	2.85	0.53
1:D:40:MET:SD	1:D:126:MET:HG3	2.48	0.53
1:B:3:GLU:OE2	1:B:91:ARG:CZ	2.57	0.53
1:D:94:ASP:C	1:D:94:ASP:OD1	2.50	0.53
1:E:53:ARG:HB3	1:E:55:ASP:OD1	2.09	0.53
1:F:-3:ARG:NH1	1:F:-1:SER:O	2.42	0.53
1:C:90:LEU:HD11	1:C:99:VAL:HG21	1.91	0.52
1:A:51:LEU:HD23	1:A:279:TYR:CE1	2.43	0.52
1:A:-3:ARG:HH21	1:A:64:ARG:HH12	1.57	0.52
1:B:3:GLU:OE2	1:B:91:ARG:NH2	2.43	0.52
1:C:188:SER:O	1:C:227:GLY:C	2.52	0.52
1:A:119:LEU:HB3	1:A:120:GLU:HB2	1.91	0.52
1:D:90:LEU:HD11	1:D:99:VAL:HG21	1.91	0.52
1:E:64:ARG:HG3	1:E:65:ASN:H	1.72	0.52
1:E:190:ARG:HB2	1:E:227:GLY:C	2.33	0.52
1:C:131:MET:CB	1:C:132:ASP:CA	2.85	0.52
1:A:-4:PRO:N	1:A:-3:ARG:HA	2.20	0.52
1:F:126:MET:HE2	1:F:127:GLY:C	2.29	0.52
1:D:53:ARG:HB3	1:D:55:ASP:OD1	2.10	0.52
1:A:1:MET:HA	1:A:93:ASP:HA	1.92	0.51
1:F:126:MET:CE	1:F:127:GLY:O	2.38	0.51
1:A:274:ILE:CD1	1:A:274:ILE:N	2.73	0.51
1:A:-3:ARG:NH2	1:A:64:ARG:HH22	2.09	0.51
1:B:53:ARG:HB3	1:B:55:ASP:OD1	2.11	0.51
1:F:124:GLU:HB2	1:F:125:SER:CA	2.40	0.51
1:E:184:ALA:O	1:E:185:ALA:C	2.54	0.51
1:F:90:LEU:HD11	1:F:99:VAL:HG21	1.93	0.51
1:A:130:GLU:HB3	1:A:131:MET:CB	2.41	0.51
1:C:122:GLU:HA	1:C:123:ALA:HB3	1.93	0.50
1:D:39:ALA:O	1:D:47:LEU:HD22	2.12	0.50
1:E:40:MET:HE3	1:E:44:HIS:CD2	2.45	0.50
1:E:70:LEU:CD2	1:E:118:LEU:HD23	2.40	0.50
1:A:125:SER:O	1:A:126:MET:HB2	2.11	0.50
1:B:1:MET:HE3	1:B:91:ARG:HD3	1.93	0.50
1:B:164:LYS:NZ	1:B:165:GLU:CG	2.73	0.50
1:C:164:LYS:O	1:C:165:GLU:HG2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:30:CYS:C	1:E:62:CYS:SG	2.95	0.50
1:B:164:LYS:HZ2	1:B:165:GLU:HG3	1.74	0.50
1:D:92:HIS:NE2	1:D:94:ASP:O	2.44	0.49
1:D:93:ASP:O	1:D:94:ASP:HB3	2.10	0.49
1:B:164:LYS:HZ3	1:B:165:GLU:HG3	1.76	0.49
1:C:165:GLU:HA	1:C:184:ALA:HB3	1.93	0.49
1:A:-5:VAL:HA	1:A:-3:ARG:HB3	1.94	0.49
1:D:70:LEU:CD2	1:D:118:LEU:HD23	2.42	0.49
1:F:93:ASP:C	1:F:95:ASP:O	2.56	0.49
1:A:64:ARG:NH1	1:A:64:ARG:CG	2.72	0.49
1:A:135:SER:HG	1:A:233:GLU:H	1.48	0.49
1:A:164:LYS:O	1:A:165:GLU:CG	2.60	0.49
1:F:53:ARG:HB3	1:F:55:ASP:OD1	2.13	0.49
1:A:125:SER:O	1:A:126:MET:CE	2.60	0.49
