



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 10, 2026 – 11:20 AM UTC

PDB ID : 1N3N / pdb_00001n3n
Title : Crystal structure of a mycobacterial hsp60 epitope with the murine class I MHC molecule H-2Db
Authors : Ciatto, C.; Capitani, G.; Tissot, A.C.; Pecorari, F.; Pluckthun, A.; Grutter, M.G.
Deposited on : 2002-10-29
Resolution : 3.00 Å(reported)

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

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

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
Mogul : 2022.3.0, CSD as543be (2022)
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

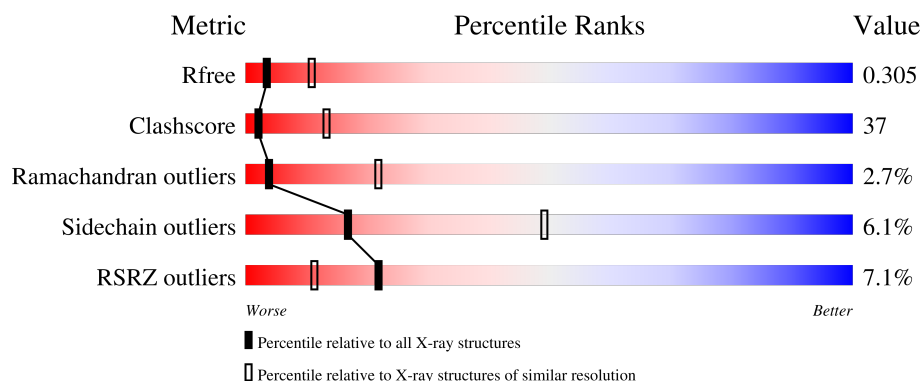
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.00 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	2672 (3.00-3.00)
Clashscore	190562	2977 (3.00-3.00)
Ramachandran outliers	187476	2877 (3.00-3.00)
Sidechain outliers	187428	2880 (3.00-3.00)
RSRZ outliers	180081	2671 (3.00-3.00)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments 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	280	7% 43% 48% 6% ..
1	C	280	11% 42% 48% 8% .
1	E	280	5% 45% 46% 7% ..
1	G	280	5% 45% 46% 8% ..
2	B	99	2% 44% 52% .

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Mol	Chain	Length	Quality of chain
2	D	99	5% 45% 48% 6%
2	F	99	3% 44% 47% 8%
2	H	99	19% 37% 55% 8%
3	I	10	20% 70% 10%
3	J	10	10% 30% 70%
3	K	10	60% 30% 10%
3	L	10	30% 50% 20%

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 12803 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 H-2 CLASS I HISTOCOMPATIBILITY ANTIGEN, D-B ALPHA CHAIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	276	Total	C	N	O	S	0	0	0
			2264	1430	400	425	9			
1	C	276	Total	C	N	O	S	0	0	0
			2264	1430	400	425	9			
1	E	276	Total	C	N	O	S	0	0	0
			2264	1430	400	425	9			
1	G	276	Total	C	N	O	S	0	0	0
			2264	1430	400	425	9			

- Molecule 2 is a protein called BETA-2-MICROGLOBULIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	99	Total	C	N	O	S	0	0	0
			821	524	138	152	7			
2	D	99	Total	C	N	O	S	0	0	0
			821	524	138	152	7			
2	F	99	Total	C	N	O	S	0	0	0
			821	524	138	152	7			
2	H	99	Total	C	N	O	S	0	0	0
			821	524	138	152	7			

- Molecule 3 is a protein called mycobacterial hsp60 decameric epitope.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
3	I	10	Total	C	N	O	0	0	0
			66	39	12	15			
3	J	10	Total	C	N	O	0	0	0
			66	39	12	15			
3	K	10	Total	C	N	O	0	0	0
			66	39	12	15			
3	L	10	Total	C	N	O	0	0	0
			66	39	12	15			

- Molecule 4 is SULFATE ION (CCD ID: SO4) (formula: O₄S).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	E	1	Total	O	S	0	0
			5	4	1		
4	G	1	Total	O	S	0	0
			5	4	1		

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	28	Total	O	0	0
			28	28		
5	B	20	Total	O	0	0
			20	20		
5	C	30	Total	O	0	0
			30	30		
5	D	14	Total	O	0	0
			14	14		
5	E	33	Total	O	0	0
			33	33		
5	F	20	Total	O	0	0
			20	20		
5	G	28	Total	O	0	0
			28	28		
5	H	6	Total	O	0	0
			6	6		
5	I	1	Total	O	0	0
			1	1		

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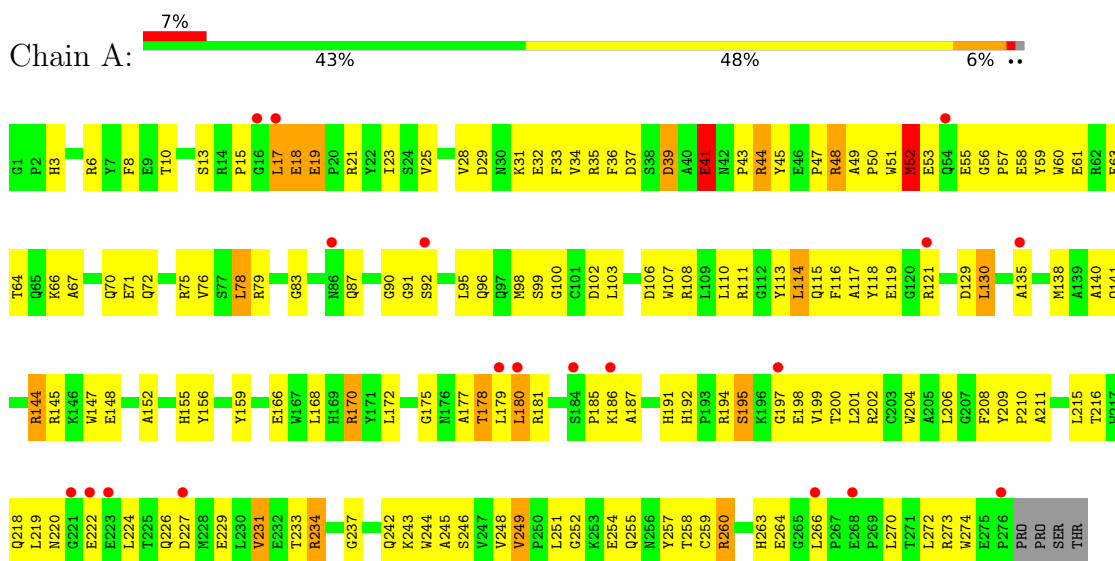
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	K	5	Total	O	0	0
			5	5		
5	L	4	Total	O	0	0
			4	4		

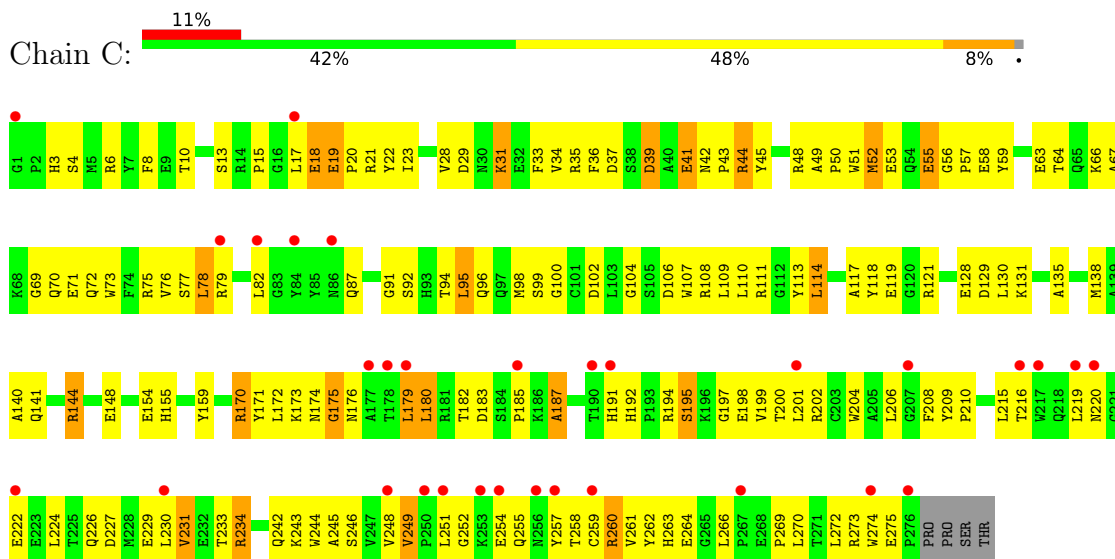
3 Residue-property plots

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.

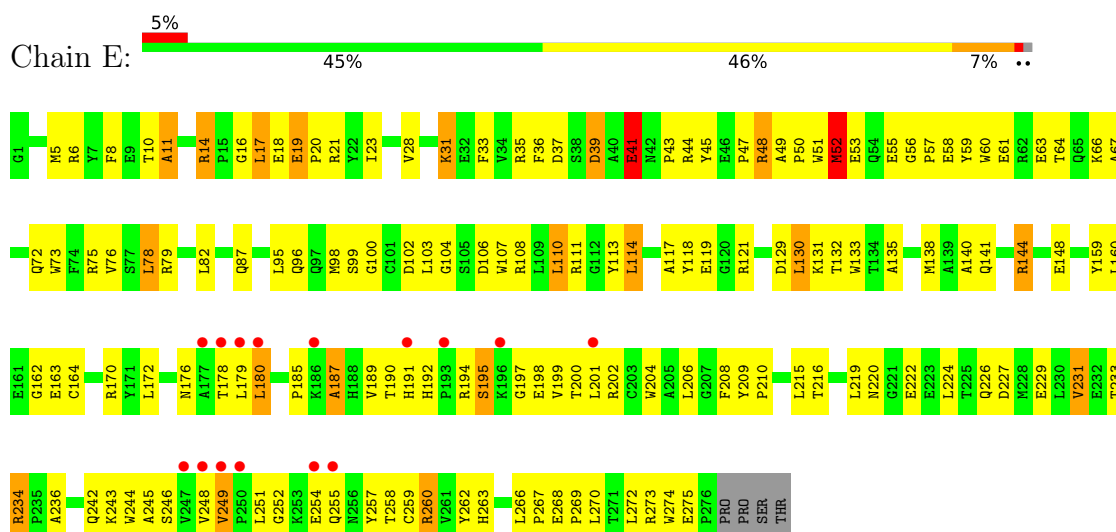
- Molecule 1: H-2 CLASS I HISTOCOMPATIBILITY ANTIGEN, D-B ALPHA CHAIN



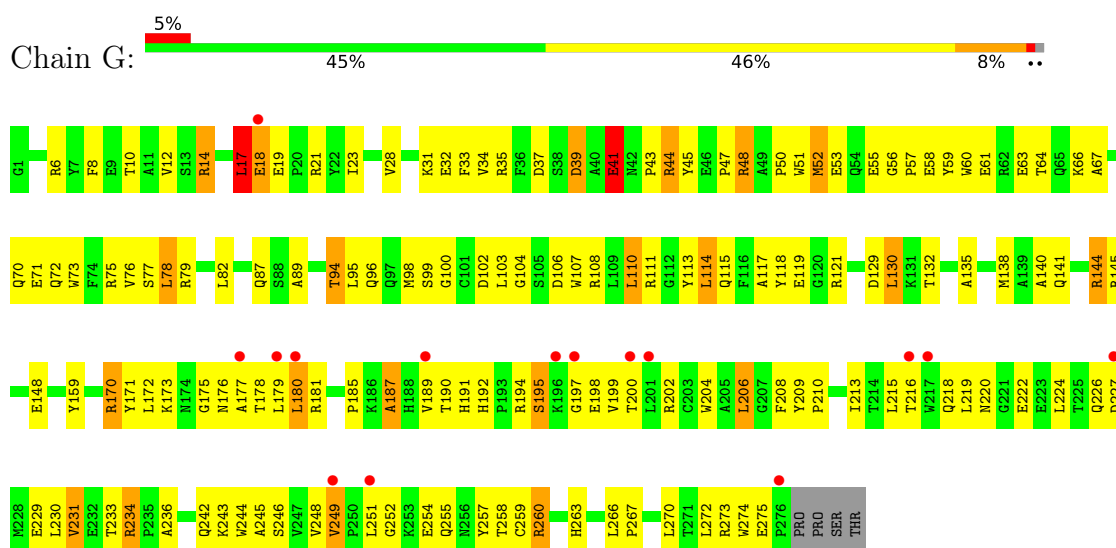
- Molecule 1: H-2 CLASS I HISTOCOMPATIBILITY ANTIGEN, D-B ALPHA CHAIN



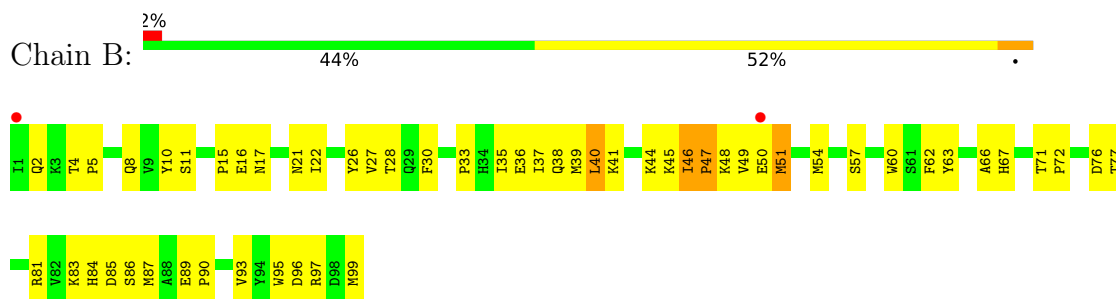
- Molecule 1: H-2 CLASS I HISTOCOMPATIBILITY ANTIGEN, D-B ALPHA CHAIN



