Full wwPDB X-ray Structure Validation Report (i)

Jun 12, 2024 – 06:22 AM EDT

PDB ID	:	1MIU
Title	:	Structure of a BRCA2-DSS1 complex
Authors	:	Yang, H.; Jeffrey, P.D.; Miller, J.; Kinnucan, E.; Sun, Y.; Thoma, N.H.; Zheng, N.; Chen, P.L.; Lee, W.H.; Pavletich, N.P.
Deposited on	:	2002-08-23
Resolution	:	3.10 Å(reported)

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

|		
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

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 3.10 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
Clashscore		66
Ramachandran outliers		16.4%
Sidechain outliers		16.3%

Worse *Better*

▌ Percentile relative to all X-ray structures
◨ Percentile relative to X-ray structures of similar resolution
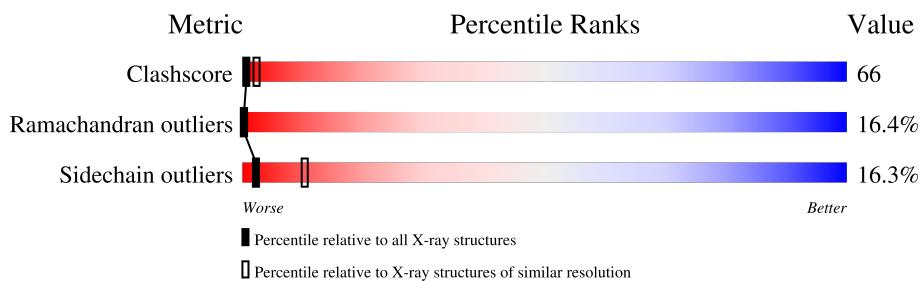
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	1184 (3.10-3.10)
Ramachandran outliers	138981	1141 (3.10-3.10)
Sidechain outliers	138945	1141 (3.10-3.10)

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%

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	B	70	23% 29% 6% • 40%
2	A	738	23% 47% 19% • 9%
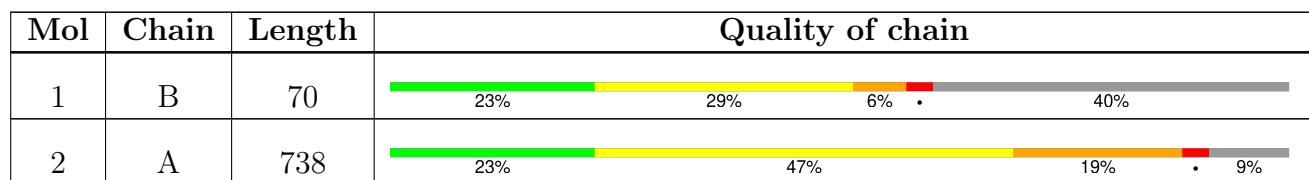
2 Entity composition ⓘ

There are 3 unique types of molecules in this entry. The entry contains 5647 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 Deleted in split hand/split foot protein 1.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
1	B	42	Total	C	N	O	0	0	0
			348	217	53	78			

- Molecule 2 is a protein called Breast Cancer type 2 susceptibility protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	A	671	Total	C	N	O	S	0	0	0
			5294	3361	925	991	17			

- Molecule 3 is MERCURY (II) ION (three-letter code: HG) (formula: Hg).

| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	5	Total	Hg	0	0
			5	5		

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. 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. 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.

Note EDS was not executed.

• Molecule 1: Deleted in split hand/split foot protein 1

Chain B:
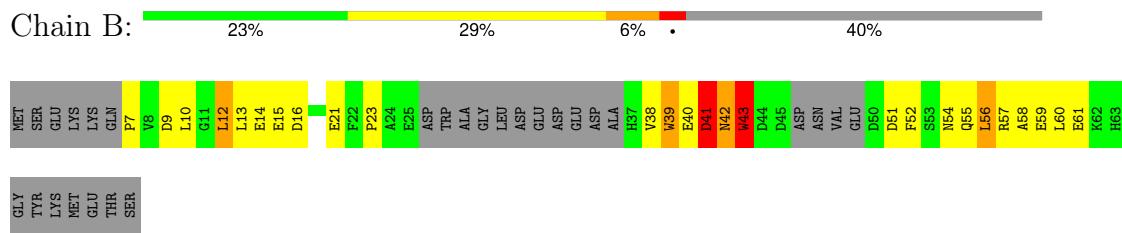
• Molecule 2: Breast Cancer type 2 susceptibility protein

Chain A:
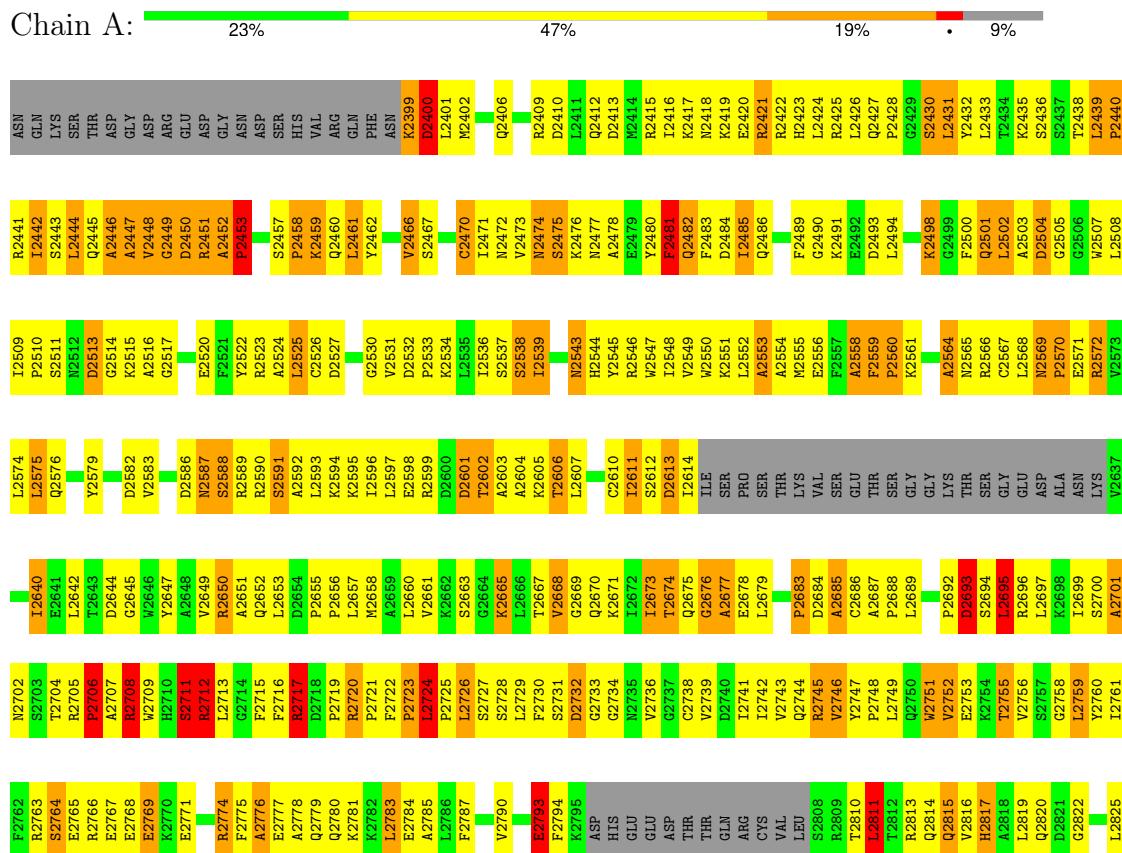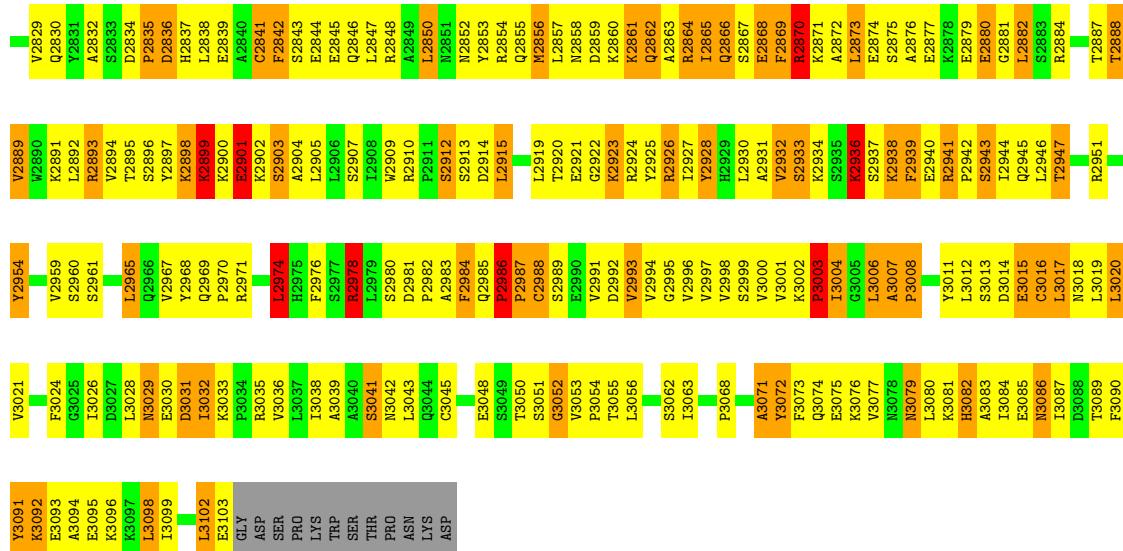
4 Data and refinement statistics ⓘ

Xtriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	C 2 2 2	Depositor
Cell constants a, b, c, α, β, γ	160.51Å 228.27Å 81.72Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	20.00 – 3.10	Depositor
% Data completeness (in resolution range)	(Not available) (20.00-3.10)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	0.05	Depositor
Refinement program	CNS	Depositor
R, R_{free}	0.256 , 0.310	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	5647	wwPDB-VP
Average B, all atoms (Å^2)	107.0	wwPDB-VP

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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	B	0.57	0/354	0.85	2/478 (0.4%)
2	A	0.59	6/5399 (0.1%)	0.86	9/7303 (0.1%)
All	All	0.59	6/5753 (0.1%)	0.85	11/7781 (0.1%)

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
2	A	0	1

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	2712	ARG	CZ-NH1	6.55	1.41	1.33
2	A	2712	ARG	CZ-NH2	6.13	1.41	1.33
2	A	2978	ARG	CZ-NH1	5.45	1.40	1.33
2	A	2978	ARG	CZ-NH2	5.41	1.40	1.33
2	A	3045	CYS	CB-SG	5.15	1.91	1.82
2	A	2472	ASN	CG-OD1	5.13	1.35	1.24

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	2978	ARG	NE-CZ-NH1	11.80	126.20	120.30
2	A	2458	PRO	N-CA-CB	5.95	110.44	103.30
2	A	2811	LEU	CA-CB-CG	5.82	128.69	115.30
2	A	2724	LEU	CA-CB-CG	5.76	128.54	115.30
1	B	7	PRO	N-CA-CB	5.45	109.83	103.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	12	LEU	CA-CB-CG	-5.36	102.96	115.30
2	A	2505	GLY	N-CA-C	-5.35	99.73	113.10
2	A	2926	ARG	N-CA-C	-5.34	96.57	111.00
2	A	2978	ARG	NE-CZ-NH2	-5.09	117.75	120.30
2	A	2986	PRO	N-CA-CB	5.04	109.34	103.30
2	A	2695	LEU	CA-CB-CG	5.04	126.88	115.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	A	2853	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	B	348	0	281	59	0
2	A	5294	0	5280	722	0
3	A	5	0	0	0	0
All	All	5647	0	5561	744	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 66.

