Full wwPDB EM Validation Report

Jan 25, 2024 – 01:37 PM EST

PDB ID	:	8DTY
EMDB ID	:	EMD-27711
Title	:	Recombinant mouse RyR2 triple phosphomimetic mutant S2807D/S2813D/S2030D in complex with FKBP12.6 and nanodisc under closed-state conditions
Authors	:	Iyer, K.A.; Hu, Y.; Murayama, T.; Samso, M.
Deposited on	:	2022-07-26
Resolution	:	3.50 Å(reported)
Based on initial model	:	6WOU

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 (i) 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 (i)) were used in the production of this report:

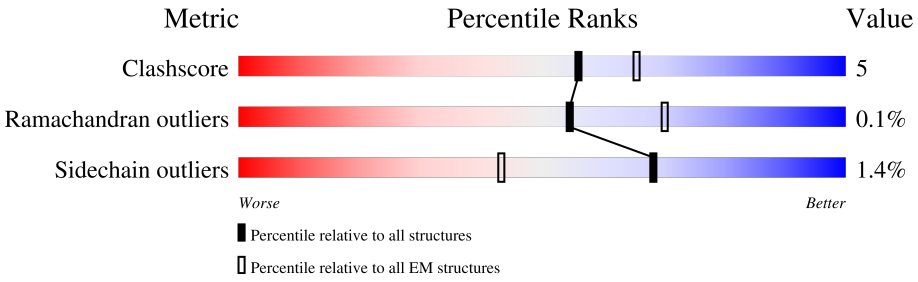
EMDB validation analysis	:	0.0.1.dev70
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.50 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	4966	19% 69% 11% 19%
1	B	4966	19% 69% 11% 19%
1	C	4966	19% 69% 11% 19%
1	D	4966	19% 69% 11% 19%
2	E	107	79% 21%
2	F	107	79% 21%
2	G	107	78% 22%
2	H	107	79% 21%

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 128772 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 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	4004	Total	C	N	O	S	0	0
			31374	19934	5355	5887	198		
1	B	4004	Total	C	N	O	S	0	0
			31374	19934	5355	5887	198		
1	C	4004	Total	C	N	O	S	0	0
			31374	19934	5355	5887	198		
1	D	4004	Total	C	N	O	S	0	0
			31374	19934	5355	5887	198		

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	2030	ASP	SER	engineered mutation	UNP E9Q401
A	2807	ASP	SER	engineered mutation	UNP E9Q401
A	2813	ASP	SER	engineered mutation	UNP E9Q401
B	2030	ASP	SER	engineered mutation	UNP E9Q401
B	2807	ASP	SER	engineered mutation	UNP E9Q401
B	2813	ASP	SER	engineered mutation	UNP E9Q401
C	2030	ASP	SER	engineered mutation	UNP E9Q401
C	2807	ASP	SER	engineered mutation	UNP E9Q401
C	2813	ASP	SER	engineered mutation	UNP E9Q401
D	2030	ASP	SER	engineered mutation	UNP E9Q401
D	2807	ASP	SER	engineered mutation	UNP E9Q401
D	2813	ASP	SER	engineered mutation	UNP E9Q401

- Molecule 2 is a protein called Peptidyl-prolyl cis-trans isomerase FKBP1B.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	E	107	Total	C	N	O	S	0	0
			818	516	144	154	4		
2	F	107	Total	C	N	O	S	0	0
			818	516	144	154	4		
2	G	107	Total	C	N	O	S	0	0
			818	516	144	154	4		

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Mol	Chain	Residues	Atoms					AltConf	Trace
2	H	107	Total	C	N	O	S	0	0
			818	516	144	154	4		

- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).

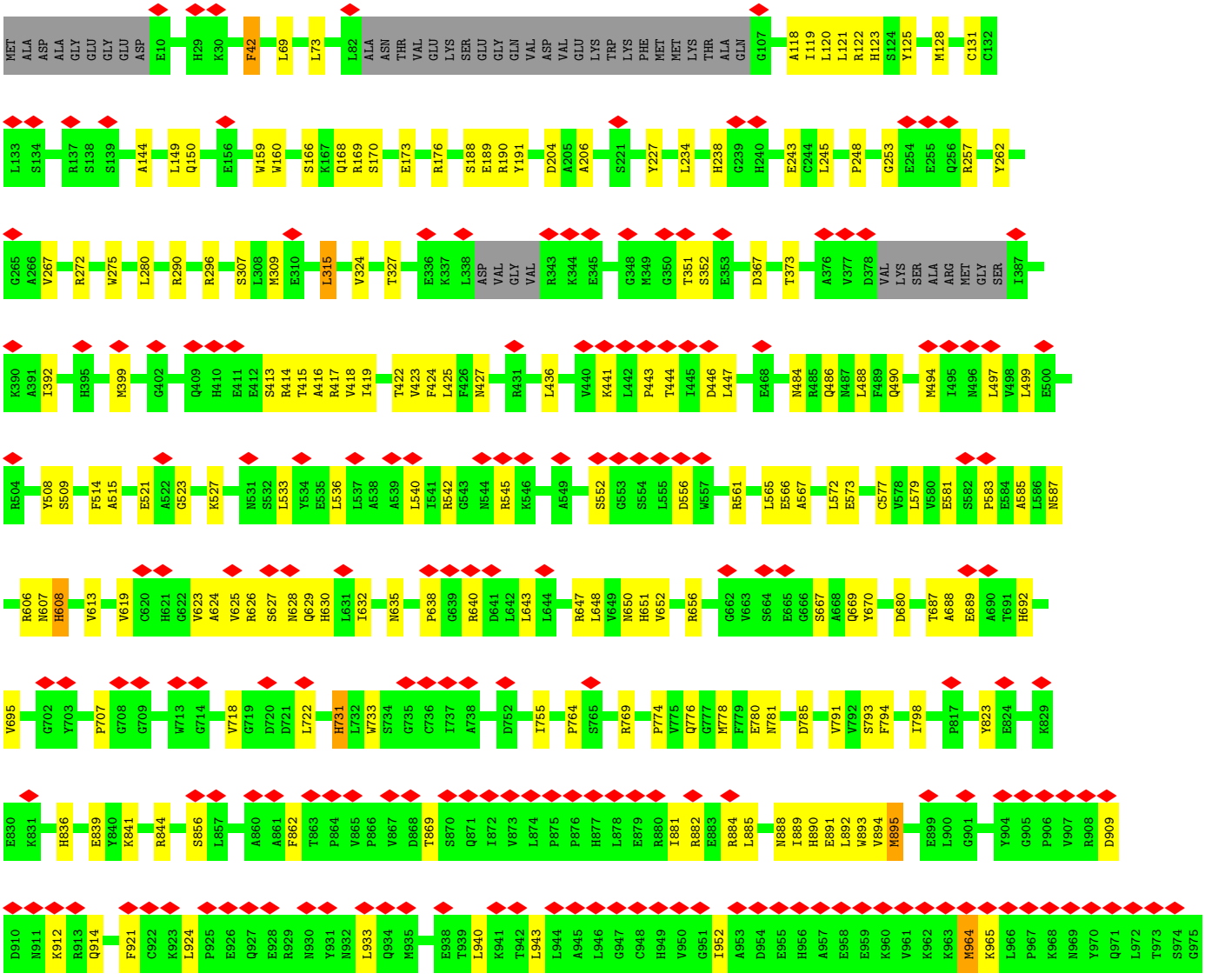
Mol	Chain	Residues	Atoms		AltConf
3	A	1	Total	Zn	0
			1	1	
3	B	1	Total	Zn	0
			1	1	
3	C	1	Total	Zn	0
			1	1	
3	D	1	Total	Zn	0
			1	1	

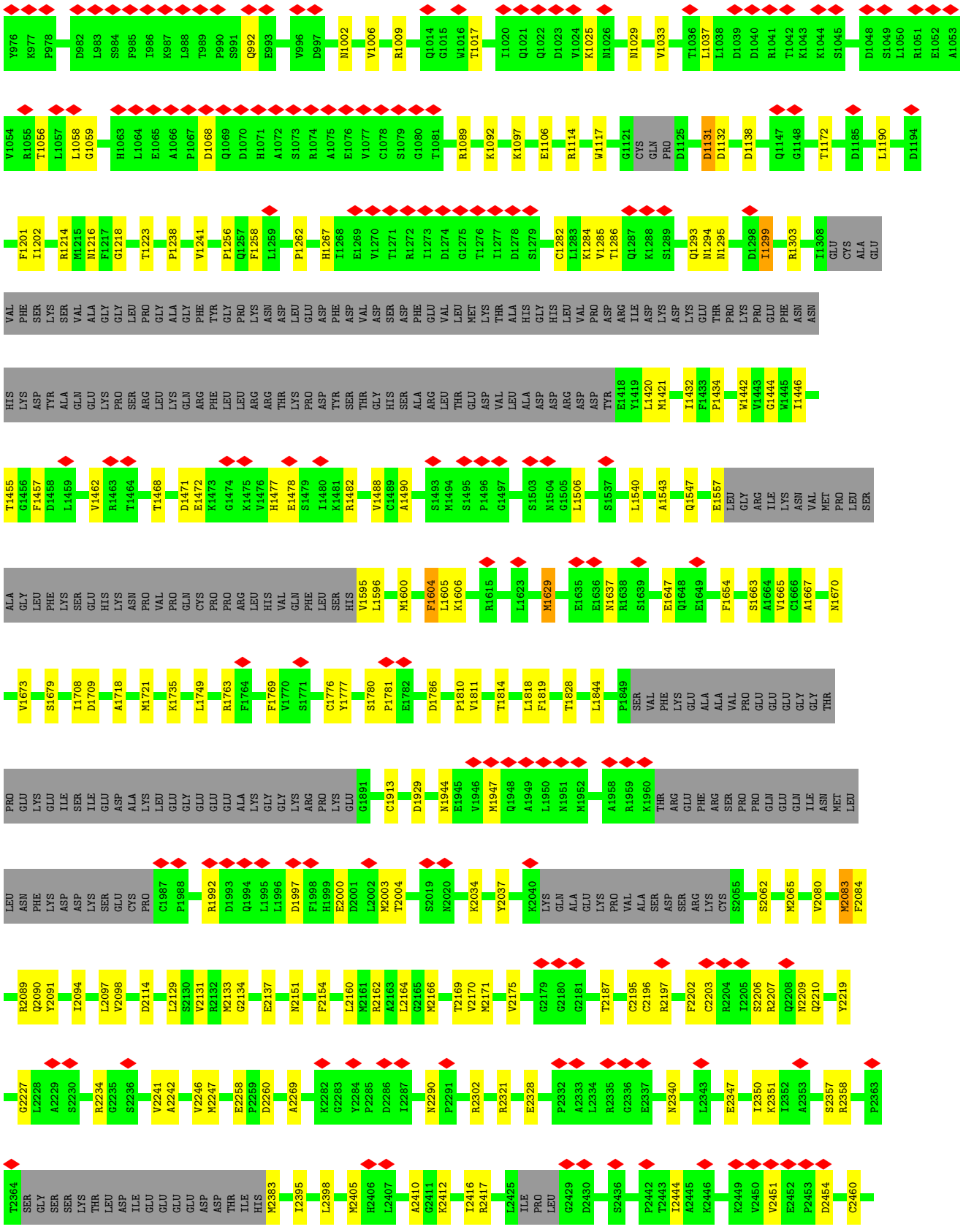
3 Residue-property plots (i)

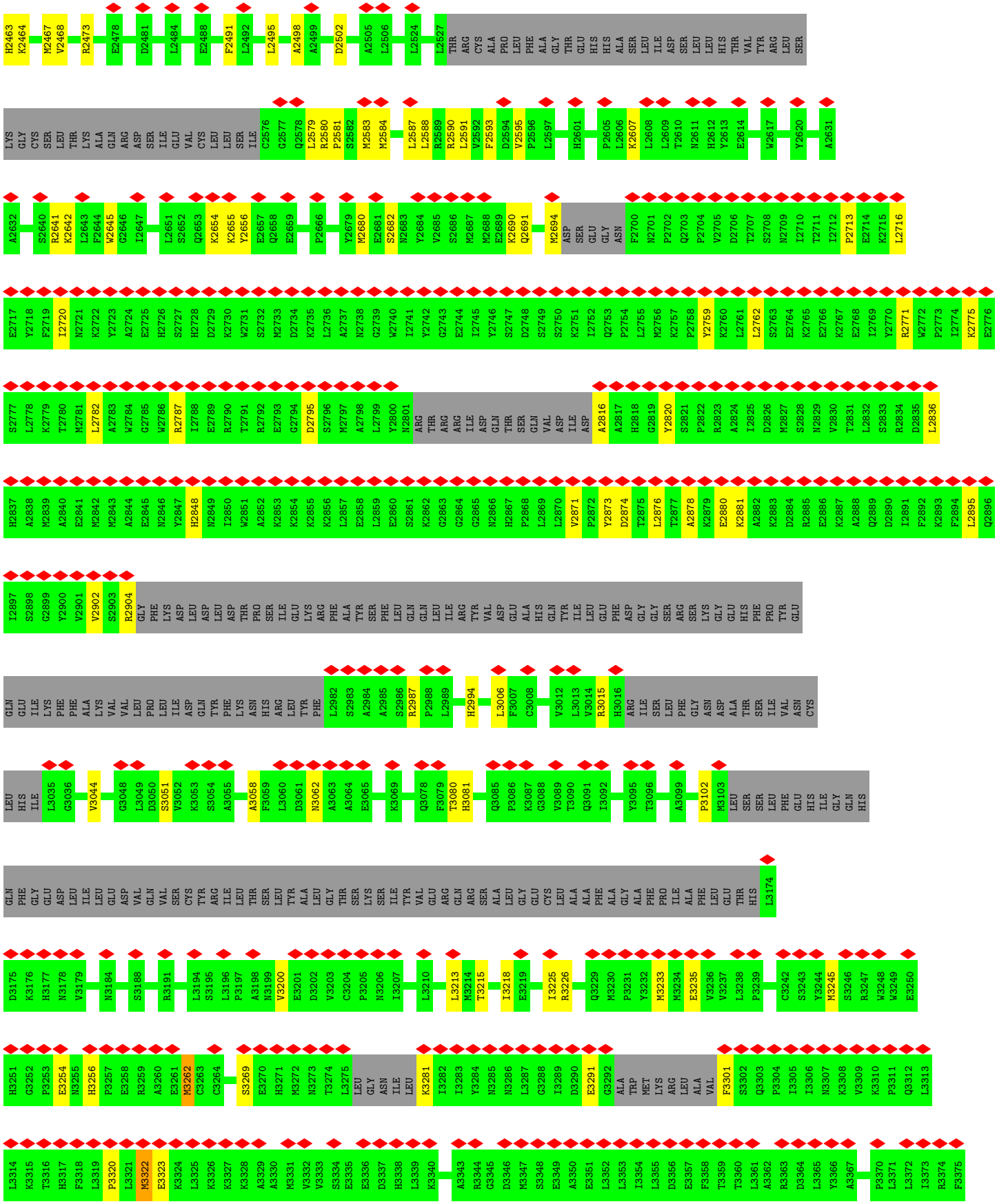
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

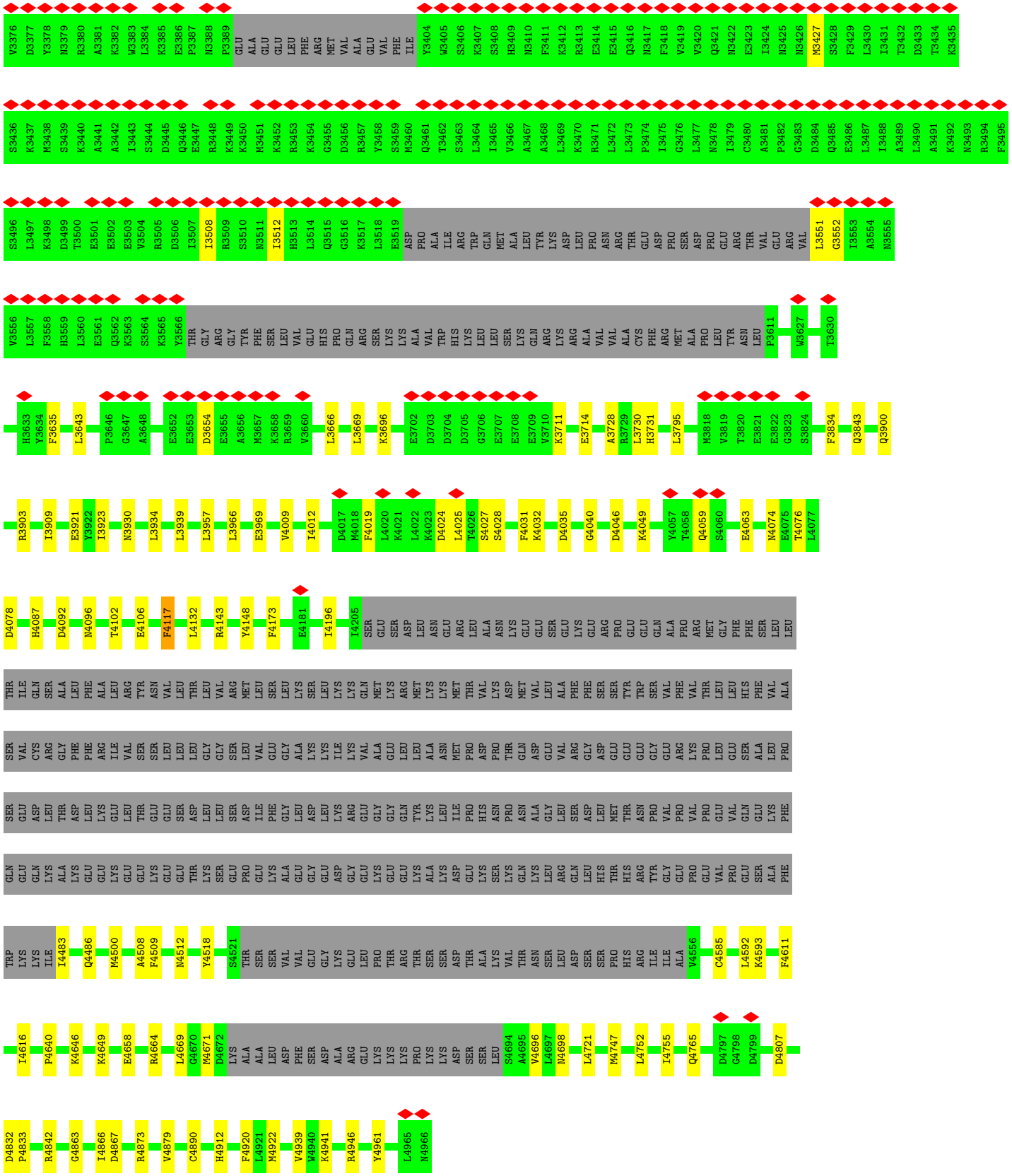
- Molecule 1: Ryanodine receptor 2

Chain A:



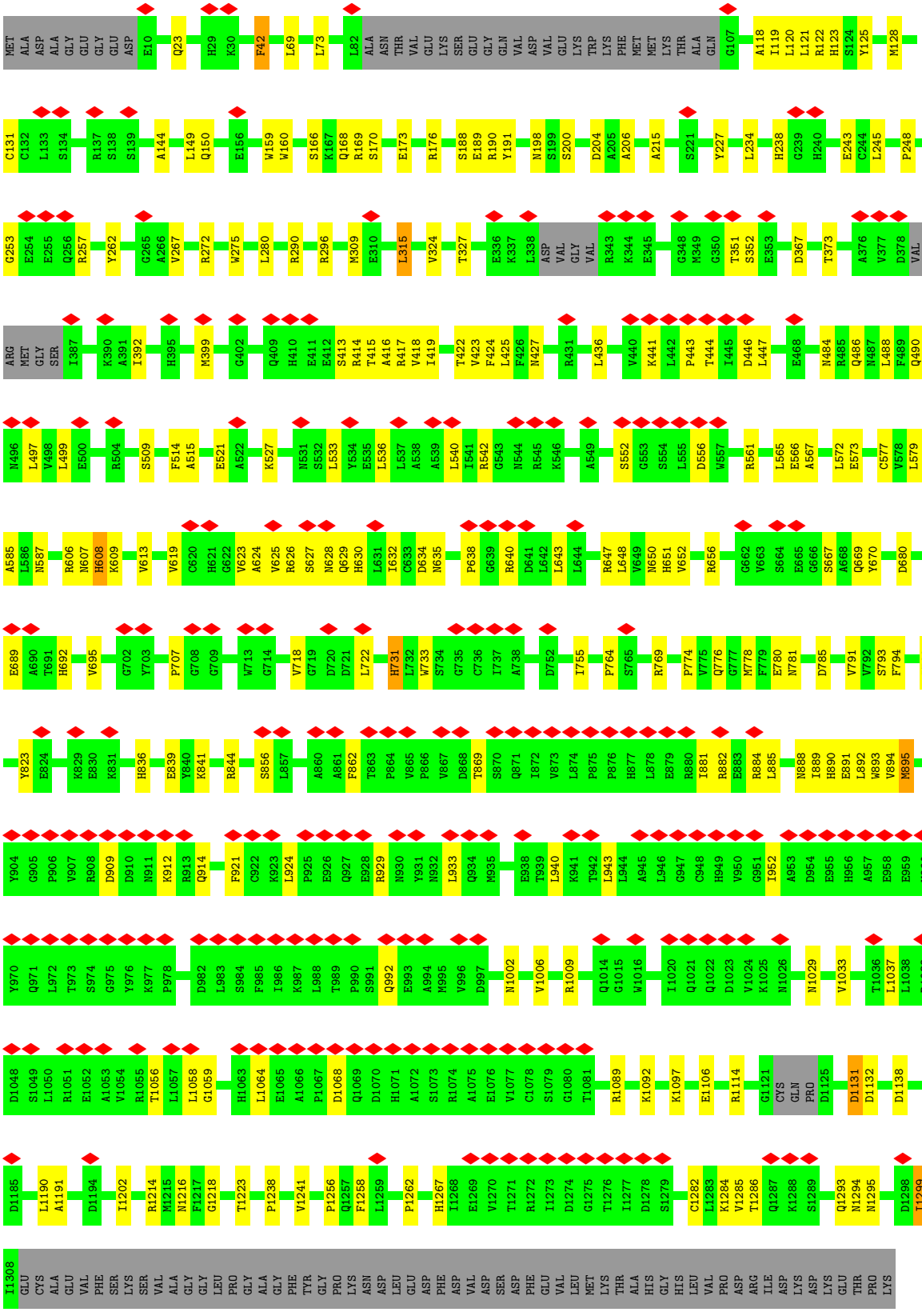


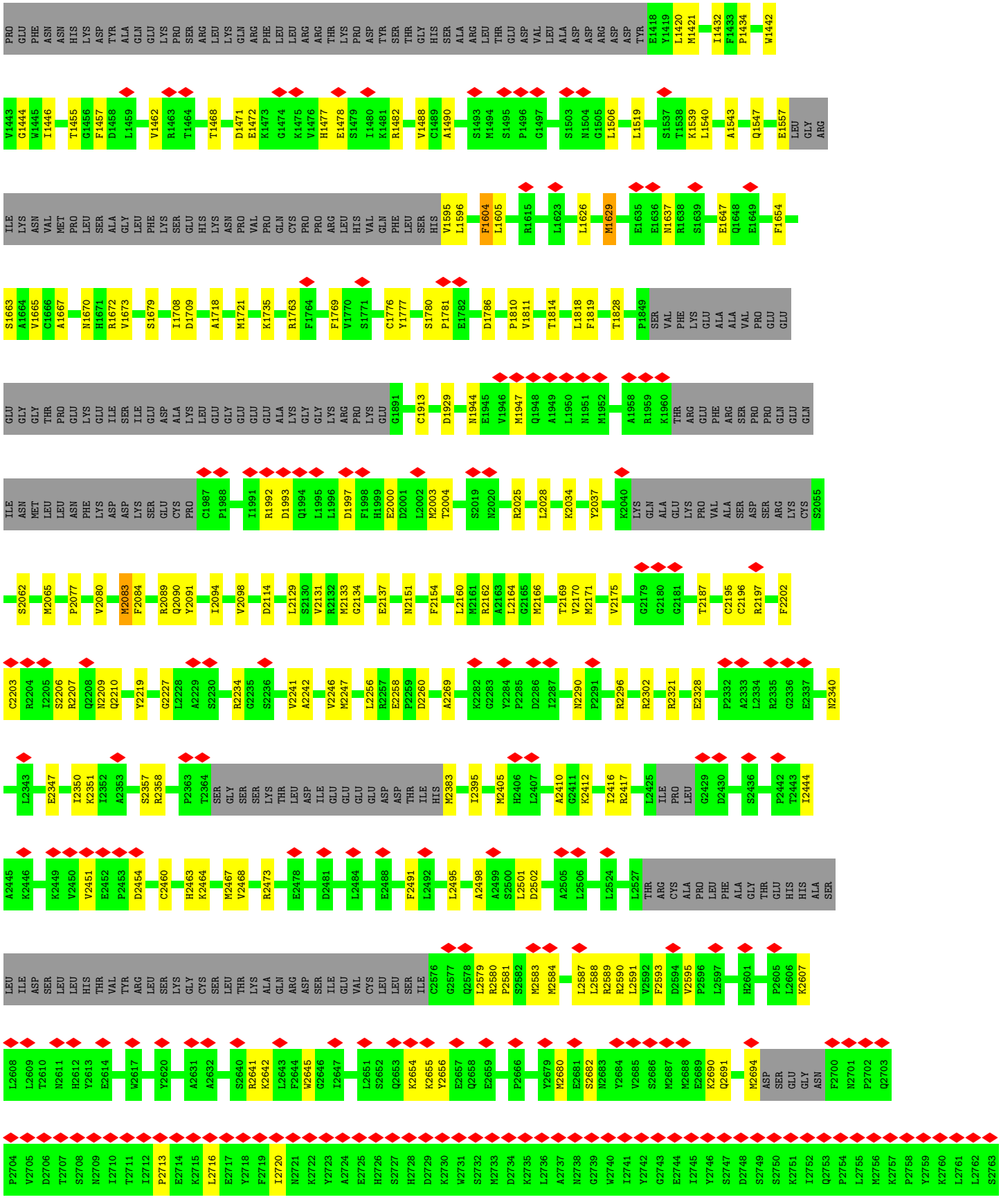

H2463 K2464 M2467 V2468 R2473 E2478 D2481 L2484 E2488 P2491 L2492 L2495 A2498 A2499 D2502 A2505 L2506 L2524 L2527
LYS GLY CYS SER LEU THR LYS ALA GLN ARG ASP SER ILE GLU VAL CYS LEU LEU SER ILE C2576 G2577 Q2578 L2579 R2580 P2581 S2582 M2583 M2584 L2587 L2588 R2589 R2590 L2591 V2592 F2593 D2594 V2595 P2596 L2597 H2601 P2605 L2606 K2607 L2608 L2609 T2610 N2611 H2612 Y2613 E2614 W2617 Y2620 A2631
A2632 S2640 R2641 K2642 L2643 F2644 W2645 G2646 I2647 L2651 S2652 Q2653 K2654 K2655 Y2656 E2657 Q2658 E2659 P2666 Y2679 M2680 E2681 S2682 N2683 Y2684 V2685 S2686 M2687 M2688 E2689 K2690 Q2691 M2694 ASP SER GLU GLY ASN F2700 N2701 P2702 Q2703 P2704 V2705 D2706 T2707 S2708 N2709 I2710 T2711 I2712 P2713 E2714 K2715 L2716
E2717 Y2718 F2719 I2720 N2721 K2722 Y2723 A2724 E2725 H2726 S2727 H2728 D2729 K2730 W2731 S2732 M2733 D2734 K2735 L2736 A2737 N2738 G2739 W2740 I2741 Y2742 G2743 E2744 I2745 Y2746 S2747 D2748 S2749 S2750 K2751 I2752 Q2753 P2754 L2755 M2756 K2757 P2758 Y2759 K2760 L2761 L2762 S2763 E2764 K2765 E2766 K2767 E2768 I2769 Y2770 R2771 W2772 P2773 I2774 K2775 E2776
S2777 L2778 K2779 T2780 M2781 L2782 A2783 W2784 G2785 W2786 R2787 I2788 E2789 R2790 T2791 R2792 E2793 G2794 D2795 S2796 M2797 A2798 L2799 Y2800 N2801 ARG THR ARG ARG ILE ASP GLN THR SER GLN VAL ASP ILE ASP A2816 A2817 H2818 G2819 Y2820 S2821 P2822 R2823 A2824 I2825 D2826 M2827 S2828 N2829 V2830 T2831 L2832 S2833 R2834 D2835 L2836
H2837 A2838 M2839 A2840 E2841 M2842 M2843 A2844 E2845 N2846 Y2847 H2848 N2849 I2850 W2851 A2852 K2853 K2854 K2855 K2856 L2857 E2858 L2859 E2860 S2861 K2862 G2863 G2864 G2865 N2866 H2867 P2868 L2869 L2870 V2871 P2872 Y2873 D2874 T2875 L2876 T2877 A2878 K2879 E2880 K2881 A2882 K2883 D2884 R2885 E2886 K2887 A2888 Q2889 D2890 I2891 F2892 K2893 F2894 L2895 Q2896
I2897 S2898 G2899 Y2900 V2901 V2902 S2903 R2904 GLY PHE LYS ASP LEU ASP LEU ASP THR PRO SER ILE GLU LYS ARG PHE ALA TYR SER PHE LEU GLN GLN LEU ILE ARG TYR VAL ASP GLU ALA HIS GLN TYR ILE LEU GLU PHE ASP GLY GLY SER ARG SER LYS GLY GLU HIS PHE PRO TYR GLU
GLN GLU ILE LYS PHE PHE ALA LYS VAL VAL LEU LEU PRO LEU ILE ASP GLN TYR PHE LYS ASN HIS ARG LEU TYR PHE L2982 S2983 A2984 A2985 S2986 R2987 P2988 L2989 H2994 L3006 F3007 C3008 V3012 L3013 V3014 R3015 H3016 ARG ILE SER LEU PHE GLY GLY ASN ASP ALA THR SER ILE VAL ASN CYS
LEU HIS ILE L3035 G3036 V3044 G3048 L3049 D3050 S3051 V3052 K3053 S3054 A3055 A3058 F3059 L3060 D3061 N3062 A3063 A3064 E3065 K3069 Q3078 F3079 T3080 H3081 Q3085 P3086 K3087 G3088 V3089 T3090 Q3091 I3092 Y3095 T3096 A3099 P3102 M3103 LEU SER SER LEU PHE GLU HIS ILE GLY GLN HIS
GLN PHE GLY GLU ASP LEU ILE LEU GLU ASP VAL GLN VAL SER CYS TYR ARG ILE LEU THR SER LEU TYR ALA LEU GLY THR SER LYS SER ILE TYR VAL GLU ARG GLN ARG SER ALA LEU GLY GLU CYS LEU ALA ALA PHE ALA GLY ALA PHE PRO ILE ALA PHE LEU GLU THR HIS L3174
D3175 K3176 H3177 N3178 V3179 N3184 S3188 R3191 L3194 S3195 L3196 P3197 A3198 N3199 V3200 E3201 D3202 V3203 C3204 P3205 N3206 I3207 L3210 L3213 M3214 T3215 I3218 E3219 I3225 R3226 Q3229 M3230 P3231 Y3232 M3233 M3234 E3235 V3236 V3237 L3238 P3239 C3242 S3243 Y3244 M3245 S3246 R3247 W3248 W3249 E3250
H3251 G3252 P3253 E3254 N3255 H3256 P3257 E3258 R3259 A3260 E3261 M3262 C3263 C3264 S3269 E3270 H3271 M3272 N3273 T3274 L3275 LEU GLY ASN ILE LEU K3281 I3282 I3283 Y3284 N3285 N3286 L3287 G3288 I3289 D3290 E3291 G3292 ALA TRP MET LYS ARG LEU ALA VAL F3301 S3302 Q3303 P3304 I3305 I3306 N3307 K3308 V3309 K3310 P3311 Q3312 L3313
L3314 K3315 T3316 H3317 F3318 L3319 P3320 L3321 M3322 E3323 K3324 L3325 K3326 K3327 K3328 A3329 A3330 M3331 V3332 V3333 S3334 E3335 E3336 D3337 H3338 L3339 K3340 A3343 R3344 G3345 D3346 M3347 S3348 E3349 A3350 E3351 L3352 L3353 I3354 L3355 D3356 E3357 F3358 T3359 T3360 L3361 A3362 R3363 D3364 L3365 Y3366 A3367 P3370 L3371 L3372 I3373 R3374 F3375

