Full wwPDB EM Validation Report

Oct 12, 2024 – 03:03 PM EDT

PDB ID	:	5TAX
EMDB ID	:	EMD-8388
Title	:	Structure of rabbit RyR1 (ryanodine dataset, class 1)
Authors	:	Clarke, O.B.; des Georges, A.; Zalk, R.; Marks, A.R.; Hendrickson, W.A.; Frank, J.
Deposited on	:	2016-09-10
Resolution	:	6.60 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

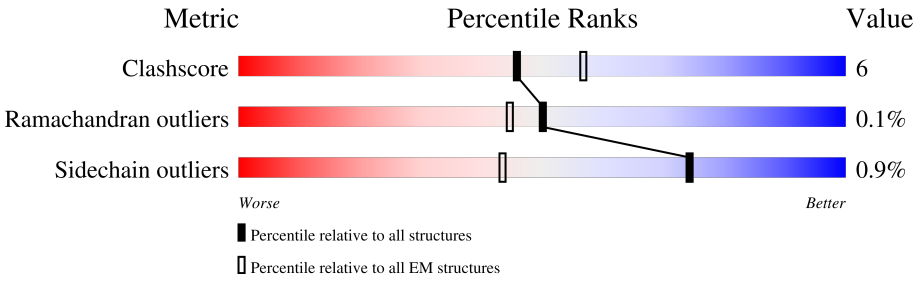
EMDB validation analysis	:	0.0.1.dev113
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

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 6.60 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	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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	108	80% 19%
1	F	108	78% 21%
1	H	108	79% 20%
1	J	108	76% 23%
2	B	4416	14% 83% 12% 5%
2	E	4416	14% 83% 12% 5%
2	G	4416	15% 83% 12% 5%
2	I	4416	14% 83% 12% 5%

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 121276 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 Peptidyl-prolyl cis-trans isomerase FKBP1B.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	F	107	Total	C	N	O	S	0	0
			818	516	144	154	4		
1	A	107	Total	C	N	O	S	0	0
			818	516	144	154	4		
1	H	107	Total	C	N	O	S	0	0
			818	516	144	154	4		
1	J	107	Total	C	N	O	S	0	0
			818	516	144	154	4		

- Molecule 2 is a protein called Ryanodine receptor 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	4194	Total	C	N	O	S	0	0
			29499	18686	5228	5428	157		
2	I	4194	Total	C	N	O	S	0	0
			29499	18686	5228	5428	157		
2	G	4194	Total	C	N	O	S	0	0
			29499	18686	5228	5428	157		
2	E	4194	Total	C	N	O	S	0	0
			29499	18686	5228	5428	157		

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

Mol	Chain	Residues	Atoms		AltConf
3	B	1	Total	Zn	0
			1	1	
3	I	1	Total	Zn	0
			1	1	
3	G	1	Total	Zn	0
			1	1	
3	E	1	Total	Zn	0
			1	1	

- Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca).

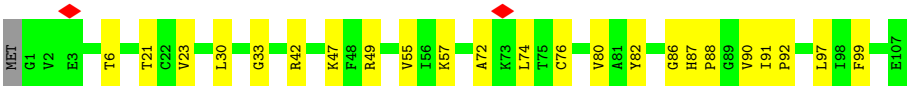
Mol	Chain	Residues	Atoms	AltConf
4	B	1	Total Ca 1 1	0
4	I	1	Total Ca 1 1	0
4	G	1	Total Ca 1 1	0
4	E	1	Total Ca 1 1	0

3 Residue-property plots (i)

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

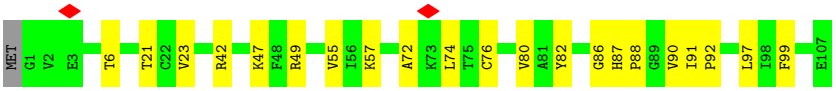
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B

Chain F:



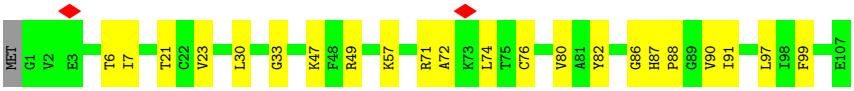
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B

Chain A:



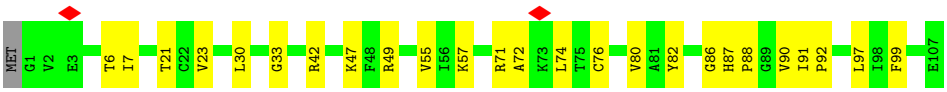
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B

Chain H:



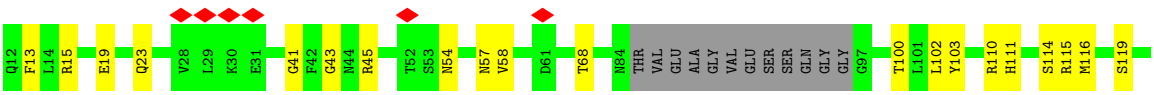
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B

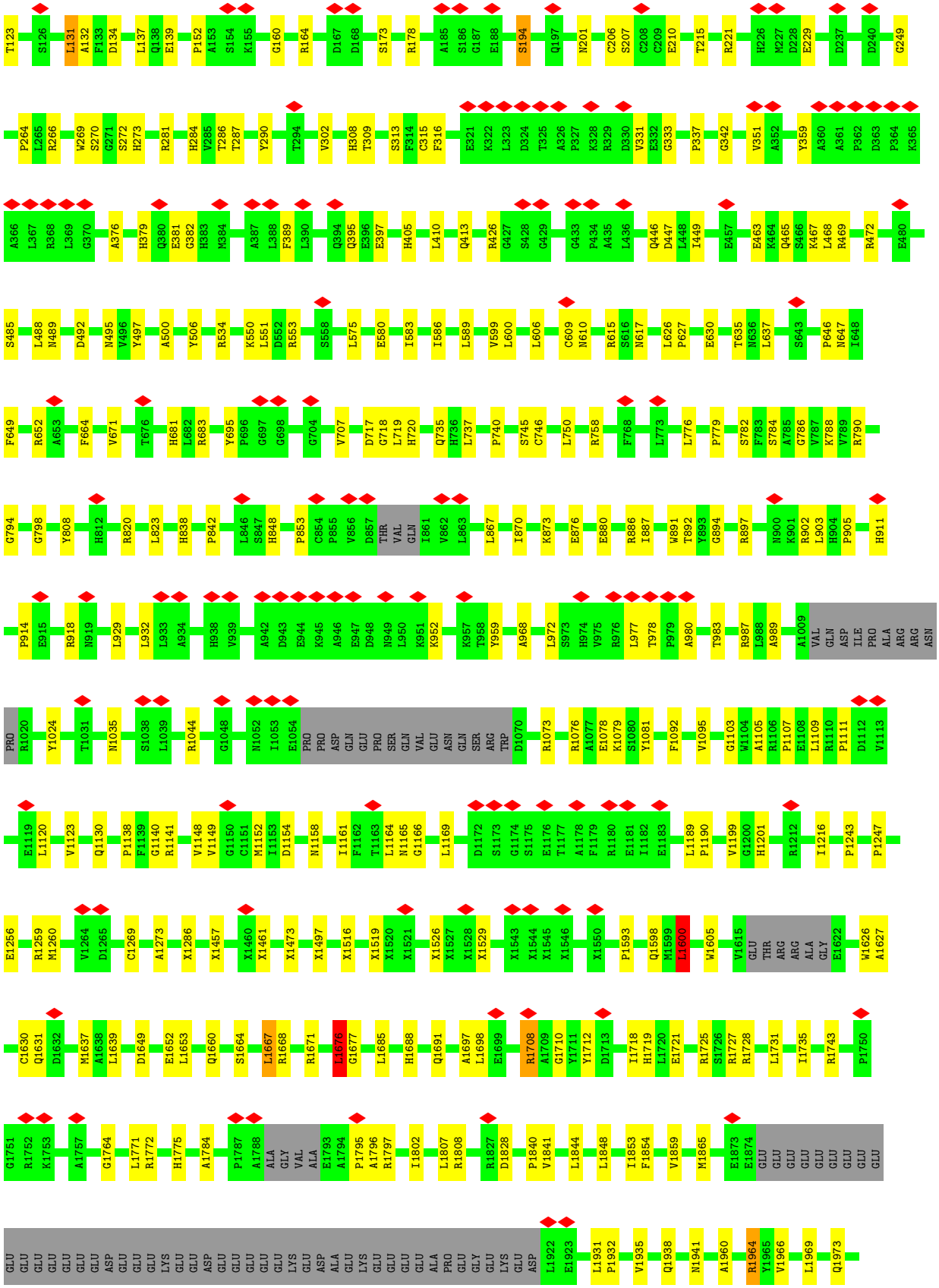
Chain J:



• Molecule 2: Ryanodine receptor 1

Chain B:

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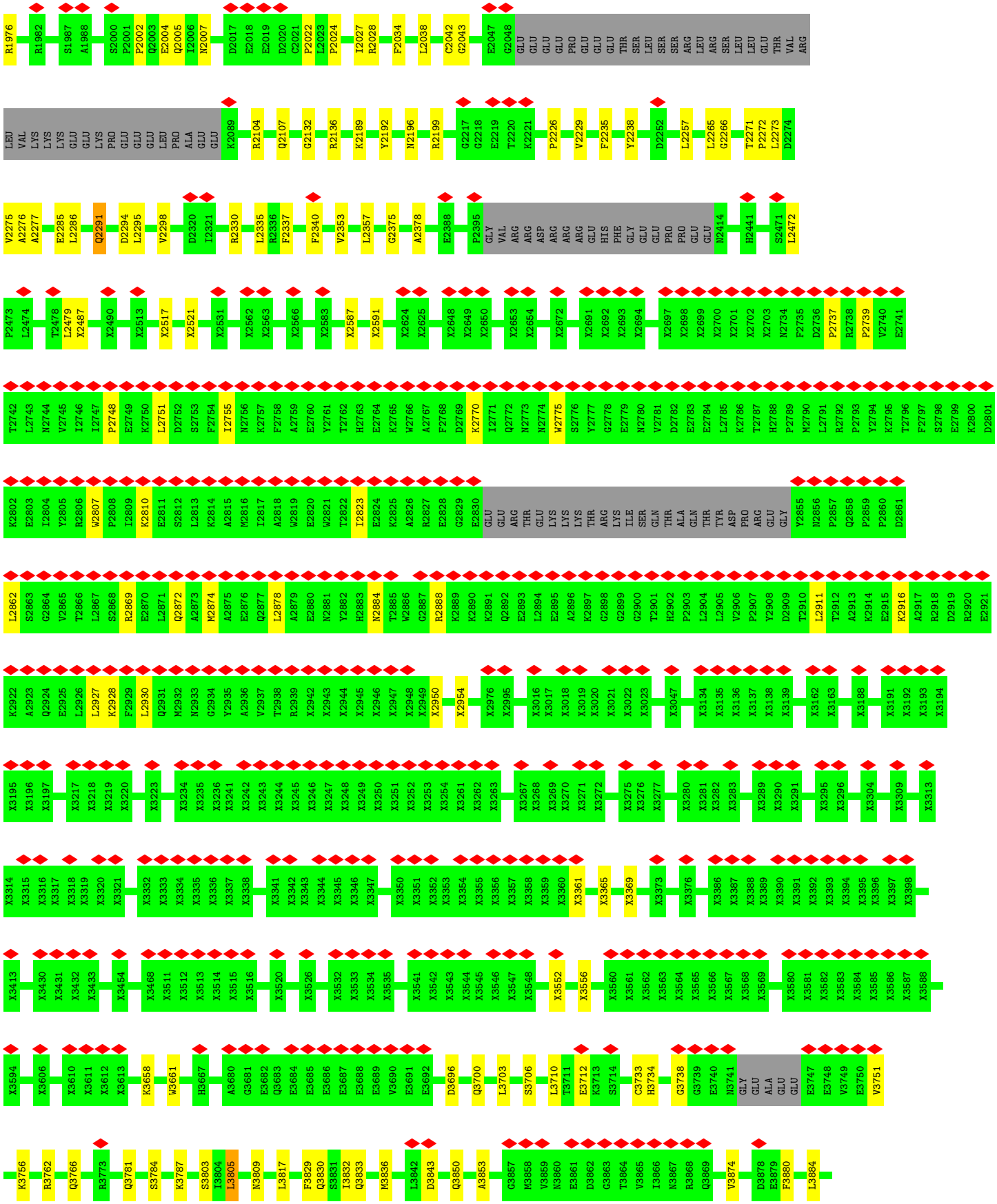
P264 L265 R266 W269 S270 G271 S272 H273 R281 H284 Y285 T286 T287 Y290 T294 V302 H308 T309 S313 F314 C315 F316 E321 K322 L323 D324 T325 A326 P327 K328 R329 D330 V331 E332 G333 P337 G342 V351 A352 Y359 A360 A361 P362 D363 P364 K365
A366 L367 R368 L369 G370 A376 H379 Q380 E381 G382 H383 M384 A387 L388 F389 L390 Q394 Q395 E396 E397 H405 L410 Q413 R426 G427 S428 G429 G433 P434 A435 L436 Q446 D447 L448 I449 E457 E463 K464 Q465 S466 K467 L468 R469 R472 E480
S485 L488 N489 D492 N495 V496 Y497 A500 Y506 R534 K550 L551 D552 R553 S558 L575 E580 I583 I586 L589 V599 L600 L606 C609 N610 R615 S616 N617 L626 P627 E630 T635 N636 L637 S643 P646 N647 I648
F649 R652 A653 F664 V671 T676 H681 L682 R683 Y695 P696 G697 G698 G704 V707 D717 G718 L719 H720 Q735 H736 L737 P740 S745 C746 L750 R758 F768 L773 L776 P779 S782 F783 S784 A785 G786 V787 K788 V789 R790
G794 G798 Y808 H812 R820 L823 H838 P842 L846 S847 H848 P853 C854 P855 V856 D857 THR VAL GLN I861 V862 L863 L867 I870 K873 E876 E880 R886 I887 W891 T892 Y893 G894 R897 N900 K901 R902 L903 H904 P905 H911
P914 E915 R918 N919 L929 L932 L933 A934 H938 V939 A942 D943 E944 K945 A946 E947 D948 N949 L950 K951 K952 K957 T958 Y959 A968 L972 S973 H974 V975 R976 L977 T978 P979 A980 T983 R987 L988 A989 A1009 VAL GLN ASP ILE PRO ALA ARG ARG ASN
PRO R1020 Y1024 T1031 N1035 S1038 L1039 R1044 G1048 N1052 I1053 E1054 PRO PRO ASP GLN GLU PRO SER GLN VAL GLU ASN GLN SER ARG TRP D1070 R1073 R1076 A1077 E1078 K1079 S1080 Y1081 F1092 V1095 G1103 W1104 A1105 R1106 P1107 E1108 L1109 R1110 P1111 D1112 V1113
E1119 L1120 V1123 Q1130 P1138 F1139 G1140 R1141 V1148 V1149 G1150 C1151 M1152 I1153 D1154 N1158 I1161 F1162 T1163 L1164 N1165 G1166 L1169 D1172 S1173 G1174 S1175 E1176 T1177 A1178 F1179 R1180 E1181 I1182 E1183 L1189 P1190 V1199 G1200 H1201 R1212 I1216 P1243 P1247
E1256 R1259 M1260 V1264 D1265 C1269 A1273 X1286 X1457 X1460 X1461 X1473 X1497 X1516 X1519 X1520 X1521 X1526 X1527 X1528 X1529 X1543 X1544 X1545 X1546 X1550 P1593 Q1598 M1599 L1600 W1605 V1615 GLU THR ARG ARG ALA GLY E1622 W1626 A1627
C1630 Q1631 D1632 M1637 A1638 L1639 D1649 E1652 L1653 Q1660 S1664 L1667 R1668 R1671 L1676 G1677 L1685 H1688 Q1691 A1697 L1698 E1699 R1708 A1709 G1710 Y1711 Y1712 D1713 I1718 H1719 L1720 E1721 R1725 S1726 R1727 R1728 L1731 I1735 R1743 P1750
G1751 R1752 K1753 A1757 G1764 L1771 R1772 H1775 A1784 P1787 A1788 ALA GLY VAL ALA E1793 A1794 P1795 A1796 R1797 I1802 L1807 R1808 R1827 D1828 P1840 V1841 L1844 L1848 I1853 F1854 V1859 M1865 E1873 E1874 GLU GLU GLU GLU GLU GLU GLU GLU
GLU GLU GLU GLU GLU ASP GLU GLU GLU LYS GLU GLU ASP GLU GLU GLU GLU LYS GLU ASP ALA GLU LYS GLU GLU GLU GLU ALA PRO GLU GLY GLU LYS GLU ASP L1922 E1923 L1931 P1932 V1935 Q1938 N1941 A1960 R1964 Y1965 V1966 L1969 Q1973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LEU VAL LYS LYS LYS GLU GLU LYS PRO GLU GLU GLU LEU PRO ALA GLU GLU K2089 R2104 Q2107 G2132 R2136 K2189 Y2192 N2196 R2199 G2217 G2218 E2219 T2220 K2221 P2226 V2229 F2235 Y2238 D2252 L2257 L2265 G2266 T2271 P2272 L2273 D2274
V2275 A2276 A2277 E2285 L2286 Q2291 D2294 L2295 V2298 D2320 I2321 R2330 L2335 R2336 F2337 F2340 V2353 L2357 G2375 A2378 E2388 P2395 GLY VAL ARG ARG ASP ARG ARG ARG GLU HIS PHE GLY GLU GLU PRO PRO GLU GLU N2414 H2441 S2471 L2472
P2473 L2474 T2478 L2479 X2487 X2490 X2513 X2517 X2521 X2531 X2562 X2563 X2566 X2583 X2587 X2591 X2624 X2625 X2648 X2649 X2650 X2653 X2654 X2672 X2691 X2692 X2693 X2694 X2697 X2698 X2699 X2700 X2701 X2702 X2703 N2734 F2735 D2736 P2737 R2738 P2739 V2740 E2741
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K2802 E2803 I2804 Y2805 R2806 W2807 P2808 I2809 K2810 E2811 S2812 L2813 K2814 A2815 M2816 I2817 A2818 W2819 E2820 W2821 T2822 I2823 E2824 K2825 A2826 R2827 E2828 G2829 E2830 GLU GLU ARG THR GLU LYS LYS LYS THR ARG LYS ILE SER GLN THR ALA GLN THR TYR ASP PRO ARG GLU GLY Y2855 N2856 P2857 Q2858 P2859 P2860 D2861
L2862 S2863 G2864 V2865 T2866 L2867 S2868 R2869 E2870 L2871 Q2872 A2873 M2874 A2875 E2876 Q2877 L2878 A2879 E2880 N2881 Y2882 H2883 N2884 T2885 W2886 G2887 R2888 K2889 K2890 K2891 Q2892 E2893 L2894 E2895 A2896 K2897 G2898 G2899 G2900 T2901 H2902 P2903 L2904 L2905 V2906 P2907 Y2908 D2909 T2910 L2911 T2912 A2913 K2914 E2915 K2916 A2917 R2918 D2919 R2920 E2921
K2922 A2923 Q2924 E2925 L2926 L2927 K2928 F2929 L2930 Q2931 M2932 N2933 G2934 Y2935 A2936 V2937 T2938 R2939 R2942 X2943 X2944 X2945 X2946 X2947 X2948 X2949 X2950 X2954 X2976 X2995 X3016 X3017 X3018 X3019 X3020 X3021 X3022 X3023 X3047 X3134 X3135 X3136 X3137 X3138 X3139 X3162 X3163 X3188 X3191 X3192 X3193 X3194
X3195 X3196 X3197 X3217 X3218 X3219 X3220 X3223 X3234 X3235 X3236 X3241 X3242 X3243 X3244 X3245 X3246 X3247 X3248 X3249 X3250 X3251 X3252 X3253 X3254 X3261 X3262 X3263 X3267 X3268 X3269 X3270 X3271 X3272 X3275 X3276 X3277 X3280 X3281 X3282 X3283 X3289 X3290 X3291 X3295 X3296 X3304 X3309 X3313
X3314 X3315 X3316 X3317 X3318 X3319 X3320 X3321 X3332 X3333 X3334 X3335 X3336 X3337 X3338 X3341 X3342 X3343 X3344 X3345 X3346 X3347 X3350 X3351 X3352 X3353 X3354 X3355 X3356 X3357 X3358 X3359 X3360 X3361 X3365 X3369 X3373 X3376 X3386 X3387 X3388 X3389 X3390 X3391 X3392 X3393 X3394 X3395 X3396 X3397 X3398
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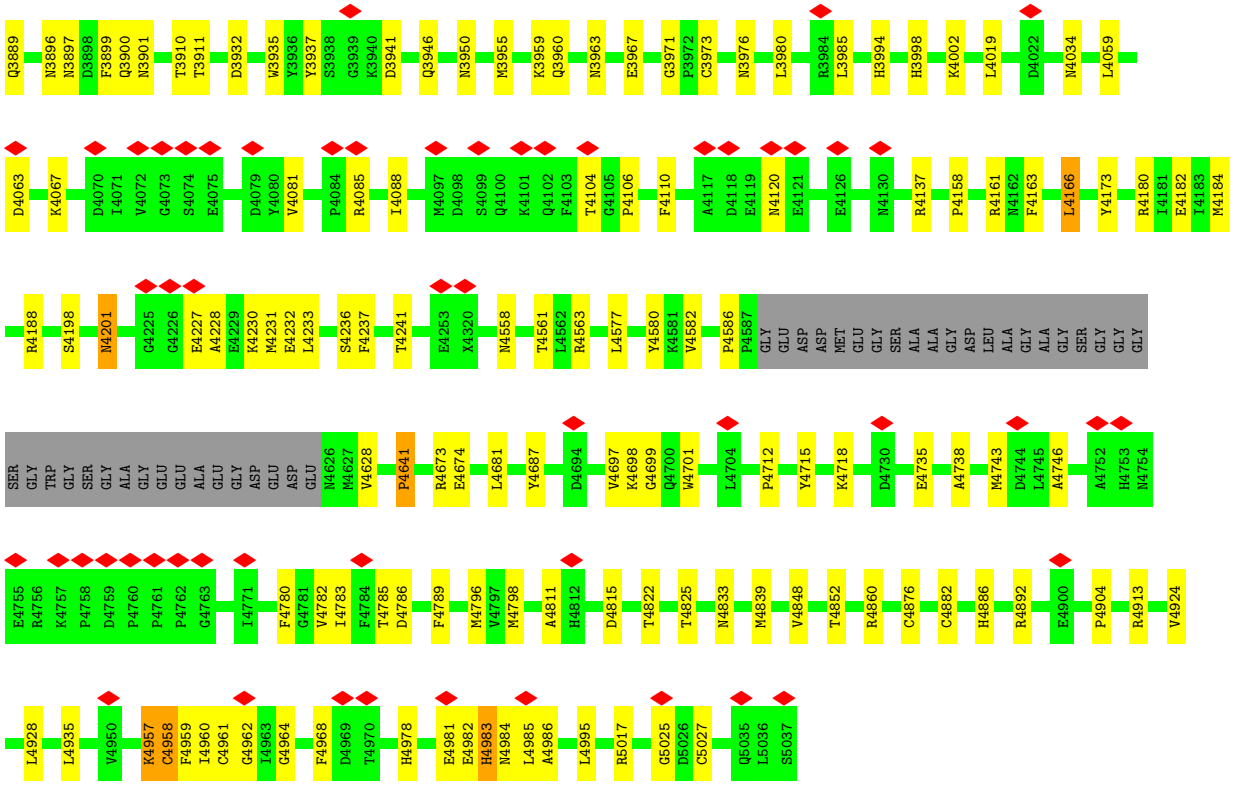
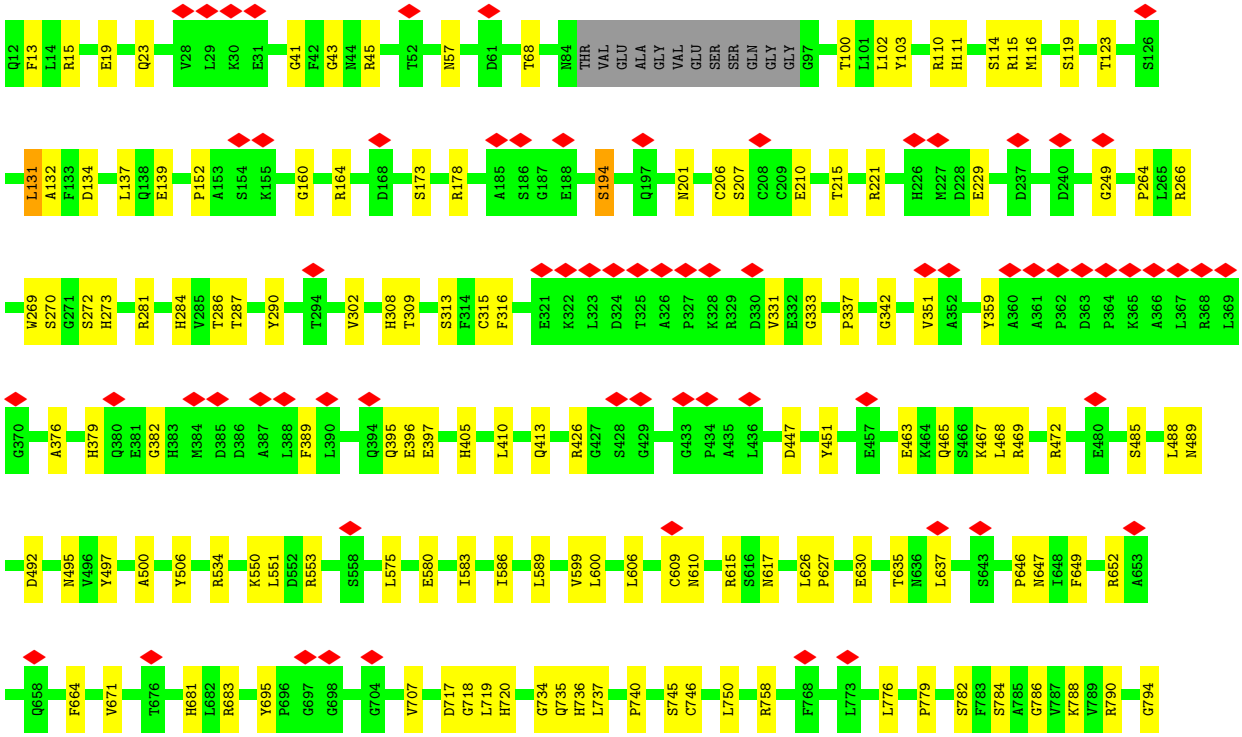
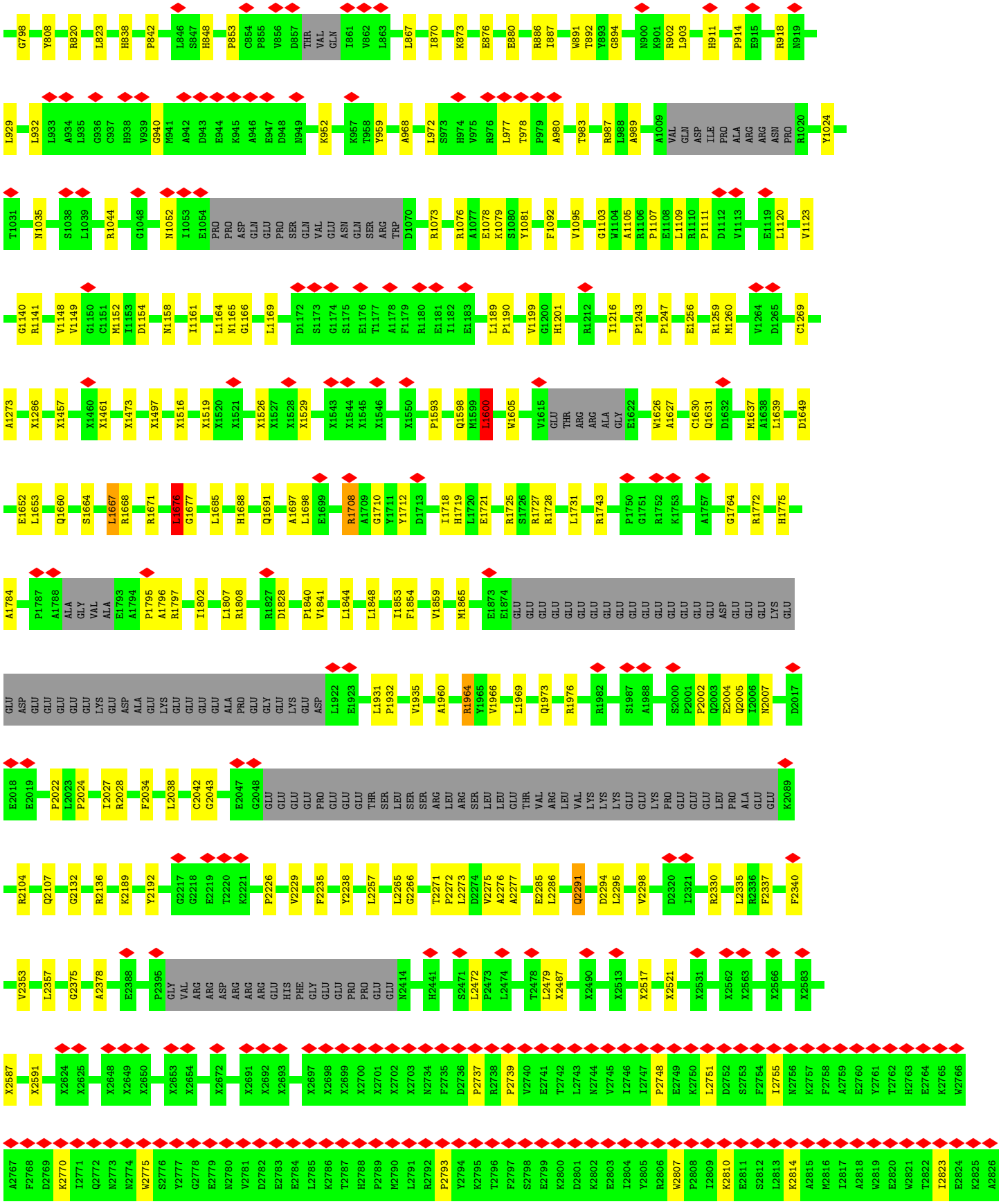
K3756 R3762 Q3766 R3773 Q3781 S3784 K3787 S3803 I3804 L3805 N3809 L3817 F3829 Q3830 S3831 I3832 Q3833 M3836 L3842 D3843 Q3850 A3853 G3857 M3858 V3859 N3860 E3861 D3862 G3863 T3864 V3865 I3866 N3867 R3868 Q3869 V3874 D3878 E3879 F3880 L3884