All (744) 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)
2:A:2936:LYS:H	2:A:2936:LYS:HD3	1.02	1.15
2:A:3001:VAL:HG12	2:A:3003:PRO:HD3	1.34	1.05
2:A:2426:LEU:HD12	2:A:2426:LEU:H	1.20	1.01
1:B:9:ASP:HB3	1:B:12:LEU:HD12	1.42	0.99
2:A:3020:LEU:HA	2:A:3054:PRO:HD2	1.47	0.97
2:A:2502:LEU:HD23	2:A:2503:ALA:H	1.28	0.97
2:A:2430:SER:HB3	2:A:2575:LEU:HD21	1.48	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2611:ILE:HD11	2:A:2670:GLN:HB3	1.50	0.93
2:A:2548:ILE:HG23	2:A:2576:GLN:HE21	1.32	0.92
1:B:21:GLU:O	1:B:23:PRO:HD3	1.69	0.92
2:A:2650:ARG:HH11	2:A:2650:ARG:HB2	1.34	0.90
2:A:2502:LEU:HD23	2:A:2503:ALA:N	1.87	0.90
2:A:2420:GLU:HB3	2:A:2533:PRO:HG2	1.55	0.89
2:A:2936:LYS:HD3	2:A:2936:LYS:N	1.87	0.89
2:A:2548:ILE:HG23	2:A:2576:GLN:NE2	1.88	0.88
2:A:2862:GLN:HE21	2:A:2866:GLN:HE21	1.19	0.88
2:A:2502:LEU:HD21	2:A:2571:GLU:HG2	1.54	0.88
2:A:2612:SER:O	2:A:2668:VAL:HG22	1.74	0.88
2:A:2656:PRO:HD3	2:A:2732:ASP:HB2	1.56	0.87
2:A:2448:VAL:HG21	2:A:2559:PHE:CE1	2.08	0.87
2:A:2811:LEU:HA	2:A:2814:GLN:NE2	1.90	0.87
2:A:2558:ALA:C	2:A:2559:PHE:HD2	1.78	0.87
2:A:2678:GLU:HG2	2:A:2679:LEU:N	1.90	0.87
2:A:2452:ALA:HB1	2:A:2453:PRO:HD2	1.58	0.85
2:A:2485:ILE:HG21	2:A:2510:PRO:HB3	1.58	0.85
2:A:3092:LYS:O	2:A:3096:LYS:HG3	1.76	0.85
2:A:2843:SER:HA	2:A:2847:LEU:HD22	1.56	0.85
2:A:2862:GLN:NE2	2:A:2866:GLN:HE21	1.75	0.84
2:A:2995:GLY:HA2	2:A:3080:LEU:HD23	1.58	0.84
2:A:2462:TYR:HB3	2:A:2466:VAL:HG22	1.59	0.84
2:A:2811:LEU:HA	2:A:2814:GLN:HE21	1.41	0.84
2:A:2503:ALA:O	2:A:2504:ASP:HB2	1.79	0.82
2:A:2572:ARG:O	2:A:2576:GLN:HG3	1.78	0.82
2:A:2861:LYS:O	2:A:2863:ALA:N	2.13	0.82
2:A:3002:LYS:HE2	2:A:3028:LEU:HD12	1.58	0.82
1:B:41:ASP:O	2:A:2705:ARG:HD2	1.80	0.81
2:A:2723:PRO:HG3	2:A:2926:ARG:HH21	1.45	0.81
2:A:2931:ALA:O	2:A:2933:SER:N	2.13	0.81
2:A:2428:PRO:HB2	2:A:2433:LEU:HG	1.63	0.80
2:A:2441:ARG:O	2:A:2442:ILE:HG13	1.82	0.80
2:A:2485:ILE:HD12	2:A:2486:GLN:N	1.97	0.80
2:A:2614:ILE:HD11	2:A:2668:VAL:HG23	1.64	0.80
2:A:2746:VAL:HG22	2:A:2892:LEU:HD22	1.63	0.80
2:A:2415:ARG:NH1	2:A:2527:ASP:OD1	2.15	0.80
2:A:2845:GLU:HG3	2:A:2846:GLN:HG3	1.61	0.80
2:A:2650:ARG:HH11	2:A:2650:ARG:CB	1.94	0.79
2:A:2483:PHE:HB2	2:A:2516:ALA:HB3	1.63	0.79
2:A:2543:ASN:HD21	2:A:2547:TRP:HE1	1.30	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2678:GLU:O	2:A:2697:LEU:HD12	1.82	0.79
2:A:2651:ALA:HB1	2:A:2699:ILE:HD13	1.65	0.79
2:A:2675:GLN:NE2	2:A:2722:PHE:H	1.79	0.79
2:A:2421:ARG:CZ	2:A:2422:ARG:HG3	2.12	0.79
2:A:2543:ASN:ND2	2:A:2547:TRP:HE1	1.81	0.79
2:A:2553:ALA:O	2:A:2556:GLU:HB2	1.84	0.78
2:A:2544:HIS:O	2:A:2548:ILE:HG13	1.84	0.78
2:A:2448:VAL:HG21	2:A:2559:PHE:HE1	1.47	0.77
2:A:2869:PHE:O	2:A:2870:ARG:C	2.22	0.77
2:A:2476:LYS:HD2	2:A:2613:ASP:OD2	1.84	0.77
2:A:2724:LEU:HB2	2:A:2725:PRO:HD2	1.64	0.77
2:A:2892:LEU:O	2:A:2905:LEU:HD12	1.83	0.77
2:A:2868:GLU:OE2	2:A:2868:GLU:HA	1.84	0.76
2:A:3095:GLU:O	2:A:3099:ILE:HG22	1.85	0.76
1:B:56:LEU:O	1:B:56:LEU:HG	1.85	0.76
2:A:2650:ARG:HB2	2:A:2650:ARG:NH1	1.97	0.76
2:A:2675:GLN:HG3	2:A:2722:PHE:CE1	2.19	0.76
2:A:2565:ASN:C	2:A:2567:CYS:H	1.86	0.76
2:A:2601:ASP:O	2:A:2603:ALA:N	2.19	0.76
2:A:2673:ILE:CG1	2:A:2707:ALA:HB2	2.16	0.76
2:A:2674:THR:CG2	2:A:2699:ILE:HG23	2.14	0.76
2:A:2587:ASN:HD22	2:A:2587:ASN:H	1.35	0.75
2:A:2532:ASP:OD2	2:A:2534:LYS:HE3	1.86	0.75
2:A:2748:PRO:HG3	2:A:3063:ILE:HD11	1.69	0.75
2:A:2480:TYR:O	2:A:2482:GLN:HG2	1.85	0.75
2:A:2834:ASP:OD1	2:A:2837:HIS:HB2	1.86	0.75
2:A:2869:PHE:O	2:A:2871:LYS:N	2.20	0.75
2:A:2687:ALA:O	2:A:2689:LEU:N	2.20	0.75
2:A:2726:LEU:HA	2:A:2729:LEU:HG	1.68	0.75
2:A:2768:GLU:O	2:A:2768:GLU:HG3	1.87	0.75
2:A:3008:PRO:HG2	2:A:3024:PHE:HB2	1.68	0.75
2:A:2995:GLY:HA2	2:A:3080:LEU:CD2	2.16	0.74
2:A:2516:ALA:HA	2:A:2520:GLU:HG2	1.68	0.74
2:A:2399:LYS:O	2:A:2400:ASP:HB2	1.84	0.74
2:A:2915:LEU:HD11	2:A:2954:TYR:CE1	2.23	0.74
1:B:9:ASP:CB	1:B:12:LEU:HD12	2.16	0.74
2:A:2409:ARG:NH2	2:A:2511:SER:HA	2.02	0.74
2:A:3081:LYS:O	2:A:3085:GLU:HG2	1.88	0.74
2:A:2564:ALA:HB3	2:A:2566:ARG:HG2	1.69	0.73
2:A:2751:TRP:HB3	2:A:2768:GLU:HG2	1.69	0.73
2:A:3012:LEU:HB2	2:A:3020:LEU:HD21	1.71	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2415:ARG:HD2	2:A:2527:ASP:OD2	1.87	0.73
2:A:2745:ARG:HH21	2:A:2971:ARG:HA	1.52	0.73
2:A:2898:LYS:O	2:A:2899:LYS:O	2.07	0.72
1:B:58:ALA:O	1:B:61:GLU:HB2	1.89	0.72
2:A:2419:LYS:HE3	2:A:2526:CYS:O	1.90	0.72
2:A:2936:LYS:H	2:A:2936:LYS:CD	1.90	0.72
2:A:3035:ARG:NE	2:A:3092:LYS:HD3	2.04	0.72
2:A:3015:GLU:OE1	2:A:3079:ASN:HB3	1.89	0.72
2:A:2452:ALA:HB1	2:A:2453:PRO:CD	2.20	0.71
2:A:2502:LEU:HD21	2:A:2571:GLU:CG	2.19	0.71
2:A:2614:ILE:HG23	2:A:2640:ILE:HG22	1.72	0.71
2:A:2656:PRO:CD	2:A:2732:ASP:HB2	2.21	0.71
2:A:3052:GLY:O	2:A:3054:PRO:HD3	1.91	0.70
2:A:2711:SER:O	2:A:2712:ARG:HB2	1.89	0.70
2:A:2602:THR:O	2:A:2603:ALA:C	2.30	0.70
2:A:2400:ASP:C	2:A:2402:MET:H	1.93	0.70
2:A:2653:LEU:HD22	2:A:2657:LEU:HD13	1.73	0.70
2:A:2723:PRO:HG3	2:A:2926:ARG:NH2	2.06	0.70
2:A:2819:LEU:HD13	2:A:2842:PHE:CD2	2.26	0.70
2:A:3032:ILE:O	2:A:3032:ILE:HG22	1.92	0.69
2:A:2745:ARG:HE	2:A:2971:ARG:CG	2.04	0.69
2:A:2976:PHE:CE2	2:A:3020:LEU:HD22	2.27	0.69
2:A:2475:SER:HB2	2:A:2550:TRP:NE1	2.06	0.69
2:A:2902:LYS:HE2	2:A:2943:SER:HA	1.74	0.69
1:B:12:LEU:CD2	2:A:2439:LEU:HD22	2.23	0.68
2:A:2475:SER:HB2	2:A:2550:TRP:CE2	2.28	0.68
2:A:2484:ASP:O	2:A:2486:GLN:N	2.27	0.68
2:A:2954:TYR:HD2	2:A:2954:TYR:N	1.90	0.68
2:A:2571:GLU:O	2:A:2575:LEU:HB2	1.93	0.68
2:A:2418:ASN:O	2:A:2421:ARG:HB3	1.94	0.68
2:A:2895:THR:CG2	2:A:2903:SER:HB3	2.24	0.67
2:A:2485:ILE:HG21	2:A:2510:PRO:CB	2.24	0.67
2:A:2702:ASN:ND2	2:A:2733:GLY:O	2.27	0.67
2:A:2745:ARG:HD3	2:A:2921:GLU:OE2	1.93	0.67
2:A:2723:PRO:CG	2:A:2926:ARG:HH21	2.06	0.67
2:A:2845:GLU:HG3	2:A:2846:GLN:N	2.09	0.67
2:A:2984:PHE:O	2:A:2986:PRO:N	2.28	0.67
2:A:2676:GLY:O	2:A:2677:ALA:O	2.13	0.67
2:A:2653:LEU:CD2	2:A:2657:LEU:HD13	2.25	0.67
2:A:3014:ASP:HA	2:A:3080:LEU:HD22	1.76	0.67
2:A:2431:LEU:HD21	2:A:2575:LEU:HD13	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2915:LEU:HD21	2:A:2954:TYR:CZ	2.30	0.66
2:A:2450:ASP:O	2:A:2451:ARG:HB2	1.93	0.66
2:A:2900:LYS:O	2:A:2901:GLU:HB3	1.96	0.66
1:B:39:TRP:CZ2	2:A:2722:PHE:HB2	2.31	0.66
2:A:2678:GLU:HG2	2:A:2679:LEU:H	1.58	0.66
2:A:2587:ASN:H	2:A:2587:ASN:ND2	1.92	0.66
2:A:2938:LYS:O	2:A:2939:PHE:HB2	1.95	0.66
2:A:2954:TYR:N	2:A:2954:TYR:CD2	2.62	0.66
2:A:2822:GLY:HA2	2:A:2825:LEU:HB2	1.78	0.66
1:B:54:ASN:HB3	2:A:2453:PRO:HD2	1.78	0.66
2:A:2766:ARG:HA	2:A:2766:ARG:NE	2.10	0.65
1:B:57:ARG:HB3	2:A:2550:TRP:CH2	2.32	0.65
2:A:2675:GLN:NE2	2:A:2722:PHE:N	2.44	0.65
2:A:2745:ARG:NE	2:A:2971:ARG:HG3	2.11	0.65
2:A:3012:LEU:HB2	2:A:3020:LEU:CD2	2.26	0.65
2:A:2421:ARG:O	2:A:2421:ARG:NE	2.30	0.65
2:A:2684:ASP:O	2:A:2685:ALA:O	2.15	0.65
2:A:2775:PHE:O	2:A:2777:GLU:N	2.30	0.65
2:A:2858:ASN:O	2:A:2860:LYS:N	2.30	0.65
1:B:40:GLU:HB2	1:B:52:PHE:CZ	2.32	0.65
2:A:3002:LYS:HE2	2:A:3028:LEU:CD1	2.27	0.64
2:A:2445:GLN:HE21	2:A:2450:ASP:HA	1.62	0.64
2:A:2864:ARG:HG3	2:A:2864:ARG:HH11	1.60	0.64
2:A:2611:ILE:HG13	2:A:2669:GLY:H	1.60	0.64
2:A:2845:GLU:HA	2:A:2848:ARG:HE	1.62	0.64
2:A:2474:ASN:H	2:A:2477:ASN:HD21	1.43	0.64
2:A:2768:GLU:O	2:A:2768:GLU:CG	2.46	0.64
1:B:52:PHE:CE1	2:A:2708:ARG:NH1	2.65	0.64
1:B:12:LEU:HD22	2:A:2439:LEU:HD22	1.80	0.64
2:A:2936:LYS:HE3	2:A:2942:PRO:O	1.98	0.64
2:A:2675:GLN:HG3	2:A:2722:PHE:HE1	1.62	0.63
2:A:2996:VAL:HG21	2:A:3084:ILE:HD11	1.79	0.63
2:A:2872:ALA:O	2:A:2875:SER:N	2.24	0.63
2:A:2459:LYS:C	2:A:2461:LEU:N	2.48	0.63
2:A:2667:THR:O	2:A:2668:VAL:C	2.36	0.63
2:A:2844:GLU:HG2	2:A:2846:GLN:H	1.64	0.63
2:A:2919:LEU:HD21	2:A:2954:TYR:HD1	1.64	0.63
2:A:2742:ILE:HD12	2:A:2923:LYS:O	1.99	0.63
2:A:2865:ILE:O	2:A:2866:GLN:C	2.37	0.63
2:A:3081:LYS:NZ	2:A:3085:GLU:HB3	2.14	0.63
1:B:16:ASP:OD1	1:B:57:ARG:NH2	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2640:ILE:HD13	2:A:2640:ILE:H	1.63	0.63
2:A:2675:GLN:O	2:A:2677:ALA:N	2.32	0.62
2:A:3031:ASP:O	2:A:3033:LYS:N	2.31	0.62
2:A:3099:ILE:HD11	2:A:3103:GLU:OE1	1.99	0.62
2:A:2891:LYS:O	2:A:2892:LEU:HD23	1.98	0.62
2:A:2425:ARG:HE	2:A:2426:LEU:CD1	2.12	0.62
2:A:2830:GLN:C	2:A:2832:ALA:H	2.03	0.62
2:A:2969:GLN:HE22	2:A:2987:PRO:CB	2.11	0.62
2:A:3020:LEU:HB2	2:A:3054:PRO:HB2	1.82	0.62
2:A:2606:THR:HG22	2:A:2716:PHE:HB3	1.80	0.62
2:A:2653:LEU:HB3	2:A:2657:LEU:CB	2.30	0.62
2:A:2783:LEU:HD12	2:A:2879:GLU:CG	2.30	0.62
2:A:2591:SER:OG	2:A:2592:ALA:N	2.30	0.61
