Full wwPDB EM Validation Report ⓘ

Sep 29, 2025 – 12:16 PM EDT

PDB ID	:	9NMN / pdb_00009nmn
EMDB ID	:	EMD-49534
Title	:	Structure of mouse RyR1 (Ca2+/CFF/ATP dataset; open pore)
Authors	:	Weninger, G.; Marks, A.R.
Deposited on	:	2025-03-04
Resolution	:	3.09 Å(reported)

This is a Full wwPDB EM 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/EMValidationReportHelp
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:

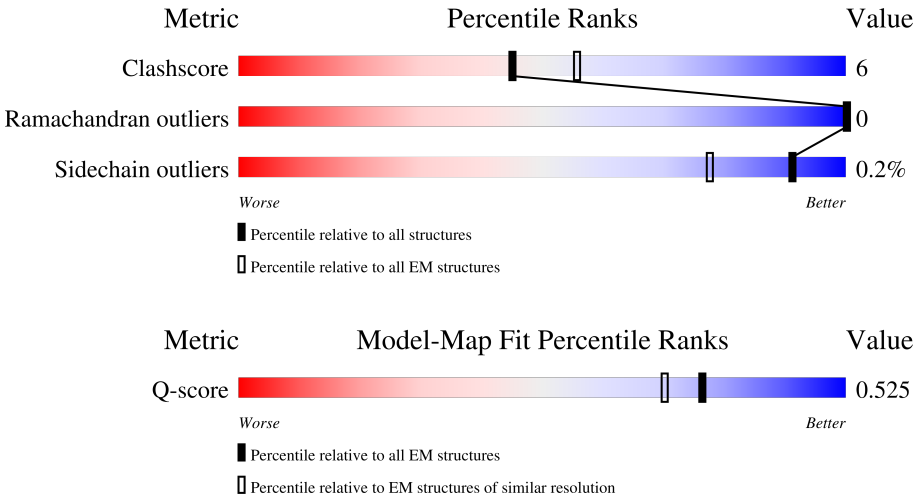
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.09 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)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	14003 (2.59 - 3.59)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	5035	12% 75% 12% 13%
1	B	5035	12% 74% 12% 13%
1	C	5035	12% 75% 12% 13%
1	D	5035	12% 75% 12% 13%

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Mol	Chain	Length	Quality of chain
2	E	108	87% 12%
2	F	108	88% 11%
2	G	108	89% 10%
2	H	108	89% 10%

2 Entry composition

There are 7 unique types of molecules in this entry. The entry contains 143248 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, 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 Ryanodine receptor 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	4373	Total 34797	C 22132	N 5983	O 6445	S 237	0	0
1	B	4373	Total 34797	C 22132	N 5983	O 6445	S 237	0	0
1	C	4373	Total 34797	C 22132	N 5983	O 6445	S 237	0	0
1	D	4373	Total 34797	C 22132	N 5983	O 6445	S 237	0	0

- Molecule 2 is a protein called Peptidyl-prolyl cis-trans isomerase FKBP1A.

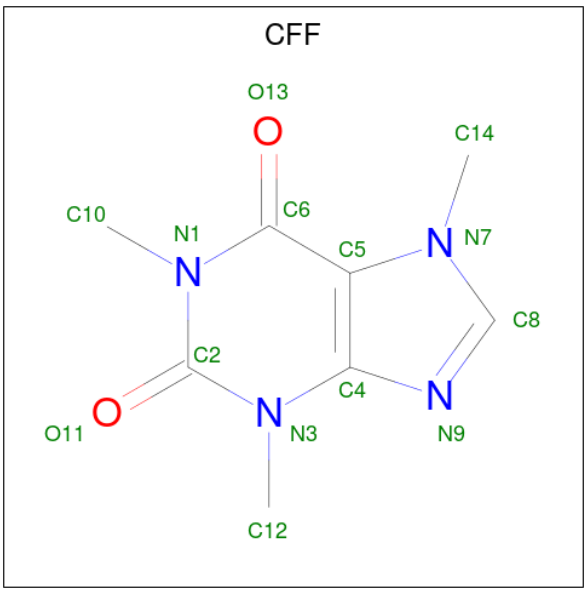
Mol	Chain	Residues	Atoms					AltConf	Trace
2	E	107	Total 829	C 526	N 145	O 155	S 3	0	0
2	F	107	Total 829	C 526	N 145	O 155	S 3	0	0
2	G	107	Total 829	C 526	N 145	O 155	S 3	0	0
2	H	107	Total 829	C 526	N 145	O 155	S 3	0	0

- Molecule 3 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
3	A	1	Total 1	Zn 1	0
3	B	1	Total 1	Zn 1	0
3	C	1	Total 1	Zn 1	0
3	D	1	Total 1	Zn 1	0

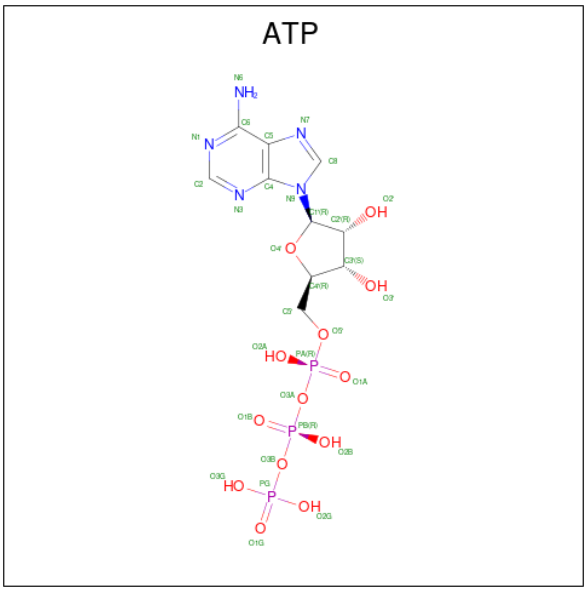
- Molecule 4 is CAFFEINE (CCD ID: CFF) (formula: $C_8H_{10}N_4O_2$) (labeled as "Ligand of

Interest" by depositor).



Mol	Chain	Residues	Atoms	AltConf
4	A	1	Total C N O 14 8 4 2	0
4	B	1	Total C N O 14 8 4 2	0
4	C	1	Total C N O 14 8 4 2	0
4	D	1	Total C N O 14 8 4 2	0

- Molecule 5 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
5	A	1	Total	C	N	O	P	0
			31	10	5	13	3	
5	A	1	Total	C	N	O	P	0
			31	10	5	13	3	
5	B	1	Total	C	N	O	P	0
			31	10	5	13	3	
5	B	1	Total	C	N	O	P	0
			31	10	5	13	3	
5	C	1	Total	C	N	O	P	0
			31	10	5	13	3	
5	C	1	Total	C	N	O	P	0
			31	10	5	13	3	
5	D	1	Total	C	N	O	P	0
			31	10	5	13	3	
5	D	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 6 is CALCIUM ION (CCD ID: CA) (formula: Ca) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
6	A	1	Total	Ca	0
			1	1	
6	B	1	Total	Ca	0
			1	1	
6	C	1	Total	Ca	0
			1	1	

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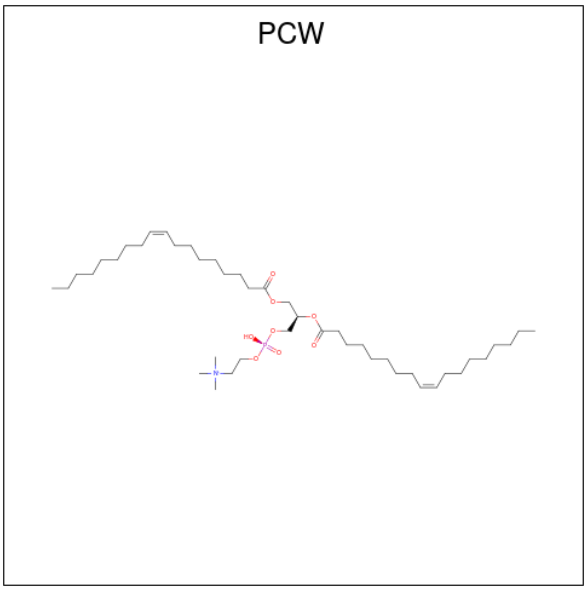
Mol	Chain	Residues	Atoms	AltConf
6	D	1	Total Ca 1 1	0

- Molecule 7 is 1,2-DIOLEOYL-SN-GLYCERO-3-PHOSPHOCHOLINE (CCD ID: PCW) (formula: $C_{44}H_{85}NO_8P$).



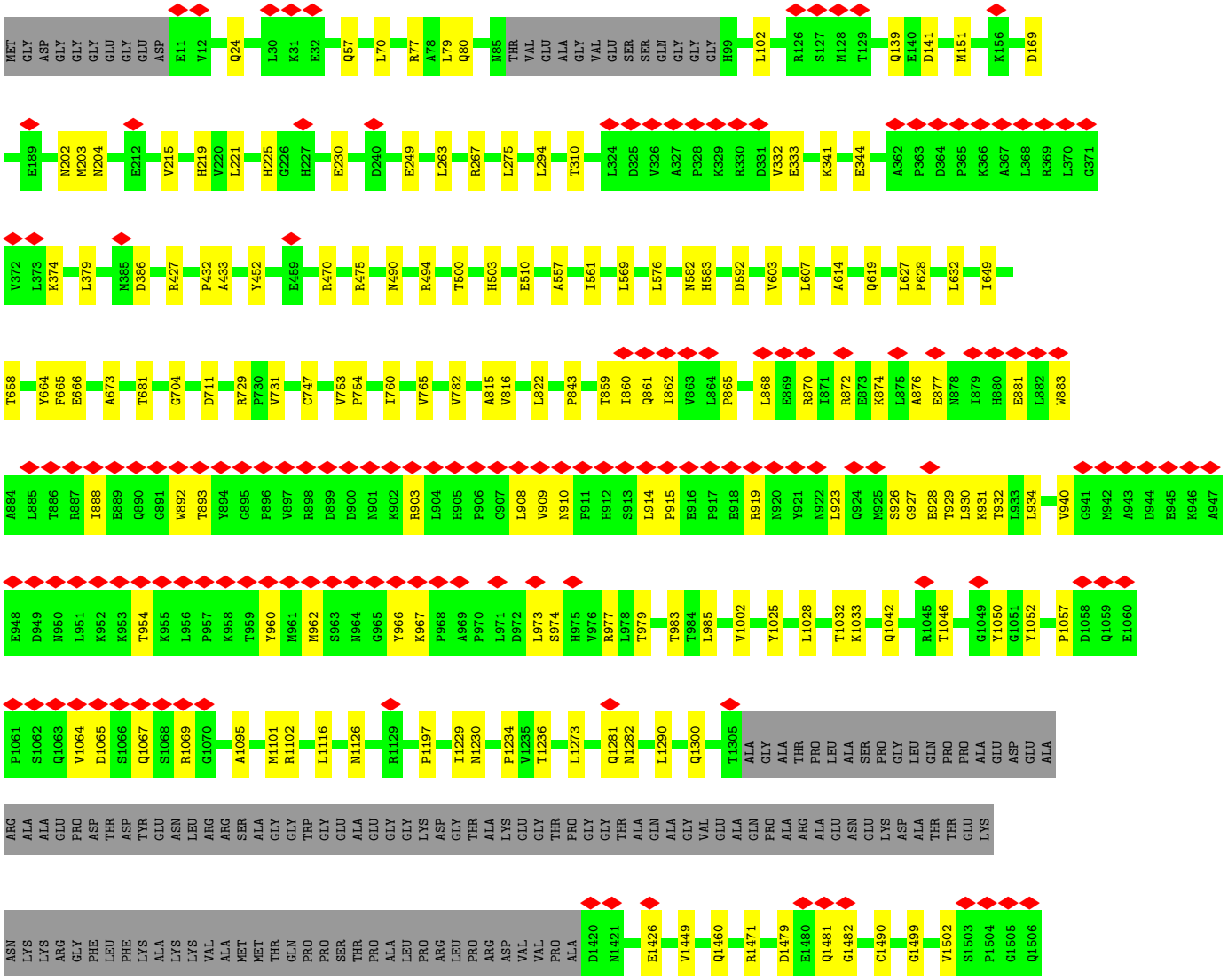
Mol	Chain	Residues	Atoms	AltConf
7	A	1	Total C N O P 54 44 1 8 1	0
7	A	1	Total C N O P 54 44 1 8 1	0
7	B	1	Total C N O P 54 44 1 8 1	0
7	B	1	Total C N O P 54 44 1 8 1	0
7	C	1	Total C N O P 54 44 1 8 1	0
7	C	1	Total C N O P 54 44 1 8 1	0
7	D	1	Total C N O P 54 44 1 8 1	0
7	D	1	Total C N O P 54 44 1 8 1	0

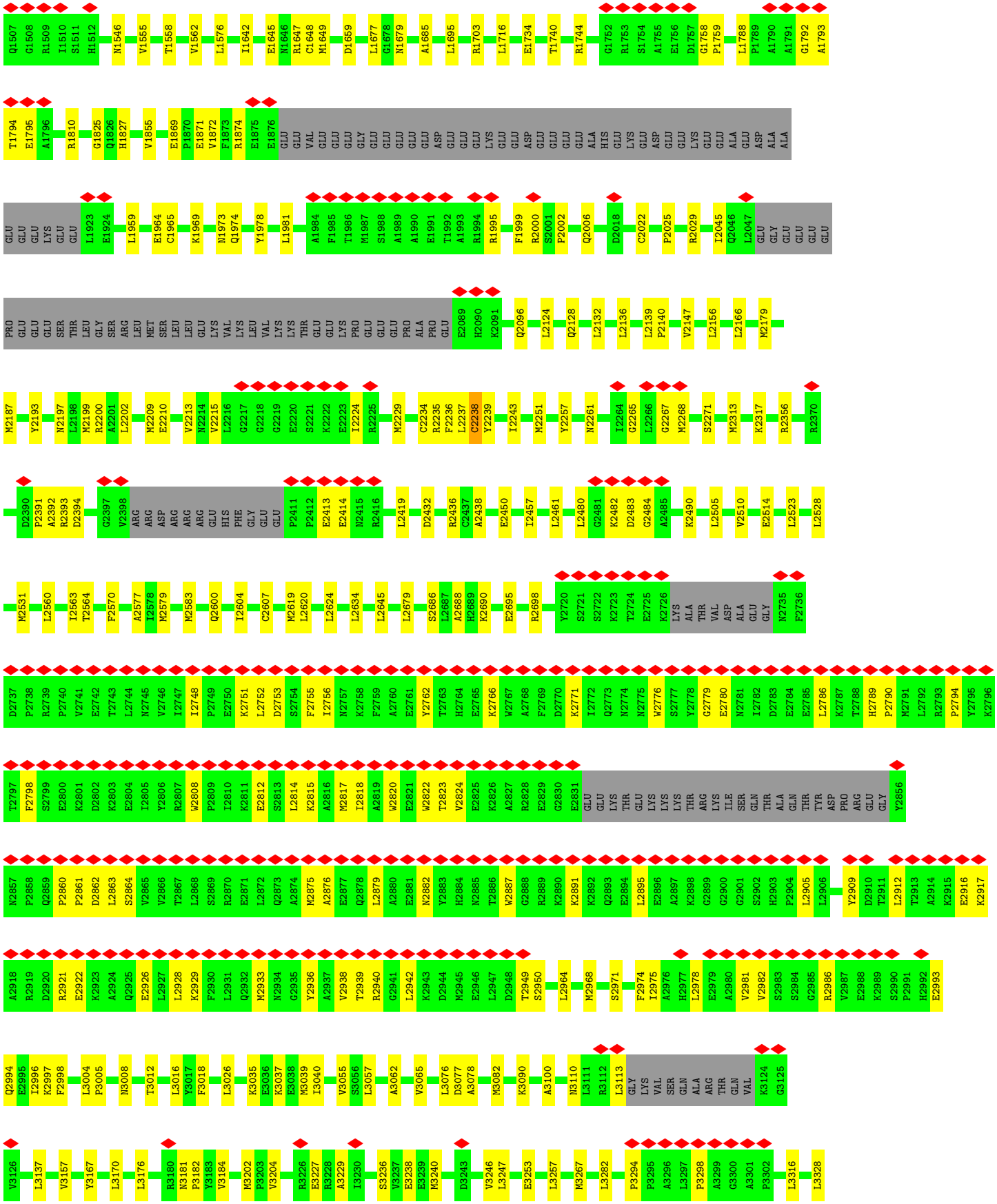
3 Residue-property plots (i)

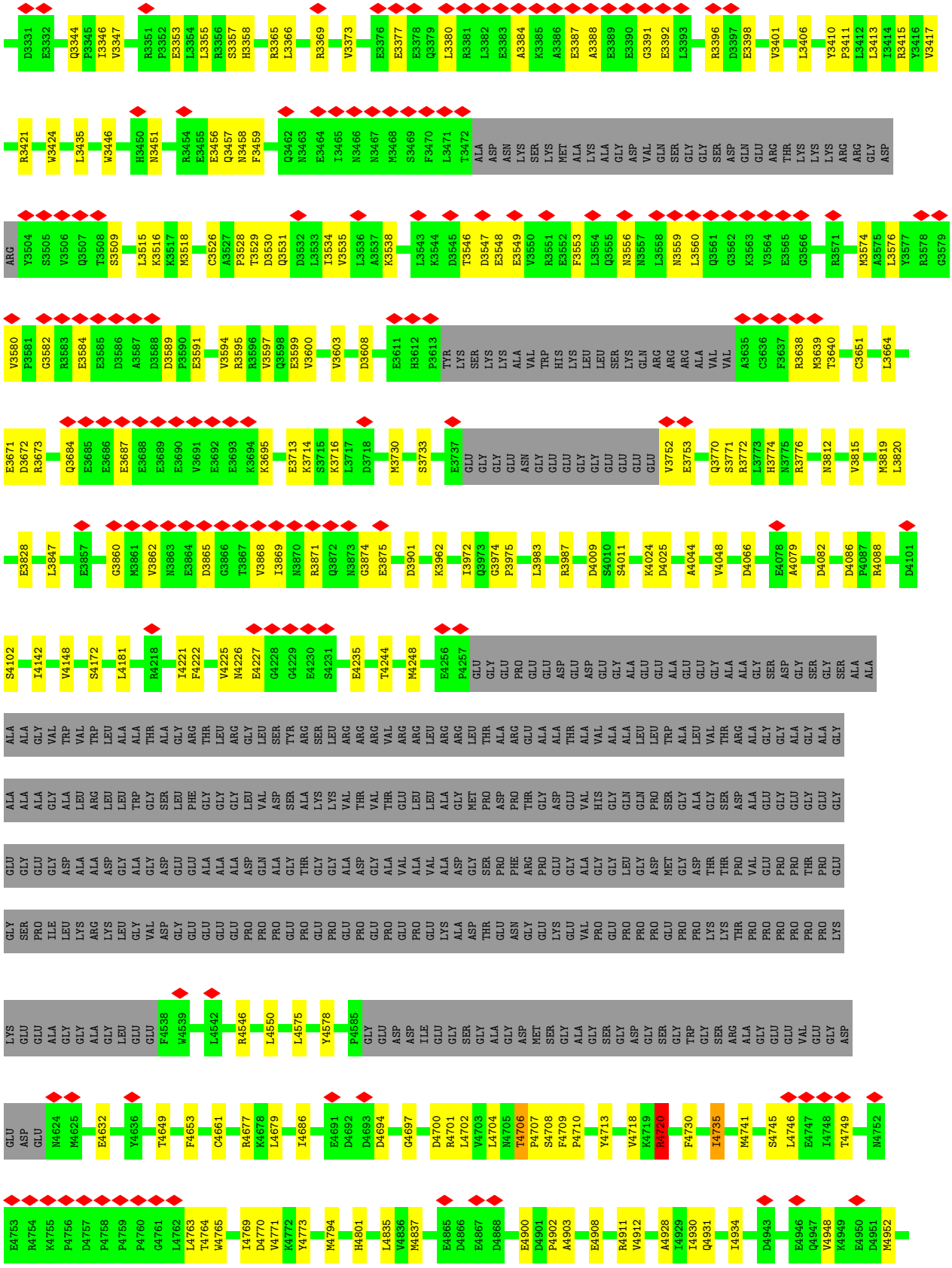
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

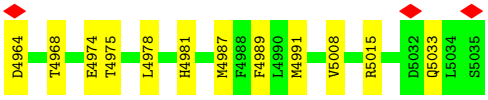
- Molecule 1: Ryanodine receptor 1

Chain A:



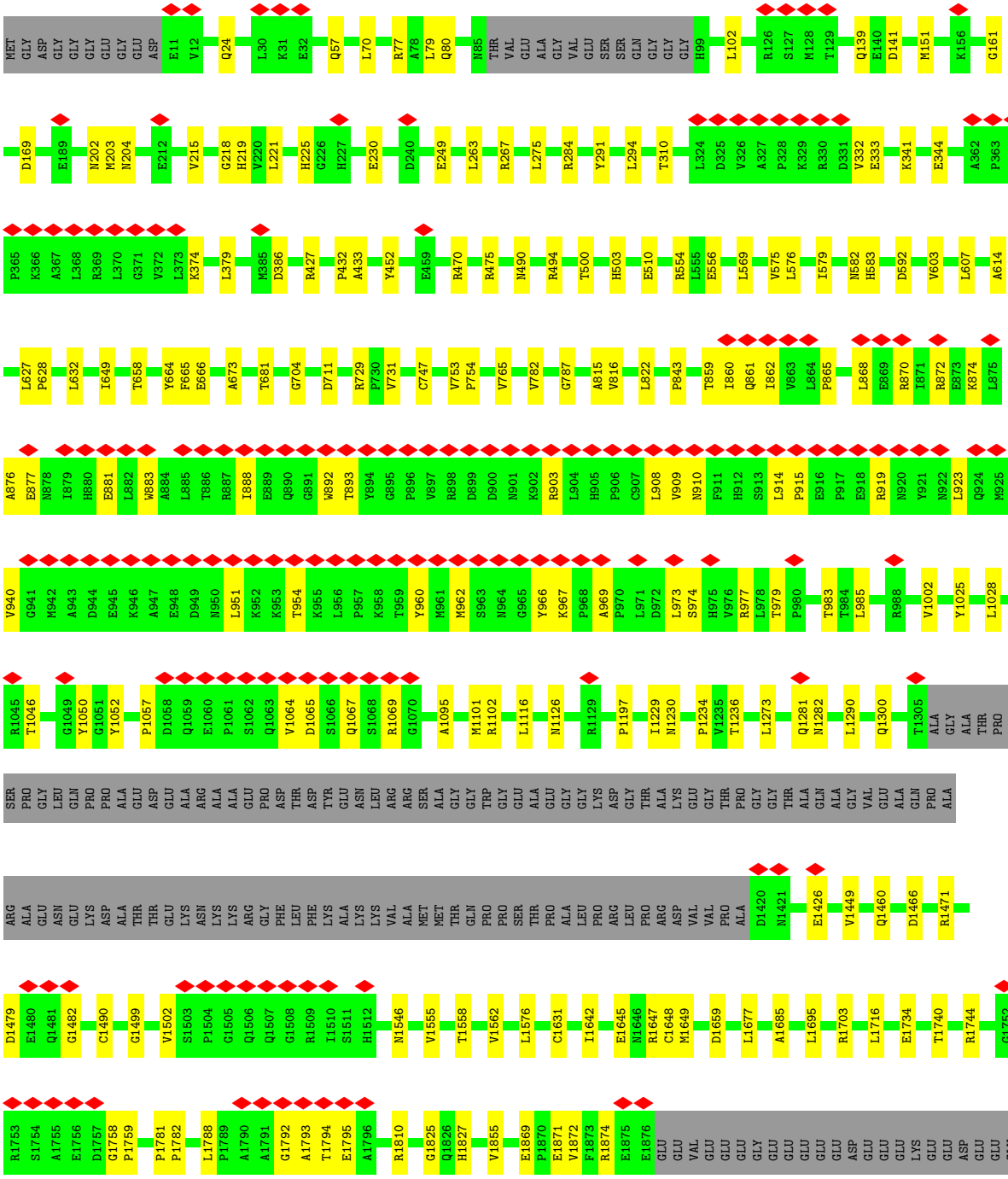

Q1507 G1508 R1509 I1510 S1511 H1512 N1546 V1555 T1558 V1562 L1576 I1642 E1645 N1646 R1647 C1648 M1649 D1659 L1677 G1678 N1679 A1685 L1695 R1703 L1716 E1734 T1740 R1744 G1752 R1753 S1754 A1755 E1756 D1757 G1758 P1759 L1788 P1789 A1790 A1791 G1792 A1793
T1794 E1795 A1796 R1810 G1825 Q1826 H1827 V1855 E1869 P1870 E1871 V1872 F1873 R1874 E1875 E1876 GLU GLU VAL GLU GLU GLU GLY GLU GLU GLU GLU GLU ASP GLU GLU GLU LYS GLU GLU ASP GLU GLU GLU ALA HIS GLU LYS GLU ASP GLU GLU LYS GLU GLU ALA GLU ASP ALA ALA
GLU GLU GLU LYS GLU GLU L1923 E1924 L1959 E1964 C1965 K1969 N1973 Q1974 Y1978 L1981 A1984 F1985 T1986 M1987 S1988 A1989 A1990 E1991 T1992 A1993 R1994 R1995 F1999 R2000 S2001 P2002 Q2006 D2018 C2022 P2025 R2029 I2045 Q2046 L2047 GLU GLY GLU GLU GLU
PRO GLU GLU GLU SER THR LEU GLY SER ARG LEU MET SER LEU LEU LEU GLU LYS VAL LYS LEU VAL LYS LYS THR GLU GLU LYS PRO GLU GLU GLU PRO ALA PRO GLU E2089 H2090 K2091 Q2096 L2124 Q2128 L2132 L2136 L2139 P2140 V2147 L2156 L2166 M2179
M2187 Y2193 N2197 L2198 M2199 R2200 A2201 L2202 M2209 E2210 V2213 N2214 V2215 L2216 G2217 G2218 G2219 E2220 S2221 K2222 E2223 I2224 R2225 M2229 C2234 R2235 F2236 L2237 C2238 Y2239 I2243 M2251 Y2257 N2261 I2264 G2265 L2266 G2267 M2268 S2271 M2313 K2317 R2356 R2370
D2390 P2391 A2392 R2393 D2394 G2397 V2398 ARG ARG ASP ARG ARG ARG GLU HIS PHE GLY GLU GLU P2411 P2412 E2413 E2414 N2415 R2416 L2419 D2432 R2436 C2437 A2438 E2450 I2457 L2461 L2480 G2481 K2482 D2483 G2484 A2485 K2490 L2505 V2510 E2514 L2523 L2528
M2531 L2560 I2563 T2564 F2570 A2577 Y2578 M2579 M2583 Q2600 I2604 C2607 M2619 L2620 L2624 L2634 L2645 L2679 S2686 L2687 A2688 H2689 K2690 E2695 R2698 Y2720 S2721 S2722 K2723 T2724 E2725 K2726 LYS ALA THR VAL ASP ALA GLU GLY N2735 F2736
D2737 P2738 R2739 P2740 V2741 E2742 T2743 L2744 N2745 V2746 I2747 I2748 P2749 E2750 K2751 L2752 D2753 S2754 F2755 I2756 W2757 K2758 F2759 A2760 E2761 Y2762 T2763 H2764 E2765 K2766 W2767 A2768 F2769 D2770 K2771 I2772 Q2773 N2774 N2775 W2776 S2777 Y2778 G2779 E2780 W2781 I2782 D2783 E2784 E2785 L2786 K2787 T2788 H2789 P2790 W2791 L2792 R2793 P2794 Y2795 K2796
T2797 F2798 S2799 E2800 K2801 D2802 K2803 E2804 I2805 Y2806 R2807 W2808 P2809 I2810 K2811 E2812 S2813 L2814 K2815 A2816 W2817 I2818 A2819 W2820 E2821 W2822 T2823 V2824 E2825 K2826 A2827 R2828 E2829 G2830 E2831 GLU GLU LYS THR GLU LYS LYS LYS THR ARG LYS ILE SER GLN THR ALA GLN THR TYR ASP PRO ARG GLU GLY Y2856
N2857 P2858 Q2859 P2860 P2861 D2862 L2863 S2864 V2865 V2866 T2867 L2868 S2869 R2870 E2871 L2872 Q2873 A2874 M2875 A2876 E2877 Q2878 L2879 A2880 E2881 N2882 Y2883 H2884 N2885 T2886 W2887 G2888 R2889 K2890 K2891 K2892 Q2893 E2894 L2895 E2896 A2897 K2898 G2899 G2900 G2901 S2902 H2903 P2904 L2905 L2906 Y2909 D2910 T2911 L2912 T2913 A2914 K2915 E2916 K2917
A2918 R2919 D2920 R2921 E2922 K2923 A2924 Q2925 E2926 L2927 L2928 K2929 F2930 L2931 Q2932 M2933 N2934 G2935 Y2936 A2937 V2938 T2939 R2940 G2941 L2942 K2943 D2944 M2945 E2946 L2947 D2948 T2949 S2950 L2964 M2968 S2971 F2974 I2975 A2976 H2977 L2978 E2979 A2980 V2981 V2982 S2983 S2984 G2985 R2986 V2987 E2988 K2989 S2990 P2991 H2992 E2993
Q2994 E2995 I2996 K2997 F2998 L3004 P3005 N3008 T3012 L3016 Y3017 F3018 L3026 K3035 E3036 K3037 E3038 M3039 I3040 V3055 S3056 L3057 A3062 V3065 L3076 D3077 A3078 M3082 K3090 A3100 N3110 L3111 R3112 L3113 GLY LYS VAL SER GLN ALA ARG THR GLN VAL K3124 G3125
V3126 L3137 V3157 Y3167 L3170 L3176 R3180 N3181 P3182 Y3183 V3184 M3202 P3203 V3204 R3226 E3227 R3228 A3229 I3230 S3236 V3237 E3238 E3239 M3240 D3243 V3246 L3247 E3253 L3257 M3267 L3282 P3294 P3295 A3296 L3297 P3298 A3299 G3300 A3301 P3302 L3316 L3328

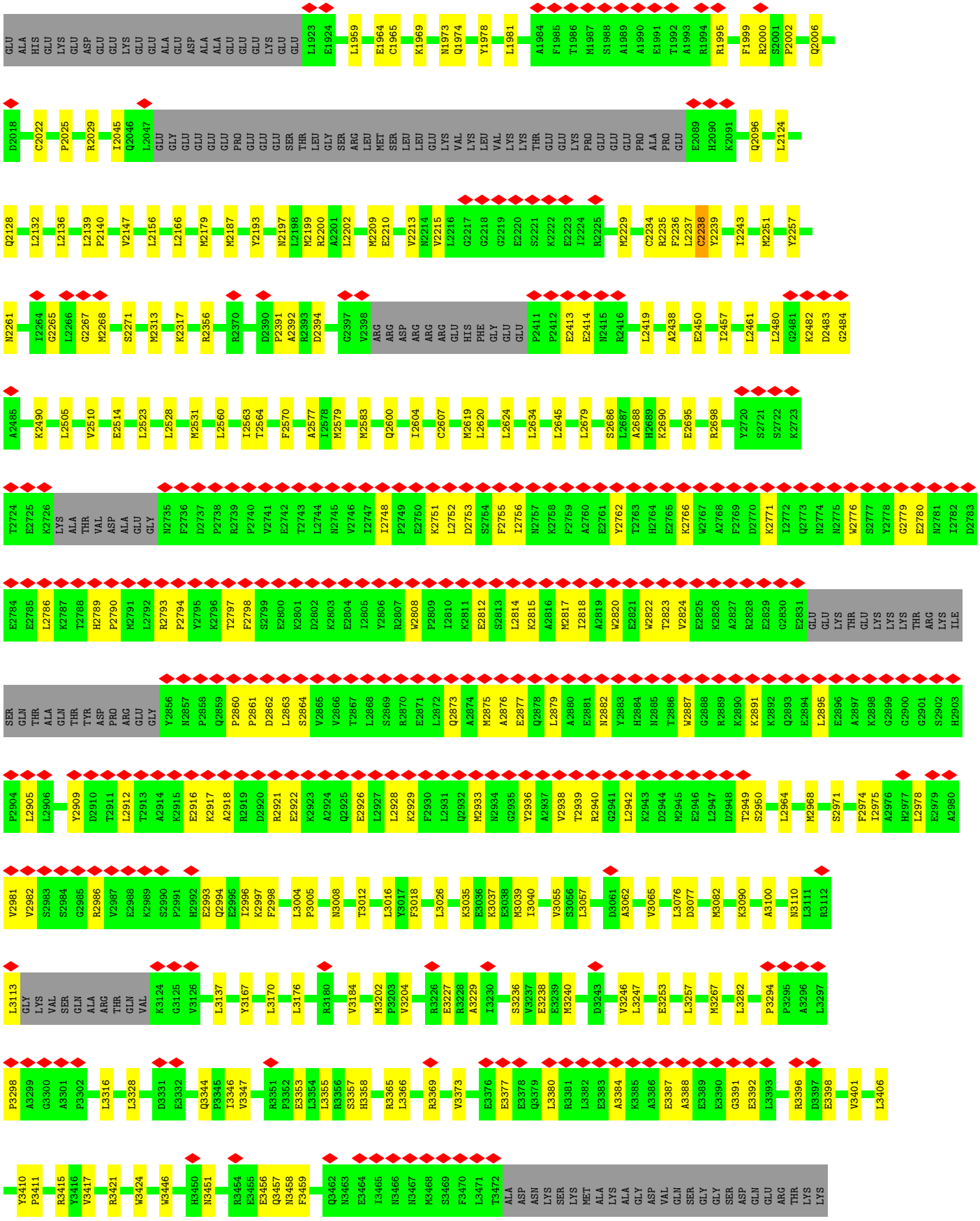


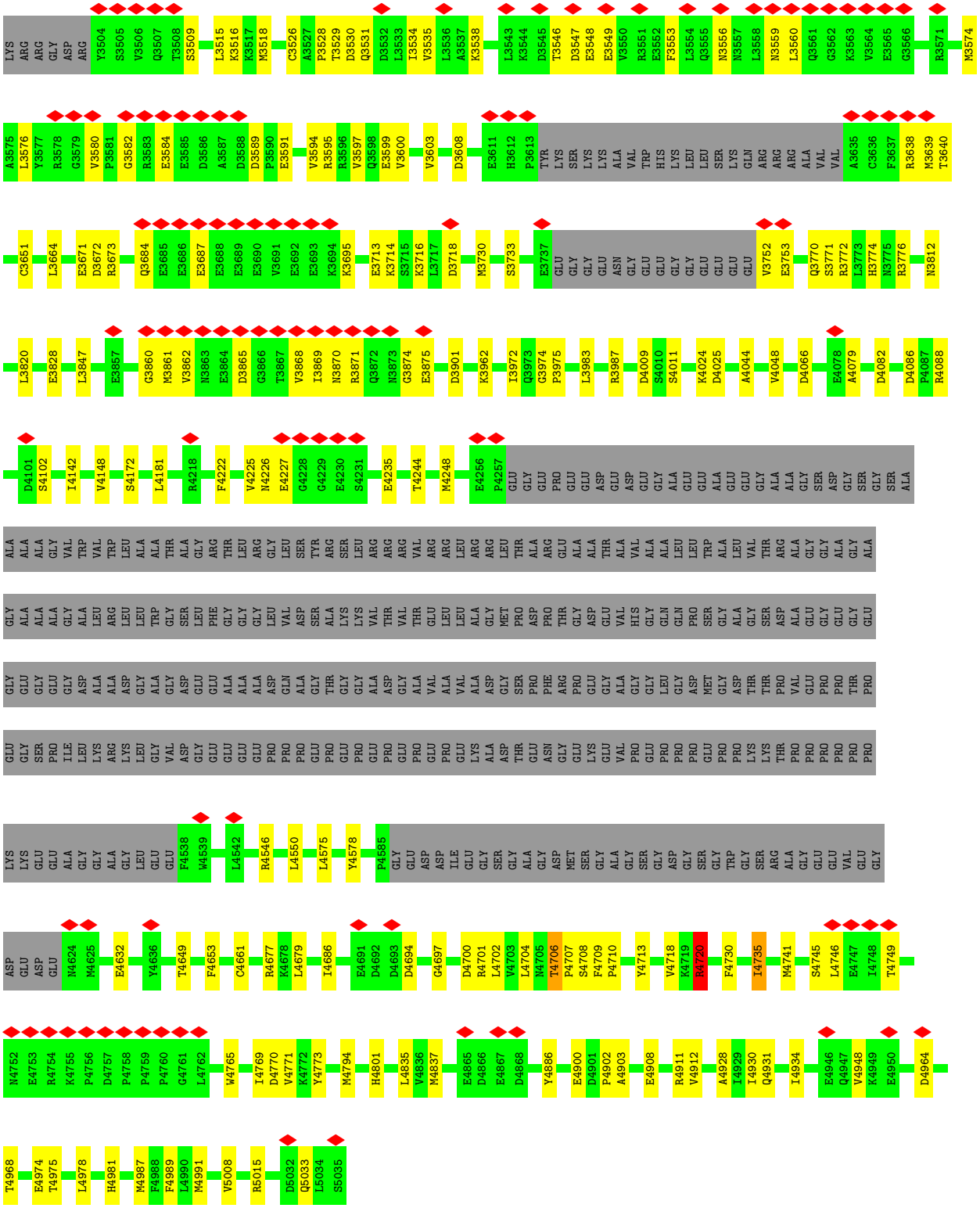


• Molecule 1: Ryanodine receptor 1

Chain B:

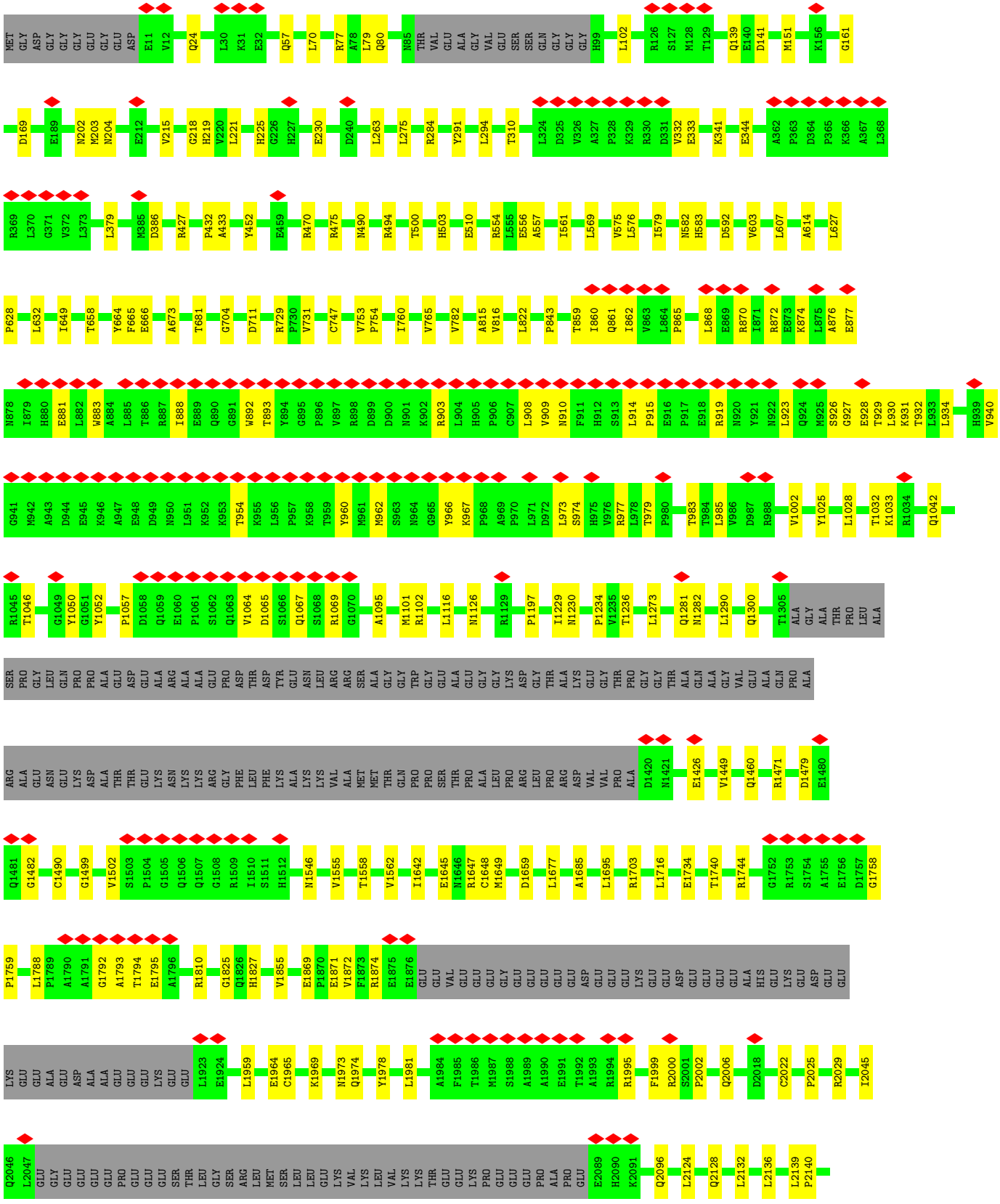






• Molecule 1: Ryanodine receptor 1

Chain C: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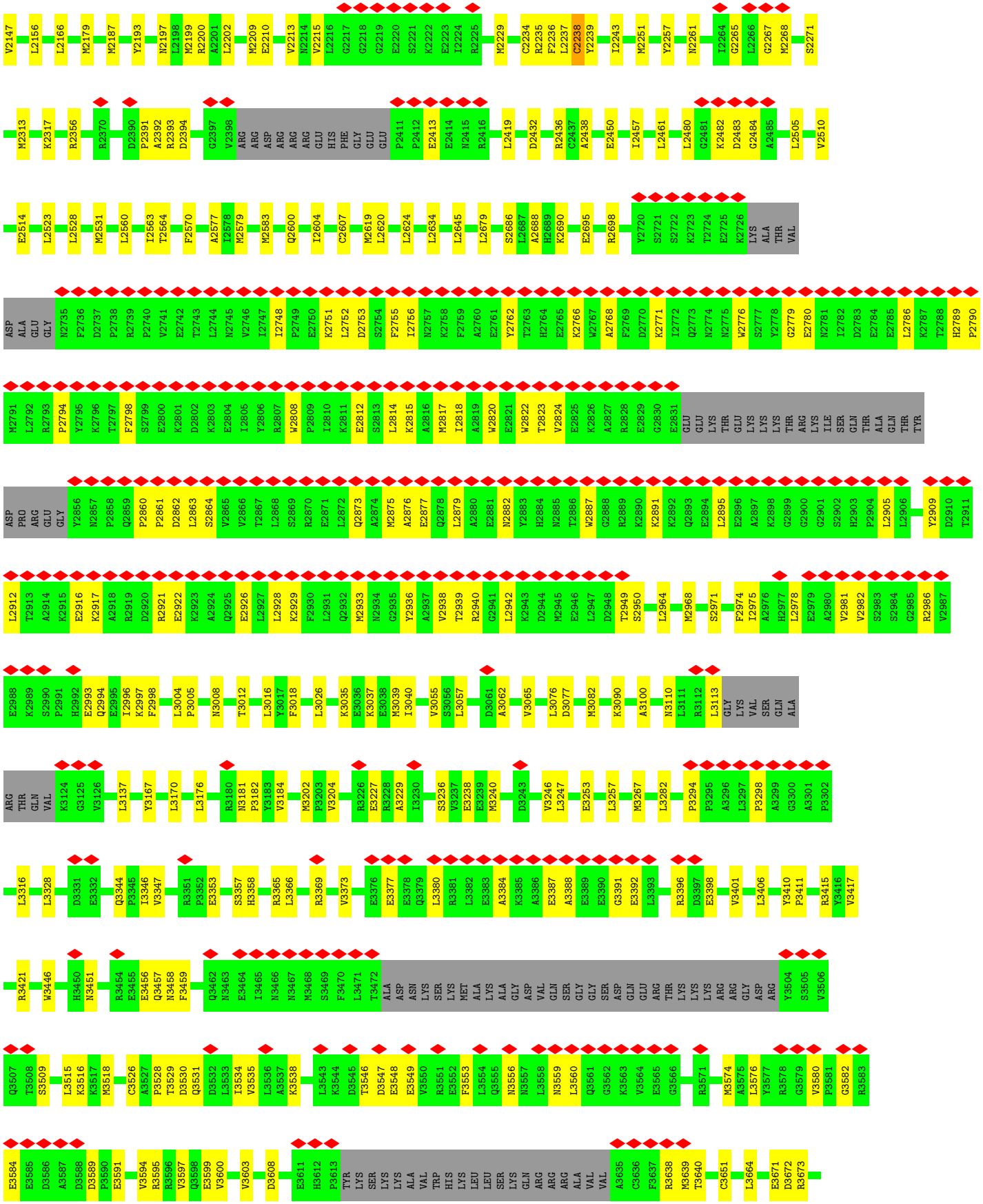
D169 E189 N202 M203 N204 E212 V215 G218 H219 V220 L221 H225 G226 H227 E230 D240 L263 L275 R284 Y291 L294 T310 L324 D325 V326 A327 P328 K329 R330 D331 V332 E333 K341 E344 A362 P363 D364 P365 K366 A367 L368
R369 L370 G371 V372 L373 L379 M385 D386 R427 P432 A433 Y452 E459 R470 R475 N490 R494 T500 H503 E510 R554 L555 E556 A557 I561 L569 V575 L576 I579 N582 H583 D592 V603 L607 A614 L627
P628 L632 I649 T658 Y664 F665 E666 A673 T681 G704 D711 R729 P730 V731 C747 V753 P754 I760 V765 V782 A815 V816 L822 P843 T859 I860 Q861 I862 V863 L864 P865 L868 E869 R870 I871 R872 E873 K874 L875 A876 E877
N878 I879 H880 E881 L882 W883 A884 L885 T886 R887 I888 E889 Q890 G891 W892 T893 Y894 G895 P896 V897 R898 D899 D900 N901 K902 R903 L904 H905 P906 C907 L908 V909 N910 F911 H912 S913 L914 P915 E916 P917 E918 R919 N920 Y921 N922 L923 Q924 M925 S926 G927 E928 T929 L930 K931 T932 L933 L934 H939 V940
G941 M942 A943 D944 E945 K946 A947 E948 D949 N950 L951 K952 K953 T954 K955 L956 P957 K958 T959 Y960 M961 M962 S963 N964 G965 Y966 K967 P968 A969 P970 L971 D972 L973 S974 H975 V976 R977 L978 T979 P980 T983 T984 L985 V986 D987 R988 V1002 Y1025 L1028 T1032 K1033 R1034 Q1042
R1045 T1046 G1049 Y1050 G1051 Y1052 P1057 D1058 Q1059 E1060 P1061 S1062 Q1063 V1064 D1065 S1066 Q1067 S1068 R1069 G1070 A1095 M1101 R1102 L1116 N1126 R1129 P1197 I1229 N1230 P1234 V1235 T1236 L1273 Q1281 N1282 L1290 Q1300 T1305 ALA GLY ALA THR PRO LEU ALA
SER PRO GLY LEU GLN PRO PRO ALA GLU ASP GLU GLU ALA ARG ALA ALA ALA GLU PRO ASP THR ASP TYR GLU ASN LEU ARG ARG SER ALA GLY GLY TRP GLY GLU ALA GLU GLY GLY LYS ASP GLY THR ALA LYS GLU GLY THR PRO GLY GLY THR ALA GLN ALA GLY VAL GLU ALA GLN PRO ALA
ARG ALA GLU ASN GLU LYS ASP ALA THR THR GLU LYS ASN LYS LYS ARG GLY PHE LEU PHE LYS ALA LYS LYS VAL ALA MET MET THR GLN PRO PRO SER THR PRO ALA ALA LEU PRO ARG LEU PRO ARG ASP VAL VAL PRO ALA D1420 N1421 E1426 V1449 Q1460 R1471 D1479 E1480
Q1481 G1482 C1490 G1499 V1502 S1503 P1504 G1505 Q1506 Q1507 G1508 R1509 I1510 S1511 H1512 N1546 V1555 T1558 V1562 I1642 E1645 N1646 R1647 C1648 M1649 D1659 L1677 A1685 L1695 R1703 L1716 E1734 T1740 R1744 G1752 R1753 S1754 A1755 E1756 D1757 G1758
P1759 L1788 P1789 A1790 A1791 G1792 A1793 T1794 E1795 A1796 R1810 G1825 Q1826 H1827 V1855 E1869 P1870 E1871 V1872 F1873 R1874 E1875 E1876 GLU GLU VAL GLU GLU GLU GLY GLU GLU GLU GLU GLU GLU ASP GLU GLU GLU LYS GLU GLU GLU ASP GLU GLU GLU GLU GLU ALA HIS GLU LYS GLU ASP GLU GLU
LYS GLU GLU ALA GLU ASP ALA ALA GLU GLU GLU LYS GLU GLU L1923 E1924 L1959 E1964 C1965 K1969 N1973 Q1974 Y1978 L1981 A1984 F1985 T1986 M1987 S1988 A1989 A1990 E1991 T1992 A1993 R1994 R1995 F1999 R2000 S2001 P2002 Q2006 D2018 C2022 P2025 R2029 I2045
Q2046 L2047 GLU GLY GLU GLU GLU GLU PRO GLU GLU GLU SER THR LEU LEU GLY SER ARG LEU MET SER LEU LEU GLU LYS VAL LYS LEU VAL LYS LYS THR GLU GLU LYS PRO GLU GLU GLU PRO ALA PRO GLU E2089 H2090 K2091 Q2096 L2124 Q2128 L2132 L2136 L2139 P2140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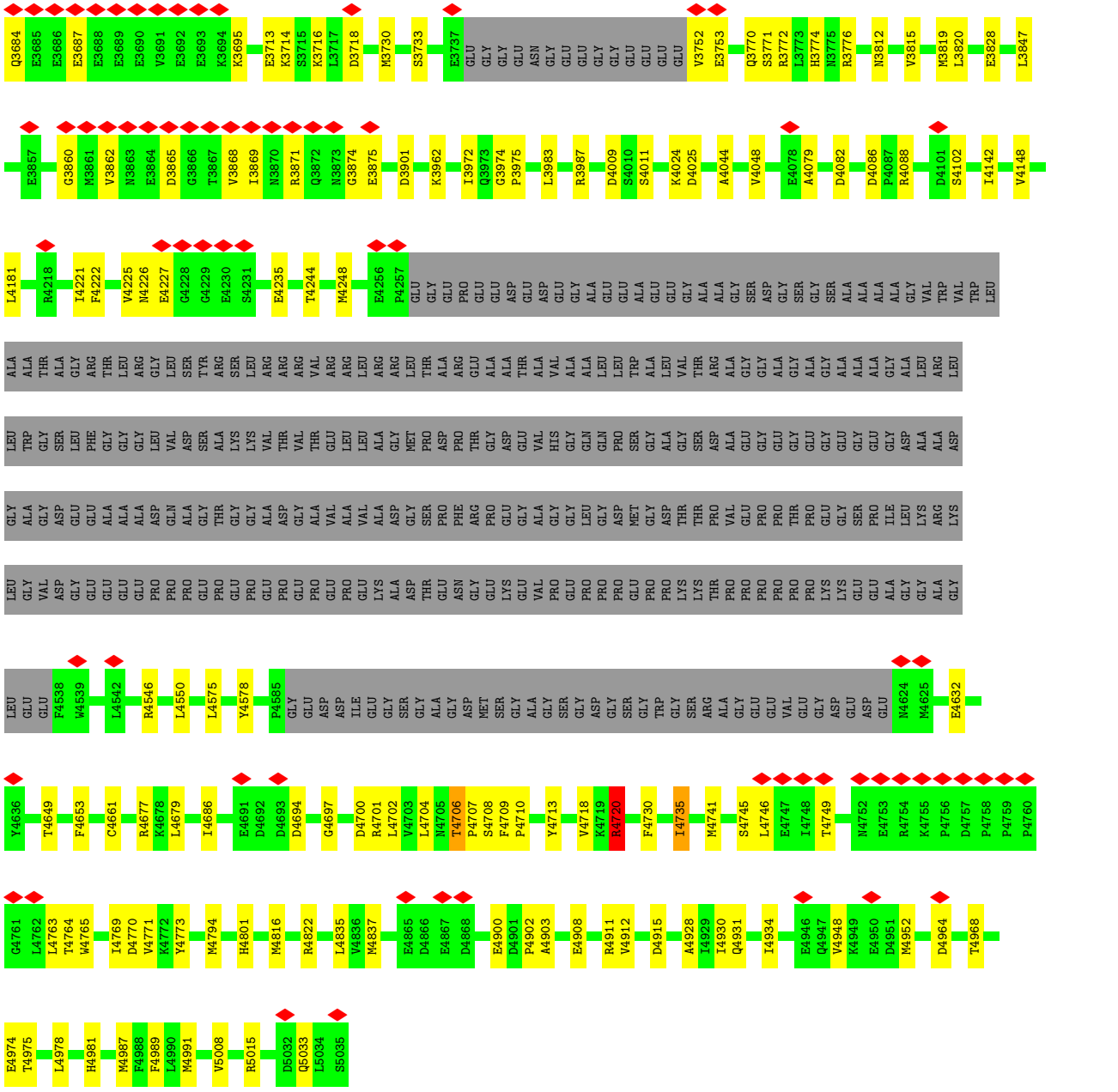
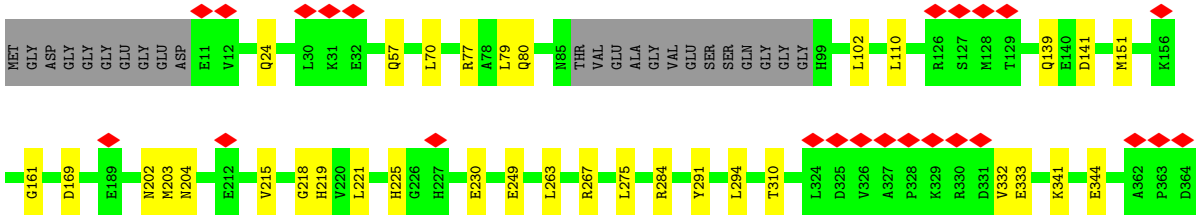
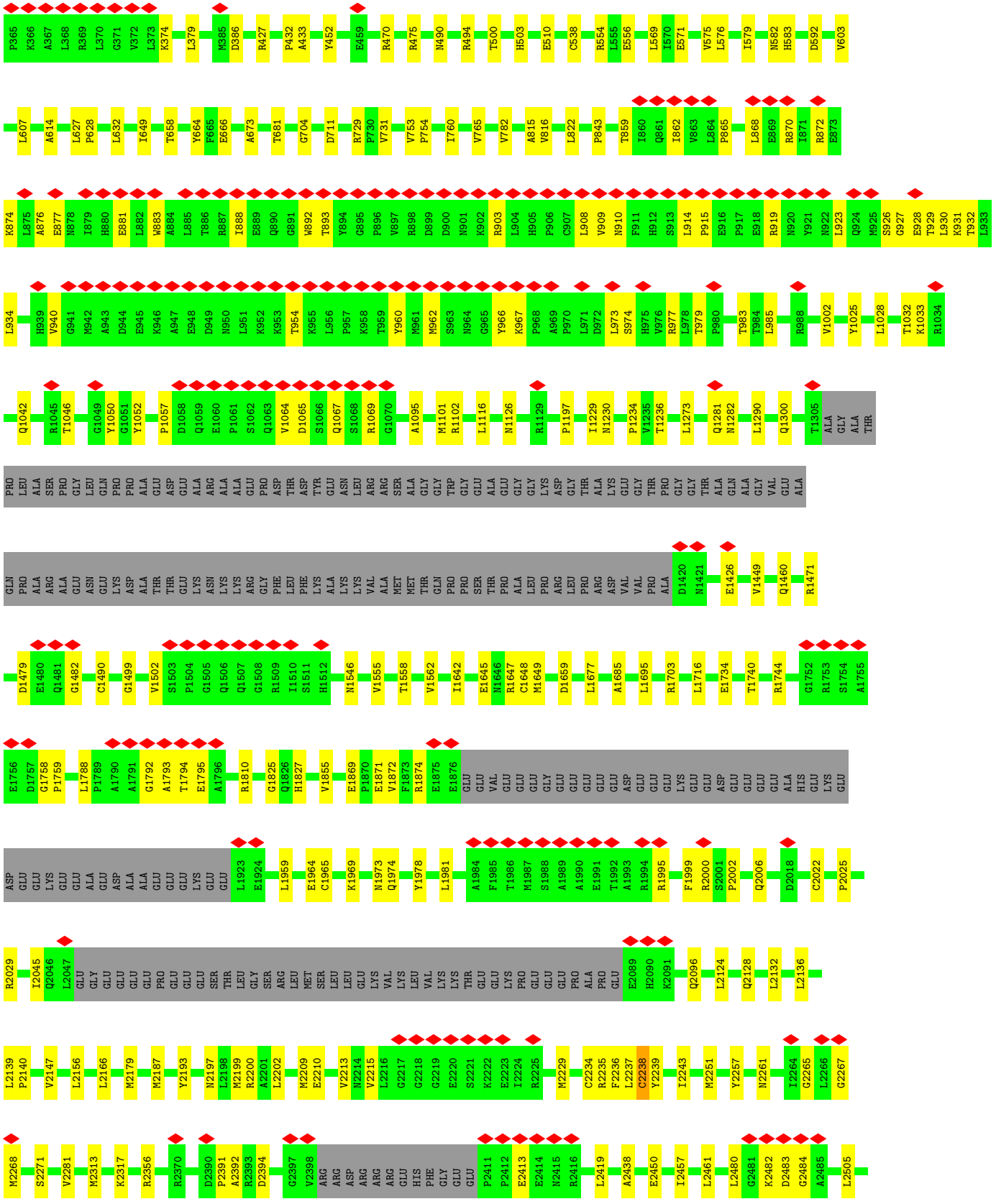
M2313 K2317 R2356 R2370 D2390 P2391 A2392 R2393 D2394 G2397 V2398 ARG ARG ASP ARG ARG ARG GLU HIS PHE GLY GLU GLU P2411 P2412 E2413 E2414 N2415 R2416 L2419 D2432 R2436 C2437 A2438 E2450 I2457 L2461 L2480 G2481 K2482 D2483 G2484 A2485 L2505 V2510
E2514 L2523 L2528 M2531 L2560 I2563 T2564 F2570 A2577 I2578 M2579 M2583 Q2600 I2604 C2607 M2619 L2620 L2624 L2634 L2645 L2679 S2686 L2687 A2688 H2689 K2690 E2695 R2698 Y2720 S2721 S2722 K2723 T2724 E2725 K2726 LYS ALA THR VAL
ASP ALA GLU GLY N2735 F2736 D2737 P2738 R2739 P2740 V2741 E2742 T2743 L2744 N2745 V2746 I2747 I2748 P2749 E2750 K2751 L2752 D2753 S2754 F2755 I2756 N2757 K2758 F2759 A2760 E2761 Y2762 T2763 H2764 E2765 K2766 W2767 A2768 F2769 D2770 K2771 I2772 Q2773 N2774 N2775 W2776 S2777 Y2778 G2779 E2780 N2781 I2782 D2783 E2784 E2785 L2786 K2787 T2788 H2789 P2790
M2791 L2792 R2793 P2794 Y2795 K2796 T2797 F2798 S2799 E2800 K2801 D2802 K2803 E2804 I2805 Y2806 R2807 W2808 P2809 I2810 K2811 E2812 S2813 L2814 K2815 A2816 M2817 I2818 A2819 W2820 E2821 W2822 T2823 V2824 E2825 K2826 A2827 R2828 E2829 G2830 E2831 GLU GLU LYS THR GLU LYS LYS LYS THR ARG LYS ILE SER GLN THR ALA GLN THR TYR
ASP PRO ARG GLU GLY Y2856 N2857 P2858 Q2859 P2860 P2861 D2862 L2863 S2864 V2865 V2866 T2867 L2868 S2869 R2870 E2871 L2872 Q2873 A2874 M2875 A2876 E2877 Q2878 L2879 A2880 E2881 N2882 Y2883 H2884 N2885 T2886 W2887 G2888 R2889 K2890 K2891 K2892 Q2893 E2894 L2895 E2896 A2897 K2898 G2899 G2900 G2901 S2902 H2903 P2904 L2905 L2906 Y2909 D2910 T2911
L2912 T2913 A2914 K2915 E2916 K2917 A2918 R2919 D2920 R2921 E2922 K2923 A2924 Q2925 E2926 L2927 L2928 K2929 F2930 L2931 Q2932 M2933 N2934 G2935 Y2936 A2937 V2938 T2939 R2940 G2941 L2942 K2943 D2944 M2945 E2946 L2947 D2948 T2949 S2950 L2964 M2968 S2971 F2974 I2975 A2976 H2977 L2978 E2979 A2980 V2981 V2982 S2983 S2984 G2985 R2986 V2987
E2988 K2989 S2990 P2991 H2992 E2993 Q2994 E2995 I2996 K2997 F2998 L3004 P3005 N3008 T3012 L3016 Y3017 F3018 L3026 K3035 E3036 K3037 E3038 M3039 I3040 V3055 S3056 L3057 D3061 A3062 V3065 L3076 D3077 M3082 K3090 A3100 N3110 L3111 R3112 L3113 GLY LYS VAL SER GLN ALA
ARG THR GLN VAL K3124 G3125 V3126 L3137 Y3167 L3170 L3176 R3180 N3181 P3182 Y3183 V3184 M3202 P3203 V3204 R3226 E3227 R3228 A3229 I3230 S3236 V3237 E3238 E3239 M3240 D3243 V3246 L3247 E3253 L3257 M3267 L3282 P3294 P3295 A3296 L3297 P3298 A3299 G3300 A3301 P3302
L3316 L3328 D3331 E3332 Q3344 P3345 I3346 V3347 R3351 P3352 E3353 S3357 H3358 R3365 L3366 R3369 V3373 E3376 E3377 E3378 Q3379 L3380 R3381 L3382 E3383 A3384 K3385 A3386 E3387 A3388 E3389 E3390 G3391 E3392 L3393 R3396 D3397 E3398 V3401 L3406 Y3410 P3411 R3415 Y3416 V3417
R3421 W3446 H3450 N3451 R3454 E3455 E3456 Q3457 N3458 F3459 Q3462 N3463 E3464 I3465 N3466 N3467 M3468 S3469 F3470 L3471 T3472 ALA ASP ASN LYS SER LYS MET ALA LYS ALA GLY ASP VAL GLN SER GLY GLY SER ASP GLN GLU ARG THR LYS LYS LYS ARG ARG GLY ASP ARG Y3504 S3505 V3506
Q3507 T3508 S3509 L3515 K3516 K3517 M3518 C3526 A3527 P3528 T3529 D3530 Q3531 D3532 L3533 I3534 V3535 L3536 A3537 K3538 L3543 K3544 D3545 T3546 D3547 E3548 E3549 V3550 R3551 E3562 F3553 L3554 Q3555 N3556 N3557 L3558 N3559 L3560 Q3561 G3562 K3563 V3564 E3565 G3566 R3571 M3574 A3575 L3576 Y3577 R3578 G3579 V3580 P3581 G3582 R3583
E3584 E3585 D3586 A3587 D3588 D3589 P3590 E3591 V3594 R3595 R3596 V3597 Q3598 E3599 V3600 V3603 D3608 E3611 H3612 P3613 TYR LYS SER LYS LYS ALA VAL TRP HIS LYS LEU LEU SER LYS GLN ARG ARG ARG ALA VAL VAL A3635 C3636 F3637 R3638 M3639 T3640 C3651 L3664 E3671 D3672 R3673

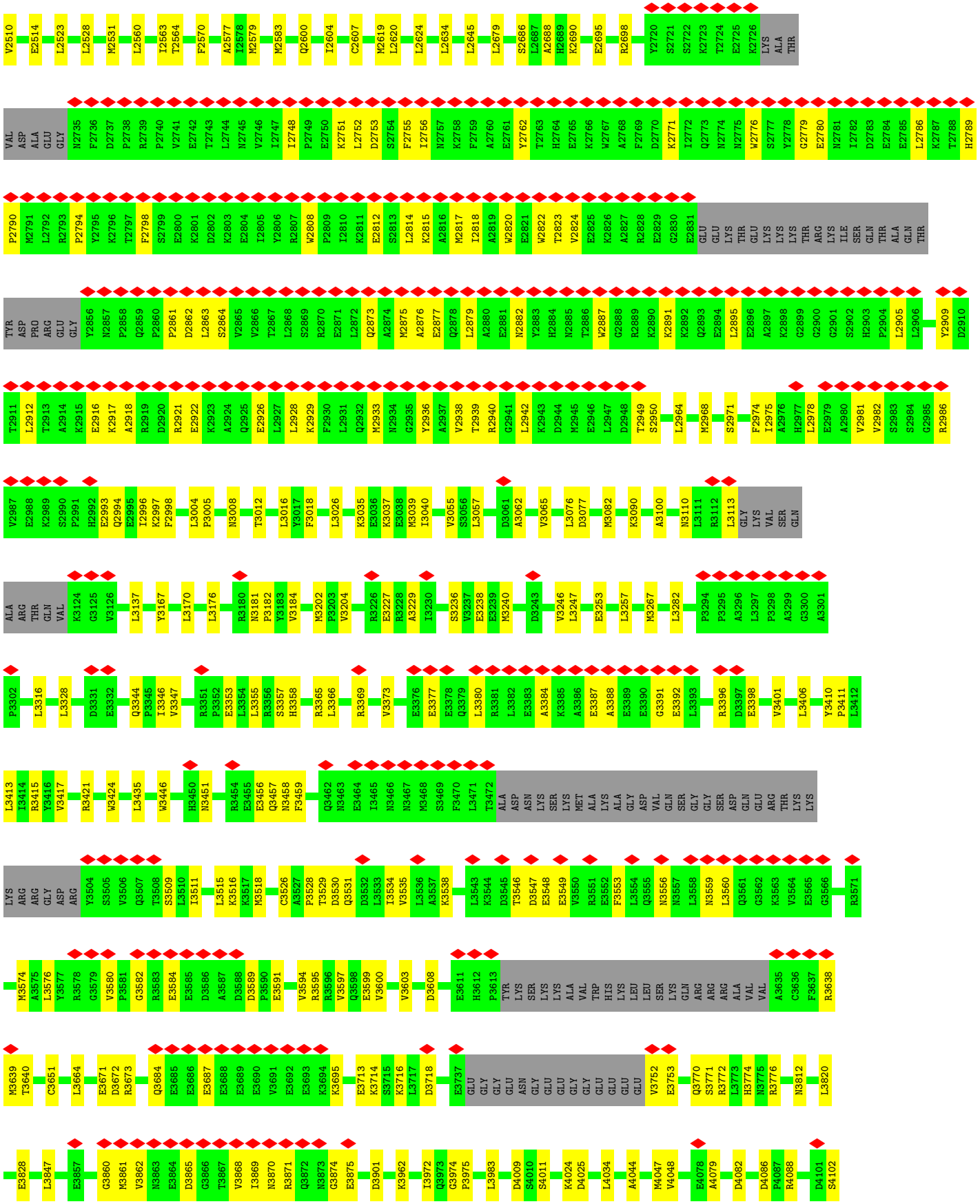


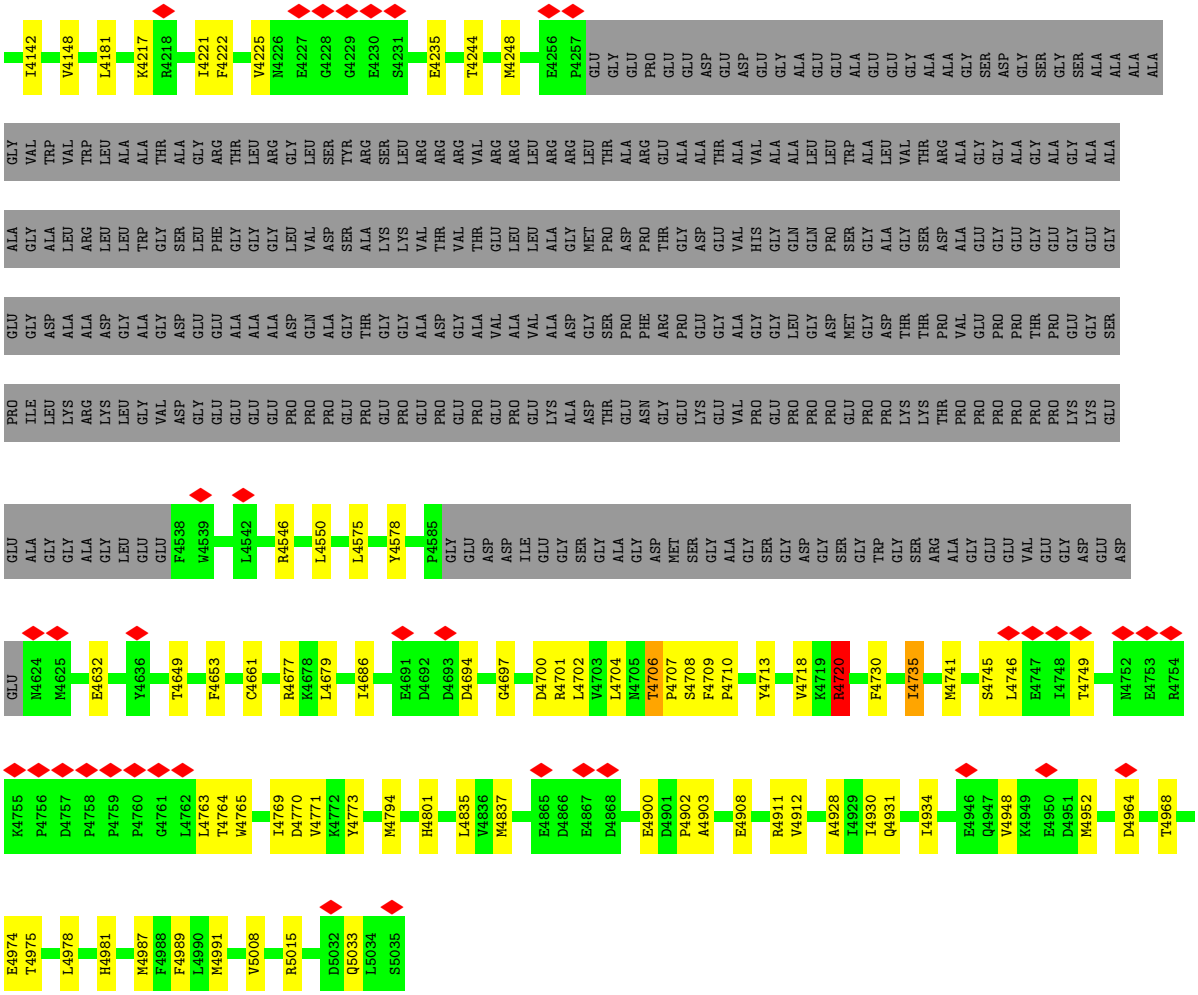
• Molecule 1: Ryanodine receptor 1

Chain D:



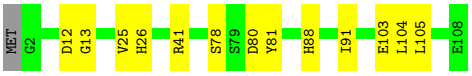



V2510 E2514 L2523 L2528 M2531 L2560 I2563 T2564 F2570 A2577 I2578 M2579 M2583 Q2600 I2604 C2607 M2619 L2620 L2624 L2634 L2645 L2679 S2686 L2687 A2688 H2689 K2690 E2695 R2698 Y2720 S2721 S2722 K2723 T2724 E2725 K2726 LYS ALA THR
VAL ASP ALA GLU GLY N2735 F2736 D2737 P2738 R2739 P2740 V2741 E2742 T2743 L2744 N2745 V2746 I2747 I2748 P2749 E2750 K2751 L2752 D2753 S2754 F2755 I2756 N2757 K2758 F2759 A2760 E2761 Y2762 T2763 H2764 E2765 K2766 W2767 A2768 F2769 D2770 K2771 I2772 Q2773 N2774 N2775 W2776 S2777 Y2778 G2779 E2780 N2781 I2782 D2783 E2784 E2785 L2786 K2787 T2788 H2789
P2790 M2791 L2792 R2793 P2794 Y2795 K2796 T2797 F2798 S2799 E2800 K2801 D2802 K2803 E2804 I2805 Y2806 R2807 W2808 P2809 I2810 K2811 E2812 S2813 L2814 K2815 A2816 M2817 I2818 A2819 W2820 E2821 GLU GLU LYS THR GLU LYS LYS LYS THR ARG LYS ILE SER GLN THR ALA GLN THR
TYR ASP PRO ARG GLU GLY Y2856 N2857 P2858 Q2859 P2860 P2861 D2862 L2863 S2864 V2865 V2866 T2867 L2868 S2869 R2870 E2871 L2872 Q2873 A2874 M2875 A2876 E2877 Q2878 L2879 A2880 E2881 N2882 Y2883 H2884 N2885 T2886 W2887 G2888 R2889 K2890 K2891 K2892 Q2893 E2894 L2895 E2896 A2897 K2898 G2899 G2900 G2901 S2902 H2903 P2904 L2905 L2906 Y2909 D2910
T2911 L2912 T2913 A2914 K2915 E2916 K2917 A2918 R2919 D2920 R2921 E2922 K2923 A2924 Q2925 E2926 L2927 L2928 K2929 F2930 L2931 Q2932 M2933 N2934 G2935 Y2936 A2937 V2938 T2939 R2940 G2941 L2942 K2943 D2944 M2945 E2946 L2947 D2948 T2949 S2950 L2964 M2968 S2971 F2974 I2975 A2976 H2977 L2978 E2979 A2980 V2981 V2982 S2983 S2984 G2985 R2986
V2987 E2988 K2989 S2990 P2991 H2992 E2993 Q2994 E2995 I2996 K2997 F2998 L3004 P3005 N3008 T3012 L3016 Y3017 F3018 L3026 K3035 E3036 K3037 E3038 M3039 I3040 V3055 S3056 L3057 D3061 A3062 V3065 L3076 D3077 M3082 K3090 A3100 N3110 L3111 R3112 L3113 GLY LYS VAL SER GLN
ALA ARG THR GLN VAL K3124 G3125 V3126 L3137 Y3167 L3170 L3176 R3180 N3181 P3182 Y3183 V3184 M3202 P3203 V3204 R3226 E3227 R3228 A3229 I3230 S3236 V3237 E3238 E3239 M3240 D3243 V3246 L3247 E3253 L3257 M3267 L3282 P3294 P3295 A3296 L3297 P3298 A3299 G3300 A3301
P3302 L3316 L3328 D3331 E3332 Q3344 P3345 I3346 V3347 R3351 P3352 E3353 L3354 L3355 R3356 S3357 H3358 R3365 L3366 R3369 V3373 E3376 E3377 E3378 Q3379 L3380 R3381 L3382 E3383 A3384 K3385 A3386 E3387 A3388 E3389 E3390 G3391 E3392 L3393 R3396 D3397 E3398 V3401 L3406 Y3410 P3411 L3412
L3413 I3414 R3415 Y3416 V3417 R3421 W3424 L3435 W3446 H3450 N3451 R3454 E3455 E3456 Q3457 N3458 F3459 Q3462 N3463 E3464 I3465 N3466 N3467 M3468 S3469 F3470 L3471 T3472 ALA ASP ASN LYS SER LYS MET ALA LYS ALA GLY ASP VAL GLN SER GLY GLY GLY SER ASP GLN GLU ARG THR LYS LYS
LYS ARG ARG GLY ASP ARG Y3504 S3505 V3506 Q3507 T3508 S3509 L3510 I3511 L3515 K3516 K3517 M3518 C3526 A3527 P3528 T3529 D3530 Q3531 D3532 L3533 I3534 V3535 L3536 A3537 K3538 L3543 K3544 D3545 T3546 D3547 E3548 E3549 V3550 R3551 E3552 F3553 L3554 Q3555 N3556 N3557 L3558 N3559 L3560 Q3561 G3562 K3563 V3564 E3565 G3566 R3571
M3574 A3575 L3576 Y3577 R3578 G3579 V3580 P3581 G3582 R3583 E3584 E3585 D3586 A3587 D3588 D3589 P3590 E3591 V3594 R3595 R3596 V3597 Q3598 E3599 V3600 V3603 D3608 E3611 H3612 P3613 TYR LYS SER LYS LYS ALA VAL TRP HIS LYS LEU LEU SER LYS GLN ARG ARG ARG ALA VAL VAL A3635 C3636 F3637 R3638
M3639 T3640 C3651 L3664 E3671 D3672 R3673 Q3684 E3685 E3686 E3687 E3688 E3689 E3690 V3691 E3692 E3693 K3694 K3695 E3713 K3714 S3715 K3716 L3717 D3718 E3737 GLU GLY GLY GLU ASN GLY GLU GLU GLY GLY GLU GLU GLU GLU V3752 E3753 Q3770 S3771 R3772 L3773 H3774 N3775 R3776 N3812 L3820
E3828 L3847 E3857 G3860 M3861 V3862 N3863 E3864 D3865 G3866 T3867 V3868 I3869 N3870 R3871 Q3872 N3873 G3874 E3875 D3901 K3962 I3972 Q3973 G3974 P3975 L3983 D4009 S4010 S4011 K4024 D4025 L4034 A4044 M4047 V4048 E4078 A4079 D4082 D4086 P4087 R4088 D4101 S4102



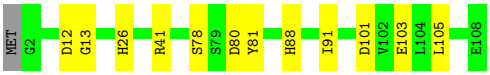
• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain E:



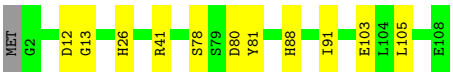
• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain F:



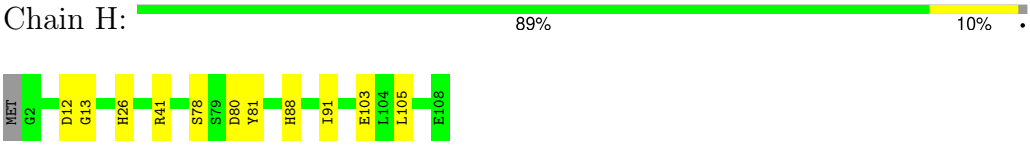
• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain G:



• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain H:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	26588	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	58	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1200	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.463	Depositor
Minimum map value	0.000	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.019	Depositor
Recommended contour level	0.1	Depositor
Map size (Å)	427.776, 427.776, 427.776	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.8355, 0.8355, 0.8355	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: ATP, CA, CFF, PCW, ZN

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	0.20	0/35586	0.36	4/48203 (0.0%)
1	B	0.20	0/35586	0.36	4/48203 (0.0%)
1	C	0.20	0/35586	0.36	4/48203 (0.0%)
1	D	0.20	0/35586	0.36	4/48203 (0.0%)
2	E	0.17	0/847	0.34	0/1142
2	F	0.17	0/847	0.32	0/1142
2	G	0.18	0/847	0.33	0/1142
2	H	0.18	0/847	0.33	0/1142
All	All	0.20	0/145732	0.36	16/197380 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	2
1	B	0	2
1	C	0	2
1	D	0	2
All	All	0	8

There are no bond length outliers.

All (16) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	2237	LEU	CA-C-N	8.49	134.18	120.60
1	C	2237	LEU	C-N-CA	8.49	134.18	120.60
1	A	2237	LEU	CA-C-N	8.48	134.16	120.60
1	A	2237	LEU	C-N-CA	8.48	134.16	120.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	2237	LEU	CA-C-N	8.48	134.16	120.60
1	B	2237	LEU	C-N-CA	8.48	134.16	120.60
1	D	2237	LEU	CA-C-N	8.48	134.16	120.60
1	D	2237	LEU	C-N-CA	8.48	134.16	120.60
1	B	2238	CYS	CA-CB-SG	7.68	132.06	114.40
1	A	2238	CYS	CA-CB-SG	7.67	132.03	114.40
1	C	2238	CYS	CA-CB-SG	7.66	132.03	114.40
1	D	2238	CYS	CA-CB-SG	7.65	131.99	114.40
1	D	2238	CYS	N-CA-CB	-5.60	100.80	110.32
1	A	2238	CYS	N-CA-CB	-5.58	100.84	110.32
1	B	2238	CYS	N-CA-CB	-5.58	100.84	110.32
1	C	2238	CYS	N-CA-CB	-5.57	100.86	110.32

There are no chirality outliers.

All (8) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	4701	ARG	Sidechain
1	A	4720	ARG	Sidechain
1	B	4701	ARG	Sidechain
1	B	4720	ARG	Sidechain
1	C	4701	ARG	Sidechain
1	C	4720	ARG	Sidechain
1	D	4701	ARG	Sidechain
1	D	4720	ARG	Sidechain

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	34797	0	34384	428	0
1	B	34797	0	34384	432	0
1	C	34797	0	34384	425	0
1	D	34797	0	34384	427	0
2	E	829	0	826	11	0
2	F	829	0	826	11	0
2	G	829	0	826	10	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	H	829	0	826	9	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
4	A	14	0	10	0	0
4	B	14	0	10	0	0
4	C	14	0	10	0	0
4	D	14	0	10	0	0
5	A	62	0	24	1	0
5	B	62	0	24	1	0
5	C	62	0	24	1	0
5	D	62	0	24	2	0
6	A	1	0	0	0	0
6	B	1	0	0	0	0
6	C	1	0	0	0	0
6	D	1	0	0	0	0
7	A	108	0	168	0	0
7	B	108	0	168	0	0
7	C	108	0	168	1	0
7	D	108	0	168	1	0
All	All	143248	0	141648	1734	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 6.

