WORLDWIDE PDB PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report ⓘ

Oct 9, 2023 – 11:50 PM EDT

PDB ID	:	7MWC
Title	:	ERAP1 binds peptide C-terminus of a LPF sequence (AAAAFKARKF)
Authors	:	Guo, H.C.; Sui, L.
Deposited on	:	2021-05-16
Resolution	:	3.00 Å(reported)

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

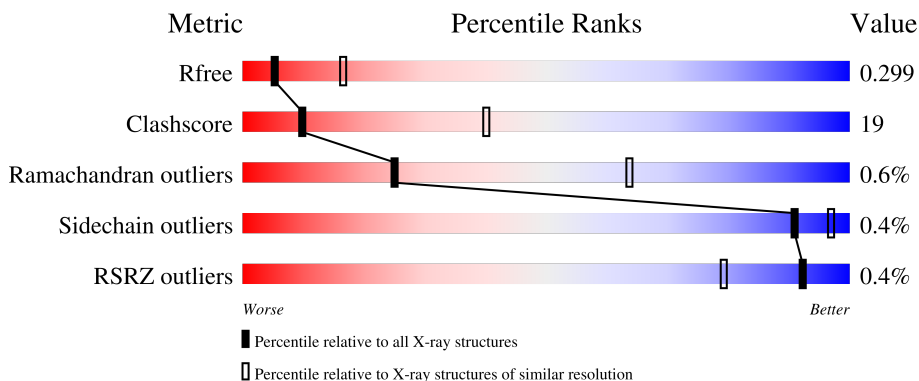|		
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35.1

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	Percentile Ranks	Value
Rfree		0.299
Clashscore		19
Ramachandran outliers		0.6%
Sidechain outliers		0.4%
RSRZ outliers		0.4%

Worse ... *Better*

▮ Percentile relative to all X-ray structures
▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	2092 (3.00-3.00)
Clashscore	141614	2416 (3.00-3.00)
Ramachandran outliers	138981	2333 (3.00-3.00)
Sidechain outliers	138945	2336 (3.00-3.00)
RSRZ outliers	127900	1990 (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 <=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	423	68% — 26% — 6%
1	B	423	69% — 25% — 5%
1	C	423	% · / 69% — 25% — 6%
1	D	423	62% — 32% — 6%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 13007 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 Endoplasmic reticulum aminopeptidase 1,LPF sequence.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	396	Total 3183	C 2048	N 541	O 579	S 15	0	0	0
1	B	400	Total 3252	C 2092	N 553	O 592	S 15	29	0	0
1	C	399	Total 3236	C 2082	N 552	O 587	S 15	29	0	0
1	D	398	Total 3215	C 2067	N 547	O 586	S 15	13	0	0

- Molecule 2 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	32	Total 32	O 32	0	0
2	B	27	Total 27	O 27	0	0
2	C	26	Total 26	O 26	0	0
2	D	36	Total 36	O 36	0	0

3 Residue-property plots ⓘ

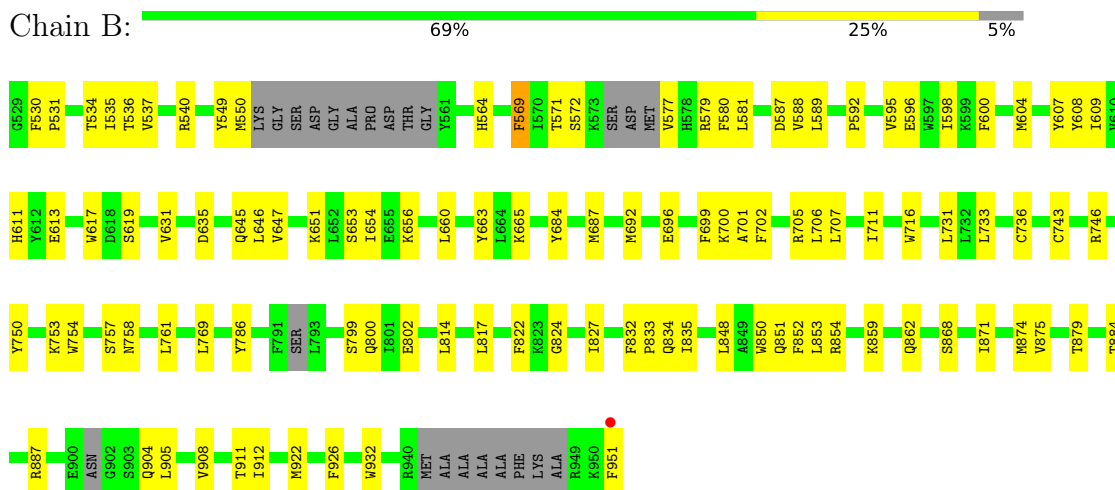These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: Endoplasmic reticulum aminopeptidase 1,LPF sequence
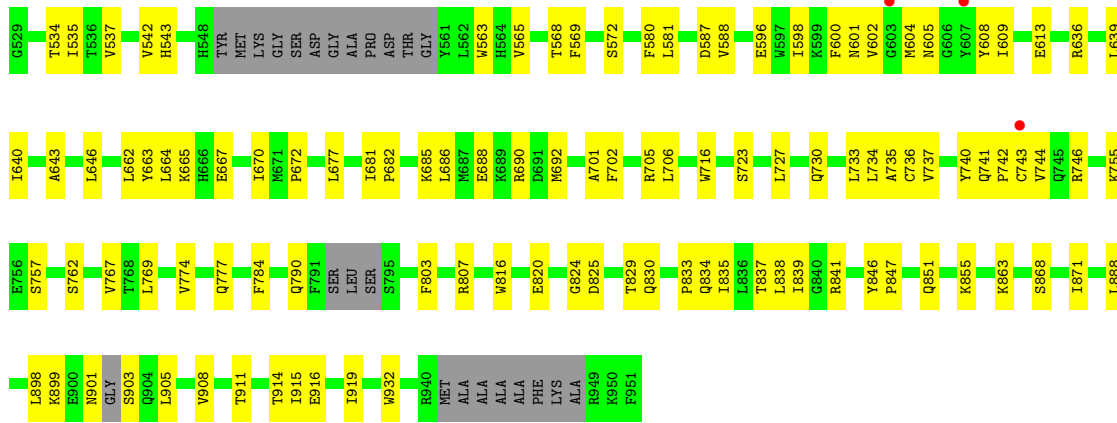
Chain A:

• Molecule 1: Endoplasmic reticulum aminopeptidase 1,LPF sequence

Chain B:

• Molecule 1: Endoplasmic reticulum aminopeptidase 1,LPF sequence

Chain C:

• Molecule 1: Endoplasmic reticulum aminopeptidase 1,LPF sequence
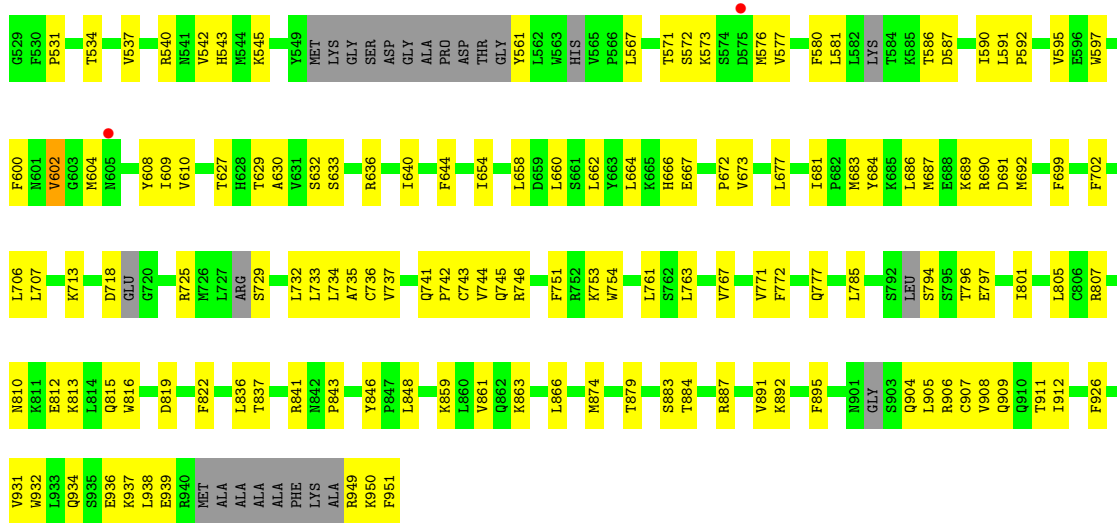
Chain D:

4   Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α, β, γ	57.03Å 66.68Å 121.71Å 90.07° 101.81° 90.05°	Depositor
Resolution (Å)	55.12 – 3.00 55.06 – 3.00	Depositor EDS
% Data completeness (in resolution range)	86.9 (55.12-3.00) 81.5 (55.06-3.00)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.06	Depositor
$< I/\sigma(I) >$ [1]	1.59 (at 3.01Å)	Xtriage
Refinement program	REFMAC 5.8.0258	Depositor
R, R_{free}	0.238 , 0.298 0.242 , 0.299	Depositor DCC
R_{free} test set	1678 reflections (5.49%)	wwPDB-VP
Wilson B-factor (Å^2)	41.9	Xtriage
Anisotropy	0.486	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 18.7	EDS
L-test for twinning[2]	$< |L| > = 0.45, < L^2 > = 0.27$	Xtriage
Estimated twinning fraction	0.028 for h,-k,-h-l 0.418 for -h,k,-l 0.024 for -h,-k,h+l	Xtriage
F_o,F_c correlation	0.88	EDS
Total number of atoms	13007	wwPDB-VP
Average B, all atoms (Å^2)	57.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 8.10% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.

[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$|Z|$ >5	RMSZ	#$|Z|$ >5
1	A	0.57	0/3248	0.77	0/4386
1	B	0.59	0/3320	0.84	0/4476
1	C	0.57	0/3303	0.82	0/4454
1	D	0.59	0/3278	0.88	0/4416
All	All	0.58	0/13149	0.83	0/17732

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

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	3183	0	3130	125	0
1	B	3252	0	3230	134	0
1	C	3236	0	3225	100	0
1	D	3215	0	3185	150	0
2	A	32	0	0	11	0
2	B	27	0	0	6	0
2	C	26	0	0	2	0
2	D	36	0	0	7	0
All	All	13007	0	12770	490	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 19.