1:E:96:SER:O	1:E:98:VAL:N	2.46	0.49
1:D:163:SER:OG	1:D:165:GLU:OE2	2.30	0.49
1:F:21:GLY:O	1:F:247:ILE:HD13	2.13	0.49
1:A:39:ALA:O	1:A:47:LEU:HD22	2.13	0.48
1:A:135:SER:HB3	1:A:232:MET:HB2	1.89	0.48
1:A:-3:ARG:NH2	1:A:64:ARG:NH2	2.61	0.48
1:F:185:ALA:N	1:F:228:VAL:O	2.46	0.48
1:A:64:ARG:N	1:A:64:ARG:CD	2.73	0.48
1:F:95:ASP:O	1:F:95:ASP:OD1	2.31	0.48
1:A:-3:ARG:HH21	1:A:64:ARG:NH1	2.12	0.48
1:C:130:GLU:HB2	1:C:131:MET:SD	2.53	0.48
1:F:-3:ARG:HH11	1:F:-2:GLY:HA3	1.79	0.48
1:B:96:SER:O	1:B:98:VAL:N	2.47	0.48
1:C:53:ARG:HB3	1:C:55:ASP:OD1	2.13	0.48
1:E:39:ALA:O	1:E:47:LEU:HD22	2.14	0.48
1:A:56:CYS:HB2	1:A:277:VAL:HB	1.96	0.48
1:D:99:VAL:HG12	1:D:118:LEU:HD21	1.95	0.48
1:A:-4:PRO:HG2	1:A:-3:ARG:HA	1.93	0.47
1:D:105:ASN:N	1:D:105:ASN:ND2	2.61	0.47
1:A:165:GLU:HG3	1:A:166:GLY:H	1.80	0.47
1:C:14:ARG:HD2	1:C:253:THR:HB	1.96	0.47
1:C:39:ALA:O	1:C:47:LEU:HD22	2.14	0.47
1:C:125:SER:OG	1:C:126:MET:N	2.48	0.47
1:F:126:MET:N	1:F:127:GLY:HA2	2.28	0.47
1:B:164:LYS:CD	1:B:165:GLU:N	2.73	0.47
1:B:130:GLU:N	1:B:130:GLU:CD	2.72	0.47
1:F:47:LEU:CG	1:F:126:MET:CE	2.71	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:14:ARG:HD2	1:A:253:THR:HB	1.97	0.47
1:A:135:SER:HA	1:A:232:MET:HA	1.93	0.47
1:B:164:LYS:NZ	1:B:165:GLU:CD	2.73	0.47
1:E:274:ILE:CD1	1:E:279:TYR:CA	2.92	0.47
1:F:-5:VAL:HG23	1:F:-4:PRO:HD2	1.97	0.47
1:F:40:MET:HE3	1:F:47:LEU:HD12	1.97	0.47
1:B:80:LYS:HE2	1:B:80:LYS:CA	2.44	0.47
1:D:70:LEU:HD23	1:D:118:LEU:HD23	1.96	0.47
1:C:134:ARG:NH1	1:C:233:GLU:OE1	2.47	0.47
1:A:105:ASN:O	1:A:106:PRO:C	2.54	0.46
1:F:245:MET:HA	1:F:245:MET:CE	2.38	0.46
1:D:14:ARG:HD2	1:D:253:THR:HB	1.97	0.46
1:E:21:GLY:O	1:E:247:ILE:HD13	2.15	0.46
1:A:119:LEU:CA	1:A:120:GLU:HB2	2.45	0.46
1:D:65:ASN:C	1:D:65:ASN:ND2	2.55	0.46
1:A:135:SER:CB	1:A:232:MET:CB	2.86	0.46
1:A:274:ILE:CD1	1:A:280:LEU:N	2.78	0.46
1:F:80:LYS:HE2	1:F:80:LYS:CA	2.46	0.46
1:A:1:MET:HG2	1:A:93:ASP:CG	2.39	0.46
1:C:21:GLY:O	1:C:247:ILE:HD13	2.16	0.46
1:F:130:GLU:HB3	1:F:131:MET:CB	2.46	0.46
1:A:-3:ARG:C	1:A:-3:ARG:CD	2.86	0.46