All (1734) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:2234:CYS:SG	1:D:2271:SER:OG	2.24	0.94
1:A:2234:CYS:SG	1:A:2271:SER:OG	2.24	0.94
1:B:2234:CYS:SG	1:B:2271:SER:OG	2.24	0.94
1:C:2234:CYS:SG	1:C:2271:SER:OG	2.24	0.94
1:C:2879:LEU:HD12	1:C:2928:LEU:HD21	1.55	0.88
1:A:893:THR:O	1:A:903:ARG:NH1	2.07	0.87
1:C:893:THR:O	1:C:903:ARG:NH1	2.07	0.87
1:B:2879:LEU:HD12	1:B:2928:LEU:HD21	1.55	0.87
1:B:2762:TYR:OH	1:B:2861:PRO:O	1.93	0.87
1:C:2762:TYR:OH	1:C:2861:PRO:O	1.93	0.87
1:B:893:THR:O	1:B:903:ARG:NH1	2.07	0.87
1:D:2762:TYR:OH	1:D:2861:PRO:O	1.93	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:2879:LEU:HD12	1:D:2928:LEU:HD21	1.55	0.87
1:D:893:THR:O	1:D:903:ARG:NH1	2.07	0.86
1:A:2879:LEU:HD12	1:A:2928:LEU:HD21	1.55	0.86
1:A:2762:TYR:OH	1:A:2861:PRO:O	1.93	0.84
1:B:2912:LEU:O	1:B:2917:LYS:NZ	2.12	0.82
1:A:2912:LEU:O	1:A:2917:LYS:NZ	2.12	0.82
1:C:2912:LEU:O	1:C:2917:LYS:NZ	2.12	0.81
1:D:2912:LEU:O	1:D:2917:LYS:NZ	2.12	0.81
1:C:3082:MET:O	1:C:3090:LYS:NZ	2.15	0.80
1:A:3082:MET:O	1:A:3090:LYS:NZ	2.15	0.80
1:D:3082:MET:O	1:D:3090:LYS:NZ	2.15	0.79
1:B:2862:ASP:OD2	1:B:2864:SER:OG	2.01	0.79
1:B:3082:MET:O	1:B:3090:LYS:NZ	2.15	0.79
1:A:3714:LYS:NZ	1:A:3716:LYS:O	2.16	0.79
1:C:2862:ASP:OD2	1:C:2864:SER:OG	2.01	0.79
1:B:3456:GLU:OE2	1:B:3509:SER:OG	2.00	0.78
1:C:3456:GLU:OE2	1:C:3509:SER:OG	2.00	0.78
1:D:3456:GLU:OE2	1:D:3509:SER:OG	2.00	0.78
1:C:3714:LYS:NZ	1:C:3716:LYS:O	2.16	0.78
1:D:3236:SER:OG	1:D:3238:GLU:OE1	2.02	0.78
1:A:3236:SER:OG	1:A:3238:GLU:OE1	2.02	0.77
1:A:2197:ASN:OD1	1:A:2200:ARG:NH2	2.18	0.77
1:A:2862:ASP:OD2	1:A:2864:SER:OG	2.01	0.77
1:C:3236:SER:OG	1:C:3238:GLU:OE1	2.02	0.77
1:A:3456:GLU:OE2	1:A:3509:SER:OG	2.00	0.77
1:C:2197:ASN:OD1	1:C:2200:ARG:NH2	2.18	0.77
1:D:2197:ASN:OD1	1:D:2200:ARG:NH2	2.18	0.77
1:D:2862:ASP:OD2	1:D:2864:SER:OG	2.01	0.77
1:B:2197:ASN:OD1	1:B:2200:ARG:NH2	2.18	0.77
1:B:24:GLN:OE1	1:B:204:ASN:ND2	2.18	0.76
1:C:1236:THR:OG1	1:C:1703:ARG:NH1	2.19	0.76
1:B:3236:SER:OG	1:B:3238:GLU:OE1	2.02	0.76
1:C:24:GLN:OE1	1:C:204:ASN:ND2	2.18	0.76
1:B:1236:THR:OG1	1:B:1703:ARG:NH1	2.19	0.76
1:A:24:GLN:OE1	1:A:204:ASN:ND2	2.18	0.76
1:A:1236:THR:OG1	1:A:1703:ARG:NH1	2.19	0.75
1:D:1236:THR:OG1	1:D:1703:ARG:NH1	2.19	0.75
1:D:24:GLN:OE1	1:D:204:ASN:ND2	2.18	0.75
1:C:2187:MET:O	1:C:2193:TYR:OH	2.02	0.75
1:C:3531:GLN:O	1:C:3535:VAL:HG23	1.88	0.73
1:A:3531:GLN:O	1:A:3535:VAL:HG23	1.88	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:88:HIS:ND1	2:E:91:ILE:HD13	2.03	0.73
1:B:2993:GLU:HA	1:B:2996:ILE:HD12	1.70	0.73
1:D:3538:LYS:NZ	1:D:3608:ASP:OD2	2.15	0.73
1:D:3714:LYS:NZ	1:D:3716:LYS:O	2.16	0.73
1:A:865:PRO:HD2	1:A:868:LEU:HD12	1.70	0.73
1:A:2993:GLU:HA	1:A:2996:ILE:HD12	1.70	0.73
1:B:3531:GLN:O	1:B:3535:VAL:HG23	1.88	0.73
1:A:2523:LEU:HD21	1:A:2583:MET:SD	2.28	0.73
1:B:2523:LEU:HD21	1:B:2583:MET:SD	2.28	0.73
1:A:2187:MET:O	1:A:2193:TYR:OH	2.02	0.73
1:D:3531:GLN:O	1:D:3535:VAL:HG23	1.88	0.73
1:D:914:LEU:O	1:D:919:ARG:NH1	2.22	0.73
1:A:914:LEU:O	1:A:919:ARG:NH1	2.22	0.72
1:C:2523:LEU:HD21	1:C:2583:MET:SD	2.28	0.72
1:C:865:PRO:HD2	1:C:868:LEU:HD12	1.70	0.72
1:B:914:LEU:O	1:B:919:ARG:NH1	2.22	0.72
1:C:1793:ALA:O	1:C:1794:THR:OG1	2.06	0.72
1:D:865:PRO:HD2	1:D:868:LEU:HD12	1.70	0.72
1:D:2523:LEU:HD21	1:D:2583:MET:SD	2.28	0.72
1:C:914:LEU:O	1:C:919:ARG:NH1	2.22	0.72
1:D:2187:MET:O	1:D:2193:TYR:OH	2.02	0.71
1:B:865:PRO:HD2	1:B:868:LEU:HD12	1.70	0.71
1:B:1793:ALA:O	1:B:1794:THR:OG1	2.06	0.71
1:D:2993:GLU:HA	1:D:2996:ILE:HD12	1.70	0.71
1:C:2993:GLU:HA	1:C:2996:ILE:HD12	1.70	0.71
1:B:2187:MET:O	1:B:2193:TYR:OH	2.02	0.71
1:B:4908:GLU:O	1:B:4912:VAL:HG13	1.91	0.70
1:B:2823:THR:OG1	1:B:2939:THR:OG1	2.09	0.70
1:C:2823:THR:OG1	1:C:2939:THR:OG1	2.09	0.70
1:C:4908:GLU:O	1:C:4912:VAL:HG13	1.91	0.70
1:D:4009:ASP:OD2	1:D:4011:SER:OG	2.10	0.70
1:D:914:LEU:HD12	1:D:915:PRO:HD2	1.74	0.70
1:B:3714:LYS:NZ	1:B:3716:LYS:O	2.16	0.70
1:D:4908:GLU:O	1:D:4912:VAL:HG13	1.91	0.70
1:A:914:LEU:HD12	1:A:915:PRO:HD2	1.73	0.69
1:A:4009:ASP:OD2	1:A:4011:SER:OG	2.10	0.69
1:A:1793:ALA:O	1:A:1794:THR:OG1	2.06	0.69
1:C:914:LEU:HD12	1:C:915:PRO:HD2	1.74	0.69
1:D:2823:THR:OG1	1:D:2939:THR:OG1	2.09	0.69
1:A:2823:THR:OG1	1:A:2939:THR:OG1	2.09	0.69
1:A:4908:GLU:O	1:A:4912:VAL:HG13	1.91	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3369:ARG:NH2	1:A:3398:GLU:OE1	2.26	0.69
1:B:1042:GLN:O	1:B:1046:THR:HG23	1.93	0.69
1:B:3369:ARG:NH2	1:B:3398:GLU:OE1	2.26	0.69
1:A:1042:GLN:O	1:A:1046:THR:HG23	1.93	0.69
1:C:4009:ASP:OD2	1:C:4011:SER:OG	2.10	0.69
1:A:102:LEU:HB3	1:A:151:MET:HE1	1.75	0.69
2:E:41:ARG:NH2	2:E:103:GLU:OE1	2.25	0.69
1:D:3369:ARG:NH2	1:D:3398:GLU:OE1	2.26	0.69
1:D:2570:PHE:CE1	1:D:2583:MET:HE1	2.29	0.68
2:G:88:HIS:CD2	1:C:1788:LEU:HD21	2.28	0.68
1:B:102:LEU:HB3	1:B:151:MET:HE1	1.75	0.68
1:C:2560:LEU:O	1:C:2564:THR:HG23	1.94	0.68
1:D:2564:THR:HG22	1:D:2607:CYS:HA	1.75	0.68
2:H:88:HIS:ND1	2:H:91:ILE:HD13	2.09	0.68
1:C:1042:GLN:O	1:C:1046:THR:HG23	1.93	0.68
1:C:3538:LYS:NZ	1:C:3608:ASP:OD2	2.15	0.68
1:D:1042:GLN:O	1:D:1046:THR:HG23	1.93	0.68
1:C:2780:GLU:OE2	1:C:2786:LEU:HD12	1.94	0.68
1:C:3176:LEU:HD21	1:C:3184:VAL:HG13	1.76	0.68
1:B:914:LEU:HD12	1:B:915:PRO:HD2	1.74	0.68
1:C:2564:THR:HG22	1:C:2607:CYS:HA	1.75	0.68
1:A:3176:LEU:HD21	1:A:3184:VAL:HG13	1.76	0.68
1:D:102:LEU:HB3	1:D:151:MET:HE1	1.75	0.68
1:A:2560:LEU:O	1:A:2564:THR:HG23	1.94	0.68
1:A:4235:GLU:OE2	1:A:5015:ARG:NH2	2.27	0.68
1:B:2817:MET:HE2	1:B:2879:LEU:HD11	1.76	0.68
1:B:3176:LEU:HD21	1:B:3184:VAL:HG13	1.76	0.68
1:B:3538:LYS:NZ	1:B:3608:ASP:OD2	2.15	0.68
1:B:4009:ASP:OD2	1:B:4011:SER:OG	2.10	0.68
1:D:3176:LEU:HD21	1:D:3184:VAL:HG13	1.76	0.68
1:B:2780:GLU:OE2	1:B:2786:LEU:HD12	1.94	0.67
1:C:4235:GLU:OE2	1:C:5015:ARG:NH2	2.27	0.67
1:A:2570:PHE:CE1	1:A:2583:MET:HE1	2.29	0.67
1:C:3369:ARG:NH2	1:C:3398:GLU:OE1	2.26	0.67
1:D:2814:LEU:HD23	1:D:2817:MET:HE3	1.76	0.67
1:B:2570:PHE:CE1	1:B:2583:MET:HE1	2.29	0.67
1:C:2570:PHE:CE1	1:C:2583:MET:HE1	2.29	0.67
1:A:2780:GLU:OE2	1:A:2786:LEU:HD12	1.94	0.67
1:A:2814:LEU:HD23	1:A:2817:MET:HE3	1.76	0.67
1:B:1981:LEU:HD22	1:B:1995:ARG:HB3	1.77	0.67
1:B:2560:LEU:O	1:B:2564:THR:HG23	1.94	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2564:THR:HG22	1:B:2607:CYS:HA	1.75	0.67
1:D:4235:GLU:OE2	1:D:5015:ARG:NH2	2.27	0.67
1:C:102:LEU:HB3	1:C:151:MET:HE1	1.75	0.67
1:D:470:ARG:NE	1:D:3713:GLU:OE1	2.28	0.67
1:D:1793:ALA:O	1:D:1794:THR:OG1	2.06	0.67
1:D:2560:LEU:O	1:D:2564:THR:HG23	1.94	0.67
1:D:2817:MET:HE2	1:D:2879:LEU:HD11	1.76	0.67
1:B:1025:TYR:O	1:B:1033:LYS:NZ	2.28	0.67
1:C:3176:LEU:HD23	1:C:3176:LEU:O	1.95	0.67
1:D:3176:LEU:O	1:D:3176:LEU:HD23	1.95	0.67
1:D:1025:TYR:O	1:D:1033:LYS:NZ	2.28	0.67
1:A:470:ARG:NE	1:A:3713:GLU:OE1	2.28	0.66
1:A:2564:THR:HG22	1:A:2607:CYS:HA	1.75	0.66
1:C:2817:MET:HE2	1:C:2879:LEU:HD11	1.76	0.66
1:D:2780:GLU:OE2	1:D:2786:LEU:HD12	1.94	0.66
2:E:25:VAL:HG12	2:E:104:LEU:HA	1.77	0.66
1:A:1981:LEU:HD22	1:A:1995:ARG:HB3	1.77	0.66
1:B:470:ARG:NE	1:B:3713:GLU:OE1	2.28	0.66
1:B:2156:LEU:HD13	1:B:2199:MET:HE1	1.78	0.66
1:B:4235:GLU:OE2	1:B:5015:ARG:NH2	2.27	0.66
1:A:2817:MET:HE2	1:A:2879:LEU:HD11	1.76	0.66
1:A:1025:TYR:O	1:A:1033:LYS:NZ	2.28	0.66
2:F:88:HIS:ND1	2:F:91:ILE:HD13	2.09	0.66
1:B:3176:LEU:O	1:B:3176:LEU:HD23	1.95	0.66
1:C:2814:LEU:HD23	1:C:2817:MET:HE3	1.76	0.66
1:A:2755:PHE:CD2	1:A:2814:LEU:HD11	2.31	0.66
1:C:470:ARG:NE	1:C:3713:GLU:OE1	2.28	0.66
1:C:4550:LEU:HD12	1:C:4661:CYS:SG	2.36	0.66
1:A:3176:LEU:O	1:A:3176:LEU:HD23	1.95	0.66
1:B:4550:LEU:HD12	1:B:4661:CYS:SG	2.36	0.66
1:D:1981:LEU:HD22	1:D:1995:ARG:HB3	1.77	0.66
1:A:4550:LEU:HD12	1:A:4661:CYS:SG	2.36	0.65
1:B:3257:LEU:HD23	1:B:3267:MET:HE2	1.78	0.65
1:C:1981:LEU:HD22	1:C:1995:ARG:HB3	1.77	0.65
1:D:2755:PHE:CD2	1:D:2814:LEU:HD11	2.31	0.65
1:D:4550:LEU:HD12	1:D:4661:CYS:SG	2.36	0.65
1:A:3530:ASP:O	1:A:3534:ILE:HD12	1.97	0.65
1:B:2814:LEU:HD23	1:B:2817:MET:HE3	1.76	0.65
1:A:2968:MET:HA	1:A:2968:MET:HE3	1.79	0.65
1:A:3257:LEU:HD23	1:A:3267:MET:HE2	1.78	0.65
2:F:26:HIS:HD2	2:F:105:LEU:HD11	1.61	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:57:GLN:O	1:A:310:THR:HG23	1.97	0.65
1:A:2645:LEU:HD13	1:A:2679:LEU:HD21	1.78	0.65
1:C:57:GLN:O	1:C:310:THR:HG23	1.97	0.65
1:B:57:GLN:O	1:B:310:THR:HG23	1.97	0.65
1:C:2156:LEU:HD13	1:C:2199:MET:HE1	1.78	0.65
1:C:2755:PHE:CD2	1:C:2814:LEU:HD11	2.31	0.65
1:D:3530:ASP:O	1:D:3534:ILE:HD12	1.97	0.65
1:A:452:TYR:O	1:A:475:ARG:NH2	2.30	0.65
1:B:2755:PHE:CD2	1:B:2814:LEU:HD11	2.31	0.65
1:C:452:TYR:O	1:C:475:ARG:NH2	2.30	0.65
1:D:70:LEU:HD13	1:D:102:LEU:HD11	1.79	0.65
1:C:1025:TYR:O	1:C:1033:LYS:NZ	2.28	0.65
1:D:57:GLN:O	1:D:310:THR:HG23	1.97	0.65
1:D:2156:LEU:HD13	1:D:2199:MET:HE1	1.78	0.65
1:D:2968:MET:HE3	1:D:2968:MET:HA	1.79	0.65
1:C:2645:LEU:HD13	1:C:2679:LEU:HD21	1.78	0.65
1:A:3547:ASP:OD1	1:A:3548:GLU:N	2.31	0.64
1:A:4745:SER:O	1:A:4749:THR:HG23	1.97	0.64
2:G:88:HIS:ND1	2:G:91:ILE:HD13	2.11	0.64
1:B:70:LEU:HD13	1:B:102:LEU:HD11	1.79	0.64
1:C:3547:ASP:OD1	1:C:3548:GLU:N	2.31	0.64
1:B:2645:LEU:HD13	1:B:2679:LEU:HD21	1.78	0.64
1:B:3530:ASP:O	1:B:3534:ILE:HD12	1.97	0.64
1:A:2755:PHE:HD2	1:A:2814:LEU:HD11	1.63	0.64
1:B:452:TYR:O	1:B:475:ARG:NH2	2.30	0.64
1:C:2968:MET:HA	1:C:2968:MET:HE3	1.79	0.64
1:D:3257:LEU:HD23	1:D:3267:MET:HE2	1.78	0.64
1:D:4745:SER:O	1:D:4749:THR:HG23	1.98	0.64
1:C:3530:ASP:O	1:C:3534:ILE:HD12	1.97	0.64
1:D:452:TYR:O	1:D:475:ARG:NH2	2.30	0.64
1:C:70:LEU:HD13	1:C:102:LEU:HD11	1.79	0.64
1:C:2234:CYS:O	1:C:2235:ARG:C	2.41	0.64
1:A:2156:LEU:HD13	1:A:2199:MET:HE1	1.78	0.64
1:A:2234:CYS:O	1:A:2235:ARG:C	2.41	0.64
1:C:3576:LEU:O	1:C:3580:VAL:HG23	1.98	0.64
1:C:3860:GLY:O	1:C:3871:ARG:NH2	2.31	0.64
1:D:3576:LEU:O	1:D:3580:VAL:HG23	1.98	0.64
1:A:3538:LYS:NZ	1:A:3608:ASP:OD2	2.15	0.64
1:A:3576:LEU:O	1:A:3580:VAL:HG23	1.98	0.64
1:B:4745:SER:O	1:B:4749:THR:HG23	1.97	0.64
1:C:3257:LEU:HD23	1:C:3267:MET:HE2	1.78	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:2755:PHE:HD2	1:D:2814:LEU:HD11	1.63	0.64
1:A:70:LEU:HD13	1:A:102:LEU:HD11	1.79	0.64
1:D:3547:ASP:OD1	1:D:3548:GLU:N	2.31	0.64
1:A:3860:GLY:O	1:A:3871:ARG:NH2	2.31	0.63
1:B:2968:MET:HA	1:B:2968:MET:HE3	1.79	0.63
1:B:3860:GLY:O	1:B:3871:ARG:NH2	2.31	0.63
1:D:2645:LEU:HD13	1:D:2679:LEU:HD21	1.78	0.63
1:B:3576:LEU:O	1:B:3580:VAL:HG23	1.98	0.63
1:D:3559:ASN:OD1	1:D:3560:LEU:HD12	1.99	0.63
1:B:169:ASP:OD1	1:B:202:ASN:ND2	2.32	0.63
1:B:2695:GLU:OE1	1:B:2698:ARG:NH1	2.31	0.63
1:C:872:ARG:NH1	1:C:923:LEU:O	2.31	0.63
1:C:2695:GLU:OE1	1:C:2698:ARG:NH1	2.31	0.63
1:C:2755:PHE:HD2	1:C:2814:LEU:HD11	1.63	0.63
1:D:876:ALA:CB	1:D:923:LEU:HD23	2.29	0.63
1:D:2695:GLU:OE1	1:D:2698:ARG:NH1	2.31	0.63
1:A:3559:ASN:OD1	1:A:3560:LEU:HD12	1.99	0.63
1:B:2755:PHE:HD2	1:B:2814:LEU:HD11	1.63	0.63
1:D:3860:GLY:O	1:D:3871:ARG:NH2	2.31	0.63
1:B:876:ALA:CB	1:B:923:LEU:HD23	2.29	0.63
1:B:3547:ASP:OD1	1:B:3548:GLU:N	2.31	0.63
1:D:341:LYS:NZ	1:D:344:GLU:OE1	2.32	0.63
1:D:2234:CYS:O	1:D:2235:ARG:C	2.41	0.63
1:A:169:ASP:OD1	1:A:202:ASN:ND2	2.32	0.63
2:H:12:ASP:OD1	2:H:13:GLY:N	2.32	0.63
1:A:2695:GLU:OE1	1:A:2698:ARG:NH1	2.31	0.63
2:F:12:ASP:OD1	2:F:13:GLY:N	2.32	0.63
2:G:12:ASP:OD1	2:G:13:GLY:N	2.32	0.63
1:C:341:LYS:NZ	1:C:344:GLU:OE1	2.32	0.63
1:C:3559:ASN:OD1	1:C:3560:LEU:HD12	1.99	0.63
1:C:4745:SER:O	1:C:4749:THR:HG23	1.97	0.63
1:A:1978:TYR:OH	1:A:3639:MET:SD	2.49	0.62
1:B:1978:TYR:OH	1:B:3639:MET:SD	2.49	0.62
1:A:341:LYS:NZ	1:A:344:GLU:OE1	2.32	0.62
1:C:876:ALA:CB	1:C:923:LEU:HD23	2.29	0.62
1:B:872:ARG:NH1	1:B:923:LEU:O	2.31	0.62
1:B:929:THR:HG23	1:B:930:LEU:HD22	1.82	0.62
1:B:3559:ASN:OD1	1:B:3560:LEU:HD12	1.99	0.62
1:D:872:ARG:NH1	1:D:923:LEU:O	2.32	0.62
1:D:3672:ASP:OD1	1:D:3673:ARG:N	2.33	0.62
1:A:929:THR:HG23	1:A:930:LEU:HD22	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:3672:ASP:OD1	1:C:3673:ARG:N	2.33	0.62
1:D:4649:THR:OG1	1:D:4801:HIS:NE2	2.29	0.62
1:A:876:ALA:CB	1:A:923:LEU:HD23	2.29	0.62
1:C:2863:LEU:HD23	1:C:2933:MET:HE3	1.82	0.62
1:A:872:ARG:NH1	1:A:923:LEU:O	2.31	0.62
1:B:1974:GLN:NE2	1:B:2006:GLN:OE1	2.32	0.62
1:D:169:ASP:OD1	1:D:202:ASN:ND2	2.32	0.62
1:D:2863:LEU:HD23	1:D:2933:MET:HE3	1.82	0.62
1:A:1974:GLN:NE2	1:A:2006:GLN:OE1	2.32	0.62
1:C:169:ASP:OD1	1:C:202:ASN:ND2	2.32	0.62
1:D:1974:GLN:NE2	1:D:2006:GLN:OE1	2.32	0.62
1:B:4649:THR:OG1	1:B:4801:HIS:NE2	2.29	0.62
1:A:4222:PHE:HA	1:A:4948:VAL:HG21	1.82	0.61
2:G:80:ASP:OD1	2:G:81:TYR:N	2.33	0.61
1:B:3534:ILE:HG13	1:B:3597:VAL:HG23	1.81	0.61
1:C:929:THR:HG23	1:C:930:LEU:HD22	1.82	0.61
1:D:664:TYR:OH	1:D:666:GLU:OE2	2.18	0.61
1:D:929:THR:HG23	1:D:930:LEU:HD22	1.82	0.61
1:D:4222:PHE:HA	1:D:4948:VAL:HG21	1.82	0.61
1:A:3534:ILE:HG13	1:A:3597:VAL:HG23	1.81	0.61
1:B:341:LYS:NZ	1:B:344:GLU:OE1	2.32	0.61
1:C:1234:PRO:O	1:C:1703:ARG:NH2	2.34	0.61
1:C:1974:GLN:NE2	1:C:2006:GLN:OE1	2.32	0.61
1:A:3672:ASP:OD1	1:A:3673:ARG:N	2.33	0.61
1:B:2879:LEU:HD12	1:B:2928:LEU:CD2	2.29	0.61
1:B:3446:TRP:NE1	1:B:3456:GLU:OE1	2.33	0.61
1:B:3672:ASP:OD1	1:B:3673:ARG:N	2.33	0.61
1:D:1426:GLU:OE1	1:D:1426:GLU:N	2.34	0.61
2:E:26:HIS:ND1	2:E:105:LEU:HD11	2.16	0.61
1:B:876:ALA:HB1	1:B:923:LEU:HD23	1.83	0.61
1:C:2523:LEU:HD23	1:C:2579:MET:HE1	1.83	0.61
2:H:80:ASP:OD1	2:H:81:TYR:N	2.33	0.61
1:B:2234:CYS:O	1:B:2235:ARG:C	2.41	0.61
1:A:2022:CYS:O	1:A:2029:ARG:NH2	2.34	0.61
2:E:80:ASP:OD1	2:E:81:TYR:N	2.33	0.61
1:C:2022:CYS:O	1:C:2029:ARG:NH2	2.34	0.61
1:D:1978:TYR:OH	1:D:3639:MET:SD	2.49	0.61
1:D:2022:CYS:O	1:D:2029:ARG:NH2	2.34	0.61
1:D:3446:TRP:NE1	1:D:3456:GLU:OE1	2.33	0.61
1:D:3534:ILE:HG13	1:D:3597:VAL:HG23	1.81	0.61
1:D:1234:PRO:O	1:D:1703:ARG:NH2	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1234:PRO:O	1:A:1703:ARG:NH2	2.34	0.61
1:A:3446:TRP:NE1	1:A:3456:GLU:OE1	2.33	0.61
1:B:2863:LEU:HD23	1:B:2933:MET:HE3	1.82	0.61
1:D:876:ALA:HB1	1:D:923:LEU:HD23	1.82	0.61
1:D:2688:ALA:O	1:D:2994:GLN:NE2	2.34	0.61
1:A:2523:LEU:HD23	1:A:2579:MET:HE1	1.83	0.61
2:F:80:ASP:OD1	2:F:81:TYR:N	2.33	0.61
1:B:1234:PRO:O	1:B:1703:ARG:NH2	2.33	0.61
1:B:2688:ALA:O	1:B:2994:GLN:NE2	2.34	0.61
1:A:2688:ALA:O	1:A:2994:GLN:NE2	2.34	0.60
1:A:2863:LEU:HD23	1:A:2933:MET:HE3	1.82	0.60
1:B:2022:CYS:O	1:B:2029:ARG:NH2	2.34	0.60
1:B:2523:LEU:HD23	1:B:2579:MET:HE1	1.83	0.60
1:C:3534:ILE:HG13	1:C:3597:VAL:HG23	1.81	0.60
1:C:3972:ILE:HG21	1:C:3983:LEU:HD12	1.83	0.60
1:C:876:ALA:HB1	1:C:923:LEU:HD23	1.82	0.60
1:D:2213:VAL:HG12	1:D:2257:TYR:CE2	2.37	0.60
1:D:3972:ILE:HG21	1:D:3983:LEU:HD12	1.83	0.60
1:A:876:ALA:HB1	1:A:923:LEU:HD23	1.82	0.60
1:B:4222:PHE:HA	1:B:4948:VAL:HG21	1.82	0.60
1:D:2514:GLU:OE1	1:D:2514:GLU:N	2.35	0.60
1:C:2213:VAL:HG12	1:C:2257:TYR:CE2	2.37	0.60
1:C:2514:GLU:N	1:C:2514:GLU:OE1	2.35	0.60
1:C:2688:ALA:O	1:C:2994:GLN:NE2	2.34	0.60
1:C:4222:PHE:HA	1:C:4948:VAL:HG21	1.82	0.60
1:C:1426:GLU:N	1:C:1426:GLU:OE1	2.34	0.60
1:C:3446:TRP:NE1	1:C:3456:GLU:OE1	2.33	0.60
1:D:4974:GLU:OE1	1:D:4978:LEU:HD11	2.01	0.60
1:A:2514:GLU:OE1	1:A:2514:GLU:N	2.35	0.60
1:A:4974:GLU:OE1	1:A:4978:LEU:HD11	2.02	0.60
1:C:4649:THR:OG1	1:C:4801:HIS:NE2	2.29	0.60
1:D:2523:LEU:HD23	1:D:2579:MET:HE1	1.83	0.60
1:A:1555:VAL:HG21	1:A:1562:VAL:CG1	2.32	0.60
1:A:4649:THR:OG1	1:A:4801:HIS:NE2	2.29	0.60
1:B:1426:GLU:OE1	1:B:1426:GLU:N	2.34	0.60
1:B:2514:GLU:OE1	1:B:2514:GLU:N	2.35	0.60
1:B:4225:VAL:HB	1:B:4948:VAL:HG23	1.84	0.60
2:F:41:ARG:NH2	2:F:103:GLU:OE1	2.35	0.59
1:B:2213:VAL:HG12	1:B:2257:TYR:CE2	2.37	0.59
1:A:2879:LEU:HD12	1:A:2928:LEU:CD2	2.29	0.59
2:E:12:ASP:OD1	2:E:13:GLY:N	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1555:VAL:HG21	1:B:1562:VAL:CG1	2.32	0.59
1:B:1792:GLY:N	1:B:1795:GLU:OE2	2.35	0.59
1:C:2879:LEU:HD12	1:C:2928:LEU:CD2	2.29	0.59
1:D:1792:GLY:N	1:D:1795:GLU:OE2	2.35	0.59
1:D:2794:PRO:O	1:D:2798:PHE:N	2.35	0.59
1:A:2213:VAL:HG12	1:A:2257:TYR:CE2	2.37	0.59
1:A:2794:PRO:O	1:A:2798:PHE:N	2.35	0.59
1:C:1555:VAL:HG21	1:C:1562:VAL:CG1	2.32	0.59
1:C:4225:VAL:HB	1:C:4948:VAL:HG23	1.85	0.59
1:D:1555:VAL:HG21	1:D:1562:VAL:CG1	2.32	0.59
1:D:4225:VAL:HB	1:D:4948:VAL:HG23	1.85	0.59
1:A:954:THR:O	1:A:967:LYS:NZ	2.33	0.59
1:B:4974:GLU:OE1	1:B:4978:LEU:HD11	2.01	0.59
1:C:1978:TYR:OH	1:C:3639:MET:SD	2.49	0.59
1:A:1792:GLY:N	1:A:1795:GLU:OE2	2.35	0.58
1:A:4225:VAL:HB	1:A:4948:VAL:HG23	1.84	0.58
2:H:41:ARG:NH2	2:H:103:GLU:OE1	2.36	0.58
1:B:3972:ILE:HG21	1:B:3983:LEU:HD12	1.83	0.58
1:C:1792:GLY:N	1:C:1795:GLU:OE2	2.35	0.58
1:A:649:ILE:HG23	1:A:815:ALA:HB3	1.85	0.58
1:A:664:TYR:OH	1:A:666:GLU:OE2	2.18	0.58
1:B:582:ASN:OD1	1:B:583:HIS:N	2.36	0.58
1:C:4974:GLU:OE1	1:C:4978:LEU:HD11	2.02	0.58
1:D:649:ILE:HG23	1:D:815:ALA:HB3	1.85	0.58
1:D:954:THR:O	1:D:967:LYS:NZ	2.33	0.58
1:D:2875:MET:CE	1:D:2938:VAL:HG12	2.33	0.58
1:C:582:ASN:OD1	1:C:583:HIS:N	2.36	0.58
1:A:3328:LEU:HD23	1:A:3365:ARG:NH1	2.19	0.58
1:C:3328:LEU:HD23	1:C:3365:ARG:NH1	2.19	0.58
1:A:2875:MET:CE	1:A:2938:VAL:HG12	2.33	0.58
1:A:3972:ILE:HG21	1:A:3983:LEU:HD12	1.83	0.58
2:G:41:ARG:NH2	2:G:103:GLU:OE1	2.36	0.58
1:B:2394:ASP:OD1	1:B:2419:LEU:N	2.37	0.58
1:B:2875:MET:CE	1:B:2938:VAL:HG12	2.33	0.58
1:C:2394:ASP:OD1	1:C:2419:LEU:N	2.37	0.58
1:C:2794:PRO:O	1:C:2798:PHE:N	2.35	0.58
1:C:2875:MET:CE	1:C:2938:VAL:HG12	2.33	0.58
1:C:4837:MET:HE2	1:C:4837:MET:HA	1.86	0.58
1:B:3328:LEU:HD23	1:B:3365:ARG:NH1	2.19	0.58
1:D:582:ASN:OD1	1:D:583:HIS:N	2.36	0.58
1:B:664:TYR:OH	1:B:666:GLU:OE2	2.18	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1426:GLU:OE1	1:A:1426:GLU:N	2.34	0.58
1:A:2394:ASP:OD1	1:A:2419:LEU:N	2.37	0.58
1:B:4837:MET:HA	1:B:4837:MET:HE2	1.86	0.57
1:A:582:ASN:OD1	1:A:583:HIS:N	2.36	0.57
1:C:649:ILE:HG23	1:C:815:ALA:HB3	1.85	0.57
1:C:2753:ASP:HA	1:C:2756:ILE:HD12	1.86	0.57
1:D:3328:LEU:HD23	1:D:3365:ARG:NH1	2.19	0.57
1:D:1869:GLU:OE1	1:D:1872:VAL:N	2.33	0.57
1:D:2879:LEU:HD12	1:D:2928:LEU:CD2	2.29	0.57
2:F:26:HIS:CD2	2:F:105:LEU:HD11	2.38	0.57
1:B:649:ILE:HG23	1:B:815:ALA:HB3	1.85	0.57
1:B:926:SER:O	1:B:929:THR:HG22	2.05	0.57
1:D:2394:ASP:OD1	1:D:2419:LEU:N	2.37	0.57
1:C:3387:GLU:OE1	1:C:3387:GLU:N	2.38	0.57
1:D:2753:ASP:HA	1:D:2756:ILE:HD12	1.86	0.57
1:C:614:ALA:HB2	1:C:1677:LEU:HD12	1.87	0.57
1:D:614:ALA:HB2	1:D:1677:LEU:HD12	1.87	0.57
1:D:658:THR:HG22	1:D:1002:VAL:HG21	1.87	0.57
1:A:1744:ARG:NE	1:A:1964:GLU:OE2	2.38	0.57
1:C:870:ARG:NH2	1:C:1052:TYR:OH	2.38	0.57
1:C:954:THR:O	1:C:967:LYS:NZ	2.33	0.57
1:D:870:ARG:NH2	1:D:1052:TYR:OH	2.38	0.57
1:D:4837:MET:HE2	1:D:4837:MET:HA	1.86	0.57
1:B:1744:ARG:NE	1:B:1964:GLU:OE2	2.38	0.56
1:B:4086:ASP:OD2	1:B:4088:ARG:N	2.38	0.56
1:C:4086:ASP:OD2	1:C:4088:ARG:N	2.38	0.56
1:C:658:THR:HG22	1:C:1002:VAL:HG21	1.87	0.56
1:C:926:SER:O	1:C:929:THR:HG22	2.05	0.56
1:D:926:SER:O	1:D:929:THR:HG22	2.05	0.56
1:A:2887:TRP:CG	1:A:2891:LYS:HZ1	2.22	0.56
1:A:4837:MET:HE2	1:A:4837:MET:HA	1.86	0.56
1:D:1744:ARG:NE	1:D:1964:GLU:OE2	2.38	0.56
1:A:2753:ASP:HA	1:A:2756:ILE:HD12	1.86	0.56
2:E:78:SER:OG	2:E:80:ASP:OD1	2.23	0.56
1:D:888:ILE:HD13	1:D:962:MET:HE1	1.88	0.56
1:A:926:SER:O	1:A:929:THR:HG22	2.05	0.56
1:B:870:ARG:NH2	1:B:1052:TYR:OH	2.38	0.56
1:B:2756:ILE:HG13	1:B:2814:LEU:HD12	1.88	0.56
1:C:888:ILE:HD13	1:C:962:MET:HE1	1.88	0.56
1:C:2756:ILE:HG13	1:C:2814:LEU:HD12	1.88	0.56
1:A:658:THR:HG22	1:A:1002:VAL:HG21	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:870:ARG:NH2	1:A:1052:TYR:OH	2.38	0.56
1:A:2213:VAL:HG12	1:A:2257:TYR:HE2	1.71	0.56
1:A:3387:GLU:OE1	1:A:3387:GLU:N	2.38	0.56
1:C:1744:ARG:NE	1:C:1964:GLU:OE2	2.38	0.56
1:C:1869:GLU:OE1	1:C:1872:VAL:N	2.33	0.56
1:C:2166:LEU:HB3	1:C:2179:MET:HE1	1.87	0.56
1:C:2863:LEU:HD23	1:C:2933:MET:CE	2.36	0.56
1:D:2213:VAL:HG12	1:D:2257:TYR:HE2	1.71	0.56
1:D:3387:GLU:OE1	1:D:3387:GLU:N	2.38	0.56
1:B:2166:LEU:HB3	1:B:2179:MET:HE1	1.87	0.56
1:B:2753:ASP:HA	1:B:2756:ILE:HD12	1.86	0.56
1:A:614:ALA:HB2	1:A:1677:LEU:HD12	1.87	0.56
1:A:3282:LEU:HD12	1:A:3316:LEU:HD22	1.88	0.56
1:B:658:THR:HG22	1:B:1002:VAL:HG21	1.87	0.56
1:D:2863:LEU:HD23	1:D:2933:MET:CE	2.36	0.56
1:A:1449:VAL:HG22	1:A:1555:VAL:HG23	1.88	0.56
1:A:1558:THR:O	1:A:1558:THR:HG22	2.05	0.56
1:B:614:ALA:HB2	1:B:1677:LEU:HD12	1.87	0.56
1:A:888:ILE:HD11	1:A:893:THR:HG22	1.88	0.56
1:A:2863:LEU:HD23	1:A:2933:MET:CE	2.36	0.56
1:B:888:ILE:HD13	1:B:962:MET:HE1	1.88	0.56
1:B:1558:THR:HG22	1:B:1558:THR:O	2.05	0.56
1:B:3387:GLU:N	1:B:3387:GLU:OE1	2.38	0.56
1:D:2887:TRP:CG	1:D:2891:LYS:HZ1	2.24	0.56
1:A:888:ILE:HD13	1:A:962:MET:HE1	1.88	0.55
1:B:1449:VAL:HG22	1:B:1555:VAL:HG23	1.88	0.55
1:D:1558:THR:HG22	1:D:1558:THR:O	2.05	0.55
1:B:658:THR:HG22	1:B:1002:VAL:CG2	2.36	0.55
1:B:888:ILE:HD11	1:B:893:THR:HG22	1.88	0.55
1:B:2209:MET:O	1:B:2213:VAL:HG13	2.07	0.55
1:A:2166:LEU:HB3	1:A:2179:MET:HE1	1.87	0.55
1:B:2794:PRO:O	1:B:2798:PHE:N	2.35	0.55
1:C:888:ILE:HD11	1:C:893:THR:HG22	1.88	0.55
1:C:1449:VAL:HG22	1:C:1555:VAL:HG23	1.88	0.55
1:D:888:ILE:HD11	1:D:893:THR:HG22	1.88	0.55
1:D:928:GLU:O	1:D:932:THR:HG23	2.07	0.55
1:D:1449:VAL:HG22	1:D:1555:VAL:HG23	1.88	0.55
1:D:3282:LEU:HD12	1:D:3316:LEU:HD22	1.88	0.55
1:A:928:GLU:O	1:A:932:THR:HG23	2.07	0.55
1:B:3282:LEU:HD12	1:B:3316:LEU:HD22	1.88	0.55
1:C:1558:THR:O	1:C:1558:THR:HG22	2.05	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2863:LEU:HD23	1:B:2933:MET:CE	2.36	0.55
1:C:2887:TRP:CG	1:C:2891:LYS:HZ1	2.25	0.55
1:A:658:THR:HG22	1:A:1002:VAL:CG2	2.36	0.55
1:C:892:TRP:CB	1:C:903:ARG:HE	2.20	0.55
1:D:2166:LEU:HB3	1:D:2179:MET:HE1	1.87	0.55
1:A:3347:VAL:HG11	1:A:3415:ARG:CB	2.37	0.55
1:C:3347:VAL:HG11	1:C:3415:ARG:CB	2.37	0.55
1:C:3828:GLU:OE1	1:C:3828:GLU:N	2.39	0.55
1:C:3862:VAL:HG12	1:C:3868:VAL:HG12	1.89	0.55
1:D:2239:TYR:CE2	1:D:2243:ILE:HD11	2.42	0.55
1:D:2756:ILE:HG13	1:D:2814:LEU:HD12	1.88	0.55
1:D:3862:VAL:HG12	1:D:3868:VAL:HG12	1.89	0.55
1:A:2756:ILE:HG13	1:A:2814:LEU:HD12	1.88	0.55
1:B:2887:TRP:CG	1:B:2891:LYS:HZ1	2.24	0.55
1:C:658:THR:HG22	1:C:1002:VAL:CG2	2.36	0.55
1:C:2213:VAL:HG12	1:C:2257:TYR:HE2	1.71	0.55
1:C:2239:TYR:CE2	1:C:2243:ILE:HD11	2.42	0.55
1:D:892:TRP:CB	1:D:903:ARG:HE	2.20	0.55
1:A:2239:TYR:CE2	1:A:2243:ILE:HD11	2.42	0.55
1:C:664:TYR:OH	1:C:666:GLU:OE2	2.18	0.55
1:C:1281:GLN:O	1:C:1282:ASN:OD1	2.25	0.55
1:A:892:TRP:CB	1:A:903:ARG:HE	2.20	0.54
1:A:2863:LEU:HD22	1:A:2929:LYS:HB3	1.90	0.54
1:C:928:GLU:O	1:C:932:THR:HG23	2.07	0.54
1:D:2978:LEU:HD22	1:D:3057:LEU:HD21	1.89	0.54
1:A:3752:VAL:HG22	1:A:3753:GLU:H	1.73	0.54
1:B:928:GLU:O	1:B:932:THR:HG23	2.07	0.54
1:B:2213:VAL:HG12	1:B:2257:TYR:HE2	1.71	0.54
1:C:2209:MET:O	1:C:2213:VAL:HG13	2.07	0.54
1:D:658:THR:HG22	1:D:1002:VAL:CG2	2.36	0.54
1:D:1281:GLN:O	1:D:1282:ASN:OD1	2.25	0.54
1:D:3347:VAL:HG11	1:D:3415:ARG:CB	2.37	0.54
1:A:1281:GLN:O	1:A:1282:ASN:OD1	2.25	0.54
1:A:2978:LEU:HD22	1:A:3057:LEU:HD21	1.89	0.54
1:A:1740:THR:HG22	1:A:2147:VAL:HG22	1.89	0.54
1:B:1281:GLN:O	1:B:1282:ASN:OD1	2.25	0.54
1:B:2863:LEU:HD22	1:B:2929:LYS:HB3	1.90	0.54
1:D:1758:GLY:N	1:D:1759:PRO:CD	2.71	0.54
1:D:2209:MET:O	1:D:2213:VAL:HG13	2.07	0.54
1:D:2905:LEU:HD12	1:D:2916:GLU:HG2	1.89	0.54
1:C:3282:LEU:HD12	1:C:3316:LEU:HD22	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:3752:VAL:HG22	1:D:3753:GLU:H	1.73	0.54
1:A:2209:MET:O	1:A:2213:VAL:HG13	2.07	0.54
1:A:3862:VAL:HG12	1:A:3868:VAL:HG12	1.89	0.54
1:B:3752:VAL:HG22	1:B:3753:GLU:H	1.73	0.54
1:A:1758:GLY:N	1:A:1759:PRO:CD	2.71	0.54
1:A:2905:LEU:HD12	1:A:2916:GLU:HG2	1.89	0.54
2:H:26:HIS:ND1	2:H:105:LEU:HD11	2.22	0.54
1:B:1965:CYS:SG	1:B:1969:LYS:NZ	2.81	0.54
1:D:2863:LEU:HD22	1:D:2929:LYS:HB3	1.90	0.54
1:A:1869:GLU:OE1	1:A:1872:VAL:N	2.33	0.54
1:B:3347:VAL:HG11	1:B:3415:ARG:CB	2.37	0.54
1:B:3862:VAL:HG12	1:B:3868:VAL:HG12	1.89	0.54
1:C:1740:THR:HG22	1:C:2147:VAL:HG22	1.89	0.54
1:C:1758:GLY:N	1:C:1759:PRO:CD	2.71	0.54
1:C:4931:GLN:OE1	1:D:4928:ALA:HB2	2.08	0.54
1:A:4086:ASP:OD2	1:A:4088:ARG:N	2.38	0.54
1:B:892:TRP:CB	1:B:903:ARG:HE	2.20	0.54
1:B:2239:TYR:CE2	1:B:2243:ILE:HD11	2.42	0.54
1:C:2751:LYS:O	1:C:2936:TYR:OH	2.26	0.54
1:C:2863:LEU:HD22	1:C:2929:LYS:HB3	1.89	0.54
1:A:3828:GLU:OE1	1:A:3828:GLU:N	2.39	0.54
1:B:2978:LEU:HD22	1:B:3057:LEU:HD21	1.89	0.54
1:C:3227:GLU:O	1:C:3229:ALA:N	2.40	0.54
1:A:3227:GLU:O	1:A:3229:ALA:N	2.40	0.53
2:G:26:HIS:ND1	2:G:105:LEU:HD11	2.22	0.53
1:B:1758:GLY:N	1:B:1759:PRO:CD	2.71	0.53
1:B:2905:LEU:HD12	1:B:2916:GLU:HG2	1.90	0.53
1:A:4244:THR:HG22	1:A:4248:MET:HE3	1.90	0.53
1:B:4244:THR:HG22	1:B:4248:MET:HE3	1.90	0.53
1:B:4931:GLN:OE1	1:C:4928:ALA:HB2	2.08	0.53
1:D:1965:CYS:SG	1:D:1969:LYS:NZ	2.81	0.53
1:D:3828:GLU:OE1	1:D:3828:GLU:N	2.39	0.53
1:A:868:LEU:HD12	1:A:934:LEU:HD11	1.90	0.53
1:A:3770:GLN:OE1	1:A:3812:ASN:ND2	2.42	0.53
1:D:3357:SER:OG	1:D:3358:HIS:ND1	2.37	0.53
1:B:3770:GLN:OE1	1:B:3812:ASN:ND2	2.42	0.53
1:C:2905:LEU:HD12	1:C:2916:GLU:HG2	1.90	0.53
1:A:1965:CYS:SG	1:A:1969:LYS:NZ	2.81	0.53
1:A:2209:MET:CE	1:A:2251:MET:HE1	2.39	0.53
1:C:1965:CYS:SG	1:C:1969:LYS:NZ	2.81	0.53
2:G:78:SER:OG	2:G:80:ASP:OD1	2.26	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:874:LYS:NZ	1:B:1050:TYR:OH	2.38	0.53
1:B:1102:ARG:NH1	1:B:1116:LEU:O	2.42	0.53
1:C:874:LYS:NZ	1:C:1050:TYR:OH	2.38	0.53
1:C:3752:VAL:HG22	1:C:3753:GLU:H	1.73	0.53
1:C:4720:ARG:HD2	1:C:4746:LEU:HD13	1.91	0.53
1:D:1740:THR:HG22	1:D:2147:VAL:HG22	1.89	0.53
1:A:3392:GLU:OE2	1:A:3396:ARG:NE	2.42	0.53
1:B:3227:GLU:O	1:B:3229:ALA:N	2.40	0.53
1:B:3392:GLU:OE2	1:B:3396:ARG:NE	2.42	0.53
1:C:1102:ARG:NH1	1:C:1116:LEU:O	2.42	0.53
1:C:2978:LEU:HD22	1:C:3057:LEU:HD21	1.89	0.53
1:D:432:PRO:O	1:D:433:ALA:HB3	2.09	0.53
1:D:3392:GLU:OE2	1:D:3396:ARG:NE	2.42	0.53
1:D:4244:THR:HG22	1:D:4248:MET:HE3	1.91	0.53
1:A:985:LEU:HD13	1:A:1057:PRO:HD2	1.91	0.53
1:C:2209:MET:CE	1:C:2251:MET:HE1	2.39	0.53
1:A:1102:ARG:NH1	1:A:1116:LEU:O	2.42	0.53
1:A:2751:LYS:O	1:A:2936:TYR:OH	2.26	0.53
2:H:78:SER:OG	2:H:80:ASP:OD1	2.24	0.53
1:B:432:PRO:O	1:B:433:ALA:HB3	2.09	0.53
1:B:2209:MET:CE	1:B:2251:MET:HE1	2.39	0.53
1:B:3253:GLU:O	1:B:3257:LEU:HD13	2.09	0.53
1:C:868:LEU:HD12	1:C:934:LEU:HD11	1.90	0.53
1:C:985:LEU:HD13	1:C:1057:PRO:HD2	1.91	0.53
1:D:877:GLU:O	1:D:881:GLU:HG2	2.09	0.53
1:B:1740:THR:HG22	1:B:2147:VAL:HG22	1.89	0.53
1:C:3392:GLU:OE2	1:C:3396:ARG:NE	2.42	0.53
1:C:432:PRO:O	1:C:433:ALA:HB3	2.09	0.52
1:C:3253:GLU:O	1:C:3257:LEU:HD13	2.09	0.52
1:C:3640:THR:O	1:C:3640:THR:HG23	2.10	0.52
1:D:2209:MET:CE	1:D:2251:MET:HE1	2.39	0.52
1:C:4148:VAL:HG22	1:C:4181:LEU:HD13	1.91	0.52
1:D:985:LEU:HD13	1:D:1057:PRO:HD2	1.91	0.52
1:D:2620:LEU:O	1:D:2624:LEU:HD23	2.10	0.52
1:D:3227:GLU:O	1:D:3229:ALA:N	2.40	0.52
1:D:4148:VAL:HG22	1:D:4181:LEU:HD13	1.91	0.52
1:A:1758:GLY:N	1:A:1759:PRO:HD2	2.25	0.52
1:A:4928:ALA:HB2	1:D:4931:GLN:OE1	2.09	0.52
1:B:985:LEU:HD13	1:B:1057:PRO:HD2	1.91	0.52
1:B:4148:VAL:HG22	1:B:4181:LEU:HD13	1.91	0.52
1:D:868:LEU:HD12	1:D:934:LEU:HD11	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:2523:LEU:HD23	1:D:2579:MET:CE	2.40	0.52
1:D:3770:GLN:OE1	1:D:3812:ASN:ND2	2.42	0.52
1:A:3640:THR:HG23	1:A:3640:THR:O	2.10	0.52
1:B:868:LEU:HD12	1:B:934:LEU:HD11	1.90	0.52
1:B:877:GLU:O	1:B:881:GLU:HG2	2.09	0.52
1:A:3344:GLN:O	1:A:3347:VAL:HG12	2.10	0.52
1:B:2523:LEU:HD23	1:B:2579:MET:CE	2.40	0.52
1:B:2971:SER:HA	1:B:2974:PHE:CD1	2.45	0.52
1:C:877:GLU:O	1:C:881:GLU:HG2	2.09	0.52
1:C:2356:ARG:NH2	1:C:2450:GLU:OE2	2.43	0.52
1:D:1102:ARG:NH1	1:D:1116:LEU:O	2.42	0.52
1:D:1758:GLY:N	1:D:1759:PRO:HD2	2.25	0.52
1:A:2971:SER:HA	1:A:2974:PHE:CD1	2.45	0.52
1:A:4148:VAL:HG22	1:A:4181:LEU:HD13	1.91	0.52
1:C:4964:ASP:O	1:C:4968:THR:HG23	2.10	0.52
1:A:2949:THR:HG23	1:A:2950:SER:H	1.75	0.52
1:A:3366:LEU:HD13	1:A:3406:LEU:HD23	1.91	0.52
1:B:3640:THR:HG23	1:B:3640:THR:O	2.10	0.52
1:B:3714:LYS:HZ3	1:B:3718:ASP:CG	2.18	0.52
1:C:3344:GLN:O	1:C:3347:VAL:HG12	2.10	0.52
1:C:3770:GLN:OE1	1:C:3812:ASN:ND2	2.42	0.52
1:C:4244:THR:HG22	1:C:4248:MET:HE3	1.90	0.52
1:D:859:THR:OG1	1:D:928:GLU:OE1	2.26	0.52
1:D:2971:SER:HA	1:D:2974:PHE:CD1	2.45	0.52
1:D:3344:GLN:O	1:D:3347:VAL:HG12	2.10	0.52
1:B:1869:GLU:OE1	1:B:1872:VAL:N	2.33	0.52
1:D:2779:GLY:N	1:D:2789:HIS:O	2.42	0.52
1:A:877:GLU:O	1:A:881:GLU:HG2	2.09	0.52
1:A:1229:ILE:HG23	1:A:1230:ASN:N	2.25	0.52
1:A:2523:LEU:HD23	1:A:2579:MET:CE	2.40	0.52
1:B:4720:ARG:HD2	1:B:4746:LEU:HD13	1.91	0.52
1:C:1479:ASP:N	1:C:1482:GLY:O	2.41	0.52
1:C:2620:LEU:O	1:C:2624:LEU:HD23	2.10	0.52
1:C:2523:LEU:HD23	1:C:2579:MET:CE	2.40	0.52
1:C:2971:SER:HA	1:C:2974:PHE:CD1	2.45	0.52
1:D:4974:GLU:CD	1:D:4978:LEU:HD11	2.35	0.52
1:A:4964:ASP:O	1:A:4968:THR:HG23	2.10	0.51
1:B:1229:ILE:HG23	1:B:1230:ASN:N	2.25	0.51
1:B:3366:LEU:HD13	1:B:3406:LEU:HD23	1.91	0.51
1:B:4974:GLU:CD	1:B:4978:LEU:HD11	2.35	0.51
1:C:2756:ILE:CG1	1:C:2814:LEU:HD12	2.40	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2949:THR:HG23	1:C:2950:SER:H	1.75	0.51
1:D:1229:ILE:HG23	1:D:1230:ASN:N	2.25	0.51
1:D:2356:ARG:NH2	1:D:2450:GLU:OE2	2.43	0.51
1:A:4720:ARG:HD2	1:A:4746:LEU:HD13	1.91	0.51
1:A:4974:GLU:CD	1:A:4978:LEU:HD11	2.35	0.51
1:B:2949:THR:HG23	1:B:2950:SER:H	1.74	0.51
1:C:2000:ARG:O	1:C:3638:ARG:NH1	2.42	0.51
1:C:4974:GLU:CD	1:C:4978:LEU:HD11	2.35	0.51
1:D:3640:THR:HG23	1:D:3640:THR:O	2.10	0.51
1:A:2863:LEU:HD12	1:A:2926:GLU:OE1	2.11	0.51
1:B:1758:GLY:N	1:B:1759:PRO:HD2	2.25	0.51
1:D:3714:LYS:HZ3	1:D:3718:ASP:CG	2.19	0.51
1:A:874:LYS:NZ	1:A:1050:TYR:OH	2.38	0.51
1:A:3253:GLU:O	1:A:3257:LEU:HD13	2.09	0.51
1:B:2756:ILE:CG1	1:B:2814:LEU:HD12	2.40	0.51
1:B:2863:LEU:HD12	1:B:2926:GLU:OE1	2.11	0.51
1:D:3055:VAL:HG23	1:D:3062:ALA:HB1	1.93	0.51
1:A:2356:ARG:NH2	1:A:2450:GLU:OE2	2.43	0.51
1:A:3035:LYS:O	1:A:3039:MET:HG3	2.10	0.51
1:A:3457:GLN:OE1	1:A:3457:GLN:HA	2.11	0.51
1:C:4930:ILE:O	1:C:4934:ILE:HD12	2.11	0.51
1:D:3008:ASN:O	1:D:3012:THR:OG1	2.29	0.51
1:D:3035:LYS:O	1:D:3039:MET:HG3	2.10	0.51
1:D:3253:GLU:O	1:D:3257:LEU:HD13	2.09	0.51
1:A:2620:LEU:O	1:A:2624:LEU:HD23	2.10	0.51
1:A:3008:ASN:O	1:A:3012:THR:OG1	2.29	0.51
1:C:1229:ILE:HG23	1:C:1230:ASN:N	2.25	0.51
1:C:3055:VAL:HG23	1:C:3062:ALA:HB1	1.93	0.51
1:D:2949:THR:HG23	1:D:2950:SER:H	1.75	0.51
1:D:4086:ASP:OD2	1:D:4088:ARG:N	2.38	0.51
1:A:432:PRO:O	1:A:433:ALA:HB3	2.09	0.51
1:A:3417:VAL:O	1:A:3421:ARG:N	2.44	0.51
1:B:954:THR:O	1:B:967:LYS:NZ	2.33	0.51
1:B:974:SER:O	1:B:977:ARG:NH2	2.44	0.51
1:B:3457:GLN:HA	1:B:3457:GLN:OE1	2.11	0.51
1:B:3828:GLU:OE1	1:B:3828:GLU:N	2.39	0.51
1:B:4930:ILE:O	1:B:4934:ILE:HD12	2.11	0.51
1:B:4964:ASP:O	1:B:4968:THR:HG23	2.10	0.51
1:C:974:SER:O	1:C:977:ARG:NH2	2.44	0.51
1:D:4964:ASP:O	1:D:4968:THR:HG23	2.10	0.51
1:A:1479:ASP:N	1:A:1482:GLY:O	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2620:LEU:O	1:B:2624:LEU:HD23	2.10	0.51
1:B:3035:LYS:O	1:B:3039:MET:HG3	2.10	0.51
1:C:3457:GLN:OE1	1:C:3457:GLN:HA	2.11	0.51
2:F:78:SER:OG	2:F:80:ASP:OD1	2.26	0.51
1:B:2356:ARG:NH2	1:B:2450:GLU:OE2	2.43	0.51
1:B:3344:GLN:O	1:B:3347:VAL:HG12	2.10	0.51
1:C:3366:LEU:HD13	1:C:3406:LEU:HD23	1.91	0.51
1:A:2756:ILE:CG1	1:A:2814:LEU:HD12	2.40	0.51
1:A:2779:GLY:N	1:A:2789:HIS:O	2.42	0.51
1:A:2822:TRP:CE3	1:A:2875:MET:HE3	2.46	0.51
1:A:3055:VAL:HG23	1:A:3062:ALA:HB1	1.93	0.51
1:A:4930:ILE:O	1:A:4934:ILE:HD12	2.11	0.51
1:A:4931:GLN:OE1	1:B:4928:ALA:HB2	2.11	0.51
1:C:2234:CYS:O	1:C:2236:PHE:N	2.44	0.51
1:C:3035:LYS:O	1:C:3039:MET:HG3	2.10	0.51
1:D:3366:LEU:HD13	1:D:3406:LEU:HD23	1.91	0.51
1:D:4720:ARG:HD2	1:D:4746:LEU:HD13	1.91	0.51
1:C:3417:VAL:O	1:C:3421:ARG:N	2.44	0.50
1:D:883:TRP:CZ3	1:D:908:LEU:HD23	2.46	0.50
1:D:2756:ILE:CG1	1:D:2814:LEU:HD12	2.40	0.50
1:A:2313:MET:HE3	1:A:2317:LYS:HE2	1.93	0.50
1:B:883:TRP:CZ3	1:B:908:LEU:HD23	2.46	0.50
1:B:2234:CYS:O	1:B:2236:PHE:N	2.44	0.50
1:C:2863:LEU:HD12	1:C:2926:GLU:OE1	2.11	0.50
1:D:673:ALA:O	1:D:681:THR:OG1	2.29	0.50
1:A:2313:MET:HE3	1:A:2317:LYS:CE	2.42	0.50
1:B:2822:TRP:CE3	1:B:2875:MET:HE3	2.46	0.50
1:B:3004:LEU:HD11	1:B:3065:VAL:HG22	1.94	0.50
1:D:2313:MET:HE3	1:D:2317:LYS:CE	2.42	0.50
1:D:4930:ILE:O	1:D:4934:ILE:HD12	2.11	0.50
1:A:3004:LEU:HD11	1:A:3065:VAL:HG22	1.94	0.50
1:C:1758:GLY:N	1:C:1759:PRO:HD2	2.25	0.50
1:D:874:LYS:NZ	1:D:1050:TYR:OH	2.38	0.50
1:D:3457:GLN:OE1	1:D:3457:GLN:HA	2.11	0.50
1:A:883:TRP:CZ3	1:A:908:LEU:HD23	2.46	0.50
1:A:3730:MET:O	1:A:3733:SER:OG	2.28	0.50
1:B:2265:GLY:O	1:B:2267:GLY:N	2.42	0.50
1:D:2863:LEU:HD12	1:D:2926:GLU:OE1	2.11	0.50
1:D:3417:VAL:O	1:D:3421:ARG:N	2.44	0.50
1:B:2313:MET:HE3	1:B:2317:LYS:HE2	1.93	0.50
1:B:3055:VAL:HG23	1:B:3062:ALA:HB1	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2313:MET:HE3	1:C:2317:LYS:CE	2.42	0.50
1:C:3240:MET:HA	1:C:3240:MET:HE3	1.94	0.50
1:D:3384:ALA:O	1:D:3388:ALA:N	2.40	0.50
1:A:974:SER:O	1:A:977:ARG:NH2	2.44	0.50
1:B:859:THR:OG1	1:B:928:GLU:OE1	2.26	0.50
1:C:883:TRP:CZ3	1:C:908:LEU:HD23	2.46	0.50
1:C:3004:LEU:HD11	1:C:3065:VAL:HG22	1.94	0.50
1:D:974:SER:O	1:D:977:ARG:NH2	2.44	0.50
1:D:3004:LEU:HD11	1:D:3065:VAL:HG22	1.94	0.50
1:A:859:THR:OG1	1:A:928:GLU:OE1	2.26	0.50
1:A:2234:CYS:O	1:A:2236:PHE:N	2.44	0.50
1:B:3417:VAL:O	1:B:3421:ARG:N	2.44	0.50
1:B:4686:ILE:HG23	1:B:4730:PHE:CD2	2.47	0.50
1:D:2045:ILE:HD11	1:D:2132:LEU:HB2	1.94	0.50
1:D:2156:LEU:CD1	1:D:2199:MET:HE1	2.42	0.50
1:D:2234:CYS:O	1:D:2236:PHE:N	2.44	0.50
1:B:2808:TRP:NE1	1:B:2812:GLU:OE2	2.45	0.49
1:C:4686:ILE:HG23	1:C:4730:PHE:CD2	2.47	0.49
1:D:3687:GLU:OE1	1:D:3695:LYS:NZ	2.45	0.49
1:A:3357:SER:OG	1:A:3358:HIS:ND1	2.37	0.49
1:A:4694:ASP:OD2	1:A:4697:GLY:N	2.44	0.49
1:C:2822:TRP:CE3	1:C:2875:MET:HE3	2.46	0.49
1:A:569:LEU:HD12	1:A:603:VAL:HG13	1.95	0.49
1:B:868:LEU:HD11	1:B:940:VAL:HG11	1.94	0.49
1:B:4981:HIS:O	5:B:8003:ATP:N6	2.45	0.49
1:C:2210:GLU:O	1:C:2213:VAL:HG22	2.12	0.49
1:C:4677:ARG:NH2	1:C:4713:TYR:OH	2.46	0.49
1:C:4694:ASP:OD2	1:C:4697:GLY:N	2.44	0.49
1:D:2265:GLY:O	1:D:2267:GLY:N	2.42	0.49
1:A:1959:LEU:HD23	1:A:2139:LEU:HD21	1.94	0.49
1:B:2971:SER:HA	1:B:2974:PHE:CE1	2.48	0.49
1:B:3008:ASN:O	1:B:3012:THR:OG1	2.29	0.49
1:D:4981:HIS:O	5:D:8003:ATP:N6	2.45	0.49
1:B:1959:LEU:HD23	1:B:2139:LEU:HD21	1.94	0.49
1:B:2313:MET:HE3	1:B:2317:LYS:CE	2.42	0.49
1:C:2808:TRP:NE1	1:C:2812:GLU:OE2	2.46	0.49
1:D:4148:VAL:HG22	1:D:4181:LEU:CD1	2.42	0.49
1:A:2156:LEU:CD1	1:A:2199:MET:HE1	2.42	0.49
1:A:3240:MET:HE3	1:A:3240:MET:HA	1.94	0.49
1:A:4686:ILE:HG23	1:A:4730:PHE:CD2	2.47	0.49
1:C:816:VAL:HG11	1:C:822:LEU:HB2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:859:THR:OG1	1:C:928:GLU:OE1	2.26	0.49
1:C:4148:VAL:HG22	1:C:4181:LEU:CD1	2.43	0.49
1:A:2971:SER:HA	1:A:2974:PHE:CE1	2.48	0.49
1:D:569:LEU:HD12	1:D:603:VAL:HG13	1.95	0.49
1:A:2808:TRP:NE1	1:A:2812:GLU:OE2	2.45	0.49
1:A:4148:VAL:HG22	1:A:4181:LEU:CD1	2.43	0.49
1:D:2822:TRP:CE3	1:D:2875:MET:HE3	2.46	0.49
1:B:1479:ASP:N	1:B:1482:GLY:O	2.41	0.49
1:C:2779:GLY:N	1:C:2789:HIS:O	2.42	0.49
1:C:2971:SER:HA	1:C:2974:PHE:CE1	2.48	0.49
1:D:816:VAL:HG11	1:D:822:LEU:HB2	1.94	0.49
1:D:2313:MET:HE3	1:D:2317:LYS:HE2	1.93	0.49
1:A:868:LEU:CD1	1:A:934:LEU:HD11	2.43	0.49
1:B:3240:MET:HA	1:B:3240:MET:HE3	1.94	0.49
1:B:3687:GLU:OE1	1:B:3695:LYS:NZ	2.45	0.49
1:C:427:ARG:NH2	1:C:510:GLU:OE2	2.46	0.49
1:C:868:LEU:HD11	1:C:940:VAL:HG11	1.94	0.49
1:C:2766:LYS:HZ1	1:C:2860:PRO:HB2	1.78	0.49
1:D:1642:ILE:HD11	1:D:1649:MET:HE3	1.95	0.49
1:D:2971:SER:HA	1:D:2974:PHE:CE1	2.48	0.49
1:D:4686:ILE:HG23	1:D:4730:PHE:CD2	2.47	0.49
1:A:2265:GLY:O	1:A:2267:GLY:N	2.42	0.48
1:A:4677:ARG:NH2	1:A:4713:TYR:OH	2.46	0.48
1:B:569:LEU:HD12	1:B:603:VAL:HG13	1.95	0.48
1:B:2210:GLU:O	1:B:2213:VAL:HG22	2.12	0.48
1:C:2156:LEU:CD1	1:C:2199:MET:HE1	2.42	0.48
1:C:2438:ALA:HB2	1:C:2510:VAL:HG22	1.95	0.48
1:D:70:LEU:HD21	1:D:203:MET:HE1	1.95	0.48
1:D:1479:ASP:N	1:D:1482:GLY:O	2.41	0.48
1:A:1642:ILE:HD11	1:A:1649:MET:HE3	1.95	0.48
1:B:427:ARG:NH2	1:B:510:GLU:OE2	2.46	0.48
1:B:3730:MET:O	1:B:3733:SER:OG	2.28	0.48
1:B:4148:VAL:HG22	1:B:4181:LEU:CD1	2.43	0.48
1:C:1645:GLU:OE1	1:C:1647:ARG:NH2	2.46	0.48
1:C:1959:LEU:HD23	1:C:2139:LEU:HD21	1.94	0.48
1:C:2313:MET:HE3	1:C:2317:LYS:HE2	1.93	0.48
1:C:2997:LYS:O	1:C:2998:PHE:C	2.56	0.48
1:D:2210:GLU:O	1:D:2213:VAL:HG22	2.12	0.48
1:D:2808:TRP:NE1	1:D:2812:GLU:OE2	2.45	0.48
1:A:427:ARG:NH2	1:A:510:GLU:OE2	2.46	0.48
1:A:816:VAL:HG11	1:A:822:LEU:HB2	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2045:ILE:HD11	1:A:2132:LEU:HB2	1.94	0.48
1:A:3687:GLU:OE1	1:A:3695:LYS:NZ	2.45	0.48
1:B:2045:ILE:HD11	1:B:2132:LEU:HB2	1.94	0.48
1:B:4677:ARG:NH2	1:B:4713:TYR:OH	2.46	0.48
1:B:4709:PHE:HB3	1:B:4710:PRO:HD3	1.96	0.48
1:B:4900:GLU:O	1:B:4911:ARG:NH2	2.44	0.48
1:C:2045:ILE:HD11	1:C:2132:LEU:HB2	1.94	0.48
1:C:2949:THR:HG23	1:C:2950:SER:N	2.28	0.48
1:D:427:ARG:NH2	1:D:510:GLU:OE2	2.46	0.48
1:A:3246:VAL:HG12	1:A:3247:LEU:N	2.28	0.48
1:C:70:LEU:HD21	1:C:203:MET:HE1	1.95	0.48
1:C:569:LEU:HD12	1:C:603:VAL:HG13	1.95	0.48
1:D:859:THR:HG21	1:D:932:THR:HG22	1.96	0.48
1:A:2875:MET:HE2	1:A:2938:VAL:HG12	1.95	0.48
1:B:3369:ARG:O	1:B:3373:VAL:HG23	2.14	0.48
1:A:2210:GLU:O	1:A:2213:VAL:HG22	2.12	0.48
1:A:2949:THR:HG23	1:A:2950:SER:N	2.28	0.48
1:A:4709:PHE:HB3	1:A:4710:PRO:HD3	1.96	0.48
1:B:2156:LEU:CD1	1:B:2199:MET:HE1	2.42	0.48
1:B:3246:VAL:HG12	1:B:3247:LEU:N	2.28	0.48
1:C:859:THR:HG21	1:C:932:THR:HG22	1.96	0.48
1:D:1273:LEU:HD22	1:D:1290:LEU:HD11	1.95	0.48
1:D:3240:MET:HE3	1:D:3240:MET:HA	1.94	0.48
1:D:4709:PHE:HB3	1:D:4710:PRO:HD3	1.96	0.48
1:B:816:VAL:HG11	1:B:822:LEU:HB2	1.95	0.48
1:B:2234:CYS:O	1:B:2238:CYS:CB	2.62	0.48
1:C:3170:LEU:C	1:C:3170:LEU:HD23	2.39	0.48
1:C:3246:VAL:HG12	1:C:3247:LEU:N	2.28	0.48
1:D:729:ARG:NH2	1:D:1490:CYS:SG	2.87	0.48
1:D:1959:LEU:HD23	1:D:2139:LEU:HD21	1.94	0.48
1:A:859:THR:HG21	1:A:932:THR:HG22	1.96	0.48
1:A:1645:GLU:OE1	1:A:1647:ARG:NH2	2.46	0.48
1:A:2974:PHE:CE2	1:A:2996:ILE:HG12	2.48	0.48
1:B:592:ASP:HA	1:B:632:LEU:HD21	1.95	0.48
1:B:1645:GLU:OE1	1:B:1647:ARG:NH2	2.46	0.48
1:B:2779:GLY:N	1:B:2789:HIS:O	2.42	0.48
1:B:2949:THR:HG23	1:B:2950:SER:N	2.28	0.48
1:B:2974:PHE:CE2	1:B:2996:ILE:HG12	2.48	0.48
1:C:2876:ALA:HB3	1:C:2921:ARG:NH1	2.29	0.48
1:C:2974:PHE:CE2	1:C:2996:ILE:HG12	2.48	0.48
1:C:3369:ARG:O	1:C:3373:VAL:HG23	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:3714:LYS:HZ3	1:C:3718:ASP:CG	2.21	0.48
1:D:2234:CYS:C	1:D:2238:CYS:HB2	2.39	0.48
1:D:2876:ALA:HB3	1:D:2921:ARG:NH1	2.29	0.48
1:D:2974:PHE:CE2	1:D:2996:ILE:HG12	2.48	0.48
1:A:868:LEU:HD11	1:A:940:VAL:HG11	1.94	0.48
1:A:4900:GLU:O	1:A:4911:ARG:NH2	2.44	0.48
1:B:70:LEU:HD21	1:B:203:MET:HE1	1.95	0.48
1:B:868:LEU:CD1	1:B:934:LEU:HD11	2.43	0.48
1:B:2457:ILE:O	1:B:2461:LEU:HD13	2.14	0.48
1:B:2876:ALA:HB3	1:B:2921:ARG:NH1	2.29	0.48
1:B:3847:LEU:HD13	1:C:77:ARG:NH1	2.29	0.48
1:C:139:GLN:NE2	1:C:141:ASP:O	2.47	0.48
1:C:729:ARG:NH2	1:C:1490:CYS:SG	2.87	0.48
1:C:1642:ILE:HD11	1:C:1649:MET:HE3	1.95	0.48
1:D:868:LEU:HD11	1:D:940:VAL:HG11	1.94	0.48
1:D:2234:CYS:O	1:D:2238:CYS:CB	2.62	0.48
1:D:2949:THR:HG23	1:D:2950:SER:N	2.28	0.48
1:D:3246:VAL:HG12	1:D:3247:LEU:N	2.28	0.48
1:B:729:ARG:NH2	1:B:1490:CYS:SG	2.87	0.48
1:C:2257:TYR:CZ	1:C:2261:ASN:OD1	2.67	0.48
1:C:2875:MET:HE2	1:C:2938:VAL:HG12	1.95	0.48
1:D:868:LEU:CD1	1:D:934:LEU:HD11	2.43	0.48
1:D:1645:GLU:OE1	1:D:1647:ARG:NH2	2.46	0.48
1:D:4677:ARG:NH2	1:D:4713:TYR:OH	2.46	0.48
1:A:1273:LEU:HD22	1:A:1290:LEU:HD11	1.95	0.47
1:A:2457:ILE:O	1:A:2461:LEU:HD13	2.14	0.47
1:A:3170:LEU:HD23	1:A:3170:LEU:C	2.39	0.47
1:A:4981:HIS:O	5:A:8003:ATP:N6	2.45	0.47
1:B:139:GLN:NE2	1:B:141:ASP:O	2.47	0.47
1:B:2257:TYR:CZ	1:B:2261:ASN:OD1	2.67	0.47
1:B:2438:ALA:HB2	1:B:2510:VAL:HG22	1.95	0.47
1:B:3353:GLU:OE1	1:B:3353:GLU:N	2.44	0.47
1:C:868:LEU:HD22	1:C:930:LEU:HD12	1.96	0.47
1:C:3008:ASN:O	1:C:3012:THR:OG1	2.29	0.47
1:C:4709:PHE:HB3	1:C:4710:PRO:HD3	1.96	0.47
1:C:4902:PRO:HB3	1:C:4911:ARG:HG2	1.96	0.47
1:C:4981:HIS:O	5:C:8003:ATP:N6	2.45	0.47
1:D:2438:ALA:HB2	1:D:2510:VAL:HG22	1.95	0.47
