Full wwPDB EM Validation Report ⓘ

Mar 2, 2024 – 01:53 PM EST

PDB ID	:	5TAL
EMDB ID	:	EMD-8378
Title	:	Structure of rabbit RyR1 (Caffeine/ATP/Ca2+ dataset, class 1&2)
Authors	:	Clarke, O.B.; des Georges, A.; Zalk, R.; Marks, A.R.; Hendrickson, W.A.; Frank, J.
Deposited on	:	2016-09-10
Resolution	:	4.30 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:

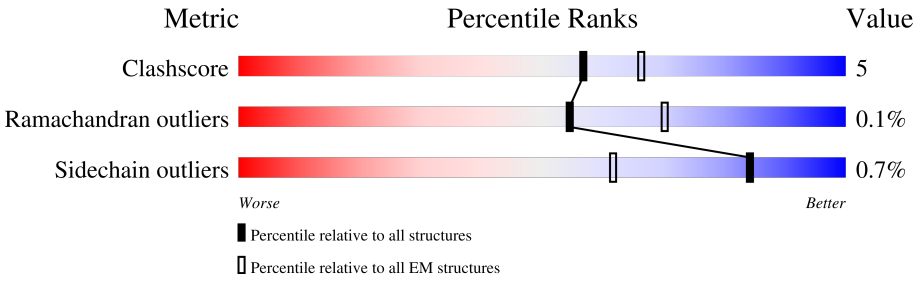
EMDB validation analysis	:	0.0.1.dev70
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 4.30 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	108	22% 83% 16%
1	F	108	23% 84% 15%
1	H	108	22% 85% 14%
1	J	108	23% 87% 12%
2	B	4416	37% 83% 11% 5%
2	E	4416	39% 83% 11% 5%
2	G	4416	38% 83% 11% 5%
2	I	4416	39% 83% 12% 5%

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 121456 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.

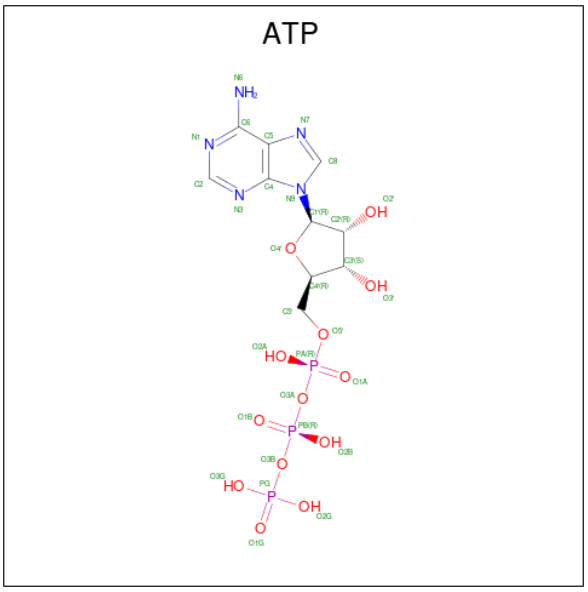
- Molecule 1 is a protein called Peptidyl-prolyl cis-trans isomerase FKBP1B.

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.

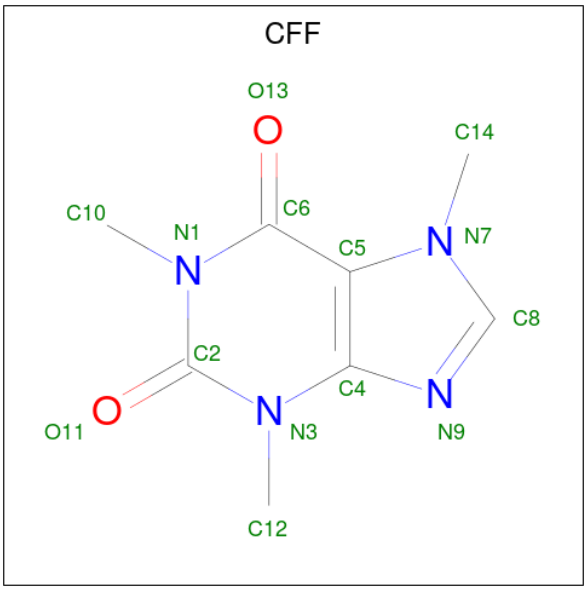
Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	4194	Total	C	N	O	S	0	0
			29499	18686	5228	5428	157		
2	G	4194	Total	C	N	O	S	0	0
			29499	18686	5228	5428	157		
2	I	4194	Total	C	N	O	S	0	0
			29499	18686	5228	5428	157		
2	E	4194	Total	C	N	O	S	0	0
			29499	18686	5228	5428	157		

- Molecule 3 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$).



Mol	Chain	Residues	Atoms					AltConf
3	B	1	Total	C	N	O	P	0
			31	10	5	13	3	
3	G	1	Total	C	N	O	P	0
			31	10	5	13	3	
3	I	1	Total	C	N	O	P	0
			31	10	5	13	3	
3	E	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 4 is CAFFEINE (three-letter code: CFF) (formula: $C_8H_{10}N_4O_2$).



Mol	Chain	Residues	Atoms				AltConf
4	B	1	Total	C	N	O	0
			14	8	4	2	
4	G	1	Total	C	N	O	0
			14	8	4	2	
4	I	1	Total	C	N	O	0
			14	8	4	2	
4	E	1	Total	C	N	O	0
			14	8	4	2	

- Molecule 5 is ZINC ION (three-letter code: ZN) (formula: Zn).

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

- Molecule 6 is CALCIUM ION (three-letter code: CA) (formula: Ca).

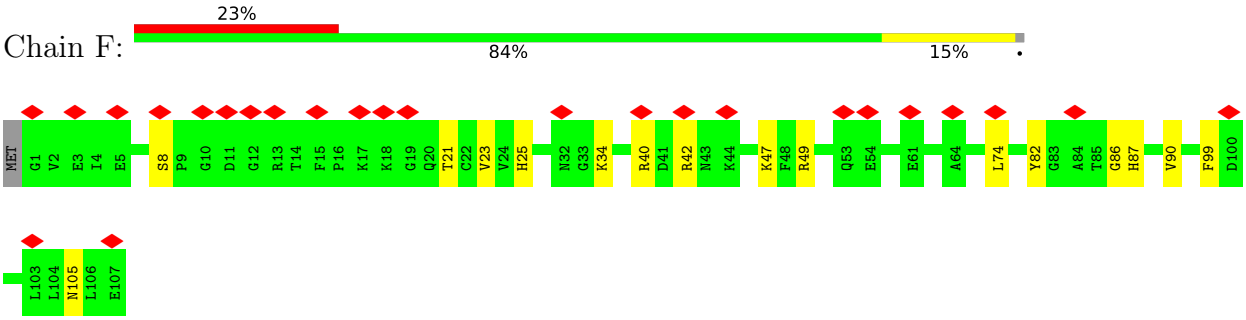
Mol	Chain	Residues	Atoms		AltConf
6	B	1	Total	Ca	0
			1	1	
6	G	1	Total	Ca	0
			1	1	
6	I	1	Total	Ca	0
			1	1	
6	E	1	Total	Ca	0
			1	1	

3 Residue-property plots (i)

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

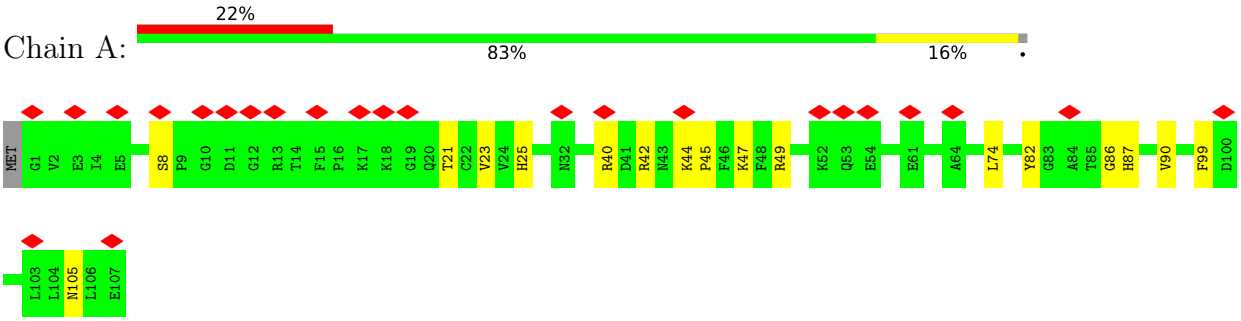
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B

Chain F:



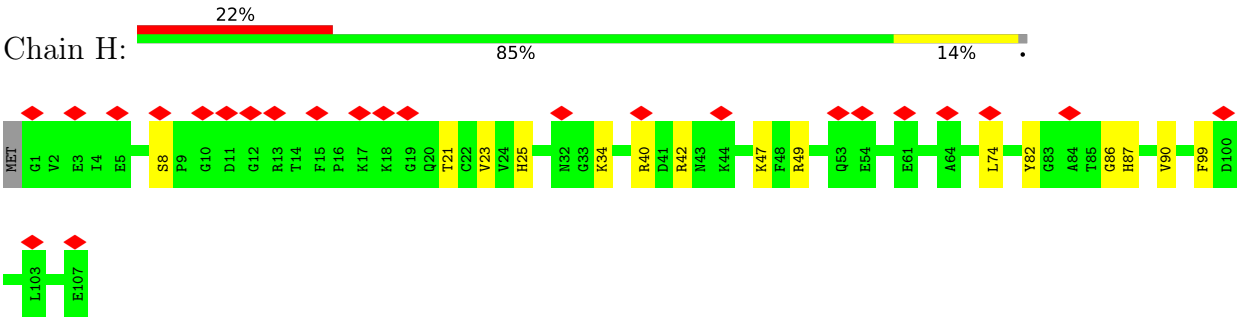
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B

Chain A:



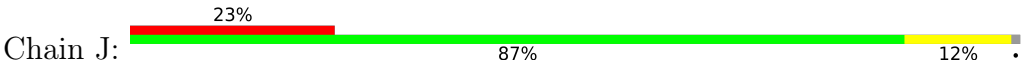
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B

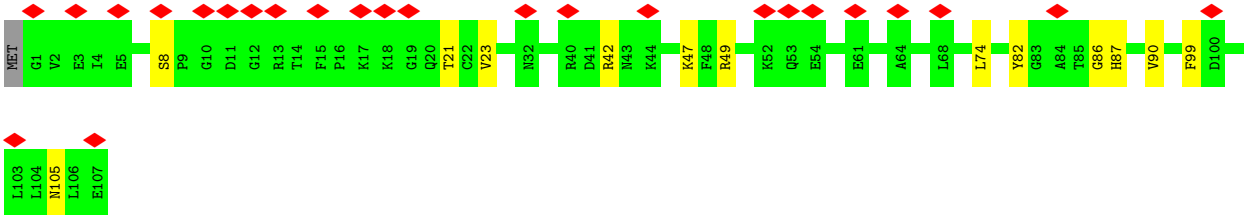
Chain H:



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

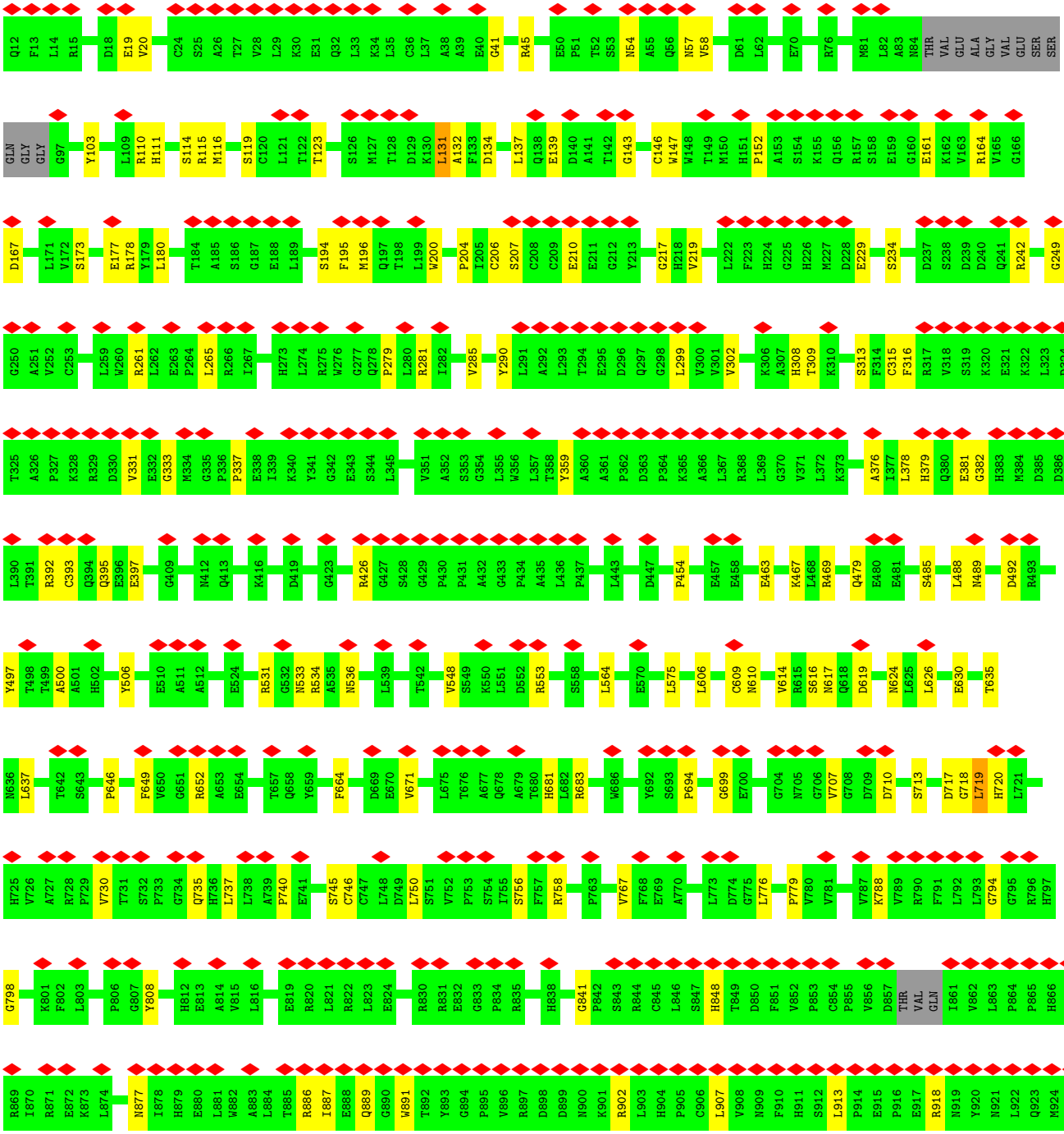
Chain J:

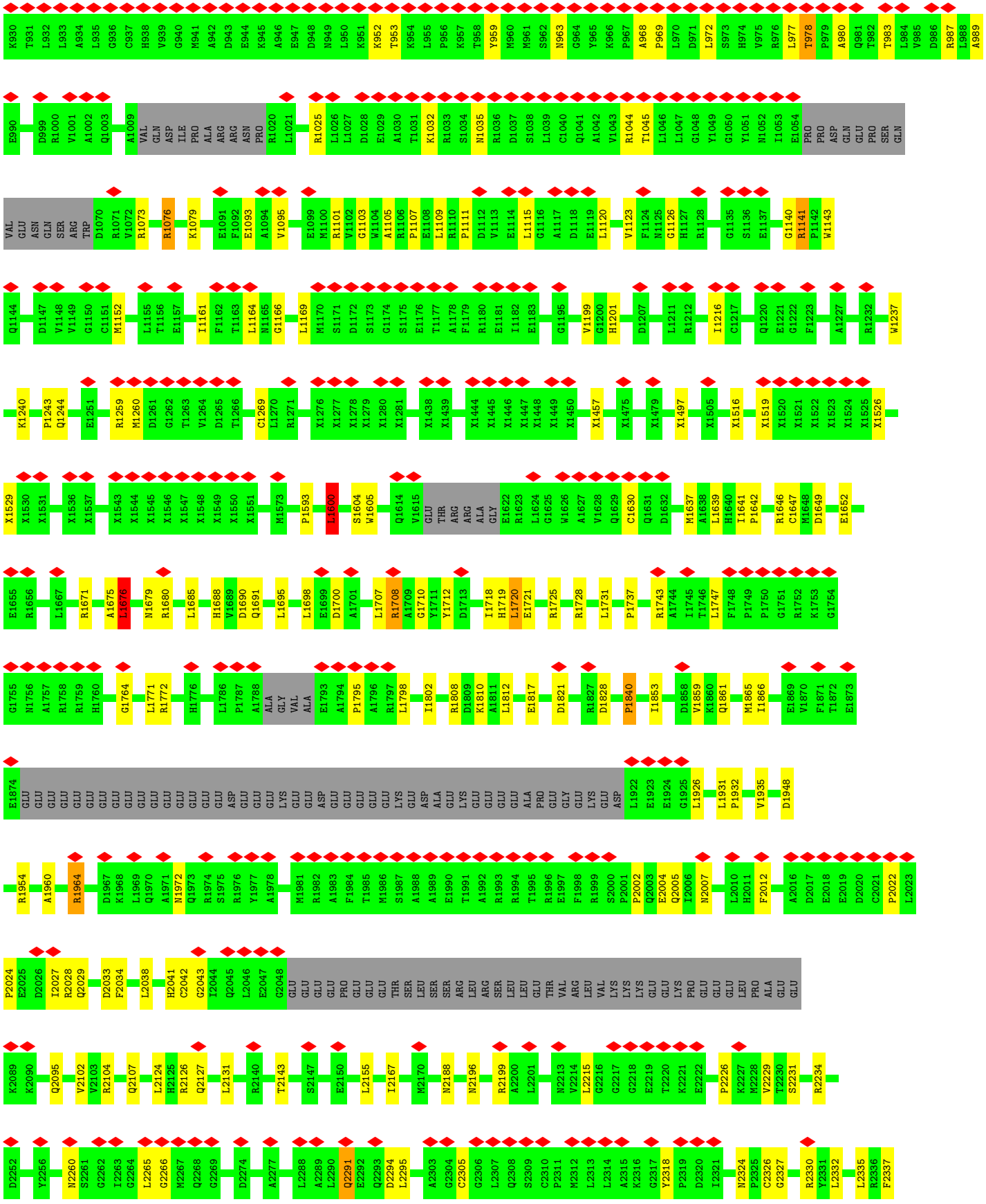




• Molecule 2: Ryanodine receptor 1

Chain B:

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VAL GLU ASN GLN SER ARG TRP D1070 R1071 V1072 R1073 R1076 K1079 E1091 F1092 E1093 A1094 V1095 E1099 M1100 R1101 V1102 G1103 W1104 A1105 R1106 P1107 E1108 L1109 R1110 P1111 D1112 V1113 E1114 L1115 G1116 A1117 D1118 E1119 L1120 V1123 F1124 N1125 G1126 H1127 R1128 G1135 S1136 E1137 G1140 R1141 P1142 W1143
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X1529 X1530 X1531 X1536 X1537 X1543 X1544 X1545 X1546 X1547 X1548 X1549 X1550 X1551 M1573 P1593 L1600 S1604 W1605 Q1614 V1615 GLU THR ARG ARG ALA GLY E1622 R1623 L1624 G1625 W1626 A1627 V1628 Q1629 C1630 Q1631 D1632 M1637 A1638 L1639 H1640 I1641 P1642 R1646 C1647 M1648 D1649 E1652
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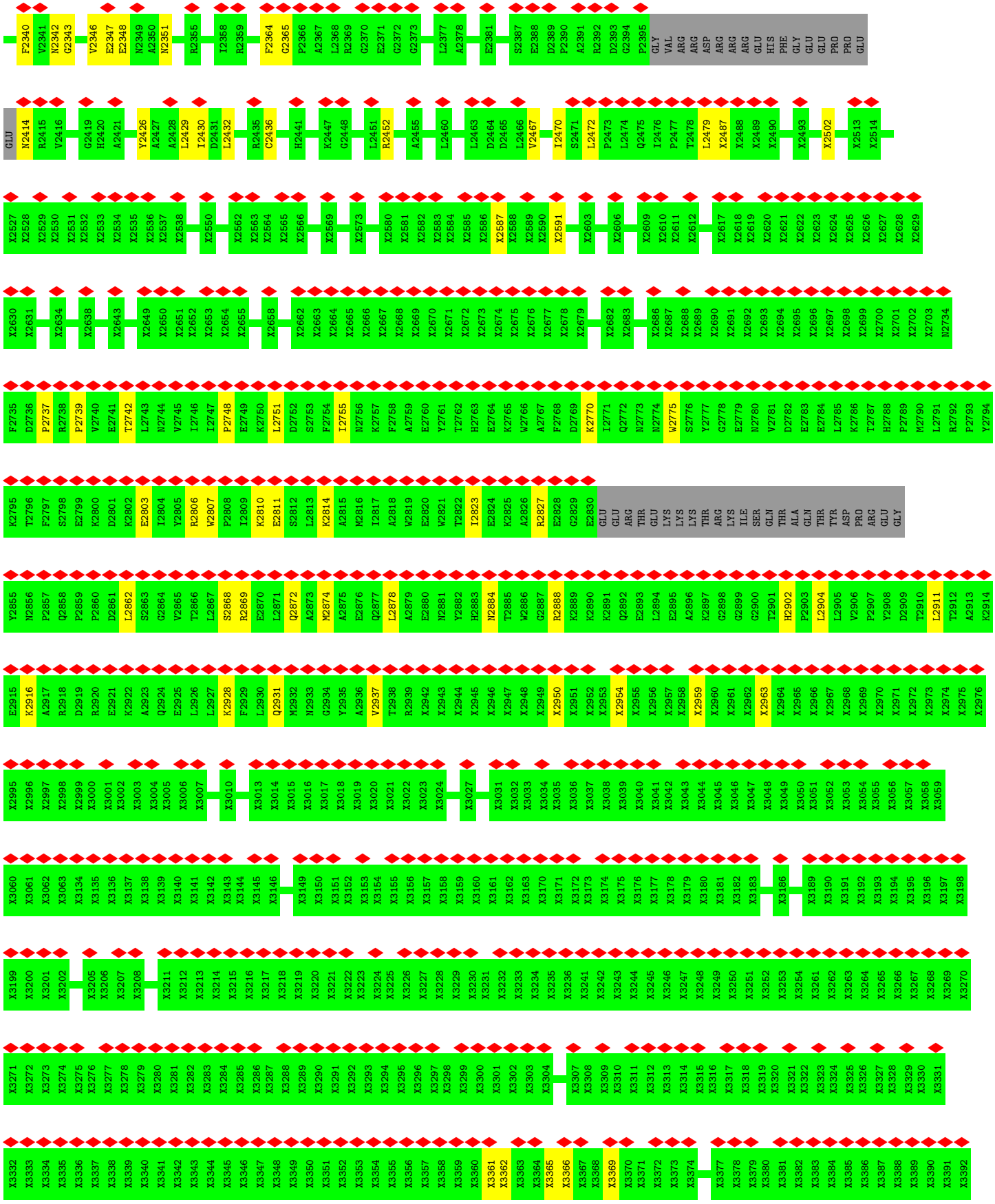
P2024 E2025 D2026 I2027 R2028 Q2029 D2033 F2034 L2038 H2041 C2042 G2043 I2044 Q2045 L2046 E2047 G2048 GLU GLU GLU PRO GLU GLU GLU THR SER LEU SER SER SER ARG LEU ARG SER LEU LEU GLU THR VAL ARG LEU VAL LYS LYS LYS GLU GLU LYS PRO GLU GLU GLU LEU PRO ALA GLU GLU
K2089 K2090 Q2095 V2102 V2103 R2104 Q2107 L2124 H2125 R2126 Q2127 L2131 R2140 T2143 S2147 E2150 L2155 I2167 M2170 N2188 N2196 R2199 A2200 L2201 N2213 V2214 L2215 G2216 G2217 G2218 E2219 T2220 K2221 E2222 P2226 K2227 M2228 V2229 T2230 S2231 R2234
D2252 Y2256 N2260 S2261 G2262 I2263 G2264 L2265 G2266 M2267 Q2268 G2269 D2274 A2277 L2288 A2289 L2290 Q2291 E2292 Q2293 D2294 L2295 A2303 G2304 C2305 G2306 L2307 Q2308 S2309 C2310 P2311 M2312 L2313 L2314 A2315 K2316 G2317 Y2318 P2319 D2320 I2321 N2324 P2325 C2326 G2327 R2330 Y2331 L2332 L2335 R2336 F2337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GLU N2414 R2415 V2416 G2419 H2420 A2421 Y2426 A2427 A2428 L2429 I2430 D2431 L2432 R2435 C2436 H2441 K2447 G2448 L2451 R2452 A2455 L2460 L2463 D2464 D2465 L2466 V2467 I2470 S2471 L2472 P2473 L2474 Q2475 I2476 P2477 T2478 L2479 X2487 X2488 X2489 X2490 X2493 X2502 X2513 X2514
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X3060 X3061 X3062 X3063 X3134 X3135 X3136 X3137 X3138 X3139 X3140 X3141 X3142 X3143 X3144 X3145 X3146 X3149 X3150 X3151 X3152 X3153 X3154 X3155 X3156 X3157 X3158 X3159 X3160 X3161 X3162 X3163 X3170 X3171 X3172 X3173 X3174 X3175 X3176 X3177 X3178 X3179 X3180 X3181 X3182 X3183 X3186 X3189 X3190 X3191 X3192 X3193 X3194 X3195 X3196 X3197 X3198
X3199 X3200 X3201 X3202 X3205 X3206 X3207 X3208 X3211 X3212 X3213 X3214 X3215 X3216 X3217 X3218 X3219 X3220 X3221 X3222 X3223 X3224 X3225 X3226 X3227 X3228 X3229 X3230 X3231 X3232 X3233 X3234 X3235 X3236 X3241 X3242 X3243 X3244 X3245 X3246 X3247 X3248 X3249 X3250 X3251 X3252 X3253 X3254 X3261 X3262 X3263 X3264 X3265 X3266 X3267 X3268 X3269 X3270
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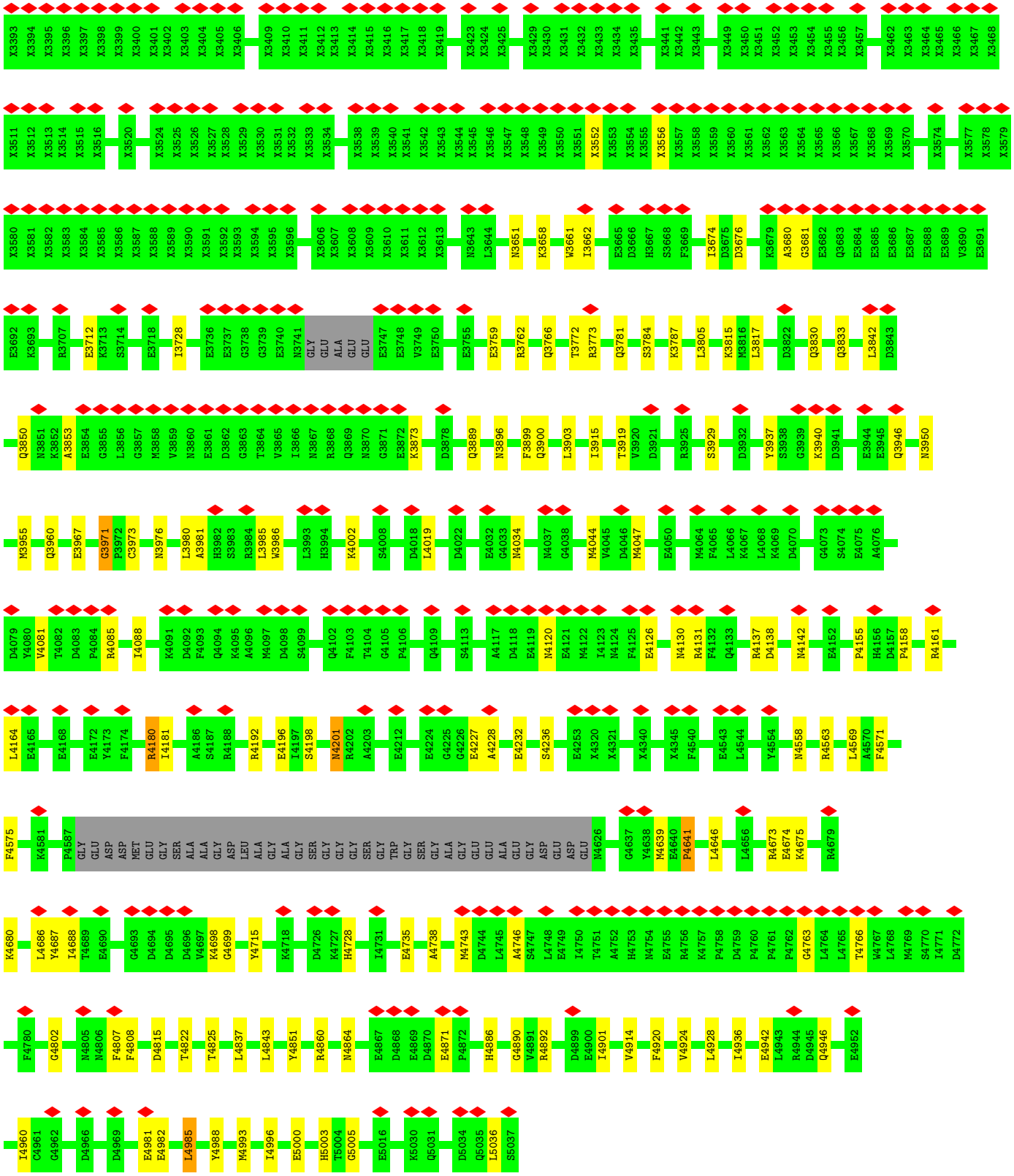
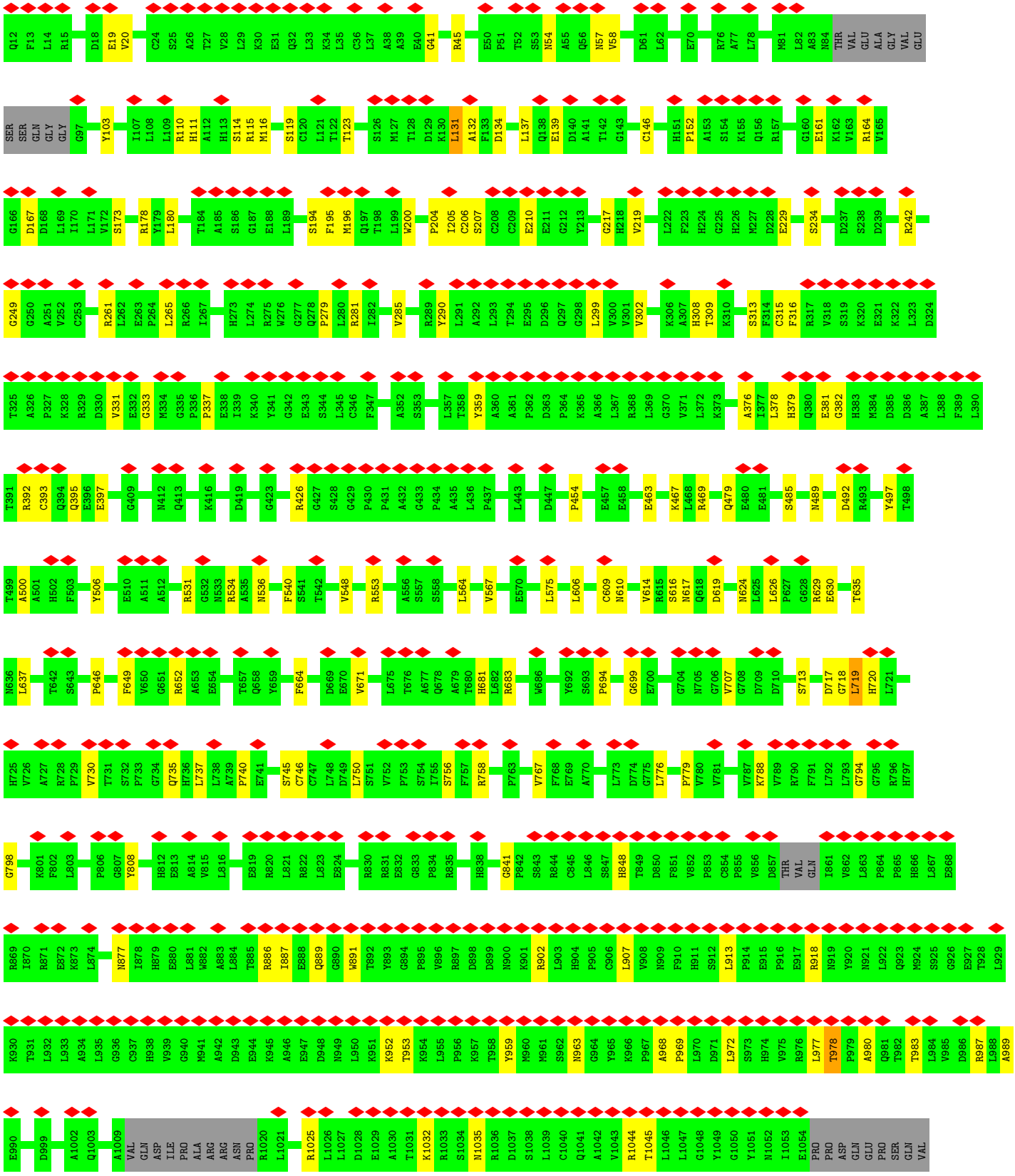


