



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 3, 2024 – 09:22 AM EST

PDB ID : 1MJE
Title : STRUCTURE OF A BRCA2-DSS1-SSDNA 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 : 2002-08-27
Resolution : 3.50 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Xtrriage (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

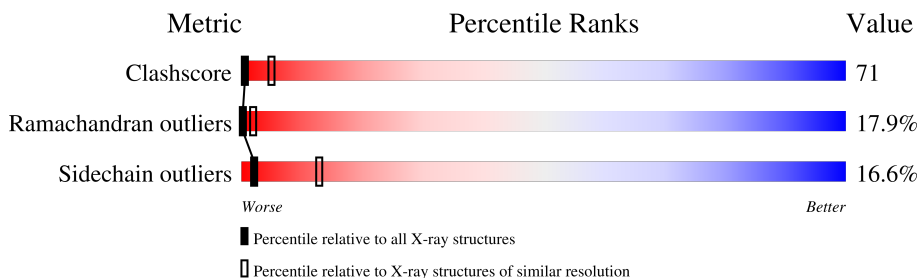
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.50 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))
Clashscore	141614	1036 (3.58-3.42)
Ramachandran outliers	138981	1005 (3.58-3.42)
Sidechain outliers	138945	1006 (3.58-3.42)

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

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	C	6	83% 17%
2	B	70	17% 30% 10% 40%
3	A	649	20% 50% 20% 8%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 5198 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 DNA chain called 5'-D(P*TP*TP*TP*TP*TP*T)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	C	6	121	60	12	43	6	16	0	0

- Molecule 2 is a protein called Deleted in split hand/split foot protein 1.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
2	B	42	335	209	50	76	0	0	0

- Molecule 3 is a protein called breast cancer 2.


Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	A	600	4742	3025	824	877	16	0	0	0

3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. 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.

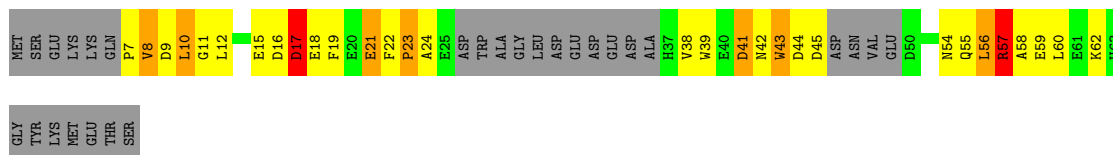
- Molecule 1: 5'-D(P*TP*TP*TP*TP*TP*T)-3'

Chain C:  83% 17%




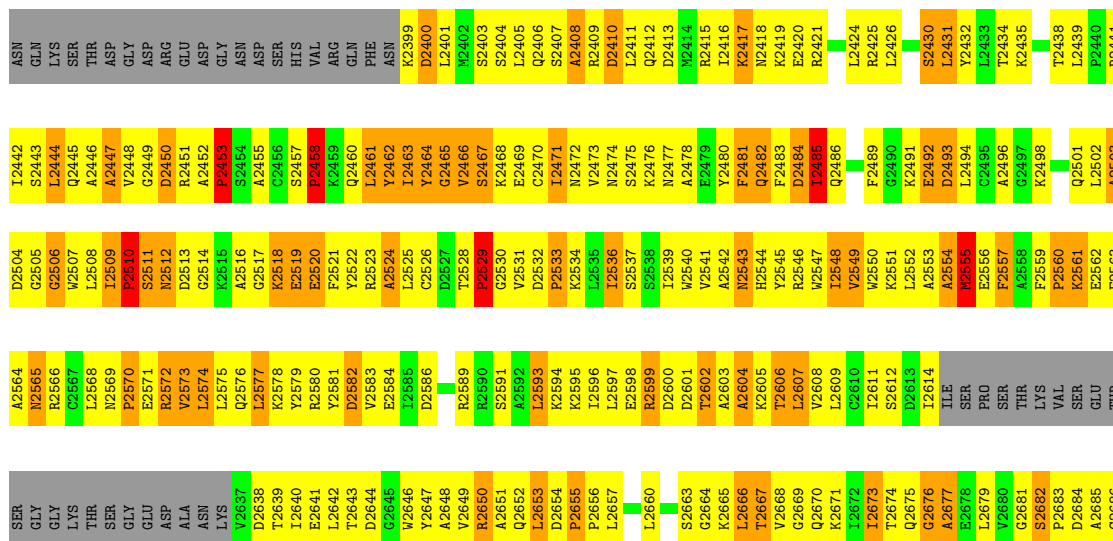
- Molecule 2: Deleted in split hand/split foot protein 1

Chain B:  17% 30% 10% 40%



- Molecule 3: breast cancer 2

Chain A:  20% 50% 20% 8%



K3098	L2748	Y2887	L2964	E3030	K3098	L2687
L3099	Q2150	K2898	L2965	D3031	L3099	P2688
I3100	W2151	K2899	Q2966	I3032	L2689	L2689
V3102	V2152	K2900	V2967	K3033	E2690	E2690
L3103	E2753	E2901	Q2968	P3034	A2691	A2691
	K2754	K2902	Q2969	R3035	P2692	P2692
	T2755	S2903	P2970	V3036	D2693	D2693
	V2756	A2904	R2971	L3037	S2694	S2694
	S2757	L2905		L3038	L2695	L2695
	G2758	L2906	L2974	A3039	R2696	R2696
SER	L2759	S2907	H2975	A3040	L2697	L2697
THR	Y2760	S2908	F2976	S3041	K2698	K2698
PRO	I2761	I2968	S2977	N3042	L2699	L2699
ASN	F2762	R2910	R2978	L3043	S2700	S2700
	R2763	P2911	L2979	Q3044	A2701	A2701
	S2764	S2912	S2980	C3045	R2702	R2702
	E2765	S2913	D2981	Q3046	S2703	S2703
	R2766	D2914	P2982	P3047	T2704	T2704
	E2767	L2915	A2983	E3048	R2705	R2705
	E2768	L2919	F2984	S3049	P2706	P2706
	E2769	G2922	Q2985	T3050	A2707	A2707
	K2770	K2923	P2986	S3051	R2708	R2708
	E2771	R2924	P2987	G3052	W2709	W2709
	A2772	Y2925	C2988	V3053	S2710	S2710
	L2773	R2926	S2989	P3054	R2711	R2711
	R2774	Y2926	E2990	T3055	R2712	R2712
	F2775	R2927	V2991	L3056	L2713	L2713
	A2776	Y2928	D2992	F3057	F2715	F2715
	Q2779	H2929	V2993	A3058	F2716	F2716
	K2780	L2930	V2994	C3059	F2717	F2717
	K2781	A2931	V2997	S3062	R2717	R2717
	K2782	V2932	V2998	I3063	P2721	P2721
	L2783	S2933	S2999	E3070	F2722	F2722
	E2784	K2934	V3000	A3071	P2723	P2723
	A2785	S2935	V3001	Y3072	L2724	L2724
	L2786	K2936	K3002	F3073	P2725	P2725
	F2787	S2937	P3003	Q3074	L2726	L2726
	T2788	K2938	I3004	E3075	S2727	S2727
	K2789	F2939	G3005	K3076	R2728	R2728
	L2729	E2940	L3006	N3077	L2729	L2729
	F2730	R2941	A3007	V3078	F2730	F2730
	S2731	P2942	P3008	N3079	S2731	S2731
	GLU	L2946	L3009	L3080	D2732	D2732
	GLY	T2947	V3010	K3081	G2733	G2733
	L2882	T2947	Y3011	H3082	G2734	G2734
	S2883	R2951	L3012	A3083	N2735	N2735
	R2884	T2952	S3013	I3084	V2736	V2736
	D2885	Q2953	D3014	E3085	G2737	G2737
	V2886	Y2954	L3017	N3086	C2738	C2738
	T2887	Q2955	N3018	I3087	V2739	V2739
	L2888	L3019	L3019	D3089	D2740	D2740
	W2889	Q2956	L3020	F3091	L2741	L2741
	L2741	P2958	V3021	F3092	L2742	L2742
	K2891	V2959	F3024	K3093	V2743	V2743
	L2892	S2960	L3028	E3096	Q2744	Q2744
	R2893	S2961	N3029	K3097	R2745	R2745
	V2894	E2962			V2746	V2746
	T2895	T2963			Y2747	Y2747
	S2896				P2748	P2748

4 Data and refinement statistics

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

Property	Value	Source
Space group	I 4 2 2	Depositor
Cell constants a, b, c, α , β , γ	198.87Å 198.87Å 200.05Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	15.00 – 3.50	Depositor
% Data completeness (in resolution range)	(Not available) (15.00-3.50)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	CNS	Depositor
R, R_{free}	0.245 , 0.278	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	5198	wwPDB-VP
Average B, all atoms (Å ²)	105.0	wwPDB-VP

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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	C	0.96	1/132 (0.8%)	0.85	0/200
2	B	0.66	0/340	0.88	1/460 (0.2%)
3	A	0.66	2/4843 (0.0%)	0.92	10/6557 (0.2%)
All	All	0.67	3/5315 (0.1%)	0.92	11/7217 (0.2%)

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
3	A	0	1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	2790	VAL	CA-CB	7.32	1.70	1.54
1	C	501	DT	OP3-P	-6.11	1.53	1.61
3	A	2789	LYS	CG-CD	5.09	1.69	1.52

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	3005	GLY	N-CA-C	-8.10	92.84	113.10
3	A	2889	VAL	CB-CA-C	-6.88	98.32	111.40
3	A	2458	PRO	N-CA-CB	5.79	110.25	103.30
3	A	2741	ILE	CB-CA-C	-5.75	100.10	111.60
3	A	2905	LEU	CA-CB-CG	-5.63	102.34	115.30
2	B	7	PRO	N-CA-CB	5.51	109.92	103.30
3	A	2769	GLU	N-CA-C	-5.33	96.61	111.00
3	A	2791	HIS	N-CA-C	5.26	125.22	111.00
3	A	2957	LEU	CA-CB-CG	-5.26	103.21	115.30
3	A	2926	ARG	N-CA-C	-5.10	97.23	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	2790	VAL	CG1-CB-CG2	-5.04	102.83	110.90

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
3	A	3072	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	C	121	0	73	10	0
2	B	335	0	262	46	0
3	A	4742	0	4783	706	0
All	All	5198	0	5118	730	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 71.