2:A:2745:ARG:HA	2:A:2921:GLU:OE2	2.00	0.61
2:A:2604:ALA:HB1	2:A:2677:ALA:HB3	1.80	0.61
2:A:2994:VAL:HG22	2:A:3073:PHE:HD2	1.65	0.61
2:A:3087:ILE:C	2:A:3089:THR:H	2.04	0.61
2:A:2611:ILE:HG13	2:A:2670:GLN:H	1.65	0.61
2:A:2474:ASN:H	2:A:2477:ASN:ND2	1.98	0.61
2:A:2674:THR:HG21	2:A:2699:ILE:HG23	1.83	0.61
2:A:2432:TYR:O	2:A:2436:SER:HB2	2.00	0.61
2:A:2751:TRP:CB	2:A:2768:GLU:HG2	2.31	0.61
2:A:2522:TYR:HE2	2:A:2523:ARG:HH21	1.49	0.60
2:A:2745:ARG:NH2	2:A:2971:ARG:HA	2.16	0.60
2:A:2891:LYS:C	2:A:2892:LEU:HD23	2.21	0.60
2:A:3001:VAL:HG12	2:A:3003:PRO:CD	2.22	0.60
2:A:3032:ILE:HD12	2:A:3032:ILE:H	1.67	0.60
2:A:2932:VAL:O	2:A:2933:SER:C	2.39	0.60
2:A:2976:PHE:CD1	2:A:3014:ASP:HB3	2.37	0.60
2:A:2974:LEU:HD11	2:A:2993:VAL:HG12	1.84	0.60
2:A:2543:ASN:O	2:A:2546:ARG:HB3	2.01	0.60
1:B:55:GLN:CD	2:A:2670:GLN:HG3	2.22	0.60
2:A:3002:LYS:CE	2:A:3028:LEU:HD12	2.31	0.60
2:A:2825:LEU:O	2:A:2829:VAL:HG23	2.02	0.60
2:A:2900:LYS:O	2:A:2901:GLU:CB	2.50	0.60
2:A:2552:LEU:O	2:A:2553:ALA:C	2.41	0.59
2:A:2441:ARG:C	2:A:2442:ILE:HG13	2.22	0.59
2:A:2904:ALA:HB1	2:A:2944:ILE:O	2.01	0.59
2:A:2565:ASN:C	2:A:2567:CYS:N	2.56	0.59
2:A:2653:LEU:HB3	2:A:2657:LEU:HB2	1.84	0.59
2:A:2775:PHE:C	2:A:2777:GLU:H	2.05	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2850:LEU:HD21	2:A:2854:ARG:NH2	2.18	0.59
2:A:2656:PRO:CG	2:A:2732:ASP:HB2	2.33	0.58
2:A:2416:ILE:HG22	2:A:2533:PRO:HG3	1.85	0.58
2:A:2559:PHE:N	2:A:2559:PHE:CD2	2.69	0.58
2:A:2856:MET:O	2:A:2856:MET:SD	2.61	0.58
2:A:2897:TYR:OH	2:A:2959:VAL:HG13	2.03	0.58
2:A:2491:LYS:HA	2:A:2494:LEU:HB2	1.84	0.58
2:A:2838:LEU:HD23	2:A:2838:LEU:O	2.03	0.58
2:A:2657:LEU:O	2:A:2661:VAL:HG23	2.03	0.58
2:A:2421:ARG:CZ	2:A:2422:ARG:CG	2.82	0.58
2:A:2587:ASN:ND2	2:A:2587:ASN:N	2.51	0.58
2:A:2431:LEU:N	2:A:2431:LEU:HD23	2.18	0.58
2:A:2611:ILE:HA	2:A:2642:LEU:HD23	1.85	0.58
2:A:2934:LYS:O	2:A:2945:GLN:HB3	2.03	0.58
2:A:2819:LEU:HD11	2:A:2844:GLU:OE2	2.04	0.58
2:A:3019:LEU:CD2	2:A:3099:ILE:HB	2.34	0.58
2:A:2783:LEU:HD12	2:A:2879:GLU:HG2	1.86	0.58
2:A:2861:LYS:O	2:A:2864:ARG:N	2.37	0.58
2:A:3062:SER:C	2:A:3063:ILE:HD13	2.24	0.58
2:A:2766:ARG:HH22	2:A:2769:GLU:HG3	1.69	0.57
2:A:3071:ALA:O	2:A:3073:PHE:N	2.37	0.57
2:A:2559:PHE:HD2	2:A:2559:PHE:N	2.02	0.57
2:A:2596:ILE:HD11	2:A:2715:PHE:HZ	1.69	0.57
2:A:2895:THR:HG22	2:A:2903:SER:HB3	1.87	0.57
2:A:2984:PHE:C	2:A:2986:PRO:N	2.56	0.57
2:A:2675:GLN:HE22	2:A:2722:PHE:N	2.00	0.57
2:A:2884:ARG:HG2	2:A:2884:ARG:HH11	1.69	0.57
2:A:2678:GLU:CG	2:A:2679:LEU:N	2.67	0.57
2:A:2858:ASN:C	2:A:2860:LYS:H	2.08	0.57
2:A:3051:SER:C	2:A:3053:VAL:H	2.07	0.57
2:A:2508:LEU:HD23	2:A:2508:LEU:O	2.04	0.57
2:A:2889:VAL:HG13	2:A:2909:TRP:CD2	2.40	0.57
2:A:2969:GLN:NE2	2:A:2987:PRO:CB	2.68	0.57
1:B:55:GLN:CG	2:A:2670:GLN:HG3	2.35	0.57
2:A:2553:ALA:O	2:A:2556:GLU:N	2.30	0.57
2:A:2559:PHE:N	2:A:2560:PRO:HD3	2.19	0.57
2:A:2699:ILE:HD12	2:A:2699:ILE:N	2.20	0.57
2:A:2819:LEU:HG	2:A:2846:GLN:CB	2.35	0.57
2:A:2459:LYS:C	2:A:2461:LEU:H	2.08	0.56
2:A:2976:PHE:HE2	2:A:3020:LEU:HD22	1.70	0.56
1:B:41:ASP:O	2:A:2705:ARG:CD	2.53	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:51:ASP:HB3	2:A:2708:ARG:HG3	1.88	0.56
2:A:2931:ALA:N	2:A:2947:THR:O	2.35	0.56
1:B:55:GLN:HG3	2:A:2670:GLN:HG3	1.86	0.56
2:A:2758:GLY:O	2:A:2759:LEU:O	2.23	0.56
2:A:2998:VAL:CG2	2:A:2999:SER:N	2.69	0.56
2:A:2406:GLN:HG2	2:A:2410:ASP:OD2	2.06	0.56
2:A:3032:ILE:HD12	2:A:3032:ILE:N	2.19	0.56
2:A:3075:GLU:O	2:A:3077:VAL:N	2.39	0.56
2:A:2416:ILE:HG23	2:A:2526:CYS:HB3	1.88	0.56
2:A:2723:PRO:O	2:A:2724:LEU:CB	2.53	0.56
2:A:3093:GLU:O	2:A:3096:LYS:HB2	2.06	0.56
2:A:2427:GLN:HB2	2:A:2530:GLY:HA3	1.87	0.56
2:A:2556:GLU:O	2:A:2558:ALA:N	2.37	0.56
2:A:2586:ASP:C	2:A:2588:SER:H	2.08	0.56
2:A:2755:THR:OG1	2:A:2758:GLY:O	2.23	0.56
2:A:2784:GLU:HG3	2:A:2785:ALA:N	2.20	0.56
1:B:10:LEU:HD12	2:A:2572:ARG:HD3	1.87	0.56
2:A:2442:ILE:HG22	2:A:2442:ILE:O	2.05	0.55
2:A:2462:TYR:HB3	2:A:2466:VAL:CG2	2.35	0.55
2:A:2864:ARG:O	2:A:2868:GLU:N	2.24	0.55
2:A:2976:PHE:CZ	2:A:3020:LEU:HD22	2.40	0.55
2:A:2612:SER:O	2:A:2668:VAL:CG2	2.51	0.55
2:A:2739:VAL:HG23	2:A:2739:VAL:O	2.05	0.55
2:A:2776:ALA:O	2:A:2780:GLN:HG3	2.05	0.55
2:A:2745:ARG:HE	2:A:2971:ARG:HG3	1.72	0.55
2:A:2415:ARG:HH11	2:A:2527:ASP:CG	2.09	0.55
2:A:2647:TYR:CE2	2:A:2689:LEU:HD21	2.42	0.55
2:A:2845:GLU:CG	2:A:2846:GLN:HG3	2.34	0.55
2:A:2994:VAL:HG22	2:A:3073:PHE:CD2	2.41	0.55
2:A:2466:VAL:HG23	2:A:2467:SER:N	2.22	0.55
2:A:2723:PRO:O	2:A:2724:LEU:HG	2.06	0.55
2:A:2476:LYS:O	2:A:2476:LYS:HG2	2.05	0.55
2:A:2548:ILE:CG2	2:A:2576:GLN:HE21	2.13	0.55
2:A:2406:GLN:HA	2:A:2409:ARG:HB2	1.88	0.55
2:A:2895:THR:HG22	2:A:2903:SER:CA	2.36	0.55
2:A:2747:TYR:HD2	2:A:3042:ASN:ND2	2.05	0.55
2:A:2817:HIS:C	2:A:2819:LEU:H	2.10	0.55
2:A:2501:GLN:HG2	2:A:2507:TRP:CE2	2.42	0.54
2:A:2550:TRP:HH2	2:A:2669:GLY:HA2	1.72	0.54
2:A:2673:ILE:HG13	2:A:2707:ALA:HB2	1.87	0.54
2:A:2842:PHE:HB2	2:A:2844:GLU:OE2	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:3079:ASN:O	2:A:3082:HIS:HB2	2.07	0.54
2:A:2474:ASN:HB2	2:A:2477:ASN:OD1	2.08	0.54
2:A:2889:VAL:HG13	2:A:2909:TRP:CE3	2.43	0.54
2:A:2655:PRO:O	2:A:2658:MET:HB2	2.07	0.54
2:A:2889:VAL:HG22	2:A:2909:TRP:CZ3	2.43	0.54
2:A:2994:VAL:HG12	2:A:2995:GLY:N	2.22	0.54
2:A:3052:GLY:C	2:A:3054:PRO:HD3	2.27	0.54
2:A:3102:LEU:HD23	2:A:3102:LEU:N	2.22	0.54
2:A:2749:LEU:HD22	2:A:2888:THR:OG1	2.06	0.54
2:A:2775:PHE:HD2	2:A:2776:ALA:N	2.06	0.54
2:A:3051:SER:O	2:A:3053:VAL:HG12	2.08	0.54
2:A:2443:SER:C	2:A:2445:GLN:N	2.59	0.54
2:A:2485:ILE:HG13	2:A:2514:GLY:O	2.08	0.54
2:A:2655:PRO:HB2	2:A:2656:PRO:HD3	1.90	0.54
2:A:2743:VAL:HA	2:A:2894:VAL:HG12	1.90	0.54
2:A:2579:TYR:O	2:A:2583:VAL:HG23	2.08	0.53
2:A:2592:ALA:O	2:A:2596:ILE:HG12	2.08	0.53
2:A:2430:SER:HB3	2:A:2575:LEU:CD2	2.30	0.53
2:A:2551:LYS:O	2:A:2555:MET:HG3	2.08	0.53
2:A:2872:ALA:O	2:A:2874:GLU:N	2.42	0.53
2:A:2988:CYS:O	2:A:2989:SER:HB3	2.09	0.53
2:A:2552:LEU:O	2:A:2555:MET:N	2.41	0.53
2:A:2994:VAL:CG2	2:A:3073:PHE:HD2	2.22	0.53
2:A:3019:LEU:HD21	2:A:3099:ILE:HB	1.91	0.53
2:A:2867:SER:O	2:A:2871:LYS:HB2	2.09	0.53
1:B:21:GLU:CG	2:A:2595:LYS:HE3	2.38	0.53
1:B:52:PHE:HE1	2:A:2708:ARG:NH1	2.05	0.53
1:B:55:GLN:C	1:B:57:ARG:H	2.12	0.53
2:A:2745:ARG:HE	2:A:2971:ARG:HG2	1.72	0.53
2:A:3006:LEU:O	2:A:3007:ALA:CB	2.55	0.53
2:A:2927:ILE:CG2	2:A:2930:LEU:HD11	2.39	0.53
2:A:2915:LEU:HD11	2:A:2954:TYR:CD1	2.44	0.52
2:A:2819:LEU:HA	2:A:2825:LEU:HD21	1.91	0.52
2:A:2687:ALA:C	2:A:2689:LEU:H	2.13	0.52
1:B:10:LEU:C	1:B:12:LEU:H	2.13	0.52
2:A:2539:ILE:H	2:A:2539:ILE:HD13	1.74	0.52
2:A:2558:ALA:O	2:A:2559:PHE:HD2	1.92	0.52
2:A:2974:LEU:HD11	2:A:2993:VAL:CB	2.40	0.52
2:A:2443:SER:O	2:A:2445:GLN:N	2.43	0.52
2:A:2660:LEU:HD22	2:A:2665:LYS:CB	2.40	0.52
2:A:2509:ILE:HG22	2:A:2510:PRO:O	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2998:VAL:HG23	2:A:2999:SER:N	2.24	0.52
2:A:2844:GLU:N	2:A:2844:GLU:OE1	2.41	0.52
2:A:3015:GLU:CA	2:A:3080:LEU:HD13	2.40	0.52
2:A:3035:ARG:HD2	2:A:3092:LYS:HB3	1.92	0.52
2:A:2836:ASP:HA	2:A:2839:GLU:HG2	1.92	0.52
2:A:2482:GLN:OE1	2:A:2515:LYS:HD3	2.10	0.52
2:A:2793:GLU:O	2:A:2794:PHE:HD1	1.93	0.52
2:A:2892:LEU:HD11	2:A:2919:LEU:HD13	1.91	0.52
2:A:2774:ARG:NH1	2:A:2775:PHE:HA	2.25	0.51
2:A:2872:ALA:O	2:A:2873:LEU:C	2.48	0.51
2:A:2931:ALA:CB	2:A:2947:THR:O	2.58	0.51
2:A:3039:ALA:HB2	2:A:3068:PRO:HG3	1.92	0.51
2:A:3098:LEU:HD13	2:A:3102:LEU:HD21	1.91	0.51
2:A:2862:GLN:HG3	2:A:2862:GLN:O	2.09	0.51
2:A:2431:LEU:HD23	2:A:2431:LEU:H	1.74	0.51
2:A:2744:GLN:HA	2:A:2744:GLN:OE1	2.10	0.51
2:A:2968:TYR:CE2	2:A:2970:PRO:HG3	2.46	0.51
2:A:2467:SER:O	2:A:2471:ILE:HD13	2.11	0.51
2:A:2502:LEU:HD21	2:A:2571:GLU:CB	2.41	0.51
2:A:2532:ASP:OD2	2:A:2534:LYS:CE	2.57	0.51
2:A:2882:LEU:HD23	2:A:2882:LEU:O	2.11	0.51
2:A:2747:TYR:HB3	2:A:2748:PRO:HD2	1.92	0.51
2:A:2895:THR:HG22	2:A:2903:SER:HA	1.93	0.51
2:A:2400:ASP:C	2:A:2402:MET:N	2.63	0.51
2:A:2651:ALA:HB1	2:A:2699:ILE:CD1	2.38	0.51
2:A:2747:TYR:HD2	2:A:3042:ASN:HD21	1.56	0.51
2:A:2502:LEU:CD2	2:A:2571:GLU:HG2	2.33	0.51
2:A:2513:ASP:CB	2:A:2515:LYS:HE3	2.41	0.51
2:A:2793:GLU:O	2:A:2794:PHE:CD1	2.64	0.51
1:B:39:TRP:HB3	2:A:2673:ILE:HD12	1.93	0.51
2:A:2835:PRO:C	2:A:2837:HIS:H	2.13	0.51
2:A:2532:ASP:CG	2:A:2534:LYS:HE3	2.31	0.51
2:A:2775:PHE:C	2:A:2777:GLU:N	2.64	0.51
2:A:2919:LEU:HA	2:A:2925:TYR:OH	2.10	0.50
2:A:3000:VAL:HG12	2:A:3001:VAL:N	2.26	0.50
2:A:2448:VAL:C	2:A:2450:ASP:H	2.14	0.50