1:A:70:LEU:HD21	1:A:203:MET:HE1	1.95	0.47
1:A:2257:TYR:CZ	1:A:2261:ASN:OD1	2.67	0.47
1:A:2432:ASP:OD2	1:A:2436:ARG:NE	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2000:ARG:O	1:B:3638:ARG:NH1	2.42	0.47
1:B:3100:ALA:HA	1:B:3137:LEU:HD21	1.96	0.47
1:B:3170:LEU:HD23	1:B:3170:LEU:C	2.39	0.47
1:C:868:LEU:CD1	1:C:934:LEU:HD11	2.43	0.47
1:C:1273:LEU:HD22	1:C:1290:LEU:HD11	1.96	0.47
1:C:2528:LEU:HD23	1:C:2531:MET:HE3	1.96	0.47
1:D:2257:TYR:CZ	1:D:2261:ASN:OD1	2.67	0.47
1:D:3369:ARG:O	1:D:3373:VAL:HG23	2.14	0.47
1:A:2863:LEU:HD22	1:A:2929:LYS:CB	2.45	0.47
1:A:3100:ALA:HA	1:A:3137:LEU:HD21	1.96	0.47
1:B:2751:LYS:O	1:B:2936:TYR:OH	2.26	0.47
1:C:592:ASP:HA	1:C:632:LEU:HD21	1.95	0.47
1:D:592:ASP:HA	1:D:632:LEU:HD21	1.95	0.47
1:D:2863:LEU:HD22	1:D:2929:LYS:CB	2.45	0.47
1:B:859:THR:HG21	1:B:932:THR:HG22	1.96	0.47
1:B:2817:MET:CE	1:B:2879:LEU:HD11	2.43	0.47
1:B:4835:LEU:HD21	1:B:4934:ILE:HD11	1.96	0.47
1:B:4902:PRO:HB3	1:B:4911:ARG:HG2	1.96	0.47
1:C:2234:CYS:O	1:C:2238:CYS:CB	2.62	0.47
1:D:139:GLN:NE2	1:D:141:ASP:O	2.47	0.47
1:A:139:GLN:NE2	1:A:141:ASP:O	2.47	0.47
1:A:729:ARG:NH2	1:A:1490:CYS:SG	2.87	0.47
1:A:3671:GLU:OE1	1:A:3671:GLU:N	2.46	0.47
1:B:2234:CYS:C	1:B:2238:CYS:HB2	2.39	0.47
1:B:2480:LEU:HD11	1:B:2484:GLY:HA2	1.96	0.47
1:C:2265:GLY:O	1:C:2267:GLY:N	2.42	0.47
1:C:4835:LEU:HD21	1:C:4934:ILE:HD11	1.96	0.47
1:A:2234:CYS:O	1:A:2238:CYS:CB	2.62	0.47
1:A:2234:CYS:C	1:A:2238:CYS:HB2	2.39	0.47
1:A:2875:MET:HE3	1:A:2938:VAL:HG12	1.96	0.47
1:B:1273:LEU:HD22	1:B:1290:LEU:HD11	1.95	0.47
1:B:2875:MET:HE2	1:B:2938:VAL:HG12	1.95	0.47
1:B:2909:TYR:HA	1:B:2912:LEU:HD12	1.97	0.47
1:B:3582:GLY:N	1:B:3584:GLU:OE1	2.48	0.47
1:C:2234:CYS:C	1:C:2238:CYS:HB2	2.39	0.47
1:C:5033:GLN:OE1	1:C:5033:GLN:N	2.48	0.47
1:D:2480:LEU:HD11	1:D:2484:GLY:HA2	1.96	0.47
1:D:2875:MET:HE2	1:D:2938:VAL:HG12	1.95	0.47
1:A:592:ASP:HA	1:A:632:LEU:HD21	1.95	0.47
1:A:1685:ALA:HA	2:E:91:ILE:HD11	1.97	0.47
1:A:2438:ALA:HB2	1:A:2510:VAL:HG22	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2997:LYS:O	1:A:2998:PHE:C	2.56	0.47
1:A:3369:ARG:O	1:A:3373:VAL:HG23	2.14	0.47
1:A:5033:GLN:OE1	1:A:5033:GLN:N	2.48	0.47
1:B:868:LEU:HD22	1:B:930:LEU:HD12	1.96	0.47
1:B:1642:ILE:HD11	1:B:1649:MET:HE3	1.95	0.47
1:B:2234:CYS:O	1:B:2238:CYS:HB2	2.15	0.47
1:B:2997:LYS:O	1:B:2998:PHE:C	2.56	0.47
1:B:4694:ASP:OD2	1:B:4697:GLY:N	2.44	0.47
1:C:2457:ILE:O	1:C:2461:LEU:HD13	2.14	0.47
1:C:3384:ALA:O	1:C:3388:ALA:N	2.40	0.47
1:C:3847:LEU:HD13	1:D:77:ARG:NH1	2.29	0.47
1:D:868:LEU:HD22	1:D:930:LEU:HD12	1.96	0.47
1:D:2457:ILE:O	1:D:2461:LEU:HD13	2.14	0.47
1:D:2997:LYS:O	1:D:2998:PHE:C	2.56	0.47
1:D:3170:LEU:HD23	1:D:3170:LEU:C	2.39	0.47
1:A:2480:LEU:HD11	1:A:2484:GLY:HA2	1.96	0.47
1:A:2876:ALA:HB3	1:A:2921:ARG:NH1	2.29	0.47
1:A:4066:ASP:OD1	1:A:4172:SER:OG	2.26	0.47
1:B:3328:LEU:HD23	1:B:3365:ARG:HH12	1.80	0.47
1:B:3384:ALA:O	1:B:3388:ALA:N	2.40	0.47
1:C:3582:GLY:N	1:C:3584:GLU:OE1	2.48	0.47
1:D:2817:MET:CE	1:D:2879:LEU:HD11	2.44	0.47
1:D:3582:GLY:N	1:D:3584:GLU:OE1	2.48	0.47
1:A:4902:PRO:HB3	1:A:4911:ARG:HG2	1.96	0.47
1:B:973:LEU:O	1:B:973:LEU:HD12	2.15	0.47
1:C:2234:CYS:O	1:C:2238:CYS:HB2	2.15	0.47
1:C:2480:LEU:HD11	1:C:2484:GLY:HA2	1.96	0.47
1:C:2863:LEU:HD22	1:C:2929:LYS:CB	2.44	0.47
1:D:2234:CYS:O	1:D:2238:CYS:HB2	2.15	0.47
1:A:2909:TYR:HA	1:A:2912:LEU:HD12	1.97	0.47
1:B:673:ALA:O	1:B:681:THR:OG1	2.29	0.47
1:B:2528:LEU:HD23	1:B:2531:MET:HE3	1.96	0.47
1:C:2817:MET:CE	1:C:2879:LEU:HD11	2.43	0.47
1:C:2875:MET:HE3	1:C:2938:VAL:HG12	1.96	0.47
1:D:4546:ARG:O	1:D:4550:LEU:HD23	2.15	0.47
1:C:973:LEU:HD12	1:C:973:LEU:O	2.15	0.46
1:D:3328:LEU:HD23	1:D:3365:ARG:HH12	1.80	0.46
1:A:3582:GLY:N	1:A:3584:GLU:OE1	2.48	0.46
1:B:5033:GLN:OE1	1:B:5033:GLN:N	2.48	0.46
1:C:3100:ALA:HA	1:C:3137:LEU:HD21	1.96	0.46
1:C:4546:ARG:O	1:C:4550:LEU:HD23	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:973:LEU:HD12	1:D:973:LEU:O	2.15	0.46
1:D:2528:LEU:HD23	1:D:2531:MET:HE3	1.96	0.46
1:D:2564:THR:HG22	1:D:2607:CYS:CA	2.44	0.46
1:D:3529:THR:HG23	1:D:3574:MET:HE3	1.98	0.46
1:D:4902:PRO:HB3	1:D:4911:ARG:HG2	1.96	0.46
1:D:5033:GLN:OE1	1:D:5033:GLN:N	2.48	0.46
1:A:973:LEU:HD12	1:A:973:LEU:O	2.15	0.46
1:A:2166:LEU:CB	1:A:2179:MET:HE1	2.46	0.46
1:A:3018:PHE:O	1:A:3037:LYS:NZ	2.48	0.46
1:C:2564:THR:HG22	1:C:2607:CYS:CA	2.44	0.46
1:C:3687:GLU:OE1	1:C:3695:LYS:NZ	2.45	0.46
1:A:3529:THR:HG23	1:A:3574:MET:HE3	1.98	0.46
1:B:1973:ASN:HD21	1:B:2025:PRO:CD	2.29	0.46
1:B:2166:LEU:CB	1:B:2179:MET:HE1	2.46	0.46
1:C:3353:GLU:OE1	1:C:3353:GLU:N	2.44	0.46
1:D:3100:ALA:HA	1:D:3137:LEU:HD21	1.96	0.46
1:A:868:LEU:HD22	1:A:930:LEU:HD12	1.96	0.46
1:A:1973:ASN:HD21	1:A:2025:PRO:CD	2.29	0.46
1:A:3847:LEU:HD13	1:B:77:ARG:NH1	2.30	0.46
1:A:4835:LEU:HD21	1:A:4934:ILE:HD11	1.96	0.46
1:B:3018:PHE:O	1:B:3037:LYS:NZ	2.48	0.46
1:B:3529:THR:HG23	1:B:3574:MET:HE3	1.98	0.46
1:C:2909:TYR:HA	1:C:2912:LEU:HD12	1.97	0.46
1:C:3529:THR:HG23	1:C:3574:MET:HE3	1.98	0.46
1:C:3730:MET:O	1:C:3733:SER:OG	2.28	0.46
1:D:2875:MET:HE3	1:D:2938:VAL:HG12	1.96	0.46
1:D:4989:PHE:HE2	1:D:5008:VAL:HG11	1.80	0.46
1:A:2234:CYS:O	1:A:2238:CYS:HB2	2.15	0.46
1:A:2817:MET:CE	1:A:2879:LEU:HD11	2.43	0.46
1:A:4546:ARG:O	1:A:4550:LEU:HD23	2.15	0.46
1:B:2863:LEU:HD22	1:B:2929:LYS:CB	2.45	0.46
1:C:1300:GLN:OE1	1:C:1546:ASN:ND2	2.48	0.46
1:C:4989:PHE:HE2	1:C:5008:VAL:HG11	1.81	0.46
1:D:2166:LEU:CB	1:D:2179:MET:HE1	2.46	0.46
1:D:4835:LEU:HD21	1:D:4934:ILE:HD11	1.96	0.46
1:A:962:MET:HG2	1:A:966:TYR:O	2.16	0.46
1:A:2528:LEU:HD23	1:A:2531:MET:HE3	1.96	0.46
1:A:2000:ARG:O	1:A:3638:ARG:NH1	2.42	0.46
1:B:3357:SER:OG	1:B:3358:HIS:ND1	2.37	0.46
1:D:2909:TYR:HA	1:D:2912:LEU:HD12	1.97	0.46
1:A:2482:LYS:HD2	1:A:2483:ASP:H	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2875:MET:HE3	1:B:2938:VAL:HG12	1.96	0.46
1:B:4546:ARG:O	1:B:4550:LEU:HD23	2.15	0.46
1:C:962:MET:HG2	1:C:966:TYR:O	2.16	0.46
1:C:1659:ASP:OD1	1:C:1659:ASP:N	2.49	0.46
1:C:2166:LEU:CB	1:C:2179:MET:HE1	2.46	0.46
1:C:2482:LYS:HD2	1:C:2483:ASP:H	1.81	0.46
1:C:2815:LYS:HA	1:C:2818:ILE:HD12	1.97	0.46
1:D:2815:LYS:HA	1:D:2818:ILE:HD12	1.97	0.46
2:E:26:HIS:CE1	2:E:105:LEU:HD11	2.51	0.46
1:B:3380:LEU:HD21	1:B:3391:GLY:C	2.41	0.46
1:A:3380:LEU:HD21	1:A:3391:GLY:C	2.41	0.45
1:C:4653:PHE:N	1:C:4794:MET:HE1	2.31	0.45
1:D:3595:ARG:O	1:D:3599:GLU:OE1	2.35	0.45
1:A:2505:LEU:HD23	1:A:2505:LEU:C	2.42	0.45
1:B:1825:GLY:O	1:B:1827:HIS:ND1	2.49	0.45
1:C:218:GLY:N	1:C:263:LEU:O	2.47	0.45
1:C:225:HIS:N	1:C:230:GLU:O	2.48	0.45
1:C:1825:GLY:O	1:C:1827:HIS:ND1	2.49	0.45
1:D:881:GLU:OE2	1:D:966:TYR:OH	2.34	0.45
1:D:1973:ASN:HD21	1:D:2025:PRO:CD	2.29	0.45
1:D:2820:TRP:CH2	1:D:2882:ASN:HB2	2.51	0.45
1:A:1095:ALA:HB1	1:A:1101:MET:HE1	1.98	0.45
1:A:2564:THR:HG22	1:A:2607:CYS:CA	2.44	0.45
1:B:249:GLU:OE1	1:B:374:LYS:NZ	2.47	0.45
1:C:3380:LEU:HD21	1:C:3391:GLY:C	2.41	0.45
1:A:2482:LYS:HD2	1:A:2483:ASP:N	2.32	0.45
1:B:2789:HIS:CD2	1:B:2790:PRO:HD2	2.52	0.45
1:D:2505:LEU:HD23	1:D:2505:LEU:C	2.42	0.45
1:A:4989:PHE:HE2	1:A:5008:VAL:HG11	1.81	0.45
1:C:1734:GLU:HG2	1:C:2202:LEU:HD23	1.98	0.45
1:C:2577:ALA:HA	1:C:2619:MET:HE1	1.98	0.45
1:C:3328:LEU:HD23	1:C:3365:ARG:HH12	1.80	0.45
1:D:962:MET:HG2	1:D:966:TYR:O	2.15	0.45
1:A:881:GLU:OE2	1:A:966:TYR:OH	2.34	0.45
1:A:1734:GLU:HG2	1:A:2202:LEU:HD23	1.98	0.45
1:A:3328:LEU:HD23	1:A:3365:ARG:HH12	1.80	0.45
1:C:862:ILE:HG22	1:C:862:ILE:O	2.17	0.45
1:C:1973:ASN:HD21	1:C:2025:PRO:CD	2.29	0.45
1:C:3684:GLN:OE1	1:C:3684:GLN:N	2.45	0.45
1:C:4244:THR:CG2	1:C:4248:MET:HE3	2.47	0.45
1:D:4653:PHE:N	1:D:4794:MET:HE1	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:862:ILE:O	1:B:862:ILE:HG22	2.17	0.45
1:B:1300:GLN:OE1	1:B:1546:ASN:ND2	2.47	0.45
1:B:3671:GLU:OE1	1:B:3671:GLU:N	2.46	0.45
1:B:4989:PHE:HE2	1:B:5008:VAL:HG11	1.81	0.45
1:C:2505:LEU:C	1:C:2505:LEU:HD23	2.42	0.45
1:D:3380:LEU:HD21	1:D:3391:GLY:C	2.41	0.45
1:D:4244:THR:CG2	1:D:4248:MET:HE3	2.47	0.45
1:A:1810:ARG:NE	1:A:1855:VAL:O	2.50	0.45
1:A:3974:GLY:N	1:A:3975:PRO:HA	2.32	0.45
1:B:1734:GLU:HG2	1:B:2202:LEU:HD23	1.98	0.45
1:B:2505:LEU:HD23	1:B:2505:LEU:C	2.42	0.45
1:B:2577:ALA:HA	1:B:2619:MET:HE1	1.98	0.45
1:B:2815:LYS:HA	1:B:2818:ILE:HD12	1.97	0.45
1:C:881:GLU:OE2	1:C:966:TYR:OH	2.35	0.45
1:C:2096:GLN:HA	1:C:2128:GLN:HE21	1.82	0.45
1:C:3398:GLU:O	1:C:3401:VAL:HG12	2.17	0.45
1:D:1734:GLU:HG2	1:D:2202:LEU:HD23	1.98	0.45
1:D:1810:ARG:NE	1:D:1855:VAL:O	2.50	0.45
1:D:2482:LYS:HD2	1:D:2483:ASP:H	1.81	0.45
1:D:3267:MET:HG3	1:D:3267:MET:O	2.17	0.45
1:A:1825:GLY:O	1:A:1827:HIS:ND1	2.49	0.45
1:A:2820:TRP:CH2	1:A:2882:ASN:HB2	2.52	0.45
1:B:2564:THR:HG22	1:B:2607:CYS:CA	2.44	0.45
1:B:4244:THR:CG2	1:B:4248:MET:HE3	2.47	0.45
1:C:2215:VAL:HG11	1:C:2229:MET:HG2	1.99	0.45
1:C:2482:LYS:HD2	1:C:2483:ASP:N	2.32	0.45
1:C:3037:LYS:O	1:C:3040:ILE:HG22	2.17	0.45
1:D:2096:GLN:HA	1:D:2128:GLN:HE21	1.82	0.45
1:D:3018:PHE:O	1:D:3037:LYS:NZ	2.48	0.45
1:D:3398:GLU:O	1:D:3401:VAL:HG12	2.17	0.45
1:A:2789:HIS:CD2	1:A:2790:PRO:HD2	2.52	0.45
1:A:3037:LYS:O	1:A:3040:ILE:HG22	2.17	0.45
1:A:4044:ALA:O	1:A:4048:VAL:HG23	2.17	0.45
1:B:2820:TRP:CH2	1:B:2882:ASN:HB2	2.52	0.45
1:C:2820:TRP:CH2	1:C:2882:ASN:HB2	2.52	0.45
1:C:3018:PHE:O	1:C:3037:LYS:NZ	2.48	0.45
1:C:3357:SER:OG	1:C:3358:HIS:ND1	2.37	0.45
1:D:3037:LYS:O	1:D:3040:ILE:HG22	2.17	0.45
1:D:3353:GLU:OE1	1:D:3353:GLU:N	2.44	0.45
1:D:4694:ASP:OD2	1:D:4697:GLY:N	2.44	0.45
1:A:2215:VAL:HG11	1:A:2229:MET:HG2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2815:LYS:HA	1:A:2818:ILE:HD12	1.97	0.44
1:A:3384:ALA:O	1:A:3388:ALA:N	2.40	0.44
1:A:4244:THR:CG2	1:A:4248:MET:HE3	2.47	0.44
1:A:4653:PHE:N	1:A:4794:MET:HE1	2.31	0.44
1:B:962:MET:HG2	1:B:966:TYR:O	2.16	0.44
1:B:4066:ASP:OD1	1:B:4172:SER:OG	2.26	0.44
1:A:3267:MET:HG3	1:A:3267:MET:O	2.17	0.44
2:G:88:HIS:NE2	1:C:1788:LEU:HD21	2.32	0.44
1:B:1810:ARG:NE	1:B:1855:VAL:O	2.50	0.44
1:C:2789:HIS:CD2	1:C:2790:PRO:HD2	2.52	0.44
1:C:4044:ALA:O	1:C:4048:VAL:HG23	2.17	0.44
1:D:929:THR:HG23	1:D:930:LEU:CD2	2.46	0.44
1:D:1825:GLY:O	1:D:1827:HIS:ND1	2.49	0.44
1:D:2000:ARG:O	1:D:3638:ARG:NH1	2.42	0.44
1:D:2215:VAL:HG11	1:D:2229:MET:HG2	1.99	0.44
1:D:2234:CYS:C	1:D:2238:CYS:CB	2.91	0.44
1:D:2482:LYS:HD2	1:D:2483:ASP:N	2.32	0.44
1:D:4044:ALA:O	1:D:4048:VAL:HG23	2.17	0.44
1:A:3398:GLU:O	1:A:3401:VAL:HG12	2.17	0.44
1:B:2482:LYS:HD2	1:B:2483:ASP:N	2.32	0.44
1:B:3974:GLY:N	1:B:3975:PRO:HA	2.32	0.44
1:C:3869:ILE:O	1:C:3869:ILE:HG22	2.17	0.44
1:C:3974:GLY:N	1:C:3975:PRO:HA	2.32	0.44
1:D:2789:HIS:CD2	1:D:2790:PRO:HD2	2.52	0.44
1:B:881:GLU:OE2	1:B:966:TYR:OH	2.34	0.44
1:C:2234:CYS:C	1:C:2238:CYS:CB	2.91	0.44
1:C:3267:MET:HG3	1:C:3267:MET:O	2.17	0.44
1:C:3528:PRO:HG2	1:C:3574:MET:HE2	2.00	0.44
1:C:4720:ARG:HE	1:C:4720:ARG:HB3	1.61	0.44
1:D:554:ARG:NH2	1:D:556:GLU:OE2	2.48	0.44
1:D:1095:ALA:HB1	1:D:1101:MET:HE1	1.98	0.44
1:D:2577:ALA:HA	1:D:2619:MET:HE1	1.98	0.44
1:D:2922:GLU:O	1:D:2926:GLU:HG2	2.18	0.44
1:D:3016:LEU:HD22	1:D:3026:LEU:CD1	2.47	0.44
1:A:77:ARG:NH1	1:D:3847:LEU:HD13	2.32	0.44
1:A:1659:ASP:N	1:A:1659:ASP:OD1	2.49	0.44
1:A:2577:ALA:HA	1:A:2619:MET:HE1	1.98	0.44
1:A:3016:LEU:HD22	1:A:3026:LEU:CD1	2.47	0.44
1:A:3202:MET:HE3	1:A:3204:VAL:HG12	2.00	0.44
1:B:2096:GLN:HA	1:B:2128:GLN:HE21	1.82	0.44
1:B:2971:SER:O	1:B:2975:ILE:HG12	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3595:ARG:O	1:B:3599:GLU:OE1	2.35	0.44
1:C:3595:ARG:O	1:C:3599:GLU:OE1	2.35	0.44
1:D:3515:LEU:HD21	1:D:3603:VAL:HG13	2.00	0.44
1:A:1871:GLU:O	1:A:1874:ARG:HD2	2.18	0.44
1:A:2766:LYS:HZ1	1:A:2860:PRO:HB2	1.83	0.44
1:A:2940:ARG:HB3	1:A:2942:LEU:HD12	2.00	0.44
1:A:2971:SER:O	1:A:2975:ILE:HG12	2.18	0.44
1:B:267:ARG:NH2	1:B:332:VAL:O	2.49	0.44
1:B:1095:ALA:HB1	1:B:1101:MET:HE1	1.98	0.44
1:B:2234:CYS:C	1:B:2238:CYS:CB	2.91	0.44
1:B:2922:GLU:O	1:B:2926:GLU:HG2	2.18	0.44
1:C:2922:GLU:O	1:C:2926:GLU:HG2	2.18	0.44
1:C:2971:SER:O	1:C:2975:ILE:HG12	2.18	0.44
1:D:3671:GLU:OE1	1:D:3671:GLU:N	2.46	0.44
1:D:3869:ILE:HG22	1:D:3869:ILE:O	2.17	0.44
1:A:3595:ARG:O	1:A:3599:GLU:OE1	2.35	0.44
1:B:929:THR:HG23	1:B:930:LEU:CD2	2.46	0.44
1:B:3016:LEU:HD22	1:B:3026:LEU:CD1	2.47	0.44
1:B:3037:LYS:O	1:B:3040:ILE:HG22	2.17	0.44
1:B:3267:MET:O	1:B:3267:MET:HG3	2.17	0.44
1:B:3528:PRO:HG2	1:B:3574:MET:HE2	2.00	0.44
1:B:4653:PHE:N	1:B:4794:MET:HE1	2.31	0.44
1:C:3016:LEU:HD22	1:C:3026:LEU:CD1	2.47	0.44
1:D:218:GLY:N	1:D:263:LEU:O	2.47	0.44
1:D:3410:TYR:N	1:D:3411:PRO:HD2	2.33	0.44
1:D:3528:PRO:HG2	1:D:3574:MET:HE2	2.00	0.44
1:D:3974:GLY:N	1:D:3975:PRO:HA	2.32	0.44
1:A:2096:GLN:HA	1:A:2128:GLN:HE21	1.82	0.44
1:A:3347:VAL:HG11	1:A:3415:ARG:HB2	2.00	0.44
1:A:3515:LEU:HD21	1:A:3603:VAL:HG13	2.00	0.44
1:B:2215:VAL:HG11	1:B:2229:MET:HG2	1.99	0.44
1:D:711:ASP:OD1	1:D:711:ASP:N	2.51	0.44
1:A:2234:CYS:C	1:A:2238:CYS:CB	2.91	0.44
2:H:91:ILE:HD11	1:D:1685:ALA:HA	2.00	0.44
1:B:2482:LYS:HD2	1:B:2483:ASP:H	1.81	0.44
1:B:2875:MET:SD	1:B:2940:ARG:HB2	2.58	0.44
1:C:1810:ARG:NE	1:C:1855:VAL:O	2.50	0.44
1:D:2940:ARG:HB3	1:D:2942:LEU:HD12	2.00	0.44
1:D:2971:SER:O	1:D:2975:ILE:HG12	2.18	0.44
1:D:3202:MET:HE3	1:D:3204:VAL:HG12	2.00	0.44
1:A:673:ALA:O	1:A:681:THR:OG1	2.29	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:731:VAL:HG21	1:B:765:VAL:HG12	2.00	0.43
1:B:1659:ASP:OD1	1:B:1659:ASP:N	2.49	0.43
1:B:2265:GLY:HA2	1:B:2268:MET:HE3	2.00	0.43
1:B:3202:MET:HE3	1:B:3204:VAL:HG12	2.00	0.43
1:B:3347:VAL:HG11	1:B:3415:ARG:HB2	2.00	0.43
1:B:4044:ALA:O	1:B:4048:VAL:HG23	2.17	0.43
1:C:1871:GLU:O	1:C:1874:ARG:HD2	2.18	0.43
1:A:225:HIS:NE2	1:A:386:ASP:O	2.52	0.43
1:A:862:ILE:O	1:A:862:ILE:HG22	2.17	0.43
1:A:929:THR:HG23	1:A:930:LEU:CD2	2.46	0.43
1:A:2690:LYS:O	1:A:2994:GLN:NE2	2.51	0.43
1:B:1871:GLU:O	1:B:1874:ARG:HD2	2.18	0.43
1:B:3515:LEU:O	1:B:3516:LYS:C	2.61	0.43
1:C:731:VAL:HG21	1:C:765:VAL:HG12	2.00	0.43
1:C:929:THR:HG23	1:C:930:LEU:CD2	2.46	0.43
1:D:225:HIS:NE2	1:D:386:ASP:O	2.52	0.43
1:D:888:ILE:CD1	1:D:893:THR:HG22	2.48	0.43
1:A:1300:GLN:OE1	1:A:1546:ASN:ND2	2.48	0.43
1:A:3004:LEU:HB2	1:A:3005:PRO:HD3	2.01	0.43
1:B:263:LEU:HD12	1:B:275:LEU:HD11	2.00	0.43
1:B:1067:GLN:OE1	1:B:1069:ARG:NH2	2.51	0.43
1:B:3004:LEU:HB2	1:B:3005:PRO:HD3	2.01	0.43
1:C:1095:ALA:HB1	1:C:1101:MET:HE1	1.98	0.43
1:C:2265:GLY:HA2	1:C:2268:MET:HE3	2.00	0.43
1:C:3202:MET:HE3	1:C:3204:VAL:HG12	2.00	0.43
1:C:3347:VAL:HG11	1:C:3415:ARG:HB2	2.00	0.43
1:C:3553:PHE:O	1:C:3556:ASN:OD1	2.37	0.43
1:D:263:LEU:HD12	1:D:275:LEU:HD11	2.00	0.43
1:D:1067:GLN:OE1	1:D:1069:ARG:NH2	2.51	0.43
1:D:1973:ASN:HD21	1:D:2025:PRO:HD3	1.84	0.43
1:D:3553:PHE:O	1:D:3556:ASN:OD1	2.37	0.43
1:B:711:ASP:N	1:B:711:ASP:OD1	2.51	0.43
1:B:3398:GLU:O	1:B:3401:VAL:HG12	2.17	0.43
1:B:3591:GLU:HA	1:B:3594:VAL:HG22	2.00	0.43
1:C:711:ASP:OD1	1:C:711:ASP:N	2.51	0.43
1:C:1067:GLN:OE1	1:C:1069:ARG:NH2	2.51	0.43
1:C:1793:ALA:C	1:C:1794:THR:HG1	2.17	0.43
1:C:3110:ASN:O	1:C:3113:LEU:HD12	2.18	0.43
1:C:3874:GLY:O	1:C:3875:GLU:C	2.62	0.43
1:D:3347:VAL:HG11	1:D:3415:ARG:HB2	2.00	0.43
1:D:3591:GLU:HA	1:D:3594:VAL:HG22	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:4632:GLU:OE1	1:D:4632:GLU:HA	2.19	0.43
1:A:2124:LEU:O	1:A:2128:GLN:HG2	2.18	0.43
1:A:3410:TYR:N	1:A:3411:PRO:HD2	2.33	0.43
1:A:3528:PRO:HG2	1:A:3574:MET:HE2	2.00	0.43
1:A:3591:GLU:HA	1:A:3594:VAL:HG22	2.00	0.43
1:A:3869:ILE:O	1:A:3869:ILE:HG22	2.18	0.43
1:B:704:GLY:N	1:B:1648:CYS:SG	2.91	0.43
1:B:3410:TYR:N	1:B:3411:PRO:HD2	2.33	0.43
1:C:2124:LEU:O	1:C:2128:GLN:HG2	2.19	0.43
1:C:2940:ARG:HE	1:C:2942:LEU:HG	1.84	0.43
1:C:3458:ASN:O	1:C:3459:PHE:C	2.62	0.43
1:C:4679:LEU:HD11	1:C:4704:LEU:HD22	2.01	0.43
1:D:1871:GLU:O	1:D:1874:ARG:HD2	2.18	0.43
1:D:2940:ARG:HE	1:D:2942:LEU:HG	1.84	0.43
1:D:3110:ASN:O	1:D:3113:LEU:HD12	2.18	0.43
1:D:4679:LEU:HD11	1:D:4704:LEU:HD22	2.01	0.43
1:A:294:LEU:HD13	1:A:379:LEU:HD12	2.01	0.43
1:A:1067:GLN:OE1	1:A:1069:ARG:NH2	2.51	0.43
1:A:3874:GLY:O	1:A:3875:GLU:C	2.62	0.43
1:B:490:ASN:O	1:B:494:ARG:HG2	2.19	0.43
1:B:2940:ARG:HB3	1:B:2942:LEU:HD12	2.00	0.43
1:B:2940:ARG:HE	1:B:2942:LEU:HG	1.84	0.43
1:B:4632:GLU:OE1	1:B:4632:GLU:HA	2.18	0.43
1:C:490:ASN:O	1:C:494:ARG:HG2	2.19	0.43
1:C:2875:MET:SD	1:C:2940:ARG:HB2	2.58	0.43
1:C:3004:LEU:HB2	1:C:3005:PRO:HD3	2.01	0.43
1:C:3671:GLU:OE1	1:C:3671:GLU:N	2.46	0.43
1:C:4835:LEU:CD2	1:C:4934:ILE:HD11	2.49	0.43
1:D:704:GLY:N	1:D:1648:CYS:SG	2.91	0.43
1:D:1659:ASP:OD1	1:D:1659:ASP:N	2.49	0.43
1:D:2875:MET:SD	1:D:2940:ARG:HB2	2.58	0.43
1:D:3377:GLU:OE2	1:D:3451:ASN:ND2	2.52	0.43
1:A:2875:MET:SD	1:A:2940:ARG:HB2	2.58	0.43
1:A:3377:GLU:OE2	1:A:3451:ASN:ND2	2.52	0.43
1:A:3772:ARG:O	1:A:3776:ARG:HD2	2.19	0.43
1:A:4706:THR:HG21	1:A:4773:TYR:HD1	1.83	0.43
1:B:888:ILE:CD1	1:B:893:THR:HG22	2.48	0.43
1:B:3377:GLU:OE2	1:B:3451:ASN:ND2	2.52	0.43
1:B:3752:VAL:HG22	1:B:3753:GLU:N	2.34	0.43
1:C:673:ALA:O	1:C:681:THR:OG1	2.29	0.43
1:C:3515:LEU:O	1:C:3516:LYS:C	2.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:4765:TRP:O	1:C:4769:ILE:HG13	2.19	0.43
1:D:294:LEU:HD13	1:D:379:LEU:HD12	2.01	0.43
1:A:225:HIS:N	1:A:230:GLU:O	2.48	0.43
1:A:704:GLY:N	1:A:1648:CYS:SG	2.92	0.43
1:A:888:ILE:CD1	1:A:893:THR:HG22	2.48	0.43
1:A:909:VAL:HG12	1:A:910:ASN:N	2.34	0.43
1:A:2891:LYS:O	1:A:2895:LEU:HG	2.19	0.43
1:A:3553:PHE:O	1:A:3556:ASN:OD1	2.37	0.43
1:B:874:LYS:HZ1	1:B:951:LEU:HD11	1.84	0.43
1:B:1973:ASN:HD21	1:B:2025:PRO:HD3	1.84	0.43
1:B:2124:LEU:O	1:B:2128:GLN:HG2	2.18	0.43
1:B:3869:ILE:O	1:B:3869:ILE:HG22	2.18	0.43
1:C:704:GLY:N	1:C:1648:CYS:SG	2.92	0.43
1:C:903:ARG:HH11	1:C:903:ARG:C	2.27	0.43
1:D:3546:THR:HG23	1:D:3549:GLU:H	1.84	0.43
1:D:3589:ASP:OD2	1:D:3591:GLU:HG3	2.19	0.43
1:D:3962:LYS:HG3	1:D:4025:ASP:OD1	2.19	0.43
1:D:4835:LEU:CD2	1:D:4934:ILE:HD11	2.49	0.43
1:A:903:ARG:HH11	1:A:903:ARG:C	2.27	0.43
1:A:2922:GLU:O	1:A:2926:GLU:HG2	2.18	0.43
1:A:4226:ASN:ND2	1:A:4227:GLU:OE1	2.46	0.43
1:A:4632:GLU:OE1	1:A:4632:GLU:HA	2.19	0.43
2:F:91:ILE:HD11	1:B:1685:ALA:HA	2.00	0.43
1:B:903:ARG:C	1:B:903:ARG:HH11	2.27	0.43
1:B:909:VAL:HG12	1:B:910:ASN:N	2.34	0.43
1:B:2891:LYS:O	1:B:2895:LEU:HG	2.19	0.43
1:B:2981:VAL:O	1:B:2986:ARG:NH2	2.51	0.43
1:B:3772:ARG:O	1:B:3776:ARG:HD2	2.19	0.43
1:B:3962:LYS:HG3	1:B:4025:ASP:OD1	2.19	0.43
1:C:284:ARG:NH1	1:C:291:TYR:OH	2.52	0.43
1:C:2887:TRP:CD1	1:C:2891:LYS:HZ1	2.37	0.43
1:C:2891:LYS:O	1:C:2895:LEU:HG	2.19	0.43
1:C:3377:GLU:OE2	1:C:3451:ASN:ND2	2.52	0.43
1:C:3410:TYR:N	1:C:3411:PRO:HD2	2.33	0.43
1:D:490:ASN:O	1:D:494:ARG:HG2	2.19	0.43
1:D:2124:LEU:O	1:D:2128:GLN:HG2	2.18	0.43
1:D:2751:LYS:O	1:D:2936:TYR:OH	2.26	0.43
1:D:3874:GLY:O	1:D:3875:GLU:C	2.62	0.43
1:A:263:LEU:HD12	1:A:275:LEU:HD11	2.00	0.43
1:A:2265:GLY:HA2	1:A:2268:MET:HE3	2.00	0.43
1:A:3546:THR:HG23	1:A:3549:GLU:H	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3589:ASP:OD2	1:A:3591:GLU:HG3	2.19	0.43
1:B:979:THR:O	1:B:983:THR:HG23	2.19	0.43
1:B:3684:GLN:OE1	1:B:3684:GLN:N	2.45	0.43
1:B:4835:LEU:CD2	1:B:4934:ILE:HD11	2.49	0.43
1:C:1499:GLY:HA2	1:C:1502:VAL:HG12	2.01	0.43
1:C:3515:LEU:HD21	1:C:3603:VAL:HG13	2.00	0.43
1:C:4632:GLU:OE1	1:C:4632:GLU:HA	2.18	0.43
1:C:4816:MET:O	1:C:4822:ARG:NH1	2.51	0.43
1:D:862:ILE:O	1:D:862:ILE:HG22	2.17	0.43
1:D:2265:GLY:HA2	1:D:2268:MET:HE3	2.01	0.43
1:D:2891:LYS:O	1:D:2895:LEU:HG	2.19	0.43
1:D:3004:LEU:HB2	1:D:3005:PRO:HD3	2.01	0.43
1:D:3772:ARG:O	1:D:3776:ARG:HD2	2.19	0.43
1:A:4024:LYS:N	1:A:4142:ILE:HD13	2.34	0.42
1:A:4765:TRP:O	1:A:4769:ILE:HG13	2.19	0.42
1:B:2978:LEU:HD22	1:B:3057:LEU:CD2	2.49	0.42
1:B:3515:LEU:O	1:B:3518:MET:N	2.52	0.42
1:B:4679:LEU:HD11	1:B:4704:LEU:HD22	2.01	0.42
1:C:2748:ILE:HD12	1:C:2818:ILE:HD11	2.01	0.42
1:C:2940:ARG:HB3	1:C:2942:LEU:HD12	2.00	0.42
1:C:4024:LYS:N	1:C:4142:ILE:HD13	2.34	0.42
1:C:4706:THR:HG21	1:C:4773:TYR:HD1	1.83	0.42
1:C:4975:THR:HA	1:C:4978:LEU:HD12	2.01	0.42
1:D:903:ARG:HH11	1:D:903:ARG:C	2.27	0.42
1:D:1964:GLU:HA	1:D:3651:CYS:SG	2.59	0.42
1:D:3167:TYR:OH	1:D:3204:VAL:HG11	2.19	0.42
1:D:3458:ASN:O	1:D:3459:PHE:C	2.62	0.42
1:A:979:THR:O	1:A:983:THR:HG23	2.19	0.42
1:A:1695:LEU:HB3	1:A:1716:LEU:HD12	2.01	0.42
1:A:1964:GLU:HA	1:A:3651:CYS:SG	2.60	0.42
1:A:4679:LEU:HD11	1:A:4704:LEU:HD22	2.01	0.42
2:H:91:ILE:N	2:H:91:ILE:HD12	2.34	0.42
1:B:2887:TRP:CD1	1:B:2891:LYS:HZ1	2.37	0.42
1:B:3458:ASN:O	1:B:3459:PHE:C	2.62	0.42
1:B:3515:LEU:HD21	1:B:3603:VAL:HG13	2.00	0.42
1:B:3589:ASP:OD2	1:B:3591:GLU:HG3	2.19	0.42
1:B:4024:LYS:N	1:B:4142:ILE:HD13	2.34	0.42
1:B:4700:ASP:C	1:B:4702:LEU:H	2.27	0.42
1:B:4706:THR:HG21	1:B:4773:TYR:HD1	1.83	0.42
1:D:1499:GLY:HA2	1:D:1502:VAL:HG12	2.01	0.42
1:D:1793:ALA:C	1:D:1794:THR:HG1	2.15	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:2483:ASP:O	1:D:2483:ASP:OD2	2.37	0.42
1:D:3515:LEU:O	1:D:3516:LYS:C	2.61	0.42
1:A:3515:LEU:O	1:A:3516:LYS:C	2.61	0.42
1:A:4700:ASP:C	1:A:4702:LEU:H	2.27	0.42
1:B:3553:PHE:O	1:B:3556:ASN:OD1	2.37	0.42
1:B:4226:ASN:ND2	1:B:4227:GLU:OE1	2.47	0.42
1:C:888:ILE:HG12	1:C:960:TYR:HA	2.01	0.42
1:C:2978:LEU:HD22	1:C:3057:LEU:CD2	2.50	0.42
1:C:4706:THR:HG23	1:C:4708:SER:H	1.84	0.42
1:C:4902:PRO:O	1:C:4903:ALA:C	2.63	0.42
1:D:225:HIS:N	1:D:230:GLU:O	2.48	0.42
1:D:4765:TRP:O	1:D:4769:ILE:HG13	2.19	0.42
1:A:249:GLU:OE1	1:A:374:LYS:NZ	2.47	0.42
1:A:782:VAL:HG13	1:A:782:VAL:O	2.20	0.42
1:A:888:ILE:HG12	1:A:960:TYR:HA	2.01	0.42
1:A:2887:TRP:CD1	1:A:2891:LYS:HZ1	2.37	0.42
1:A:4835:LEU:CD2	1:A:4934:ILE:HD11	2.49	0.42
1:B:2523:LEU:HD11	1:B:2563:ILE:HD13	2.02	0.42
1:B:4706:THR:HG23	1:B:4708:SER:H	1.84	0.42
1:C:927:GLY:O	1:C:931:LYS:HG3	2.20	0.42
1:C:979:THR:O	1:C:983:THR:HG23	2.19	0.42
1:C:3167:TYR:OH	1:C:3204:VAL:HG11	2.19	0.42
1:C:3591:GLU:HA	1:C:3594:VAL:HG22	2.00	0.42
1:D:4900:GLU:O	1:D:4911:ARG:NH2	2.44	0.42
1:A:490:ASN:O	1:A:494:ARG:HG2	2.19	0.42
1:A:731:VAL:HG21	1:A:765:VAL:HG12	2.00	0.42
1:A:1788:LEU:HD21	2:E:88:HIS:CD2	2.54	0.42
1:B:2136:LEU:HD21	1:B:3664:LEU:HD13	2.02	0.42
1:B:3316:LEU:HD23	1:B:3346:ILE:HD13	2.01	0.42
1:C:263:LEU:HD12	1:C:275:LEU:HD11	2.00	0.42
1:C:909:VAL:HG12	1:C:910:ASN:N	2.34	0.42
1:C:2002:PRO:HG2	1:C:3865:ASP:HB2	2.02	0.42
1:C:2523:LEU:HD11	1:C:2563:ILE:HD13	2.02	0.42
1:C:3546:THR:HG23	1:C:3549:GLU:H	1.84	0.42
1:C:4079:ALA:O	1:C:4082:ASP:HB2	2.19	0.42
1:D:3316:LEU:HD23	1:D:3346:ILE:HD13	2.01	0.42
1:A:215:VAL:HG12	1:A:275:LEU:HD12	2.02	0.42
1:A:2483:ASP:O	1:A:2483:ASP:OD2	2.37	0.42
1:A:3962:LYS:HG3	1:A:4025:ASP:OD1	2.19	0.42
1:A:4575:LEU:O	1:A:4578:TYR:HB2	2.20	0.42
1:B:225:HIS:N	1:B:230:GLU:O	2.48	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2756:ILE:HG13	1:B:2814:LEU:CD1	2.49	0.42
1:B:2982:VAL:O	1:B:2986:ARG:NH2	2.53	0.42
1:B:4765:TRP:O	1:B:4769:ILE:HG13	2.19	0.42
1:C:554:ARG:NH2	1:C:556:GLU:OE2	2.49	0.42
1:C:888:ILE:CD1	1:C:893:THR:HG22	2.48	0.42
1:C:1964:GLU:HA	1:C:3651:CYS:SG	2.59	0.42
1:C:2600:GLN:O	1:C:2604:ILE:HG13	2.20	0.42
1:C:2690:LYS:O	1:C:2994:GLN:NE2	2.51	0.42
1:D:215:VAL:HG12	1:D:275:LEU:HD12	2.02	0.42
1:D:4700:ASP:C	1:D:4702:LEU:H	2.27	0.42
1:A:1973:ASN:HD21	1:A:2025:PRO:HD3	1.84	0.42
1:A:1978:TYR:HB2	1:A:1999:PHE:CE1	2.55	0.42
1:A:3458:ASN:O	1:A:3459:PHE:C	2.62	0.42
1:A:3752:VAL:HG22	1:A:3753:GLU:N	2.34	0.42
1:B:294:LEU:HD13	1:B:379:LEU:HD12	2.01	0.42
1:B:2748:ILE:HD12	1:B:2818:ILE:HD11	2.01	0.42
1:B:3110:ASN:O	1:B:3113:LEU:HD12	2.18	0.42
1:C:4900:GLU:O	1:C:4911:ARG:NH2	2.44	0.42
1:D:731:VAL:HG21	1:D:765:VAL:HG12	2.00	0.42
1:D:2002:PRO:HG2	1:D:3865:ASP:HB2	2.02	0.42
1:D:2887:TRP:CD1	1:D:2891:LYS:HZ1	2.37	0.42
1:D:3515:LEU:O	1:D:3518:MET:N	2.52	0.42
1:D:4024:LYS:N	1:D:4142:ILE:HD13	2.34	0.42
1:A:576:LEU:CD2	1:A:607:LEU:HD23	2.50	0.42
1:A:3257:LEU:HB3	1:A:3267:MET:HE1	2.02	0.42
1:A:3353:GLU:OE1	1:A:3353:GLU:N	2.44	0.42
1:A:4741:MET:HE2	1:A:4746:LEU:HD11	2.02	0.42
1:B:284:ARG:NH1	1:B:291:TYR:OH	2.52	0.42
1:C:294:LEU:HD13	1:C:379:LEU:HD12	2.01	0.42
1:C:1102:ARG:HG2	1:C:1126:ASN:HB2	2.01	0.42
1:C:1973:ASN:HD21	1:C:2025:PRO:HD3	1.84	0.42
1:C:2981:VAL:O	1:C:2986:ARG:NH2	2.51	0.42
1:C:3515:LEU:O	1:C:3518:MET:N	2.52	0.42
1:C:3772:ARG:O	1:C:3776:ARG:HD2	2.19	0.42
1:D:576:LEU:CD2	1:D:607:LEU:HD23	2.50	0.42
1:D:888:ILE:HG12	1:D:960:TYR:HA	2.02	0.42
1:D:1064:VAL:HG23	1:D:1065:ASP:N	2.35	0.42
1:D:4720:ARG:HE	1:D:4720:ARG:HB3	1.61	0.42
1:A:2136:LEU:HD21	1:A:3664:LEU:HD13	2.02	0.42
1:A:2940:ARG:HE	1:A:2942:LEU:HG	1.84	0.42
1:A:3316:LEU:HD23	1:A:3346:ILE:HD13	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3515:LEU:O	1:A:3518:MET:N	2.52	0.42
2:H:88:HIS:CD2	1:D:1788:LEU:HD21	2.55	0.42
1:B:576:LEU:CD2	1:B:607:LEU:HD23	2.50	0.42
1:B:3057:LEU:O	1:B:3057:LEU:HD23	2.20	0.42
1:B:4987:MET:O	1:B:4991:MET:HG3	2.19	0.42
1:C:3076:LEU:HD23	1:C:3077:ASP:N	2.35	0.42
1:C:3257:LEU:HB3	1:C:3267:MET:HE1	2.02	0.42
1:D:782:VAL:HG13	1:D:782:VAL:O	2.20	0.42
1:D:2600:GLN:O	1:D:2604:ILE:HG13	2.20	0.42
1:D:2982:VAL:O	1:D:2986:ARG:NH2	2.53	0.42
1:D:4707:PRO:HD2	1:D:4770:ASP:CG	2.45	0.42
1:D:4902:PRO:O	1:D:4903:ALA:C	2.62	0.42
1:A:1064:VAL:HG23	1:A:1065:ASP:N	2.35	0.42
1:A:1499:GLY:HA2	1:A:1502:VAL:HG12	2.01	0.42
1:A:1576:LEU:HD23	1:A:1576:LEU:HA	1.93	0.42
1:A:2748:ILE:HD12	1:A:2818:ILE:HD11	2.01	0.42
1:A:3076:LEU:HD23	1:A:3077:ASP:N	2.35	0.42
1:A:3987:ARG:NH2	1:B:161:GLY:O	2.53	0.42
1:A:4706:THR:HG23	1:A:4708:SER:H	1.85	0.42
1:B:575:VAL:O	1:B:579:ILE:HG12	2.20	0.42
1:B:1964:GLU:HA	1:B:3651:CYS:SG	2.59	0.42
1:B:4079:ALA:O	1:B:4082:ASP:HB2	2.19	0.42
1:B:4741:MET:HE2	1:B:4746:LEU:HD11	2.02	0.42
1:B:4902:PRO:O	1:B:4903:ALA:C	2.62	0.42
1:C:575:VAL:O	1:C:579:ILE:HG12	2.20	0.42
1:C:2136:LEU:HD21	1:C:3664:LEU:HD13	2.02	0.42
1:C:3589:ASP:OD2	1:C:3591:GLU:HG3	2.19	0.42
1:C:3752:VAL:HG22	1:C:3753:GLU:N	2.34	0.42
1:C:4575:LEU:O	1:C:4578:TYR:HB2	2.20	0.42
1:D:284:ARG:NH1	1:D:291:TYR:OH	2.52	0.42
1:D:760:ILE:O	1:D:760:ILE:HG23	2.20	0.42
1:D:927:GLY:O	1:D:931:LYS:HG3	2.20	0.42
1:D:1978:TYR:HB2	1:D:1999:PHE:CE1	2.55	0.42
1:D:2136:LEU:HD21	1:D:3664:LEU:HD13	2.02	0.42
1:D:2981:VAL:O	1:D:2986:ARG:NH2	2.51	0.42
1:D:4706:THR:HG21	1:D:4773:TYR:HD1	1.83	0.42
1:D:4975:THR:HA	1:D:4978:LEU:HD12	2.01	0.42
1:D:4987:MET:O	1:D:4991:MET:HG3	2.19	0.42
1:A:760:ILE:HG23	1:A:760:ILE:O	2.20	0.41
1:A:927:GLY:O	1:A:931:LYS:HG3	2.20	0.41
1:A:2756:ILE:HG13	1:A:2814:LEU:CD1	2.49	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3110:ASN:O	1:A:3113:LEU:HD12	2.19	0.41
1:A:3167:TYR:OH	1:A:3204:VAL:HG11	2.19	0.41
1:A:4707:PRO:HD2	1:A:4770:ASP:CG	2.45	0.41
1:B:1499:GLY:HA2	1:B:1502:VAL:HG12	2.02	0.41
1:B:4707:PRO:HD2	1:B:4770:ASP:CG	2.45	0.41
1:C:753:VAL:HB	1:C:754:PRO:C	2.45	0.41
1:C:1064:VAL:HG23	1:C:1065:ASP:N	2.35	0.41
1:C:2756:ILE:HG13	1:C:2814:LEU:CD1	2.49	0.41
1:C:3962:LYS:HG3	1:C:4025:ASP:OD1	2.19	0.41
1:D:2413:GLU:HG3	1:D:2413:GLU:O	2.20	0.41
1:D:3638:ARG:HH11	1:D:3640:THR:HG22	1.85	0.41
1:A:79:LEU:O	1:A:80:GLN:C	2.62	0.41
1:A:711:ASP:N	1:A:711:ASP:OD1	2.51	0.41
1:A:3638:ARG:HH11	1:A:3640:THR:HG22	1.85	0.41
1:A:3684:GLN:OE1	1:A:3684:GLN:N	2.45	0.41
1:B:753:VAL:HB	1:B:754:PRO:C	2.45	0.41
1:B:782:VAL:O	1:B:782:VAL:HG13	2.20	0.41
1:B:3546:THR:HG23	1:B:3549:GLU:H	1.84	0.41
1:B:3987:ARG:NH2	1:C:161:GLY:O	2.53	0.41
1:B:4975:THR:HA	1:B:4978:LEU:HD12	2.01	0.41
1:C:576:LEU:CD2	1:C:607:LEU:HD23	2.50	0.41
1:C:3987:ARG:NH2	1:D:161:GLY:O	2.53	0.41
1:C:4987:MET:O	1:C:4991:MET:HG3	2.19	0.41
1:D:914:LEU:O	1:D:915:PRO:C	2.63	0.41
1:D:979:THR:O	1:D:983:THR:HG23	2.19	0.41
1:D:1102:ARG:HG2	1:D:1126:ASN:HB2	2.01	0.41
1:D:2748:ILE:HD12	1:D:2818:ILE:HD11	2.01	0.41
1:D:3076:LEU:HD23	1:D:3077:ASP:N	2.35	0.41
1:A:2600:GLN:O	1:A:2604:ILE:HG13	2.20	0.41
1:A:2982:VAL:O	1:A:2986:ARG:NH2	2.53	0.41
1:A:4079:ALA:O	1:A:4082:ASP:HB2	2.19	0.41
1:A:4902:PRO:O	1:A:4903:ALA:C	2.62	0.41
1:B:79:LEU:O	1:B:80:GLN:C	2.62	0.41
1:B:221:LEU:C	1:B:221:LEU:HD12	2.45	0.41
1:B:903:ARG:HH22	1:B:908:LEU:HD12	1.86	0.41
1:B:1695:LEU:HB3	1:B:1716:LEU:HD12	2.01	0.41
1:B:1978:TYR:HB2	1:B:1999:PHE:CE1	2.55	0.41
1:B:4575:LEU:O	1:B:4578:TYR:HB2	2.20	0.41
1:B:4886:TYR:OH	1:C:4915:ASP:OD2	2.34	0.41
1:C:79:LEU:O	1:C:80:GLN:C	2.62	0.41
1:C:215:VAL:HG12	1:C:275:LEU:HD12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:3181:ASN:OD1	1:C:3182:PRO:HD2	2.21	0.41
1:D:627:LEU:N	1:D:628:PRO:HD2	2.36	0.41
1:D:2771:LYS:HE3	1:D:2789:HIS:CG	2.55	0.41
1:A:2002:PRO:HG2	1:A:3865:ASP:HB2	2.02	0.41
1:A:2748:ILE:HG23	1:A:2748:ILE:O	2.20	0.41
1:A:2964:LEU:O	1:A:2968:MET:HG2	2.20	0.41
1:A:3181:ASN:OD1	1:A:3182:PRO:HD2	2.21	0.41
1:A:4975:THR:HA	1:A:4978:LEU:HD12	2.01	0.41
1:A:4987:MET:O	1:A:4991:MET:HG3	2.19	0.41
2:F:88:HIS:CD2	1:B:1788:LEU:HD21	2.55	0.41
2:F:91:ILE:HD12	2:F:91:ILE:N	2.34	0.41
1:B:218:GLY:N	1:B:263:LEU:O	2.47	0.41
1:B:927:GLY:O	1:B:931:LYS:HG3	2.20	0.41
1:B:1064:VAL:HG23	1:B:1065:ASP:N	2.35	0.41
1:B:2002:PRO:HG2	1:B:3865:ASP:HB2	2.02	0.41
1:B:2964:LEU:O	1:B:2968:MET:HG2	2.20	0.41
1:B:3167:TYR:OH	1:B:3204:VAL:HG11	2.19	0.41
1:C:1978:TYR:HB2	1:C:1999:PHE:CE1	2.55	0.41
1:C:3057:LEU:O	1:C:3057:LEU:HD23	2.20	0.41
1:C:3316:LEU:HD23	1:C:3346:ILE:HD13	2.01	0.41
1:C:4707:PRO:HD2	1:C:4770:ASP:CG	2.45	0.41
1:D:267:ARG:NH2	1:D:332:VAL:O	2.49	0.41
1:D:909:VAL:HG12	1:D:910:ASN:N	2.34	0.41
1:A:221:LEU:C	1:A:221:LEU:HD12	2.45	0.41
1:A:267:ARG:NH2	1:A:332:VAL:O	2.49	0.41
1:A:753:VAL:HB	1:A:754:PRO:C	2.45	0.41
2:G:91:ILE:HD12	2:G:91:ILE:N	2.35	0.41
1:B:1229:ILE:HG23	1:B:1230:ASN:H	1.85	0.41
1:B:2600:GLN:O	1:B:2604:ILE:HG13	2.20	0.41
1:B:2748:ILE:HD12	1:B:2818:ILE:CD1	2.51	0.41
1:B:3257:LEU:HB3	1:B:3267:MET:HE1	2.02	0.41
1:C:2139:LEU:N	1:C:2140:PRO:HD2	2.35	0.41
1:C:2748:ILE:O	1:C:2748:ILE:HG23	2.20	0.41
1:C:2752:LEU:HD21	1:C:2824:VAL:HG11	2.03	0.41
1:D:221:LEU:C	1:D:221:LEU:HD12	2.45	0.41
1:D:892:TRP:HB3	1:D:903:ARG:HE	1.86	0.41
1:D:2748:ILE:O	1:D:2748:ILE:HG23	2.20	0.41
1:D:2752:LEU:HD21	1:D:2824:VAL:HG11	2.03	0.41
1:D:3257:LEU:HB3	1:D:3267:MET:HE1	2.02	0.41
1:D:3526:CYS:SG	1:D:3600:VAL:HG21	2.61	0.41
1:D:4079:ALA:O	1:D:4082:ASP:HB2	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:4706:THR:HG23	1:D:4708:SER:H	1.84	0.41
1:A:1102:ARG:HG2	1:A:1126:ASN:HB2	2.01	0.41
1:A:4835:LEU:HD11	1:A:4934:ILE:HD11	2.02	0.41
2:G:91:ILE:HD11	1:C:1685:ALA:HA	2.01	0.41
1:B:215:VAL:HG12	1:B:275:LEU:HD12	2.02	0.41
1:B:500:THR:HG23	1:B:503:HIS:H	1.86	0.41
1:B:787:GLY:N	1:B:1631:CYS:O	2.45	0.41
1:B:888:ILE:HG12	1:B:960:TYR:HA	2.01	0.41
1:B:2771:LYS:HB3	1:B:2776:TRP:HB2	2.02	0.41
1:B:2771:LYS:HE3	1:B:2789:HIS:CG	2.56	0.41
1:B:4720:ARG:HE	1:B:4720:ARG:HB3	1.61	0.41
1:C:221:LEU:C	1:C:221:LEU:HD12	2.45	0.41
1:C:627:LEU:N	1:C:628:PRO:HD2	2.35	0.41
1:C:782:VAL:O	1:C:782:VAL:HG13	2.20	0.41
1:C:892:TRP:HB3	1:C:903:ARG:HE	1.85	0.41
1:C:2873:GLN:O	1:C:2877:GLU:HG2	2.21	0.41
1:C:2982:VAL:O	1:C:2986:ARG:NH2	2.53	0.41
1:D:1229:ILE:HG23	1:D:1230:ASN:H	1.85	0.41
1:D:1300:GLN:OE1	1:D:1546:ASN:ND2	2.48	0.41
1:D:2756:ILE:HG13	1:D:2814:LEU:CD1	2.49	0.41
1:A:2523:LEU:HD11	1:A:2563:ILE:HD13	2.02	0.41
1:A:2771:LYS:HE3	1:A:2789:HIS:CG	2.55	0.41
2:E:91:ILE:N	2:E:91:ILE:HD12	2.36	0.41
1:B:141:ASP:OD1	1:B:141:ASP:N	2.53	0.41
1:B:2634:LEU:HD12	1:B:2686:SER:CB	2.51	0.41
1:B:2817:MET:HB2	1:B:2822:TRP:HB2	2.03	0.41
1:B:4835:LEU:HD11	1:B:4934:ILE:HD11	2.02	0.41
1:C:1695:LEU:HB3	1:C:1716:LEU:HD12	2.01	0.41
1:C:3526:CYS:SG	1:C:3600:VAL:HG21	2.61	0.41
1:D:249:GLU:OE1	1:D:374:LYS:NZ	2.47	0.41
1:D:753:VAL:HB	1:D:754:PRO:C	2.45	0.41
1:D:2964:LEU:O	1:D:2968:MET:HG2	2.20	0.41
1:D:3181:ASN:OD1	1:D:3182:PRO:HD2	2.21	0.41
1:D:4763:LEU:HD12	1:D:4764:THR:N	2.36	0.41
1:A:500:THR:HG23	1:A:503:HIS:H	1.85	0.41
1:A:892:TRP:HB3	1:A:903:ARG:HE	1.86	0.41
1:A:914:LEU:O	1:A:915:PRO:C	2.63	0.41
1:B:554:ARG:NH2	1:B:556:GLU:OE2	2.48	0.41
1:B:627:LEU:N	1:B:628:PRO:HD2	2.35	0.41
1:B:1793:ALA:C	1:B:1794:THR:HG1	2.18	0.41
1:B:2139:LEU:N	1:B:2140:PRO:HD2	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2413:GLU:O	1:B:2413:GLU:HG3	2.20	0.41
1:B:2483:ASP:O	1:B:2483:ASP:OD2	2.37	0.41
1:B:3076:LEU:HD23	1:B:3077:ASP:N	2.35	0.41
1:C:2483:ASP:O	1:C:2483:ASP:OD2	2.37	0.41
1:C:2748:ILE:HD12	1:C:2818:ILE:CD1	2.51	0.41
1:C:2964:LEU:O	1:C:2968:MET:HG2	2.20	0.41
1:C:3638:ARG:HH11	1:C:3640:THR:HG22	1.85	0.41
1:C:4835:LEU:HD11	1:C:4934:ILE:HD11	2.02	0.41
1:D:500:THR:HG23	1:D:503:HIS:H	1.85	0.41
1:D:2523:LEU:HD11	1:D:2563:ILE:HD13	2.02	0.41
1:D:2690:LYS:O	1:D:2994:GLN:NE2	2.51	0.41
1:D:2771:LYS:HB3	1:D:2776:TRP:HB2	2.02	0.41
1:D:3413:LEU:HD11	1:D:3435:LEU:HD21	2.03	0.41
1:D:3752:VAL:HG22	1:D:3753:GLU:N	2.34	0.41
1:D:4221:ILE:HD13	1:D:4952:MET:HE2	2.03	0.41
1:D:4741:MET:HE2	1:D:4746:LEU:HD11	2.02	0.41
1:A:909:VAL:O	1:A:910:ASN:C	2.64	0.41
1:A:2413:GLU:HG3	1:A:2413:GLU:O	2.20	0.41
1:A:2634:LEU:HD12	1:A:2686:SER:CB	2.51	0.41
1:A:2752:LEU:HD21	1:A:2824:VAL:HG11	2.03	0.41
1:A:3057:LEU:HD23	1:A:3057:LEU:O	2.20	0.41
1:A:3078:ALA:HB3	1:A:3157:VAL:HG21	2.03	0.41
1:A:3294:PRO:HB2	1:A:3298:PRO:HD3	2.03	0.41
1:A:3526:CYS:SG	1:A:3600:VAL:HG21	2.61	0.41
1:A:3771:SER:HA	1:A:3774:HIS:CD2	2.56	0.41
2:F:101:ASP:OD1	2:F:101:ASP:C	2.64	0.41
1:B:225:HIS:NE2	1:B:386:ASP:O	2.51	0.41
1:B:843:PRO:O	1:B:1197:PRO:HA	2.21	0.41
1:B:910:ASN:O	1:B:914:LEU:N	2.54	0.41
1:B:1102:ARG:HG2	1:B:1126:ASN:HB2	2.01	0.41
1:B:2000:ARG:HH11	1:B:2000:ARG:HG3	1.86	0.41
1:B:2748:ILE:HG23	1:B:2748:ILE:O	2.20	0.41
1:B:2752:LEU:HD21	1:B:2824:VAL:HG11	2.03	0.41
1:B:3638:ARG:HH11	1:B:3640:THR:HG22	1.85	0.41
1:B:3874:GLY:O	1:B:3875:GLU:C	2.61	0.41
1:C:860:ILE:HG13	1:C:861:GLN:N	2.36	0.41
1:C:1460:GLN:OE1	1:C:1471:ARG:HG2	2.21	0.41
1:C:2000:ARG:HH11	1:C:2000:ARG:HG3	1.86	0.41
1:C:2391:PRO:C	1:C:2393:ARG:H	2.29	0.41
1:C:2391:PRO:O	1:C:2392:ALA:HB3	2.20	0.41
1:C:2634:LEU:HD12	1:C:2686:SER:CB	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:4700:ASP:C	1:C:4702:LEU:H	2.27	0.41
1:C:4741:MET:HE2	1:C:4746:LEU:HD11	2.02	0.41
7:C:8006:PCW:H482	7:C:8006:PCW:C44	2.51	0.41
1:D:141:ASP:OD1	1:D:141:ASP:N	2.53	0.41
1:D:575:VAL:O	1:D:579:ILE:HG12	2.20	0.41
1:D:903:ARG:HH22	1:D:908:LEU:HD12	1.85	0.41
1:D:2000:ARG:HG3	1:D:2000:ARG:HH11	1.86	0.41
1:D:2139:LEU:N	1:D:2140:PRO:HD2	2.35	0.41
1:D:2873:GLN:O	1:D:2877:GLU:HG2	2.21	0.41
1:D:2978:LEU:HD22	1:D:3057:LEU:CD2	2.49	0.41
1:D:3057:LEU:HD23	1:D:3057:LEU:O	2.20	0.41
1:D:3771:SER:HA	1:D:3774:HIS:CD2	2.56	0.41
1:D:4575:LEU:O	1:D:4578:TYR:HB2	2.20	0.41
1:D:4835:LEU:HD11	1:D:4934:ILE:HD11	2.02	0.41
7:D:8006:PCW:H482	7:D:8006:PCW:C44	2.51	0.41
1:A:1793:ALA:C	1:A:1794:THR:HG1	2.16	0.41
1:A:2000:ARG:HG3	1:A:2000:ARG:HH11	1.86	0.41
1:A:2224:ILE:HD11	1:A:2268:MET:HE2	2.03	0.41
1:A:4763:LEU:HD12	1:A:4764:THR:N	2.36	0.41
1:B:1576:LEU:HD23	1:B:1576:LEU:HA	1.93	0.41
1:B:2766:LYS:HZ1	1:B:2860:PRO:HB2	1.85	0.41
1:B:2793:ARG:NH1	1:B:2797:THR:O	2.54	0.41
1:B:2873:GLN:O	1:B:2877:GLU:HG2	2.21	0.41
1:B:3861:MET:HE1	1:B:3870:ASN:HA	2.04	0.41
1:B:4730:PHE:HD2	1:B:4735:ILE:HG12	1.85	0.41
1:C:225:HIS:NE2	1:C:386:ASP:O	2.52	0.41
1:C:2413:GLU:HG3	1:C:2413:GLU:O	2.20	0.41
1:C:3815:VAL:O	1:C:3819:MET:HG3	2.21	0.41
1:D:2634:LEU:HD12	1:D:2686:SER:CB	2.51	0.41
1:D:3534:ILE:HD12	1:D:3534:ILE:H	1.86	0.41
1:D:3820:LEU:CD2	1:D:3901:ASP:HB3	2.51	0.41
1:D:4217:LYS:NZ	5:D:8003:ATP:O1A	2.53	0.41
1:A:1481:GLN:OE1	1:A:1481:GLN:N	2.52	0.40
1:A:2771:LYS:HB3	1:A:2776:TRP:HB2	2.02	0.40
1:A:2981:VAL:O	1:A:2986:ARG:NH2	2.51	0.40
1:A:3413:LEU:HD11	1:A:3435:LEU:HD21	2.03	0.40
1:A:3820:LEU:CD2	1:A:3901:ASP:HB3	2.51	0.40
1:B:914:LEU:O	1:B:915:PRO:C	2.63	0.40
1:B:3294:PRO:HB2	1:B:3298:PRO:HD3	2.03	0.40
1:B:3526:CYS:SG	1:B:3600:VAL:HG21	2.61	0.40
1:C:843:PRO:O	1:C:1197:PRO:HA	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:893:THR:O	1:C:903:ARG:CZ	2.69	0.40
1:C:903:ARG:HH22	1:C:908:LEU:HD12	1.86	0.40
1:C:2432:ASP:OD2	1:C:2436:ARG:NE	2.44	0.40
1:C:4221:ILE:HD13	1:C:4952:MET:HE2	2.03	0.40
1:C:4730:PHE:HD2	1:C:4735:ILE:HG12	1.85	0.40
1:D:1460:GLN:OE1	1:D:1471:ARG:HG2	2.21	0.40
1:A:332:VAL:HG22	1:A:333:GLU:N	2.36	0.40
1:A:627:LEU:N	1:A:628:PRO:HD2	2.35	0.40
1:A:1028:LEU:HD21	1:A:1032:THR:CG2	2.52	0.40
1:A:1229:ILE:HG23	1:A:1230:ASN:H	1.85	0.40
1:A:1460:GLN:OE1	1:A:1471:ARG:HG2	2.21	0.40
1:A:2139:LEU:N	1:A:2140:PRO:HD2	2.35	0.40
1:A:2391:PRO:C	1:A:2393:ARG:H	2.29	0.40
1:A:4221:ILE:HD13	1:A:4952:MET:HE2	2.03	0.40
1:A:4720:ARG:HE	1:A:4720:ARG:HB3	1.61	0.40
1:A:4730:PHE:HD2	1:A:4735:ILE:HG12	1.85	0.40
1:B:332:VAL:HG22	1:B:333:GLU:N	2.36	0.40
1:B:909:VAL:O	1:B:910:ASN:C	2.64	0.40
1:B:2391:PRO:O	1:B:2392:ALA:HB3	2.20	0.40
1:B:3355:LEU:HD22	1:B:3424:TRP:CZ2	2.56	0.40
1:B:3771:SER:HA	1:B:3774:HIS:CD2	2.56	0.40
1:C:2771:LYS:HE3	1:C:2789:HIS:CG	2.56	0.40
1:C:4226:ASN:ND2	1:C:4227:GLU:OE1	2.46	0.40
1:C:4763:LEU:HD12	1:C:4764:THR:N	2.36	0.40
1:D:843:PRO:O	1:D:1197:PRO:HA	2.21	0.40
1:D:1028:LEU:HD21	1:D:1032:THR:CG2	2.52	0.40
1:D:1695:LEU:HB3	1:D:1716:LEU:HD12	2.01	0.40
1:D:2391:PRO:O	1:D:2392:ALA:HB3	2.20	0.40
1:D:3355:LEU:HD22	1:D:3424:TRP:CZ2	2.56	0.40
1:D:3861:MET:HE1	1:D:3870:ASN:HA	2.04	0.40
1:A:665:PHE:CE1	1:A:747:CYS:HB2	2.57	0.40
1:A:843:PRO:O	1:A:1197:PRO:HA	2.21	0.40
1:A:2748:ILE:HD12	1:A:2818:ILE:CD1	2.51	0.40
1:A:2817:MET:HB2	1:A:2822:TRP:HB2	2.03	0.40
1:B:1028:LEU:HD21	1:B:1032:THR:CG2	2.51	0.40
1:B:4086:ASP:OD1	1:B:4088:ARG:NH2	2.49	0.40
1:C:557:ALA:O	1:C:561:ILE:HD12	2.22	0.40
1:C:760:ILE:HG23	1:C:760:ILE:O	2.20	0.40
1:C:1028:LEU:HD21	1:C:1032:THR:CG2	2.52	0.40
1:C:2768:ALA:HA	1:C:2771:LYS:HE2	2.04	0.40
1:C:2771:LYS:HB3	1:C:2776:TRP:HB2	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:3820:LEU:CD2	1:C:3901:ASP:HB3	2.51	0.40
1:D:79:LEU:O	1:D:80:GLN:C	2.62	0.40
1:D:3406:LEU:HD13	1:D:3511:ILE:HD12	2.04	0.40
1:A:557:ALA:O	1:A:561:ILE:HD12	2.22	0.40
1:A:2414:GLU:HB2	1:A:2490:LYS:HZ3	1.87	0.40
1:A:2748:ILE:HD11	1:A:2752:LEU:HB3	2.04	0.40
1:A:2978:LEU:HD22	1:A:3057:LEU:CD2	2.49	0.40
1:A:3355:LEU:HD22	1:A:3424:TRP:CZ2	2.56	0.40
1:B:860:ILE:HG13	1:B:861:GLN:N	2.36	0.40
1:B:1460:GLN:OE1	1:B:1471:ARG:HG2	2.21	0.40
1:B:1466:ASP:OD1	1:B:1466:ASP:C	2.65	0.40
1:B:2414:GLU:HB2	1:B:2490:LYS:HZ3	1.87	0.40
1:B:2918:ALA:HA	1:B:2921:ARG:HB3	2.03	0.40
1:C:665:PHE:CE1	1:C:747:CYS:HB2	2.57	0.40
1:D:70:LEU:HD23	1:D:110:LEU:HD23	2.04	0.40
1:D:332:VAL:HG22	1:D:333:GLU:N	2.36	0.40
1:D:910:ASN:O	1:D:914:LEU:N	2.54	0.40
1:D:2748:ILE:HD12	1:D:2818:ILE:CD1	2.51	0.40
1:D:2817:MET:HB2	1:D:2822:TRP:HB2	2.03	0.40
1:D:2918:ALA:HA	1:D:2921:ARG:HB3	2.03	0.40
1:D:4730:PHE:HD2	1:D:4735:ILE:HG12	1.85	0.40
1:A:619:GLN:OE1	1:A:1679:ASN:ND2	2.50	0.40
1:A:860:ILE:HG13	1:A:861:GLN:N	2.36	0.40
1:A:903:ARG:HH22	1:A:908:LEU:HD12	1.86	0.40
1:A:2391:PRO:O	1:A:2392:ALA:HB3	2.20	0.40
1:A:3815:VAL:O	1:A:3819:MET:HG3	2.21	0.40
1:B:665:PHE:CE1	1:B:747:CYS:HB2	2.57	0.40
1:B:881:GLU:OE1	1:B:969:ALA:N	2.40	0.40
1:B:1781:PRO:HA	1:B:1782:PRO:HD3	1.99	0.40
1:B:2690:LYS:O	1:B:2994:GLN:NE2	2.51	0.40
1:B:3820:LEU:CD2	1:B:3901:ASP:HB3	2.51	0.40
1:C:332:VAL:HG22	1:C:333:GLU:N	2.36	0.40
1:C:500:THR:HG23	1:C:503:HIS:H	1.85	0.40
1:C:914:LEU:O	1:C:915:PRO:C	2.63	0.40
1:C:3294:PRO:HB2	1:C:3298:PRO:HD3	2.03	0.40
1:C:3771:SER:HA	1:C:3774:HIS:CD2	2.56	0.40
1:D:538:CYS:SG	1:D:571:GLU:HB2	2.62	0.40
1:D:2281:VAL:O	1:D:2281:VAL:HG22	2.22	0.40
1:D:2482:LYS:HD2	1:D:2483:ASP:CG	2.47	0.40
1:D:3684:GLN:OE1	1:D:3684:GLN:N	2.45	0.40
1:D:4034:LEU:HG	1:D:4047:MET:HE1	2.04	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 PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	4345/5035 (86%)	4201 (97%)	144 (3%)	0	100	100
1	B	4345/5035 (86%)	4200 (97%)	145 (3%)	0	100	100
1	C	4345/5035 (86%)	4203 (97%)	142 (3%)	0	100	100
1	D	4345/5035 (86%)	4201 (97%)	144 (3%)	0	100	100
2	E	105/108 (97%)	100 (95%)	5 (5%)	0	100	100
2	F	105/108 (97%)	102 (97%)	3 (3%)	0	100	100
2	G	105/108 (97%)	102 (97%)	3 (3%)	0	100	100
2	H	105/108 (97%)	101 (96%)	4 (4%)	0	100	100
All	All	17800/20572 (86%)	17210 (97%)	590 (3%)	0	100	100