All (730) 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:B:56:LEU:HD23	2:B:57:ARG:H	1.02	1.17
3:A:2604:ALA:HB1	3:A:2677:ALA:HB3	1.27	1.17
3:A:3040:ALA:HB1	3:A:3043:LEU:HD11	1.27	1.12
3:A:2691:ALA:HB1	3:A:2692:PRO:HD2	1.25	1.11
2:B:10:LEU:HD11	3:A:2566:ARG:HH21	1.12	1.10
3:A:2749:LEU:CD2	3:A:2750:GLN:H	1.66	1.09
3:A:2974:LEU:CD2	3:A:2976:PHE:H	1.68	1.06
3:A:2747:TYR:HB3	3:A:2748:PRO:HD2	1.35	1.05
3:A:2482:GLN:HG2	3:A:2517:GLY:HA3	1.38	1.04
3:A:2485:ILE:HD13	3:A:2510:PRO:HB3	1.38	1.01
3:A:2412:GLN:HA	3:A:2415:ARG:HH21	1.28	0.99
3:A:2974:LEU:HD23	3:A:2975:HIS:N	1.78	0.98

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:3028:LEU:O	3:A:3030:GLU:N	1.97	0.98
3:A:2681:GLY:HA3	3:A:2695:LEU:HA	1.45	0.98
3:A:2451:ARG:HE	3:A:2452:ALA:H	1.05	0.97
3:A:2749:LEU:HD23	3:A:2750:GLN:H	1.29	0.96
2:B:56:LEU:CD2	2:B:57:ARG:H	1.78	0.96
3:A:2548:ILE:HG22	3:A:2552:LEU:HD11	1.47	0.96
2:B:10:LEU:HD11	3:A:2566:ARG:NH2	1.80	0.94
3:A:2674:THR:HB	3:A:2704:THR:HG22	1.47	0.93
3:A:2768:GLU:O	3:A:2768:GLU:HG3	1.66	0.93
3:A:2974:LEU:HD23	3:A:2976:PHE:H	1.34	0.92
3:A:2691:ALA:HB1	3:A:2692:PRO:CD	2.00	0.92
3:A:2723:PRO:C	3:A:2724:LEU:HD12	1.90	0.91
3:A:2611:ILE:HD11	3:A:2667:THR:O	1.69	0.91
3:A:2927:ILE:HG22	3:A:2930:LEU:HD21	1.52	0.90
3:A:2549:VAL:HA	3:A:2552:LEU:HD12	1.54	0.90
3:A:2572:ARG:O	3:A:2575:LEU:HB2	1.71	0.89
3:A:2729:LEU:HD21	3:A:2736:VAL:HG22	1.52	0.89
3:A:2604:ALA:CB	3:A:2677:ALA:HB3	2.03	0.88
3:A:2596:ILE:HD11	3:A:2603:ALA:HA	1.54	0.88
3:A:2691:ALA:CB	3:A:2692:PRO:HD2	2.04	0.87
3:A:2675:GLN:NE2	3:A:2721:PRO:HA	1.89	0.87
3:A:2763:ARG:HG3	3:A:2763:ARG:HH11	1.40	0.87
3:A:2740:ASP:OD2	3:A:2897:TYR:HB2	1.75	0.87
2:B:56:LEU:HD23	2:B:57:ARG:N	1.87	0.86
3:A:2453:PRO:HD3	3:A:2559:PHE:CZ	2.10	0.86
3:A:2526:CYS:HB3	3:A:2533:PRO:HG3	1.56	0.86
3:A:2679:LEU:HD11	3:A:2695:LEU:HD21	1.57	0.85
3:A:2653:LEU:HD13	3:A:2657:LEU:HB3	1.58	0.85
3:A:2442:ILE:N	3:A:2442:ILE:HD12	1.92	0.85
2:B:55:GLN:HG3	3:A:2670:GLN:HA	1.59	0.85
2:B:43:TRP:CZ3	3:A:2704:THR:O	2.30	0.85
3:A:2747:TYR:HB3	3:A:2748:PRO:CD	2.05	0.84
3:A:2444:LEU:HD12	3:A:2444:LEU:H	1.41	0.84
3:A:3019:LEU:HD22	3:A:3019:LEU:N	1.93	0.84
3:A:2473:VAL:HA	3:A:2477:ASN:HD21	1.40	0.84
3:A:2961:SER:O	3:A:2965:LEU:HD13	1.77	0.84
3:A:2674:THR:CB	3:A:2704:THR:HG22	2.08	0.84
3:A:2939:PHE:O	3:A:2940:GLU:HG3	1.77	0.83
3:A:3040:ALA:CB	3:A:3043:LEU:HD11	2.07	0.83
3:A:2573:VAL:HG12	3:A:2577:LEU:CD1	2.07	0.83
3:A:2695:LEU:HD23	3:A:2696:ARG:N	1.94	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:3001:VAL:HG12	3:A:3003:PRO:HD3	1.61	0.82
3:A:2412:GLN:HA	3:A:2415:ARG:NH2	1.95	0.82
3:A:2975:HIS:O	3:A:2976:PHE:HB2	1.78	0.82
2:B:43:TRP:HZ3	3:A:2704:THR:O	1.62	0.82
3:A:3081:LYS:O	3:A:3085:GLU:HG2	1.78	0.82
3:A:2565:ASN:HA	3:A:2568:LEU:HD13	1.61	0.82
3:A:2729:LEU:CD2	3:A:2736:VAL:HG22	2.09	0.81
3:A:3030:GLU:C	3:A:3032:ILE:H	1.81	0.81
3:A:2742:ILE:HD13	3:A:2923:LYS:O	1.80	0.81
3:A:2573:VAL:HG12	3:A:2577:LEU:HD11	1.61	0.80
3:A:2509:ILE:O	3:A:2511:SER:N	2.15	0.79
3:A:2749:LEU:HD22	3:A:2750:GLN:H	1.47	0.79
3:A:2526:CYS:SG	3:A:2533:PRO:HB3	2.23	0.79
3:A:2773:LEU:HD23	3:A:2774:ARG:N	1.97	0.79
3:A:2560:PRO:C	3:A:2562:GLU:H	1.86	0.79
3:A:2608:VAL:O	3:A:2609:LEU:HD23	1.82	0.79
3:A:2470:CYS:SG	3:A:2471:ILE:N	2.55	0.79
3:A:2726:LEU:HA	3:A:2729:LEU:HD12	1.65	0.78
3:A:2986:PRO:HB2	3:A:2987:PRO:HD2	1.63	0.78
3:A:2650:ARG:HH22	3:A:2695:LEU:HB3	1.49	0.78
3:A:2753:GLU:HG3	3:A:2886:VAL:HG23	1.66	0.78
3:A:2768:GLU:O	3:A:2768:GLU:CG	2.31	0.78
3:A:3037:LEU:CD1	3:A:3080:LEU:HD23	2.14	0.77
3:A:2675:GLN:HE22	3:A:2721:PRO:HA	1.47	0.77
3:A:2892:LEU:HD12	3:A:2906:LEU:O	1.83	0.77
3:A:2749:LEU:HD23	3:A:2750:GLN:N	1.98	0.77
3:A:2654:ASP:OD1	3:A:2656:PRO:HD2	1.85	0.77
3:A:3028:LEU:C	3:A:3030:GLU:H	1.88	0.77
3:A:2773:LEU:HD23	3:A:2773:LEU:C	2.06	0.76
3:A:3081:LYS:HA	3:A:3084:ILE:HD12	1.68	0.76
3:A:3020:LEU:HD23	3:A:3020:LEU:O	1.84	0.76
3:A:2451:ARG:HE	3:A:2452:ALA:N	1.83	0.76
3:A:2502:LEU:HD13	3:A:2570:PRO:HB2	1.68	0.76
3:A:2611:ILE:HD13	3:A:2666:LEU:HD23	1.68	0.75
3:A:3050:THR:HB	3:A:3053:VAL:HG13	1.67	0.75
3:A:2485:ILE:HD13	3:A:2510:PRO:CB	2.17	0.75
3:A:2571:GLU:HG3	3:A:2572:ARG:H	1.52	0.75
3:A:2448:VAL:HG11	3:A:2559:PHE:CE1	2.21	0.75
3:A:2521:PHE:HA	3:A:2524:ALA:HB3	1.69	0.74
3:A:2451:ARG:NE	3:A:2452:ALA:H	1.84	0.74
3:A:2406:GLN:HA	3:A:2409:ARG:HB3	1.67	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2408:ALA:HA	3:A:2411:LEU:HB3	1.69	0.74
3:A:2554:ALA:O	3:A:2557:PHE:N	2.21	0.74
3:A:2769:GLU:O	3:A:2772:ALA:HB3	1.88	0.73
3:A:2596:ILE:HD11	3:A:2603:ALA:CA	2.18	0.73
3:A:2650:ARG:H	3:A:2650:ARG:HE	1.36	0.73
3:A:2710:HIS:O	3:A:2711:SER:HB2	1.89	0.73
3:A:3050:THR:HB	3:A:3053:VAL:CG1	2.19	0.72
3:A:2605:LYS:HG3	3:A:2606:THR:H	1.53	0.72
3:A:2895:THR:HG22	3:A:2901:GLU:OE1	1.88	0.72
3:A:2747:TYR:CB	3:A:2748:PRO:HD2	2.18	0.71
3:A:2485:ILE:CD1	3:A:2510:PRO:HB3	2.18	0.71
3:A:2549:VAL:CA	3:A:2552:LEU:HD12	2.20	0.71
3:A:2607:LEU:HD23	3:A:2609:LEU:HD21	1.73	0.71
3:A:2596:ILE:HD11	3:A:2604:ALA:N	2.05	0.71
3:A:2788:THR:HG22	3:A:2788:THR:O	1.89	0.71
3:A:2653:LEU:HD13	3:A:2657:LEU:CB	2.21	0.71
3:A:2611:ILE:HG13	3:A:2668:VAL:HA	1.73	0.71
3:A:2408:ALA:O	3:A:2412:GLN:HB2	1.90	0.70
3:A:2462:TYR:HB3	3:A:2466:VAL:HG22	1.71	0.70
3:A:2462:TYR:N	3:A:2462:TYR:CD1	2.60	0.70
3:A:3089:ASP:C	3:A:3091:PHE:H	1.93	0.70
3:A:2473:VAL:HA	3:A:2477:ASN:ND2	2.06	0.70
3:A:2573:VAL:C	3:A:2577:LEU:HD12	2.12	0.70
3:A:2548:ILE:O	3:A:2552:LEU:HG	1.92	0.70
3:A:2596:ILE:CD1	3:A:2603:ALA:HA	2.22	0.70
3:A:3078:ASN:HA	3:A:3081:LYS:HB2	1.72	0.70
3:A:2749:LEU:HD23	3:A:2889:VAL:O	1.90	0.70
3:A:2560:PRO:O	3:A:2562:GLU:N	2.25	0.69
3:A:2671:LYS:HE3	3:A:2709:TRP:O	1.91	0.69
2:B:57:ARG:HG2	3:A:2550:TRP:CZ2	2.27	0.69
3:A:2654:ASP:HB2	3:A:2655:PRO:HD2	1.74	0.69
3:A:2892:LEU:HD12	3:A:2892:LEU:H	1.57	0.69
3:A:2910:ARG:O	3:A:2911:PRO:O	2.09	0.69
3:A:2763:ARG:HG3	3:A:2763:ARG:NH1	2.08	0.69
3:A:2417:LYS:HA	3:A:2420:GLU:HG2	1.74	0.69
3:A:2689:LEU:HD13	3:A:2690:GLU:N	2.08	0.69
3:A:2929:HIS:O	3:A:2930:LEU:HD23	1.93	0.69
3:A:2967:VAL:HG23	3:A:2968:TYR:H	1.58	0.69
2:B:12:LEU:C	3:A:2441:ARG:HH21	1.97	0.68
3:A:2641:GLU:HG2	3:A:2648:ALA:HB1	1.76	0.68
3:A:2462:TYR:HD1	3:A:2462:TYR:H	1.41	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2695:LEU:HD23	3:A:2696:ARG:H	1.59	0.68
3:A:3055:THR:HG22	3:A:3056:LEU:H	1.59	0.68
3:A:2424:LEU:HD12	3:A:2532:ASP:HB2	1.75	0.68
3:A:2927:ILE:CG2	3:A:2930:LEU:HD21	2.24	0.67
3:A:2749:LEU:CD2	3:A:2750:GLN:N	2.48	0.66
3:A:2976:PHE:HE2	3:A:3020:LEU:HD22	1.59	0.66
3:A:2608:VAL:C	3:A:2609:LEU:HD23	2.16	0.66
3:A:2675:GLN:HE22	3:A:2721:PRO:CA	2.09	0.65