2:A:2725:PRO:HG2	2:A:2728:SER:OG	2.11	0.50
2:A:3015:GLU:HA	2:A:3080:LEU:HD13	1.94	0.50
2:A:2604:ALA:HB3	2:A:2677:ALA:O	2.12	0.50
2:A:2847:LEU:O	2:A:2847:LEU:HG	2.12	0.50
2:A:2583:VAL:O	2:A:2589:ARG:HB2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2656:PRO:HG3	2:A:2732:ASP:OD1	2.11	0.50
2:A:2675:GLN:CG	2:A:2722:PHE:CE1	2.94	0.50
1:B:39:TRP:CE2	2:A:2722:PHE:HB2	2.46	0.50
2:A:2974:LEU:HD11	2:A:2993:VAL:CG1	2.41	0.50
2:A:2652:GLN:N	2:A:2697:LEU:O	2.45	0.50
2:A:2965:LEU:HD12	2:A:2965:LEU:H	1.75	0.50
2:A:2425:ARG:HE	2:A:2426:LEU:HD13	1.75	0.50
1:B:60:LEU:HD11	2:A:2554:ALA:N	2.27	0.49
2:A:2790:VAL:HG12	2:A:2790:VAL:O	2.12	0.49
2:A:2593:LEU:O	2:A:2597:LEU:HD23	2.11	0.49
2:A:2909:TRP:O	2:A:2910:ARG:C	2.50	0.49
2:A:3099:ILE:CD1	2:A:3103:GLU:OE1	2.60	0.49
1:B:59:GLU:C	1:B:61:GLU:H	2.16	0.49
2:A:2419:LYS:HD3	2:A:2531:VAL:O	2.12	0.49
2:A:2543:ASN:ND2	2:A:2547:TRP:NE1	2.57	0.49
2:A:2559:PHE:N	2:A:2560:PRO:CD	2.76	0.49
2:A:3031:ASP:OD1	2:A:3031:ASP:N	2.45	0.49
2:A:2478:ALA:C	2:A:2480:TYR:H	2.16	0.49
2:A:2912:SER:OG	2:A:2914:ASP:HB2	2.12	0.49
2:A:2978:ARG:C	2:A:2980:SER:H	2.14	0.49
1:B:42:ASN:HA	2:A:2728:SER:HB2	1.93	0.49
2:A:2423:HIS:C	2:A:2424:LEU:HG	2.33	0.49
2:A:2760:TYR:C	2:A:2761:ILE:HD12	2.33	0.49
2:A:2763:ARG:O	2:A:2764:SER:O	2.30	0.49
1:B:52:PHE:CD1	1:B:52:PHE:N	2.80	0.49
2:A:2675:GLN:NE2	2:A:2722:PHE:CD1	2.81	0.49
2:A:3020:LEU:HD12	2:A:3056:LEU:HG	1.94	0.49
2:A:2443:SER:C	2:A:2445:GLN:H	2.15	0.49
2:A:2829:VAL:O	2:A:2832:ALA:HB3	2.11	0.49
2:A:2865:ILE:HG22	2:A:2866:GLN:N	2.26	0.49
1:B:55:GLN:HG3	2:A:2670:GLN:CB	2.43	0.49
2:A:2446:ALA:C	2:A:2448:VAL:H	2.16	0.49
2:A:3018:ASN:C	2:A:3019:LEU:HD12	2.32	0.49
2:A:2660:LEU:HD22	2:A:2665:LYS:HB2	1.95	0.49
2:A:2671:LYS:HD3	2:A:2711:SER:HB2	1.95	0.49
1:B:55:GLN:HG3	2:A:2670:GLN:CG	2.42	0.49
2:A:2474:ASN:C	2:A:2476:LYS:H	2.16	0.49
2:A:2997:VAL:O	2:A:3035:ARG:N	2.44	0.49
2:A:2500:PHE:CE2	2:A:2510:PRO:HG3	2.47	0.48
2:A:2550:TRP:CH2	2:A:2669:GLY:HA2	2.48	0.48
2:A:2723:PRO:O	2:A:2724:LEU:CG	2.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:3014:ASP:HA	2:A:3080:LEU:CD2	2.43	0.48
1:B:14:GLU:HG2	2:A:2441:ARG:HB3	1.95	0.48
2:A:2483:PHE:O	2:A:2485:ILE:N	2.46	0.48
2:A:2523:ARG:HA	2:A:2523:ARG:NE	2.28	0.48
2:A:2981:ASP:O	2:A:2983:ALA:N	2.42	0.48
2:A:2981:ASP:C	2:A:2983:ALA:H	2.15	0.48
2:A:2412:GLN:O	2:A:2416:ILE:HG13	2.13	0.48
2:A:2426:LEU:HD12	2:A:2426:LEU:N	2.06	0.48
2:A:2683:PRO:HG2	2:A:2684:ASP:H	1.77	0.48
1:B:43:TRP:CH2	2:A:2657:LEU:HD21	2.48	0.48
2:A:2413:ASP:OD1	2:A:2523:ARG:NH1	2.45	0.48
2:A:2574:LEU:O	2:A:2574:LEU:HG	2.13	0.48
2:A:2590:ARG:HG2	2:A:2594:LYS:HD3	1.94	0.48
2:A:2869:PHE:O	2:A:2872:ALA:N	2.41	0.48
1:B:51:ASP:HB2	2:A:2708:ARG:HH11	1.77	0.48
2:A:2611:ILE:CG1	2:A:2670:GLN:H	2.26	0.48
2:A:2673:ILE:HD11	2:A:2707:ALA:HB2	1.96	0.48
2:A:2856:MET:SD	2:A:2856:MET:C	2.91	0.48
2:A:3019:LEU:O	2:A:3054:PRO:CD	2.61	0.48
2:A:2868:GLU:O	2:A:2869:PHE:O	2.31	0.48
1:B:10:LEU:C	1:B:12:LEU:N	2.67	0.48
2:A:2423:HIS:O	2:A:2424:LEU:HG	2.13	0.48
2:A:2459:LYS:O	2:A:2461:LEU:N	2.47	0.48
2:A:2708:ARG:H	2:A:2708:ARG:HD3	1.79	0.48
2:A:3011:TYR:CD2	2:A:3099:ILE:HD13	2.49	0.48
2:A:2742:ILE:CG2	2:A:2895:THR:OG1	2.62	0.48
2:A:2787:PHE:CD1	2:A:2787:PHE:N	2.82	0.48
1:B:59:GLU:OE2	2:A:2453:PRO:HG2	2.14	0.48
2:A:2524:ALA:O	2:A:2526:CYS:N	2.47	0.48
2:A:2696:ARG:HH11	2:A:2696:ARG:HG3	1.79	0.48
2:A:2835:PRO:O	2:A:2837:HIS:N	2.46	0.48
2:A:2915:LEU:HD21	2:A:2954:TYR:OH	2.14	0.48
2:A:3091:TYR:O	2:A:3093:GLU:N	2.47	0.48
2:A:2549:VAL:HG12	2:A:2550:TRP:N	2.29	0.48
2:A:2974:LEU:HD11	2:A:2993:VAL:HB	1.96	0.48
1:B:59:GLU:C	1:B:61:GLU:N	2.65	0.47
2:A:2861:LYS:HE2	2:A:2861:LYS:HB3	1.71	0.47
2:A:2924:ARG:HB2	2:A:2959:VAL:CG2	2.43	0.47
2:A:3004:ILE:H	2:A:3004:ILE:HG13	1.47	0.47
2:A:2474:ASN:N	2:A:2477:ASN:HD21	2.12	0.47
2:A:2489:PHE:HB3	2:A:2493:ASP:HB2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2524:ALA:C	2:A:2526:CYS:H	2.17	0.47
2:A:2545:TYR:O	2:A:2549:VAL:HG23	2.14	0.47
2:A:2861:LYS:C	2:A:2863:ALA:N	2.65	0.47
2:A:2775:PHE:CD2	2:A:2776:ALA:N	2.81	0.47
2:A:2855:GLN:O	2:A:2855:GLN:HG3	2.14	0.47
2:A:2876:ALA:O	2:A:2880:GLU:HG2	2.14	0.47
2:A:3001:VAL:C	2:A:3003:PRO:HD3	2.34	0.47
2:A:2467:SER:OG	2:A:2470:CYS:HB3	2.14	0.47
2:A:2752:VAL:HG12	2:A:2887:THR:HG22	1.96	0.47
2:A:2996:VAL:CG2	2:A:3084:ILE:HD11	2.44	0.47
2:A:3033:LYS:O	2:A:3036:VAL:HG22	2.14	0.47
1:B:55:GLN:O	1:B:57:ARG:N	2.45	0.47
2:A:2445:GLN:O	2:A:2447:ALA:N	2.48	0.47
2:A:2597:LEU:C	2:A:2599:ARG:H	2.17	0.47
2:A:2745:ARG:NE	2:A:2971:ARG:CG	2.70	0.47
2:A:2936:LYS:HD2	2:A:2944:ILE:HA	1.96	0.47
2:A:2399:LYS:HE3	2:A:2399:LYS:HA	1.97	0.47
2:A:2842:PHE:HD1	2:A:2842:PHE:O	1.98	0.47
2:A:2960:SER:O	2:A:2961:SER:C	2.52	0.47
2:A:3016:CYS:C	2:A:3017:LEU:HD12	2.35	0.47
2:A:2462:TYR:CG	2:A:2466:VAL:HG21	2.49	0.47
2:A:2576:GLN:O	2:A:2579:TYR:N	2.48	0.47
2:A:2764:SER:OG	2:A:2767:GLU:HG3	2.14	0.47
2:A:2815:GLN:NE2	2:A:2841:CYS:O	2.46	0.47
2:A:2879:GLU:O	2:A:2881:GLY:N	2.48	0.47
2:A:2902:LYS:O	2:A:2903:SER:C	2.53	0.47
2:A:2905:LEU:HD12	2:A:2905:LEU:HA	1.71	0.47
2:A:3091:TYR:O	2:A:3094:ALA:N	2.47	0.47
2:A:2815:GLN:O	2:A:2819:LEU:HB2	2.14	0.47
2:A:2976:PHE:HE1	2:A:2994:VAL:O	1.98	0.47
1:B:12:LEU:HD21	2:A:2439:LEU:HD22	1.96	0.47
2:A:2445:GLN:HG3	2:A:2450:ASP:OD1	2.14	0.47
2:A:2548:ILE:O	2:A:2552:LEU:HG	2.15	0.47
2:A:2559:PHE:O	2:A:2561:LYS:N	2.48	0.47
2:A:2774:ARG:HD2	2:A:2774:ARG:O	2.14	0.47
2:A:2416:ILE:CG2	2:A:2526:CYS:HB3	2.45	0.46
2:A:2525:LEU:O	2:A:2531:VAL:HG11	2.15	0.46
2:A:2558:ALA:C	2:A:2559:PHE:CD2	2.69	0.46
2:A:2753:GLU:OE1	2:A:2884:ARG:NH2	2.48	0.46
2:A:2861:LYS:O	2:A:2862:GLN:C	2.54	0.46
2:A:2931:ALA:CB	2:A:2947:THR:HB	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:3089:THR:C	2:A:3091:TYR:H	2.19	0.46
2:A:2601:ASP:O	2:A:2602:THR:C	2.53	0.46
2:A:2742:ILE:HG22	2:A:2895:THR:O	2.14	0.46
2:A:3051:SER:O	2:A:3053:VAL:N	2.47	0.46
2:A:2736:VAL:HG11	2:A:2739:VAL:CG1	2.46	0.46
2:A:2936:LYS:NZ	2:A:2944:ILE:HD12	2.30	0.46
2:A:2420:GLU:C	2:A:2422:ARG:H	2.18	0.46
2:A:2838:LEU:HD23	2:A:2838:LEU:C	2.36	0.46
2:A:2944:ILE:HG13	2:A:2945:GLN:H	1.81	0.46
2:A:2569:ASN:C	2:A:2571:GLU:H	2.19	0.46
2:A:2644:ASP:C	2:A:2713:LEU:HD13	2.35	0.46
2:A:2673:ILE:CD1	2:A:2707:ALA:HB2	2.45	0.46
2:A:2526:CYS:SG	2:A:2536:ILE:HD11	2.56	0.46
2:A:2597:LEU:HD21	2:A:2649:VAL:HG11	1.97	0.46
2:A:2607:LEU:O	2:A:2673:ILE:HA	2.14	0.46
2:A:2656:PRO:HG3	2:A:2732:ASP:HB2	1.96	0.46
2:A:2844:GLU:CD	2:A:2844:GLU:H	2.19	0.46
2:A:2901:GLU:C	2:A:2901:GLU:OE1	2.54	0.46
2:A:2931:ALA:HB3	2:A:2947:THR:HB	1.98	0.46
2:A:2520:GLU:O	2:A:2523:ARG:HB2	2.16	0.46
2:A:3039:ALA:CB	2:A:3068:PRO:HG3	2.45	0.46
2:A:2431:LEU:O	2:A:2435:LYS:HG3	2.16	0.46
2:A:2544:HIS:O	2:A:2548:ILE:CG1	2.60	0.46
2:A:2558:ALA:H	2:A:2560:PRO:HD3	1.80	0.46
2:A:2467:SER:HB3	2:A:2470:CYS:SG	2.55	0.45
2:A:2554:ALA:C	2:A:2556:GLU:H	2.19	0.45
2:A:2988:CYS:O	2:A:2989:SER:CB	2.64	0.45
2:A:2409:ARG:HH22	2:A:2511:SER:HA	1.78	0.45
2:A:2480:TYR:O	2:A:2481:PHE:C	2.54	0.45
2:A:2484:ASP:O	2:A:2485:ILE:C	2.54	0.45
2:A:2586:ASP:C	2:A:2586:ASP:OD2	2.53	0.45
2:A:2611:ILE:H	2:A:2611:ILE:HG12	1.36	0.45
2:A:2678:GLU:CG	2:A:2679:LEU:H	2.26	0.45
2:A:2705:ARG:O	2:A:2706:PRO:O	2.33	0.45
2:A:2746:VAL:O	2:A:2746:VAL:HG12	2.16	0.45
2:A:2751:TRP:CG	2:A:2768:GLU:HG2	2.52	0.45
2:A:2993:VAL:HG11	2:A:3056:LEU:HD11	1.98	0.45
1:B:42:ASN:O	1:B:43:TRP:C	2.55	0.45
2:A:2451:ARG:O	2:A:2451:ARG:HG2	2.16	0.45
2:A:2779:GLN:OE1	2:A:2882:LEU:HD21	2.16	0.45
2:A:3099:ILE:O	2:A:3103:GLU:HG2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2420:GLU:HB3	2:A:2533:PRO:CG	2.35	0.45
2:A:2576:GLN:O	2:A:2579:TYR:HB3	2.16	0.45
2:A:2892:LEU:HD11	2:A:2919:LEU:CD1	2.47	0.45
2:A:2406:GLN:O	2:A:2410:ASP:N	2.36	0.45
2:A:2420:GLU:CB	2:A:2533:PRO:HG2	2.36	0.45
2:A:2720:ARG:HD3	2:A:2720:ARG:HA	1.84	0.45
2:A:2751:TRP:CZ3	2:A:2765:GLU:HB2	2.52	0.45
2:A:2992:ASP:OD1	2:A:3042:ASN:N	2.43	0.45
2:A:3011:TYR:CE2	2:A:3021:VAL:CG2	3.00	0.45
2:A:2470:CYS:SG	2:A:2556:GLU:OE2	2.75	0.45
2:A:2483:PHE:CB	2:A:2516:ALA:HB3	2.42	0.45
2:A:3020:LEU:HA	2:A:3054:PRO:CD	2.33	0.45
2:A:2731:SER:HB2	2:A:2944:ILE:HD11	1.97	0.45
2:A:2922:GLY:HA3	2:A:2968:TYR:CZ	2.51	0.45
2:A:2998:VAL:HG22	2:A:3011:TYR:CB	2.47	0.45
2:A:3082:HIS:C	2:A:3084:ILE:H	2.20	0.45
2:A:3091:TYR:O	2:A:3092:LYS:C	2.54	0.45
2:A:2558:ALA:C	2:A:2560:PRO:HD3	2.38	0.45
2:A:2699:ILE:HG22	2:A:2700:SER:N	2.32	0.45
2:A:2931:ALA:HB3	2:A:2947:THR:O	2.15	0.45