All (490) 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:687:MET:HA	1:B:692:MET:SD	1.67	1.33
1:D:667:GLU:OE2	1:D:672:PRO:HG2	1.32	1.22
1:A:806:CYS:HB2	1:A:838:LEU:CD2	1.74	1.17
1:A:581:LEU:HD23	1:A:583:LYS:NZ	1.63	1.14
1:A:806:CYS:HB2	1:A:838:LEU:HD22	1.20	1.14
1:A:806:CYS:CB	1:A:838:LEU:HD22	1.77	1.14
1:C:755:LYS:HG3	1:C:784:PHE:CD2	1.87	1.09
1:A:581:LEU:HD23	1:A:583:LYS:CE	1.85	1.05
1:A:813:LYS:HB2	2:A:1001:HOH:O	1.55	1.05
1:A:737:VAL:HG13	1:A:807:ARG:HE	1.17	1.05
1:A:867:GLY:HA2	1:A:905:LEU:HD21	1.09	1.03
1:A:867:GLY:CA	1:A:905:LEU:HD21	1.88	1.03
1:D:807:ARG:HH22	1:D:843:PRO:CD	1.71	1.02
1:B:611:HIS:HE1	1:B:651:LYS:HB3	1.24	1.01
1:D:629:THR:HA	1:D:636:ARG:NH2	1.75	1.01
1:D:573:LYS:HB2	2:D:1008:HOH:O	1.60	1.00
1:A:810:ASN:HB3	2:A:1001:HOH:O	1.61	1.00
1:B:884:THR:HG23	1:B:887:ARG:H	1.27	0.98
1:C:851:GLN:OE1	1:C:855:LYS:HE3	1.63	0.97
1:A:581:LEU:CD2	1:A:583:LYS:HE3	1.95	0.97
1:C:762:SER:HB2	2:C:1010:HOH:O	1.64	0.96
1:A:737:VAL:HG13	1:A:807:ARG:NE	1.82	0.95
1:D:807:ARG:NH2	1:D:843:PRO:CD	2.30	0.94
1:C:790:GLN:O	1:C:790:GLN:HG2	1.63	0.94
1:B:687:MET:HG2	1:B:692:MET:HE1	1.48	0.93
1:D:543:HIS:CE1	1:D:586:THR:CG2	2.52	0.92
1:C:898:LEU:HB3	1:C:901:ASN:OD1	1.68	0.92
1:D:735:ALA:HB1	1:D:743:CYS:SG	2.10	0.92
1:B:687:MET:CA	1:B:692:MET:SD	2.56	0.92
1:A:566:PRO:HG2	1:D:741:GLN:NE2	1.84	0.91
1:B:817:LEU:CD2	1:B:835:ILE:HG21	1.99	0.91
1:A:867:GLY:HA2	1:A:905:LEU:CD2	1.99	0.91
1:A:670:ILE:HD12	1:A:727:LEU:HD13	1.51	0.91
1:D:687:MET:HG2	1:D:692:MET:HE1	1.54	0.90
1:B:884:THR:CG2	1:B:887:ARG:H	1.85	0.89
1:B:611:HIS:CE1	1:B:651:LYS:HB3	2.07	0.89
1:B:707:LEU:HD22	1:B:731:LEU:HD22	1.54	0.89
1:A:755:LYS:NZ	1:A:780:GLU:HB3	1.88	0.88
1:B:904:GLN:O	1:B:905:LEU:HG	1.73	0.87
1:A:754:TRP:CZ3	1:A:784:PHE:CE2	2.63	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:543:HIS:CE1	1:D:586:THR:HG23	2.10	0.87
1:D:543:HIS:HE1	1:D:586:THR:HG21	1.39	0.87
1:B:753:LYS:O	1:B:761:LEU:HD22	1.74	0.86
1:B:822:PHE:CD1	1:B:852:PHE:HZ	1.94	0.86
1:B:951:PHE:CE1	1:C:803:PHE:CZ	2.65	0.85
1:C:829:THR:HG21	1:C:863:LYS:HD3	1.59	0.85
1:D:736:CYS:SG	1:D:743:CYS:HB3	2.15	0.85
1:C:733:LEU:O	1:C:737:VAL:HG23	1.76	0.84
1:A:621:THR:CG2	1:A:625:LYS:HE2	2.06	0.83
1:B:687:MET:HG2	1:B:692:MET:CE	2.07	0.83
1:C:730:GLN:O	1:C:734:LEU:HD13	1.78	0.83
1:A:806:CYS:CB	1:A:838:LEU:CD2	2.46	0.83
1:B:700:LYS:HE2	2:B:1014:HOH:O	1.79	0.82
1:A:581:LEU:HD23	1:A:583:LYS:HE3	1.55	0.82
1:D:692:MET:HE3	1:D:926:PHE:CE1	2.15	0.82
1:A:803:PHE:HD1	1:A:838:LEU:HD11	1.45	0.82
1:D:751:PHE:HE1	1:D:785:LEU:HD21	1.44	0.81
1:D:543:HIS:CE1	1:D:586:THR:HG21	2.13	0.80
1:D:879:THR:OG1	1:D:911:THR:HG21	1.82	0.80
1:D:687:MET:HG2	1:D:692:MET:CE	2.12	0.80
1:D:807:ARG:NH2	1:D:843:PRO:HD2	1.97	0.80
1:C:665:LYS:HG2	1:C:706:LEU:HD23	1.64	0.79
1:B:769:LEU:CD2	1:B:800:GLN:HG2	2.13	0.79
1:C:534:THR:O	1:C:535:ILE:HD13	1.83	0.79
1:B:832:PHE:CZ	1:B:852:PHE:HE2	2.02	0.78
1:B:665:LYS:HG3	1:B:706:LEU:HD12	1.66	0.78
1:D:629:THR:HA	1:D:636:ARG:HH21	1.45	0.78
1:A:621:THR:HG23	1:A:625:LYS:HE2	1.66	0.77
1:A:581:LEU:HD21	1:A:583:LYS:HE3	1.65	0.77
1:B:769:LEU:HD21	1:B:800:GLN:HG2	1.65	0.77
1:B:884:THR:HG22	1:B:887:ARG:HG2	1.66	0.77
1:C:790:GLN:O	1:C:790:GLN:CG	2.32	0.77
1:B:868:SER:OG	1:B:871:ILE:HG12	1.85	0.77
1:B:850:TRP:CE2	1:B:854:ARG:HD2	2.20	0.76
1:D:692:MET:HE3	1:D:926:PHE:CD1	2.20	0.76
1:D:735:ALA:CB	1:D:743:CYS:SG	2.73	0.76
1:B:692:MET:HE1	1:B:922:MET:HE1	1.65	0.76
1:B:817:LEU:CD2	1:B:835:ILE:CG2	2.63	0.76
1:C:667:GLU:OE2	1:C:672:PRO:HG2	1.86	0.76
1:B:884:THR:HG23	1:B:887:ARG:N	2.02	0.75
1:B:692:MET:HE1	1:B:922:MET:CE	2.16	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:581:LEU:HD23	1:A:583:LYS:HZ2	1.53	0.74
1:B:716:TRP:NE1	1:B:746:ARG:NH1	2.36	0.74
1:D:807:ARG:HH22	1:D:843:PRO:HD3	1.51	0.74
1:C:604:MET:HG2	1:C:605:ASN:N	2.02	0.74
1:D:753:LYS:HB3	1:D:761:LEU:HD11	1.69	0.73
1:D:627:THR:O	1:D:627:THR:HG22	1.88	0.73
1:D:807:ARG:HH22	1:D:843:PRO:CG	2.01	0.73
1:D:543:HIS:HE1	1:D:586:THR:CG2	1.95	0.73
1:D:949:ARG:HD2	2:D:1018:HOH:O	1.89	0.73
1:B:580:PHE:HZ	1:B:587:ASP:OD2	1.71	0.72
1:D:567:LEU:CD2	1:D:602:VAL:HG22	2.19	0.72
1:A:532:LEU:HD23	1:A:547:GLU:OE1	1.89	0.72
1:A:532:LEU:CD2	1:A:547:GLU:OE1	2.37	0.72
1:D:746:ARG:HD2	2:D:1014:HOH:O	1.89	0.72
1:A:581:LEU:CD2	1:A:583:LYS:CE	2.57	0.72
1:B:853:LEU:HD11	1:B:874:MET:HB3	1.72	0.72
1:C:716:TRP:CE2	1:C:746:ARG:HD2	2.25	0.72