3:A:2682:SER:OG	3:A:2695:LEU:HD12	1.96	0.65
3:A:2702:ASN:ND2	3:A:2733:GLY:O	2.29	0.65
3:A:3030:GLU:C	3:A:3032:ILE:N	2.50	0.65
3:A:3096:GLU:O	3:A:3100:ILE:HG13	1.97	0.65
3:A:2406:GLN:HG2	3:A:2410:ASP:HB2	1.79	0.65
3:A:2532:ASP:OD1	3:A:2534:LYS:HB3	1.97	0.64
3:A:2787:PHE:C	3:A:2789:LYS:H	1.99	0.64
3:A:2919:LEU:N	3:A:2919:LEU:HD23	2.13	0.64
3:A:2582:ASP:O	3:A:2586:ASP:HB2	1.97	0.64
3:A:2915:LEU:O	3:A:2915:LEU:HD23	1.97	0.64
3:A:2987:PRO:O	3:A:2989:SER:N	2.30	0.64
3:A:3017:LEU:O	3:A:3098:LYS:HE3	1.97	0.64
3:A:2478:ALA:HB3	3:A:2546:ARG:HG3	1.80	0.64
3:A:3012:LEU:CD1	3:A:3020:LEU:HD21	2.27	0.64
3:A:3078:ASN:HD22	3:A:3079:ASN:N	1.95	0.64
3:A:2441:ARG:C	3:A:2442:ILE:HD12	2.19	0.63
3:A:3037:LEU:HD11	3:A:3080:LEU:HD23	1.80	0.63
3:A:2614:ILE:HA	3:A:2640:ILE:HG22	1.78	0.63
3:A:3045:CYS:O	3:A:3046:GLN:HG2	1.98	0.63
3:A:2528:THR:HB	3:A:2531:VAL:HG21	1.80	0.63
3:A:2723:PRO:HG3	3:A:2926:ARG:NH2	2.14	0.62
3:A:2532:ASP:O	3:A:2534:LYS:N	2.31	0.62
3:A:2568:LEU:N	3:A:2568:LEU:HD12	2.14	0.62
3:A:2611:ILE:HG22	3:A:2642:LEU:CD2	2.29	0.62
3:A:2503:ALA:C	3:A:2505:GLY:H	2.03	0.62
3:A:2667:THR:O	3:A:2670:GLN:HG3	1.99	0.62
3:A:3077:VAL:HG12	3:A:3078:ASN:N	2.14	0.62
3:A:2543:ASN:OD1	3:A:2544:HIS:N	2.32	0.62
3:A:2922:GLY:O	3:A:2923:LYS:HD3	2.00	0.62
3:A:2987:PRO:C	3:A:2989:SER:H	2.03	0.62
3:A:2764:SER:HB3	3:A:2767:GLU:HB3	1.82	0.62
3:A:2413:ASP:HA	3:A:2416:ILE:HD12	1.81	0.62
3:A:3057:PHE:CD1	3:A:3057:PHE:C	2.73	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2539:ILE:O	3:A:2542:ALA:N	2.26	0.61
3:A:2906:LEU:HA	3:A:2946:LEU:O	1.99	0.61
3:A:2532:ASP:C	3:A:2534:LYS:H	2.03	0.61
3:A:2790:VAL:HG12	3:A:2791:HIS:CE1	2.35	0.61
3:A:2790:VAL:HG12	3:A:2791:HIS:ND1	2.15	0.61
3:A:2892:LEU:O	3:A:2905:LEU:HD12	2.01	0.61
3:A:2756:VAL:HG23	3:A:2757:SER:N	2.14	0.61
1:C:503:DT:O4	3:A:2891:LYS:HE3	2.01	0.60
3:A:2551:LYS:O	3:A:2554:ALA:HB3	2.01	0.60
3:A:2723:PRO:O	3:A:2724:LEU:HD12	2.00	0.60
3:A:2906:LEU:HD12	3:A:2946:LEU:O	2.00	0.60
3:A:3055:THR:HG22	3:A:3056:LEU:N	2.16	0.60
3:A:2444:LEU:H	3:A:2444:LEU:CD1	2.10	0.60
3:A:2503:ALA:O	3:A:2505:GLY:N	2.35	0.60
3:A:2724:LEU:HD12	3:A:2724:LEU:N	2.14	0.60
3:A:2974:LEU:CD2	3:A:2976:PHE:N	2.53	0.60
3:A:2974:LEU:HD23	3:A:2976:PHE:N	2.10	0.60
3:A:3074:GLN:HA	3:A:3077:VAL:HB	1.82	0.60
3:A:2976:PHE:CE2	3:A:3020:LEU:HD13	2.37	0.60
3:A:2412:GLN:OE1	3:A:2509:ILE:HD11	2.01	0.60
3:A:2892:LEU:HD12	3:A:2892:LEU:N	2.14	0.60
3:A:2415:ARG:O	3:A:2419:LYS:HB2	2.02	0.60
3:A:2442:ILE:CG2	3:A:2447:ALA:HB2	2.32	0.60
3:A:2547:TRP:HA	3:A:2547:TRP:CE3	2.36	0.60
3:A:2730:PHE:HB3	3:A:2732:ASP:OD1	2.01	0.60
3:A:2738:CYS:HB2	3:A:2928:TYR:HD1	1.66	0.60
3:A:2895:THR:HG22	3:A:2903:SER:HA	1.84	0.60
3:A:3013:SER:HB2	3:A:3019:LEU:CD1	2.31	0.60
3:A:3048:GLU:N	3:A:3048:GLU:OE1	2.34	0.60
3:A:2560:PRO:C	3:A:2562:GLU:N	2.55	0.60
3:A:2599:ARG:NH2	3:A:2683:PRO:HA	2.17	0.60
3:A:2547:TRP:HA	3:A:2547:TRP:HE3	1.67	0.59
3:A:2922:GLY:HA2	3:A:2968:TYR:CE1	2.37	0.59
2:B:42:ASN:O	2:B:43:TRP:O	2.21	0.59
3:A:2695:LEU:O	3:A:2696:ARG:HD2	2.02	0.59
3:A:3050:THR:O	3:A:3051:SER:C	2.40	0.59
3:A:3057:PHE:HE1	3:A:3059:CYS:HA	1.67	0.59
3:A:3083:ALA:O	3:A:3086:ASN:HB3	2.02	0.59
3:A:2442:ILE:N	3:A:2442:ILE:CD1	2.62	0.59
3:A:2679:LEU:HD11	3:A:2695:LEU:CD2	2.31	0.59
2:B:16:ASP:OD1	2:B:16:ASP:O	2.20	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2412:GLN:CD	3:A:2509:ILE:HD11	2.23	0.59
3:A:2987:PRO:C	3:A:2988:CYS:SG	2.81	0.59
3:A:2890:TRP:HZ3	3:A:2915:LEU:HD23	1.68	0.59
3:A:2897:TYR:CE1	3:A:2924:ARG:CZ	2.85	0.59
3:A:2502:LEU:O	3:A:2503:ALA:O	2.21	0.59
3:A:2723:PRO:HG3	3:A:2926:ARG:HH21	1.68	0.59
3:A:2523:ARG:C	3:A:2525:LEU:H	2.06	0.58
3:A:2733:GLY:O	3:A:2734:GLY:O	2.21	0.58
3:A:2898:LYS:O	3:A:2899:LYS:HB3	2.03	0.58
3:A:3012:LEU:HD12	3:A:3020:LEU:HD21	1.82	0.58
3:A:3041:SER:O	3:A:3042:ASN:HB2	2.02	0.58
3:A:2430:SER:HB3	3:A:2575:LEU:CD2	2.33	0.58
3:A:2650:ARG:NH1	3:A:2695:LEU:O	2.35	0.58
3:A:2968:TYR:CG	3:A:2969:GLN:N	2.70	0.58
3:A:2569:ASN:HB3	3:A:2571:GLU:HG2	1.85	0.58
3:A:2745:ARG:NH2	3:A:2971:ARG:HA	2.19	0.58
3:A:2573:VAL:O	3:A:2577:LEU:HD12	2.03	0.58
3:A:2576:GLN:O	3:A:2579:TYR:HB3	2.04	0.58
3:A:2611:ILE:CD1	3:A:2667:THR:O	2.48	0.58
2:B:22:PHE:O	2:B:24:ALA:N	2.37	0.58
3:A:2405:LEU:C	3:A:2407:SER:H	2.05	0.58
3:A:3091:PHE:C	3:A:3093:LYS:H	2.07	0.58
3:A:2552:LEU:HA	3:A:2555:MET:HG3	1.86	0.58
3:A:2442:ILE:HG22	3:A:2447:ALA:HB2	1.85	0.58
3:A:2478:ALA:HB3	3:A:2546:ARG:CG	2.34	0.58
3:A:2607:LEU:O	3:A:2673:ILE:HA	2.04	0.58
3:A:2742:ILE:HG22	3:A:2895:THR:OG1	2.04	0.58
3:A:3059:CYS:O	3:A:3062:SER:HB2	2.03	0.58
3:A:2526:CYS:HB3	3:A:2533:PRO:CG	2.31	0.58
2:B:21:GLU:CD	3:A:2589:ARG:HG2	2.24	0.57
3:A:2690:GLU:OE2	3:A:2690:GLU:HA	2.03	0.57
3:A:2779:GLN:HA	3:A:2779:GLN:NE2	2.18	0.57
3:A:2745:ARG:HG2	3:A:2745:ARG:HH11	1.69	0.57
3:A:2502:LEU:CD1	3:A:2570:PRO:HB2	2.34	0.57
3:A:2409:ARG:HH11	3:A:2409:ARG:HB2	1.70	0.57
3:A:2492:GLU:HG3	3:A:2493:ASP:H	1.69	0.57
3:A:2717:ARG:HG2	3:A:2717:ARG:HH11	1.69	0.57
3:A:2508:LEU:HA	3:A:2524:ALA:HB2	1.86	0.57
3:A:2889:VAL:HG13	3:A:2909:TRP:CD2	2.40	0.57
3:A:3008:PRO:C	3:A:3009:LEU:HD12	2.24	0.57
3:A:2539:ILE:C	3:A:2542:ALA:H	2.08	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2417:LYS:O	3:A:2420:GLU:HG2	2.05	0.57
3:A:2551:LYS:HG2	3:A:2552:LEU:N	2.20	0.57
3:A:2935:SER:HB3	3:A:2941:ARG:O	2.04	0.57
3:A:2412:GLN:CA	3:A:2415:ARG:HH21	2.10	0.57
3:A:2552:LEU:O	3:A:2555:MET:HB2	2.04	0.57
3:A:2761:ILE:HG21	3:A:2763:ARG:NH2	2.19	0.57
3:A:2960:SER:OG	3:A:2963:THR:OG1	2.23	0.57
3:A:2978:ARG:HD3	3:A:2984:PHE:CE1	2.40	0.57
3:A:2417:LYS:O	3:A:2420:GLU:N	2.34	0.57
3:A:2516:ALA:HA	3:A:2520:GLU:OE2	2.04	0.57
3:A:2611:ILE:O	3:A:2668:VAL:HG13	2.05	0.57
3:A:2508:LEU:O	3:A:2510:PRO:HD3	2.05	0.56
3:A:2560:PRO:HA	3:A:2563:PHE:O	2.05	0.56
3:A:2596:ILE:C	3:A:2598:GLU:H	2.08	0.56
3:A:2741:ILE:HD13	3:A:2927:ILE:HG12	1.87	0.56
3:A:3091:PHE:C	3:A:3093:LYS:N	2.58	0.56
3:A:2574:LEU:HA	3:A:2577:LEU:HD13	1.85	0.56
3:A:2607:LEU:HD23	3:A:2609:LEU:HD11	1.87	0.56
3:A:2925:TYR:HA	3:A:2955:GLN:O	2.06	0.56
3:A:2485:ILE:HG21	3:A:2510:PRO:HB3	1.87	0.56
3:A:2744:GLN:C	3:A:2745:ARG:HD2	2.26	0.56
3:A:2988:CYS:O	3:A:2989:SER:HB2	2.05	0.56
3:A:2693:ASP:O	3:A:2696:ARG:NH1	2.38	0.56
3:A:2749:LEU:O	3:A:2750:GLN:HG2	2.05	0.56
3:A:2963:THR:O	3:A:2967:VAL:HG22	2.05	0.56
3:A:2994:VAL:HG21	3:A:3077:VAL:HG23	1.88	0.56
2:B:10:LEU:N	2:B:10:LEU:HD12	2.20	0.56
3:A:3055:THR:O	3:A:3056:LEU:HD23	2.05	0.56
3:A:2597:LEU:O	3:A:2686:CYS:HB3	2.06	0.56
3:A:2702:ASN:HD21	3:A:2730:PHE:H	1.52	0.56
3:A:2754:LYS:HG2	3:A:2760:TYR:CE2	2.41	0.56
3:A:3020:LEU:HD23	3:A:3020:LEU:N	2.20	0.56