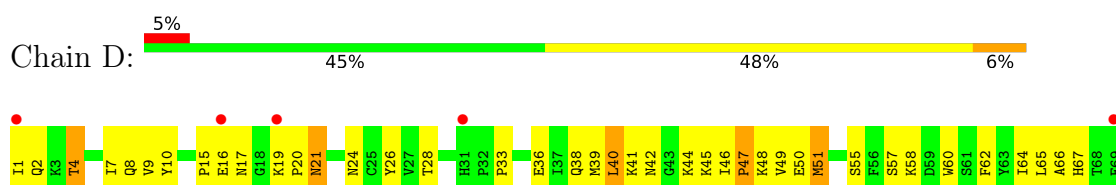
• Molecule 1: H-2 CLASS I HISTOCOMPATIBILITY ANTIGEN, D-B ALPHA CHAIN



• Molecule 2: BETA-2-MICROGLOBULIN

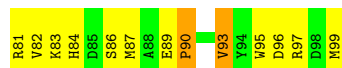
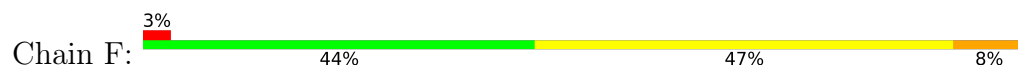


• Molecule 2: BETA-2-MICROGLOBULIN

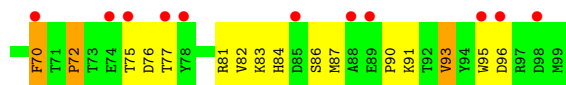
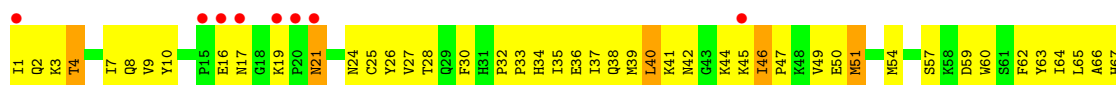




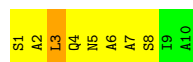
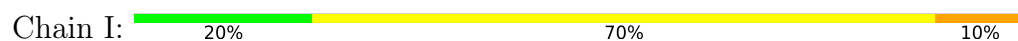
- Molecule 2: BETA-2-MICROGLOBULIN



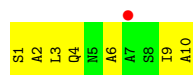
- Molecule 2: BETA-2-MICROGLOBULIN



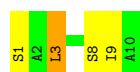
- Molecule 3: mycobacterial hsp60 decameric epitope



- Molecule 3: mycobacterial hsp60 decameric epitope

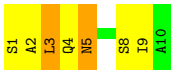


- Molecule 3: mycobacterial hsp60 decameric epitope



- Molecule 3: mycobacterial hsp60 decameric epitope





4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	129.28Å 123.00Å 150.83Å 90.00° 90.01° 90.00°	Depositor
Resolution (Å)	30.00 – 3.00 30.00 – 3.00	Depositor EDS
% Data completeness (in resolution range)	(Not available) (30.00-3.00) 94.9 (30.00-3.00)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	4.51 (at 3.00Å)	Xtriage
Refinement program	CNS 1.0	Depositor
R, R_{free}	0.246 , 0.307 0.246 , 0.305	Depositor DCC
R_{free} test set	1336 reflections (2.96%)	wwPDB-VP
Wilson B-factor (Å ²)	46.2	Xtriage
Anisotropy	0.137	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 61.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	0.003 for k,h,-l 0.000 for -k,-h,-l 0.000 for -h,-k,l	Xtriage
F_o, F_c correlation	0.90	EDS
Total number of atoms	12803	wwPDB-VP
Average B, all atoms (Å ²)	53.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 32.41 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 9.4413e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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

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

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	0.74	0/2331	1.07	10/3166 (0.3%)
1	C	0.73	0/2331	1.02	6/3166 (0.2%)
1	E	0.73	0/2331	1.05	10/3166 (0.3%)
1	G	0.71	1/2331 (0.0%)	1.05	11/3166 (0.3%)
2	B	0.96	0/847	1.19	5/1148 (0.4%)
2	D	0.85	0/847	1.12	5/1148 (0.4%)
2	F	0.77	1/847 (0.1%)	1.11	5/1148 (0.4%)
2	H	0.72	0/847	1.11	7/1148 (0.6%)
3	I	0.71	0/65	1.19	1/86 (1.2%)
3	J	0.67	0/65	1.20	1/86 (1.2%)
3	K	1.04	0/65	1.07	0/86
3	L	0.90	0/65	1.09	0/86
All	All	0.76	2/12972 (0.0%)	1.07	61/17600 (0.3%)

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	C	0	1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	7	ILE	CA-CB	-6.19	1.46	1.54
1	G	213	ILE	CA-CB	-5.04	1.52	1.55

All (61) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	249	VAL	N-CA-C	7.96	116.80	107.73
1	C	41	GLU	N-CA-C	-7.76	102.77	111.07
1	E	162	GLY	N-CA-C	7.40	116.94	110.21
1	E	110	LEU	N-CA-C	-7.04	106.59	114.62
1	G	41	GLU	N-CA-C	-6.88	103.70	111.07
1	G	249	VAL	N-CA-C	6.75	115.42	107.73
1	A	180	LEU	N-CA-C	-6.60	103.27	112.25
1	A	249	VAL	N-CA-C	6.60	115.25	107.73
1	A	56	GLY	CA-C-N	6.51	126.02	119.24
1	A	56	GLY	C-N-CA	6.51	126.02	119.24
2	B	46	ILE	CA-C-N	6.43	127.88	119.84
2	B	46	ILE	C-N-CA	6.43	127.88	119.84
1	E	41	GLU	N-CA-C	-6.43	104.19	111.14
1	A	25	VAL	CA-C-N	-6.36	117.79	122.18
1	A	25	VAL	C-N-CA	-6.36	117.79	122.18
2	D	40	LEU	N-CA-C	6.36	119.89	109.72
2	F	4	THR	CA-C-N	6.25	126.58	119.83
2	F	4	THR	C-N-CA	6.25	126.58	119.83
1	A	110	LEU	N-CA-C	-6.07	107.70	114.62
2	F	40	LEU	N-CA-C	6.03	119.37	109.85
1	E	249	VAL	N-CA-C	5.93	114.48	107.73
2	F	46	ILE	CA-C-N	5.91	127.23	119.84
2	F	46	ILE	C-N-CA	5.91	127.23	119.84
1	A	41	GLU	N-CA-C	-5.91	104.75	111.07
2	B	40	LEU	N-CA-C	5.80	119.00	109.72
2	H	40	LEU	N-CA-C	5.79	119.00	109.85
2	D	46	ILE	CA-C-N	5.73	127.00	119.84
2	D	46	ILE	C-N-CA	5.73	127.00	119.84
1	A	186	LYS	N-CA-C	-5.69	101.27	110.32
2	H	46	ILE	CA-C-N	5.67	126.92	119.84
2	H	46	ILE	C-N-CA	5.67	126.92	119.84
3	J	2	ALA	N-CA-C	5.65	118.03	110.35
2	B	76	ASP	N-CA-C	5.57	118.40	110.10
2	B	85	ASP	N-CA-C	5.55	117.33	111.28
1	G	12	VAL	N-CA-C	5.51	115.79	107.75
1	C	56	GLY	CA-C-N	5.50	126.72	119.84
1	C	56	GLY	C-N-CA	5.50	126.72	119.84
1	E	236	ALA	N-CA-C	-5.50	106.41	113.01
1	G	94	THR	N-CA-C	5.50	118.05	108.76
3	I	7	ALA	N-CA-C	-5.44	105.51	111.82
1	G	110	LEU	N-CA-C	-5.40	108.47	114.62
2	H	4	THR	CA-C-N	5.38	125.68	119.93
2	H	4	THR	C-N-CA	5.38	125.68	119.93

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	56	GLY	CA-C-N	5.34	126.51	119.84
1	G	56	GLY	C-N-CA	5.34	126.51	119.84
2	D	4	THR	CA-C-N	5.27	125.52	119.83
2	D	4	THR	C-N-CA	5.27	125.52	119.83
1	G	206	LEU	N-CA-C	5.22	117.76	109.50
1	A	211	ALA	N-CA-C	5.20	118.89	112.54
1	E	180	LEU	N-CA-C	-5.20	107.59	114.04
1	C	55	GLU	N-CA-C	5.17	119.56	112.68
1	E	187	ALA	N-CA-C	5.16	117.25	109.41
2	H	25	CYS	N-CA-C	-5.13	99.05	108.02
1	G	236	ALA	N-CA-C	-5.10	106.32	112.54
2	H	72	PRO	N-CA-C	5.05	118.81	111.03
1	G	77	SER	N-CA-C	-5.05	105.78	111.28
1	E	56	GLY	CA-C-N	5.03	126.13	119.84
1	E	56	GLY	C-N-CA	5.03	126.13	119.84
1	C	187	ALA	N-CA-C	5.03	117.05	109.41
1	E	11	ALA	N-CA-C	-5.03	99.91	108.26
1	G	187	ALA	N-CA-C	5.00	117.01	109.41

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	22	TYR	Sidechain

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	2264	0	2136	175	0
1	C	2264	0	2136	188	0
1	E	2264	0	2136	190	0
1	G	2264	0	2136	185	0
2	B	821	0	796	50	0
2	D	821	0	796	55	0
2	F	821	0	796	62	0
2	H	821	0	796	62	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	I	66	0	68	14	0
3	J	66	0	68	12	0
3	K	66	0	68	7	0
3	L	66	0	68	10	0
4	E	5	0	0	0	0
4	G	5	0	0	0	0
5	A	28	0	0	11	0
5	B	20	0	0	5	0
5	C	30	0	0	10	0
5	D	14	0	0	1	0
5	E	33	0	0	9	0
5	F	20	0	0	4	0
5	G	28	0	0	7	0
5	H	6	0	0	0	0
5	I	1	0	0	2	0
5	K	5	0	0	0	0
5	L	4	0	0	0	0
All	All	12803	0	12000	918	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 37.