1:B:817:LEU:HD21	1:B:835:ILE:HG21	1.72	0.71
1:D:934:GLN:O	1:D:934:GLN:HG2	1.91	0.70
1:B:707:LEU:HD22	1:B:731:LEU:CD2	2.22	0.69
1:A:806:CYS:HB2	1:A:838:LEU:HD21	1.73	0.69
1:B:665:LYS:CG	1:B:706:LEU:HD12	2.22	0.69
1:B:832:PHE:HZ	1:B:852:PHE:HE2	1.38	0.69
1:B:577:VAL:HG12	2:B:1018:HOH:O	1.92	0.69
1:D:534:THR:HB	1:D:545:LYS:HB2	1.73	0.69
1:A:581:LEU:HD23	1:A:583:LYS:HZ1	1.58	0.69
1:A:733:LEU:O	1:A:737:VAL:HG23	1.92	0.69
1:B:832:PHE:CZ	1:B:852:PHE:CE2	2.80	0.69
1:D:664:LEU:HD12	1:D:706:LEU:HD21	1.73	0.69
1:A:737:VAL:CG1	1:A:807:ARG:HE	2.02	0.69
1:A:867:GLY:CA	1:A:905:LEU:CD2	2.66	0.69
1:B:580:PHE:CZ	1:B:587:ASP:OD2	2.46	0.69
1:A:566:PRO:HG2	1:D:741:GLN:HE21	1.57	0.68
1:B:832:PHE:HZ	1:B:852:PHE:CE2	2.12	0.68
1:B:684:TYR:CD1	1:B:700:LYS:HE3	2.29	0.68
1:B:884:THR:CG2	1:B:887:ARG:HG2	2.23	0.68
1:C:667:GLU:OE2	1:C:672:PRO:CG	2.42	0.68
1:A:755:LYS:HZ1	1:A:780:GLU:HB3	1.58	0.67
1:B:611:HIS:CE1	1:B:651:LYS:CB	2.77	0.67
1:B:611:HIS:CD2	1:B:617:TRP:HE1	2.12	0.67
1:D:754:TRP:HZ3	1:D:785:LEU:HD23	1.60	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:604:MET:CE	1:C:608:TYR:HB3	2.25	0.67
1:B:609:ILE:HG21	1:B:646:LEU:HD21	1.77	0.66
1:C:677:LEU:HD22	1:C:681:ILE:HD11	1.75	0.66
1:C:685:LYS:HA	1:C:688:GLU:OE1	1.96	0.66
1:C:834:GLN:O	1:C:838:LEU:HG	1.96	0.66
1:A:755:LYS:HZ2	1:A:780:GLU:HB3	1.60	0.66
1:B:611:HIS:HE1	1:B:651:LYS:CB	2.03	0.66
1:B:716:TRP:HE1	1:B:746:ARG:NH1	1.94	0.66
1:A:681:ILE:HG21	1:D:949:ARG:O	1.95	0.65
1:A:722:VAL:HG11	1:D:934:GLN:O	1.96	0.65
1:A:581:LEU:HG	1:A:583:LYS:HG3	1.78	0.65
1:A:907:CYS:O	1:A:911:THR:HG23	1.97	0.65
1:B:692:MET:HG2	2:B:1015:HOH:O	1.97	0.64
1:D:636:ARG:HD3	1:D:667:GLU:OE1	1.96	0.64
1:C:636:ARG:NH1	1:C:667:GLU:OE2	2.30	0.64
1:D:567:LEU:HD23	1:D:602:VAL:HG22	1.80	0.64
1:D:576:MET:HG2	1:D:577:VAL:H	1.62	0.64
1:D:602:VAL:HG12	1:D:604:MET:H	1.62	0.64
1:B:817:LEU:HD23	1:B:835:ILE:HG21	1.80	0.64
1:A:599:LYS:CD	1:A:639:LEU:HD21	2.29	0.63
1:C:755:LYS:HG3	1:C:784:PHE:CE2	2.32	0.63
1:C:824:GLY:O	1:C:825:ASP:OD1	2.16	0.63
1:D:836:LEU:HD23	1:D:874:MET:HG2	1.80	0.63
1:A:599:LYS:HD2	1:A:639:LEU:HD21	1.81	0.63
1:B:904:GLN:O	1:B:905:LEU:CG	2.46	0.63
1:C:735:ALA:HB1	1:C:740:TYR:HB3	1.81	0.63
1:A:566:PRO:HG2	1:D:741:GLN:HE22	1.62	0.62
1:B:611:HIS:HD2	1:B:617:TRP:HE1	1.47	0.62
1:B:951:PHE:CE1	1:C:807:ARG:HB2	2.35	0.62
1:D:654:ILE:HD11	1:D:683:MET:HE1	1.80	0.62
1:D:807:ARG:NH2	1:D:843:PRO:HD3	2.10	0.62
1:B:951:PHE:CD1	1:C:807:ARG:HD3	2.35	0.62
1:D:718:ASP:HB3	1:D:725:ARG:HE	1.66	0.61
1:B:817:LEU:HD21	1:B:835:ILE:CG2	2.29	0.61
1:B:951:PHE:CE1	1:C:807:ARG:HD3	2.36	0.61
1:D:576:MET:HG2	1:D:577:VAL:N	2.16	0.61
1:D:542:VAL:HG21	1:D:591:LEU:HD11	1.83	0.60
1:C:604:MET:CG	1:C:605:ASN:N	2.64	0.60
1:B:540:ARG:NH2	1:B:592:PRO:HA	2.16	0.60
1:C:736:CYS:SG	1:C:743:CYS:HB3	2.41	0.60
1:A:794:SER:HB2	1:A:797:GLU:HB2	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:692:MET:CE	1:B:922:MET:CE	2.79	0.60
1:B:848:LEU:HD13	1:B:851:GLN:NE2	2.17	0.60
1:C:665:LYS:CG	1:C:706:LEU:HD23	2.31	0.60
1:D:777:GLN:NE2	1:D:807:ARG:O	2.33	0.59
1:D:819:ASP:O	1:D:822:PHE:HB3	2.02	0.59
1:A:876:MET:O	1:A:880:ASN:ND2	2.35	0.59
1:B:684:TYR:HB2	1:B:700:LYS:HZ1	1.67	0.59
1:C:604:MET:HE2	1:C:608:TYR:HB3	1.83	0.59
1:D:754:TRP:N	1:D:761:LEU:HD12	2.17	0.59
1:A:623:LEU:HD21	1:A:631:VAL:CG2	2.33	0.59
1:A:754:TRP:CE3	1:A:784:PHE:HE2	2.20	0.59
1:D:754:TRP:HA	1:D:761:LEU:HD12	1.83	0.59
1:A:754:TRP:CZ3	1:A:784:PHE:HE2	2.14	0.59
1:C:662:LEU:HD21	1:C:932:TRP:CZ2	2.38	0.59
1:A:607:TYR:CE2	1:D:742:PRO:HG3	2.38	0.59
1:D:733:LEU:O	1:D:737:VAL:HG23	2.02	0.59
1:D:629:THR:HA	1:D:636:ARG:HH22	1.66	0.58
1:B:571:THR:HG22	1:B:598:ILE:HB	1.85	0.58
1:A:596:GLU:HG3	2:A:1009:HOH:O	2.03	0.58
1:A:759:GLY:HA3	1:A:788:LYS:HE3	1.85	0.58
1:C:604:MET:HG2	1:C:605:ASN:H	1.67	0.58
1:C:905:LEU:HB2	1:C:908:VAL:HG12	1.85	0.58
1:D:586:THR:HG22	1:D:587:ASP:N	2.18	0.58
1:A:670:ILE:CD1	1:A:727:LEU:HD13	2.30	0.58
1:D:667:GLU:CD	1:D:672:PRO:HG2	2.20	0.58
1:C:535:ILE:HG21	1:C:600:PHE:CE2	2.38	0.57
1:B:684:TYR:CD1	1:B:700:LYS:CE	2.87	0.57
1:D:904:GLN:O	1:D:904:GLN:HG2	2.04	0.57
1:D:640:ILE:CD1	1:D:664:LEU:HD21	2.35	0.57
1:C:777:GLN:NE2	1:C:807:ARG:NH1	2.53	0.57
1:C:777:GLN:NE2	1:C:807:ARG:HH12	2.02	0.57
1:C:604:MET:CG	1:C:605:ASN:H	2.17	0.57
1:D:754:TRP:CA	1:D:761:LEU:HD12	2.34	0.57
1:D:754:TRP:CZ3	1:D:785:LEU:HD23	2.38	0.57