3:A:2568:LEU:HD12	3:A:2568:LEU:H	1.69	0.56
1:C:505:DT:C6	3:A:3057:PHE:CE2	2.94	0.56
3:A:3102:VAL:HG12	3:A:3103:LEU:N	2.20	0.55
3:A:2409:ARG:HB2	3:A:2409:ARG:NH1	2.21	0.55
3:A:2764:SER:HB3	3:A:2767:GLU:OE1	2.05	0.55
3:A:2909:TRP:C	3:A:2911:PRO:HD3	2.25	0.55
3:A:2729:LEU:CD2	3:A:2736:VAL:CG2	2.84	0.55
2:B:16:ASP:O	2:B:16:ASP:CG	2.44	0.55
3:A:2593:LEU:HG	3:A:2644:ASP:HB3	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2924:ARG:HD3	3:A:2957:LEU:HB2	1.88	0.55
3:A:2607:LEU:CD2	3:A:2609:LEU:HD21	2.35	0.55
3:A:2898:LYS:O	3:A:2899:LYS:CB	2.55	0.55
2:B:55:GLN:NE2	3:A:2671:LYS:HD2	2.21	0.55
3:A:2417:LYS:CA	3:A:2420:GLU:HG2	2.37	0.55
3:A:2883:SER:OG	3:A:2884:ARG:N	2.40	0.55
3:A:2574:LEU:HA	3:A:2577:LEU:CD1	2.37	0.54
3:A:2890:TRP:HZ3	3:A:2915:LEU:CD2	2.20	0.54
3:A:2501:GLN:HB2	3:A:2507:TRP:CH2	2.42	0.54
3:A:2750:GLN:OE1	3:A:2762:PHE:HD1	1.90	0.54
3:A:3019:LEU:N	3:A:3019:LEU:CD2	2.68	0.54
3:A:3020:LEU:HD23	3:A:3020:LEU:H	1.72	0.54
3:A:3057:PHE:CD1	3:A:3058:ALA:N	2.76	0.54
2:B:16:ASP:O	2:B:17:ASP:HB3	2.06	0.54
3:A:2688:PRO:O	3:A:2689:LEU:C	2.46	0.54
3:A:2470:CYS:O	3:A:2473:VAL:N	2.40	0.54
3:A:2964:LEU:O	3:A:2966:GLN:N	2.40	0.54
3:A:3036:VAL:HG12	3:A:3038:ILE:HG12	1.90	0.54
3:A:2474:ASN:O	3:A:2476:LYS:N	2.40	0.54
3:A:2753:GLU:HA	3:A:2885:ASP:O	2.08	0.54
3:A:2652:GLN:HB3	3:A:2698:LYS:HA	1.89	0.53
3:A:3108:PRO:O	3:A:3110:TRP:N	2.41	0.53
3:A:2430:SER:HB3	3:A:2575:LEU:HD22	1.89	0.53
3:A:2463:ILE:O	3:A:2465:GLY:N	2.41	0.53
3:A:2937:SER:O	3:A:2939:PHE:N	2.41	0.53
3:A:3089:ASP:C	3:A:3091:PHE:N	2.60	0.53
3:A:2432:TYR:C	3:A:2432:TYR:CD2	2.82	0.53
3:A:2605:LYS:HG3	3:A:2606:THR:N	2.21	0.53
2:B:56:LEU:CG	2:B:57:ARG:N	2.71	0.53
3:A:2902:LYS:O	3:A:2903:SER:O	2.27	0.53
3:A:2765:GLU:C	3:A:2767:GLU:H	2.11	0.53
3:A:2896:SER:O	3:A:2897:TYR:O	2.26	0.53
2:B:56:LEU:CG	2:B:57:ARG:H	2.22	0.53
3:A:2444:LEU:HD12	3:A:2444:LEU:N	2.16	0.53
3:A:2677:ALA:HB1	3:A:2698:LYS:O	2.09	0.53
3:A:3011:TYR:CD2	3:A:3099:LEU:HD21	2.44	0.53
3:A:2448:VAL:HG12	3:A:2451:ARG:HB3	1.91	0.53
3:A:2570:PRO:HA	3:A:2573:VAL:HB	1.90	0.53
3:A:2922:GLY:CA	3:A:2968:TYR:CE1	2.92	0.53
3:A:3020:LEU:N	3:A:3020:LEU:CD2	2.71	0.53
3:A:2598:GLU:O	3:A:2600:ASP:N	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2751:TRP:CH2	3:A:2765:GLU:HG3	2.44	0.52
3:A:3019:LEU:HD22	3:A:3019:LEU:H	1.70	0.52
3:A:3049:SER:HB2	3:A:3055:THR:OG1	2.10	0.52
3:A:2736:VAL:HG11	3:A:2739:VAL:CG1	2.39	0.52
3:A:3093:LYS:O	3:A:3093:LYS:HD3	2.09	0.52
3:A:2578:LYS:O	3:A:2579:TYR:C	2.48	0.52
3:A:2578:LYS:O	3:A:2581:TYR:HB3	2.10	0.52
3:A:2596:ILE:HD11	3:A:2603:ALA:C	2.29	0.52
3:A:2710:HIS:ND1	3:A:2710:HIS:N	2.55	0.52
3:A:2986:PRO:HB2	3:A:2987:PRO:CD	2.39	0.52
3:A:2552:LEU:O	3:A:2553:ALA:C	2.47	0.52
3:A:2601:ASP:O	3:A:2602:THR:C	2.48	0.52
3:A:3086:ASN:OD1	3:A:3087:ILE:HD11	2.09	0.52
3:A:2405:LEU:C	3:A:2407:SER:N	2.63	0.52
3:A:2573:VAL:O	3:A:2575:LEU:N	2.43	0.52
3:A:2961:SER:HB2	3:A:2962:GLU:OE2	2.09	0.52
3:A:2689:LEU:HD13	3:A:2690:GLU:H	1.75	0.52
2:B:55:GLN:HE22	3:A:2671:LYS:HD2	1.74	0.52
3:A:2743:VAL:HG12	3:A:2743:VAL:O	2.09	0.52
3:A:2928:TYR:O	3:A:2952:THR:HA	2.09	0.52
3:A:3089:ASP:O	3:A:3091:PHE:N	2.43	0.52
1:C:505:DT:H72	3:A:2939:PHE:HZ	1.75	0.52
1:C:501:DT:H5'	1:C:501:DT:C6	2.45	0.52
3:A:2519:GLU:O	3:A:2522:TYR:HB3	2.10	0.52
3:A:2569:ASN:HB3	3:A:2571:GLU:CG	2.39	0.52
3:A:3075:GLU:O	3:A:3079:ASN:HB2	2.09	0.52
3:A:3099:LEU:O	3:A:3100:ILE:C	2.47	0.52
3:A:2654:ASP:OD2	3:A:2700:SER:HA	2.09	0.51
3:A:2967:VAL:HG23	3:A:2968:TYR:N	2.24	0.51
3:A:2523:ARG:C	3:A:2525:LEU:N	2.63	0.51
3:A:2544:HIS:O	3:A:2548:ILE:HG13	2.10	0.51
3:A:2598:GLU:O	3:A:2599:ARG:C	2.48	0.51
3:A:3008:PRO:HG2	3:A:3024:PHE:HB2	1.91	0.51
2:B:60:LEU:HD21	3:A:2473:VAL:O	2.10	0.51
3:A:2674:THR:HB	3:A:2704:THR:CG2	2.31	0.51
3:A:2968:TYR:O	3:A:2969:GLN:HB2	2.11	0.51
3:A:2988:CYS:O	3:A:2989:SER:CB	2.58	0.51
3:A:2556:GLU:HG3	3:A:2564:ALA:HA	1.93	0.51
3:A:3077:VAL:O	3:A:3080:LEU:HB3	2.10	0.51
3:A:2728:SER:O	3:A:2729:LEU:HB2	2.11	0.51
3:A:3089:ASP:HA	3:A:3092:TYR:CD1	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2517:GLY:H	3:A:2520:GLU:CD	2.14	0.51
3:A:2749:LEU:C	3:A:2750:GLN:HG2	2.31	0.51
3:A:2992:ASP:O	3:A:2993:VAL:HG13	2.10	0.51
3:A:2745:ARG:HD2	3:A:2745:ARG:N	2.25	0.51
3:A:2559:PHE:O	3:A:2563:PHE:HB2	2.11	0.51
3:A:2446:ALA:C	3:A:2448:VAL:H	2.14	0.51
3:A:3074:GLN:O	3:A:3078:ASN:ND2	2.44	0.51
2:B:10:LEU:HD21	3:A:2566:ARG:NE	2.26	0.50
3:A:2992:ASP:OD1	3:A:3041:SER:HA	2.10	0.50
3:A:2997:VAL:CG1	3:A:3034:PRO:HA	2.41	0.50
3:A:2501:GLN:HB2	3:A:2507:TRP:CZ2	2.46	0.50
3:A:2910:ARG:N	3:A:2911:PRO:HD3	2.26	0.50
3:A:2735:ASN:OD1	3:A:2735:ASN:N	2.44	0.50
3:A:3017:LEU:CD1	3:A:3091:PHE:HE1	2.23	0.50
2:B:54:ASN:HB3	3:A:2453:PRO:HB2	1.93	0.50
3:A:2537:SER:O	3:A:2541:VAL:HG23	2.11	0.50
3:A:2729:LEU:HD22	3:A:2736:VAL:HG22	1.93	0.50
3:A:2561:LYS:O	3:A:2561:LYS:HG2	2.12	0.50
3:A:2936:LYS:HG3	3:A:2936:LYS:O	2.11	0.50
3:A:2467:SER:C	3:A:2469:GLU:H	2.14	0.50
2:B:43:TRP:CH2	3:A:2705:ARG:HA	2.46	0.50
3:A:2408:ALA:CA	3:A:2411:LEU:HB3	2.37	0.50
3:A:2893:ARG:NH1	3:A:2905:LEU:HD13	2.26	0.50
3:A:2551:LYS:CG	3:A:2552:LEU:N	2.72	0.50
3:A:2449:GLY:O	3:A:2450:ASP:C	2.50	0.50
3:A:2724:LEU:N	3:A:2724:LEU:CD1	2.74	0.50
3:A:2738:CYS:SG	3:A:2739:VAL:N	2.83	0.50
3:A:2521:PHE:CE2	3:A:2570:PRO:HB3	2.47	0.49
3:A:2571:GLU:HG3	3:A:2572:ARG:N	2.25	0.49
3:A:2974:LEU:HD23	3:A:2975:HIS:H	1.70	0.49
3:A:2578:LYS:HZ3	3:A:2581:TYR:HD2	1.58	0.49
1:C:502:DT:O4	3:A:2947:THR:HG23	2.12	0.49
3:A:2484:ASP:O	3:A:2486:GLN:N	2.45	0.49
3:A:2736:VAL:HG12	3:A:2738:CYS:H	1.77	0.49
3:A:2952:THR:HG22	3:A:2953:GLN:N	2.26	0.49
3:A:2424:LEU:HD12	3:A:2532:ASP:CB	2.43	0.49
3:A:2890:TRP:CZ3	3:A:2915:LEU:CD2	2.96	0.49
3:A:2927:ILE:HD12	3:A:2954:TYR:HD1	1.78	0.49
3:A:2960:SER:O	3:A:2963:THR:N	2.46	0.49
3:A:3006:LEU:O	3:A:3007:ALA:HB3	2.13	0.49
3:A:3019:LEU:HD21	3:A:3098:LYS:HG2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2674:THR:HG22	3:A:2704:THR:CG2	2.42	0.49
3:A:2751:TRP:CG	3:A:2768:GLU:HG2	2.47	0.49
3:A:2906:LEU:HD13	3:A:2946:LEU:HB3	1.94	0.49
3:A:2987:PRO:O	3:A:2988:CYS:SG	2.71	0.49
3:A:2924:ARG:HB3	3:A:2957:LEU:O	2.13	0.49
3:A:2591:SER:O	3:A:2595:LYS:HB2	2.11	0.49
3:A:2596:ILE:HD11	3:A:2604:ALA:H	1.76	0.49
3:A:2964:LEU:C	3:A:2966:GLN:H	2.15	0.49
3:A:2453:PRO:HD3	3:A:2559:PHE:HZ	1.68	0.49
3:A:2532:ASP:OD1	3:A:2534:LYS:CB	2.61	0.49
3:A:2603:ALA:O	3:A:2605:LYS:N	2.45	0.49
3:A:2763:ARG:NH1	3:A:2763:ARG:CG	2.73	0.49
3:A:2576:GLN:HA	3:A:2579:TYR:HB2	1.95	0.49
3:A:2596:ILE:C	3:A:2598:GLU:N	2.64	0.49
3:A:2764:SER:OG	3:A:2765:GLU:N	2.45	0.49
3:A:2439:LEU:N	3:A:2439:LEU:HD23	2.27	0.48