All (918) 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:G:14:ARG:HH11	1:G:14:ARG:HB3	1.16	1.08
1:E:14:ARG:HH11	1:E:14:ARG:HB3	1.20	1.06
2:F:38:GLN:HE21	2:F:45:LYS:HD2	1.22	1.00
1:C:52:MET:HA	1:C:52:MET:HE3	1.44	1.00
2:H:38:GLN:HE21	2:H:45:LYS:HD2	1.24	0.99
2:B:38:GLN:HE21	2:B:45:LYS:HD2	1.25	0.96
2:D:38:GLN:HE21	2:D:45:LYS:HD2	1.29	0.93
1:G:52:MET:HE3	1:G:52:MET:HA	1.48	0.93
1:A:52:MET:HA	1:A:52:MET:HE3	1.49	0.93
1:C:4:SER:HB2	5:C:284:HOH:O	1.67	0.92
1:A:187:ALA:HB1	1:A:272:LEU:HD11	1.50	0.92
2:H:33:PRO:HG3	2:H:62:PHE:CE2	2.04	0.91
1:C:159:TYR:CE2	3:J:3:LEU:HB2	2.06	0.91
1:A:209:TYR:CD1	1:A:210:PRO:HA	2.05	0.91
1:G:8:PHE:CZ	1:G:98:MET:HE3	2.05	0.91
1:E:8:PHE:CZ	1:E:98:MET:HE3	2.07	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:144:ARG:HB3	1:A:144:ARG:HH11	1.37	0.89
1:G:28:VAL:HG23	1:G:179:LEU:HD21	1.55	0.89
1:G:187:ALA:HB1	1:G:272:LEU:HD11	1.55	0.88
1:C:202:ARG:HD3	1:C:246:SER:HB3	1.56	0.88
1:G:144:ARG:HH11	1:G:144:ARG:HB3	1.38	0.88
1:C:121:ARG:HH21	2:D:1:ILE:HB	1.38	0.88
1:E:144:ARG:HH11	1:E:144:ARG:HB3	1.39	0.87
1:E:52:MET:HE3	1:E:52:MET:HA	1.55	0.87
1:E:187:ALA:HB1	1:E:272:LEU:HD11	1.55	0.87
1:A:35:ARG:HB2	1:A:48:ARG:HD2	1.57	0.86
1:C:21:ARG:HE	1:C:39:ASP:CG	1.83	0.86
1:C:94:THR:HG22	5:C:283:HOH:O	1.75	0.86
1:A:21:ARG:HE	1:A:39:ASP:CG	1.84	0.85
1:C:121:ARG:NH2	2:D:1:ILE:HB	1.92	0.85
1:G:178:THR:HG23	1:G:179:LEU:HD12	1.57	0.85
1:E:202:ARG:HD3	1:E:246:SER:HB3	1.58	0.84
2:H:84:HIS:CD2	2:H:86:SER:H	1.96	0.84
1:C:144:ARG:HH11	1:C:144:ARG:HB3	1.44	0.83
1:C:187:ALA:HB1	1:C:272:LEU:HD11	1.62	0.82
1:G:35:ARG:HB2	1:G:48:ARG:HD2	1.58	0.82
1:C:194:ARG:HG3	1:C:194:ARG:HH11	1.44	0.82
1:C:117:ALA:HB2	2:D:60:TRP:CE2	2.13	0.82
1:E:233:THR:OG1	1:E:243:LYS:HE2	1.80	0.82
1:G:14:ARG:HB3	1:G:14:ARG:NH1	1.93	0.82
2:F:84:HIS:CD2	2:F:86:SER:H	1.98	0.82
1:G:121:ARG:NH2	2:H:1:ILE:HB	1.94	0.82
1:A:8:PHE:CZ	1:A:98:MET:HE3	2.15	0.81
1:C:209:TYR:CD1	1:C:210:PRO:HA	2.14	0.81
1:G:209:TYR:CD1	1:G:210:PRO:HA	2.15	0.81
1:C:8:PHE:CZ	1:C:98:MET:HE3	2.16	0.81
2:B:33:PRO:HG3	2:B:62:PHE:CE2	2.15	0.81
2:D:41:LYS:O	2:D:44:LYS:HG2	1.81	0.81
2:F:33:PRO:HG3	2:F:62:PHE:CE2	2.16	0.81
2:F:4:THR:HG23	2:F:87:MET:HE3	1.61	0.80
1:C:6:ARG:HD3	1:C:100:GLY:HA3	1.62	0.80
2:D:84:HIS:CD2	2:D:86:SER:H	1.98	0.80
1:G:73:TRP:CD1	3:L:9:ILE:HG22	2.17	0.79
1:A:159:TYR:CE2	3:I:3:LEU:HB2	2.17	0.79
1:E:35:ARG:HB2	1:E:48:ARG:HD2	1.62	0.79
1:E:73:TRP:NE1	3:K:9:ILE:HG22	1.97	0.79
1:E:14:ARG:HB3	1:E:14:ARG:NH1	1.96	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:233:THR:OG1	1:A:243:LYS:HE2	1.83	0.78
2:D:33:PRO:HG3	2:D:62:PHE:CE2	2.17	0.78
2:F:42:ASN:HA	2:F:77:THR:HG22	1.64	0.78
1:E:21:ARG:HE	1:E:39:ASP:CG	1.92	0.78
1:E:185:PRO:HD3	1:E:263:HIS:CD2	2.19	0.78
1:G:41:GLU:H	1:G:41:GLU:CD	1.92	0.78
1:G:159:TYR:CE2	3:L:3:LEU:HB2	2.18	0.78
1:C:35:ARG:HB2	1:C:48:ARG:HD2	1.66	0.77
1:A:72:GLN:HE22	1:A:75:ARG:HD3	1.50	0.77
1:E:73:TRP:CD1	3:K:9:ILE:HG22	2.18	0.77
1:E:159:TYR:CE2	3:K:3:LEU:HB2	2.19	0.77
1:E:209:TYR:CD1	1:E:210:PRO:HA	2.20	0.77
1:A:258:THR:HG22	1:A:273:ARG:HG3	1.66	0.76
2:B:4:THR:HG23	2:B:87:MET:HE3	1.68	0.76
2:H:41:LYS:O	2:H:44:LYS:HG2	1.84	0.76
1:G:202:ARG:HD3	1:G:246:SER:HB3	1.66	0.76
1:A:144:ARG:HB3	1:A:144:ARG:NH1	2.01	0.75
1:G:194:ARG:HG3	1:G:194:ARG:HH11	1.50	0.75
1:A:187:ALA:CB	1:A:272:LEU:HD11	2.16	0.75
1:G:111:ARG:HD3	1:G:113:TYR:OH	1.87	0.75
1:E:194:ARG:HG3	1:E:194:ARG:HH11	1.50	0.74
1:C:111:ARG:HD3	1:C:113:TYR:OH	1.86	0.74
1:E:121:ARG:NH2	2:F:1:ILE:HB	2.02	0.73
1:G:202:ARG:HG2	1:G:204:TRP:NE1	2.03	0.73
2:D:95:TRP:CD1	2:D:96:ASP:H	2.06	0.73
2:H:95:TRP:CD1	2:H:96:ASP:H	2.05	0.73
2:B:41:LYS:O	2:B:44:LYS:HG2	1.89	0.73
1:A:76:VAL:HG22	5:A:289:HOH:O	1.89	0.73
1:C:48:ARG:HH11	1:C:48:ARG:HG2	1.53	0.73
2:D:2:GLN:NE2	2:D:86:SER:HA	2.03	0.73
1:E:111:ARG:HD3	1:E:113:TYR:OH	1.89	0.72
1:A:194:ARG:HG3	1:A:194:ARG:HH11	1.53	0.72
1:C:258:THR:HG22	1:C:273:ARG:HG3	1.71	0.72
2:F:41:LYS:O	2:F:44:LYS:HG2	1.90	0.72
1:G:258:THR:HG22	1:G:273:ARG:HG3	1.69	0.72
2:H:2:GLN:NE2	2:H:86:SER:HA	2.05	0.71
1:C:17:LEU:HG	1:C:17:LEU:O	1.90	0.71
1:E:258:THR:HG22	1:E:273:ARG:HG3	1.70	0.71
1:C:185:PRO:HD3	1:C:263:HIS:CD2	2.24	0.71
1:A:41:GLU:CD	1:A:41:GLU:H	1.99	0.71
1:G:144:ARG:HB3	1:G:144:ARG:NH1	2.05	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:108:ARG:NE	5:E:291:HOH:O	2.23	0.71
1:C:138:MET:CE	1:C:141:GLN:HG3	2.20	0.70
1:C:48:ARG:HG2	1:C:48:ARG:NH1	2.07	0.70
1:E:66:LYS:HZ1	3:K:1:SER:HB2	1.56	0.70
2:B:2:GLN:NE2	2:B:86:SER:HA	2.06	0.70
1:C:41:GLU:CD	1:C:41:GLU:H	1.99	0.70
2:D:4:THR:HG23	2:D:87:MET:HE3	1.74	0.70
2:F:77:THR:HG23	2:F:77:THR:O	1.91	0.70
2:H:42:ASN:HA	2:H:77:THR:HG22	1.74	0.69
2:D:33:PRO:HG3	2:D:62:PHE:CZ	2.27	0.69
1:G:73:TRP:NE1	3:L:9:ILE:HG22	2.06	0.69
1:G:21:ARG:HE	1:G:39:ASP:CG	2.00	0.69
1:G:94:THR:HG22	5:G:284:HOH:O	1.91	0.69
1:G:185:PRO:HD3	1:G:263:HIS:CD2	2.28	0.69
1:A:45:TYR:CE1	1:A:67:ALA:HB2	2.28	0.69
1:G:233:THR:OG1	1:G:243:LYS:HE2	1.92	0.69
1:A:202:ARG:HG2	1:A:204:TRP:NE1	2.08	0.69
1:C:251:LEU:HD12	1:C:252:GLY:N	2.08	0.69
1:E:41:GLU:H	1:E:41:GLU:CD	1.98	0.69
1:E:176:ASN:OD1	1:E:180:LEU:HD11	1.91	0.69
1:G:66:LYS:NZ	3:L:1:SER:HB2	2.07	0.69
1:A:117:ALA:HB2	2:B:60:TRP:CE2	2.28	0.68
1:C:233:THR:OG1	1:C:243:LYS:HE2	1.93	0.68
1:G:176:ASN:HA	1:G:180:LEU:HG	1.75	0.68
1:E:229:GLU:O	1:E:245:ALA:HA	1.93	0.68
1:C:154:GLU:HA	5:C:286:HOH:O	1.93	0.68
1:G:229:GLU:O	1:G:245:ALA:HA	1.93	0.68
1:C:52:MET:HA	1:C:52:MET:CE	2.22	0.68
1:C:144:ARG:HB3	1:C:144:ARG:NH1	2.08	0.68
1:G:234:ARG:HE	2:H:8:GLN:HE22	1.42	0.68
1:C:144:ARG:O	1:C:148:GLU:HG3	1.93	0.68
1:G:187:ALA:CB	1:G:272:LEU:HD11	2.24	0.68
1:G:121:ARG:HH21	2:H:1:ILE:HB	1.58	0.67
1:E:72:GLN:HE22	1:E:75:ARG:HD3	1.59	0.67
1:G:102:ASP:OD2	1:G:113:TYR:HE2	1.78	0.67
1:E:144:ARG:HB3	1:E:144:ARG:NH1	2.07	0.67
1:C:107:TRP:CD2	1:E:269:PRO:HD3	2.30	0.67
1:C:111:ARG:HD3	1:C:113:TYR:CZ	2.30	0.67
1:E:202:ARG:HG2	1:E:204:TRP:NE1	2.10	0.67
1:G:254:GLU:HG2	1:G:274:TRP:HD1	1.59	0.67
1:A:202:ARG:HD3	1:A:246:SER:HB3	1.75	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:87:GLN:NE2	1:C:118:TYR:OH	2.27	0.67
1:E:251:LEU:HD12	1:E:252:GLY:N	2.10	0.66
1:A:144:ARG:HH11	1:A:144:ARG:CB	2.08	0.66
2:B:84:HIS:CD2	2:B:86:SER:H	2.12	0.66
1:C:21:ARG:NH1	1:C:23:ILE:HD11	2.11	0.66
1:G:14:ARG:HH21	2:H:34:HIS:CE1	2.13	0.66
1:E:31:LYS:HE3	5:E:297:HOH:O	1.95	0.66
1:E:66:LYS:NZ	3:K:1:SER:HB2	2.11	0.66
1:C:18:GLU:HG2	1:C:19:GLU:H	1.59	0.66
1:C:187:ALA:CB	1:C:272:LEU:HD11	2.25	0.66
1:A:102:ASP:OD2	1:A:113:TYR:HE2	1.79	0.66
1:C:138:MET:HE2	1:C:141:GLN:HG3	1.78	0.66
1:A:226:GLN:O	1:A:227:ASP:HB2	1.95	0.65
1:A:48:ARG:HG2	1:A:48:ARG:HH11	1.61	0.65
1:C:117:ALA:HB2	2:D:60:TRP:CZ2	2.30	0.65
1:C:202:ARG:HG2	1:C:204:TRP:NE1	2.11	0.65
1:A:17:LEU:O	1:A:17:LEU:HG	1.97	0.65
1:G:144:ARG:HH11	1:G:144:ARG:CB	2.08	0.65
1:A:52:MET:HA	1:A:52:MET:CE	2.24	0.65
1:G:195:SER:OG	1:G:198:GLU:HB2	1.96	0.65
1:A:111:ARG:HD3	1:A:113:TYR:OH	1.97	0.65
1:E:106:ASP:O	1:E:107:TRP:HB2	1.97	0.65
1:A:121:ARG:NH1	5:A:296:HOH:O	2.29	0.64
2:B:39:MET:HE3	2:B:49:VAL:HG13	1.79	0.64
1:E:254:GLU:HG2	1:E:274:TRP:HD1	1.62	0.64
1:A:106:ASP:OD2	1:A:108:ARG:HB2	1.98	0.64
1:E:111:ARG:HD3	1:E:113:TYR:CZ	2.32	0.64
2:F:42:ASN:HA	2:F:77:THR:CG2	2.28	0.64
1:E:195:SER:OG	1:E:198:GLU:HB2	1.97	0.64
2:F:33:PRO:HG3	2:F:62:PHE:CZ	2.33	0.64
1:G:35:ARG:CD	1:G:48:ARG:HE	2.10	0.64
1:G:45:TYR:CE1	1:G:67:ALA:HB2	2.33	0.64
3:I:6:ALA:HB1	5:I:11:HOH:O	1.97	0.64
1:A:48:ARG:HG2	1:A:48:ARG:NH1	2.12	0.64
1:A:63:GLU:OE1	3:I:1:SER:HA	1.97	0.64
1:C:191:HIS:CE1	1:C:199:VAL:HG21	2.33	0.64
1:A:106:ASP:O	1:A:107:TRP:HB2	1.97	0.63
1:E:6:ARG:HD3	1:E:100:GLY:HA3	1.80	0.63
1:A:117:ALA:HB2	2:B:60:TRP:CZ2	2.34	0.63
1:C:255:GLN:O	1:C:273:ARG:HD3	1.98	0.63
1:G:63:GLU:OE1	3:L:1:SER:HA	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:194:ARG:HB2	1:G:200:THR:HG23	1.81	0.63
1:A:194:ARG:HD2	1:A:194:ARG:O	1.97	0.63
1:A:229:GLU:HB2	1:A:246:SER:OG	1.97	0.63
1:C:138:MET:HE2	1:C:138:MET:HA	1.81	0.63
1:C:176:ASN:HB3	1:C:180:LEU:HD22	1.81	0.63
1:E:35:ARG:HD2	1:E:48:ARG:HE	1.63	0.63
1:G:202:ARG:HD2	1:G:244:TRP:CE3	2.34	0.63
1:A:75:ARG:HG2	1:A:75:ARG:HH11	1.63	0.63
1:A:195:SER:OG	1:A:198:GLU:HB2	1.98	0.63
1:G:194:ARG:HD2	1:G:194:ARG:O	1.98	0.63
2:B:39:MET:HE1	2:B:67:HIS:CA	2.29	0.63
1:E:63:GLU:OE1	3:K:1:SER:HA	1.97	0.63
2:H:77:THR:HG23	2:H:77:THR:O	1.97	0.63
1:A:159:TYR:CD2	3:I:3:LEU:HD13	2.33	0.63
1:A:185:PRO:HD2	1:A:266:LEU:HD13	1.81	0.63
1:C:79:ARG:HH11	1:C:79:ARG:HB3	1.64	0.63
1:C:106:ASP:O	1:C:107:TRP:HB2	1.98	0.63
1:E:21:ARG:NH1	1:E:23:ILE:HD11	2.14	0.63
1:G:173:LYS:HD2	5:G:290:HOH:O	1.97	0.63
2:D:39:MET:HE1	2:D:67:HIS:C	2.24	0.62
2:B:39:MET:HE1	2:B:67:HIS:C	2.24	0.62
2:H:33:PRO:HG3	2:H:62:PHE:CD2	2.34	0.62
1:A:175:GLY:O	1:A:179:LEU:HD12	1.99	0.62
2:H:42:ASN:OD1	2:H:76:ASP:HA	1.99	0.62
1:E:159:TYR:CD2	3:K:3:LEU:HD13	2.35	0.62
1:C:251:LEU:HD12	1:C:252:GLY:H	1.64	0.62
1:G:66:LYS:HZ1	3:L:1:SER:HB2	1.63	0.62
1:A:95:LEU:HD23	1:A:96:GLN:N	2.14	0.62
1:E:52:MET:HE2	1:E:55:GLU:HG2	1.82	0.62
1:E:117:ALA:HB2	2:F:60:TRP:CE2	2.34	0.62
2:H:95:TRP:CD1	2:H:96:ASP:N	2.68	0.62
1:E:144:ARG:HH11	1:E:144:ARG:CB	2.11	0.62
1:A:66:LYS:NZ	3:I:1:SER:HB2	2.15	0.62
1:C:52:MET:HE2	1:C:55:GLU:HG2	1.81	0.62
1:C:234:ARG:NH2	2:D:99:MET:OXT	2.33	0.61
1:A:79:ARG:HH11	1:A:79:ARG:HB3	1.65	0.61
1:E:187:ALA:CB	1:E:272:LEU:HD11	2.28	0.61
1:E:194:ARG:HD2	1:E:194:ARG:O	1.99	0.61
1:C:229:GLU:O	1:C:245:ALA:HA	2.00	0.61
1:G:52:MET:HA	1:G:52:MET:CE	2.27	0.61
2:F:36:GLU:HB2	2:F:83:LYS:HB3	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:48:ARG:HG2	1:G:48:ARG:HH11	1.66	0.61
1:A:66:LYS:HE2	3:I:2:ALA:HB3	1.82	0.61
1:C:185:PRO:HD2	1:C:266:LEU:HD13	1.82	0.61
2:D:95:TRP:CD1	2:D:96:ASP:N	2.68	0.61
2:H:36:GLU:HB2	2:H:83:LYS:HB3	1.83	0.61
1:A:83:GLY:HA2	5:A:297:HOH:O	2.00	0.61
1:E:194:ARG:HB2	1:E:200:THR:HG23	1.82	0.61
2:F:40:LEU:HD23	2:F:45:LYS:HA	1.81	0.61
2:H:39:MET:HE1	2:H:67:HIS:C	2.26	0.61
