



Full wwPDB X-ray Structure Validation Report ⓘ

Jan 31, 2016 – 11:03 PM GMT

PDB ID : 1WAC
Title : BACK-PRIMING MODE OF PHI6 RNA-DEPENDENT RNA POLYMERASE
Authors : Laurila, M.R.L.; Salgado, P.S.; Stuart, D.I.; Grimes, J.M.; Bamford, D.H.
Deposited on : 2004-10-26
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
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

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

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

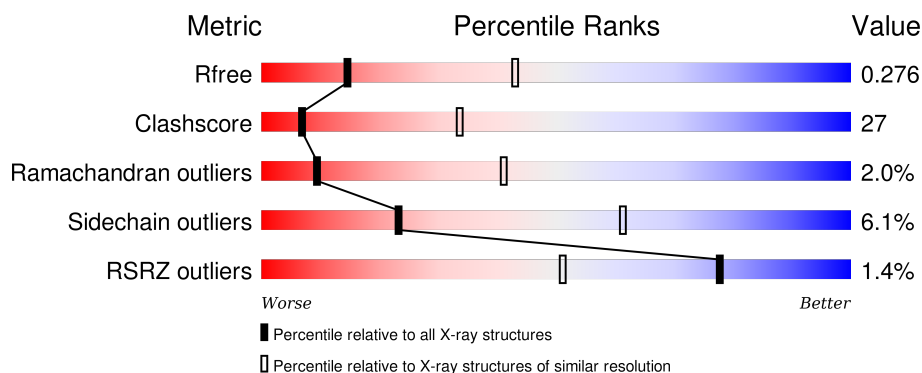
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.00 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}	91344	1578 (3.00-3.00)
Clashscore	102246	1912 (3.00-3.00)
Ramachandran outliers	100387	1853 (3.00-3.00)
Sidechain outliers	100360	1856 (3.00-3.00)
RSRZ outliers	91569	1592 (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 on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	662	<div> <div style="width: 100%; height: 10px; background: linear-gradient(to right, red 1%, orange 1%, yellow 56%, green 39%);"></div> <div style="display: flex; justify-content: space-between; width: 100%;"> 56% 39% </div> </div>
1	B	662	<div> <div style="width: 100%; height: 10px; background: linear-gradient(to right, red 2%, orange 1%, yellow 57%, green 38%);"></div> <div style="display: flex; justify-content: space-between; width: 100%;"> 57% 38% </div> </div>
1	C	662	<div> <div style="width: 100%; height: 10px; background: linear-gradient(to right, red 2%, orange 1%, yellow 56%, green 39%);"></div> <div style="display: flex; justify-content: space-between; width: 100%;"> 56% 39% </div> </div>

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 15693 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 P2 PROTEIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	662	Total	C	N	O	S	0	0	0
			5231	3316	909	974	32			
1	B	662	Total	C	N	O	S	0	0	0
			5231	3316	909	974	32			
1	C	662	Total	C	N	O	S	0	0	0
			5231	3316	909	974	32			

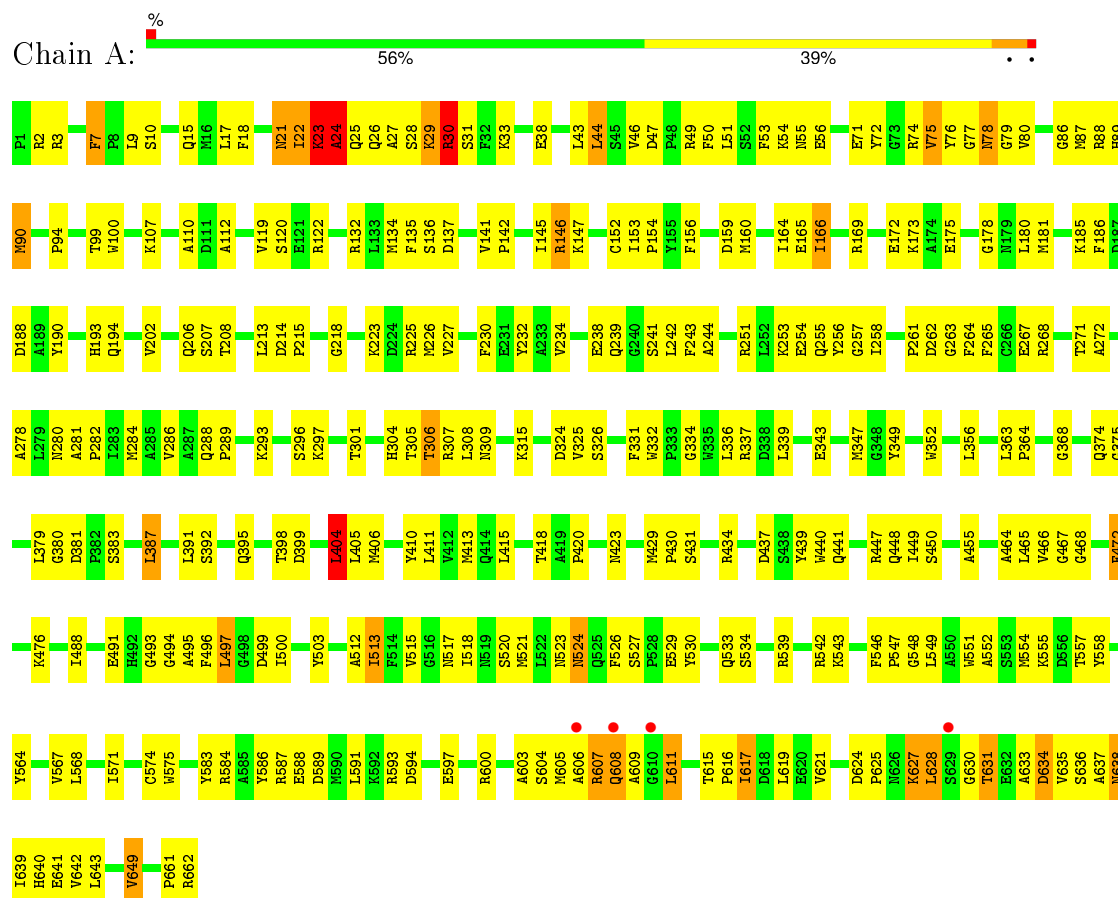
There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	456	MET	ILE	ENGINEERED MUTATION	UNP P11124
B	456	MET	ILE	ENGINEERED MUTATION	UNP P11124
C	456	MET	ILE	ENGINEERED MUTATION	UNP P11124

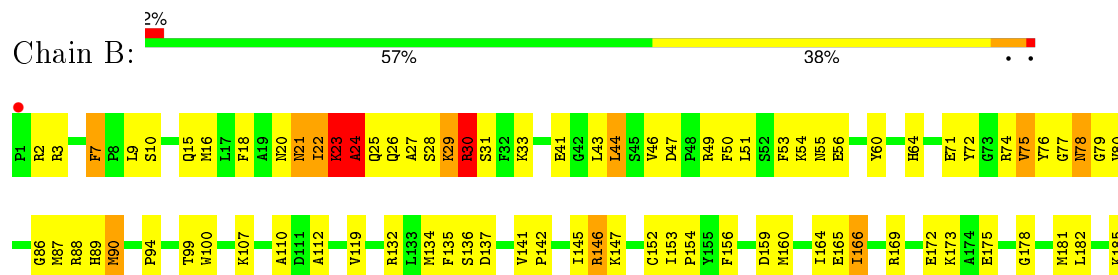
3 Residue-property plots

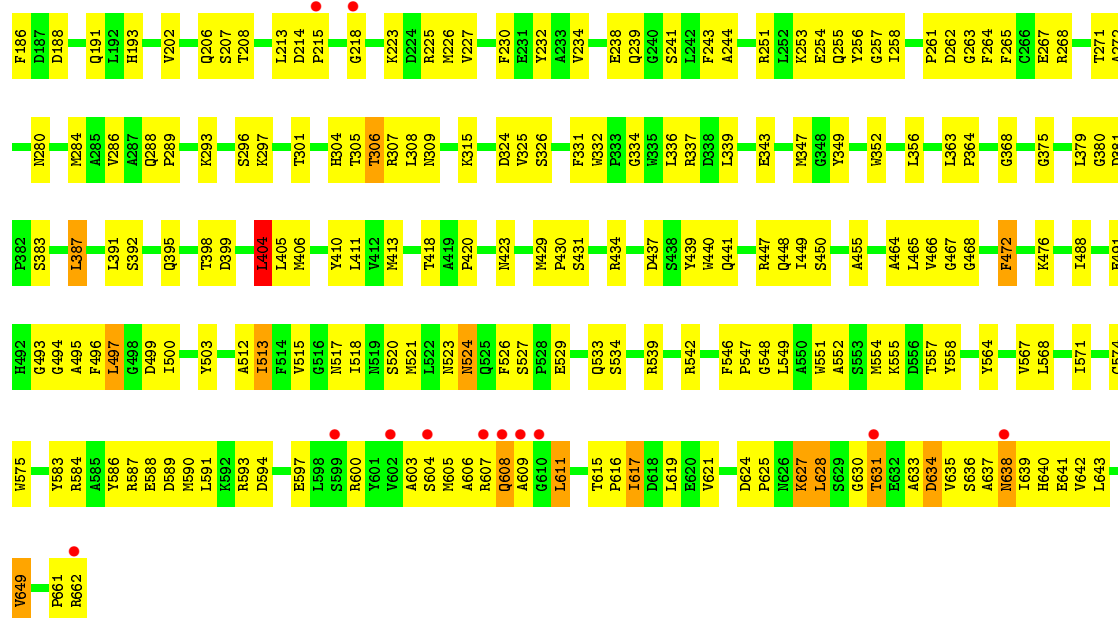
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according 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: P2 PROTEIN