3:A:2910:ARG:NH1	3:A:2910:ARG:HG3	2.28	0.48
3:A:2593:LEU:HD12	3:A:2647:TYR:O	2.13	0.48
3:A:2650:ARG:HE	3:A:2650:ARG:N	2.08	0.48
3:A:2787:PHE:C	3:A:2789:LYS:N	2.67	0.48
3:A:2955:GLN:CG	3:A:2957:LEU:HD21	2.42	0.48
3:A:3057:PHE:CE1	3:A:3058:ALA:C	2.87	0.48
3:A:2452:ALA:HB1	3:A:2453:PRO:HD2	1.94	0.48
3:A:2560:PRO:HG2	3:A:2561:LYS:H	1.78	0.48
3:A:2569:ASN:O	3:A:2571:GLU:N	2.47	0.48
3:A:2909:TRP:O	3:A:2910:ARG:C	2.52	0.48
3:A:3020:LEU:HD23	3:A:3020:LEU:C	2.32	0.48
3:A:2638:ASP:O	3:A:2639:THR:HG23	2.13	0.48
3:A:2790:VAL:CG1	3:A:2790:VAL:O	2.62	0.48
3:A:2974:LEU:HD23	3:A:2974:LEU:C	2.32	0.48
3:A:3009:LEU:HD12	3:A:3009:LEU:N	2.29	0.48
3:A:2483:PHE:CD2	3:A:2570:PRO:HG3	2.48	0.48
2:B:56:LEU:CD2	2:B:57:ARG:N	2.60	0.48
3:A:2481:PHE:HD2	3:A:2545:TYR:OH	1.97	0.48
3:A:2571:GLU:O	3:A:2572:ARG:C	2.52	0.48
3:A:2682:SER:C	3:A:2684:ASP:H	2.17	0.48
3:A:2399:LYS:N	3:A:2494:LEU:HD21	2.28	0.48
3:A:2431:LEU:O	3:A:2432:TYR:C	2.51	0.48
3:A:2582:ASP:HA	3:A:2586:ASP:HB2	1.95	0.48
3:A:2611:ILE:HG22	3:A:2642:LEU:HD21	1.94	0.48
3:A:2675:GLN:O	3:A:2677:ALA:N	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2649:VAL:HG23	3:A:2650:ARG:N	2.29	0.47
3:A:2788:THR:O	3:A:2788:THR:CG2	2.58	0.47
3:A:2897:TYR:CD2	3:A:2898:LYS:N	2.82	0.47
3:A:3070:GLU:HB3	3:A:3072:TYR:CE2	2.49	0.47
1:C:503:DT:H2''	1:C:504:DT:H5''	1.96	0.47
3:A:2689:LEU:O	3:A:2690:GLU:HG2	2.14	0.47
2:B:10:LEU:CD1	3:A:2566:ARG:NH2	2.67	0.47
2:B:41:ASP:O	3:A:2705:ARG:NE	2.47	0.47
1:C:505:DT:H72	3:A:2939:PHE:CZ	2.49	0.47
2:B:8:VAL:HG12	2:B:9:ASP:O	2.13	0.47
2:B:60:LEU:CD2	3:A:2473:VAL:O	2.62	0.47
3:A:2681:GLY:HA3	3:A:2695:LEU:CA	2.31	0.47
3:A:3099:LEU:O	3:A:3103:LEU:HB2	2.15	0.47
3:A:2485:ILE:HA	3:A:2489:PHE:CE1	2.49	0.47
3:A:2717:ARG:HG2	3:A:2717:ARG:NH1	2.28	0.47
3:A:2751:TRP:CZ3	3:A:2765:GLU:HA	2.49	0.47
3:A:2426:LEU:HD23	3:A:2586:ASP:OD2	2.14	0.47
3:A:2455:ALA:HB1	3:A:2557:PHE:HE2	1.80	0.47
3:A:2783:LEU:O	3:A:2784:GLU:C	2.53	0.47
3:A:2897:TYR:HE1	3:A:2924:ARG:CZ	2.26	0.47
3:A:2974:LEU:HD13	3:A:2979:LEU:HD11	1.97	0.47
3:A:3034:PRO:C	3:A:3035:ARG:HG3	2.35	0.47
3:A:3053:VAL:HG23	3:A:3054:PRO:HD2	1.97	0.47
3:A:2522:TYR:O	3:A:2525:LEU:HB3	2.15	0.47
3:A:2736:VAL:HG11	3:A:2739:VAL:HG12	1.97	0.47
2:B:15:GLU:HB2	2:B:18:GLU:HG2	1.96	0.47
3:A:3013:SER:HB2	3:A:3019:LEU:HD13	1.97	0.47
3:A:2528:THR:O	3:A:2531:VAL:HB	2.15	0.47
3:A:2674:THR:CA	3:A:2704:THR:HG22	2.45	0.47
3:A:2704:THR:O	3:A:2705:ARG:HG3	2.15	0.47
3:A:2927:ILE:CG2	3:A:2930:LEU:HD11	2.45	0.47
3:A:3009:LEU:N	3:A:3009:LEU:CD1	2.78	0.47
3:A:2460:GLN:HA	3:A:2462:TYR:CE1	2.50	0.46
3:A:2507:TRP:O	3:A:2524:ALA:HA	2.15	0.46
3:A:2675:GLN:O	3:A:2676:GLY:C	2.54	0.46
3:A:2557:PHE:C	3:A:2559:PHE:H	2.19	0.46
3:A:2569:ASN:O	3:A:2572:ARG:N	2.48	0.46
3:A:2674:THR:HA	3:A:2704:THR:HA	1.97	0.46
3:A:2531:VAL:HG12	3:A:2533:PRO:HD3	1.96	0.46
3:A:2457:SER:O	3:A:2458:PRO:CB	2.64	0.46
3:A:2755:THR:O	3:A:2756:VAL:C	2.54	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2756:VAL:CG2	3:A:2757:SER:N	2.77	0.46
3:A:2766:ARG:O	3:A:2766:ARG:HG3	2.15	0.46
3:A:2470:CYS:O	3:A:2471:ILE:C	2.54	0.46
3:A:2541:VAL:HG12	3:A:2541:VAL:O	2.15	0.46
3:A:2889:VAL:HG13	3:A:2909:TRP:CE3	2.51	0.46
3:A:2449:GLY:O	3:A:2451:ARG:N	2.49	0.46
3:A:2529:PRO:O	3:A:2531:VAL:HG23	2.15	0.46
3:A:2573:VAL:C	3:A:2575:LEU:N	2.67	0.46
3:A:2607:LEU:HD23	3:A:2609:LEU:CD2	2.44	0.46
3:A:2689:LEU:O	3:A:2690:GLU:CB	2.63	0.46
3:A:2750:GLN:OE1	3:A:2762:PHE:CD1	2.68	0.46
3:A:3085:GLU:O	3:A:3086:ASN:C	2.54	0.46
3:A:2460:GLN:HA	3:A:2462:TYR:HE1	1.81	0.46
3:A:3040:ALA:HA	3:A:3063:ILE:O	2.16	0.46
3:A:2526:CYS:CB	3:A:2533:PRO:HB3	2.46	0.46
3:A:2555:MET:HA	3:A:2555:MET:CE	2.46	0.46
3:A:2594:LYS:HD2	3:A:2647:TYR:CE1	2.51	0.46
3:A:2764:SER:HB3	3:A:2767:GLU:CB	2.46	0.46
3:A:2593:LEU:O	3:A:2596:ILE:HG22	2.15	0.46
3:A:2554:ALA:O	3:A:2555:MET:C	2.54	0.45
3:A:2573:VAL:HG12	3:A:2577:LEU:HD12	1.95	0.45
3:A:2604:ALA:HB1	3:A:2677:ALA:CB	2.19	0.45
3:A:2650:ARG:CZ	3:A:2695:LEU:O	2.64	0.45
3:A:2651:ALA:HA	3:A:2697:LEU:O	2.16	0.45
2:B:17:ASP:OD1	2:B:17:ASP:C	2.54	0.45
3:A:2421:ARG:NH1	3:A:2421:ARG:HB3	2.31	0.45
3:A:2512:ASN:O	3:A:2514:GLY:N	2.50	0.45
3:A:2612:SER:O	3:A:2668:VAL:HG11	2.16	0.45
3:A:2647:TYR:HB3	3:A:2689:LEU:HG	1.97	0.45
3:A:2786:LEU:HD23	3:A:2786:LEU:HA	1.63	0.45
3:A:2927:ILE:HG21	3:A:2930:LEU:HD11	1.98	0.45
3:A:2976:PHE:O	3:A:2977:SER:C	2.55	0.45
3:A:3080:LEU:O	3:A:3084:ILE:HG13	2.16	0.45
3:A:2498:LYS:HD3	3:A:2498:LYS:HA	1.79	0.45
3:A:2529:PRO:O	3:A:2531:VAL:N	2.50	0.45
3:A:2576:GLN:O	3:A:2579:TYR:N	2.49	0.45
3:A:2668:VAL:HG12	3:A:2669:GLY:N	2.30	0.45
3:A:2769:GLU:C	3:A:2772:ALA:HB3	2.36	0.45
3:A:3014:ASP:CG	3:A:3018:ASN:HD22	2.18	0.45
3:A:2446:ALA:O	3:A:2448:VAL:N	2.50	0.45
3:A:2465:GLY:O	3:A:2466:VAL:C	2.55	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2732:ASP:OD1	3:A:2732:ASP:N	2.47	0.45
3:A:2906:LEU:HD12	3:A:2946:LEU:C	2.36	0.45
3:A:2539:ILE:HA	3:A:2542:ALA:HB2	1.98	0.45
3:A:2611:ILE:CD1	3:A:2666:LEU:HD23	2.43	0.45
3:A:2673:ILE:HG23	3:A:2673:ILE:O	2.17	0.45
3:A:2997:VAL:HB	3:A:3034:PRO:HA	1.97	0.45
3:A:3030:GLU:O	3:A:3031:ASP:HB2	2.17	0.45
3:A:2430:SER:HB3	3:A:2575:LEU:HD21	1.98	0.45
3:A:3017:LEU:HD11	3:A:3091:PHE:CE1	2.52	0.45
3:A:3096:GLU:O	3:A:3097:LYS:C	2.54	0.45
3:A:2539:ILE:C	3:A:2541:VAL:N	2.68	0.45
3:A:2702:ASN:CG	3:A:2729:LEU:HD23	2.37	0.45
3:A:2485:ILE:HD11	3:A:2514:GLY:HA2	1.99	0.45
3:A:2761:ILE:HG21	3:A:2763:ARG:CZ	2.46	0.45
3:A:2937:SER:O	3:A:2938:LYS:C	2.55	0.45
3:A:2443:SER:O	3:A:2444:LEU:C	2.54	0.45
3:A:2400:ASP:CG	3:A:2401:LEU:H	2.19	0.45
3:A:2684:ASP:O	3:A:2686:CYS:N	2.50	0.45
3:A:2448:VAL:HG12	3:A:2448:VAL:O	2.17	0.44
3:A:2470:CYS:O	3:A:2472:ASN:N	2.49	0.44
3:A:2660:LEU:O	3:A:2664:GLY:N	2.49	0.44
3:A:2939:PHE:C	3:A:2940:GLU:HG3	2.38	0.44
3:A:3030:GLU:O	3:A:3032:ILE:HG13	2.17	0.44
3:A:3099:LEU:HD12	3:A:3103:LEU:HD12	1.99	0.44
3:A:2539:ILE:HA	3:A:2542:ALA:CB	2.47	0.44
3:A:2746:VAL:CG2	3:A:2892:LEU:HD23	2.48	0.44
3:A:2776:ALA:O	3:A:2780:GLN:HB2	2.18	0.44
3:A:2946:LEU:HD12	3:A:2946:LEU:HA	1.70	0.44
3:A:2987:PRO:C	3:A:2989:SER:N	2.68	0.44
3:A:3024:PHE:HA	3:A:3058:ALA:HB3	1.98	0.44
2:B:59:GLU:HG3	3:A:2453:PRO:HB3	1.99	0.44
3:A:2426:LEU:HD12	3:A:2426:LEU:H	1.83	0.44
3:A:2697:LEU:HD12	3:A:2697:LEU:HA	1.61	0.44
3:A:3038:ILE:HD13	3:A:3038:ILE:HA	1.81	0.44
3:A:2568:LEU:H	3:A:2568:LEU:CD1	2.31	0.44
3:A:2575:LEU:HD23	3:A:2575:LEU:HA	1.77	0.44
3:A:2968:TYR:CE2	3:A:2970:PRO:HB3	2.52	0.44
3:A:2466:VAL:O	3:A:2467:SER:CB	2.65	0.44
3:A:2789:LYS:C	3:A:2791:HIS:H	2.21	0.44
3:A:2910:ARG:HG3	3:A:2910:ARG:HH11	1.82	0.44
3:A:2691:ALA:CB	3:A:2692:PRO:CD	2.72	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2955:GLN:HG2	3:A:2957:LEU:HD21	1.98	0.44