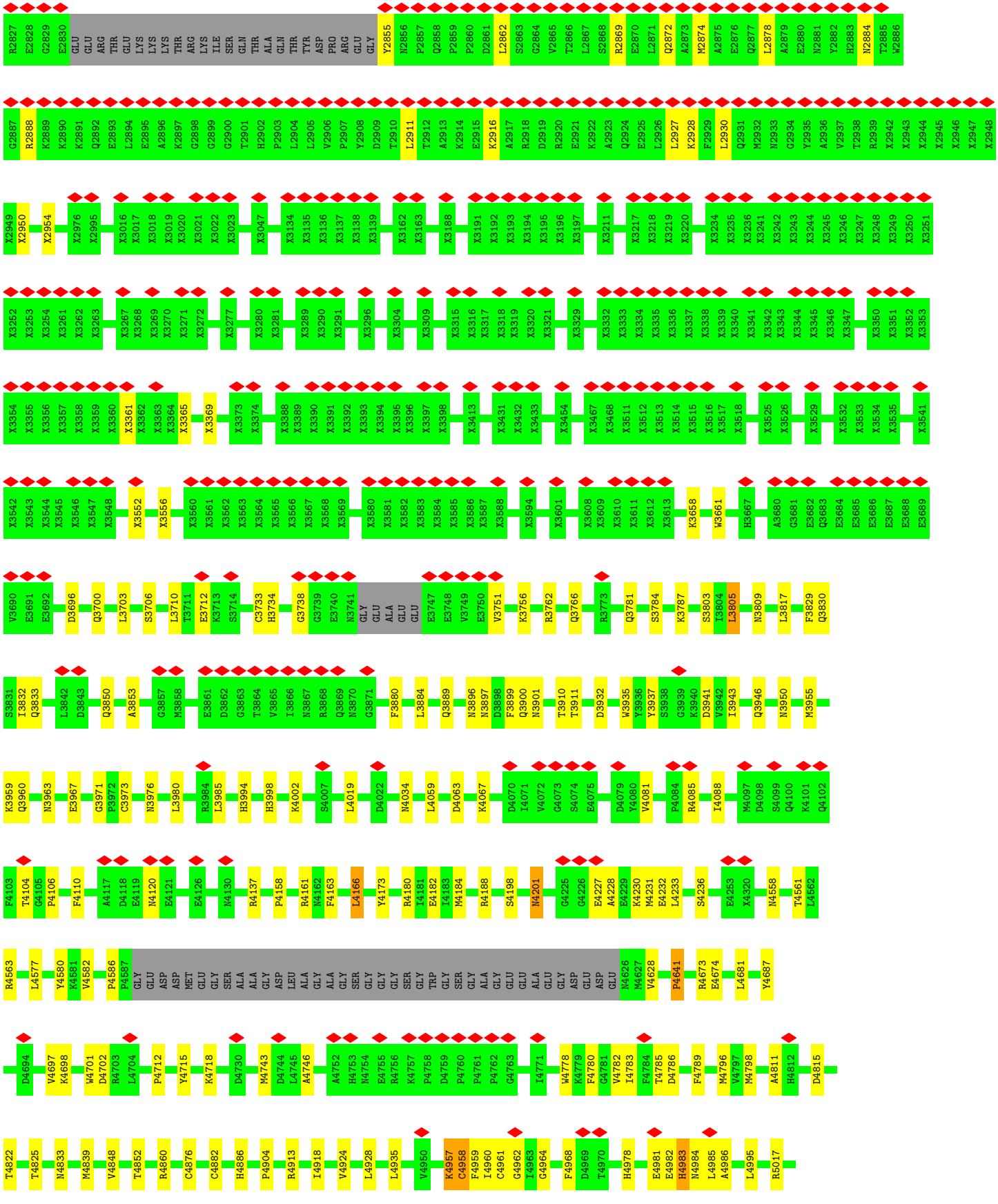


• Molecule 2: Ryanodine receptor 1

Chain I:



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V3690 E3691 E3692 D3696 Q3700 L3703 S3706 L3710 T3711 E3712 K3713 S3714 C3733 H3734 G3738 G3739 E3740 N3741 GLY GLU ALA GLU GLU E3747 E3748 V3749 E3750 V3751 K3756 R3762 Q3766 R3773 Q3781 S3784 K3787 S3803 I3804 L3805 N3809 L3817 F3829 Q3830
S3831 I3832 Q3833 L3842 D3843 Q3850 A3853 G3857 M3858 E3861 D3862 G3863 T3864 V3865 I3866 N3867 R3868 Q3869 N3870 G3871 F3880 L3884 Q3889 N3896 N3897 D3898 F3899 Q3900 N3901 T3910 T3911 D3932 W3935 Y3936 Y3937 S3938 G3939 K3940 D3941 V3942 I3943 Q3946 N3950 M3955
K3959 Q3960 N3963 E3967 G3971 P3972 C3973 N3976 L3980 R3984 L3985 H3994 H3998 K4002 S4007 L4019 D4022 N4034 L4059 D4063 K4067 D4070 I4071 V4072 G4073 S4074 E4075 D4079 Y4080 V4081 P4084 R4085 I4088 M4097 D4098 S4099 Q4100 K4101 Q4102
F4103 T4104 G4105 P4106 F4110 A4117 D4118 E4119 N4120 E4121 E4126 N4130 R4137 P4158 R4161 N4162 F4163 L4166 Y4173 R4180 I4181 E4182 I4183 M4184 R4188 S4198 N4201 G4225 G4226 E4227 A4228 E4229 K4230 M4231 E4232 L4233 S4236 E4253 X4320 N4558 T4561 L4562
R4563 L4577 Y4580 K4581 V4582 P4586 P4587 GLY GLU ASP ASP MET GLU GLY SER ALA ALA GLY ASP LEU ALA GLY ALA GLY SER GLY GLY GLY GLY SER GLY TRP GLY SER GLY ALA GLY GLU GLU ALA GLU GLY ASP GLU ASP GLU M4626 M4627 V4628 P4641 R4673 E4674 L4681 Y4687
D4694 V4697 K4698 W4701 D4702 R4703 L4704 P4712 Y4715 K4718 D4730 M4743 D4744 L4745 A4746 A4752 H4753 N4754 E4755 R4756 K4757 P4758 D4759 P4760 P4761 P4762 G4763 I4771 W4778 K4779 F4780 C4781 V4782 I4783 F4784 T4785 D4786 F4789 M4796 V4797 M4798 A4811 H4812 D4815
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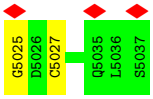
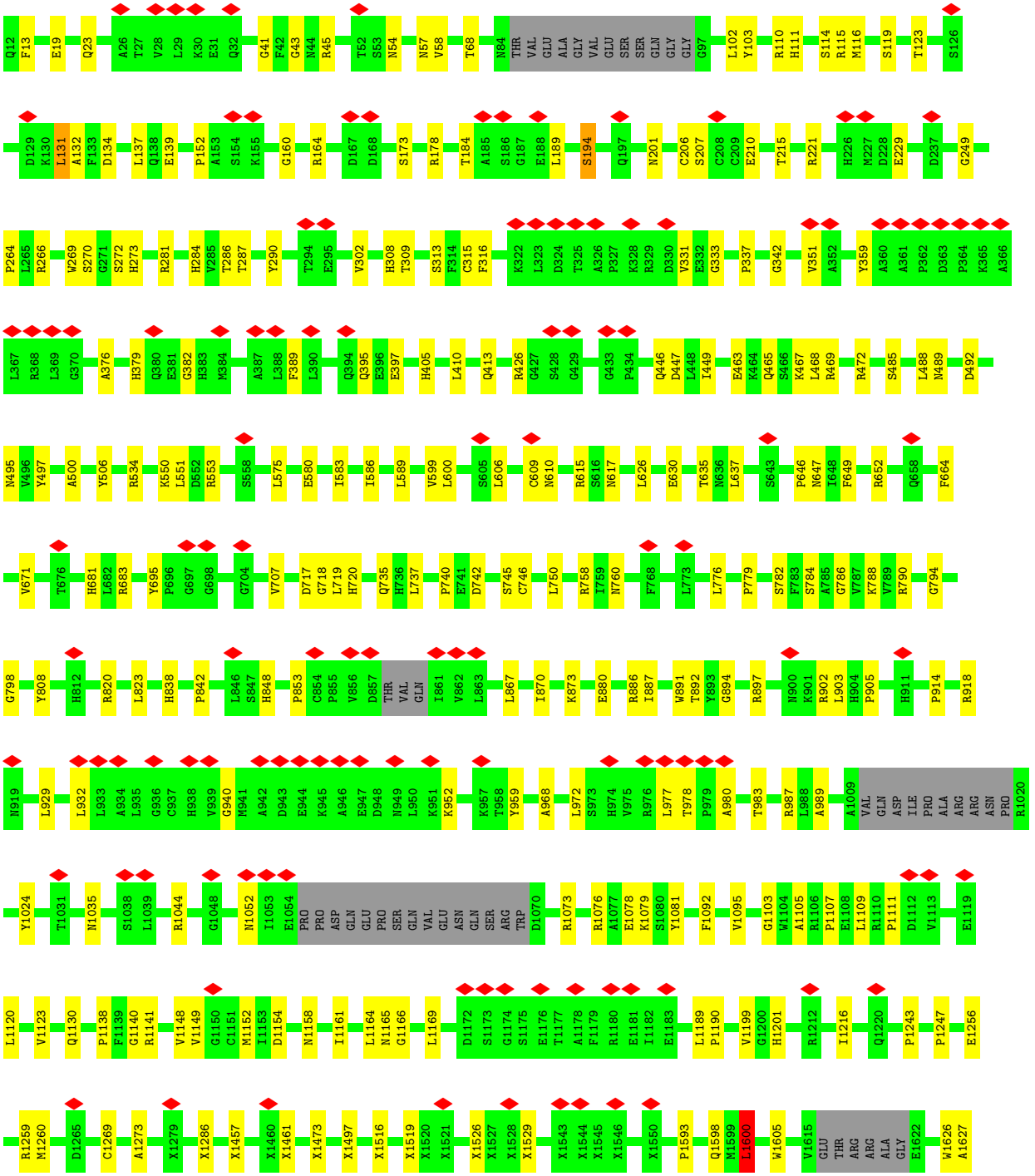
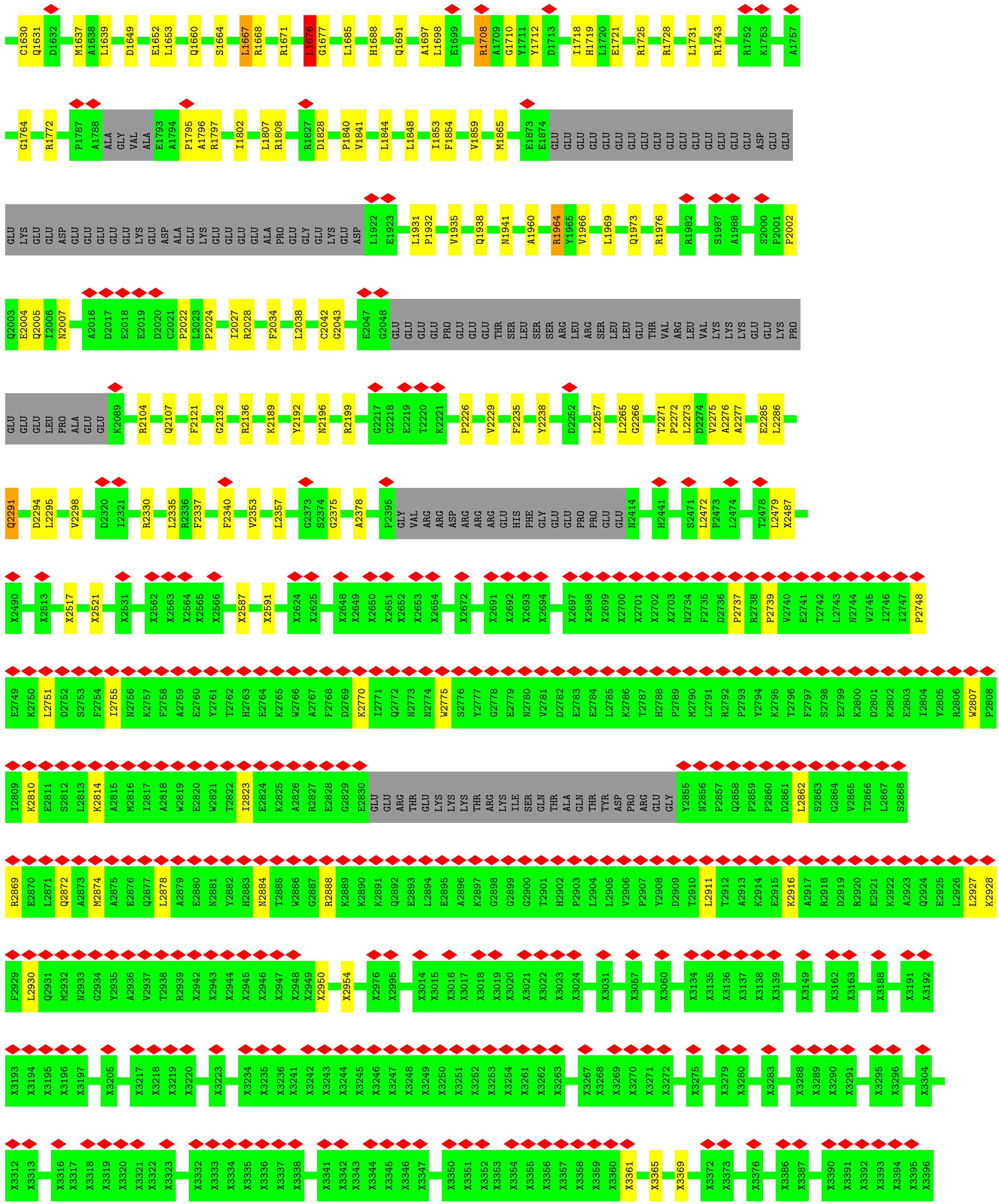


• Molecule 2: Ryanodine receptor 1

Chain G:

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G1764 R1772 P1787 A1788 ALA GLY VAL ALA E1793 A1794 P1795 A1796 R1797 I1802 L1807 R1808 R1827 D1828 P1840 V1841 L1844 L1848 I1853 F1854 V1859 M1865 E1873 E1874 GLU GLU GLU GLU GLU GLU GLU GLU GLU GLU GLU GLU GLU GLU GLU GLU ASP GLU GLU
GLU LYS GLU GLU ASP GLU GLU GLU GLU GLU LYS GLU ASP ALA GLU LYS GLU GLU GLU GLU ALA PRO GLU GLY GLU LYS GLU ASP L1922 E1923 L1931 P1932 V1935 Q1938 N1941 A1960 R1964 Y1965 V1966 L1969 Q1973 R1976 R1982 S1987 A1988 S2000 P2001 P2002
Q2003 E2004 Q2005 I2006 N2007 A2016 D2017 E2018 E2019 D2020 C2021 P2022 L2023 P2024 I2027 R2028 F2034 L2038 C2042 G2043 E2047 G2048 GLU GLU GLU GLU PRO GLU GLU GLU THR SER LEU SER SER ARG LEU ARG SER LEU LEU GLU THR VAL ARG LEU VAL LYS LYS LYS GLU GLU LYS PRO
GLU GLU GLU LEU PRO ALA GLU GLU K2089 R2104 Q2107 F2121 G2132 R2136 K2189 Y2192 N2196 R2199 G2217 G2218 E2219 T2220 K2221 P2226 V2229 F2235 Y2238 D2252 L2257 L2265 G2266 T2271 P2272 L2273 D2274 V2275 A2276 A2277 E2285 L2286
Q2291 D2294 L2295 V2298 D2320 I2321 R2330 L2335 R2336 F2337 F2340 V2353 L2357 G2373 S2374 G2375 A2378 P2395 GLY VAL ARG ARG ASP ARG ARG ARG GLU HIS PHE GLY GLU GLU PRO PRO GLU GLU N2414 H2441 S2471 L2472 P2473 L2474 T2478 L2479 X2487
X2490 X2513 X2517 X2521 X2531 X2562 X2563 X2564 X2565 X2566 X2587 X2591 X2624 X2625 X2648 X2649 X2650 X2651 X2652 X2653 X2654 X2672 X2691 X2692 X2693 X2694 X2697 X2698 X2699 X2700 X2701 X2702 X2703 N2734 F2735 D2736 P2737 R2738 P2739 V2740 E2741 T2742 L2743 N2744 V2745 I2746 I2747 P2748
E2749 K2750 L2751 D2752 S2753 F2754 I2755 N2756 K2757 F2758 A2759 E2760 Y2761 T2762 H2763 E2764 K2765 W2766 A2767 F2768 D2769 K2770 I2771 Q2772 N2773 N2774 W2775 S2776 Y2777 G2778 E2779 N2780 V2781 D2782 E2783 E2784 L2785 K2786 T2787 H2788 P2789 M2790 L2791 R2792 P2793 Y2794 K2795 T2796 F2797 S2798 E2799 K2800 D2801 K2802 E2803 I2804 Y2805 R2806 W2807 P2808
I2809 K2810 E2811 S2812 L2813 K2814 A2815 M2816 I2817 A2818 W2819 E2820 W2821 T2822 I2823 E2824 K2825 A2826 R2827 E2828 G2829 E2830 GLU GLU ARG THR GLU LYS LYS LYS THR ARG LYS ILE SER GLN THR ALA GLN THR TYR ASP PRO ARG GLU GLY Y2855 N2856 P2857 Q2858 P2859 P2860 D2861 L2862 S2863 G2864 V2865 T2866 L2867 S2868
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F2929 L2930 Q2931 M2932 N2933 G2934 Y2935 A2936 V2937 T2938 R2939 X2942 X2943 X2944 X2945 X2946 X2947 X2948 X2949 X2950 X2954 X2976 X2995 X3014 X3015 X3016 X3017 X3018 X3019 X3020 X3021 X3022 X3023 X3024 X3031 X3057 X3060 X3134 X3135 X3136 X3137 X3138 X3139 X3149 X3162 X3163 X3188 X3191 X3192
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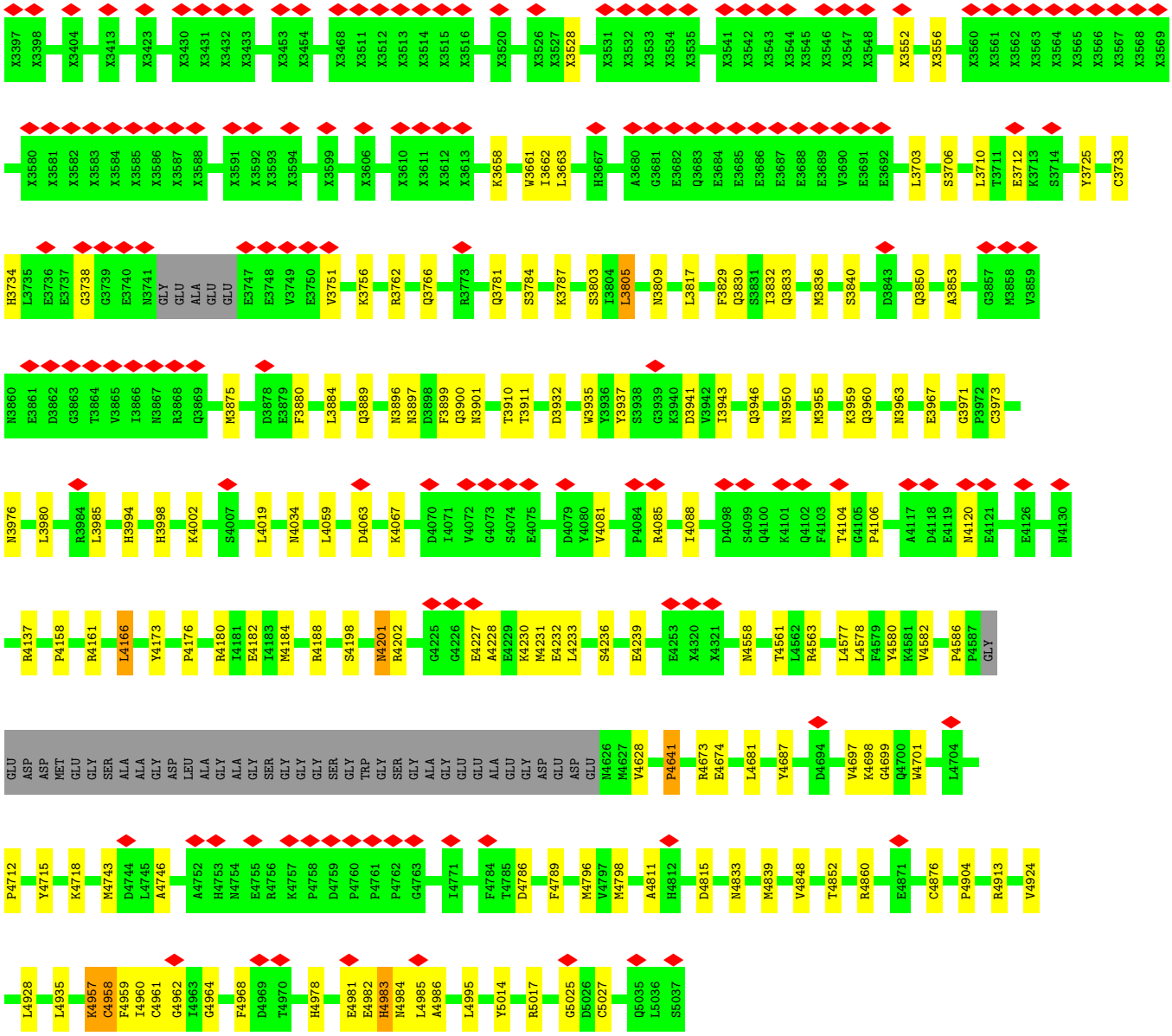
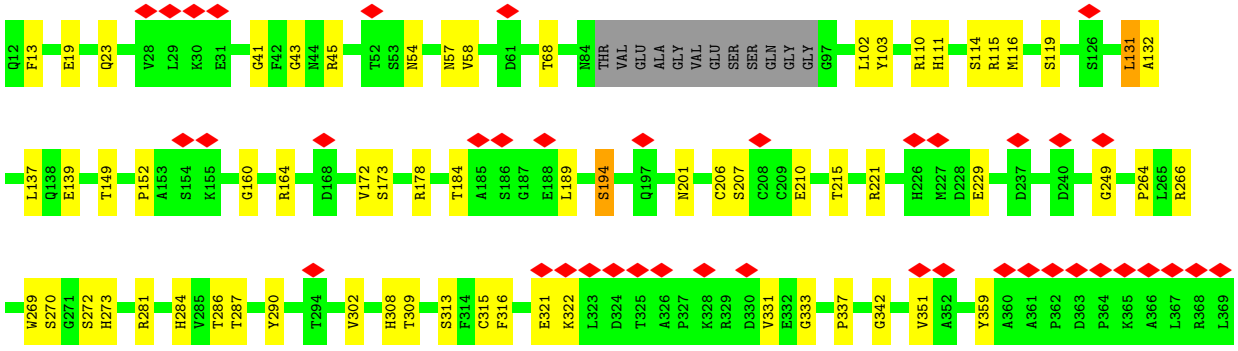
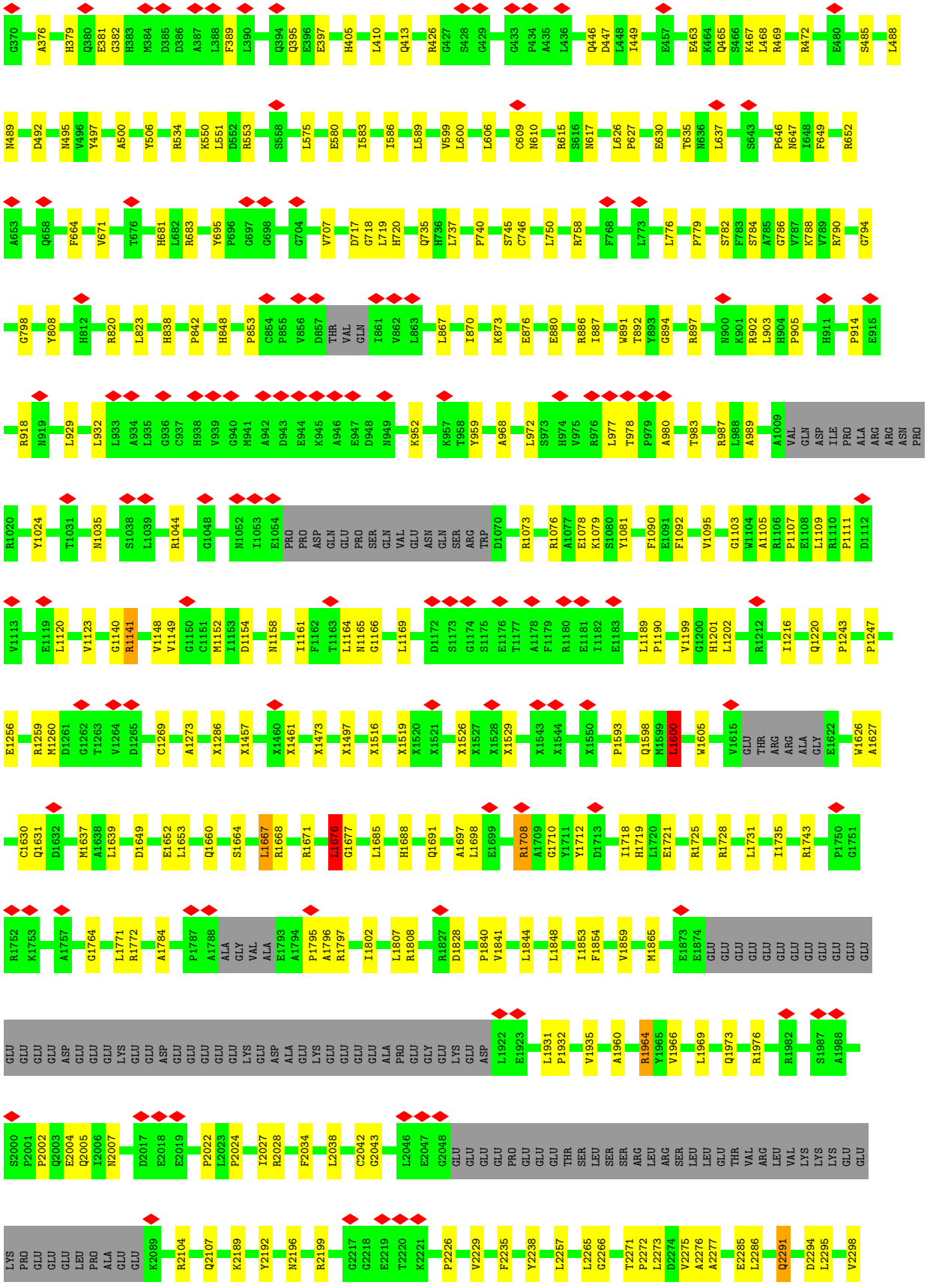


• Molecule 2: Ryanodine receptor 1

Chain E:

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N489 D492 N495 Y496 Y497 A500 Y506 R534 K550 L551 D552 R553 S558 L575 E580 I583 I586 L589 V599 L600 L606 G609 N610 R615 S616 N617 L626 P627 E630 T635 N636 L637 S643 P646 N647 I648 F649 R652
A653 Q658 F664 V671 T676 H681 L682 R683 Y695 P696 G697 G698 G704 V707 D717 G718 L719 H720 Q735 H736 L737 P740 S745 C746 L750 R758 F768 L773 L776 P779 S782 F783 S784 A785 G786 V787 K788 V789 R790 G794
G798 Y808 H812 R820 L823 H838 P842 H848 P853 C854 P855 V856 D857 THR VAL GLN I861 V862 L863 L867 I870 K873 E876 E880 R886 I887 W891 T892 Y893 G894 R897 N900 K901 R902 L903 H904 P905 H911 P914 E915
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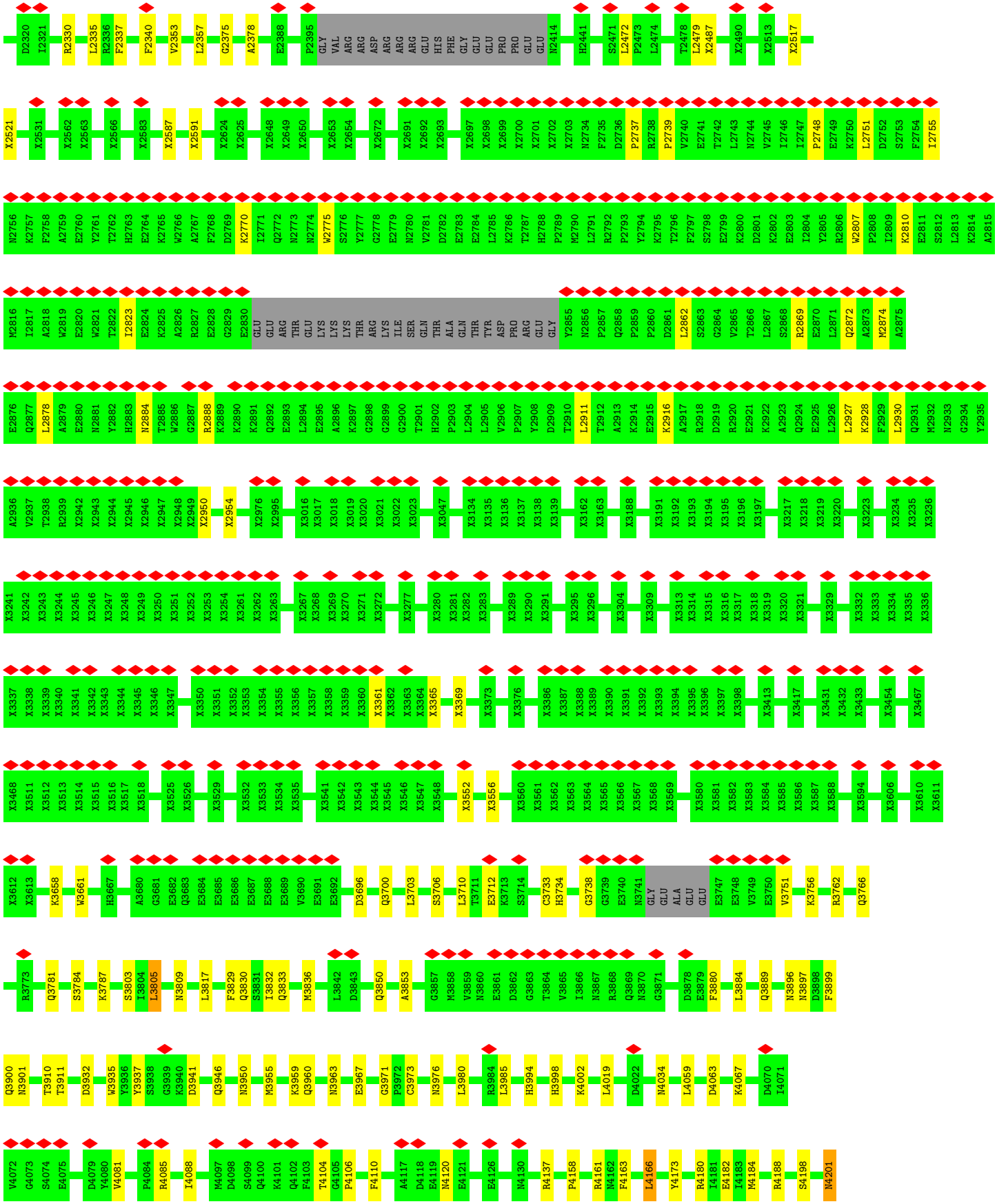
GLU GLU GLU GLU ASP GLU GLU GLU GLU ASP GLU GLU GLU GLU LYS GLU ASP ALA GLU LYS GLU GLU GLU GLU ALA PRO GLU GLY GLU LYS GLU ASP L1922 E1923 L1931 P1932 V1935 A1960 R1964 Y1965 V1966 L1969 Q1973 R1976 R1982 S1987 A1988
S2000 P2001 P2002 Q2003 E2004 Q2005 I2006 N2007 D2017 E2018 E2019 P2022 L2023 P2024 I2027 R2028 F2034 L2038 C2042 G2043 L2046 E2047 G2048 GLU GLU GLU GLU PRO GLU GLU GLU THR SER LEU SER SER ARG LEU ARG SER LEU LEU LEU GLU THR VAL ARG LEU LEU VAL LYS LYS LYS GLU GLU
LYS PRO GLU GLU GLU LEU PRO ALA GLU GLU K2089 R2104 Q2107 K2189 Y2192 N2196 R2199 G2217 G2218 E2219 T2220 K2221 P2226 V2229 F2235 Y2238 L2257 L2265 G2266 T2271 P2272 L2273 D2274 V2275 A2276 A2277 E2285 L2286 Q2291 D2294 L2295 V2298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X2521 X2531 X2562 X2563 X2566 X2583 X2587 X2591 X2624 X2625 X2648 X2649 X2650 X2653 X2654 X2672 X2691 X2692 X2693 X2697 X2698 X2699 X2700 X2701 X2702 X2703 N2734 F2735 D2736 P2737 R2738 P2739 V2740 E2741 T2742 L2743 N2744 V2745 I2746 I2747 P2748 E2749 K2750 L2751 D2752 S2753 F2754 I2755
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M2816 I2817 A2818 W2819 E2820 W2821 T2822 I2823 E2824 K2825 A2826 R2827 E2828 G2829 E2830 GLU GLU ARG THR GLU LYS LYS LYS THR ARG LYS ILE SER GLN THR ALA GLN THR TYR ASP PRO ARG GLU GLY Y2855 N2856 P2857 Q2858 P2859 P2860 D2861 L2862 S2863 G2864 V2865 T2866 L2867 S2868 R2869 E2870 L2871 Q2872 A2873 M2874 A2875
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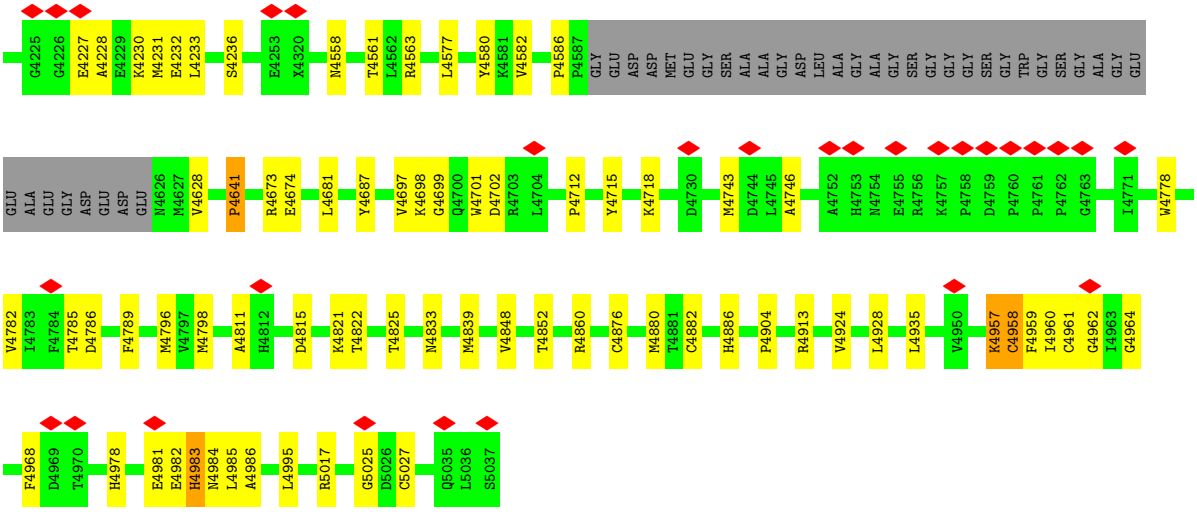
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GLU ALA GLU GLY ASP GLU ASP GLU N4626 M4627 V4628 P4641 R4673 E4674 L4681 Y4687 V4697 K4698 G4699 Q4700 W4701 D4702 R4703 L4704 P4712 Y4715 K4718 D4730 M4743 D4744 L4745 A4746 A4752 H4753 N4754 E4755 R4756 K4757 P4758 D4759 P4760 P4761 P4762 G4763 I4771 W4778
V4782 I4783 F4784 T4785 D4786 F4789 M4796 V4797 M4798 A4811 H4812 D4815 K4821 T4822 T4825 N4833 M4839 V4848 T4852 R4860 C4876 M4880 T4881 C4882 H4886 P4904 R4913 V4924 L4928 L4935 V4950 K4957 C4958 F4959 I4960 C4961 G4962 I4963 G4964
F4968 D4969 T4970 H4978 E4981 E4982 H4983 N4984 L4985 A4986 L4995 R5017 G5025 D5026 C5027 Q5035 L5036 S5037

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	55564	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI POLARA 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.100	Depositor
Minimum map value	-0.044	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.025	Depositor
Map size (Å)	502.0, 502.0, 502.0	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.255, 1.255, 1.255	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: CA, 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	0.29	0/834	0.53	0/1123
1	F	0.29	0/834	0.53	0/1123
1	H	0.29	0/834	0.53	0/1123
1	J	0.29	0/834	0.53	0/1123
2	B	0.29	0/25428	0.54	7/34534 (0.0%)
2	E	0.29	0/25428	0.54	7/34534 (0.0%)
2	G	0.29	0/25428	0.54	7/34534 (0.0%)
2	I	0.29	0/25428	0.54	7/34534 (0.0%)
All	All	0.29	0/105048	0.54	28/142628 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	B	0	11
2	E	0	11
2	G	0	11
2	I	0	11
All	All	0	44

There are no bond length outliers.

All (28) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	E	131	LEU	CA-CB-CG	8.10	133.93	115.30
2	I	131	LEU	CA-CB-CG	8.09	133.90	115.30
2	B	131	LEU	CA-CB-CG	8.08	133.88	115.30
2	G	131	LEU	CA-CB-CG	8.07	133.87	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	E	4985	LEU	CA-CB-CG	7.05	131.51	115.30
2	B	4985	LEU	CA-CB-CG	7.04	131.49	115.30
2	I	4985	LEU	CA-CB-CG	7.04	131.48	115.30
2	G	4985	LEU	CA-CB-CG	7.03	131.47	115.30
2	I	1140	GLY	C-N-CA	6.89	138.93	121.70
2	B	1140	GLY	C-N-CA	6.89	138.93	121.70
2	E	1140	GLY	C-N-CA	6.89	138.93	121.70
2	G	1140	GLY	C-N-CA	6.88	138.90	121.70
2	E	1676	LEU	CA-CB-CG	6.50	130.25	115.30
2	G	1676	LEU	CA-CB-CG	6.50	130.24	115.30
2	B	1676	LEU	CA-CB-CG	6.49	130.23	115.30
2	I	1676	LEU	CA-CB-CG	6.48	130.21	115.30
2	E	1600	LEU	CA-CB-CG	6.40	130.02	115.30
2	B	1600	LEU	CA-CB-CG	6.39	130.00	115.30
2	G	1600	LEU	CA-CB-CG	6.38	129.99	115.30
2	I	1600	LEU	CA-CB-CG	6.38	129.98	115.30
2	I	977	LEU	CA-CB-CG	5.36	127.63	115.30
2	G	977	LEU	CA-CB-CG	5.36	127.62	115.30
2	E	977	LEU	CA-CB-CG	5.35	127.60	115.30
2	B	977	LEU	CA-CB-CG	5.35	127.60	115.30
2	B	1667	LEU	CA-CB-CG	5.07	126.96	115.30
2	I	1667	LEU	CA-CB-CG	5.07	126.95	115.30
2	E	1667	LEU	CA-CB-CG	5.06	126.93	115.30
2	G	1667	LEU	CA-CB-CG	5.06	126.93	115.30

There are no chirality outliers.

All (44) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	139	GLU	Peptide
2	B	1676	LEU	Peptide
2	B	1795	PRO	Peptide
2	B	1828	ASP	Peptide
2	B	194	SER	Peptide
2	B	2291	GLN	Peptide
2	B	2472	LEU	Peptide
2	B	2807	TRP	Peptide
2	B	3971	GLY	Peptide
2	B	4641	PRO	Peptide
2	B	808	TYR	Peptide
2	E	139	GLU	Peptide
2	E	1676	LEU	Peptide

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Mol	Chain	Res	Type	Group
2	E	1795	PRO	Peptide
2	E	1828	ASP	Peptide
2	E	194	SER	Peptide
2	E	2291	GLN	Peptide
2	E	2472	LEU	Peptide
2	E	2807	TRP	Peptide
2	E	3971	GLY	Peptide
2	E	4641	PRO	Peptide
2	E	808	TYR	Peptide
2	G	139	GLU	Peptide
2	G	1676	LEU	Peptide
2	G	1795	PRO	Peptide
2	G	1828	ASP	Peptide
2	G	194	SER	Peptide
2	G	2291	GLN	Peptide
2	G	2472	LEU	Peptide
2	G	2807	TRP	Peptide
2	G	3971	GLY	Peptide
2	G	4641	PRO	Peptide
2	G	808	TYR	Peptide
2	I	139	GLU	Peptide
2	I	1676	LEU	Peptide
2	I	1795	PRO	Peptide
2	I	1828	ASP	Peptide
2	I	194	SER	Peptide
2	I	2291	GLN	Peptide
2	I	2472	LEU	Peptide
2	I	2807	TRP	Peptide
2	I	3971	GLY	Peptide
2	I	4641	PRO	Peptide
2	I	808	TYR	Peptide

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	818	0	824	13	0
1	F	818	0	824	14	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	H	818	0	824	12	0
1	J	818	0	824	15	0
2	B	29499	0	24741	329	0
2	E	29499	0	24742	325	0
2	G	29499	0	24741	322	0
2	I	29499	0	24742	324	0
3	B	1	0	0	0	0
3	E	1	0	0	0	0
3	G	1	0	0	0	0
3	I	1	0	0	0	0
4	B	1	0	0	0	0
4	E	1	0	0	0	0
4	G	1	0	0	0	0
4	I	1	0	0	0	0
All	All	121276	0	102262	1338	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 6.