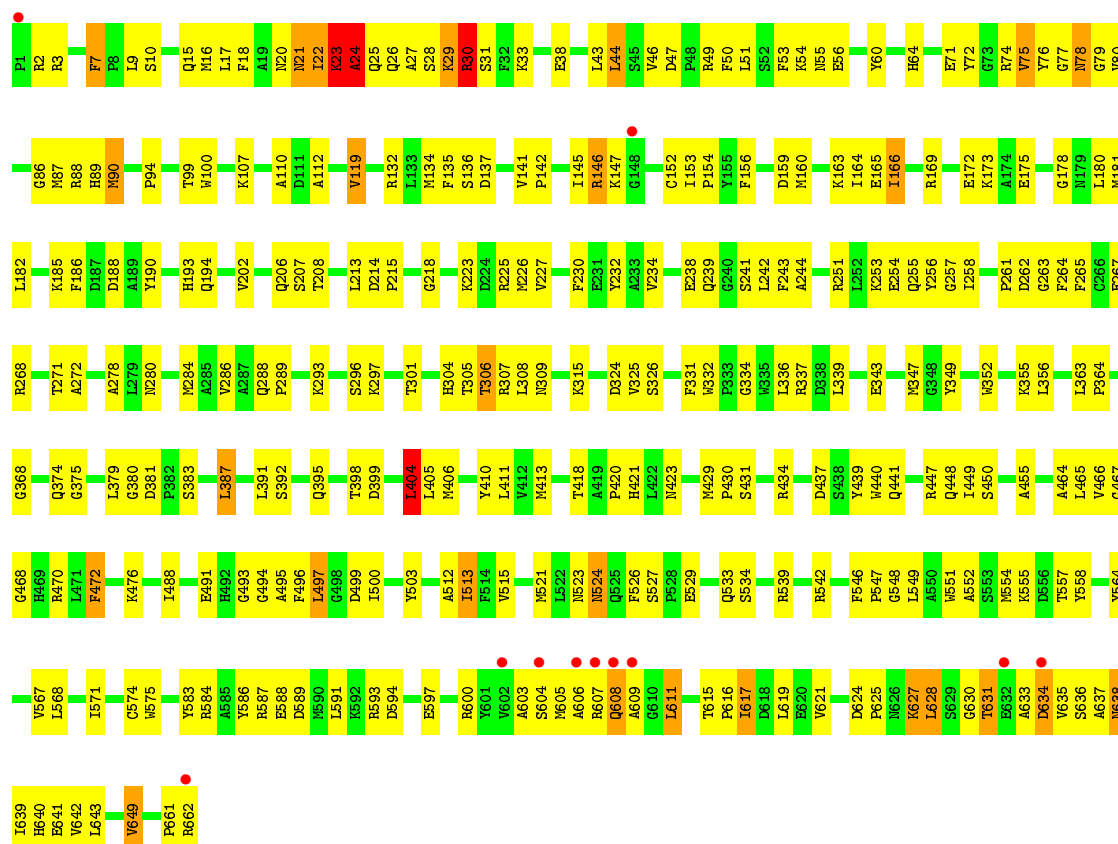


• Molecule 1: P2 PROTEIN





• Molecule 1: P2 PROTEIN



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	76.58Å 105.85Å 157.71Å 90.00° 98.86° 90.00°	Depositor
Resolution (Å)	20.00 – 3.00 29.33 – 2.90	Depositor EDS
% Data completeness (in resolution range)	99.2 (20.00-3.00) 99.0 (29.33-2.90)	Depositor EDS
R_{merge}	0.02	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.27 (at 2.90Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.241 , 0.280 0.238 , 0.276	Depositor DCC
R_{free} test set	2510 reflections (5.07%)	DCC
Wilson B-factor (Å ²)	37.7	Xtriage
Anisotropy	0.549	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 59.4	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Outliers	0 of 54739 reflections	Xtriage
F_o, F_c correlation	0.88	EDS
Total number of atoms	15693	wwPDB-VP
Average B, all atoms (Å ²)	35.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.54% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

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	0.72	2/5359 (0.0%)	0.83	3/7246 (0.0%)
1	B	0.72	2/5359 (0.0%)	0.83	3/7246 (0.0%)
1	C	0.72	2/5359 (0.0%)	0.83	3/7246 (0.0%)
All	All	0.72	6/16077 (0.0%)	0.83	9/21738 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	B	0	1
1	C	0	1
All	All	0	3

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	24	ALA	CA-CB	-10.24	1.30	1.52
1	A	24	ALA	CA-CB	-10.23	1.30	1.52
1	B	24	ALA	CA-CB	-10.23	1.30	1.52
1	B	27	ALA	CA-CB	-7.54	1.36	1.52
1	A	27	ALA	CA-CB	-7.53	1.36	1.52
1	C	27	ALA	CA-CB	-7.51	1.36	1.52

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	404	LEU	CA-CB-CG	5.55	128.06	115.30
1	C	404	LEU	CA-CB-CG	5.54	128.04	115.30
1	C	100	TRP	N-CA-C	-5.53	96.08	111.00
1	A	100	TRP	N-CA-C	-5.52	96.10	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	404	LEU	CA-CB-CG	5.52	127.99	115.30
1	B	100	TRP	N-CA-C	-5.52	96.11	111.00
1	C	493	GLY	N-CA-C	-5.28	99.89	113.10
1	A	493	GLY	N-CA-C	-5.28	99.91	113.10
1	B	493	GLY	N-CA-C	-5.27	99.92	113.10

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	21	ASN	Peptide
1	B	21	ASN	Peptide
1	C	21	ASN	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	5231	0	5133	277	19
1	B	5231	0	5133	275	19
1	C	5231	0	5133	296	0
All	All	15693	0	15399	829	19

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 27.

All (829) 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:B:20:ASN:OD1	1:C:119:VAL:CG2	1.73	1.35
1:B:20:ASN:OD1	1:C:119:VAL:HG21	1.29	1.22
1:B:169:ARG:NH2	1:C:470:ARG:NH1	1.92	1.17
1:A:122:ARG:NH2	1:C:20:ASN:ND2	1.97	1.13
1:C:600:ARG:HB2	1:C:600:ARG:NH1	1.68	1.09
1:B:600:ARG:NH1	1:B:600:ARG:HB2	1.68	1.08