2:F:54:MET:HA	5:F:100:HOH:O	2.00	0.61
1:A:75:ARG:NH1	5:A:289:HOH:O	2.33	0.60
1:E:251:LEU:HD12	1:E:252:GLY:H	1.65	0.60
2:F:2:GLN:NE2	2:F:86:SER:HA	2.16	0.60
1:G:226:GLN:O	1:G:227:ASP:HB2	2.00	0.60
2:H:33:PRO:HG3	2:H:62:PHE:CZ	2.36	0.60
1:A:35:ARG:HD2	1:A:48:ARG:HE	1.65	0.60
1:C:75:ARG:HG2	1:C:75:ARG:HH11	1.66	0.60
1:C:194:ARG:HD2	1:C:194:ARG:O	2.01	0.60
1:E:216:THR:O	1:E:259:CYS:HA	2.01	0.60
1:E:234:ARG:HE	2:F:8:GLN:NE2	1.99	0.60
1:E:206:LEU:HD23	1:E:242:GLN:HB3	1.84	0.60
1:G:48:ARG:HG2	1:G:48:ARG:NH1	2.16	0.60
1:A:255:GLN:O	1:A:273:ARG:HD3	2.01	0.60
1:C:159:TYR:CD2	3:J:3:LEU:HD13	2.36	0.60
1:A:6:ARG:HD3	1:A:100:GLY:HA3	1.84	0.60
1:E:138:MET:HE2	1:E:141:GLN:HG3	1.83	0.60
1:A:18:GLU:HG2	1:A:19:GLU:H	1.67	0.60
1:A:251:LEU:HD12	1:A:252:GLY:N	2.17	0.60
2:B:33:PRO:HG3	2:B:62:PHE:CZ	2.37	0.60
1:C:254:GLU:HG2	1:C:274:TRP:HD1	1.66	0.60
1:E:226:GLN:O	1:E:227:ASP:HB2	2.02	0.60
1:E:48:ARG:HH11	1:E:48:ARG:HG2	1.67	0.60
1:G:178:THR:CG2	1:G:179:LEU:HD12	2.31	0.60
1:C:106:ASP:OD2	1:C:108:ARG:HB2	2.02	0.59
2:B:36:GLU:HB2	2:B:83:LYS:HB3	1.84	0.59
2:D:36:GLU:HB2	2:D:83:LYS:HB3	1.83	0.59
2:B:97:ARG:HD3	5:B:113:HOH:O	2.02	0.59
1:A:18:GLU:O	1:A:19:GLU:HB2	2.02	0.59
1:E:234:ARG:HD3	2:F:10:TYR:CZ	2.38	0.59
1:C:216:THR:O	1:C:259:CYS:HA	2.03	0.59
1:C:226:GLN:O	1:C:227:ASP:HB2	2.00	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:234:ARG:HE	2:F:8:GLN:HE22	1.50	0.59
1:G:111:ARG:HD3	1:G:113:TYR:CZ	2.37	0.59
2:D:57:SER:O	2:D:60:TRP:N	2.36	0.59
1:E:138:MET:CE	1:E:141:GLN:HG3	2.33	0.59
1:G:35:ARG:NH2	2:H:54:MET:O	2.34	0.59
2:B:39:MET:CE	2:B:49:VAL:HG13	2.32	0.59
2:B:95:TRP:CD1	2:B:96:ASP:H	2.20	0.59
2:H:40:LEU:HD11	2:H:81:ARG:NH1	2.17	0.59
1:A:52:MET:HE2	1:A:55:GLU:HG2	1.85	0.59
1:E:44:ARG:HA	1:E:64:THR:HG23	1.83	0.58
2:F:95:TRP:CD1	2:F:96:ASP:H	2.19	0.58
1:A:63:GLU:OE2	1:A:63:GLU:HA	2.02	0.58
1:G:23:ILE:HD12	2:H:54:MET:SD	2.43	0.58
1:C:99:SER:HA	1:C:113:TYR:O	2.02	0.58
1:C:243:LYS:HG2	1:C:244:TRP:N	2.17	0.58
1:G:185:PRO:HD2	1:G:266:LEU:HD13	1.85	0.58
2:H:38:GLN:NE2	2:H:45:LYS:HD2	2.07	0.58
1:A:202:ARG:HD2	1:A:244:TRP:CE3	2.38	0.58
1:C:50:PRO:O	1:C:53:GLU:HB2	2.03	0.58
1:G:35:ARG:HD2	1:G:48:ARG:HE	1.67	0.58
1:C:194:ARG:HG3	1:C:194:ARG:NH1	2.15	0.58
1:E:35:ARG:CD	1:E:48:ARG:HE	2.16	0.58
1:G:21:ARG:NH1	1:G:23:ILE:HD11	2.19	0.58
1:A:229:GLU:O	1:A:245:ALA:HA	2.03	0.58
1:E:202:ARG:HD2	1:E:244:TRP:CE3	2.38	0.58
1:G:6:ARG:HD3	1:G:100:GLY:HA3	1.85	0.58
1:A:33:PHE:CD2	1:A:34:VAL:HG13	2.38	0.58
1:E:104:GLY:CA	1:E:110:LEU:HD11	2.34	0.58
1:E:106:ASP:OD2	1:E:108:ARG:HB2	2.04	0.58
1:G:14:ARG:HH11	1:G:14:ARG:CB	2.03	0.58
1:G:138:MET:CE	1:G:141:GLN:HG3	2.34	0.58
1:E:48:ARG:HG2	1:E:48:ARG:NH1	2.19	0.57
1:E:75:ARG:HH11	1:E:75:ARG:HG2	1.69	0.57
1:C:76:VAL:HG13	1:C:79:ARG:NH2	2.19	0.57
1:G:75:ARG:HD2	5:G:302:HOH:O	2.04	0.57
1:E:79:ARG:HH11	1:E:79:ARG:HB3	1.68	0.57
1:G:10:THR:N	5:G:295:HOH:O	2.36	0.57
1:A:156:TYR:HE1	3:I:5:ASN:HA	1.68	0.57
1:E:121:ARG:HH21	2:F:1:ILE:HB	1.69	0.57
1:G:52:MET:HE2	1:G:55:GLU:HG2	1.85	0.57
1:G:260:ARG:HA	1:G:270:LEU:O	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:234:ARG:NH2	2:B:99:MET:OXT	2.37	0.57
1:C:63:GLU:HA	1:C:63:GLU:OE2	2.05	0.57
1:C:260:ARG:HA	1:C:270:LEU:O	2.05	0.57
2:D:39:MET:HE1	2:D:67:HIS:CA	2.35	0.57
1:A:87:GLN:NE2	1:A:118:TYR:OH	2.33	0.57
1:C:18:GLU:O	1:C:19:GLU:HB2	2.05	0.57
2:F:38:GLN:NE2	2:F:45:LYS:HD2	2.06	0.57
1:E:72:GLN:NE2	1:E:75:ARG:HD3	2.20	0.57
2:F:19:LYS:HE3	5:F:115:HOH:O	2.04	0.57
1:A:260:ARG:HA	1:A:270:LEU:O	2.04	0.57
2:H:40:LEU:HD11	2:H:81:ARG:HH12	1.69	0.57
2:H:27:VAL:HG21	2:H:37:ILE:CD1	2.35	0.57
1:A:35:ARG:CD	1:A:48:ARG:HE	2.18	0.56
1:C:144:ARG:HH11	1:C:144:ARG:CB	2.15	0.56
1:E:224:LEU:N	1:E:224:LEU:HD22	2.20	0.56
1:G:14:ARG:NH2	2:H:34:HIS:CE1	2.72	0.56
1:C:197:GLY:O	1:C:251:LEU:HB3	2.06	0.56
1:E:185:PRO:HD2	1:E:266:LEU:HD13	1.87	0.56
1:G:75:ARG:HG2	1:G:75:ARG:HH11	1.71	0.56
1:G:138:MET:HE2	1:G:141:GLN:HG3	1.88	0.56
1:G:181:ARG:HG2	1:G:181:ARG:NH1	2.20	0.56
1:G:216:THR:O	1:G:259:CYS:HA	2.05	0.56
1:G:234:ARG:HE	2:H:8:GLN:NE2	2.02	0.56
1:E:35:ARG:NH2	2:F:54:MET:O	2.38	0.56
1:E:45:TYR:CE1	1:E:67:ALA:HB2	2.40	0.56
1:G:243:LYS:HG2	1:G:244:TRP:N	2.21	0.56
1:A:243:LYS:HG2	1:A:244:TRP:N	2.19	0.56
1:G:194:ARG:HG3	1:G:194:ARG:NH1	2.20	0.56
1:A:251:LEU:HD12	1:A:252:GLY:H	1.69	0.56
2:D:40:LEU:HD23	2:D:45:LYS:HA	1.86	0.56
1:E:102:ASP:OD2	1:E:113:TYR:HE2	1.89	0.56
1:C:202:ARG:HD3	1:C:246:SER:CB	2.34	0.56
1:A:119:GLU:HA	5:B:101:HOH:O	2.06	0.56
1:E:52:MET:HA	1:E:52:MET:CE	2.32	0.56
1:E:194:ARG:HG3	1:E:194:ARG:NH1	2.21	0.56
1:E:268:GLU:HG2	5:E:308:HOH:O	2.06	0.55
1:G:129:ASP:O	1:G:130:LEU:HB2	2.06	0.55
1:G:255:GLN:O	1:G:273:ARG:HD3	2.06	0.55
1:A:129:ASP:O	1:A:130:LEU:HB2	2.05	0.55
2:H:39:MET:CE	2:H:49:VAL:HG13	2.36	0.55
1:G:191:HIS:CE1	1:G:199:VAL:HG21	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:216:THR:O	1:A:259:CYS:HA	2.07	0.55
2:F:84:HIS:HD2	2:F:86:SER:H	1.48	0.55
1:A:102:ASP:OD2	1:A:113:TYR:CE2	2.60	0.55
2:D:70:PHE:HA	5:D:107:HOH:O	2.05	0.55
1:E:14:ARG:HH11	1:E:14:ARG:CB	2.07	0.55
1:E:255:GLN:O	1:E:273:ARG:HD3	2.06	0.55
1:A:254:GLU:HG2	1:A:274:TRP:HD1	1.72	0.55
2:H:4:THR:HG23	2:H:87:MET:HE3	1.88	0.55
1:G:106:ASP:O	1:G:107:TRP:HB2	2.07	0.55
1:G:251:LEU:HD12	1:G:252:GLY:H	1.72	0.55
2:F:17:ASN:HA	2:F:72:PRO:O	2.07	0.54
1:A:10:THR:N	5:A:281:HOH:O	2.39	0.54
1:A:21:ARG:NH1	1:A:23:ILE:HD11	2.22	0.54
1:G:254:GLU:HG2	1:G:274:TRP:CD1	2.41	0.54
2:B:40:LEU:HD11	2:B:81:ARG:NH1	2.22	0.54
1:A:48:ARG:HH11	1:A:48:ARG:CG	2.21	0.54
1:C:185:PRO:HB3	1:C:208:PHE:HB3	1.89	0.54
1:C:194:ARG:HG2	1:C:248:VAL:HG12	1.89	0.54
1:G:32:GLU:OE2	1:G:35:ARG:HD2	2.08	0.54
3:I:3:LEU:HD12	3:I:4:GLN:H	1.71	0.54
1:A:61:GLU:OE2	1:A:61:GLU:HA	2.07	0.54
1:G:87:GLN:NE2	1:G:118:TYR:OH	2.32	0.54
1:A:185:PRO:HB3	1:A:208:PHE:HB3	1.90	0.54
1:C:104:GLY:CA	1:C:110:LEU:HD11	2.38	0.54
2:D:84:HIS:HD2	2:D:86:SER:H	1.54	0.54
1:E:135:ALA:HB1	1:E:140:ALA:CB	2.38	0.54
1:E:191:HIS:CE1	1:E:199:VAL:HG21	2.43	0.54
1:G:44:ARG:HG3	1:G:44:ARG:O	2.06	0.54
1:G:202:ARG:HG2	1:G:204:TRP:HE1	1.73	0.54
1:C:234:ARG:HE	2:D:8:GLN:HE22	1.54	0.54
1:E:243:LYS:HG2	1:E:244:TRP:N	2.22	0.54
1:E:267:PRO:HB2	5:E:308:HOH:O	2.07	0.54
2:F:39:MET:HE1	2:F:67:HIS:C	2.33	0.54
1:A:35:ARG:NH2	2:B:54:MET:O	2.41	0.54
1:A:185:PRO:HD3	1:A:263:HIS:CD2	2.43	0.54
2:B:38:GLN:NE2	2:B:45:LYS:HD2	2.09	0.54
2:H:50:GLU:O	2:H:66:ALA:HA	2.07	0.54
2:D:51:MET:SD	2:D:66:ALA:HB2	2.48	0.53
1:E:63:GLU:OE2	1:E:66:LYS:NZ	2.39	0.53
1:G:51:TRP:O	1:G:53:GLU:N	2.41	0.53
2:H:84:HIS:HD2	2:H:86:SER:H	1.51	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:177:ALA:O	1:A:178:THR:HB	2.08	0.53
1:C:194:ARG:NE	5:C:298:HOH:O	2.40	0.53
1:A:78:LEU:HD13	1:A:95:LEU:HB2	1.91	0.53
2:B:17:ASN:ND2	5:B:109:HOH:O	2.41	0.53
1:C:31:LYS:HE2	1:C:179:LEU:HD11	1.91	0.53
1:E:260:ARG:HA	1:E:270:LEU:O	2.08	0.53
2:D:39:MET:CE	2:D:49:VAL:HG13	2.38	0.53
2:D:72:PRO:HB3	2:D:95:TRP:CH2	2.43	0.53
1:E:231:VAL:CG2	2:F:8:GLN:NE2	2.71	0.53
1:G:50:PRO:O	1:G:53:GLU:HB2	2.09	0.53
1:C:49:ALA:O	1:C:50:PRO:C	2.52	0.53
1:C:129:ASP:O	1:C:131:LYS:HG3	2.08	0.53
1:E:254:GLU:HG2	1:E:274:TRP:CD1	2.43	0.53
1:G:33:PHE:CD2	1:G:34:VAL:HG13	2.44	0.53
2:B:33:PRO:HG3	2:B:62:PHE:CD2	2.44	0.53
1:C:194:ARG:HB2	1:C:200:THR:HG23	1.91	0.53
1:A:13:SER:O	1:A:92:SER:HA	2.08	0.52
1:E:191:HIS:NE2	1:E:199:VAL:HG11	2.24	0.52
1:G:61:GLU:OE2	1:G:61:GLU:HA	2.07	0.52
1:E:23:ILE:HD12	2:F:54:MET:SD	2.49	0.52
1:G:117:ALA:HB2	2:H:60:TRP:CE2	2.44	0.52
1:A:58:GLU:HG2	1:A:59:TYR:H	1.75	0.52
1:C:107:TRP:CE3	1:E:269:PRO:HD3	2.45	0.52
2:D:26:TYR:CE2	2:D:28:THR:HG21	2.44	0.52
1:G:219:LEU:HB3	1:G:224:LEU:HD21	1.90	0.52
1:C:266:LEU:HD21	1:C:270:LEU:HD12	1.90	0.52
1:A:50:PRO:O	1:A:53:GLU:HB2	2.10	0.52
2:H:40:LEU:HD23	2:H:45:LYS:HA	1.91	0.52
1:A:199:VAL:HG22	1:A:249:VAL:O	2.09	0.52
1:E:231:VAL:CG2	2:F:8:GLN:HE22	2.22	0.52
1:A:144:ARG:O	1:A:148:GLU:HG3	2.10	0.52
1:C:63:GLU:OE1	3:J:1:SER:HA	2.10	0.52
1:C:219:LEU:HB3	1:C:224:LEU:HD21	1.91	0.52
1:C:234:ARG:HE	2:D:8:GLN:NE2	2.07	0.52
1:G:224:LEU:N	1:G:224:LEU:HD22	2.25	0.52
1:G:251:LEU:HD12	1:G:252:GLY:N	2.25	0.52
1:A:187:ALA:HB1	1:A:272:LEU:CD1	2.34	0.51
1:A:194:ARG:HG3	1:A:194:ARG:NH1	2.23	0.51
1:E:14:ARG:HB2	1:E:17:LEU:HD23	1.92	0.51
2:F:39:MET:CE	2:F:49:VAL:HG13	2.39	0.51
1:G:28:VAL:HG23	1:G:28:VAL:O	2.08	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:219:LEU:O	1:E:222:GLU:HG2	2.10	0.51
1:G:8:PHE:CE2	1:G:98:MET:HE3	2.43	0.51
1:G:191:HIS:NE2	1:G:199:VAL:HG11	2.25	0.51
1:C:254:GLU:HG2	1:C:274:TRP:CD1	2.45	0.51
1:G:17:LEU:HD12	1:G:18:GLU:N	2.25	0.51
1:E:119:GLU:N	5:E:287:HOH:O	2.44	0.51
2:F:95:TRP:CD1	2:F:96:ASP:N	2.79	0.51
1:G:175:GLY:C	1:G:177:ALA:H	2.18	0.51
1:G:102:ASP:OD2	1:G:113:TYR:CE2	2.62	0.51
1:G:138:MET:HE2	1:G:138:MET:HA	1.93	0.51
1:C:10:THR:N	5:C:282:HOH:O	2.43	0.51
1:E:104:GLY:HA2	1:E:110:LEU:HD11	1.93	0.51
1:C:195:SER:OG	1:C:198:GLU:HB2	2.11	0.51
1:C:48:ARG:HH11	1:C:48:ARG:CG	2.17	0.51
1:C:183:ASP:HA	5:C:296:HOH:O	2.10	0.51
2:D:16:GLU:OE1	2:D:19:LYS:HB2	2.10	0.51
1:G:76:VAL:HG13	1:G:79:ARG:NH2	2.26	0.51
1:G:95:LEU:HD23	1:G:96:GLN:N	2.26	0.51
1:G:181:ARG:HG2	1:G:181:ARG:HH11	1.75	0.51
1:A:72:GLN:NE2	1:A:75:ARG:HD3	2.21	0.50
1:E:28:VAL:HG23	1:E:28:VAL:O	2.10	0.50
2:D:16:GLU:HB3	2:D:19:LYS:HE2	1.92	0.50
1:E:50:PRO:O	1:E:53:GLU:HB2	2.11	0.50
1:A:45:TYR:HE1	1:A:67:ALA:HB2	1.75	0.50
1:A:135:ALA:HB1	1:A:140:ALA:CB	2.41	0.50
1:A:166:GLU:OE2	5:A:305:HOH:O	2.19	0.50
1:C:35:ARG:HD2	1:C:48:ARG:HE	1.75	0.50
1:C:179:LEU:CD1	1:C:179:LEU:H	2.24	0.50
1:A:138:MET:CE	1:A:141:GLN:HG3	2.41	0.50
1:A:75:ARG:HG2	1:A:75:ARG:NH1	2.26	0.50
1:A:219:LEU:O	1:A:220:ASN:HB2	2.12	0.50
2:D:40:LEU:HD11	2:D:81:ARG:NH1	2.26	0.50
1:G:28:VAL:O	1:G:28:VAL:CG2	2.59	0.50
1:G:72:GLN:HE22	1:G:75:ARG:HD3	1.76	0.50
1:A:28:VAL:O	1:A:28:VAL:CG2	2.59	0.50
1:C:78:LEU:HD13	1:C:95:LEU:HB2	1.93	0.50
1:E:138:MET:HE1	1:E:141:GLN:HE21	1.77	0.50
1:A:58:GLU:HG2	1:A:59:TYR:N	2.27	0.50