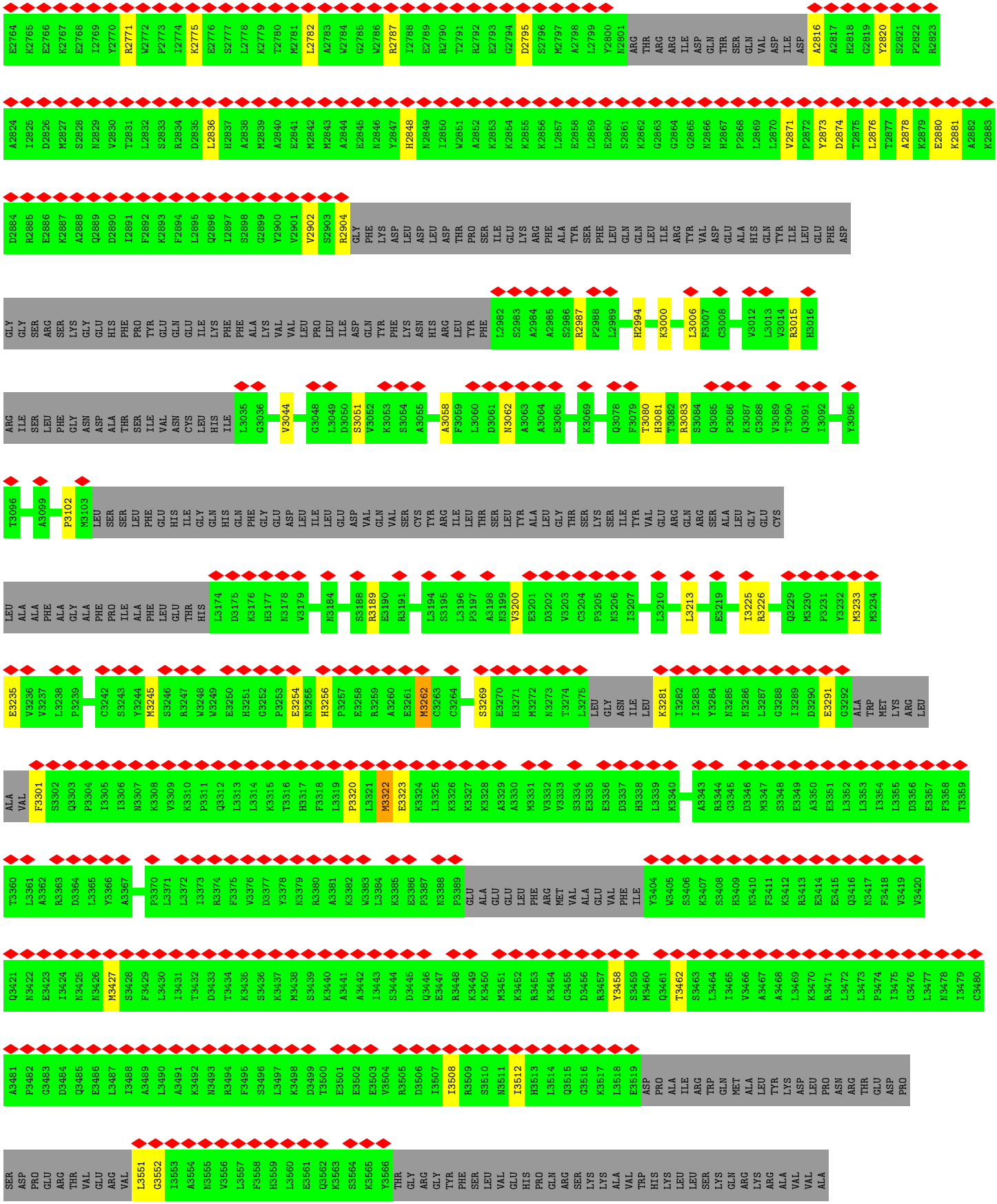


• Molecule 1: Ryanodine receptor 2

Chain B:




PRO GLU PHE ASN ASN HIS LYS ASP TYR ALA GLN GLU LYS PRO SER ARG LEU LYS GLN ARG PHE LEU LEU ARG ARG THR LYS PRO ASP TYR SER THR GLY HIS SER ALA ARG LEU THR GLU ASP VAL LEU ALA ASP ASP ARG ASP ASP TYR E1418 Y1419 L1420 M1421 I1432 F1433 P1434 W1442
V1443 G1444 W1445 I1446 T1455 G1456 F1457 D1458 L1459 V1462 R1463 T1464 T1468 D1471 E1472 K1473 G1474 K1475 V1476 H1477 E1478 S1479 I1480 K1481 R1482 V1488 C1489 A1490 S1493 M1494 S1495 P1496 G1497 S1503 N1504 G1505 L1506 L1519 S1537 T1538 K1539 L1540 A1543 Q1547 E1557 LEU GLY ARG
ILE LYS ASN VAL MET PRO LEU SER ALA GLY LEU PHE LYS SER GLU HIS LYS ASN PRO VAL PRO GLN CYS PRO PRO ARG LEU HIS VAL GLN PHE LEU SER HIS V1595 L1596 F1604 L1605 R1615 L1623 L1626 M1629 E1635 E1636 N1637 R1638 S1639 E1647 Q1648 E1649 F1654
S1663 A1664 V1665 C1666 A1667 N1670 H1671 R1672 V1673 S1679 I1708 D1709 A1718 M1721 K1735 R1763 F1764 F1769 V1770 S1771 C1776 Y1777 S1780 P1781 E1782 D1786 P1810 V1811 T1814 L1818 F1819 T1828 P1849 SER VAL PHE LYS GLU ALA ALA VAL PRO GLU GLU
GLU GLY GLY THR PRO GLU LYS GLU ILE SER ILE GLU ASP ALA LYS LEU GLU GLU GLY GLU GLU GLU ALA LYS GLY GLY LYS ARG PRO LYS GLU G1691 C1913 D1929 N1944 E1945 V1946 M1947 Q1948 A1949 L1950 N1951 M1962 A1968 R1969 K1960 THR ARG GLU PHE ARG SER PRO PRO GLN GLU GLN
ILE ASN MET LEU LEU ASN PHE LYS ASP ASP LYS SER GLU CYS PRO C1987 P1988 I1991 R1992 D1993 Q1994 L1995 L1996 D1997 F1998 H1999 E2000 D2001 L2002 M2003 T2004 S2019 M2020 R2025 L2028 K2034 Y2037 K2040 LYS GLN ALA GLU LYS PRO VAL ALA SER ASP SER ARG LYS CYS S2055
S2062 M2065 P2077 V2080 M2083 F2084 R2089 Q2090 Y2091 I2094 V2098 D2114 L2129 S2130 V2131 R2132 M2133 G2134 E2137 N2151 F2154 L2160 M2161 R2162 A2163 L2164 G2165 M2166 T2169 V2170 M2171 V2175 G2179 G2180 G2181 T2187 C2195 C2196 R2197 F2202
C2203 R2204 I2205 S2206 R2207 Q2208 N2209 Q2210 Y2219 G2227 L2228 A2229 S2230 R2234 G2235 S2236 V2241 A2242 V2246 M2247 L2256 R2257 E2258 P2259 D2260 A2269 K2282 G2283 Y2284 P2285 D2286 I2287 N2290 P2291 R2296 R2302 R2321 E2328 P2332 A2333 L2334 R2335 G2336 E2337 N2340
L2343 E2347 I2350 K2351 I2352 A2353 S2357 R2358 P2363 T2364 SER GLY SER SER LYS THR LEU ASP ILE GLU GLU GLU GLU ASP ASP THR ILE HIS M2383 I2395 M2405 H2406 L2407 A2410 G2411 K2412 I2416 R2417 L2425 ILE PRO LEU G2429 D2430 S2436 P2442 T2443 I2444
A2445 K2446 K2449 V2450 V2451 E2452 P2453 D2454 C2460 H2463 K2464 M2467 V2468 R2473 E2478 D2481 L2484 E2488 F2491 L2492 L2495 A2498 A2499 S2500 L2501 D2502 A2505 L2506 L2524 L2527 THR ARG CYS ALA PRO LEU PHE ALA GLY THR GLU HIS HIS ALA SER
LEU ILE ASP SER LEU LEU HIS THR VAL TYR ARG LEU SER LYS GLY CYS SER LEU THR LYS ALA GLN ASP SER ILE GLU VAL CYS LEU LEU SER ILE C2576 G2577 Q2578 L2579 R2580 P2581 S2582 M2583 M2584 L2587 L2588 R2589 R2590 L2591 Y2592 F2593 D2594 V2595 P2596 L2597 H2601 P2605 L2606 K2607
L2608 L2609 T2610 N2611 H2612 Y2613 E2614 W2617 Y2620 A2631 A2632 S2640 R2641 K2642 L2643 F2644 W2645 G2646 I2647 L2651 S2652 Q2653 K2654 K2655 Y2656 E2657 Q2658 E2659 P2666 Y2679 M2680 E2681 S2682 N2683 Y2684 V2685 S2686 M2687 M2688 E2689 K2690 Q2691 M2694 ASP SER GLU GLY ASN F2700 N2701 P2702 Q2703
P2704 V2705 D2706 T2707 S2708 N2709 I2710 T2711 I2712 P2713 E2714 K2715 L2716 E2717 Y2718 F2719 I2720 N2721 K2722 Y2723 A2724 E2725 H2726 S2727 H2728 D2729 K2730 W2731 S2732 M2733 D2734 K2735 L2736 A2737 N2738 G2739 W2740 I2741 Y2742 G2743 E2744 I2745 Y2746 S2747 D2748 S2749 S2750 K2751 I2752 Q2753 P2754 L2755 M2756 K2757 P2758 Y2759 K2760 L2761 L2762 S2763


E2764 K2765 E2766 K2767 E2768 I2769 Y2770 R2771 W2772 P2773 I2774 K2775 E2776 S2777 L2778 K2779 T2780 M2781 L2782 A2783 W2784 G2785 W2786 R2787 I2788 E2789 R2790 T2791 R2792 E2793 G2794 D2795 S2796 M2797 A2798 L2799 Y2800 N2801 ARG THR ARG ARG ILE ASP GLN THR SER GLN VAL ASP ILE ASP A2816 A2817 H2818 G2819 Y2820 S2821 P2822 R2823
A2824 I2825 D2826 M2827 S2828 N2829 V2830 T2831 L2832 S2833 R2834 D2835 L2836 H2837 A2838 M2839 A2840 E2841 M2842 M2843 A2844 E2845 N2846 Y2847 H2848 N2849 I2850 W2851 A2852 K2853 K2854 K2855 K2856 L2857 E2858 L2859 E2860 S2861 K2862 G2863 G2864 G2865 N2866 H2867 P2868 L2869 L2870 V2871 P2872 Y2873 D2874 T2875 L2876 T2877 A2878 K2879 E2880 K2881 A2882 K2883
D2884 R2885 E2886 K2887 A2888 Q2889 D2890 I2891 F2892 K2893 F2894 L2895 Q2896 I2897 S2898 G2899 Y2900 V2901 V2902 S2903 R2904 GLY PHE LYS ASP LEU ASP LEU ASP THR PRO SER ILE GLU LYS ARG PHE ALA TYR SER PHE LEU GLN GLN LEU ILE ARG TYR VAL ASP GLU ALA HIS GLN TYR ILE LEU GLU PHE ASP
GLY GLY SER ARG SER LYS GLY GLU HIS PHE PRO TYR GLU GLN GLU ILE LYS PHE PHE ALA LYS VAL VAL LEU PRO LEU ILE ASP GLN TYR PHE LYS ASN HIS ARG LEU TYR PHE L2982 S2983 A2984 A2985 S2986 R2987 P2988 L2989 H2994 K3000 L3006 F3007 C3008 V3012 L3013 V3014 R3015 H3016
ARG ILE SER LEU PHE GLY ASN ASP ALA THR SER ILE VAL ASN CYS LEU HIS ILE L3035 G3036 V3044 G3048 L3049 D3050 S3051 V3052 K3053 S3054 A3055 A3058 F3059 L3060 D3061 N3062 A3063 A3064 E3065 K3069 Q3078 F3079 T3080 H3081 T3082 R3083 S3084 Q3085 P3086 K3087 G3088 V3089 T3090 Q3091 I3092 Y3095
T3096 A3099 P3102 M3103 LEU SER SER LEU PHE GLU HIS ILE GLY GLN HIS GLN PHE GLY GLU ASP LEU ILE LEU GLU ASP VAL GLN VAL SER CYS TYR ARG ILE LEU THR SER LEU TYR ALA LEU GLY THR SER LYS SER ILE TYR VAL GLU ARG GLN ARG SER ALA LEU GLY GLU CYS
LEU ALA ALA PHE ALA GLY ALA PHE PRO ILE ALA ALA PHE LEU GLU GLU THR HIS L3174 D3175 K3176 H3177 N3178 V3179 N3184 S3188 R3189 E3190 R3191 L3194 S3195 L3196 P3197 A3198 N3199 V3200 E3201 D3202 V3203 C3204 P3205 N3206 I3207 L3210 L3213 E3219 I3225 R3226 Q3229 M3230 P3231 Y3232 M3233 M3234
E3235 V3236 V3237 L3238 P3239 C3242 S3243 Y3244 M3245 S3246 R3247 W3248 W3249 E3250 H3251 G3252 P3253 E3254 N3255 H3256 P3257 E3258 R3259 A3260 E3261 M3262 C3263 C3264 S3269 E3270 H3271 M3272 N3273 T3274 L3275 LEU GLY ASN ILE LEU K3281 I3282 I3283 Y3284 N3285 N3286 L3287 G3288 I3289 D3290 E3291 G3292 ALA TRP MET LYS ARG LEU
ALA VAL F3301 S3302 Q3303 P3304 I3305 I3306 N3307 K3308 V3309 K3310 P3311 Q3312 L3313 L3314 K3315 T3316 H3317 F3318 L3319 P3320 L3321 M3322 M3323 E3323 K3324 L3325 K3326 K3327 K3328 A3329 A3330 M3331 V3332 V3333 S3334 E3335 E3336 D3337 H3338 L3339 K3340 A3343 R3344 G3345 D3346 M3347 S3348 E3349 A3350 E3351 L3352 L3353 I3354 L3355 D3356 E3357 F3358 T3359
T3360 L3361 A3362 R3363 D3364 L3365 Y3366 A3367 P3370 L3371 L3372 I3373 R3374 F3375 V3376 D3377 Y3378 N3379 R3380 A3381 K3382 W3383 L3384 K3385 E3386 P3387 N3388 P3389 GLU ALA GLU GLU LEU PHE ARG MET VAL ALA GLU VAL PHE ILE Y3404 W3405 S3406 K3407 S3408 H3409 N3410 F3411 K3412 R3413 E3414 E3415 Q3416 N3417 F3418 V3419 V3420
Q3421 N3422 E3423 I3424 N3425 N3426 M3427 S3428 F3429 L3430 I3431 T3432 D3433 T3434 K3435 S3436 K3437 M3438 S3439 K3440 A3441 A3442 I3443 S3444 D3445 Q3446 E3447 R3448 K3449 K3450 M3451 K3452 R3453 K3454 G3455 D3456 R3457 Y3458 S3459 M3460 Q3461 T3462 S3463 L3464 I3465 V3466 A3467 A3468 L3469 K3470 R3471 L3472 L3473 P3474 I3475 G3476 L3477 N3478 I3479 C3480
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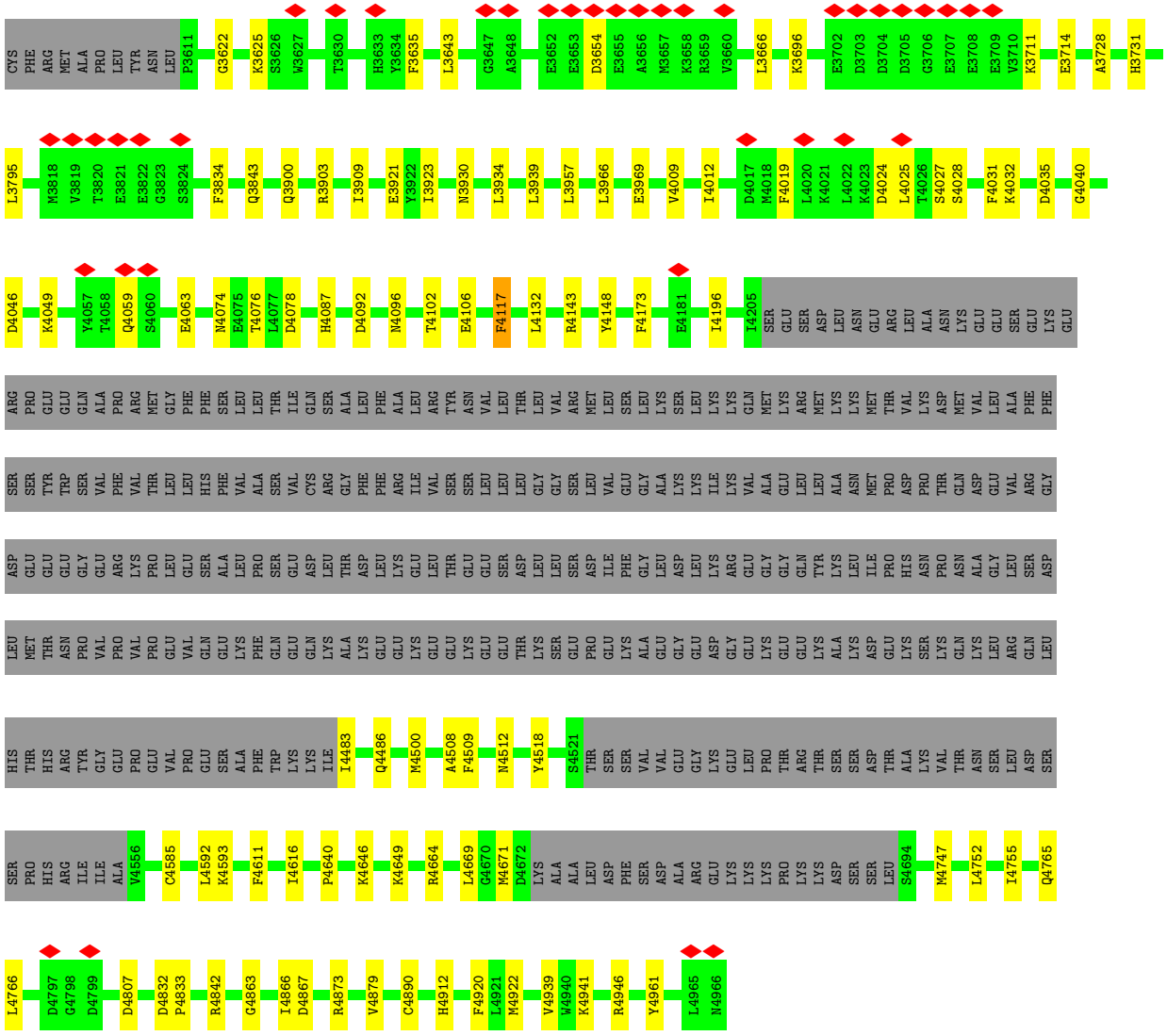
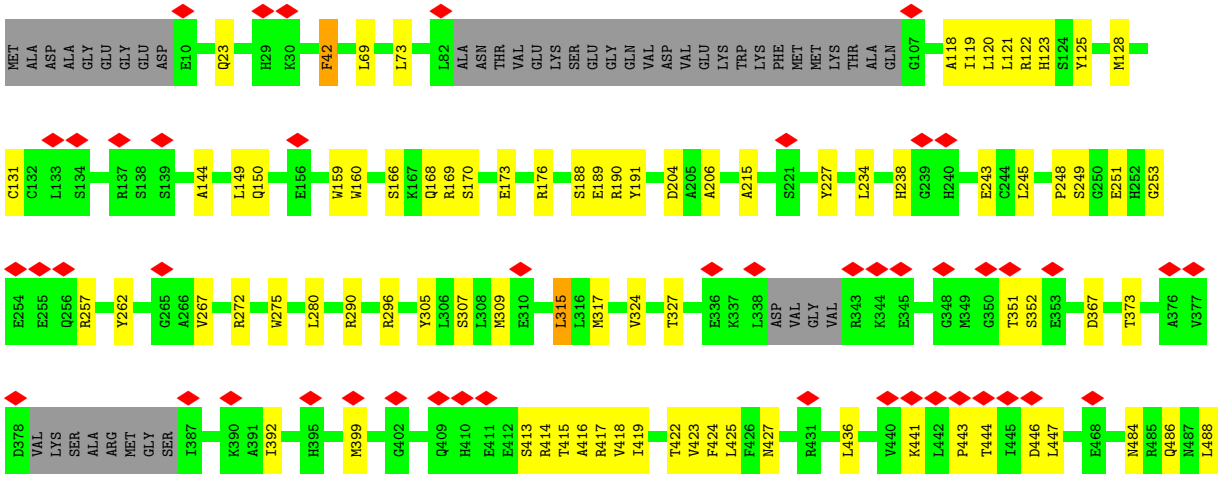
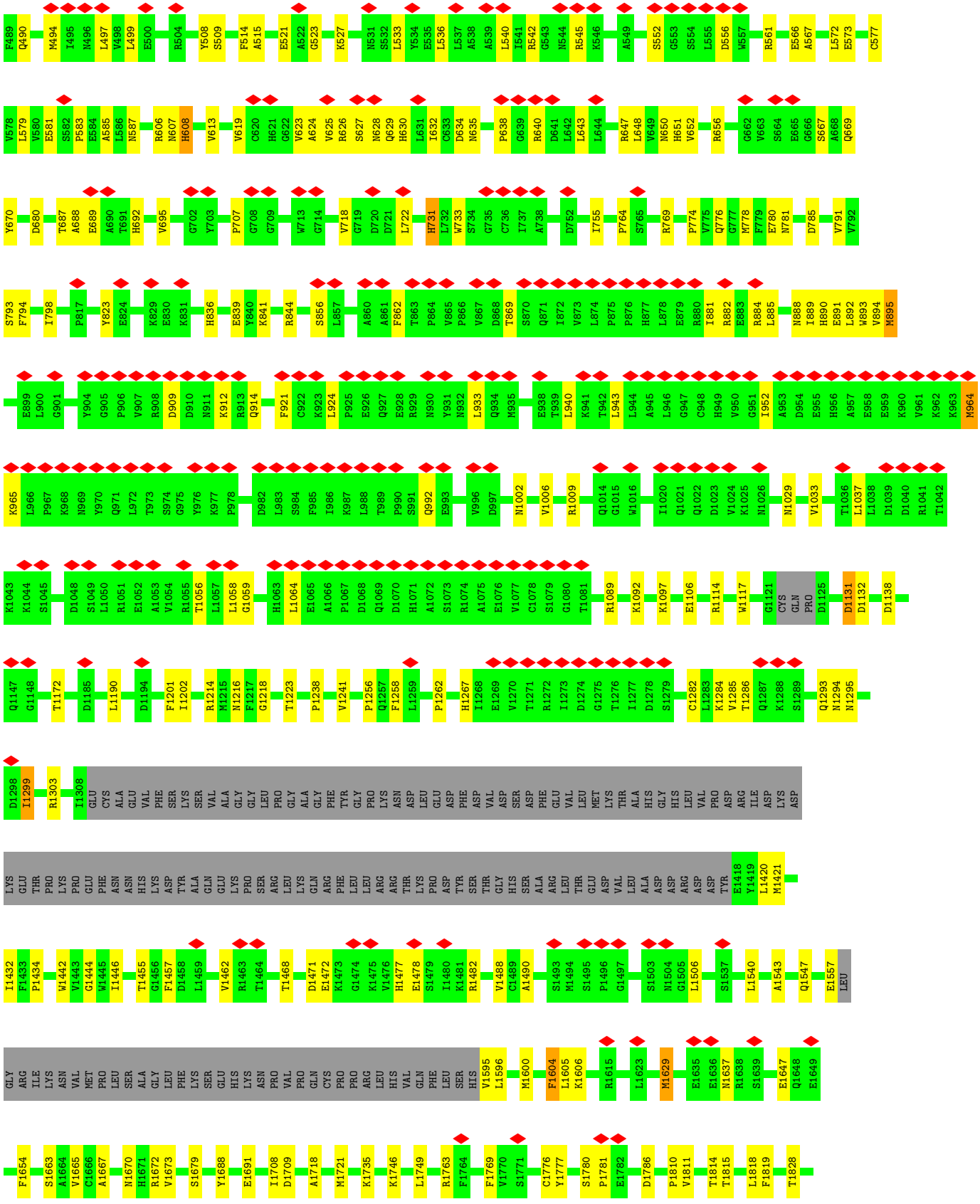
SER ASP PRO GLU ARG THR VAL GLU ARG VAL L3551 G3552 I3553 A3554 N3555 V3556 L3557 F3558 H3559 L3560 E3561 Q3562 K3563 S3564 K3565 Y3566 THR GLY ARG GLY TYR PHE SER LEU VAL GLU HIS PRO GLN ARG SER LYS LYS ALA VAL TRP HIS LYS LEU LEU SER LYS GLN ARG LYS ARG ALA VAL VAL ALA



• Molecule 1: Ryanodine receptor 2

Chain C:

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S793 F794 I798 P817 Y823 E824 K829 E830 K831 H836 E839 Y840 K841 R844 S856 L857 A860 A861 F862 T863 P864 V865 P866 V867 D868 T869 S870 Q871 I872 V873 L874 P875 P876 H877 L878 E879 R880 I881 R882 E883 R884 L885 N888 I889 H890 E891 L892 W893 V894 M895
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K1043 K1044 S1045 D1048 S1049 L1050 R1051 E1062 A1053 V1054 R1055 T1056 L1057 L1058 G1059 H1063 L1064 E1065 A1066 P1067 D1068 Q1069 D1070 H1071 A1072 S1073 R1074 A1075 E1076 V1077 C1078 S1079 G1080 T1081 R1089 K1092 K1087 E1106 R1114 W1117 G1121 CYS GLN PRO D1125 D1131 D1132 D1138
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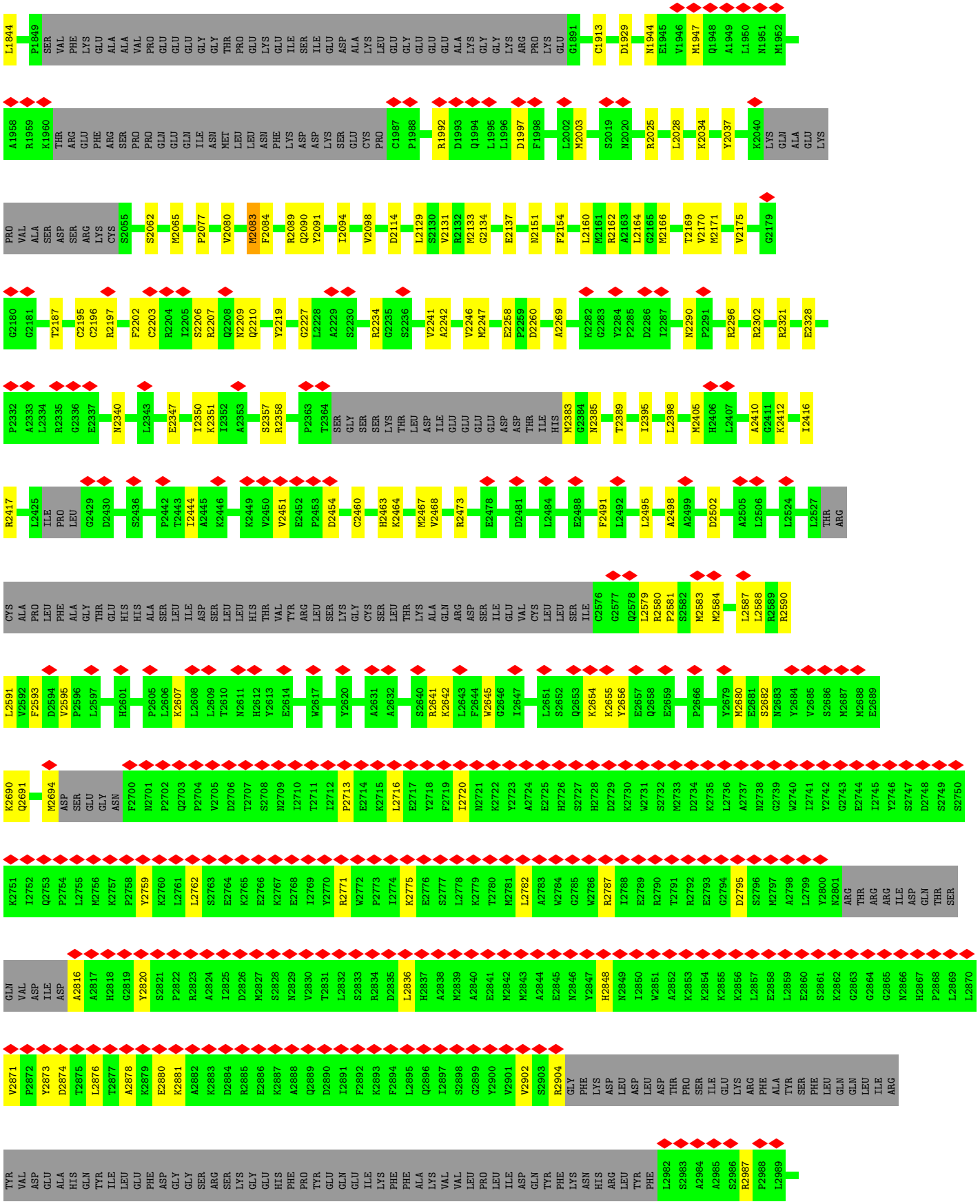
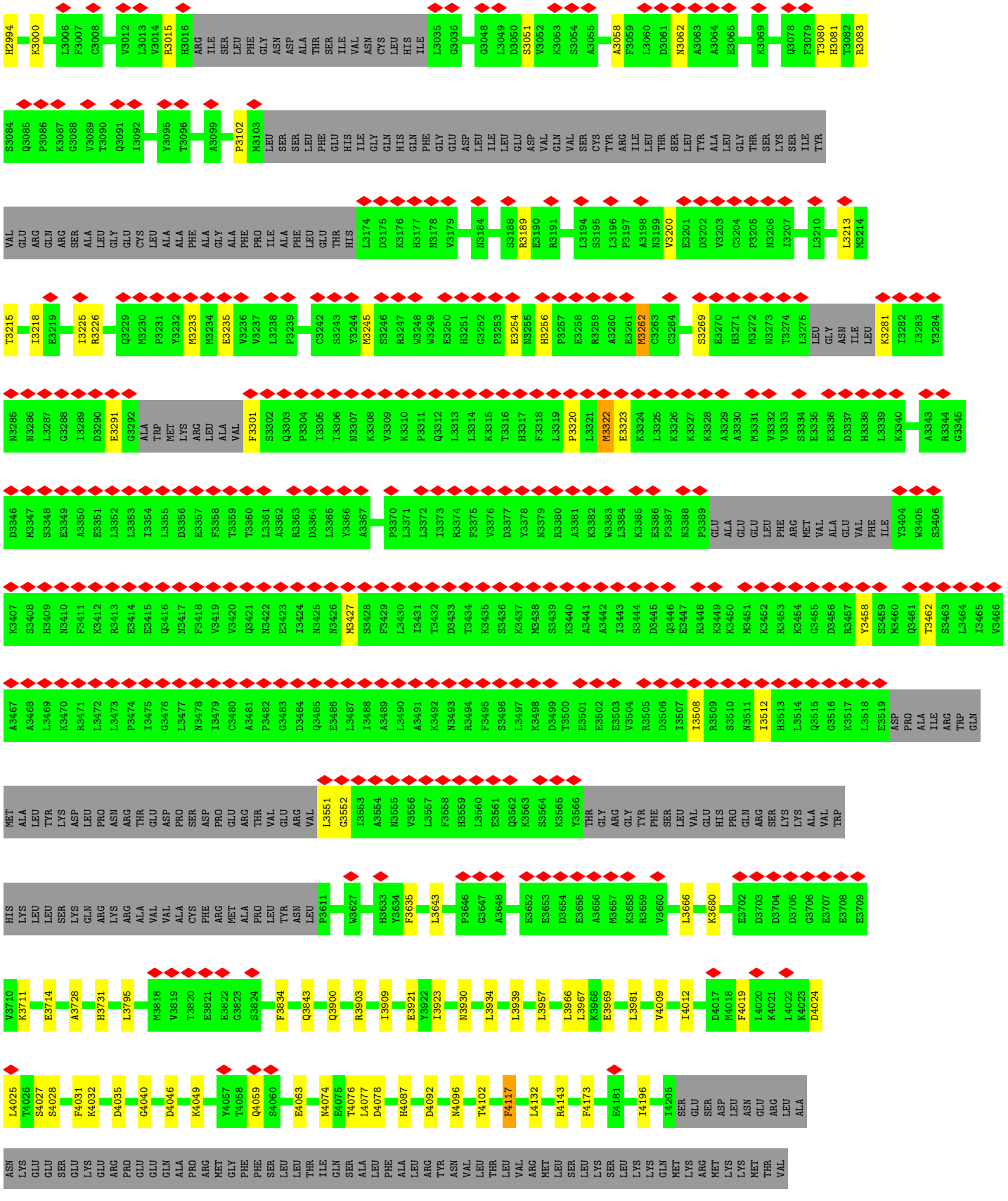
D1298 I1299 R1303 I1308 GLU CYS ALA GLU VAL PHE SER LYS SER VAL ALA GLY GLY LEU PRO GLY ALA GLY PHE TYR GLY PRO LYS ASN ASP LEU GLU ASP PHE ASP VAL ASP SER ASP PHE GLU VAL LEU MET LYS THR ALA HIS GLY HIS LEU VAL PRO ASP ARG ILE ASP LYS ASP
LYS GLU THR PRO LYS PRO GLU PHE ASN ASN HIS LYS ASP TYR ALA GLN GLU LYS PRO SER ARG LEU LYS GLN ARG PHE LEU LEU ARG ARG THR LYS PRO ASP TYR SER THR GLY HIS SER ALA ARG LEU THR GLU ASP VAL LEU ALA ASP ASP ARG ASP ASP TYR E1418 Y1419 L1420 M1421
I1432 F1433 P1434 W1442 V1443 G1444 W1445 I1446 T1455 G1456 F1457 D1458 L1459 V1462 R1463 T1464 T1468 D1471 E1472 K1473 G1474 K1475 V1476 H1477 E1478 S1479 I1480 K1481 R1482 V1488 C1489 A1490 S1493 M1494 S1495 P1496 G1497 S1503 N1504 G1505 L1506 S1537 L1540 A1543 Q1547 E1557 LEU
GLY ARG ILE LYS ASN VAL MET PRO LEU SER ALA GLY LEU PHE LYS SER GLU HIS LYS ASN PRO VAL PRO GLN CYS PRO PRO ARG LEU HIS VAL GLN PHE LEU SER HIS V1595 L1596 M1600 F1604 L1605 K1606 R1615 L1623 M1629 E1635 E1636 N1637 R1638 S1639 E1647 Q1648 E1649
F1654 S1663 A1664 V1665 C1666 A1667 N1670 H1671 R1672 V1673 S1679 Y1688 E1691 I1708 D1709 A1718 M1721 K1735 K1746 L1749 R1763 F1764 F1769 V1770 S1771 C1776 Y1777 S1780 P1781 E1782 D1786 P1810 V1811 T1814 T1815 L1818 F1819 T1828