There are no Ramachandran outliers to report.

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 PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	3806/4296 (89%)	3799 (100%)	7 (0%)	92	96
1	B	3806/4296 (89%)	3799 (100%)	7 (0%)	92	96
1	C	3806/4296 (89%)	3799 (100%)	7 (0%)	92	96
1	D	3806/4296 (89%)	3799 (100%)	7 (0%)	92	96

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
2	E	89/90 (99%)	89 (100%)	0	100 100
2	F	89/90 (99%)	89 (100%)	0	100 100
2	G	89/90 (99%)	89 (100%)	0	100 100
2	H	89/90 (99%)	89 (100%)	0	100 100
All	All	15580/17544 (89%)	15552 (100%)	28 (0%)	91 96

All (28) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	219	HIS
1	A	4102	SER
1	A	4706	THR
1	A	4718	VAL
1	A	4720	ARG
1	A	4735	ILE
1	A	4771	VAL
1	B	219	HIS
1	B	4102	SER
1	B	4706	THR
1	B	4718	VAL
1	B	4720	ARG
1	B	4735	ILE
1	B	4771	VAL
1	C	219	HIS
1	C	4102	SER
1	C	4706	THR
1	C	4718	VAL
1	C	4720	ARG
1	C	4735	ILE
1	C	4771	VAL
1	D	219	HIS
1	D	4102	SER
1	D	4706	THR
1	D	4718	VAL
1	D	4720	ARG
1	D	4735	ILE
1	D	4771	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (129) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	24	GLN
1	A	204	ASN
1	A	350	GLN
1	A	534	ASN
1	A	640	ASN
1	A	766	GLN
1	A	922	ASN
1	A	1207	GLN
1	A	1460	GLN
1	A	1591	GLN
1	A	1632	GLN
1	A	1973	ASN
1	A	2126	HIS
1	A	2261	ASN
1	A	2418	HIS
1	A	2963	GLN
1	A	3212	ASN
1	A	3327	ASN
1	A	3450	HIS
1	A	3557	ASN
1	A	3612	HIS
1	A	3930	GLN
1	A	3963	GLN
1	A	3973	GLN
1	A	3981	GLN
1	A	4156	HIS
1	A	4165	ASN
1	A	4545	GLN
1	A	4834	GLN
2	E	95	HIS
2	F	26	HIS
2	F	44	ASN
2	F	95	HIS
2	G	95	HIS
2	H	44	ASN
2	H	95	HIS
1	B	24	GLN
1	B	204	ASN
1	B	350	GLN
1	B	413	ASN
1	B	534	ASN
1	B	577	ASN
1	B	640	ASN

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Mol	Chain	Res	Type
1	B	922	ASN
1	B	1207	GLN
1	B	1301	HIS
1	B	1460	GLN
1	B	1591	GLN
1	B	1632	GLN
1	B	1692	GLN
1	B	1973	ASN
1	B	2126	HIS
1	B	2261	ASN
1	B	2418	HIS
1	B	2963	GLN
1	B	3212	ASN
1	B	3327	ASN
1	B	3419	ASN
1	B	3450	HIS
1	B	3557	ASN
1	B	3612	HIS
1	B	3873	ASN
1	B	3963	GLN
1	B	3981	GLN
1	B	4156	HIS
1	B	4165	ASN
1	B	4545	GLN
1	B	4774	GLN
1	B	4834	GLN
1	C	24	GLN
1	C	204	ASN
1	C	350	GLN
1	C	534	ASN
1	C	640	ASN
1	C	922	ASN
1	C	1207	GLN
1	C	1460	GLN
1	C	1512	HIS
1	C	1591	GLN
1	C	1632	GLN
1	C	1778	HIS
1	C	1973	ASN
1	C	2126	HIS
1	C	2261	ASN
1	C	2418	HIS

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Mol	Chain	Res	Type
1	C	2963	GLN
1	C	3212	ASN
1	C	3327	ASN
1	C	3450	HIS
1	C	3557	ASN
1	C	3612	HIS
1	C	3963	GLN
1	C	3981	GLN
1	C	4156	HIS
1	C	4165	ASN
1	C	4545	GLN
1	C	4774	GLN
1	C	4834	GLN
1	D	24	GLN
1	D	204	ASN
1	D	350	GLN
1	D	413	ASN
1	D	534	ASN
1	D	640	ASN
1	D	922	ASN
1	D	1460	GLN
1	D	1512	HIS
1	D	1591	GLN
1	D	1632	GLN
1	D	1778	HIS
1	D	1973	ASN
1	D	2126	HIS
1	D	2261	ASN
1	D	2418	HIS
1	D	2775	ASN
1	D	2963	GLN
1	D	3212	ASN
1	D	3327	ASN
1	D	3450	HIS
1	D	3557	ASN
1	D	3612	HIS
1	D	3892	GLN
1	D	3963	GLN
1	D	3981	GLN
1	D	4156	HIS
1	D	4165	ASN
1	D	4545	GLN

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Mol	Chain	Res	Type
1	D	4774	GLN
1	D	4834	GLN