2:A:2605:LYS:HE3	2:A:2715:PHE:CE1	2.52	0.45
2:A:2726:LEU:CA	2:A:2729:LEU:HG	2.43	0.45
2:A:2409:ARG:HH21	2:A:2511:SER:HA	1.75	0.45
2:A:2692:PRO:C	2:A:2694:SER:H	2.20	0.45
2:A:2701:ALA:O	2:A:2705:ARG:NH1	2.47	0.45
2:A:2738:CYS:SG	2:A:2926:ARG:HG2	2.57	0.45
2:A:2490:GLY:O	2:A:2494:LEU:HD12	2.18	0.44
2:A:2524:ALA:C	2:A:2526:CYS:N	2.71	0.44
2:A:2783:LEU:HD11	2:A:2880:GLU:N	2.32	0.44
2:A:2830:GLN:C	2:A:2832:ALA:N	2.69	0.44
2:A:2951:ARG:HG2	2:A:2951:ARG:HH11	1.82	0.44
2:A:2442:ILE:O	2:A:2443:SER:C	2.56	0.44
2:A:2572:ARG:HA	2:A:2575:LEU:HB2	1.98	0.44
2:A:2967:VAL:HG23	2:A:2968:TYR:H	1.81	0.44
1:B:52:PHE:CE2	2:A:2706:PRO:O	2.70	0.44
2:A:2644:ASP:O	2:A:2713:LEU:CB	2.65	0.44
2:A:2687:ALA:C	2:A:2689:LEU:N	2.69	0.44
2:A:2978:ARG:C	2:A:2980:SER:N	2.71	0.44
1:B:12:LEU:HD22	2:A:2439:LEU:O	2.17	0.44
2:A:2451:ARG:O	2:A:2451:ARG:CG	2.65	0.44
2:A:2498:LYS:HE3	2:A:2498:LYS:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2694:SER:OG	2:A:2695:LEU:N	2.51	0.44
2:A:2723:PRO:O	2:A:2724:LEU:HB3	2.16	0.44
2:A:2937:SER:O	2:A:2938:LYS:HB2	2.18	0.44
2:A:2426:LEU:H	2:A:2426:LEU:CD1	1.97	0.44
2:A:2448:VAL:O	2:A:2450:ASP:N	2.50	0.44
1:B:56:LEU:C	1:B:57:ARG:HG3	2.37	0.44
2:A:2524:ALA:O	2:A:2527:ASP:N	2.46	0.44
2:A:2676:GLY:O	2:A:2677:ALA:C	2.55	0.44
2:A:3011:TYR:CE2	2:A:3021:VAL:HG21	2.53	0.44
2:A:2522:TYR:HE1	2:A:2537:SER:CA	2.31	0.44
2:A:2815:GLN:OE1	2:A:2842:PHE:HD2	2.00	0.44
2:A:2895:THR:HG22	2:A:2903:SER:CB	2.47	0.44
2:A:2898:LYS:NZ	2:A:2898:LYS:HB3	2.31	0.44
2:A:2483:PHE:CD2	2:A:2570:PRO:HB3	2.53	0.44
2:A:2748:PRO:HG3	2:A:3063:ILE:CD1	2.45	0.44
2:A:2766:ARG:NH2	2:A:2769:GLU:HG3	2.33	0.44
2:A:2899:LYS:O	2:A:2900:LYS:C	2.55	0.44
2:A:2967:VAL:HG23	2:A:2968:TYR:N	2.32	0.44
2:A:2742:ILE:HA	2:A:2923:LYS:O	2.17	0.44
2:A:2783:LEU:HD21	2:A:2880:GLU:HB3	2.00	0.44
2:A:2870:ARG:O	2:A:2871:LYS:C	2.56	0.44
1:B:52:PHE:HE2	2:A:2706:PRO:O	2.01	0.43
2:A:2412:GLN:NE2	2:A:2507:TRP:O	2.51	0.43
2:A:2640:ILE:HD11	2:A:2651:ALA:HB3	1.99	0.43
2:A:2653:LEU:HB3	2:A:2657:LEU:HB3	1.99	0.43
2:A:2726:LEU:HD22	2:A:2904:ALA:HB3	2.00	0.43
2:A:2817:HIS:C	2:A:2819:LEU:N	2.72	0.43
2:A:2674:THR:HG21	2:A:2699:ILE:HG13	2.00	0.43
2:A:3077:VAL:O	2:A:3081:LYS:N	2.48	0.43
1:B:52:PHE:O	2:A:2670:GLN:NE2	2.52	0.43
2:A:2445:GLN:O	2:A:2448:VAL:N	2.51	0.43
2:A:2459:LYS:O	2:A:2460:GLN:C	2.56	0.43
2:A:2474:ASN:CB	2:A:2477:ASN:OD1	2.66	0.43
2:A:2816:VAL:O	2:A:2819:LEU:HB3	2.19	0.43
2:A:3041:SER:HB2	2:A:3042:ASN:OD1	2.17	0.43
1:B:43:TRP:CH2	2:A:2704:THR:HB	2.52	0.43
1:B:54:ASN:CB	2:A:2452:ALA:HB1	2.48	0.43
2:A:2884:ARG:HH11	2:A:2884:ARG:CG	2.31	0.43
1:B:16:ASP:OD1	1:B:57:ARG:NE	2.51	0.43
2:A:2611:ILE:HG13	2:A:2669:GLY:N	2.31	0.43
2:A:2940:GLU:HB2	2:A:2942:PRO:HD2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:3028:LEU:HD23	2:A:3028:LEU:HA	1.75	0.43
1:B:56:LEU:O	1:B:56:LEU:CG	2.60	0.43
2:A:2445:GLN:HE22	2:A:2709:TRP:HE1	1.65	0.43
2:A:2484:ASP:C	2:A:2486:GLN:N	2.71	0.43
2:A:2485:ILE:CG2	2:A:2516:ALA:HB2	2.48	0.43
2:A:2604:ALA:O	2:A:2675:GLN:O	2.37	0.43
2:A:2549:VAL:O	2:A:2550:TRP:C	2.55	0.43
2:A:2700:SER:HB3	2:A:2734:GLY:CA	2.49	0.43
2:A:2766:ARG:HA	2:A:2766:ARG:CZ	2.47	0.43
2:A:3020:LEU:HD23	2:A:3020:LEU:O	2.18	0.43
1:B:13:LEU:HD11	2:A:2444:LEU:CD1	2.48	0.43
2:A:2448:VAL:HG21	2:A:2559:PHE:CD1	2.52	0.43
2:A:2857:LEU:HA	2:A:2857:LEU:HD23	1.67	0.43
2:A:2858:ASN:C	2:A:2860:LYS:N	2.70	0.43
2:A:2432:TYR:OH	2:A:2589:ARG:NH2	2.31	0.43
2:A:2448:VAL:HG11	2:A:2559:PHE:CD1	2.53	0.43
2:A:2449:GLY:O	2:A:2450:ASP:CB	2.66	0.43
2:A:2462:TYR:CD1	2:A:2466:VAL:HG11	2.54	0.43
2:A:2517:GLY:N	2:A:2520:GLU:OE1	2.51	0.43
2:A:2645:GLY:N	2:A:2713:LEU:HD13	2.34	0.43
2:A:2655:PRO:HB2	2:A:2732:ASP:CB	2.49	0.43
2:A:2708:ARG:H	2:A:2708:ARG:CD	2.32	0.43
2:A:2727:SER:HA	2:A:2902:LYS:CD	2.49	0.43
2:A:2760:TYR:O	2:A:2761:ILE:HD12	2.19	0.43
2:A:2987:PRO:O	2:A:2989:SER:N	2.52	0.43
2:A:3029:ASN:O	2:A:3030:GLU:HB2	2.19	0.43
2:A:3053:VAL:HG13	2:A:3053:VAL:O	2.19	0.43
2:A:2647:TYR:CD2	2:A:2689:LEU:HD21	2.54	0.42
2:A:3016:CYS:HB3	2:A:3018:ASN:ND2	2.34	0.42
2:A:2860:LYS:HD2	2:A:2860:LYS:HA	1.88	0.42
1:B:13:LEU:HG	1:B:15:GLU:HG3	2.01	0.42
2:A:2452:ALA:CB	2:A:2453:PRO:CD	2.90	0.42
2:A:2596:ILE:HD11	2:A:2715:PHE:CZ	2.50	0.42
2:A:2596:ILE:HD12	2:A:2602:THR:O	2.19	0.42
2:A:2705:ARG:O	2:A:2706:PRO:C	2.58	0.42
2:A:2717:ARG:O	2:A:2719:PRO:HD3	2.19	0.42
2:A:2892:LEU:CD1	2:A:2919:LEU:HD13	2.49	0.42
1:B:51:ASP:CB	2:A:2708:ARG:HG3	2.50	0.42
2:A:2522:TYR:HE1	2:A:2537:SER:HA	1.84	0.42
2:A:3086:ASN:CG	2:A:3087:ILE:N	2.72	0.42
2:A:2745:ARG:HD3	2:A:2745:ARG:HA	1.51	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2864:ARG:HA	2:A:2864:ARG:HD2	1.62	0.42
2:A:2892:LEU:O	2:A:2905:LEU:CD1	2.61	0.42
2:A:2675:GLN:HE21	2:A:2721:PRO:HA	1.85	0.42
2:A:2861:LYS:C	2:A:2863:ALA:H	2.21	0.42
2:A:3000:VAL:CG1	2:A:3001:VAL:N	2.82	0.42
2:A:2742:ILE:HD12	2:A:2923:LYS:C	2.40	0.42
2:A:2893:ARG:HA	2:A:2905:LEU:HD12	2.01	0.42
2:A:2640:ILE:H	2:A:2640:ILE:CD1	2.29	0.42
2:A:2650:ARG:CB	2:A:2650:ARG:NH1	2.69	0.42
2:A:2729:LEU:C	2:A:2730:PHE:HD1	2.23	0.42
2:A:2845:GLU:HA	2:A:2848:ARG:HH21	1.83	0.42
2:A:2865:ILE:O	2:A:2868:GLU:N	2.53	0.42
2:A:2941:ARG:N	2:A:2942:PRO:HD2	2.34	0.42
1:B:43:TRP:HZ3	2:A:2701:ALA:HA	1.84	0.42
2:A:2763:ARG:CZ	2:A:2771:GLU:HG2	2.50	0.42
1:B:16:ASP:CG	1:B:57:ARG:HH21	2.20	0.42
2:A:2466:VAL:O	2:A:2467:SER:HB2	2.19	0.42
2:A:2873:LEU:C	2:A:2873:LEU:HD23	2.40	0.42
2:A:2676:GLY:C	2:A:2677:ALA:O	2.58	0.41
2:A:2420:GLU:C	2:A:2422:ARG:N	2.73	0.41
2:A:2726:LEU:HD12	2:A:2896:SER:OG	2.19	0.41
2:A:2926:ARG:HB3	2:A:2928:TYR:CE2	2.56	0.41
2:A:2587:ASN:O	2:A:2588:SER:C	2.57	0.41
2:A:2941:ARG:N	2:A:2942:PRO:CD	2.83	0.41
2:A:3013:SER:HA	2:A:3018:ASN:O	2.19	0.41
1:B:59:GLU:OE2	2:A:2453:PRO:CG	2.69	0.41
2:A:2674:THR:HG23	2:A:2699:ILE:HG23	2.01	0.41
2:A:2747:TYR:CD2	2:A:3042:ASN:ND2	2.87	0.41
2:A:2819:LEU:HD21	2:A:2844:GLU:OE2	2.20	0.41
2:A:2864:ARG:O	2:A:2868:GLU:HB2	2.20	0.41
2:A:2976:PHE:HB2	2:A:3014:ASP:OD2	2.19	0.41
2:A:2513:ASP:HB3	2:A:2515:LYS:HE3	2.01	0.41
2:A:2679:LEU:CD2	2:A:2697:LEU:HD13	2.50	0.41
2:A:2965:LEU:H	2:A:2965:LEU:CD1	2.33	0.41
2:A:3015:GLU:N	2:A:3080:LEU:HD13	2.35	0.41
2:A:3050:THR:HG22	2:A:3050:THR:O	2.20	0.41
2:A:3051:SER:C	2:A:3053:VAL:N	2.74	0.41
2:A:2605:LYS:HE3	2:A:2715:PHE:CD1	2.56	0.41
2:A:2783:LEU:HD11	2:A:2880:GLU:H	1.84	0.41
1:B:13:LEU:HD11	2:A:2444:LEU:HD12	2.02	0.41
2:A:2481:PHE:O	2:A:2482:GLN:CB	2.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2647:TYR:HE2	2:A:2689:LEU:HD21	1.84	0.41
2:A:2902:LYS:HE2	2:A:2943:SER:CA	2.46	0.41
2:A:2673:ILE:HG12	2:A:2707:ALA:HB2	2.00	0.41
2:A:2694:SER:O	2:A:2695:LEU:C	2.59	0.41
2:A:2951:ARG:HG2	2:A:2951:ARG:NH1	2.35	0.41
1:B:10:LEU:O	1:B:12:LEU:N	2.54	0.41
2:A:2534:LYS:HE3	2:A:2534:LYS:HB2	1.91	0.41
2:A:2684:ASP:HB3	2:A:2685:ALA:H	1.58	0.41
2:A:2700:SER:HB3	2:A:2734:GLY:HA3	2.03	0.41
2:A:2864:ARG:O	2:A:2865:ILE:O	2.38	0.41
2:A:3011:TYR:CZ	2:A:3021:VAL:HG21	2.55	0.41
2:A:3062:SER:O	2:A:3063:ILE:HD13	2.21	0.41
2:A:2445:GLN:HB3	2:A:2446:ALA:H	1.77	0.41
2:A:2458:PRO:O	2:A:2459:LYS:O	2.38	0.41
2:A:2819:LEU:HG	2:A:2846:GLN:CD	2.40	0.41
2:A:2965:LEU:HD12	2:A:2965:LEU:N	2.36	0.41
2:A:2415:ARG:HD2	2:A:2415:ARG:HH11	1.74	0.40
2:A:2582:ASP:O	2:A:2587:ASN:ND2	2.48	0.40
2:A:2660:LEU:HD22	2:A:2665:LYS:HG2	2.02	0.40
2:A:2927:ILE:HB	2:A:2930:LEU:HD11	2.03	0.40
2:A:3054:PRO:O	2:A:3055:THR:OG1	2.35	0.40
2:A:2445:GLN:O	2:A:2446:ALA:C	2.59	0.40
2:A:2610:CYS:O	2:A:2642:LEU:HA	2.21	0.40
2:A:2751:TRP:HZ3	2:A:2765:GLU:HB2	1.86	0.40
2:A:3042:ASN:O	2:A:3043:LEU:HD23	2.21	0.40
2:A:3091:TYR:CD1	2:A:3092:LYS:N	2.89	0.40
2:A:2522:TYR:CE1	2:A:2538:SER:N	2.89	0.40
2:A:2864:ARG:HH11	2:A:2864:ARG:CG	2.32	0.40
2:A:2912:SER:O	2:A:2914:ASP:N	2.54	0.40
2:A:2993:VAL:O	2:A:3073:PHE:HE2	2.04	0.40
2:A:3014:ASP:OD1	2:A:3014:ASP:C	2.59	0.40
2:A:3087:ILE:C	2:A:3089:THR:N	2.73	0.40
2:A:2778:ALA:O	2:A:2781:LYS:HB2	2.21	0.40
1:B:9:ASP:CG	1:B:12:LEU:HD12	2.40	0.40
2:A:2423:HIS:O	2:A:2423:HIS:CD2	2.75	0.40
2:A:2471:ILE:C	2:A:2473:VAL:H	2.25	0.40
2:A:2481:PHE:O	2:A:2482:GLN:HB2	2.21	0.40
2:A:2644:ASP:O	2:A:2713:LEU:HB3	2.21	0.40
2:A:2693:ASP:OD1	2:A:2693:ASP:N	2.52	0.40
2:A:2993:VAL:HG23	2:A:2994:VAL:N	2.37	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	B	36/70 (51%)	25 (69%)	7 (19%)	4 (11%)	0	2
2	A	665/738 (90%)	427 (64%)	127 (19%)	111 (17%)	0	0
All	All	701/808 (87%)	452 (64%)	134 (19%)	115 (16%)	0	0