1:A:21:GLY:O	1:A:247:ILE:HD13	2.16	0.46
1:A:126:MET:HG3	1:A:127:GLY:C	2.41	0.46
1:A:136:THR:HG23	1:A:261:LYS:CA	2.42	0.46
1:E:133:TYR:CD1	1:E:133:TYR:C	2.93	0.46
1:E:274:ILE:CG2	1:E:277:VAL:HG23	2.45	0.46
1:F:124:GLU:HB2	1:F:125:SER:CB	2.46	0.46
1:F:184:ALA:C	1:F:228:VAL:O	2.58	0.46
1:A:275:ASP:OD1	1:A:277:VAL:HG22	2.15	0.46
1:B:21:GLY:O	1:B:247:ILE:HD13	2.16	0.46
1:E:274:ILE:HD12	1:E:279:TYR:HA	1.95	0.46
1:F:14:ARG:HD2	1:F:253:THR:HB	1.97	0.46
1:F:184:ALA:HA	1:F:185:ALA:HA	1.64	0.45
1:B:14:ARG:HD2	1:B:253:THR:HB	1.98	0.45
1:B:131:MET:O	1:B:132:ASP:HB2	2.16	0.45
1:E:64:ARG:CG	1:E:65:ASN:N	2.75	0.45
1:E:68:LEU:HD22	1:E:92:HIS:CD2	2.52	0.45
1:A:96:SER:O	1:A:98:VAL:N	2.50	0.45
1:B:119:LEU:CA	1:B:120:GLU:HB2	2.46	0.45
1:E:92:HIS:CE1	1:E:93:ASP:O	2.70	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:132:ASP:O	1:E:133:TYR:CB	2.65	0.45
1:D:10:SER:HB2	1:D:14:ARG:NH1	2.32	0.45
1:B:4:ALA:HA	1:B:59:LYS:O	2.17	0.45
1:B:266:SER:O	1:B:267:PRO:C	2.59	0.45
1:D:106:PRO:O	1:D:108:LYS:HD3	2.17	0.45
1:A:274:ILE:HD11	1:A:279:TYR:C	2.41	0.45
1:D:21:GLY:O	1:D:247:ILE:HD13	2.17	0.45
1:D:131:MET:O	1:D:133:TYR:N	2.50	0.45
1:E:14:ARG:HD2	1:E:253:THR:HB	1.99	0.45
1:E:190:ARG:HB2	1:E:227:GLY:HA3	1.99	0.45
1:A:-4:PRO:HD2	1:A:-2:GLY:HA3	1.99	0.44
1:C:-1:SER:HB3	1:C:0:HIS:CD2	2.53	0.44
1:C:89:SER:OG	1:C:91:ARG:NH2	2.49	0.44
1:E:106:PRO:O	1:E:108:LYS:HD3	2.18	0.44
1:B:48:VAL:HG21	1:B:282:TYR:HE1	1.82	0.44
1:E:164:LYS:HE3	1:E:232:MET:HE2	1.99	0.44
1:E:63:GLY:O	1:E:64:ARG:CG	2.66	0.44
1:F:38:GLN:OE1	1:F:127:GLY:O	2.35	0.44
1:A:119:LEU:HA	1:A:120:GLU:HB2	1.99	0.44
1:A:164:LYS:O	1:A:165:GLU:HG2	2.18	0.44
1:B:5:GLN:O	1:B:58:VAL:HG22	2.18	0.44
1:B:184:ALA:O	1:B:185:ALA:C	2.61	0.44
1:F:188:SER:HA	1:F:189:ASP:HA	1.68	0.44
1:B:1:MET:O	1:B:92:HIS:O	2.36	0.44
1:C:243:ARG:O	1:C:247:ILE:HG13	2.18	0.44
1:F:2:LEU:HD12	1:F:3:GLU:N	2.32	0.44
1:B:243:ARG:O	1:B:247:ILE:HG13	2.18	0.44
1:D:243:ARG:O	1:D:247:ILE:HG13	2.17	0.44
1:E:132:ASP:O	1:E:133:TYR:HB3	2.18	0.44
1:F:-2:GLY:HA3	1:F:-1:SER:HA	1.67	0.44