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:600:ARG:HB2	1:A:600:ARG:NH1	1.68	1.08
1:A:364:PRO:HA	1:A:387:LEU:HD23	1.43	0.98
1:C:364:PRO:HA	1:C:387:LEU:HD23	1.43	0.98
1:B:364:PRO:HA	1:B:387:LEU:HD23	1.43	0.98
1:B:169:ARG:HH22	1:C:470:ARG:NH1	1.64	0.91
1:B:29:LYS:O	1:B:30:ARG:C	2.04	0.91
1:C:29:LYS:O	1:C:30:ARG:C	2.04	0.89
1:A:22:ILE:O	1:A:26:GLN:HG3	1.73	0.88
1:C:22:ILE:O	1:C:26:GLN:HG3	1.73	0.88
1:B:22:ILE:O	1:B:26:GLN:HG3	1.73	0.88
1:A:29:LYS:O	1:A:30:ARG:C	2.04	0.87
1:A:122:ARG:NH2	1:C:20:ASN:HD22	1.67	0.86
1:A:600:ARG:HB2	1:A:600:ARG:HH11	1.40	0.86
1:B:600:ARG:HH11	1:B:600:ARG:HB2	1.40	0.86
1:C:600:ARG:HB2	1:C:600:ARG:HH11	1.40	0.84
1:A:122:ARG:HH21	1:C:20:ASN:ND2	1.73	0.83
1:B:169:ARG:NH2	1:C:470:ARG:HH11	1.73	0.81
1:A:122:ARG:HH22	1:C:20:ASN:HD22	1.23	0.81
1:B:20:ASN:OD1	1:C:119:VAL:HG22	1.78	0.81
1:B:251:ARG:HH11	1:B:255:GLN:NE2	1.79	0.80
1:C:251:ARG:HH11	1:C:255:GLN:NE2	1.79	0.80
1:A:413:MET:HE1	1:A:488:ILE:HG13	1.62	0.80
1:B:413:MET:HE1	1:B:488:ILE:HG13	1.62	0.80
1:C:413:MET:HE1	1:C:488:ILE:HG13	1.63	0.79
1:A:251:ARG:HH11	1:A:255:GLN:NE2	1.79	0.79
1:B:29:LYS:O	1:B:30:ARG:O	2.01	0.78
1:B:46:VAL:HG12	1:B:90:MET:HE2	1.63	0.78
1:C:29:LYS:O	1:C:30:ARG:O	2.01	0.78
1:A:29:LYS:O	1:A:30:ARG:O	2.01	0.78
1:A:615:THR:HG22	1:A:616:PRO:HD2	1.66	0.78
1:B:9:LEU:HD21	1:B:28:SER:HB2	1.66	0.78
1:B:615:THR:HG22	1:B:616:PRO:HD2	1.66	0.77
1:C:206:GLN:OE1	1:C:206:GLN:HA	1.85	0.77
1:C:9:LEU:HD21	1:C:28:SER:HB2	1.66	0.77
1:A:9:LEU:HD21	1:A:28:SER:HB2	1.66	0.76
1:B:206:GLN:HA	1:B:206:GLN:OE1	1.85	0.76
1:A:46:VAL:HG12	1:A:90:MET:HE2	1.67	0.76
1:C:55:ASN:OD1	1:C:88:ARG:NH2	2.18	0.76
1:A:55:ASN:OD1	1:A:88:ARG:NH2	2.18	0.76
1:B:78:ASN:HD22	1:B:79:GLY:N	1.84	0.76
1:C:78:ASN:HD22	1:C:79:GLY:N	1.84	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:615:THR:HG22	1:C:616:PRO:HD2	1.66	0.75
1:A:226:MET:HE1	1:A:244:ALA:HB2	1.67	0.75
1:B:226:MET:HE1	1:B:244:ALA:HB2	1.67	0.75
1:A:78:ASN:HD22	1:A:79:GLY:N	1.84	0.75
1:B:307:ARG:HH22	1:B:557:THR:HA	1.50	0.75
1:B:169:ARG:HH22	1:C:470:ARG:HH11	1.31	0.75
1:C:307:ARG:HH22	1:C:557:THR:HA	1.50	0.74
1:A:206:GLN:OE1	1:A:206:GLN:HA	1.85	0.74
1:B:551:TRP:CZ3	1:B:587:ARG:HG3	2.23	0.74
1:A:551:TRP:CZ3	1:A:587:ARG:HG3	2.23	0.74
1:A:307:ARG:HH22	1:A:557:THR:HA	1.50	0.74
1:C:551:TRP:CZ3	1:C:587:ARG:HG3	2.23	0.74
1:A:251:ARG:HH11	1:A:255:GLN:HE22	1.35	0.74
1:B:55:ASN:OD1	1:B:88:ARG:NH2	2.18	0.74
1:C:251:ARG:HH11	1:C:255:GLN:HE22	1.35	0.74
1:C:539:ARG:HG2	1:C:542:ARG:NH1	2.03	0.74
1:B:539:ARG:HG2	1:B:542:ARG:NH1	2.03	0.73
1:A:539:ARG:HG2	1:A:542:ARG:NH1	2.03	0.73
1:B:169:ARG:HH21	1:C:470:ARG:NH1	1.87	0.72
1:C:78:ASN:ND2	1:C:80:VAL:H	1.87	0.72
1:C:226:MET:HE1	1:C:244:ALA:HB2	1.70	0.72
1:C:539:ARG:HG2	1:C:542:ARG:HH11	1.55	0.72
1:C:392:SER:O	1:C:398:THR:HG21	1.90	0.72
1:B:78:ASN:ND2	1:B:80:VAL:H	1.87	0.71
1:B:539:ARG:HG2	1:B:542:ARG:HH11	1.55	0.71
1:A:78:ASN:ND2	1:A:80:VAL:H	1.87	0.71
1:A:392:SER:O	1:A:398:THR:HG21	1.90	0.71
1:B:251:ARG:HH11	1:B:255:GLN:HE22	1.35	0.70
1:C:600:ARG:CZ	1:C:600:ARG:HB2	2.21	0.70
1:A:600:ARG:HB2	1:A:600:ARG:CZ	2.21	0.70
1:B:392:SER:O	1:B:398:THR:HG21	1.90	0.70
1:C:46:VAL:HG12	1:C:90:MET:HE2	1.74	0.70
1:A:31:SER:O	1:A:33:LYS:HD2	1.92	0.70
1:B:207:SER:HA	1:B:267:GLU:HG2	1.74	0.70
1:B:31:SER:O	1:B:33:LYS:HD2	1.92	0.70
1:C:46:VAL:HG12	1:C:90:MET:CE	2.22	0.70
1:B:600:ARG:HB2	1:B:600:ARG:CZ	2.21	0.69
1:A:46:VAL:HG12	1:A:90:MET:CE	2.22	0.69
1:B:46:VAL:HG12	1:B:90:MET:CE	2.22	0.69
1:B:286:VAL:C	1:B:289:PRO:HD2	2.13	0.69
1:A:22:ILE:HG22	1:A:23:LYS:N	2.08	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:296:SER:OG	1:B:297:LYS:N	2.26	0.69
1:A:142:PRO:HD3	1:A:649:VAL:HG13	1.75	0.69
1:B:134:MET:HE3	1:B:404:LEU:HD22	1.74	0.69
1:C:305:THR:H	1:C:309:ASN:HD22	1.40	0.69
1:B:142:PRO:HD3	1:B:649:VAL:HG13	1.75	0.69
1:B:305:THR:H	1:B:309:ASN:HD22	1.40	0.69
1:C:22:ILE:HG22	1:C:23:LYS:N	2.08	0.68
1:A:539:ARG:HG2	1:A:542:ARG:HH11	1.55	0.68
1:A:134:MET:HE3	1:A:404:LEU:HD22	1.74	0.68
1:C:142:PRO:HD3	1:C:649:VAL:HG13	1.75	0.68
1:A:637:ALA:HA	1:A:640:HIS:ND1	2.09	0.68
1:C:207:SER:HA	1:C:267:GLU:HG2	1.74	0.68
1:C:31:SER:O	1:C:33:LYS:HD2	1.92	0.68
1:A:286:VAL:C	1:A:289:PRO:HD2	2.13	0.68
1:B:606:ALA:HB3	1:B:609:ALA:HB2	1.76	0.68
1:C:286:VAL:C	1:C:289:PRO:HD2	2.13	0.68
1:A:606:ALA:HB3	1:A:609:ALA:HB2	1.76	0.68
1:B:22:ILE:HG22	1:B:23:LYS:N	2.07	0.68
1:A:546:PHE:HB2	1:A:549:LEU:HD12	1.76	0.68
1:C:637:ALA:HA	1:C:640:HIS:ND1	2.09	0.68
1:C:546:PHE:HB2	1:C:549:LEU:HD12	1.76	0.68
1:B:600:ARG:HH11	1:B:600:ARG:CB	2.08	0.67
1:A:600:ARG:CB	1:A:600:ARG:HH11	2.08	0.67
1:C:600:ARG:HH11	1:C:600:ARG:CB	2.08	0.67
1:A:207:SER:HA	1:A:267:GLU:HG2	1.74	0.67
1:B:661:PRO:O	1:B:662:ARG:HG3	1.95	0.67
1:C:606:ALA:O	1:C:608:GLN:N	2.28	0.67
1:C:141:VAL:HB	1:C:142:PRO:HD2	1.77	0.66
1:B:637:ALA:HA	1:B:640:HIS:ND1	2.09	0.66
1:C:296:SER:OG	1:C:297:LYS:N	2.26	0.66
1:A:141:VAL:HB	1:A:142:PRO:HD2	1.77	0.66
1:A:305:THR:H	1:A:309:ASN:HD22	1.40	0.66
1:C:606:ALA:HB3	1:C:609:ALA:HB2	1.76	0.66
1:B:628:LEU:HD11	1:B:634:ASP:OD2	1.96	0.66
1:B:546:PHE:HB2	1:B:549:LEU:HD12	1.76	0.66
1:A:628:LEU:HD11	1:A:634:ASP:OD2	1.96	0.65
1:C:23:LYS:O	1:C:25:GLN:N	2.30	0.65
1:A:661:PRO:O	1:A:662:ARG:HG3	1.95	0.65
1:A:23:LYS:O	1:A:25:GLN:N	2.30	0.65
1:B:141:VAL:HB	1:B:142:PRO:HD2	1.77	0.65
1:B:160:MET:O	1:B:164:ILE:HG12	1.97	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:628:LEU:HD11	1:C:634:ASP:OD2	1.96	0.65
1:A:534:SER:HA	1:A:542:ARG:NH2	2.12	0.65
1:C:214:ASP:OD1	1:C:215:PRO:HD2	1.97	0.65
1:C:661:PRO:O	1:C:662:ARG:HG3	1.95	0.65
1:A:21:ASN:OD1	1:A:22:ILE:N	2.30	0.65
1:A:437:ASP:O	1:A:441:GLN:HG3	1.97	0.65
1:B:21:ASN:OD1	1:B:22:ILE:N	2.30	0.65
1:C:391:LEU:HD22	1:C:398:THR:HG22	1.79	0.65
1:A:296:SER:OG	1:A:297:LYS:N	2.26	0.65
1:B:534:SER:HA	1:B:542:ARG:NH2	2.12	0.65
1:C:160:MET:O	1:C:164:ILE:HG12	1.97	0.65
1:A:306:THR:HG22	1:A:308:LEU:N	2.12	0.64
1:B:23:LYS:O	1:B:25:GLN:N	2.30	0.64
1:C:21:ASN:OD1	1:C:22:ILE:N	2.30	0.64
1:A:214:ASP:OD1	1:A:215:PRO:HD2	1.97	0.64
1:C:306:THR:HG22	1:C:308:LEU:N	2.12	0.64
1:B:214:ASP:OD1	1:B:215:PRO:HD2	1.97	0.64
1:C:637:ALA:HA	1:C:640:HIS:CE1	2.33	0.64
1:C:603:ALA:C	1:C:605:MET:H	2.01	0.64
1:A:160:MET:O	1:A:164:ILE:HG12	1.97	0.64
1:B:606:ALA:O	1:B:608:GLN:N	2.28	0.64
1:B:603:ALA:C	1:B:605:MET:H	2.01	0.64
1:B:437:ASP:O	1:B:441:GLN:HG3	1.97	0.64
1:B:637:ALA:HA	1:B:640:HIS:CE1	2.33	0.64
1:A:185:LYS:HB3	1:A:188:ASP:HB2	1.79	0.64
1:A:391:LEU:HD22	1:A:398:THR:HG22	1.79	0.64
1:C:437:ASP:O	1:C:441:GLN:HG3	1.97	0.63
1:B:185:LYS:HB3	1:B:188:ASP:HB2	1.79	0.63
1:C:534:SER:HA	1:C:542:ARG:NH2	2.12	0.63
1:B:306:THR:HG22	1:B:308:LEU:N	2.12	0.63
1:A:286:VAL:O	1:A:289:PRO:HD2	1.99	0.63
1:B:251:ARG:O	1:B:255:GLN:HG3	1.99	0.62
1:C:185:LYS:HB3	1:C:188:ASP:HB2	1.79	0.62
1:A:603:ALA:C	1:A:605:MET:H	2.01	0.62
1:A:606:ALA:O	1:A:608:GLN:N	2.28	0.62
1:A:251:ARG:O	1:A:255:GLN:HG3	1.99	0.62
1:B:391:LEU:HD22	1:B:398:THR:HG22	1.79	0.62
1:A:637:ALA:HA	1:A:640:HIS:CE1	2.33	0.62
1:C:380:GLY:HA3	1:C:387:LEU:HD21	1.81	0.62
1:C:306:THR:HB	1:C:309:ASN:CB	2.29	0.62
1:B:306:THR:HB	1:B:309:ASN:CB	2.29	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:54:LYS:HD2	1:A:87:MET:O	2.00	0.62
1:C:286:VAL:O	1:C:289:PRO:HD2	1.99	0.61
1:C:54:LYS:HD2	1:C:87:MET:O	2.00	0.61
1:C:625:PRO:C	1:C:627:LYS:H	2.03	0.61
1:B:625:PRO:C	1:B:627:LYS:H	2.03	0.61
1:B:286:VAL:O	1:B:289:PRO:HD2	1.99	0.61
1:A:306:THR:HB	1:A:309:ASN:CB	2.29	0.61
1:C:251:ARG:O	1:C:255:GLN:HG3	1.99	0.61
1:B:54:LYS:HD2	1:B:87:MET:O	2.00	0.61
1:A:513:ILE:HD12	1:A:515:VAL:HG13	1.83	0.61
1:A:380:GLY:HA3	1:A:387:LEU:HD21	1.81	0.60
1:B:380:GLY:HA3	1:B:387:LEU:HD21	1.81	0.60
1:B:136:SER:OG	1:B:293:LYS:NZ	2.33	0.60
1:B:513:ILE:HD12	1:B:515:VAL:HG13	1.83	0.60
1:A:625:PRO:C	1:A:627:LYS:H	2.03	0.60
1:C:513:ILE:HD12	1:C:515:VAL:HG13	1.83	0.60
1:A:132:ARG:HA	1:A:347:MET:CE	2.32	0.60
1:C:132:ARG:HA	1:C:347:MET:CE	2.32	0.60
1:B:395:GLN:HB3	1:B:398:THR:HG23	1.84	0.60
1:B:635:VAL:O	1:B:640:HIS:CE1	2.55	0.59
1:C:621:VAL:HG13	1:C:625:PRO:HA	1.84	0.59
1:B:615:THR:HG22	1:B:616:PRO:CD	2.32	0.59
1:B:615:THR:CG2	1:B:616:PRO:HD2	2.33	0.59
1:B:621:VAL:HG13	1:B:625:PRO:HA	1.84	0.59
1:A:621:VAL:HG13	1:A:625:PRO:HA	1.84	0.59
1:B:173:LYS:HG2	1:B:193:HIS:CE1	2.38	0.59
1:A:615:THR:HG22	1:A:616:PRO:CD	2.32	0.59
1:B:306:THR:HG22	1:B:308:LEU:H	1.67	0.59
1:C:635:VAL:O	1:C:640:HIS:CE1	2.55	0.59
1:A:631:THR:HG23	1:A:633:ALA:H	1.67	0.59
1:C:173:LYS:HG2	1:C:193:HIS:CE1	2.38	0.59
1:B:132:ARG:HA	1:B:347:MET:CE	2.32	0.59
1:C:146:ARG:HD3	1:C:147:LYS:O	2.03	0.59
1:A:146:ARG:NH2	1:A:643:LEU:HD22	2.18	0.59
1:A:552:ALA:CB	1:A:619:LEU:HD13	2.33	0.59
1:B:301:THR:HG23	1:B:440:TRP:O	2.03	0.59
1:C:16:MET:HE2	1:C:16:MET:HA	1.84	0.59
1:B:305:THR:O	1:B:306:THR:CB	2.50	0.59
1:A:306:THR:HG22	1:A:308:LEU:H	1.67	0.59
1:C:136:SER:OG	1:C:293:LYS:NZ	2.33	0.59
1:B:636:SER:O	1:B:639:ILE:HB	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:615:THR:CG2	1:A:616:PRO:HD2	2.33	0.59
1:A:261:PRO:HG2	1:A:264:PHE:CD1	2.38	0.59
1:A:635:VAL:O	1:A:640:HIS:CE1	2.55	0.59
1:C:137:ASP:H	1:C:293:LYS:HZ2	1.50	0.59
1:B:552:ALA:CB	1:B:619:LEU:HD13	2.33	0.59
1:A:173:LYS:HG2	1:A:193:HIS:CE1	2.37	0.59
1:C:301:THR:HG23	1:C:440:TRP:O	2.03	0.59
1:B:624:ASP:OD2	1:B:624:ASP:C	2.40	0.59
1:C:552:ALA:CB	1:C:619:LEU:HD13	2.33	0.59
1:B:146:ARG:NH2	1:B:643:LEU:HD22	2.18	0.59
1:A:137:ASP:H	1:A:293:LYS:NZ	2.01	0.59
1:A:636:SER:O	1:A:639:ILE:HB	2.02	0.58
1:A:146:ARG:HD3	1:A:147:LYS:O	2.03	0.58
1:C:334:GLY:O	1:C:337:ARG:HB3	2.03	0.58
1:C:305:THR:O	1:C:306:THR:CB	2.50	0.58
1:A:305:THR:O	1:A:306:THR:CB	2.50	0.58
1:B:631:THR:HG23	1:B:633:ALA:H	1.67	0.58
1:A:630:GLY:O	1:A:631:THR:HB	2.03	0.58
1:C:624:ASP:C	1:C:624:ASP:OD2	2.40	0.58
1:B:78:ASN:HD22	1:B:78:ASN:C	2.06	0.58
1:A:395:GLN:HB3	1:A:398:THR:HG23	1.84	0.58
1:C:261:PRO:HG2	1:C:264:PHE:CD1	2.38	0.58
1:B:146:ARG:HD3	1:B:147:LYS:O	2.02	0.58
1:A:137:ASP:H	1:A:293:LYS:HZ2	1.49	0.58
1:B:261:PRO:HG2	1:B:264:PHE:CD1	2.38	0.58
1:C:395:GLN:HB3	1:C:398:THR:HG23	1.84	0.58
1:A:624:ASP:C	1:A:624:ASP:OD2	2.40	0.58
1:B:134:MET:CE	1:B:404:LEU:HD22	2.34	0.58
1:B:631:THR:HG22	1:B:634:ASP:OD1	2.03	0.58
1:B:137:ASP:H	1:B:293:LYS:NZ	2.01	0.58
1:A:78:ASN:C	1:A:78:ASN:HD22	2.07	0.58
1:C:146:ARG:NH2	1:C:643:LEU:HD22	2.18	0.58
1:C:306:THR:HG22	1:C:308:LEU:H	1.67	0.58
1:A:134:MET:CE	1:A:404:LEU:HD22	2.34	0.58
1:A:136:SER:OG	1:A:293:LYS:NZ	2.33	0.58
1:C:134:MET:HE3	1:C:404:LEU:HD22	1.85	0.58
1:C:137:ASP:H	1:C:293:LYS:NZ	2.01	0.58
1:B:334:GLY:O	1:B:337:ARG:HB3	2.03	0.58
1:B:169:ARG:NH2	1:C:470:ARG:HH12	1.98	0.58
1:C:636:SER:O	1:C:639:ILE:HB	2.02	0.58
1:C:631:THR:HG22	1:C:634:ASP:OD1	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:243:PHE:CD1	1:C:243:PHE:N	2.72	0.58
1:A:334:GLY:O	1:A:337:ARG:HB3	2.03	0.58
1:B:630:GLY:O	1:B:631:THR:HB	2.03	0.57
1:A:631:THR:HG22	1:A:634:ASP:CG	2.25	0.57
1:C:631:THR:HG23	1:C:633:ALA:H	1.67	0.57
1:B:137:ASP:H	1:B:293:LYS:HZ2	1.51	0.57
1:A:132:ARG:NH1	1:A:343:GLU:OE2	2.37	0.57
1:B:251:ARG:NH1	1:B:255:GLN:HE22	2.02	0.57
1:B:606:ALA:C	1:B:608:GLN:H	2.07	0.57
1:A:606:ALA:C	1:A:608:GLN:H	2.07	0.57
1:A:301:THR:HG23	1:A:440:TRP:O	2.03	0.57
1:C:615:THR:HG22	1:C:616:PRO:CD	2.32	0.57
1:C:630:GLY:O	1:C:631:THR:HB	2.03	0.57
1:B:132:ARG:NH1	1:B:343:GLU:OE2	2.37	0.57
1:A:631:THR:HG22	1:A:634:ASP:OD1	2.03	0.57
1:B:146:ARG:HH21	1:B:643:LEU:HD22	1.70	0.57
1:B:450:SER:HB2	1:B:455:ALA:HB2	1.86	0.57
1:C:146:ARG:HH21	1:C:643:LEU:HD22	1.70	0.57
1:C:134:MET:CE	1:C:404:LEU:HD22	2.34	0.57
1:A:251:ARG:NH1	1:A:255:GLN:HE22	2.02	0.57
1:C:307:ARG:NH2	1:C:557:THR:O	2.38	0.57
1:A:307:ARG:NH2	1:A:557:THR:O	2.38	0.57
1:B:631:THR:HG22	1:B:634:ASP:CG	2.25	0.57
1:A:364:PRO:HA	1:A:387:LEU:CD2	2.28	0.57
1:C:615:THR:CG2	1:C:616:PRO:HD2	2.33	0.57
1:C:631:THR:HG22	1:C:634:ASP:CG	2.25	0.57
1:A:146:ARG:HH21	1:A:643:LEU:HD22	1.70	0.57