3:A:3012:LEU:HD13	3:A:3020:LEU:HD21	1.97	0.44
3:A:3030:GLU:OE1	3:A:3030:GLU:HA	2.16	0.44
3:A:2470:CYS:O	3:A:2473:VAL:HG12	2.17	0.44
3:A:2519:GLU:O	3:A:2520:GLU:C	2.56	0.44
3:A:2560:PRO:O	3:A:2563:PHE:N	2.51	0.44
3:A:2789:LYS:O	3:A:2791:HIS:N	2.51	0.44
3:A:2994:VAL:HG11	3:A:3077:VAL:HG22	1.99	0.44
3:A:2409:ARG:HH11	3:A:2409:ARG:CB	2.30	0.44
2:B:57:ARG:CG	3:A:2550:TRP:CE2	3.01	0.43
3:A:2471:ILE:C	3:A:2473:VAL:H	2.21	0.43
3:A:2484:ASP:C	3:A:2486:GLN:H	2.21	0.43
3:A:2593:LEU:O	3:A:2596:ILE:N	2.43	0.43
3:A:3078:ASN:HA	3:A:3081:LYS:CB	2.46	0.43
3:A:3078:ASN:HD22	3:A:3078:ASN:C	2.20	0.43
3:A:2483:PHE:CE1	3:A:2521:PHE:CZ	3.06	0.43
3:A:2521:PHE:H	3:A:2521:PHE:HD1	1.66	0.43
3:A:2710:HIS:O	3:A:2711:SER:CB	2.59	0.43
3:A:2582:ASP:C	3:A:2586:ASP:HB2	2.39	0.43
3:A:2689:LEU:O	3:A:2690:GLU:HB2	2.18	0.43
3:A:2924:ARG:O	3:A:2956:GLN:HA	2.18	0.43
3:A:2483:PHE:CE2	3:A:2570:PRO:HG3	2.53	0.43
3:A:2529:PRO:C	3:A:2531:VAL:H	2.22	0.43
3:A:2614:ILE:HD13	3:A:2640:ILE:HG21	2.00	0.43
3:A:2675:GLN:HE22	3:A:2721:PRO:CB	2.31	0.43
3:A:2518:LYS:HE3	3:A:2542:ALA:HB2	2.00	0.43
3:A:2593:LEU:HD13	3:A:2649:VAL:HG13	2.00	0.43
3:A:2594:LYS:HB2	3:A:2647:TYR:CD1	2.53	0.43
3:A:2981:ASP:OD1	3:A:2982:PRO:HD2	2.18	0.43
2:B:19:PHE:HE2	3:A:2646:TRP:CE2	2.37	0.43
3:A:2525:LEU:O	3:A:2531:VAL:HG11	2.19	0.43
3:A:3020:LEU:HA	3:A:3053:VAL:CG2	2.48	0.43
3:A:3028:LEU:C	3:A:3030:GLU:N	2.52	0.43
3:A:3038:ILE:CG2	3:A:3039:ALA:N	2.82	0.43
3:A:2523:ARG:O	3:A:2525:LEU:N	2.51	0.43
3:A:2540:TRP:O	3:A:2544:HIS:HD2	2.01	0.43
3:A:2641:GLU:O	3:A:2642:LEU:HD23	2.18	0.43
2:B:42:ASN:C	2:B:43:TRP:O	2.55	0.43
3:A:2522:TYR:CE1	3:A:2536:ILE:HD11	2.53	0.43
3:A:2580:ARG:HD3	3:A:2646:TRP:CZ3	2.54	0.43
3:A:2941:ARG:HB2	3:A:2942:PRO:HD3	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2438:THR:O	3:A:2438:THR:HG22	2.18	0.43
3:A:2441:ARG:HA	3:A:2442:ILE:HD12	2.01	0.43
3:A:2503:ALA:C	3:A:2505:GLY:N	2.70	0.43
3:A:2997:VAL:HG12	3:A:3034:PRO:HA	1.99	0.43
3:A:3013:SER:HA	3:A:3018:ASN:O	2.17	0.43
3:A:2446:ALA:C	3:A:2448:VAL:N	2.72	0.43
1:C:506:DT:O5'	3:A:3007:ALA:HB3	2.19	0.42
3:A:2473:VAL:HG11	3:A:2553:ALA:CB	2.49	0.42
3:A:2536:ILE:HG13	3:A:2537:SER:N	2.33	0.42
3:A:3020:LEU:HA	3:A:3053:VAL:HG23	2.00	0.42
3:A:3046:GLN:NE2	3:A:3057:PHE:HB2	2.33	0.42
2:B:43:TRP:O	2:B:44:ASP:C	2.58	0.42
3:A:2539:ILE:HG13	3:A:2540:TRP:H	1.83	0.42
3:A:2540:TRP:O	3:A:2544:HIS:CD2	2.72	0.42
3:A:2729:LEU:HD21	3:A:2736:VAL:CG2	2.34	0.42
3:A:2789:LYS:C	3:A:2791:HIS:N	2.73	0.42
3:A:2941:ARG:NH1	3:A:2941:ARG:HG2	2.34	0.42
3:A:3103:LEU:HD23	3:A:3103:LEU:HA	1.81	0.42
1:C:505:DT:C6	3:A:3057:PHE:HE2	2.34	0.42
3:A:2554:ALA:O	3:A:2556:GLU:N	2.52	0.42
3:A:2650:ARG:NH2	3:A:2695:LEU:HD22	2.33	0.42
3:A:2768:GLU:O	3:A:2772:ALA:HB2	2.19	0.42
3:A:2461:LEU:CB	3:A:2464:TYR:HE2	2.32	0.42
3:A:2539:ILE:HG13	3:A:2540:TRP:N	2.34	0.42
3:A:2968:TYR:HE2	3:A:2970:PRO:HB3	1.83	0.42
3:A:3000:VAL:O	3:A:3000:VAL:HG12	2.19	0.42
2:B:44:ASP:O	2:B:45:ASP:HB3	2.20	0.42
2:B:9:ASP:OD2	2:B:12:LEU:N	2.47	0.42
2:B:62:LYS:O	3:A:2457:SER:HA	2.20	0.42
3:A:2442:ILE:HG21	3:A:2447:ALA:HB2	2.01	0.42
3:A:2522:TYR:HE1	3:A:2536:ILE:CG1	2.33	0.42
3:A:2736:VAL:HG23	3:A:2932:VAL:HG21	2.02	0.42
2:B:55:GLN:NE2	3:A:2671:LYS:H	2.18	0.42
3:A:2400:ASP:OD2	3:A:2401:LEU:N	2.51	0.42
3:A:2572:ARG:O	3:A:2575:LEU:CB	2.56	0.42
3:A:2593:LEU:O	3:A:2594:LYS:C	2.57	0.42
3:A:2771:GLU:O	3:A:2772:ALA:C	2.56	0.42
3:A:2906:LEU:CD1	3:A:2946:LEU:HB3	2.50	0.42
3:A:3057:PHE:CE1	3:A:3058:ALA:O	2.73	0.42
3:A:2462:TYR:CB	3:A:2466:VAL:HG22	2.45	0.42
3:A:2519:GLU:O	3:A:2522:TYR:N	2.51	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2571:GLU:CG	3:A:2572:ARG:H	2.28	0.42
3:A:2897:TYR:CE1	3:A:2924:ARG:NE	2.88	0.42
3:A:2443:SER:O	3:A:2446:ALA:N	2.53	0.42
3:A:2605:LYS:O	3:A:2675:GLN:HA	2.19	0.42
3:A:3017:LEU:N	3:A:3017:LEU:HD12	2.35	0.41
2:B:11:GLY:O	3:A:2435:LYS:HE2	2.20	0.41
3:A:2473:VAL:HG11	3:A:2553:ALA:HB1	2.02	0.41
3:A:2579:TYR:O	3:A:2580:ARG:C	2.59	0.41
3:A:2584:GLU:OE2	3:A:2647:TYR:OH	2.36	0.41
3:A:2991:VAL:HG23	3:A:2992:ASP:N	2.34	0.41
3:A:3091:PHE:O	3:A:3093:LYS:N	2.53	0.41
3:A:2745:ARG:HG2	3:A:2745:ARG:NH1	2.35	0.41
3:A:2611:ILE:HD13	3:A:2666:LEU:CD2	2.46	0.41
3:A:2736:VAL:O	3:A:2737:GLY:C	2.58	0.41
3:A:2783:LEU:O	3:A:2786:LEU:N	2.53	0.41
2:B:43:TRP:CZ2	3:A:2706:PRO:HD3	2.55	0.41
3:A:2642:LEU:O	3:A:2648:ALA:HA	2.20	0.41
3:A:2941:ARG:HB2	3:A:2942:PRO:CD	2.50	0.41
1:C:506:DT:O5'	3:A:3007:ALA:CB	2.69	0.41
3:A:2509:ILE:O	3:A:2509:ILE:HG22	2.19	0.41
3:A:2548:ILE:O	3:A:2549:VAL:C	2.58	0.41
3:A:2505:GLY:O	3:A:2506:GLY:O	2.38	0.41
3:A:2532:ASP:C	3:A:2534:LYS:N	2.72	0.41
3:A:2573:VAL:O	3:A:2574:LEU:C	2.59	0.41
3:A:2736:VAL:O	3:A:2738:CYS:N	2.53	0.41
3:A:2779:GLN:O	3:A:2782:LYS:HB3	2.21	0.41
3:A:3017:LEU:CD1	3:A:3091:PHE:CE1	3.03	0.41
3:A:2466:VAL:HG12	3:A:2467:SER:N	2.34	0.41
3:A:2485:ILE:O	3:A:2489:PHE:CD1	2.73	0.41
3:A:2552:LEU:HG	3:A:2552:LEU:H	1.35	0.41
3:A:2597:LEU:HD23	3:A:2597:LEU:HA	1.82	0.41
3:A:2657:LEU:O	3:A:2660:LEU:HB2	2.21	0.41
3:A:2663:SER:OG	3:A:2665:LYS:HG2	2.20	0.41
3:A:3011:TYR:CD2	3:A:3021:VAL:HG13	2.56	0.41
2:B:57:ARG:HE	2:B:57:ARG:HB2	1.40	0.41
3:A:2443:SER:C	3:A:2445:GLN:N	2.71	0.41
3:A:2688:PRO:O	3:A:2689:LEU:O	2.39	0.41
3:A:2724:LEU:HB3	3:A:2725:PRO:HD2	2.03	0.41
3:A:2773:LEU:HD23	3:A:2774:ARG:CA	2.50	0.41
3:A:2905:LEU:HD12	3:A:2905:LEU:HA	1.28	0.41
3:A:2926:ARG:HD2	3:A:2957:LEU:HD11	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2926:ARG:HD3	3:A:2928:TYR:OH	2.19	0.41
3:A:2960:SER:O	3:A:2962:GLU:N	2.54	0.41
3:A:3048:GLU:N	3:A:3048:GLU:CD	2.75	0.41
3:A:2569:ASN:C	3:A:2571:GLU:N	2.74	0.40
3:A:2576:GLN:O	3:A:2577:LEU:C	2.59	0.40
3:A:2768:GLU:CD	3:A:2884:ARG:HH22	2.24	0.40
3:A:3086:ASN:OD1	3:A:3087:ILE:CD1	2.69	0.40
3:A:3089:ASP:C	3:A:3089:ASP:OD1	2.59	0.40
2:B:56:LEU:HD23	2:B:57:ARG:HB2	2.03	0.40
2:B:56:LEU:O	2:B:58:ALA:N	2.54	0.40
3:A:2924:ARG:HD2	3:A:2959:VAL:HG22	2.02	0.40
3:A:2434:THR:HG22	3:A:2435:LYS:N	2.36	0.40
3:A:2674:THR:CG2	3:A:2704:THR:CG2	2.99	0.40
3:A:2531:VAL:O	3:A:2533:PRO:HD2	2.21	0.40
3:A:2722:PHE:CD2	3:A:2724:LEU:HD11	2.57	0.40
3:A:2747:TYR:CB	3:A:2748:PRO:CD	2.79	0.40
3:A:2783:LEU:HA	3:A:2786:LEU:HB2	2.03	0.40
3:A:2964:LEU:HB3	3:A:2965:LEU:H	1.77	0.40
3:A:3074:GLN:O	3:A:3075:GLU:C	2.60	0.40
3:A:2540:TRP:CE3	3:A:2541:VAL:HG22	2.57	0.40
3:A:2670:GLN:HE21	3:A:2670:GLN:HB3	1.57	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	B	36/70 (51%)	23 (64%)	5 (14%)	8 (22%)	0 1
3	A	594/649 (92%)	372 (63%)	117 (20%)	105 (18%)	0 2
All	All	630/719 (88%)	395 (63%)	122 (19%)	113 (18%)	0 2