All (115) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	41	ASP
1	B	56	LEU
2	A	2440	PRO
2	A	2451	ARG
2	A	2453	PRO
2	A	2457	SER
2	A	2481	PHE
2	A	2485	ILE
2	A	2564	ALA
2	A	2602	THR
2	A	2677	ALA
2	A	2683	PRO
2	A	2685	ALA
2	A	2688	PRO
2	A	2706	PRO
2	A	2708	ARG
2	A	2711	SER
2	A	2712	ARG
2	A	2724	LEU
2	A	2759	LEU
2	A	2764	SER
2	A	2810	THR
2	A	2835	PRO
2	A	2862	GLN
2	A	2865	ILE

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Mol	Chain	Res	Type
2	A	2869	PHE
2	A	2870	ARG
2	A	2899	LYS
2	A	2901	GLU
2	A	2932	VAL
2	A	2974	LEU
2	A	2984	PHE
2	A	2986	PRO
2	A	2987	PRO
2	A	3007	ALA
2	A	3072	TYR
2	A	3074	GLN
2	A	3076	LYS
1	B	43	TRP
2	A	2446	ALA
2	A	2449	GLY
2	A	2461	LEU
2	A	2588	SER
2	A	2601	ASP
2	A	2668	VAL
2	A	2676	GLY
2	A	2695	LEU
2	A	2701	ALA
2	A	2723	PRO
2	A	2776	ALA
2	A	2836	ASP
2	A	2873	LEU
2	A	2880	GLU
2	A	2933	SER
2	A	2939	PHE
2	A	2965	LEU
2	A	2985	GLN
2	A	2988	CYS
2	A	3006	LEU
2	A	3032	ILE
2	A	3092	LYS
2	A	2400	ASP
2	A	2430	SER
2	A	2444	LEU
2	A	2447	ALA
2	A	2450	ASP
2	A	2452	ALA