1:A:450:SER:HB2	1:A:455:ALA:HB2	1.86	0.57
1:B:304:HIS:O	1:B:305:THR:HG23	2.05	0.56
1:C:606:ALA:C	1:C:608:GLN:H	2.07	0.56
1:A:305:THR:O	1:A:306:THR:OG1	2.23	0.56
1:C:78:ASN:C	1:C:78:ASN:HD22	2.06	0.56
1:C:450:SER:HB2	1:C:455:ALA:HB2	1.86	0.56
1:B:251:ARG:HH11	1:B:251:ARG:HG3	1.70	0.56
1:A:304:HIS:O	1:A:305:THR:HG23	2.05	0.56
1:C:72:TYR:CE1	1:C:476:LYS:HD3	2.41	0.56
1:C:72:TYR:HB3	1:C:472:PHE:CZ	2.41	0.56
1:C:86:GLY:O	1:C:89:HIS:HD2	1.89	0.56
1:A:175:GLU:HA	1:A:352:TRP:CE3	2.41	0.56
1:A:72:TYR:CE1	1:A:476:LYS:HD3	2.41	0.56
1:C:304:HIS:O	1:C:305:THR:HG23	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:86:GLY:O	1:A:89:HIS:HD2	1.89	0.56
1:B:175:GLU:HA	1:B:352:TRP:CE3	2.41	0.56
1:A:243:PHE:CD1	1:A:243:PHE:N	2.72	0.56
1:C:449:ILE:O	1:C:449:ILE:HG13	2.05	0.56
1:C:364:PRO:HA	1:C:387:LEU:CD2	2.28	0.56
1:A:449:ILE:HG13	1:A:449:ILE:O	2.05	0.56
1:C:368:GLY:O	1:C:375:GLY:HA3	2.06	0.55
1:B:86:GLY:O	1:B:89:HIS:HD2	1.89	0.55
1:A:72:TYR:HB3	1:A:472:PHE:CZ	2.41	0.55
1:B:72:TYR:HB3	1:B:472:PHE:CZ	2.41	0.55
1:B:72:TYR:CE1	1:B:476:LYS:HD3	2.41	0.55
1:B:307:ARG:NH2	1:B:557:THR:O	2.38	0.55
1:B:449:ILE:HG13	1:B:449:ILE:O	2.05	0.55
1:C:584:ARG:O	1:C:588:GLU:HG3	2.07	0.55
1:C:226:MET:CE	1:C:244:ALA:HB2	2.37	0.55
1:B:305:THR:O	1:B:306:THR:OG1	2.23	0.55
1:A:251:ARG:HG3	1:A:251:ARG:HH11	1.70	0.55
1:C:305:THR:O	1:C:306:THR:OG1	2.23	0.55
1:C:175:GLU:HA	1:C:352:TRP:CE3	2.41	0.55
1:B:280:ASN:O	1:B:284:MET:HG3	2.07	0.55
1:B:368:GLY:O	1:B:375:GLY:HA3	2.06	0.55
1:C:251:ARG:HH11	1:C:251:ARG:HG3	1.70	0.55
1:B:584:ARG:O	1:B:588:GLU:HG3	2.07	0.55
1:B:534:SER:HA	1:B:542:ARG:HH21	1.72	0.55
1:C:381:ASP:OD2	1:C:381:ASP:C	2.45	0.55
1:C:533:GLN:O	1:C:542:ARG:NE	2.35	0.54
1:C:280:ASN:O	1:C:284:MET:HG3	2.07	0.54
1:A:368:GLY:O	1:A:375:GLY:HA3	2.06	0.54
1:A:381:ASP:OD2	1:A:381:ASP:C	2.45	0.54
1:B:243:PHE:N	1:B:243:PHE:CD1	2.72	0.54
1:C:132:ARG:NH1	1:C:343:GLU:OE2	2.37	0.54
1:B:306:THR:HB	1:B:309:ASN:HB3	1.90	0.54
1:B:226:MET:CE	1:B:244:ALA:HB2	2.37	0.54
1:A:534:SER:HA	1:A:542:ARG:HH21	1.72	0.54
1:A:301:THR:HG22	1:A:448:GLN:O	2.07	0.54
1:C:306:THR:HB	1:C:309:ASN:HB3	1.90	0.54
1:A:226:MET:CE	1:A:244:ALA:HB2	2.37	0.54
1:A:533:GLN:O	1:A:542:ARG:NE	2.35	0.54
1:A:25:GLN:O	1:A:29:LYS:HG3	2.08	0.54
1:C:146:ARG:HD3	1:C:147:LYS:N	2.23	0.54
1:A:146:ARG:HD3	1:A:147:LYS:N	2.23	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:418:THR:HG22	1:B:467:GLY:C	2.29	0.54
1:A:584:ARG:O	1:A:588:GLU:HG3	2.07	0.54
1:C:552:ALA:HB3	1:C:619:LEU:HD13	1.90	0.53
1:A:280:ASN:O	1:A:284:MET:HG3	2.07	0.53
1:C:418:THR:HG22	1:C:467:GLY:C	2.29	0.53
1:A:418:THR:HG22	1:A:467:GLY:C	2.29	0.53
1:A:552:ALA:HB3	1:A:619:LEU:HD13	1.90	0.53
1:C:301:THR:HG22	1:C:448:GLN:O	2.07	0.53
1:C:25:GLN:O	1:C:29:LYS:HG3	2.08	0.53
1:B:146:ARG:HD3	1:B:147:LYS:N	2.23	0.53
1:C:534:SER:HA	1:C:542:ARG:HH21	1.72	0.53
1:B:301:THR:HG22	1:B:448:GLN:O	2.07	0.53
1:C:251:ARG:NH1	1:C:255:GLN:HE22	2.02	0.53
1:B:178:GLY:O	1:B:181:MET:HB2	2.09	0.53
1:B:447:ARG:HG3	1:B:447:ARG:HH11	1.73	0.53
1:C:447:ARG:HG3	1:C:447:ARG:HH11	1.73	0.53
1:B:25:GLN:O	1:B:29:LYS:HG3	2.08	0.53
1:A:606:ALA:HB3	1:A:609:ALA:CB	2.39	0.53
1:A:178:GLY:O	1:A:181:MET:HB2	2.09	0.53
1:B:552:ALA:HB3	1:B:619:LEU:HD13	1.90	0.53
1:A:175:GLU:HA	1:A:352:TRP:CD2	2.44	0.53
1:C:225:ARG:NH1	1:C:268:ARG:CZ	2.72	0.53
1:C:606:ALA:HB3	1:C:609:ALA:CB	2.39	0.53
1:A:306:THR:HB	1:A:309:ASN:HB3	1.90	0.53
1:A:225:ARG:NH1	1:A:268:ARG:CZ	2.72	0.53
1:C:589:ASP:HB3	1:C:593:ARG:HH12	1.74	0.53
1:A:429:MET:HB2	1:A:430:PRO:HD3	1.91	0.52
1:B:175:GLU:HA	1:B:352:TRP:CD2	2.44	0.52
1:C:429:MET:HB2	1:C:430:PRO:HD3	1.92	0.52
1:A:447:ARG:HG3	1:A:447:ARG:NH1	2.24	0.52
1:C:175:GLU:HA	1:C:352:TRP:CD2	2.44	0.52
1:C:178:GLY:O	1:C:181:MET:HB2	2.09	0.52
1:B:225:ARG:NH1	1:B:268:ARG:CZ	2.72	0.52
1:A:120:SER:HB3	1:C:20:ASN:OD1	2.10	0.52
1:B:429:MET:HB2	1:B:430:PRO:HD3	1.92	0.52
1:B:381:ASP:C	1:B:381:ASP:OD2	2.45	0.52
1:C:575:TRP:CG	1:C:583:TYR:HB2	2.45	0.52
1:B:533:GLN:O	1:B:542:ARG:NE	2.35	0.52
1:B:16:MET:HA	1:B:16:MET:HE2	1.91	0.52
1:C:420:PRO:HA	1:C:423:ASN:ND2	2.25	0.52
1:C:564:TYR:CZ	1:C:568:LEU:HD11	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:589:ASP:HB3	1:B:593:ARG:HH12	1.74	0.52
1:C:51:LEU:HD21	1:C:90:MET:HE3	1.92	0.52
1:B:447:ARG:NH1	1:B:447:ARG:HG3	2.24	0.52
1:B:253:LYS:O	1:B:257:GLY:N	2.43	0.52
1:A:564:TYR:CZ	1:A:568:LEU:HD11	2.45	0.52
1:B:606:ALA:HB3	1:B:609:ALA:CB	2.39	0.52
1:A:447:ARG:HG3	1:A:447:ARG:HH11	1.73	0.52
1:B:575:TRP:CG	1:B:583:TYR:HB2	2.45	0.52
1:A:575:TRP:CG	1:A:583:TYR:HB2	2.45	0.52
1:A:88:ARG:HD3	1:A:263:GLY:O	2.10	0.51
1:B:145:ILE:HD12	1:B:164:ILE:HD13	1.92	0.51
1:A:145:ILE:HD12	1:A:164:ILE:HD13	1.92	0.51
1:A:169:ARG:O	1:A:172:GLU:HB2	2.11	0.51
1:A:589:ASP:HB3	1:A:593:ARG:HH12	1.74	0.51
1:B:169:ARG:O	1:B:172:GLU:HB2	2.10	0.51
1:C:88:ARG:HD3	1:C:263:GLY:O	2.10	0.51
1:C:9:LEU:CD2	1:C:28:SER:HB2	2.39	0.51
1:B:51:LEU:HD21	1:B:90:MET:CE	2.41	0.51
1:C:225:ARG:NH1	1:C:268:ARG:NH1	2.59	0.51
1:B:564:TYR:CZ	1:B:568:LEU:HD11	2.45	0.51
1:C:145:ILE:HD12	1:C:164:ILE:HD13	1.92	0.51
1:B:225:ARG:NH1	1:B:268:ARG:NH1	2.59	0.51
1:B:88:ARG:HD3	1:B:263:GLY:O	2.10	0.51
1:C:54:LYS:HD3	1:C:87:MET:HB2	1.92	0.51
1:C:175:GLU:HG3	1:C:352:TRP:CD1	2.46	0.51
1:A:225:ARG:NH1	1:A:268:ARG:NH1	2.59	0.51
1:B:54:LYS:HD3	1:B:87:MET:HB2	1.92	0.51
1:C:447:ARG:NH1	1:C:447:ARG:HG3	2.24	0.51
1:A:51:LEU:HD21	1:A:90:MET:CE	2.41	0.50
1:B:465:LEU:O	1:B:465:LEU:HD12	2.12	0.50
1:A:175:GLU:HG3	1:A:352:TRP:CD1	2.46	0.50
1:C:169:ARG:O	1:C:172:GLU:HB2	2.11	0.50
1:C:51:LEU:HD21	1:C:90:MET:CE	2.41	0.50
1:B:420:PRO:HA	1:B:423:ASN:ND2	2.25	0.50
1:B:26:GLN:O	1:B:30:ARG:HB2	2.12	0.50
1:B:546:PHE:CB	1:B:549:LEU:HD12	2.42	0.50
1:B:175:GLU:HG3	1:B:352:TRP:CD1	2.46	0.50
1:C:465:LEU:HD12	1:C:465:LEU:O	2.12	0.50
1:A:254:GLU:HG2	1:A:254:GLU:O	2.12	0.50
1:A:30:ARG:HG2	1:A:30:ARG:NH1	2.27	0.50
1:C:597:GLU:O	1:C:600:ARG:HB3	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:25:GLN:O	1:B:28:SER:OG	2.29	0.50
1:B:603:ALA:O	1:B:605:MET:N	2.44	0.50
1:A:256:TYR:HB2	1:A:258:ILE:HG13	1.93	0.50
1:A:635:VAL:HG12	1:A:639:ILE:HB	1.94	0.50
1:A:76:TYR:CD1	1:A:77:GLY:N	2.80	0.50
1:C:306:THR:HB	1:C:309:ASN:HB2	1.94	0.50
1:A:306:THR:HB	1:A:309:ASN:HB2	1.94	0.50
1:B:165:GLU:O	1:B:166:ILE:C	2.50	0.50
1:C:165:GLU:O	1:C:166:ILE:C	2.50	0.50
1:A:339:LEU:HD23	1:A:339:LEU:C	2.33	0.50
1:B:339:LEU:C	1:B:339:LEU:HD23	2.33	0.50
1:C:254:GLU:O	1:C:254:GLU:HG2	2.12	0.50
1:B:30:ARG:NH1	1:B:30:ARG:HG2	2.27	0.49
1:C:25:GLN:O	1:C:28:SER:OG	2.29	0.49
1:B:635:VAL:HG12	1:B:639:ILE:HB	1.94	0.49
1:B:208:THR:HG21	1:B:523:ASN:CG	2.33	0.49
1:C:29:LYS:C	1:C:30:ARG:O	2.50	0.49
1:A:603:ALA:O	1:A:605:MET:N	2.44	0.49
1:A:420:PRO:HA	1:A:423:ASN:ND2	2.25	0.49
1:B:7:PHE:CD1	1:B:7:PHE:N	2.80	0.49
1:B:364:PRO:HA	1:B:387:LEU:CD2	2.29	0.49
1:B:29:LYS:C	1:B:30:ARG:O	2.50	0.49
1:A:25:GLN:O	1:A:28:SER:OG	2.29	0.49
1:B:256:TYR:HB2	1:B:258:ILE:HG13	1.93	0.49
1:C:132:ARG:HD2	1:C:429:MET:HE3	1.94	0.49
1:A:465:LEU:HD12	1:A:465:LEU:O	2.12	0.49
1:A:597:GLU:O	1:A:600:ARG:HB3	2.12	0.49
1:B:450:SER:CB	1:B:455:ALA:HB2	2.43	0.49
1:B:76:TYR:CD1	1:B:77:GLY:N	2.80	0.49
1:A:546:PHE:CB	1:A:549:LEU:HD12	2.42	0.49
1:C:546:PHE:CB	1:C:549:LEU:HD12	2.42	0.49
1:B:254:GLU:HG2	1:B:254:GLU:O	2.12	0.49
1:A:7:PHE:CD1	1:A:7:PHE:N	2.80	0.49
1:A:26:GLN:O	1:A:30:ARG:HB2	2.12	0.49
1:B:251:ARG:HG3	1:B:251:ARG:NH1	2.28	0.49
1:B:631:THR:HG23	1:B:633:ALA:N	2.28	0.49
1:A:54:LYS:HD3	1:A:87:MET:HB2	1.92	0.49
1:C:230:PHE:CZ	1:C:234:VAL:HG11	2.47	0.49
1:B:597:GLU:O	1:B:600:ARG:HB3	2.12	0.49
1:B:230:PHE:CZ	1:B:234:VAL:HG11	2.47	0.49
1:C:7:PHE:CD1	1:C:7:PHE:N	2.80	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:76:TYR:CD1	1:C:77:GLY:N	2.80	0.49
1:A:165:GLU:O	1:A:166:ILE:C	2.50	0.49
1:C:339:LEU:C	1:C:339:LEU:HD23	2.33	0.49
1:C:26:GLN:O	1:C:30:ARG:HB2	2.12	0.49
1:C:30:ARG:HG2	1:C:30:ARG:NH1	2.27	0.49
1:B:306:THR:HB	1:B:309:ASN:HB2	1.94	0.49
1:B:431:SER:HA	1:B:434:ARG:NH1	2.28	0.49
1:A:29:LYS:C	1:A:30:ARG:O	2.50	0.49
1:C:251:ARG:NH1	1:C:251:ARG:HG3	2.28	0.49
1:A:251:ARG:NH1	1:A:251:ARG:HG3	2.28	0.49
1:C:635:VAL:HG12	1:C:639:ILE:HB	1.94	0.49
1:A:450:SER:CB	1:A:455:ALA:HB2	2.42	0.49
1:A:208:THR:HG21	1:A:523:ASN:CG	2.33	0.49
1:A:230:PHE:CZ	1:A:234:VAL:HG11	2.47	0.49
1:C:208:THR:HG21	1:C:523:ASN:CG	2.33	0.48
1:B:304:HIS:HB2	1:B:497:LEU:HD23	1.96	0.48
1:A:589:ASP:HB3	1:A:593:ARG:NH1	2.28	0.48
1:C:256:TYR:HB2	1:C:258:ILE:HG13	1.93	0.48
1:C:450:SER:CB	1:C:455:ALA:HB2	2.42	0.48
1:C:589:ASP:HB3	1:C:593:ARG:NH1	2.28	0.48
1:C:202:VAL:O	1:C:202:VAL:HG23	2.14	0.48
1:C:380:GLY:HA3	1:C:387:LEU:CD2	2.43	0.48
1:B:380:GLY:HA3	1:B:387:LEU:CD2	2.43	0.48
1:C:431:SER:HA	1:C:434:ARG:NH1	2.28	0.48
1:B:631:THR:HG22	1:B:634:ASP:OD2	2.13	0.48
1:C:381:ASP:OD2	1:C:383:SER:N	2.44	0.48
1:B:9:LEU:CD2	1:B:28:SER:HB2	2.39	0.48
1:B:624:ASP:O	1:B:627:LYS:HB2	2.14	0.48
1:B:589:ASP:HB3	1:B:593:ARG:NH1	2.28	0.48
1:A:202:VAL:HG23	1:A:202:VAL:O	2.14	0.48
1:A:631:THR:HG23	1:A:633:ALA:N	2.28	0.48
1:C:631:THR:HG23	1:C:633:ALA:N	2.28	0.48
1:A:431:SER:HA	1:A:434:ARG:NH1	2.28	0.48
1:A:631:THR:HG22	1:A:634:ASP:OD2	2.13	0.48
1:C:631:THR:HG22	1:C:634:ASP:OD2	2.13	0.48
1:C:624:ASP:O	1:C:627:LYS:HB2	2.14	0.48
1:A:624:ASP:O	1:A:627:LYS:HB2	2.14	0.48
1:A:253:LYS:O	1:A:257:GLY:N	2.43	0.48
1:A:380:GLY:HA3	1:A:387:LEU:CD2	2.43	0.48
1:B:145:ILE:CD1	1:B:164:ILE:HD13	2.44	0.48
1:A:625:PRO:C	1:A:627:LYS:N	2.67	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:381:ASP:OD2	1:A:383:SER:N	2.44	0.48
1:A:152:CYS:HA	1:A:156:PHE:CD1	2.49	0.48
1:B:202:VAL:HG23	1:B:202:VAL:O	2.14	0.48
1:B:213:LEU:HD11	1:B:218:GLY:O	2.14	0.48
1:A:213:LEU:HD11	1:A:218:GLY:O	2.14	0.48
1:B:497:LEU:HA	1:B:497:LEU:HD12	1.76	0.47
1:A:145:ILE:CD1	1:A:164:ILE:HD13	2.44	0.47
1:C:491:GLU:HB3	1:C:494:GLY:HA2	1.97	0.47
1:A:638:ASN:HA	1:A:641:GLU:OE2	2.14	0.47
1:C:145:ILE:CD1	1:C:164:ILE:HD13	2.44	0.47
1:A:132:ARG:HD2	1:A:429:MET:HE3	1.95	0.47
1:B:191:GLN:HE22	1:C:421:HIS:HB3	1.79	0.47
1:C:304:HIS:HB2	1:C:497:LEU:HD23	1.96	0.47
1:C:202:VAL:HG23	1:C:272:ALA:HB3	1.97	0.47
1:C:638:ASN:HA	1:C:641:GLU:OE2	2.14	0.47
1:B:583:TYR:O	1:B:586:TYR:HB3	2.15	0.47
1:A:202:VAL:HG23	1:A:272:ALA:HB3	1.97	0.47
1:C:152:CYS:HA	1:C:156:PHE:CD1	2.49	0.47
1:B:23:LYS:HG2	1:B:23:LYS:H	1.29	0.47
1:B:395:GLN:HB3	1:B:398:THR:CG2	2.45	0.47
1:B:625:PRO:C	1:B:627:LYS:N	2.67	0.47
1:B:132:ARG:HD2	1:B:429:MET:HE3	1.97	0.47
1:A:491:GLU:HB3	1:A:494:GLY:HA2	1.97	0.47
1:B:491:GLU:HB3	1:B:494:GLY:HA2	1.97	0.47
1:C:213:LEU:HD11	1:C:218:GLY:O	2.14	0.47
1:A:395:GLN:HB3	1:A:398:THR:CG2	2.45	0.47
1:B:638:ASN:HA	1:B:641:GLU:OE2	2.14	0.47
1:C:99:THR:HB	1:C:227:VAL:HG12	1.97	0.47
1:C:253:LYS:O	1:C:257:GLY:N	2.43	0.47
1:C:615:THR:CG2	1:C:616:PRO:CD	2.93	0.47
1:C:214:ASP:OD1	1:C:215:PRO:CD	2.63	0.47
1:C:173:LYS:CG	1:C:193:HIS:CE1	2.97	0.47
1:C:583:TYR:O	1:C:586:TYR:HB3	2.15	0.47
1:B:524:ASN:N	1:B:524:ASN:HD22	2.13	0.47
1:C:251:ARG:HG3	1:C:255:GLN:HE21	1.80	0.47
1:C:603:ALA:O	1:C:605:MET:N	2.43	0.47
1:A:524:ASN:HD22	1:A:524:ASN:N	2.13	0.47
1:C:242:LEU:HD12	1:C:242:LEU:HA	1.70	0.47
1:B:615:THR:CG2	1:B:616:PRO:CD	2.93	0.46
1:C:46:VAL:HG12	1:C:90:MET:HE1	1.95	0.46
1:B:173:LYS:CG	1:B:193:HIS:CE1	2.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:152:CYS:HA	1:B:156:PHE:CD1	2.49	0.46
1:A:173:LYS:CG	1:A:193:HIS:CE1	2.97	0.46
1:B:411:LEU:HD13	1:B:439:TYR:CZ	2.51	0.46
1:C:625:PRO:C	1:C:627:LYS:N	2.67	0.46
1:B:72:TYR:CZ	1:B:476:LYS:HD3	2.50	0.46
1:A:583:TYR:O	1:A:586:TYR:HB3	2.15	0.46
1:B:56:GLU:HG2	1:B:574:CYS:SG	2.55	0.46
1:B:552:ALA:HB1	1:B:619:LEU:HD13	1.98	0.46
1:C:56:GLU:HG2	1:C:574:CYS:SG	2.55	0.46
1:C:304:HIS:HA	1:C:309:ASN:ND2	2.31	0.46
1:A:304:HIS:HA	1:A:309:ASN:ND2	2.31	0.46
1:A:99:THR:HB	1:A:227:VAL:HG12	1.97	0.46
1:A:304:HIS:HB2	1:A:497:LEU:HD23	1.96	0.46
1:B:214:ASP:OD1	1:B:215:PRO:CD	2.63	0.46
1:B:251:ARG:HG3	1:B:255:GLN:HE21	1.80	0.46