1:D:185:ALA:HB1	1:D:186:GLY:HA3	2.00	0.43
1:E:1:MET:SD	1:E:1:MET:N	2.92	0.43
1:E:51:LEU:HD23	1:E:279:TYR:HE1	1.81	0.43
1:E:63:GLY:O	1:E:64:ARG:CB	2.65	0.43
1:E:243:ARG:O	1:E:247:ILE:HG13	2.18	0.43
1:F:22:LEU:HD12	1:F:48:VAL:CG2	2.48	0.43
1:A:164:LYS:O	1:A:165:GLU:CB	2.66	0.43
1:B:106:PRO:O	1:B:108:LYS:HD3	2.18	0.43
1:C:131:MET:SD	1:C:131:MET:N	2.76	0.43
1:D:105:ASN:OD1	1:D:110:ARG:HB3	2.19	0.43
1:A:165:GLU:CG	1:A:166:GLY:H	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:124:GLU:C	1:B:126:MET:H	2.25	0.43
1:E:148:VAL:O	1:E:152:GLN:HG3	2.19	0.43
1:F:243:ARG:O	1:F:247:ILE:HG13	2.18	0.43
1:A:10:SER:HB2	1:A:14:ARG:NH1	2.33	0.43
1:C:96:SER:O	1:C:98:VAL:N	2.52	0.43
1:F:95:ASP:OD1	1:F:95:ASP:N	2.51	0.43
1:C:148:VAL:O	1:C:152:GLN:HG3	2.19	0.43
1:C:188:SER:HA	1:C:227:GLY:HA2	2.01	0.43
1:D:22:LEU:HD12	1:D:48:VAL:CG2	2.49	0.43
1:F:130:GLU:HB3	1:F:131:MET:HB3	2.00	0.43
1:C:106:PRO:O	1:C:107:GLU:CD	2.62	0.43
1:D:97:ASP:O	1:D:118:LEU:HB2	2.18	0.43
1:F:106:PRO:O	1:F:108:LYS:HD3	2.19	0.43
1:B:48:VAL:HG21	1:B:282:TYR:CE1	2.54	0.43
1:C:22:LEU:HD12	1:C:48:VAL:CG2	2.49	0.43
1:E:10:SER:HB2	1:E:14:ARG:NH1	2.33	0.43
1:E:249:ALA:HA	1:E:272:TYR:OH	2.19	0.43
1:A:165:GLU:CG	1:A:166:GLY:N	2.81	0.42
1:A:-4:PRO:N	1:A:-3:ARG:CA	2.81	0.42
1:B:130:GLU:H	1:B:131:MET:HB3	1.83	0.42
1:C:2:LEU:HD12	1:C:3:GLU:N	2.34	0.42
1:E:-4:PRO:O	1:E:-3:ARG:HB2	2.19	0.42
1:A:0:HIS:CB	1:A:94:ASP:CB	2.80	0.42
1:A:135:SER:CB	1:A:232:MET:HB2	2.48	0.42
1:D:248:PHE:CD1	1:D:282:TYR:CG	3.07	0.42
1:E:134:ARG:NH2	1:E:236:ILE:HD12	2.14	0.42
1:E:188:SER:OG	1:E:189:ASP:HB3	2.20	0.42
1:E:120:GLU:HA	1:E:120:GLU:OE1	2.19	0.42
1:F:124:GLU:N	1:F:124:GLU:CD	2.77	0.42
1:A:90:LEU:HD11	1:A:99:VAL:CG2	2.50	0.42
1:A:243:ARG:O	1:A:247:ILE:HG13	2.19	0.42
1:B:148:VAL:O	1:B:152:GLN:HG3	2.20	0.42
1:A:134:ARG:NH2	1:A:233:GLU:OE1	2.53	0.42
1:A:190:ARG:NH2	1:B:109:THR:OG1	2.52	0.42
1:C:10:SER:HB2	1:C:14:ARG:NH1	2.35	0.42
1:D:148:VAL:O	1:D:152:GLN:HG3	2.19	0.42
1:D:274:ILE:HD12	1:D:279:TYR:HA	2.02	0.42
1:E:190:ARG:HB3	1:E:257:ARG:HH12	1.84	0.42