All (1338) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:4182:GLU:OE2	2:I:4983:HIS:NE2	1.64	1.31
2:E:4182:GLU:OE2	2:E:4983:HIS:NE2	1.64	1.29
2:G:4182:GLU:OE2	2:G:4983:HIS:NE2	1.64	1.29
2:B:4182:GLU:OE2	2:B:4983:HIS:NE2	1.64	1.27
2:G:4982:GLU:OE1	2:G:5027:CYS:SG	1.98	1.22
2:B:4982:GLU:OE1	2:B:5027:CYS:SG	1.98	1.21
2:I:4982:GLU:OE1	2:I:5027:CYS:SG	1.98	1.21
2:E:4982:GLU:OE1	2:E:5027:CYS:SG	1.98	1.20
2:E:4230:LYS:HG3	2:E:4959:PHE:CZ	1.89	1.07
2:G:4230:LYS:HG3	2:G:4959:PHE:CZ	1.89	1.06
2:B:4230:LYS:HG3	2:B:4959:PHE:CZ	1.89	1.06
2:I:4230:LYS:HG3	2:I:4959:PHE:CZ	1.89	1.06
2:I:4968:PHE:CZ	2:I:4978:HIS:CE1	2.50	1.00
2:G:4968:PHE:CZ	2:G:4978:HIS:CE1	2.50	1.00
2:E:4968:PHE:CZ	2:E:4978:HIS:CE1	2.50	0.99
2:B:4968:PHE:CZ	2:B:4978:HIS:CE1	2.50	0.99
2:I:4230:LYS:HG3	2:I:4959:PHE:HZ	1.30	0.96
2:B:4230:LYS:HG3	2:B:4959:PHE:HZ	1.30	0.94
2:G:4230:LYS:HG3	2:G:4959:PHE:HZ	1.30	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:4230:LYS:HG3	2:E:4959:PHE:HZ	1.30	0.92
2:G:4230:LYS:HD2	2:G:4959:PHE:CZ	2.06	0.91
2:I:4230:LYS:HD2	2:I:4959:PHE:CZ	2.06	0.90
2:E:4230:LYS:HD2	2:E:4959:PHE:CZ	2.06	0.90
2:B:4230:LYS:HD2	2:B:4959:PHE:CZ	2.06	0.89
2:B:4230:LYS:CG	2:B:4959:PHE:CZ	2.59	0.85
2:I:4230:LYS:CG	2:I:4959:PHE:CZ	2.59	0.85
2:G:4230:LYS:CG	2:G:4959:PHE:CZ	2.59	0.84
2:E:4230:LYS:CG	2:E:4959:PHE:CZ	2.59	0.84
2:E:4978:HIS:HA	2:E:4982:GLU:HB2	1.61	0.83
2:B:4978:HIS:HA	2:B:4982:GLU:HB2	1.61	0.82
2:G:4968:PHE:CZ	2:G:4978:HIS:ND1	2.48	0.82
2:B:4968:PHE:CZ	2:B:4978:HIS:ND1	2.48	0.82
2:I:4978:HIS:HA	2:I:4982:GLU:HB2	1.61	0.82
2:I:4968:PHE:CZ	2:I:4978:HIS:ND1	2.48	0.82
2:G:4978:HIS:HA	2:G:4982:GLU:HB2	1.61	0.81
2:G:4230:LYS:CD	2:G:4959:PHE:CZ	2.63	0.81
2:E:4230:LYS:CD	2:E:4959:PHE:CZ	2.63	0.81
2:I:4230:LYS:CD	2:I:4959:PHE:CZ	2.63	0.81
2:E:4968:PHE:CZ	2:E:4978:HIS:ND1	2.48	0.81
2:B:4230:LYS:CD	2:B:4959:PHE:CZ	2.63	0.81
2:G:4957:LYS:HZ3	2:G:4957:LYS:HB2	1.55	0.72
2:E:1259:ARG:HH12	2:E:1593:PRO:HA	1.56	0.71
2:G:1259:ARG:HH12	2:G:1593:PRO:HA	1.56	0.71
2:G:4957:LYS:HG3	2:G:4964:GLY:CA	2.22	0.70
2:I:1260:MET:HB2	2:I:1269:CYS:H	1.56	0.70
2:B:1260:MET:HB2	2:B:1269:CYS:H	1.56	0.70
2:B:4957:LYS:HG3	2:B:4964:GLY:CA	2.22	0.70
2:G:1260:MET:HB2	2:G:1269:CYS:H	1.56	0.70
2:B:1259:ARG:HH12	2:B:1593:PRO:HA	1.56	0.69
2:I:4957:LYS:HG3	2:I:4964:GLY:CA	2.22	0.69
2:E:4957:LYS:HG3	2:E:4964:GLY:CA	2.22	0.69
2:E:1260:MET:HB2	2:E:1269:CYS:H	1.56	0.69
2:I:788:LYS:HG2	2:I:1630:CYS:H	1.58	0.69
2:G:788:LYS:HG2	2:G:1630:CYS:H	1.58	0.69
2:I:1259:ARG:HH12	2:I:1593:PRO:HA	1.56	0.69
2:B:4957:LYS:HG3	2:B:4964:GLY:HA2	1.75	0.69
2:G:4957:LYS:HG3	2:G:4964:GLY:HA2	1.76	0.68
2:B:788:LYS:HG2	2:B:1630:CYS:H	1.58	0.68
2:I:4957:LYS:HG3	2:I:4964:GLY:HA2	1.75	0.67
2:I:4968:PHE:CZ	2:I:4978:HIS:HE1	2.09	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:788:LYS:HG2	2:E:1630:CYS:H	1.58	0.67
2:G:2291:GLN:HB2	2:G:2295:LEU:HG	1.76	0.67
2:E:2291:GLN:HB2	2:E:2295:LEU:HG	1.76	0.67
2:B:2291:GLN:HB2	2:B:2295:LEU:HG	1.76	0.66
2:I:2291:GLN:HB2	2:I:2295:LEU:HG	1.76	0.66
2:G:4968:PHE:CZ	2:G:4978:HIS:HE1	2.09	0.66
2:E:4968:PHE:CZ	2:E:4978:HIS:HE1	2.09	0.66
2:I:2291:GLN:HB3	2:I:2294:ASP:H	1.60	0.66
2:E:4957:LYS:HG3	2:E:4964:GLY:HA2	1.76	0.66
2:B:646:PRO:HD2	2:B:779:PRO:HB2	1.77	0.66
2:B:2291:GLN:HB3	2:B:2294:ASP:H	1.60	0.66
2:B:4230:LYS:HD2	2:B:4959:PHE:CE1	2.31	0.65
2:E:2291:GLN:HB3	2:E:2294:ASP:H	1.60	0.65
2:G:379:HIS:HD2	2:G:382:GLY:H	1.44	0.65
2:E:646:PRO:HD2	2:E:779:PRO:HB2	1.77	0.65
2:E:379:HIS:HD2	2:E:382:GLY:H	1.44	0.65
2:G:4230:LYS:HD2	2:G:4959:PHE:CE1	2.31	0.65
2:G:2291:GLN:HB3	2:G:2294:ASP:H	1.60	0.65
2:I:646:PRO:HD2	2:I:779:PRO:HB2	1.77	0.65
2:I:4230:LYS:HD2	2:I:4959:PHE:CE1	2.31	0.65
2:E:4230:LYS:HD2	2:E:4959:PHE:CE1	2.31	0.65
2:B:626:LEU:HD23	2:B:630:GLU:H	1.62	0.64
2:B:4968:PHE:CZ	2:B:4978:HIS:HE1	2.09	0.64
2:G:626:LEU:HD23	2:G:630:GLU:H	1.62	0.64
2:G:646:PRO:HD2	2:G:779:PRO:HB2	1.78	0.64
2:E:626:LEU:HD23	2:E:630:GLU:H	1.62	0.64
2:I:379:HIS:HD2	2:I:382:GLY:H	1.44	0.64
2:B:379:HIS:HD2	2:B:382:GLY:H	1.44	0.64
2:E:1667:LEU:HD23	2:E:1671:ARG:HH12	1.63	0.64
2:G:1667:LEU:HD23	2:G:1671:ARG:HH12	1.63	0.64
2:B:426:ARG:HB2	2:B:506:TYR:HA	1.80	0.63
2:I:426:ARG:HB2	2:I:506:TYR:HA	1.80	0.63
2:G:426:ARG:HB2	2:G:506:TYR:HA	1.80	0.63
2:I:626:LEU:HD23	2:I:630:GLU:H	1.62	0.63
2:E:4957:LYS:CG	2:E:4964:GLY:HA2	2.29	0.63
2:B:4957:LYS:CG	2:B:4964:GLY:HA2	2.29	0.62
2:G:745:SER:HB2	2:G:758:ARG:HB3	1.81	0.62
2:I:331:VAL:HG12	2:I:333:GLY:H	1.64	0.62
2:I:1667:LEU:HD23	2:I:1671:ARG:HH12	1.63	0.62
2:E:111:HIS:HD2	2:E:114:SER:H	1.47	0.62
2:E:426:ARG:HB2	2:E:506:TYR:HA	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:745:SER:HB2	2:E:758:ARG:HB3	1.82	0.62
2:B:497:TYR:HB3	2:B:500:ALA:HB2	1.82	0.62
2:B:745:SER:HB2	2:B:758:ARG:HB3	1.82	0.62
2:I:497:TYR:HB3	2:I:500:ALA:HB2	1.82	0.62
2:I:745:SER:HB2	2:I:758:ARG:HB3	1.82	0.62
2:I:4063:ASP:OD2	2:I:4067:LYS:NZ	2.33	0.62
2:I:4957:LYS:CG	2:I:4964:GLY:HA2	2.29	0.62
2:G:4957:LYS:CG	2:G:4964:GLY:HA2	2.29	0.62
2:E:4063:ASP:OD2	2:E:4067:LYS:NZ	2.33	0.62
2:B:331:VAL:HG12	2:B:333:GLY:H	1.64	0.62
2:I:1079:LYS:NZ	2:I:1107:PRO:O	2.33	0.62
2:G:1653:LEU:HB3	2:G:1660:GLN:HB2	1.81	0.62
2:B:1667:LEU:HD23	2:B:1671:ARG:HH12	1.63	0.61
2:B:4063:ASP:OD2	2:B:4067:LYS:NZ	2.33	0.61
2:G:497:TYR:HB3	2:G:500:ALA:HB2	1.82	0.61
2:B:1653:LEU:HB3	2:B:1660:GLN:HB2	1.81	0.61
2:E:1079:LYS:NZ	2:E:1107:PRO:O	2.33	0.61
2:G:331:VAL:HG12	2:G:333:GLY:H	1.64	0.61
1:F:87:HIS:H	1:F:91:ILE:HB	1.65	0.61
2:B:111:HIS:HD2	2:B:114:SER:H	1.47	0.61
2:B:1079:LYS:NZ	2:B:1107:PRO:O	2.33	0.61
2:G:4063:ASP:OD2	2:G:4067:LYS:NZ	2.33	0.61
2:E:497:TYR:HB3	2:E:500:ALA:HB2	1.82	0.61
2:B:132:ALA:HA	2:B:194:SER:HB2	1.83	0.61
2:G:1079:LYS:NZ	2:G:1107:PRO:O	2.33	0.61
2:B:4198:SER:HB3	2:B:4201:ASN:HB2	1.83	0.61
2:E:331:VAL:HG12	2:E:333:GLY:H	1.64	0.61
1:A:87:HIS:H	1:A:91:ILE:HB	1.66	0.61
1:H:87:HIS:H	1:H:91:ILE:HB	1.66	0.61
2:E:132:ALA:HA	2:E:194:SER:HB2	1.83	0.61
2:B:4957:LYS:HB2	2:B:4957:LYS:HZ3	1.65	0.61
2:G:111:HIS:HD2	2:G:114:SER:H	1.47	0.61
2:E:4198:SER:HB3	2:E:4201:ASN:HB2	1.83	0.61
2:G:465:GLN:HG3	2:G:3710:LEU:HB3	1.83	0.60
2:E:465:GLN:HG3	2:E:3710:LEU:HB3	1.83	0.60
2:E:683:ARG:HB2	2:E:782:SER:HB3	1.83	0.60
1:J:87:HIS:H	1:J:91:ILE:HB	1.66	0.60
2:I:111:HIS:HD2	2:I:114:SER:H	1.47	0.60
2:I:1653:LEU:HB3	2:I:1660:GLN:HB2	1.81	0.60
2:G:4198:SER:HB3	2:G:4201:ASN:HB2	1.83	0.60
2:I:132:ALA:HA	2:I:194:SER:HB2	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:3937:TYR:O	2:I:4002:LYS:NZ	2.35	0.60
2:G:3937:TYR:O	2:G:4002:LYS:NZ	2.35	0.60
2:B:683:ARG:HB2	2:B:782:SER:HB3	1.83	0.60
2:I:469:ARG:HH21	2:I:3712:GLU:HB3	1.67	0.60
2:I:2755:ILE:HD13	2:I:2810:LYS:HG2	1.83	0.60
2:I:4198:SER:HB3	2:I:4201:ASN:HB2	1.83	0.60
2:G:132:ALA:HA	2:G:194:SER:HB2	1.83	0.60
2:E:1653:LEU:HB3	2:E:1660:GLN:HB2	1.81	0.60
2:E:3937:TYR:O	2:E:4002:LYS:NZ	2.35	0.60
2:E:4957:LYS:HZ3	2:E:4957:LYS:HB2	1.66	0.60
2:B:3937:TYR:O	2:B:4002:LYS:NZ	2.35	0.60
2:I:210:GLU:HG3	2:I:337:PRO:HG3	1.84	0.60
2:G:210:GLU:HG3	2:G:337:PRO:HG3	1.84	0.60
2:G:469:ARG:HH21	2:G:3712:GLU:HB3	1.67	0.60
2:G:463:GLU:OE2	2:G:467:LYS:NZ	2.35	0.60
2:E:210:GLU:HG3	2:E:337:PRO:HG3	1.84	0.60
2:I:4674:GLU:HB3	2:I:4715:TYR:HB2	1.84	0.60
2:G:683:ARG:HB2	2:G:782:SER:HB3	1.83	0.60
2:E:463:GLU:OE2	2:E:467:LYS:NZ	2.35	0.60
2:B:2755:ILE:HD13	2:B:2810:LYS:HG2	1.83	0.59
2:E:2755:ILE:HD13	2:E:2810:LYS:HG2	1.83	0.59
2:I:463:GLU:OE2	2:I:467:LYS:NZ	2.35	0.59
2:I:683:ARG:NH1	2:I:707:VAL:O	2.36	0.59
2:G:4674:GLU:HB3	2:G:4715:TYR:HB2	1.84	0.59
2:B:210:GLU:HG3	2:B:337:PRO:HG3	1.84	0.59
2:B:465:GLN:HG3	2:B:3710:LEU:HB3	1.83	0.59
2:I:281:ARG:NH2	2:I:309:THR:OG1	2.36	0.59
2:I:465:GLN:HG3	2:I:3710:LEU:HB3	1.83	0.59
2:B:469:ARG:HH21	2:B:3712:GLU:HB3	1.67	0.59
2:B:1671:ARG:NH2	2:B:1710:GLY:O	2.36	0.59
2:B:4674:GLU:HB3	2:B:4715:TYR:HB2	1.84	0.59
2:E:281:ARG:NH2	2:E:309:THR:OG1	2.36	0.59
2:E:1671:ARG:NH2	2:E:1710:GLY:O	2.36	0.59
2:I:1671:ARG:NH2	2:I:1710:GLY:O	2.36	0.59
2:E:1685:LEU:HA	2:E:1688:HIS:HD2	1.68	0.59
2:G:1685:LEU:HA	2:G:1688:HIS:HD2	1.68	0.59
2:G:2755:ILE:HD13	2:G:2810:LYS:HG2	1.83	0.59
2:E:315:CYS:SG	2:E:316:PHE:N	2.77	0.58
2:E:469:ARG:HH21	2:E:3712:GLU:HB3	1.67	0.58
2:E:683:ARG:NH1	2:E:707:VAL:O	2.36	0.58
2:B:315:CYS:SG	2:B:316:PHE:N	2.77	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:463:GLU:OE2	2:B:467:LYS:NZ	2.35	0.58
2:I:683:ARG:HB2	2:I:782:SER:HB3	1.83	0.58
2:B:683:ARG:NH1	2:B:707:VAL:O	2.36	0.58
2:B:4860:ARG:HD2	2:E:4582:VAL:HG11	1.84	0.58
2:I:315:CYS:SG	2:I:316:PHE:N	2.77	0.58
2:G:315:CYS:SG	2:G:316:PHE:N	2.77	0.58
2:G:1671:ARG:NH2	2:G:1710:GLY:O	2.36	0.58
2:E:1152:MET:HB2	2:E:1161:ILE:HB	1.85	0.58
2:E:4674:GLU:HB3	2:E:4715:TYR:HB2	1.84	0.58
2:I:1092:PHE:HB3	2:I:1149:VAL:HB	1.85	0.58
2:I:1152:MET:HB2	2:I:1161:ILE:HB	1.85	0.58
2:B:3889:GLN:OE1	2:B:3960:GLN:NE2	2.37	0.58
2:B:3955:MET:HG3	2:B:4019:LEU:HD22	1.85	0.58
2:B:1247:PRO:HA	2:B:1598:GLN:HA	1.86	0.58
2:I:2911:LEU:HB2	2:I:2916:LYS:HE3	1.86	0.58
2:I:3889:GLN:OE1	2:I:3960:GLN:NE2	2.37	0.58
2:I:3955:MET:HG3	2:I:4019:LEU:HD22	1.85	0.58
2:E:4983:HIS:CD2	2:E:4983:HIS:H	2.22	0.58
2:B:609:CYS:SG	2:B:610:ASN:N	2.77	0.58
2:B:1109:LEU:HA	2:B:1120:LEU:HD21	1.86	0.58
2:I:119:SER:H	2:I:137:LEU:HA	1.69	0.58
2:G:683:ARG:NH1	2:G:707:VAL:O	2.36	0.58
2:E:2022:PRO:O	2:E:2028:ARG:NH2	2.37	0.58
2:E:3889:GLN:OE1	2:E:3960:GLN:NE2	2.37	0.58
2:B:1092:PHE:HB3	2:B:1149:VAL:HB	1.85	0.58
2:G:1109:LEU:HA	2:G:1120:LEU:HD21	1.86	0.58
2:B:2911:LEU:HB2	2:B:2916:LYS:HE3	1.86	0.57
2:G:717:ASP:OD1	2:G:720:HIS:ND1	2.37	0.57
2:G:3955:MET:HG3	2:G:4019:LEU:HD22	1.85	0.57
2:I:2257:LEU:HD11	2:I:2276:ALA:HB2	1.86	0.57
2:G:1865:MET:SD	2:G:1865:MET:N	2.77	0.57
2:G:3889:GLN:OE1	2:G:3960:GLN:NE2	2.37	0.57
2:E:2911:LEU:HB2	2:E:2916:LYS:HE3	1.86	0.57
2:B:119:SER:H	2:B:137:LEU:HA	1.69	0.57
2:I:1685:LEU:HA	2:I:1688:HIS:HD2	1.68	0.57
2:G:281:ARG:NH2	2:G:309:THR:OG1	2.36	0.57
2:G:2022:PRO:O	2:G:2028:ARG:NH2	2.37	0.57
2:E:1109:LEU:HA	2:E:1120:LEU:HD21	1.86	0.57
2:E:1865:MET:SD	2:E:1865:MET:N	2.77	0.57
2:B:717:ASP:OD1	2:B:720:HIS:ND1	2.37	0.57
2:I:23:GLN:HB3	2:I:201:ASN:HB2	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:717:ASP:OD1	2:I:720:HIS:ND1	2.37	0.57
2:I:4904:PRO:HB3	2:I:4913:ARG:HD3	1.86	0.57
2:G:2911:LEU:HB2	2:G:2916:LYS:HE3	1.86	0.57
2:E:3955:MET:HG3	2:E:4019:LEU:HD22	1.85	0.57
2:E:4983:HIS:CD2	2:E:4983:HIS:N	2.73	0.57
2:B:1152:MET:HB2	2:B:1161:ILE:HB	1.85	0.57
2:B:1685:LEU:HA	2:B:1688:HIS:HD2	1.68	0.57
2:B:4904:PRO:HB3	2:B:4913:ARG:HD3	1.86	0.57
2:E:1247:PRO:HA	2:E:1598:GLN:HA	1.86	0.57
2:B:281:ARG:NH2	2:B:309:THR:OG1	2.36	0.57
2:B:2257:LEU:HD11	2:B:2276:ALA:HB2	1.87	0.57
2:I:4978:HIS:CE1	2:I:5027:CYS:SG	2.98	0.57
2:G:609:CYS:SG	2:G:610:ASN:N	2.77	0.57
2:G:1152:MET:HB2	2:G:1161:ILE:HB	1.85	0.57
2:E:1092:PHE:HB3	2:E:1149:VAL:HB	1.85	0.57
2:B:4582:VAL:HG11	2:I:4860:ARG:HD2	1.86	0.57
2:E:609:CYS:SG	2:E:610:ASN:N	2.77	0.57
2:B:1865:MET:SD	2:B:1865:MET:N	2.77	0.57
2:I:1865:MET:SD	2:I:1865:MET:N	2.77	0.57
2:I:3973:CYS:SG	2:I:3976:ASN:ND2	2.78	0.57
2:G:4957:LYS:HB2	2:G:4957:LYS:NZ	2.20	0.57
2:E:4978:HIS:CE1	2:E:5027:CYS:SG	2.98	0.57
2:G:1092:PHE:HB3	2:G:1149:VAL:HB	1.85	0.57
2:G:1247:PRO:HA	2:G:1598:GLN:HA	1.86	0.57
2:B:2022:PRO:O	2:B:2028:ARG:NH2	2.37	0.57
2:I:110:ARG:HH21	2:I:115:ARG:HB3	1.70	0.56
2:I:1109:LEU:HA	2:I:1120:LEU:HD21	1.86	0.56
2:I:4582:VAL:HG11	2:G:4860:ARG:HD2	1.87	0.56
2:G:4983:HIS:N	2:G:4983:HIS:CD2	2.73	0.56
2:E:4904:PRO:HB3	2:E:4913:ARG:HD3	1.86	0.56
2:E:4957:LYS:HB2	2:E:4957:LYS:NZ	2.20	0.56
2:I:609:CYS:SG	2:I:610:ASN:N	2.77	0.56
2:I:2022:PRO:O	2:I:2028:ARG:NH2	2.37	0.56
2:G:23:GLN:HB3	2:G:201:ASN:HB2	1.86	0.56
2:G:4180:ARG:HH22	2:G:4981:GLU:HA	1.71	0.56
2:E:4180:ARG:HH22	2:E:4981:GLU:HA	1.71	0.56
1:F:55:VAL:HA	2:E:1784:ALA:HA	1.87	0.56
2:B:110:ARG:HH21	2:B:115:ARG:HB3	1.70	0.56
2:G:119:SER:H	2:G:137:LEU:HA	1.69	0.56
2:G:2257:LEU:HD11	2:G:2276:ALA:HB2	1.86	0.56
2:G:2748:PRO:HD2	2:G:2751:LEU:HD12	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:3973:CYS:SG	2:G:3976:ASN:ND2	2.78	0.56
2:G:4582:VAL:HG11	2:E:4860:ARG:HD2	1.87	0.56
2:G:4904:PRO:HB3	2:G:4913:ARG:HD3	1.85	0.56
2:G:4978:HIS:CE1	2:G:5027:CYS:SG	2.98	0.56
2:E:23:GLN:HB3	2:E:201:ASN:HB2	1.86	0.56
2:E:717:ASP:OD1	2:E:720:HIS:ND1	2.37	0.56
2:E:3973:CYS:SG	2:E:3976:ASN:ND2	2.78	0.56
2:I:1247:PRO:HA	2:I:1598:GLN:HA	1.86	0.56
2:B:3973:CYS:SG	2:B:3976:ASN:ND2	2.78	0.56
2:I:4957:LYS:HB2	2:I:4957:LYS:NZ	2.20	0.56
2:G:4983:HIS:CD2	2:G:4983:HIS:H	2.22	0.56
2:E:119:SER:H	2:E:137:LEU:HA	1.69	0.56
2:B:952:LYS:HB3	2:B:968:ALA:HB1	1.88	0.56
2:B:1721:GLU:OE2	2:B:1725:ARG:NH2	2.39	0.56
2:B:4180:ARG:HH22	2:B:4981:GLU:HA	1.70	0.56
2:I:1721:GLU:OE2	2:I:1725:ARG:NH2	2.39	0.56
2:G:1721:GLU:OE2	2:G:1725:ARG:NH2	2.39	0.56
2:E:110:ARG:HH21	2:E:115:ARG:HB3	1.70	0.56
2:E:952:LYS:HB3	2:E:968:ALA:HB1	1.88	0.56
2:E:1721:GLU:OE2	2:E:1725:ARG:NH2	2.39	0.56
2:B:4978:HIS:CE1	2:B:5027:CYS:SG	2.98	0.56
2:I:2748:PRO:HD2	2:I:2751:LEU:HD12	1.87	0.56
2:B:23:GLN:HB3	2:B:201:ASN:HB2	1.86	0.56
2:I:4983:HIS:H	2:I:4983:HIS:CD2	2.22	0.56
2:G:4968:PHE:HZ	2:G:4978:HIS:HE1	1.54	0.56
2:E:2257:LEU:HD11	2:E:2276:ALA:HB2	1.87	0.56
2:I:4180:ARG:HH22	2:I:4981:GLU:HA	1.70	0.56
2:G:110:ARG:HH21	2:G:115:ARG:HB3	1.71	0.56
2:B:3932:ASP:HA	2:B:3935:TRP:HD1	1.71	0.56
2:E:2479:LEU:O	2:E:2487:UNK:N	2.39	0.56
2:E:2748:PRO:HD2	2:E:2751:LEU:HD12	1.88	0.56
2:E:1764:GLY:HA3	2:E:1859:VAL:HG11	1.88	0.55
2:I:3910:THR:HG23	2:I:3911:THR:HG23	1.89	0.55
2:I:4968:PHE:HZ	2:I:4978:HIS:HE1	1.54	0.55
2:G:3762:ARG:O	2:G:3766:GLN:NE2	2.38	0.55
2:E:3932:ASP:HA	2:E:3935:TRP:HD1	1.71	0.55
2:B:4983:HIS:CD2	2:B:4983:HIS:H	2.22	0.55
2:G:952:LYS:HB3	2:G:968:ALA:HB1	1.88	0.55
2:G:2770:LYS:HB3	2:G:2775:TRP:HB2	1.89	0.55
2:G:3932:ASP:HA	2:G:3935:TRP:HD1	1.71	0.55
2:B:3910:THR:HG23	2:B:3911:THR:HG23	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:2770:LYS:HB3	2:I:2775:TRP:HB2	1.89	0.55
2:I:4983:HIS:CD2	2:I:4983:HIS:N	2.73	0.55
2:G:1764:GLY:HA3	2:G:1859:VAL:HG11	1.88	0.55
2:B:606:LEU:O	2:B:617:ASN:ND2	2.40	0.55
2:B:4957:LYS:HB2	2:B:4957:LYS:NZ	2.20	0.55
2:G:1243:PRO:HB2	2:G:1600:LEU:HD22	1.89	0.55
2:E:1243:PRO:HB2	2:E:1600:LEU:HD22	1.89	0.55
2:B:2479:LEU:O	2:B:2487:UNK:N	2.39	0.55
2:G:1808:ARG:NH1	2:G:1853:ILE:O	2.38	0.55
2:E:2002:PRO:HA	2:E:2005:GLN:HB3	1.89	0.55
2:G:4184:MET:HE1	2:G:4188:ARG:HE	1.72	0.55
2:E:635:THR:HB	2:E:1639:LEU:HD23	1.89	0.55
2:B:2748:PRO:HD2	2:B:2751:LEU:HD12	1.88	0.55
2:B:1519:UNK:HA	2:B:1526:UNK:HA	1.89	0.54
2:B:4983:HIS:CD2	2:B:4983:HIS:N	2.73	0.54
2:I:952:LYS:HB3	2:I:968:ALA:HB1	1.88	0.54
2:I:1667:LEU:O	2:I:1671:ARG:NH1	2.41	0.54
2:I:1764:GLY:HA3	2:I:1859:VAL:HG11	1.88	0.54
2:I:3932:ASP:HA	2:I:3935:TRP:HD1	1.71	0.54
2:G:664:PHE:HB2	2:G:746:CYS:HB2	1.89	0.54
2:B:664:PHE:HB2	2:B:746:CYS:HB2	1.89	0.54
2:I:2479:LEU:O	2:I:2487:UNK:N	2.39	0.54
2:G:19:GLU:HB2	2:G:206:CYS:HB3	1.90	0.54
2:B:19:GLU:HB2	2:B:206:CYS:HB3	1.89	0.54
2:B:635:THR:HB	2:B:1639:LEU:HD23	1.89	0.54
2:B:2770:LYS:HB3	2:B:2775:TRP:HB2	1.89	0.54
2:G:2479:LEU:O	2:G:2487:UNK:N	2.39	0.54
2:E:19:GLU:HB2	2:E:206:CYS:HB3	1.89	0.54
2:E:1519:UNK:HA	2:E:1526:UNK:HA	1.89	0.54
2:B:1667:LEU:O	2:B:1671:ARG:NH1	2.41	0.54
2:I:19:GLU:HB2	2:I:206:CYS:HB3	1.89	0.54
2:I:4968:PHE:CE2	2:I:4978:HIS:CE1	2.96	0.54
2:G:606:LEU:O	2:G:617:ASN:ND2	2.40	0.54
2:E:606:LEU:O	2:E:617:ASN:ND2	2.40	0.54
2:E:2298:VAL:HG21	2:E:2335:LEU:HD21	1.90	0.54
2:B:1764:GLY:HA3	2:B:1859:VAL:HG11	1.88	0.54
2:B:2002:PRO:HA	2:B:2005:GLN:HB3	1.89	0.54
2:G:1667:LEU:O	2:G:1671:ARG:NH1	2.41	0.54
2:G:2002:PRO:HA	2:G:2005:GLN:HB3	1.89	0.54
2:G:3910:THR:HG23	2:G:3911:THR:HG23	1.89	0.54
2:E:3897:ASN:O	2:E:3901:ASN:ND2	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:2002:PRO:HA	2:I:2005:GLN:HB3	1.89	0.54
2:I:3897:ASN:O	2:I:3901:ASN:ND2	2.41	0.54
2:B:2266:GLY:O	2:B:2330:ARG:NH2	2.41	0.54
2:I:606:LEU:O	2:I:617:ASN:ND2	2.40	0.54
2:I:2266:GLY:O	2:I:2330:ARG:NH2	2.41	0.54
2:I:3733:CYS:HB2	2:I:3803:SER:HB3	1.90	0.54
2:E:1111:PRO:HD3	2:E:1605:TRP:HE1	1.73	0.54
2:B:1808:ARG:NH1	2:B:1853:ILE:O	2.38	0.54
2:I:4059:LEU:O	2:I:4063:ASP:N	2.36	0.54
2:I:4957:LYS:HB2	2:I:4957:LYS:HZ3	1.72	0.54
2:E:3910:THR:HG23	2:E:3911:THR:HG23	1.89	0.54
2:G:989:ALA:O	2:G:1035:ASN:ND2	2.41	0.54
2:E:2770:LYS:HB3	2:E:2775:TRP:HB2	1.89	0.54
2:E:3733:CYS:HB2	2:E:3803:SER:HB3	1.90	0.54
2:E:3762:ARG:O	2:E:3766:GLN:NE2	2.38	0.54
2:E:4968:PHE:CE2	2:E:4978:HIS:CE1	2.96	0.54
2:B:1243:PRO:HB2	2:B:1600:LEU:HD22	1.89	0.53
2:I:1243:PRO:HB2	2:I:1600:LEU:HD22	1.89	0.53
2:E:2739:PRO:HB3	2:E:2884:ASN:HB3	1.91	0.53
2:B:3897:ASN:O	2:B:3901:ASN:ND2	2.41	0.53
2:E:3733:CYS:HA	2:E:3766:GLN:HG2	1.90	0.53
1:A:74:LEU:HB2	1:A:99:PHE:HB2	1.90	0.53
1:H:74:LEU:HB2	1:H:99:PHE:HB2	1.90	0.53
1:J:55:VAL:HA	2:I:1784:ALA:HA	1.90	0.53
2:B:2739:PRO:HB3	2:B:2884:ASN:HB3	1.91	0.53
2:I:2739:PRO:HB3	2:I:2884:ASN:HB3	1.90	0.53
2:G:635:THR:HB	2:G:1639:LEU:HD23	1.89	0.53
2:G:3897:ASN:O	2:G:3901:ASN:ND2	2.41	0.53
2:E:664:PHE:HB2	2:E:746:CYS:HB2	1.89	0.53
2:B:4137:ARG:NH1	2:B:4173:TYR:OH	2.42	0.53
2:I:2298:VAL:HG21	2:I:2335:LEU:HD21	1.90	0.53
2:G:3733:CYS:HA	2:G:3766:GLN:HG2	1.90	0.53
2:E:4184:MET:HE1	2:E:4188:ARG:HE	1.74	0.53
1:J:6:THR:HA	1:J:72:ALA:HA	1.91	0.53
2:B:1111:PRO:HD3	2:B:1605:TRP:HE1	1.73	0.53
2:I:2737:PRO:O	2:I:2888:ARG:NH2	2.42	0.53
2:G:1111:PRO:HD3	2:G:1605:TRP:HE1	1.73	0.53
2:G:2298:VAL:HG21	2:G:2335:LEU:HD21	1.90	0.53
1:F:6:THR:HA	1:F:72:ALA:HA	1.91	0.53
2:B:989:ALA:O	2:B:1035:ASN:ND2	2.41	0.53
2:B:2298:VAL:HG21	2:B:2335:LEU:HD21	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:635:THR:HB	2:I:1639:LEU:HD23	1.89	0.53
2:I:1519:UNK:HA	2:I:1526:UNK:HA	1.89	0.53
2:G:2739:PRO:HB3	2:G:2884:ASN:HB3	1.91	0.53
2:G:3733:CYS:HB2	2:G:3803:SER:HB3	1.90	0.53
2:E:1667:LEU:O	2:E:1671:ARG:NH1	2.41	0.53
2:E:2266:GLY:O	2:E:2330:ARG:NH2	2.41	0.53
2:E:2737:PRO:O	2:E:2888:ARG:NH2	2.42	0.53
1:H:6:THR:HA	1:H:72:ALA:HA	1.91	0.53
2:B:4968:PHE:HZ	2:B:4978:HIS:HE1	1.54	0.53
2:I:3830:GLN:HA	2:I:3833:GLN:HG2	1.91	0.53
2:I:4184:MET:HE1	2:I:4188:ARG:HE	1.73	0.53
2:G:41:GLY:O	2:G:45:ARG:NH1	2.42	0.53
1:F:74:LEU:HB2	1:F:99:PHE:HB2	1.90	0.53
1:A:6:THR:HA	1:A:72:ALA:HA	1.91	0.53
2:B:3830:GLN:HA	2:B:3833:GLN:HG2	1.91	0.53
2:B:4968:PHE:CE2	2:B:4978:HIS:CE1	2.96	0.53
2:I:266:ARG:NH2	2:I:272:SER:OG	2.42	0.53
2:I:1111:PRO:HD3	2:I:1605:TRP:HE1	1.73	0.53
2:G:2737:PRO:O	2:G:2888:ARG:NH2	2.42	0.53
2:B:2042:CYS:SG	2:B:2043:GLY:N	2.82	0.53
2:I:4786:ASP:OD2	2:I:4789:PHE:N	2.42	0.53
1:A:55:VAL:HA	2:B:1784:ALA:HA	1.90	0.53
2:B:3733:CYS:HB2	2:B:3803:SER:HB3	1.90	0.53
2:B:4681:LEU:HD21	2:B:4687:TYR:HD2	1.74	0.53
2:I:173:SER:HB3	2:I:178:ARG:H	1.74	0.53
2:I:647:ASN:ND2	2:I:820:ARG:O	2.42	0.53
2:I:989:ALA:O	2:I:1035:ASN:ND2	2.41	0.53
2:G:173:SER:HB3	2:G:178:ARG:H	1.74	0.53
2:G:1519:UNK:HA	2:G:1526:UNK:HA	1.90	0.53
2:E:718:GLY:HA3	2:E:737:LEU:HA	1.91	0.53
2:B:4184:MET:HE1	2:B:4188:ARG:HE	1.73	0.52
2:G:2266:GLY:O	2:G:2330:ARG:NH2	2.41	0.52
2:E:989:ALA:O	2:E:1035:ASN:ND2	2.41	0.52
2:I:664:PHE:HB2	2:I:746:CYS:HB2	1.89	0.52
2:I:3734:HIS:O	2:I:3738:GLY:N	2.43	0.52
2:I:4137:ARG:NH1	2:I:4173:TYR:OH	2.42	0.52
2:G:718:GLY:HA3	2:G:737:LEU:HA	1.91	0.52
2:G:4968:PHE:CE2	2:G:4978:HIS:CE1	2.96	0.52
2:E:41:GLY:O	2:E:45:ARG:NH1	2.42	0.52
2:E:4137:ARG:NH1	2:E:4173:TYR:OH	2.42	0.52
2:B:2737:PRO:O	2:B:2888:ARG:NH2	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:3830:GLN:HA	2:G:3833:GLN:HG2	1.91	0.52
2:E:3734:HIS:O	2:E:3738:GLY:N	2.43	0.52
2:E:4231:MET:HE3	2:E:4960:ILE:HG23	1.91	0.52
1:J:74:LEU:HB2	1:J:99:PHE:HB2	1.90	0.52
2:G:1808:ARG:HD3	2:G:1853:ILE:HG22	1.91	0.52
2:E:1166:GLY:HA3	2:E:1216:ILE:HD13	1.92	0.52
2:E:3830:GLN:HA	2:E:3833:GLN:HG2	1.91	0.52
2:B:173:SER:HB3	2:B:178:ARG:H	1.74	0.52
2:B:1808:ARG:HD3	2:B:1853:ILE:HG22	1.91	0.52
2:G:13:PHE:HA	2:G:164:ARG:HA	1.92	0.52
2:B:313:SER:HB3	2:B:351:VAL:HB	1.92	0.52
2:G:1166:GLY:HA3	2:G:1216:ILE:HD13	1.92	0.52
2:B:4786:ASP:OD2	2:B:4789:PHE:N	2.42	0.52
2:G:4137:ARG:NH1	2:G:4173:TYR:OH	2.42	0.52
2:E:1649:ASP:HB3	2:E:1652:GLU:HG2	1.92	0.52
2:E:4232:GLU:OE2	2:E:5017:ARG:NH1	2.39	0.52
2:B:266:ARG:NH2	2:B:272:SER:OG	2.42	0.52
2:I:718:GLY:HA3	2:I:737:LEU:HA	1.91	0.52