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 oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 28 ligands modelled in this entry, 8 are monoatomic - leaving 20 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	CFF	B	8002	-	8,15,15	2.08	3 (37%)	8,23,23	1.40	1 (12%)
7	PCW	B	8006	-	53,53,53	1.24	7 (13%)	59,61,61	1.07	3 (5%)
7	PCW	D	8006	-	53,53,53	1.24	7 (13%)	59,61,61	1.07	3 (5%)
7	PCW	C	8006	-	53,53,53	1.24	7 (13%)	59,61,61	1.07	3 (5%)
7	PCW	A	8005	-	53,53,53	1.26	7 (13%)	59,61,61	1.15	4 (6%)
7	PCW	A	8006	-	53,53,53	1.24	7 (13%)	59,61,61	1.07	3 (5%)
4	CFF	D	8002	-	8,15,15	2.08	3 (37%)	8,23,23	1.40	1 (12%)
4	CFF	C	8002	-	8,15,15	2.08	3 (37%)	8,23,23	1.39	1 (12%)
5	ATP	B	8007	-	28,33,33	0.65	0	34,52,52	0.92	1 (2%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
4	CFF	A	8002	-	8,15,15	2.08	3 (37%)	8,23,23	1.39	1 (12%)
5	ATP	C	8007	-	28,33,33	0.65	0	34,52,52	0.92	1 (2%)
5	ATP	A	8007	-	28,33,33	0.65	0	34,52,52	0.92	1 (2%)
5	ATP	B	8003	-	28,33,33	0.64	0	34,52,52	0.88	1 (2%)
5	ATP	C	8003	-	28,33,33	0.63	0	34,52,52	0.89	1 (2%)
7	PCW	B	8005	-	53,53,53	1.26	7 (13%)	59,61,61	1.15	4 (6%)
5	ATP	A	8003	-	28,33,33	0.64	0	34,52,52	0.89	1 (2%)
5	ATP	D	8007	-	28,33,33	0.65	0	34,52,52	0.92	1 (2%)
7	PCW	C	8005	-	53,53,53	1.26	7 (13%)	59,61,61	1.15	4 (6%)
7	PCW	D	8005	-	53,53,53	1.26	7 (13%)	59,61,61	1.15	4 (6%)
5	ATP	D	8003	-	28,33,33	0.63	0	34,52,52	0.89	1 (2%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	CFF	B	8002	-	-	-	0/2/2/2
7	PCW	B	8006	-	-	22/57/57/57	-
7	PCW	D	8006	-	-	22/57/57/57	-
7	PCW	C	8006	-	-	22/57/57/57	-
7	PCW	A	8005	-	-	26/57/57/57	-
7	PCW	A	8006	-	-	22/57/57/57	-
4	CFF	C	8002	-	-	-	0/2/2/2
4	CFF	D	8002	-	-	-	0/2/2/2
5	ATP	B	8007	-	-	6/18/38/38	0/3/3/3
4	CFF	A	8002	-	-	-	0/2/2/2
5	ATP	C	8007	-	-	6/18/38/38	0/3/3/3
5	ATP	A	8007	-	-	6/18/38/38	0/3/3/3
5	ATP	B	8003	-	-	4/18/38/38	0/3/3/3
5	ATP	C	8003	-	-	4/18/38/38	0/3/3/3
7	PCW	B	8005	-	-	26/57/57/57	-
5	ATP	A	8003	-	-	4/18/38/38	0/3/3/3
5	ATP	D	8007	-	-	6/18/38/38	0/3/3/3
7	PCW	C	8005	-	-	26/57/57/57	-
7	PCW	D	8005	-	-	26/57/57/57	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	ATP	D	8003	-	-	4/18/38/38	0/3/3/3

All (68) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	8002	CFF	C5-C4	-3.44	1.33	1.39
4	D	8002	CFF	C5-C4	-3.44	1.33	1.39
4	A	8002	CFF	C5-C4	-3.42	1.33	1.39
4	C	8002	CFF	C5-C4	-3.42	1.33	1.39
4	A	8002	CFF	C6-N1	-3.26	1.32	1.38
4	C	8002	CFF	C6-N1	-3.26	1.32	1.38
4	B	8002	CFF	C6-N1	-3.22	1.32	1.38
4	D	8002	CFF	C6-N1	-3.22	1.32	1.38
7	B	8005	PCW	O3-C11	3.08	1.42	1.33
7	A	8005	PCW	O3-C11	3.07	1.42	1.33
7	D	8005	PCW	O3-C11	3.07	1.42	1.33
7	B	8006	PCW	O3-C11	3.06	1.42	1.33
7	C	8005	PCW	O3-C11	3.05	1.42	1.33
7	A	8006	PCW	O3-C11	3.03	1.42	1.33
7	C	8006	PCW	O3-C11	3.03	1.42	1.33
7	D	8006	PCW	O3-C11	3.03	1.42	1.33
7	B	8005	PCW	O2-C31	2.88	1.42	1.34
7	A	8005	PCW	O2-C31	2.87	1.42	1.34
7	D	8005	PCW	O2-C31	2.87	1.42	1.34
7	A	8006	PCW	O2-C31	2.86	1.42	1.34
7	B	8006	PCW	O2-C31	2.86	1.42	1.34
7	D	8006	PCW	O2-C31	2.86	1.42	1.34
7	C	8005	PCW	O2-C31	2.86	1.42	1.34
7	C	8006	PCW	O2-C31	2.84	1.42	1.34
7	C	8005	PCW	P-O4P	2.57	1.69	1.59
7	D	8005	PCW	P-O4P	2.57	1.69	1.59
7	A	8005	PCW	P-O4P	2.56	1.69	1.59
7	B	8005	PCW	P-O4P	2.55	1.69	1.59
7	B	8006	PCW	P-O4P	2.54	1.69	1.59
7	D	8006	PCW	P-O4P	2.54	1.69	1.59
7	A	8006	PCW	P-O4P	2.53	1.69	1.59
7	C	8006	PCW	P-O4P	2.53	1.69	1.59
4	A	8002	CFF	O13-C6	-2.49	1.18	1.24
4	B	8002	CFF	O13-C6	-2.49	1.18	1.24
4	D	8002	CFF	O13-C6	-2.49	1.18	1.24
4	C	8002	CFF	O13-C6	-2.49	1.18	1.24
7	B	8005	PCW	O2-C2	-2.42	1.40	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A	8005	PCW	O2-C2	-2.41	1.40	1.46
7	C	8005	PCW	O2-C2	-2.41	1.40	1.46
7	D	8005	PCW	O2-C2	-2.40	1.41	1.46
7	A	8005	PCW	C5-C4	2.38	1.58	1.51
7	B	8005	PCW	C5-C4	2.38	1.58	1.51
7	D	8005	PCW	C5-C4	2.38	1.58	1.51
7	C	8005	PCW	C5-C4	2.36	1.58	1.51
7	A	8006	PCW	O2-C2	-2.30	1.41	1.46
7	B	8006	PCW	O2-C2	-2.30	1.41	1.46
7	D	8006	PCW	O2-C2	-2.30	1.41	1.46
7	C	8006	PCW	O2-C2	-2.29	1.41	1.46
7	B	8005	PCW	C32-C31	2.28	1.57	1.50
7	D	8005	PCW	C32-C31	2.28	1.57	1.50
7	A	8005	PCW	C32-C31	2.27	1.57	1.50
7	C	8005	PCW	C32-C31	2.27	1.57	1.50
7	A	8005	PCW	P-O3P	2.22	1.68	1.59
7	C	8005	PCW	P-O3P	2.22	1.68	1.59
7	D	8005	PCW	P-O3P	2.22	1.68	1.59
7	B	8005	PCW	P-O3P	2.21	1.68	1.59
7	C	8006	PCW	C32-C31	2.17	1.57	1.50
7	B	8006	PCW	C5-C4	2.16	1.57	1.51
7	C	8006	PCW	C5-C4	2.14	1.57	1.51
7	D	8006	PCW	C5-C4	2.14	1.57	1.51
7	A	8006	PCW	C32-C31	2.14	1.56	1.50
7	B	8006	PCW	C32-C31	2.14	1.56	1.50
7	D	8006	PCW	C32-C31	2.14	1.56	1.50
7	A	8006	PCW	C5-C4	2.14	1.57	1.51
7	D	8006	PCW	P-O3P	2.09	1.67	1.59
7	B	8006	PCW	P-O3P	2.07	1.67	1.59
7	A	8006	PCW	P-O3P	2.07	1.67	1.59
7	C	8006	PCW	P-O3P	2.06	1.67	1.59

All (40) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	C	8005	PCW	O2-C31-C32	4.11	120.38	111.48
7	A	8005	PCW	O2-C31-C32	4.10	120.36	111.48
7	D	8005	PCW	O2-C31-C32	4.09	120.34	111.48
7	B	8005	PCW	O2-C31-C32	4.08	120.32	111.48
7	B	8005	PCW	C21-C20-C19	4.08	155.39	124.83
7	A	8005	PCW	C21-C20-C19	4.07	155.36	124.83
7	C	8005	PCW	C21-C20-C19	4.07	155.36	124.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	D	8005	PCW	C21-C20-C19	4.07	155.31	124.83
7	A	8006	PCW	O2-C31-C32	3.95	120.02	111.48
7	B	8006	PCW	O2-C31-C32	3.95	120.02	111.48
7	C	8006	PCW	O2-C31-C32	3.95	120.02	111.48
7	D	8006	PCW	O2-C31-C32	3.95	120.02	111.48
7	C	8006	PCW	C21-C20-C19	3.88	153.87	124.83
7	D	8006	PCW	C21-C20-C19	3.88	153.87	124.83
7	A	8006	PCW	C21-C20-C19	3.87	153.84	124.83
7	B	8006	PCW	C21-C20-C19	3.87	153.81	124.83
4	B	8002	CFF	C14-N7-C8	-3.05	110.76	125.43
4	D	8002	CFF	C14-N7-C8	-3.05	110.76	125.43
4	A	8002	CFF	C14-N7-C8	-3.04	110.80	125.43
4	C	8002	CFF	C14-N7-C8	-3.04	110.82	125.43
7	D	8005	PCW	C18-C19-C20	2.77	145.58	124.83
7	C	8005	PCW	C18-C19-C20	2.76	145.55	124.83
7	B	8005	PCW	C18-C19-C20	2.76	145.54	124.83
7	A	8005	PCW	C18-C19-C20	2.76	145.54	124.83
7	D	8006	PCW	O3-C11-C12	2.59	119.72	111.83
7	A	8006	PCW	O3-C11-C12	2.59	119.72	111.83
7	B	8006	PCW	O3-C11-C12	2.59	119.72	111.83
7	C	8006	PCW	O3-C11-C12	2.58	119.69	111.83
7	D	8005	PCW	O3-C11-C12	2.48	119.40	111.83
7	A	8005	PCW	O3-C11-C12	2.47	119.36	111.83
7	C	8005	PCW	O3-C11-C12	2.46	119.33	111.83
7	B	8005	PCW	O3-C11-C12	2.45	119.31	111.83
5	A	8003	ATP	C5-C6-N6	2.33	123.87	120.31
5	D	8003	ATP	C5-C6-N6	2.32	123.85	120.31
5	C	8003	ATP	C5-C6-N6	2.32	123.85	120.31
5	A	8007	ATP	C5-C6-N6	2.31	123.83	120.31
5	B	8003	ATP	C5-C6-N6	2.31	123.83	120.31
5	C	8007	ATP	C5-C6-N6	2.30	123.82	120.31
5	D	8007	ATP	C5-C6-N6	2.29	123.80	120.31
5	B	8007	ATP	C5-C6-N6	2.29	123.80	120.31

There are no chirality outliers.

All (232) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	8003	ATP	C5'-O5'-PA-O2A
5	A	8003	ATP	C5'-O5'-PA-O3A
5	B	8003	ATP	C5'-O5'-PA-O2A
5	B	8003	ATP	C5'-O5'-PA-O3A

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Mol	Chain	Res	Type	Atoms
5	C	8003	ATP	C5'-O5'-PA-O2A
5	C	8003	ATP	C5'-O5'-PA-O3A
5	D	8003	ATP	C5'-O5'-PA-O2A
5	D	8003	ATP	C5'-O5'-PA-O3A
7	A	8005	PCW	C32-C31-O2-C2
7	A	8006	PCW	O4P-C4-C5-N
7	A	8006	PCW	C1-O3P-P-O2P
7	A	8006	PCW	C4-O4P-P-O2P
7	A	8006	PCW	C4-O4P-P-O3P
7	B	8005	PCW	C32-C31-O2-C2
7	B	8006	PCW	O4P-C4-C5-N
7	B	8006	PCW	C1-O3P-P-O2P
7	B	8006	PCW	C4-O4P-P-O2P
7	B	8006	PCW	C4-O4P-P-O3P
7	C	8005	PCW	C32-C31-O2-C2
7	C	8006	PCW	O4P-C4-C5-N
7	C	8006	PCW	C1-O3P-P-O2P
7	C	8006	PCW	C4-O4P-P-O2P
7	C	8006	PCW	C4-O4P-P-O3P
7	D	8005	PCW	C32-C31-O2-C2
7	D	8006	PCW	O4P-C4-C5-N
7	D	8006	PCW	C1-O3P-P-O2P
7	D	8006	PCW	C4-O4P-P-O2P
7	D	8006	PCW	C4-O4P-P-O3P
7	A	8005	PCW	O31-C31-O2-C2
7	B	8005	PCW	O31-C31-O2-C2
7	C	8005	PCW	O31-C31-O2-C2
7	D	8005	PCW	O31-C31-O2-C2
7	B	8005	PCW	C41-C42-C43-C44
7	A	8005	PCW	C41-C42-C43-C44
7	C	8005	PCW	C41-C42-C43-C44
7	D	8005	PCW	C41-C42-C43-C44
7	A	8006	PCW	C31-C32-C33-C34
7	B	8006	PCW	C31-C32-C33-C34
7	C	8006	PCW	C31-C32-C33-C34
7	D	8006	PCW	C31-C32-C33-C34
7	A	8006	PCW	C20-C21-C22-C23
7	B	8006	PCW	C20-C21-C22-C23
7	C	8006	PCW	C20-C21-C22-C23
7	D	8006	PCW	C20-C21-C22-C23
7	A	8006	PCW	C11-C12-C13-C14
7	B	8006	PCW	C11-C12-C13-C14

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Mol	Chain	Res	Type	Atoms
7	C	8006	PCW	C11-C12-C13-C14
7	D	8006	PCW	C11-C12-C13-C14
7	A	8005	PCW	C21-C22-C23-C24
7	B	8005	PCW	C21-C22-C23-C24
7	C	8005	PCW	C21-C22-C23-C24
7	D	8005	PCW	C21-C22-C23-C24
7	C	8006	PCW	C35-C36-C37-C38
7	A	8006	PCW	C35-C36-C37-C38
7	B	8006	PCW	C35-C36-C37-C38
7	D	8006	PCW	C35-C36-C37-C38
7	A	8006	PCW	C40-C41-C42-C43
7	B	8006	PCW	C40-C41-C42-C43
7	D	8006	PCW	C40-C41-C42-C43
5	A	8003	ATP	C4'-C5'-O5'-PA
5	B	8003	ATP	C4'-C5'-O5'-PA
5	C	8003	ATP	C4'-C5'-O5'-PA
5	D	8003	ATP	C4'-C5'-O5'-PA
7	A	8006	PCW	C32-C31-O2-C2
7	B	8006	PCW	C32-C31-O2-C2
7	C	8006	PCW	C32-C31-O2-C2
7	D	8006	PCW	C32-C31-O2-C2
7	B	8005	PCW	C32-C33-C34-C35
7	A	8005	PCW	C32-C33-C34-C35
7	C	8005	PCW	C32-C33-C34-C35
7	D	8005	PCW	C32-C33-C34-C35
7	C	8006	PCW	C40-C41-C42-C43
7	A	8005	PCW	C36-C37-C38-C39
7	B	8005	PCW	C36-C37-C38-C39
7	C	8005	PCW	C36-C37-C38-C39
7	D	8005	PCW	C36-C37-C38-C39
7	D	8006	PCW	C15-C16-C17-C18
7	A	8006	PCW	C15-C16-C17-C18
7	B	8006	PCW	C15-C16-C17-C18
7	C	8006	PCW	C15-C16-C17-C18
7	A	8006	PCW	O31-C31-O2-C2
7	C	8006	PCW	O31-C31-O2-C2
7	D	8006	PCW	O31-C31-O2-C2
7	B	8006	PCW	O31-C31-O2-C2
7	A	8005	PCW	C20-C21-C22-C23
7	B	8005	PCW	C20-C21-C22-C23
7	C	8005	PCW	C20-C21-C22-C23
7	D	8005	PCW	C20-C21-C22-C23

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Mol	Chain	Res	Type	Atoms
7	A	8005	PCW	C15-C16-C17-C18
7	B	8005	PCW	C15-C16-C17-C18
7	C	8005	PCW	C15-C16-C17-C18
7	D	8005	PCW	C15-C16-C17-C18
7	A	8005	PCW	C16-C17-C18-C19
7	B	8005	PCW	C16-C17-C18-C19
7	C	8005	PCW	C16-C17-C18-C19
7	D	8005	PCW	C16-C17-C18-C19
7	A	8006	PCW	C43-C44-C45-C46
7	B	8006	PCW	C43-C44-C45-C46
7	C	8006	PCW	C43-C44-C45-C46
7	D	8006	PCW	C43-C44-C45-C46
7	A	8006	PCW	C41-C42-C43-C44
7	C	8006	PCW	C41-C42-C43-C44
7	D	8006	PCW	C41-C42-C43-C44
7	B	8006	PCW	C41-C42-C43-C44
5	A	8003	ATP	PA-O3A-PB-O3B
5	B	8003	ATP	PA-O3A-PB-O3B
5	C	8003	ATP	PA-O3A-PB-O3B
5	D	8003	ATP	PA-O3A-PB-O3B
7	A	8006	PCW	O3P-C1-C2-O2
7	B	8006	PCW	O3P-C1-C2-O2
7	C	8006	PCW	O3P-C1-C2-O2
7	D	8006	PCW	O3P-C1-C2-O2
7	A	8005	PCW	C23-C24-C25-C26
7	B	8005	PCW	C23-C24-C25-C26
7	C	8005	PCW	C23-C24-C25-C26
7	D	8005	PCW	C23-C24-C25-C26
7	A	8006	PCW	O3P-C1-C2-C3
7	B	8006	PCW	O3P-C1-C2-C3
7	C	8006	PCW	O3P-C1-C2-C3
7	D	8006	PCW	O3P-C1-C2-C3
5	A	8007	ATP	PG-O3B-PB-O2B
5	B	8007	ATP	PG-O3B-PB-O2B
5	C	8007	ATP	PG-O3B-PB-O2B
5	D	8007	ATP	PG-O3B-PB-O2B
7	A	8005	PCW	C19-C20-C21-C22
7	B	8005	PCW	C19-C20-C21-C22
7	C	8005	PCW	C19-C20-C21-C22
7	D	8005	PCW	C19-C20-C21-C22
7	A	8005	PCW	C2-C1-O3P-P
7	B	8005	PCW	C2-C1-O3P-P

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Mol	Chain	Res	Type	Atoms
7	C	8005	PCW	C2-C1-O3P-P
7	D	8005	PCW	C2-C1-O3P-P
7	A	8005	PCW	C25-C26-C27-C28
7	B	8005	PCW	C25-C26-C27-C28
7	C	8005	PCW	C25-C26-C27-C28
7	D	8005	PCW	C25-C26-C27-C28
7	A	8005	PCW	C33-C34-C35-C36
7	D	8005	PCW	C33-C34-C35-C36
7	C	8005	PCW	C33-C34-C35-C36
7	B	8005	PCW	C33-C34-C35-C36
7	D	8006	PCW	C45-C46-C47-C48
7	B	8006	PCW	C45-C46-C47-C48
7	A	8006	PCW	C45-C46-C47-C48
7	C	8006	PCW	C45-C46-C47-C48
7	C	8005	PCW	C45-C46-C47-C48
7	A	8005	PCW	C45-C46-C47-C48
7	B	8005	PCW	C45-C46-C47-C48
7	D	8005	PCW	C45-C46-C47-C48
7	C	8006	PCW	C25-C26-C27-C28
7	A	8006	PCW	C25-C26-C27-C28
7	B	8006	PCW	C25-C26-C27-C28
7	D	8006	PCW	C25-C26-C27-C28
5	A	8007	ATP	C4'-C5'-O5'-PA
5	B	8007	ATP	C4'-C5'-O5'-PA
5	C	8007	ATP	C4'-C5'-O5'-PA
5	D	8007	ATP	C4'-C5'-O5'-PA
7	A	8006	PCW	C16-C17-C18-C19
7	B	8006	PCW	C16-C17-C18-C19
7	C	8006	PCW	C16-C17-C18-C19
7	D	8006	PCW	C16-C17-C18-C19
5	A	8007	ATP	PB-O3A-PA-O1A
5	B	8007	ATP	PB-O3A-PA-O1A
5	C	8007	ATP	PB-O3A-PA-O1A
5	D	8007	ATP	PB-O3A-PA-O1A
7	C	8005	PCW	C31-C32-C33-C34
7	A	8005	PCW	C31-C32-C33-C34
7	B	8005	PCW	C31-C32-C33-C34
7	D	8005	PCW	C31-C32-C33-C34
7	D	8005	PCW	C43-C44-C45-C46
7	A	8005	PCW	C43-C44-C45-C46
7	B	8005	PCW	C43-C44-C45-C46
7	C	8005	PCW	C43-C44-C45-C46

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Mol	Chain	Res	Type	Atoms
7	A	8005	PCW	C4-C5-N-C6
7	B	8005	PCW	C4-C5-N-C6
7	C	8005	PCW	C4-C5-N-C6
7	D	8005	PCW	C4-C5-N-C6
7	A	8005	PCW	C5-C4-O4P-P
7	B	8005	PCW	C5-C4-O4P-P
7	C	8005	PCW	C5-C4-O4P-P
7	D	8005	PCW	C5-C4-O4P-P
7	A	8006	PCW	O2-C31-C32-C33
7	B	8006	PCW	O2-C31-C32-C33
7	D	8006	PCW	O2-C31-C32-C33
5	A	8007	ATP	PG-O3B-PB-O1B
5	B	8007	ATP	PG-O3B-PB-O1B
5	C	8007	ATP	PG-O3B-PB-O1B
5	D	8007	ATP	PG-O3B-PB-O1B
7	C	8006	PCW	O2-C31-C32-C33
5	A	8007	ATP	O4'-C4'-C5'-O5'
5	B	8007	ATP	O4'-C4'-C5'-O5'
5	C	8007	ATP	O4'-C4'-C5'-O5'
5	D	8007	ATP	O4'-C4'-C5'-O5'
7	A	8005	PCW	C4-C5-N-C7
7	B	8005	PCW	C4-C5-N-C7
7	C	8005	PCW	C4-C5-N-C7
7	D	8005	PCW	C4-C5-N-C7
7	A	8005	PCW	O2-C31-C32-C33
7	B	8005	PCW	O2-C31-C32-C33
7	C	8005	PCW	O2-C31-C32-C33
7	D	8005	PCW	O2-C31-C32-C33
7	A	8005	PCW	C37-C38-C39-C40
7	B	8005	PCW	C37-C38-C39-C40
7	D	8005	PCW	C34-C35-C36-C37
7	C	8005	PCW	C37-C38-C39-C40
7	D	8005	PCW	C37-C38-C39-C40
7	B	8005	PCW	C34-C35-C36-C37
7	A	8005	PCW	C34-C35-C36-C37
7	C	8005	PCW	C34-C35-C36-C37
7	A	8005	PCW	O31-C31-C32-C33
7	C	8005	PCW	O31-C31-C32-C33
7	B	8005	PCW	O31-C31-C32-C33
7	D	8005	PCW	O31-C31-C32-C33
7	A	8006	PCW	O31-C31-C32-C33
7	C	8006	PCW	O31-C31-C32-C33

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Mol	Chain	Res	Type	Atoms
7	D	8006	PCW	O31-C31-C32-C33
7	B	8006	PCW	O31-C31-C32-C33
7	A	8005	PCW	C1-C2-C3-O3
7	B	8005	PCW	C1-C2-C3-O3
7	C	8005	PCW	C1-C2-C3-O3
7	D	8005	PCW	C1-C2-C3-O3
7	A	8005	PCW	C4-C5-N-C8
7	B	8005	PCW	C4-C5-N-C8
7	C	8005	PCW	C4-C5-N-C8
7	D	8005	PCW	C4-C5-N-C8
7	D	8006	PCW	C33-C34-C35-C36
7	C	8006	PCW	C33-C34-C35-C36
7	A	8006	PCW	C33-C34-C35-C36
7	B	8006	PCW	C33-C34-C35-C36
5	A	8007	ATP	PB-O3A-PA-O2A
5	B	8007	ATP	PB-O3A-PA-O2A
5	C	8007	ATP	PB-O3A-PA-O2A
5	D	8007	ATP	PB-O3A-PA-O2A

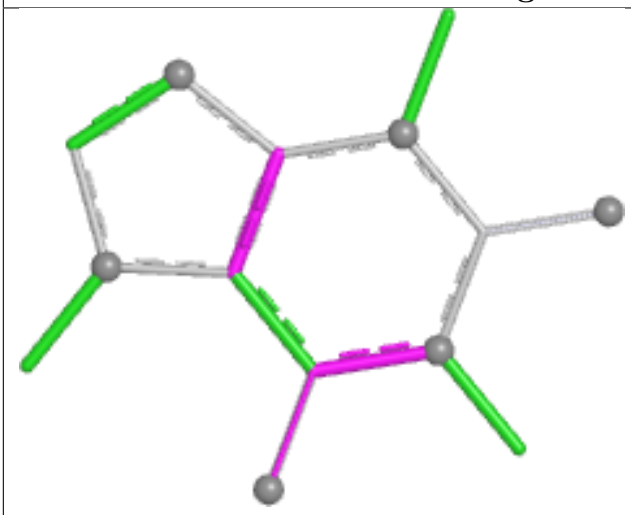
There are no ring outliers.

6 monomers are involved in 7 short contacts:

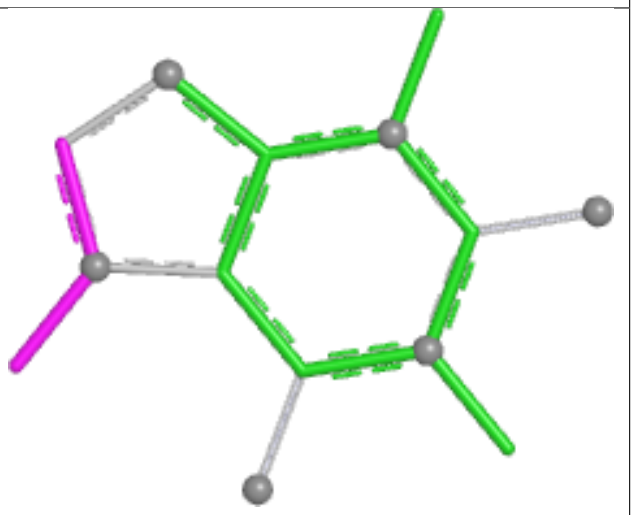
Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	D	8006	PCW	1	0
7	C	8006	PCW	1	0
5	B	8003	ATP	1	0
5	C	8003	ATP	1	0
5	A	8003	ATP	1	0
5	D	8003	ATP	2	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

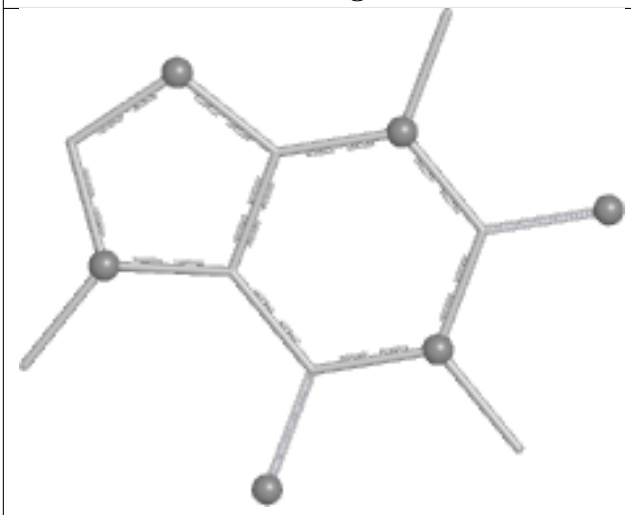
Ligand CFF B 8002



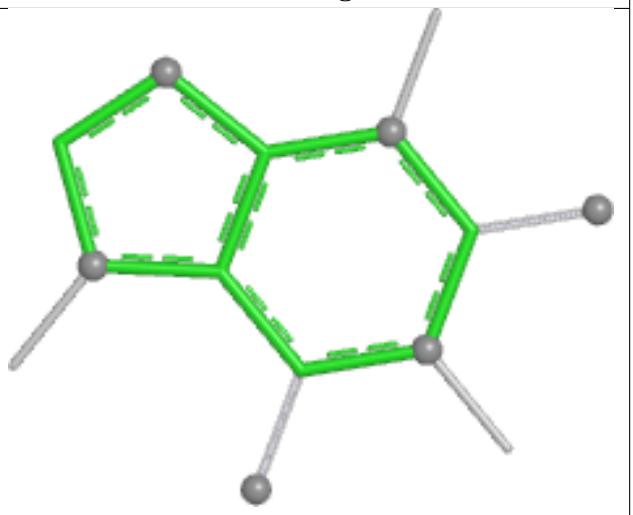
Bond lengths



Bond angles

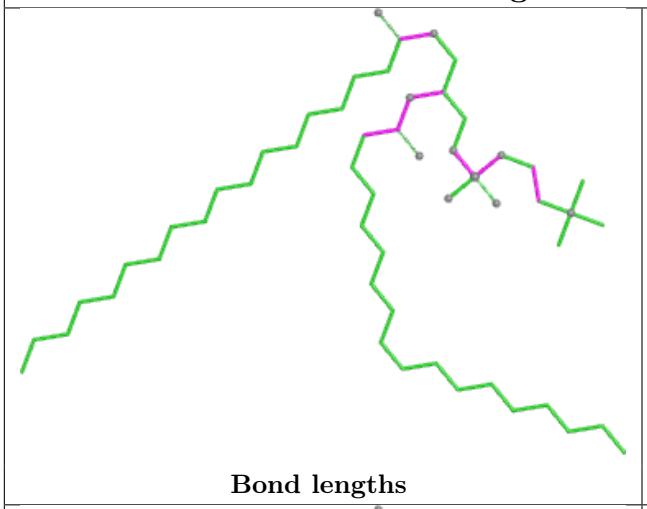


Torsions

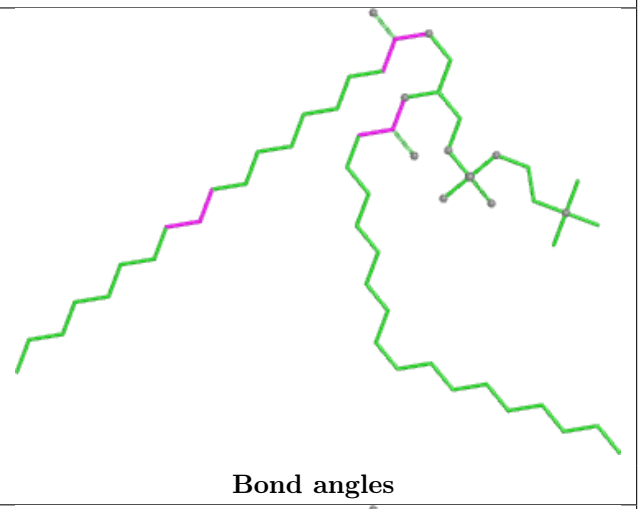


Rings

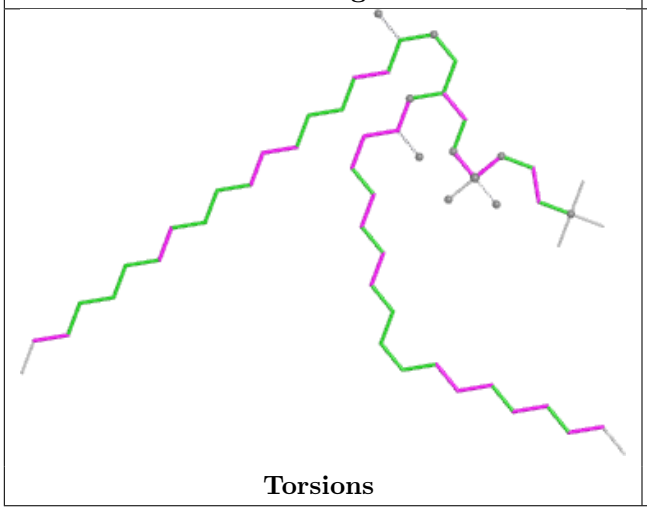
Ligand PCW B 8006



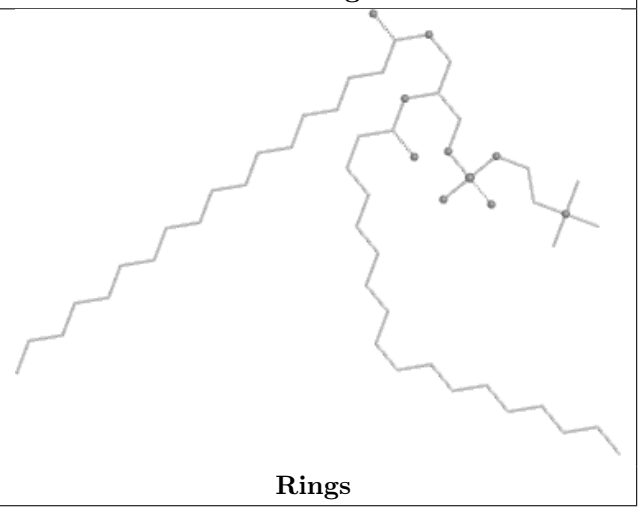
Bond lengths



Bond angles

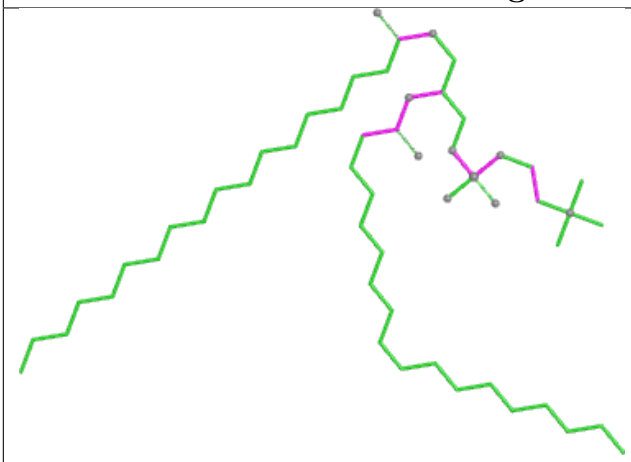


Torsions

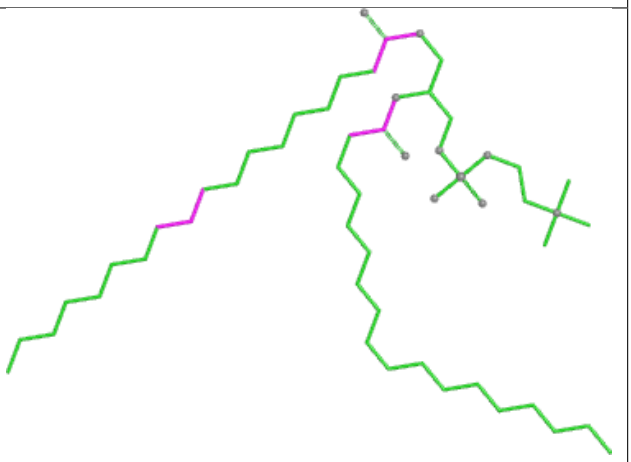


Rings

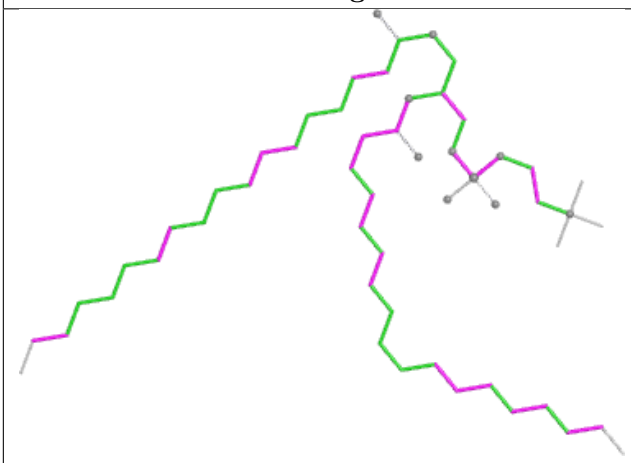
Ligand PCW D 8006



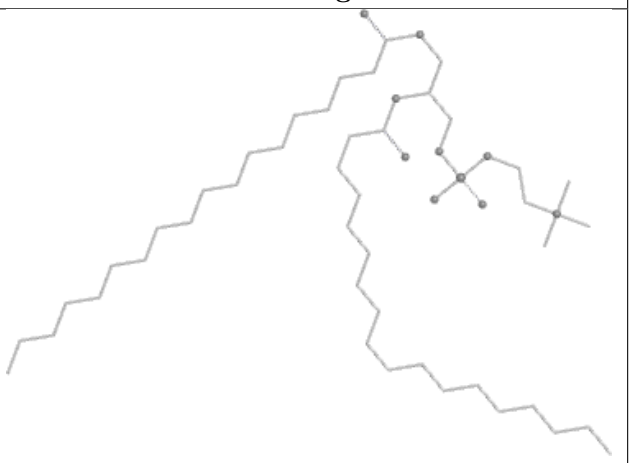
Bond lengths



Bond angles

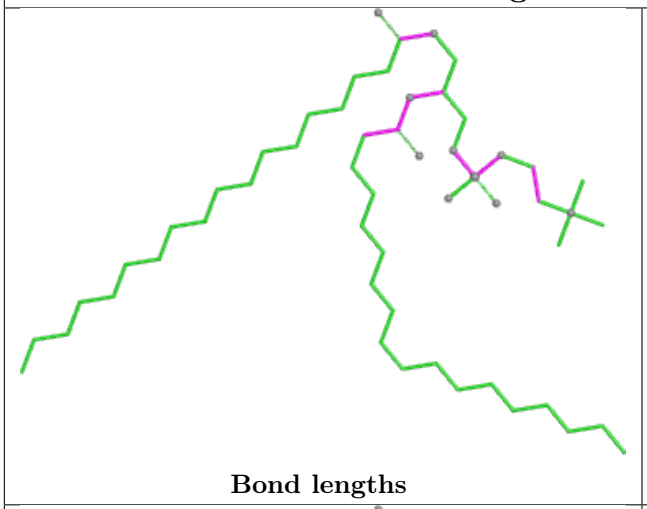


Torsions



Rings

Ligand PCW C 8006



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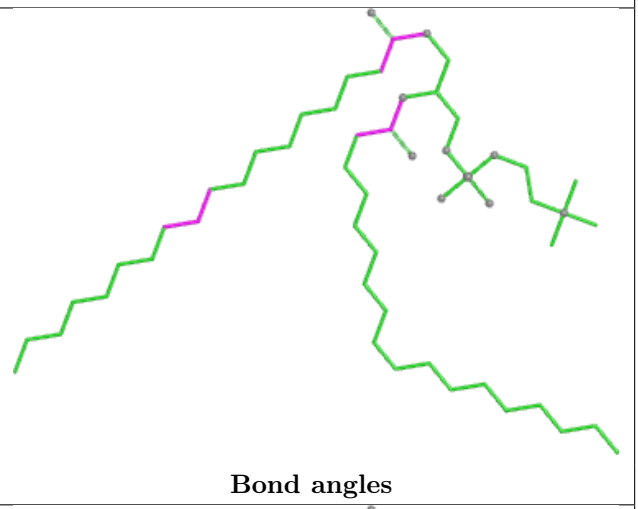
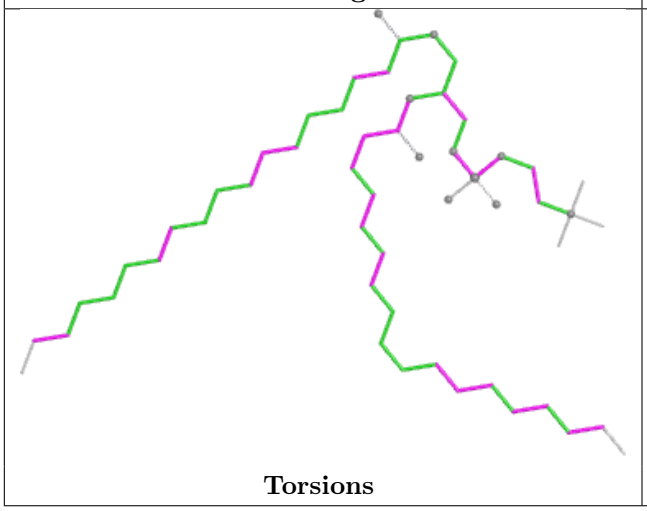


Bond angles



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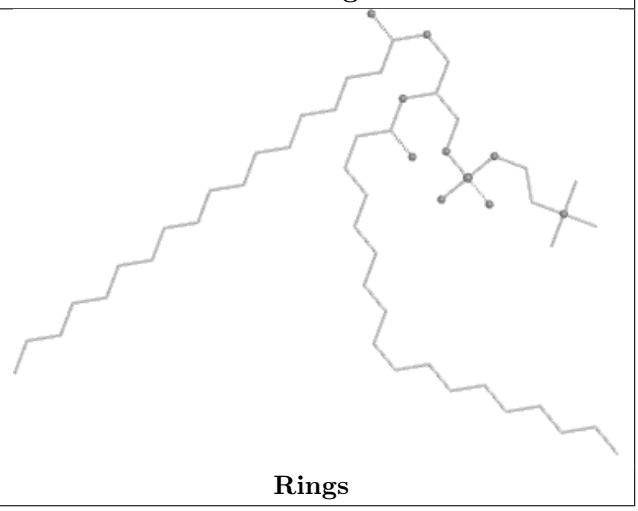
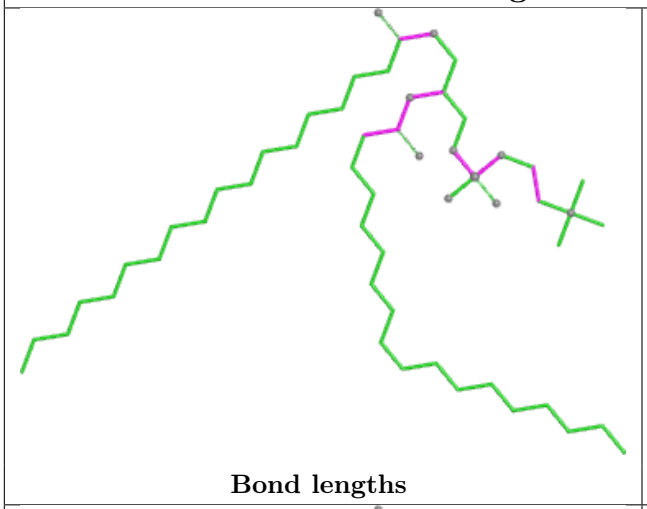


Rings

Ligand PCW A 8005



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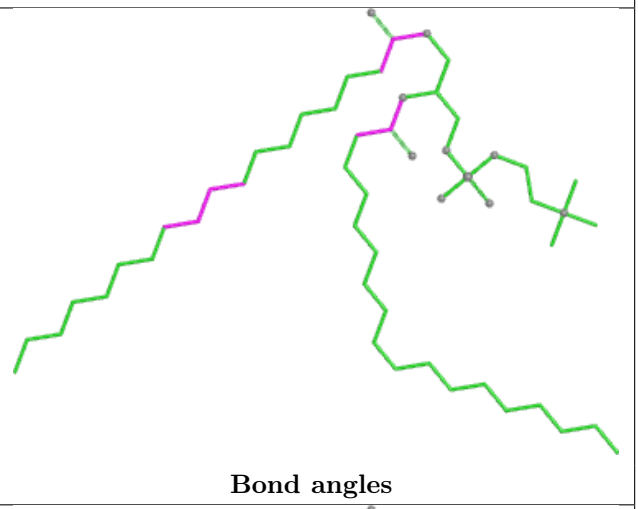
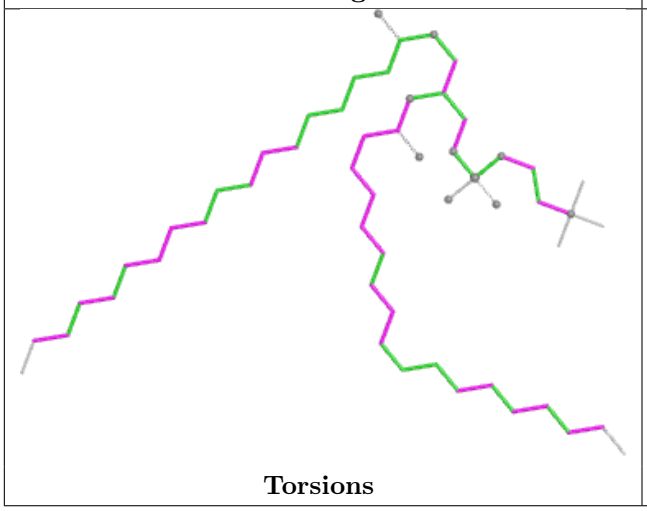


Bond angles



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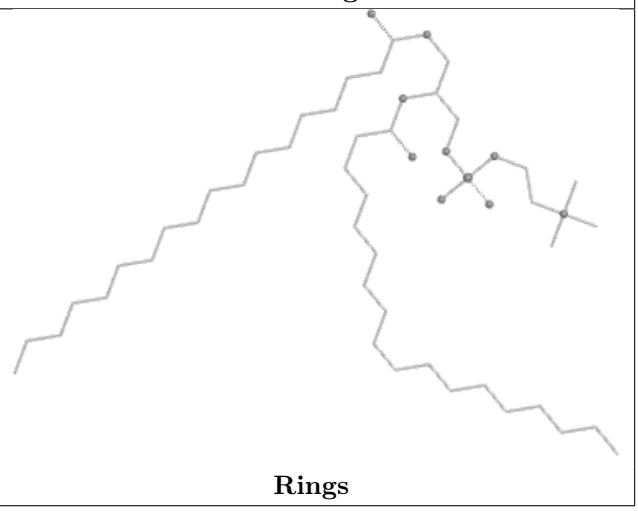
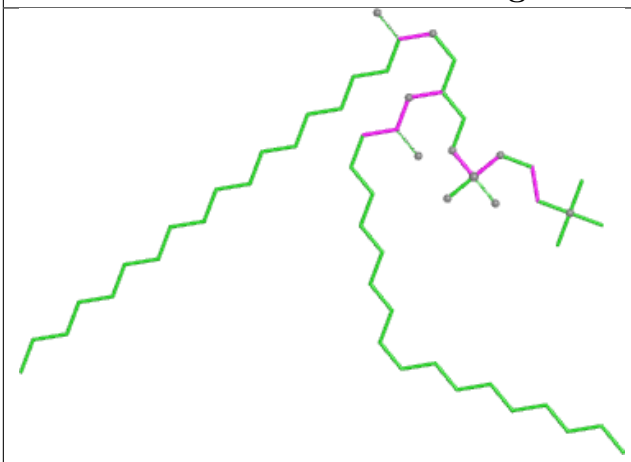


Rings

Ligand PCW A 8006



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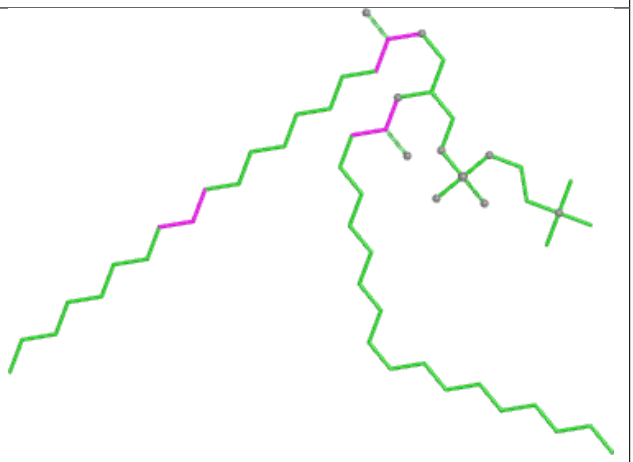
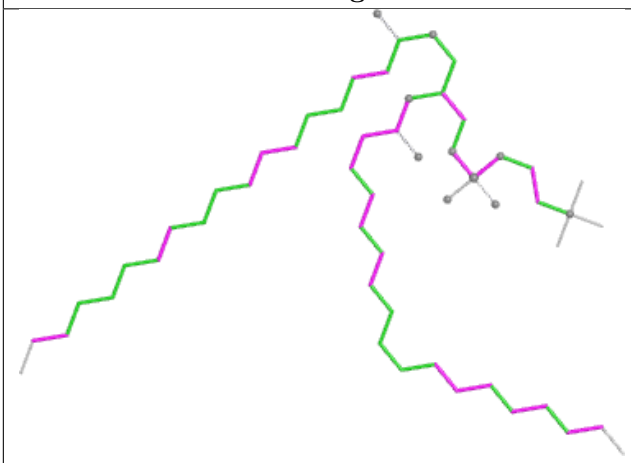