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S3084 Q3085 P3086 K3087 G3088 V3089 T3090 Q3091 I3092 Y3095 T3096 A3099 P3102 M3103 LEU SER SER LEU PHE GLU HIS ILE GLY GLN HIS GLN PHE GLY GLU ASP LEU ILE LEU GLU ASP VAL GLN VAL SER CYS TYR ARG ILE LEU THR SER LEU LEU TYR ALA LEU GLY THR SER LYS SER ILE TYR
VAL GLU ARG GLN ARG SER ALA LEU GLY GLU CYS LEU ALA ALA PHE ALA GLY ALA PHE PRO ILE ALA PHE LEU GLU THR HIS L3174 D3175 K3176 H3177 N3178 V3179 N3184 S3188 R3189 E3190 R3191 L3194 S3195 L3196 P3197 A3198 N3199 V3200 E3201 D3202 V3203 C3204 P3205 N3206 I3207 L3210 L3213 M3214
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N3285 N3286 L3287 G3288 I3289 D3290 E3291 G3292 ALA TRP MET LYS ARG LEU ALA VAL F3301 S3302 Q3303 P3304 I3305 I3306 N3307 K3308 V3309 K3310 P3311 Q3312 L3313 L3314 K3315 T3316 H3317 F3318 L3319 P3320 L3321 M3322 E3323 K3324 L3325 K3326 K3327 K3328 A3329 A3330 M3331 V3332 V3333 S3334 E3335 E3336 D3337 H3338 L3339 K3340 A3343 R3344 G3345
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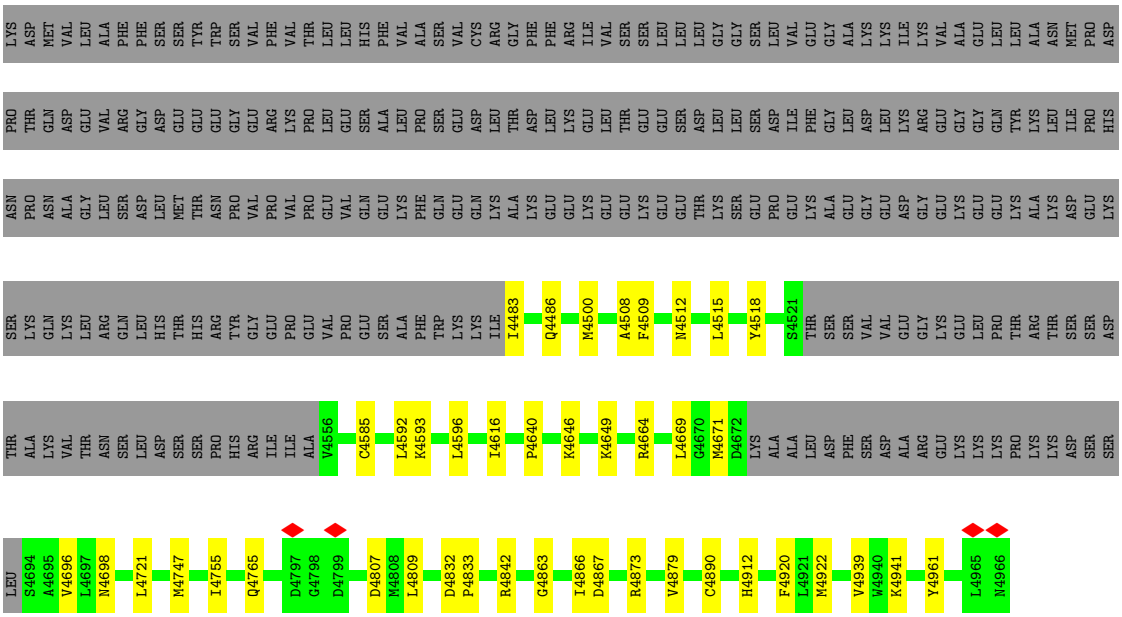
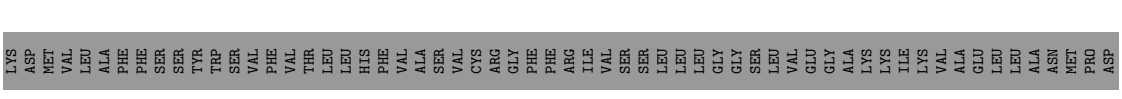
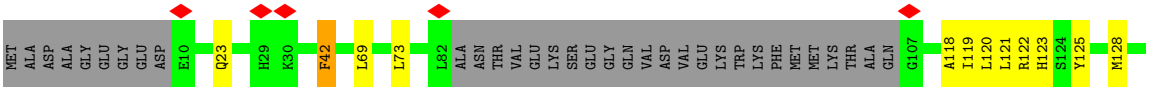
MET ALA LEU TYR LYS ASP LEU PRO ASN ARG THR GLU ASP PRO SER ASP PRO GLU ARG THR VAL GLU ARG VAL L3551 G3552 T3553 A3554 N3555 V3556 L3557 F3558 H3559 L3560 E3561 Q3562 K3563 S3564 K3565 Y3566 THR GLY ARG GLY TYR PHE SER LEU VAL GLU HIS PRO GLN ARG SER LYS LYS ALA VAL TRP
HIS LYS LEU LEU SER LYS GLN ARG LYS ARG ALA VAL VAL ALA CYS PHE ARG MET ALA PRO LEU TYR ASN LEU P3611 W3627 H3633 Y3634 F3635 L3643 P3646 G3647 A3648 E3652 E3653 D3654 E3655 A3656 M3657 K3658 R3659 V3660 L3666 K3680 E3702 D3703 D3704 D3705 G3706 E3707 E3708 E3709
V3710 K3711 E3714 A3728 H3731 L3795 M3818 V3819 T3820 E3821 E3822 G3823 S3824 F3834 Q3843 Q3900 R3903 I3909 E3921 Y3922 I3923 N3930 L3934 L3939 L3957 L3966 L3967 K3968 E3969 L3981 V4009 I4012 D4017 M4018 F4019 L4020 K4021 L4022 K4023 D4024
L4025 T4026 S4027 S4028 F4031 K4032 D4035 G4040 D4046 K4049 Y4057 T4058 Q4059 S4060 E4063 N4074 E4075 T4076 L4077 D4078 H4087 D4092 N4096 T4102 F4117 L4132 R4143 F4173 E4181 I4196 I4205 SER GLU SER ASP LEU ASN GLU ARG LEU ALA
ASN LYS GLU GLU SER GLU LYS GLU ARG PRO GLU GLU GLN ALA PRO ARG MET GLY PHE PHE SER LEU LEU THR ILE GLN SER ALA LEU PHE ALA LEU ARG TYR ASN VAL LEU THR LEU VAL ARG MET LEU SER LEU LYS SER LEU LYS LYS GLN MET LYS ARG MET LYS LYS MET THR VAL

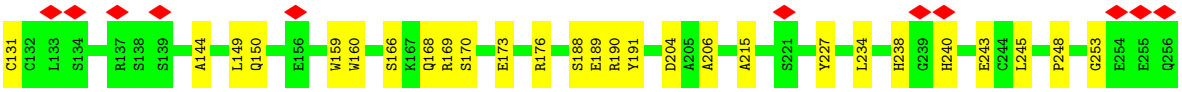


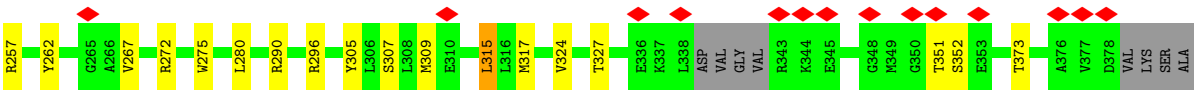


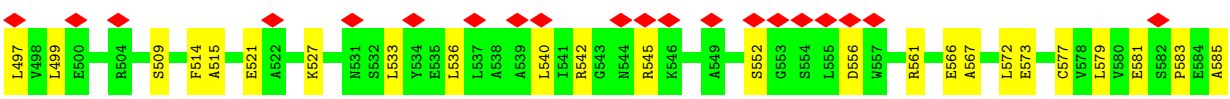
• Molecule 1: Ryanodine receptor 2

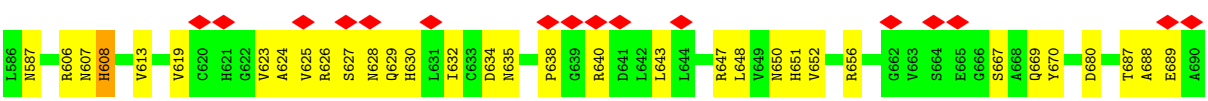
Chain D:

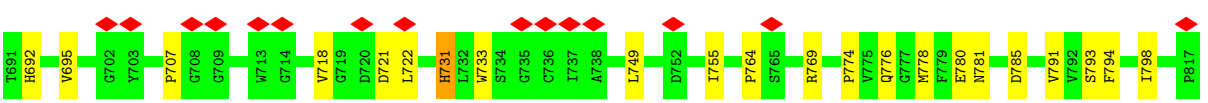


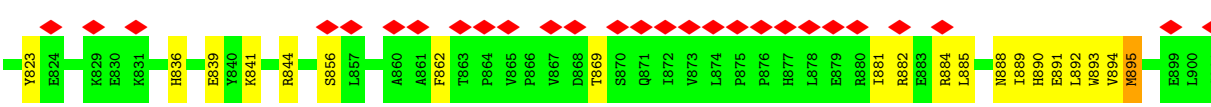


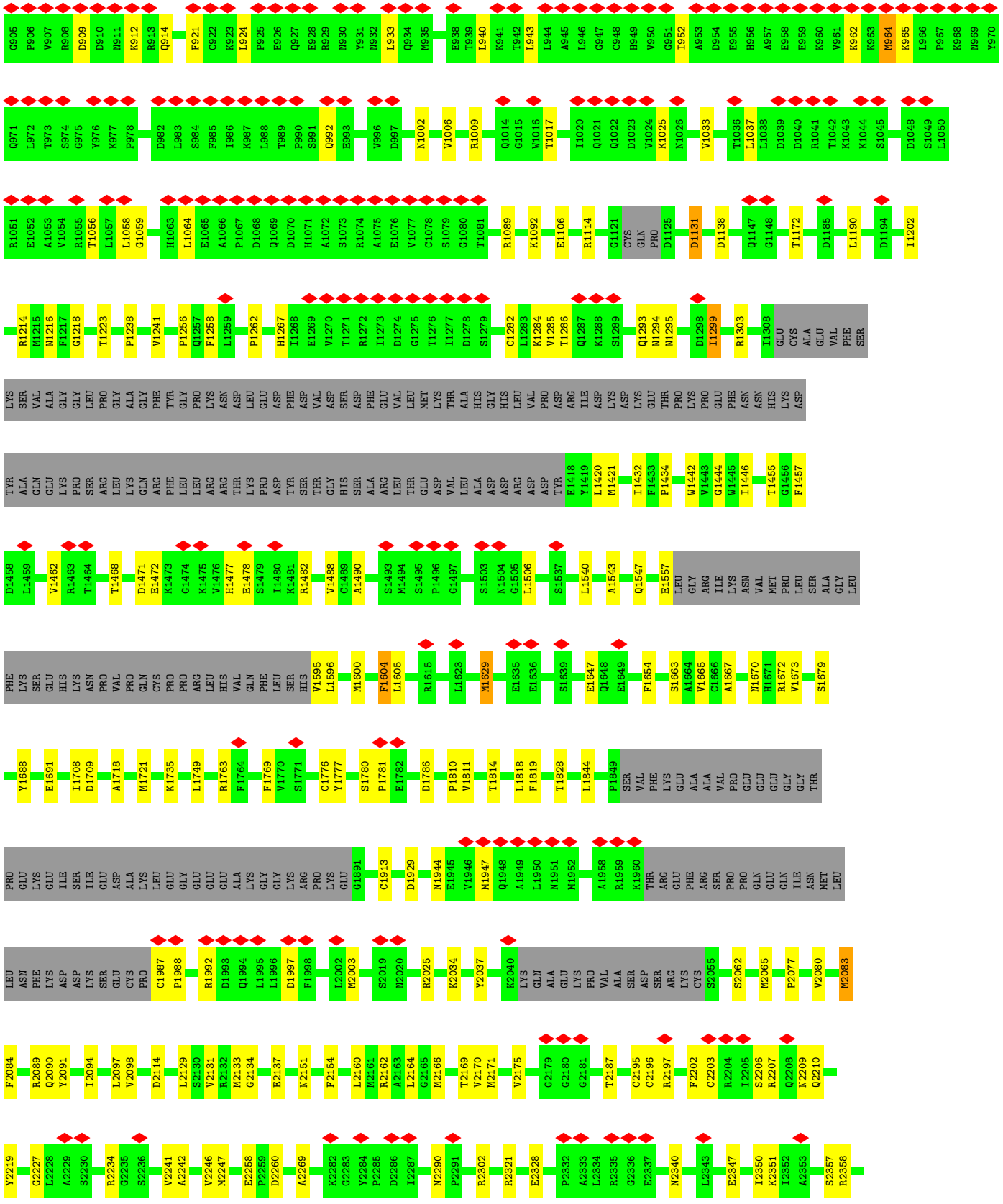








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Q971 L972 T973 S974 G975 Y976 K977 P978 D982 L983 S984 F985 I986 K987 L988 T989 P990 S991 Q992 E993 V996 D997 N1002 V1006 R1009 Q1014 G1015 W1016 T1017 I1020 Q1021 Q1022 D1023 V1024 K1025 N1026 V1033 T1036 L1037 L1038 D1039 D1040 R1041 T1042 K1043 K1044 S1045 D1048 S1049 L1050
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R1214 M1215 N1216 F1217 G1218 T1223 P1238 V1241 P1256 Q1257 F1258 L1259 P1262 H1267 I1268 E1269 V1270 T1271 R1272 I1273 D1274 G1275 T1276 I1277 D1278 S1279 C1282 L1283 K1284 V1285 T1286 Q1287 K1288 S1289 Q1293 N1294 N1295 D1298 I1299 R1303 I1308 GLU CYS ALA GLU VAL PHE SER
LYS SER VAL ALA GLY GLY LEU PRO GLY ALA GLY PHE TYR GLY PRO LYS ASN ASP LEU GLU ASP PHE ASP VAL ASP SER ASP PHE GLU VAL LEU MET LYS THR ALA HIS GLY HIS LEU VAL PRO ASP ARG ILE ASP LYS ASP GLU THR PRO LYS PRO GLU PHE ASN ASN HIS LYS ASP
TYR ALA GLN GLU LYS PRO SER ARG LEU LYS GLN ARG PHE LEU LEU ARG ARG THR LYS PRO ASP TYR SER THR GLY HIS SER ALA ARG LEU THR GLU ASP VAL LEU ALA ASP ASP ARG ASP ASP TYR E1418 Y1419 L1420 M1421 I1432 F1433 P1434 W1442 V1443 G1444 W1445 I1446 T1455 G1456 F1457
D1458 L1459 V1462 R1463 T1464 T1468 D1471 E1472 K1473 G1474 K1475 V1476 H1477 E1478 S1479 I1480 K1481 R1482 V1488 C1489 A1490 S1493 M1494 S1495 P1496 G1497 S1503 N1504 G1505 L1506 S1537 L1540 A1543 Q1547 E1557 LEU GLY ARG ILE LYS ASN VAL MET PRO LEU SER ALA GLY LEU
PHE LYS SER GLU HIS LYS ASN PRO VAL PRO GLN CYS PRO PRO ARG LEU HIS VAL GLN PHE LEU SER HIS V1595 L1596 M1600 F1604 L1605 R1615 L1623 M1629 E1635 E1636 S1639 E1647 Q1648 E1649 F1654 S1663 A1664 V1665 C1666 A1667 N1670 H1671 R1672 V1673 S1679
Y1688 E1691 I1708 D1709 A1718 M1721 K1735 L1749 R1763 F1764 F1769 V1770 S1771 C1776 Y1777 S1780 P1781 E1782 D1786 P1810 V1811 T1814 L1818 F1819 T1828 L1844 P1849 SER VAL PHE LYS GLU ALA ALA VAL PRO GLU GLU GLU GLY GLY THR
PRO GLU LYS GLU ILE SER ILE GLU ASP ALA LYS LEU GLU GLY GLU GLU GLU ALA LYS GLY GLY LYS ARG PRO LYS GLU G1891 C1913 D1929 N1944 E1945 V1946 M1947 Q1948 A1949 L1950 N1951 M1952 A1958 R1959 K1960 THR ARG GLU PHE ARG SER PRO PRO GLN GLU GLN ILE ASN MET LEU
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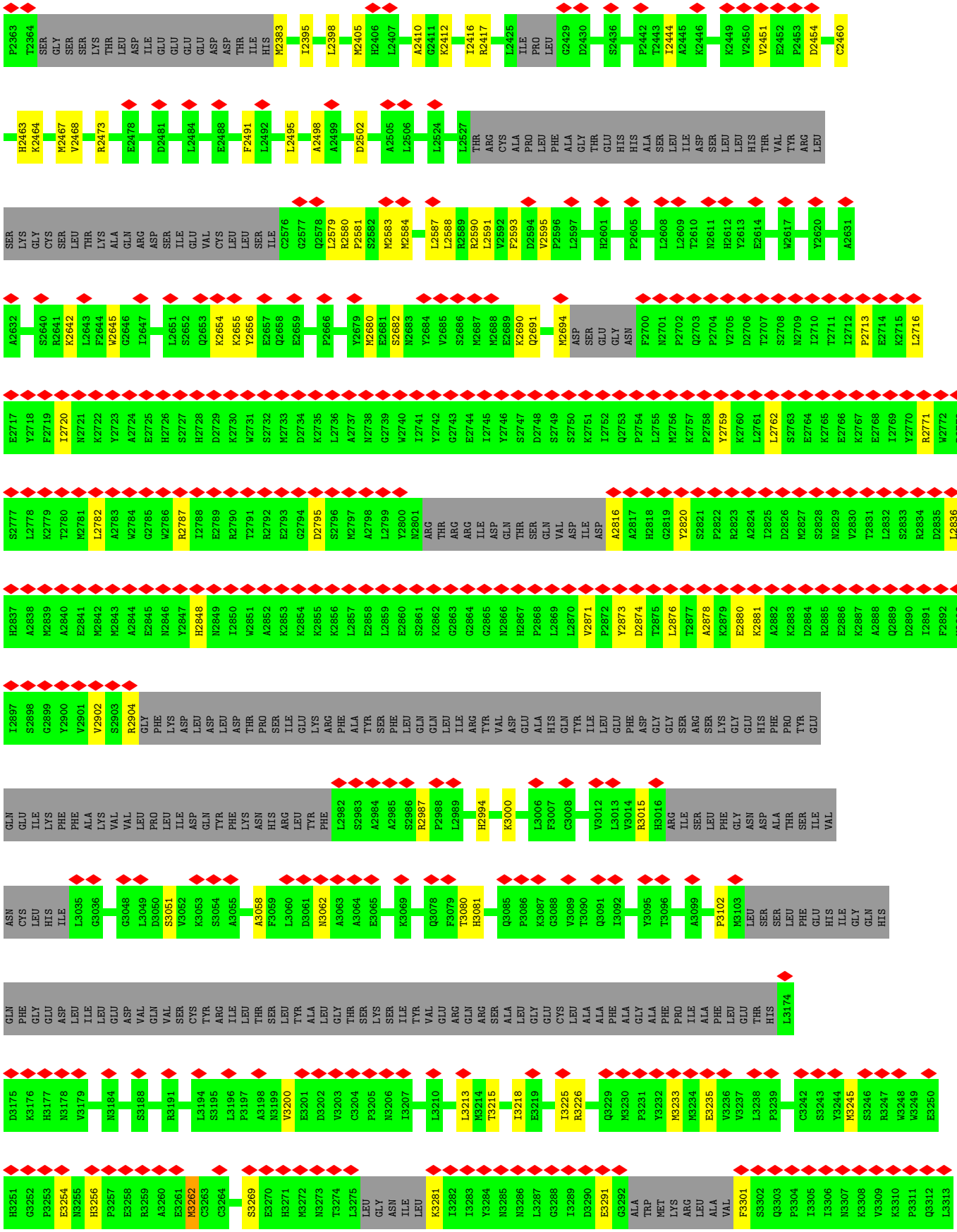
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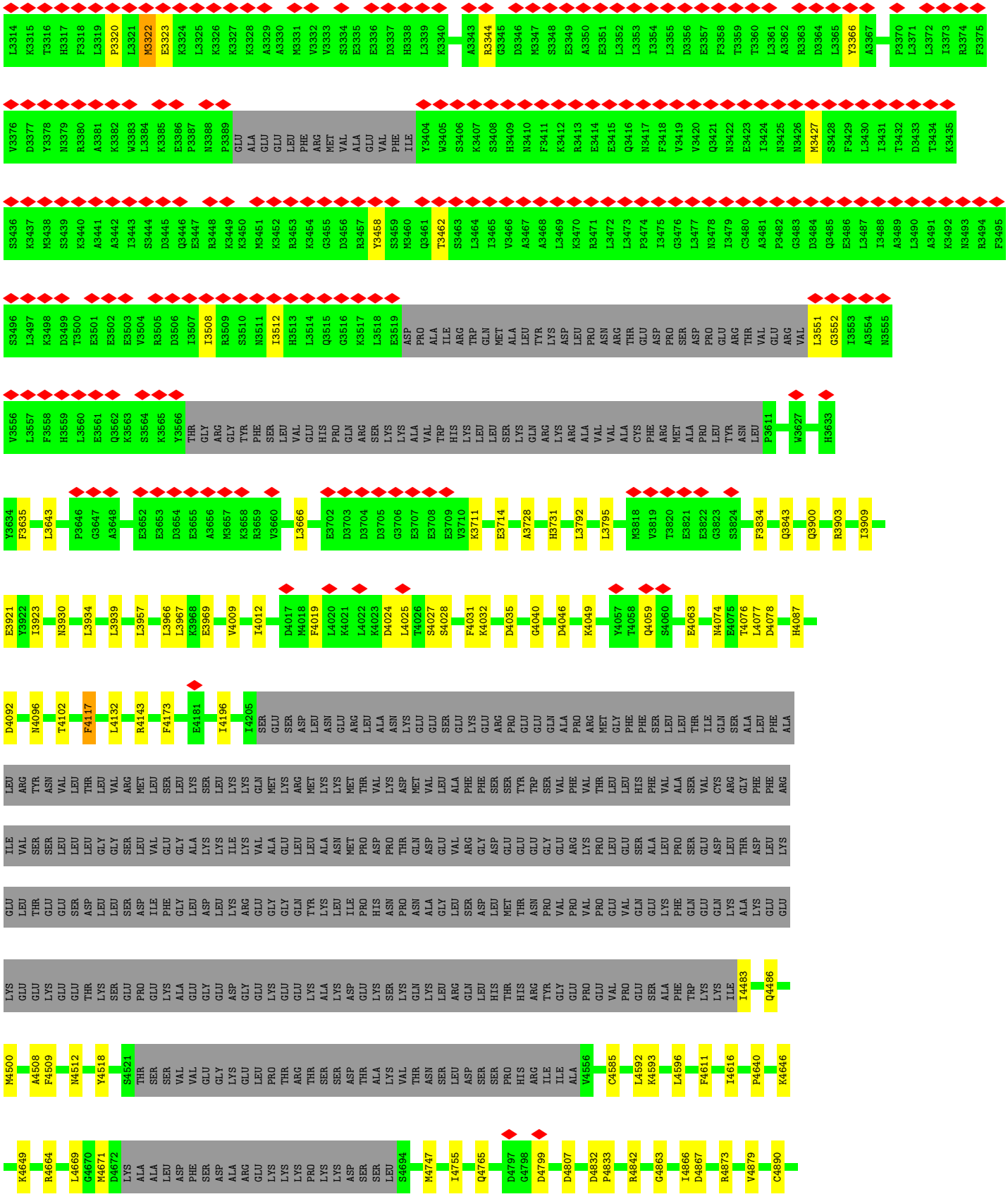
H2463 K2464 M2467 V2468 R2473 E2478 D2481 L2484 E2488 F2491 L2492 L2495 A2498 A2499 D2502 A2505 L2506 L2524 L2527 THR ARG CYS ALA PRO LEU PHE ALA GLY THR GLU HIS HIS ALA SER LEU ILE ASP SER LEU LEU HIS THR VAL TYR ARG LEU
SER LYS GLY CYS SER LEU THR LYS ALA GLN ARG ASP SER ILE GLU VAL CYS LEU LEU SER ILE C2576 G2577 Q2578 L2579 R2580 P2581 S2582 M2583 M2584 L2587 L2588 R2589 R2590 L2591 Y2592 F2593 D2594 V2595 P2596 L2597 H2601 P2605 L2608 L2609 T2610 N2611 H2612 Y2613 E2614 W2617 Y2620 A2631
A2632 S2640 R2641 K2642 L2643 F2644 W2645 G2646 I2647 L2651 S2652 Q2653 K2654 K2655 Y2656 E2657 Q2658 E2659 P2666 Y2679 M2680 E2681 S2682 W2683 Y2684 V2685 S2686 M2687 M2688 E2689 K2690 Q2691 M2694 ASP SER GLU GLY ASN F2700 N2701 P2702 Q2703 P2704 V2705 D2706 T2707 S2708 N2709 I2710 T2711 I2712 P2713 E2714 K2715 L2716
E2717 Y2718 F2719 I2720 N2721 K2722 Y2723 A2724 E2725 H2726 S2727 H2728 D2729 K2730 W2731 S2732 M2733 D2734 K2735 L2736 A2737 N2738 G2739 W2740 I2741 Y2742 G2743 E2744 I2745 Y2746 S2747 D2748 S2749 S2750 K2751 I2752 Q2753 P2754 L2755 M2756 K2757 P2758 Y2759 K2760 L2761 L2762 S2763 E2764 K2765 E2766 K2767 E2768 I2769 Y2770 R2771 W2772 P2773 I2774 K2775 E2776
S2777 L2778 K2779 T2780 M2781 L2782 A2783 W2784 G2785 W2786 R2787 I2788 E2789 R2790 T2791 R2792 E2793 G2794 G2795 S2796 M2797 A2798 L2799 Y2800 N2801 ARG THR ARG ARG ILE ASP GLN THR SER GLN VAL ASP ILE ASP A2816 A2817 H2818 G2819 Y2820 S2821 P2822 R2823 A2824 I2825 D2826 M2827 S2828 N2829 V2830 T2831 L2832 S2833 R2834 D2835 L2836
H2837 A2838 M2839 A2840 E2841 M2842 M2843 A2844 E2845 N2846 Y2847 H2848 H2849 I2850 W2851 A2852 K2853 K2854 K2855 K2856 L2857 E2858 L2859 E2860 S2861 K2862 G2863 G2864 G2865 N2866 H2867 P2868 L2869 L2870 V2871 P2872 Y2873 D2874 T2875 L2876 T2877 A2878 K2879 E2880 K2881 A2882 K2883 D2884 R2885 E2886 K2887 A2888 Q2889 D2890 I2891 F2892 K2893 F2894 L2895 Q2896
I2897 S2898 G2899 Y2900 V2901 V2902 S2903 R2904 GLY PHE LYS ASP LEU ASP LEU ASP LEU ASP THR PRO SER ILE GLU GLY LYS ARG PHE ALA TYR SER PHE LEU GLN GLN LEU ILE ARG TYR VAL ASP GLU ALA HIS GLN TYR ILE LEU GLU PHE ASP GLY GLY SER ARG SER LYS GLY GLU HIS PHE PRO TYR GLU
GLN GLU ILE LYS PHE PHE ALA LYS VAL VAL LEU PRO LEU ILE ASP GLN TYR PHE LYS ASN HIS ARG LEU TYR PHE L2982 S2983 A2984 A2985 S2986 R2987 P2988 L2989 H2994 K3000 L3006 F3007 C3008 V3012 L3013 V3014 R3015 H3016 ARG ILE SER LEU PHE GLY ASN ASP ALA THR SER ILE VAL
ASN CYS LEU HIS ILE L3035 G3036 G3048 L3049 D3050 S3051 V3052 K3053 S3054 A3055 A3058 F3059 L3060 D3061 N3062 A3063 A3064 E3065 K3069 Q3078 F3079 T3080 H3081 Q3085 P3086 K3087 G3088 V3089 T3090 Q3091 I3092 Y3095 T3096 A3099 P3102 M3103 LEU SER SER LEU PHE GLU HIS ILE GLY GLN HIS
GLN PHE GLY GLU ASP LEU ILE LEU GLU ASP VAL GLN VAL SER CYS TYR ARG ILE LEU THR SER LEU TYR ALA LEU GLY THR SER LYS SER ILE TYR VAL GLU ARG GLN ARG SER ALA LEU GLY GLU CYS LEU ALA ALA PHE ALA GLY ALA PHE PRO ILE ALA PHE LEU GLU THR HIS L3174
D3175 K3176 H3177 N3178 V3179 N3184 S3188 R3191 L3194 S3195 L3196 P3197 A3198 N3199 V3200 E3201 D3202 V3203 C3204 P3205 N3206 I3207 L3210 L3213 M3214 T3215 I3218 E3219 I3225 R3226 Q3229 M3230 P3231 Y3232 M3233 M3234 E3235 V3236 V3237 L3238 P3239 C3242 S3243 Y3244 M3245 S3246 R3247 W3248 W3249 E3250
H3251 G3252 P3253 E3254 N3255 H3256 P3257 E3258 R3259 A3260 E3261 M3262 C3263 C3264 S3269 E3270 H3271 H3272 N3273 T3274 L3275 LEU GLY ASN ILE LEU K3281 I3282 I3283 Y3284 N3285 N3286 L3287 G3288 I3289 D3290 E3291 G3292 ALA TRP MET LYS ARG LEU ALA VAL F3301 S3302 Q3303 P3304 I3305 I3306 N3307 K3308 V3309 K3310 P3311 Q3312 L3313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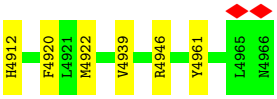
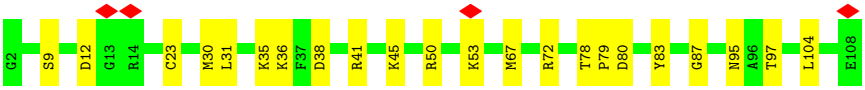
V3376 D3377 Y3378 N3379 R3380 A3381 K3382 W3383 L3384 K3385 E3386 P3387 N3388 P3389 GLU ALA GLU GLU LEU PHE ARG MET VAL ALA GLU VAL PHE ILE Y3404 W3405 S3406 K3407 S3408 H3409 N3410 F3411 K3412 R3413 E3414 E3415 Q3416 N3417 F3418 V3419 V3420 Q3421 N3422 E3423 I3424 N3425 N3426 M3427 S3428 F3429 L3430 I3431 T3432 D3433 T3434 K3435
S3436 K3437 M3438 S3439 K3440 A3441 A3442 I3443 S3444 D3445 Q3446 E3447 R3448 K3449 K3450 M3451 K3452 R3453 K3454 G3455 D3456 R3457 Y3458 S3459 M3460 Q3461 T3462 S3463 L3464 I3465 V3466 A3467 A3468 L3469 K3470 R3471 L3472 L3473 P3474 I3475 G3476 L3477 N3478 I3479 C3480 A3481 P3482 G3483 D3484 Q3485 E3486 L3487 I3488 A3489 L3490 A3491 K3492 N3493 R3494 F3495
S3496 L3497 K3498 D3499 T3500 L3560 E3561 Q3562 K3563 S3564 K3565 Y3566 THR GLY ARG GLY TYR PHE SER LEU VAL GLU HIS PRO GLN ARG SER LYS LYS ALA VAL TRP HIS LYS LEU LEU SER LYS GLN ARG LYS ARG ALA VAL VAL ALA CYS PHE ARG MET ALA PRO LEU TYR ASN LEU P3611 W3627 H3633
Y3634 F3635 L3643 P3646 G3647 A3648 E3652 E3653 D3654 E3655 A3656 M3657 K3658 R3659 V3660 L3666 E3702 D3703 D3704 D3705 G3706 E3707 E3708 E3709 V3710 K3711 E3714 A3728 H3731 L3792 L3795 M3818 V3819 T3820 E3821 E3822 G3823 S3824 F3834 Q3843 Q3900 R3903 I3909
E3921 Y3922 I3923 N3930 L3934 L3939 L3957 L3966 L3967 K3968 E3969 V4009 I4012 D4017 M4018 F4019 L4020 K4021 L4022 K4023 D4024 L4025 T4026 S4027 S4028 F4031 K4032 D4035 G4040 D4046 K4049 Y4057 T4058 Q4059 S4060 E4063 N4074 E4075 T4076 L4077 D4078 H4087
D4092 N4096 T4102 F4117 L4132 R4143 F4173 E4181 I4196 I4205 SER GLU SER ASP LEU ASN GLU ARG LEU ALA ASN LYS GLU GLU SER GLU LYS GLU ARG PRO GLU GLU GLN ALA PRO ARG MET GLY PHE PHE SER LEU LEU THR ILE GLN SER ALA LEU PHE ALA
LEU ARG TYR ASN VAL LEU THR LEU VAL ARG MET LEU SER LEU LYS SER LEU LYS LYS GLN MET LYS ARG MET LYS LYS MET THR VAL LYS ASP MET VAL LEU ALA PHE PHE SER SER TYR TRP SER VAL PHE PHE VAL THR LEU LEU HIS PHE VAL ALA SER VAL CYS ARG GLY PHE PHE ARG
ILE VAL SER SER LEU LEU LEU SER LEU VAL GLU GLY GLY SER LEU VAL LYS LYS ILE LYS VAL ALA GLU LEU LEU ALA ASN MET PRO ASP PRO THR GLN ASP GLU VAL ARG GLY ASP GLU GLU GLY GLU ARG LYS PRO LEU GLU SER ALA LEU PRO SER GLU ASP LEU THR ASP LEU LYS
GLU LEU THR GLU GLU SER ASP LEU LEU SER ASP ILE PHE GLY GLY LEU ASP LEU LYS ARG GLU GLY GLY GLN TYR LYS LEU ILE PRO HIS ASN PRO ASN ALA GLY LEU SER ASP LEU MET THR ASN PRO VAL PRO VAL PRO GLU VAL GLN GLU LYS ALA PHE GLN GLU GLN LYS ALA LEU GLU
LYS GLU GLU LYS GLU GLU THR LYS SER GLU PRO GLU GLU ASP GLY GLU LYS GLU GLU LYS ALA LYS ASP GLU LYS SER LYS GLN LYS LEU ARG GLN LEU HIS THR HIS ARG TYR GLY GLU PRO GLU VAL PRO GLU SER ALA PHE TRP LYS LYS ILE I4483 Q4486
M4500 A4508 F4509 N4512 Y4518 S4521 THR SER SER VAL VAL GLU GLY LYS GLU LEU PRO THR ARG THR SER SER ASP THR ALA LYS VAL THR ASN SER LEU ASP SER SER PRO HIS ARG ILE ILE ALA V4556 C4585 L4592 K4593 L4596 F4611 I4616 P4640 K4646
K4649 R4664 L4669 G4670 M4671 D4672 LYS ALA ALA LEU ASP PHE SER ASP ALA ARG GLU LYS LYS LYS PRO LYS LYS ASP SER SER LEU S4694 M4747 I4755 Q4765 D4797 G4798 D4799 D4807 D4832 P4833 R4842 G4863 I4866 D4867 R4873 V4879 C4890