2:I:3733:CYS:HA	2:I:3766:GLN:HG2	1.90	0.52
2:I:4681:LEU:HD21	2:I:4687:TYR:HD2	1.74	0.52
2:G:266:ARG:NH2	2:G:272:SER:OG	2.42	0.52
2:G:2042:CYS:SG	2:G:2043:GLY:N	2.82	0.52
2:E:13:PHE:HA	2:E:164:ARG:HA	1.92	0.52
2:B:718:GLY:HA3	2:B:737:LEU:HA	1.91	0.52
2:B:1166:GLY:HA3	2:B:1216:ILE:HD13	1.92	0.52
2:B:3733:CYS:HA	2:B:3766:GLN:HG2	1.90	0.52
2:I:4232:GLU:OE2	2:I:5017:ARG:NH1	2.39	0.52
2:G:3734:HIS:O	2:G:3738:GLY:N	2.43	0.52
2:E:4681:LEU:HD21	2:E:4687:TYR:HD2	1.74	0.52
2:E:173:SER:HB3	2:E:178:ARG:H	1.74	0.52
2:B:41:GLY:O	2:B:45:ARG:NH1	2.42	0.51
2:I:13:PHE:HA	2:I:164:ARG:HA	1.92	0.51
2:I:4833:ASN:ND2	2:I:4935:LEU:O	2.44	0.51
2:I:4958:CYS:SG	2:I:4961:CYS:N	2.84	0.51
2:G:111:HIS:CD2	2:G:114:SER:H	2.26	0.51
2:E:266:ARG:NH2	2:E:272:SER:OG	2.42	0.51
1:A:82:TYR:O	1:A:86:GLY:N	2.44	0.51
2:I:1808:ARG:HD3	2:I:1853:ILE:HG22	1.91	0.51
2:G:264:PRO:HG2	2:G:270:SER:HB2	1.92	0.51
2:E:671:VAL:HG22	2:E:740:PRO:HG3	1.92	0.51
2:E:4833:ASN:ND2	2:E:4935:LEU:O	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:13:PHE:HA	2:B:164:ARG:HA	1.92	0.51
2:B:1649:ASP:HB3	2:B:1652:GLU:HG2	1.92	0.51
2:I:41:GLY:O	2:I:45:ARG:NH1	2.42	0.51
2:I:1166:GLY:HA3	2:I:1216:ILE:HD13	1.92	0.51
2:G:313:SER:HB3	2:G:351:VAL:HB	1.92	0.51
2:G:671:VAL:HG22	2:G:740:PRO:HG3	1.92	0.51
2:G:4232:GLU:OE2	2:G:5017:ARG:NH1	2.39	0.51
2:E:264:PRO:HG2	2:E:270:SER:HB2	1.92	0.51
2:E:1808:ARG:HD3	2:E:1853:ILE:HG22	1.91	0.51
2:E:4968:PHE:HZ	2:E:4978:HIS:HE1	1.54	0.51
2:I:111:HIS:CD2	2:I:114:SER:H	2.26	0.51
2:G:1649:ASP:HB3	2:G:1652:GLU:HG2	1.92	0.51
2:G:4681:LEU:HD21	2:G:4687:TYR:HD2	1.74	0.51
2:E:111:HIS:CD2	2:E:114:SER:H	2.26	0.51
2:I:649:PHE:HB3	2:I:776:LEU:HD13	1.93	0.51
2:G:647:ASN:ND2	2:G:820:ARG:O	2.42	0.51
2:G:4786:ASP:OD2	2:G:4789:PHE:N	2.42	0.51
2:E:2042:CYS:SG	2:E:2043:GLY:N	2.82	0.51
2:I:1808:ARG:NH1	2:I:1853:ILE:O	2.38	0.51
2:B:264:PRO:HG2	2:B:270:SER:HB2	1.92	0.51
2:B:4860:ARG:HG3	2:B:4876:CYS:HB3	1.93	0.51
1:F:82:TYR:O	1:F:86:GLY:N	2.44	0.51
2:B:4833:ASN:ND2	2:B:4935:LEU:O	2.44	0.51
2:I:1649:ASP:HB3	2:I:1652:GLU:HG2	1.92	0.51
2:I:4860:ARG:HG3	2:I:4876:CYS:HB3	1.93	0.51
2:I:264:PRO:HG2	2:I:270:SER:HB2	1.92	0.51
2:I:4673:ARG:HH22	2:I:4698:LYS:HB2	1.76	0.51
2:G:4860:ARG:HG3	2:G:4876:CYS:HB3	1.93	0.51
2:G:4958:CYS:SG	2:G:4961:CYS:N	2.84	0.51
1:H:82:TYR:O	1:H:86:GLY:N	2.44	0.51
1:J:82:TYR:O	1:J:86:GLY:N	2.44	0.51
2:B:671:VAL:HG22	2:B:740:PRO:HG3	1.92	0.51
2:B:4958:CYS:SG	2:B:4961:CYS:N	2.84	0.51
2:I:313:SER:HB3	2:I:351:VAL:HB	1.92	0.51
2:G:649:PHE:HB3	2:G:776:LEU:HD13	1.93	0.51
2:E:313:SER:HB3	2:E:351:VAL:HB	1.92	0.51
2:E:2337:PHE:HA	2:E:2340:PHE:HB2	1.93	0.51
2:B:111:HIS:CD2	2:B:114:SER:H	2.26	0.50
2:G:4833:ASN:ND2	2:G:4935:LEU:O	2.44	0.50
2:E:4673:ARG:HH22	2:E:4698:LYS:HB2	1.76	0.50
2:B:3734:HIS:O	2:B:3738:GLY:N	2.43	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:3980:LEU:HD22	2:B:3985:LEU:HD22	1.92	0.50
2:I:68:THR:N	2:I:110:ARG:O	2.44	0.50
2:E:4958:CYS:SG	2:E:4961:CYS:N	2.84	0.50
2:G:3980:LEU:HD22	2:G:3985:LEU:HD22	1.92	0.50
2:G:4230:LYS:HG3	2:G:4959:PHE:CE2	2.44	0.50
2:G:4673:ARG:HH22	2:G:4698:LYS:HB2	1.76	0.50
2:E:68:THR:N	2:E:110:ARG:O	2.44	0.50
2:E:1725:ARG:HA	2:E:1728:ARG:HG2	1.94	0.50
2:E:3980:LEU:HD22	2:E:3985:LEU:HD22	1.92	0.50
2:B:68:THR:N	2:B:110:ARG:O	2.44	0.50
1:H:76:CYS:HB2	1:H:97:LEU:HB2	1.94	0.50
2:B:2337:PHE:HA	2:B:2340:PHE:HB2	1.93	0.50
2:B:4232:GLU:OE2	2:B:5017:ARG:NH1	2.39	0.50
2:I:2042:CYS:SG	2:I:2043:GLY:N	2.82	0.50
2:I:4182:GLU:OE2	2:I:4983:HIS:CD2	2.57	0.50
2:E:647:ASN:ND2	2:E:820:ARG:O	2.42	0.50
1:F:42:ARG:HG2	2:E:1691:GLN:HG2	1.93	0.50
2:E:4786:ASP:OD2	2:E:4789:PHE:N	2.42	0.50
1:J:76:CYS:HB2	1:J:97:LEU:HB2	1.94	0.50
2:B:1725:ARG:HA	2:B:1728:ARG:HG2	1.94	0.50
2:B:2927:LEU:HD23	2:B:2930:LEU:HD12	1.94	0.50
2:I:2337:PHE:HA	2:I:2340:PHE:HB2	1.93	0.50
2:E:4860:ARG:HG3	2:E:4876:CYS:HB3	1.93	0.50
2:B:978:THR:HB	2:B:980:ALA:H	1.77	0.50
2:B:3751:VAL:O	2:B:3756:LYS:NZ	2.45	0.50
2:I:978:THR:HB	2:I:980:ALA:H	1.77	0.50
2:G:3805:LEU:HA	2:G:3809:ASN:HD22	1.77	0.50
2:E:2927:LEU:HD23	2:E:2930:LEU:HD12	1.94	0.50
2:B:649:PHE:HB3	2:B:776:LEU:HD13	1.93	0.50
2:I:3751:VAL:O	2:I:3756:LYS:NZ	2.45	0.50
2:I:4978:HIS:HE1	2:I:5027:CYS:SG	2.35	0.50
2:E:3751:VAL:O	2:E:3756:LYS:NZ	2.45	0.50
2:B:647:ASN:ND2	2:B:820:ARG:O	2.42	0.49
2:B:886:ARG:HB3	2:B:891:TRP:HB2	1.94	0.49
2:B:3959:LYS:O	2:B:3963:ASN:ND2	2.45	0.49
2:I:671:VAL:HG22	2:I:740:PRO:HG3	1.92	0.49
2:E:359:TYR:HA	2:E:376:ALA:HA	1.94	0.49
2:E:886:ARG:HB3	2:E:891:TRP:HB2	1.94	0.49
2:I:3762:ARG:O	2:I:3766:GLN:NE2	2.38	0.49
2:I:3980:LEU:HD22	2:I:3985:LEU:HD22	1.92	0.49
2:G:221:ARG:NH2	2:G:397:GLU:OE2	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:3941:ASP:HA	2:G:4002:LYS:HE3	1.94	0.49
2:B:3941:ASP:HA	2:B:4002:LYS:HE3	1.94	0.49
2:B:4978:HIS:HE1	2:B:5027:CYS:SG	2.35	0.49
2:I:3959:LYS:O	2:I:3963:ASN:ND2	2.45	0.49
2:E:3941:ASP:HA	2:E:4002:LYS:HE3	1.94	0.49
1:A:76:CYS:HB2	1:A:97:LEU:HB2	1.94	0.49
2:B:4962:GLY:HA3	2:B:5025:GLY:HA2	1.95	0.49
2:I:3805:LEU:HA	2:I:3809:ASN:HD22	1.77	0.49
2:G:68:THR:N	2:G:110:ARG:O	2.44	0.49
2:E:649:PHE:HB3	2:E:776:LEU:HD13	1.93	0.49
2:E:4978:HIS:HE1	2:E:5027:CYS:SG	2.35	0.49
2:G:359:TYR:HA	2:G:376:ALA:HA	1.94	0.49
2:E:221:ARG:NH2	2:E:397:GLU:OE2	2.45	0.49
2:E:1808:ARG:NH1	2:E:1853:ILE:O	2.38	0.49
2:E:4230:LYS:HG3	2:E:4959:PHE:CE2	2.44	0.49
2:E:4962:GLY:HA3	2:E:5025:GLY:HA2	1.95	0.49
2:B:284:HIS:HB3	2:B:287:THR:HB	1.94	0.49
2:B:4059:LEU:O	2:B:4063:ASP:N	2.36	0.49
2:G:2337:PHE:HA	2:G:2340:PHE:HB2	1.93	0.49
2:G:3959:LYS:O	2:G:3963:ASN:ND2	2.45	0.49
2:E:395:GLN:HG3	2:E:397:GLU:H	1.78	0.49
1:F:76:CYS:HB2	1:F:97:LEU:HB2	1.94	0.49
2:B:485:SER:O	2:B:489:ASN:N	2.40	0.49
2:I:4231:MET:CE	2:I:4960:ILE:HG23	2.43	0.49
2:G:395:GLN:HG3	2:G:397:GLU:H	1.78	0.49
2:G:3751:VAL:O	2:G:3756:LYS:NZ	2.45	0.49
2:E:838:HIS:HA	2:E:1201:HIS:HB3	1.95	0.49
2:B:838:HIS:HA	2:B:1201:HIS:HB3	1.95	0.49
2:B:4231:MET:CE	2:B:4960:ILE:HG23	2.43	0.49
2:I:1725:ARG:HA	2:I:1728:ARG:HG2	1.94	0.49
2:I:2869:ARG:HA	2:I:2872:GLN:HB3	1.95	0.49
2:I:2927:LEU:HD23	2:I:2930:LEU:HD12	1.94	0.49
2:G:1725:ARG:HA	2:G:1728:ARG:HG2	1.94	0.49
2:G:2927:LEU:HD23	2:G:2930:LEU:HD12	1.94	0.49
2:E:776:LEU:HG	2:E:848:HIS:HA	1.95	0.49
2:E:1848:LEU:HD22	2:E:1853:ILE:HG13	1.95	0.49
2:B:972:LEU:O	2:B:1044:ARG:NH2	2.46	0.49
2:B:4673:ARG:HH22	2:B:4698:LYS:HB2	1.76	0.49
2:I:229:GLU:HA	2:I:249:GLY:HA2	1.95	0.49
2:I:972:LEU:O	2:I:1044:ARG:NH2	2.46	0.49
2:E:3805:LEU:HA	2:E:3809:ASN:HD22	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:23:VAL:HG22	1:H:47:LYS:HG2	1.95	0.49
2:B:615:ARG:NH2	2:B:1677:GLY:O	2.43	0.49
2:G:229:GLU:HA	2:G:249:GLY:HA2	1.95	0.49
1:F:23:VAL:HG22	1:F:47:LYS:HG2	1.95	0.48
2:B:4230:LYS:HG3	2:B:4959:PHE:CE2	2.44	0.48
2:I:4833:ASN:HD21	2:I:4935:LEU:HG	1.78	0.48
2:G:284:HIS:HB3	2:G:287:THR:HB	1.94	0.48
2:G:4978:HIS:HE1	2:G:5027:CYS:SG	2.35	0.48
2:E:3959:LYS:O	2:E:3963:ASN:ND2	2.45	0.48
2:B:43:GLY:N	2:B:447:ASP:OD2	2.43	0.48
2:B:359:TYR:HA	2:B:376:ALA:HA	1.94	0.48
2:B:776:LEU:HG	2:B:848:HIS:HA	1.95	0.48
2:G:978:THR:HB	2:G:980:ALA:H	1.77	0.48
2:E:867:LEU:HB3	2:E:929:LEU:HD13	1.95	0.48
2:B:4230:LYS:HD2	2:B:4959:PHE:CE2	2.48	0.48
2:B:4833:ASN:HD21	2:B:4935:LEU:HG	1.78	0.48
2:I:3941:ASP:HA	2:I:4002:LYS:HE3	1.94	0.48
2:I:4962:GLY:H	2:I:5025:GLY:N	2.12	0.48
2:G:2869:ARG:HA	2:G:2872:GLN:HB3	1.95	0.48
2:G:4577:LEU:HG	2:G:4580:TYR:HE2	1.79	0.48
2:E:4962:GLY:H	2:E:5025:GLY:N	2.12	0.48
2:B:1516:UNK:N	2:B:1529:UNK:O	2.47	0.48
2:B:1743:ARG:O	2:B:1964:ARG:NH2	2.43	0.48
2:I:4962:GLY:HA3	2:I:5025:GLY:HA2	1.95	0.48
2:G:1743:ARG:O	2:G:1964:ARG:NH2	2.43	0.48
2:E:2869:ARG:HA	2:E:2872:GLN:HB3	1.95	0.48
2:E:4833:ASN:HD21	2:E:4935:LEU:HG	1.78	0.48
2:B:1105:ALA:HB1	2:B:1109:LEU:HD21	1.96	0.48
2:I:359:TYR:HA	2:I:376:ALA:HA	1.94	0.48
2:I:1660:GLN:O	2:I:1664:SER:N	2.47	0.48
2:I:1848:LEU:HD22	2:I:1853:ILE:HG13	1.94	0.48
2:I:4577:LEU:HG	2:I:4580:TYR:HE2	1.79	0.48
2:G:867:LEU:HB3	2:G:929:LEU:HD13	1.95	0.48
2:G:1516:UNK:N	2:G:1529:UNK:O	2.47	0.48
2:G:4962:GLY:HA3	2:G:5025:GLY:HA2	1.95	0.48
2:E:43:GLY:N	2:E:447:ASP:OD2	2.43	0.48
2:E:972:LEU:O	2:E:1044:ARG:NH2	2.46	0.48
2:E:978:THR:HB	2:E:980:ALA:H	1.77	0.48
2:B:3762:ARG:O	2:B:3766:GLN:NE2	2.38	0.48
2:B:3805:LEU:HA	2:B:3809:ASN:HD22	1.77	0.48
2:I:886:ARG:HB3	2:I:891:TRP:HB2	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:886:ARG:HB3	2:G:891:TRP:HB2	1.94	0.48
2:G:972:LEU:O	2:G:1044:ARG:NH2	2.46	0.48
2:G:1848:LEU:HD22	2:G:1853:ILE:HG13	1.94	0.48
2:G:4231:MET:CE	2:G:4960:ILE:HG23	2.43	0.48
2:G:4962:GLY:H	2:G:5025:GLY:N	2.12	0.48
2:E:1105:ALA:HB1	2:E:1109:LEU:HD21	1.96	0.48
2:E:4233:LEU:HA	2:E:4236:SER:HB3	1.95	0.48
1:J:23:VAL:HG22	1:J:47:LYS:HG2	1.95	0.48
2:I:615:ARG:NH2	2:I:1677:GLY:O	2.43	0.48
2:I:776:LEU:HG	2:I:848:HIS:HA	1.95	0.48
2:I:838:HIS:HA	2:I:1201:HIS:HB3	1.95	0.48
2:G:838:HIS:HA	2:G:1201:HIS:HB3	1.95	0.48
2:G:4059:LEU:O	2:G:4063:ASP:N	2.36	0.48
2:G:4833:ASN:HD21	2:G:4935:LEU:HG	1.78	0.48
2:E:284:HIS:HB3	2:E:287:THR:HB	1.94	0.48
2:E:1516:UNK:N	2:E:1529:UNK:O	2.47	0.48
2:E:2285:GLU:HG3	2:E:2286:LEU:HG	1.96	0.48
2:E:4059:LEU:O	2:E:4063:ASP:N	2.36	0.48
2:I:284:HIS:HB3	2:I:287:THR:HB	1.94	0.48
2:I:719:LEU:HD22	2:I:735:GLN:HG2	1.95	0.48
2:I:1516:UNK:N	2:I:1529:UNK:O	2.47	0.48
2:E:580:GLU:HG2	2:E:583:ILE:HD11	1.96	0.48
2:E:4577:LEU:HG	2:E:4580:TYR:HE2	1.79	0.48
1:A:42:ARG:HG2	2:B:1691:GLN:HG2	1.94	0.48
2:B:395:GLN:HG3	2:B:397:GLU:H	1.78	0.48
2:B:867:LEU:HB3	2:B:929:LEU:HD13	1.95	0.48
2:I:395:GLN:HG3	2:I:397:GLU:H	1.78	0.48
2:E:719:LEU:HD22	2:E:735:GLN:HG2	1.95	0.48
2:E:3900:GLN:NE2	2:E:3967:GLU:O	2.47	0.48
2:E:4231:MET:CE	2:E:4960:ILE:HG23	2.43	0.48
2:E:4563:ARG:NH1	2:E:4815:ASP:OD1	2.47	0.48
1:J:57:LYS:HB2	1:J:80:VAL:HB	1.96	0.48
2:B:2869:ARG:HA	2:B:2872:GLN:HB3	1.95	0.48
2:B:4577:LEU:HG	2:B:4580:TYR:HE2	1.79	0.48
2:G:2285:GLU:HG3	2:G:2286:LEU:HG	1.96	0.48
1:F:57:LYS:HB2	1:F:80:VAL:HB	1.96	0.47
2:B:2285:GLU:HG3	2:B:2286:LEU:HG	1.96	0.47
2:I:580:GLU:HG2	2:I:583:ILE:HD11	1.96	0.47
2:I:1685:LEU:HD22	2:I:1718:ILE:HG21	1.96	0.47
2:G:719:LEU:HD22	2:G:735:GLN:HG2	1.95	0.47
2:G:776:LEU:HG	2:G:848:HIS:HA	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:4230:LYS:HD2	2:E:4959:PHE:CE2	2.49	0.47
1:A:23:VAL:HG22	1:A:47:LYS:HG2	1.95	0.47
2:B:1685:LEU:HD22	2:B:1718:ILE:HG21	1.96	0.47
2:B:4233:LEU:HA	2:B:4236:SER:HB3	1.95	0.47
2:G:4563:ARG:NH1	2:G:4815:ASP:OD1	2.47	0.47
2:E:983:THR:O	2:E:987:ARG:N	2.47	0.47
2:B:3946:GLN:OE1	2:B:3950:ASN:ND2	2.47	0.47
2:I:116:MET:HB2	2:I:137:LEU:HD12	1.96	0.47
2:I:1960:ALA:O	2:I:1964:ARG:NE	2.47	0.47
2:I:4563:ARG:NH1	2:I:4815:ASP:OD1	2.47	0.47
2:G:1960:ALA:O	2:G:1964:ARG:NE	2.47	0.47
2:G:3900:GLN:NE2	2:G:3967:GLU:O	2.47	0.47
2:G:4230:LYS:HD2	2:G:4959:PHE:CE2	2.48	0.47
2:E:229:GLU:HA	2:E:249:GLY:HA2	1.95	0.47
1:A:57:LYS:HB2	1:A:80:VAL:HB	1.96	0.47
2:B:229:GLU:HA	2:B:249:GLY:HA2	1.95	0.47
2:B:3850:GLN:HA	2:B:3853:ALA:HB3	1.97	0.47
2:G:116:MET:HB2	2:G:137:LEU:HD12	1.96	0.47
2:G:615:ARG:NH2	2:G:1677:GLY:O	2.43	0.47
2:G:3946:GLN:OE1	2:G:3950:ASN:ND2	2.48	0.47
2:E:3946:GLN:OE1	2:E:3950:ASN:ND2	2.47	0.47
2:I:983:THR:O	2:I:987:ARG:N	2.47	0.47
2:I:2285:GLU:HG3	2:I:2286:LEU:HG	1.96	0.47
2:I:4231:MET:HE3	2:I:4960:ILE:HG23	1.95	0.47
2:I:4586:PRO:HB3	2:I:4628:VAL:HG21	1.97	0.47
2:G:1685:LEU:HD22	2:G:1718:ILE:HG21	1.96	0.47
2:B:221:ARG:NH2	2:B:397:GLU:OE2	2.45	0.47
2:B:1848:LEU:HD22	2:B:1853:ILE:HG13	1.94	0.47
2:G:580:GLU:HG2	2:G:583:ILE:HD11	1.96	0.47
2:G:983:THR:O	2:G:987:ARG:N	2.47	0.47
2:G:4239:GLU:OE2	2:G:5014:TYR:OH	2.30	0.47
2:E:1685:LEU:HD22	2:E:1718:ILE:HG21	1.96	0.47
2:B:2196:ASN:OD1	2:B:2199:ARG:NH1	2.38	0.47
2:B:3900:GLN:NE2	2:B:3967:GLU:O	2.47	0.47
2:B:4182:GLU:OE2	2:B:4983:HIS:CD2	2.57	0.47
2:B:4822:THR:O	2:B:4825:THR:OG1	2.32	0.47
2:I:103:TYR:HB3	2:I:152:PRO:HD3	1.97	0.47
2:I:3900:GLN:NE2	2:I:3967:GLU:O	2.47	0.47
2:G:3850:GLN:HA	2:G:3853:ALA:HB3	1.97	0.47
2:G:4233:LEU:HA	2:G:4236:SER:HB3	1.96	0.47
2:E:3850:GLN:HA	2:E:3853:ALA:HB3	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:4104:THR:HG22	2:E:4106:PRO:HD2	1.97	0.47
2:I:894:GLY:HA3	2:I:903:LEU:HD22	1.97	0.47
2:I:3850:GLN:HA	2:I:3853:ALA:HB3	1.97	0.47
2:I:4104:THR:HG22	2:I:4106:PRO:HD2	1.97	0.47
2:G:1660:GLN:O	2:G:1664:SER:N	2.47	0.47
2:E:4558:ASN:HB2	2:E:4561:THR:HB	1.97	0.47
1:H:57:LYS:HB2	1:H:80:VAL:HB	1.96	0.47
2:B:103:TYR:HB3	2:B:152:PRO:HD3	1.97	0.47
2:B:719:LEU:HD22	2:B:735:GLN:HG2	1.95	0.47
2:B:2024:PRO:HB2	2:B:2027:ILE:HG12	1.97	0.47
2:B:4563:ARG:NH1	2:B:4815:ASP:OD1	2.47	0.47
2:B:4586:PRO:HB3	2:B:4628:VAL:HG21	1.97	0.47
2:I:468:LEU:HB3	2:I:472:ARG:HH12	1.80	0.47
2:G:853:PRO:HB3	2:G:1024:TYR:H	1.80	0.47
2:G:1105:ALA:HB1	2:G:1109:LEU:HD21	1.96	0.47
2:G:4586:PRO:HB3	2:G:4628:VAL:HG21	1.97	0.47
2:B:1960:ALA:O	2:B:1964:ARG:NE	2.47	0.47
2:B:4962:GLY:H	2:B:5025:GLY:N	2.12	0.47
2:I:2024:PRO:HB2	2:I:2027:ILE:HG12	1.97	0.47
2:E:2189:LYS:HA	2:E:2192:TYR:HD2	1.80	0.47
2:E:4158:PRO:HA	2:E:4161:ARG:HB2	1.97	0.47
2:B:853:PRO:HB3	2:B:1024:TYR:H	1.80	0.46
2:I:488:LEU:O	2:I:492:ASP:N	2.45	0.46
2:I:867:LEU:HB3	2:I:929:LEU:HD13	1.95	0.46
2:I:4233:LEU:HA	2:I:4236:SER:HB3	1.95	0.46
2:G:2751:LEU:HD11	2:G:2823:ILE:HG21	1.97	0.46
2:G:4158:PRO:HA	2:G:4161:ARG:HB2	1.97	0.46
2:E:2751:LEU:HD11	2:E:2823:ILE:HG21	1.97	0.46
1:J:42:ARG:HG2	2:I:1691:GLN:HG2	1.97	0.46
1:J:92:PRO:HD3	2:I:627:PRO:HB2	1.98	0.46
2:B:580:GLU:HG2	2:B:583:ILE:HD11	1.96	0.46
2:I:1105:ALA:HB1	2:I:1109:LEU:HD21	1.96	0.46
2:G:103:TYR:HB3	2:G:152:PRO:HD3	1.97	0.46
2:E:468:LEU:HB3	2:E:472:ARG:HH12	1.80	0.46
2:E:853:PRO:HB3	2:E:1024:TYR:H	1.80	0.46
2:E:1743:ARG:O	2:E:1964:ARG:NH2	2.43	0.46
2:I:1743:ARG:O	2:I:1964:ARG:NH2	2.43	0.46
2:G:894:GLY:HA3	2:G:903:LEU:HD22	1.97	0.46
2:G:2024:PRO:HB2	2:G:2027:ILE:HG12	1.97	0.46
2:G:3528:UNK:HA	2:E:1220:GLN:NE2	2.30	0.46
2:G:4697:VAL:O	2:G:4701:TRP:N	2.47	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:615:ARG:NH2	2:E:1677:GLY:O	2.43	0.46
2:E:1660:GLN:O	2:E:1664:SER:N	2.47	0.46
1:J:21:THR:HA	1:J:49:ARG:HA	1.98	0.46
2:B:116:MET:HB2	2:B:137:LEU:HD12	1.96	0.46
2:B:4104:THR:HG22	2:B:4106:PRO:HD2	1.96	0.46
2:G:887:ILE:HG21	2:G:959:TYR:HA	1.98	0.46
2:E:1796:ALA:HB1	2:E:1797:ARG:HH21	1.81	0.46
2:E:1960:ALA:O	2:E:1964:ARG:NE	2.47	0.46
2:B:2189:LYS:HA	2:B:2192:TYR:HD2	1.80	0.46
2:B:4558:ASN:HB2	2:B:4561:THR:HB	1.97	0.46
2:I:1931:LEU:HB3	2:I:1935:VAL:HB	1.98	0.46
2:I:2189:LYS:HA	2:I:2192:TYR:HD2	1.80	0.46
2:I:4558:ASN:HB2	2:I:4561:THR:HB	1.97	0.46
2:G:4182:GLU:OE2	2:G:4983:HIS:CD2	2.57	0.46
2:E:116:MET:HB2	2:E:137:LEU:HD12	1.96	0.46
2:E:286:THR:HA	2:E:405:HIS:HB2	1.98	0.46
2:E:4882:CYS:SG	2:E:4886:HIS:NE2	2.89	0.46
1:H:21:THR:HA	1:H:49:ARG:HA	1.98	0.46
2:B:468:LEU:HB3	2:B:472:ARG:HH12	1.80	0.46
2:B:870:ILE:HD12	2:B:873:LYS:HB2	1.98	0.46
2:B:4231:MET:HE3	2:B:4960:ILE:HG23	1.97	0.46
2:I:786:GLY:HA2	2:I:1631:GLN:HA	1.98	0.46
2:I:853:PRO:HB3	2:I:1024:TYR:H	1.80	0.46
2:I:870:ILE:HD12	2:I:873:LYS:HB2	1.98	0.46
2:I:3696:ASP:O	2:I:3700:GLN:N	2.46	0.46
2:G:4957:LYS:HG3	2:G:4964:GLY:HA3	1.97	0.46
2:E:870:ILE:HD12	2:E:873:LYS:HB2	1.98	0.46
2:E:2024:PRO:HB2	2:E:2027:ILE:HG12	1.97	0.46
2:E:4957:LYS:HG3	2:E:4964:GLY:HA3	1.96	0.46
2:B:786:GLY:HA2	2:B:1631:GLN:HA	1.98	0.46
2:B:983:THR:O	2:B:987:ARG:N	2.47	0.46
2:I:57:ASN:HD22	2:I:308:HIS:HB2	1.81	0.46
2:G:286:THR:HA	2:G:405:HIS:HB2	1.98	0.46
2:G:870:ILE:HD12	2:G:873:LYS:HB2	1.98	0.46
2:G:2189:LYS:HA	2:G:2192:TYR:HD2	1.80	0.46
2:G:4960:ILE:HG22	2:G:4960:ILE:O	2.16	0.46
2:E:4924:VAL:HG12	2:E:4928:LEU:HD12	1.98	0.46
2:I:3946:GLN:OE1	2:I:3950:ASN:ND2	2.47	0.46
2:I:4230:LYS:HG3	2:I:4959:PHE:CE2	2.44	0.46
2:G:786:GLY:HA2	2:G:1631:GLN:HA	1.98	0.46
2:G:1848:LEU:HB3	2:G:1853:ILE:HB	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:786:GLY:HA2	2:E:1631:GLN:HA	1.98	0.46
2:E:887:ILE:HG21	2:E:959:TYR:HA	1.97	0.46
2:B:57:ASN:HD22	2:B:308:HIS:HB2	1.81	0.46
2:B:894:GLY:HA3	2:B:903:LEU:HD22	1.97	0.46
2:B:2751:LEU:HD11	2:B:2823:ILE:HG21	1.97	0.46
2:I:2104:ARG:HA	2:I:2107:GLN:HB3	1.98	0.46
2:I:4697:VAL:O	2:I:4701:TRP:N	2.47	0.46
2:I:4882:CYS:SG	2:I:4886:HIS:NE2	2.89	0.46
2:E:2375:GLY:HA3	2:E:2378:ALA:HB3	1.98	0.46
2:E:4586:PRO:HB3	2:E:4628:VAL:HG21	1.97	0.46
1:F:21:THR:HA	1:F:49:ARG:HA	1.98	0.46
2:B:1848:LEU:HB3	2:B:1853:ILE:HB	1.98	0.46
2:B:1931:LEU:HB3	2:B:1935:VAL:HB	1.98	0.46
2:B:4924:VAL:HG12	2:B:4928:LEU:HD12	1.98	0.46
2:I:823:LEU:HD23	2:I:1626:TRP:HB3	1.98	0.46
2:I:2517:UNK:O	2:I:2521:UNK:N	2.49	0.46
2:G:57:ASN:HD22	2:G:308:HIS:HB2	1.81	0.46
2:G:1796:ALA:HB1	2:G:1797:ARG:HH21	1.81	0.46
2:G:4104:THR:HG22	2:G:4106:PRO:HD2	1.96	0.46
2:E:57:ASN:HD22	2:E:308:HIS:HB2	1.81	0.46
2:E:103:TYR:HB3	2:E:152:PRO:HD3	1.97	0.46
2:E:695:TYR:OH	2:E:1073:ARG:NH1	2.48	0.46
2:B:1078:GLU:HB3	2:B:1081:TYR:HD2	1.82	0.45
2:I:880:GLU:OE1	2:I:968:ALA:N	2.47	0.45
2:I:887:ILE:HG21	2:I:959:TYR:HA	1.97	0.45
2:I:1848:LEU:HB3	2:I:1853:ILE:HB	1.98	0.45
2:I:4960:ILE:O	2:I:4960:ILE:HG22	2.16	0.45
2:G:823:LEU:HD23	2:G:1626:TRP:HB3	1.99	0.45
2:G:4081:VAL:HB	2:G:4088:ILE:HD12	1.98	0.45
2:E:1848:LEU:HB3	2:E:1853:ILE:HB	1.98	0.45
2:E:1931:LEU:HB3	2:E:1935:VAL:HB	1.98	0.45
2:E:2277:ALA:HB1	2:E:2337:PHE:HD2	1.81	0.45
2:B:4158:PRO:HA	2:B:4161:ARG:HB2	1.97	0.45
2:I:790:ARG:HG2	2:I:1627:ALA:HA	1.98	0.45
2:I:794:GLY:H	2:I:798:GLY:HA3	1.82	0.45
2:G:468:LEU:HB3	2:G:472:ARG:HH12	1.80	0.45
2:G:2277:ALA:HB1	2:G:2337:PHE:HD2	1.81	0.45
2:B:2517:UNK:O	2:B:2521:UNK:N	2.49	0.45
2:B:4882:CYS:SG	2:B:4886:HIS:NE2	2.89	0.45
2:I:2751:LEU:HD11	2:I:2823:ILE:HG21	1.97	0.45
2:G:2104:ARG:HA	2:G:2107:GLN:HB3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:823:LEU:HD23	2:E:1626:TRP:HB3	1.98	0.45
2:E:1078:GLU:HB3	2:E:1081:TYR:HD2	1.82	0.45
1:A:21:THR:HA	1:A:49:ARG:HA	1.98	0.45
2:B:823:LEU:HD23	2:B:1626:TRP:HB3	1.98	0.45
2:B:2375:GLY:HA3	2:B:2378:ALA:HB3	1.98	0.45
2:I:1148:VAL:HB	2:I:1165:ASN:HA	1.98	0.45
2:I:1718:ILE:HG13	2:I:1719:HIS:CD2	2.52	0.45
2:I:2277:ALA:HB1	2:I:2337:PHE:HD2	1.81	0.45
2:I:3943:ILE:HD11	2:I:4002:LYS:HZ3	1.81	0.45
2:I:4059:LEU:HD13	2:I:4166:LEU:HB3	1.99	0.45
2:G:485:SER:HA	2:G:488:LEU:HB2	1.99	0.45
2:G:794:GLY:H	2:G:798:GLY:HA3	1.82	0.45
2:G:2517:UNK:O	2:G:2521:UNK:N	2.49	0.45
2:E:894:GLY:HA3	2:E:903:LEU:HD22	1.97	0.45
2:E:1148:VAL:HB	2:E:1165:ASN:HA	1.98	0.45
2:E:2517:UNK:O	2:E:2521:UNK:N	2.49	0.45
2:B:266:ARG:NH2	2:B:269:TRP:O	2.50	0.45
2:B:1660:GLN:O	2:B:1664:SER:N	2.47	0.45
2:B:1796:ALA:HB1	2:B:1797:ARG:HH21	1.81	0.45
2:B:2874:MET:O	2:B:2878:LEU:N	2.42	0.45
2:I:2375:GLY:HA3	2:I:2378:ALA:HB3	1.98	0.45
2:I:3994:HIS:O	2:I:3998:HIS:ND1	2.46	0.45
2:G:266:ARG:NH2	2:G:269:TRP:O	2.50	0.45
2:G:4059:LEU:HD13	2:G:4166:LEU:HB3	1.99	0.45
2:E:4782:VAL:O	2:E:4785:THR:OG1	2.30	0.45
2:B:887:ILE:HG21	2:B:959:TYR:HA	1.97	0.45
2:B:4957:LYS:HG3	2:B:4964:GLY:HA3	1.96	0.45
2:I:637:LEU:HD23	2:I:1637:MET:HB3	1.99	0.45
2:I:4158:PRO:HA	2:I:4161:ARG:HB2	1.97	0.45
2:I:4957:LYS:HG3	2:I:4964:GLY:HA3	1.96	0.45
2:E:4059:LEU:HD13	2:E:4166:LEU:HB3	1.99	0.45
2:B:286:THR:HA	2:B:405:HIS:HB2	1.98	0.45
2:B:794:GLY:H	2:B:798:GLY:HA3	1.82	0.45
2:B:2587:UNK:O	2:B:2591:UNK:N	2.50	0.45
2:B:4059:LEU:HD13	2:B:4166:LEU:HB3	1.99	0.45
2:I:221:ARG:NH2	2:I:397:GLU:OE2	2.45	0.45
2:I:495:ASN:HD21	2:I:550:LYS:HE3	1.82	0.45
2:G:3658:LYS:HA	2:G:3661:TRP:CE2	2.52	0.45
2:E:485:SER:HA	2:E:488:LEU:HB2	1.99	0.45
2:E:892:THR:N	2:E:902:ARG:O	2.48	0.45
2:B:1718:ILE:HG13	2:B:1719:HIS:CD2	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:3658:LYS:HA	2:B:3661:TRP:CE2	2.52	0.45
2:B:3829:PHE:HA	2:B:3832:ILE:HD12	1.99	0.45
2:B:4081:VAL:HB	2:B:4088:ILE:HD12	1.98	0.45
2:B:4697:VAL:O	2:B:4701:TRP:N	2.47	0.45
2:I:1802:ILE:HG21	2:I:1807:LEU:HD22	1.99	0.45
2:G:495:ASN:HD21	2:G:550:LYS:HE3	1.82	0.45
2:G:1802:ILE:HG21	2:G:1807:LEU:HD22	1.99	0.45
2:G:1931:LEU:HB3	2:G:1935:VAL:HB	1.98	0.45
2:G:4687:TYR:OH	2:G:4699:GLY:O	2.34	0.45
2:G:4924:VAL:HG12	2:G:4928:LEU:HD12	1.98	0.45
2:E:637:LEU:HD23	2:E:1637:MET:HB3	1.99	0.45
2:E:4960:ILE:HG22	2:E:4960:ILE:O	2.16	0.45
1:F:87:HIS:HD2	1:F:90:VAL:HB	1.82	0.45
1:F:92:PRO:HD3	2:E:627:PRO:HB2	1.98	0.45
1:A:87:HIS:HD2	1:A:90:VAL:HB	1.82	0.45
2:I:286:THR:HA	2:I:405:HIS:HB2	1.98	0.45
2:I:3658:LYS:HA	2:I:3661:TRP:CE2	2.52	0.45