1:B:251:ARG:NH1	1:B:255:GLN:NE2	2.58	0.46
1:A:214:ASP:OD1	1:A:215:PRO:CD	2.63	0.46
1:A:423:ASN:HB2	1:C:16:MET:HE3	1.98	0.46
1:B:23:LYS:O	1:B:26:GLN:N	2.42	0.46
1:A:552:ALA:HB1	1:A:619:LEU:HD13	1.98	0.46
1:A:72:TYR:CZ	1:A:476:LYS:HD3	2.51	0.46
1:C:524:ASN:HD22	1:C:524:ASN:N	2.13	0.46
1:B:304:HIS:HA	1:B:309:ASN:ND2	2.31	0.46
1:C:617:ILE:O	1:C:621:VAL:HG23	2.15	0.46
1:C:552:ALA:HB1	1:C:619:LEU:HD13	1.98	0.46
1:C:72:TYR:CZ	1:C:476:LYS:HD3	2.50	0.46
1:A:56:GLU:HG2	1:A:574:CYS:SG	2.55	0.46
1:A:325:VAL:HG12	1:A:326:SER:N	2.31	0.46
1:A:251:ARG:HG3	1:A:255:GLN:HE21	1.80	0.45
1:B:325:VAL:HG12	1:B:326:SER:N	2.31	0.45
1:A:411:LEU:HD13	1:A:439:TYR:CZ	2.51	0.45
1:B:99:THR:HB	1:B:227:VAL:HG12	1.97	0.45
1:A:9:LEU:CD2	1:A:28:SER:HB2	2.39	0.45
1:A:132:ARG:HD2	1:A:429:MET:CE	2.47	0.45
1:C:411:LEU:HD13	1:C:439:TYR:CZ	2.51	0.45
1:A:22:ILE:HD13	1:A:22:ILE:HG23	1.58	0.45
1:C:132:ARG:HD2	1:C:429:MET:CE	2.47	0.45
1:B:202:VAL:HG23	1:B:272:ALA:HB3	1.97	0.45
1:C:325:VAL:HG12	1:C:326:SER:N	2.31	0.45
1:C:232:TYR:HA	1:C:239:GLN:O	2.17	0.45
1:B:399:ASP:OD2	1:B:399:ASP:N	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:255:GLN:HB2	1:C:256:TYR:CD2	2.51	0.45
1:C:223:LYS:HD3	1:C:225:ARG:NH2	2.32	0.45
1:B:223:LYS:HD3	1:B:225:ARG:NH2	2.32	0.45
1:B:232:TYR:HA	1:B:239:GLN:O	2.17	0.45
1:C:44:LEU:HA	1:C:44:LEU:HD12	1.63	0.45
1:A:232:TYR:HA	1:A:239:GLN:O	2.17	0.45
1:C:9:LEU:HD12	1:C:9:LEU:O	2.17	0.45
1:A:495:ALA:HB1	1:A:499:ASP:O	2.17	0.45
1:A:107:LYS:HD2	1:A:238:GLU:HG2	1.98	0.45
1:B:9:LEU:O	1:B:9:LEU:HD12	2.17	0.45
1:A:78:ASN:C	1:A:78:ASN:ND2	2.70	0.45
1:B:495:ALA:HB1	1:B:499:ASP:O	2.17	0.45
1:B:255:GLN:HB2	1:B:256:TYR:CD2	2.51	0.45
1:A:255:GLN:HB2	1:A:256:TYR:CD2	2.51	0.45
1:C:395:GLN:HB3	1:C:398:THR:CG2	2.45	0.45
1:B:145:ILE:HD12	1:B:164:ILE:CD1	2.47	0.45
1:A:223:LYS:HD3	1:A:225:ARG:NH2	2.32	0.45
1:A:47:ASP:OD1	1:A:49:ARG:NH1	2.50	0.45
1:C:145:ILE:HD12	1:C:164:ILE:CD1	2.47	0.45
1:B:617:ILE:O	1:B:621:VAL:HG23	2.16	0.45
1:B:381:ASP:OD2	1:B:383:SER:N	2.44	0.45
1:C:47:ASP:OD1	1:C:49:ARG:NH1	2.50	0.45
1:A:110:ALA:C	1:A:112:ALA:H	2.20	0.45
1:A:331:PHE:O	1:A:332:TRP:C	2.55	0.45
1:A:548:GLY:N	1:A:594:ASP:OD1	2.50	0.45
1:A:44:LEU:HA	1:A:44:LEU:HD12	1.63	0.45
1:B:47:ASP:OD1	1:B:49:ARG:NH1	2.50	0.45
1:A:23:LYS:H	1:A:23:LYS:HG2	1.29	0.45
1:C:587:ARG:HD2	1:C:587:ARG:HA	1.86	0.45
1:B:534:SER:CA	1:B:542:ARG:HH21	2.30	0.45
1:B:639:ILE:O	1:B:642:VAL:N	2.50	0.45
1:A:617:ILE:O	1:A:621:VAL:HG23	2.16	0.45
1:B:363:LEU:HA	1:B:364:PRO:HD3	1.89	0.44
1:C:548:GLY:N	1:C:594:ASP:OD1	2.50	0.44
1:C:331:PHE:O	1:C:332:TRP:C	2.55	0.44
1:B:548:GLY:N	1:B:594:ASP:OD1	2.50	0.44
1:C:23:LYS:O	1:C:26:GLN:N	2.42	0.44
1:A:9:LEU:O	1:A:9:LEU:HD12	2.17	0.44
1:C:534:SER:CA	1:C:542:ARG:HH21	2.31	0.44
1:B:331:PHE:O	1:B:332:TRP:C	2.55	0.44
1:A:288:GLN:N	1:A:289:PRO:CD	2.80	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:132:ARG:HD2	1:B:429:MET:CE	2.47	0.44
1:B:107:LYS:HD2	1:B:238:GLU:HG2	1.98	0.44
1:C:495:ALA:HB1	1:C:499:ASP:O	2.17	0.44
1:C:23:LYS:O	1:C:24:ALA:C	2.54	0.44
1:B:611:LEU:HD22	1:B:619:LEU:HD21	1.99	0.44
1:C:181:MET:HG2	1:C:186:PHE:CE2	2.53	0.44
1:B:420:PRO:HA	1:B:423:ASN:HD21	1.83	0.44
1:A:399:ASP:N	1:A:399:ASP:OD2	2.50	0.44
1:C:363:LEU:HA	1:C:364:PRO:HD3	1.88	0.44
1:B:251:ARG:HB2	1:B:255:GLN:HE21	1.83	0.44
1:C:208:THR:HG21	1:C:523:ASN:OD1	2.17	0.44
1:A:51:LEU:HD21	1:A:90:MET:HE3	1.99	0.44
1:C:265:PHE:N	1:C:265:PHE:CD1	2.86	0.44
1:B:288:GLN:N	1:B:289:PRO:CD	2.80	0.44
1:A:145:ILE:HD12	1:A:164:ILE:CD1	2.47	0.44
1:B:208:THR:HG21	1:B:523:ASN:OD1	2.17	0.44
1:A:208:THR:HG21	1:A:523:ASN:OD1	2.17	0.44
1:B:23:LYS:O	1:B:24:ALA:C	2.54	0.43
1:A:9:LEU:O	1:A:15:GLN:NE2	2.51	0.43
1:A:251:ARG:HB2	1:A:255:GLN:HE21	1.83	0.43
1:B:181:MET:HG2	1:B:186:PHE:CE2	2.53	0.43
1:B:110:ALA:C	1:B:112:ALA:H	2.20	0.43
1:C:107:LYS:HD2	1:C:238:GLU:HG2	1.98	0.43
1:B:315:LYS:HE3	1:B:512:ALA:O	2.18	0.43
1:C:78:ASN:C	1:C:78:ASN:ND2	2.70	0.43
1:C:288:GLN:N	1:C:289:PRO:CD	2.80	0.43
1:C:639:ILE:O	1:C:642:VAL:N	2.50	0.43
1:A:611:LEU:HD22	1:A:619:LEU:HD21	1.99	0.43
1:A:181:MET:HG2	1:A:186:PHE:CE2	2.53	0.43
1:A:615:THR:CG2	1:A:616:PRO:CD	2.93	0.43
1:C:513:ILE:HD12	1:C:515:VAL:CG1	2.47	0.43
1:C:418:THR:HG21	1:C:468:GLY:HA2	2.01	0.43
1:B:74:ARG:HG2	1:B:503:TYR:CE2	2.53	0.43
1:C:110:ALA:C	1:C:112:ALA:H	2.20	0.43
1:C:23:LYS:H	1:C:23:LYS:HG2	1.29	0.43
1:C:51:LEU:HD13	1:C:261:PRO:CD	2.48	0.43
1:B:638:ASN:O	1:B:642:VAL:HG23	2.18	0.43
1:A:420:PRO:HA	1:A:423:ASN:HD21	1.83	0.43
1:A:363:LEU:HA	1:A:363:LEU:HD12	1.76	0.43
1:B:265:PHE:N	1:B:265:PHE:CD1	2.86	0.43
1:B:51:LEU:HD13	1:B:261:PRO:CD	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:51:LEU:HD13	1:A:261:PRO:CD	2.48	0.43
1:B:496:PHE:CZ	1:B:497:LEU:HD22	2.54	0.43
1:C:74:ARG:HG2	1:C:503:TYR:CE2	2.54	0.43
1:A:518:ILE:HA	1:A:518:ILE:HD12	1.80	0.43
1:C:251:ARG:HB2	1:C:255:GLN:HE21	1.83	0.43
1:A:496:PHE:CZ	1:A:497:LEU:HD22	2.54	0.43
1:A:638:ASN:O	1:A:642:VAL:HG23	2.18	0.43
1:B:513:ILE:HD12	1:B:515:VAL:CG1	2.47	0.43
1:A:23:LYS:O	1:A:24:ALA:C	2.54	0.43
1:B:78:ASN:ND2	1:B:78:ASN:C	2.70	0.43
1:C:496:PHE:CZ	1:C:497:LEU:HD22	2.54	0.43
1:B:16:MET:HE1	1:C:423:ASN:ND2	2.34	0.43
1:A:75:VAL:HG11	1:A:500:ILE:HG23	2.01	0.43
1:A:315:LYS:HE3	1:A:512:ALA:O	2.18	0.43
1:C:9:LEU:O	1:C:15:GLN:NE2	2.51	0.43
1:A:265:PHE:CD1	1:A:265:PHE:N	2.86	0.43
1:C:315:LYS:HE3	1:C:512:ALA:O	2.18	0.43
1:C:364:PRO:HB3	1:C:379:LEU:O	2.19	0.43
1:A:534:SER:CA	1:A:542:ARG:HH21	2.30	0.43
1:C:611:LEU:HD22	1:C:619:LEU:HD21	1.99	0.43
1:A:242:LEU:HA	1:A:242:LEU:HD12	1.70	0.43
1:B:44:LEU:HD12	1:B:44:LEU:HA	1.63	0.43
1:C:600:ARG:NH1	1:C:600:ARG:CB	2.57	0.42
1:C:364:PRO:CA	1:C:387:LEU:HD23	2.32	0.42
1:B:9:LEU:O	1:B:15:GLN:NE2	2.51	0.42
1:A:23:LYS:O	1:A:26:GLN:N	2.42	0.42
1:B:603:ALA:C	1:B:605:MET:N	2.70	0.42
1:A:603:ALA:C	1:A:605:MET:N	2.70	0.42
1:B:159:ASP:OD1	1:B:159:ASP:C	2.58	0.42
1:C:554:MET:HG2	1:C:555:LYS:N	2.34	0.42
1:A:587:ARG:HA	1:A:587:ARG:HD2	1.86	0.42
1:C:603:ALA:C	1:C:605:MET:N	2.70	0.42
1:B:75:VAL:HG11	1:B:500:ILE:HG23	2.01	0.42
1:B:567:VAL:O	1:B:571:ILE:HG13	2.19	0.42
1:A:190:TYR:O	1:A:194:GLN:N	2.51	0.42
1:B:364:PRO:HB3	1:B:379:LEU:O	2.19	0.42
1:C:142:PRO:CD	1:C:649:VAL:HG13	2.47	0.42
1:A:513:ILE:HD12	1:A:515:VAL:CG1	2.47	0.42
1:C:54:LYS:HE2	1:C:526:PHE:O	2.20	0.42
1:A:418:THR:HG21	1:A:468:GLY:HA2	2.01	0.42
1:B:16:MET:CE	1:C:423:ASN:ND2	2.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:153:ILE:HA	1:B:154:PRO:HA	1.77	0.42
1:B:50:PHE:O	1:B:53:PHE:HB3	2.19	0.42
1:C:50:PHE:O	1:C:53:PHE:HB3	2.19	0.42
1:C:497:LEU:HA	1:C:497:LEU:HD12	1.76	0.42
1:C:182:LEU:HD23	1:C:182:LEU:HA	1.88	0.42
1:A:74:ARG:HG2	1:A:503:TYR:CE2	2.54	0.42
1:C:90:MET:CE	1:C:90:MET:HA	2.49	0.42
1:A:639:ILE:O	1:A:642:VAL:N	2.50	0.42
1:C:420:PRO:HA	1:C:423:ASN:HD21	1.83	0.42
1:C:226:MET:HE2	1:C:244:ALA:HA	2.02	0.42
1:A:554:MET:HG2	1:A:555:LYS:N	2.34	0.42
1:A:23:LYS:HB2	1:A:24:ALA:H	1.73	0.42
1:C:638:ASN:O	1:C:642:VAL:HG23	2.18	0.42
1:B:54:LYS:HE2	1:B:526:PHE:O	2.20	0.42
1:C:75:VAL:HG11	1:C:500:ILE:HG23	2.01	0.42
1:A:406:MET:HE2	1:A:410:TYR:CZ	2.55	0.42
1:B:22:ILE:HD12	1:B:22:ILE:HG21	1.66	0.42
1:B:90:MET:CE	1:B:90:MET:HA	2.49	0.42
1:B:336:LEU:HD23	1:B:405:LEU:HB2	2.02	0.42
1:C:567:VAL:O	1:C:571:ILE:HG13	2.19	0.42
1:B:51:LEU:HD21	1:B:90:MET:HE1	2.00	0.42
1:A:90:MET:CE	1:A:90:MET:HA	2.49	0.42
1:B:418:THR:HG21	1:B:468:GLY:HA2	2.01	0.42
1:A:418:THR:O	1:A:464:ALA:HA	2.20	0.42
1:A:521:MET:HB2	1:A:558:TYR:CE2	2.55	0.42
1:C:399:ASP:OD2	1:C:399:ASP:N	2.49	0.42
1:B:418:THR:O	1:B:464:ALA:HA	2.20	0.41
1:C:336:LEU:HD23	1:C:405:LEU:HB2	2.02	0.41
1:A:50:PHE:O	1:A:53:PHE:HB3	2.19	0.41
1:B:521:MET:HB2	1:B:558:TYR:CE2	2.55	0.41
1:C:261:PRO:HG2	1:C:264:PHE:CG	2.56	0.41
1:B:496:PHE:CE2	1:B:497:LEU:HD22	2.55	0.41
1:C:619:LEU:HD23	1:C:619:LEU:HA	1.88	0.41
1:B:466:VAL:HG13	1:B:467:GLY:N	2.35	0.41
1:C:153:ILE:HA	1:C:154:PRO:HA	1.77	0.41
1:B:554:MET:HG2	1:B:555:LYS:N	2.34	0.41
1:A:415:LEU:HD23	1:A:415:LEU:HA	1.84	0.41
1:B:22:ILE:HG23	1:B:22:ILE:HD13	1.58	0.41
1:C:22:ILE:HD13	1:C:22:ILE:HG23	1.58	0.41
1:C:23:LYS:HB2	1:C:24:ALA:H	1.73	0.41
1:A:306:THR:CG2	1:A:309:ASN:H	2.34	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:661:PRO:O	1:A:662:ARG:CG	2.67	0.41
1:A:54:LYS:HE2	1:A:526:PHE:O	2.20	0.41
1:B:406:MET:HE2	1:B:410:TYR:CZ	2.55	0.41
1:A:336:LEU:HD23	1:A:405:LEU:HB2	2.02	0.41
1:A:364:PRO:HB3	1:A:379:LEU:O	2.19	0.41
1:B:18:PHE:HB3	1:B:24:ALA:O	2.20	0.41
1:A:568:LEU:HA	1:A:568:LEU:HD23	1.94	0.41
1:C:521:MET:HB2	1:C:558:TYR:CE2	2.55	0.41
1:A:567:VAL:O	1:A:571:ILE:HG13	2.19	0.41
1:A:135:PHE:HB3	1:A:349:TYR:OH	2.20	0.41
1:B:363:LEU:HA	1:B:363:LEU:HD12	1.77	0.41
1:B:251:ARG:HB2	1:B:255:GLN:NE2	2.36	0.41
1:B:261:PRO:HG2	1:B:264:PHE:CG	2.56	0.41
1:C:496:PHE:CE2	1:C:497:LEU:HD22	2.55	0.41
1:A:619:LEU:HA	1:A:619:LEU:HD23	1.88	0.41
1:A:173:LYS:HG2	1:A:193:HIS:ND1	2.36	0.41
1:C:264:PHE:C	1:C:265:PHE:CD1	2.94	0.41
1:B:306:THR:CG2	1:B:309:ASN:H	2.34	0.41
1:C:636:SER:HB2	1:C:639:ILE:HG12	2.03	0.41
1:C:47:ASP:C	1:C:47:ASP:OD2	2.59	0.41
1:C:159:ASP:OD1	1:C:159:ASP:C	2.57	0.41
1:C:363:LEU:HA	1:C:363:LEU:HD12	1.76	0.41
1:C:18:PHE:HB3	1:C:24:ALA:O	2.20	0.41
1:A:18:PHE:HB3	1:A:24:ALA:O	2.20	0.41
1:C:251:ARG:CG	1:C:255:GLN:HE21	2.34	0.41
1:C:206:GLN:OE1	1:C:206:GLN:CA	2.64	0.41
1:A:78:ASN:ND2	1:A:80:VAL:N	2.64	0.41
1:C:466:VAL:HG13	1:C:467:GLY:N	2.35	0.41
1:A:181:MET:CE	1:A:356:LEU:HD23	2.51	0.41
1:C:135:PHE:HB3	1:C:349:TYR:OH	2.20	0.41
1:B:182:LEU:HA	1:B:182:LEU:HD23	1.88	0.41
1:A:261:PRO:HG2	1:A:264:PHE:CG	2.56	0.41
1:B:636:SER:HB2	1:B:639:ILE:HG12	2.03	0.41
1:B:173:LYS:HG2	1:B:193:HIS:ND1	2.36	0.41
1:A:159:ASP:C	1:A:159:ASP:OD1	2.57	0.41
1:B:135:PHE:HB3	1:B:349:TYR:OH	2.20	0.41
1:B:264:PHE:C	1:B:265:PHE:CD1	2.94	0.41
1:A:142:PRO:CD	1:A:649:VAL:HG13	2.47	0.41
1:A:496:PHE:CE2	1:A:497:LEU:HD22	2.55	0.41
1:C:661:PRO:O	1:C:662:ARG:CG	2.67	0.41
1:C:180:LEU:HD22	1:C:188:ASP:CB	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:173:LYS:HG2	1:C:193:HIS:ND1	2.36	0.41
1:A:86:GLY:O	1:A:89:HIS:CD2	2.73	0.41
1:C:418:THR:O	1:C:464:ALA:HA	2.20	0.41
1:B:181:MET:CE	1:B:356:LEU:HD23	2.51	0.41
1:B:518:ILE:HD12	1:B:518:ILE:HA	1.80	0.41
1:A:180:LEU:HD22	1:A:188:ASP:CB	2.51	0.41
1:A:194:GLN:O	1:A:278:ALA:HB3	2.21	0.41
1:C:406:MET:HE2	1:C:410:TYR:CZ	2.55	0.41
1:B:60:TYR:CE1	1:B:64:HIS:CE1	3.09	0.41
1:B:251:ARG:CG	1:B:255:GLN:HE21	2.34	0.40
1:C:132:ARG:CD	1:C:429:MET:HE3	2.51	0.40
1:A:466:VAL:HG13	1:A:467:GLY:N	2.35	0.40
1:A:47:ASP:OD2	1:A:47:ASP:C	2.59	0.40
1:A:38:GLU:HA	1:A:44:LEU:HD12	2.03	0.40
1:C:17:LEU:O	1:C:153:ILE:HG23	2.21	0.40
1:A:153:ILE:HA	1:A:154:PRO:HA	1.77	0.40
1:C:190:TYR:O	1:C:194:GLN:N	2.51	0.40
1:A:374:GLN:HB2	1:A:374:GLN:HE21	1.64	0.40
1:C:251:ARG:HB2	1:C:255:GLN:NE2	2.36	0.40
1:C:251:ARG:NH1	1:C:255:GLN:NE2	2.58	0.40
1:A:251:ARG:HB2	1:A:255:GLN:NE2	2.36	0.40
1:A:132:ARG:CD	1:A:429:MET:HE3	2.52	0.40
1:C:146:ARG:O	1:C:163:LYS:NZ	2.51	0.40
1:B:213:LEU:CD1	1:B:218:GLY:O	2.69	0.40
1:B:517:ASN:O	1:B:520:SER:N	2.52	0.40
1:A:530:TYR:CD2	1:A:543:LYS:HG3	2.57	0.40
1:C:374:GLN:HB2	1:C:374:GLN:HE21	1.64	0.40
1:C:306:THR:CG2	1:C:309:ASN:H	2.34	0.40
1:C:181:MET:CE	1:C:356:LEU:HD23	2.51	0.40
1:B:16:MET:CE	1:C:423:ASN:HD22	2.34	0.40
1:C:38:GLU:HA	1:C:44:LEU:HD12	2.03	0.40
1:A:17:LEU:O	1:A:153:ILE:HG23	2.21	0.40
1:A:281:ALA:HB3	1:A:282:PRO:CD	2.51	0.40
1:C:60:TYR:CE1	1:C:64:HIS:CE1	3.09	0.40
1:A:517:ASN:O	1:A:520:SER:N	2.52	0.40
1:A:264:PHE:C	1:A:265:PHE:CD1	2.94	0.40
1:B:587:ARG:HA	1:B:587:ARG:HD2	1.86	0.40
1:B:142:PRO:CD	1:B:649:VAL:HG13	2.47	0.40
1:C:194:GLN:O	1:C:278:ALA:HB3	2.21	0.40
1:B:226:MET:HE2	1:B:244:ALA:HA	2.04	0.40
1:A:391:LEU:HA	1:A:391:LEU:HD23	1.83	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:213:LEU:CD1	1:C:218:GLY:O	2.69	0.40
1:A:336:LEU:CD2	1:A:405:LEU:HB2	2.52	0.40
1:C:355:LYS:HD2	1:C:355:LYS:HA	1.92	0.40