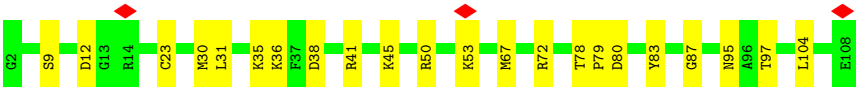
• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1B

Chain E:



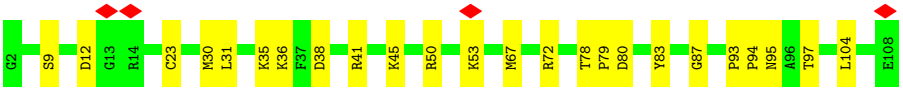
• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1B

Chain F:



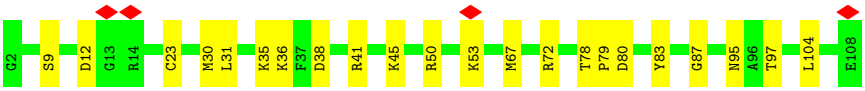
• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1B

Chain G:



• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1B

Chain H:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C4	Depositor
Number of particles used	406681	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	52.95	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.804	Depositor
Minimum map value	-1.458	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.065	Depositor
Recommended contour level	0.24	Depositor
Map size (Å)	496.80002, 496.80002, 496.80002	wwPDB
Map dimensions	460, 460, 460	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.08, 1.08, 1.08	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 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	0.25	0/32026	0.49	7/43315 (0.0%)
1	B	0.26	0/32026	0.49	7/43315 (0.0%)
1	C	0.26	0/32026	0.49	7/43315 (0.0%)
1	D	0.26	0/32026	0.49	7/43315 (0.0%)
2	E	0.27	0/834	0.50	0/1123
2	F	0.27	0/834	0.50	0/1123
2	G	0.27	0/834	0.50	0/1123
2	H	0.27	0/834	0.50	0/1123
All	All	0.26	0/131440	0.49	28/177752 (0.0%)

There are no bond length outliers.

All (28) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	315	LEU	CA-CB-CG	6.82	130.99	115.30
1	C	315	LEU	CA-CB-CG	6.81	130.95	115.30
1	B	315	LEU	CA-CB-CG	6.79	130.93	115.30
1	A	315	LEU	CA-CB-CG	6.79	130.92	115.30
1	B	1131	ASP	CB-CG-OD1	6.33	124.00	118.30
1	C	1131	ASP	CB-CG-OD1	6.26	123.94	118.30
1	A	1131	ASP	CB-CG-OD1	6.21	123.89	118.30
1	D	1131	ASP	CB-CG-OD1	6.17	123.86	118.30
1	D	3643	LEU	CA-CB-CG	5.52	127.99	115.30
1	C	3643	LEU	CA-CB-CG	5.52	127.99	115.30
1	A	3643	LEU	CA-CB-CG	5.51	127.98	115.30
1	B	3643	LEU	CA-CB-CG	5.51	127.97	115.30
1	B	2579	LEU	CA-CB-CG	5.35	127.60	115.30
1	D	2579	LEU	CA-CB-CG	5.35	127.60	115.30
1	A	2579	LEU	CA-CB-CG	5.34	127.59	115.30
1	C	2579	LEU	CA-CB-CG	5.33	127.56	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	895	MET	CG-SD-CE	5.07	108.31	100.20
1	C	895	MET	CG-SD-CE	5.07	108.31	100.20
1	A	895	MET	CA-CB-CG	5.06	121.91	113.30
1	C	895	MET	CA-CB-CG	5.06	121.91	113.30
1	B	895	MET	CA-CB-CG	5.05	121.89	113.30
1	D	895	MET	CA-CB-CG	5.04	121.88	113.30
1	B	895	MET	CG-SD-CE	5.04	108.27	100.20
1	D	895	MET	CG-SD-CE	5.04	108.26	100.20
1	B	964	MET	CB-CG-SD	5.03	127.48	112.40
1	A	964	MET	CB-CG-SD	5.02	127.47	112.40
1	C	964	MET	CB-CG-SD	5.02	127.45	112.40
1	D	964	MET	CB-CG-SD	5.02	127.45	112.40

There are no chirality outliers.

There are no planarity outliers.

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	31374	0	30394	319	0
1	B	31374	0	30394	324	0
1	C	31374	0	30394	328	0
1	D	31374	0	30394	312	0
2	E	818	0	821	12	0
2	F	818	0	821	12	0
2	G	818	0	821	13	0
2	H	818	0	821	12	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
All	All	128772	0	124860	1307	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 5.