1:A:532:LEU:HG	1:A:547:GLU:OE1	2.05	0.56
1:A:803:PHE:CD1	1:A:838:LEU:HD11	2.35	0.56
1:B:716:TRP:CE2	1:B:746:ARG:HD2	2.40	0.56
1:D:576:MET:CG	1:D:577:VAL:H	2.18	0.56
1:B:822:PHE:CD1	1:B:852:PHE:CZ	2.85	0.56
1:C:682:PRO:O	1:C:686:LEU:HD13	2.05	0.56
1:C:777:GLN:HE22	1:C:807:ARG:NH1	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:632:SER:O	1:D:636:ARG:HG3	2.06	0.56
1:B:611:HIS:HD2	1:B:617:TRP:NE1	2.04	0.56
1:B:577:VAL:HG12	1:B:577:VAL:O	2.06	0.55
1:D:673:VAL:HG13	1:D:707:LEU:HD21	1.88	0.55
1:A:599:LYS:CD	1:A:639:LEU:HD11	2.36	0.55
1:D:742:PRO:O	1:D:746:ARG:CZ	2.55	0.55
1:A:850:TRP:CZ2	1:A:854:ARG:HD3	2.42	0.55
1:A:616:GLY:N	2:A:1002:HOH:O	2.40	0.55
1:B:701:ALA:HB1	1:B:705:ARG:HH22	1.72	0.55
1:B:871:ILE:O	1:B:875:VAL:HG23	2.06	0.55
1:D:892:LYS:HG3	1:D:912:ILE:HD13	1.89	0.55
1:D:687:MET:HA	1:D:692:MET:SD	2.48	0.54
1:D:542:VAL:CG2	1:D:591:LEU:HD11	2.37	0.54
1:A:532:LEU:CG	1:A:547:GLU:OE1	2.55	0.54
1:D:754:TRP:HZ3	1:D:785:LEU:CD2	2.20	0.54
1:A:548:HIS:C	2:A:1011:HOH:O	2.45	0.54
1:D:662:LEU:CD2	1:D:702:PHE:HZ	2.21	0.54
1:C:915:ILE:O	1:C:919:ILE:HG13	2.08	0.54
1:D:934:GLN:O	1:D:934:GLN:CG	2.55	0.54
1:B:692:MET:CG	2:B:1015:HOH:O	2.53	0.54
1:A:719:GLU:HG3	1:A:719:GLU:O	2.07	0.54
1:C:835:ILE:O	1:C:839:ILE:HD13	2.08	0.54
1:D:627:THR:HG22	1:D:630:ALA:HB2	1.90	0.54
1:B:951:PHE:HA	1:C:737:VAL:HG11	1.90	0.53
1:D:861:VAL:HB	1:D:866:LEU:HD23	1.90	0.53
1:C:888:LEU:HD13	1:C:919:ILE:HD12	1.91	0.53
1:D:636:ARG:HD3	1:D:667:GLU:CD	2.28	0.53
1:B:702:PHE:CZ	1:B:932:TRP:HH2	2.27	0.53
1:D:763:LEU:CD1	1:D:771:VAL:HG11	2.38	0.53
1:D:938:LEU:O	1:D:939:GLU:HB3	2.08	0.53
1:A:801:ILE:O	1:A:805:LEU:HG	2.09	0.53
1:B:537:VAL:HG23	1:B:537:VAL:O	2.08	0.53
1:D:725:ARG:O	1:D:729:SER:HB3	2.08	0.53
1:D:689:LYS:HE3	1:D:846:TYR:HB2	1.91	0.53
1:B:799:SER:HA	1:B:802:GLU:HB3	1.92	0.52
1:C:888:LEU:HD11	1:C:916:GLU:CG	2.39	0.52
1:B:753:LYS:O	1:B:761:LEU:CD2	2.52	0.52
1:C:837:THR:HG23	1:C:841:ARG:HH12	1.75	0.52
1:C:837:THR:HG23	1:C:841:ARG:NH1	2.24	0.52
1:A:838:LEU:HD23	1:A:838:LEU:O	2.09	0.52
1:D:807:ARG:HH21	1:D:843:PRO:HD2	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:662:LEU:HD11	1:D:932:TRP:HH2	1.74	0.52
1:D:837:THR:O	1:D:841:ARG:HG2	2.10	0.52
1:D:690:ARG:HD2	1:D:883:SER:HB2	1.92	0.51
1:B:884:THR:HG22	1:B:887:ARG:CG	2.38	0.51
1:C:604:MET:HE1	1:C:608:TYR:HB3	1.92	0.51
1:D:636:ARG:HB2	1:D:672:PRO:HG3	1.92	0.51
1:B:587:ASP:CG	1:B:588:VAL:H	2.14	0.51
1:A:736:CYS:SG	1:A:770:ALA:HB1	2.50	0.51
1:C:609:ILE:HG22	1:C:646:LEU:HD11	1.93	0.51
1:C:662:LEU:HD21	1:C:932:TRP:CH2	2.45	0.51
1:D:540:ARG:HB2	1:D:591:LEU:HB2	1.92	0.51
1:A:782:TRP:CE3	1:A:813:LYS:HD3	2.46	0.51
1:A:787:SER:HA	1:A:790:GLN:HE21	1.75	0.51
1:A:887:ARG:O	1:A:891:VAL:HG23	2.10	0.51
1:B:540:ARG:NE	1:B:592:PRO:O	2.44	0.51
1:A:785:LEU:HB3	1:A:801:ILE:HG23	1.93	0.51
1:B:868:SER:HG	1:B:871:ILE:HG12	1.75	0.51
1:B:684:TYR:CE1	1:B:700:LYS:HE3	2.46	0.51
1:B:699:PHE:O	1:B:702:PHE:HB3	2.10	0.51
1:D:691:ASP:O	1:D:692:MET:HG3	2.11	0.51
1:A:856:ASN:C	2:A:1004:HOH:O	2.48	0.50
1:B:687:MET:CG	1:B:692:MET:HE1	2.28	0.50
1:C:534:THR:CG2	1:C:613:GLU:OE2	2.59	0.50
1:D:576:MET:CG	1:D:577:VAL:N	2.75	0.50
1:C:777:GLN:HE22	1:C:807:ARG:HH12	1.57	0.50
1:D:662:LEU:CD2	1:D:702:PHE:CZ	2.94	0.50
1:B:577:VAL:HG13	2:B:1001:HOH:O	2.10	0.50
1:B:692:MET:CE	1:B:922:MET:HE3	2.41	0.50
1:D:677:LEU:HD22	1:D:734:LEU:HD11	1.92	0.50
1:D:794:SER:HA	2:D:1030:HOH:O	2.12	0.50
1:D:905:LEU:HD23	1:D:907:CYS:SG	2.52	0.50
1:B:653:SER:OG	1:B:656:LYS:HG2	2.12	0.50
1:D:807:ARG:O	1:D:807:ARG:HG3	2.11	0.50
1:A:536:THR:CG2	1:A:614:ASP:OD2	2.59	0.50
1:A:806:CYS:HB3	1:A:838:LEU:CD2	2.40	0.50
1:C:851:GLN:CD	1:C:855:LYS:HE3	2.31	0.50
1:D:744:VAL:HG12	1:D:744:VAL:O	2.12	0.50
1:B:587:ASP:CG	1:B:588:VAL:N	2.65	0.50
1:A:607:TYR:O	1:A:607:TYR:CD1	2.65	0.50
1:A:621:THR:CG2	1:A:625:LYS:CE	2.86	0.50
1:A:668:THR:O	1:A:669:GLU:OE2	2.29	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:537:VAL:HG13	1:D:542:VAL:HG22	1.93	0.50
1:D:662:LEU:HD21	1:D:932:TRP:CH2	2.46	0.50
1:B:733:LEU:HD12	1:B:769:LEU:HB3	1.94	0.49
1:A:795:SER:HB3	2:A:1022:HOH:O	2.10	0.49
1:A:814:LEU:HD22	1:A:839:ILE:CD1	2.41	0.49
1:B:684:TYR:HB2	1:B:700:LYS:NZ	2.27	0.49
1:D:531:PRO:O	1:D:609:ILE:HB	2.12	0.49
1:B:951:PHE:CZ	1:C:803:PHE:CZ	3.00	0.49
1:D:686:LEU:HD22	1:D:883:SER:OG	2.12	0.49
1:B:757:SER:HB3	1:B:761:LEU:HD13	1.94	0.49
1:D:810:ASN:OD1	1:D:812:GLU:HB3	2.13	0.49