1:F:189:ASP:O	1:F:190:ARG:HB2	2.19	0.42
1:C:190:ARG:HB3	1:C:190:ARG:HH11	1.85	0.42
1:B:10:SER:HB2	1:B:14:ARG:NH1	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:40:MET:HB2	1:C:126:MET:HG3	2.01	0.41
1:F:186:GLY:CA	1:F:187:VAL:C	2.92	0.41
1:E:90:LEU:HD11	1:E:99:VAL:CG2	2.50	0.41
1:E:189:ASP:C	1:E:190:ARG:O	2.62	0.41
1:D:51:LEU:HD12	1:D:52:LEU:N	2.35	0.41
1:A:38:GLN:OE1	1:A:127:GLY:O	2.39	0.41
1:B:119:LEU:CB	1:B:120:GLU:HB2	2.49	0.41
1:B:134:ARG:HH12	1:B:234:GLU:HB2	1.86	0.41
1:C:90:LEU:HD11	1:C:99:VAL:CG2	2.51	0.41
1:D:131:MET:O	1:D:132:ASP:C	2.59	0.41
1:F:148:VAL:O	1:F:152:GLN:HG3	2.20	0.41
1:A:148:VAL:O	1:A:152:GLN:HG3	2.20	0.41
1:B:249:ALA:HA	1:B:272:TYR:OH	2.21	0.41
1:C:122:GLU:O	1:C:124:GLU:HG2	2.20	0.41
1:C:274:ILE:HD12	1:C:279:TYR:HA	2.03	0.41
1:E:248:PHE:CD1	1:E:282:TYR:CG	3.09	0.41
1:F:10:SER:HB2	1:F:14:ARG:NH1	2.36	0.41
1:F:15:LEU:HD22	1:F:50:MET:HE3	2.03	0.41
1:A:248:PHE:CD1	1:A:282:TYR:CG	3.09	0.41
1:D:242:LEU:O	1:D:243:ARG:C	2.64	0.41
1:E:-1:SER:CB	1:E:0:HIS:HB3	2.51	0.41
1:A:22:LEU:HD12	1:A:48:VAL:CG2	2.50	0.40
1:B:22:LEU:HD12	1:B:22:LEU:HA	1.91	0.40
1:B:30:CYS:HA	1:B:35:LEU:HD23	2.04	0.40
1:B:164:LYS:HZ2	1:B:165:GLU:CG	2.33	0.40
1:D:94:ASP:CG	1:D:95:ASP:N	2.79	0.40
1:F:144:PHE:HZ	1:F:245:MET:HE2	1.86	0.40
1:E:274:ILE:HB	1:E:277:VAL:HG23	2.03	0.40
1:A:-3:ARG:HH21	1:A:64:ARG:HH22	1.68	0.40
1:B:90:LEU:HD11	1:B:99:VAL:CG2	2.51	0.40
1:F:95:ASP:O	1:F:96:SER:CB	2.63	0.40
1:B:5:GLN:NE2	1:B:87:SER:CB	2.80	0.40
1:F:184:ALA:HA	1:F:187:VAL:HG12	1.96	0.40
1:B:164:LYS:HD3	1:B:165:GLU:HG3	2.02	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:A:-3:ARG:NH1	1:B:120:GLU:OE2[4_544]	2.01	0.19

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	256/300 (85%)	227 (89%)	20 (8%)	9 (4%)	3	7
1	B	257/300 (86%)	232 (90%)	22 (9%)	3 (1%)	10	28
1	C	256/300 (85%)	233 (91%)	20 (8%)	3 (1%)	10	28
1	D	257/300 (86%)	234 (91%)	20 (8%)	3 (1%)	10	28
1	E	255/300 (85%)	228 (89%)	21 (8%)	6 (2%)	4	13
1	F	257/300 (86%)	223 (87%)	30 (12%)	4 (2%)	7	21