1:A:28:VAL:O	1:A:28:VAL:HG23	2.11	0.50
1:A:194:ARG:HB2	1:A:200:THR:HG23	1.94	0.50
1:A:224:LEU:N	1:A:224:LEU:HD22	2.27	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:24:ASN:HB3	2:D:65:LEU:HD11	1.94	0.50
2:F:9:VAL:HG23	2:F:93:VAL:CG2	2.42	0.50
3:J:3:LEU:HD12	3:J:4:GLN:H	1.76	0.50
1:A:254:GLU:HG2	1:A:274:TRP:CD1	2.47	0.49
1:G:229:GLU:HB2	1:G:246:SER:OG	2.12	0.49
1:A:44:ARG:HA	1:A:64:THR:HG23	1.94	0.49
2:B:39:MET:HE1	2:B:67:HIS:HA	1.92	0.49
1:E:28:VAL:O	1:E:28:VAL:CG2	2.59	0.49
1:C:231:VAL:CG2	2:D:8:GLN:NE2	2.75	0.49
1:E:87:GLN:NE2	1:E:118:TYR:OH	2.36	0.49
1:G:135:ALA:HB1	1:G:140:ALA:CB	2.43	0.49
1:C:70:GLN:O	1:C:71:GLU:C	2.54	0.49
1:A:111:ARG:HD3	1:A:113:TYR:CZ	2.48	0.49
1:A:180:LEU:O	1:A:181:ARG:HG3	2.13	0.49
1:C:44:ARG:HA	1:C:64:THR:HG23	1.93	0.49
1:G:194:ARG:CB	1:G:200:THR:HG23	2.43	0.49
1:G:194:ARG:HG2	1:G:248:VAL:HG12	1.93	0.49
1:G:219:LEU:O	1:G:220:ASN:HB2	2.13	0.49
2:H:27:VAL:HG11	2:H:35:ILE:HD11	1.94	0.49
1:C:43:PRO:O	1:C:44:ARG:HB3	2.13	0.49
1:C:255:GLN:C	1:C:257:TYR:H	2.20	0.49
1:E:229:GLU:HB2	1:E:246:SER:OG	2.13	0.49
1:G:89:ALA:HA	5:G:307:HOH:O	2.12	0.49
2:H:51:MET:SD	2:H:66:ALA:HB2	2.52	0.49
1:A:156:TYR:CE1	3:I:5:ASN:HA	2.46	0.49
1:C:202:ARG:HG2	1:C:204:TRP:HE1	1.78	0.49
1:C:264:GLU:HG2	5:C:290:HOH:O	2.11	0.49
1:G:206:LEU:HD23	1:G:242:GLN:HB3	1.95	0.49
1:G:274:TRP:CE3	1:G:275:GLU:N	2.80	0.49
2:B:27:VAL:HG21	2:B:37:ILE:CD1	2.43	0.49
1:C:45:TYR:CE1	1:C:67:ALA:HB2	2.48	0.49
1:C:121:ARG:HH21	2:D:1:ILE:CB	2.20	0.49
1:E:103:LEU:HD13	1:E:107:TRP:O	2.13	0.49
2:F:26:TYR:CE2	2:F:28:THR:HG21	2.47	0.49
1:G:199:VAL:HG22	1:G:249:VAL:O	2.13	0.49
1:A:219:LEU:HB3	1:A:224:LEU:HD21	1.95	0.49
2:B:27:VAL:HG11	2:B:35:ILE:HD11	1.95	0.49
1:C:58:GLU:HG2	1:C:59:TYR:H	1.78	0.49
1:E:199:VAL:HG22	1:E:249:VAL:O	2.13	0.49
1:A:194:ARG:HG2	1:A:248:VAL:HG12	1.95	0.48
1:C:52:MET:HE2	1:C:55:GLU:CG	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:224:LEU:N	1:C:224:LEU:HD22	2.28	0.48
1:E:99:SER:HB3	1:E:114:LEU:HD23	1.95	0.48
2:H:39:MET:O	2:H:46:ILE:HG13	2.13	0.48
3:I:3:LEU:HD12	3:I:4:GLN:N	2.28	0.48
1:E:231:VAL:HG21	2:F:8:GLN:HE22	1.78	0.48
1:E:259:CYS:SG	1:E:272:LEU:HB2	2.53	0.48
1:G:47:PRO:HB3	1:G:60:TRP:CZ2	2.48	0.48
1:G:99:SER:HB3	1:G:114:LEU:HD23	1.95	0.48
2:B:95:TRP:CD1	2:B:96:ASP:N	2.80	0.48
1:E:113:TYR:HA	5:E:305:HOH:O	2.12	0.48
1:G:106:ASP:OD2	1:G:108:ARG:HB2	2.14	0.48
1:A:135:ALA:HB1	1:A:140:ALA:HB3	1.95	0.48
1:C:202:ARG:HD2	1:C:244:TRP:CE3	2.48	0.48
1:A:33:PHE:O	1:A:34:VAL:HG13	2.13	0.48
1:A:35:ARG:HB2	1:A:48:ARG:CD	2.37	0.48
2:B:84:HIS:HD2	2:B:86:SER:OG	1.96	0.48
1:C:194:ARG:NH1	1:C:194:ARG:CG	2.74	0.48
1:G:63:GLU:OE2	1:G:63:GLU:HA	2.14	0.48
1:A:33:PHE:C	1:A:34:VAL:HG13	2.39	0.48
1:A:57:PRO:O	1:A:58:GLU:C	2.55	0.48
1:C:79:ARG:NH1	1:C:79:ARG:CB	2.77	0.48
1:C:231:VAL:CG2	2:D:8:GLN:HE22	2.27	0.48
1:A:255:GLN:C	1:A:257:TYR:H	2.21	0.48
1:C:104:GLY:HA2	1:C:110:LEU:HD11	1.95	0.48
2:B:40:LEU:HD11	2:B:81:ARG:HH12	1.78	0.47
1:C:17:LEU:O	1:C:17:LEU:CG	2.61	0.47
1:C:57:PRO:O	1:C:58:GLU:C	2.57	0.47
1:C:58:GLU:HG2	1:C:59:TYR:N	2.30	0.47
1:G:79:ARG:HH11	1:G:79:ARG:HB3	1.78	0.47
1:G:115:GLN:NE2	5:G:283:HOH:O	2.47	0.47
1:E:129:ASP:O	1:E:130:LEU:HB2	2.13	0.47
2:F:21:ASN:HB3	2:F:70:PHE:CE1	2.49	0.47
1:G:48:ARG:HH11	1:G:48:ARG:CG	2.25	0.47
1:C:33:PHE:CD2	1:C:34:VAL:HG13	2.49	0.47
1:C:77:SER:HB3	3:J:10:ALA:HB3	1.95	0.47
1:C:174:ASN:O	1:C:175:GLY:O	2.32	0.47
1:E:202:ARG:HD3	1:E:246:SER:CB	2.39	0.47
1:G:234:ARG:HD3	2:H:10:TYR:CZ	2.50	0.47
1:E:63:GLU:OE2	1:E:63:GLU:HA	2.15	0.47
1:E:76:VAL:HG13	1:E:79:ARG:NH2	2.30	0.47
1:A:79:ARG:CB	1:A:79:ARG:NH1	2.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:234:ARG:HD3	2:B:10:TYR:CZ	2.49	0.47
1:A:237:GLY:HA3	5:B:100:HOH:O	2.14	0.47
1:C:75:ARG:HG2	1:C:75:ARG:NH1	2.28	0.47
1:C:259:CYS:SG	1:C:272:LEU:HB2	2.55	0.47
1:E:75:ARG:HG2	1:E:75:ARG:NH1	2.30	0.47
1:G:6:ARG:NH2	1:G:113:TYR:CD2	2.82	0.47
1:G:70:GLN:O	1:G:71:GLU:C	2.56	0.47
1:G:104:GLY:CA	1:G:110:LEU:HD11	2.45	0.47
1:G:144:ARG:O	1:G:148:GLU:HG3	2.15	0.47
1:A:191:HIS:CE1	1:A:199:VAL:HG21	2.50	0.47
1:A:218:GLN:NE2	1:A:260:ARG:NH1	2.63	0.47
2:D:39:MET:HE3	2:D:49:VAL:HG13	1.97	0.47
2:F:55:SER:N	5:F:100:HOH:O	2.45	0.47
1:A:43:PRO:O	1:A:44:ARG:HB3	2.15	0.47
1:A:47:PRO:HB3	1:A:60:TRP:CZ2	2.48	0.47
1:E:185:PRO:HB3	1:E:208:PHE:HB3	1.95	0.47
1:E:219:LEU:O	1:E:220:ASN:HB2	2.15	0.47
1:G:21:ARG:HE	1:G:39:ASP:CB	2.28	0.47
1:G:129:ASP:OD2	1:G:132:THR:OG1	2.25	0.47
1:C:51:TRP:C	1:C:53:GLU:N	2.73	0.46
1:E:194:ARG:CB	1:E:200:THR:HG23	2.46	0.46
1:G:32:GLU:CD	1:G:35:ARG:HH11	2.23	0.46
1:G:185:PRO:HB3	1:G:208:PHE:HB3	1.96	0.46
1:A:152:ALA:HB2	5:I:11:HOH:O	2.16	0.46
1:E:210:PRO:O	1:E:263:HIS:HE1	1.98	0.46
1:G:104:GLY:HA2	1:G:110:LEU:HD11	1.98	0.46
1:C:21:ARG:HE	1:C:39:ASP:CB	2.29	0.46
1:C:107:TRP:CE3	1:E:269:PRO:CD	2.98	0.46
1:C:173:LYS:HE2	1:E:268:GLU:OE1	2.15	0.46
1:E:10:THR:N	5:E:301:HOH:O	2.48	0.46
2:F:37:ILE:HB	2:F:51:MET:CE	2.45	0.46
1:E:51:TRP:O	1:E:53:GLU:N	2.49	0.46
1:E:78:LEU:HD13	1:E:95:LEU:HB2	1.97	0.46
1:E:138:MET:HE2	1:E:138:MET:HA	1.97	0.46
2:H:17:ASN:HA	2:H:72:PRO:HG2	1.97	0.46
1:C:6:ARG:NE	5:C:284:HOH:O	2.48	0.46
1:C:159:TYR:CZ	3:J:3:LEU:HB2	2.50	0.46
1:E:144:ARG:O	1:E:148:GLU:HG3	2.15	0.46
1:G:28:VAL:HG13	1:G:33:PHE:CD1	2.50	0.46
2:H:9:VAL:HG23	2:H:93:VAL:CG2	2.45	0.46
1:A:70:GLN:O	1:A:71:GLU:C	2.59	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:99:SER:HB3	1:A:114:LEU:HD23	1.98	0.46
1:C:3:HIS:HA	1:C:29:ASP:OD1	2.15	0.46
1:E:79:ARG:HB3	1:E:79:ARG:NH1	2.29	0.46
1:G:51:TRP:C	1:G:53:GLU:N	2.74	0.46
1:G:197:GLY:O	1:G:251:LEU:HB3	2.15	0.46
1:A:52:MET:O	1:A:52:MET:HG3	2.16	0.46
2:D:64:ILE:HG22	2:D:65:LEU:N	2.29	0.46
1:C:118:TYR:O	1:C:119:GLU:HB2	2.16	0.46
1:A:33:PHE:O	1:A:34:VAL:CG1	2.64	0.46
2:B:4:THR:CG2	2:B:87:MET:HE3	2.44	0.46
1:C:185:PRO:CA	1:C:208:PHE:HB3	2.45	0.46
2:F:16:GLU:HB3	2:F:19:LYS:HE2	1.98	0.46
1:C:73:TRP:CD1	3:J:9:ILE:HG22	2.50	0.46
1:C:141:GLN:HA	1:C:144:ARG:NH1	2.31	0.46
1:C:266:LEU:HD21	1:C:270:LEU:CD1	2.46	0.46
1:E:58:GLU:HG2	1:E:59:TYR:H	1.81	0.46
1:G:28:VAL:CG2	1:G:179:LEU:HD21	2.38	0.46
2:H:16:GLU:HB3	2:H:19:LYS:HE2	1.98	0.46
1:A:21:ARG:HE	1:A:39:ASP:CB	2.28	0.45
1:C:51:TRP:O	1:C:53:GLU:N	2.49	0.45
1:E:57:PRO:O	1:E:58:GLU:C	2.58	0.45
2:H:42:ASN:HA	2:H:77:THR:CG2	2.45	0.45
1:C:13:SER:O	1:C:92:SER:HA	2.17	0.45
1:C:77:SER:HB3	3:J:10:ALA:CB	2.46	0.45
1:C:269:PRO:HD3	1:E:107:TRP:CD2	2.51	0.45
1:C:36:PHE:CD1	1:C:36:PHE:C	2.94	0.45
2:D:9:VAL:HG23	2:D:93:VAL:CG2	2.46	0.45
2:H:72:PRO:HB3	2:H:95:TRP:CZ3	2.51	0.45
1:A:66:LYS:HZ1	3:I:1:SER:HB2	1.80	0.45
1:C:79:ARG:HB3	1:C:79:ARG:NH1	2.30	0.45
1:E:48:ARG:HH11	1:E:48:ARG:CG	2.29	0.45
1:E:61:GLU:HA	1:E:61:GLU:OE2	2.15	0.45
1:E:234:ARG:HD3	2:F:10:TYR:CE2	2.52	0.45
1:G:78:LEU:HD13	1:G:95:LEU:HB2	1.97	0.45
1:A:18:GLU:O	1:A:19:GLU:CB	2.64	0.45
1:A:192:HIS:HB2	1:A:200:THR:OG1	2.17	0.45
1:A:202:ARG:HD2	1:A:244:TRP:CD2	2.52	0.45
1:C:72:GLN:HE22	1:C:75:ARG:HD3	1.81	0.45
1:C:141:GLN:OE1	1:C:144:ARG:NH1	2.50	0.45
1:C:231:VAL:HG12	1:C:244:TRP:O	2.16	0.45
2:F:40:LEU:HD11	2:F:81:ARG:NH1	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:57:SER:O	2:H:60:TRP:N	2.46	0.45
1:A:138:MET:HE2	1:A:141:GLN:HG3	1.98	0.45
1:C:51:TRP:C	1:C:53:GLU:H	2.23	0.45
1:C:233:THR:HG1	1:C:243:LYS:HE2	1.82	0.45
1:E:58:GLU:HG2	1:E:59:TYR:N	2.30	0.45
1:E:219:LEU:HB3	1:E:224:LEU:HD21	1.97	0.45
1:G:75:ARG:HG2	1:G:75:ARG:NH1	2.32	0.45
1:G:99:SER:HA	1:G:113:TYR:O	2.16	0.45
1:A:99:SER:HA	1:A:113:TYR:O	2.17	0.45
1:A:264:GLU:C	1:A:266:LEU:H	2.25	0.45
1:C:102:ASP:OD2	1:C:113:TYR:HE2	2.00	0.45
1:E:14:ARG:HH21	2:F:34:HIS:CE1	2.34	0.45
1:E:36:PHE:CD1	1:E:36:PHE:C	2.95	0.45
1:E:189:VAL:HG12	1:E:190:THR:N	2.32	0.45
1:E:209:TYR:HA	1:E:210:PRO:C	2.42	0.45
1:G:45:TYR:HE1	1:G:67:ALA:HB2	1.80	0.45
1:G:176:ASN:HD22	1:G:180:LEU:HD21	1.81	0.45
2:H:39:MET:HE1	2:H:67:HIS:CA	2.47	0.45
1:A:37:ASP:OD1	1:A:39:ASP:HB2	2.16	0.45
1:C:42:ASN:HB3	5:C:289:HOH:O	2.16	0.45
1:C:135:ALA:HB1	1:C:140:ALA:CB	2.47	0.45
1:C:230:LEU:HB3	1:C:231:VAL:H	1.64	0.45
1:E:255:GLN:C	1:E:257:TYR:H	2.25	0.45
1:G:102:ASP:O	1:G:103:LEU:HD23	2.17	0.45
1:A:114:LEU:CD1	1:A:116:PHE:HE1	2.30	0.45
2:F:50:GLU:O	2:F:66:ALA:HA	2.15	0.45
1:G:209:TYR:HA	1:G:210:PRO:C	2.42	0.45
1:G:255:GLN:C	1:G:257:TYR:H	2.25	0.45
2:B:16:GLU:HB2	5:B:119:HOH:O	2.16	0.45
2:D:39:MET:HE1	2:D:67:HIS:HA	1.98	0.45
1:E:129:ASP:O	1:E:131:LYS:HG3	2.17	0.45
1:E:197:GLY:O	1:E:251:LEU:HB3	2.16	0.45
2:F:37:ILE:HB	2:F:51:MET:HE1	1.99	0.45
1:A:118:TYR:CD2	1:A:119:GLU:HG2	2.52	0.44
2:B:40:LEU:HD23	2:B:45:LYS:HA	1.99	0.44
2:D:96:ASP:C	2:D:96:ASP:OD1	2.60	0.44
1:E:99:SER:HA	1:E:113:TYR:O	2.16	0.44
1:G:58:GLU:OE1	1:G:58:GLU:N	2.49	0.44
1:A:51:TRP:O	1:A:53:GLU:N	2.51	0.44
2:B:89:GLU:HG3	2:B:90:PRO:HD2	1.99	0.44
1:E:194:ARG:HG2	1:E:248:VAL:HG12	1.97	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:27:VAL:HG21	2:H:37:ILE:HD11	1.98	0.44
2:B:4:THR:HA	2:B:5:PRO:HD2	1.85	0.44
2:B:26:TYR:CE2	2:B:28:THR:HG21	2.53	0.44
1:A:72:GLN:HE22	1:A:75:ARG:CD	2.26	0.44
1:G:51:TRP:C	1:G:53:GLU:H	2.24	0.44
1:G:159:TYR:CD2	3:L:3:LEU:HD13	2.53	0.44
1:G:219:LEU:O	1:G:222:GLU:HG2	2.17	0.44
1:A:231:VAL:HG21	2:B:8:GLN:HE22	1.83	0.44
2:B:57:SER:O	2:B:60:TRP:N	2.48	0.44
1:C:95:LEU:HD23	1:C:96:GLN:N	2.32	0.44
1:C:173:LYS:HG2	1:E:268:GLU:OE1	2.17	0.44
1:E:266:LEU:HD21	1:E:270:LEU:HG	1.98	0.44
1:G:35:ARG:HB2	1:G:48:ARG:CD	2.39	0.44
1:A:201:LEU:HD12	1:A:249:VAL:HG21	2.00	0.44
2:B:39:MET:O	2:B:46:ILE:HG13	2.17	0.44
2:B:50:GLU:HB2	2:B:67:HIS:CD2	2.53	0.44
2:D:50:GLU:O	2:D:66:ALA:HA	2.18	0.44
1:C:37:ASP:OD1	1:C:39:ASP:HB2	2.18	0.44
1:G:179:LEU:C	1:G:181:ARG:H	2.25	0.44
2:H:39:MET:HE3	2:H:49:VAL:HG13	1.98	0.44
1:A:6:ARG:NH1	5:A:294:HOH:O	2.51	0.44
1:A:28:VAL:HG13	1:A:33:PHE:CD1	2.53	0.44
1:C:191:HIS:HE1	1:C:199:VAL:HG21	1.79	0.44
1:E:5:MET:HE2	1:E:164:CYS:SG	2.58	0.44
1:E:28:VAL:HG13	1:E:33:PHE:CD1	2.53	0.44
1:G:181:ARG:HH11	1:G:181:ARG:CG	2.31	0.44