1:D:813:LYS:O	1:D:816:TRP:HB3	2.12	0.49
1:B:696:GLU:O	1:B:699:PHE:HB3	2.13	0.49
1:C:730:GLN:O	1:C:734:LEU:CD1	2.58	0.49
1:A:806:CYS:SG	1:A:838:LEU:HD22	2.53	0.49
1:B:530:PHE:HB2	1:B:531:PRO:HD2	1.95	0.49
1:B:631:VAL:CG1	1:B:635:ASP:HB3	2.43	0.48
1:C:868:SER:OG	1:C:871:ILE:HD13	2.13	0.48
1:B:536:THR:HG22	1:B:537:VAL:N	2.28	0.48
1:B:951:PHE:CE1	1:C:803:PHE:HZ	2.24	0.48
1:C:733:LEU:HD12	1:C:769:LEU:HB3	1.94	0.48
1:D:690:ARG:CD	1:D:883:SER:HB2	2.43	0.48
1:B:534:THR:CG2	1:B:613:GLU:OE2	2.61	0.48
1:B:665:LYS:HG3	1:B:706:LEU:CD1	2.38	0.48
1:D:662:LEU:HD21	1:D:932:TRP:HH2	1.78	0.48
1:B:607:TYR:OH	1:B:645:GLN:HG3	2.12	0.48
1:B:736:CYS:SG	1:B:743:CYS:O	2.72	0.48
1:D:905:LEU:HG	1:D:906:ARG:N	2.28	0.48
1:D:937:LYS:O	1:D:937:LYS:HG2	2.13	0.48
1:A:869:SER:HB2	1:D:666:HIS:HB3	1.95	0.48
1:C:670:ILE:HD12	1:C:723:SER:O	2.14	0.48
1:D:767:VAL:HG12	1:D:771:VAL:HG23	1.95	0.48
1:B:832:PHE:CD1	1:B:874:MET:CE	2.97	0.48
1:D:567:LEU:HD12	1:D:580:PHE:CD2	2.48	0.48
1:D:595:VAL:HG12	2:D:1008:HOH:O	2.14	0.48
1:A:546:GLN:OE1	1:A:563:TRP:HB2	2.14	0.48
1:B:577:VAL:CG1	2:B:1018:HOH:O	2.55	0.48
1:D:884:THR:OG1	1:D:887:ARG:HG2	2.14	0.48
1:A:599:LYS:HD2	1:A:639:LEU:CD2	2.44	0.47
1:C:888:LEU:HD11	1:C:916:GLU:HG2	1.95	0.47
1:A:625:LYS:NZ	1:A:659:ASP:OD1	2.46	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:662:LEU:HD11	1:D:932:TRP:CH2	2.50	0.47
1:C:851:GLN:OE1	1:C:855:LYS:CE	2.50	0.47
1:A:668:THR:O	1:A:668:THR:HG23	2.14	0.47
1:D:644:PHE:CE1	1:D:683:MET:HE1	2.49	0.47
1:A:599:LYS:HD3	1:A:639:LEU:HD11	1.96	0.47
1:D:542:VAL:HG23	1:D:591:LEU:HG	1.97	0.47
1:A:716:TRP:CZ2	1:A:732:LEU:HD22	2.50	0.47
1:C:580:PHE:CZ	1:C:587:ASP:OD2	2.68	0.47
1:D:796:THR:HG23	1:D:797:GLU:N	2.30	0.47
1:D:807:ARG:HH22	1:D:843:PRO:HG3	1.79	0.47
1:A:673:VAL:HG13	1:A:707:LEU:HD21	1.96	0.47
1:B:564:HIS:HB3	1:B:581:LEU:HD21	1.97	0.47
1:B:571:THR:HG22	1:B:598:ILE:CB	2.44	0.47
1:C:690:ARG:NE	1:C:692:MET:HE1	2.30	0.47
1:C:716:TRP:NE1	1:C:746:ARG:HD2	2.29	0.47
1:B:692:MET:HE2	1:B:926:PHE:CE1	2.50	0.47
1:B:850:TRP:NE1	1:B:854:ARG:HD2	2.30	0.47
1:D:571:THR:HB	1:D:595:VAL:HG21	1.97	0.46
1:A:610:VAL:O	1:A:646:LEU:HD11	2.15	0.46
1:A:686:LEU:HD22	1:A:883:SER:HB3	1.98	0.46
1:A:754:TRP:HZ3	1:A:784:PHE:CE2	2.31	0.46
1:C:572:SER:HB3	1:C:596:GLU:HB2	1.97	0.46
1:D:586:THR:CG2	1:D:587:ASP:N	2.78	0.46
1:A:813:LYS:CB	2:A:1001:HOH:O	2.33	0.46
1:B:786:TYR:O	1:B:786:TYR:CD1	2.69	0.46
1:D:754:TRP:CZ3	1:D:785:LEU:CD2	2.98	0.46
1:D:572:SER:HB3	1:D:597:TRP:H	1.81	0.46
1:B:580:PHE:CD2	1:B:589:LEU:HD23	2.51	0.45
1:B:701:ALA:HB1	1:B:705:ARG:NH2	2.30	0.45
1:C:580:PHE:HZ	1:C:587:ASP:OD2	1.99	0.45
1:D:531:PRO:CG	1:D:604:MET:SD	3.05	0.45
1:D:713:LYS:HG3	1:D:713:LYS:O	2.15	0.45
1:B:859:LYS:O	1:B:862:GLN:HB2	2.17	0.45
1:D:580:PHE:CG	1:D:581:LEU:N	2.84	0.45
1:B:824:GLY:HA2	1:B:827:ILE:O	2.16	0.45
1:D:600:PHE:HB2	1:D:610:VAL:HG11	1.99	0.45
1:A:769:LEU:HD22	1:A:803:PHE:CD2	2.52	0.45
1:B:660:LEU:O	1:B:663:TYR:HD1	2.00	0.45
1:A:534:THR:HB	1:A:545:LYS:HB3	1.99	0.45
1:A:888:LEU:HD11	1:A:892:LYS:HE3	1.99	0.45
1:A:754:TRP:HH2	1:A:788:LYS:HG3	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:777:GLN:CD	1:A:807:ARG:NH2	2.71	0.45
1:C:833:PRO:O	1:C:834:GLN:C	2.56	0.45
1:B:572:SER:HB3	1:B:596:GLU:HB3	1.98	0.44
1:A:601:ASN:HB2	1:A:608:TYR:CE2	2.52	0.44
1:D:636:ARG:HD3	1:D:667:GLU:OE2	2.17	0.44
1:D:699:PHE:O	1:D:702:PHE:HB3	2.16	0.44
1:A:664:LEU:HB2	1:A:706:LEU:HD11	2.00	0.44
1:C:563:TRP:CE2	1:C:565:VAL:HG22	2.53	0.44
1:D:735:ALA:HB3	1:D:743:CYS:SG	2.57	0.44
1:D:763:LEU:HD11	1:D:771:VAL:HG11	2.00	0.44
1:A:533:ILE:HG22	1:A:535:ILE:HD11	1.99	0.44
1:C:535:ILE:HG21	1:C:600:PHE:CD2	2.53	0.44
1:C:543:HIS:CE1	2:C:1020:HOH:O	2.70	0.44
1:C:602:VAL:HB	1:C:608:TYR:CD1	2.53	0.44
1:C:868:SER:HG	1:C:871:ILE:HD13	1.82	0.44
1:A:670:ILE:HG23	1:A:671:MET:N	2.33	0.44
1:B:535:ILE:HD12	1:B:600:PHE:CG	2.52	0.44
1:C:824:GLY:HA3	1:C:829:THR:OG1	2.18	0.44
1:A:879:THR:O	1:A:915:ILE:HD11	2.18	0.44
1:B:832:PHE:CD1	1:B:874:MET:HE1	2.53	0.44
1:D:815:GLN:OE1	1:D:848:LEU:HD12	2.17	0.44
1:B:549:TYR:HE1	1:B:550:MET:SD	2.41	0.44
1:B:951:PHE:CZ	1:C:807:ARG:HB2	2.53	0.44
1:C:565:VAL:O	1:C:581:LEU:HA	2.18	0.44
1:D:692:MET:CE	1:D:926:PHE:CE1	2.94	0.44
1:A:905:LEU:HG	1:A:906:ARG:N	2.33	0.43
1:B:905:LEU:HB2	1:B:908:VAL:HG23	2.00	0.43
1:B:833:PRO:O	1:B:834:GLN:C	2.54	0.43
1:C:911:THR:O	1:C:914:THR:N	2.51	0.43