All (113) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	17	ASP
2	B	23	PRO
2	B	38	VAL
2	B	41	ASP
2	B	43	TRP
3	A	2400	ASP
3	A	2408	ALA
3	A	2453	PRO
3	A	2458	PRO
3	A	2461	LEU
3	A	2463	ILE
3	A	2464	TYR
3	A	2466	VAL
3	A	2467	SER
3	A	2475	SER
3	A	2492	GLU
3	A	2503	ALA
3	A	2510	PRO
3	A	2512	ASN
3	A	2555	MET
3	A	2561	LYS
3	A	2599	ARG
3	A	2604	ALA
3	A	2690	GLU
3	A	2692	PRO
3	A	2734	GLY
3	A	2759	LEU
3	A	2897	TYR
3	A	2899	LYS
3	A	2903	SER
3	A	2911	PRO
3	A	2913	SER
3	A	2941	ARG
3	A	2965	LEU
3	A	2968	TYR
3	A	2969	GLN
3	A	2988	CYS
3	A	3006	LEU
3	A	3029	ASN
3	A	3050	THR
3	A	3090	THR
3	A	2417	LYS

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Mol	Chain	Res	Type
3	A	2418	ASN
3	A	2447	ALA
3	A	2471	ILE
3	A	2485	ILE
3	A	2491	LYS
3	A	2504	ASP
3	A	2506	GLY
3	A	2513	ASP
3	A	2518	LYS
3	A	2530	GLY
3	A	2533	PRO
3	A	2549	VAL
3	A	2573	VAL
3	A	2676	GLY
3	A	2685	ALA
3	A	2715	PHE
3	A	2721	PRO
3	A	2744	GLN
3	A	2749	LEU
3	A	2936	LYS
3	A	2938	LYS
3	A	2952	THR
3	A	2976	PHE
3	A	3028	LEU
3	A	3049	SER
3	A	3051	SER
3	A	3109	LYS
2	B	21	GLU
2	B	57	ARG
3	A	2450	ASP
3	A	2465	GLY
3	A	2480	TYR
3	A	2482	GLN
3	A	2496	ALA
3	A	2511	SER
3	A	2519	GLU
3	A	2520	GLU
3	A	2560	PRO
3	A	2655	PRO
3	A	2677	ALA
3	A	2702	ASN
3	A	2712	ARG