• Molecule 2: Ryanodine receptor 1

Chain G: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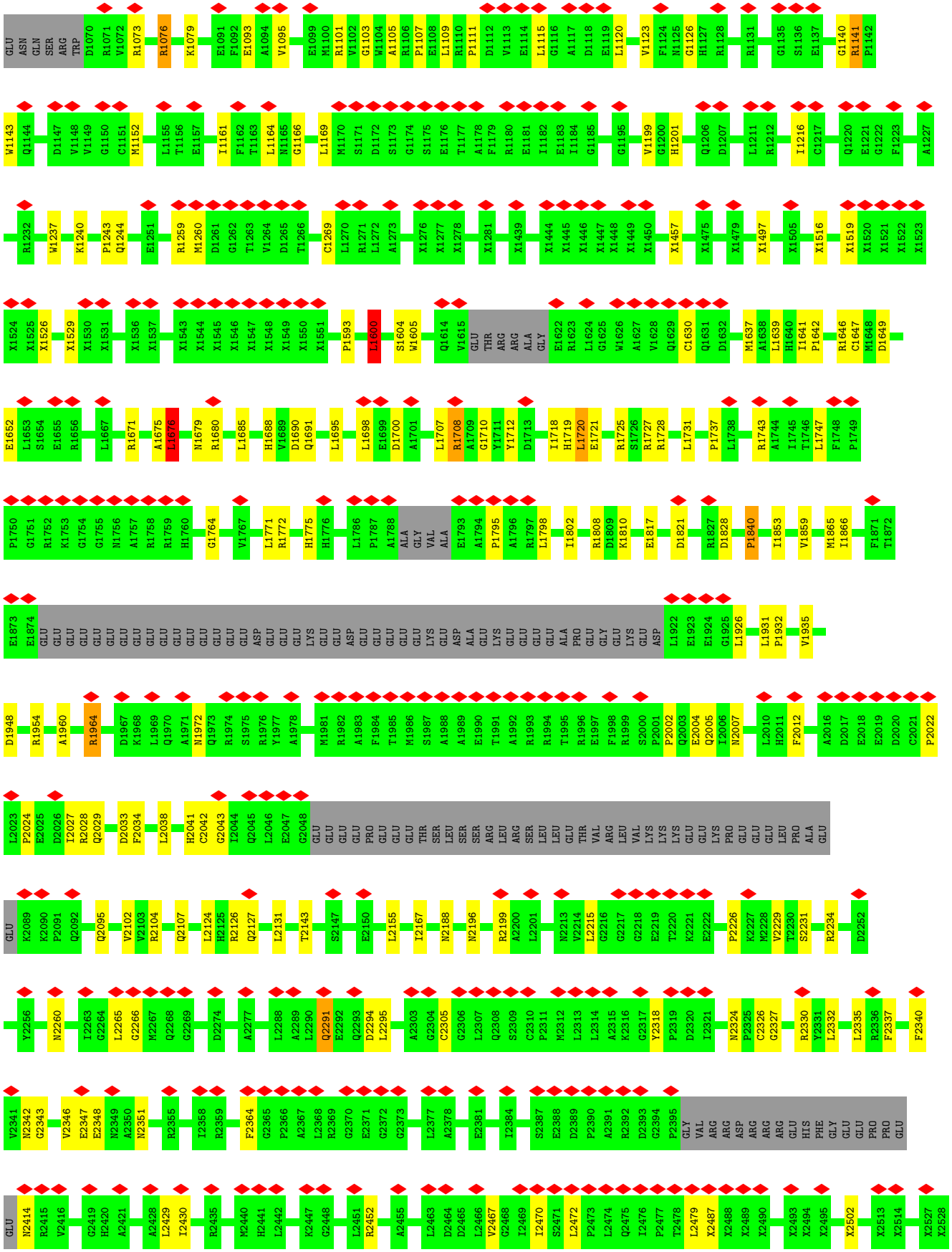

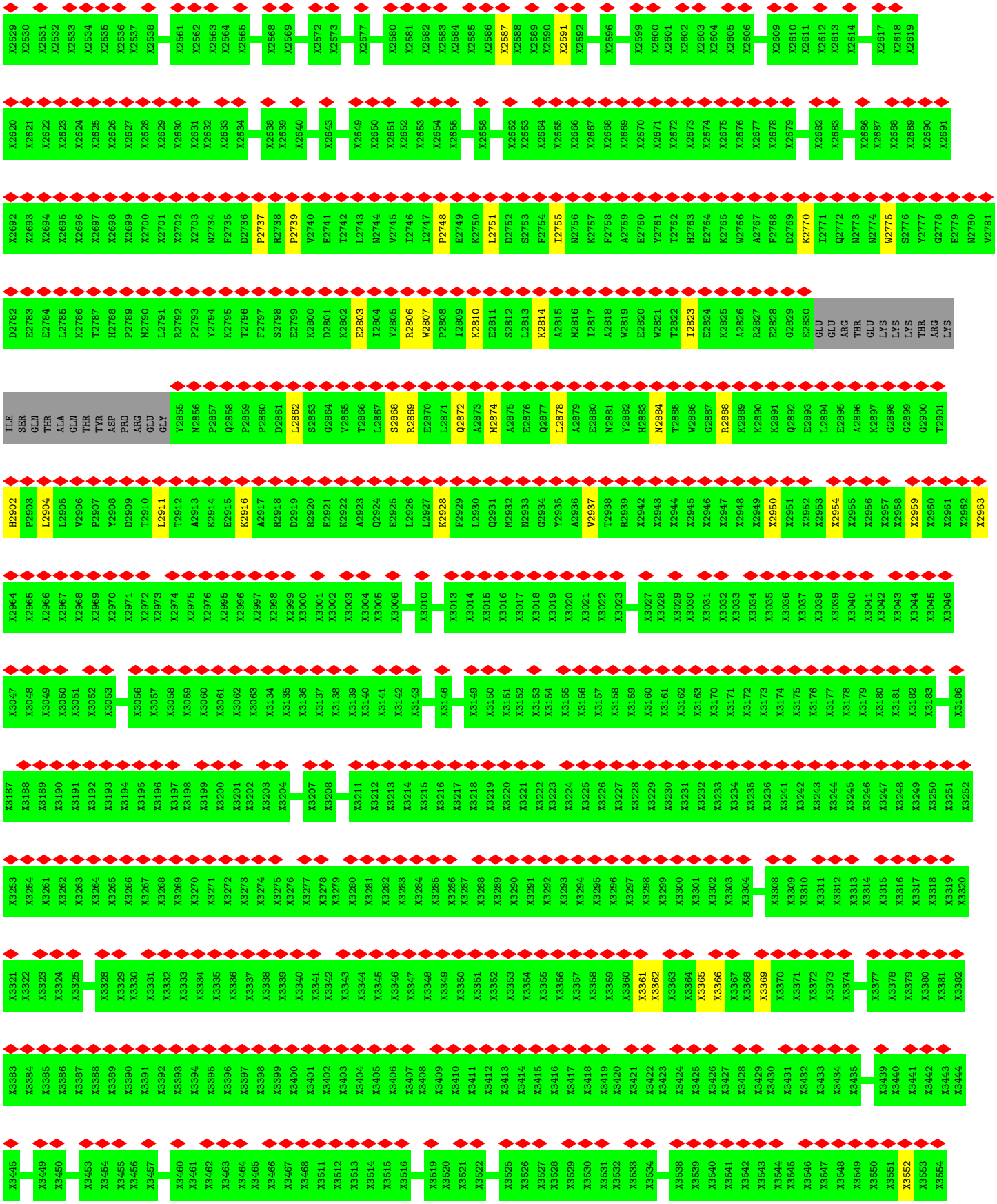
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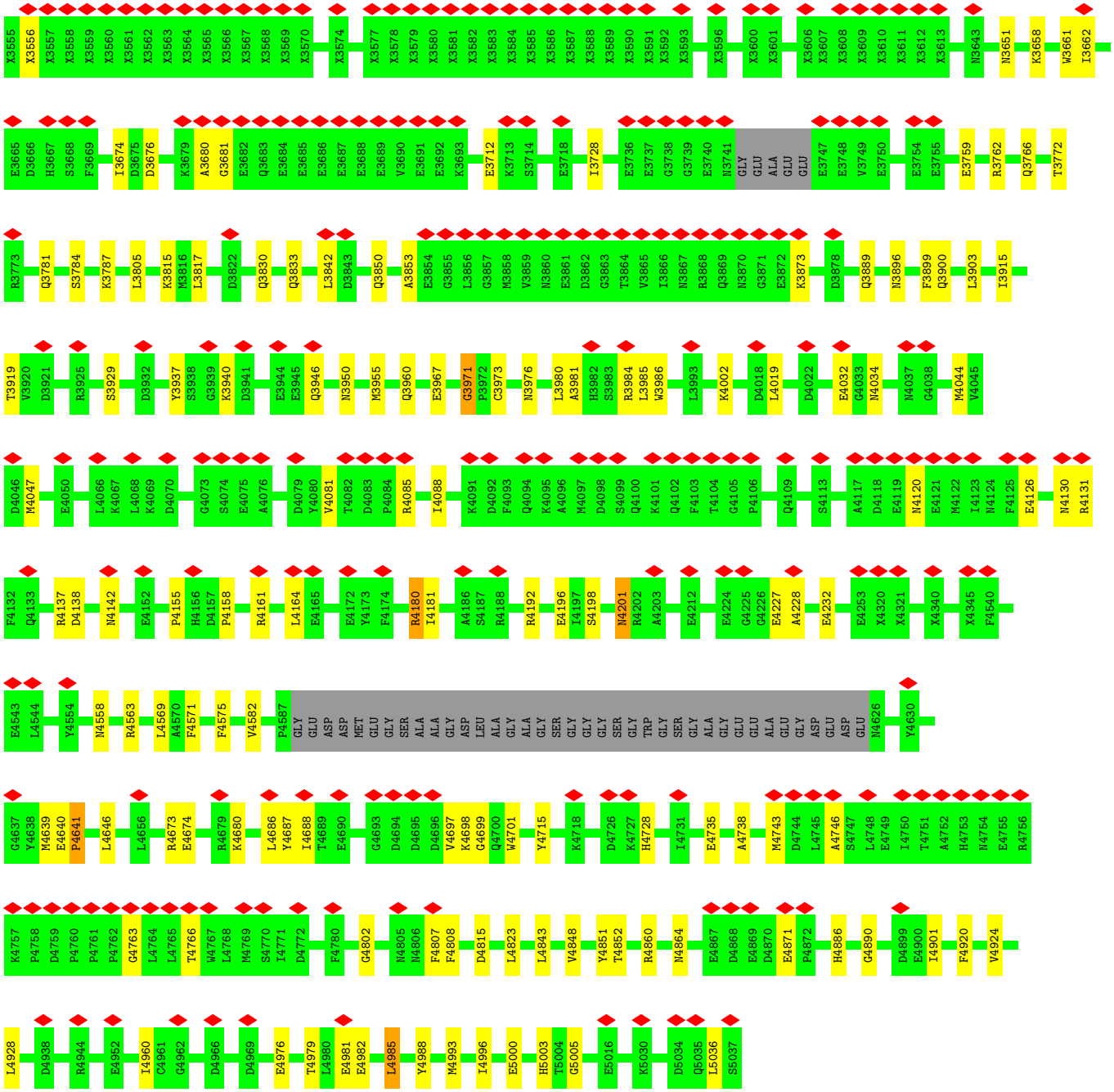
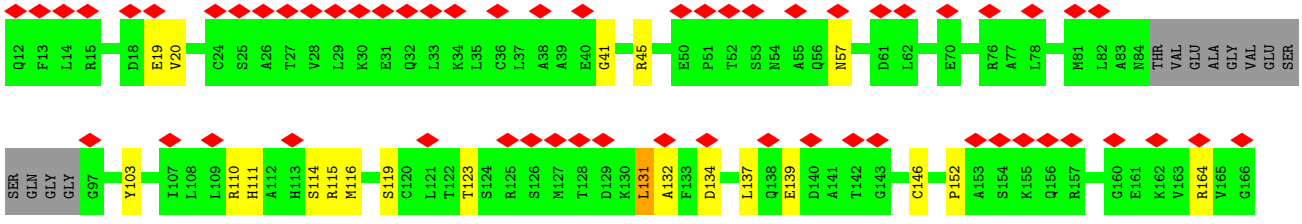
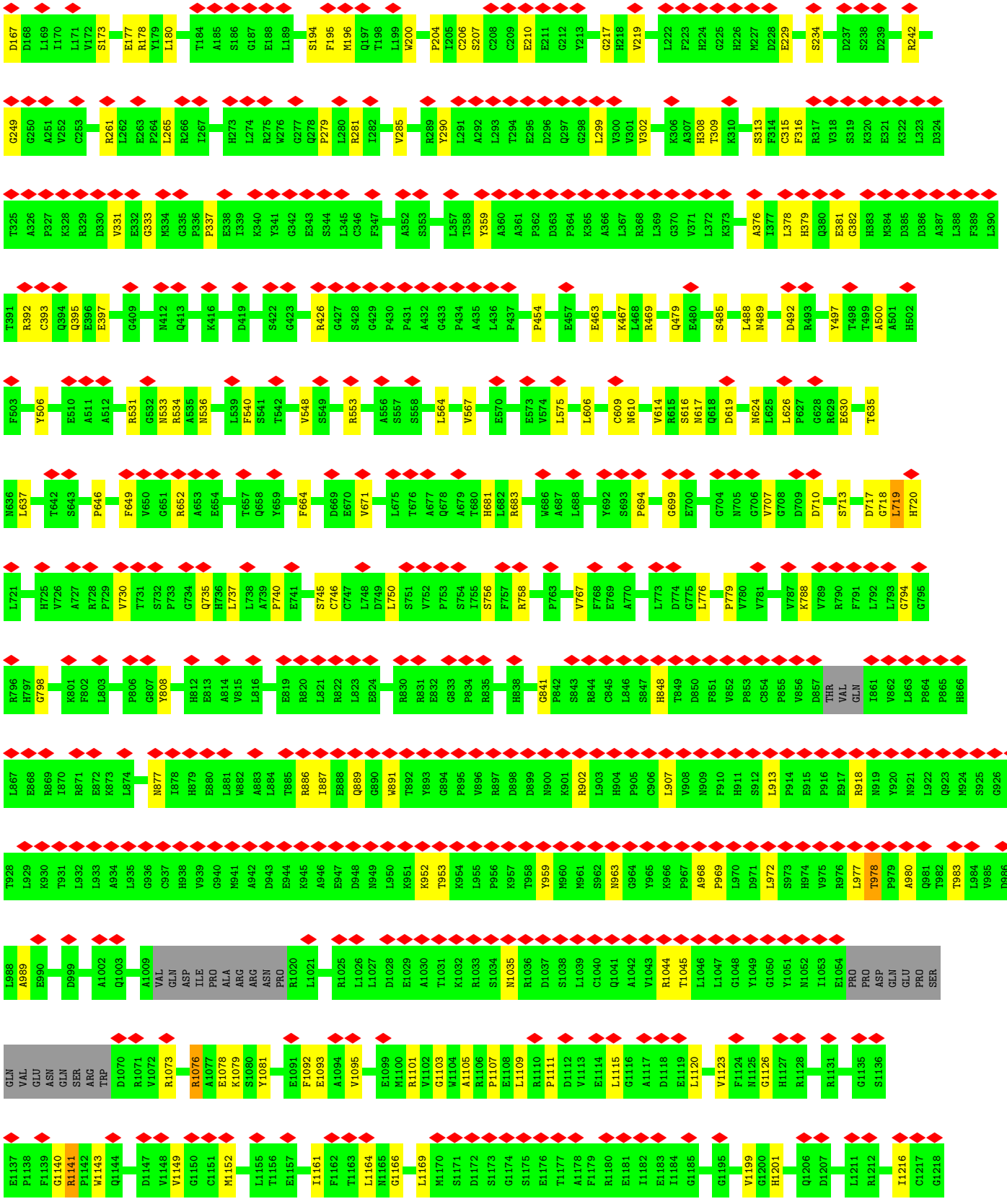


• Molecule 2: Ryanodine receptor 1

Chain I:

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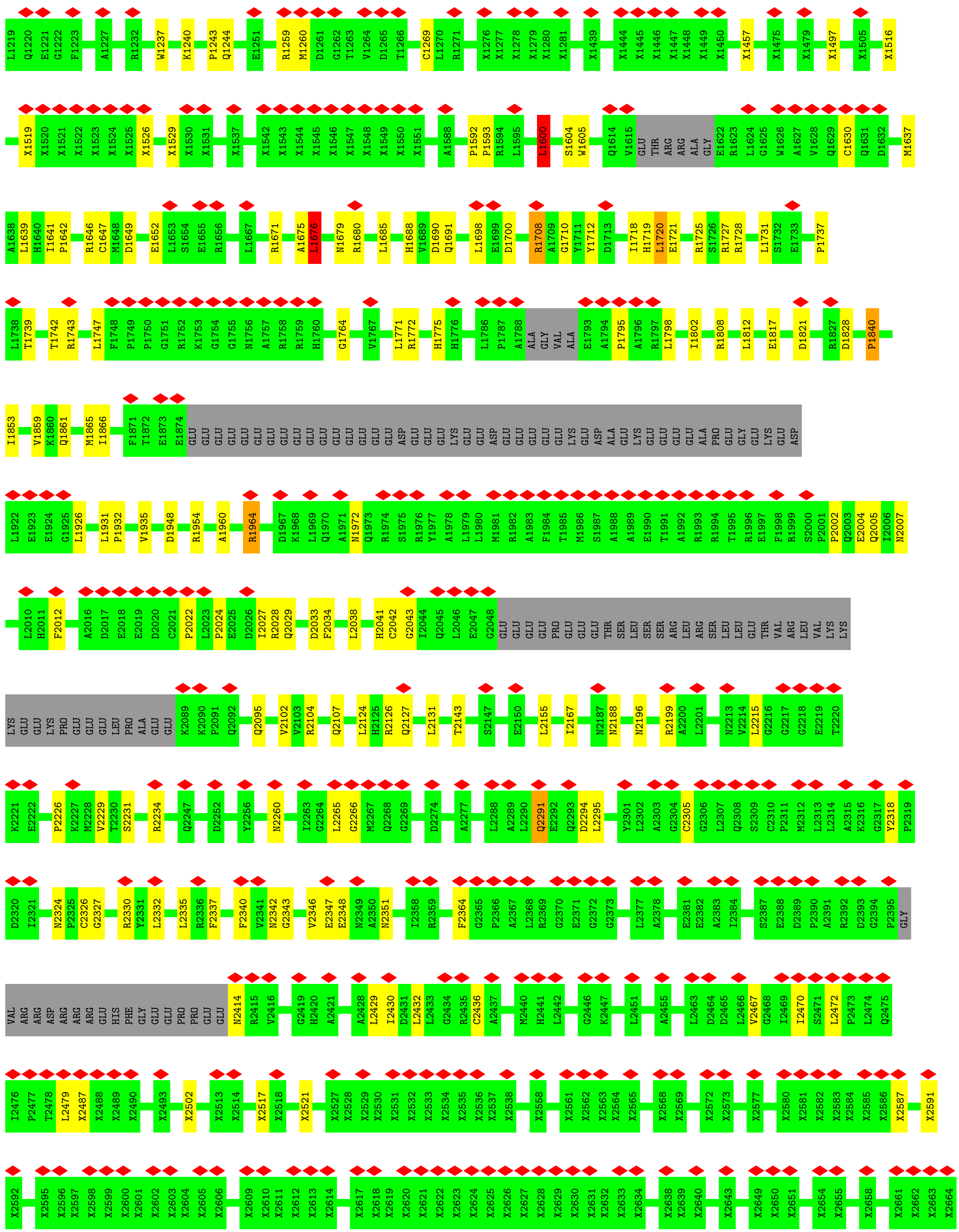
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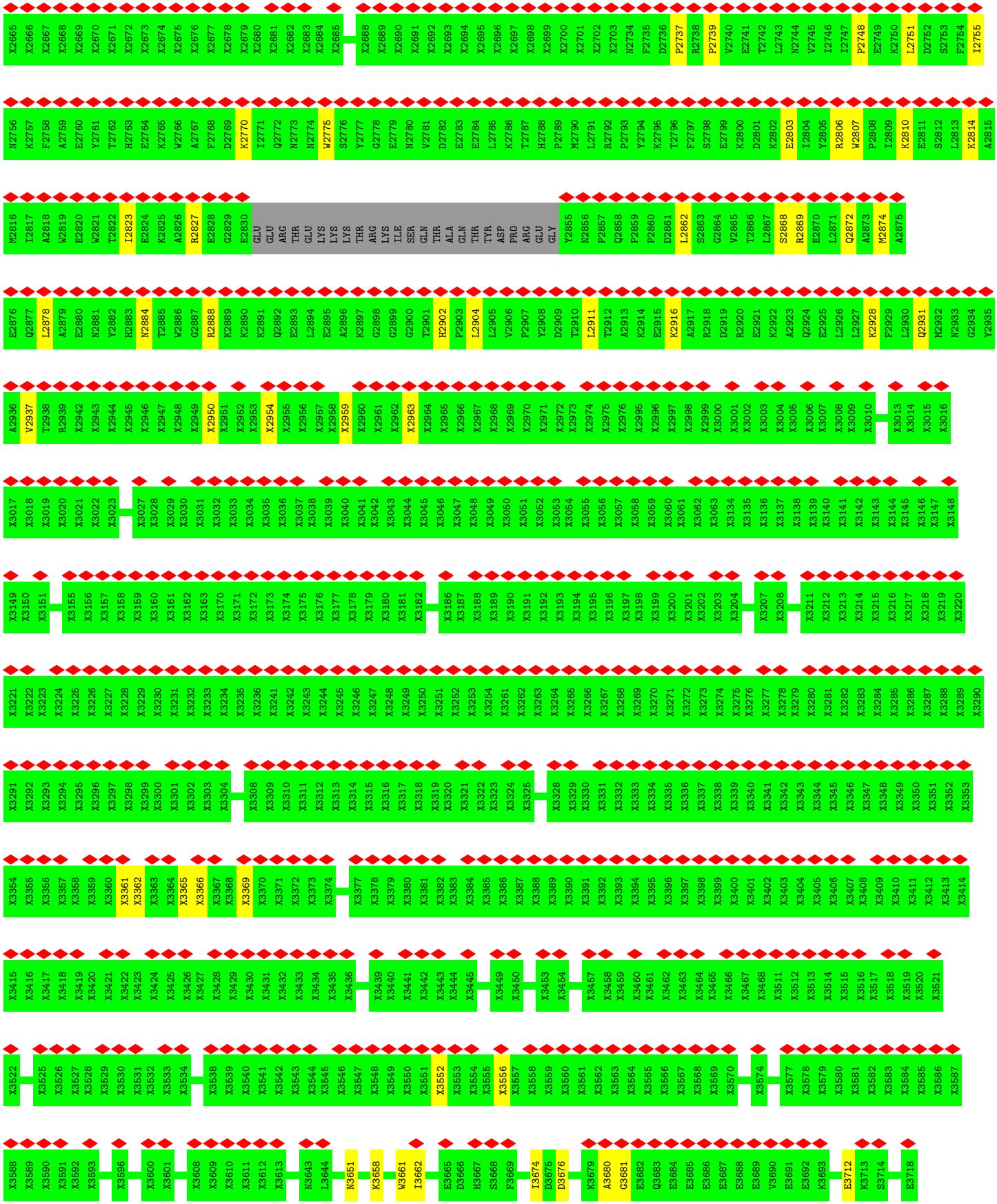
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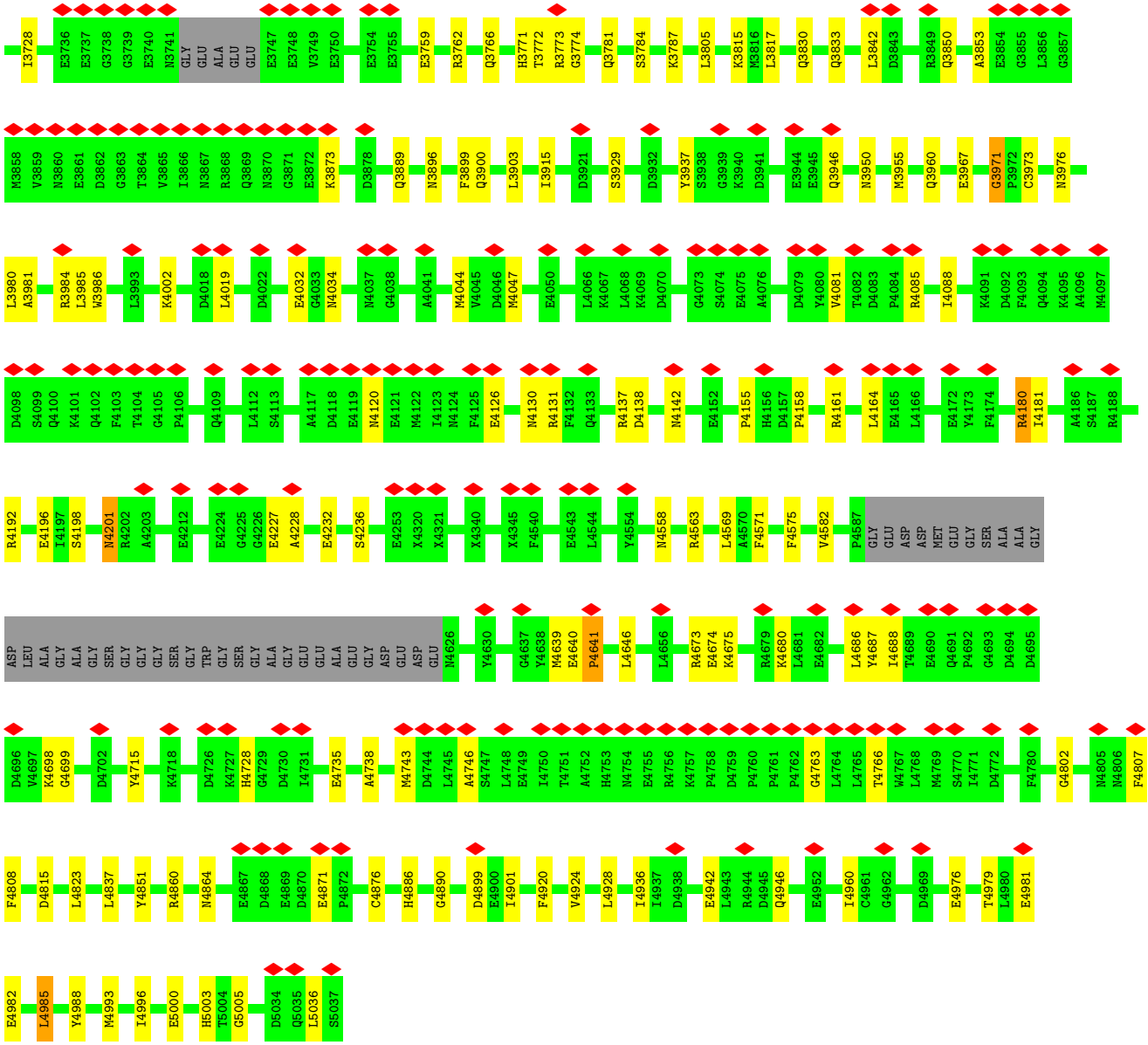