Bond angles



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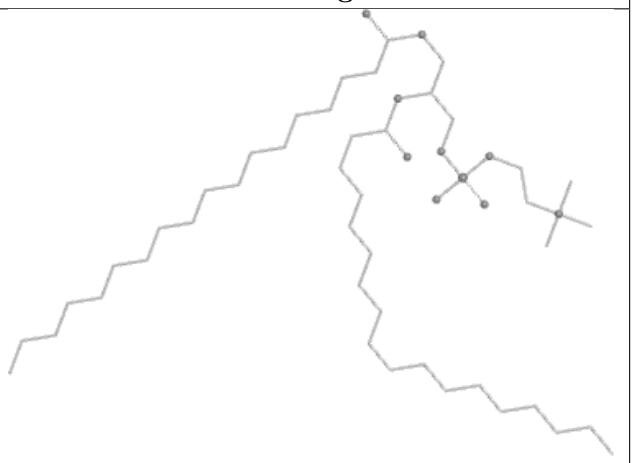
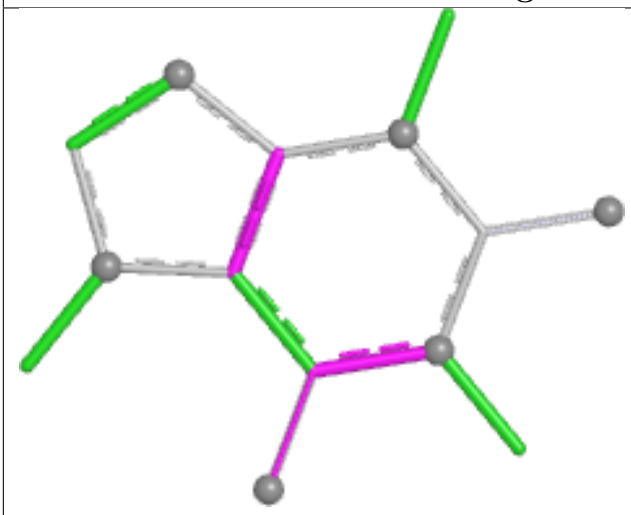


Rings

Ligand CFF D 8002



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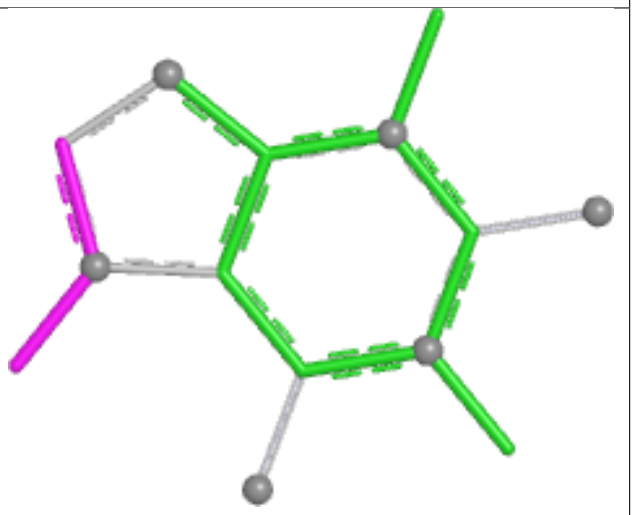
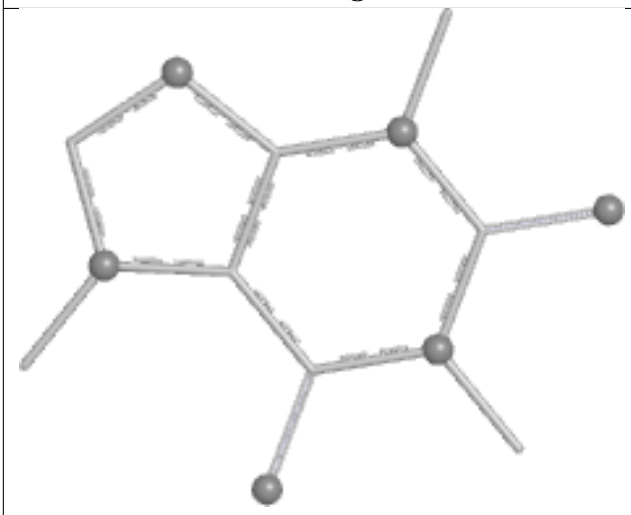


Bond angles



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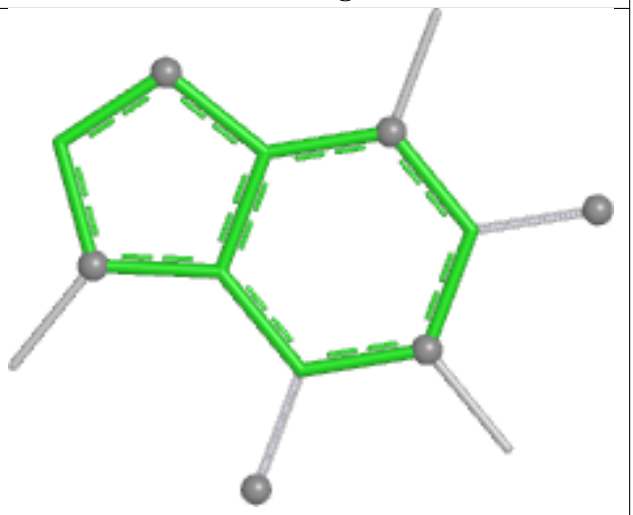
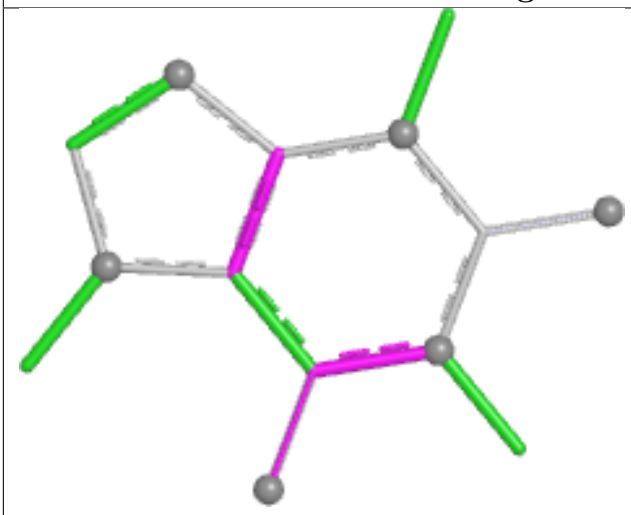


Rings

Ligand CFF C 8002



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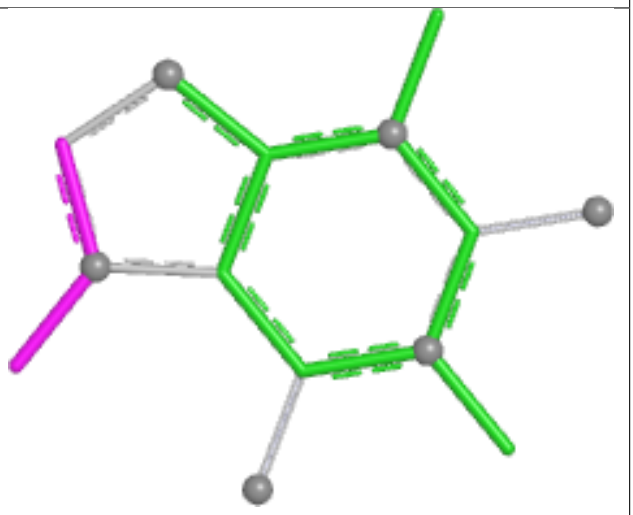
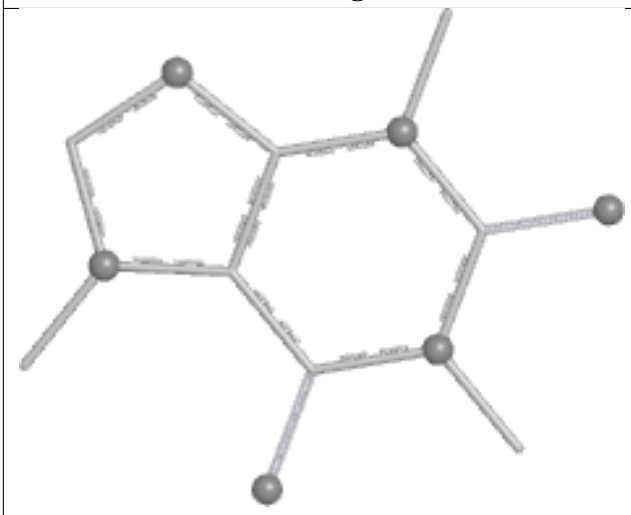


Bond angles



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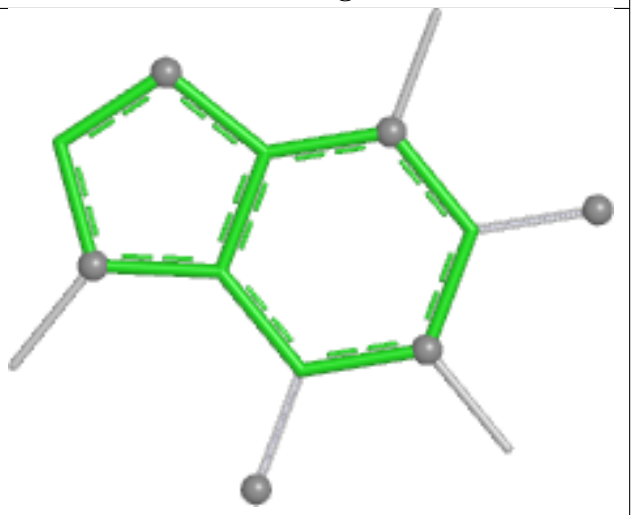
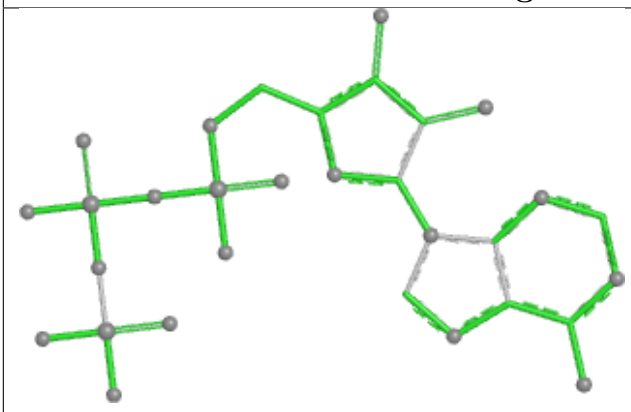


Rings

Ligand ATP B 8007



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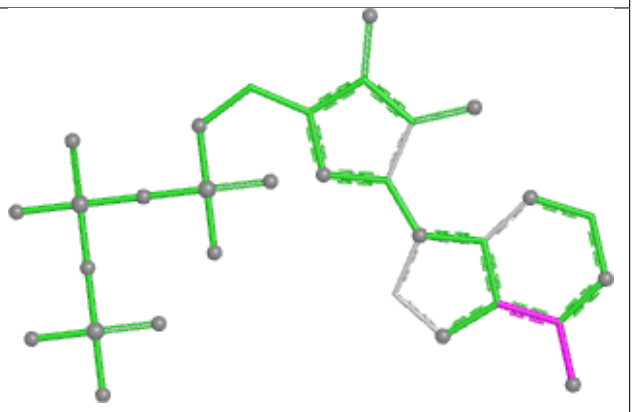

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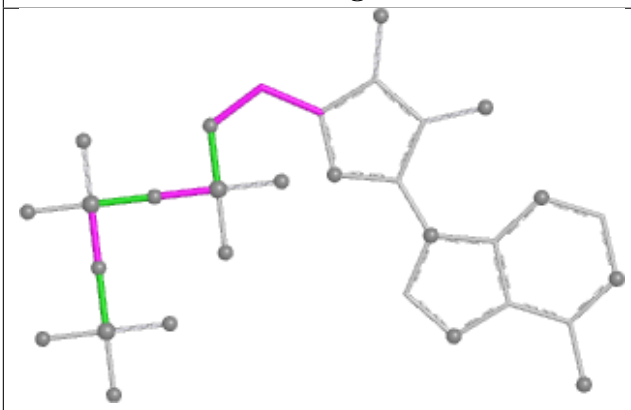

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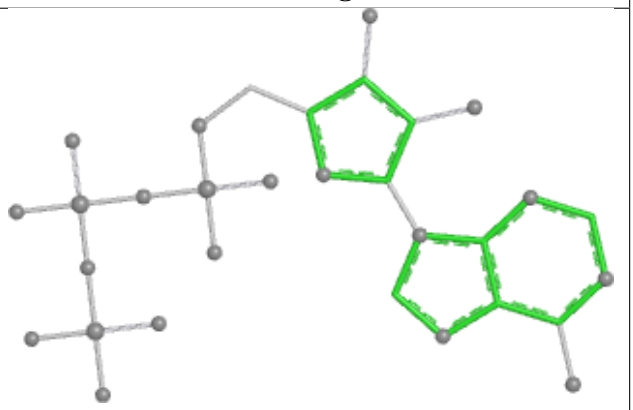
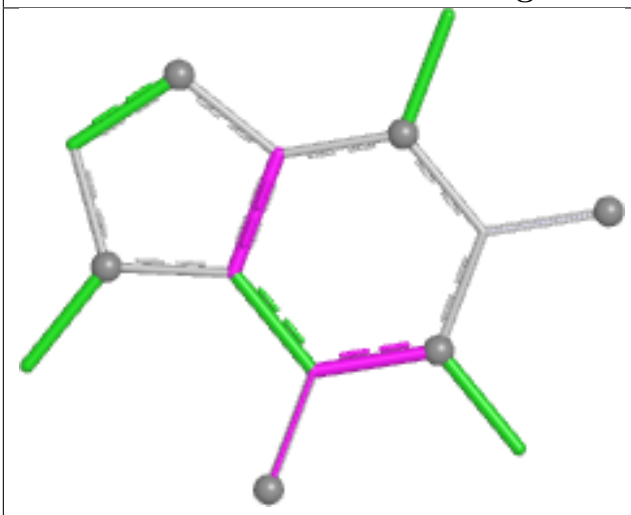


Rings

Ligand CFF A 8002



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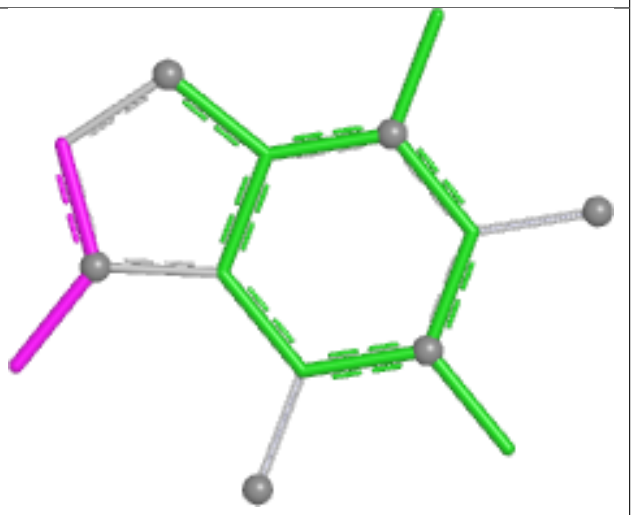
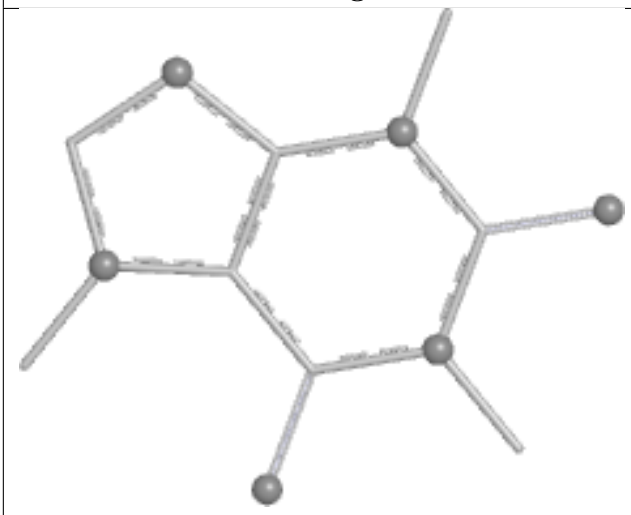


Bond angles



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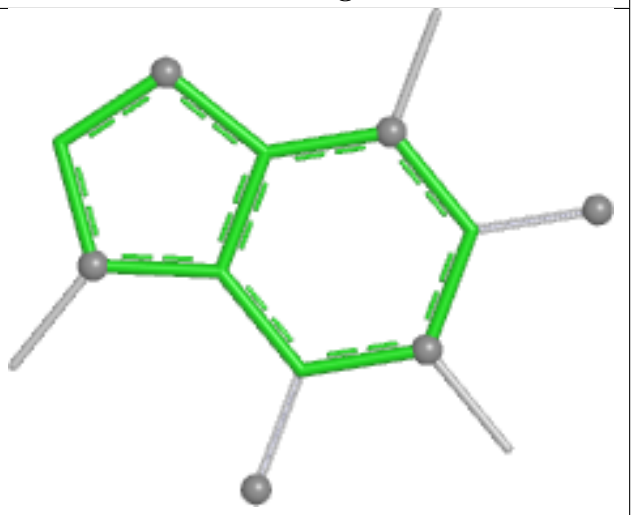
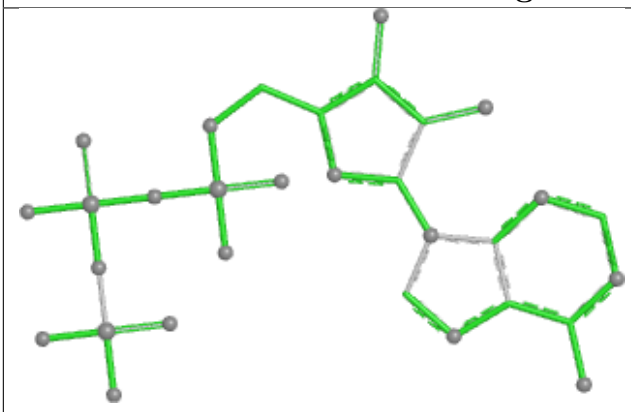


Rings

Ligand ATP C 8007



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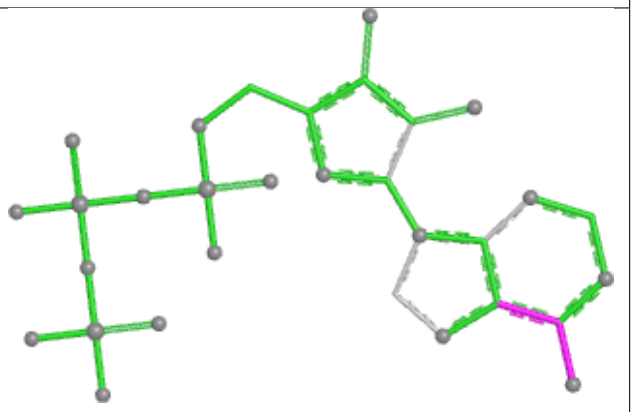

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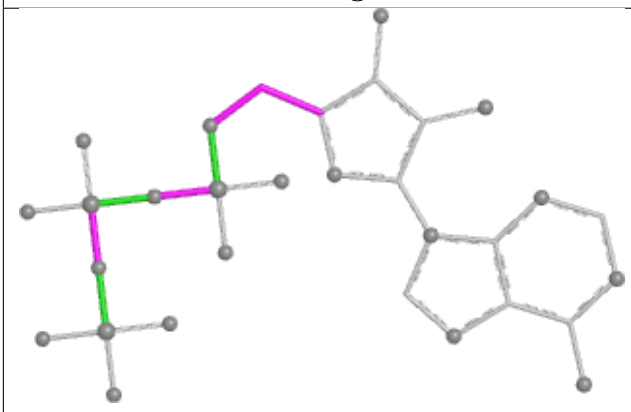

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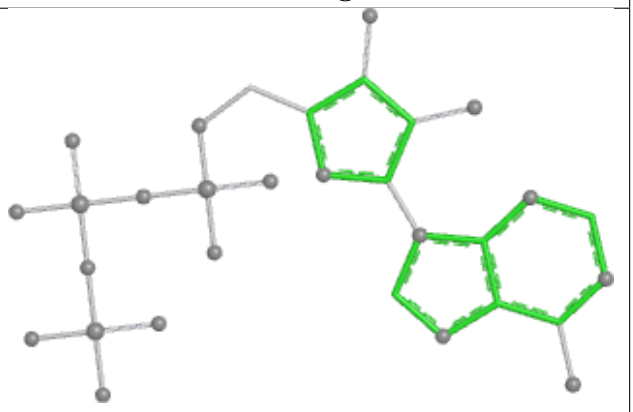
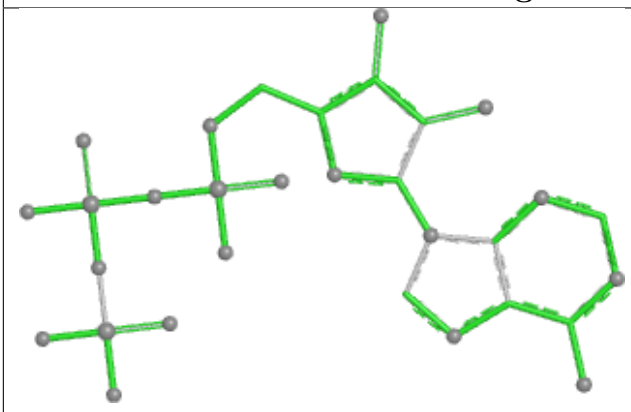


Rings

Ligand ATP A 8007



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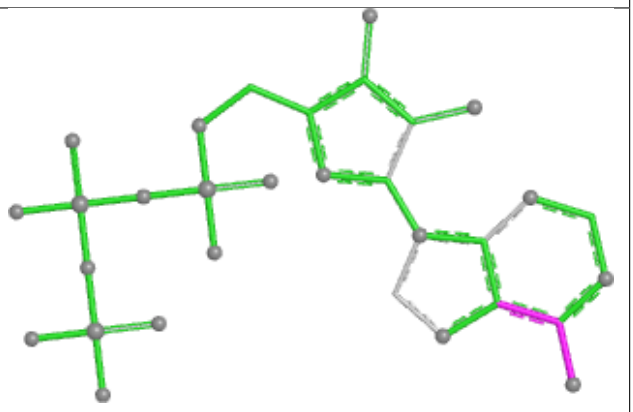

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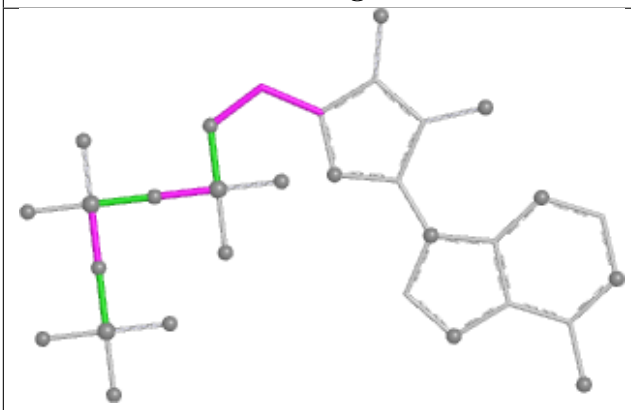

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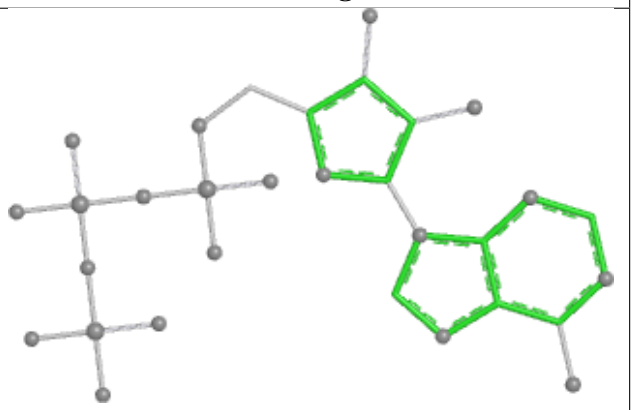
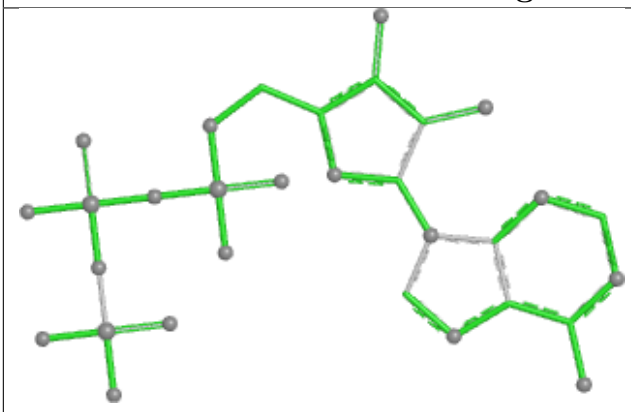


Rings

Ligand ATP B 8003



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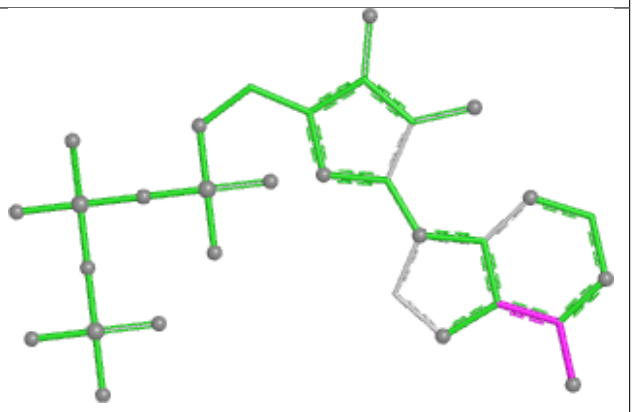
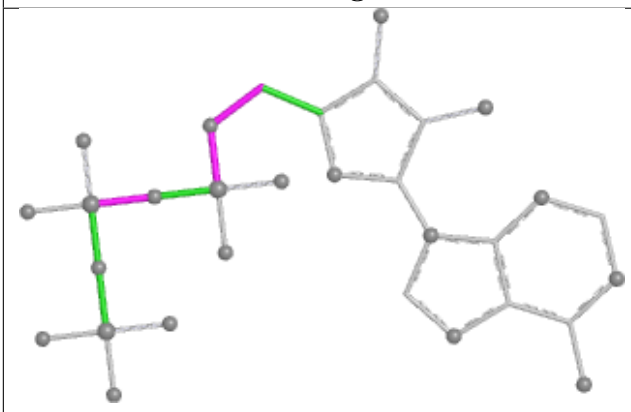


Bond angles



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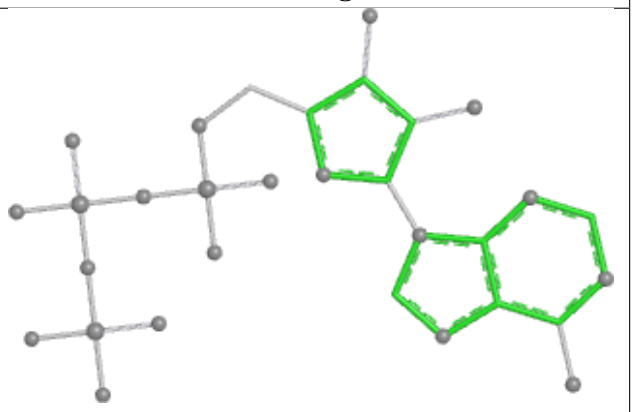
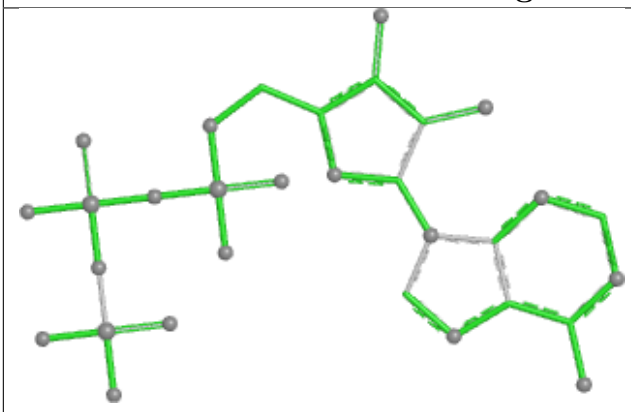


Rings

Ligand ATP C 8003



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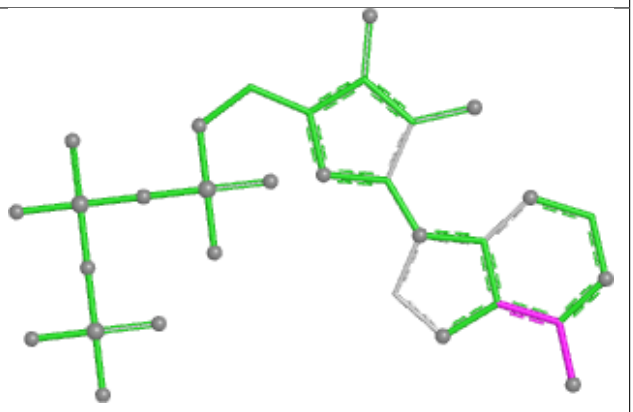
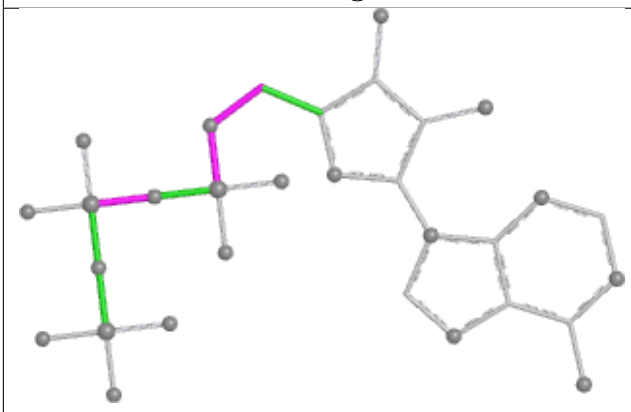
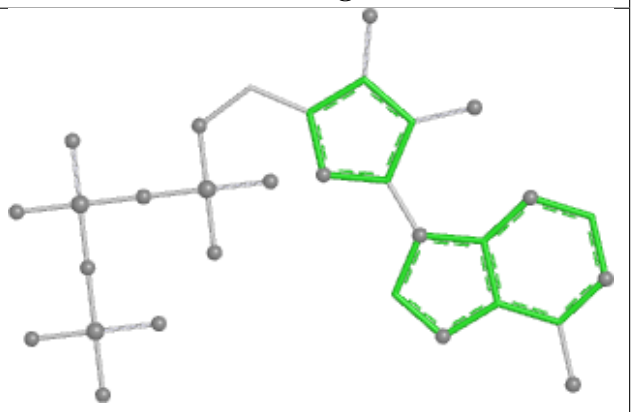


Bond angles

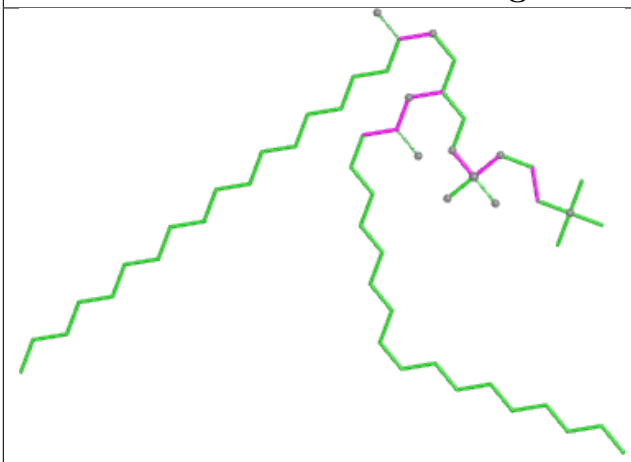


Torsions



Rings

Ligand PCW B 8005



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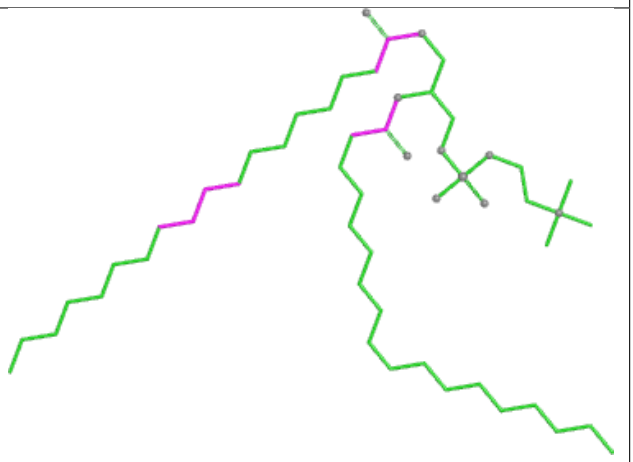
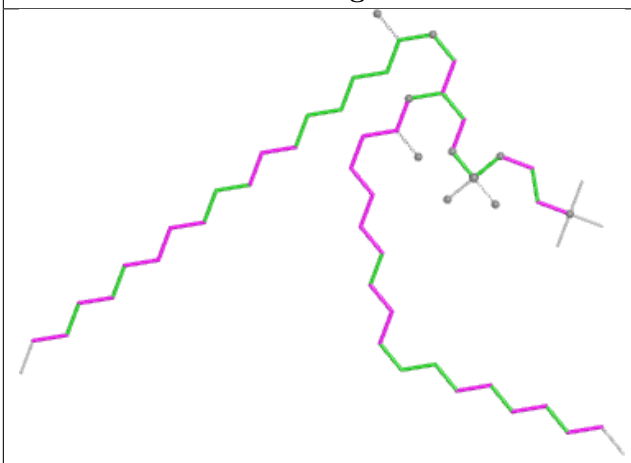


Bond angles



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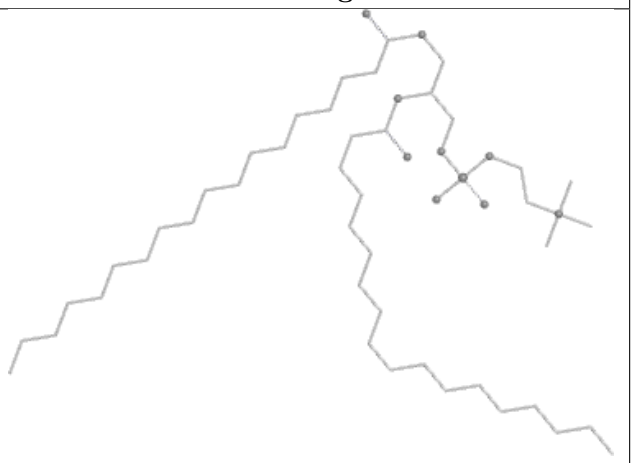
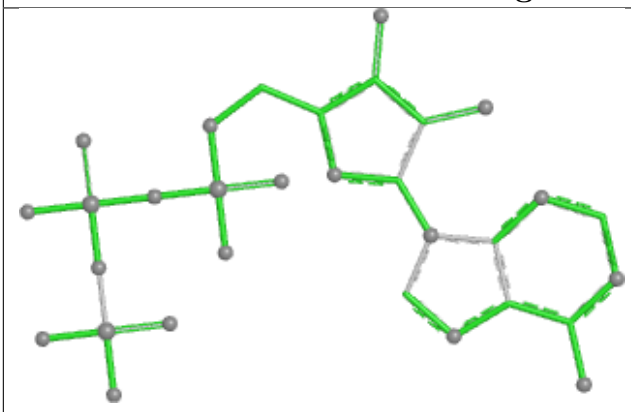
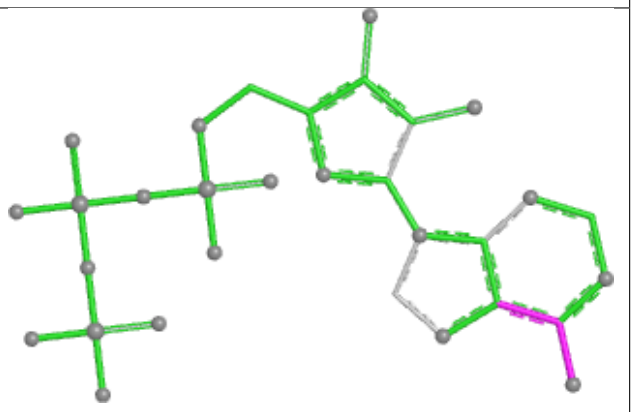


Rings

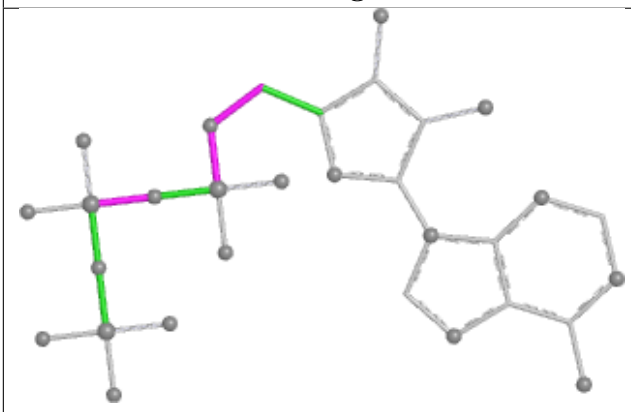
Ligand ATP A 8003



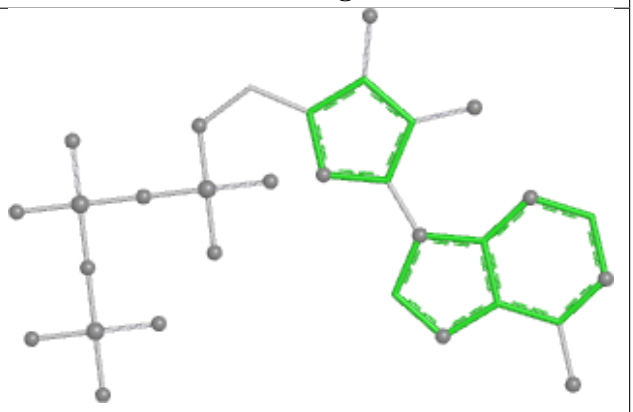
Bond lengths



Bond angles

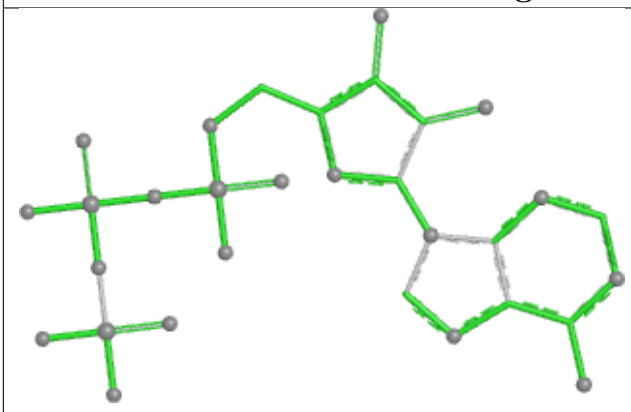


Torsions

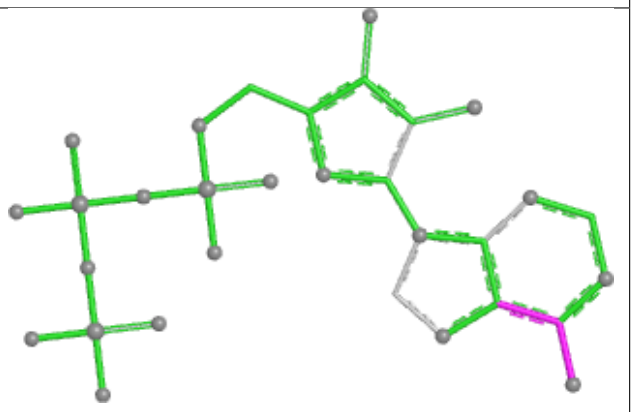


Rings

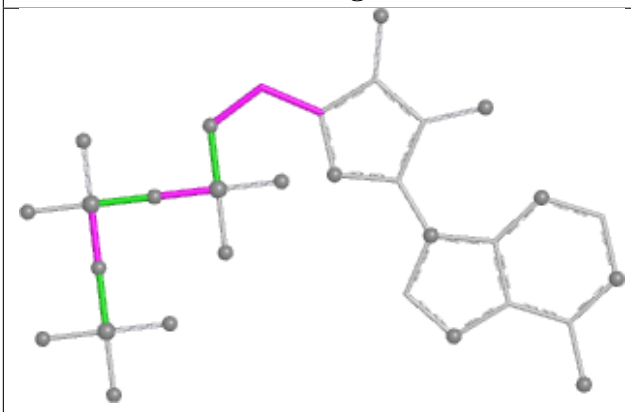
Ligand ATP D 8007



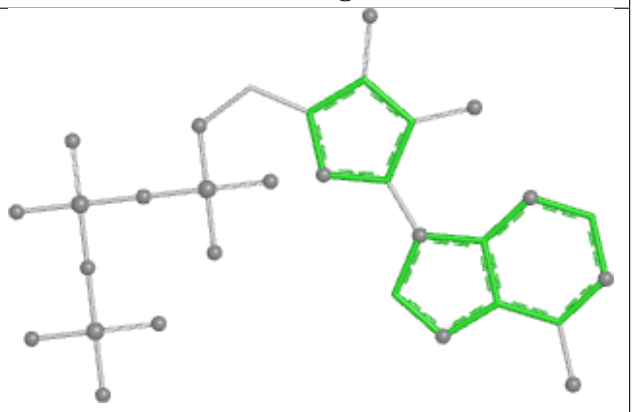
Bond lengths



Bond angles

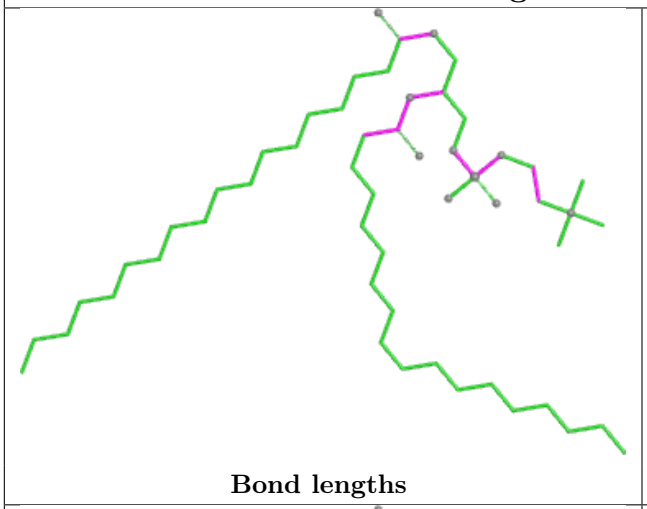


Torsions

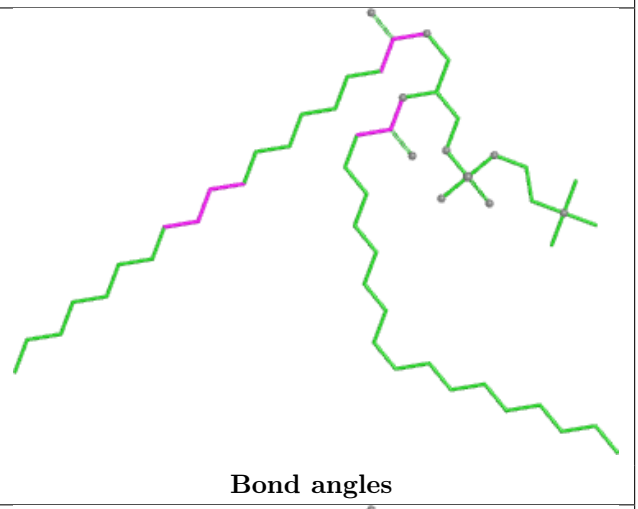


Rings

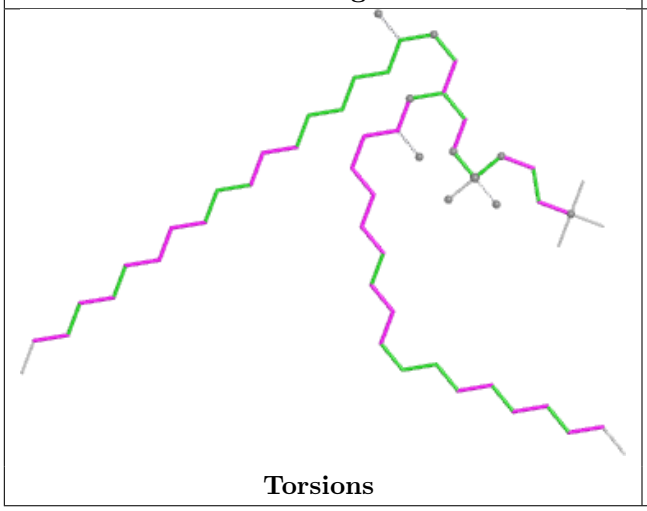
Ligand PCW C 8005



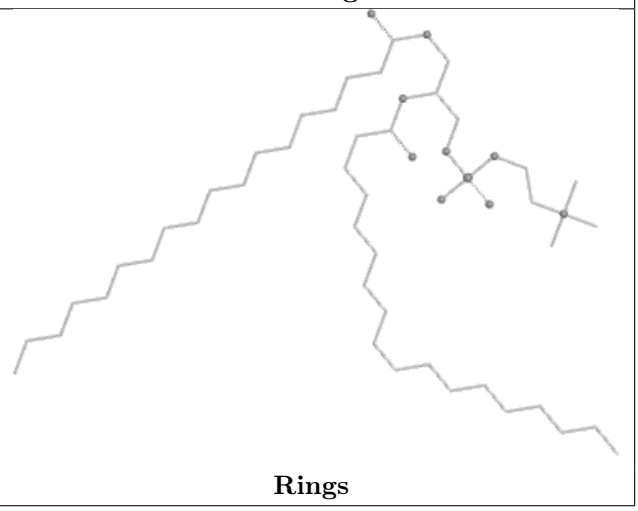
Bond lengths



Bond angles

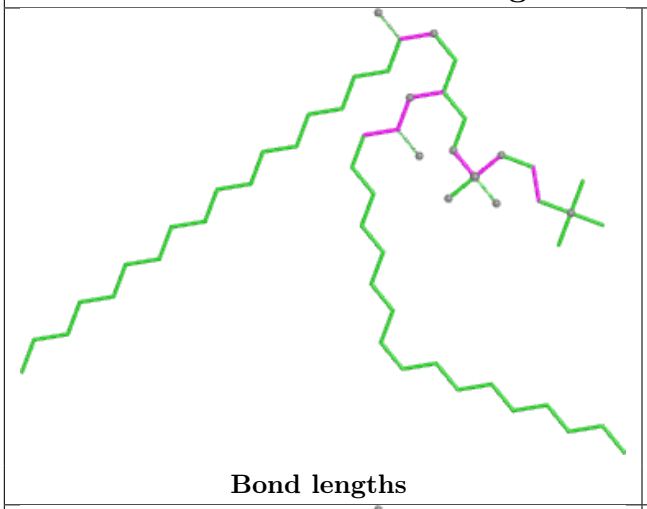


Torsions

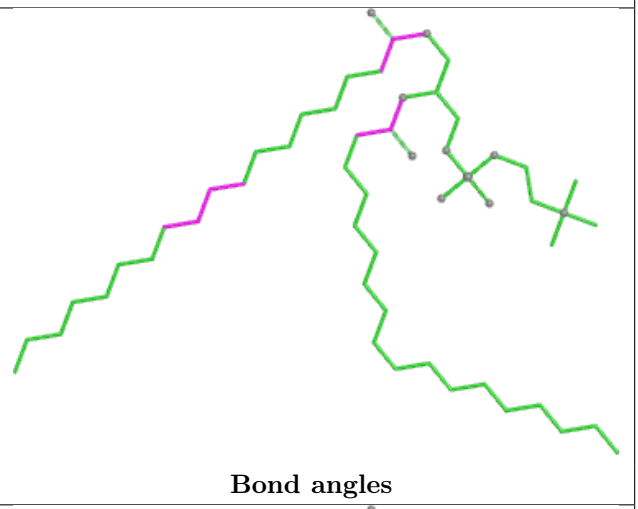


Rings

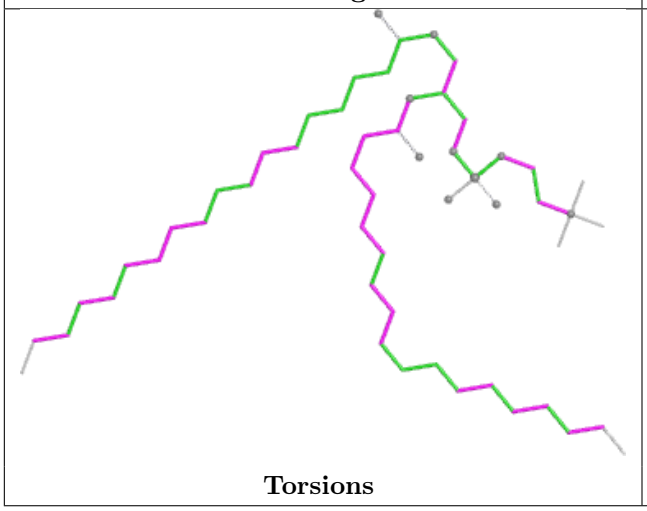
Ligand PCW D 8005



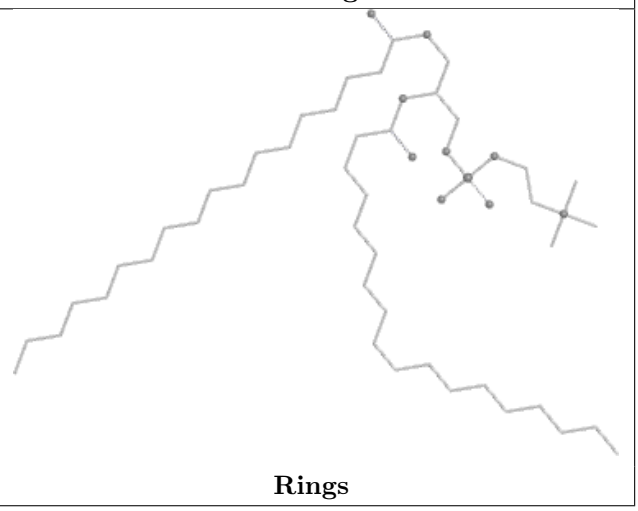
Bond lengths



Bond angles

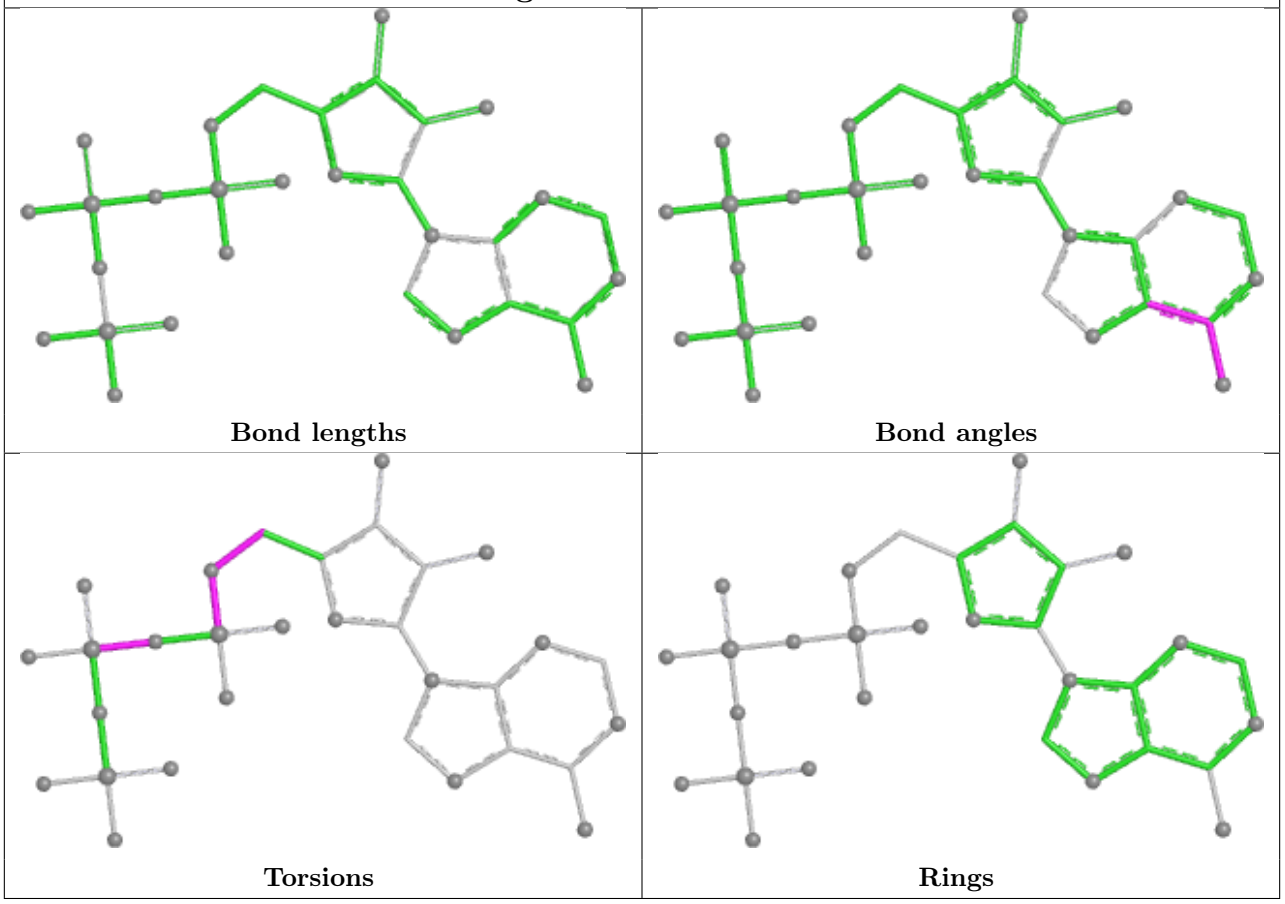


Torsions



Rings

Ligand ATP D 8003



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.