1:A:737:VAL:HG11	1:D:951:PHE:HA	1.99	0.43
1:B:832:PHE:CE2	1:B:852:PHE:CE2	3.06	0.43
1:C:537:VAL:HG22	1:C:542:VAL:HG22	2.00	0.43
1:D:542:VAL:CG2	1:D:591:LEU:CD1	2.96	0.43
1:D:681:ILE:HA	1:D:684:TYR:CE2	2.54	0.43
1:D:763:LEU:HD13	1:D:771:VAL:HG11	1.99	0.43
1:C:601:ASN:ND2	1:C:602:VAL:O	2.51	0.43
1:A:532:LEU:HD22	1:A:649:ILE:CD1	2.48	0.43
1:D:636:ARG:CD	1:D:667:GLU:OE2	2.66	0.43
1:C:534:THR:HG21	1:C:613:GLU:OE2	2.19	0.43
1:C:690:ARG:HE	1:C:692:MET:HE1	1.84	0.43
1:A:857:TRP:N	2:A:1004:HOH:O	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:876:MET:O	1:A:880:ASN:CG	2.57	0.43
1:D:891:VAL:O	1:D:895:PHE:HD2	2.02	0.43
1:A:599:LYS:HD2	1:A:639:LEU:CG	2.49	0.42
1:A:905:LEU:HG	1:A:906:ARG:H	1.83	0.42
1:B:746:ARG:HD3	1:B:750:TYR:CE2	2.54	0.42
1:C:587:ASP:CG	1:C:588:VAL:H	2.22	0.42
1:C:816:TRP:CE2	1:C:820:GLU:HG3	2.54	0.42
1:D:751:PHE:HE1	1:D:785:LEU:CD2	2.24	0.42
1:D:771:VAL:HG12	1:D:772:PHE:CD1	2.54	0.42
1:D:879:THR:OG1	1:D:911:THR:CG2	2.61	0.42
1:D:909:GLN:HG2	2:D:1036:HOH:O	2.18	0.42
1:B:549:TYR:CE1	1:B:550:MET:SD	3.13	0.42
1:B:832:PHE:CD1	1:B:874:MET:HE2	2.55	0.42
1:A:769:LEU:HD22	1:A:803:PHE:HD2	1.85	0.42
1:C:755:LYS:C	1:C:757:SER:H	2.23	0.42
1:C:769:LEU:HA	1:C:769:LEU:HD23	1.71	0.42
1:A:875:VAL:HG13	1:A:895:PHE:CZ	2.55	0.42
1:B:746:ARG:HD3	1:B:750:TYR:HE2	1.84	0.42
1:A:658:LEU:O	1:A:661:SER:OG	2.30	0.42
1:C:701:ALA:HB1	1:C:705:ARG:HH22	1.85	0.42
1:D:859:LYS:HG3	1:D:863:LYS:HE2	2.01	0.42
1:A:813:LYS:N	2:A:1001:HOH:O	2.52	0.42
1:A:875:VAL:HG12	1:A:911:THR:HG21	2.02	0.42
1:B:619:SER:O	1:C:830:GLN:NE2	2.52	0.42
1:B:665:LYS:HG2	1:B:706:LEU:HD12	2.00	0.42
1:B:684:TYR:CG	1:B:700:LYS:HE3	2.54	0.42
1:B:701:ALA:CB	1:B:705:ARG:HH12	2.32	0.42
1:B:879:THR:OG1	1:B:911:THR:HG21	2.20	0.42
1:D:640:ILE:HD11	1:D:664:LEU:HD21	2.01	0.42
1:A:536:THR:HG23	1:A:614:ASP:OD2	2.18	0.41
1:C:568:THR:HG22	1:C:569:PHE:N	2.35	0.41
1:C:639:LEU:O	1:C:643:ALA:HB2	2.20	0.41
1:C:741:GLN:HB3	1:C:742:PRO:HD3	2.01	0.41
1:C:767:VAL:O	1:C:767:VAL:HG12	2.19	0.41
1:B:701:ALA:O	1:B:705:ARG:HB2	2.21	0.41
1:B:951:PHE:CZ	1:C:803:PHE:CE1	3.08	0.41
1:B:711:ILE:HG12	1:B:731:LEU:HB3	2.02	0.41
1:A:728:ARG:HE	1:A:728:ARG:HB3	1.58	0.41
1:A:782:TRP:CZ3	1:A:813:LYS:HD3	2.54	0.41
1:C:662:LEU:HD21	1:C:932:TRP:HZ2	1.86	0.41
1:D:567:LEU:HD12	1:D:580:PHE:HD2	1.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:658:LEU:C	1:D:660:LEU:H	2.24	0.41
1:D:691:ASP:C	1:D:692:MET:HG3	2.40	0.41
1:A:667:GLU:OE2	1:A:668:THR:N	2.54	0.41
1:C:663:TYR:C	1:C:665:LYS:N	2.74	0.41
1:C:670:ILE:HD12	1:C:727:LEU:HB2	2.02	0.41
1:C:888:LEU:CD1	1:C:919:ILE:HD12	2.49	0.41
1:D:908:VAL:O	1:D:912:ILE:HG13	2.21	0.41
1:D:567:LEU:HD22	1:D:602:VAL:HG22	1.98	0.41
1:A:532:LEU:HD22	1:A:649:ILE:HD12	2.03	0.41
1:A:705:ARG:NH1	1:A:936:GLU:OE1	2.47	0.41
1:A:831:GLU:O	1:A:835:ILE:HD12	2.20	0.41
1:B:571:THR:HG21	1:B:595:VAL:HG21	2.02	0.41
1:B:604:MET:SD	1:B:608:TYR:CD1	3.14	0.41
1:B:746:ARG:HG2	1:B:750:TYR:CD2	2.55	0.41
1:B:814:LEU:HA	1:B:814:LEU:HD23	1.75	0.41
1:C:598:ILE:O	1:C:598:ILE:HG23	2.21	0.41
1:C:640:ILE:CD1	1:C:664:LEU:HD21	2.51	0.41
1:D:732:LEU:HD23	1:D:732:LEU:HA	1.88	0.41
1:B:908:VAL:O	1:B:912:ILE:HG13	2.21	0.41
1:D:537:VAL:HG22	1:D:542:VAL:HG13	2.02	0.41
1:A:546:GLN:O	1:A:547:GLU:HG3	2.21	0.40
1:A:718:ASP:O	1:A:719:GLU:C	2.60	0.40
1:A:838:LEU:HD23	1:A:838:LEU:C	2.42	0.40
1:A:871:ILE:HD13	1:A:874:MET:CE	2.51	0.40
1:D:801:ILE:O	1:D:805:LEU:HG	2.20	0.40
1:A:722:VAL:HG21	1:D:931:VAL:HG13	2.03	0.40
1:A:813:LYS:CA	2:A:1001:HOH:O	2.65	0.40
1:A:930:ARG:O	1:A:934:GLN:HG3	2.20	0.40
1:B:736:CYS:SG	1:B:743:CYS:C	2.99	0.40
1:C:744:VAL:HG13	1:C:774:VAL:HG21	2.03	0.40
1:D:561:TYR:CB	2:D:1031:HOH:O	2.69	0.40
1:D:667:GLU:HG2	1:D:672:PRO:HB2	2.02	0.40
1:B:647:VAL:HG11	1:B:654:ILE:HD13	2.03	0.40
1:D:602:VAL:HB	1:D:608:TYR:CB	2.52	0.40
1:A:662:LEU:HD21	1:A:932:TRP:CH2	2.57	0.40
1:B:716:TRP:CD2	1:B:746:ARG:HD2	2.57	0.40
1:D:633:SER:O	1:D:636:ARG:HB2	2.21	0.40
1:A:754:TRP:CH2	1:A:788:LYS:HG3	2.57	0.40
1:C:846:TYR:CG	1:C:847:PRO:HD3	2.57	0.40
1:C:901:ASN:C	1:C:903:SER:N	2.74	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	384/423 (91%)	338 (88%)	45 (12%)	1 (0%)	41	76
1	B	388/423 (92%)	332 (86%)	53 (14%)	3 (1%)	19	57
1	C	389/423 (92%)	336 (86%)	52 (13%)	1 (0%)	41	76
1	D	380/423 (90%)	316 (83%)	60 (16%)	4 (1%)	14	50
All	All	1541/1692 (91%)	1322 (86%)	210 (14%)	9 (1%)	25	64