2:G:637:LEU:HD23	2:G:1637:MET:HB3	1.99	0.45
2:G:1095:VAL:HB	2:G:1199:VAL:HG23	1.99	0.45
2:E:2235:PHE:HA	2:E:2238:TYR:HD2	1.82	0.45
2:I:43:GLY:N	2:I:447:ASP:OD2	2.43	0.45
2:I:4924:VAL:HG12	2:I:4928:LEU:HD12	1.98	0.45
2:G:652:ARG:HB2	2:G:750:LEU:HD13	1.99	0.45
2:G:790:ARG:HG2	2:G:1627:ALA:HA	1.98	0.45
2:G:1078:GLU:HB3	2:G:1081:TYR:HD2	1.82	0.45
2:G:1718:ILE:HG13	2:G:1719:HIS:CD2	2.52	0.45
2:G:2235:PHE:HA	2:G:2238:TYR:HD2	1.82	0.45
2:G:2375:GLY:HA3	2:G:2378:ALA:HB3	1.98	0.45
2:G:4558:ASN:HB2	2:G:4561:THR:HB	1.97	0.45
2:E:794:GLY:H	2:E:798:GLY:HA3	1.82	0.45
2:E:2004:GLU:HA	2:E:2007:ASN:HD22	1.82	0.45
2:E:2874:MET:O	2:E:2878:LEU:N	2.42	0.45
1:H:87:HIS:HD2	1:H:90:VAL:HB	1.82	0.44
2:B:637:LEU:HD23	2:B:1637:MET:HB3	1.99	0.44
2:B:2104:ARG:HA	2:B:2107:GLN:HB3	1.98	0.44
2:I:1457:UNK:N	2:I:1497:UNK:O	2.50	0.44
2:G:1148:VAL:HB	2:G:1165:ASN:HA	1.98	0.44
2:G:2034:PHE:O	2:G:2038:LEU:N	2.50	0.44
2:G:4798:MET:HG3	2:G:4811:ALA:HB3	1.99	0.44
2:G:4848:VAL:O	2:G:4852:THR:N	2.50	0.44
2:E:2104:ARG:HA	2:E:2107:GLN:HB3	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:495:ASN:HD21	2:B:550:LYS:HE3	1.82	0.44
2:B:1105:ALA:O	2:B:1189:LEU:N	2.51	0.44
2:B:2862:LEU:HB3	2:B:2928:LYS:HB3	1.99	0.44
2:B:4848:VAL:O	2:B:4852:THR:N	2.50	0.44
2:B:4959:PHE:CG	2:B:4959:PHE:O	2.70	0.44
2:B:4960:ILE:HG22	2:B:4960:ILE:O	2.16	0.44
2:I:695:TYR:OH	2:I:1073:ARG:NH1	2.48	0.44
2:I:1095:VAL:HB	2:I:1199:VAL:HG23	1.99	0.44
2:I:2265:LEU:O	2:I:2330:ARG:NH1	2.51	0.44
2:I:2587:UNK:O	2:I:2591:UNK:N	2.50	0.44
2:G:3943:ILE:HD11	2:G:4002:LYS:HZ3	1.83	0.44
2:E:2034:PHE:O	2:E:2038:LEU:N	2.50	0.44
2:B:2235:PHE:HA	2:B:2238:TYR:HD2	1.82	0.44
2:I:485:SER:HA	2:I:488:LEU:HB2	1.99	0.44
2:I:1796:ALA:HB1	2:I:1797:ARG:HH21	1.81	0.44
2:I:4798:MET:HG3	2:I:4811:ALA:HB3	2.00	0.44
2:G:1105:ALA:N	2:G:1189:LEU:O	2.50	0.44
2:G:4959:PHE:O	2:G:4959:PHE:CD2	2.70	0.44
2:E:54:ASN:O	2:E:58:VAL:N	2.47	0.44
2:E:206:CYS:SG	2:E:207:SER:N	2.90	0.44
2:E:2587:UNK:O	2:E:2591:UNK:N	2.50	0.44
2:E:2862:LEU:HB3	2:E:2928:LYS:HB3	1.99	0.44
2:B:290:TYR:O	2:B:302:VAL:N	2.51	0.44
2:B:1457:UNK:N	2:B:1497:UNK:O	2.50	0.44
2:B:2034:PHE:O	2:B:2038:LEU:N	2.50	0.44
2:B:2265:LEU:O	2:B:2330:ARG:NH1	2.51	0.44
2:I:4081:VAL:HB	2:I:4088:ILE:HD12	1.98	0.44
2:I:4959:PHE:CD2	2:I:4959:PHE:O	2.70	0.44
2:G:2265:LEU:O	2:G:2330:ARG:NH1	2.51	0.44
2:G:2862:LEU:HB3	2:G:2928:LYS:HB3	1.99	0.44
2:E:266:ARG:NH2	2:E:269:TRP:O	2.49	0.44
2:E:495:ASN:HD21	2:E:550:LYS:HE3	1.82	0.44
2:E:652:ARG:HB2	2:E:750:LEU:HD13	1.99	0.44
2:E:790:ARG:HG2	2:E:1627:ALA:HA	1.98	0.44
2:E:4848:VAL:O	2:E:4852:THR:N	2.50	0.44
2:B:215:THR:HG22	2:B:273:HIS:HA	2.00	0.44
2:B:4782:VAL:O	2:B:4785:THR:OG1	2.30	0.44
2:I:206:CYS:SG	2:I:207:SER:N	2.90	0.44
2:I:652:ARG:HB2	2:I:750:LEU:HD13	1.99	0.44
2:I:2235:PHE:HA	2:I:2238:TYR:HD2	1.82	0.44
2:G:2004:GLU:HA	2:G:2007:ASN:HD22	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:290:TYR:O	2:E:302:VAL:N	2.51	0.44
2:E:551:LEU:HD11	2:E:589:LEU:HD13	2.00	0.44
1:J:87:HIS:HD2	1:J:90:VAL:HB	1.82	0.44
2:B:652:ARG:HB2	2:B:750:LEU:HD13	1.99	0.44
2:B:1148:VAL:HB	2:B:1165:ASN:HA	1.98	0.44
2:B:2022:PRO:HB2	2:B:2024:PRO:HD2	1.99	0.44
2:B:2226:PRO:HA	2:B:2229:VAL:HG12	2.00	0.44
2:I:266:ARG:NH2	2:I:269:TRP:O	2.50	0.44
2:G:206:CYS:SG	2:G:207:SER:N	2.90	0.44
2:G:914:PRO:O	2:G:918:ARG:N	2.48	0.44
2:E:488:LEU:O	2:E:492:ASP:N	2.45	0.44
2:E:1718:ILE:HG13	2:E:1719:HIS:CD2	2.51	0.44
2:E:3658:LYS:HA	2:E:3661:TRP:CE2	2.52	0.44
2:E:4081:VAL:HB	2:E:4088:ILE:HD12	1.98	0.44
2:E:4798:MET:HG3	2:E:4811:ALA:HB3	1.99	0.44
2:E:4959:PHE:O	2:E:4959:PHE:CD2	2.70	0.44
2:E:4959:PHE:O	2:E:4959:PHE:CG	2.70	0.44
2:B:790:ARG:HG2	2:B:1627:ALA:HA	1.98	0.44
2:I:681:HIS:O	2:I:784:SER:N	2.45	0.44
2:I:1078:GLU:HB3	2:I:1081:TYR:HD2	1.81	0.44
2:I:2004:GLU:HA	2:I:2007:ASN:HD22	1.82	0.44
2:I:4848:VAL:O	2:I:4852:THR:N	2.51	0.44
2:G:4959:PHE:O	2:G:4959:PHE:CG	2.70	0.44
2:E:2226:PRO:HA	2:E:2229:VAL:HG12	2.00	0.44
2:B:485:SER:HA	2:B:488:LEU:HB2	1.99	0.44
2:B:1103:GLY:HA3	2:B:1123:VAL:HA	2.00	0.44
2:B:2277:ALA:HB1	2:B:2337:PHE:HD2	1.81	0.44
2:B:4959:PHE:O	2:B:4959:PHE:CD2	2.70	0.44
2:I:485:SER:O	2:I:489:ASN:N	2.40	0.44
2:I:1103:GLY:HA3	2:I:1123:VAL:HA	2.00	0.44
2:I:2034:PHE:O	2:I:2038:LEU:N	2.50	0.44
2:G:43:GLY:N	2:G:447:ASP:OD2	2.43	0.44
2:G:695:TYR:OH	2:G:1073:ARG:NH1	2.48	0.44
2:G:1973:GLN:HA	2:G:1976:ARG:HB3	2.00	0.44
2:E:1095:VAL:HB	2:E:1199:VAL:HG23	1.99	0.44
2:B:1802:ILE:HG21	2:B:1807:LEU:HD22	1.99	0.44
2:I:583:ILE:HA	2:I:586:ILE:HD12	2.00	0.44
2:I:1841:VAL:HG13	2:I:1844:LEU:HD23	2.00	0.44
2:I:4743:MET:HB3	2:I:4746:ALA:HB3	2.00	0.44
2:I:4959:PHE:O	2:I:4959:PHE:CG	2.70	0.44
2:G:2353:VAL:O	2:G:2357:LEU:N	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:2587:UNK:O	2:G:2591:UNK:N	2.50	0.44
2:G:3829:PHE:HA	2:G:3832:ILE:HD12	1.99	0.44
2:E:1841:VAL:HG13	2:E:1844:LEU:HD23	2.00	0.44
2:E:3829:PHE:HA	2:E:3832:ILE:HD12	1.99	0.44
2:B:4673:ARG:HH12	2:B:4698:LYS:HE3	1.83	0.43
2:I:914:PRO:O	2:I:918:ARG:N	2.48	0.43
2:I:2226:PRO:HA	2:I:2229:VAL:HG12	2.00	0.43
2:I:3829:PHE:HA	2:I:3832:ILE:HD12	1.99	0.43
2:G:215:THR:HG22	2:G:273:HIS:HA	2.00	0.43
2:G:583:ILE:HA	2:G:586:ILE:HD12	2.00	0.43
2:G:892:THR:N	2:G:902:ARG:O	2.48	0.43
2:E:1105:ALA:O	2:E:1189:LEU:N	2.51	0.43
2:E:1105:ALA:N	2:E:1189:LEU:O	2.50	0.43
2:E:1457:UNK:N	2:E:1497:UNK:O	2.50	0.43
2:B:206:CYS:SG	2:B:207:SER:N	2.90	0.43
2:B:1841:VAL:HG13	2:B:1844:LEU:HD23	2.00	0.43
2:I:551:LEU:HD11	2:I:589:LEU:HD13	2.00	0.43
2:I:2022:PRO:HB2	2:I:2024:PRO:HD2	1.99	0.43
2:G:488:LEU:O	2:G:492:ASP:N	2.45	0.43
2:G:551:LEU:HD11	2:G:589:LEU:HD13	2.00	0.43
2:G:2226:PRO:HA	2:G:2229:VAL:HG12	2.00	0.43
2:G:2271:THR:HG22	2:G:2273:LEU:H	1.83	0.43
2:E:575:LEU:HD22	2:E:609:CYS:HB3	2.00	0.43
2:E:1802:ILE:HG21	2:E:1807:LEU:HD22	1.99	0.43
2:E:4697:VAL:O	2:E:4701:TRP:N	2.47	0.43
2:B:2004:GLU:HA	2:B:2007:ASN:HD22	1.82	0.43
2:B:4798:MET:HG3	2:B:4811:ALA:HB3	1.99	0.43
2:G:1103:GLY:HA3	2:G:1123:VAL:HA	2.00	0.43
2:G:1154:ASP:O	2:G:1158:ASN:N	2.52	0.43
2:G:3805:LEU:H	2:G:3805:LEU:HG	1.74	0.43
2:E:880:GLU:OE1	2:E:968:ALA:N	2.48	0.43
2:E:1973:GLN:HA	2:E:1976:ARG:HB3	2.00	0.43
2:E:4743:MET:HB3	2:E:4746:ALA:HB3	2.00	0.43
1:H:87:HIS:HA	1:H:88:PRO:HD3	1.88	0.43
2:B:583:ILE:HA	2:B:586:ILE:HD12	2.00	0.43
2:B:1973:GLN:HA	2:B:1976:ARG:HB3	2.00	0.43
2:I:2271:THR:HG22	2:I:2273:LEU:H	1.83	0.43
2:G:1457:UNK:N	2:G:1497:UNK:O	2.50	0.43
2:E:2022:PRO:HB2	2:E:2024:PRO:HD2	1.99	0.43
2:E:4182:GLU:OE2	2:E:4983:HIS:CD2	2.57	0.43
2:B:551:LEU:HD11	2:B:589:LEU:HD13	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:290:TYR:O	2:I:302:VAL:N	2.51	0.43
2:I:2862:LEU:HB3	2:I:2928:LYS:HB3	1.99	0.43
2:I:4230:LYS:HD2	2:I:4959:PHE:CE2	2.48	0.43
2:G:485:SER:O	2:G:489:ASN:N	2.40	0.43
2:G:575:LEU:HD22	2:G:609:CYS:HB3	2.00	0.43
2:G:2022:PRO:HB2	2:G:2024:PRO:HD2	1.99	0.43
2:E:215:THR:HG22	2:E:273:HIS:HA	2.00	0.43
2:B:2353:VAL:O	2:B:2357:LEU:N	2.51	0.43
2:B:3552:UNK:O	2:B:3556:UNK:N	2.52	0.43
2:I:2272:PRO:HA	2:I:2275:VAL:HG12	2.01	0.43
2:G:683:ARG:HG2	2:G:717:ASP:HB3	2.01	0.43
2:G:880:GLU:OE1	2:G:968:ALA:N	2.48	0.43
2:G:1698:LEU:N	2:G:1712:TYR:OH	2.52	0.43
2:G:4984:ASN:ND2	2:G:4986:ALA:HB3	2.33	0.43
2:E:1154:ASP:O	2:E:1158:ASN:N	2.52	0.43
2:E:1698:LEU:N	2:E:1712:TYR:OH	2.52	0.43
2:E:2265:LEU:O	2:E:2330:ARG:NH1	2.51	0.43
2:E:4984:ASN:ND2	2:E:4986:ALA:HB3	2.33	0.43
1:F:87:HIS:HA	1:F:88:PRO:HD3	1.89	0.43
2:B:575:LEU:HD22	2:B:609:CYS:HB3	2.00	0.43
2:B:3994:HIS:O	2:B:3998:HIS:ND1	2.46	0.43
2:I:215:THR:HG22	2:I:273:HIS:HA	2.00	0.43
2:I:929:LEU:HD23	2:I:932:LEU:HD12	2.01	0.43
2:I:1269:CYS:HA	2:I:1473:UNK:HA	2.01	0.43
2:I:4982:GLU:HB3	2:I:4983:HIS:H	1.71	0.43
2:I:4984:ASN:ND2	2:I:4986:ALA:HB3	2.33	0.43
2:G:1105:ALA:O	2:G:1189:LEU:N	2.51	0.43
2:E:583:ILE:HA	2:E:586:ILE:HD12	2.00	0.43
2:E:2271:THR:HG22	2:E:2273:LEU:H	1.83	0.43
2:E:2353:VAL:O	2:E:2357:LEU:N	2.51	0.43
2:B:683:ARG:HG2	2:B:717:ASP:HB3	2.01	0.43
2:B:892:THR:N	2:B:902:ARG:O	2.48	0.43
2:I:1154:ASP:O	2:I:1158:ASN:N	2.52	0.43
2:I:3552:UNK:O	2:I:3556:UNK:N	2.52	0.43
2:G:290:TYR:O	2:G:302:VAL:N	2.51	0.43
2:G:1841:VAL:HG13	2:G:1844:LEU:HD23	2.00	0.43
2:G:4673:ARG:HH12	2:G:4698:LYS:HE3	1.84	0.43
2:E:929:LEU:HD23	2:E:932:LEU:HD12	2.01	0.43
2:E:3781:GLN:HA	2:E:3784:SER:HB3	2.01	0.43
2:B:1095:VAL:HB	2:B:1199:VAL:HG23	1.99	0.43
2:B:4743:MET:HB3	2:B:4746:ALA:HB3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:4984:ASN:ND2	2:B:4986:ALA:HB3	2.33	0.43
2:I:4673:ARG:HH12	2:I:4698:LYS:HE3	1.83	0.43
2:G:929:LEU:HD23	2:G:932:LEU:HD12	2.01	0.43
2:B:929:LEU:HD23	2:B:932:LEU:HD12	2.01	0.43
2:B:1154:ASP:O	2:B:1158:ASN:N	2.52	0.43
2:B:2271:THR:HG22	2:B:2273:LEU:H	1.83	0.43
2:B:4962:GLY:H	2:B:5025:GLY:HA2	1.84	0.43
2:I:683:ARG:HG2	2:I:717:ASP:HB3	2.01	0.43
2:I:1698:LEU:N	2:I:1712:TYR:OH	2.52	0.43
2:E:1269:CYS:HA	2:E:1473:UNK:HA	2.01	0.43
2:E:4673:ARG:HH12	2:E:4698:LYS:HE3	1.83	0.43
2:B:695:TYR:OH	2:B:1073:ARG:NH1	2.48	0.42
2:B:1731:LEU:HA	2:B:1772:ARG:HH12	1.84	0.42
2:I:2874:MET:O	2:I:2878:LEU:N	2.42	0.42
2:E:2272:PRO:HA	2:E:2275:VAL:HG12	2.01	0.42
2:E:3552:UNK:O	2:E:3556:UNK:N	2.52	0.42
2:B:1105:ALA:N	2:B:1189:LEU:O	2.50	0.42
2:B:3781:GLN:HA	2:B:3784:SER:HB3	2.01	0.42
2:I:4962:GLY:H	2:I:5025:GLY:HA2	1.84	0.42
2:E:379:HIS:CD2	2:E:382:GLY:H	2.32	0.42
2:E:1103:GLY:HA3	2:E:1123:VAL:HA	2.00	0.42
2:E:1691:GLN:HE22	2:E:1802:ILE:HG12	1.85	0.42
2:E:4962:GLY:H	2:E:5025:GLY:HA2	1.84	0.42
2:B:54:ASN:O	2:B:58:VAL:N	2.47	0.42
2:B:3703:LEU:HA	2:B:3706:SER:HB3	2.01	0.42
2:I:1973:GLN:HA	2:I:1976:ARG:HB3	2.00	0.42
2:E:683:ARG:HG2	2:E:717:ASP:HB3	2.01	0.42
2:E:3817:LEU:HD13	2:E:3899:PHE:HD1	1.84	0.42
2:E:3832:ILE:O	2:E:3836:MET:N	2.50	0.42
2:E:4968:PHE:CE1	2:E:4978:HIS:ND1	2.76	0.42
2:B:842:PRO:HD3	2:B:1073:ARG:HG3	2.02	0.42
2:B:1286:UNK:HA	2:B:1461:UNK:HA	2.02	0.42
2:I:2132:GLY:O	2:I:2136:ARG:N	2.51	0.42
2:I:4227:GLU:HG3	2:I:4228:ALA:H	1.84	0.42
2:G:3552:UNK:O	2:G:3556:UNK:N	2.52	0.42
2:B:1698:LEU:N	2:B:1712:TYR:OH	2.52	0.42
2:I:575:LEU:HD22	2:I:609:CYS:HB3	2.00	0.42
2:I:2265:LEU:HD22	2:I:2330:ARG:HB3	2.01	0.42
2:I:3703:LEU:HA	2:I:3706:SER:HB3	2.01	0.42
2:G:4227:GLU:HG3	2:G:4228:ALA:H	1.84	0.42
2:G:4743:MET:HB3	2:G:4746:ALA:HB3	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:681:HIS:HB3	2:E:784:SER:HB3	2.02	0.42
2:E:914:PRO:O	2:E:918:ARG:N	2.48	0.42
2:E:3696:ASP:O	2:E:3700:GLN:N	2.46	0.42
1:J:7:ILE:N	1:J:71:ARG:O	2.48	0.42
2:B:1164:LEU:HB3	2:B:1169:LEU:HD21	2.02	0.42
2:B:3817:LEU:HD13	2:B:3899:PHE:HD1	1.85	0.42
2:I:842:PRO:HD3	2:I:1073:ARG:HG3	2.02	0.42
2:I:1164:LEU:HB3	2:I:1169:LEU:HD21	2.02	0.42
2:I:2810:LYS:O	2:I:2814:LYS:N	2.43	0.42
2:I:4712:PRO:HB2	2:I:4718:LYS:HA	2.01	0.42
2:I:4822:THR:O	2:I:4825:THR:OG1	2.32	0.42
2:G:1808:ARG:HD2	2:G:1854:PHE:HA	2.02	0.42
2:E:1164:LEU:HB3	2:E:1169:LEU:HD21	2.02	0.42
2:E:1808:ARG:HD2	2:E:1854:PHE:HA	2.02	0.42
2:E:4712:PRO:HB2	2:E:4718:LYS:HA	2.01	0.42
1:J:87:HIS:HA	1:J:88:PRO:HD3	1.88	0.42
2:B:1189:LEU:HD12	2:B:1190:PRO:HD2	2.02	0.42
2:B:2265:LEU:HD22	2:B:2330:ARG:HB3	2.01	0.42
2:B:4687:TYR:OH	2:B:4699:GLY:O	2.34	0.42
2:I:681:HIS:HB3	2:I:784:SER:HB3	2.02	0.42
2:I:1668:ARG:HA	2:I:1671:ARG:HH11	1.85	0.42
2:G:1164:LEU:HB3	2:G:1169:LEU:HD21	2.02	0.42
2:G:1269:CYS:HA	2:G:1473:UNK:HA	2.01	0.42
2:G:3832:ILE:O	2:G:3836:MET:N	2.50	0.42
2:G:4962:GLY:H	2:G:5025:GLY:HA2	1.84	0.42
2:G:4982:GLU:HB3	2:G:4983:HIS:H	1.71	0.42
2:E:1668:ARG:HA	2:E:1671:ARG:HH11	1.85	0.42
2:E:3361:UNK:O	2:E:3365:UNK:N	2.53	0.42
2:B:488:LEU:O	2:B:492:ASP:N	2.45	0.42
2:B:1668:ARG:HA	2:B:1671:ARG:HH11	1.85	0.42
2:B:4227:GLU:HG3	2:B:4228:ALA:H	1.84	0.42
2:B:4892:ARG:HD3	2:I:4918:ILE:HD13	2.02	0.42
2:I:1189:LEU:HD12	2:I:1190:PRO:HD2	2.02	0.42
2:G:1286:UNK:HA	2:G:1461:UNK:HA	2.02	0.42
2:G:1668:ARG:HA	2:G:1671:ARG:HH11	1.85	0.42
2:G:3840:SER:OG	2:G:3875:MET:O	2.34	0.42
2:E:1728:ARG:HA	2:E:1731:LEU:HB2	2.01	0.42
2:B:2132:GLY:O	2:B:2136:ARG:N	2.51	0.42
2:B:3696:ASP:O	2:B:3700:GLN:N	2.46	0.42
2:I:892:THR:N	2:I:902:ARG:O	2.48	0.42
2:I:1731:LEU:HA	2:I:1772:ARG:HH12	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:681:HIS:HB3	2:G:784:SER:HB3	2.02	0.42
2:G:3361:UNK:O	2:G:3365:UNK:N	2.53	0.42
2:G:3781:GLN:HA	2:G:3784:SER:HB3	2.01	0.42
2:G:4231:MET:HE3	2:G:4960:ILE:HG23	2.02	0.42
2:E:2265:LEU:HD22	2:E:2330:ARG:HB3	2.01	0.42
2:E:3994:HIS:O	2:E:3998:HIS:ND1	2.46	0.42
2:E:4687:TYR:OH	2:E:4699:GLY:O	2.34	0.42
2:B:876:GLU:O	2:B:880:GLU:N	2.51	0.42
2:B:2272:PRO:HA	2:B:2275:VAL:HG12	2.01	0.42
2:G:1691:GLN:HE22	2:G:1802:ILE:HG12	1.84	0.42
2:G:1697:ALA:HB1	2:G:1708:ARG:HB3	2.02	0.42
2:G:1966:VAL:HA	2:G:1969:LEU:HB3	2.02	0.42
2:G:2121:PHE:O	2:G:3725:TYR:OH	2.33	0.42
2:G:3817:LEU:HD13	2:G:3899:PHE:HD1	1.84	0.42
2:E:1966:VAL:HA	2:E:1969:LEU:HB3	2.02	0.42
2:E:3703:LEU:HA	2:E:3706:SER:HB3	2.01	0.42
1:H:7:ILE:N	1:H:71:ARG:O	2.48	0.41
2:B:1697:ALA:HB1	2:B:1708:ARG:HB3	2.02	0.41
2:B:1966:VAL:HA	2:B:1969:LEU:HB3	2.02	0.41
2:B:3832:ILE:O	2:B:3836:MET:N	2.50	0.41
2:I:599:VAL:HG23	2:I:600:LEU:HD12	2.02	0.41
2:G:2265:LEU:HD22	2:G:2330:ARG:HB3	2.01	0.41
2:G:3663:LEU:H	2:G:3663:LEU:HG	1.76	0.41
2:E:842:PRO:HD3	2:E:1073:ARG:HG3	2.02	0.41
2:E:1731:LEU:HA	2:E:1772:ARG:HH12	1.84	0.41
2:E:4227:GLU:HG3	2:E:4228:ALA:H	1.83	0.41
1:A:92:PRO:HD3	2:B:627:PRO:HB2	2.01	0.41
2:B:3361:UNK:O	2:B:3365:UNK:N	2.53	0.41
2:B:4982:GLU:HB3	2:B:4983:HIS:H	1.71	0.41
2:I:3781:GLN:HA	2:I:3784:SER:HB3	2.01	0.41
2:I:3817:LEU:HD13	2:I:3899:PHE:HD1	1.85	0.41
2:G:1728:ARG:HA	2:G:1731:LEU:HB2	2.01	0.41
2:I:342:GLY:HA2	2:I:389:PHE:HB2	2.03	0.41
2:I:940:GLY:O	2:I:1052:ASN:N	2.52	0.41
2:I:1697:ALA:HB1	2:I:1708:ARG:HB3	2.02	0.41
2:I:1728:ARG:HA	2:I:1731:LEU:HB2	2.01	0.41
2:I:1966:VAL:HA	2:I:1969:LEU:HB3	2.02	0.41
2:G:842:PRO:HD3	2:G:1073:ARG:HG3	2.02	0.41
2:G:2272:PRO:HA	2:G:2275:VAL:HG12	2.01	0.41
2:G:3703:LEU:HA	2:G:3706:SER:HB3	2.01	0.41
2:E:1697:ALA:HB1	2:E:1708:ARG:HB3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:2196:ASN:OD1	2:E:2199:ARG:NH1	2.38	0.41
2:E:4821:LYS:HE2	2:E:4821:LYS:HB3	1.96	0.41
1:F:30:LEU:HD23	1:F:33:GLY:HA3	2.03	0.41
2:B:1691:GLN:HE22	2:B:1802:ILE:HG12	1.85	0.41
2:B:1728:ARG:HA	2:B:1731:LEU:HB2	2.01	0.41
2:B:3880:PHE:O	2:B:3884:LEU:N	2.54	0.41
2:B:3937:TYR:HB3	2:B:4002:LYS:HZ3	1.85	0.41
2:B:4712:PRO:HB2	2:B:4718:LYS:HA	2.01	0.41
2:I:15:ARG:HG2	2:I:100:THR:HA	2.03	0.41
2:I:1286:UNK:HA	2:I:1461:UNK:HA	2.02	0.41
2:I:1808:ARG:HD2	2:I:1854:PHE:HA	2.02	0.41
2:I:3361:UNK:O	2:I:3365:UNK:N	2.53	0.41
2:I:4702:ASP:OD1	2:I:4778:TRP:NE1	2.48	0.41
2:G:599:VAL:HG23	2:G:600:LEU:HD12	2.02	0.41
2:G:2132:GLY:O	2:G:2136:ARG:N	2.51	0.41
2:E:1189:LEU:HD12	2:E:1190:PRO:HD2	2.02	0.41
1:H:30:LEU:HD23	1:H:33:GLY:HA3	2.03	0.41
2:B:914:PRO:O	2:B:918:ARG:N	2.48	0.41
2:B:1808:ARG:HD2	2:B:1854:PHE:HA	2.02	0.41
2:I:1691:GLN:HE22	2:I:1802:ILE:HG12	1.85	0.41
2:I:2950:UNK:O	2:I:2954:UNK:N	2.54	0.41
2:I:4163:PHE:HA	2:I:4166:LEU:HB2	2.02	0.41
2:B:681:HIS:HB3	2:B:784:SER:HB3	2.02	0.41
2:B:1269:CYS:HA	2:B:1473:UNK:HA	2.01	0.41
2:I:379:HIS:CD2	2:I:382:GLY:H	2.32	0.41
2:I:1256:GLU:HG2	2:I:1273:ALA:HB3	2.03	0.41
2:G:1256:GLU:HG2	2:G:1273:ALA:HB3	2.03	0.41
2:G:2810:LYS:O	2:G:2814:LYS:N	2.42	0.41
2:G:3365:UNK:O	2:G:3369:UNK:N	2.54	0.41
2:G:3994:HIS:O	2:G:3998:HIS:ND1	2.46	0.41
2:E:4106:PRO:O	2:E:4110:PHE:N	2.53	0.41
2:B:342:GLY:HA2	2:B:389:PHE:HB2	2.03	0.41
2:B:599:VAL:HG23	2:B:600:LEU:HD12	2.02	0.41
2:I:2353:VAL:O	2:I:2357:LEU:N	2.51	0.41
2:I:3365:UNK:O	2:I:3369:UNK:N	2.54	0.41
2:G:123:THR:OG1	2:G:134:ASP:OD1	2.39	0.41
2:E:2950:UNK:O	2:E:2954:UNK:N	2.54	0.41
2:E:3365:UNK:O	2:E:3369:UNK:N	2.54	0.41
2:B:379:HIS:CD2	2:B:382:GLY:H	2.32	0.41
2:B:1130:GLN:HG2	2:B:1138:PRO:HA	2.03	0.41
2:G:1731:LEU:HA	2:G:1772:ARG:HH12	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:3880:PHE:O	2:G:3884:LEU:N	2.54	0.41
2:E:876:GLU:O	2:E:880:GLU:N	2.51	0.41
1:J:30:LEU:HD23	1:J:33:GLY:HA3	2.03	0.41
2:B:15:ARG:HG2	2:B:100:THR:HA	2.03	0.41
2:B:45:ARG:NH2	2:B:447:ASP:OD1	2.52	0.41
2:B:102:LEU:HB3	2:B:160:GLY:HA2	2.03	0.41
2:B:123:THR:OG1	2:B:134:ASP:OD1	2.39	0.41
2:B:410:LEU:HD12	2:B:413:GLN:HE21	1.86	0.41
2:B:911:HIS:O	2:B:918:ARG:NH2	2.52	0.41
2:B:1256:GLU:HG2	2:B:1273:ALA:HB3	2.03	0.41
2:B:1938:GLN:HA	2:B:1941:ASN:HD22	1.86	0.41
2:B:4780:PHE:HA	2:B:4783:ILE:HD12	2.03	0.41
2:I:734:GLY:O	2:I:736:HIS:ND1	2.54	0.41
2:I:911:HIS:O	2:I:918:ARG:NH2	2.52	0.41
2:I:4782:VAL:O	2:I:4785:THR:OG1	2.30	0.41
2:I:4968:PHE:CE2	2:I:4978:HIS:ND1	2.89	0.41
2:G:54:ASN:O	2:G:58:VAL:N	2.47	0.41
2:G:102:LEU:HB3	2:G:160:GLY:HA2	2.03	0.41
2:G:410:LEU:HD12	2:G:413:GLN:HE21	1.86	0.41
2:G:1189:LEU:HD12	2:G:1190:PRO:HD2	2.02	0.41
2:G:1938:GLN:HA	2:G:1941:ASN:HD22	1.86	0.41
2:G:2874:MET:O	2:G:2878:LEU:N	2.42	0.41
2:E:102:LEU:HB3	2:E:160:GLY:HA2	2.03	0.41
2:E:379:HIS:CD2	2:E:381:GLU:H	2.39	0.41
2:E:446:GLN:HA	2:E:449:ILE:HD12	2.03	0.41
2:E:4163:PHE:HA	2:E:4166:LEU:HB2	2.02	0.41
2:B:379:HIS:CD2	2:B:381:GLU:H	2.39	0.41
2:B:2950:UNK:O	2:B:2954:UNK:N	2.54	0.41
2:B:3365:UNK:O	2:B:3369:UNK:N	2.54	0.41
2:B:4237:PHE:O	2:B:4241:THR:OG1	2.33	0.41
2:I:410:LEU:HD12	2:I:413:GLN:HE21	1.86	0.41
2:E:342:GLY:HA2	2:E:389:PHE:HB2	2.03	0.41
2:E:485:SER:O	2:E:489:ASN:N	2.40	0.41
2:E:3880:PHE:O	2:E:3884:LEU:N	2.53	0.41
2:E:4822:THR:O	2:E:4825:THR:OG1	2.32	0.41
1:A:87:HIS:HA	1:A:88:PRO:HD3	1.88	0.40
2:B:309:THR:O	2:B:313:SER:OG	2.39	0.40
2:B:446:GLN:HA	2:B:449:ILE:HD12	2.03	0.40
2:B:1727:ARG:HH21	2:B:1775:HIS:CE1	2.39	0.40
2:B:4163:PHE:HA	2:B:4166:LEU:HB2	2.02	0.40
2:I:4106:PRO:O	2:I:4110:PHE:N	2.53	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:4780:PHE:HA	2:I:4783:ILE:HD12	2.03	0.40
2:I:4962:GLY:H	2:I:5025:GLY:CA	2.34	0.40
2:G:342:GLY:HA2	2:G:389:PHE:HB2	2.02	0.40
2:G:742:ASP:HA	2:G:760:ASN:HD21	1.86	0.40
2:G:897:ARG:HD2	2:G:905:PRO:HG3	2.04	0.40
2:G:1130:GLN:HG2	2:G:1138:PRO:HA	2.03	0.40
2:G:4962:GLY:H	2:G:5025:GLY:CA	2.34	0.40
2:E:410:LEU:HD12	2:E:413:GLN:HE21	1.86	0.40
2:E:1256:GLU:HG2	2:E:1273:ALA:HB3	2.03	0.40
2:E:1286:UNK:HA	2:E:1461:UNK:HA	2.02	0.40
2:B:1735:ILE:HG23	2:B:1771:LEU:HD23	2.03	0.40
2:I:102:LEU:HB3	2:I:160:GLY:HA2	2.03	0.40
2:I:309:THR:O	2:I:313:SER:OG	2.39	0.40
2:I:1105:ALA:O	2:I:1189:LEU:N	2.51	0.40
2:I:3880:PHE:O	2:I:3884:LEU:N	2.54	0.40
2:G:940:GLY:O	2:G:1052:ASN:N	2.52	0.40
2:G:4712:PRO:HB2	2:G:4718:LYS:HA	2.01	0.40
2:E:1141:ARG:HD2	2:E:1141:ARG:H	1.87	0.40
2:B:4984:ASN:HD21	2:B:4986:ALA:HB3	1.86	0.40
2:I:123:THR:OG1	2:I:134:ASP:OD1	2.39	0.40
2:I:876:GLU:O	2:I:880:GLU:N	2.51	0.40
2:I:1727:ARG:HH21	2:I:1775:HIS:CE1	2.39	0.40
2:I:4957:LYS:NZ	2:I:4957:LYS:CB	2.83	0.40
2:G:184:THR:HA	2:G:189:LEU:HA	2.03	0.40
2:G:3662:ILE:H	2:G:3662:ILE:HG13	1.79	0.40
2:G:4176:PRO:O	2:G:4202:ARG:NH2	2.55	0.40
2:G:4984:ASN:HD21	2:G:4986:ALA:HB3	1.87	0.40
2:E:184:THR:HA	2:E:189:LEU:HA	2.03	0.40
2:E:599:VAL:HG23	2:E:600:LEU:HD12	2.02	0.40
2:E:1735:ILE:HG23	2:E:1771:LEU:HD23	2.03	0.40
2:B:897:ARG:HD2	2:B:905:PRO:HG3	2.04	0.40
2:B:3843:ASP:H	2:B:3874:VAL:HG13	1.87	0.40
2:B:4735:GLU:HA	2:B:4738:ALA:HB3	2.03	0.40
2:I:2793:PRO:HG3	2:I:2855:TYR:CZ	2.57	0.40
2:G:2950:UNK:O	2:G:2954:UNK:N	2.54	0.40
2:G:4578:LEU:O	2:E:4880:MET:HG3	2.21	0.40
2:E:321:GLU:HB3	2:E:322:LYS:H	1.73	0.40
2:E:897:ARG:HD2	2:E:905:PRO:HG3	2.04	0.40
2:E:4982:GLU:HB3	2:E:4983:HIS:H	1.71	0.40
2:B:4106:PRO:O	2:B:4110:PHE:N	2.53	0.40
2:I:396:GLU:OE2	2:I:451:TYR:OH	2.32	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:446:GLN:HA	2:G:449:ILE:HD12	2.03	0.40
2:G:2196:ASN:OD1	2:G:2199:ARG:NH1	2.38	0.40
2:G:4968:PHE:CE2	2:G:4978:HIS:ND1	2.89	0.40
2:E:149:THR:N	2:E:172:VAL:O	2.54	0.40
2:E:1090:PHE:HD2	2:E:1202:LEU:HD11	1.86	0.40
2:E:4702:ASP:OD1	2:E:4778:TRP:NE1	2.48	0.40
2:E:4962:GLY:H	2:E:5025:GLY:CA	2.34	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	105/108 (97%)	92 (88%)	13 (12%)	0	100	100
1	F	105/108 (97%)	92 (88%)	13 (12%)	0	100	100
1	H	105/108 (97%)	92 (88%)	13 (12%)	0	100	100
1	J	105/108 (97%)	92 (88%)	13 (12%)	0	100	100
2	B	3235/4416 (73%)	2899 (90%)	332 (10%)	4 (0%)	48	83
2	E	3235/4416 (73%)	2900 (90%)	331 (10%)	4 (0%)	48	83
2	G	3235/4416 (73%)	2900 (90%)	331 (10%)	4 (0%)	48	83
2	I	3235/4416 (73%)	2900 (90%)	331 (10%)	4 (0%)	48	83
All	All	13360/18096 (74%)	11967 (90%)	1377 (10%)	16 (0%)	50	83