• Molecule 2: Ryanodine receptor 1

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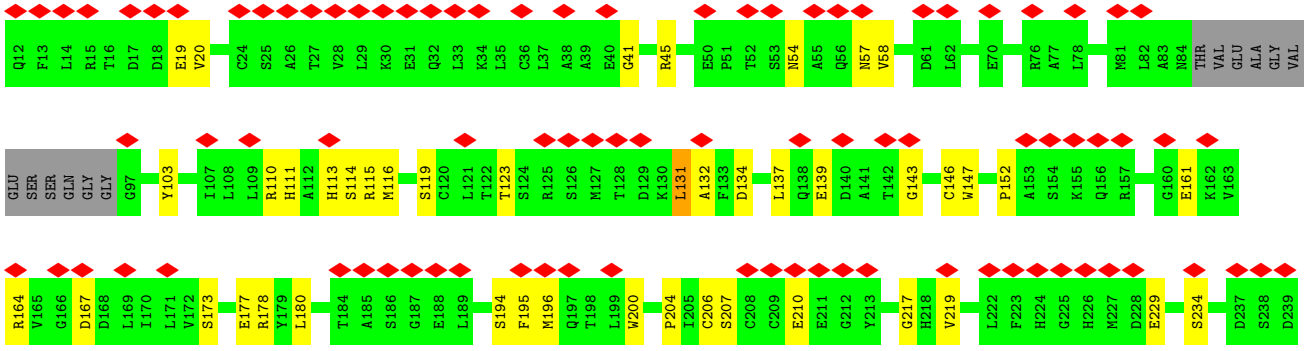

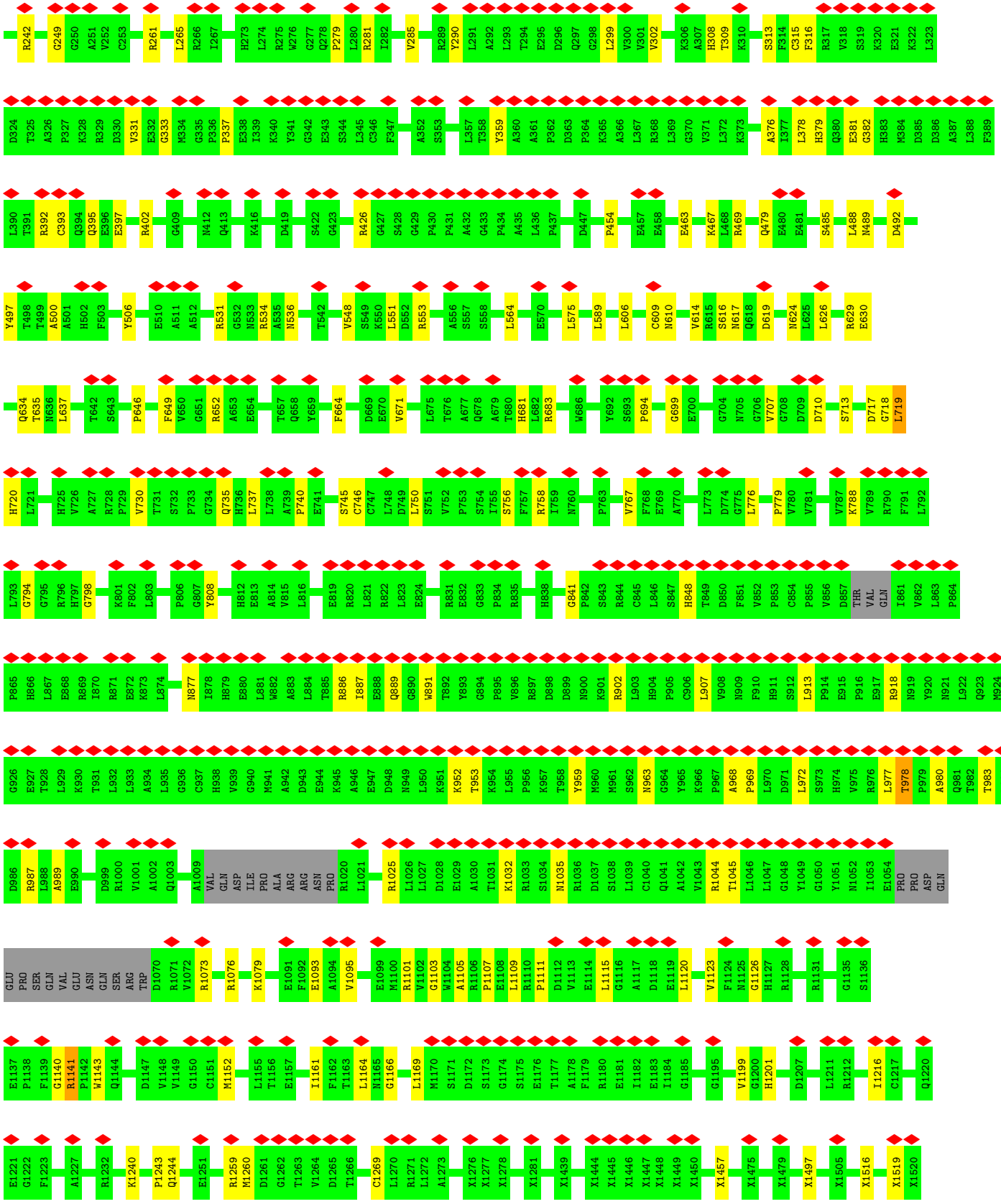
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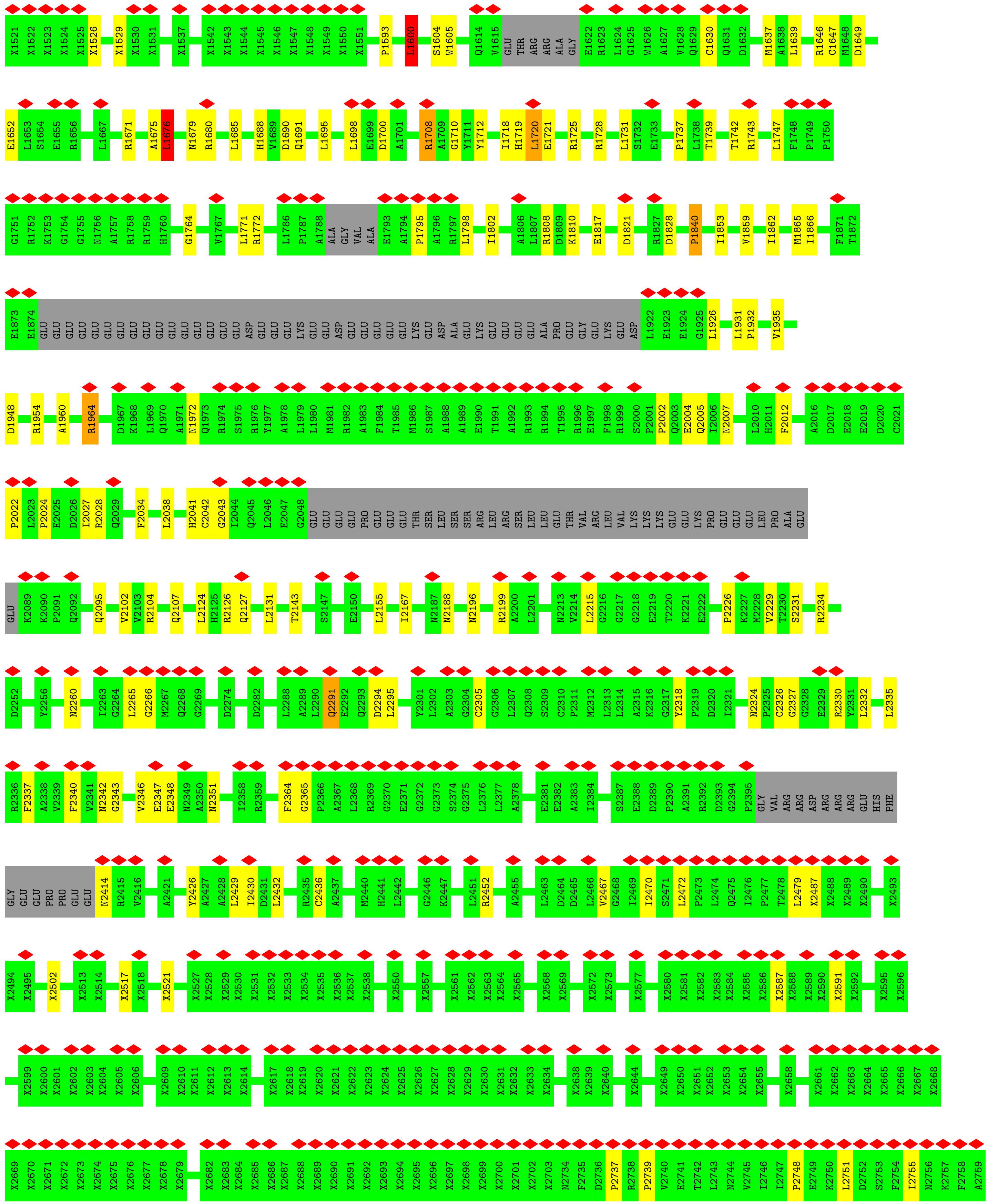
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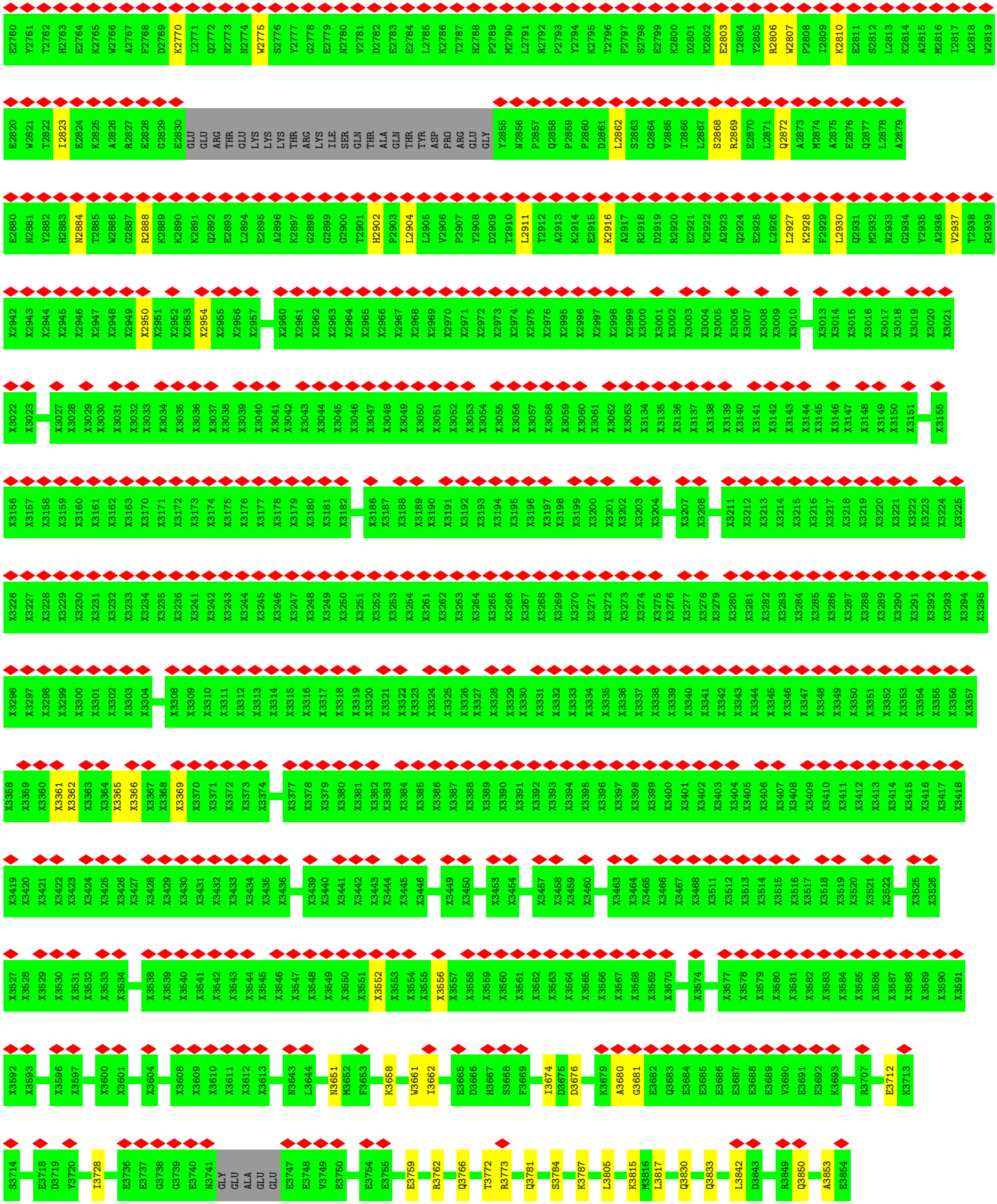
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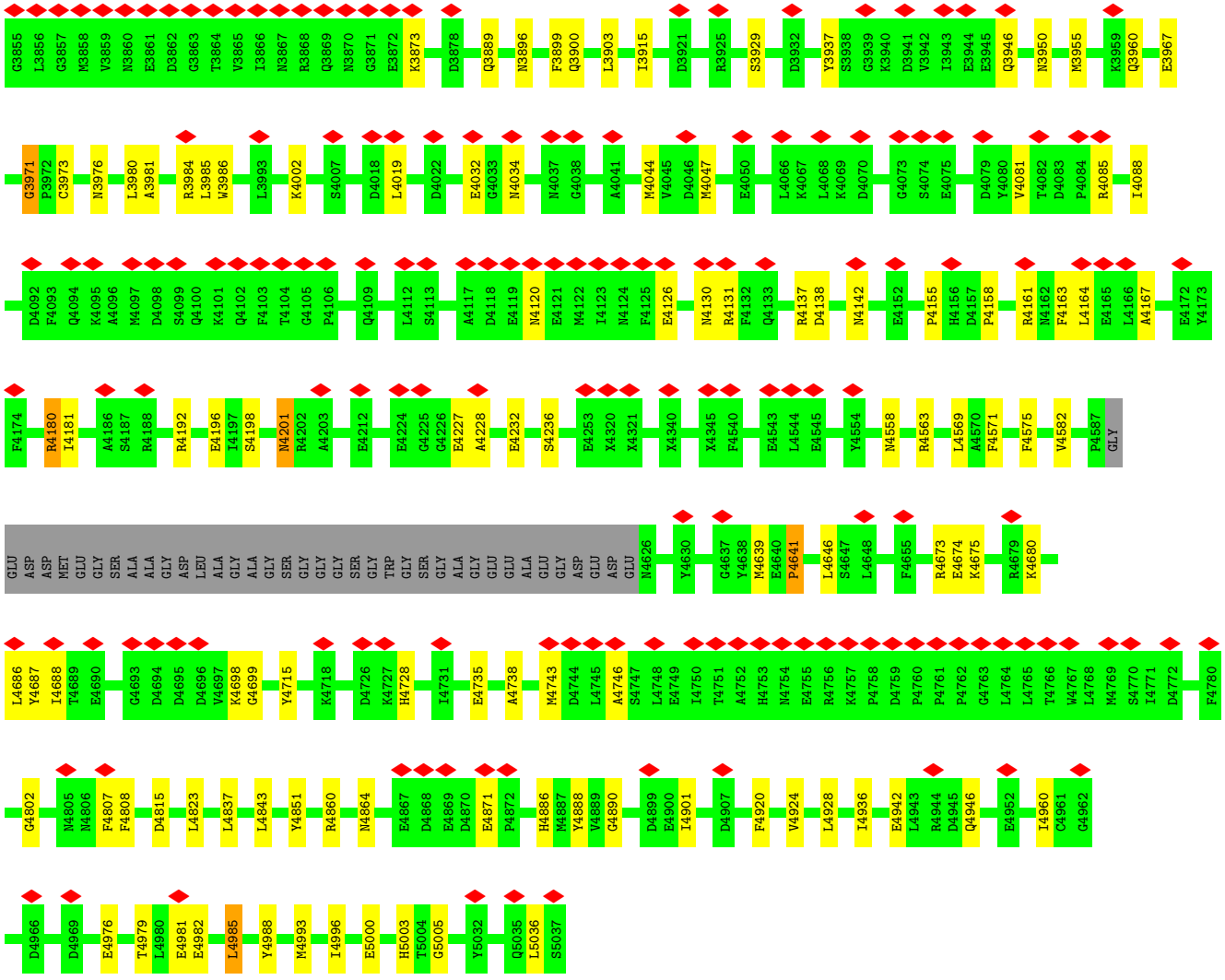
X3527 X3528 X3529 X3530 X3531 X3532 X3533 X3534 X3538 X3539 X3540 X3541 X3542 X3543 X3544 X3545 X3546 X3547 X3548 X3549 X3550 X3551 X3552 X3553 X3554 X3555 X3556 X3557 X3558 X3559 X3560 X3561 X3562 X3563 X3564 X3565 X3566 X3567 X3568 X3569 X3570 X3574 X3577 X3578 X3579 X3580 X3581 X3582 X3583 X3584 X3585 X3586 X3587 X3588 X3589 X3590 X3591
X3592 X3593 X3596 X3597 X3600 X3601 X3604 X3608 X3609 X3610 X3611 X3612 X3613 N3643 L3644 N3651 M3652 F3653 K3658 W3661 I3662 E3665 D3666 H3667 S3668 F3669 I3674 D3675 D3676 K3679 A3680 G3681 E3682 Q3683 E3684 E3685 E3686 E3687 E3688 E3689 V3690 E3691 E3692 K3693 R3707 E3712 K3713
S3714 E3718 D3719 Y3720 I3728 E3736 E3737 G3738 G3739 E3740 N3741 GLY GLU ALA GLU GLU E3747 E3748 V3749 E3750 E3754 E3755 E3759 R3762 Q3766 T3772 R3773 Q3781 S3784 K3787 L3805 K3815 M3816 L3817 Q3830 Q3833 L3842 D3843 R3849 Q3850 A3853 E3854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G3971 P3972 C3973 N3976 L3980 A3981 R3984 L3985 W3986 L3993 K4002 S4007 D4018 L4019 D4022 E4032 G4033 N4034 N4037 G4038 A4041 M4044 V4045 D4046 M4047 E4050 L4066 K4067 L4068 K4069 D4070 G4073 S4074 E4075 D4079 Y4080 V4081 T4082 D4083 P4084 R4085 I4088
D4092 F4093 Q4094 K4095 A4096 M4097 D4098 S4099 Q4100 K4101 Q4102 F4103 T4104 G4105 P4106 Q4109 L4112 S4113 A4117 D4118 E4119 N4120 E4121 M4122 I4123 N4124 F4125 E4126 N4130 R4131 F4132 Q4133 R4137 D4138 N4142 E4152 P4155 H4156 D4157 P4158 R4161 N4162 F4163 L4164 E4165 L4166 A4167 E4172 Y4173
F4174 R4180 I4181 A4186 S4187 R4188 R4192 E4196 I4197 S4198 N4201 R4202 A4203 E4212 E4224 G4225 G4226 E4227 A4228 E4232 S4236 E4253 X4320 X4321 X4340 X4345 F4540 E4543 L4544 E4545 Y4554 N4558 R4563 L4569 A4570 F4571 F4575 V4582 P4587 GLY
GLU ASP ASP MET GLU GLY SER ALA ALA GLY ASP LEU ALA GLY ALA GLY SER GLY GLY GLY SER GLY TRP GLY SER GLY ALA GLY GLU GLU ALA GLU GLY ASP GLU ASP GLU N4626 Y4630 G4637 Y4638 M4639 E4640 P4641 L4646 S4647 L4648 F4655 R4673 E4674 K4675 R4679 K4680
L4686 Y4687 I4688 T4689 E4690 G4693 D4694 D4695 D4696 V4697 K4698 G4699 Y4715 K4718 D4726 K4727 H4728 I4731 E4735 A4738 M4743 D4744 L4745 A4746 S4747 L4748 E4749 I4750 T4751 A4752 H4753 N4754 E4755 R4756 K4757 P4758 D4759 P4760 P4761 P4762 G4763 L4764 L4765 T4766 W4767 L4768 M4769 S4770 I4771 D4772 F4780
G4802 N4805 M4806 F4807 F4808 D4815 L4823 L4837 L4843 Y4851 R4860 N4864 E4867 D4868 E4869 D4870 E4871 P4872 H4886 M4887 Y4888 V4889 G4890 D4899 E4900 I4901 D4907 F4920 V4924 L4928 I4936 E4942 L4943 R4944 D4945 Q4946 E4952 I4960 C4961 G4962
D4966 D4969 E4976 T4979 L4980 E4981 E4982 L4985 Y4988 M4993 I4996 E5000 H5003 T5004 G5005 Y5032 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	0.088	Depositor
Minimum map value	-0.043	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.004	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: CFF, CA, ATP, 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	0.31	0/834	0.53	0/1123
1	F	0.32	0/834	0.53	0/1123
1	H	0.32	0/834	0.53	0/1123
1	J	0.32	0/834	0.53	0/1123
2	B	0.31	0/25428	0.55	8/34534 (0.0%)
2	E	0.31	0/25428	0.55	8/34534 (0.0%)
2	G	0.31	0/25428	0.55	8/34534 (0.0%)
2	I	0.31	0/25428	0.55	8/34534 (0.0%)
All	All	0.31	0/105048	0.55	32/142628 (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
1	A	0	1
1	F	0	1
1	H	0	1
1	J	0	1
2	B	0	17
2	E	0	17
2	G	0	17
2	I	0	17
All	All	0	72

There are no bond length outliers.

All (32) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	E	131	LEU	CA-CB-CG	7.51	132.57	115.30
2	G	131	LEU	CA-CB-CG	7.51	132.56	115.30
2	I	131	LEU	CA-CB-CG	7.51	132.56	115.30
2	B	131	LEU	CA-CB-CG	7.49	132.53	115.30
2	B	1676	LEU	CA-CB-CG	6.38	129.96	115.30
2	E	1676	LEU	CA-CB-CG	6.37	129.95	115.30
2	G	1676	LEU	CA-CB-CG	6.35	129.91	115.30
2	I	1676	LEU	CA-CB-CG	6.35	129.91	115.30
2	G	1600	LEU	CA-CB-CG	6.08	129.29	115.30
2	B	1600	LEU	CA-CB-CG	6.07	129.26	115.30
2	E	1600	LEU	CA-CB-CG	6.07	129.26	115.30
2	I	1600	LEU	CA-CB-CG	6.06	129.25	115.30
2	B	4901	ILE	CG1-CB-CG2	-6.04	98.11	111.40
2	G	4901	ILE	CG1-CB-CG2	-6.03	98.12	111.40
2	I	4901	ILE	CG1-CB-CG2	-6.03	98.13	111.40
2	E	4901	ILE	CG1-CB-CG2	-6.02	98.15	111.40
2	I	977	LEU	CA-CB-CG	5.50	127.96	115.30
2	E	977	LEU	CA-CB-CG	5.50	127.95	115.30
2	B	977	LEU	CA-CB-CG	5.50	127.94	115.30
2	G	977	LEU	CA-CB-CG	5.48	127.90	115.30
2	B	4639	MET	C-N-CA	5.42	135.26	121.70
2	I	4639	MET	C-N-CA	5.41	135.22	121.70
2	G	4639	MET	C-N-CA	5.40	135.21	121.70
2	E	4639	MET	C-N-CA	5.39	135.19	121.70
2	I	1140	GLY	C-N-CA	5.23	134.77	121.70
2	B	1140	GLY	C-N-CA	5.22	134.75	121.70
2	G	1140	GLY	C-N-CA	5.20	134.70	121.70
2	E	1140	GLY	C-N-CA	5.20	134.70	121.70
2	B	4985	LEU	CA-CB-CG	5.18	127.21	115.30
2	I	4985	LEU	CA-CB-CG	5.18	127.21	115.30
2	E	4985	LEU	CA-CB-CG	5.17	127.19	115.30
2	G	4985	LEU	CA-CB-CG	5.16	127.16	115.30

There are no chirality outliers.