All (1307) 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:A:1629:MET:SD	1:A:1629:MET:N	2.61	0.73
1:D:1629:MET:SD	1:D:1629:MET:N	2.61	0.73
1:C:1629:MET:SD	1:C:1629:MET:N	2.61	0.72
1:D:1444:GLY:HA3	1:D:1488:VAL:HA	1.72	0.71
1:A:3843:GLN:HG3	1:A:3921:GLU:HG3	1.73	0.71
1:B:3843:GLN:HG3	1:B:3921:GLU:HG3	1.73	0.70
1:B:1629:MET:SD	1:B:1629:MET:N	2.61	0.70
1:C:69:LEU:HD22	1:C:119:ILE:HD11	1.74	0.70
1:C:1444:GLY:HA3	1:C:1488:VAL:HA	1.72	0.70
1:A:69:LEU:HD22	1:A:119:ILE:HD11	1.74	0.70
1:A:1444:GLY:HA3	1:A:1488:VAL:HA	1.72	0.69
1:B:1444:GLY:HA3	1:B:1488:VAL:HA	1.72	0.69
1:D:69:LEU:HD22	1:D:119:ILE:HD11	1.74	0.69
1:B:69:LEU:HD22	1:B:119:ILE:HD11	1.74	0.69
1:C:296:ARG:HH22	1:C:324:VAL:HG22	1.58	0.69
1:C:3843:GLN:HG3	1:C:3921:GLU:HG3	1.73	0.69
1:D:3843:GLN:HG3	1:D:3921:GLU:HG3	1.73	0.69
1:D:296:ARG:HH22	1:D:324:VAL:HG22	1.58	0.69
1:A:579:LEU:HD12	1:A:583:PRO:HB3	1.75	0.69
1:B:296:ARG:HH22	1:B:324:VAL:HG22	1.58	0.69
1:C:579:LEU:HD12	1:C:583:PRO:HB3	1.75	0.69
1:A:296:ARG:HH22	1:A:324:VAL:HG22	1.58	0.68
1:B:579:LEU:HD12	1:B:583:PRO:HB3	1.75	0.68
1:B:413:SER:OG	1:B:414:ARG:NH1	2.28	0.67
1:A:415:THR:O	1:A:419:ILE:HG12	1.95	0.67
1:D:579:LEU:HD12	1:D:583:PRO:HB3	1.75	0.66
1:A:413:SER:OG	1:A:414:ARG:NH1	2.28	0.66
1:C:413:SER:OG	1:C:414:ARG:NH1	2.28	0.66
1:D:413:SER:OG	1:D:414:ARG:NH1	2.28	0.66
1:A:4765:GLN:HB3	1:B:4755:ILE:HD11	1.78	0.66
1:C:415:THR:O	1:C:419:ILE:HG12	1.95	0.66
1:D:415:THR:O	1:D:419:ILE:HG12	1.95	0.66
1:D:441:LYS:HG3	1:D:443:PRO:HD2	1.79	0.65
1:B:441:LYS:HG3	1:B:443:PRO:HD2	1.79	0.65
1:C:2084:PHE:HE2	1:C:3666:LEU:HB2	1.61	0.65
1:A:2084:PHE:HE2	1:A:3666:LEU:HB2	1.61	0.65
1:B:2084:PHE:HE2	1:B:3666:LEU:HB2	1.61	0.65
1:D:619:VAL:HA	1:D:624:ALA:HB2	1.78	0.65
1:B:415:THR:O	1:B:419:ILE:HG12	1.95	0.65
1:B:619:VAL:HA	1:B:624:ALA:HB2	1.78	0.65
1:D:2084:PHE:HE2	1:D:3666:LEU:HB2	1.61	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:441:LYS:HG3	1:C:443:PRO:HD2	1.79	0.64
1:A:619:VAL:HA	1:A:624:ALA:HB2	1.78	0.64
1:A:131:CYS:HA	1:A:160:TRP:HE1	1.62	0.64
1:C:619:VAL:HA	1:C:624:ALA:HB2	1.78	0.64
1:A:441:LYS:HG3	1:A:443:PRO:HD2	1.79	0.64
1:B:131:CYS:HA	1:B:160:TRP:HE1	1.62	0.64
1:C:2584:MET:SD	1:C:2584:MET:N	2.71	0.63
1:B:188:SER:HB2	1:B:190:ARG:HH11	1.64	0.63
1:B:2062:SER:OG	1:B:2090:GLN:NE2	2.32	0.63
1:B:2584:MET:SD	1:B:2584:MET:N	2.71	0.63
1:D:2062:SER:OG	1:D:2090:GLN:NE2	2.32	0.63
1:A:1303:ARG:HH22	1:A:1540:LEU:HD12	1.64	0.63
1:C:188:SER:HB2	1:C:190:ARG:HH11	1.64	0.63
1:C:2062:SER:OG	1:C:2090:GLN:NE2	2.32	0.63
1:A:2062:SER:OG	1:A:2090:GLN:NE2	2.32	0.63
1:D:188:SER:HB2	1:D:190:ARG:HH11	1.64	0.63
1:C:131:CYS:HA	1:C:160:TRP:HE1	1.62	0.63
1:B:131:CYS:SG	1:B:150:GLN:NE2	2.72	0.62
1:D:131:CYS:HA	1:D:160:TRP:HE1	1.62	0.62
1:A:188:SER:HB2	1:A:190:ARG:HH11	1.64	0.62
1:B:3233:MET:HG2	1:B:3235:GLU:H	1.64	0.62
1:A:3233:MET:HG2	1:A:3235:GLU:H	1.64	0.62
1:C:131:CYS:SG	1:C:150:GLN:NE2	2.72	0.62
1:D:131:CYS:SG	1:D:150:GLN:NE2	2.72	0.62
1:A:131:CYS:SG	1:A:150:GLN:NE2	2.72	0.62
1:B:1303:ARG:HH22	1:B:1540:LEU:HD12	1.64	0.62
1:C:1303:ARG:HH22	1:C:1540:LEU:HD12	1.64	0.62
1:D:3233:MET:HG2	1:D:3235:GLU:H	1.64	0.62
1:B:248:PRO:O	1:B:257:ARG:NH2	2.33	0.61
1:C:722:LEU:O	1:C:1482:ARG:NH1	2.34	0.61
1:C:1033:VAL:HB	1:C:1037:LEU:HB2	1.82	0.61
1:C:3233:MET:HG2	1:C:3235:GLU:H	1.64	0.61
1:D:509:SER:H	1:D:514:PHE:HE2	1.48	0.61
1:D:731:HIS:CE1	1:D:733:TRP:HB3	2.36	0.61
1:D:1303:ARG:HH22	1:D:1540:LEU:HD12	1.64	0.61
1:C:731:HIS:CE1	1:C:733:TRP:HB3	2.36	0.61
1:D:1033:VAL:HB	1:D:1037:LEU:HB2	1.82	0.61
1:D:2584:MET:SD	1:D:2584:MET:N	2.71	0.61
1:B:731:HIS:CE1	1:B:733:TRP:HB3	2.36	0.61
1:D:2395:ILE:HG21	1:D:2467:MET:HE3	1.83	0.61
1:A:731:HIS:CE1	1:A:733:TRP:HB3	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4755:ILE:HD11	1:C:4765:GLN:HB3	1.83	0.60
1:B:722:LEU:O	1:B:1482:ARG:NH1	2.34	0.60
1:B:1033:VAL:HB	1:B:1037:LEU:HB2	1.82	0.60
1:C:509:SER:H	1:C:514:PHE:HE2	1.48	0.60
1:A:1033:VAL:HB	1:A:1037:LEU:HB2	1.82	0.60
1:B:2848:HIS:HD1	1:B:2873:TYR:HH	1.50	0.60
1:C:2716:LEU:HD13	1:C:2720:ILE:HG21	1.84	0.60
1:D:2716:LEU:HD13	1:D:2720:ILE:HG21	1.84	0.60
1:B:4765:GLN:HB3	1:D:4755:ILE:HD11	1.83	0.60
1:D:2690:LYS:HG3	1:D:2691:GLN:HG2	1.84	0.60
1:A:509:SER:H	1:A:514:PHE:HE2	1.48	0.60
1:A:722:LEU:O	1:A:1482:ARG:NH1	2.34	0.60
1:A:2716:LEU:HD13	1:A:2720:ILE:HG21	1.84	0.60
1:B:882:ARG:HH22	1:B:933:LEU:HG	1.67	0.60
1:B:2716:LEU:HD13	1:B:2720:ILE:HG21	1.84	0.60
1:D:722:LEU:O	1:D:1482:ARG:NH1	2.34	0.60
1:B:2690:LYS:HG3	1:B:2691:GLN:HG2	1.84	0.59
2:F:83:TYR:HB2	2:F:87:GLY:HA2	1.84	0.59
1:A:2580:ARG:NH1	1:A:2874:ASP:O	2.35	0.59
1:A:2848:HIS:HD1	1:A:2873:TYR:HH	1.49	0.59
1:D:2580:ARG:NH1	1:D:2874:ASP:O	2.35	0.59
1:C:4755:ILE:HD11	1:D:4765:GLN:HB3	1.84	0.59
1:D:882:ARG:HH22	1:D:933:LEU:HG	1.67	0.59
2:E:9:SER:HB2	2:E:72:ARG:H	1.67	0.59
1:A:2580:ARG:NH1	1:A:2581:PRO:O	2.35	0.59
1:C:2580:ARG:NH1	1:C:2874:ASP:O	2.35	0.59
1:A:4671:MET:SD	1:A:4671:MET:N	2.75	0.59
1:B:509:SER:H	1:B:514:PHE:HE2	1.48	0.59
1:C:882:ARG:HH22	1:C:933:LEU:HG	1.67	0.59
1:C:4671:MET:SD	1:C:4671:MET:N	2.75	0.59
1:D:2836:LEU:HD21	1:D:2902:VAL:H	1.68	0.59
1:A:2836:LEU:HD21	1:A:2902:VAL:H	1.68	0.59
1:C:2580:ARG:NH1	1:C:2581:PRO:O	2.35	0.59
1:D:2580:ARG:NH1	1:D:2581:PRO:O	2.35	0.59
2:H:83:TYR:HB2	2:H:87:GLY:HA2	1.85	0.59
1:D:248:PRO:O	1:D:257:ARG:NH2	2.33	0.59
2:E:83:TYR:HB2	2:E:87:GLY:HA2	1.85	0.59
1:B:189:GLU:OE2	1:D:2417:ARG:NH1	2.35	0.59
1:C:2690:LYS:HG3	1:C:2691:GLN:HG2	1.84	0.59
1:D:1432:ILE:HG22	1:D:1506:LEU:HD13	1.84	0.59
1:A:776:GLN:NE2	1:A:1471:ASP:O	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:776:GLN:NE2	1:C:1471:ASP:O	2.36	0.58
1:C:1432:ILE:HG22	1:C:1506:LEU:HD13	1.84	0.58
1:D:2848:HIS:HD1	1:D:2873:TYR:HH	1.49	0.58
1:B:1432:ILE:HG22	1:B:1506:LEU:HD13	1.84	0.58
1:B:2836:LEU:HD21	1:B:2902:VAL:H	1.68	0.58
2:G:83:TYR:HB2	2:G:87:GLY:HA2	1.85	0.58
1:B:2395:ILE:HG21	1:B:2467:MET:HE3	1.85	0.58
1:B:2580:ARG:NH1	1:B:2581:PRO:O	2.35	0.58
1:B:2580:ARG:NH1	1:B:2874:ASP:O	2.35	0.58
1:C:607:ASN:O	1:C:608:HIS:ND1	2.36	0.58
1:A:2690:LYS:HG3	1:A:2691:GLN:HG2	1.84	0.58
1:C:267:VAL:HG22	1:C:272:ARG:HD3	1.85	0.58
1:D:607:ASN:O	1:D:608:HIS:ND1	2.36	0.58
1:D:776:GLN:NE2	1:D:1471:ASP:O	2.36	0.58
2:G:9:SER:HB2	2:G:72:ARG:H	1.67	0.58
1:A:2034:LYS:HA	1:A:2037:TYR:HE2	1.69	0.58
1:A:882:ARG:HH22	1:A:933:LEU:HG	1.67	0.58
1:A:1432:ILE:HG22	1:A:1506:LEU:HD13	1.84	0.58
1:C:248:PRO:O	1:C:257:ARG:NH2	2.33	0.58
2:F:9:SER:HB2	2:F:72:ARG:H	1.67	0.58
1:A:267:VAL:HG22	1:A:272:ARG:HD3	1.85	0.58
1:D:619:VAL:HG21	1:D:1667:ALA:HB3	1.85	0.58
1:B:776:GLN:NE2	1:B:1471:ASP:O	2.36	0.58
1:D:2034:LYS:HA	1:D:2037:TYR:HE2	1.69	0.58
1:D:894:VAL:HG23	1:D:895:MET:HE3	1.85	0.58
1:A:248:PRO:O	1:A:257:ARG:NH2	2.33	0.57
1:A:894:VAL:HG23	1:A:895:MET:HE3	1.86	0.57
1:C:2395:ILE:HG21	1:C:2467:MET:HE3	1.85	0.57
1:C:2836:LEU:HD21	1:C:2902:VAL:H	1.68	0.57
1:D:992:GLN:HG3	1:D:1058:LEU:HD11	1.86	0.57
1:B:267:VAL:HG22	1:B:272:ARG:HD3	1.85	0.57
1:C:619:VAL:HG21	1:C:1667:ALA:HB3	1.85	0.57
1:D:2162:ARG:NH1	1:D:2206:SER:OG	2.38	0.57
1:A:189:GLU:OE2	1:B:2417:ARG:NH1	2.38	0.57
1:B:607:ASN:O	1:B:608:HIS:ND1	2.36	0.57
1:B:2034:LYS:HA	1:B:2037:TYR:HE2	1.69	0.57
1:D:3015:ARG:HH22	1:D:3081:HIS:HA	1.69	0.57
1:A:992:GLN:HG3	1:A:1058:LEU:HD11	1.86	0.57
1:D:267:VAL:HG22	1:D:272:ARG:HD3	1.85	0.57
1:B:2498:ALA:HA	1:B:2590:ARG:HH22	1.70	0.57
1:D:4640:PRO:HG2	1:D:4646:LYS:HG3	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:619:VAL:HG21	1:B:1667:ALA:HB3	1.85	0.57
1:B:4640:PRO:HG2	1:B:4646:LYS:HG3	1.87	0.57
2:H:9:SER:HB2	2:H:72:ARG:H	1.67	0.57
1:B:486:GLN:HB3	1:B:540:LEU:HA	1.86	0.57
1:B:992:GLN:HG3	1:B:1058:LEU:HD11	1.86	0.57
1:A:2584:MET:SD	1:A:2584:MET:N	2.71	0.57
1:C:2417:ARG:NH1	1:D:189:GLU:OE2	2.38	0.57
1:C:2498:ALA:HA	1:C:2590:ARG:HH22	1.70	0.57
1:A:607:ASN:O	1:A:608:HIS:ND1	2.36	0.57
1:A:1256:PRO:HB2	1:A:1596:LEU:HD22	1.87	0.57
1:C:894:VAL:HG23	1:C:895:MET:HE3	1.87	0.57
1:B:1256:PRO:HB2	1:B:1596:LEU:HD22	1.87	0.56
1:D:4173:PHE:HD1	1:D:4879:VAL:HG21	1.70	0.56
1:A:2162:ARG:NH1	1:A:2206:SER:OG	2.38	0.56
1:B:2162:ARG:NH1	1:B:2206:SER:OG	2.38	0.56
1:C:2034:LYS:HA	1:C:2037:TYR:HE2	1.69	0.56
1:A:486:GLN:HB3	1:A:540:LEU:HA	1.86	0.56
1:A:542:ARG:NH2	1:A:573:GLU:OE1	2.38	0.56
1:A:619:VAL:HG21	1:A:1667:ALA:HB3	1.85	0.56
1:A:2395:ILE:HG21	1:A:2467:MET:HE3	1.87	0.56
1:C:486:GLN:HB3	1:C:540:LEU:HA	1.86	0.56
1:C:542:ARG:NH2	1:C:573:GLU:OE1	2.38	0.56
1:C:992:GLN:HG3	1:C:1058:LEU:HD11	1.86	0.56
1:C:4640:PRO:HG2	1:C:4646:LYS:HG3	1.87	0.56
1:B:626:ARG:HE	1:B:2131:VAL:HG11	1.71	0.56
1:B:2878:ALA:HA	1:B:2881:LYS:HB2	1.87	0.56
1:A:4173:PHE:HD1	1:A:4879:VAL:HG21	1.70	0.56
1:B:940:LEU:HD23	1:B:943:LEU:HD21	1.88	0.56
1:B:2416:ILE:HD12	1:B:2416:ILE:H	1.71	0.56
1:C:2878:ALA:HA	1:C:2881:LYS:HB2	1.87	0.56
1:C:3015:ARG:HH22	1:C:3081:HIS:HA	1.69	0.56
1:D:542:ARG:NH2	1:D:573:GLU:OE1	2.38	0.56
1:D:626:ARG:HE	1:D:2131:VAL:HG11	1.71	0.56
1:A:2410:ALA:O	1:A:2412:LYS:NZ	2.39	0.56
1:B:3015:ARG:HH22	1:B:3081:HIS:HA	1.69	0.56
1:C:1256:PRO:HB2	1:C:1596:LEU:HD22	1.87	0.56
2:G:79:PRO:HD3	2:G:97:THR:HG22	1.88	0.56
1:A:4640:PRO:HG2	1:A:4646:LYS:HG3	1.87	0.56
1:B:1258:PHE:HB3	1:B:1303:ARG:HD2	1.88	0.56
1:B:2410:ALA:O	1:B:2412:LYS:NZ	2.39	0.56
2:E:79:PRO:HD3	2:E:97:THR:HG22	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:79:PRO:HD3	2:F:97:THR:HG22	1.88	0.56
1:A:2498:ALA:HA	1:A:2590:ARG:HH22	1.70	0.56
1:B:542:ARG:NH2	1:B:573:GLU:OE1	2.38	0.56
1:C:626:ARG:HE	1:C:2131:VAL:HG11	1.71	0.56
1:C:2416:ILE:HD12	1:C:2416:ILE:H	1.71	0.56
1:C:3934:LEU:HD12	1:C:3939:LEU:HD22	1.88	0.56
1:D:1258:PHE:HB3	1:D:1303:ARG:HD2	1.88	0.56
1:D:3508:ILE:O	1:D:3551:LEU:N	2.39	0.56
1:A:1258:PHE:HB3	1:A:1303:ARG:HD2	1.88	0.56
1:A:2417:ARG:NH1	1:C:189:GLU:OE2	2.38	0.56
1:A:3934:LEU:HD12	1:A:3939:LEU:HD22	1.88	0.56
1:C:1258:PHE:HB3	1:C:1303:ARG:HD2	1.88	0.56
1:C:4173:PHE:HD1	1:C:4879:VAL:HG21	1.70	0.56
1:C:4890:CYS:SG	1:C:4912:HIS:HE1	2.22	0.56
1:D:940:LEU:HD23	1:D:943:LEU:HD21	1.88	0.55
1:A:667:SER:O	1:A:669:GLN:NE2	2.40	0.55
1:A:940:LEU:HD23	1:A:943:LEU:HD21	1.88	0.55
1:B:3508:ILE:O	1:B:3551:LEU:N	2.39	0.55
1:C:2162:ARG:NH1	1:C:2206:SER:OG	2.38	0.55
1:C:3508:ILE:O	1:C:3551:LEU:N	2.40	0.55
1:D:486:GLN:HB3	1:D:540:LEU:HA	1.86	0.55
1:D:1256:PRO:HB2	1:D:1596:LEU:HD22	1.87	0.55
2:H:79:PRO:HD3	2:H:97:THR:HG22	1.88	0.55
1:B:166:SER:OG	1:B:168:GLN:OE1	2.19	0.55
1:D:667:SER:O	1:D:669:GLN:NE2	2.40	0.55
1:A:1718:ALA:HA	1:A:1721:MET:HE2	1.88	0.55
1:A:3102:PRO:HG3	1:A:3226:ARG:HD2	1.89	0.55
1:A:3508:ILE:O	1:A:3551:LEU:N	2.39	0.55
1:B:1718:ALA:HA	1:B:1721:MET:HE2	1.87	0.55
1:B:4173:PHE:HD1	1:B:4879:VAL:HG21	1.70	0.55
1:D:794:PHE:HB2	1:D:798:ILE:HG21	1.89	0.55
1:D:2416:ILE:HD12	1:D:2416:ILE:H	1.71	0.55
1:A:2878:ALA:HA	1:A:2881:LYS:HB2	1.87	0.55
1:C:667:SER:O	1:C:669:GLN:NE2	2.40	0.55
1:C:940:LEU:HD23	1:C:943:LEU:HD21	1.88	0.55
1:C:2410:ALA:O	1:C:2412:LYS:NZ	2.39	0.55
1:C:3200:VAL:HG23	1:C:3213:LEU:HD21	1.89	0.55
1:D:2878:ALA:HA	1:D:2881:LYS:HB2	1.87	0.55
1:D:3200:VAL:HG23	1:D:3213:LEU:HD21	1.89	0.55
1:B:1665:VAL:HG12	1:B:1673:VAL:HG11	1.89	0.55
1:D:2410:ALA:O	1:D:2412:LYS:NZ	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3934:LEU:HD12	1:B:3939:LEU:HD22	1.88	0.55
1:A:794:PHE:HB2	1:A:798:ILE:HG21	1.89	0.55
1:B:2134:GLY:H	1:B:2137:GLU:HB2	1.72	0.55
1:D:688:ALA:HA	2:H:41:ARG:HD2	1.89	0.55
1:D:3934:LEU:HD12	1:D:3939:LEU:HD22	1.88	0.55
1:D:4671:MET:SD	1:D:4671:MET:N	2.75	0.55
1:A:166:SER:OG	1:A:168:GLN:OE1	2.19	0.55
1:A:3015:ARG:HH22	1:A:3081:HIS:HA	1.69	0.55
1:C:527:LYS:NZ	1:C:566:GLU:OE1	2.40	0.55
1:C:3909:ILE:HG21	1:C:3969:GLU:HB3	1.89	0.55
1:D:2498:ALA:HA	1:D:2590:ARG:HH22	1.70	0.55
1:C:794:PHE:HB2	1:C:798:ILE:HG21	1.89	0.55
1:C:3102:PRO:HG3	1:C:3226:ARG:HD2	1.89	0.55
1:A:688:ALA:HA	2:E:41:ARG:HD2	1.89	0.54
1:A:2416:ILE:H	1:A:2416:ILE:HD12	1.71	0.54
1:B:667:SER:O	1:B:669:GLN:NE2	2.40	0.54
1:B:794:PHE:HB2	1:B:798:ILE:HG21	1.89	0.54
1:C:688:ALA:HA	2:G:41:ARG:HD2	1.89	0.54
1:A:2134:GLY:H	1:A:2137:GLU:HB2	1.72	0.54
1:D:1670:ASN:O	1:D:1777:TYR:OH	2.19	0.54
1:A:626:ARG:HE	1:A:2131:VAL:HG11	1.71	0.54
1:B:527:LYS:NZ	1:B:566:GLU:OE1	2.40	0.54
1:B:688:ALA:HA	2:F:41:ARG:HD2	1.89	0.54
1:B:1763:ARG:NH1	1:B:1776:CYS:O	2.41	0.54
1:A:1665:VAL:HG12	1:A:1673:VAL:HG11	1.89	0.54
1:C:2134:GLY:H	1:C:2137:GLU:HB2	1.72	0.54
1:D:527:LYS:NZ	1:D:566:GLU:OE1	2.40	0.54
1:A:4024:ASP:OD1	1:A:4024:ASP:N	2.41	0.54
1:B:423:VAL:O	1:B:427:ASN:ND2	2.41	0.54
1:B:4671:MET:SD	1:B:4671:MET:N	2.75	0.54
1:C:423:VAL:O	1:C:427:ASN:ND2	2.41	0.54
1:C:1665:VAL:HG12	1:C:1673:VAL:HG11	1.89	0.54
1:B:3102:PRO:HG3	1:B:3226:ARG:HD2	1.89	0.54
1:D:2358:ARG:O	1:D:2383:MET:N	2.41	0.54
1:D:2134:GLY:H	1:D:2137:GLU:HB2	1.72	0.54
1:A:912:LYS:O	1:A:914:GLN:NE2	2.38	0.54
1:D:423:VAL:O	1:D:427:ASN:ND2	2.41	0.54
1:D:533:LEU:HD23	1:D:536:LEU:HD21	1.90	0.54
1:D:3909:ILE:HG21	1:D:3969:GLU:HB3	1.89	0.54
1:A:2358:ARG:O	1:A:2383:MET:N	2.41	0.54
1:A:1763:ARG:NH1	1:A:1776:CYS:O	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2358:ARG:O	1:B:2383:MET:N	2.41	0.54
1:D:1763:ARG:NH1	1:D:1776:CYS:O	2.41	0.54
1:D:3102:PRO:HG3	1:D:3226:ARG:HD2	1.89	0.54
1:A:3200:VAL:HG23	1:A:3213:LEU:HD21	1.89	0.53
1:A:3909:ILE:HG21	1:A:3969:GLU:HB3	1.89	0.53
1:C:1763:ARG:NH1	1:C:1776:CYS:O	2.41	0.53
1:D:1665:VAL:HG12	1:D:1673:VAL:HG11	1.89	0.53
1:A:423:VAL:O	1:A:427:ASN:ND2	2.41	0.53
1:B:3200:VAL:HG23	1:B:3213:LEU:HD21	1.89	0.53
1:D:4890:CYS:SG	1:D:4912:HIS:HE1	2.22	0.53
1:A:4890:CYS:SG	1:A:4912:HIS:HE1	2.22	0.53
1:B:3909:ILE:HG21	1:B:3969:GLU:HB3	1.89	0.53
1:C:2358:ARG:O	1:C:2383:MET:N	2.41	0.53
1:A:280:LEU:HD22	1:A:296:ARG:HH21	1.74	0.53
1:B:280:LEU:HD22	1:B:296:ARG:HH21	1.74	0.53
1:B:4024:ASP:N	1:B:4024:ASP:OD1	2.41	0.53
1:C:3711:LYS:HD3	1:C:3714:GLU:HB2	1.91	0.53
1:D:170:SER:N	1:D:173:GLU:OE2	2.41	0.53
1:D:2987:ARG:O	1:D:2994:HIS:NE2	2.39	0.53
1:D:4024:ASP:N	1:D:4024:ASP:OD1	2.41	0.53
1:A:3711:LYS:HD3	1:A:3714:GLU:HB2	1.91	0.53
1:C:533:LEU:HD23	1:C:536:LEU:HD21	1.90	0.53
1:C:556:ASP:OD1	1:C:556:ASP:N	2.42	0.53
1:C:4024:ASP:OD1	1:C:4024:ASP:N	2.41	0.53
1:A:1477:HIS:ND1	1:A:1478:GLU:OE1	2.42	0.53
1:A:4508:ALA:O	1:A:4512:ASN:ND2	2.41	0.53
1:A:556:ASP:OD1	1:A:556:ASP:N	2.42	0.53
1:C:2987:ARG:O	1:C:2994:HIS:NE2	2.39	0.53
1:D:652:VAL:HG11	1:D:692:HIS:HB3	1.91	0.53
1:D:4616:ILE:HB	1:D:4664:ARG:HH12	1.74	0.53
1:A:527:LYS:NZ	1:A:566:GLU:OE1	2.40	0.52
1:B:3711:LYS:HD3	1:B:3714:GLU:HB2	1.91	0.52
1:C:280:LEU:HD22	1:C:296:ARG:HH21	1.74	0.52
1:D:3711:LYS:HD3	1:D:3714:GLU:HB2	1.91	0.52
1:B:556:ASP:N	1:B:556:ASP:OD1	2.42	0.52
1:B:2260:ASP:OD1	1:B:2260:ASP:N	2.43	0.52
1:D:280:LEU:HD22	1:D:296:ARG:HH21	1.74	0.52
1:A:1605:LEU:O	1:A:1606:LYS:NZ	2.34	0.52
1:B:4019:PHE:O	1:B:4027:SER:OG	2.21	0.52
1:B:533:LEU:HD23	1:B:536:LEU:HD21	1.90	0.52
1:C:373:THR:OG1	1:C:392:ILE:O	2.28	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:373:THR:OG1	1:A:392:ILE:O	2.28	0.52
1:B:1477:HIS:ND1	1:B:1478:GLU:OE1	2.42	0.52
1:C:4616:ILE:HB	1:C:4664:ARG:HH12	1.74	0.52
1:A:652:VAL:HG11	1:A:692:HIS:HB3	1.91	0.52
1:D:785:ASP:OD1	1:D:785:ASP:N	2.39	0.52
1:D:1477:HIS:ND1	1:D:1478:GLU:OE1	2.42	0.52
1:C:785:ASP:N	1:C:785:ASP:OD1	2.39	0.52
1:A:533:LEU:HD23	1:A:536:LEU:HD21	1.90	0.52
1:C:169:ARG:HE	1:C:176:ARG:HE	1.57	0.52
1:C:652:VAL:HG11	1:C:692:HIS:HB3	1.91	0.52
1:C:4009:VAL:HG11	1:C:4117:PHE:HE2	1.75	0.52
1:D:2260:ASP:OD1	1:D:2260:ASP:N	2.42	0.52
1:A:170:SER:N	1:A:173:GLU:OE2	2.41	0.52
1:B:2464:LYS:O	1:B:2468:VAL:HG13	2.10	0.52
1:A:4616:ILE:HB	1:A:4664:ARG:HH12	1.74	0.51
1:B:894:VAL:HG23	1:B:895:MET:HE3	1.92	0.51
1:B:1092:LYS:HD2	1:B:1647:GLU:HG2	1.92	0.51
1:C:166:SER:OG	1:C:168:GLN:OE1	2.19	0.51
1:C:290:ARG:NH1	1:C:351:THR:OG1	2.43	0.51
1:C:1477:HIS:ND1	1:C:1478:GLU:OE1	2.42	0.51
1:D:169:ARG:HE	1:D:176:ARG:HE	1.57	0.51
1:B:2196:CYS:HB2	1:B:2241:VAL:HG13	1.93	0.51
1:B:2987:ARG:O	1:B:2994:HIS:NE2	2.39	0.51
1:A:1132:ASP:OD1	1:A:1132:ASP:N	2.43	0.51
1:A:2464:LYS:O	1:A:2468:VAL:HG13	2.10	0.51
1:B:4616:ILE:HB	1:B:4664:ARG:HH12	1.74	0.51
1:D:4009:VAL:HG11	1:D:4117:PHE:HE2	1.75	0.51
1:A:2987:ARG:O	1:A:2994:HIS:NE2	2.39	0.51
1:B:169:ARG:HE	1:B:176:ARG:HE	1.57	0.51
1:D:2196:CYS:HB2	1:D:2241:VAL:HG13	1.93	0.51
1:A:2196:CYS:HB2	1:A:2241:VAL:HG13	1.93	0.51
1:A:3900:GLN:OE1	1:A:3903:ARG:NH1	2.41	0.51
1:B:1218:GLY:HA3	1:B:1238:PRO:HB3	1.92	0.51
1:C:1092:LYS:HD2	1:C:1647:GLU:HG2	1.92	0.51
1:A:169:ARG:HE	1:A:176:ARG:HE	1.57	0.51
1:B:290:ARG:NH1	1:B:351:THR:OG1	2.43	0.51
1:C:1442:TRP:HD1	1:C:1490:ALA:HA	1.76	0.51
1:C:2196:CYS:HB2	1:C:2241:VAL:HG13	1.93	0.51
1:C:2464:LYS:O	1:C:2468:VAL:HG13	2.10	0.51
1:B:42:PHE:HB3	1:B:425:LEU:HG	1.93	0.51
1:D:42:PHE:HB3	1:D:425:LEU:HG	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:2464:LYS:O	1:D:2468:VAL:HG13	2.10	0.51
1:A:267:VAL:HG13	1:A:272:ARG:HB2	1.93	0.51
1:A:2234:ARG:NH2	1:A:2290:ASN:O	2.44	0.51
1:B:170:SER:N	1:B:173:GLU:OE2	2.41	0.51
1:C:170:SER:N	1:C:173:GLU:OE2	2.41	0.51
1:C:912:LYS:O	1:C:914:GLN:NE2	2.38	0.51
1:C:4046:ASP:HA	1:C:4049:LYS:HG2	1.93	0.51
1:B:4890:CYS:SG	1:B:4912:HIS:HE1	2.22	0.51
1:D:4046:ASP:HA	1:D:4049:LYS:HG2	1.93	0.51
1:A:785:ASP:N	1:A:785:ASP:OD1	2.39	0.51
1:A:1092:LYS:HD2	1:A:1647:GLU:HG2	1.92	0.51
1:C:1218:GLY:HA3	1:C:1238:PRO:HB3	1.92	0.51
1:D:2234:ARG:NH2	1:D:2290:ASN:O	2.44	0.51
1:D:3322:MET:SD	1:D:3322:MET:N	2.79	0.51
2:G:78:THR:HG22	2:G:80:ASP:H	1.76	0.51
1:A:2260:ASP:OD1	1:A:2260:ASP:N	2.42	0.50
1:B:1763:ARG:HH12	1:B:1777:TYR:HA	1.77	0.50
1:B:4649:LYS:HE2	1:B:4669:LEU:HD12	1.94	0.50
1:D:778:MET:O	1:D:1468:THR:OG1	2.28	0.50
1:D:1442:TRP:HD1	1:D:1490:ALA:HA	1.76	0.50
1:D:1763:ARG:HH12	1:D:1777:TYR:HA	1.76	0.50
1:A:290:ARG:NH1	1:A:351:THR:OG1	2.43	0.50
1:A:1218:GLY:HA3	1:A:1238:PRO:HB3	1.92	0.50
1:A:4019:PHE:O	1:A:4027:SER:OG	2.21	0.50
1:B:1442:TRP:HD1	1:B:1490:ALA:HA	1.76	0.50
1:B:4009:VAL:HG11	1:B:4117:PHE:HE2	1.75	0.50
1:C:267:VAL:HG13	1:C:272:ARG:HB2	1.93	0.50
1:C:2234:ARG:NH2	1:C:2290:ASN:O	2.44	0.50
1:D:4649:LYS:HE2	1:D:4669:LEU:HD12	1.93	0.50
1:A:4009:VAL:HG11	1:A:4117:PHE:HE2	1.75	0.50
1:B:652:VAL:HG11	1:B:692:HIS:HB3	1.91	0.50
1:D:1092:LYS:HD2	1:D:1647:GLU:HG2	1.92	0.50
2:E:78:THR:HG22	2:E:80:ASP:H	1.76	0.50
2:F:78:THR:HG22	2:F:80:ASP:H	1.76	0.50
2:G:50:ARG:HH21	2:G:53:LYS:HE3	1.77	0.50
1:B:1132:ASP:OD1	1:B:1132:ASP:N	2.43	0.50
1:D:1218:GLY:HA3	1:D:1238:PRO:HB3	1.92	0.50
2:H:78:THR:HG22	2:H:80:ASP:H	1.76	0.50
1:A:638:PRO:O	1:A:640:ARG:NH1	2.45	0.50
1:A:778:MET:O	1:A:1468:THR:OG1	2.28	0.50
1:B:2234:ARG:NH2	1:B:2290:ASN:O	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:4035:ASP:OD1	1:C:4035:ASP:N	2.45	0.50
1:D:373:THR:OG1	1:D:392:ILE:O	2.28	0.50
2:H:50:ARG:HH21	2:H:53:LYS:HE3	1.77	0.50
1:A:42:PHE:HB3	1:A:425:LEU:HG	1.93	0.50
1:A:4873:ARG:NE	1:C:4867:ASP:OD1	2.38	0.50
1:B:892:LEU:HD21	1:B:1056:THR:HG21	1.94	0.50
1:B:3900:GLN:OE1	1:B:3903:ARG:NH1	2.41	0.50
1:C:42:PHE:HB3	1:C:425:LEU:HG	1.93	0.50
1:C:778:MET:O	1:C:1468:THR:OG1	2.28	0.50
1:C:4508:ALA:O	1:C:4512:ASN:ND2	2.41	0.50
1:B:638:PRO:O	1:B:640:ARG:NH1	2.45	0.50
1:C:1718:ALA:HA	1:C:1721:MET:HE2	1.93	0.50
1:C:4649:LYS:HE2	1:C:4669:LEU:HD12	1.94	0.50
1:D:625:VAL:HG12	1:D:627:SER:H	1.76	0.50
1:A:1763:ARG:HH12	1:A:1777:TYR:HA	1.77	0.50
1:A:892:LEU:HD21	1:A:1056:THR:HG21	1.94	0.50
1:A:4046:ASP:HA	1:A:4049:LYS:HG2	1.93	0.50
1:B:4046:ASP:HA	1:B:4049:LYS:HG2	1.93	0.50
1:D:909:ASP:OD1	1:D:909:ASP:N	2.44	0.50
1:D:4143:ARG:NE	1:D:4961:TYR:OH	2.43	0.50
1:A:2587:LEU:HD23	1:A:2591:LEU:HD23	1.93	0.49
1:A:4649:LYS:HE2	1:A:4669:LEU:HD12	1.94	0.49
1:B:625:VAL:HG12	1:B:627:SER:H	1.76	0.49
1:B:909:ASP:OD1	1:B:909:ASP:N	2.44	0.49
1:C:625:VAL:HG12	1:C:627:SER:H	1.76	0.49
1:C:638:PRO:O	1:C:640:ARG:NH1	2.45	0.49
1:C:2260:ASP:N	1:C:2260:ASP:OD1	2.42	0.49
1:B:2587:LEU:HD23	1:B:2591:LEU:HD23	1.93	0.49
1:D:638:PRO:O	1:D:640:ARG:NH1	2.45	0.49
1:B:191:TYR:N	1:B:206:ALA:O	2.42	0.49
1:B:4035:ASP:OD1	1:B:4035:ASP:N	2.45	0.49
1:C:2587:LEU:HD23	1:C:2591:LEU:HD23	1.93	0.49
1:D:2094:ILE:O	1:D:2098:VAL:HG12	2.13	0.49
1:D:3900:GLN:OE1	1:D:3903:ARG:NH1	2.41	0.49
2:F:50:ARG:HH21	2:F:53:LYS:HE3	1.77	0.49
1:A:2816:ALA:N	1:A:2820:TYR:O	2.46	0.49
1:A:4143:ARG:NE	1:A:4961:TYR:OH	2.43	0.49
1:B:267:VAL:HG13	1:B:272:ARG:HB2	1.93	0.49
1:C:2848:HIS:HD1	1:C:2873:TYR:HH	1.51	0.49
1:C:1763:ARG:HH12	1:C:1777:TYR:HA	1.77	0.49
1:D:267:VAL:HG13	1:D:272:ARG:HB2	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:764:PRO:HB2	1:D:780:GLU:HG3	1.94	0.49
1:D:912:LYS:O	1:D:914:GLN:NE2	2.38	0.49
1:D:4035:ASP:N	1:D:4035:ASP:OD1	2.45	0.49
1:A:441:LYS:O	1:A:444:THR:OG1	2.28	0.49
1:A:1442:TRP:HD1	1:A:1490:ALA:HA	1.76	0.49
1:B:1811:VAL:H	1:B:1818:LEU:HD22	1.77	0.49
1:D:1267:HIS:CD2	1:D:1293:GLN:HB2	2.47	0.49
1:B:1267:HIS:CD2	1:B:1293:GLN:HB2	2.47	0.49
1:B:4102:THR:HG21	1:B:4132:LEU:HD21	1.95	0.49
1:C:1267:HIS:CD2	1:C:1293:GLN:HB2	2.47	0.49
1:C:2094:ILE:O	1:C:2098:VAL:HG12	2.13	0.49
1:C:3322:MET:SD	1:C:3322:MET:N	2.79	0.49
1:D:4102:THR:HG21	1:D:4132:LEU:HD21	1.95	0.49
1:A:625:VAL:HG12	1:A:627:SER:H	1.76	0.49
1:A:3320:PRO:HA	1:A:3323:GLU:HB3	1.95	0.49
1:B:128:MET:HB3	1:B:149:LEU:HD22	1.95	0.49
1:D:290:ARG:NH1	1:D:351:THR:OG1	2.43	0.49
1:D:625:VAL:O	1:D:629:GLN:HB3	2.12	0.49
1:D:2160:LEU:O	1:D:2164:LEU:HB2	2.12	0.49
1:D:3320:PRO:HA	1:D:3323:GLU:HB3	1.95	0.49
1:D:4508:ALA:O	1:D:4512:ASN:ND2	2.41	0.49
2:E:50:ARG:HH21	2:E:53:LYS:HE3	1.77	0.49
1:B:778:MET:O	1:B:1468:THR:OG1	2.28	0.49
1:B:2094:ILE:O	1:B:2098:VAL:HG12	2.13	0.49
1:C:625:VAL:O	1:C:629:GLN:HB3	2.12	0.49
1:C:3320:PRO:HA	1:C:3323:GLU:HB3	1.95	0.49
1:D:2587:LEU:HD23	1:D:2591:LEU:HD23	1.93	0.49
1:D:2816:ALA:N	1:D:2820:TYR:O	2.46	0.49
1:A:1267:HIS:CD2	1:A:1293:GLN:HB2	2.47	0.49
1:B:764:PRO:HB2	1:B:780:GLU:HG3	1.94	0.49
1:D:892:LEU:HD21	1:D:1056:THR:HG21	1.94	0.49
1:A:1670:ASN:O	1:A:1777:TYR:OH	2.19	0.48
1:A:2357:SER:OG	1:A:2358:ARG:N	2.46	0.48
1:B:3320:PRO:HA	1:B:3323:GLU:HB3	1.95	0.48
1:D:441:LYS:O	1:D:444:THR:OG1	2.28	0.48
1:D:4807:ASP:OD1	1:D:4807:ASP:N	2.46	0.48
1:A:128:MET:HB3	1:A:149:LEU:HD22	1.95	0.48
1:A:624:ALA:HB3	1:A:2131:VAL:HG23	1.95	0.48
1:A:2094:ILE:O	1:A:2098:VAL:HG12	2.13	0.48
1:C:892:LEU:HD21	1:C:1056:THR:HG21	1.94	0.48
1:D:1811:VAL:H	1:D:1818:LEU:HD22	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:2227:GLY:HA2	1:D:2234:ARG:HA	1.94	0.48
1:D:2795:ASP:N	1:D:2795:ASP:OD1	2.47	0.48
1:A:2160:LEU:O	1:A:2164:LEU:HB2	2.12	0.48
1:B:144:ALA:HB1	1:B:204:ASP:HB3	1.96	0.48
1:B:625:VAL:O	1:B:629:GLN:HB3	2.12	0.48
1:B:640:ARG:HA	1:B:643:LEU:HG	1.95	0.48
1:C:144:ALA:HB1	1:C:204:ASP:HB3	1.95	0.48
1:C:689:GLU:OE1	2:G:41:ARG:NH2	2.37	0.48
1:B:2357:SER:OG	1:B:2358:ARG:N	2.46	0.48
1:C:2816:ALA:N	1:C:2820:TYR:O	2.46	0.48
1:C:2848:HIS:CG	1:C:2873:TYR:HH	2.29	0.48
1:C:3262:MET:SD	1:C:3262:MET:N	2.79	0.48
1:D:640:ARG:HA	1:D:643:LEU:HG	1.95	0.48
1:D:1172:THR:HB	1:D:1190:LEU:HD22	1.96	0.48
1:D:1718:ALA:HA	1:D:1721:MET:HE2	1.94	0.48
1:A:144:ALA:HB1	1:A:204:ASP:HB3	1.95	0.48
1:A:764:PRO:HB2	1:A:780:GLU:HG3	1.94	0.48
1:A:2227:GLY:HA2	1:A:2234:ARG:HA	1.95	0.48
1:A:4035:ASP:N	1:A:4035:ASP:OD1	2.45	0.48
1:B:2160:LEU:O	1:B:2164:LEU:HB2	2.12	0.48
1:B:2227:GLY:HA2	1:B:2234:ARG:HA	1.95	0.48
1:B:2816:ALA:N	1:B:2820:TYR:O	2.46	0.48
1:C:909:ASP:N	1:C:909:ASP:OD1	2.44	0.48
1:C:1947:MET:SD	1:C:1947:MET:N	2.86	0.48
1:D:556:ASP:N	1:D:556:ASP:OD1	2.42	0.48
1:A:625:VAL:O	1:A:629:GLN:HB3	2.12	0.48
1:B:2795:ASP:OD1	1:B:2795:ASP:N	2.46	0.48
1:C:624:ALA:HB3	1:C:2131:VAL:HG23	1.95	0.48
1:D:144:ALA:HB1	1:D:204:ASP:HB3	1.96	0.48
1:D:166:SER:OG	1:D:168:GLN:OE1	2.19	0.48
1:D:2187:THR:O	1:D:2187:THR:OG1	2.31	0.48
1:B:785:ASP:OD1	1:B:785:ASP:N	2.39	0.48
1:B:1172:THR:HB	1:B:1190:LEU:HD22	1.96	0.48
1:C:764:PRO:HB2	1:C:780:GLU:HG3	1.94	0.48
1:C:1172:THR:HB	1:C:1190:LEU:HD22	1.96	0.48
1:C:2160:LEU:O	1:C:2164:LEU:HB2	2.12	0.48
1:C:4807:ASP:OD1	1:C:4807:ASP:N	2.46	0.48
1:A:1172:THR:HB	1:A:1190:LEU:HD22	1.96	0.48
1:A:1811:VAL:H	1:A:1818:LEU:HD22	1.77	0.48
1:B:4508:ALA:O	1:B:4512:ASN:ND2	2.41	0.48
1:C:4102:THR:HG21	1:C:4132:LEU:HD21	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:4143:ARG:NE	1:C:4961:TYR:OH	2.43	0.48
1:D:128:MET:HB3	1:D:149:LEU:HD22	1.95	0.48
1:A:1708:ILE:HD12	1:A:1828:THR:HG21	1.96	0.48
1:B:373:THR:OG1	1:B:392:ILE:O	2.28	0.48
1:B:836:HIS:ND1	1:B:839:GLU:HG3	2.29	0.48
1:B:4092:ASP:O	1:B:4096:ASN:ND2	2.47	0.48
1:C:128:MET:HB3	1:C:149:LEU:HD22	1.95	0.48
1:C:776:GLN:HE21	1:C:1472:GLU:HB2	1.79	0.48
1:C:1708:ILE:HD12	1:C:1828:THR:HG21	1.96	0.48
2:E:31:LEU:N	2:E:35:LYS:O	2.47	0.48
1:A:2187:THR:O	1:A:2187:THR:OG1	2.31	0.48
1:C:836:HIS:ND1	1:C:839:GLU:HG3	2.29	0.48
1:C:4092:ASP:O	1:C:4096:ASN:ND2	2.47	0.48
1:D:624:ALA:HB3	1:D:2131:VAL:HG23	1.95	0.48
1:D:776:GLN:HE21	1:D:1472:GLU:HB2	1.79	0.48
1:D:4592:LEU:HD23	1:D:4593:LYS:HG3	1.96	0.48
2:F:31:LEU:N	2:F:35:LYS:O	2.47	0.48
1:A:4092:ASP:O	1:A:4096:ASN:ND2	2.47	0.47
1:A:4807:ASP:OD1	1:A:4807:ASP:N	2.46	0.47
1:C:1811:VAL:H	1:C:1818:LEU:HD22	1.77	0.47
1:C:2357:SER:OG	1:C:2358:ARG:N	2.46	0.47
1:D:836:HIS:ND1	1:D:839:GLU:HG3	2.29	0.47
1:B:606:ARG:HH12	1:B:1654:PHE:HB3	1.79	0.47
1:B:2084:PHE:HD2	1:B:3666:LEU:HD13	1.80	0.47
2:H:31:LEU:N	2:H:35:LYS:O	2.47	0.47
1:A:446:ASP:N	1:A:446:ASP:OD1	2.48	0.47
1:A:4102:THR:HG21	1:A:4132:LEU:HD21	1.95	0.47
1:A:4592:LEU:HD23	1:A:4593:LYS:HG3	1.96	0.47
1:B:309:MET:HG3	1:B:315:LEU:HD23	1.97	0.47
1:C:2227:GLY:HA2	1:C:2234:ARG:HA	1.95	0.47
1:D:2357:SER:OG	1:D:2358:ARG:N	2.46	0.47
1:A:309:MET:HG3	1:A:315:LEU:HD23	1.97	0.47
1:A:2787:ARG:NH2	1:A:2904:ARG:O	2.48	0.47
1:B:912:LYS:O	1:B:914:GLN:NE2	2.38	0.47
1:B:1708:ILE:HD12	1:B:1828:THR:HG21	1.96	0.47
1:C:1735:LYS:NZ	1:C:1929:ASP:OD2	2.41	0.47
1:C:4592:LEU:HD23	1:C:4593:LYS:HG3	1.96	0.47
1:A:606:ARG:HH12	1:A:1654:PHE:HB3	1.79	0.47
1:B:884:ARG:O	1:B:888:ASN:ND2	2.48	0.47
1:C:3458:TYR:O	1:C:3462:THR:OG1	2.25	0.47
1:D:689:GLU:OE1	2:H:41:ARG:NH2	2.37	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:769:ARG:HA	1:D:774:PRO:HA	1.96	0.47
1:D:4019:PHE:O	1:D:4027:SER:OG	2.21	0.47
1:A:769:ARG:HA	1:A:774:PRO:HA	1.96	0.47
1:A:909:ASP:N	1:A:909:ASP:OD1	2.44	0.47
1:B:446:ASP:OD1	1:B:446:ASP:N	2.48	0.47
1:B:776:GLN:HE21	1:B:1472:GLU:HB2	1.79	0.47
1:B:4592:LEU:HD23	1:B:4593:LYS:HG3	1.96	0.47
1:C:2495:LEU:HD22	1:C:2871:VAL:HG21	1.96	0.47
1:A:776:GLN:HE21	1:A:1472:GLU:HB2	1.79	0.47
1:A:836:HIS:ND1	1:A:839:GLU:HG3	2.29	0.47
1:A:1947:MET:SD	1:A:1947:MET:N	2.86	0.47
1:A:2084:PHE:HD2	1:A:3666:LEU:HD13	1.79	0.47
1:A:2495:LEU:HD22	1:A:2871:VAL:HG21	1.96	0.47
1:A:3262:MET:SD	1:A:3262:MET:N	2.79	0.47
1:C:309:MET:HG3	1:C:315:LEU:HD23	1.97	0.47
1:C:606:ARG:HH12	1:C:1654:PHE:HB3	1.79	0.47
1:C:656:ARG:HB3	1:C:791:VAL:HG12	1.97	0.47
1:C:2460:CYS:HB3	1:C:2463:HIS:CE1	2.50	0.47
1:D:446:ASP:OD1	1:D:446:ASP:N	2.48	0.47
1:D:884:ARG:O	1:D:888:ASN:ND2	2.48	0.47
1:D:1708:ILE:HD12	1:D:1828:THR:HG21	1.96	0.47
1:D:4092:ASP:O	1:D:4096:ASN:ND2	2.47	0.47
1:A:561:ARG:NH2	1:A:567:ALA:O	2.48	0.47
1:A:2460:CYS:HB3	1:A:2463:HIS:CE1	2.50	0.47
1:C:640:ARG:HA	1:C:643:LEU:HG	1.95	0.47
1:C:2787:ARG:NH2	1:C:2904:ARG:O	2.48	0.47
2:G:31:LEU:N	2:G:35:LYS:O	2.47	0.47
1:B:624:ALA:HB3	1:B:2131:VAL:HG23	1.95	0.47
1:B:632:ILE:HA	1:B:635:ASN:HB2	1.97	0.47
1:B:965:LYS:NZ	1:B:1059:GLY:O	2.41	0.47
1:B:2495:LEU:HD22	1:B:2871:VAL:HG21	1.96	0.47
1:C:446:ASP:N	1:C:446:ASP:OD1	2.48	0.47
1:D:191:TYR:N	1:D:206:ALA:O	2.42	0.47
1:A:243:GLU:HG3	1:A:262:TYR:HD2	1.80	0.47
1:A:640:ARG:HA	1:A:643:LEU:HG	1.95	0.47
1:A:4025:LEU:HD22	1:A:4087:HIS:HA	1.97	0.47
1:B:561:ARG:NH2	1:B:567:ALA:O	2.48	0.47
1:B:587:ASN:HA	1:B:628:ASN:HB2	1.97	0.47
1:B:1006:VAL:HA	1:B:1009:ARG:HG2	1.97	0.47
1:B:1947:MET:SD	1:B:1947:MET:N	2.86	0.47
1:C:191:TYR:N	1:C:206:ALA:O	2.42	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2258:GLU:N	1:C:2258:GLU:OE2	2.48	0.47
1:D:1947:MET:SD	1:D:1947:MET:N	2.86	0.47
1:D:2084:PHE:HD2	1:D:3666:LEU:HD13	1.79	0.47
1:A:632:ILE:HA	1:A:635:ASN:HB2	1.98	0.46
1:A:656:ARG:HB3	1:A:791:VAL:HG12	1.97	0.46
1:A:884:ARG:O	1:A:888:ASN:ND2	2.48	0.46
1:B:656:ARG:HB3	1:B:791:VAL:HG12	1.97	0.46
1:B:2258:GLU:OE2	1:B:2258:GLU:N	2.48	0.46
1:B:2460:CYS:HB3	1:B:2463:HIS:CE1	2.50	0.46
1:C:243:GLU:HG3	1:C:262:TYR:HD2	1.80	0.46
1:C:1097:LYS:HA	1:C:1097:LYS:HD3	1.74	0.46
1:C:2795:ASP:OD1	1:C:2795:ASP:N	2.46	0.46
1:D:2876:LEU:HD22	1:D:2880:GLU:HG3	1.97	0.46
1:D:4025:LEU:HD22	1:D:4087:HIS:HA	1.97	0.46
1:A:191:TYR:N	1:A:206:ALA:O	2.42	0.46
1:A:587:ASN:HA	1:A:628:ASN:HB2	1.97	0.46
1:B:885:LEU:O	1:B:889:ILE:HG12	2.16	0.46
1:B:2787:ARG:NH2	1:B:2904:ARG:O	2.48	0.46
1:B:2876:LEU:HD22	1:B:2880:GLU:HG3	1.97	0.46
1:B:3458:TYR:O	1:B:3462:THR:OG1	2.25	0.46
1:B:3622:GLY:HA2	1:B:3625:LYS:HZ3	1.79	0.46
1:C:3225:ILE:O	1:C:3269:SER:OG	2.33	0.46
1:D:656:ARG:HB3	1:D:791:VAL:HG12	1.97	0.46
1:D:2460:CYS:HB3	1:D:2463:HIS:CE1	2.50	0.46
1:A:2795:ASP:OD1	1:A:2795:ASP:N	2.47	0.46
1:A:4483:ILE:HG22	1:A:4486:GLN:H	1.81	0.46
1:C:884:ARG:O	1:C:888:ASN:ND2	2.48	0.46
1:D:869:THR:OG1	1:D:1002:ASN:OD1	2.29	0.46
1:D:4046:ASP:OD1	1:D:4046:ASP:N	2.48	0.46
1:A:2258:GLU:N	1:A:2258:GLU:OE2	2.48	0.46
1:B:3225:ILE:O	1:B:3269:SER:OG	2.33	0.46
1:C:1679:SER:HB2	1:C:1769:PHE:CZ	2.51	0.46
1:C:1810:PRO:HG2	1:C:1814:THR:HA	1.97	0.46
1:C:4025:LEU:HD22	1:C:4087:HIS:HA	1.97	0.46
1:D:2258:GLU:OE2	1:D:2258:GLU:N	2.48	0.46
1:D:2495:LEU:HD22	1:D:2871:VAL:HG21	1.96	0.46
1:A:1810:PRO:HG2	1:A:1814:THR:HA	1.97	0.46
1:A:4074:ASN:HB3	1:A:4076:THR:HG22	1.98	0.46
1:B:769:ARG:HA	1:B:774:PRO:HA	1.96	0.46
1:B:1810:PRO:HG2	1:B:1814:THR:HA	1.97	0.46
1:B:4025:LEU:HD22	1:B:4087:HIS:HA	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:416:ALA:HA	1:C:419:ILE:HD11	1.98	0.46
1:C:632:ILE:HA	1:C:635:ASN:HB2	1.97	0.46
1:C:869:THR:OG1	1:C:1002:ASN:OD1	2.29	0.46
1:C:2876:LEU:HD22	1:C:2880:GLU:HG3	1.97	0.46