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	719	GLU
1	B	758	ASN
1	D	745	GLN
1	B	569	PHE
1	D	602	VAL
1	B	754	TRP
1	C	899	LYS
1	D	590	ILE
1	D	592	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	340/379 (90%)	339 (100%)	1 (0%)	92	97
1	B	355/379 (94%)	353 (99%)	2 (1%)	86	95

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	C	353/379 (93%)	352 (100%)	1 (0%)	92	97
1	D	350/379 (92%)	348 (99%)	2 (1%)	86	95
All	All	1398/1516 (92%)	1392 (100%)	6 (0%)	91	97

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	674	PHE
1	B	569	PHE
1	B	579	ARG
1	C	702	PHE
1	D	936	GLU
1	D	950	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (19) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	578	HIS
1	A	738	HIS
1	A	790	GLN
1	A	934	GLN
1	B	611	HIS
1	B	745	GLN
1	B	851	GLN
1	B	856	ASN
1	C	611	HIS
1	C	678	ASN
1	C	698	GLN
1	C	738	HIS
1	C	777	GLN
1	C	934	GLN
1	D	543	HIS
1	D	641	ASN
1	D	666	HIS
1	D	741	GLN
1	D	909	GLN

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 monosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

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	396/423 (93%)	-0.36	0	100	100	33, 56, 81, 97	2 (0%)
1	B	399/423 (94%)	-0.32	1 (0%)	94	84	32, 55, 82, 101	6 (1%)
1	C	398/423 (94%)	-0.32	3 (0%)	86	65	34, 57, 84, 104	5 (1%)
1	D	398/423 (94%)	-0.35	2 (0%)	91	75	30, 55, 85, 127	9 (2%)
All	All	1591/1692 (94%)	-0.34	6 (0%)	92	79	30, 56, 83, 127	22 (1%)

All (6) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	605	ASN	2.4
1	C	743	CYS	2.3
1	C	603	GLY	2.2
1	C	607	TYR	2.2
1	B	951	PHE	2.2
1	D	575	ASP	2.0

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

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

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

There are no ligands in this entry.

6.5 Other polymers ⓘ

There are no such residues in this entry.