All (72) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	8	SER	Peptide
2	B	139	GLU	Peptide
2	B	1676	LEU	Peptide
2	B	1690	ASP	Peptide
2	B	1720	LEU	Peptide
2	B	1795	PRO	Peptide

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Mol	Chain	Res	Type	Group
2	B	1828	ASP	Peptide
2	B	1840	PRO	Peptide
2	B	2291	GLN	Peptide
2	B	2343	GLY	Peptide
2	B	2472	LEU	Peptide
2	B	2807	TRP	Peptide
2	B	3971	GLY	Peptide
2	B	4641	PRO	Peptide
2	B	4807	PHE	Peptide
2	B	624	ASN	Peptide
2	B	694	PRO	Peptide
2	B	808	TYR	Peptide
2	E	139	GLU	Peptide
2	E	1676	LEU	Peptide
2	E	1690	ASP	Peptide
2	E	1720	LEU	Peptide
2	E	1795	PRO	Peptide
2	E	1828	ASP	Peptide
2	E	1840	PRO	Peptide
2	E	2291	GLN	Peptide
2	E	2343	GLY	Peptide
2	E	2472	LEU	Peptide
2	E	2807	TRP	Peptide
2	E	3971	GLY	Peptide
2	E	4641	PRO	Peptide
2	E	4807	PHE	Peptide
2	E	624	ASN	Peptide
2	E	694	PRO	Peptide
2	E	808	TYR	Peptide
1	F	8	SER	Peptide
2	G	139	GLU	Peptide
2	G	1676	LEU	Peptide
2	G	1690	ASP	Peptide
2	G	1720	LEU	Peptide
2	G	1795	PRO	Peptide
2	G	1828	ASP	Peptide
2	G	1840	PRO	Peptide
2	G	2291	GLN	Peptide
2	G	2343	GLY	Peptide
2	G	2472	LEU	Peptide
2	G	2807	TRP	Peptide
2	G	3971	GLY	Peptide

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Mol	Chain	Res	Type	Group
2	G	4641	PRO	Peptide
2	G	4807	PHE	Peptide
2	G	624	ASN	Peptide
2	G	694	PRO	Peptide
2	G	808	TYR	Peptide
1	H	8	SER	Peptide
2	I	139	GLU	Peptide
2	I	1676	LEU	Peptide
2	I	1690	ASP	Peptide
2	I	1720	LEU	Peptide
2	I	1795	PRO	Peptide
2	I	1828	ASP	Peptide
2	I	1840	PRO	Peptide
2	I	2291	GLN	Peptide
2	I	2343	GLY	Peptide
2	I	2472	LEU	Peptide
2	I	2807	TRP	Peptide
2	I	3971	GLY	Peptide
2	I	4641	PRO	Peptide
2	I	4807	PHE	Peptide
2	I	624	ASN	Peptide
2	I	694	PRO	Peptide
2	I	808	TYR	Peptide
1	J	8	SER	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	10	0
1	F	818	0	824	11	0
1	H	818	0	824	8	0
1	J	818	0	824	7	0
2	B	29499	0	24746	286	0
2	E	29499	0	24747	282	0
2	G	29499	0	24747	279	0
2	I	29499	0	24747	284	0
3	B	31	0	12	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	E	31	0	12	1	0
3	G	31	0	12	1	0
3	I	31	0	12	1	0
4	B	14	0	10	0	0
4	E	14	0	10	0	0
4	G	14	0	10	0	0
4	I	14	0	10	0	0
5	B	1	0	0	0	0
5	E	1	0	0	0	0
5	G	1	0	0	0	0
5	I	1	0	0	0	0
6	B	1	0	0	0	0
6	E	1	0	0	0	0
6	G	1	0	0	0	0
6	I	1	0	0	0	0
All	All	121456	0	102371	1145	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 5.