1:D:2848:HIS:CG	1:D:2873:TYR:HH	2.32	0.46
1:D:3225:ILE:O	1:D:3269:SER:OG	2.33	0.46
1:A:1679:SER:HB2	1:A:1769:PHE:CZ	2.51	0.46
1:B:2848:HIS:CG	1:B:2873:TYR:HH	2.32	0.46
1:B:4143:ARG:NE	1:B:4961:TYR:OH	2.43	0.46
1:C:882:ARG:NH2	1:C:933:LEU:O	2.49	0.46
1:D:309:MET:HG3	1:D:315:LEU:HD23	1.97	0.46
1:D:490:GLN:HG3	1:D:494:MET:SD	2.56	0.46
1:D:606:ARG:HH12	1:D:1654:PHE:HB3	1.79	0.46
1:D:965:LYS:NZ	1:D:1059:GLY:O	2.41	0.46
1:A:882:ARG:NH2	1:A:933:LEU:O	2.49	0.46
1:B:441:LYS:O	1:B:444:THR:OG1	2.28	0.46
1:B:4059:GLN:NE2	1:B:4063:GLU:OE1	2.49	0.46
1:B:4863:GLY:HA2	1:D:4866:ILE:HD13	1.98	0.46
1:C:587:ASN:HA	1:C:628:ASN:HB2	1.97	0.46
1:C:4074:ASN:HB3	1:C:4076:THR:HG22	1.98	0.46
1:C:4483:ILE:HG22	1:C:4486:GLN:H	1.81	0.46
1:D:561:ARG:NH2	1:D:567:ALA:O	2.48	0.46
1:D:2787:ARG:NH2	1:D:2904:ARG:O	2.48	0.46
1:A:2876:LEU:HD22	1:A:2880:GLU:HG3	1.97	0.46
1:A:3225:ILE:O	1:A:3269:SER:OG	2.33	0.46
1:A:4832:ASP:OD1	1:A:4832:ASP:N	2.49	0.46
1:B:1097:LYS:HA	1:B:1097:LYS:HD3	1.74	0.46
1:B:1670:ASN:O	1:B:1777:TYR:OH	2.19	0.46
1:B:3512:ILE:H	1:B:3552:GLY:HA2	1.81	0.46
1:C:561:ARG:NH2	1:C:567:ALA:O	2.48	0.46
1:C:4019:PHE:O	1:C:4027:SER:OG	2.21	0.46
1:D:632:ILE:HA	1:D:635:ASN:HB2	1.97	0.46
1:D:885:LEU:O	1:D:889:ILE:HG12	2.16	0.46
1:D:4074:ASN:HB3	1:D:4076:THR:HG22	1.98	0.46
1:B:695:VAL:HG21	1:B:755:ILE:HG21	1.98	0.46
1:B:2473:ARG:HA	1:B:2473:ARG:HD2	1.76	0.46
1:B:4074:ASN:HB3	1:B:4076:THR:HG22	1.98	0.46
1:C:418:VAL:O	1:C:422:THR:OG1	2.32	0.46
1:D:1679:SER:HB2	1:D:1769:PHE:CZ	2.51	0.46
1:A:416:ALA:HA	1:A:419:ILE:HD11	1.98	0.46
1:A:680:ASP:OD2	1:A:680:ASP:N	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:695:VAL:HG21	1:A:755:ILE:HG21	1.98	0.46
1:A:1735:LYS:NZ	1:A:1929:ASP:OD2	2.41	0.46
1:A:4059:GLN:NE2	1:A:4063:GLU:OE1	2.49	0.46
1:C:2694:MET:O	1:C:3051:SER:OG	2.34	0.46
1:D:882:ARG:NH2	1:D:933:LEU:O	2.49	0.46
1:D:1600:MET:HB3	1:D:1600:MET:HE2	1.80	0.46
1:A:367:ASP:OD1	1:A:367:ASP:N	2.48	0.45
1:A:718:VAL:HG23	1:A:793:SER:HB3	1.98	0.45
1:A:2242:ALA:O	1:A:2246:VAL:HG22	2.17	0.45
1:B:4009:VAL:HA	1:B:4012:ILE:HG12	1.98	0.45
1:B:4046:ASP:OD1	1:B:4046:ASP:N	2.48	0.45
1:B:4483:ILE:HG22	1:B:4486:GLN:H	1.81	0.45
1:C:718:VAL:HG23	1:C:793:SER:HB3	1.98	0.45
1:C:1670:ASN:O	1:C:1777:TYR:OH	2.19	0.45
1:C:4941:LYS:HB3	1:C:4941:LYS:HE2	1.80	0.45
1:B:367:ASP:OD1	1:B:367:ASP:N	2.48	0.45
1:B:1679:SER:HB2	1:B:1769:PHE:CZ	2.51	0.45
1:B:2242:ALA:O	1:B:2246:VAL:HG22	2.17	0.45
1:C:841:LYS:HG2	1:C:844:ARG:HE	1.81	0.45
1:C:885:LEU:O	1:C:889:ILE:HG12	2.16	0.45
1:D:1006:VAL:HA	1:D:1009:ARG:HG2	1.97	0.45
1:D:2473:ARG:HD2	1:D:2473:ARG:HA	1.76	0.45
1:A:3322:MET:SD	1:A:3322:MET:N	2.79	0.45
1:A:4046:ASP:N	1:A:4046:ASP:OD1	2.48	0.45
1:B:912:LYS:HB3	1:B:914:GLN:HG2	1.99	0.45
1:C:490:GLN:HG3	1:C:494:MET:SD	2.56	0.45
1:D:587:ASN:HA	1:D:628:ASN:HB2	1.97	0.45
1:D:1810:PRO:HG2	1:D:1814:THR:HA	1.97	0.45
1:A:885:LEU:O	1:A:889:ILE:HG12	2.16	0.45
1:A:4009:VAL:HA	1:A:4012:ILE:HG12	1.98	0.45
1:B:490:GLN:HG3	1:B:494:MET:SD	2.56	0.45
1:C:1006:VAL:HA	1:C:1009:ARG:HG2	1.97	0.45
1:C:2242:ALA:O	1:C:2246:VAL:HG22	2.17	0.45
1:C:3512:ILE:H	1:C:3552:GLY:HA2	1.81	0.45
1:D:243:GLU:HG3	1:D:262:TYR:HD2	1.80	0.45
1:D:416:ALA:HA	1:D:419:ILE:HD11	1.98	0.45
1:D:841:LYS:HG2	1:D:844:ARG:HE	1.81	0.45
1:A:1006:VAL:HA	1:A:1009:ARG:HG2	1.97	0.45
1:C:680:ASP:OD2	1:C:680:ASP:N	2.49	0.45
1:C:769:ARG:HA	1:C:774:PRO:HA	1.96	0.45
1:C:965:LYS:NZ	1:C:1059:GLY:O	2.41	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2084:PHE:HD2	1:C:3666:LEU:HD13	1.79	0.45
1:C:2654:LYS:HE2	1:C:2656:TYR:HD2	1.82	0.45
1:C:4873:ARG:NE	1:D:4867:ASP:OD1	2.38	0.45
1:D:3512:ILE:H	1:D:3552:GLY:HA2	1.81	0.45
1:A:552:SER:HB2	1:A:585:ALA:HB2	1.99	0.45
1:B:243:GLU:HG3	1:B:262:TYR:HD2	1.80	0.45
1:B:2171:MET:O	1:B:2175:VAL:HG23	2.17	0.45
1:C:3900:GLN:OE1	1:C:3903:ARG:NH1	2.41	0.45
1:C:4059:GLN:NE2	1:C:4063:GLU:OE1	2.49	0.45
1:C:4721:LEU:HD23	1:C:4721:LEU:HA	1.84	0.45
1:D:680:ASP:OD2	1:D:680:ASP:N	2.49	0.45
1:D:2694:MET:O	1:D:3051:SER:OG	2.35	0.45
1:A:3512:ILE:H	1:A:3552:GLY:HA2	1.81	0.45
1:B:882:ARG:NH2	1:B:933:LEU:O	2.49	0.45
1:C:695:VAL:HG21	1:C:755:ILE:HG21	1.98	0.45
1:D:2129:LEU:HD22	1:D:2169:THR:HG23	1.98	0.45
1:D:4059:GLN:NE2	1:D:4063:GLU:OE1	2.49	0.45
1:D:4483:ILE:HG22	1:D:4486:GLN:H	1.81	0.45
1:A:490:GLN:HG3	1:A:494:MET:SD	2.56	0.45
1:A:890:HIS:HA	1:A:893:TRP:CD1	2.52	0.45
1:A:2171:MET:O	1:A:2175:VAL:HG23	2.17	0.45
1:A:2848:HIS:ND1	1:A:2873:TYR:OH	2.40	0.45
1:B:552:SER:HB2	1:B:585:ALA:HB2	1.99	0.45
1:D:2713:PRO:HD2	1:D:2782:LEU:HD13	1.99	0.45
1:D:4596:LEU:HD12	1:D:4596:LEU:HA	1.78	0.45
1:A:841:LYS:HG2	1:A:844:ARG:HE	1.81	0.45
1:A:965:LYS:NZ	1:A:1059:GLY:O	2.41	0.45
1:A:2347:GLU:HA	1:A:2350:ILE:HG12	1.99	0.45
1:C:1600:MET:HB3	1:C:1600:MET:HE2	1.79	0.45
1:D:2654:LYS:HE2	1:D:2656:TYR:HD2	1.82	0.45
1:D:3291:GLU:OE1	1:D:3301:PHE:N	2.50	0.45
1:D:4009:VAL:HA	1:D:4012:ILE:HG12	1.98	0.45
1:B:890:HIS:HA	1:B:893:TRP:CD1	2.52	0.45
1:B:2296:ARG:HA	1:B:2296:ARG:HD3	1.87	0.45
1:C:651:HIS:CE1	1:C:1605:LEU:HD11	2.52	0.45
1:C:2166:MET:O	1:C:2170:VAL:HG23	2.17	0.45
1:D:120:LEU:HB2	1:D:159:TRP:CZ3	2.52	0.45
1:D:912:LYS:HB3	1:D:914:GLN:HG2	1.99	0.45
1:D:2583:MET:SD	1:D:2583:MET:N	2.90	0.45
1:B:416:ALA:HA	1:B:419:ILE:HD11	1.98	0.44
1:B:1106:GLU:HB2	1:B:1214:ARG:HB3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2347:GLU:HA	1:B:2350:ILE:HG12	1.99	0.44
1:B:2583:MET:SD	1:B:2583:MET:N	2.90	0.44
1:C:3291:GLU:OE1	1:C:3301:PHE:N	2.50	0.44
1:D:1106:GLU:HB2	1:D:1214:ARG:HB3	2.00	0.44
1:D:2347:GLU:HA	1:D:2350:ILE:HG12	1.99	0.44
1:D:2642:LYS:HG2	1:D:2645:TRP:HE3	1.82	0.44
1:A:2583:MET:SD	1:A:2583:MET:N	2.90	0.44
1:B:120:LEU:HB2	1:B:159:TRP:CZ3	2.52	0.44
1:B:651:HIS:CE1	1:B:1605:LEU:HD11	2.52	0.44
1:B:2129:LEU:HD22	1:B:2169:THR:HG23	1.98	0.44
1:B:2187:THR:O	1:B:2187:THR:OG1	2.31	0.44
1:B:2654:LYS:HE2	1:B:2656:TYR:HD2	1.82	0.44
1:C:120:LEU:HB2	1:C:159:TRP:CZ3	2.52	0.44
1:C:121:LEU:HD12	1:C:121:LEU:HA	1.87	0.44
1:C:890:HIS:HA	1:C:893:TRP:CD1	2.52	0.44
1:D:651:HIS:CE1	1:D:1605:LEU:HD11	2.52	0.44
1:D:695:VAL:HG21	1:D:755:ILE:HG21	1.98	0.44
1:A:120:LEU:HB2	1:A:159:TRP:CZ3	2.52	0.44
1:A:651:HIS:CE1	1:A:1605:LEU:HD11	2.52	0.44
1:A:2694:MET:O	1:A:3051:SER:OG	2.34	0.44
1:B:73:LEU:O	1:B:118:ALA:N	2.51	0.44
1:B:680:ASP:OD2	1:B:680:ASP:N	2.49	0.44
1:D:296:ARG:NH1	1:D:327:THR:OG1	2.51	0.44
1:D:650:ASN:ND2	1:D:687:THR:OG1	2.43	0.44
1:D:2242:ALA:O	1:D:2246:VAL:HG22	2.17	0.44
1:D:2502:ASP:N	1:D:2502:ASP:OD1	2.50	0.44
1:B:841:LYS:HG2	1:B:844:ARG:HE	1.81	0.44
1:B:4807:ASP:N	1:B:4807:ASP:OD1	2.46	0.44
1:C:2129:LEU:HD22	1:C:2169:THR:HG23	1.98	0.44
1:C:2347:GLU:HA	1:C:2350:ILE:HG12	1.99	0.44
1:D:890:HIS:HA	1:D:893:TRP:CD1	2.52	0.44
1:A:2129:LEU:HD22	1:A:2169:THR:HG23	1.98	0.44
1:A:2654:LYS:HE2	1:A:2656:TYR:HD2	1.82	0.44
1:A:3291:GLU:OE1	1:A:3301:PHE:N	2.50	0.44
1:B:3291:GLU:OE1	1:B:3301:PHE:N	2.50	0.44
1:C:419:ILE:HG21	1:C:488:LEU:HD22	1.99	0.44
1:C:579:LEU:HG	1:C:623:VAL:HG23	1.99	0.44
1:C:1420:LEU:HG	1:C:1421:MET:HG3	2.00	0.44
1:C:2171:MET:O	1:C:2175:VAL:HG23	2.17	0.44
1:C:2583:MET:SD	1:C:2583:MET:N	2.90	0.44
1:D:4799:ASP:N	1:D:4799:ASP:OD1	2.49	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:419:ILE:HG21	1:A:488:LEU:HD22	1.99	0.44
1:A:912:LYS:HB3	1:A:914:GLN:HG2	1.99	0.44
1:B:579:LEU:HG	1:B:623:VAL:HG23	1.99	0.44
1:B:2166:MET:O	1:B:2170:VAL:HG23	2.17	0.44
1:B:3923:ILE:HG22	1:B:3930:ASN:HB3	2.00	0.44
1:C:912:LYS:HB3	1:C:914:GLN:HG2	1.99	0.44
1:C:2593:PHE:HD2	1:C:2595:VAL:HG23	1.83	0.44
1:C:4009:VAL:HA	1:C:4012:ILE:HG12	1.98	0.44
2:H:23:CYS:HB3	2:H:104:LEU:HD11	2.00	0.44
1:A:1420:LEU:HG	1:A:1421:MET:HG3	2.00	0.44
1:A:2713:PRO:HD2	1:A:2782:LEU:HD13	1.99	0.44
1:A:4941:LYS:HB3	1:A:4941:LYS:HE2	1.80	0.44
1:B:650:ASN:ND2	1:B:687:THR:OG1	2.43	0.44
1:B:718:VAL:HG23	1:B:793:SER:HB3	1.98	0.44
1:B:2694:MET:O	1:B:3051:SER:OG	2.34	0.44
1:C:296:ARG:NH1	1:C:327:THR:OG1	2.51	0.44
1:C:552:SER:HB2	1:C:585:ALA:HB2	1.99	0.44
1:C:2642:LYS:HG2	1:C:2645:TRP:HE3	1.83	0.44
1:D:718:VAL:HG23	1:D:793:SER:HB3	1.98	0.44
1:D:1663:SER:OG	1:D:1709:ASP:OD2	2.31	0.44
1:D:2171:MET:O	1:D:2175:VAL:HG23	2.17	0.44
1:A:121:LEU:HD12	1:A:121:LEU:HA	1.87	0.44
1:A:3058:ALA:O	1:A:3062:ASN:HB2	2.18	0.44
1:B:2025:ARG:HA	1:B:2025:ARG:HD2	1.85	0.44
1:C:921:PHE:HA	1:C:924:LEU:HD12	2.00	0.44
1:C:1786:ASP:OD1	1:C:1786:ASP:N	2.51	0.44
1:C:4028:SER:HB2	1:C:4032:LYS:HE2	2.00	0.44
1:C:4046:ASP:N	1:C:4046:ASP:OD1	2.48	0.44
1:D:424:PHE:HA	1:D:427:ASN:HD21	1.83	0.44
1:D:2593:PHE:HD2	1:D:2595:VAL:HG23	1.83	0.44
1:D:3923:ILE:HG22	1:D:3930:ASN:HB3	2.00	0.44
1:A:579:LEU:HG	1:A:623:VAL:HG23	1.99	0.44
1:A:1106:GLU:HB2	1:A:1214:ARG:HB3	2.00	0.44
1:C:441:LYS:O	1:C:444:THR:OG1	2.28	0.44
1:D:552:SER:HB2	1:D:585:ALA:HB2	1.99	0.44
1:D:3728:ALA:HA	1:D:3731:HIS:CE1	2.53	0.44
1:A:418:VAL:O	1:A:422:THR:OG1	2.32	0.43
1:B:921:PHE:HA	1:B:924:LEU:HD12	2.00	0.43
1:B:4500:MET:HG3	1:B:4585:CYS:SG	2.58	0.43
1:B:4867:ASP:OD1	1:D:4873:ARG:NE	2.38	0.43
1:C:1132:ASP:OD1	1:C:1132:ASP:N	2.43	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:4500:MET:HG3	1:C:4585:CYS:SG	2.58	0.43
1:D:2025:ARG:HA	1:D:2025:ARG:HD2	1.85	0.43
1:D:4832:ASP:OD1	1:D:4832:ASP:N	2.49	0.43
1:A:1992:ARG:HD2	1:A:1997:ASP:HA	2.00	0.43
1:B:296:ARG:NH1	1:B:327:THR:OG1	2.51	0.43
1:B:1735:LYS:NZ	1:B:1929:ASP:OD2	2.41	0.43
1:B:2209:ASN:OD1	1:B:2210:GLN:N	2.52	0.43
1:B:2642:LYS:HG2	1:B:2645:TRP:HE3	1.83	0.43
1:B:2713:PRO:HD2	1:B:2782:LEU:HD13	1.99	0.43
1:C:249:SER:OG	1:C:251:GLU:OE1	2.27	0.43
1:C:1106:GLU:HB2	1:C:1214:ARG:HB3	2.00	0.43
1:C:2713:PRO:HD2	1:C:2782:LEU:HD13	1.99	0.43
1:D:73:LEU:O	1:D:118:ALA:N	2.51	0.43
1:D:121:LEU:HD12	1:D:121:LEU:HA	1.87	0.43
2:F:23:CYS:HB3	2:F:104:LEU:HD11	2.00	0.43
1:A:245:LEU:HB2	1:A:275:TRP:HH2	1.84	0.43
1:A:424:PHE:HA	1:A:427:ASN:HD21	1.83	0.43
1:A:2166:MET:O	1:A:2170:VAL:HG23	2.17	0.43
1:A:4500:MET:HG3	1:A:4585:CYS:SG	2.58	0.43
1:B:419:ILE:HG21	1:B:488:LEU:HD22	1.99	0.43
1:B:1064:LEU:HD12	1:B:1064:LEU:HA	1.89	0.43
1:B:1282:CYS:O	1:B:1284:LYS:N	2.50	0.43
1:B:1786:ASP:N	1:B:1786:ASP:OD1	2.51	0.43
1:B:2196:CYS:SG	1:B:2197:ARG:N	2.92	0.43
1:B:2502:ASP:N	1:B:2502:ASP:OD1	2.50	0.43
1:C:515:ALA:HB1	1:C:521:GLU:HA	2.01	0.43
1:D:1735:LYS:NZ	1:D:1929:ASP:OD2	2.41	0.43
1:D:4833:PRO:HG3	1:D:4842:ARG:HG2	2.00	0.43
2:G:23:CYS:HB3	2:G:104:LEU:HD11	2.00	0.43
1:A:296:ARG:NH1	1:A:327:THR:OG1	2.51	0.43
1:A:2771:ARG:HE	1:A:2775:LYS:HD2	1.83	0.43
1:A:4833:PRO:HG3	1:A:4842:ARG:HG2	2.00	0.43
1:B:1663:SER:OG	1:B:1709:ASP:OD2	2.31	0.43
1:B:1993:ASP:OD1	1:B:1993:ASP:N	2.51	0.43
1:B:2256:LEU:HD23	1:B:2256:LEU:HA	1.90	0.43
1:C:1992:ARG:HD2	1:C:1997:ASP:HA	2.00	0.43
1:C:2502:ASP:OD1	1:C:2502:ASP:N	2.50	0.43
1:C:3728:ALA:HA	1:C:3731:HIS:CE1	2.53	0.43
1:C:3923:ILE:HG22	1:C:3930:ASN:HB3	2.00	0.43
1:D:4500:MET:HG3	1:D:4585:CYS:SG	2.58	0.43
1:A:2593:PHE:HD2	1:A:2595:VAL:HG23	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3728:ALA:HA	1:A:3731:HIS:CE1	2.53	0.43
1:B:2000:GLU:O	1:B:2004:THR:OG1	2.32	0.43
1:B:3654:ASP:OD1	1:B:3654:ASP:N	2.52	0.43
1:B:4833:PRO:HG3	1:B:4842:ARG:HG2	2.00	0.43
1:C:245:LEU:HB2	1:C:275:TRP:HH2	1.84	0.43
1:C:1446:ILE:HG21	1:C:1543:ALA:HB3	2.00	0.43
1:C:4833:PRO:HG3	1:C:4842:ARG:HG2	2.00	0.43
1:D:515:ALA:HB1	1:D:521:GLU:HA	2.01	0.43
1:D:1282:CYS:O	1:D:1284:LYS:N	2.50	0.43
1:D:2166:MET:O	1:D:2170:VAL:HG23	2.17	0.43
1:D:4028:SER:HB2	1:D:4032:LYS:HE2	2.00	0.43
1:A:921:PHE:HA	1:A:924:LEU:HD12	2.00	0.43
1:A:1663:SER:OG	1:A:1709:ASP:OD2	2.31	0.43
1:A:2196:CYS:SG	1:A:2197:ARG:N	2.92	0.43
1:B:2593:PHE:HD2	1:B:2595:VAL:HG23	1.83	0.43
1:B:2771:ARG:HE	1:B:2775:LYS:HD2	1.83	0.43
1:D:245:LEU:HB2	1:D:275:TRP:HH2	1.84	0.43
1:D:419:ILE:HG21	1:D:488:LEU:HD22	1.99	0.43
1:D:579:LEU:HG	1:D:623:VAL:HG23	1.99	0.43
1:D:891:GLU:O	1:D:895:MET:HG2	2.19	0.43
1:D:921:PHE:HA	1:D:924:LEU:HD12	2.00	0.43
1:D:2196:CYS:SG	1:D:2197:ARG:N	2.92	0.43
1:A:436:LEU:HD12	1:A:447:LEU:HD13	2.01	0.43
1:A:1446:ILE:HG21	1:A:1543:ALA:HB3	2.00	0.43
1:A:1786:ASP:OD1	1:A:1786:ASP:N	2.51	0.43
1:A:2502:ASP:OD1	1:A:2502:ASP:N	2.50	0.43
1:A:2642:LYS:HG2	1:A:2645:TRP:CE3	2.54	0.43
1:B:418:VAL:O	1:B:422:THR:OG1	2.32	0.43
1:B:1299:ILE:HG21	1:B:1455:THR:HA	2.00	0.43
1:B:2642:LYS:HG2	1:B:2645:TRP:CE3	2.54	0.43
1:B:3058:ALA:O	1:B:3062:ASN:HB2	2.18	0.43
1:C:2588:LEU:HA	1:C:2591:LEU:HG	2.00	0.43
1:C:2771:ARG:HE	1:C:2775:LYS:HD2	1.83	0.43
1:C:3058:ALA:O	1:C:3062:ASN:HB2	2.18	0.43
1:C:4196:ILE:HG12	1:C:4922:MET:HB2	2.01	0.43
1:C:4809:LEU:HD12	1:C:4809:LEU:HA	1.85	0.43
1:C:4832:ASP:OD1	1:C:4832:ASP:N	2.49	0.43
1:D:1420:LEU:HG	1:D:1421:MET:HG3	2.00	0.43
1:D:2642:LYS:HG2	1:D:2645:TRP:CE3	2.54	0.43
1:D:3058:ALA:O	1:D:3062:ASN:HB2	2.18	0.43
1:A:869:THR:OG1	1:A:1002:ASN:OD1	2.29	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2398:LEU:HD23	1:A:2398:LEU:HA	1.82	0.43
1:A:2588:LEU:HA	1:A:2591:LEU:HG	2.00	0.43
1:A:3923:ILE:HG22	1:A:3930:ASN:HB3	2.00	0.43
1:B:2034:LYS:HA	1:B:2037:TYR:CE2	2.53	0.43
1:D:2593:PHE:CD2	1:D:2595:VAL:HG23	2.54	0.43
1:A:2642:LYS:HG2	1:A:2645:TRP:HE3	1.83	0.43
1:B:227:TYR:CD2	1:B:352:SER:HB2	2.54	0.43
1:B:2065:MET:SD	1:B:2083:MET:HG3	2.59	0.43
1:B:3728:ALA:HA	1:B:3731:HIS:CE1	2.53	0.43
1:B:4028:SER:HB2	1:B:4032:LYS:HE2	2.00	0.43
1:C:707:PRO:HD3	1:C:1604:PHE:CE1	2.54	0.43
1:C:1064:LEU:HD12	1:C:1064:LEU:HA	1.89	0.43
1:C:2196:CYS:SG	1:C:2197:ARG:N	2.92	0.43
1:C:2473:ARG:HA	1:C:2473:ARG:HD2	1.76	0.43
1:C:4031:PHE:HZ	1:C:4040:GLY:HA2	1.84	0.43
1:D:1064:LEU:HD12	1:D:1064:LEU:HA	1.89	0.43
1:D:2771:ARG:HE	1:D:2775:LYS:HD2	1.83	0.43
1:D:4077:LEU:HD23	1:D:4077:LEU:HA	1.87	0.43
2:F:36:LYS:HZ3	2:F:38:ASP:N	2.16	0.43
1:A:1029:ASN:OD1	1:A:1029:ASN:N	2.52	0.43
1:A:2065:MET:SD	1:A:2083:MET:HG3	2.59	0.43
1:A:2097:LEU:HD12	1:A:2097:LEU:HA	1.89	0.43
1:A:2269:ALA:HA	1:A:2328:GLU:HB2	2.01	0.43
1:A:4196:ILE:HG12	1:A:4922:MET:HB2	2.01	0.43
1:B:891:GLU:O	1:B:895:MET:HG2	2.19	0.43
1:B:929:ARG:HA	1:B:929:ARG:HD2	1.93	0.43
1:B:1420:LEU:HG	1:B:1421:MET:HG3	2.00	0.43
1:B:1432:ILE:HG23	1:B:1434:PRO:HD3	2.01	0.43
1:C:647:ARG:HE	1:C:648:LEU:H	1.67	0.43
1:C:1432:ILE:HG23	1:C:1434:PRO:HD3	2.01	0.43
1:D:894:VAL:HG23	1:D:895:MET:CE	2.49	0.43
1:A:515:ALA:HB1	1:A:521:GLU:HA	2.01	0.42
1:A:647:ARG:HE	1:A:648:LEU:H	1.66	0.42
1:A:1299:ILE:HG21	1:A:1455:THR:HA	2.00	0.42
1:A:2593:PHE:CD2	1:A:2595:VAL:HG23	2.54	0.42
1:B:869:THR:OG1	1:B:1002:ASN:OD1	2.29	0.42
1:B:2593:PHE:CD2	1:B:2595:VAL:HG23	2.54	0.42
1:C:367:ASP:OD1	1:C:367:ASP:N	2.48	0.42
1:D:1294:ASN:OD1	1:D:1295:ASN:ND2	2.51	0.42
1:D:1721:MET:HE2	1:D:1721:MET:HB2	1.92	0.42
2:E:23:CYS:HB3	2:E:104:LEU:HD11	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4752:LEU:HD12	1:A:4752:LEU:HA	1.86	0.42
1:A:4920:PHE:HE2	1:A:4939:VAL:HG11	1.85	0.42
1:B:2588:LEU:HA	1:B:2591:LEU:HG	2.00	0.42
1:B:4832:ASP:N	1:B:4832:ASP:OD1	2.49	0.42
1:B:4922:MET:HE2	1:B:4922:MET:HB3	1.88	0.42
1:C:122:ARG:HG2	1:C:123:HIS:H	1.84	0.42
1:C:1216:ASN:HD21	1:C:1223:THR:HG22	1.84	0.42
1:C:1944:ASN:OD1	1:C:1944:ASN:N	2.52	0.42
1:C:2385:ASN:O	1:C:2389:THR:OG1	2.32	0.42
1:D:436:LEU:HD12	1:D:447:LEU:HD13	2.01	0.42
1:D:707:PRO:HD3	1:D:1604:PHE:CE1	2.54	0.42
1:D:1786:ASP:N	1:D:1786:ASP:OD1	2.51	0.42
1:D:3262:MET:SD	1:D:3262:MET:N	2.79	0.42
2:H:36:LYS:HZ3	2:H:38:ASP:N	2.16	0.42
1:A:891:GLU:O	1:A:895:MET:HG2	2.19	0.42
1:A:1606:LYS:HA	1:A:1606:LYS:HD3	1.87	0.42
1:B:565:LEU:HA	1:B:565:LEU:HD23	1.81	0.42
1:B:1216:ASN:HD21	1:B:1223:THR:HG22	1.84	0.42
1:B:1992:ARG:HD2	1:B:1997:ASP:HA	2.00	0.42
1:C:424:PHE:HA	1:C:427:ASN:HD21	1.83	0.42
1:C:1029:ASN:OD1	1:C:1029:ASN:N	2.52	0.42
1:C:1282:CYS:O	1:C:1284:LYS:N	2.50	0.42
1:D:227:TYR:CD2	1:D:352:SER:HB2	2.54	0.42
1:D:1446:ILE:HG21	1:D:1543:ALA:HB3	2.00	0.42
1:D:4196:ILE:HG12	1:D:4922:MET:HB2	2.01	0.42
2:H:12:ASP:OD1	2:H:12:ASP:N	2.52	0.42
1:A:626:ARG:HG2	1:A:630:HIS:CE1	2.55	0.42
1:A:707:PRO:HD3	1:A:1604:PHE:CE1	2.54	0.42
1:A:3015:ARG:NH2	1:A:3080:THR:O	2.53	0.42
1:A:3711:LYS:HB2	1:A:3711:LYS:HE2	1.81	0.42
1:A:4028:SER:HB2	1:A:4032:LYS:HE2	2.00	0.42
1:A:4863:GLY:HA2	1:B:4866:ILE:HD13	2.02	0.42
1:B:626:ARG:HG2	1:B:630:HIS:CE1	2.55	0.42
1:B:647:ARG:HE	1:B:648:LEU:H	1.66	0.42
1:C:650:ASN:ND2	1:C:687:THR:OG1	2.43	0.42
1:C:891:GLU:O	1:C:895:MET:HG2	2.19	0.42
1:C:2025:ARG:HD2	1:C:2025:ARG:HA	1.85	0.42
1:D:626:ARG:HG2	1:D:630:HIS:CE1	2.55	0.42
1:D:1992:ARG:HD2	1:D:1997:ASP:HA	2.00	0.42
1:D:2588:LEU:HA	1:D:2591:LEU:HG	2.00	0.42
1:A:3215:THR:HA	1:A:3218:ILE:HD12	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:626:ARG:HG2	1:C:630:HIS:CE1	2.55	0.42
1:D:497:LEU:O	1:D:499:LEU:N	2.52	0.42
1:D:1299:ILE:HG21	1:D:1455:THR:HA	2.00	0.42
1:D:4920:PHE:HE2	1:D:4939:VAL:HG11	1.84	0.42
1:A:253:GLY:HA2	1:A:257:ARG:HB2	2.02	0.42
1:A:1286:THR:HB	1:A:1557:GLU:HA	2.02	0.42
1:A:1944:ASN:OD1	1:A:1944:ASN:N	2.52	0.42
1:A:2209:ASN:OD1	1:A:2210:GLN:N	2.51	0.42
1:A:4721:LEU:HD23	1:A:4721:LEU:HA	1.84	0.42
1:B:424:PHE:HA	1:B:427:ASN:HD21	1.83	0.42
1:B:515:ALA:HB1	1:B:521:GLU:HA	2.01	0.42
1:B:4196:ILE:HG12	1:B:4922:MET:HB2	2.01	0.42
1:C:1600:MET:H	1:C:1600:MET:HG2	1.58	0.42
1:C:2269:ALA:HA	1:C:2328:GLU:HB2	2.01	0.42
1:C:2398:LEU:HD23	1:C:2398:LEU:HA	1.82	0.42
1:C:3680:LYS:HA	1:C:3680:LYS:HD2	1.92	0.42
1:C:4077:LEU:HD23	1:C:4077:LEU:HA	1.87	0.42
1:D:253:GLY:HA2	1:D:257:ARG:HB2	2.02	0.42
1:D:1987:CYS:HA	1:D:1988:PRO:HD3	1.87	0.42
1:D:2065:MET:SD	1:D:2083:MET:HG3	2.59	0.42
1:D:2209:ASN:OD1	1:D:2210:GLN:N	2.52	0.42
1:D:3000:LYS:HD2	1:D:3000:LYS:HA	1.92	0.42
1:D:3792:LEU:HD23	1:D:3792:LEU:HA	1.87	0.42
1:B:436:LEU:HD12	1:B:447:LEU:HD13	2.01	0.42
1:B:1286:THR:HB	1:B:1557:GLU:HA	2.02	0.42
1:B:3696:LYS:HA	1:B:3696:LYS:HD3	1.85	0.42
1:C:227:TYR:CD2	1:C:352:SER:HB2	2.54	0.42
1:C:253:GLY:HA2	1:C:257:ARG:HB2	2.02	0.42
1:C:572:LEU:HB2	1:C:613:VAL:HG22	2.02	0.42
1:C:2642:LYS:HG2	1:C:2645:TRP:CE3	2.54	0.42
1:C:2848:HIS:ND1	1:C:2873:TYR:OH	2.40	0.42
1:C:3981:LEU:HD23	1:C:3981:LEU:HA	1.91	0.42
1:D:1944:ASN:OD1	1:D:1944:ASN:N	2.52	0.42
2:E:36:LYS:HZ3	2:E:38:ASP:N	2.18	0.42
1:A:3233:MET:SD	1:A:3233:MET:N	2.92	0.42
1:B:245:LEU:HB2	1:B:275:TRP:HH2	1.84	0.42
1:B:707:PRO:HD3	1:B:1604:PHE:CE1	2.54	0.42
1:B:881:ILE:HG21	1:B:952:ILE:HD11	2.02	0.42
1:B:894:VAL:HG23	1:B:895:MET:CE	2.49	0.42
1:B:1446:ILE:HG21	1:B:1543:ALA:HB3	2.00	0.42
1:C:1663:SER:OG	1:C:1709:ASP:OD2	2.31	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2065:MET:SD	1:C:2083:MET:HG3	2.59	0.42
1:A:856:SER:HB2	1:A:862:PHE:CE1	2.55	0.42
1:A:1068:ASP:OD1	1:A:1068:ASP:N	2.48	0.42
1:A:1432:ILE:HG23	1:A:1434:PRO:HD3	2.01	0.42
1:A:1600:MET:H	1:A:1600:MET:HG2	1.58	0.42
1:A:3696:LYS:HD3	1:A:3696:LYS:HA	1.85	0.42
1:C:1294:ASN:OD1	1:C:1295:ASN:ND2	2.51	0.42
1:C:1299:ILE:HG21	1:C:1455:THR:HA	2.00	0.42
1:D:856:SER:HB2	1:D:862:PHE:CE1	2.55	0.42
1:D:1432:ILE:HG23	1:D:1434:PRO:HD3	2.01	0.42
1:D:3254:GLU:OE1	1:D:3256:HIS:NE2	2.53	0.42
1:D:3795:LEU:HD22	1:D:3834:PHE:HZ	1.85	0.42
1:A:607:ASN:OD1	1:A:607:ASN:N	2.53	0.42
1:A:1097:LYS:HA	1:A:1097:LYS:HD3	1.74	0.42
1:A:1294:ASN:OD1	1:A:1295:ASN:ND2	2.51	0.42
1:A:3654:ASP:OD1	1:A:3654:ASP:N	2.52	0.42
1:B:121:LEU:HD12	1:B:121:LEU:HA	1.87	0.42
1:B:2133:MET:SD	1:B:2133:MET:N	2.93	0.42
1:C:894:VAL:HG23	1:C:895:MET:CE	2.49	0.42
1:C:1606:LYS:HD3	1:C:1606:LYS:HA	1.87	0.42
1:C:2593:PHE:CD2	1:C:2595:VAL:HG23	2.54	0.42
1:D:1089:ARG:HG2	1:D:1202:ILE:HD12	2.02	0.42
1:D:1216:ASN:HD21	1:D:1223:THR:HG22	1.84	0.42
1:D:2133:MET:SD	1:D:2133:MET:N	2.93	0.42
1:D:2269:ALA:HA	1:D:2328:GLU:HB2	2.01	0.42
2:E:12:ASP:OD1	2:E:12:ASP:N	2.52	0.42
1:A:227:TYR:CD2	1:A:352:SER:HB2	2.54	0.41
1:A:1216:ASN:HD21	1:A:1223:THR:HG22	1.84	0.41
1:A:4031:PHE:HZ	1:A:4040:GLY:HA2	1.84	0.41
1:A:4867:ASP:OD1	1:B:4873:ARG:NE	2.40	0.41
1:B:23:GLN:HE22	1:B:215:ALA:HB2	1.85	0.41
1:B:1068:ASP:OD1	1:B:1068:ASP:N	2.48	0.41
1:B:4106:GLU:OE1	1:B:4148:TYR:OH	2.37	0.41
1:C:73:LEU:O	1:C:118:ALA:N	2.51	0.41
1:C:1286:THR:HB	1:C:1557:GLU:HA	2.02	0.41
1:C:3015:ARG:NH2	1:C:3080:THR:O	2.53	0.41
1:C:3215:THR:HA	1:C:3218:ILE:HD12	2.02	0.41
1:C:3711:LYS:HE2	1:C:3711:LYS:HB2	1.81	0.41
1:D:122:ARG:HG2	1:D:123:HIS:H	1.84	0.41
1:D:607:ASN:OD1	1:D:607:ASN:N	2.53	0.41
1:D:1780:SER:HB2	1:D:1781:PRO:HD3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:3015:ARG:NH2	1:D:3080:THR:O	2.53	0.41
1:D:3967:LEU:HD12	1:D:3967:LEU:HA	1.89	0.41
1:D:4078:ASP:N	1:D:4078:ASP:OD1	2.53	0.41
2:G:50:ARG:HE	2:G:50:ARG:HB3	1.74	0.41
1:A:650:ASN:ND2	1:A:687:THR:OG1	2.43	0.41
1:A:1282:CYS:O	1:A:1284:LYS:N	2.50	0.41
1:A:2151:ASN:OD1	1:A:2154:PHE:N	2.53	0.41
1:B:238:HIS:ND1	1:B:243:GLU:HB3	2.36	0.41
1:B:3015:ARG:NH2	1:B:3080:THR:O	2.53	0.41
1:B:3795:LEU:HD22	1:B:3834:PHE:HZ	1.85	0.41
1:B:4752:LEU:HD12	1:B:4752:LEU:HA	1.86	0.41
1:C:2607:LYS:HE3	1:C:2641:ARG:HH22	1.85	0.41
2:G:36:LYS:HZ3	2:G:38:ASP:N	2.17	0.41
2:H:50:ARG:HE	2:H:50:ARG:HB3	1.74	0.41
1:A:497:LEU:O	1:A:499:LEU:N	2.52	0.41
1:A:689:GLU:OE1	2:E:41:ARG:NH2	2.37	0.41
1:A:2759:TYR:HA	1:A:2762:LEU:HD12	2.02	0.41
1:B:414:ARG:O	1:B:417:ARG:HG3	2.20	0.41
1:B:689:GLU:OE1	2:F:41:ARG:NH2	2.37	0.41
1:C:4922:MET:HE2	1:C:4922:MET:HB3	1.84	0.41
1:D:572:LEU:HB2	1:D:613:VAL:HG22	2.02	0.41
1:D:2398:LEU:HD23	1:D:2398:LEU:HA	1.82	0.41
1:D:3344:ARG:O	1:D:3366:TYR:OH	2.26	0.41
1:A:1114:ARG:NH1	1:A:1138:ASP:HB3	2.36	0.41
1:A:1600:MET:HE2	1:A:1600:MET:HB3	1.82	0.41
1:A:1780:SER:HB2	1:A:1781:PRO:HD3	2.02	0.41
1:A:2133:MET:SD	1:A:2133:MET:N	2.93	0.41
1:B:607:ASN:OD1	1:B:607:ASN:N	2.53	0.41
1:B:1944:ASN:OD1	1:B:1944:ASN:N	2.52	0.41
1:B:2269:ALA:HA	1:B:2328:GLU:HB2	2.01	0.41
1:B:3711:LYS:HB2	1:B:3711:LYS:HE2	1.81	0.41
1:B:4920:PHE:HE2	1:B:4939:VAL:HG11	1.85	0.41
1:C:1089:ARG:HG2	1:C:1202:ILE:HD12	2.02	0.41
1:C:2133:MET:SD	1:C:2133:MET:N	2.93	0.41
1:A:73:LEU:O	1:A:118:ALA:N	2.51	0.41
1:A:238:HIS:ND1	1:A:243:GLU:HB3	2.36	0.41
1:A:1238:PRO:HB2	1:A:1241:VAL:HB	2.03	0.41
1:A:1637:ASN:OD1	1:A:1637:ASN:N	2.53	0.41
1:A:3730:LEU:HD23	1:A:3730:LEU:HA	1.84	0.41
1:A:4866:ILE:HD13	1:C:4863:GLY:HA2	2.02	0.41
1:B:122:ARG:HG2	1:B:123:HIS:H	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1780:SER:HB2	1:B:1781:PRO:HD3	2.02	0.41
1:B:2028:LEU:HD12	1:B:2028:LEU:HA	1.91	0.41
1:B:3254:GLU:OE1	1:B:3256:HIS:NE2	2.53	0.41
1:C:23:GLN:HE22	1:C:215:ALA:HB2	1.86	0.41
1:C:238:HIS:ND1	1:C:243:GLU:HB3	2.36	0.41
1:C:1746:LYS:HD3	1:C:1746:LYS:HA	1.94	0.41
1:C:2209:ASN:OD1	1:C:2210:GLN:N	2.52	0.41
1:C:2296:ARG:HA	1:C:2296:ARG:HD3	1.87	0.41
1:D:414:ARG:O	1:D:417:ARG:HG3	2.20	0.41
1:D:881:ILE:HG21	1:D:952:ILE:HD11	2.02	0.41
1:D:2151:ASN:OD1	1:D:2154:PHE:N	2.53	0.41
1:A:307:SER:HB3	1:A:327:THR:HG22	2.03	0.41
1:A:3254:GLU:OE1	1:A:3256:HIS:NE2	2.53	0.41
1:A:4611:PHE:HE2	1:A:4946:ARG:HD3	1.85	0.41
1:B:253:GLY:HA2	1:B:257:ARG:HB2	2.02	0.41
1:B:572:LEU:HB2	1:B:613:VAL:HG22	2.02	0.41
1:B:856:SER:HB2	1:B:862:PHE:CE1	2.55	0.41
1:B:1262:PRO:HG3	1:B:1595:VAL:HG12	2.03	0.41
1:B:1539:LYS:HE2	1:B:1539:LYS:HB2	1.90	0.41
1:B:1913:CYS:HB3	1:B:2089:ARG:HH12	1.85	0.41
1:B:2077:PRO:HA	1:B:2080:VAL:HG12	2.03	0.41
1:B:3322:MET:SD	1:B:3322:MET:N	2.79	0.41
1:B:4611:PHE:HE2	1:B:4946:ARG:HD3	1.85	0.41
1:C:305:TYR:O	1:C:317:MET:N	2.54	0.41
1:C:307:SER:HB3	1:C:327:THR:HG22	2.03	0.41
1:C:436:LEU:HD12	1:C:447:LEU:HD13	2.01	0.41
1:C:1238:PRO:HB2	1:C:1241:VAL:HB	2.03	0.41
1:D:305:TYR:O	1:D:317:MET:N	2.54	0.41
1:D:3458:TYR:O	1:D:3462:THR:OG1	2.25	0.41
1:D:4173:PHE:CD1	1:D:4879:VAL:HG21	2.54	0.41
1:B:1294:ASN:OD1	1:B:1295:ASN:ND2	2.51	0.41
1:B:1626:LEU:HD23	1:B:1626:LEU:HA	1.91	0.41
1:C:2759:TYR:HA	1:C:2762:LEU:HD12	2.03	0.41
1:D:647:ARG:HE	1:D:648:LEU:H	1.66	0.41
1:D:1286:THR:HB	1:D:1557:GLU:HA	2.02	0.41
1:D:3215:THR:HA	1:D:3218:ILE:HD12	2.02	0.41
2:F:12:ASP:N	2:F:12:ASP:OD1	2.52	0.41
1:A:122:ARG:HG2	1:A:123:HIS:H	1.85	0.41
1:A:414:ARG:O	1:A:417:ARG:HG3	2.20	0.41
1:A:565:LEU:HD23	1:A:565:LEU:HA	1.81	0.41
1:A:881:ILE:HG21	1:A:952:ILE:HD11	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1089:ARG:HG2	1:A:1202:ILE:HD12	2.02	0.41
1:A:1262:PRO:HG3	1:A:1595:VAL:HG12	2.03	0.41
1:A:2203:CYS:O	1:A:2207:ARG:NE	2.54	0.41
1:A:3957:LEU:HD11	1:A:3966:LEU:HD23	2.03	0.41
1:B:198:ASN:OD1	1:B:200:SER:OG	2.32	0.41
1:B:634:ASP:HB3	1:B:1672:ARG:HH21	1.86	0.41
1:B:2151:ASN:OD1	1:B:2154:PHE:N	2.54	0.41
1:B:3262:MET:SD	1:B:3262:MET:N	2.79	0.41
1:B:3957:LEU:HD11	1:B:3966:LEU:HD23	2.03	0.41
1:B:4031:PHE:HZ	1:B:4040:GLY:HA2	1.84	0.41
1:C:545:ARG:HG2	1:C:581:GLU:HG2	2.03	0.41
1:C:607:ASN:OD1	1:C:607:ASN:N	2.53	0.41
1:C:856:SER:HB2	1:C:862:PHE:CE1	2.55	0.41
1:C:1114:ARG:NH1	1:C:1138:ASP:HB3	2.36	0.41
1:C:1262:PRO:HG3	1:C:1595:VAL:HG12	2.03	0.41
1:C:1637:ASN:N	1:C:1637:ASN:OD1	2.53	0.41
1:C:1913:CYS:HB3	1:C:2089:ARG:HH12	1.85	0.41
1:C:3957:LEU:HD11	1:C:3966:LEU:HD23	2.03	0.41
1:C:4696:VAL:HG12	1:C:4698:ASN:HB2	2.03	0.41
1:C:4920:PHE:HE2	1:C:4939:VAL:HG11	1.84	0.41
1:D:2077:PRO:HA	1:D:2080:VAL:HG12	2.03	0.41
2:G:12:ASP:N	2:G:12:ASP:OD1	2.52	0.41
1:B:2607:LYS:HE3	1:B:2641:ARG:HH22	1.85	0.41
1:B:4078:ASP:OD1	1:B:4078:ASP:N	2.53	0.41
1:B:4766:LEU:HD23	1:B:4766:LEU:HA	1.90	0.41
1:C:1688:TYR:HA	1:C:1691:GLU:HG2	2.02	0.41
1:C:1814:THR:OG1	1:C:1815:THR:N	2.54	0.41
1:C:3795:LEU:HD22	1:C:3834:PHE:HZ	1.85	0.41
1:C:4515:LEU:HD12	1:C:4515:LEU:HA	1.88	0.41
1:D:238:HIS:ND1	1:D:243:GLU:HB3	2.36	0.41
1:D:4031:PHE:HZ	1:D:4040:GLY:HA2	1.84	0.41
1:D:4611:PHE:HE2	1:D:4946:ARG:HD3	1.85	0.41
1:A:1117:TRP:HB3	1:A:1201:PHE:HB3	2.03	0.41
1:A:2607:LYS:HE3	1:A:2641:ARG:HH22	1.86	0.41
1:B:609:LYS:HD2	1:B:609:LYS:HA	1.91	0.41
1:B:1637:ASN:N	1:B:1637:ASN:OD1	2.53	0.41
1:B:2203:CYS:O	1:B:2207:ARG:NE	2.54	0.41
1:B:4941:LYS:HB3	1:B:4941:LYS:HE2	1.80	0.41
1:C:2203:CYS:O	1:C:2207:ARG:NE	2.54	0.41
1:C:2347:GLU:OE1	1:C:2347:GLU:N	2.54	0.41
1:C:3254:GLU:OE1	1:C:3256:HIS:NE2	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:4078:ASP:N	1:C:4078:ASP:OD1	2.54	0.41
1:C:4596:LEU:HA	1:C:4596:LEU:HD12	1.78	0.41
1:C:4866:ILE:HD13	1:D:4863:GLY:HA2	2.02	0.41
1:D:307:SER:HB3	1:D:327:THR:HG22	2.03	0.41
1:D:721:ASP:OD1	1:D:721:ASP:N	2.50	0.41
1:D:889:ILE:HB	1:D:893:TRP:CZ2	2.56	0.41
1:D:1913:CYS:HB3	1:D:2089:ARG:HH12	1.85	0.41
1:D:2203:CYS:O	1:D:2207:ARG:NE	2.54	0.41
1:A:545:ARG:HG2	1:A:581:GLU:HG2	2.03	0.40
1:A:2895:LEU:HD12	1:A:2895:LEU:HA	1.96	0.40
1:A:4106:GLU:OE1	1:A:4148:TYR:OH	2.37	0.40
1:B:198:ASN:OD1	1:B:198:ASN:N	2.54	0.40
1:B:889:ILE:HB	1:B:893:TRP:CZ2	2.56	0.40
1:B:1029:ASN:OD1	1:B:1029:ASN:N	2.52	0.40
1:B:1519:LEU:HD12	1:B:1519:LEU:HA	1.90	0.40
1:C:414:ARG:O	1:C:417:ARG:HG3	2.20	0.40
1:C:1749:LEU:HD12	1:C:1844:LEU:HG	2.03	0.40
1:D:545:ARG:HG2	1:D:581:GLU:HG2	2.03	0.40
1:D:1262:PRO:HG3	1:D:1595:VAL:HG12	2.03	0.40
1:D:3957:LEU:HD11	1:D:3966:LEU:HD23	2.03	0.40
2:G:93:PRO:HA	2:G:94:PRO:HD3	1.97	0.40
1:A:508:TYR:CZ	1:A:523:GLY:HA3	2.57	0.40
1:A:889:ILE:HB	1:A:893:TRP:CZ2	2.56	0.40
1:A:1749:LEU:HD12	1:A:1844:LEU:HG	2.03	0.40
1:A:1913:CYS:HB3	1:A:2089:ARG:HH12	1.85	0.40
1:A:2473:ARG:HD2	1:A:2473:ARG:HA	1.76	0.40
1:A:3795:LEU:HD22	1:A:3834:PHE:HZ	1.85	0.40
1:A:4696:VAL:HG12	1:A:4698:ASN:HB2	2.03	0.40
1:B:168:GLN:HE21	1:D:240:HIS:HB2	1.87	0.40
1:B:497:LEU:O	1:B:499:LEU:N	2.52	0.40
1:B:1089:ARG:HG2	1:B:1202:ILE:HD12	2.02	0.40
1:B:1238:PRO:HB2	1:B:1241:VAL:HB	2.03	0.40
1:C:885:LEU:HA	1:C:888:ASN:HD21	1.86	0.40
1:C:889:ILE:HB	1:C:893:TRP:CZ2	2.56	0.40
1:C:2028:LEU:HD12	1:C:2028:LEU:HA	1.91	0.40
1:D:23:GLN:HE22	1:D:215:ALA:HB2	1.86	0.40
1:D:962:LYS:HD3	1:D:962:LYS:HA	1.88	0.40
1:D:1114:ARG:NH1	1:D:1138:ASP:HB3	2.36	0.40
1:D:1688:TYR:HA	1:D:1691:GLU:HG2	2.02	0.40
1:A:572:LEU:HB2	1:A:613:VAL:HG22	2.02	0.40
1:A:894:VAL:HG23	1:A:895:MET:CE	2.49	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2000:GLU:O	1:A:2004:THR:OG1	2.32	0.40
1:A:2080:VAL:HG13	1:A:3669:LEU:HD22	2.04	0.40
1:A:3006:LEU:HD13	1:A:3044:VAL:HG21	2.03	0.40
1:B:2501:LEU:HD22	1:B:2589:ARG:HG2	2.03	0.40
1:B:3000:LYS:HD2	1:B:3000:LYS:HA	1.92	0.40
1:B:3083:ARG:HD3	1:B:3189:ARG:NH1	2.37	0.40
1:C:497:LEU:O	1:C:499:LEU:N	2.52	0.40
1:C:881:ILE:HG21	1:C:952:ILE:HD11	2.02	0.40
1:C:1780:SER:HB2	1:C:1781:PRO:HD3	2.02	0.40
1:C:2151:ASN:OD1	1:C:2154:PHE:N	2.53	0.40
1:C:3967:LEU:HD12	1:C:3967:LEU:HA	1.89	0.40
1:B:885:LEU:HA	1:B:888:ASN:HD21	1.86	0.40
1:B:3006:LEU:HD13	1:B:3044:VAL:HG21	2.03	0.40
1:C:634:ASP:HB3	1:C:1672:ARG:HH21	1.86	0.40
1:C:2077:PRO:HA	1:C:2080:VAL:HG12	2.03	0.40
1:C:2187:THR:O	1:C:2187:THR:OG1	2.31	0.40
1:C:3083:ARG:HD3	1:C:3189:ARG:NH1	2.37	0.40
1:D:634:ASP:HB3	1:D:1672:ARG:HH21	1.86	0.40
1:D:749:LEU:HD22	1:D:755:ILE:HD11	2.02	0.40
1:D:1749:LEU:HD12	1:D:1844:LEU:HG	2.03	0.40
1:D:2759:TYR:HA	1:D:2762:LEU:HD12	2.02	0.40
2:E:50:ARG:HE	2:E:50:ARG:HB3	1.74	0.40
1:A:1017:THR:HA	1:A:1025:LYS:HD3	2.04	0.40
1:A:2395:ILE:HD13	1:A:2395:ILE:HA	1.94	0.40
1:A:4078:ASP:N	1:A:4078:ASP:OD1	2.53	0.40
1:A:4658:GLU:H	1:A:4658:GLU:HG3	1.74	0.40
1:B:1114:ARG:NH1	1:B:1138:ASP:HB3	2.36	0.40
1:B:1144:ARG:NH1	1:B:1191:ALA:O	2.55	0.40
1:C:508:TYR:CZ	1:C:523:GLY:HA3	2.57	0.40
1:C:1117:TRP:HB3	1:C:1201:PHE:HB3	2.03	0.40
1:C:3000:LYS:HD2	1:C:3000:LYS:HA	1.92	0.40
1:D:1017:THR:HA	1:D:1025:LYS:HD3	2.04	0.40
1:D:1238:PRO:HB2	1:D:1241:VAL:HB	2.03	0.40
1:D:2097:LEU:HD12	1:D:2097:LEU:HA	1.89	0.40
1:D:2895:LEU:HD12	1:D:2895:LEU:HA	1.96	0.40
2:F:50:ARG:HE	2:F:50:ARG:HB3	1.74	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	3952/4966 (80%)	3722 (94%)	224 (6%)	6 (0%)	47	81
1	B	3952/4966 (80%)	3724 (94%)	222 (6%)	6 (0%)	47	81
1	C	3952/4966 (80%)	3725 (94%)	221 (6%)	6 (0%)	47	81
1	D	3952/4966 (80%)	3722 (94%)	224 (6%)	6 (0%)	47	81
2	E	105/107 (98%)	98 (93%)	7 (7%)	0	100	100
2	F	105/107 (98%)	98 (93%)	7 (7%)	0	100	100
2	G	105/107 (98%)	98 (93%)	7 (7%)	0	100	100
2	H	105/107 (98%)	98 (93%)	7 (7%)	0	100	100
All	All	16228/20292 (80%)	15285 (94%)	919 (6%)	24 (0%)	54	84