All (19) 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:607:ARG:NH2	1:B:589:ASP:CA[2_546]	0.55	1.65
1:A:608:GLN:OE1	1:B:41:GLU:OE2[2_546]	0.70	1.50
1:A:607:ARG:CZ	1:B:589:ASP:CB[2_546]	0.75	1.45
1:A:607:ARG:NH2	1:B:589:ASP:C[2_546]	1.04	1.16
1:A:608:GLN:CD	1:B:41:GLU:OE2[2_546]	1.17	1.03
1:A:607:ARG:NH1	1:B:589:ASP:CB[2_546]	1.22	0.98
1:A:607:ARG:CZ	1:B:589:ASP:CA[2_546]	1.53	0.67
1:A:607:ARG:CD	1:B:593:ARG:NH1[2_546]	1.56	0.64
1:A:607:ARG:NH2	1:B:589:ASP:CB[2_546]	1.59	0.61
1:A:608:GLN:OE1	1:B:41:GLU:CD[2_546]	1.66	0.54
1:A:607:ARG:NE	1:B:589:ASP:CB[2_546]	1.73	0.47
1:A:607:ARG:NE	1:B:593:ARG:NH1[2_546]	1.78	0.42
1:A:607:ARG:NH2	1:B:589:ASP:N[2_546]	1.88	0.32
1:A:607:ARG:NH2	1:B:589:ASP:O[2_546]	1.92	0.28
1:A:607:ARG:CZ	1:B:589:ASP:C[2_546]	1.96	0.24
1:A:607:ARG:NH2	1:B:590:MET:N[2_546]	2.05	0.15
1:A:608:GLN:CD	1:B:41:GLU:CD[2_546]	2.17	0.03
1:A:608:GLN:NE2	1:B:41:GLU:OE2[2_546]	2.17	0.03
1:A:607:ARG:CB	1:B:593:ARG:NH1[2_546]	2.19	0.01