All (1145) 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:E:2318:TYR:HH	2:E:2414:ASN:N	1.86	0.74
2:B:2318:TYR:HH	2:B:2414:ASN:N	1.86	0.72
2:G:2318:TYR:HH	2:G:2414:ASN:N	1.86	0.71
2:I:2318:TYR:HH	2:I:2414:ASN:N	1.87	0.71
2:G:4985:LEU:HB2	3:G:5101:ATP:HN61	1.56	0.70
2:I:4985:LEU:HB2	3:I:5101:ATP:HN61	1.57	0.70
2:B:4860:ARG:HD2	2:E:4582:VAL:HG11	1.74	0.70
2:E:1260:MET:HB2	2:E:1269:CYS:H	1.58	0.69
2:E:4985:LEU:HB2	3:E:5101:ATP:HN61	1.57	0.69
2:B:4985:LEU:HB2	3:B:5101:ATP:HN61	1.56	0.68
2:B:1260:MET:HB2	2:B:1269:CYS:H	1.58	0.68
2:I:1260:MET:HB2	2:I:1269:CYS:H	1.58	0.68
2:B:2452:ARG:HH12	2:I:177:GLU:HG3	1.58	0.68
2:G:1260:MET:HB2	2:G:1269:CYS:H	1.58	0.67
2:E:646:PRO:HD2	2:E:779:PRO:HB2	1.78	0.66
2:B:646:PRO:HD2	2:B:779:PRO:HB2	1.78	0.65
2:G:646:PRO:HD2	2:G:779:PRO:HB2	1.78	0.65
2:I:646:PRO:HD2	2:I:779:PRO:HB2	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:1259:ARG:HH12	2:E:1593:PRO:HA	1.62	0.65
2:B:745:SER:HB2	2:B:758:ARG:HB3	1.80	0.64
2:B:1259:ARG:HH12	2:B:1593:PRO:HA	1.62	0.64
2:I:745:SER:HB2	2:I:758:ARG:HB3	1.80	0.64
2:I:1259:ARG:HH12	2:I:1593:PRO:HA	1.62	0.64
2:B:161:GLU:HA	2:E:3984:ARG:HH22	1.62	0.63
2:G:745:SER:HB2	2:G:758:ARG:HB3	1.80	0.63
2:G:1259:ARG:HH12	2:G:1593:PRO:HA	1.62	0.63
2:E:745:SER:HB2	2:E:758:ARG:HB3	1.80	0.63
2:G:2266:GLY:O	2:G:2330:ARG:NH2	2.32	0.63
2:B:1079:LYS:NZ	2:B:1107:PRO:O	2.33	0.62
2:B:2266:GLY:O	2:B:2330:ARG:NH2	2.32	0.62
2:E:2266:GLY:O	2:E:2330:ARG:NH2	2.32	0.62
2:G:1079:LYS:NZ	2:G:1107:PRO:O	2.33	0.62
2:B:1700:ASP:OD2	2:B:1708:ARG:NH2	2.33	0.62
2:G:1700:ASP:OD2	2:G:1708:ARG:NH2	2.33	0.62
2:I:2755:ILE:HD13	2:I:2810:LYS:HG2	1.82	0.62
2:B:2755:ILE:HD13	2:B:2810:LYS:HG2	1.82	0.62
2:G:497:TYR:HB3	2:G:500:ALA:HB2	1.82	0.61
2:E:497:TYR:HB3	2:E:500:ALA:HB2	1.82	0.61
2:E:1700:ASP:OD2	2:E:1708:ARG:NH2	2.33	0.61
2:I:1079:LYS:NZ	2:I:1107:PRO:O	2.33	0.61
2:I:1700:ASP:OD2	2:I:1708:ARG:NH2	2.33	0.61
2:I:2266:GLY:O	2:I:2330:ARG:NH2	2.32	0.61
2:B:497:TYR:HB3	2:B:500:ALA:HB2	1.82	0.61
2:I:497:TYR:HB3	2:I:500:ALA:HB2	1.82	0.61
2:E:1079:LYS:NZ	2:E:1107:PRO:O	2.33	0.61
2:I:4674:GLU:HB3	2:I:4715:TYR:HB2	1.83	0.61
2:B:379:HIS:HD2	2:B:382:GLY:H	1.47	0.61
2:G:379:HIS:HD2	2:G:382:GLY:H	1.47	0.61
2:G:4674:GLU:HB3	2:G:4715:TYR:HB2	1.83	0.61
2:I:379:HIS:HD2	2:I:382:GLY:H	1.47	0.60
2:E:2755:ILE:HD13	2:E:2810:LYS:HG2	1.82	0.60
2:B:4674:GLU:HB3	2:B:4715:TYR:HB2	1.83	0.60
2:G:173:SER:HB3	2:G:178:ARG:H	1.66	0.60
2:G:788:LYS:HG2	2:G:1630:CYS:H	1.66	0.60
2:I:173:SER:HB3	2:I:178:ARG:H	1.66	0.60
2:E:379:HIS:HD2	2:E:382:GLY:H	1.48	0.60
2:G:2755:ILE:HD13	2:G:2810:LYS:HG2	1.82	0.60
2:G:1519:UNK:HA	2:G:1526:UNK:HA	1.84	0.60
2:B:4924:VAL:HA	2:B:4928:LEU:HB2	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:1519:UNK:HA	2:I:1526:UNK:HA	1.84	0.60
2:G:952:LYS:HB3	2:G:968:ALA:HB1	1.84	0.60
2:E:788:LYS:HG2	2:E:1630:CYS:H	1.67	0.60
2:E:4674:GLU:HB3	2:E:4715:TYR:HB2	1.83	0.60
2:B:110:ARG:HH21	2:B:115:ARG:HB3	1.67	0.59
2:B:952:LYS:HB3	2:B:968:ALA:HB1	1.84	0.59
2:B:1519:UNK:HA	2:B:1526:UNK:HA	1.83	0.59
2:G:4924:VAL:HA	2:G:4928:LEU:HB2	1.83	0.59
2:E:3937:TYR:O	2:E:4002:LYS:NZ	2.35	0.59
2:B:173:SER:HB3	2:B:178:ARG:H	1.66	0.59
2:G:132:ALA:HA	2:G:194:SER:HB2	1.85	0.59
2:I:132:ALA:HA	2:I:194:SER:HB2	1.85	0.59
2:I:952:LYS:HB3	2:I:968:ALA:HB1	1.84	0.59
2:E:4924:VAL:HA	2:E:4928:LEU:HB2	1.83	0.59
2:B:3937:TYR:O	2:B:4002:LYS:NZ	2.35	0.59
2:I:3937:TYR:O	2:I:4002:LYS:NZ	2.35	0.59
2:E:3762:ARG:O	2:E:3766:GLN:NE2	2.35	0.59
2:G:3937:TYR:O	2:G:4002:LYS:NZ	2.35	0.59
2:E:173:SER:HB3	2:E:178:ARG:H	1.66	0.59
2:I:788:LYS:HG2	2:I:1630:CYS:H	1.67	0.59
2:E:210:GLU:HG3	2:E:337:PRO:HG3	1.84	0.59
2:B:606:LEU:O	2:B:617:ASN:ND2	2.36	0.59
2:E:1637:MET:SD	2:E:1708:ARG:NH1	2.76	0.59
2:G:718:GLY:HA3	2:G:737:LEU:HA	1.85	0.59
2:I:1743:ARG:O	2:I:1964:ARG:NH2	2.36	0.59
2:E:1743:ARG:O	2:E:1964:ARG:NH2	2.36	0.59
2:B:788:LYS:HG2	2:B:1630:CYS:H	1.67	0.59
2:E:718:GLY:HA3	2:E:737:LEU:HA	1.85	0.59
2:B:1743:ARG:O	2:B:1964:ARG:NH2	2.36	0.58
2:G:110:ARG:HH21	2:G:115:ARG:HB3	1.67	0.58
2:G:210:GLU:HG3	2:G:337:PRO:HG3	1.84	0.58
2:I:110:ARG:HH21	2:I:115:ARG:HB3	1.67	0.58
2:I:718:GLY:HA3	2:I:737:LEU:HA	1.85	0.58
2:E:110:ARG:HH21	2:E:115:ARG:HB3	1.67	0.58
2:E:132:ALA:HA	2:E:194:SER:HB2	1.85	0.58
2:B:132:ALA:HA	2:B:194:SER:HB2	1.85	0.58
2:I:606:LEU:O	2:I:617:ASN:ND2	2.36	0.58
2:I:1637:MET:SD	2:I:1708:ARG:NH1	2.76	0.58
2:E:952:LYS:HB3	2:E:968:ALA:HB1	1.84	0.58
2:B:718:GLY:HA3	2:B:737:LEU:HA	1.85	0.58
2:G:606:LEU:O	2:G:617:ASN:ND2	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:4924:VAL:HA	2:I:4928:LEU:HB2	1.84	0.58
2:B:3772:THR:OG1	2:B:3815:LYS:NZ	2.37	0.58
2:G:1743:ARG:O	2:G:1964:ARG:NH2	2.36	0.58
2:I:210:GLU:HG3	2:I:337:PRO:HG3	1.84	0.58
2:I:978:THR:HB	2:I:980:ALA:H	1.69	0.58
2:E:606:LEU:O	2:E:617:ASN:ND2	2.36	0.58
2:E:978:THR:HB	2:E:980:ALA:H	1.69	0.58
2:G:1637:MET:SD	2:G:1708:ARG:NH1	2.76	0.58
2:I:1671:ARG:NH2	2:I:1710:GLY:O	2.37	0.58
2:E:2342:ASN:N	2:E:2342:ASN:OD1	2.37	0.58
2:B:1109:LEU:HA	2:B:1120:LEU:HD21	1.86	0.58
2:B:2342:ASN:OD1	2:B:2342:ASN:N	2.37	0.58
2:B:3762:ARG:O	2:B:3766:GLN:NE2	2.35	0.58
2:G:1671:ARG:NH2	2:G:1710:GLY:O	2.37	0.58
2:B:1637:MET:SD	2:B:1708:ARG:NH1	2.76	0.58
2:B:1671:ARG:NH2	2:B:1710:GLY:O	2.37	0.58
2:I:3762:ARG:O	2:I:3766:GLN:NE2	2.35	0.58
2:E:1519:UNK:HA	2:E:1526:UNK:HA	1.86	0.58
2:B:210:GLU:HG3	2:B:337:PRO:HG3	1.84	0.57
2:B:978:THR:HB	2:B:980:ALA:H	1.69	0.57
2:G:3762:ARG:O	2:G:3766:GLN:NE2	2.35	0.57
2:G:1109:LEU:HA	2:G:1120:LEU:HD21	1.86	0.57
2:E:1109:LEU:HA	2:E:1120:LEU:HD21	1.86	0.57
2:B:1764:GLY:HA3	2:B:1859:VAL:HG11	1.85	0.57
2:I:1764:GLY:HA3	2:I:1859:VAL:HG11	1.86	0.57
2:G:978:THR:HB	2:G:980:ALA:H	1.69	0.57
2:G:1764:GLY:HA3	2:G:1859:VAL:HG11	1.85	0.57
2:G:2107:GLN:HG3	2:G:3681:GLY:HA2	1.87	0.57
2:I:1109:LEU:HA	2:I:1120:LEU:HD21	1.86	0.57
1:H:23:VAL:HG22	1:H:47:LYS:HG2	1.87	0.57
2:E:1671:ARG:NH2	2:E:1710:GLY:O	2.37	0.57
2:E:1764:GLY:HA3	2:E:1859:VAL:HG11	1.86	0.57
2:B:4993:MET:HA	2:B:4996:ILE:HD12	1.86	0.57
2:I:359:TYR:HA	2:I:376:ALA:HA	1.86	0.57
2:I:2107:GLN:HG3	2:I:3681:GLY:HA2	1.87	0.56
2:E:609:CYS:SG	2:E:610:ASN:N	2.78	0.56
1:F:23:VAL:HG22	1:F:47:LYS:HG2	1.87	0.56
2:B:359:TYR:HA	2:B:376:ALA:HA	1.86	0.56
2:I:3772:THR:OG1	2:I:3815:LYS:NZ	2.37	0.56
2:E:2107:GLN:HG3	2:E:3681:GLY:HA2	1.87	0.56
2:E:3981:ALA:HA	2:E:3986:TRP:HE1	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:609:CYS:SG	2:B:610:ASN:N	2.78	0.56
2:B:2107:GLN:HG3	2:B:3681:GLY:HA2	1.87	0.56
2:G:2291:GLN:HB2	2:G:2295:LEU:HG	1.88	0.56
2:E:2291:GLN:HB2	2:E:2295:LEU:HG	1.88	0.56
2:B:1152:MET:HB2	2:B:1161:ILE:HB	1.88	0.56
2:G:217:GLY:O	2:G:261:ARG:NH1	2.39	0.56
1:F:34:LYS:HD3	2:E:629:ARG:HD2	1.88	0.56
2:G:609:CYS:SG	2:G:610:ASN:N	2.78	0.56
2:E:4192:ARG:NH1	2:E:4982:GLU:OE2	2.39	0.56
2:B:217:GLY:O	2:B:261:ARG:NH1	2.39	0.56
2:I:217:GLY:O	2:I:261:ARG:NH1	2.39	0.56
2:I:1152:MET:HB2	2:I:1161:ILE:HB	1.88	0.56
1:A:23:VAL:HG22	1:A:47:LYS:HG2	1.86	0.56
1:J:23:VAL:HG22	1:J:47:LYS:HG2	1.87	0.56
2:B:3981:ALA:HA	2:B:3986:TRP:HE1	1.70	0.56
2:G:1152:MET:HB2	2:G:1161:ILE:HB	1.88	0.56
2:I:265:LEU:HD12	2:I:279:PRO:HB2	1.88	0.56
2:I:4993:MET:HA	2:I:4996:ILE:HD12	1.86	0.56
2:B:265:LEU:HD12	2:B:279:PRO:HB2	1.88	0.56
2:G:359:TYR:HA	2:G:376:ALA:HA	1.86	0.56
2:G:4993:MET:HA	2:G:4996:ILE:HD12	1.86	0.56
2:E:359:TYR:HA	2:E:376:ALA:HA	1.86	0.55
2:B:2291:GLN:HB2	2:B:2295:LEU:HG	1.88	0.55
2:B:4192:ARG:NH1	2:B:4982:GLU:OE2	2.39	0.55
2:G:1948:ASP:OD1	2:G:2126:ARG:NH2	2.39	0.55
2:G:4192:ARG:NH1	2:G:4982:GLU:OE2	2.39	0.55
2:I:2342:ASN:OD1	2:I:2342:ASN:N	2.37	0.55
2:E:4993:MET:HA	2:E:4996:ILE:HD12	1.86	0.55
2:G:614:VAL:HG22	2:G:616:SER:H	1.71	0.55
2:G:2347:GLU:O	2:G:2351:ASN:N	2.38	0.55
2:I:609:CYS:SG	2:I:610:ASN:N	2.78	0.55
2:I:683:ARG:NH1	2:I:707:VAL:O	2.38	0.55
2:B:1164:LEU:HB3	2:B:1169:LEU:HD21	1.89	0.55
2:G:265:LEU:HD12	2:G:279:PRO:HB2	1.88	0.55
2:I:4192:ARG:NH1	2:I:4982:GLU:OE2	2.39	0.55
2:E:265:LEU:HD12	2:E:279:PRO:HB2	1.88	0.55
2:E:1164:LEU:HB3	2:E:1169:LEU:HD21	1.89	0.55
2:G:1164:LEU:HB3	2:G:1169:LEU:HD21	1.89	0.55
2:G:3981:ALA:HA	2:G:3986:TRP:HE1	1.70	0.55
2:I:664:PHE:HB2	2:I:746:CYS:HB2	1.89	0.55
2:I:1691:GLN:HE22	2:I:1802:ILE:HG12	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:217:GLY:O	2:E:261:ARG:NH1	2.39	0.55
2:B:2770:LYS:HB3	2:B:2775:TRP:HB2	1.89	0.55
2:G:2770:LYS:HB3	2:G:2775:TRP:HB2	1.89	0.55
2:I:614:VAL:HG22	2:I:616:SER:H	1.71	0.55
2:I:2291:GLN:HB2	2:I:2295:LEU:HG	1.88	0.55
2:I:2770:LYS:HB3	2:I:2775:TRP:HB2	1.89	0.55
2:I:3981:ALA:HA	2:I:3986:TRP:HE1	1.70	0.55
2:E:664:PHE:HB2	2:E:746:CYS:HB2	1.89	0.55
2:B:671:VAL:HG22	2:B:740:PRO:HG3	1.89	0.55
2:I:180:LEU:O	2:I:200:TRP:NE1	2.36	0.55
2:G:1691:GLN:HE22	2:G:1802:ILE:HG12	1.72	0.55
2:I:315:CYS:SG	2:I:316:PHE:N	2.80	0.55
2:I:671:VAL:HG22	2:I:740:PRO:HG3	1.89	0.55
2:I:1721:GLU:OE2	2:I:1725:ARG:NH2	2.40	0.55
2:G:1721:GLU:OE2	2:G:1725:ARG:NH2	2.40	0.55
2:I:2739:PRO:HB3	2:I:2884:ASN:HB3	1.89	0.55
2:E:315:CYS:SG	2:E:316:PHE:N	2.80	0.55
2:E:1721:GLU:OE2	2:E:1725:ARG:NH2	2.40	0.55
2:E:2347:GLU:O	2:E:2351:ASN:N	2.38	0.55
2:G:664:PHE:HB2	2:G:746:CYS:HB2	1.89	0.55
2:I:1164:LEU:HB3	2:I:1169:LEU:HD21	1.89	0.55
2:I:1948:ASP:OD1	2:I:2126:ARG:NH2	2.39	0.55
2:I:4126:GLU:O	2:I:4130:ASN:ND2	2.40	0.55
2:B:664:PHE:HB2	2:B:746:CYS:HB2	1.89	0.54
2:E:1152:MET:HB2	2:E:1161:ILE:HB	1.88	0.54
2:E:2739:PRO:HB3	2:E:2884:ASN:HB3	1.89	0.54
2:B:614:VAL:HG22	2:B:616:SER:H	1.71	0.54
2:B:1691:GLN:HE22	2:B:1802:ILE:HG12	1.72	0.54
2:G:315:CYS:SG	2:G:316:PHE:N	2.80	0.54
2:B:315:CYS:SG	2:B:316:PHE:N	2.80	0.54
2:G:180:LEU:O	2:G:200:TRP:NE1	2.36	0.54
1:F:42:ARG:HG2	2:E:1691:GLN:HG2	1.90	0.54
2:B:2347:GLU:O	2:B:2351:ASN:N	2.38	0.54
2:G:4126:GLU:O	2:G:4130:ASN:ND2	2.40	0.54
2:I:2347:GLU:O	2:I:2351:ASN:N	2.38	0.54
2:E:111:HIS:HD2	2:E:114:SER:H	1.54	0.54
2:B:1721:GLU:OE2	2:B:1725:ARG:NH2	2.40	0.54
2:B:4914:VAL:HG23	2:E:4888:TYR:HD1	1.72	0.54
2:G:2739:PRO:HB3	2:G:2884:ASN:HB3	1.89	0.54
2:G:3772:THR:OG1	2:G:3815:LYS:NZ	2.37	0.54
2:E:683:ARG:NH1	2:E:707:VAL:O	2.38	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:4126:GLU:O	2:B:4130:ASN:ND2	2.40	0.54
2:G:671:VAL:HG22	2:G:740:PRO:HG3	1.89	0.54
2:E:614:VAL:HG22	2:E:616:SER:H	1.71	0.54
2:E:671:VAL:HG22	2:E:740:PRO:HG3	1.89	0.54
2:E:2770:LYS:HB3	2:E:2775:TRP:HB2	1.89	0.54
2:B:2739:PRO:HB3	2:B:2884:ASN:HB3	1.90	0.54
2:B:887:ILE:HG21	2:B:959:TYR:HA	1.89	0.54
2:G:2342:ASN:OD1	2:G:2342:ASN:N	2.37	0.54
2:I:111:HIS:HD2	2:I:114:SER:H	1.54	0.54
2:E:111:HIS:CD2	2:E:114:SER:H	2.26	0.54
2:I:887:ILE:HG21	2:I:959:TYR:HA	1.89	0.54
2:E:1948:ASP:OD1	2:E:2126:ARG:NH2	2.39	0.54
1:J:42:ARG:HG2	2:I:1691:GLN:HG2	1.90	0.53
2:B:111:HIS:HD2	2:B:114:SER:H	1.54	0.53
2:G:2265:LEU:O	2:G:2330:ARG:NH1	2.41	0.53
2:E:2265:LEU:O	2:E:2330:ARG:NH1	2.41	0.53
2:B:309:THR:O	2:B:313:SER:OG	2.27	0.53
2:G:19:GLU:HB2	2:G:206:CYS:HB3	1.90	0.53
2:E:19:GLU:HB2	2:E:206:CYS:HB3	1.90	0.53
2:E:4126:GLU:O	2:E:4130:ASN:ND2	2.40	0.53
2:B:4161:ARG:HD3	2:B:4164:LEU:HD12	1.90	0.53
2:G:111:HIS:HD2	2:G:114:SER:H	1.54	0.53
2:E:1691:GLN:HE22	2:E:1802:ILE:HG12	1.72	0.53
2:E:4161:ARG:HD3	2:E:4164:LEU:HD12	1.91	0.53
2:B:281:ARG:NH2	2:B:309:THR:OG1	2.42	0.53
2:B:4180:ARG:NH1	2:B:4981:GLU:OE1	2.41	0.53
2:I:309:THR:O	2:I:313:SER:OG	2.27	0.53
2:G:111:HIS:CD2	2:G:114:SER:H	2.26	0.53
2:G:309:THR:O	2:G:313:SER:OG	2.27	0.53
2:I:2265:LEU:O	2:I:2330:ARG:NH1	2.41	0.53
2:E:652:ARG:HB2	2:E:750:LEU:HD13	1.91	0.53
2:E:887:ILE:HG21	2:E:959:TYR:HA	1.89	0.53
2:B:426:ARG:HB2	2:B:506:TYR:HA	1.91	0.53
2:G:4155:PRO:HD2	2:G:5036:LEU:HD23	1.91	0.53
2:I:426:ARG:HB2	2:I:506:TYR:HA	1.91	0.53
2:B:4236:SER:OG	2:B:4675:LYS:NZ	2.38	0.53
2:I:19:GLU:HB2	2:I:206:CYS:HB3	1.90	0.53
2:I:111:HIS:CD2	2:I:114:SER:H	2.26	0.53
2:I:331:VAL:HG12	2:I:333:GLY:H	1.74	0.53
2:E:309:THR:O	2:E:313:SER:OG	2.27	0.53
2:B:1948:ASP:OD1	2:B:2126:ARG:NH2	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:4155:PRO:HD2	2:I:5036:LEU:HD23	1.91	0.52
2:G:887:ILE:HG21	2:G:959:TYR:HA	1.89	0.52
2:I:281:ARG:NH2	2:I:309:THR:OG1	2.42	0.52
2:I:652:ARG:HB2	2:I:750:LEU:HD13	1.91	0.52
2:B:2265:LEU:O	2:B:2330:ARG:NH1	2.41	0.52
2:B:2737:PRO:O	2:B:2888:ARG:NH2	2.43	0.52
2:G:2107:GLN:NE2	2:G:3680:ALA:O	2.43	0.52
2:I:4161:ARG:HD3	2:I:4164:LEU:HD12	1.90	0.52
2:E:219:VAL:O	2:E:392:ARG:NH1	2.43	0.52
2:B:111:HIS:CD2	2:B:114:SER:H	2.26	0.52
2:G:331:VAL:HG12	2:G:333:GLY:H	1.74	0.52
2:E:637:LEU:HD23	2:E:1637:MET:HB3	1.92	0.52
2:E:3772:THR:OG1	2:E:3815:LYS:NZ	2.37	0.52
2:B:652:ARG:HB2	2:B:750:LEU:HD13	1.91	0.52
2:B:2143:THR:O	2:B:3651:ASN:ND2	2.42	0.52
2:G:219:VAL:O	2:G:392:ARG:NH1	2.43	0.52
2:B:180:LEU:O	2:B:200:TRP:NE1	2.36	0.52
2:B:331:VAL:HG12	2:B:333:GLY:H	1.74	0.52
2:E:331:VAL:HG12	2:E:333:GLY:H	1.74	0.52
2:E:4864:ASN:ND2	2:E:4871:GLU:OE1	2.43	0.52
2:G:426:ARG:HB2	2:G:506:TYR:HA	1.91	0.52
2:G:2737:PRO:O	2:G:2888:ARG:NH2	2.43	0.52
2:I:2107:GLN:NE2	2:I:3680:ALA:O	2.43	0.52
2:B:19:GLU:HB2	2:B:206:CYS:HB3	1.90	0.52
2:B:637:LEU:HD23	2:B:1637:MET:HB3	1.92	0.52
2:B:1960:ALA:O	2:B:1964:ARG:NE	2.43	0.52
2:G:652:ARG:HB2	2:G:750:LEU:HD13	1.91	0.52
2:E:4155:PRO:HD2	2:E:5036:LEU:HD23	1.91	0.52
2:G:4864:ASN:ND2	2:G:4871:GLU:OE1	2.43	0.52
2:I:2737:PRO:O	2:I:2888:ARG:NH2	2.43	0.52
2:G:4161:ARG:HD3	2:G:4164:LEU:HD12	1.90	0.51
2:B:683:ARG:NH1	2:B:707:VAL:O	2.38	0.51
2:I:219:VAL:O	2:I:392:ARG:NH1	2.43	0.51
2:I:4864:ASN:ND2	2:I:4871:GLU:OE1	2.43	0.51
2:E:889:GLN:O	2:E:902:ARG:NH1	2.44	0.51
1:A:82:TYR:O	1:A:86:GLY:N	2.43	0.51
2:B:219:VAL:O	2:B:392:ARG:NH1	2.43	0.51
2:E:2737:PRO:O	2:E:2888:ARG:NH2	2.43	0.51
2:G:649:PHE:HB3	2:G:776:LEU:HD13	1.93	0.51
2:I:649:PHE:HB3	2:I:776:LEU:HD13	1.93	0.51
2:E:1960:ALA:O	2:E:1964:ARG:NE	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:41:GLY:O	2:G:45:ARG:NH1	2.44	0.51
2:G:4180:ARG:NH1	2:G:4981:GLU:OE1	2.41	0.51
2:E:426:ARG:HB2	2:E:506:TYR:HA	1.91	0.51
2:E:2107:GLN:NE2	2:E:3680:ALA:O	2.43	0.51
1:F:82:TYR:O	1:F:86:GLY:N	2.43	0.51
2:B:2107:GLN:NE2	2:B:3680:ALA:O	2.43	0.51
1:J:82:TYR:O	1:J:86:GLY:N	2.43	0.51
2:B:4155:PRO:HD2	2:B:5036:LEU:HD23	1.91	0.51
2:G:161:GLU:HA	2:I:3984:ARG:HH22	1.75	0.51
2:G:281:ARG:NH2	2:G:309:THR:OG1	2.42	0.51
2:G:637:LEU:HD23	2:G:1637:MET:HB3	1.92	0.51
2:E:776:LEU:HG	2:E:848:HIS:HA	1.93	0.51
2:B:889:GLN:O	2:B:902:ARG:NH1	2.44	0.51
2:G:4860:ARG:HD2	2:I:4582:VAL:HG11	1.91	0.51
2:E:4198:SER:HB3	2:E:4201:ASN:HB2	1.93	0.51
2:E:4563:ARG:NH1	2:E:4815:ASP:OD1	2.44	0.51
1:H:42:ARG:HG2	2:G:1691:GLN:HG2	1.93	0.51
2:B:4864:ASN:ND2	2:B:4871:GLU:OE1	2.43	0.51
2:G:889:GLN:O	2:G:902:ARG:NH1	2.44	0.51
2:G:1960:ALA:O	2:G:1964:ARG:NE	2.43	0.51
2:E:3900:GLN:NE2	2:E:3967:GLU:O	2.44	0.51
2:B:776:LEU:HG	2:B:848:HIS:HA	1.93	0.50
2:G:683:ARG:NH1	2:G:707:VAL:O	2.38	0.50
2:I:637:LEU:HD23	2:I:1637:MET:HB3	1.92	0.50
2:B:649:PHE:HB3	2:B:776:LEU:HD13	1.93	0.50
2:B:1516:UNK:N	2:B:1529:UNK:O	2.44	0.50
2:G:463:GLU:OE2	2:G:467:LYS:NZ	2.44	0.50
2:I:463:GLU:OE2	2:I:467:LYS:NZ	2.44	0.50
2:I:889:GLN:O	2:I:902:ARG:NH1	2.44	0.50
2:I:4198:SER:HB3	2:I:4201:ASN:HB2	1.93	0.50
2:E:3773:ARG:HG3	2:E:3815:LYS:HZ3	1.75	0.50
2:B:2231:SER:HA	2:B:2234:ARG:HG2	1.94	0.50
2:B:4563:ARG:NH1	2:B:4815:ASP:OD1	2.44	0.50
2:I:1731:LEU:HA	2:I:1772:ARG:HH12	1.76	0.50
2:I:41:GLY:O	2:I:45:ARG:NH1	2.44	0.50
2:I:776:LEU:HG	2:I:848:HIS:HA	1.93	0.50
2:E:180:LEU:O	2:E:200:TRP:NE1	2.36	0.50
1:H:82:TYR:O	1:H:86:GLY:N	2.43	0.50
2:B:3900:GLN:NE2	2:B:3967:GLU:O	2.44	0.50
2:G:3900:GLN:NE2	2:G:3967:GLU:O	2.44	0.50
2:I:1516:UNK:N	2:I:1529:UNK:O	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:2231:SER:HA	2:I:2234:ARG:HG2	1.93	0.50
2:E:281:ARG:NH2	2:E:309:THR:OG1	2.42	0.50
2:E:907:LEU:O	2:E:963:ASN:ND2	2.38	0.50
2:E:989:ALA:O	2:E:1035:ASN:ND2	2.44	0.50
2:B:989:ALA:O	2:B:1035:ASN:ND2	2.44	0.50
2:G:776:LEU:HG	2:G:848:HIS:HA	1.93	0.50
2:G:1516:UNK:N	2:G:1529:UNK:O	2.45	0.50
2:B:20:VAL:HG12	2:B:204:PRO:HA	1.93	0.50
2:B:41:GLY:O	2:B:45:ARG:NH1	2.44	0.50
2:B:463:GLU:OE2	2:B:467:LYS:NZ	2.44	0.50
2:G:4563:ARG:NH1	2:G:4815:ASP:OD1	2.44	0.50
2:E:1516:UNK:N	2:E:1529:UNK:O	2.45	0.50
2:B:2196:ASN:OD1	2:B:2199:ARG:NH1	2.38	0.50
2:B:4198:SER:HB3	2:B:4201:ASN:HB2	1.93	0.50
2:G:575:LEU:HD22	2:G:609:CYS:HB3	1.94	0.50
2:G:1126:GLY:HA3	2:G:1143:TRP:CE2	2.47	0.50
2:E:575:LEU:HD22	2:E:609:CYS:HB3	1.94	0.50
2:G:989:ALA:O	2:G:1035:ASN:ND2	2.44	0.50
2:G:4198:SER:HB3	2:G:4201:ASN:HB2	1.93	0.50
2:I:20:VAL:HG12	2:I:204:PRO:HA	1.93	0.50
2:I:4563:ARG:NH1	2:I:4815:ASP:OD1	2.44	0.50
2:E:463:GLU:OE2	2:E:467:LYS:NZ	2.44	0.50
2:E:1126:GLY:HA3	2:E:1143:TRP:CE2	2.47	0.49
2:E:1244:GLN:OE1	2:E:1646:ARG:NH1	2.45	0.49
2:B:1244:GLN:OE1	2:B:1646:ARG:NH1	2.45	0.49
2:G:3759:GLU:HB3	2:G:3762:ARG:HH21	1.77	0.49
2:I:3900:GLN:NE2	2:I:3967:GLU:O	2.44	0.49
2:E:649:PHE:HB3	2:E:776:LEU:HD13	1.93	0.49
2:E:1731:LEU:HA	2:E:1772:ARG:HH12	1.76	0.49
2:E:2143:THR:O	2:E:3651:ASN:ND2	2.42	0.49
2:E:2332:LEU:HD13	2:E:2335:LEU:HD12	1.94	0.49
2:B:1126:GLY:HA3	2:B:1143:TRP:CE2	2.47	0.49
2:I:1960:ALA:O	2:I:1964:ARG:NE	2.43	0.49
2:B:3759:GLU:HB3	2:B:3762:ARG:HH21	1.77	0.49
2:I:1126:GLY:HA3	2:I:1143:TRP:CE2	2.47	0.49
2:I:1244:GLN:OE1	2:I:1646:ARG:NH1	2.45	0.49
2:B:1731:LEU:HA	2:B:1772:ARG:HH12	1.76	0.49
2:G:907:LEU:O	2:G:963:ASN:ND2	2.38	0.49
2:G:1731:LEU:HA	2:G:1772:ARG:HH12	1.76	0.49
2:E:2231:SER:HA	2:E:2234:ARG:HG2	1.94	0.49
2:G:2318:TYR:OH	2:G:2414:ASN:N	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1457:UNK:N	2:B:1497:UNK:O	2.46	0.49
2:G:20:VAL:HG12	2:G:204:PRO:HA	1.93	0.49
2:I:3759:GLU:HB3	2:I:3762:ARG:HH21	1.77	0.49
2:E:41:GLY:O	2:E:45:ARG:NH1	2.44	0.49
2:E:2318:TYR:OH	2:E:2414:ASN:N	2.46	0.49
2:B:2332:LEU:HD13	2:B:2335:LEU:HD12	1.94	0.49
2:G:164:ARG:N	2:G:167:ASP:OD2	2.43	0.49
2:G:1931:LEU:HB3	2:G:1935:VAL:HB	1.95	0.49
2:I:989:ALA:O	2:I:1035:ASN:ND2	2.44	0.49
2:I:3658:LYS:HA	2:I:3661:TRP:CD2	2.48	0.49
2:B:1931:LEU:HB3	2:B:1935:VAL:HB	1.95	0.49
2:G:2231:SER:HA	2:G:2234:ARG:HG2	1.94	0.49
2:I:1457:UNK:N	2:I:1497:UNK:O	2.46	0.49
2:I:4180:ARG:NH1	2:I:4981:GLU:OE1	2.41	0.49
2:E:1025:ARG:O	2:E:1032:LYS:NZ	2.42	0.49
2:E:3658:LYS:HA	2:E:3661:TRP:CD2	2.48	0.49
2:E:4180:ARG:NH1	2:E:4981:GLU:OE1	2.41	0.49
2:B:907:LEU:O	2:B:963:ASN:ND2	2.38	0.49
2:B:2318:TYR:OH	2:B:2414:ASN:N	2.46	0.49
2:E:20:VAL:HG12	2:E:204:PRO:HA	1.93	0.49
2:E:164:ARG:N	2:E:167:ASP:OD2	2.43	0.49
2:E:469:ARG:HH21	2:E:3712:GLU:HB3	1.78	0.49
2:B:469:ARG:HH21	2:B:3712:GLU:HB3	1.78	0.48
2:E:1931:LEU:HB3	2:E:1935:VAL:HB	1.95	0.48
2:B:2226:PRO:HA	2:B:2229:VAL:HG12	1.95	0.48
2:G:1244:GLN:OE1	2:G:1646:ARG:NH1	2.45	0.48
2:G:2226:PRO:HA	2:G:2229:VAL:HG12	1.95	0.48
2:G:2305:CYS:HA	2:G:2324:ASN:HD22	1.79	0.48
2:I:1931:LEU:HB3	2:I:1935:VAL:HB	1.95	0.48
2:E:3842:LEU:O	2:E:3929:SER:OG	2.32	0.48
1:F:87:HIS:HD2	1:F:90:VAL:HB	1.78	0.48
2:G:2022:PRO:O	2:G:2028:ARG:NH2	2.37	0.48
2:G:2104:ARG:HA	2:G:2107:GLN:HB3	1.96	0.48
2:I:1166:GLY:HA3	2:I:1216:ILE:HD13	1.96	0.48
2:B:234:SER:O	2:B:242:ARG:NE	2.46	0.48
2:B:1166:GLY:HA3	2:B:1216:ILE:HD13	1.96	0.48
2:B:2346:VAL:HG22	2:B:2348:GLU:H	1.79	0.48
2:B:3658:LYS:HA	2:B:3661:TRP:CD2	2.48	0.48
2:B:3773:ARG:HG3	2:B:3815:LYS:HZ3	1.78	0.48
2:G:1166:GLY:HA3	2:G:1216:ILE:HD13	1.96	0.48
2:I:575:LEU:HD22	2:I:609:CYS:HB3	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:730:VAL:O	2:E:735:GLN:NE2	2.47	0.48
2:B:575:LEU:HD22	2:B:609:CYS:HB3	1.94	0.48
2:B:2104:ARG:HA	2:B:2107:GLN:HB3	1.96	0.48
2:I:2104:ARG:HA	2:I:2107:GLN:HB3	1.96	0.48
2:I:2332:LEU:HD13	2:I:2335:LEU:HD12	1.94	0.48
2:E:234:SER:O	2:E:242:ARG:NE	2.46	0.48
1:H:87:HIS:HD2	1:H:90:VAL:HB	1.78	0.48
2:B:730:VAL:O	2:B:735:GLN:NE2	2.47	0.48
2:B:3842:LEU:O	2:B:3929:SER:OG	2.32	0.48
2:I:2346:VAL:HG22	2:I:2348:GLU:H	1.79	0.48
2:E:2430:ILE:HG21	2:E:2502:UNK:HA	1.96	0.48
2:E:3759:GLU:HB3	2:E:3762:ARG:HH21	1.77	0.48
2:B:2950:UNK:O	2:B:2954:UNK:N	2.47	0.48
2:B:4687:TYR:OH	2:B:4699:GLY:O	2.32	0.48
2:B:4892:ARG:NH2	2:I:4899:ASP:OD1	2.47	0.48
2:G:116:MET:HB2	2:G:137:LEU:HD12	1.96	0.48
2:G:2143:THR:O	2:G:3651:ASN:ND2	2.42	0.48
2:I:2291:GLN:HB3	2:I:2294:ASP:H	1.79	0.48
2:E:1457:UNK:N	2:E:1497:UNK:O	2.46	0.48
2:E:2346:VAL:HG22	2:E:2348:GLU:H	1.79	0.48
2:B:116:MET:HB2	2:B:137:LEU:HD12	1.96	0.48
2:B:119:SER:HA	2:B:146:CYS:HA	1.96	0.48
2:B:2291:GLN:HB3	2:B:2294:ASP:H	1.79	0.48
2:G:3658:LYS:HA	2:G:3661:TRP:CD2	2.48	0.48
2:I:2004:GLU:HA	2:I:2007:ASN:HB2	1.96	0.48
2:I:2318:TYR:OH	2:I:2414:ASN:N	2.45	0.48
2:E:2022:PRO:O	2:E:2028:ARG:NH2	2.37	0.48
2:E:2305:CYS:HA	2:E:2324:ASN:HD22	1.79	0.48
2:B:2004:GLU:HA	2:B:2007:ASN:HB2	1.96	0.48
2:G:2332:LEU:HD13	2:G:2335:LEU:HD12	1.94	0.48
2:G:3842:LEU:O	2:G:3929:SER:OG	2.32	0.48
2:I:2022:PRO:O	2:I:2028:ARG:NH2	2.37	0.48
2:I:3903:LEU:HG	2:I:3915:ILE:HD12	1.96	0.48
2:I:4960:ILE:HD11	2:I:4985:LEU:HD23	1.96	0.48
2:E:1166:GLY:HA3	2:E:1216:ILE:HD13	1.96	0.48
2:E:2226:PRO:HA	2:E:2229:VAL:HG12	1.95	0.48
2:E:2291:GLN:HB3	2:E:2294:ASP:H	1.79	0.48
2:E:4687:TYR:OH	2:E:4699:GLY:O	2.32	0.48
2:B:2869:ARG:HA	2:B:2872:GLN:HB3	1.96	0.48
2:G:2869:ARG:HA	2:G:2872:GLN:HB3	1.96	0.48
2:G:3940:LYS:O	2:G:4002:LYS:NZ	2.42	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:2104:ARG:HA	2:E:2107:GLN:HB3	1.96	0.48
2:B:2002:PRO:HA	2:B:2005:GLN:HB3	1.96	0.47
2:B:2305:CYS:HA	2:B:2324:ASN:HD22	1.79	0.47
2:I:2869:ARG:HA	2:I:2872:GLN:HB3	1.96	0.47
2:E:4227:GLU:HG3	2:E:4228:ALA:H	1.79	0.47
1:J:74:LEU:HB2	1:J:99:PHE:HB2	1.97	0.47
2:G:1457:UNK:N	2:G:1497:UNK:O	2.46	0.47
2:G:2748:PRO:HD2	2:G:2751:LEU:HD12	1.96	0.47
2:G:2868:SER:O	2:G:2872:GLN:N	2.47	0.47
2:G:4843:LEU:HD12	2:I:4823:LEU:HD23	1.96	0.47
2:I:164:ARG:N	2:I:167:ASP:OD2	2.43	0.47
2:I:2226:PRO:HA	2:I:2229:VAL:HG12	1.95	0.47
2:G:119:SER:HA	2:G:146:CYS:HA	1.96	0.47
2:G:730:VAL:O	2:G:735:GLN:NE2	2.47	0.47
2:I:730:VAL:O	2:I:735:GLN:NE2	2.47	0.47
2:I:4137:ARG:NH2	2:I:4196:GLU:OE2	2.48	0.47
2:B:2748:PRO:HD2	2:B:2751:LEU:HD12	1.96	0.47
2:B:4227:GLU:HG3	2:B:4228:ALA:H	1.79	0.47
2:I:469:ARG:HH21	2:I:3712:GLU:HB3	1.78	0.47
2:E:2803:GLU:OE2	2:E:2806:ARG:NH1	2.48	0.47
2:E:2868:SER:O	2:E:2872:GLN:N	2.47	0.47
2:G:2950:UNK:O	2:G:2954:UNK:N	2.47	0.47
2:G:3903:LEU:HG	2:G:3915:ILE:HD12	1.96	0.47
2:E:4851:TYR:HD2	2:E:4920:PHE:HD1	1.62	0.47
1:H:74:LEU:HB2	1:H:99:PHE:HB2	1.97	0.47
1:J:87:HIS:HD2	1:J:90:VAL:HB	1.78	0.47
2:B:4680:LYS:HD3	2:B:4686:LEU:HD22	1.97	0.47
2:G:469:ARG:HH21	2:G:3712:GLU:HB3	1.78	0.47
2:I:2748:PRO:HD2	2:I:2751:LEU:HD12	1.95	0.47
2:E:2869:ARG:HA	2:E:2872:GLN:HB3	1.96	0.47
1:F:74:LEU:HB2	1:F:99:PHE:HB2	1.96	0.47
1:A:74:LEU:HB2	1:A:99:PHE:HB2	1.97	0.47
2:B:123:THR:OG1	2:B:134:ASP:OD1	2.33	0.47
2:B:393:CYS:SG	2:B:395:GLN:NE2	2.88	0.47
2:G:229:GLU:HA	2:G:249:GLY:HA2	1.97	0.47
2:G:393:CYS:SG	2:G:395:GLN:NE2	2.88	0.47
2:G:2002:PRO:HA	2:G:2005:GLN:HB3	1.96	0.47
2:G:2095:GLN:NE2	2:G:2127:GLN:O	2.46	0.47
2:G:2803:GLU:OE2	2:G:2806:ARG:NH1	2.48	0.47
2:G:4137:ARG:NH2	2:G:4196:GLU:OE2	2.48	0.47
2:G:4227:GLU:HG3	2:G:4228:ALA:H	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:2002:PRO:HA	2:I:2005:GLN:HB3	1.96	0.47
2:E:2002:PRO:HA	2:E:2005:GLN:HB3	1.96	0.47
2:E:2748:PRO:HD2	2:E:2751:LEU:HD12	1.95	0.47
2:E:4673:ARG:HH22	2:E:4698:LYS:HB2	1.80	0.47
2:E:4976:GLU:O	2:E:4979:THR:OG1	2.29	0.47
2:B:4960:ILE:HD11	2:B:4985:LEU:HD23	1.96	0.47
2:G:234:SER:O	2:G:242:ARG:NE	2.46	0.47
2:G:707:VAL:HG23	2:G:713:SER:HB2	1.97	0.47
2:G:1025:ARG:O	2:G:1032:LYS:NZ	2.42	0.47
2:G:2004:GLU:HA	2:G:2007:ASN:HB2	1.96	0.47
2:G:2291:GLN:HB3	2:G:2294:ASP:H	1.79	0.47
2:G:3850:GLN:HB3	2:G:3873:LYS:HD3	1.97	0.47
2:I:119:SER:HA	2:I:146:CYS:HA	1.96	0.47
2:I:4673:ARG:HH22	2:I:4698:LYS:HB2	1.80	0.47
2:I:4680:LYS:HD3	2:I:4686:LEU:HD22	1.97	0.47
2:E:116:MET:HB2	2:E:137:LEU:HD12	1.96	0.47
2:E:123:THR:OG1	2:E:134:ASP:OD1	2.33	0.47
2:E:707:VAL:HG23	2:E:713:SER:HB2	1.97	0.47
2:E:2950:UNK:O	2:E:2954:UNK:N	2.48	0.47
1:A:42:ARG:HG2	2:B:1691:GLN:HG2	1.95	0.47
2:G:1817:GLU:O	2:G:1821:ASP:N	2.45	0.47
2:G:2346:VAL:HG22	2:G:2348:GLU:H	1.79	0.47
2:G:4960:ILE:HD11	2:G:4985:LEU:HD23	1.96	0.47
2:I:229:GLU:HA	2:I:249:GLY:HA2	1.97	0.47
2:I:393:CYS:SG	2:I:395:GLN:NE2	2.88	0.47
2:I:2143:THR:O	2:I:3651:ASN:ND2	2.42	0.47
2:I:2305:CYS:HA	2:I:2324:ASN:HD22	1.79	0.47
2:I:2803:GLU:OE2	2:I:2806:ARG:NH1	2.48	0.47
2:I:4227:GLU:HG3	2:I:4228:ALA:H	1.79	0.47
2:E:3903:LEU:HG	2:E:3915:ILE:HD12	1.96	0.47
2:B:635:THR:HB	2:B:1639:LEU:HD23	1.97	0.47
2:B:1747:LEU:HD21	2:B:2041:HIS:HB2	1.97	0.47
2:G:2452:ARG:HH12	2:E:177:GLU:HG3	1.79	0.47
2:G:4851:TYR:HD2	2:G:4920:PHE:HD1	1.62	0.47
2:E:393:CYS:SG	2:E:395:GLN:NE2	2.88	0.47
2:E:3850:GLN:HB3	2:E:3873:LYS:HD3	1.97	0.47
2:E:4680:LYS:HD3	2:E:4686:LEU:HD22	1.97	0.47
2:B:2095:GLN:NE2	2:B:2127:GLN:O	2.46	0.46
2:B:2803:GLU:OE2	2:B:2806:ARG:NH1	2.48	0.46
2:I:234:SER:O	2:I:242:ARG:NE	2.46	0.46
2:I:707:VAL:HG23	2:I:713:SER:HB2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:4236:SER:OG	2:I:4675:LYS:NZ	2.38	0.46
2:I:907:LEU:O	2:I:963:ASN:ND2	2.38	0.46
2:I:3674:ILE:HD11	2:I:3728:ILE:HG22	1.97	0.46
2:E:635:THR:HB	2:E:1639:LEU:HD23	1.97	0.46
2:E:4960:ILE:HD11	2:E:4985:LEU:HD23	1.96	0.46
1:A:87:HIS:HD2	1:A:90:VAL:HB	1.78	0.46
2:B:4137:ARG:NH2	2:B:4196:GLU:OE2	2.48	0.46
2:G:3946:GLN:OE1	2:G:3950:ASN:ND2	2.48	0.46
2:G:4687:TYR:OH	2:G:4699:GLY:O	2.32	0.46
2:I:2196:ASN:OD1	2:I:2199:ARG:NH1	2.38	0.46
2:E:1747:LEU:HD21	2:E:2041:HIS:HB2	1.97	0.46
2:B:2131:LEU:HD23	2:B:3662:ILE:HB	1.98	0.46
2:G:206:CYS:SG	2:G:207:SER:N	2.88	0.46
2:G:4680:LYS:HD3	2:G:4686:LEU:HD22	1.97	0.46
2:I:116:MET:HB2	2:I:137:LEU:HD12	1.96	0.46
2:I:3946:GLN:OE1	2:I:3950:ASN:ND2	2.48	0.46
2:E:1093:GLU:OE1	2:E:1201:HIS:NE2	2.46	0.46
2:B:3903:LEU:HG	2:B:3915:ILE:HD12	1.96	0.46
2:G:1111:PRO:HD3	2:G:1605:TRP:HE1	1.81	0.46
2:G:2131:LEU:HD23	2:G:3662:ILE:HB	1.98	0.46
2:G:3361:UNK:O	2:G:3365:UNK:N	2.49	0.46
2:I:2868:SER:O	2:I:2872:GLN:N	2.47	0.46
2:I:3842:LEU:O	2:I:3929:SER:OG	2.32	0.46
2:E:4886:HIS:O	2:E:4890:GLY:N	2.44	0.46
1:H:34:LYS:HD3	2:G:629:ARG:HD2	1.98	0.46
2:B:103:TYR:HB3	2:B:152:PRO:HD3	1.98	0.46
2:B:229:GLU:HA	2:B:249:GLY:HA2	1.97	0.46
2:B:707:VAL:HG23	2:B:713:SER:HB2	1.97	0.46
2:B:3674:ILE:HD11	2:B:3728:ILE:HG22	1.97	0.46