All (24) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	1299	ILE
1	B	1299	ILE
1	C	1299	ILE
1	D	1299	ILE
1	A	1462	VAL
1	A	2451	VAL
1	B	1462	VAL
1	B	2451	VAL
1	C	1462	VAL
1	C	2451	VAL
1	D	1462	VAL
1	D	2451	VAL
1	A	2444	ILE
1	B	2444	ILE
1	C	2444	ILE
1	D	2444	ILE
1	A	2454	ASP

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Mol	Chain	Res	Type
1	B	2454	ASP
1	C	2454	ASP
1	D	2454	ASP
1	A	1285	VAL
1	B	1285	VAL
1	C	1285	VAL
1	D	1285	VAL

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	3331/4355 (76%)	3286 (99%)	45 (1%)	67 85
1	B	3331/4355 (76%)	3286 (99%)	45 (1%)	67 85
1	C	3331/4355 (76%)	3286 (99%)	45 (1%)	67 85
1	D	3331/4355 (76%)	3286 (99%)	45 (1%)	67 85
2	E	88/88 (100%)	84 (96%)	4 (4%)	27 61
2	F	88/88 (100%)	84 (96%)	4 (4%)	27 61
2	G	88/88 (100%)	84 (96%)	4 (4%)	27 61
2	H	88/88 (100%)	84 (96%)	4 (4%)	27 61
All	All	13676/17772 (77%)	13480 (99%)	196 (1%)	68 85

All (196) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	42	PHE
1	A	125	TYR
1	A	234	LEU
1	A	399	MET
1	A	484	ASN
1	A	577	CYS
1	A	608	HIS
1	A	670	TYR

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Mol	Chain	Res	Type
1	A	731	HIS
1	A	781	ASN
1	A	823	TYR
1	A	964	MET
1	A	1131	ASP
1	A	1457	PHE
1	A	1547	GLN
1	A	1604	PHE
1	A	1629	MET
1	A	1819	PHE
1	A	2003	MET
1	A	2083	MET
1	A	2091	TYR
1	A	2114	ASP
1	A	2195	CYS
1	A	2202	PHE
1	A	2219	TYR
1	A	2247	MET
1	A	2302	ARG
1	A	2321	ARG
1	A	2340	ASN
1	A	2351	LYS
1	A	2405	MET
1	A	2491	PHE
1	A	2655	LYS
1	A	2680	MET
1	A	2682	SER
1	A	3245	MET
1	A	3262	MET
1	A	3281	LYS
1	A	3322	MET
1	A	3427	MET
1	A	3635	PHE
1	A	4117	PHE
1	A	4509	PHE
1	A	4518	TYR
1	A	4747	MET
1	B	42	PHE
1	B	125	TYR
1	B	234	LEU
1	B	399	MET
1	B	484	ASN

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Mol	Chain	Res	Type
1	B	577	CYS
1	B	608	HIS
1	B	670	TYR
1	B	731	HIS
1	B	781	ASN
1	B	823	TYR
1	B	964	MET
1	B	1131	ASP
1	B	1457	PHE
1	B	1547	GLN
1	B	1604	PHE
1	B	1629	MET
1	B	1819	PHE
1	B	2003	MET
1	B	2083	MET
1	B	2091	TYR
1	B	2114	ASP
1	B	2195	CYS
1	B	2202	PHE
1	B	2219	TYR
1	B	2247	MET
1	B	2302	ARG
1	B	2321	ARG
1	B	2340	ASN
1	B	2351	LYS
1	B	2405	MET
1	B	2491	PHE
1	B	2655	LYS
1	B	2680	MET
1	B	2682	SER
1	B	3245	MET
1	B	3262	MET
1	B	3281	LYS
1	B	3322	MET
1	B	3427	MET
1	B	3635	PHE
1	B	4117	PHE
1	B	4509	PHE
1	B	4518	TYR
1	B	4747	MET
1	C	42	PHE
1	C	125	TYR

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Mol	Chain	Res	Type
1	C	234	LEU
1	C	399	MET
1	C	484	ASN
1	C	577	CYS
1	C	608	HIS
1	C	670	TYR
1	C	731	HIS
1	C	781	ASN
1	C	823	TYR
1	C	964	MET
1	C	1131	ASP
1	C	1457	PHE
1	C	1547	GLN
1	C	1604	PHE
1	C	1629	MET
1	C	1819	PHE
1	C	2003	MET
1	C	2083	MET
1	C	2091	TYR
1	C	2114	ASP
1	C	2195	CYS
1	C	2202	PHE
1	C	2219	TYR
1	C	2247	MET
1	C	2302	ARG
1	C	2321	ARG
1	C	2340	ASN
1	C	2351	LYS
1	C	2405	MET
1	C	2491	PHE
1	C	2655	LYS
1	C	2680	MET
1	C	2682	SER
1	C	3245	MET
1	C	3262	MET
1	C	3281	LYS
1	C	3322	MET
1	C	3427	MET
1	C	3635	PHE
1	C	4117	PHE
1	C	4509	PHE
1	C	4518	TYR

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Mol	Chain	Res	Type
1	C	4747	MET
1	D	42	PHE
1	D	125	TYR
1	D	234	LEU
1	D	399	MET
1	D	484	ASN
1	D	577	CYS
1	D	608	HIS
1	D	670	TYR
1	D	731	HIS
1	D	781	ASN
1	D	823	TYR
1	D	964	MET
1	D	1131	ASP
1	D	1457	PHE
1	D	1547	GLN
1	D	1604	PHE
1	D	1629	MET
1	D	1819	PHE
1	D	2003	MET
1	D	2083	MET
1	D	2091	TYR
1	D	2114	ASP
1	D	2195	CYS
1	D	2202	PHE
1	D	2219	TYR
1	D	2247	MET
1	D	2302	ARG
1	D	2321	ARG
1	D	2340	ASN
1	D	2351	LYS
1	D	2405	MET
1	D	2491	PHE
1	D	2655	LYS
1	D	2680	MET
1	D	2682	SER
1	D	3245	MET
1	D	3262	MET
1	D	3281	LYS
1	D	3322	MET
1	D	3427	MET
1	D	3635	PHE

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Mol	Chain	Res	Type
1	D	4117	PHE
1	D	4509	PHE
1	D	4518	TYR
1	D	4747	MET
2	E	30	MET
2	E	45	LYS
2	E	67	MET
2	E	95	ASN
2	F	30	MET
2	F	45	LYS
2	F	67	MET
2	F	95	ASN
2	G	30	MET
2	G	45	LYS
2	G	67	MET
2	G	95	ASN
2	H	30	MET
2	H	45	LYS
2	H	67	MET
2	H	95	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1685	GLN
1	B	776	GLN
1	B	1685	GLN
1	C	1685	GLN
1	D	1685	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 4 ligands modelled in this entry, 4 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

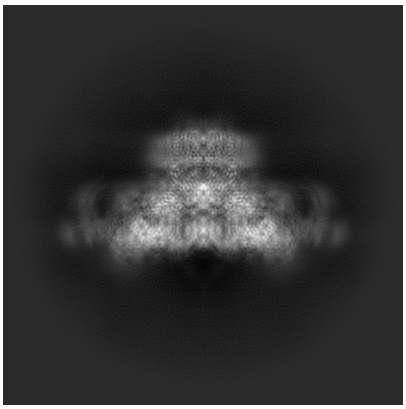
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-27711. These allow visual inspection of the internal detail of the map and identification of artifacts.