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	660/662 (100%)	594 (90%)	53 (8%)	13 (2%)	9	41
1	B	660/662 (100%)	594 (90%)	53 (8%)	13 (2%)	9	41
1	C	660/662 (100%)	594 (90%)	53 (8%)	13 (2%)	9	41
All	All	1980/1986 (100%)	1782 (90%)	159 (8%)	39 (2%)	9	41

All (39) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	24	ALA
1	A	30	ARG
1	A	306	THR
1	A	607	ARG
1	A	611	LEU
1	B	24	ALA
1	B	30	ARG
1	B	306	THR
1	B	607	ARG
1	B	611	LEU
1	C	24	ALA
1	C	30	ARG
1	C	306	THR
1	C	607	ARG
1	C	611	LEU
1	A	2	ARG
1	A	23	LYS
1	A	604	SER
1	A	608	GLN
1	B	2	ARG
1	B	23	LYS
1	B	604	SER
1	B	608	GLN
1	C	2	ARG
1	C	23	LYS
1	C	604	SER
1	C	608	GLN
1	A	628	LEU
1	A	631	THR
1	B	628	LEU
1	B	631	THR
1	C	628	LEU
1	C	631	THR
1	A	166	ILE

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Mol	Chain	Res	Type
1	B	166	ILE
1	C	166	ILE
1	A	547	PRO
1	B	547	PRO
1	C	547	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	554/554 (100%)	520 (94%)	34 (6%)	23	61
1	B	554/554 (100%)	520 (94%)	34 (6%)	23	61
1	C	554/554 (100%)	520 (94%)	34 (6%)	23	61
All	All	1662/1662 (100%)	1560 (94%)	102 (6%)	23	61