All	All	1538/1800 (85%)	1377 (90%)	133 (9%)	28 (2%)	6	19

All (28) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	97	ASP
1	A	165	GLU
1	B	97	ASP
1	C	97	ASP
1	D	94	ASP
1	D	95	ASP
1	E	97	ASP
1	E	275	ASP
1	F	0	HIS
1	A	126	MET
1	A	128	ILE
1	C	123	ALA
1	F	-4	PRO
1	A	0	HIS
1	D	185	ALA
1	E	64	ARG
1	E	125	SER
1	F	96	SER
1	A	125	SER
1	E	95	ASP

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Mol	Chain	Res	Type
1	F	184	ALA
1	B	132	ASP
1	E	1	MET
1	A	-4	PRO
1	A	129	PRO
1	A	184	ALA
1	C	107	GLU
1	B	63	GLY

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	226/257 (88%)	196 (87%)	30 (13%)	4	12
1	B	226/257 (88%)	197 (87%)	29 (13%)	4	13
1	C	226/257 (88%)	190 (84%)	36 (16%)	2	8
1	D	226/257 (88%)	197 (87%)	29 (13%)	4	13
1	E	225/257 (88%)	198 (88%)	27 (12%)	5	14
1	F	226/257 (88%)	191 (84%)	35 (16%)	2	8
All	All	1355/1542 (88%)	1169 (86%)	186 (14%)	3	11

All (186) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	LEU
1	A	19	ILE
1	A	22	LEU
1	A	41	ASP
1	A	47	LEU
1	A	48	VAL
1	A	50	MET
1	A	53	ARG
1	A	55	ASP
1	A	64	ARG

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Mol	Chain	Res	Type
1	A	100	THR
1	A	103	SER
1	A	108	LYS
1	A	109	THR
1	A	116	LEU
1	A	126	MET
1	A	135	SER
1	A	137	VAL
1	A	162	ILE
1	A	164	LYS
1	A	170	SER
1	A	183	GLN
1	A	188	SER
1	A	228	VAL
1	A	231	THR
1	A	266	SER
1	A	269	MET
1	A	270	VAL
1	A	274	ILE
1	A	287	LYS
1	B	-3	ARG
1	B	0	HIS
1	B	2	LEU
1	B	19	ILE
1	B	29	ASP
1	B	41	ASP
1	B	47	LEU
1	B	53	ARG
1	B	64	ARG
1	B	80	LYS
1	B	94	ASP
1	B	100	THR
1	B	103	SER
1	B	108	LYS
1	B	109	THR
1	B	116	LEU
1	B	126	MET
1	B	137	VAL
1	B	162	ILE
1	B	164	LYS
1	B	170	SER
1	B	183	GLN

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Mol	Chain	Res	Type
1	B	189	ASP
1	B	231	THR
1	B	266	SER
1	B	269	MET
1	B	270	VAL
1	B	276	ASN
1	B	281	ARG
1	C	-6	LEU
1	C	-3	ARG
1	C	-1	SER
1	C	1	MET
1	C	3	GLU
1	C	19	ILE
1	C	22	LEU
1	C	24	ASN
1	C	29	ASP
1	C	41	ASP
1	C	45	VAL
1	C	47	LEU
1	C	48	VAL
1	C	50	MET
1	C	53	ARG
1	C	100	THR
1	C	103	SER
1	C	107	GLU
1	C	108	LYS
1	C	109	THR
1	C	116	LEU
1	C	124	GLU
1	C	126	MET
1	C	131	MET