2:H:24:ASN:HB3	2:H:65:LEU:HD11	2.00	0.44
2:H:95:TRP:CG	2:H:96:ASP:N	2.85	0.44
1:A:219:LEU:O	1:A:222:GLU:HG2	2.17	0.44
1:E:244:TRP:CE3	1:E:244:TRP:O	2.71	0.44
2:F:89:GLU:HG3	2:F:90:PRO:HD2	2.00	0.44
1:A:58:GLU:OE1	1:A:58:GLU:N	2.45	0.43
1:E:194:ARG:NH1	1:E:194:ARG:CG	2.80	0.43
1:E:274:TRP:CE3	1:E:275:GLU:N	2.86	0.43
2:F:27:VAL:HG21	2:F:37:ILE:CD1	2.48	0.43
1:A:197:GLY:O	1:A:251:LEU:HB3	2.18	0.43
1:C:19:GLU:OE1	1:C:75:ARG:NE	2.49	0.43
2:D:41:LYS:O	2:D:44:LYS:HE2	2.18	0.43
2:H:16:GLU:O	2:H:17:ASN:C	2.61	0.43
1:C:108:ARG:HG3	1:E:262:TYR:CG	2.53	0.43
1:E:135:ALA:HB1	1:E:140:ALA:HB3	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:70:PHE:CD1	2:F:70:PHE:C	2.96	0.43
1:A:51:TRP:C	1:A:53:GLU:H	2.26	0.43
1:A:152:ALA:HB1	3:I:6:ALA:CB	2.48	0.43
1:C:155:HIS:CD2	3:J:6:ALA:HA	2.54	0.43
1:C:201:LEU:O	1:C:246:SER:HA	2.18	0.43
1:C:219:LEU:O	1:C:220:ASN:HB2	2.17	0.43
2:F:77:THR:O	2:F:77:THR:CG2	2.60	0.43
1:G:52:MET:HE2	1:G:55:GLU:CG	2.47	0.43
1:G:194:ARG:NH1	1:G:194:ARG:CG	2.79	0.43
1:A:79:ARG:HH11	1:A:79:ARG:CB	2.29	0.43
1:C:69:GLY:HA3	5:C:302:HOH:O	2.18	0.43
1:C:73:TRP:NE1	3:J:9:ILE:HG22	2.34	0.43
1:C:274:TRP:CE3	1:C:275:GLU:N	2.87	0.43
1:E:51:TRP:C	1:E:53:GLU:H	2.26	0.43
1:E:231:VAL:HG12	1:E:244:TRP:O	2.17	0.43
1:E:234:ARG:NH2	2:F:99:MET:OXT	2.51	0.43
2:H:59:ASP:O	2:H:60:TRP:HB2	2.17	0.43
1:C:234:ARG:HD3	2:D:10:TYR:CZ	2.54	0.43
1:E:19:GLU:HA	1:E:20:PRO:HD2	1.91	0.43
1:G:218:GLN:N	1:G:258:THR:O	2.43	0.43
2:H:21:ASN:HB3	2:H:70:PHE:CE1	2.53	0.43
1:A:15:PRO:HD3	1:A:91:GLY:O	2.19	0.43
1:C:229:GLU:HB2	1:C:246:SER:OG	2.18	0.43
2:D:16:GLU:O	2:D:17:ASN:C	2.61	0.43
1:A:51:TRP:C	1:A:53:GLU:N	2.77	0.43
1:E:176:ASN:OD1	1:E:180:LEU:HD21	2.18	0.43
1:E:244:TRP:CE3	1:E:244:TRP:C	2.97	0.43
2:F:96:ASP:C	2:F:96:ASP:OD1	2.62	0.43
2:H:37:ILE:HG12	2:H:82:VAL:HG22	2.01	0.43
2:B:15:PRO:HG3	2:B:97:ARG:HB2	2.01	0.43
1:C:192:HIS:HB2	1:C:200:THR:OG1	2.19	0.43
1:C:226:GLN:OE1	1:C:226:GLN:HA	2.19	0.43
1:C:260:ARG:HG3	1:C:262:TYR:OH	2.19	0.43
1:E:118:TYR:O	1:E:119:GLU:HB2	2.18	0.43
1:E:192:HIS:HB2	1:E:200:THR:OG1	2.19	0.43
1:C:66:LYS:NZ	3:J:1:SER:HB2	2.34	0.43
2:D:57:SER:O	2:D:58:LYS:C	2.62	0.43
2:F:50:GLU:HG3	2:F:67:HIS:CE1	2.54	0.43
1:G:138:MET:HE1	1:G:141:GLN:HE21	1.83	0.43
1:G:176:ASN:HA	1:G:180:LEU:CG	2.46	0.43
1:C:117:ALA:HB2	2:D:60:TRP:CD2	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:44:ARG:HA	1:G:64:THR:HG23	2.01	0.42
1:G:58:GLU:HG2	1:G:59:TYR:N	2.33	0.42
1:A:121:ARG:HB2	5:A:303:HOH:O	2.19	0.42
2:B:30:PHE:CE1	2:B:63:TYR:HA	2.54	0.42
2:B:96:ASP:CG	2:B:99:MET:HG2	2.44	0.42
1:C:17:LEU:O	1:C:18:GLU:O	2.37	0.42
2:F:16:GLU:OE1	2:F:19:LYS:HB2	2.20	0.42
2:F:20:PRO:O	2:F:21:ASN:HB2	2.19	0.42
1:G:234:ARG:NH1	1:G:242:GLN:OE1	2.52	0.42
1:A:115:GLN:NE2	5:A:282:HOH:O	2.48	0.42
1:A:141:GLN:HA	1:A:144:ARG:NH1	2.35	0.42
2:F:51:MET:SD	2:F:66:ALA:HB2	2.59	0.42
1:G:14:ARG:NH2	2:H:34:HIS:ND1	2.67	0.42
1:G:192:HIS:HB2	1:G:200:THR:OG1	2.19	0.42
1:A:17:LEU:O	1:A:18:GLU:O	2.37	0.42
2:D:20:PRO:O	2:D:21:ASN:HB2	2.18	0.42
2:F:15:PRO:HA	5:F:117:HOH:O	2.18	0.42
2:H:84:HIS:HD2	2:H:86:SER:OG	2.02	0.42
1:A:147:TRP:CD1	3:I:8:SER:HB3	2.54	0.42
1:A:194:ARG:NH1	1:A:194:ARG:CG	2.81	0.42
1:A:206:LEU:HD23	1:A:242:GLN:HB3	2.02	0.42
1:C:15:PRO:HD3	1:C:91:GLY:O	2.20	0.42
1:C:82:LEU:HD12	1:C:87:GLN:HB2	2.00	0.42
1:C:109:LEU:O	1:C:110:LEU:HD23	2.19	0.42
2:F:84:HIS:HD2	2:F:86:SER:OG	2.02	0.42
1:G:35:ARG:HD3	1:G:48:ARG:HE	1.84	0.42
1:G:191:HIS:HB2	1:G:274:TRP:CE2	2.54	0.42
1:G:219:LEU:CB	1:G:224:LEU:HD21	2.49	0.42
1:G:230:LEU:HD23	1:G:230:LEU:HA	1.91	0.42
1:C:18:GLU:O	1:C:19:GLU:CB	2.67	0.42
1:C:216:THR:OG1	1:C:260:ARG:HG2	2.19	0.42
2:D:47:PRO:HG2	2:D:48:LYS:H	1.85	0.42
1:E:51:TRP:C	1:E:53:GLU:N	2.75	0.42
1:E:216:THR:OG1	1:E:260:ARG:HG2	2.20	0.42
2:F:17:ASN:CG	2:F:97:ARG:HH12	2.27	0.42
1:G:43:PRO:O	1:G:44:ARG:HB3	2.19	0.42
1:G:44:ARG:O	1:G:45:TYR:C	2.61	0.42
1:G:231:VAL:HG12	1:G:244:TRP:O	2.20	0.42
1:A:219:LEU:N	1:A:224:LEU:HD21	2.34	0.42
1:E:72:GLN:NE2	5:E:299:HOH:O	2.52	0.42
2:B:50:GLU:O	2:B:66:ALA:HA	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:95:TRP:CG	2:D:96:ASP:N	2.87	0.42
1:A:63:GLU:O	1:A:64:THR:C	2.61	0.42
1:A:264:GLU:C	1:A:266:LEU:N	2.77	0.42
1:C:19:GLU:HA	1:C:20:PRO:HD2	1.89	0.42
1:C:185:PRO:CB	1:C:208:PHE:HB3	2.50	0.42
1:E:72:GLN:HE22	1:E:75:ARG:CD	2.28	0.42
2:B:50:GLU:HG3	2:B:67:HIS:CE1	2.55	0.42
1:C:182:THR:HB	1:C:209:TYR:O	2.20	0.42
1:E:16:GLY:O	1:E:17:LEU:HB2	2.20	0.42
1:E:133:TRP:HB2	1:E:144:ARG:HG3	2.02	0.42
1:E:185:PRO:CA	1:E:208:PHE:HB3	2.50	0.42
2:H:87:MET:HE1	2:H:91:LYS:HD3	2.01	0.42
2:B:51:MET:SD	2:B:66:ALA:HB2	2.59	0.41
1:C:107:TRP:CH2	1:E:268:GLU:HB3	2.55	0.41
2:D:41:LYS:O	2:D:42:ASN:HB2	2.18	0.41
1:E:8:PHE:HZ	1:E:98:MET:HE3	1.75	0.41
2:F:27:VAL:HG21	2:F:37:ILE:HD11	2.02	0.41
1:G:189:VAL:HG12	1:G:190:THR:N	2.35	0.41
2:H:30:PHE:CE1	2:H:63:TYR:HA	2.55	0.41
1:A:185:PRO:CA	1:A:208:PHE:HB3	2.49	0.41
1:A:219:LEU:CB	1:A:224:LEU:HD21	2.50	0.41
1:G:66:LYS:HE2	3:L:2:ALA:HB3	2.01	0.41
1:A:259:CYS:SG	1:A:272:LEU:HB2	2.60	0.41
1:C:170:ARG:HG3	1:C:171:TYR:N	2.32	0.41
1:C:206:LEU:HD23	1:C:242:GLN:HB3	2.01	0.41
2:D:64:ILE:CG2	2:D:65:LEU:N	2.83	0.41
1:E:201:LEU:O	1:E:246:SER:HA	2.20	0.41
1:G:37:ASP:OD1	1:G:39:ASP:HB2	2.20	0.41
2:D:7:ILE:HG22	2:D:8:GLN:N	2.36	0.41
1:E:49:ALA:O	1:E:50:PRO:C	2.63	0.41
1:E:82:LEU:HA	1:E:87:GLN:HE21	1.85	0.41
2:F:37:ILE:HG12	2:F:82:VAL:HG22	2.02	0.41
1:G:57:PRO:O	1:G:58:GLU:C	2.63	0.41
1:G:218:GLN:NE2	1:G:260:ARG:NH1	2.67	0.41
1:G:244:TRP:CE3	1:G:244:TRP:O	2.73	0.41
1:A:32:GLU:OE2	1:A:35:ARG:HD2	2.19	0.41
1:A:170:ARG:NE	5:A:285:HOH:O	2.53	0.41
1:A:201:LEU:O	1:A:246:SER:HA	2.20	0.41
1:C:231:VAL:HG21	2:D:8:GLN:HE22	1.85	0.41
1:E:43:PRO:O	1:E:44:ARG:HB3	2.19	0.41
1:E:191:HIS:HB2	1:E:274:TRP:CE2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:219:LEU:N	1:E:224:LEU:HD21	2.35	0.41
1:E:249:VAL:HG13	1:E:257:TYR:CE2	2.55	0.41
2:H:32:PRO:O	2:H:84:HIS:HE1	2.04	0.41
1:A:6:ARG:NH2	1:A:113:TYR:CD2	2.89	0.41
1:A:194:ARG:CB	1:A:200:THR:HG23	2.50	0.41
2:B:11:SER:HA	2:B:22:ILE:O	2.21	0.41
1:C:201:LEU:HD12	1:C:249:VAL:HG21	2.02	0.41
1:E:47:PRO:HB3	1:E:60:TRP:CZ2	2.55	0.41
1:E:234:ARG:HD3	2:F:10:TYR:CE1	2.55	0.41
1:E:234:ARG:NH1	1:E:242:GLN:OE1	2.50	0.41
1:G:108:ARG:NE	5:G:286:HOH:O	2.53	0.41
1:G:118:TYR:O	1:G:119:GLU:HB2	2.19	0.41
1:G:219:LEU:N	1:G:224:LEU:HD21	2.36	0.41
2:H:7:ILE:HD11	2:H:82:VAL:HB	2.02	0.41
3:L:4:GLN:O	3:L:5:ASN:C	2.64	0.41
1:E:267:PRO:HD2	5:E:308:HOH:O	2.19	0.41
2:F:39:MET:O	2:F:46:ILE:HG13	2.21	0.41
2:F:40:LEU:HD11	2:F:81:ARG:HH12	1.86	0.41
1:G:17:LEU:HD12	1:G:17:LEU:C	2.45	0.41
1:G:191:HIS:HE1	1:G:199:VAL:HG21	1.85	0.41
1:G:259:CYS:SG	1:G:272:LEU:HB2	2.60	0.41
1:A:103:LEU:HG	1:A:168:LEU:HD23	2.02	0.41
1:C:99:SER:HB3	1:C:114:LEU:HD23	2.01	0.41
1:C:107:TRP:CG	1:E:269:PRO:HD3	2.55	0.41
1:C:179:LEU:N	1:C:179:LEU:HD12	2.36	0.41
1:C:191:HIS:HB2	1:C:274:TRP:CZ2	2.55	0.41
1:C:261:VAL:HB	1:C:270:LEU:HB2	2.03	0.41
1:G:210:PRO:O	1:G:263:HIS:HE1	2.04	0.41
1:G:266:LEU:HA	1:G:267:PRO:HD3	1.96	0.41
1:A:49:ALA:O	1:A:50:PRO:C	2.63	0.41
1:A:155:HIS:CD2	3:I:6:ALA:HA	2.56	0.41
1:A:266:LEU:HD21	1:A:270:LEU:HG	2.03	0.41
2:B:71:THR:HA	2:B:72:PRO:HD2	1.91	0.41
1:C:111:ARG:CD	1:C:113:TYR:CZ	3.02	0.41
2:D:55:SER:O	2:D:62:PHE:HA	2.20	0.41
1:E:37:ASP:OD1	1:E:39:ASP:HB2	2.21	0.41
1:E:102:ASP:OD2	1:E:113:TYR:CE2	2.70	0.41
1:E:159:TYR:CD1	1:E:163:GLU:HB3	2.56	0.41
1:G:72:GLN:O	1:G:76:VAL:HG23	2.20	0.41
1:G:175:GLY:C	1:G:177:ALA:N	2.79	0.41
1:G:185:PRO:CA	1:G:208:PHE:HB3	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:3:LYS:HE2	2:H:3:LYS:HB3	1.89	0.41
1:C:219:LEU:O	1:C:222:GLU:HG2	2.21	0.41
1:E:95:LEU:HD23	1:E:96:GLN:N	2.36	0.41
1:E:191:HIS:HB2	1:E:274:TRP:CZ2	2.55	0.41
1:E:231:VAL:HG21	2:F:8:GLN:NE2	2.36	0.41
2:B:63:TYR:CD1	2:B:63:TYR:C	2.99	0.40
2:D:15:PRO:HG3	2:D:97:ARG:HB2	2.02	0.40
1:E:100:GLY:O	1:E:160:LEU:HD22	2.21	0.40
1:G:259:CYS:SG	1:G:259:CYS:O	2.79	0.40
1:A:6:ARG:HH21	1:A:102:ASP:CG	2.29	0.40
1:A:32:GLU:OE2	1:A:48:ARG:CD	2.70	0.40
1:A:36:PHE:CD1	1:A:36:PHE:C	2.99	0.40
1:C:219:LEU:CB	1:C:224:LEU:HD21	2.51	0.40
1:C:266:LEU:HD12	1:C:266:LEU:HA	1.97	0.40
1:E:79:ARG:NH1	1:E:79:ARG:CB	2.84	0.40
1:G:82:LEU:HD12	1:G:87:GLN:HB2	2.03	0.40
1:G:170:ARG:HG3	1:G:171:TYR:N	2.30	0.40
1:A:3:HIS:HA	1:A:29:ASP:OD1	2.21	0.40
1:A:90:GLY:HA2	5:A:286:HOH:O	2.20	0.40
1:C:179:LEU:CD1	1:C:179:LEU:N	2.83	0.40
1:E:10:THR:HG22	1:E:11:ALA:N	2.36	0.40
1:E:44:ARG:O	1:E:44:ARG:HG3	2.20	0.40
1:E:224:LEU:N	1:E:224:LEU:CD2	2.84	0.40
1:G:63:GLU:OE2	1:G:66:LYS:NZ	2.48	0.40
1:G:191:HIS:HB2	1:G:274:TRP:CZ2	2.56	0.40
2:H:26:TYR:CE2	2:H:28:THR:HG21	2.56	0.40
1:A:72:GLN:NE2	1:A:72:GLN:HA	2.34	0.40
2:B:2:GLN:HE21	2:B:2:GLN:HB2	1.71	0.40
1:C:28:VAL:O	1:C:28:VAL:CG2	2.69	0.40
1:C:138:MET:HE2	1:C:141:GLN:CG	2.49	0.40
1:C:138:MET:HE1	1:C:141:GLN:HG3	1.97	0.40
2:D:38:GLN:OE1	2:D:81:ARG:NH2	2.54	0.40
1:E:179:LEU:HG	1:E:179:LEU:O	2.22	0.40
1:E:259:CYS:SG	1:E:259:CYS:O	2.79	0.40
3:J:3:LEU:HD12	3:J:4:GLN:N	2.36	0.40
2:B:47:PRO:HG2	2:B:48:LYS:H	1.87	0.40
1:E:52:MET:HE2	1:E:55:GLU:CG	2.50	0.40
1:G:76:VAL:HG12	3:L:9:ILE:HD12	2.04	0.40
2:H:16:GLU:OE1	2:H:19:LYS:HB2	2.22	0.40
2:H:50:GLU:HG3	2:H:67:HIS:CE1	2.56	0.40
2:H:64:ILE:CG2	2:H:65:LEU:N	2.85	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	274/280 (98%)	236 (86%)	30 (11%)	8 (3%)	3	20
1	C	274/280 (98%)	238 (87%)	28 (10%)	8 (3%)	3	20
1	E	274/280 (98%)	243 (89%)	25 (9%)	6 (2%)	5	26
1	G	274/280 (98%)	239 (87%)	28 (10%)	7 (3%)	4	23
2	B	97/99 (98%)	83 (86%)	12 (12%)	2 (2%)	5	27
2	D	97/99 (98%)	85 (88%)	9 (9%)	3 (3%)	3	19
2	F	97/99 (98%)	86 (89%)	8 (8%)	3 (3%)	3	19
2	H	97/99 (98%)	81 (84%)	13 (13%)	3 (3%)	3	19
3	I	8/10 (80%)	7 (88%)	1 (12%)	0	100	100
3	J	8/10 (80%)	7 (88%)	1 (12%)	0	100	100
3	K	8/10 (80%)	7 (88%)	1 (12%)	0	100	100
3	L	8/10 (80%)	7 (88%)	0	1 (12%)	0	1
All	All	1516/1556 (97%)	1319 (87%)	156 (10%)	41 (3%)	4	22