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Mol	Chain	Res	Type
2	A	2459	LYS
2	A	2504	ASP
2	A	2513	ASP
2	A	2525	LEU
2	A	2558	ALA
2	A	2591	SER
2	A	2606	THR
2	A	2686	CYS
2	A	2717	ARG
2	A	2793	GLU
2	A	2861	LYS
2	A	2903	SER
2	A	2936	LYS
2	A	2943	SER
2	A	2978	ARG
2	A	3003	PRO
2	A	3071	ALA
2	A	2482	GLN
2	A	2553	ALA
2	A	2693	ASP
2	A	2820	GLN
2	A	2859	ASP
2	A	2982	PRO
2	A	3091	TYR
2	A	2401	LEU
2	A	2439	LEU
2	A	2475	SER
2	A	2598	GLU
2	A	2673	ILE
2	A	2811	LEU
2	A	2866	GLN
2	A	2913	SER
2	A	3029	ASN
2	A	3090	PHE
2	A	2466	VAL
2	A	2560	PRO
2	A	2938	LYS
2	A	3083	ALA
2	A	2570	PRO
2	A	2756	VAL
2	A	2442	ILE
2	A	2448	VAL

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Mol	Chain	Res	Type
2	A	2941	ARG
2	A	3008	PRO
2	A	3052	GLY
1	B	38	VAL
2	A	3026	ILE
2	A	3004	ILE