All (16) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	1708	ARG
2	I	1708	ARG
2	G	1708	ARG

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Mol	Chain	Res	Type
2	E	1708	ARG
2	B	4641	PRO
2	I	4641	PRO
2	G	4641	PRO
2	E	4641	PRO
2	B	1932	PRO
2	I	1932	PRO
2	G	1932	PRO
2	E	1932	PRO
2	B	1840	PRO
2	I	1840	PRO
2	G	1840	PRO
2	E	1840	PRO

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	88/89 (99%)	88 (100%)	0	100	100
1	F	88/89 (99%)	88 (100%)	0	100	100
1	H	88/89 (99%)	88 (100%)	0	100	100
1	J	88/89 (99%)	88 (100%)	0	100	100
2	B	2493/3022 (82%)	2471 (99%)	22 (1%)	75	83
2	E	2493/3022 (82%)	2471 (99%)	22 (1%)	75	83
2	G	2493/3022 (82%)	2471 (99%)	22 (1%)	75	83
2	I	2493/3022 (82%)	2471 (99%)	22 (1%)	75	83
All	All	10324/12444 (83%)	10236 (99%)	88 (1%)	74	83

All (88) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	131	LEU
2	B	534	ARG

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Mol	Chain	Res	Type
2	B	553	ARG
2	B	1076	ARG
2	B	1141	ARG
2	B	1600	LEU
2	B	1676	LEU
2	B	1964	ARG
2	B	3787	LYS
2	B	3805	LEU
2	B	3896	ASN
2	B	4034	ASN
2	B	4085	ARG
2	B	4120	ASN
2	B	4166	LEU
2	B	4201	ASN
2	B	4796	MET
2	B	4839	MET
2	B	4957	LYS
2	B	4958	CYS
2	B	4983	HIS
2	B	4995	LEU
2	I	131	LEU
2	I	534	ARG
2	I	553	ARG
2	I	1076	ARG
2	I	1141	ARG
2	I	1600	LEU
2	I	1676	LEU
2	I	1964	ARG
2	I	3787	LYS
2	I	3805	LEU
2	I	3896	ASN
2	I	4034	ASN
2	I	4085	ARG
2	I	4120	ASN
2	I	4166	LEU
2	I	4201	ASN
2	I	4796	MET
2	I	4839	MET
2	I	4957	LYS
2	I	4958	CYS
2	I	4983	HIS
2	I	4995	LEU

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Mol	Chain	Res	Type
2	G	131	LEU
2	G	534	ARG
2	G	553	ARG
2	G	1076	ARG
2	G	1141	ARG
2	G	1600	LEU
2	G	1676	LEU
2	G	1964	ARG
2	G	3787	LYS
2	G	3805	LEU
2	G	3896	ASN
2	G	4034	ASN
2	G	4085	ARG
2	G	4120	ASN
2	G	4166	LEU
2	G	4201	ASN
2	G	4796	MET
2	G	4839	MET
2	G	4957	LYS
2	G	4958	CYS
2	G	4983	HIS
2	G	4995	LEU
2	E	131	LEU
2	E	534	ARG
2	E	553	ARG
2	E	1076	ARG
2	E	1141	ARG
2	E	1600	LEU
2	E	1676	LEU
2	E	1964	ARG
2	E	3787	LYS
2	E	3805	LEU
2	E	3896	ASN
2	E	4034	ASN
2	E	4085	ARG
2	E	4120	ASN
2	E	4166	LEU
2	E	4201	ASN
2	E	4796	MET
2	E	4839	MET
2	E	4957	LYS
2	E	4958	CYS

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Mol	Chain	Res	Type
2	E	4983	HIS
2	E	4995	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (134) such sidechains are listed below:

Mol	Chain	Res	Type
1	F	43	ASN
1	F	87	HIS
1	A	43	ASN
1	A	87	HIS
1	H	43	ASN
1	H	87	HIS
1	J	43	ASN
1	J	87	HIS
2	B	57	ASN
2	B	71	GLN
2	B	105	HIS
2	B	111	HIS
2	B	273	HIS
2	B	379	HIS
2	B	413	GLN
2	B	479	GLN
2	B	1598	GLN
2	B	1660	GLN
2	B	1691	GLN
2	B	1693	GLN
2	B	1719	HIS
2	B	1775	HIS
2	B	1941	ASN
2	B	2007	ASN
2	B	2127	GLN
2	B	3809	ASN
2	B	3889	GLN
2	B	3896	ASN
2	B	3946	GLN
2	B	3950	ASN
2	B	3960	GLN
2	B	3963	ASN
2	B	3976	ASN
2	B	3994	HIS
2	B	4034	ASN
2	B	4054	ASN

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Mol	Chain	Res	Type
2	B	4120	ASN
2	B	4209	GLN
2	B	4833	ASN
2	B	4978	HIS
2	I	57	ASN
2	I	71	GLN
2	I	105	HIS
2	I	111	HIS
2	I	273	HIS
2	I	379	HIS
2	I	413	GLN
2	I	479	GLN
2	I	1598	GLN
2	I	1660	GLN
2	I	1691	GLN
2	I	1693	GLN
2	I	1719	HIS
2	I	1775	HIS
2	I	1941	ASN
2	I	2007	ASN
2	I	2127	GLN
2	I	3809	ASN
2	I	3889	GLN
2	I	3896	ASN
2	I	3946	GLN
2	I	3950	ASN
2	I	3960	GLN
2	I	3963	ASN
2	I	3976	ASN
2	I	3994	HIS
2	I	4034	ASN
2	I	4054	ASN
2	I	4120	ASN
2	I	4833	ASN
2	I	4978	HIS
2	G	57	ASN
2	G	71	GLN
2	G	105	HIS
2	G	111	HIS
2	G	273	HIS
2	G	379	HIS
2	G	413	GLN

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Mol	Chain	Res	Type
2	G	479	GLN
2	G	1598	GLN
2	G	1660	GLN
2	G	1691	GLN
2	G	1693	GLN
2	G	1719	HIS
2	G	1775	HIS
2	G	1941	ASN
2	G	2007	ASN
2	G	2127	GLN
2	G	3809	ASN
2	G	3889	GLN
2	G	3896	ASN
2	G	3946	GLN
2	G	3950	ASN
2	G	3960	GLN
2	G	3963	ASN
2	G	3976	ASN
2	G	3994	HIS
2	G	4034	ASN
2	G	4054	ASN
2	G	4120	ASN
2	G	4833	ASN
2	G	4973	HIS
2	G	4978	HIS
2	E	57	ASN
2	E	71	GLN
2	E	105	HIS
2	E	111	HIS
2	E	273	HIS
2	E	379	HIS
2	E	413	GLN
2	E	479	GLN
2	E	1598	GLN
2	E	1660	GLN
2	E	1691	GLN
2	E	1693	GLN
2	E	1719	HIS
2	E	1775	HIS
2	E	1941	ASN
2	E	2007	ASN
2	E	2127	GLN

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Mol	Chain	Res	Type
2	E	3809	ASN
2	E	3889	GLN
2	E	3896	ASN
2	E	3946	GLN
2	E	3950	ASN
2	E	3960	GLN
2	E	3963	ASN
2	E	3976	ASN
2	E	3994	HIS
2	E	4034	ASN
2	E	4054	ASN
2	E	4120	ASN
2	E	4833	ASN
2	E	4978	HIS

5.3.3 RNA (i)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains (i)

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 8 ligands modelled in this entry, 8 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)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
2	B	14
2	I	14
2	G	14
2	E	14

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B	4345:UNK	C	4540:PHE	N	74.58
1	I	4345:UNK	C	4540:PHE	N	74.58
1	G	4345:UNK	C	4540:PHE	N	74.58
1	E	4345:UNK	C	4540:PHE	N	74.58
1	B	3613:UNK	C	3639:THR	N	46.52
1	I	3613:UNK	C	3639:THR	N	46.52
1	G	3613:UNK	C	3639:THR	N	46.52
1	E	3613:UNK	C	3639:THR	N	46.52
1	B	4253:GLU	C	4320:UNK	N	29.50
1	I	4253:GLU	C	4320:UNK	N	29.50
1	G	4253:GLU	C	4320:UNK	N	29.50
1	E	4253:GLU	C	4320:UNK	N	29.50
1	B	3163:UNK	C	3170:UNK	N	16.19
1	I	3163:UNK	C	3170:UNK	N	16.19
1	G	3163:UNK	C	3170:UNK	N	16.18
1	E	3163:UNK	C	3170:UNK	N	16.18
1	B	3063:UNK	C	3134:UNK	N	14.97
1	I	3063:UNK	C	3134:UNK	N	14.97
1	G	3063:UNK	C	3134:UNK	N	14.97
1	E	3063:UNK	C	3134:UNK	N	14.97
1	B	3468:UNK	C	3511:UNK	N	14.26
1	I	3468:UNK	C	3511:UNK	N	14.26
1	G	3468:UNK	C	3511:UNK	N	14.26
1	E	3468:UNK	C	3511:UNK	N	14.26
1	B	2703:UNK	C	2734:ASN	N	13.16
1	I	2703:UNK	C	2734:ASN	N	13.16
1	G	2703:UNK	C	2734:ASN	N	13.16

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	E	2703:UNK	C	2734:ASN	N	13.16
1	B	3236:UNK	C	3241:UNK	N	12.69
1	I	3236:UNK	C	3241:UNK	N	12.69
1	G	3236:UNK	C	3241:UNK	N	12.69
1	E	3236:UNK	C	3241:UNK	N	12.69
1	B	2976:UNK	C	2995:UNK	N	12.19
1	I	2976:UNK	C	2995:UNK	N	12.19
1	G	2976:UNK	C	2995:UNK	N	12.19
1	E	2976:UNK	C	2995:UNK	N	12.19
1	B	1564:UNK	C	1573:MET	N	12.11
1	I	1564:UNK	C	1573:MET	N	12.11
1	G	1564:UNK	C	1573:MET	N	12.11
1	E	1564:UNK	C	1573:MET	N	12.11
1	B	3254:UNK	C	3261:UNK	N	8.68
1	I	3254:UNK	C	3261:UNK	N	8.68
1	G	3254:UNK	C	3261:UNK	N	8.68
1	E	3254:UNK	C	3261:UNK	N	8.68
1	B	1297:UNK	C	1430:UNK	N	5.91
1	I	1297:UNK	C	1430:UNK	N	5.91
1	G	1297:UNK	C	1430:UNK	N	5.91
1	E	1297:UNK	C	1430:UNK	N	5.91
1	B	2479:LEU	C	2487:UNK	N	3.40
1	I	2479:LEU	C	2487:UNK	N	3.40
1	G	2479:LEU	C	2487:UNK	N	3.40
1	E	2479:LEU	C	2487:UNK	N	3.40
1	B	2939:ARG	C	2942:UNK	N	3.21
1	I	2939:ARG	C	2942:UNK	N	3.21
1	G	2939:ARG	C	2942:UNK	N	3.21
1	E	2939:ARG	C	2942:UNK	N	3.21

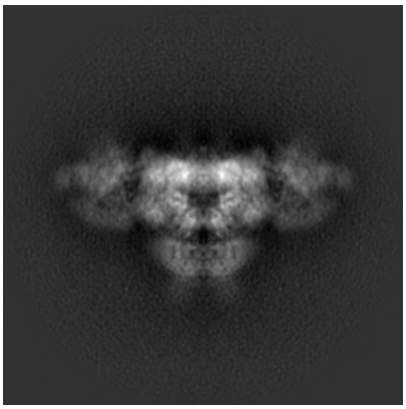
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-8388. These allow visual inspection of the internal detail of the map and identification of artifacts.

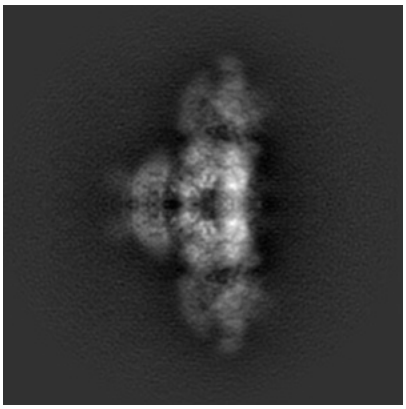
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

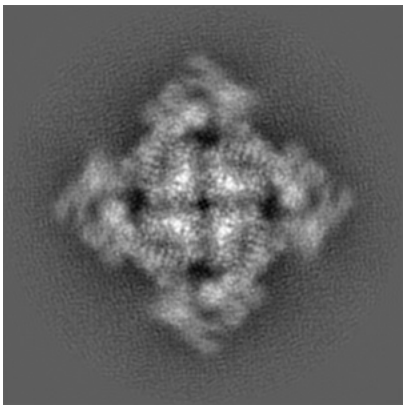
6.1.1 Primary map



X

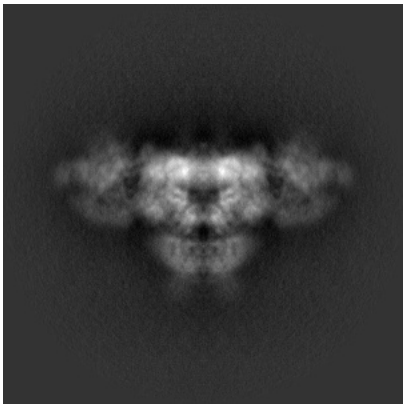


Y

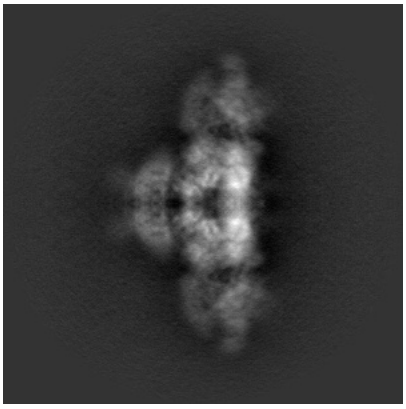


Z

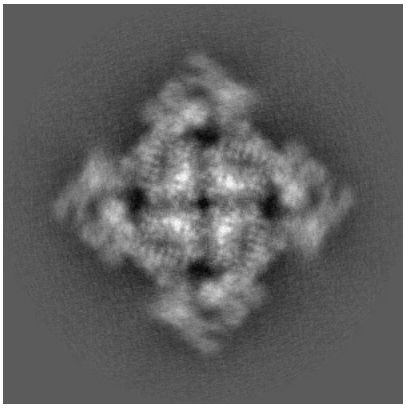
6.1.2 Raw map



X



Y

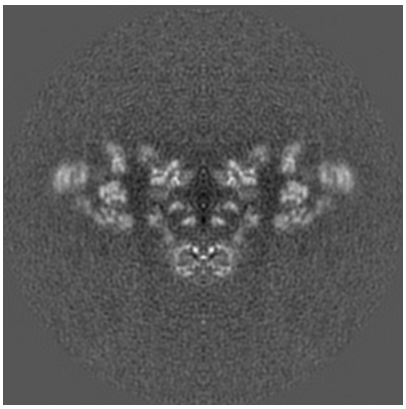


Z

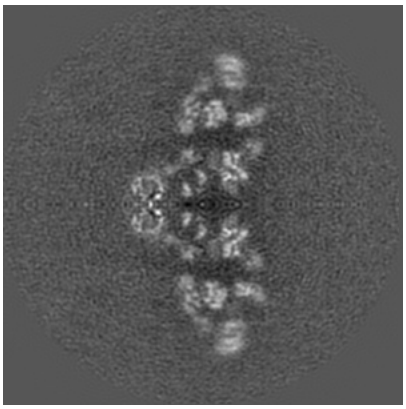
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

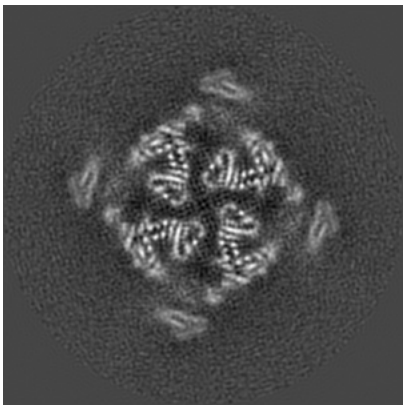
6.2.1 Primary map



X Index: 200

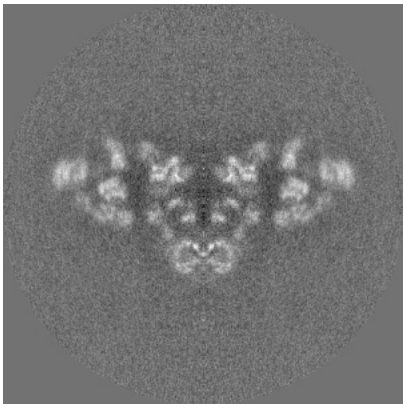


Y Index: 200

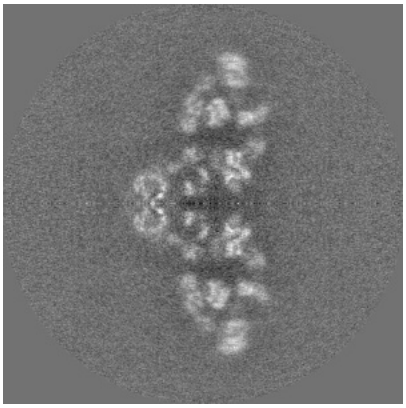


Z Index: 200

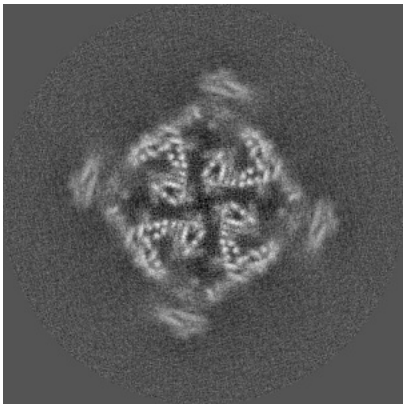
6.2.2 Raw map



X Index: 200



Y Index: 200

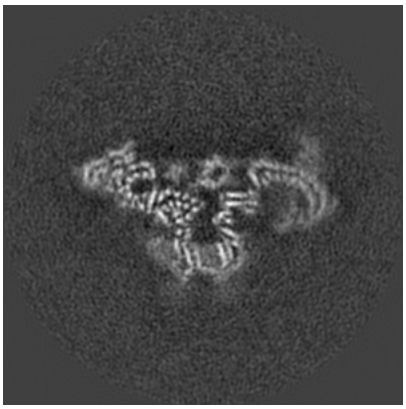


Z Index: 200

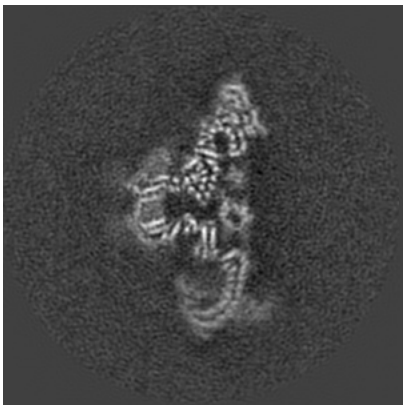
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

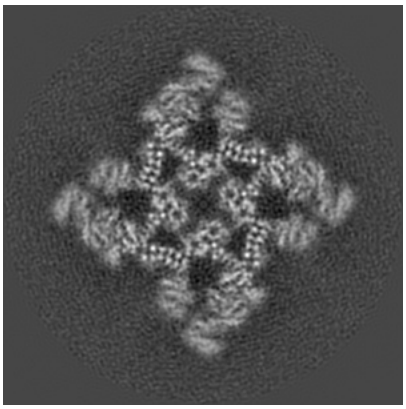
6.3.1 Primary map



X Index: 225

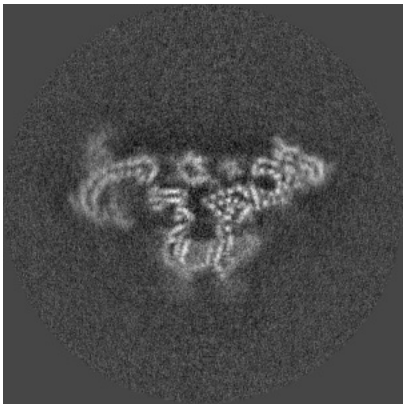


Y Index: 225

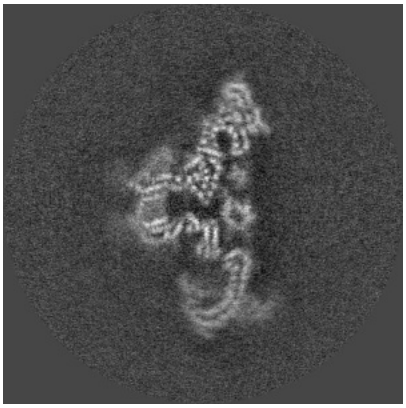


Z Index: 226

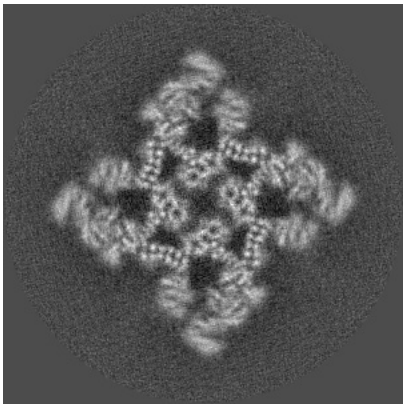
6.3.2 Raw map



X Index: 175



Y Index: 225

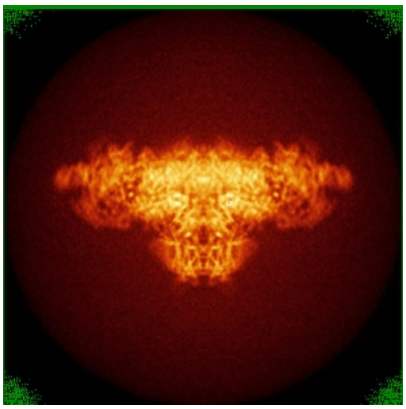


Z Index: 229

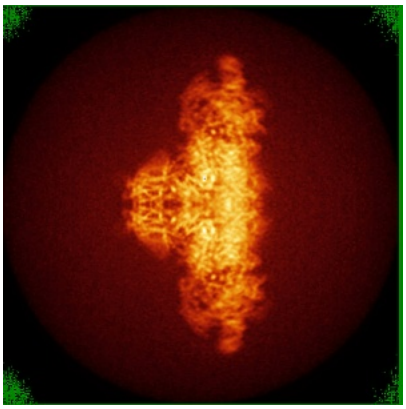
The images above show the largest variance slices of the map in three orthogonal directions.