All (41) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	178	THR
1	A	231	VAL
1	C	175	GLY
1	C	231	VAL
1	E	231	VAL
1	G	231	VAL
2	H	47	PRO
1	A	18	GLU
2	B	47	PRO

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Mol	Chain	Res	Type
1	C	18	GLU
2	D	47	PRO
1	E	17	LEU
2	F	47	PRO
1	G	17	LEU
1	G	52	MET
1	A	17	LEU
1	C	52	MET
1	E	178	THR
1	A	19	GLU
1	A	44	ARG
1	A	52	MET
1	A	195	SER
2	B	21	ASN
1	C	19	GLU
1	C	44	ARG
1	C	180	LEU
1	C	195	SER
2	D	21	ASN
1	E	52	MET
1	E	195	SER
1	G	44	ARG
1	G	180	LEU
1	G	195	SER
3	L	5	ASN
1	E	19	GLU
2	H	21	ASN
2	H	90	PRO
2	F	21	ASN
1	G	19	GLU
2	F	90	PRO
2	D	90	PRO

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	234/238 (98%)	219 (94%)	15 (6%)	16	48
1	C	234/238 (98%)	220 (94%)	14 (6%)	17	50
1	E	234/238 (98%)	217 (93%)	17 (7%)	13	42
1	G	234/238 (98%)	217 (93%)	17 (7%)	13	42
2	B	94/94 (100%)	91 (97%)	3 (3%)	34	67
2	D	94/94 (100%)	91 (97%)	3 (3%)	34	67
2	F	94/94 (100%)	90 (96%)	4 (4%)	26	60
2	H	94/94 (100%)	90 (96%)	4 (4%)	26	60
3	I	6/6 (100%)	5 (83%)	1 (17%)	2	12
3	J	6/6 (100%)	6 (100%)	0	100	100
3	K	6/6 (100%)	4 (67%)	2 (33%)	0	1
3	L	6/6 (100%)	4 (67%)	2 (33%)	0	1
All	All	1336/1352 (99%)	1254 (94%)	82 (6%)	17	49