1	C	137	VAL
1	C	162	ILE
1	C	164	LYS
1	C	165	GLU
1	C	170	SER
1	C	190	ARG
1	C	231	THR
1	C	266	SER
1	C	269	MET
1	C	270	VAL
1	C	276	ASN

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Mol	Chain	Res	Type
1	C	281	ARG
1	D	2	LEU
1	D	22	LEU
1	D	29	ASP
1	D	41	ASP
1	D	47	LEU
1	D	48	VAL
1	D	50	MET
1	D	53	ARG
1	D	65	ASN
1	D	97	ASP
1	D	100	THR
1	D	103	SER
1	D	105	ASN
1	D	108	LYS
1	D	109	THR
1	D	116	LEU
1	D	120	GLU
1	D	128	ILE
1	D	137	VAL
1	D	162	ILE
1	D	164	LYS
1	D	170	SER
1	D	188	SER
1	D	190	ARG
1	D	231	THR
1	D	266	SER
1	D	269	MET
1	D	270	VAL
1	D	276	ASN
1	E	-3	ARG
1	E	-1	SER
1	E	2	LEU
1	E	19	ILE
1	E	22	LEU
1	E	41	ASP
1	E	47	LEU
1	E	50	MET
1	E	53	ARG
1	E	80	LYS
1	E	100	THR
1	E	103	SER

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Mol	Chain	Res	Type
1	E	108	LYS
1	E	109	THR
1	E	116	LEU
1	E	120	GLU
1	E	131	MET
1	E	132	ASP
1	E	137	VAL
1	E	162	ILE
1	E	170	SER
1	E	188	SER
1	E	231	THR
1	E	266	SER
1	E	269	MET
1	E	270	VAL
1	E	274	ILE
1	F	-6	LEU
1	F	-5	VAL
1	F	-3	ARG
1	F	19	ILE
1	F	22	LEU
1	F	29	ASP
1	F	41	ASP
1	F	48	VAL
1	F	50	MET
1	F	53	ARG
1	F	64	ARG
1	F	80	LYS
1	F	100	THR
1	F	103	SER
1	F	108	LYS
1	F	109	THR
1	F	116	LEU
1	F	126	MET
1	F	131	MET
1	F	137	VAL
1	F	162	ILE
1	F	163	SER
1	F	164	LYS
1	F	165	GLU
1	F	170	SER
1	F	187	VAL
1	F	228	VAL

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Mol	Chain	Res	Type
1	F	231	THR
1	F	245	MET
1	F	265	ASP
1	F	266	SER
1	F	269	MET
1	F	270	VAL
1	F	276	ASN
1	F	281	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (30) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	7	GLN
1	A	24	ASN
1	A	27	ASN
1	A	65	ASN
1	A	92	HIS
1	A	276	ASN
1	B	0	HIS
1	B	5	GLN
1	B	7	GLN
1	B	27	ASN
1	B	38	GLN
1	B	65	ASN
1	B	92	HIS
1	C	7	GLN
1	C	65	ASN
1	C	92	HIS
1	D	7	GLN
1	D	24	ASN
1	D	38	GLN
1	D	65	ASN
1	E	7	GLN
1	E	24	ASN
1	E	27	ASN
1	E	38	GLN
1	E	44	HIS
1	E	276	ASN
1	F	7	GLN
1	F	24	ASN
1	F	27	ASN
1	F	65	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, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	260/300 (86%)	0.32	15 (5%) 29 24	70, 110, 188, 230	0