2:B:3850:GLN:HB3	2:B:3873:LYS:HD3	1.97	0.46
2:G:635:THR:HB	2:G:1639:LEU:HD23	1.97	0.46
2:I:123:THR:OG1	2:I:134:ASP:OD1	2.33	0.46
2:I:2950:UNK:O	2:I:2954:UNK:N	2.48	0.46
2:E:1718:ILE:HG13	2:E:1719:HIS:CD2	2.51	0.46
2:B:1954:ARG:HE	2:B:2041:HIS:HD2	1.63	0.46
2:G:1718:ILE:HG13	2:G:1719:HIS:CD2	2.51	0.46
2:I:2131:LEU:HD23	2:I:3662:ILE:HB	1.98	0.46
2:I:4851:TYR:HD2	2:I:4920:PHE:HD1	1.62	0.46
2:E:206:CYS:SG	2:E:207:SER:N	2.88	0.46
2:E:2004:GLU:HA	2:E:2007:ASN:HB2	1.96	0.46
2:E:4137:ARG:NH2	2:E:4196:GLU:OE2	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:4236:SER:OG	2:E:4675:LYS:NZ	2.38	0.46
2:B:1718:ILE:HG13	2:B:1719:HIS:CD2	2.51	0.46
2:B:4673:ARG:HH22	2:B:4698:LYS:HB2	1.80	0.46
2:G:2042:CYS:SG	2:G:2043:GLY:N	2.88	0.46
2:G:4673:ARG:HH22	2:G:4698:LYS:HB2	1.80	0.46
2:I:1718:ILE:HG13	2:I:1719:HIS:CD2	2.51	0.46
2:I:3361:UNK:O	2:I:3365:UNK:N	2.48	0.46
2:I:3850:GLN:HB3	2:I:3873:LYS:HD3	1.97	0.46
2:E:229:GLU:HA	2:E:249:GLY:HA2	1.97	0.46
2:E:2095:GLN:NE2	2:E:2127:GLN:O	2.46	0.46
2:E:3361:UNK:O	2:E:3365:UNK:N	2.48	0.46
2:E:3674:ILE:HD11	2:E:3728:ILE:HG22	1.97	0.46
2:B:3946:GLN:OE1	2:B:3950:ASN:ND2	2.48	0.46
2:G:103:TYR:HB3	2:G:152:PRO:HD3	1.98	0.46
2:G:123:THR:OG1	2:G:134:ASP:OD1	2.33	0.46
2:I:103:TYR:HB3	2:I:152:PRO:HD3	1.98	0.46
2:E:2131:LEU:HD23	2:E:3662:ILE:HB	1.98	0.46
2:E:3946:GLN:OE1	2:E:3950:ASN:ND2	2.48	0.46
2:B:2024:PRO:O	2:B:2028:ARG:NE	2.45	0.46
2:G:3674:ILE:HD11	2:G:3728:ILE:HG22	1.97	0.46
2:I:2479:LEU:O	2:I:2487:UNK:N	2.49	0.46
2:I:4687:TYR:OH	2:I:4699:GLY:O	2.32	0.46
2:B:652:ARG:HD2	2:B:750:LEU:HB3	1.99	0.45
2:B:1111:PRO:HD3	2:B:1605:TRP:HE1	1.81	0.45
2:G:626:LEU:HD23	2:G:630:GLU:H	1.82	0.45
2:G:3971:GLY:H	2:G:5005:GLY:HA3	1.81	0.45
2:I:635:THR:HB	2:I:1639:LEU:HD23	1.97	0.45
2:I:1111:PRO:HD3	2:I:1605:TRP:HE1	1.81	0.45
2:E:290:TYR:O	2:E:302:VAL:N	2.49	0.45
2:B:2868:SER:O	2:B:2872:GLN:N	2.47	0.45
2:G:290:TYR:O	2:G:302:VAL:N	2.49	0.45
2:I:3971:GLY:H	2:I:5005:GLY:HA3	1.81	0.45
2:E:119:SER:HA	2:E:146:CYS:HA	1.96	0.45
2:E:1095:VAL:HB	2:E:1199:VAL:HG23	1.97	0.45
2:E:3552:UNK:O	2:E:3556:UNK:N	2.49	0.45
2:B:206:CYS:SG	2:B:207:SER:N	2.88	0.45
2:B:1679:ASN:ND2	2:B:1798:LEU:O	2.50	0.45
2:G:219:VAL:HG13	2:G:285:VAL:HG21	1.98	0.45
2:G:1707:LEU:O	2:G:1710:GLY:N	2.33	0.45
2:I:652:ARG:HD2	2:I:750:LEU:HB3	1.99	0.45
2:E:103:TYR:HB3	2:E:152:PRO:HD3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:626:LEU:HD23	2:E:630:GLU:H	1.82	0.45
2:E:2042:CYS:SG	2:E:2043:GLY:N	2.88	0.45
1:J:21:THR:HA	1:J:49:ARG:HA	1.99	0.45
2:G:652:ARG:HD2	2:G:750:LEU:HB3	1.99	0.45
2:G:2430:ILE:HG21	2:G:2502:UNK:HA	1.98	0.45
2:E:1954:ARG:HE	2:E:2041:HIS:HD2	1.63	0.45
2:E:3889:GLN:OE1	2:E:3960:GLN:NE2	2.50	0.45
2:E:4081:VAL:HB	2:E:4088:ILE:HD12	1.99	0.45
2:B:2874:MET:O	2:B:2878:LEU:N	2.44	0.45
2:B:4851:TYR:HD2	2:B:4920:PHE:HD1	1.62	0.45
2:G:1141:ARG:H	2:G:1141:ARG:HD2	1.82	0.45
2:I:1747:LEU:HD21	2:I:2041:HIS:HB2	1.97	0.45
2:I:3552:UNK:O	2:I:3556:UNK:N	2.50	0.45
2:E:1111:PRO:HD3	2:E:1605:TRP:HE1	1.81	0.45
2:B:626:LEU:HD23	2:B:630:GLU:H	1.82	0.45
2:B:2012:PHE:CG	2:B:2022:PRO:HD3	2.52	0.45
2:B:4081:VAL:HB	2:B:4088:ILE:HD12	1.99	0.45
2:G:1747:LEU:HD21	2:G:2041:HIS:HB2	1.97	0.45
2:I:1095:VAL:HB	2:I:1199:VAL:HG23	1.97	0.45
2:B:219:VAL:HG13	2:B:285:VAL:HG21	1.98	0.45
2:B:3889:GLN:OE1	2:B:3960:GLN:NE2	2.50	0.45
2:G:1095:VAL:HB	2:G:1199:VAL:HG23	1.97	0.45
2:G:3552:UNK:O	2:G:3556:UNK:N	2.50	0.45
2:E:219:VAL:HG13	2:E:285:VAL:HG21	1.98	0.45
2:E:652:ARG:HD2	2:E:750:LEU:HB3	1.99	0.45
2:E:717:ASP:OD1	2:E:720:HIS:ND1	2.50	0.45
2:E:3980:LEU:HD22	2:E:3985:LEU:HD22	1.98	0.45
2:B:3955:MET:HG3	2:B:4019:LEU:HD22	1.99	0.45
2:I:206:CYS:SG	2:I:207:SER:N	2.88	0.45
2:I:2029:GLN:O	2:I:2033:ASP:N	2.48	0.45
2:E:3955:MET:HG3	2:E:4019:LEU:HD22	1.99	0.45
1:F:21:THR:HA	1:F:49:ARG:HA	1.99	0.45
2:B:1093:GLU:OE1	2:B:1201:HIS:NE2	2.46	0.45
2:B:1141:ARG:H	2:B:1141:ARG:HD2	1.82	0.45
2:B:3552:UNK:O	2:B:3556:UNK:N	2.50	0.45
2:G:379:HIS:CD2	2:G:381:GLU:H	2.35	0.45
2:G:2012:PHE:CG	2:G:2022:PRO:HD3	2.52	0.45
2:E:3365:UNK:O	2:E:3369:UNK:N	2.50	0.45
2:B:1095:VAL:HB	2:B:1199:VAL:HG23	1.97	0.45
2:G:1679:ASN:ND2	2:G:1798:LEU:O	2.50	0.45
2:G:3889:GLN:OE1	2:G:3960:GLN:NE2	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:3955:MET:HG3	2:G:4019:LEU:HD22	1.99	0.45
2:I:379:HIS:CD2	2:I:381:GLU:H	2.35	0.45
2:B:290:TYR:O	2:B:302:VAL:N	2.49	0.44
2:G:717:ASP:OD1	2:G:720:HIS:ND1	2.50	0.44
2:I:219:VAL:HG13	2:I:285:VAL:HG21	1.98	0.44
2:I:1141:ARG:H	2:I:1141:ARG:HD2	1.82	0.44
2:I:1954:ARG:HE	2:I:2041:HIS:HD2	1.63	0.44
2:I:3365:UNK:O	2:I:3369:UNK:N	2.50	0.44
2:E:2012:PHE:CG	2:E:2022:PRO:HD3	2.52	0.44
2:B:161:GLU:HG2	2:E:3984:ARG:HH12	1.82	0.44
2:B:379:HIS:CD2	2:B:381:GLU:H	2.35	0.44
2:G:619:ASP:OD1	2:G:1680:ARG:NH1	2.50	0.44
2:G:1675:ALA:HB1	2:G:1676:LEU:HD13	1.99	0.44
2:G:1954:ARG:HE	2:G:2041:HIS:HD2	1.63	0.44
2:G:3980:LEU:HD22	2:G:3985:LEU:HD22	1.98	0.44
2:G:4976:GLU:O	2:G:4979:THR:OG1	2.29	0.44
2:I:290:TYR:O	2:I:302:VAL:N	2.49	0.44
2:I:1093:GLU:OE1	2:I:1201:HIS:NE2	2.46	0.44
2:I:3889:GLN:OE1	2:I:3960:GLN:NE2	2.50	0.44
2:E:1679:ASN:ND2	2:E:1798:LEU:O	2.50	0.44
2:E:1865:MET:HB3	2:E:1926:LEU:HB2	2.00	0.44
2:E:3971:GLY:H	2:E:5005:GLY:HA3	1.81	0.44
2:E:4942:GLU:O	2:E:4946:GLN:N	2.47	0.44
2:B:1676:LEU:HD23	2:B:2167:ILE:HG23	2.00	0.44
2:B:1865:MET:HB3	2:B:1926:LEU:HB2	2.00	0.44
2:B:3971:GLY:H	2:B:5005:GLY:HA3	1.81	0.44
2:G:1103:GLY:HA3	2:G:1123:VAL:HA	2.00	0.44
2:I:877:ASN:HD22	2:I:1045:THR:HG23	1.83	0.44
2:I:1676:LEU:HD23	2:I:2167:ILE:HG23	2.00	0.44
2:I:2012:PHE:CG	2:I:2022:PRO:HD3	2.52	0.44
2:I:4763:GLY:O	2:I:4766:THR:OG1	2.30	0.44
1:H:21:THR:HA	1:H:49:ARG:HA	1.99	0.44
2:B:1101:ARG:HH21	2:B:1115:LEU:H	1.65	0.44
2:B:1720:LEU:HD23	2:B:1721:GLU:HA	2.00	0.44
2:G:877:ASN:HD22	2:G:1045:THR:HG23	1.83	0.44
2:G:4823:LEU:HD23	2:E:4843:LEU:HD12	1.98	0.44
2:I:454:PRO:HG2	2:I:531:ARG:HH12	1.83	0.44
2:I:626:LEU:HD23	2:I:630:GLU:H	1.82	0.44
2:I:717:ASP:OD1	2:I:720:HIS:ND1	2.50	0.44
2:E:379:HIS:CD2	2:E:381:GLU:H	2.35	0.44
2:G:1720:LEU:HD23	2:G:1721:GLU:HA	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:1675:ALA:HB1	2:I:1676:LEU:HD13	1.99	0.44
2:I:3955:MET:HG3	2:I:4019:LEU:HD22	1.99	0.44
2:B:3361:UNK:O	2:B:3365:UNK:N	2.50	0.44
2:B:4044:MET:HA	2:B:4047:MET:HG2	2.00	0.44
2:I:548:VAL:HG12	2:I:564:LEU:HD22	2.00	0.44
2:I:619:ASP:OD1	2:I:1680:ARG:NH1	2.50	0.44
2:E:1141:ARG:H	2:E:1141:ARG:HD2	1.82	0.44
2:E:1720:LEU:HD23	2:E:1721:GLU:HA	2.00	0.44
2:E:2479:LEU:O	2:E:2487:UNK:N	2.50	0.44
2:B:983:THR:O	2:B:987:ARG:N	2.49	0.44
2:B:3781:GLN:HA	2:B:3784:SER:HB3	2.00	0.44
2:G:454:PRO:HG2	2:G:531:ARG:HH12	1.83	0.44
2:G:1676:LEU:HD23	2:G:2167:ILE:HG23	2.00	0.44
2:I:2042:CYS:SG	2:I:2043:GLY:N	2.88	0.44
2:I:2911:LEU:HB2	2:I:2916:LYS:HE3	2.00	0.44
2:E:1675:ALA:HB1	2:E:1676:LEU:HD13	1.99	0.44
2:E:2196:ASN:OD1	2:E:2199:ARG:NH1	2.38	0.44
2:B:164:ARG:N	2:B:167:ASP:OD2	2.43	0.44
2:B:717:ASP:OD1	2:B:720:HIS:ND1	2.50	0.44
2:B:719:LEU:HD22	2:B:735:GLN:HG2	2.00	0.44
2:B:794:GLY:H	2:B:798:GLY:HA3	1.83	0.44
2:B:2034:PHE:O	2:B:2038:LEU:N	2.51	0.44
2:B:3980:LEU:HD22	2:B:3985:LEU:HD22	1.98	0.44
2:B:4886:HIS:O	2:B:4890:GLY:N	2.44	0.44
2:G:1101:ARG:HH21	2:G:1115:LEU:H	1.65	0.44
2:G:4044:MET:HA	2:G:4047:MET:HG2	2.00	0.44
2:B:619:ASP:OD1	2:B:1680:ARG:NH1	2.50	0.44
2:B:1103:GLY:HA3	2:B:1123:VAL:HA	1.99	0.44
2:B:1865:MET:SD	2:B:1865:MET:N	2.91	0.44
2:B:2823:ILE:HG12	2:B:2937:VAL:HG22	1.99	0.44
2:B:2911:LEU:HB2	2:B:2916:LYS:HE3	2.00	0.44
2:B:4802:GLY:HA2	2:B:4808:PHE:HB2	2.00	0.44
2:G:2034:PHE:O	2:G:2038:LEU:N	2.51	0.44
2:I:1720:LEU:HD23	2:I:1721:GLU:HA	2.00	0.44
2:I:1725:ARG:HA	2:I:1728:ARG:HG2	2.00	0.44
2:I:1737:PRO:HD3	2:I:1771:LEU:HD21	2.00	0.44
2:I:2034:PHE:O	2:I:2038:LEU:N	2.51	0.44
2:I:3850:GLN:HA	2:I:3853:ALA:HB3	2.00	0.44
2:E:877:ASN:HD22	2:E:1045:THR:HG23	1.83	0.44
2:E:1865:MET:SD	2:E:1865:MET:N	2.91	0.44
2:G:1695:LEU:HB3	2:G:1810:LYS:HZ2	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:1865:MET:HB3	2:G:1926:LEU:HB2	2.00	0.43
2:G:2874:MET:O	2:G:2878:LEU:N	2.44	0.43
2:G:4802:GLY:HA2	2:G:4808:PHE:HB2	2.00	0.43
2:I:1679:ASN:ND2	2:I:1798:LEU:O	2.50	0.43
2:I:3980:LEU:HD22	2:I:3985:LEU:HD22	1.98	0.43
2:I:4081:VAL:HB	2:I:4088:ILE:HD12	1.99	0.43
2:I:4976:GLU:O	2:I:4979:THR:OG1	2.29	0.43
2:E:548:VAL:HG12	2:E:564:LEU:HD22	2.00	0.43
2:E:619:ASP:OD1	2:E:1680:ARG:NH1	2.50	0.43
2:E:2823:ILE:HG12	2:E:2937:VAL:HG22	1.99	0.43
2:E:4802:GLY:HA2	2:E:4808:PHE:HB2	2.00	0.43
2:B:454:PRO:HG2	2:B:531:ARG:HH12	1.82	0.43
2:B:877:ASN:HD22	2:B:1045:THR:HG23	1.83	0.43
2:B:1737:PRO:HD3	2:B:1771:LEU:HD21	2.00	0.43
2:B:2432:LEU:O	2:B:2436:CYS:N	2.50	0.43
2:G:1737:PRO:HD3	2:G:1771:LEU:HD21	2.00	0.43
2:G:3365:UNK:O	2:G:3369:UNK:N	2.51	0.43
2:G:4081:VAL:HB	2:G:4088:ILE:HD12	1.99	0.43
2:E:195:PHE:HB3	2:E:196:MET:HG2	2.00	0.43
2:E:1676:LEU:HD23	2:E:2167:ILE:HG23	2.00	0.43
2:E:4743:MET:HB3	2:E:4746:ALA:HB3	2.00	0.43
1:A:21:THR:HA	1:A:49:ARG:HA	1.99	0.43
2:B:195:PHE:HB3	2:B:196:MET:HG2	2.00	0.43
2:B:886:ARG:HB3	2:B:891:TRP:HB2	2.01	0.43
2:B:2029:GLN:O	2:B:2033:ASP:N	2.48	0.43
2:G:2326:CYS:SG	2:G:2327:GLY:N	2.92	0.43
2:G:3850:GLN:HA	2:G:3853:ALA:HB3	2.00	0.43
2:I:485:SER:O	2:I:489:ASN:N	2.38	0.43
2:I:4044:MET:HA	2:I:4047:MET:HG2	2.00	0.43
2:E:794:GLY:H	2:E:798:GLY:HA3	1.83	0.43
2:E:1103:GLY:HA3	2:E:1123:VAL:HA	1.99	0.43
2:B:2326:CYS:SG	2:B:2327:GLY:N	2.92	0.43
2:B:4743:MET:HB3	2:B:4746:ALA:HB3	2.00	0.43
2:I:699:GLY:O	2:I:1647:CYS:N	2.50	0.43
2:I:1865:MET:HB3	2:I:1926:LEU:HB2	2.00	0.43
2:E:54:ASN:O	2:E:58:VAL:N	2.46	0.43
2:E:886:ARG:HB3	2:E:891:TRP:HB2	2.01	0.43
2:B:2364:PHE:HD1	2:B:2429:LEU:HD21	1.83	0.43
2:B:4843:LEU:HD12	2:E:4823:LEU:HD23	2.01	0.43
2:G:841:GLY:HA2	2:G:1073:ARG:HD2	2.00	0.43
2:G:3781:GLN:HA	2:G:3784:SER:HB3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:134:ASP:OD1	2:I:134:ASP:N	2.52	0.43
2:I:195:PHE:HB3	2:I:196:MET:HG2	2.01	0.43
2:E:841:GLY:HA2	2:E:1073:ARG:HD2	2.00	0.43
2:E:4044:MET:HA	2:E:4047:MET:HG2	2.00	0.43
2:E:4163:PHE:O	2:E:4167:ALA:N	2.45	0.43
2:B:548:VAL:HG12	2:B:564:LEU:HD22	2.00	0.43
2:B:1675:ALA:HB1	2:B:1676:LEU:HD13	1.99	0.43
2:B:1695:LEU:HB3	2:B:1810:LYS:HZ2	1.83	0.43
2:G:719:LEU:HD22	2:G:735:GLN:HG2	2.00	0.43
2:G:794:GLY:H	2:G:798:GLY:HA3	1.83	0.43
2:I:794:GLY:H	2:I:798:GLY:HA3	1.83	0.43
2:I:1243:PRO:HB2	2:I:1600:LEU:HD22	2.01	0.43
2:I:2337:PHE:HA	2:I:2340:PHE:HB2	2.01	0.43
2:I:2364:PHE:HD1	2:I:2429:LEU:HD21	1.84	0.43
2:I:2432:LEU:O	2:I:2436:CYS:N	2.50	0.43
2:B:489:ASN:HA	2:B:492:ASP:HB2	2.00	0.43
2:G:2911:LEU:HB2	2:G:2916:LYS:HE3	2.00	0.43
2:I:489:ASN:HA	2:I:492:ASP:HB2	2.00	0.43
2:I:1649:ASP:HB3	2:I:1652:GLU:HG2	2.01	0.43
2:I:2823:ILE:HG12	2:I:2937:VAL:HG22	1.99	0.43
2:I:3362:UNK:O	2:I:3366:UNK:N	2.52	0.43
2:I:4802:GLY:HA2	2:I:4808:PHE:HB2	2.00	0.43
2:E:719:LEU:HD22	2:E:735:GLN:HG2	2.00	0.43
2:E:1101:ARG:HH21	2:E:1115:LEU:H	1.65	0.43
2:E:1817:GLU:O	2:E:1821:ASP:N	2.45	0.43
2:E:2326:CYS:SG	2:E:2327:GLY:N	2.92	0.43
2:B:1698:LEU:N	2:B:1712:TYR:OH	2.52	0.43
2:B:1725:ARG:HA	2:B:1728:ARG:HG2	2.00	0.43
2:B:2587:UNK:O	2:B:2591:UNK:N	2.52	0.43
2:G:548:VAL:HG12	2:G:564:LEU:HD22	2.00	0.43
2:G:886:ARG:HB3	2:G:891:TRP:HB2	2.01	0.43
2:G:2029:GLN:O	2:G:2033:ASP:N	2.48	0.43
2:G:2337:PHE:HA	2:G:2340:PHE:HB2	2.01	0.43
2:G:2364:PHE:HD1	2:G:2429:LEU:HD21	1.84	0.43
2:G:4673:ARG:HH12	2:G:4698:LYS:HE3	1.84	0.43
2:I:2430:ILE:HG21	2:I:2502:UNK:HA	2.00	0.43
2:I:2587:UNK:O	2:I:2591:UNK:N	2.52	0.43
2:I:3781:GLN:HA	2:I:3784:SER:HB3	1.99	0.43
2:E:1725:ARG:HA	2:E:1728:ARG:HG2	2.00	0.43
2:E:2587:UNK:O	2:E:2591:UNK:N	2.52	0.43
2:E:4558:ASN:OD1	2:E:4558:ASN:N	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2337:PHE:HA	2:B:2340:PHE:HB2	2.00	0.43
2:B:2479:LEU:O	2:B:2487:UNK:N	2.52	0.43
2:G:134:ASP:OD1	2:G:134:ASP:N	2.52	0.43
2:G:681:HIS:HE2	2:G:683:ARG:NE	2.17	0.43
2:G:3971:GLY:N	2:G:4032:GLU:OE2	2.49	0.43
2:I:1101:ARG:HH21	2:I:1115:LEU:H	1.65	0.43
2:I:1866:ILE:HG13	2:I:1926:LEU:HB3	2.01	0.43
2:I:4743:MET:HB3	2:I:4746:ALA:HB3	2.00	0.43
2:E:454:PRO:HG2	2:E:531:ARG:HH12	1.82	0.43
2:E:681:HIS:HE2	2:E:683:ARG:NE	2.17	0.43
2:E:3781:GLN:HA	2:E:3784:SER:HB3	2.00	0.43
2:B:1105:ALA:HB1	2:B:1109:LEU:HD21	2.01	0.43
2:B:4138:ASP:O	2:B:4142:ASN:ND2	2.52	0.43
2:G:2215:LEU:HD23	2:G:2260:ASN:HB3	2.01	0.43
2:G:2823:ILE:HG12	2:G:2937:VAL:HG22	1.99	0.43
2:I:1698:LEU:N	2:I:1712:TYR:OH	2.52	0.43
2:I:1865:MET:SD	2:I:1865:MET:N	2.91	0.43
2:E:57:ASN:HD22	2:E:308:HIS:HB2	1.84	0.43
2:E:699:GLY:O	2:E:1647:CYS:N	2.50	0.43
2:E:1737:PRO:HD3	2:E:1771:LEU:HD21	2.00	0.43
2:E:3850:GLN:HA	2:E:3853:ALA:HB3	2.00	0.43
2:E:3973:CYS:SG	2:E:3976:ASN:ND2	2.92	0.43
2:E:4673:ARG:HH12	2:E:4698:LYS:HE3	1.84	0.43
2:B:177:GLU:HG3	2:E:2452:ARG:HH12	1.84	0.42
2:B:4688:ILE:HG21	2:B:4728:HIS:HB3	2.01	0.42
2:G:299:LEU:HD13	2:G:378:LEU:HG	2.01	0.42
2:G:1649:ASP:HB3	2:G:1652:GLU:HG2	2.01	0.42
2:I:719:LEU:HD22	2:I:735:GLN:HG2	2.00	0.42
2:I:2326:CYS:SG	2:I:2327:GLY:N	2.92	0.42
2:E:1649:ASP:HB3	2:E:1652:GLU:HG2	2.01	0.42
2:E:3362:UNK:O	2:E:3366:UNK:N	2.52	0.42
2:B:2430:ILE:HG21	2:B:2502:UNK:HA	2.01	0.42
2:B:3676:ASP:OD1	2:B:3676:ASP:N	2.52	0.42
2:B:4763:GLY:O	2:B:4766:THR:OG1	2.30	0.42
2:G:195:PHE:HB3	2:G:196:MET:HG2	2.00	0.42
2:G:699:GLY:O	2:G:1647:CYS:N	2.50	0.42
2:G:1243:PRO:HB2	2:G:1600:LEU:HD22	2.01	0.42
2:I:4673:ARG:HH12	2:I:4698:LYS:HE3	1.84	0.42
2:E:972:LEU:O	2:E:1044:ARG:NH2	2.52	0.42
2:E:1698:LEU:N	2:E:1712:TYR:OH	2.52	0.42
2:E:2364:PHE:HD1	2:E:2429:LEU:HD21	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:681:HIS:HE2	2:B:683:ARG:NE	2.17	0.42
2:B:3362:UNK:O	2:B:3366:UNK:N	2.52	0.42
2:B:4138:ASP:OD1	2:B:4138:ASP:N	2.53	0.42
2:G:972:LEU:O	2:G:1044:ARG:NH2	2.52	0.42
2:G:1865:MET:SD	2:G:1865:MET:N	2.91	0.42
2:G:2479:LEU:O	2:G:2487:UNK:N	2.52	0.42
2:G:3362:UNK:O	2:G:3366:UNK:N	2.52	0.42
2:G:3984:ARG:HH22	2:E:161:GLU:HA	1.83	0.42
2:I:1103:GLY:HA3	2:I:1123:VAL:HA	1.99	0.42
2:I:1972:ASN:HD21	2:I:2024:PRO:HB3	1.84	0.42
2:I:2215:LEU:HD23	2:I:2260:ASN:HB3	2.01	0.42
2:I:3676:ASP:OD1	2:I:3676:ASP:N	2.52	0.42
2:I:4688:ILE:HG21	2:I:4728:HIS:HB3	2.01	0.42
2:E:1695:LEU:HB3	2:E:1810:LYS:HZ2	1.84	0.42
2:E:3676:ASP:N	2:E:3676:ASP:OD1	2.52	0.42
2:E:4138:ASP:O	2:E:4142:ASN:ND2	2.52	0.42
2:E:4688:ILE:HG21	2:E:4728:HIS:HB3	2.01	0.42
2:B:1243:PRO:HB2	2:B:1600:LEU:HD22	2.01	0.42
2:B:1641:ILE:HA	2:B:1642:PRO:HD3	1.89	0.42
2:B:3365:UNK:O	2:B:3369:UNK:N	2.52	0.42
2:B:4942:GLU:O	2:B:4946:GLN:N	2.47	0.42
2:G:57:ASN:HD22	2:G:308:HIS:HB2	1.84	0.42
2:G:3676:ASP:OD1	2:G:3676:ASP:N	2.52	0.42
2:G:4138:ASP:O	2:G:4142:ASN:ND2	2.52	0.42
2:G:4571:PHE:O	2:G:4575:PHE:N	2.53	0.42
2:G:4743:MET:HB3	2:G:4746:ALA:HB3	2.00	0.42
2:I:972:LEU:O	2:I:1044:ARG:NH2	2.52	0.42
2:I:3973:CYS:SG	2:I:3976:ASN:ND2	2.92	0.42
2:I:4571:PHE:O	2:I:4575:PHE:N	2.53	0.42
2:E:489:ASN:HA	2:E:492:ASP:HB2	2.00	0.42
2:E:1972:ASN:HD21	2:E:2024:PRO:HB3	1.84	0.42
2:E:2337:PHE:HA	2:E:2340:PHE:HB2	2.01	0.42
2:B:54:ASN:O	2:B:58:VAL:N	2.46	0.42
2:B:299:LEU:HD13	2:B:378:LEU:HG	2.01	0.42
2:B:2022:PRO:O	2:B:2028:ARG:NH2	2.37	0.42
2:B:3850:GLN:HA	2:B:3853:ALA:HB3	2.00	0.42
2:G:1240:LYS:HB3	2:G:1604:SER:H	1.84	0.42
2:G:3973:CYS:SG	2:G:3976:ASN:ND2	2.92	0.42
2:I:1817:GLU:O	2:I:1821:ASP:N	2.45	0.42
2:I:2024:PRO:O	2:I:2028:ARG:NE	2.45	0.42
2:I:4942:GLU:O	2:I:4946:GLN:N	2.47	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:34:LYS:HE3	2:E:634:GLN:HB3	2.02	0.42
2:G:1698:LEU:N	2:G:1712:TYR:OH	2.52	0.42
2:G:1725:ARG:HA	2:G:1728:ARG:HG2	2.00	0.42
2:G:4697:VAL:O	2:G:4701:TRP:N	2.52	0.42
2:I:886:ARG:HB3	2:I:891:TRP:HB2	2.01	0.42
2:I:2902:HIS:HE1	2:I:2904:LEU:HD12	1.85	0.42
2:E:913:LEU:O	2:E:918:ARG:NH2	2.53	0.42
2:E:983:THR:O	2:E:987:ARG:N	2.49	0.42
2:E:2911:LEU:HB2	2:E:2916:LYS:HE3	2.00	0.42
2:B:1866:ILE:HG13	2:B:1926:LEU:HB3	2.01	0.42
2:B:2902:HIS:HE1	2:B:2904:LEU:HD12	1.85	0.42
2:B:4236:SER:HG	2:B:4675:LYS:HZ1	1.61	0.42
2:G:913:LEU:O	2:G:918:ARG:NH2	2.53	0.42
2:G:1093:GLU:OE1	2:G:1201:HIS:NE2	2.46	0.42
2:G:1866:ILE:HG13	2:G:1926:LEU:HB3	2.01	0.42
2:I:1641:ILE:HA	2:I:1642:PRO:HD3	1.90	0.42
2:I:4138:ASP:O	2:I:4142:ASN:ND2	2.52	0.42
2:I:4158:PRO:HA	2:I:4161:ARG:HB2	2.01	0.42
2:E:134:ASP:OD1	2:E:134:ASP:N	2.52	0.42
2:E:2862:LEU:HB3	2:E:2928:LYS:HB3	2.02	0.42
2:B:972:LEU:O	2:B:1044:ARG:NH2	2.52	0.42
2:B:1972:ASN:HD21	2:B:2024:PRO:HB3	1.84	0.42
2:G:489:ASN:HA	2:G:492:ASP:HB2	2.00	0.42
2:I:756:SER:HB3	2:I:767:VAL:HG22	2.01	0.42
2:I:841:GLY:HA2	2:I:1073:ARG:HD2	2.00	0.42
2:E:395:GLN:HG3	2:E:397:GLU:H	1.85	0.42
2:B:4558:ASN:OD1	2:B:4558:ASN:N	2.52	0.42
2:G:2587:UNK:O	2:G:2591:UNK:N	2.52	0.42
2:I:57:ASN:HD22	2:I:308:HIS:HB2	1.84	0.42
2:I:681:HIS:HE2	2:I:683:ARG:NE	2.17	0.42
2:I:913:LEU:O	2:I:918:ARG:NH2	2.53	0.42
2:I:2874:MET:O	2:I:2878:LEU:N	2.44	0.42
2:I:3771:HIS:O	2:I:3774:GLY:N	2.43	0.42
2:E:299:LEU:HD13	2:E:378:LEU:HG	2.01	0.42
2:B:913:LEU:O	2:B:918:ARG:NH2	2.53	0.42
2:B:3973:CYS:SG	2:B:3976:ASN:ND2	2.92	0.42
2:G:1685:LEU:HA	2:G:1688:HIS:HD2	1.85	0.42
2:I:299:LEU:HD13	2:I:378:LEU:HG	2.01	0.42
2:I:1685:LEU:HA	2:I:1688:HIS:HD2	1.85	0.42
2:I:4181:ILE:HD11	2:I:4988:TYR:CD1	2.55	0.42
2:E:756:SER:HB3	2:E:767:VAL:HG22	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:953:THR:HB	2:E:969:PRO:HD2	2.02	0.42
2:E:1243:PRO:HB2	2:E:1600:LEU:HD22	2.01	0.42
2:E:1685:LEU:HA	2:E:1688:HIS:HD2	1.85	0.42
2:E:2024:PRO:O	2:E:2028:ARG:NE	2.45	0.42
2:E:4158:PRO:HA	2:E:4161:ARG:HB2	2.01	0.42
2:B:1649:ASP:HB3	2:B:1652:GLU:HG2	2.01	0.41
2:B:1685:LEU:HA	2:B:1688:HIS:HD2	1.85	0.41
2:B:2042:CYS:SG	2:B:2043:GLY:N	2.88	0.41
2:G:395:GLN:HG3	2:G:397:GLU:H	1.85	0.41
2:G:983:THR:O	2:G:987:ARG:N	2.50	0.41
2:G:2102:VAL:HB	2:G:2124:LEU:HD12	2.02	0.41
2:G:4569:LEU:HD11	2:G:4646:LEU:HD22	2.02	0.41
2:I:1240:LYS:HB3	2:I:1604:SER:H	1.84	0.41
2:I:2862:LEU:HB3	2:I:2928:LYS:HB3	2.02	0.41
2:I:4138:ASP:N	2:I:4138:ASP:OD1	2.53	0.41
2:I:4886:HIS:O	2:I:4890:GLY:N	2.44	0.41
2:E:479:GLN:HE21	2:E:536:ASN:ND2	2.18	0.41
2:E:1866:ILE:HG13	2:E:1926:LEU:HB3	2.01	0.41
2:E:2215:LEU:HD23	2:E:2260:ASN:HB3	2.01	0.41
2:E:4181:ILE:HD11	2:E:4988:TYR:CD1	2.55	0.41
1:F:25:HIS:HB3	1:F:40:ARG:HD3	2.03	0.41
2:B:756:SER:HB3	2:B:767:VAL:HG22	2.01	0.41
2:B:1240:LYS:HB3	2:B:1604:SER:H	1.85	0.41
2:B:2215:LEU:HD23	2:B:2260:ASN:HB3	2.01	0.41
2:B:4673:ARG:HH12	2:B:4698:LYS:HE3	1.84	0.41
2:G:1808:ARG:HD3	2:G:1853:ILE:HG22	2.02	0.41
2:G:4735:GLU:HA	2:G:4738:ALA:HB3	2.02	0.41
2:I:4228:ALA:O	2:I:4232:GLU:N	2.52	0.41
2:I:5000:GLU:HA	2:I:5003:HIS:CD2	2.55	0.41
2:E:1105:ALA:HB1	2:E:1109:LEU:HD21	2.01	0.41
2:B:395:GLN:HG3	2:B:397:GLU:H	1.85	0.41
2:B:479:GLN:HE21	2:B:536:ASN:ND2	2.18	0.41
2:G:479:GLN:HE21	2:G:536:ASN:ND2	2.18	0.41
2:G:2024:PRO:O	2:G:2028:ARG:NE	2.45	0.41
2:G:4158:PRO:HA	2:G:4161:ARG:HB2	2.01	0.41
2:G:4558:ASN:OD1	2:G:4558:ASN:N	2.52	0.41
2:G:4848:VAL:O	2:G:4852:THR:OG1	2.24	0.41
2:I:395:GLN:HG3	2:I:397:GLU:H	1.85	0.41
2:I:710:ASP:OD1	2:I:710:ASP:N	2.54	0.41
2:E:2102:VAL:HB	2:E:2124:LEU:HD12	2.02	0.41
2:E:4228:ALA:O	2:E:4232:GLU:N	2.52	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:57:ASN:HD22	2:B:308:HIS:HB2	1.84	0.41
2:B:1707:LEU:O	2:B:1710:GLY:N	2.33	0.41
2:G:54:ASN:O	2:G:58:VAL:N	2.46	0.41
2:G:4688:ILE:HG21	2:G:4728:HIS:HB3	2.01	0.41
2:I:953:THR:HB	2:I:969:PRO:HD2	2.02	0.41
2:I:1105:ALA:HB1	2:I:1109:LEU:HD21	2.01	0.41
2:E:3971:GLY:N	2:E:4032:GLU:OE2	2.49	0.41
2:E:4735:GLU:HA	2:E:4738:ALA:HB3	2.02	0.41
2:B:710:ASP:OD1	2:B:710:ASP:N	2.54	0.41
2:B:841:GLY:HA2	2:B:1073:ARG:HD2	2.00	0.41
2:B:1808:ARG:HD3	2:B:1853:ILE:HG22	2.02	0.41
2:B:2024:PRO:HB2	2:B:2027:ILE:HG12	2.02	0.41
2:B:5000:GLU:HA	2:B:5003:HIS:CD2	2.56	0.41
2:G:205:ILE:HD12	2:G:205:ILE:HA	1.95	0.41
2:G:2024:PRO:HB2	2:G:2027:ILE:HG12	2.02	0.41
2:G:2959:UNK:O	2:G:2963:UNK:N	2.54	0.41
2:I:1808:ARG:HD3	2:I:1853:ILE:HG22	2.01	0.41
2:I:4558:ASN:OD1	2:I:4558:ASN:N	2.52	0.41
1:F:23:VAL:H	1:F:105:ASN:HB3	1.86	0.41
2:B:485:SER:HA	2:B:488:LEU:HB2	2.03	0.41
2:B:1812:LEU:HD21	2:B:1861:GLN:HG2	2.03	0.41
2:B:2102:VAL:HB	2:B:2124:LEU:HD12	2.02	0.41
2:B:2467:VAL:HA	2:B:2470:ILE:HD12	2.03	0.41
2:B:2959:UNK:O	2:B:2963:UNK:N	2.53	0.41
2:B:4928:LEU:HD13	2:B:4928:LEU:HA	1.92	0.41
2:G:2862:LEU:HB3	2:G:2928:LYS:HB3	2.02	0.41
2:I:983:THR:O	2:I:987:ARG:N	2.50	0.41
2:E:710:ASP:OD1	2:E:710:ASP:N	2.54	0.41
2:E:1808:ARG:HD3	2:E:1853:ILE:HG22	2.01	0.41
2:E:2024:PRO:HB2	2:E:2027:ILE:HG12	2.02	0.41
2:E:4569:LEU:HD11	2:E:4646:LEU:HD22	2.02	0.41
1:A:25:HIS:HB3	1:A:40:ARG:HD3	2.02	0.41
2:B:143:GLY:HA3	2:B:147:TRP:HE1	1.86	0.41
2:B:4181:ILE:HD11	2:B:4988:TYR:CD1	2.55	0.41
2:G:2196:ASN:OD1	2:G:2199:ARG:NH1	2.38	0.41
2:G:4138:ASP:N	2:G:4138:ASP:OD1	2.53	0.41
2:G:4228:ALA:O	2:G:4232:GLU:N	2.52	0.41
2:I:1076:ARG:HD3	2:I:1237:TRP:HB2	2.03	0.41
2:I:2517:UNK:O	2:I:2521:UNK:N	2.53	0.41
2:I:3773:ARG:HG3	2:I:3815:LYS:HZ3	1.85	0.41
2:I:4860:ARG:HG3	2:I:4876:CYS:HB3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:2467:VAL:HA	2:E:2470:ILE:HD12	2.03	0.41
2:B:1728:ARG:HA	2:B:1731:LEU:HB2	2.03	0.41
2:B:4158:PRO:HA	2:B:4161:ARG:HB2	2.01	0.41
2:B:4228:ALA:O	2:B:4232:GLU:N	2.52	0.41
2:G:1105:ALA:HB1	2:G:1109:LEU:HD21	2.01	0.41
2:G:1728:ARG:HA	2:G:1731:LEU:HB2	2.03	0.41
2:G:1972:ASN:HD21	2:G:2024:PRO:HB3	1.84	0.41
2:G:2902:HIS:HE1	2:G:2904:LEU:HD12	1.85	0.41
2:G:4181:ILE:HD11	2:G:4988:TYR:CD1	2.55	0.41
1:F:23:VAL:HB	1:F:105:ASN:HA	2.03	0.41
1:A:23:VAL:H	1:A:105:ASN:HB3	1.86	0.41
1:H:25:HIS:HB3	1:H:40:ARG:HD3	2.03	0.41
1:J:23:VAL:H	1:J:105:ASN:HB3	1.86	0.41
2:B:2810:LYS:HE2	2:B:2814:LYS:HE3	2.02	0.41
2:B:4569:LEU:HD11	2:B:4646:LEU:HD22	2.02	0.41
2:G:756:SER:HB3	2:G:767:VAL:HG22	2.01	0.41
2:G:953:THR:HB	2:G:969:PRO:HD2	2.02	0.41
2:G:1076:ARG:HD3	2:G:1237:TRP:HB2	2.03	0.41
2:G:1727:ARG:HH21	2:G:1775:HIS:CE1	2.39	0.41
2:G:2810:LYS:HE2	2:G:2814:LYS:HE3	2.02	0.41
2:G:3830:GLN:HA	2:G:3833:GLN:HG2	2.03	0.41
2:G:5000:GLU:HA	2:G:5003:HIS:CD2	2.56	0.41
2:I:479:GLN:HE21	2:I:536:ASN:ND2	2.18	0.41
2:I:485:SER:HA	2:I:488:LEU:HB2	2.03	0.41
2:I:533:ASN:ND2	2:I:536:ASN:OD1	2.42	0.41
2:I:1728:ARG:HA	2:I:1731:LEU:HB2	2.03	0.41
2:I:2095:GLN:NE2	2:I:2127:GLN:O	2.46	0.41
2:E:1240:LYS:HB3	2:E:1604:SER:H	1.84	0.41
2:E:2432:LEU:O	2:E:2436:CYS:N	2.50	0.41
2:E:3830:GLN:HA	2:E:3833:GLN:HG2	2.03	0.41
2:E:5000:GLU:HA	2:E:5003:HIS:CD2	2.56	0.41
1:A:23:VAL:HB	1:A:105:ASN:HA	2.03	0.41
2:B:953:THR:HB	2:B:969:PRO:HD2	2.02	0.41
2:B:1025:ARG:O	2:B:1032:LYS:NZ	2.42	0.41
2:B:2742:THR:OG1	2:B:2811:GLU:OE1	2.32	0.41
2:B:3817:LEU:HD13	2:B:3899:PHE:HD1	1.86	0.41
2:B:4837:LEU:HD22	2:B:4936:ILE:HD11	2.02	0.41
2:I:1078:GLU:HB3	2:I:1081:TYR:HD2	1.86	0.41
2:I:2102:VAL:HB	2:I:2124:LEU:HD12	2.02	0.41
2:I:3830:GLN:HA	2:I:3833:GLN:HG2	2.03	0.41
2:I:4837:LEU:HD22	2:I:4936:ILE:HD11	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:143:GLY:HA3	2:E:147:TRP:HE1	1.86	0.41
2:E:2365:GLY:HA3	2:E:2426:TYR:HE1	1.86	0.41
2:B:699:GLY:O	2:B:1647:CYS:N	2.50	0.40
2:B:1076:ARG:HD3	2:B:1237:TRP:HB2	2.03	0.40
2:B:2862:LEU:HB3	2:B:2928:LYS:HB3	2.02	0.40
2:B:4735:GLU:HA	2:B:4738:ALA:HB3	2.02	0.40
2:G:485:SER:O	2:G:489:ASN:N	2.38	0.40
2:G:2022:PRO:HB2	2:G:2024:PRO:HD2	2.02	0.40
2:G:2155:LEU:HD13	2:G:2188:ASN:HD21	1.86	0.40
2:G:3817:LEU:HD13	2:G:3899:PHE:HD1	1.86	0.40
2:G:4582:VAL:HG11	2:E:4860:ARG:HD2	2.02	0.40
2:I:606:LEU:HG	2:I:617:ASN:HD22	1.86	0.40
2:I:1592:PRO:HA	2:I:1593:PRO:HD3	1.96	0.40
2:I:1812:LEU:HD21	2:I:1861:GLN:HG2	2.03	0.40
2:I:2467:VAL:HA	2:I:2470:ILE:HD12	2.03	0.40
2:I:2959:UNK:O	2:I:2963:UNK:N	2.54	0.40
2:I:4569:LEU:HD11	2:I:4646:LEU:HD22	2.02	0.40
2:I:4735:GLU:HA	2:I:4738:ALA:HB3	2.02	0.40
2:E:485:SER:HA	2:E:488:LEU:HB2	2.03	0.40
2:E:2034:PHE:O	2:E:2038:LEU:N	2.51	0.40
2:G:2467:VAL:HA	2:G:2470:ILE:HD12	2.03	0.40
2:E:1728:ARG:HA	2:E:1731:LEU:HB2	2.03	0.40
2:E:1739:THR:H	2:E:1742:THR:HB	1.86	0.40
2:E:2517:UNK:O	2:E:2521:UNK:N	2.54	0.40
2:E:2902:HIS:HE1	2:E:2904:LEU:HD12	1.85	0.40
2:E:3817:LEU:HD13	2:E:3899:PHE:HD1	1.86	0.40
1:A:44:LYS:HA	1:A:45:PRO:HD3	1.89	0.40
2:B:533:ASN:ND2	2:B:536:ASN:OD1	2.42	0.40
2:B:1817:GLU:O	2:B:1821:ASP:N	2.45	0.40
2:B:2365:GLY:HA3	2:B:2426:TYR:HE1	1.87	0.40
2:B:2827:ARG:HH21	2:B:2931:GLN:HG3	1.86	0.40
2:B:3915:ILE:O	2:B:3919:THR:N	2.52	0.40
2:G:1641:ILE:HA	2:G:1642:PRO:HD3	1.89	0.40
2:G:3915:ILE:O	2:G:3919:THR:N	2.52	0.40
2:G:4886:HIS:O	2:G:4890:GLY:N	2.44	0.40
2:I:540:PHE:HD2	2:I:567:VAL:HG11	1.87	0.40
2:I:1739:THR:H	2:I:1742:THR:HB	1.87	0.40
2:I:2024:PRO:HB2	2:I:2027:ILE:HG12	2.02	0.40
2:I:2827:ARG:HH21	2:I:2931:GLN:HG3	1.86	0.40
2:E:2927:LEU:HD23	2:E:2930:LEU:HD12	2.03	0.40
2:E:4837:LEU:HD22	2:E:4936:ILE:HD11	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:606:LEU:HG	2:B:617:ASN:HD22	1.86	0.40
2:B:2155:LEU:HD13	2:B:2188:ASN:HD21	1.86	0.40
2:B:3830:GLN:HA	2:B:3833:GLN:HG2	2.03	0.40
2:B:3940:LYS:O	2:B:4002:LYS:NZ	2.42	0.40
2:B:4822:THR:O	2:B:4825:THR:OG1	2.33	0.40
2:G:540:PHE:HD2	2:G:567:VAL:HG11	1.87	0.40
2:I:2155:LEU:HD13	2:I:2188:ASN:HD21	1.86	0.40
2:I:2810:LYS:HE2	2:I:2814:LYS:HE3	2.02	0.40
2:E:551:LEU:HD21	2:E:589:LEU:HD13	2.03	0.40
2:E:1859:VAL:HA	2:E:1862:ILE:HG12	2.04	0.40
2:E:2155:LEU:HD13	2:E:2188:ASN:HD21	1.86	0.40
2:E:4138:ASP:N	2:E:4138:ASP:OD1	2.53	0.40
2:B:4571:PHE:O	2:B:4575:PHE:N	2.53	0.40
2:G:4763:GLY:O	2:G:4766:THR:OG1	2.30	0.40
2:I:1092:PHE:N	2:I:1149:VAL:O	2.43	0.40
2:I:1727:ARG:HH21	2:I:1775:HIS:CE1	2.39	0.40
2:I:3817:LEU:HD13	2:I:3899:PHE:HD1	1.86	0.40
2:I:3971:GLY:N	2:I:4032:GLU:OE2	2.49	0.40
2:E:113:HIS:CE1	2:E:402:ARG:HB3	2.57	0.40
2:E:4571:PHE:O	2:E:4575:PHE:N	2.53	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%)	96 (91%)	9 (9%)	0	100	100
1	F	105/108 (97%)	96 (91%)	9 (9%)	0	100	100
1	H	105/108 (97%)	96 (91%)	9 (9%)	0	100	100
1	J	105/108 (97%)	96 (91%)	9 (9%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	B	3235/4416 (73%)	2886 (89%)	345 (11%)	4 (0%)	51 85
2	E	3235/4416 (73%)	2888 (89%)	343 (11%)	4 (0%)	51 85
2	G	3235/4416 (73%)	2889 (89%)	341 (10%)	5 (0%)	47 81
2	I	3235/4416 (73%)	2888 (89%)	342 (11%)	5 (0%)	47 81
All	All	13360/18096 (74%)	11935 (89%)	1407 (10%)	18 (0%)	54 85