All (82) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	31	LYS
1	A	39	ASP
1	A	41	GLU
1	A	48	ARG
1	A	52	MET
1	A	78	LEU
1	A	114	LEU
1	A	130	LEU
1	A	144	ARG
1	A	145	ARG
1	A	170	ARG
1	A	172	LEU
1	A	215	LEU
1	A	234	ARG
1	A	260	ARG
2	B	51	MET
2	B	77	THR
2	B	93	VAL
1	C	31	LYS
1	C	39	ASP
1	C	78	LEU
1	C	95	LEU

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Mol	Chain	Res	Type
1	C	114	LEU
1	C	128	GLU
1	C	130	LEU
1	C	144	ARG
1	C	170	ARG
1	C	172	LEU
1	C	179	LEU
1	C	215	LEU
1	C	234	ARG
1	C	260	ARG
2	D	51	MET
2	D	77	THR
2	D	93	VAL
1	E	14	ARG
1	E	18	GLU
1	E	31	LYS
1	E	39	ASP
1	E	41	GLU
1	E	48	ARG
1	E	52	MET
1	E	78	LEU
1	E	114	LEU
1	E	130	LEU
1	E	132	THR
1	E	144	ARG
1	E	170	ARG
1	E	172	LEU
1	E	215	LEU
1	E	234	ARG
1	E	260	ARG
2	F	51	MET
2	F	70	PHE
2	F	75	THR
2	F	93	VAL
1	G	14	ARG
1	G	17	LEU
1	G	18	GLU
1	G	31	LYS
1	G	39	ASP
1	G	41	GLU
1	G	48	ARG
1	G	78	LEU

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Mol	Chain	Res	Type
1	G	114	LEU
1	G	130	LEU
1	G	144	ARG
1	G	145	ARG
1	G	170	ARG
1	G	172	LEU
1	G	215	LEU
1	G	234	ARG
1	G	260	ARG
2	H	51	MET
2	H	70	PHE
2	H	75	THR
2	H	93	VAL
3	I	3	LEU
3	K	3	LEU
3	K	8	SER
3	L	3	LEU
3	L	8	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (60) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	42	ASN
1	A	72	GLN
1	A	87	GLN
1	A	115	GLN
1	A	127	ASN
1	A	174	ASN
1	A	176	ASN
1	A	188	HIS
1	A	191	HIS
1	A	218	GLN
2	B	2	GLN
2	B	8	GLN
2	B	34	HIS
2	B	38	GLN
2	B	84	HIS
1	C	42	ASN
1	C	65	GLN
1	C	72	GLN
1	C	86	ASN
1	C	87	GLN

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Mol	Chain	Res	Type
1	C	127	ASN
1	C	188	HIS
1	C	191	HIS
1	C	218	GLN
1	C	263	HIS
2	D	2	GLN
2	D	8	GLN
2	D	13	HIS
2	D	34	HIS
2	D	84	HIS
1	E	30	ASN
1	E	42	ASN
1	E	54	GLN
1	E	65	GLN
1	E	72	GLN
1	E	86	ASN
1	E	87	GLN
1	E	191	HIS
1	E	218	GLN
1	E	263	HIS
2	F	2	GLN
2	F	8	GLN
2	F	13	HIS
2	F	31	HIS
2	F	67	HIS
2	F	84	HIS
1	G	42	ASN
1	G	72	GLN
1	G	86	ASN
1	G	87	GLN
1	G	115	GLN
1	G	176	ASN
1	G	191	HIS
1	G	192	HIS
1	G	218	GLN
1	G	263	HIS
2	H	2	GLN
2	H	8	GLN
2	H	13	HIS
2	H	84	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

2 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
4	SO4	G	281	-	4,4,4	0.34	0	6,6,6	0.19	0
4	SO4	E	281	-	4,4,4	0.35	0	6,6,6	0.13	0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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	276/280 (98%)	0.48	19 (6%) 23 12	7, 49, 97, 102	0
1	C	276/280 (98%)	0.57	31 (11%) 10 6	15, 55, 101, 102	0
1	E	276/280 (98%)	0.26	15 (5%) 31 16	6, 48, 102, 102	0
1	G	276/280 (98%)	0.32	15 (5%) 31 16	5, 48, 102, 102	0
2	B	99/99 (100%)	-0.09	2 (2%) 65 41	5, 35, 74, 90	0
2	D	99/99 (100%)	0.20	5 (5%) 33 17	8, 45, 88, 101	0
2	F	99/99 (100%)	0.23	3 (3%) 52 30	16, 47, 88, 102	0
2	H	99/99 (100%)	0.93	19 (19%) 3 2	15, 70, 102, 102	0
3	I	10/10 (100%)	-0.08	0 100 100	22, 41, 54, 57	0
3	J	10/10 (100%)	0.33	1 (10%) 12 7	25, 43, 74, 96	0
3	K	10/10 (100%)	-0.42	0 100 100	14, 20, 33, 39	0
3	L	10/10 (100%)	0.15	0 100 100	20, 30, 47, 48	0
All	All	1540/1556 (98%)	0.37	110 (7%) 22 11	5, 48, 102, 102	0

All (110) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	135	ALA	6.9
2	F	1	ILE	5.3
1	A	180	LEU	4.9
1	E	177	ALA	4.5
1	G	249	VAL	3.9
1	E	249	VAL	3.9
2	H	78	TYR	3.9
1	C	217	TRP	3.8
1	C	254	GLU	3.8
1	C	178	THR	3.8
2	H	1	ILE	3.7

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Mol	Chain	Res	Type	RSRZ
1	C	219	LEU	3.6
2	D	16	GLU	3.4
1	C	276	PRO	3.3
1	C	251	LEU	3.3
1	C	253	LYS	3.3
1	E	179	LEU	3.3
2	H	96	ASP	3.3
1	A	179	LEU	3.2
2	H	77	THR	3.2
2	H	17	ASN	3.2
1	C	191	HIS	3.1
1	G	201	LEU	3.1
1	A	197	GLY	3.1
1	C	177	ALA	3.1
1	G	189	VAL	3.1
1	A	268	GLU	3.1
2	H	95	TRP	3.0
1	C	248	VAL	3.0
1	C	256	ASN	3.0
1	C	84	TYR	2.9
1	G	180	LEU	2.9
1	A	17	LEU	2.9
1	C	201	LEU	2.9
1	G	197	GLY	2.8
2	B	1	ILE	2.8
1	C	250	PRO	2.8
1	E	250	PRO	2.8
2	F	2	GLN	2.8
1	G	227	ASP	2.7
1	A	186	LYS	2.7
1	C	257	TYR	2.7
1	G	196	LYS	2.7
1	E	180	LEU	2.7
1	A	223	GLU	2.7
1	G	200	THR	2.7
2	D	31	HIS	2.7
2	H	98	ASP	2.6
1	G	217	TRP	2.6
1	A	86	ASN	2.5
2	H	15	PRO	2.5
1	C	179	LEU	2.5
1	C	216	THR	2.5

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Mol	Chain	Res	Type	RSRZ
1	E	247	VAL	2.5
1	E	254	GLU	2.5
1	C	274	TRP	2.5
1	A	266	LEU	2.4
1	A	276	PRO	2.4
1	C	17	LEU	2.4
2	D	69	GLU	2.4
1	E	201	LEU	2.4
1	A	92	SER	2.4
1	E	191	HIS	2.3
1	E	178	THR	2.3
2	H	21	ASN	2.3
1	C	82	LEU	2.3
2	H	20	PRO	2.3
2	F	4	THR	2.3
1	C	230	LEU	2.3
1	A	222	GLU	2.3
1	E	193	PRO	2.3
1	G	216	THR	2.3
1	C	185	PRO	2.3
1	G	276	PRO	2.3
2	D	1	ILE	2.3
1	E	186	LYS	2.3
2	H	19	LYS	2.3
2	H	16	GLU	2.2
1	C	1	GLY	2.2
3	J	7	ALA	2.2
2	H	75	THR	2.2
1	C	79	ARG	2.2
1	C	220	ASN	2.2
2	H	70	PHE	2.2
1	G	179	LEU	2.2
1	G	18	GLU	2.2
1	E	196	LYS	2.2
2	H	45	LYS	2.2
2	H	85	ASP	2.2
1	E	248	VAL	2.1
2	H	88	ALA	2.1
1	A	227	ASP	2.1
1	A	54	GLN	2.1
1	A	221	GLY	2.1
1	C	207	GLY	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	121	ARG	2.1
1	G	177	ALA	2.1
2	H	74	GLU	2.1
2	H	89	GLU	2.1
1	C	86	ASN	2.1
1	G	251	LEU	2.1
1	C	259	CYS	2.1
1	E	255	GLN	2.1
1	C	222	GLU	2.1
1	C	190	THR	2.0
1	C	267	PRO	2.0
2	D	19	LYS	2.0
1	A	184	SER	2.0
1	A	16	GLY	2.0
2	B	50	GLU	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](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
4	SO4	E	281	5/5	0.92	0.10	81,82,83,83	0
4	SO4	G	281	5/5	0.93	0.10	77,77,78,78	0

6.5 Other polymers [i](#)

There are no such residues in this entry.