1	B	261/300 (87%)	0.18	18 (6%) 23 19	56, 92, 163, 247	0
1	C	260/300 (86%)	0.13	10 (3%) 44 36	60, 95, 167, 221	0
1	D	261/300 (87%)	0.25	14 (5%) 31 26	69, 104, 161, 224	0
1	E	259/300 (86%)	0.24	16 (6%) 26 22	69, 104, 181, 241	0
1	F	261/300 (87%)	0.07	15 (5%) 29 24	56, 88, 160, 229	0
All	All	1562/1800 (86%)	0.20	88 (5%) 30 25	56, 99, 173, 247	0

All (88) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	127	GLY	9.6
1	F	184	ALA	5.7
1	F	30	CYS	5.6
1	B	227	GLY	5.5
1	F	126	MET	5.3
1	C	188	SER	5.1
1	E	274	ILE	5.0
1	D	132	ASP	5.0
1	F	125	SER	4.6
1	C	-6	LEU	4.5
1	B	30	CYS	4.3
1	B	2	LEU	3.9
1	B	185	ALA	3.9
1	A	188	SER	3.8
1	F	-5	VAL	3.8
1	E	118	LEU	3.6
1	A	28	PHE	3.6
1	E	187	VAL	3.6
1	E	288	VAL	3.6

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Mol	Chain	Res	Type	RSRZ
1	F	288	VAL	3.6
1	B	-5	VAL	3.5
1	C	190	ARG	3.5
1	B	-6	LEU	3.5
1	D	-6	LEU	3.4
1	C	187	VAL	3.4
1	E	277	VAL	3.3
1	A	184	ALA	3.2
1	A	185	ALA	3.2
1	D	-3	ARG	3.2
1	A	231	THR	3.1
1	B	35	LEU	3.1
1	D	96	SER	3.1
1	B	12	TRP	3.1
1	D	-5	VAL	3.1
1	F	190	ARG	3.1
1	B	188	SER	3.1
1	F	189	ASP	3.0
1	F	62	CYS	3.0
1	E	161	ALA	3.0
1	B	-7	GLY	2.9
1	E	122	GLU	2.9
1	F	185	ALA	2.9
1	D	238	LEU	2.9
1	A	30	CYS	2.9
1	C	30	CYS	2.9
1	D	33	GLY	2.8
1	E	65	ASN	2.8
1	A	1	MET	2.8
1	A	189	ASP	2.8
1	D	227	GLY	2.8
1	E	276	ASN	2.7
1	B	62	CYS	2.7
1	F	0	HIS	2.7
1	A	187	VAL	2.7
1	E	275	ASP	2.7
1	A	-6	LEU	2.7
1	B	-1	SER	2.7
1	B	187	VAL	2.6
1	F	123	ALA	2.6
1	B	275	ASP	2.6
1	E	63	GLY	2.5

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Mol	Chain	Res	Type	RSRZ
1	E	129	PRO	2.5
1	C	62	CYS	2.5
1	E	30	CYS	2.5
1	A	276	ASN	2.4
1	A	55	ASP	2.4
1	F	187	VAL	2.3
1	E	227	GLY	2.3
1	E	1	MET	2.3
1	D	30	CYS	2.3
1	B	126	MET	2.3
1	A	135	SER	2.3
1	B	190	ARG	2.3
1	D	188	SER	2.3
1	A	136	THR	2.2
1	C	33	GLY	2.2
1	A	131	MET	2.2
1	C	169	PHE	2.2
1	D	60	TYR	2.2
1	D	-4	PRO	2.1
1	C	166	GLY	2.1
1	C	128	ILE	2.1
1	B	63	GLY	2.1
1	D	187	VAL	2.1
1	F	124	GLU	2.1
1	E	169	PHE	2.0
1	B	5	GLN	2.0
1	D	4	ALA	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.