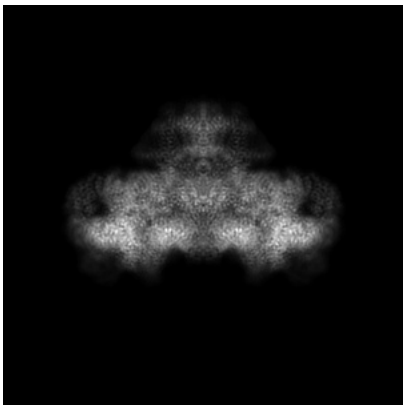
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-49534. These allow visual inspection of the internal detail of the map and identification of artifacts.

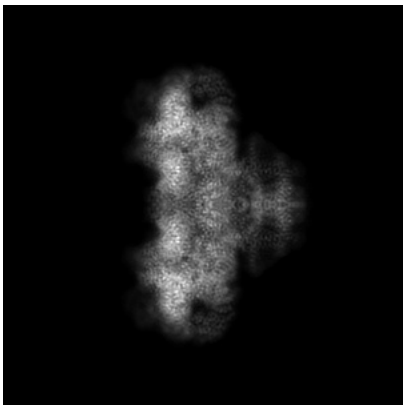
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

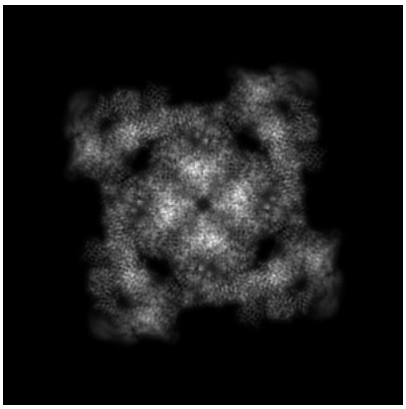
6.1.1 Primary map



X

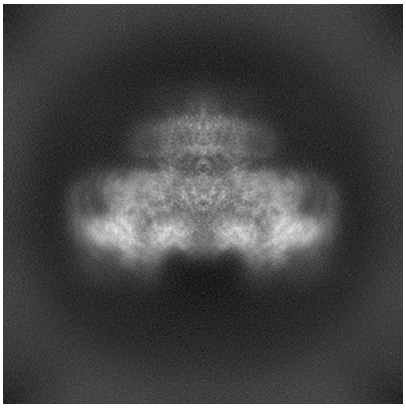


Y

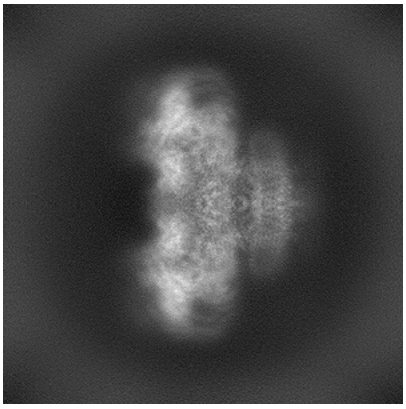


Z

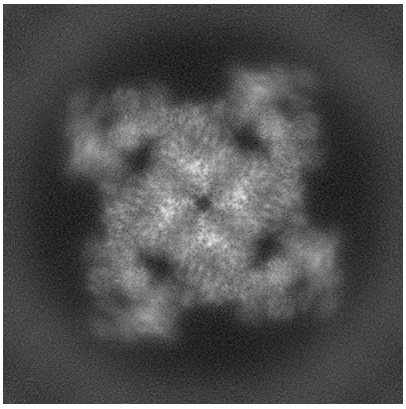
6.1.2 Raw map



X



Y

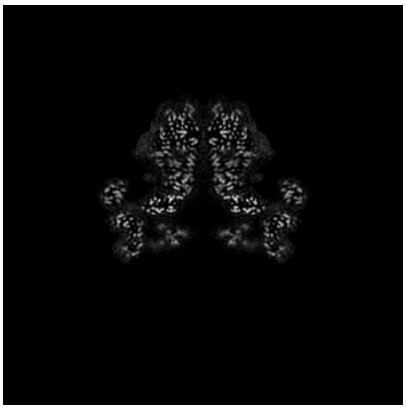


Z

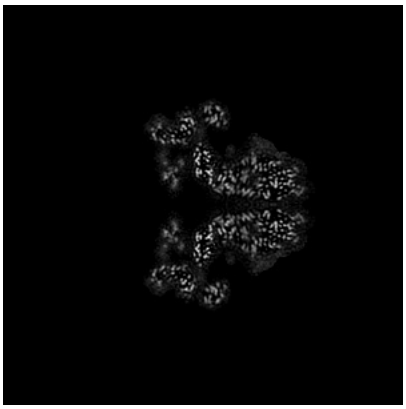
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

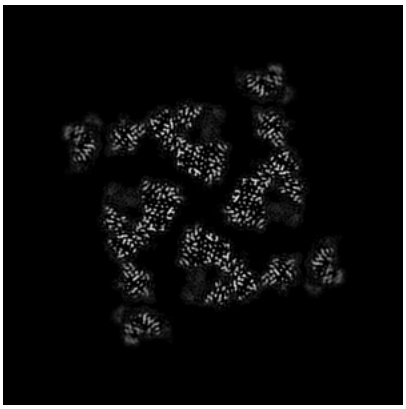
6.2.1 Primary map



X Index: 256

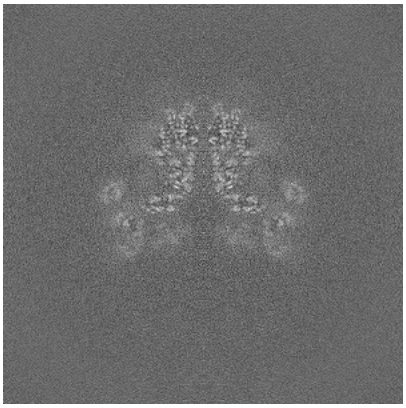


Y Index: 256

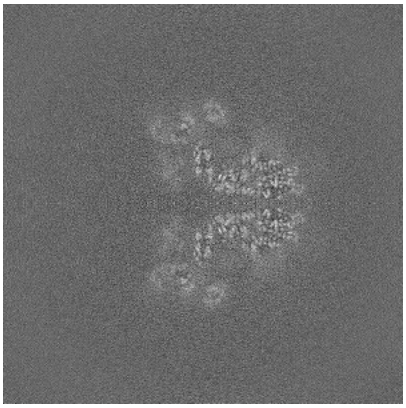


Z Index: 256

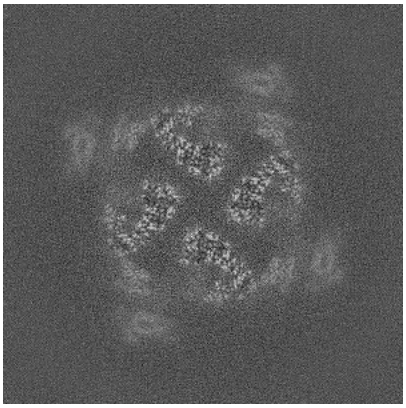
6.2.2 Raw map



X Index: 256



Y Index: 256

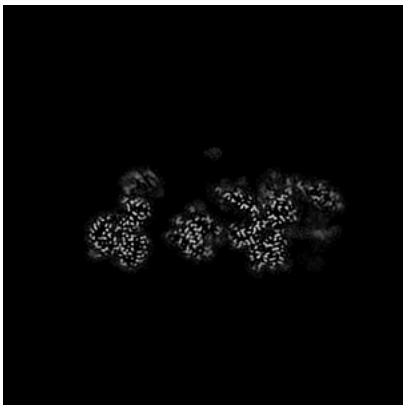


Z Index: 256

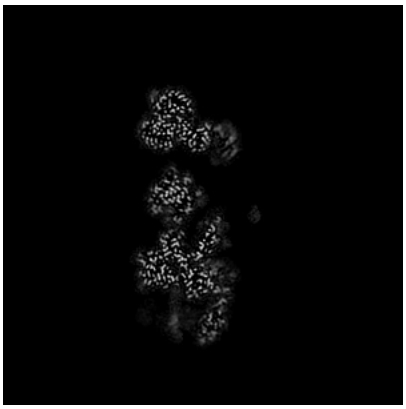
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

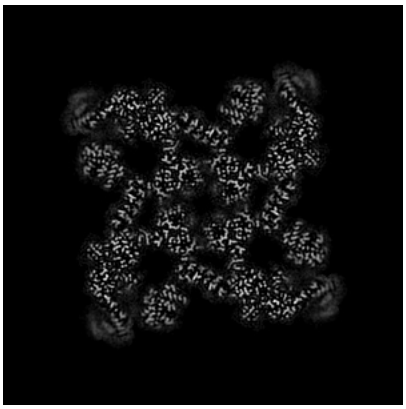
6.3.1 Primary map



X Index: 348

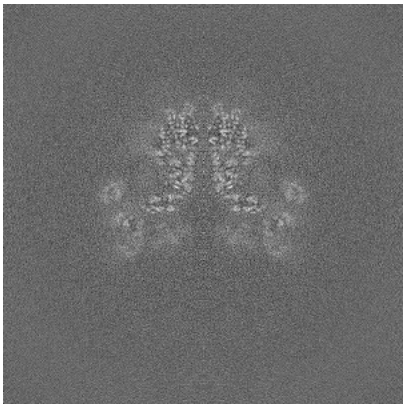


Y Index: 348

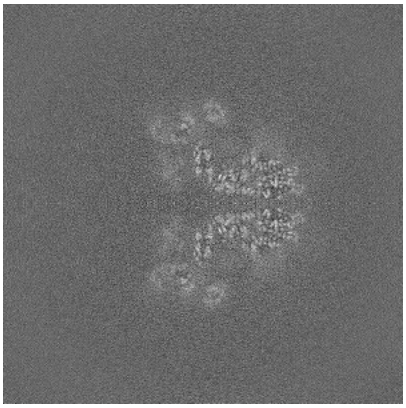


Z Index: 224

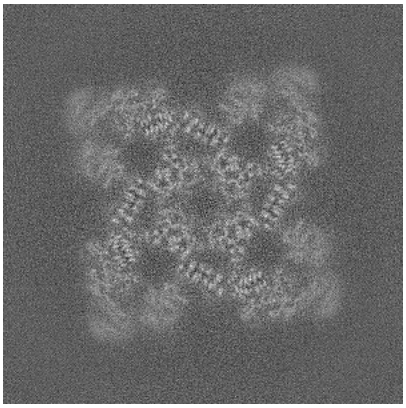
6.3.2 Raw map



X Index: 256



Y Index: 256

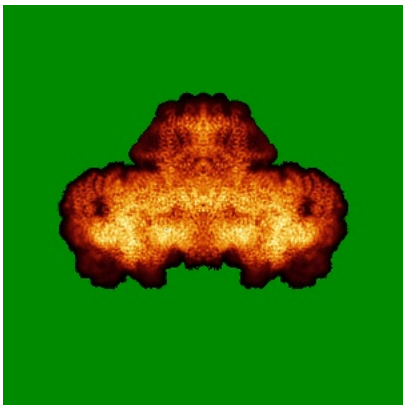


Z Index: 225

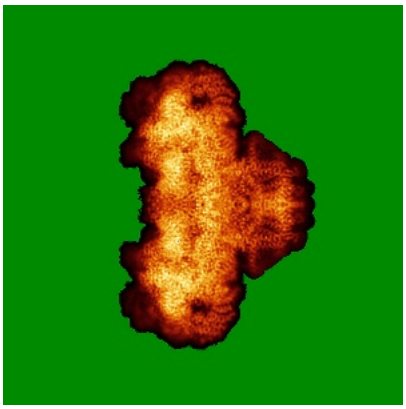
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

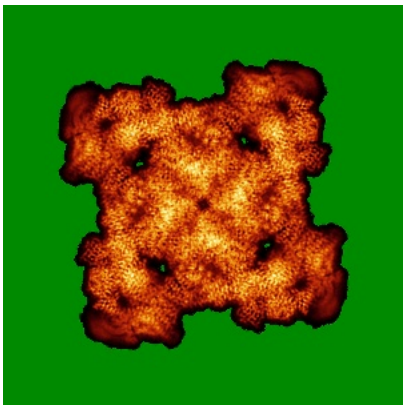
6.4.1 Primary map



X

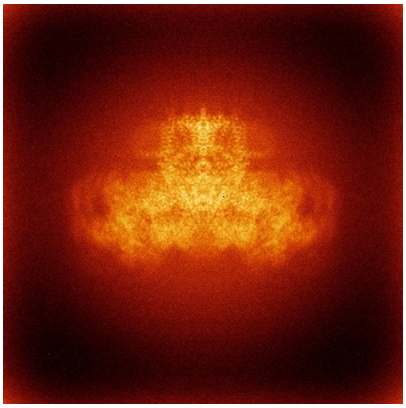


Y

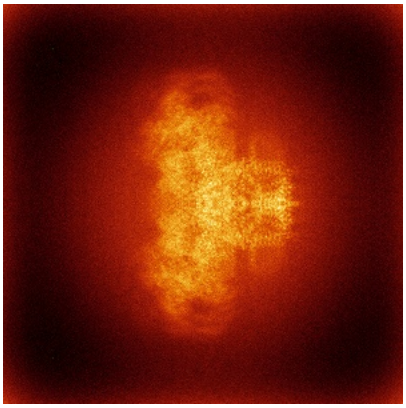


Z

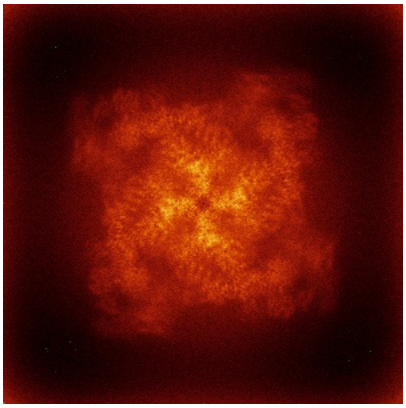
6.4.2 Raw map



X



Y

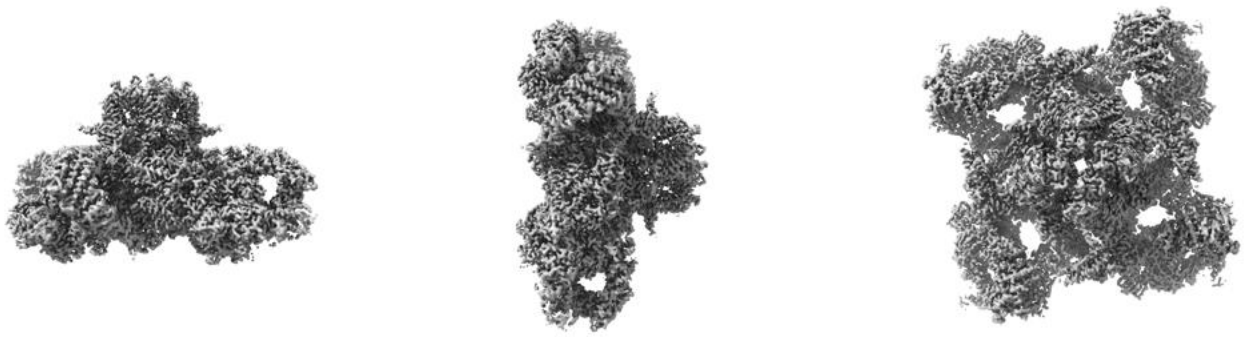


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

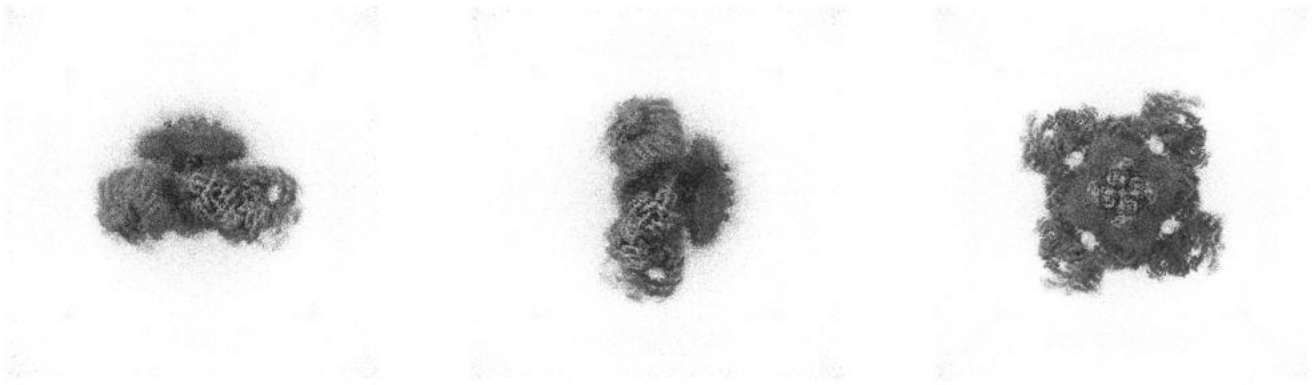
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.1. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

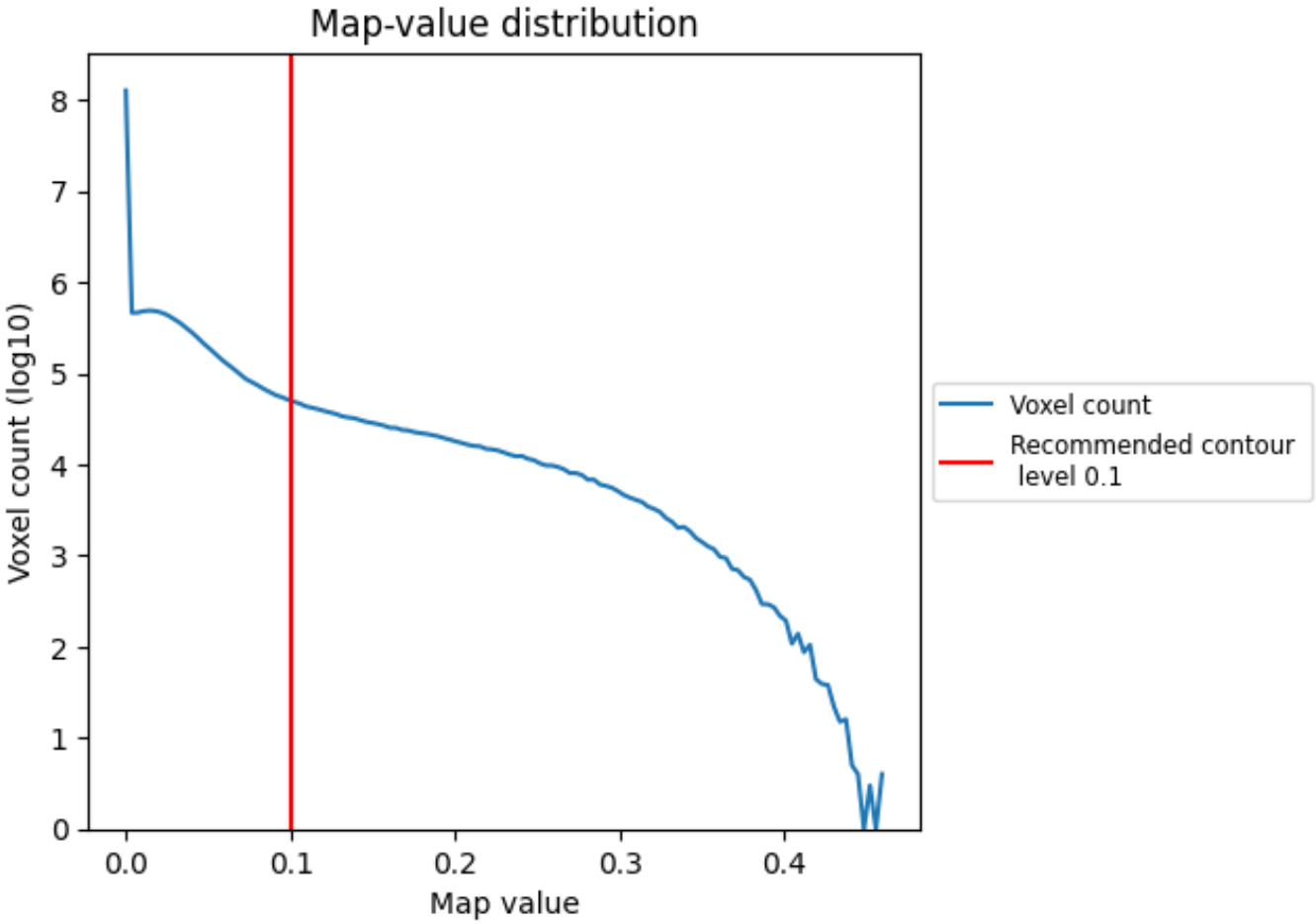
6.6 Mask visualisation (i)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis

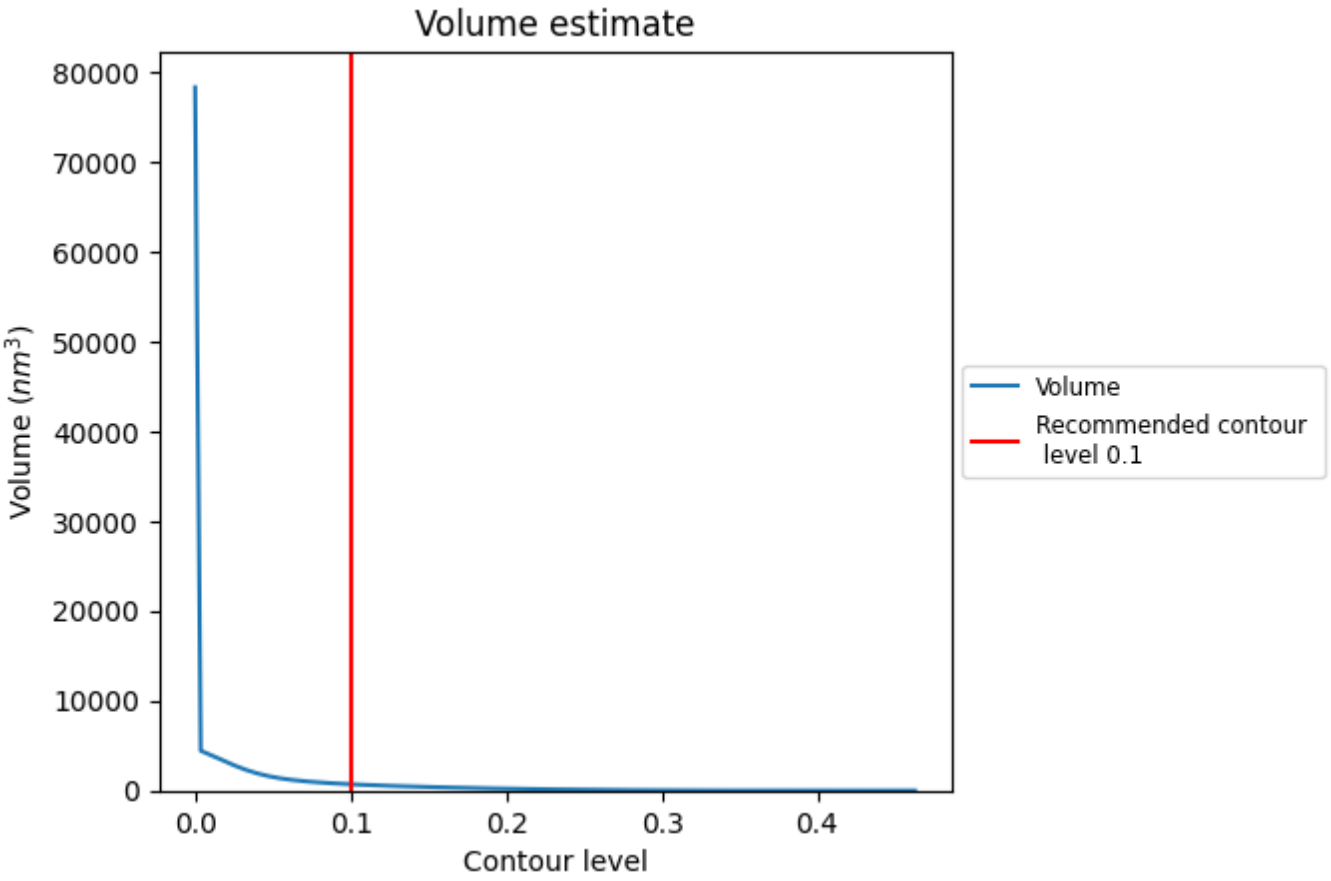
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

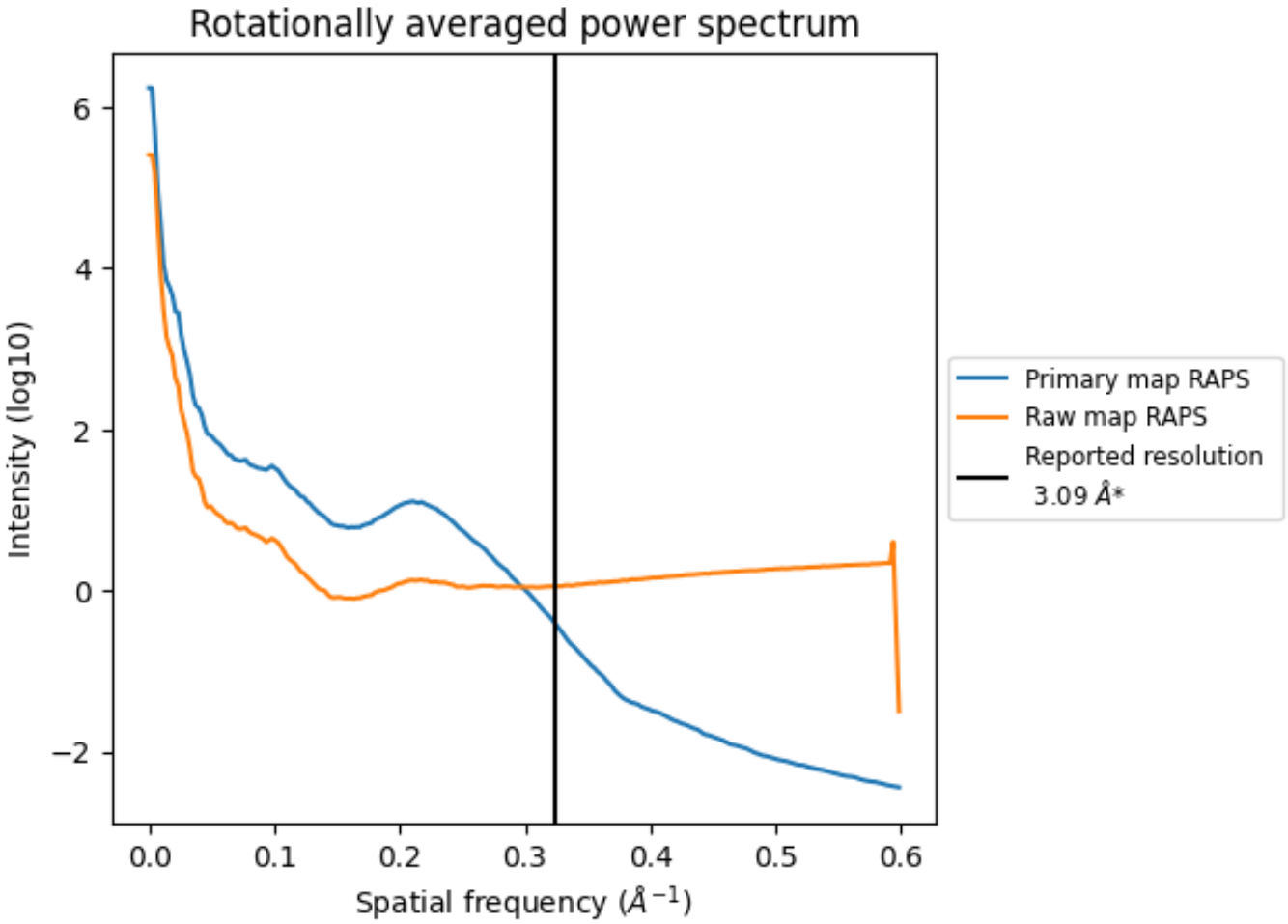
7.2 Volume estimate



The volume at the recommended contour level is 703 nm^3; this corresponds to an approximate mass of 635 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)

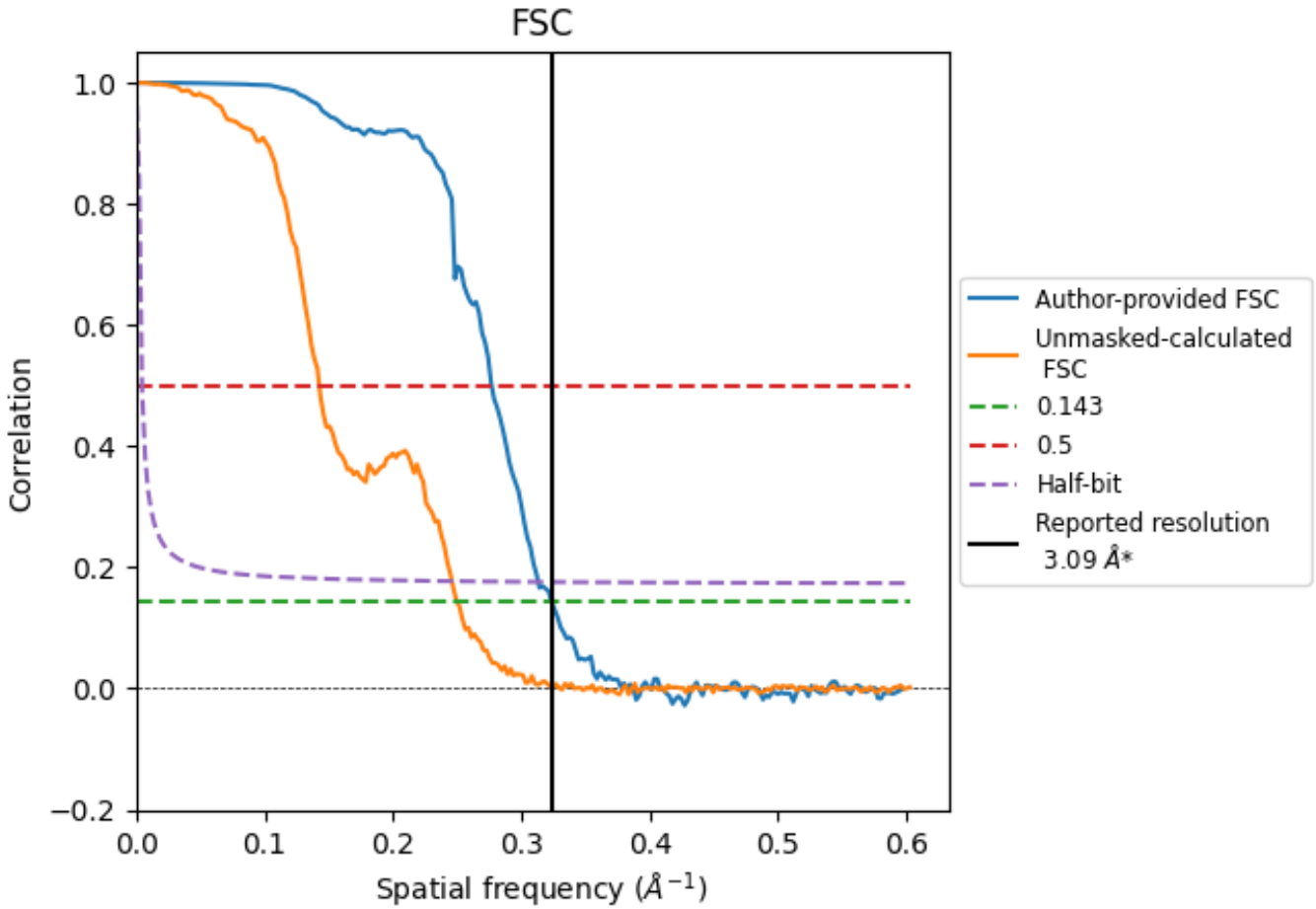


*Reported resolution corresponds to spatial frequency of 0.324 Å^{-1}

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.324 Å^{-1}

8.2 Resolution estimates (i)

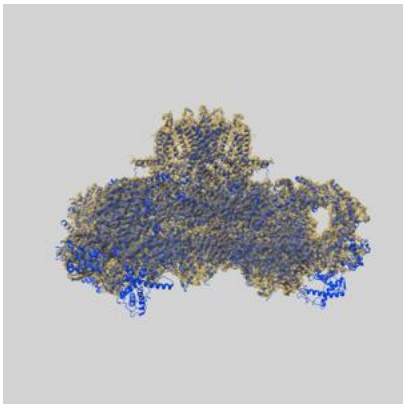
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.09	-	-
Author-provided FSC curve	3.09	3.61	3.19
Unmasked-calculated*	4.00	7.01	4.07

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.00 differs from the reported value 3.09 by more than 10 %

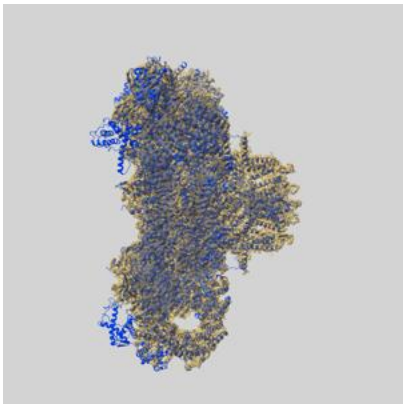
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-49534 and PDB model 9NMN. Per-residue inclusion information can be found in section 3 on page 8.

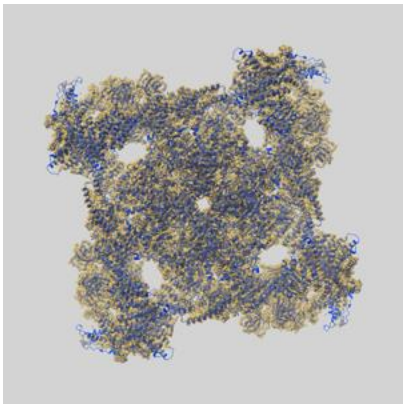
9.1 Map-model overlay



X



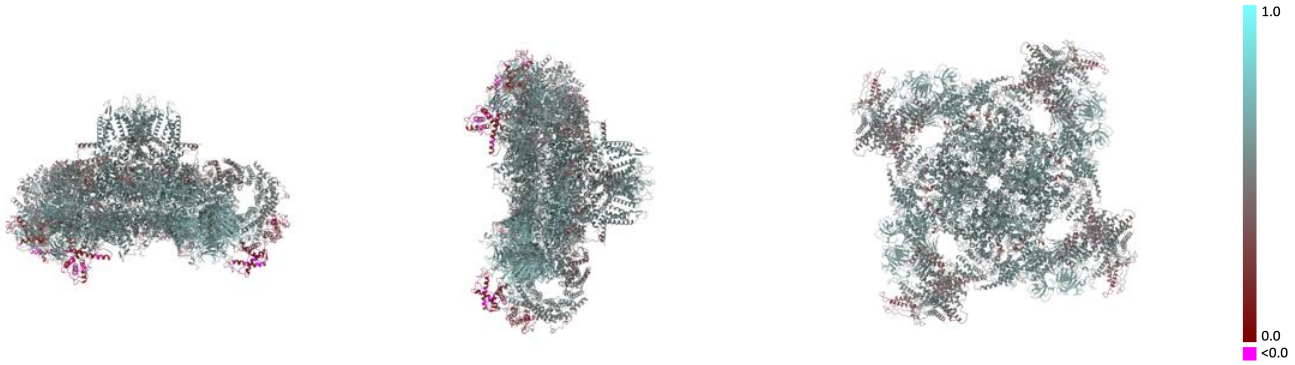
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

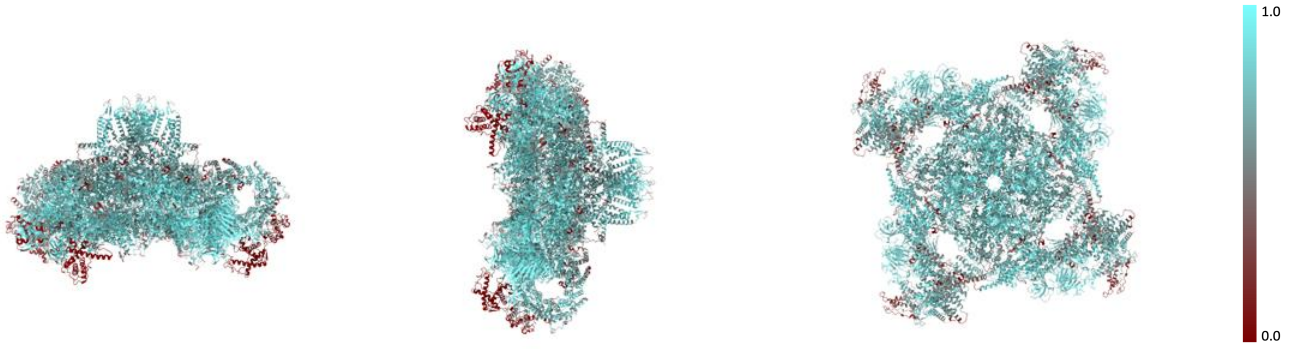
9.2 Q-score mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

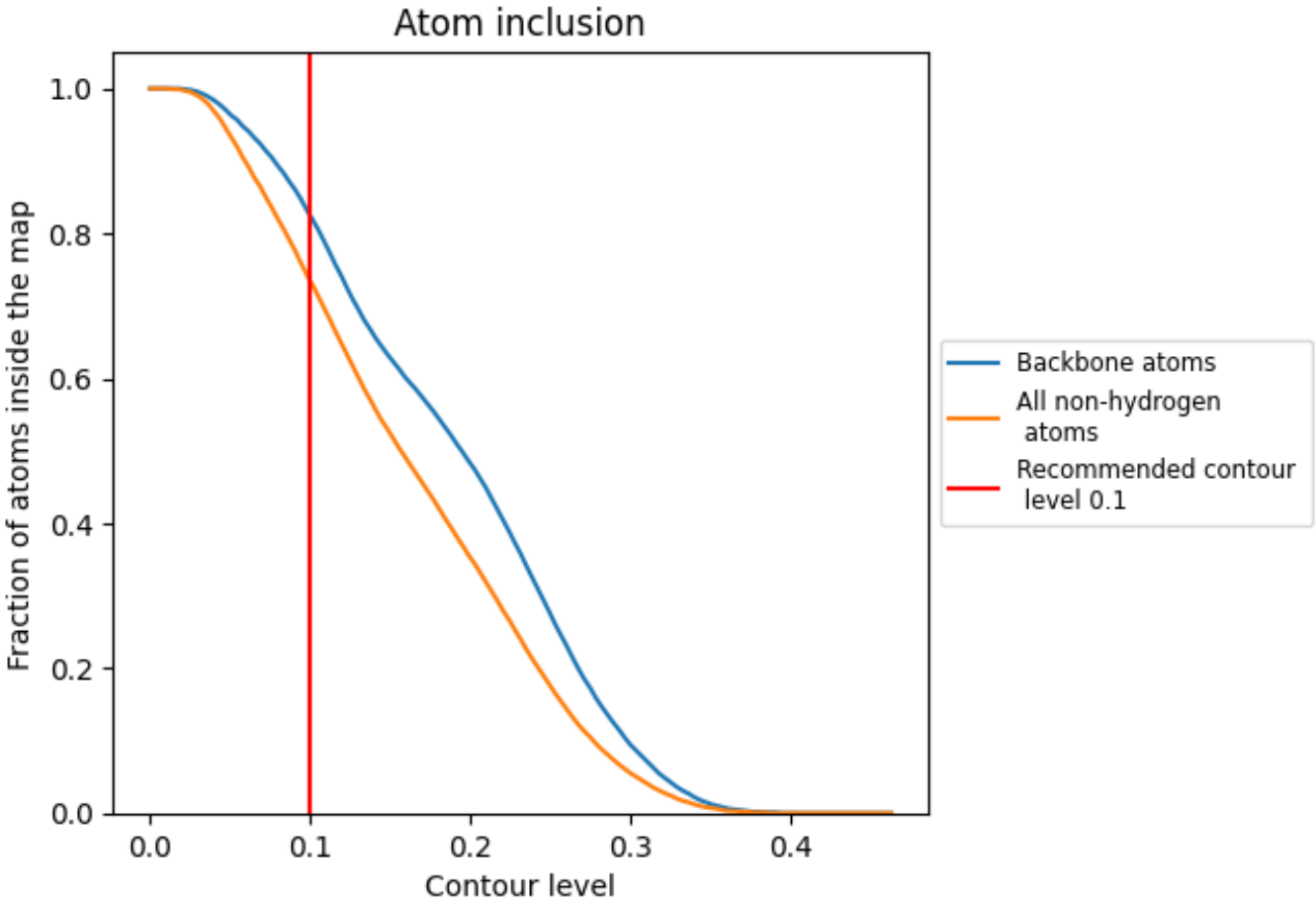
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.1).

9.4 Atom inclusion (i)



At the recommended contour level, 82% of all backbone atoms, 73% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7340	0.5250
A	0.7320	0.5230
B	0.7320	0.5230
C	0.7320	0.5230
D	0.7320	0.5230
E	0.8480	0.6050
F	0.8440	0.6060
G	0.8430	0.6070
H	0.8400	0.6050