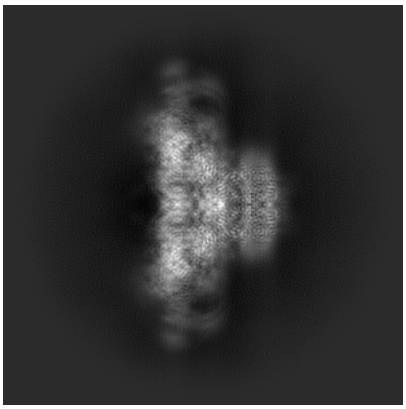
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

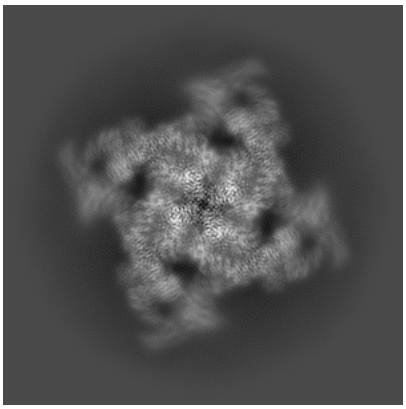
6.1.1 Primary map



X

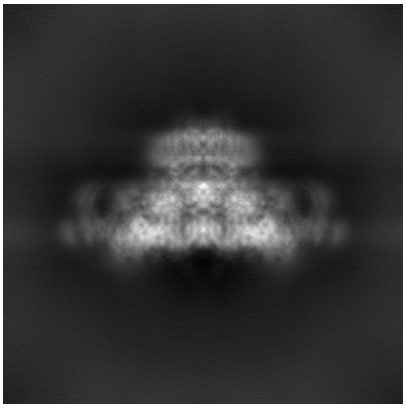


Y

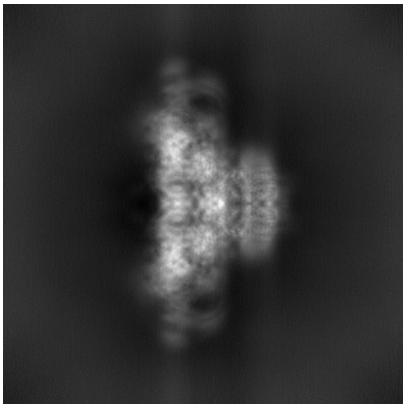


Z

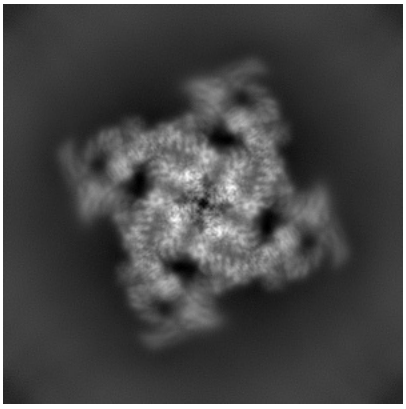
6.1.2 Raw map



X



Y

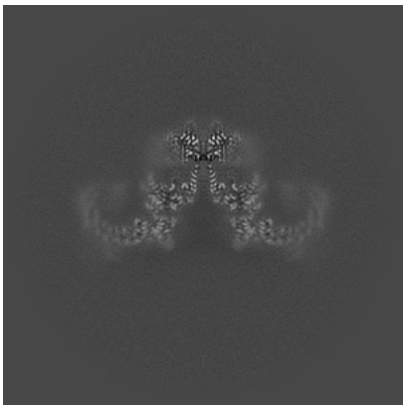


Z

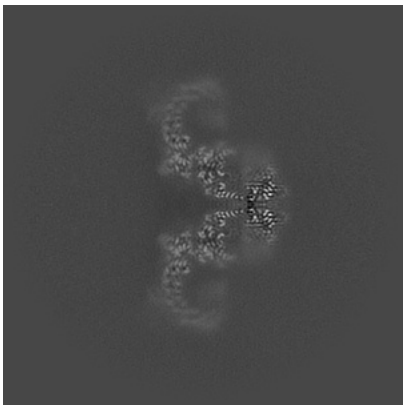
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

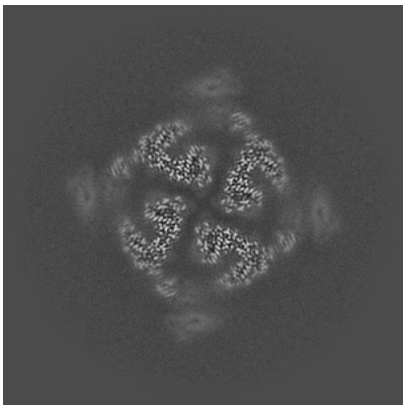
6.2.1 Primary map



X Index: 230

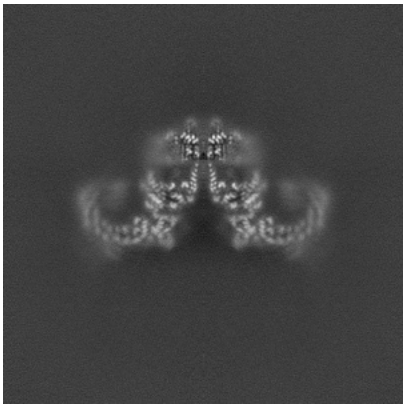


Y Index: 230

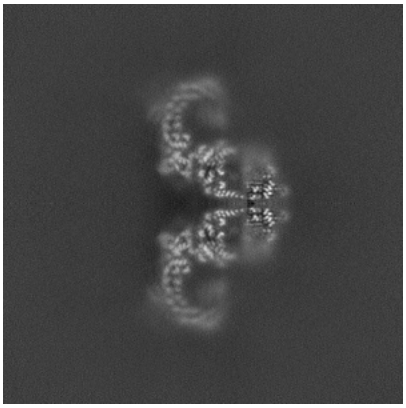


Z Index: 230

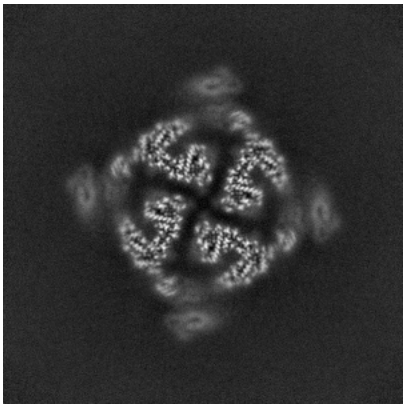
6.2.2 Raw map



X Index: 230



Y Index: 230

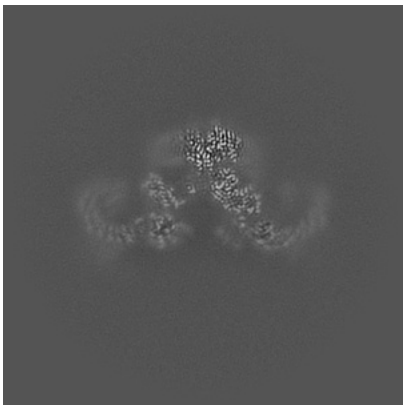


Z Index: 230

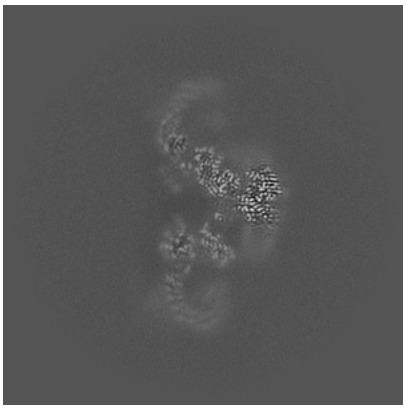
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

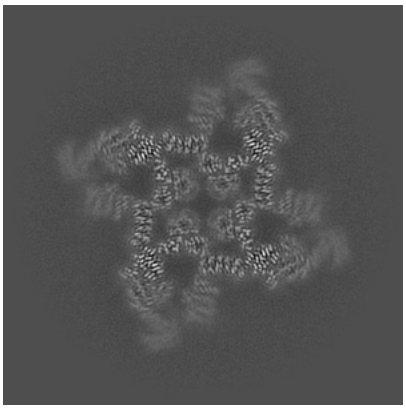
6.3.1 Primary map



X Index: 224

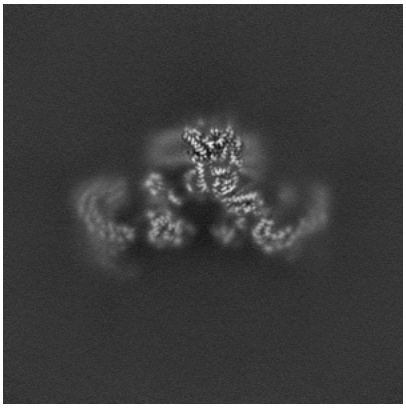


Y Index: 236

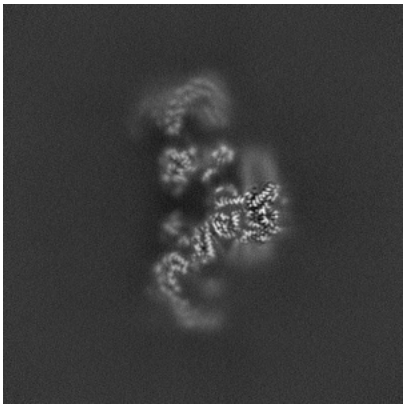


Z Index: 201

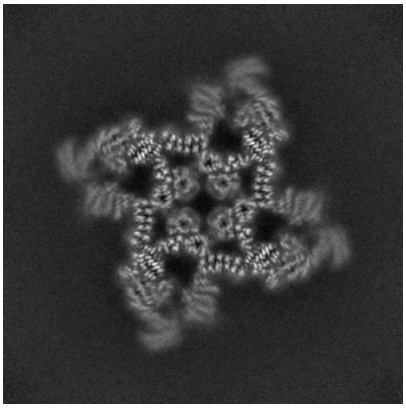
6.3.2 Raw map



X Index: 221



Y Index: 221

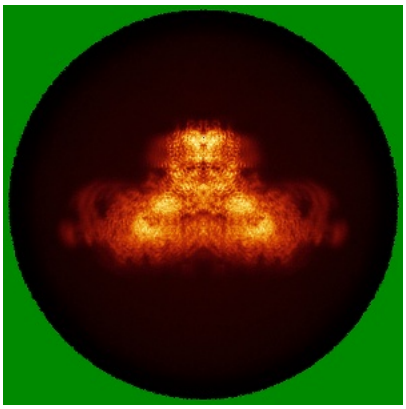


Z Index: 201

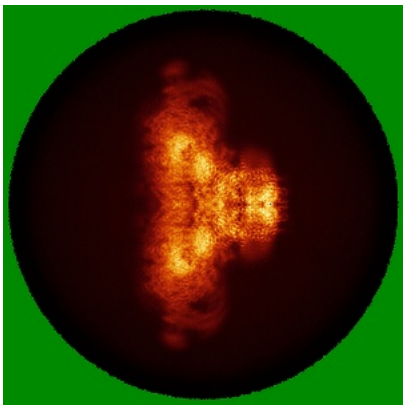
The images above show the largest variance slices of the map in three orthogonal directions.

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

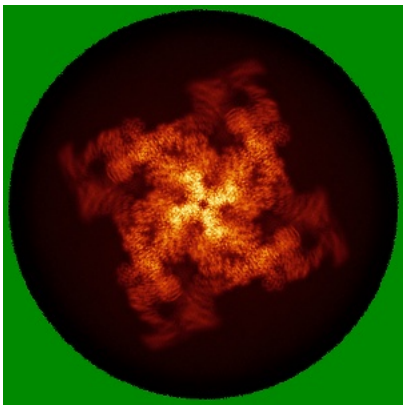
6.4.1 Primary map



X

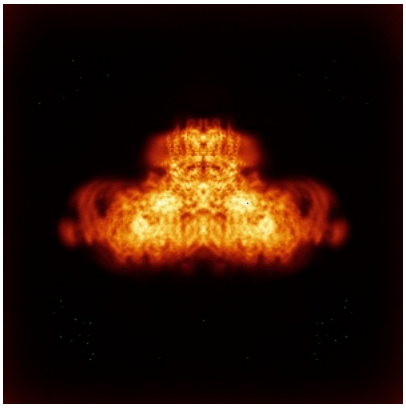


Y

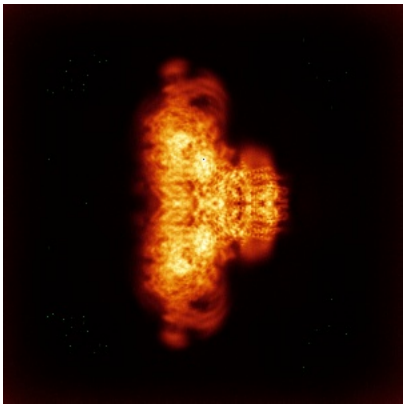


Z

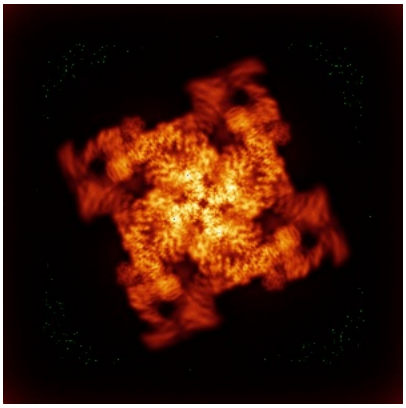
6.4.2 Raw map



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 0.24. 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.

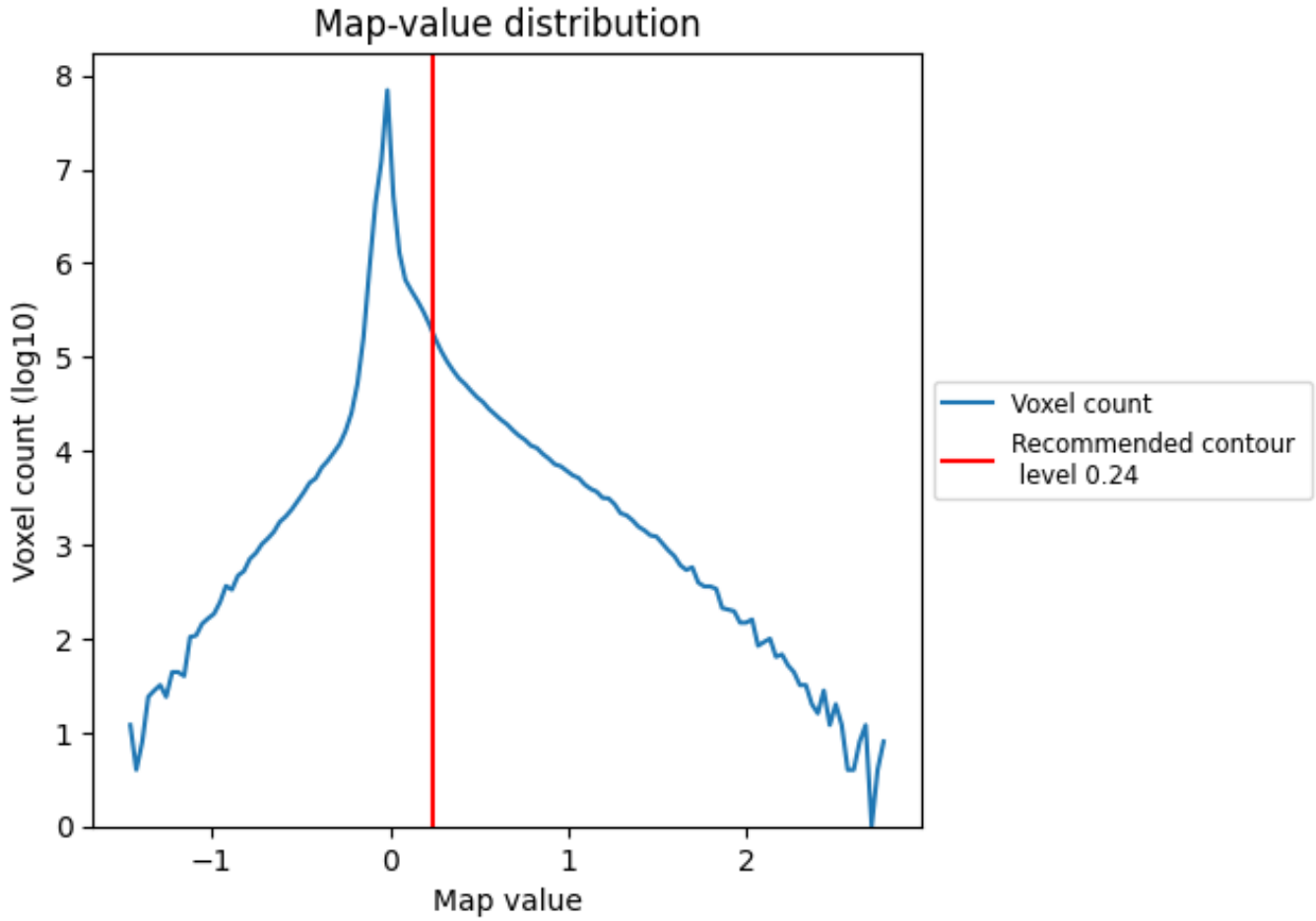
6.6 Mask visualisation (i)

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

7 Map analysis

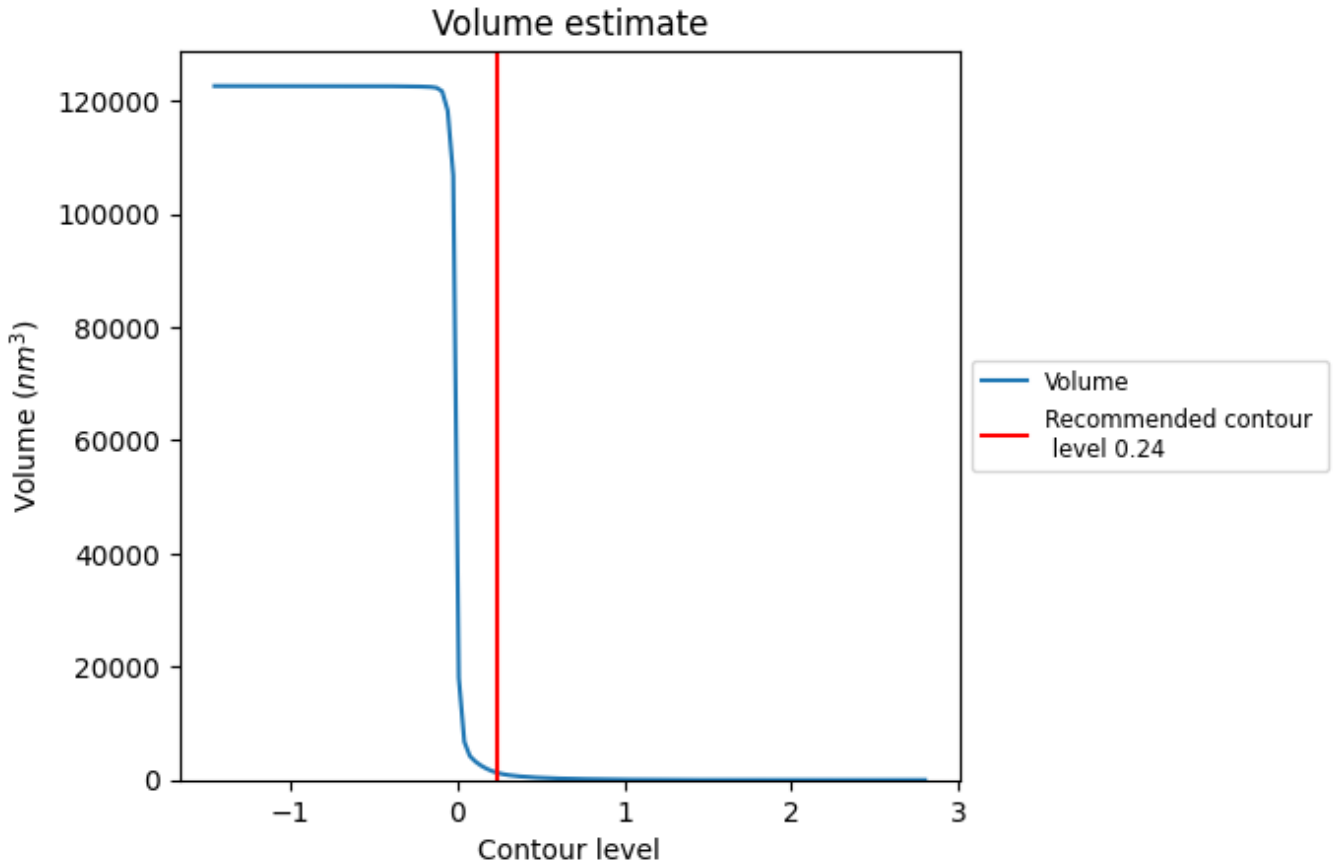
This section contains the results of statistical analysis of the map.

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.

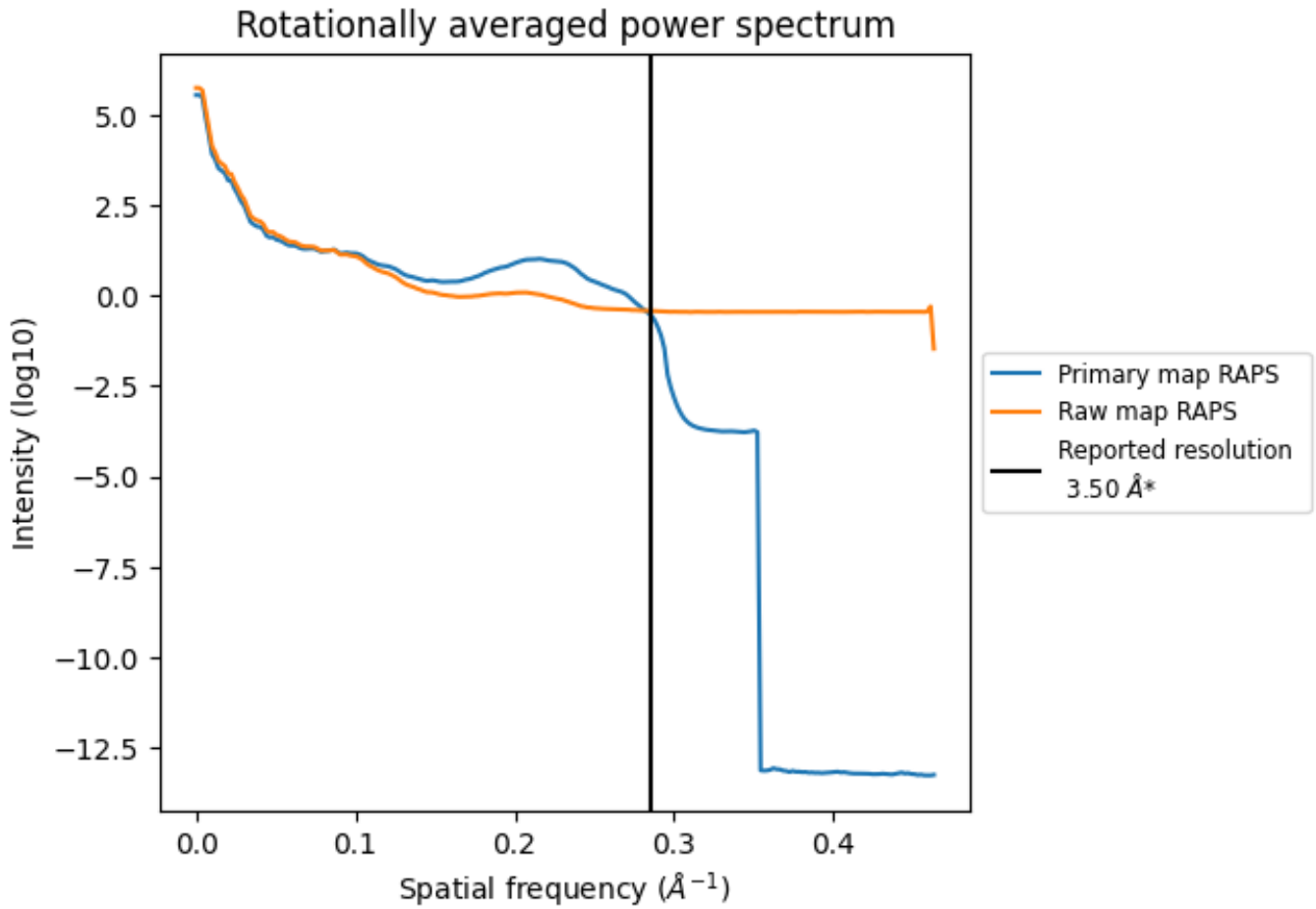
7.2 Volume estimate



The volume at the recommended contour level is 1250 nm^3; this corresponds to an approximate mass of 1129 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)

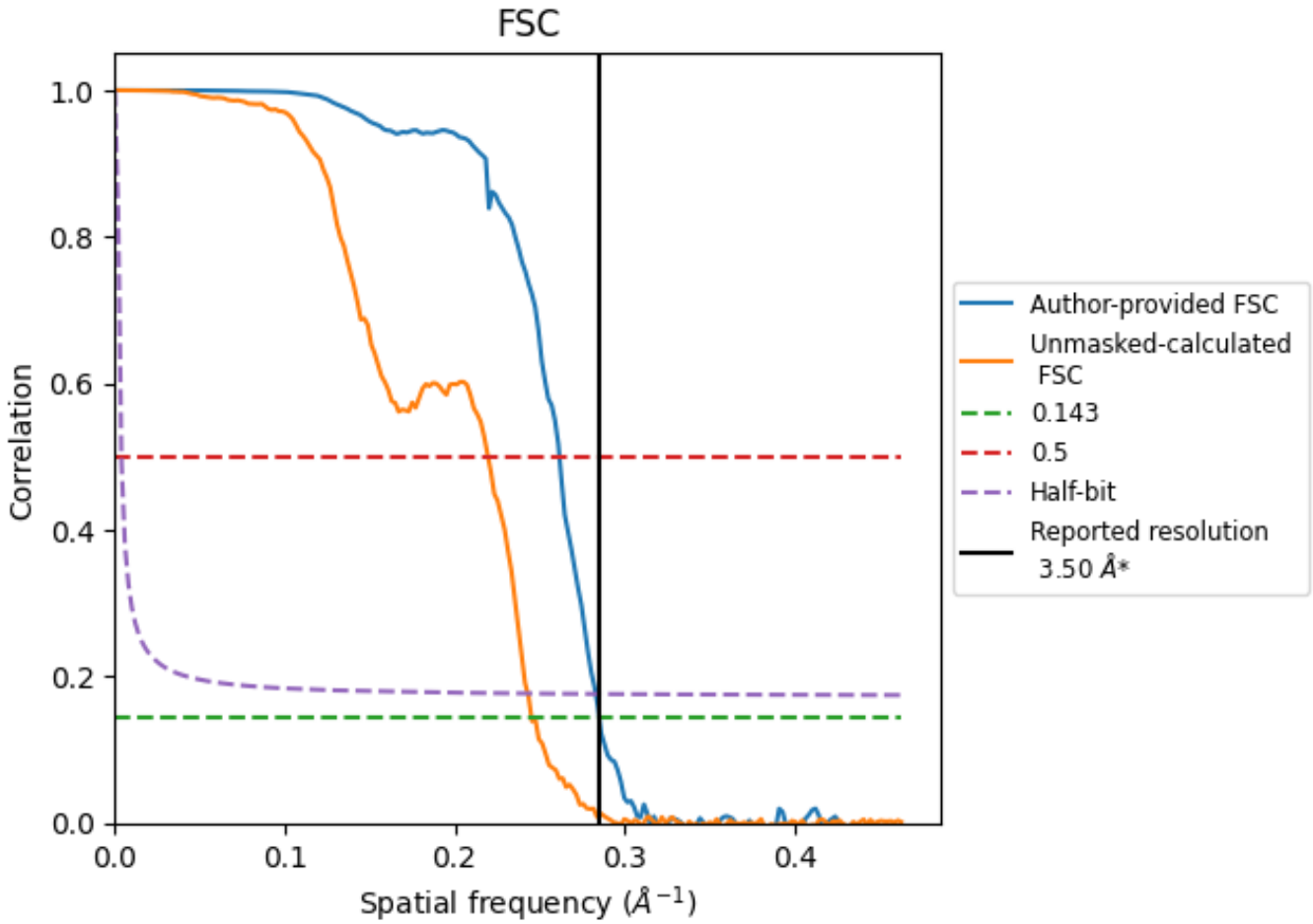


*Reported resolution corresponds to spatial frequency of 0.286 $Å^{-1}$

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 0.286 Å^{-1}

8.2 Resolution estimates (i)

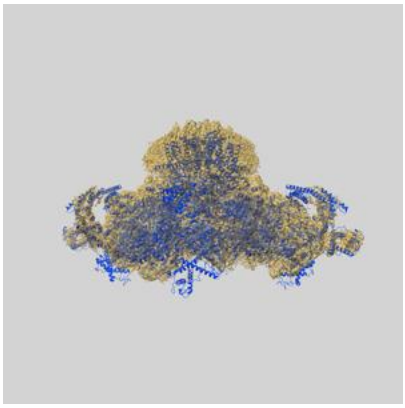
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.50	-	-
Author-provided FSC curve	3.51	3.82	3.53
Unmasked-calculated*	4.08	4.55	4.11

*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 4.08 differs from the reported value 3.5 by more than 10 %

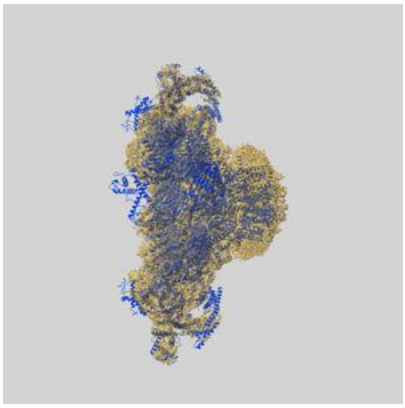
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-27711 and PDB model 8DTY. Per-residue inclusion information can be found in section 3 on page 5.

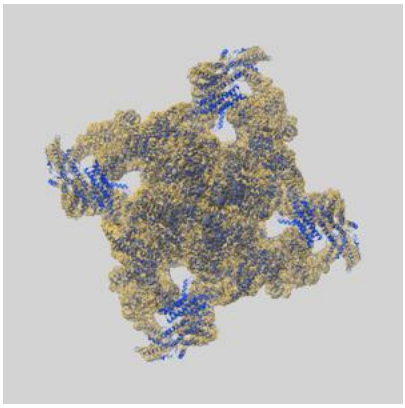
9.1 Map-model overlay



X



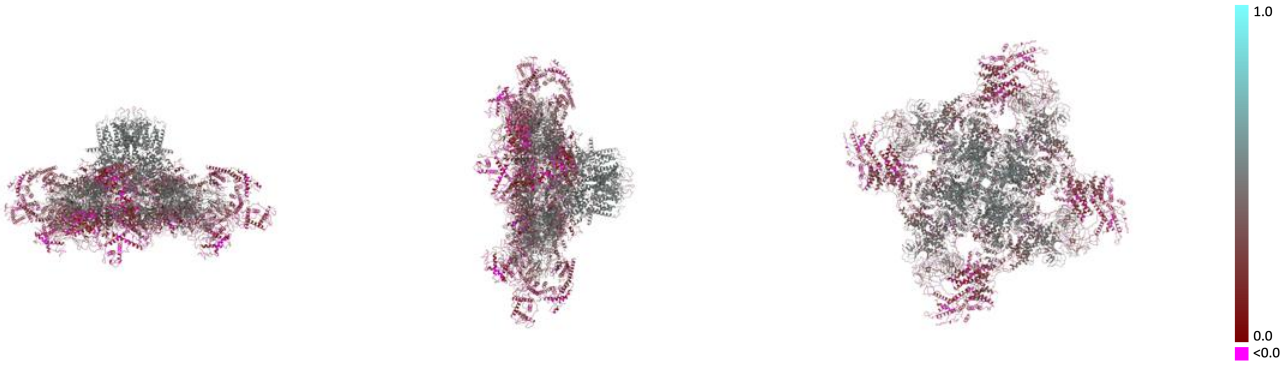
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.24 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.

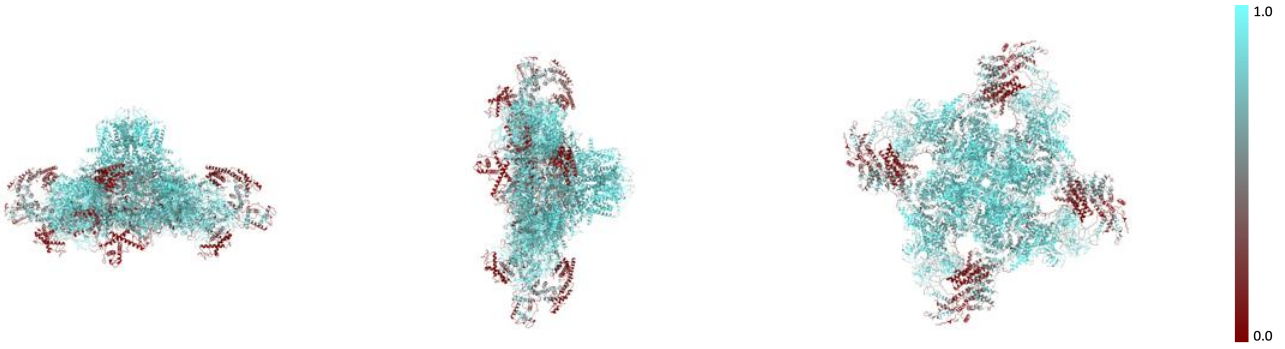
9.2 Q-score mapped to coordinate model (i)



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.

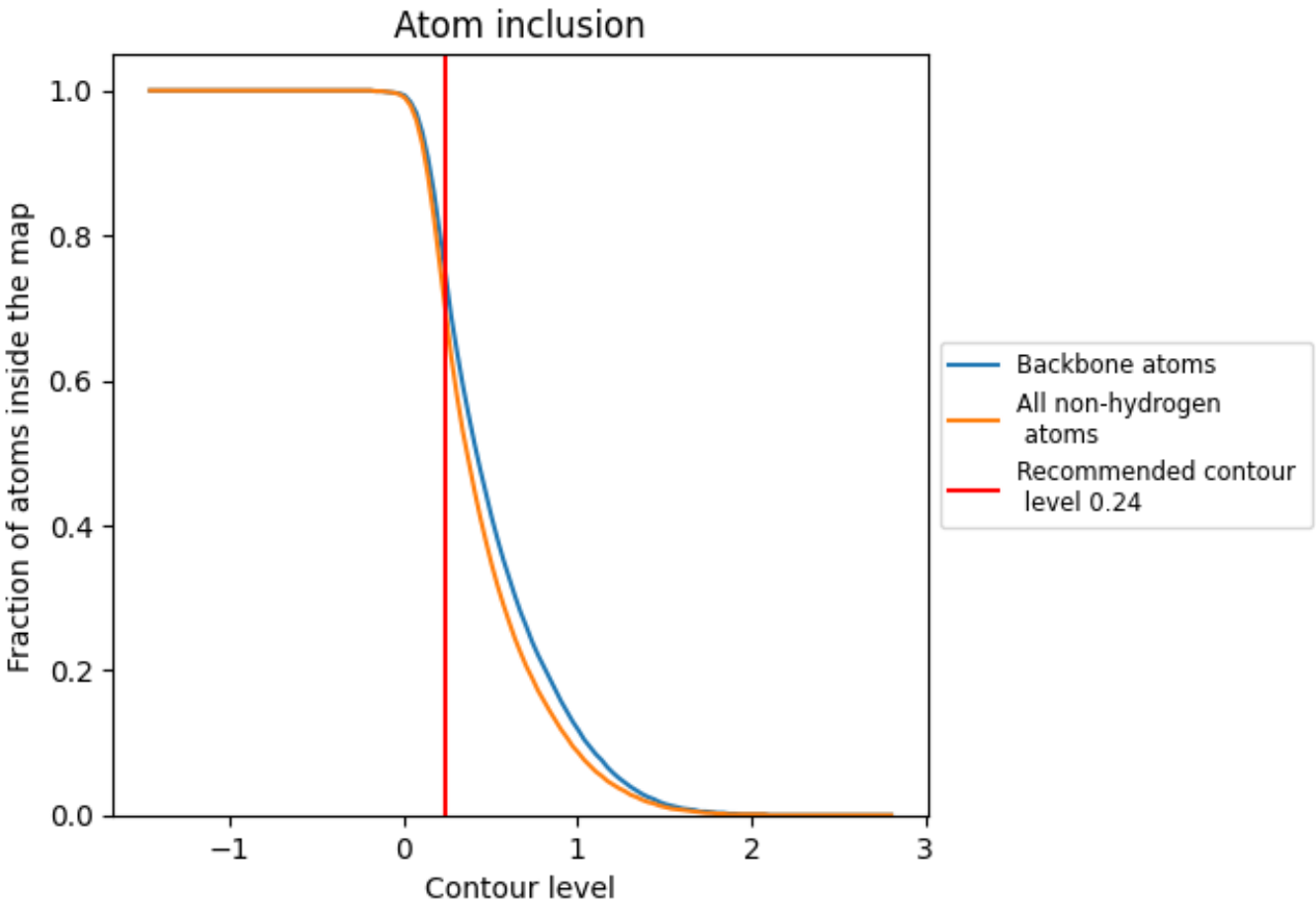
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.24).

9.4 Atom inclusion (i)



At the recommended contour level, 75% of all backbone atoms, 70% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.24) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6970	0.3090
A	0.6930	0.3070
B	0.6930	0.3070
C	0.6930	0.3070
D	0.6930	0.3070
E	0.8570	0.3930
F	0.8590	0.3950
G	0.8570	0.3930
H	0.8570	0.3960