All (18) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	1708	ARG
2	B	4641	PRO
2	G	1708	ARG
2	G	4641	PRO
2	I	1708	ARG
2	I	4641	PRO
2	E	1708	ARG
2	E	4641	PRO
2	B	1840	PRO
2	B	1932	PRO
2	G	1840	PRO
2	G	1932	PRO
2	I	1840	PRO
2	I	1932	PRO
2	E	1840	PRO
2	E	1932	PRO
2	G	4640	GLU
2	I	4640	GLU

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

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
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%)	2474 (99%)	19 (1%)	81 89
2	E	2493/3022 (82%)	2474 (99%)	19 (1%)	81 89
2	G	2493/3022 (82%)	2474 (99%)	19 (1%)	81 89
2	I	2493/3022 (82%)	2474 (99%)	19 (1%)	81 89
All	All	10324/12444 (83%)	10248 (99%)	76 (1%)	84 90

All (76) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	131	LEU
2	B	534	ARG
2	B	553	ARG
2	B	719	LEU
2	B	978	THR
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	4131	ARG
2	B	4180	ARG
2	B	4201	ASN
2	G	131	LEU
2	G	534	ARG
2	G	553	ARG
2	G	719	LEU
2	G	978	THR
2	G	1076	ARG
2	G	1141	ARG
2	G	1600	LEU
2	G	1676	LEU
2	G	1964	ARG

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Mol	Chain	Res	Type
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	4131	ARG
2	G	4180	ARG
2	G	4201	ASN
2	I	131	LEU
2	I	534	ARG
2	I	553	ARG
2	I	719	LEU
2	I	978	THR
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	4131	ARG
2	I	4180	ARG
2	I	4201	ASN
2	E	131	LEU
2	E	534	ARG
2	E	553	ARG
2	E	719	LEU
2	E	978	THR
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

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Mol	Chain	Res	Type
2	E	4085	ARG
2	E	4120	ASN
2	E	4131	ARG
2	E	4180	ARG
2	E	4201	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (138) such sidechains are listed below:

Mol	Chain	Res	Type
1	F	87	HIS
1	A	87	HIS
1	H	87	HIS
1	J	87	HIS
2	B	57	ASN
2	B	111	HIS
2	B	113	HIS
2	B	151	HIS
2	B	273	HIS
2	B	379	HIS
2	B	395	GLN
2	B	479	GLN
2	B	520	ASN
2	B	582	HIS
2	B	725	HIS
2	B	921	ASN
2	B	1598	GLN
2	B	1679	ASN
2	B	1691	GLN
2	B	1719	HIS
2	B	1775	HIS
2	B	1952	GLN
2	B	1972	ASN
2	B	2041	HIS
2	B	2127	GLN
2	B	2291	GLN
2	B	3781	GLN
2	B	3809	ASN
2	B	3896	ASN
2	B	3946	GLN
2	B	3950	ASN
2	B	3976	ASN
2	B	4034	ASN

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Mol	Chain	Res	Type
2	B	4054	ASN
2	B	4120	ASN
2	B	4142	ASN
2	B	4806	ASN
2	B	5003	HIS
2	G	57	ASN
2	G	111	HIS
2	G	113	HIS
2	G	151	HIS
2	G	273	HIS
2	G	379	HIS
2	G	395	GLN
2	G	479	GLN
2	G	520	ASN
2	G	582	HIS
2	G	725	HIS
2	G	921	ASN
2	G	1598	GLN
2	G	1679	ASN
2	G	1691	GLN
2	G	1719	HIS
2	G	1775	HIS
2	G	1972	ASN
2	G	2041	HIS
2	G	2127	GLN
2	G	2291	GLN
2	G	3781	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	3976	ASN
2	G	4034	ASN
2	G	4054	ASN
2	G	4120	ASN
2	G	4142	ASN
2	G	4806	ASN
2	G	5003	HIS
2	I	57	ASN
2	I	111	HIS

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Mol	Chain	Res	Type
2	I	113	HIS
2	I	151	HIS
2	I	273	HIS
2	I	379	HIS
2	I	395	GLN
2	I	479	GLN
2	I	520	ASN
2	I	582	HIS
2	I	725	HIS
2	I	921	ASN
2	I	1598	GLN
2	I	1679	ASN
2	I	1691	GLN
2	I	1719	HIS
2	I	1775	HIS
2	I	2041	HIS
2	I	2127	GLN
2	I	2291	GLN
2	I	3781	GLN
2	I	3809	ASN
2	I	3896	ASN
2	I	3946	GLN
2	I	3950	ASN
2	I	3960	GLN
2	I	3976	ASN
2	I	4034	ASN
2	I	4054	ASN
2	I	4120	ASN
2	I	4142	ASN
2	I	4806	ASN
2	I	5003	HIS
2	E	57	ASN
2	E	111	HIS
2	E	113	HIS
2	E	151	HIS
2	E	273	HIS
2	E	379	HIS
2	E	395	GLN
2	E	479	GLN
2	E	520	ASN
2	E	582	HIS
2	E	725	HIS

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Mol	Chain	Res	Type
2	E	921	ASN
2	E	1598	GLN
2	E	1679	ASN
2	E	1691	GLN
2	E	1719	HIS
2	E	1775	HIS
2	E	1972	ASN
2	E	2041	HIS
2	E	2127	GLN
2	E	2291	GLN
2	E	3781	GLN
2	E	3809	ASN
2	E	3896	ASN
2	E	3946	GLN
2	E	3950	ASN
2	E	3976	ASN
2	E	4054	ASN
2	E	4120	ASN
2	E	4142	ASN
2	E	4806	ASN
2	E	5003	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 monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 16 ligands modelled in this entry, 8 are monoatomic - leaving 8 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The

Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	CFF	G	5102	-	8,15,15	2.53	3 (37%)	8,23,23	1.25	1 (12%)
3	ATP	B	5101	-	26,33,33	0.89	1 (3%)	31,52,52	1.64	5 (16%)
4	CFF	I	5102	-	8,15,15	2.54	3 (37%)	8,23,23	1.26	1 (12%)
4	CFF	B	5102	-	8,15,15	2.53	3 (37%)	8,23,23	1.26	1 (12%)
3	ATP	E	5101	-	26,33,33	0.89	1 (3%)	31,52,52	1.63	5 (16%)
3	ATP	I	5101	-	26,33,33	0.89	1 (3%)	31,52,52	1.64	5 (16%)
4	CFF	E	5102	-	8,15,15	2.55	3 (37%)	8,23,23	1.24	1 (12%)
3	ATP	G	5101	-	26,33,33	0.89	1 (3%)	31,52,52	1.64	5 (16%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	CFF	G	5102	-	-	-	0/2/2/2
3	ATP	B	5101	-	-	4/18/38/38	0/3/3/3
4	CFF	I	5102	-	-	-	0/2/2/2
4	CFF	B	5102	-	-	-	0/2/2/2
3	ATP	E	5101	-	-	5/18/38/38	0/3/3/3
3	ATP	I	5101	-	-	5/18/38/38	0/3/3/3
4	CFF	E	5102	-	-	-	0/2/2/2
3	ATP	G	5101	-	-	4/18/38/38	0/3/3/3

All (16) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	E	5102	CFF	C5-C4	-4.60	1.33	1.39
4	B	5102	CFF	C5-C4	-4.57	1.33	1.39
4	I	5102	CFF	C5-C4	-4.55	1.33	1.39
4	G	5102	CFF	C5-C4	-4.54	1.33	1.39
4	G	5102	CFF	C6-N1	-4.23	1.32	1.38
4	I	5102	CFF	C6-N1	-4.23	1.32	1.38
4	E	5102	CFF	C6-N1	-4.21	1.32	1.38
4	B	5102	CFF	C6-N1	-4.18	1.32	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	G	5102	CFF	O13-C6	-2.36	1.18	1.24
4	E	5102	CFF	O13-C6	-2.35	1.18	1.24
3	I	5101	ATP	C5-C4	2.34	1.47	1.40
4	B	5102	CFF	O13-C6	-2.33	1.18	1.24
3	B	5101	ATP	C5-C4	2.32	1.47	1.40
4	I	5102	CFF	O13-C6	-2.31	1.18	1.24
3	E	5101	ATP	C5-C4	2.30	1.47	1.40
3	G	5101	ATP	C5-C4	2.30	1.47	1.40

All (24) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	I	5101	ATP	PB-O3B-PG	-3.66	120.26	132.83
3	E	5101	ATP	PB-O3B-PG	-3.66	120.27	132.83
3	G	5101	ATP	PB-O3B-PG	-3.64	120.32	132.83
3	B	5101	ATP	PB-O3B-PG	-3.63	120.36	132.83
3	I	5101	ATP	PA-O3A-PB	-3.50	120.80	132.83
3	G	5101	ATP	PA-O3A-PB	-3.50	120.82	132.83
3	B	5101	ATP	PA-O3A-PB	-3.49	120.84	132.83
3	E	5101	ATP	PA-O3A-PB	-3.49	120.85	132.83
3	E	5101	ATP	C3'-C2'-C1'	3.49	106.23	100.98
3	G	5101	ATP	C3'-C2'-C1'	3.46	106.19	100.98
3	I	5101	ATP	C3'-C2'-C1'	3.46	106.19	100.98
3	B	5101	ATP	C3'-C2'-C1'	3.44	106.16	100.98
3	G	5101	ATP	N3-C2-N1	-3.28	123.56	128.68
3	B	5101	ATP	N3-C2-N1	-3.25	123.60	128.68
3	I	5101	ATP	N3-C2-N1	-3.24	123.61	128.68
3	E	5101	ATP	N3-C2-N1	-3.18	123.70	128.68
4	B	5102	CFF	C14-N7-C8	-2.83	111.82	125.43
4	G	5102	CFF	C14-N7-C8	-2.81	111.90	125.43
4	I	5102	CFF	C14-N7-C8	-2.81	111.91	125.43
4	E	5102	CFF	C14-N7-C8	-2.81	111.93	125.43
3	I	5101	ATP	C4-C5-N7	-2.69	106.60	109.40
3	B	5101	ATP	C4-C5-N7	-2.68	106.60	109.40
3	E	5101	ATP	C4-C5-N7	-2.65	106.64	109.40
3	G	5101	ATP	C4-C5-N7	-2.62	106.67	109.40

There are no chirality outliers.