All (102) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	ARG
1	A	7	PHE
1	A	10	SER
1	A	22	ILE
1	A	23	LYS
1	A	29	LYS
1	A	30	ARG
1	A	43	LEU
1	A	44	LEU
1	A	71	GLU
1	A	75	VAL
1	A	78	ASN
1	A	90	MET
1	A	94	PRO
1	A	119	VAL
1	A	146	ARG
1	A	241	SER

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Mol	Chain	Res	Type
1	A	262	ASP
1	A	271	THR
1	A	324	ASP
1	A	387	LEU
1	A	404	LEU
1	A	472	PHE
1	A	497	LEU
1	A	513	ILE
1	A	524	ASN
1	A	527	SER
1	A	529	GLU
1	A	591	LEU
1	A	617	ILE
1	A	627	LYS
1	A	634	ASP
1	A	638	ASN
1	A	649	VAL
1	B	3	ARG
1	B	7	PHE
1	B	10	SER
1	B	22	ILE
1	B	23	LYS
1	B	29	LYS
1	B	30	ARG
1	B	43	LEU
1	B	44	LEU
1	B	71	GLU
1	B	75	VAL
1	B	78	ASN
1	B	90	MET
1	B	94	PRO
1	B	119	VAL
1	B	146	ARG
1	B	241	SER
1	B	262	ASP
1	B	271	THR
1	B	324	ASP
1	B	387	LEU
1	B	404	LEU
1	B	472	PHE
1	B	497	LEU
1	B	513	ILE

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Mol	Chain	Res	Type
1	B	524	ASN
1	B	527	SER
1	B	529	GLU
1	B	591	LEU
1	B	617	ILE
1	B	627	LYS
1	B	634	ASP
1	B	638	ASN
1	B	649	VAL
1	C	3	ARG
1	C	7	PHE
1	C	10	SER
1	C	22	ILE
1	C	23	LYS
1	C	29	LYS
1	C	30	ARG
1	C	43	LEU
1	C	44	LEU
1	C	71	GLU
1	C	75	VAL
1	C	78	ASN
1	C	90	MET
1	C	94	PRO
1	C	119	VAL
1	C	146	ARG
1	C	241	SER
1	C	262	ASP
1	C	271	THR
1	C	324	ASP
1	C	387	LEU
1	C	404	LEU
1	C	472	PHE
1	C	497	LEU
1	C	513	ILE
1	C	524	ASN
1	C	527	SER
1	C	529	GLU
1	C	591	LEU
1	C	617	ILE
1	C	627	LYS
1	C	634	ASP
1	C	638	ASN

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Mol	Chain	Res	Type
1	C	649	VAL

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (41) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	15	GLN
1	A	78	ASN
1	A	89	HIS
1	A	91	ASN
1	A	158	ASN
1	A	191	GLN
1	A	255	GLN
1	A	280	ASN
1	A	309	ASN
1	A	346	ASN
1	A	374	GLN
1	A	423	ASN
1	A	448	GLN
1	A	524	ASN
1	B	15	GLN
1	B	78	ASN
1	B	89	HIS
1	B	91	ASN
1	B	158	ASN
1	B	191	GLN
1	B	255	GLN
1	B	280	ASN
1	B	309	ASN
1	B	346	ASN
1	B	374	GLN
1	B	448	GLN
1	B	524	ASN
1	C	15	GLN
1	C	78	ASN
1	C	89	HIS
1	C	91	ASN
1	C	158	ASN
1	C	191	GLN
1	C	255	GLN
1	C	280	ASN
1	C	309	ASN
1	C	346	ASN

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Mol	Chain	Res	Type
1	C	374	GLN
1	C	423	ASN
1	C	448	GLN
1	C	524	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 carbohydrates 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	662/662 (100%)	-0.39	4 (0%) 90 73	12, 32, 66, 118	0
1	B	662/662 (100%)	-0.23	13 (1%) 68 39	12, 32, 66, 118	0
1	C	662/662 (100%)	-0.34	11 (1%) 73 45	12, 32, 66, 118	0
All	All	1986/1986 (100%)	-0.32	28 (1%) 78 51	12, 32, 68, 118	0

All (28) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	609	ALA	5.7
1	C	632	GLU	4.8
1	C	608	GLN	4.3
1	C	1	PRO	4.0
1	A	606	ALA	4.0
1	A	608	GLN	3.9
1	C	609	ALA	3.8
1	C	604	SER	3.5
1	B	610	GLY	3.2
1	C	634	ASP	2.9
1	C	607	ARG	2.9
1	C	148	GLY	2.8
1	C	606	ALA	2.8
1	B	607	ARG	2.7
1	C	662	ARG	2.6
1	B	215	PRO	2.5
1	B	608	GLN	2.5
1	B	604	SER	2.4
1	A	629	SER	2.3
1	B	602	VAL	2.3
1	B	631	THR	2.2
1	B	1	PRO	2.2
1	B	662	ARG	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	610	GLY	2.1
1	B	638	ASN	2.1
1	C	602	VAL	2.1
1	B	599	SER	2.1
1	B	218	GLY	2.0

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

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

6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

6.4 Ligands [i](#)

There are no ligands in this entry.

6.5 Other polymers [i](#)

There are no such residues in this entry.