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

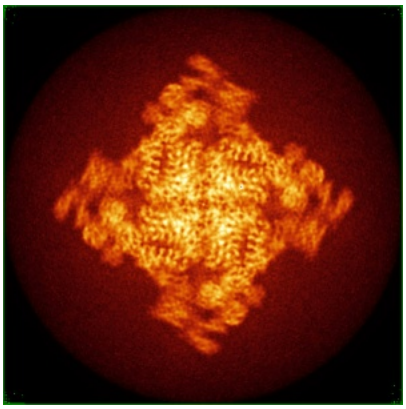
6.4.1 Primary map



X

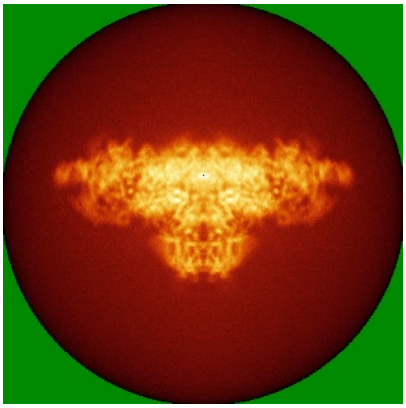


Y

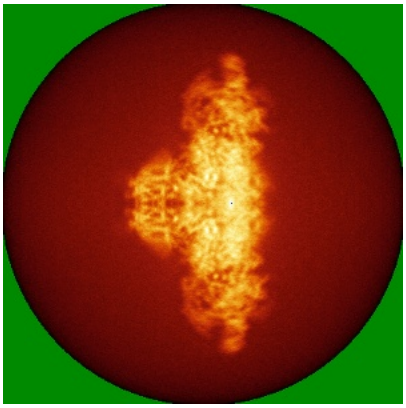


Z

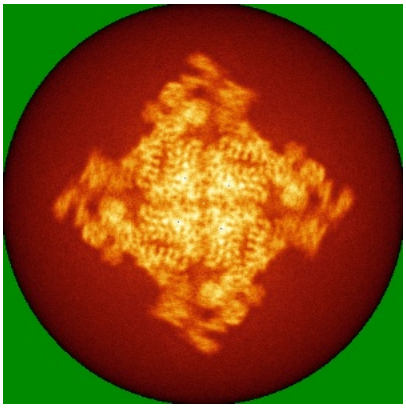
6.4.2 Raw map



X



Y

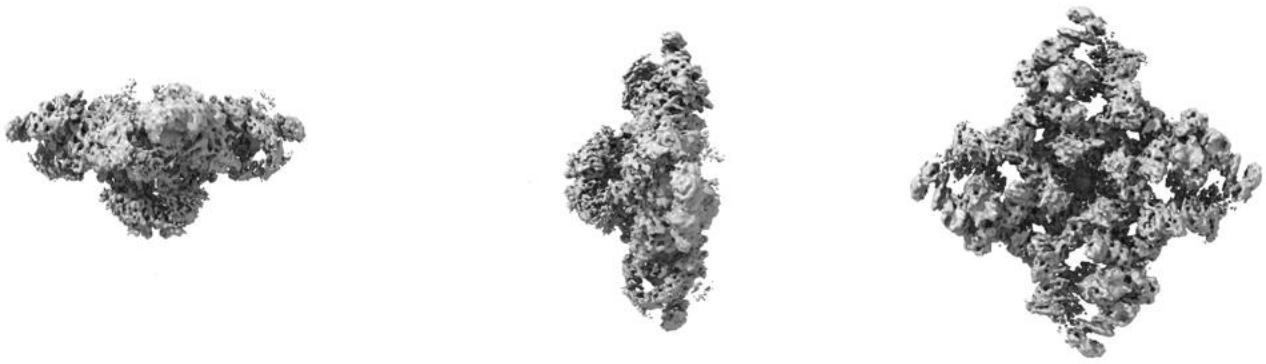


Z

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)

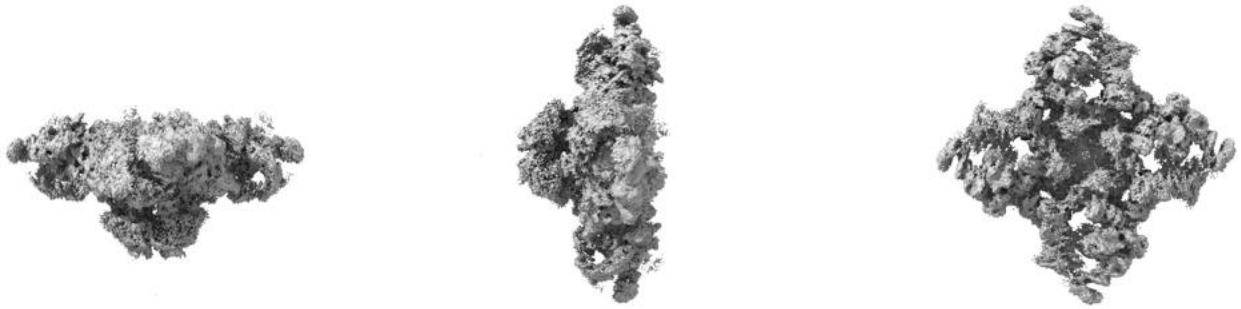
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.025. 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.

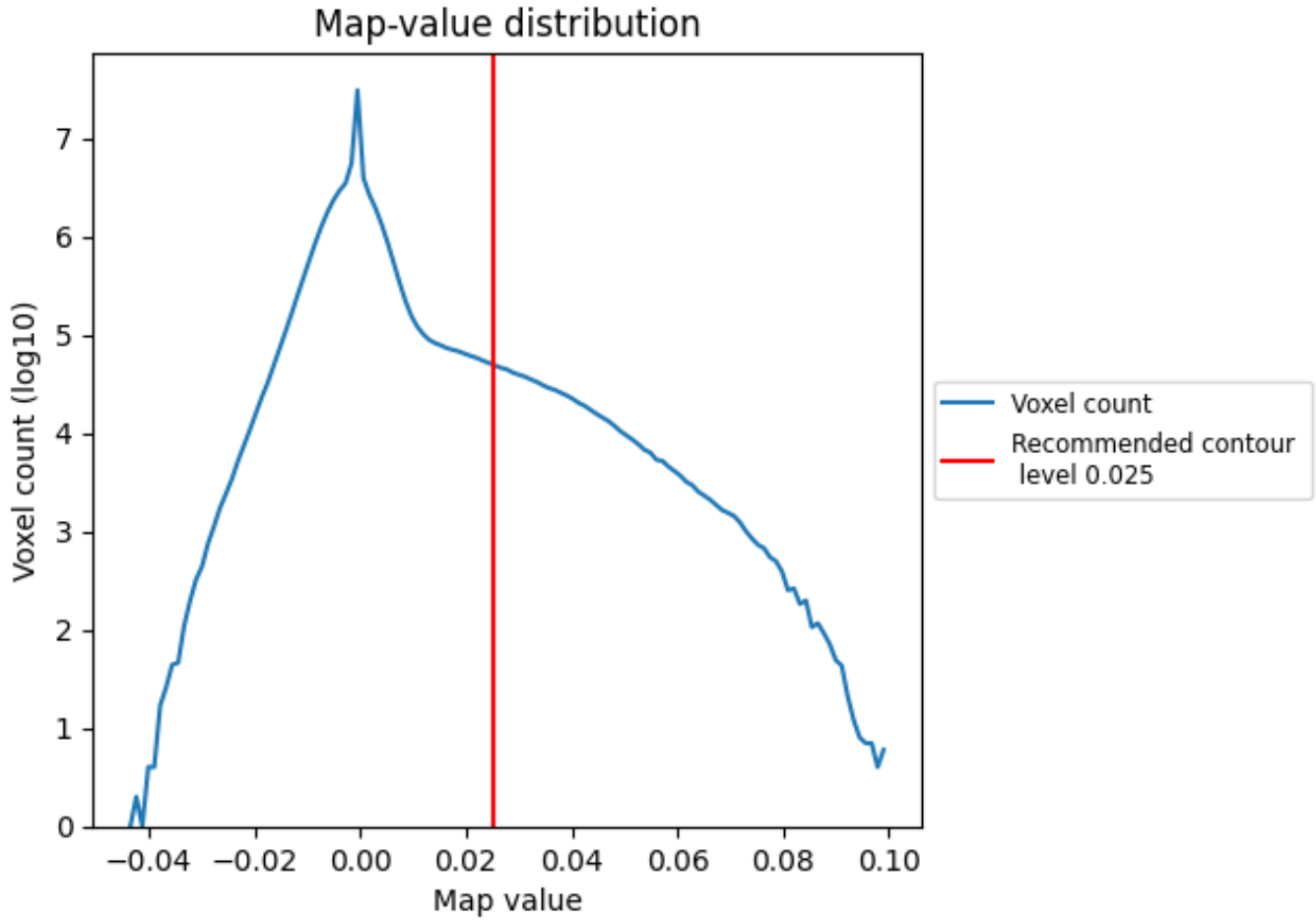
6.6 Mask visualisation (i)

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

7 Map analysis

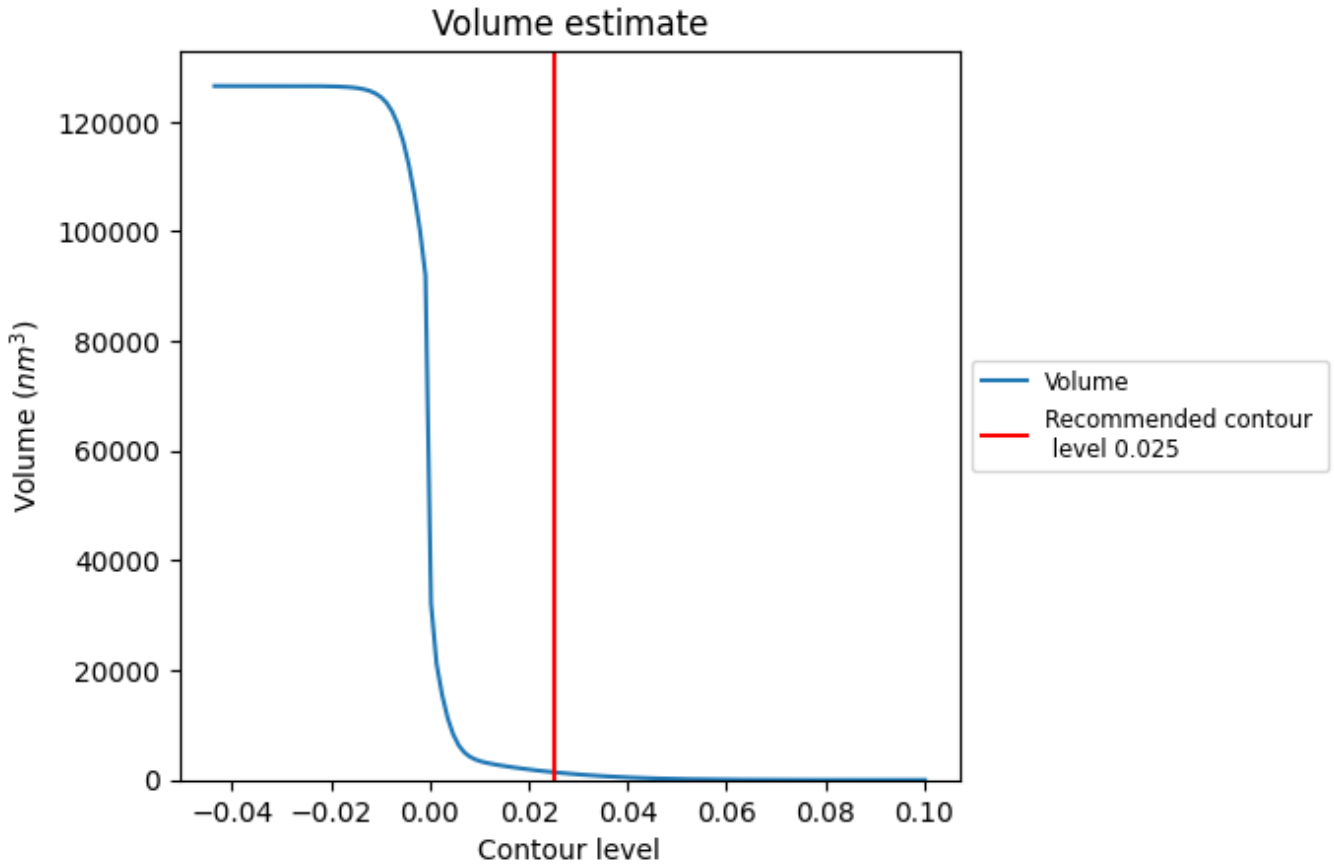
This section contains the results of statistical analysis of the map.

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.

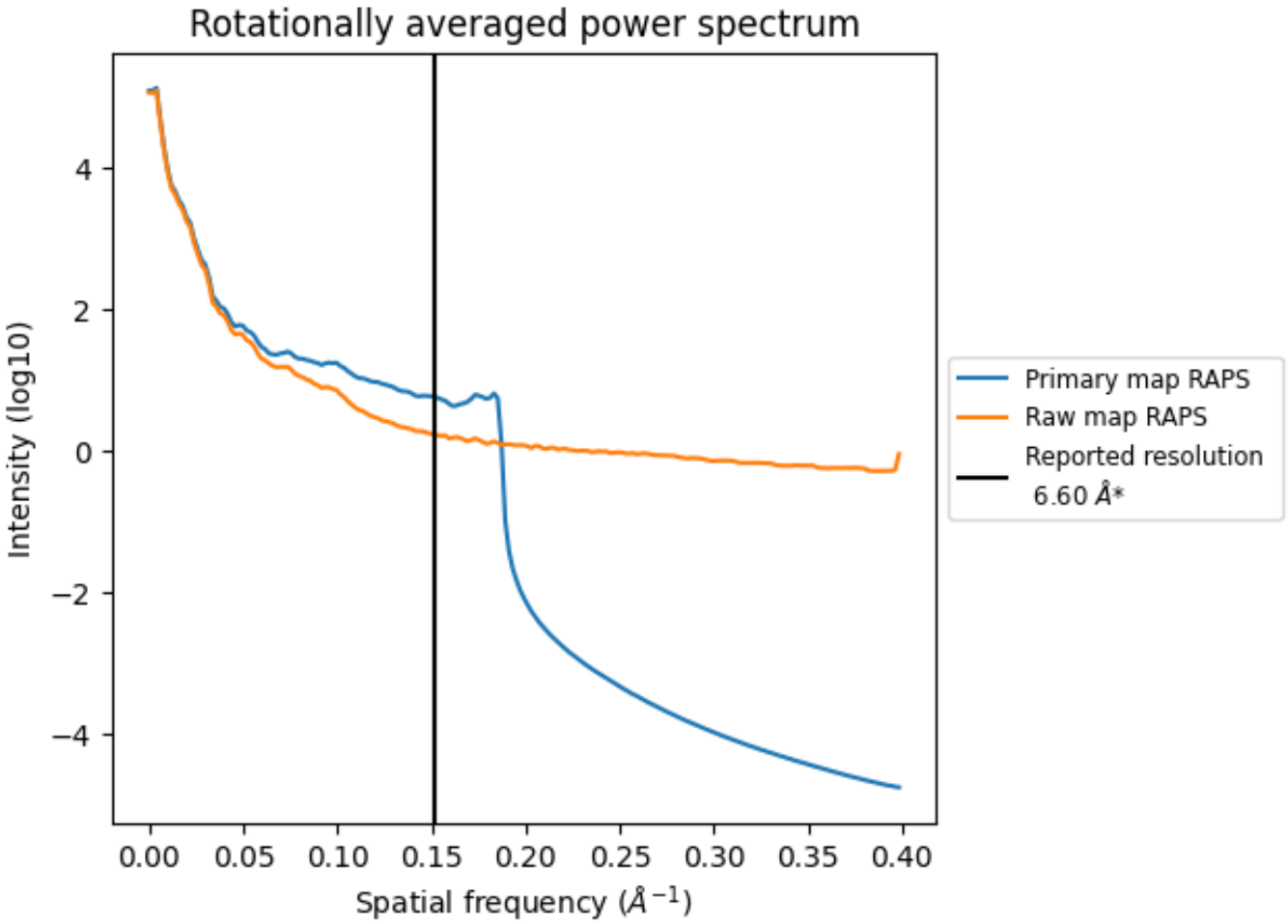
7.2 Volume estimate (i)



The volume at the recommended contour level is 1411 nm^3; this corresponds to an approximate mass of 1274 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)

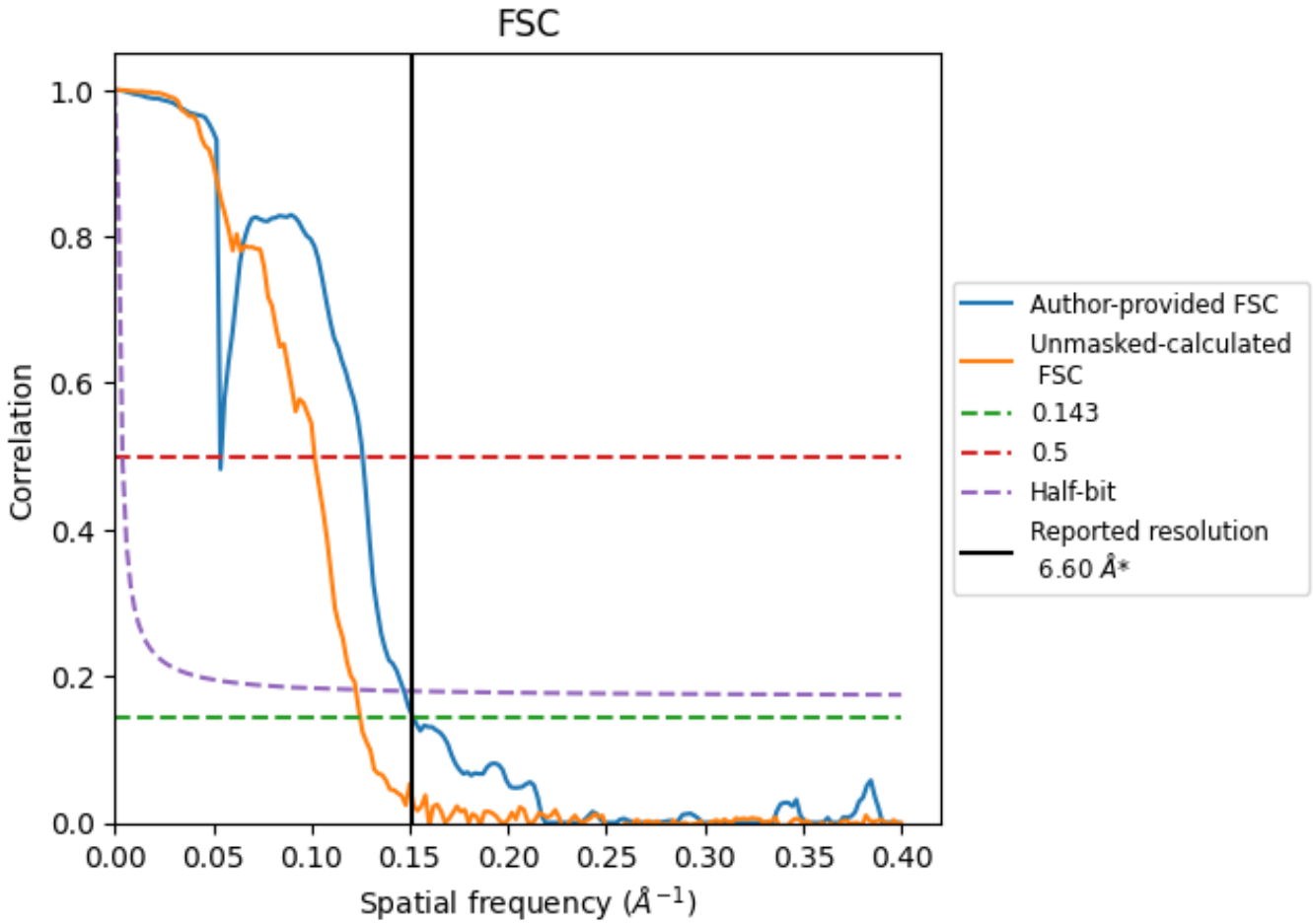


*Reported resolution corresponds to spatial frequency of 0.152 Å^{-1}

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 0.152 Å^{-1}

8.2 Resolution estimates (i)

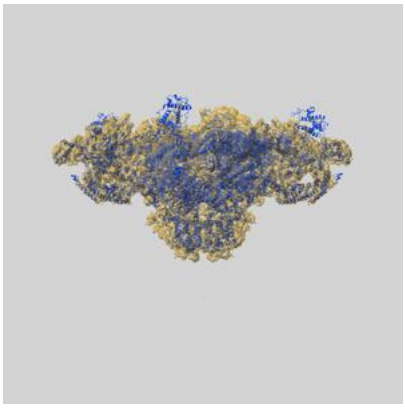
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	6.60	-	-
Author-provided FSC curve	6.58	18.62	6.80
Unmasked-calculated*	8.01	9.83	8.16

*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 8.01 differs from the reported value 6.6 by more than 10 %

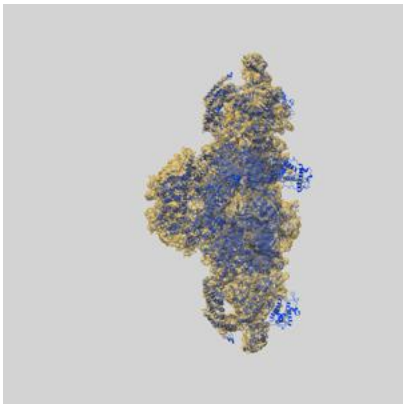
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-8388 and PDB model 5TAX. Per-residue inclusion information can be found in section 3 on page 5.

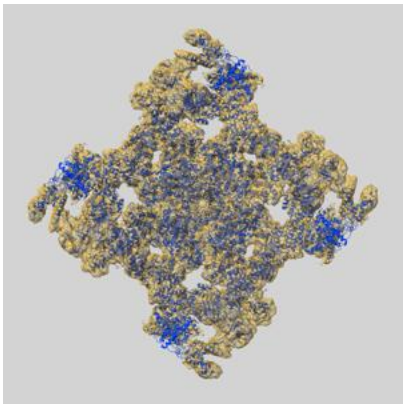
9.1 Map-model overlay



X



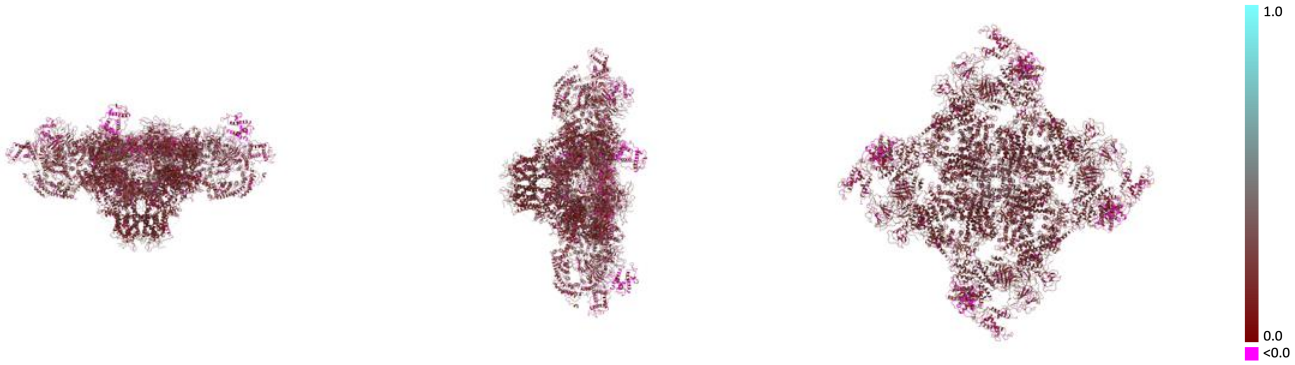
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.025 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.

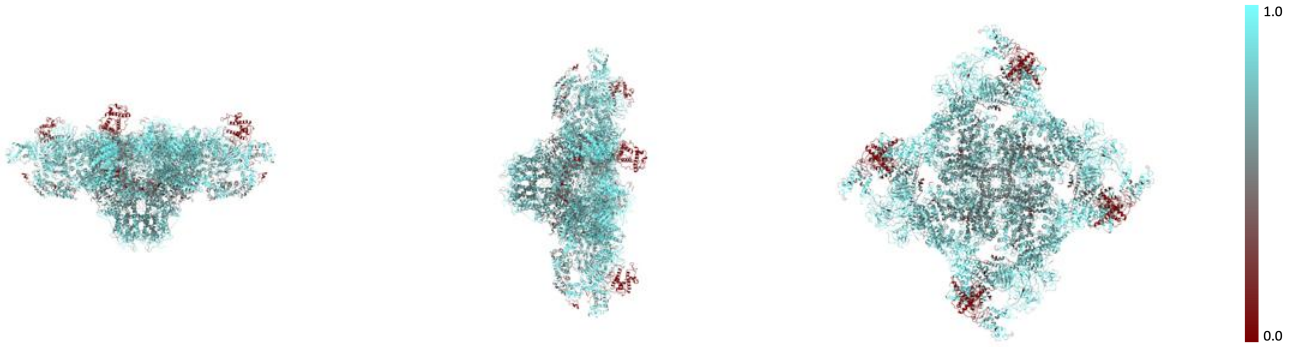
9.2 Q-score mapped to coordinate model (i)



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.

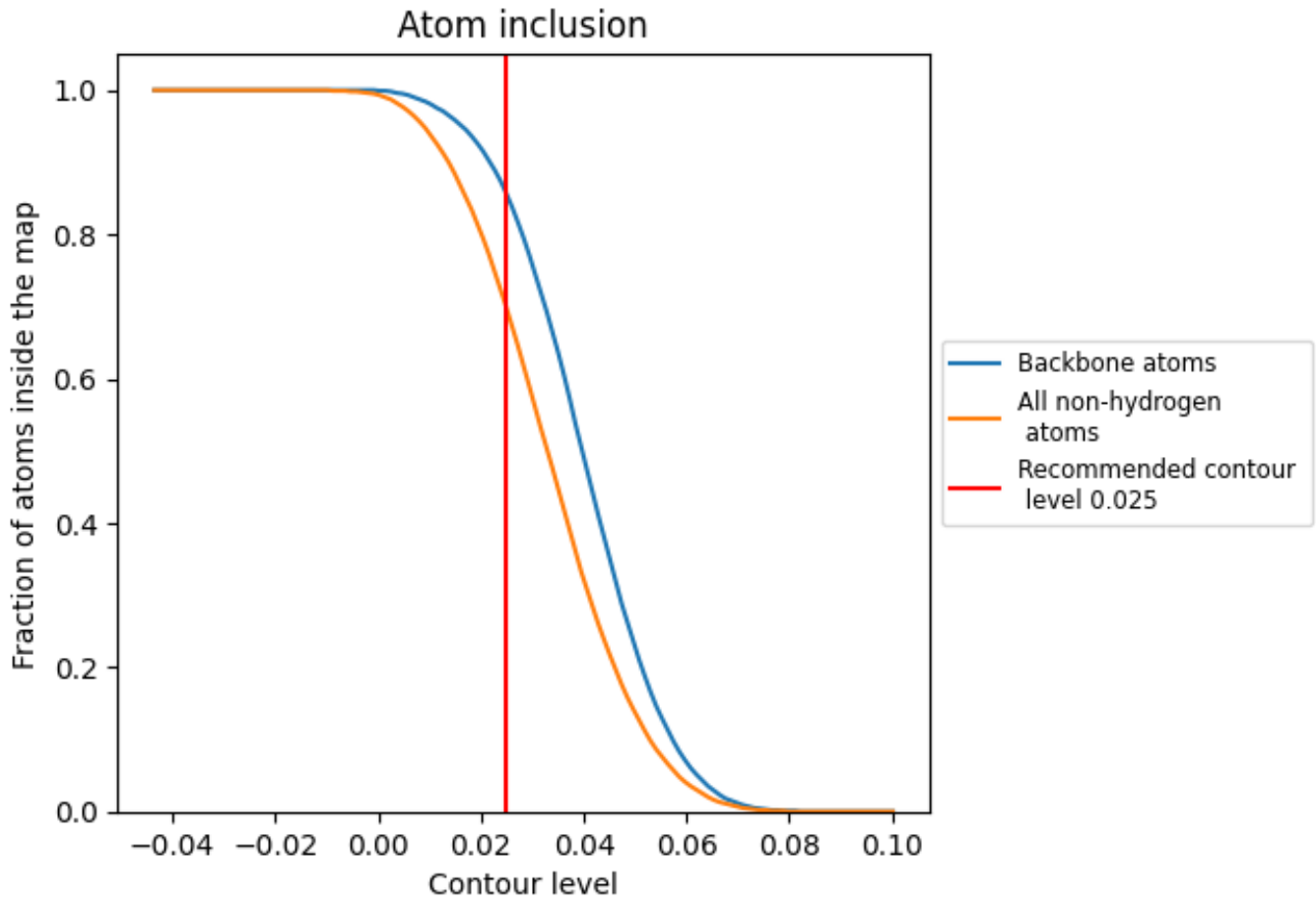
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.025).

9.4 Atom inclusion (i)



At the recommended contour level, 86% 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 (0.025) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6980	0.1910
A	0.8060	0.1870
B	0.6950	0.1910
E	0.6960	0.1910
F	0.8060	0.1910
G	0.6930	0.1910
H	0.8080	0.1900
I	0.6960	0.1910
J	0.8080	0.1870