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	B	36/63 (57%)	32 (89%)	4 (11%)	6	24
2	A	571/649 (88%)	476 (83%)	95 (17%)	2	9
All	All	607/712 (85%)	508 (84%)	99 (16%)	2	10

All (99) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	39	TRP
1	B	41	ASP
1	B	42	ASN
1	B	43	TRP
2	A	2399	LYS
2	A	2400	ASP
2	A	2417	LYS
2	A	2421	ARG
2	A	2431	LEU
2	A	2438	THR
2	A	2440	PRO
2	A	2453	PRO
2	A	2470	CYS
2	A	2474	ASN
2	A	2481	PHE
2	A	2498	LYS
2	A	2501	GLN

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Mol	Chain	Res	Type
2	A	2502	LEU
2	A	2538	SER
2	A	2539	ILE
2	A	2543	ASN
2	A	2559	PHE
2	A	2568	LEU
2	A	2569	ASN
2	A	2572	ARG
2	A	2575	LEU
2	A	2587	ASN
2	A	2611	ILE
2	A	2613	ASP
2	A	2640	ILE
2	A	2650	ARG
2	A	2663	SER
2	A	2665	LYS
2	A	2674	THR
2	A	2693	ASP
2	A	2706	PRO
2	A	2708	ARG
2	A	2711	SER
2	A	2717	ARG
2	A	2720	ARG
2	A	2726	LEU
2	A	2732	ASP
2	A	2741	ILE
2	A	2745	ARG
2	A	2746	VAL
2	A	2751	TRP
2	A	2752	VAL
2	A	2755	THR
2	A	2769	GLU
2	A	2774	ARG
2	A	2783	LEU
2	A	2793	GLU
2	A	2813	ARG
2	A	2815	GLN
2	A	2817	HIS
2	A	2841	CYS
2	A	2842	PHE
2	A	2850	LEU
2	A	2852	ASN

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Mol	Chain	Res	Type
2	A	2856	MET
2	A	2864	ARG
2	A	2868	GLU
2	A	2870	ARG
2	A	2877	GLU
2	A	2882	LEU
2	A	2888	THR
2	A	2889	VAL
2	A	2893	ARG
2	A	2898	LYS
2	A	2899	LYS
2	A	2901	GLU
2	A	2907	SER
2	A	2912	SER
2	A	2915	LEU
2	A	2920	THR
2	A	2923	LYS
2	A	2928	TYR
2	A	2936	LYS
2	A	2946	LEU
2	A	2947	THR
2	A	2954	TYR
2	A	2974	LEU
2	A	2991	VAL
2	A	2993	VAL
2	A	3003	PRO
2	A	3015	GLU
2	A	3016	CYS
2	A	3017	LEU
2	A	3020	LEU
2	A	3031	ASP
2	A	3038	ILE
2	A	3041	SER
2	A	3048	GLU
2	A	3072	TYR
2	A	3079	ASN
2	A	3082	HIS
2	A	3086	ASN
2	A	3098	LEU
2	A	3102	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (20) such sidechains are listed below:

Mol	Chain	Res	Type
2	A	2423	HIS
2	A	2486	GLN
2	A	2543	ASN
2	A	2565	ASN
2	A	2569	ASN
2	A	2576	GLN
2	A	2587	ASN
2	A	2670	GLN
2	A	2675	GLN
2	A	2814	GLN
2	A	2855	GLN
2	A	2862	GLN
2	A	2929	HIS
2	A	2956	GLN
2	A	2969	GLN
2	A	3018	ASN
2	A	3044	GLN
2	A	3078	ASN
2	A	3079	ASN
2	A	3086	ASN

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 ⓘ

Of 5 ligands modelled in this entry, 5 are monoatomic - leaving 0 for Mogul analysis.

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 ⓘ

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates ⓘ

EDS was not executed - this section is therefore empty.

6.4 Ligands ⓘ

EDS was not executed - this section is therefore empty.

6.5 Other polymers ⓘ

EDS was not executed - this section is therefore empty.