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Mol	Chain	Res	Type
3	A	2756	VAL
3	A	2961	SER
3	A	2974	LEU
3	A	2989	SER
3	A	3047	PRO
3	A	2403	SER
3	A	2431	LEU
3	A	2468	LYS
3	A	2481	PHE
3	A	2554	ALA
3	A	2574	LEU
3	A	2689	LEU
3	A	2691	ALA
3	A	2710	HIS
3	A	2729	LEU
3	A	2524	ALA
3	A	2529	PRO
3	A	2602	THR
3	A	2713	LEU
3	A	2430	SER
3	A	2548	ILE
3	A	2593	LEU
3	A	2682	SER
3	A	3087	ILE
3	A	3084	ILE
2	B	8	VAL
3	A	2509	ILE
3	A	2790	VAL
3	A	2570	PRO

5.3.2 Protein sidechains [i](#)

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
2	B	33/63 (52%)	27 (82%)	6 (18%)	1 9
3	A	521/572 (91%)	435 (84%)	86 (16%)	2 13

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	554/635 (87%)	462 (83%)	92 (17%)	2 13

All (92) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	10	LEU
2	B	17	ASP
2	B	23	PRO
2	B	39	TRP
2	B	56	LEU
2	B	57	ARG
3	A	2404	SER
3	A	2410	ASP
3	A	2425	ARG
3	A	2444	LEU
3	A	2453	PRO
3	A	2462	TYR
3	A	2484	ASP
3	A	2485	ILE
3	A	2493	ASP
3	A	2510	PRO
3	A	2529	PRO
3	A	2536	ILE
3	A	2543	ASN
3	A	2555	MET
3	A	2557	PHE
3	A	2565	ASN
3	A	2572	ARG
3	A	2577	LEU
3	A	2582	ASP
3	A	2583	VAL
3	A	2606	THR
3	A	2607	LEU
3	A	2643	THR
3	A	2650	ARG
3	A	2653	LEU
3	A	2666	LEU
3	A	2667	THR
3	A	2673	ILE
3	A	2689	LEU
3	A	2696	ARG
3	A	2706	PRO

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Mol	Chain	Res	Type
3	A	2708	ARG
3	A	2710	HIS
3	A	2721	PRO
3	A	2725	PRO
3	A	2731	SER
3	A	2732	ASP
3	A	2735	ASN
3	A	2738	CYS
3	A	2740	ASP
3	A	2741	ILE
3	A	2742	ILE
3	A	2744	GLN
3	A	2745	ARG
3	A	2746	VAL
3	A	2749	LEU
3	A	2773	LEU
3	A	2780	GLN
3	A	2786	LEU
3	A	2787	PHE
3	A	2789	LYS
3	A	2792	THR
3	A	2886	VAL
3	A	2887	THR
3	A	2889	VAL
3	A	2892	LEU
3	A	2897	TYR
3	A	2901	GLU
3	A	2903	SER
3	A	2907	SER
3	A	2933	SER
3	A	2946	LEU
3	A	2947	THR
3	A	2951	ARG
3	A	2954	TYR
3	A	2969	GLN
3	A	2998	VAL
3	A	3012	LEU
3	A	3013	SER
3	A	3019	LEU
3	A	3020	LEU
3	A	3021	VAL
3	A	3028	LEU

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Mol	Chain	Res	Type
3	A	3031	ASP
3	A	3041	SER
3	A	3045	CYS
3	A	3048	GLU
3	A	3055	THR
3	A	3074	GLN
3	A	3078	ASN
3	A	3079	ASN
3	A	3087	ILE
3	A	3089	ASP
3	A	3097	LYS
3	A	3099	LEU
3	A	3103	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	55	GLN
3	A	2486	GLN
3	A	2652	GLN
3	A	2675	GLN
3	A	2779	GLN
3	A	2945	GLN
3	A	2956	GLN
3	A	3018	ASN
3	A	3042	ASN
3	A	3060	HIS
3	A	3078	ASN
3	A	3079	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 monosaccharides 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 [i](#)

6.1 Protein, DNA and RNA chains [i](#)

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates [i](#)

EDS was not executed - this section is therefore empty.

6.4 Ligands [i](#)

EDS was not executed - this section is therefore empty.

6.5 Other polymers [i](#)

EDS was not executed - this section is therefore empty.