All (18) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	5101	ATP	C5'-O5'-PA-O2A

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Mol	Chain	Res	Type	Atoms
3	B	5101	ATP	C5'-O5'-PA-O3A
3	G	5101	ATP	C5'-O5'-PA-O2A
3	G	5101	ATP	C5'-O5'-PA-O3A
3	I	5101	ATP	C5'-O5'-PA-O2A
3	I	5101	ATP	C5'-O5'-PA-O3A
3	E	5101	ATP	C5'-O5'-PA-O2A
3	E	5101	ATP	C5'-O5'-PA-O3A
3	E	5101	ATP	C5'-O5'-PA-O1A
3	G	5101	ATP	C4'-C5'-O5'-PA
3	I	5101	ATP	C4'-C5'-O5'-PA
3	E	5101	ATP	C4'-C5'-O5'-PA
3	B	5101	ATP	C4'-C5'-O5'-PA
3	B	5101	ATP	O4'-C4'-C5'-O5'
3	G	5101	ATP	O4'-C4'-C5'-O5'
3	I	5101	ATP	O4'-C4'-C5'-O5'
3	E	5101	ATP	O4'-C4'-C5'-O5'
3	I	5101	ATP	C5'-O5'-PA-O1A

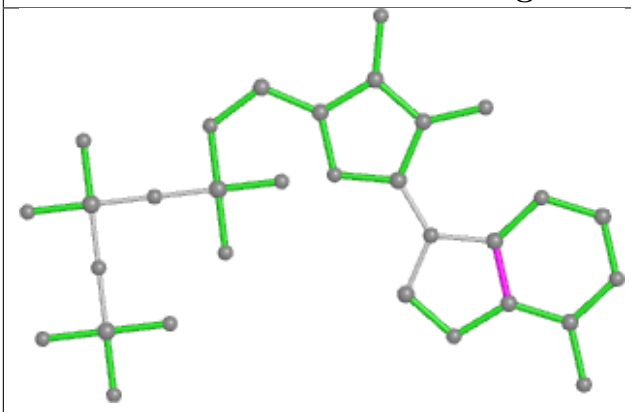
There are no ring outliers.

4 monomers are involved in 4 short contacts:

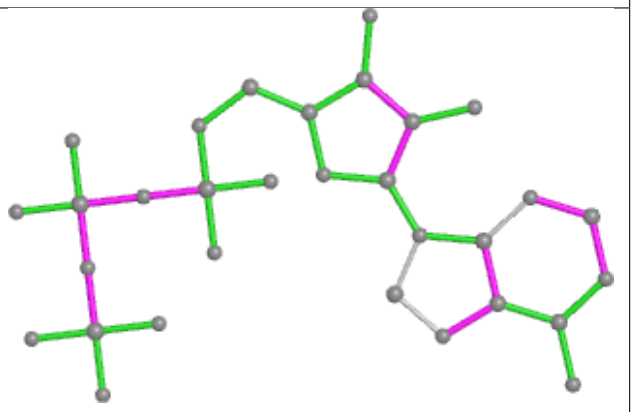
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	5101	ATP	1	0
3	E	5101	ATP	1	0
3	I	5101	ATP	1	0
3	G	5101	ATP	1	0

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

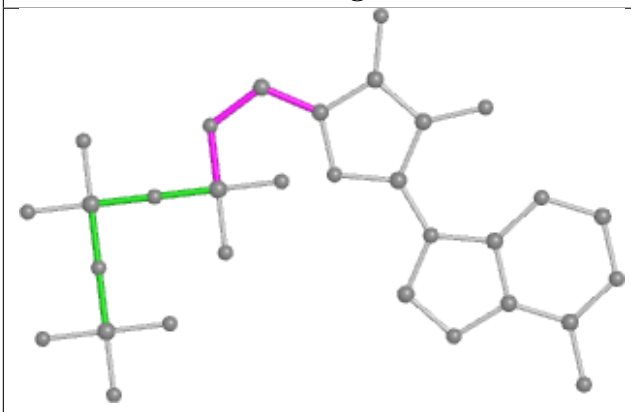
Ligand ATP B 5101



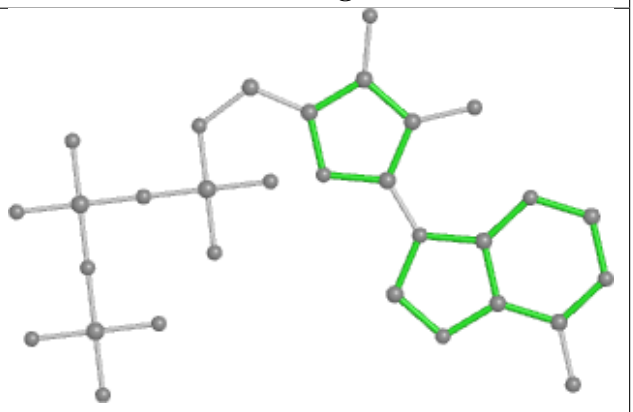
Bond lengths



Bond angles

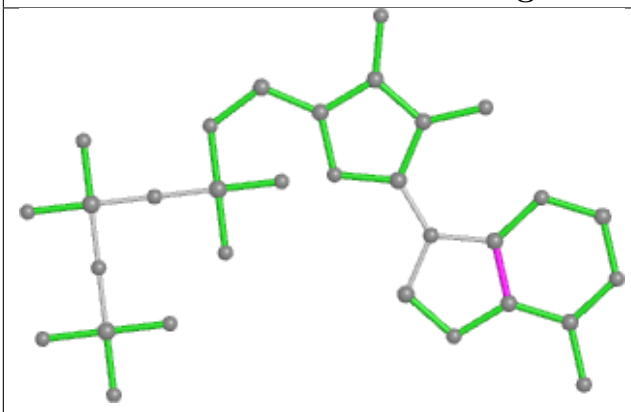


Torsions

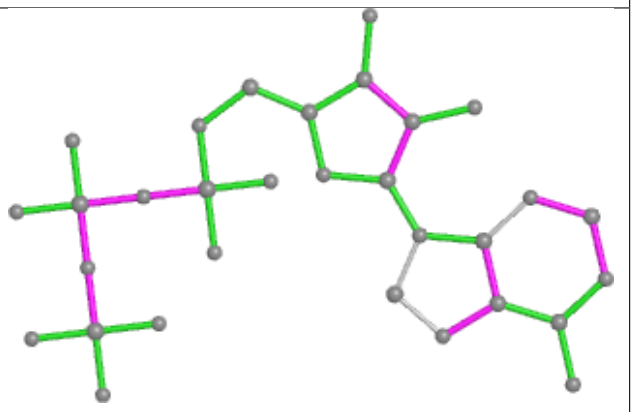


Rings

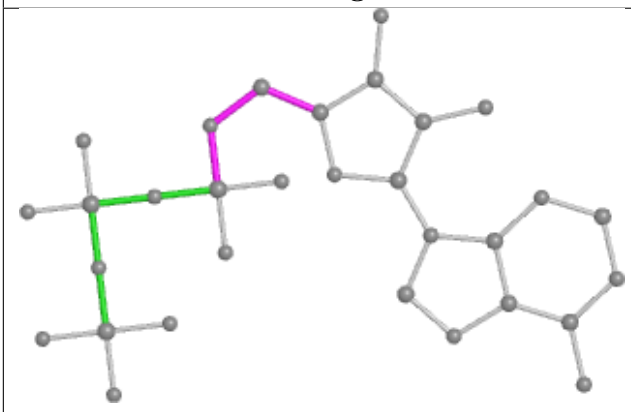
Ligand ATP E 5101



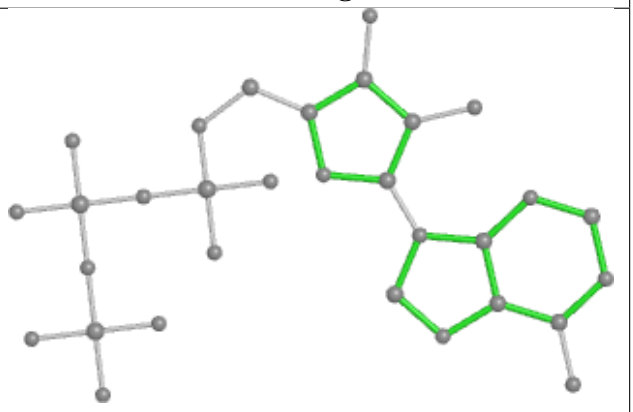
Bond lengths



Bond angles

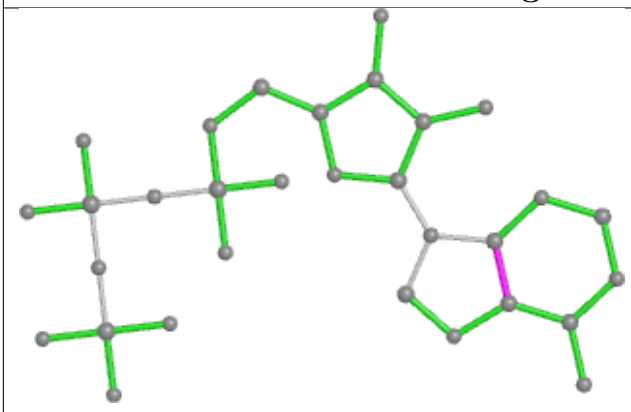


Torsions

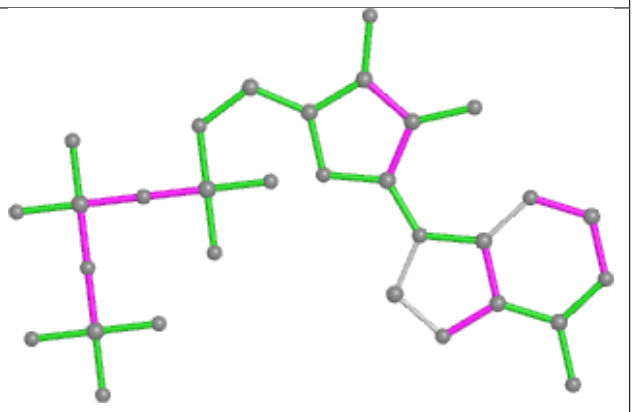


Rings

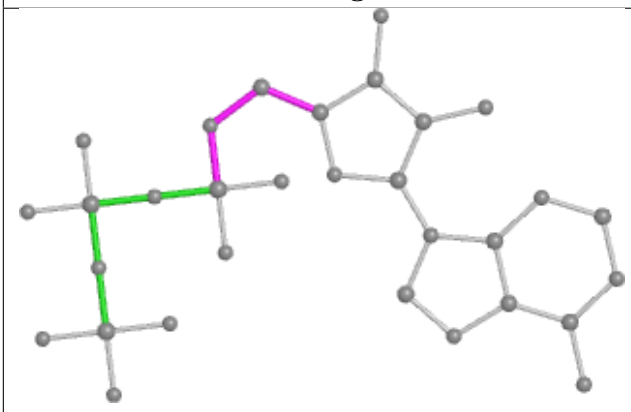
Ligand ATP I 5101



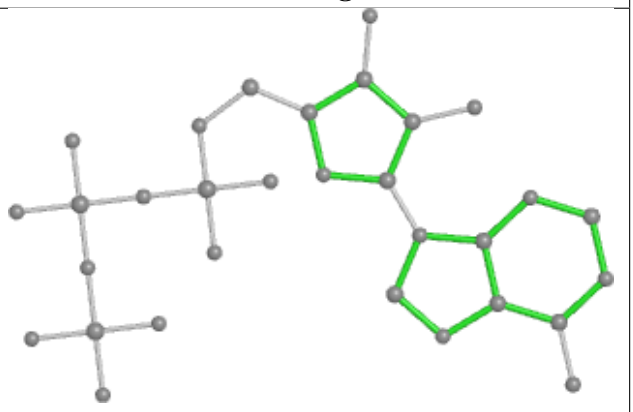
Bond lengths



Bond angles

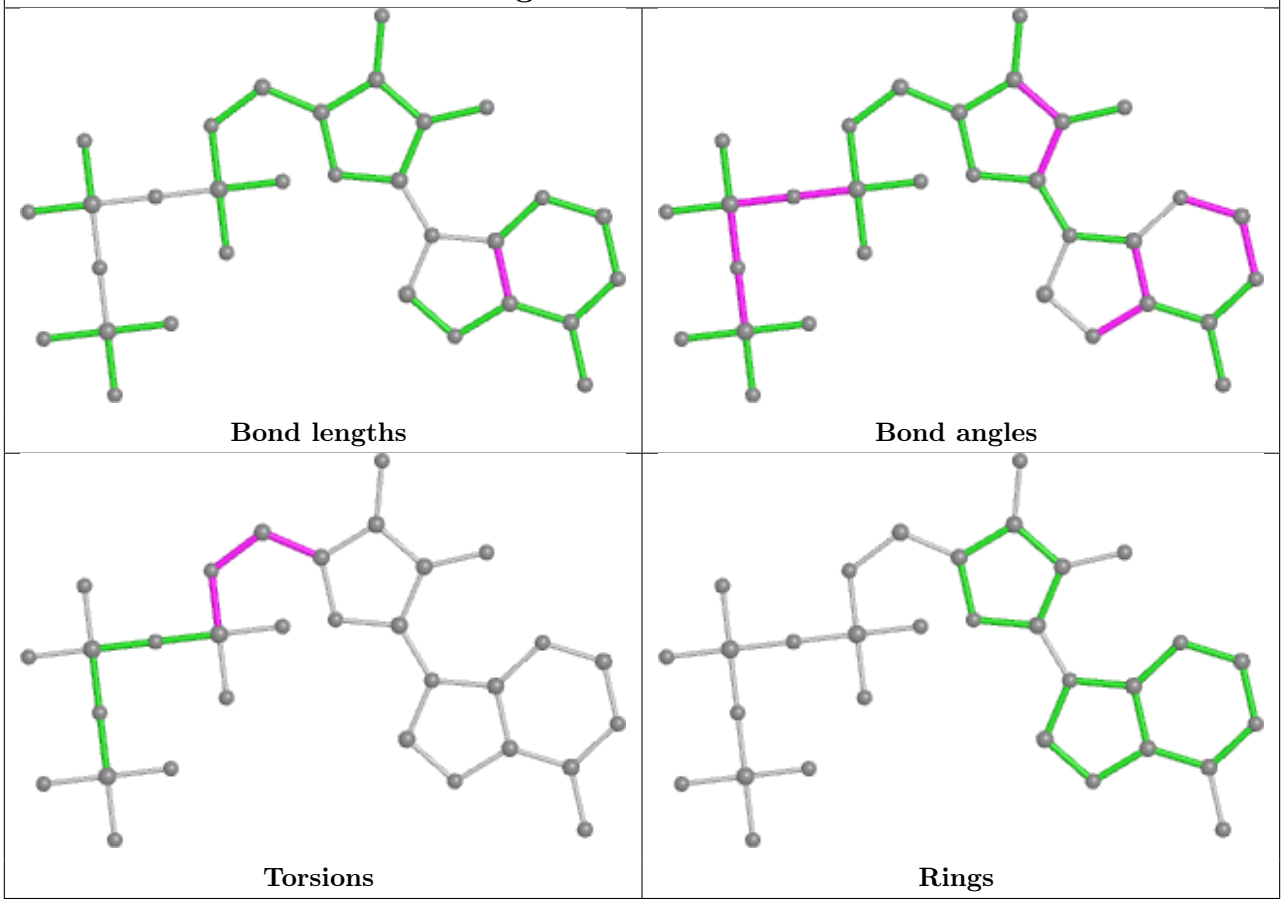


Torsions



Rings

Ligand ATP G 5101



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	G	14
2	I	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	73.32
1	G	4345:UNK	C	4540:PHE	N	73.24

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	I	4345:UNK	C	4540:PHE	N	73.23
1	E	4345:UNK	C	4540:PHE	N	73.22
1	E	3613:UNK	C	3639:THR	N	45.34
1	B	3613:UNK	C	3639:THR	N	45.33
1	G	3613:UNK	C	3639:THR	N	45.33
1	I	3613:UNK	C	3639:THR	N	45.32
1	B	4253:GLU	C	4320:UNK	N	28.10
1	G	4253:GLU	C	4320:UNK	N	28.05
1	E	4253:GLU	C	4320:UNK	N	28.05
1	I	4253:GLU	C	4320:UNK	N	28.04
1	B	3163:UNK	C	3170:UNK	N	16.08
1	G	3163:UNK	C	3170:UNK	N	16.07
1	I	3163:UNK	C	3170:UNK	N	16.06
1	E	3163:UNK	C	3170:UNK	N	16.06
1	B	3063:UNK	C	3134:UNK	N	14.99
1	G	3063:UNK	C	3134:UNK	N	14.99
1	I	3063:UNK	C	3134:UNK	N	14.99
1	E	3063:UNK	C	3134:UNK	N	14.98
1	I	3468:UNK	C	3511:UNK	N	14.52
1	E	3468:UNK	C	3511:UNK	N	14.52
1	G	3468:UNK	C	3511:UNK	N	14.49
1	B	3468:UNK	C	3511:UNK	N	14.46
1	I	2703:UNK	C	2734:ASN	N	13.80
1	E	2703:UNK	C	2734:ASN	N	13.79
1	G	2703:UNK	C	2734:ASN	N	13.75
1	B	2703:UNK	C	2734:ASN	N	13.73
1	I	3236:UNK	C	3241:UNK	N	12.95
1	E	3236:UNK	C	3241:UNK	N	12.95
1	G	3236:UNK	C	3241:UNK	N	12.92
1	B	3236:UNK	C	3241:UNK	N	12.90
1	E	1564:UNK	C	1573:MET	N	12.63
1	I	1564:UNK	C	1573:MET	N	12.60
1	G	1564:UNK	C	1573:MET	N	12.57
1	B	1564:UNK	C	1573:MET	N	12.51
1	I	2976:UNK	C	2995:UNK	N	12.40
1	E	2976:UNK	C	2995:UNK	N	12.40
1	G	2976:UNK	C	2995:UNK	N	12.39
1	B	2976:UNK	C	2995:UNK	N	12.37
1	B	3254:UNK	C	3261:UNK	N	8.55
1	G	3254:UNK	C	3261:UNK	N	8.53
1	I	3254:UNK	C	3261:UNK	N	8.52
1	E	3254:UNK	C	3261:UNK	N	8.52

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B	1297:UNK	C	1430:UNK	N	6.03
1	I	1297:UNK	C	1430:UNK	N	6.03
1	G	1297:UNK	C	1430:UNK	N	6.02
1	E	1297:UNK	C	1430:UNK	N	5.99
1	E	2939:ARG	C	2942:UNK	N	3.40
1	G	2939:ARG	C	2942:UNK	N	3.35
1	I	2939:ARG	C	2942:UNK	N	3.35
1	B	2939:ARG	C	2942:UNK	N	3.33
1	B	2479:LEU	C	2487:UNK	N	3.32
1	G	2479:LEU	C	2487:UNK	N	3.32
1	I	2479:LEU	C	2487:UNK	N	3.30
1	E	2479:LEU	C	2487:UNK	N	3.30

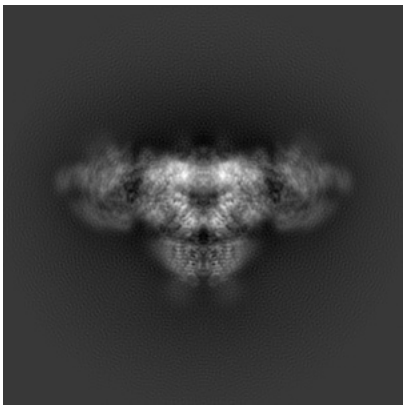
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-8378. These allow visual inspection of the internal detail of the map and identification of artifacts.

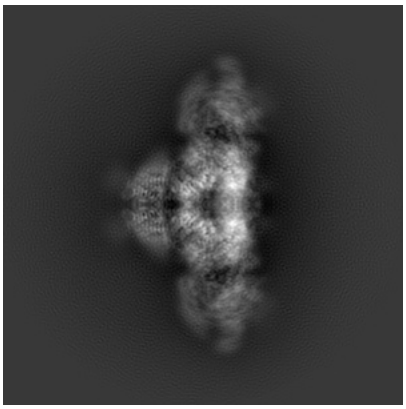
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

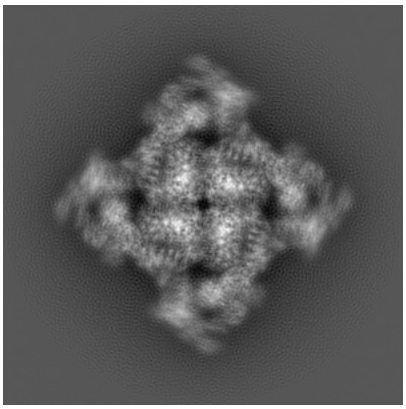
6.1.1 Primary map



X

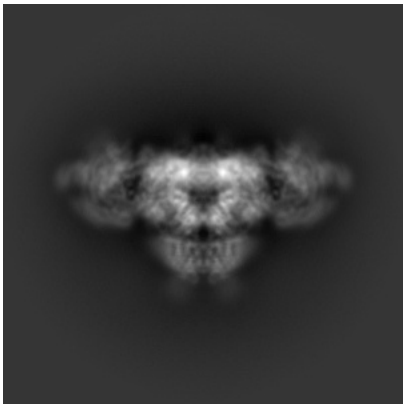


Y

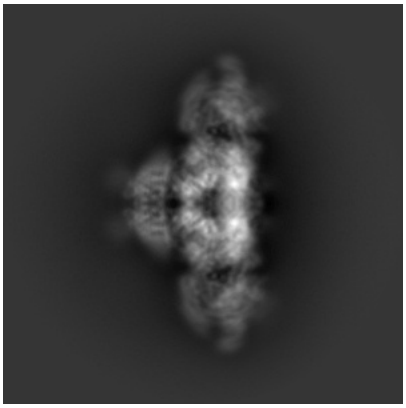


Z

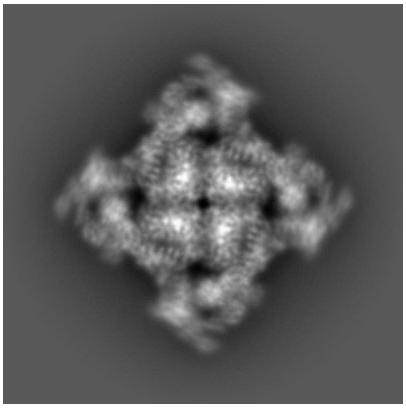
6.1.2 Raw map



X



Y

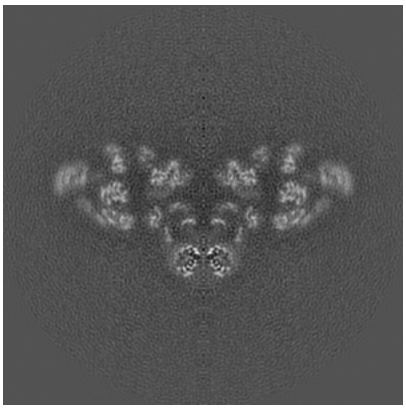


Z

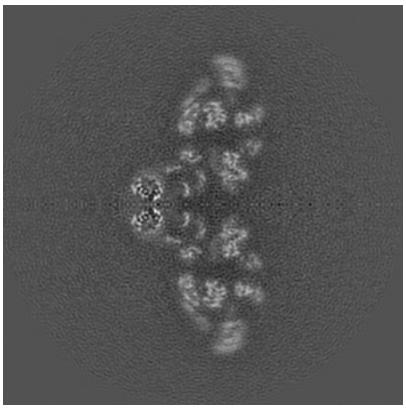
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

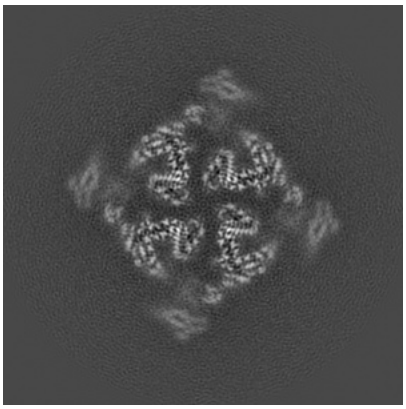
6.2.1 Primary map



X Index: 200

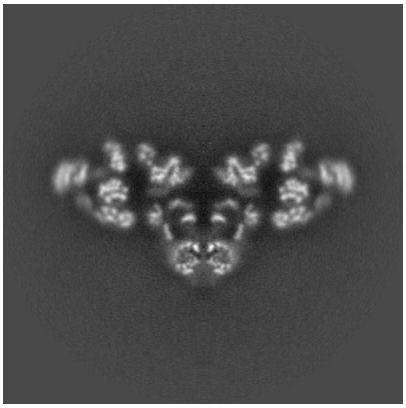


Y Index: 200

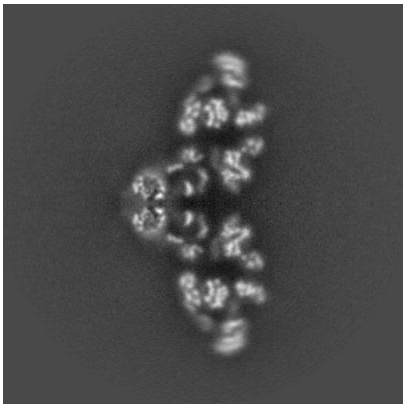


Z Index: 200

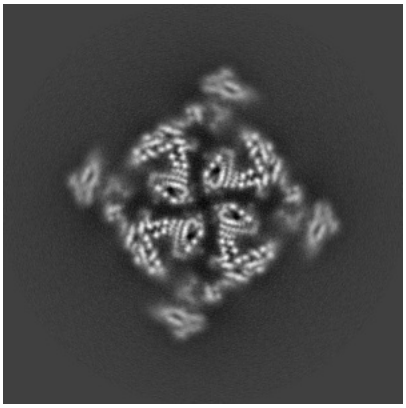
6.2.2 Raw map



X Index: 200



Y Index: 200

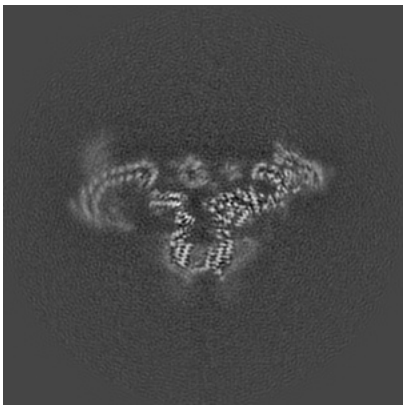


Z Index: 200

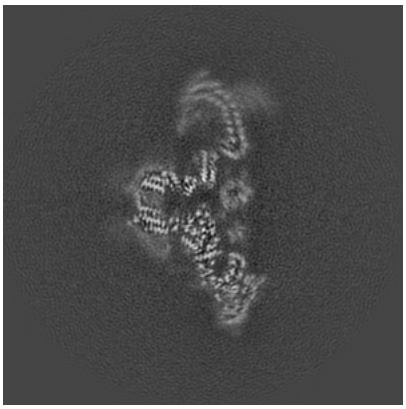
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

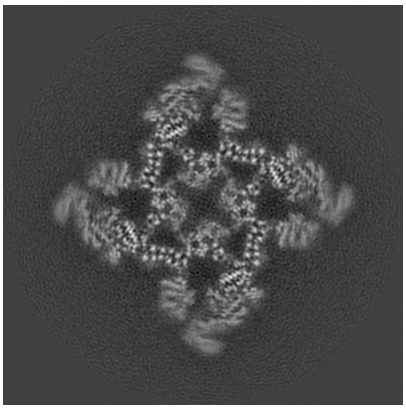
6.3.1 Primary map



X Index: 175

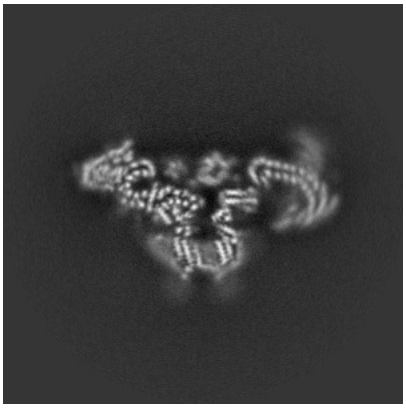


Y Index: 175

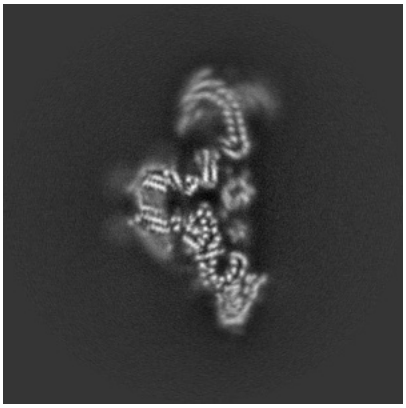


Z Index: 225

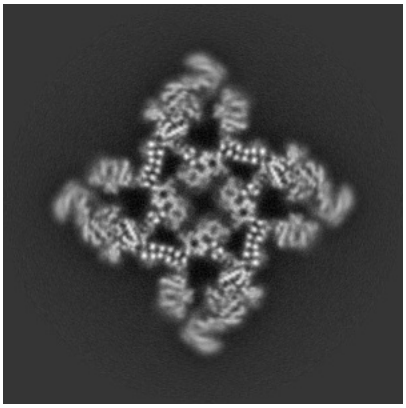
6.3.2 Raw map



X Index: 225



Y Index: 175

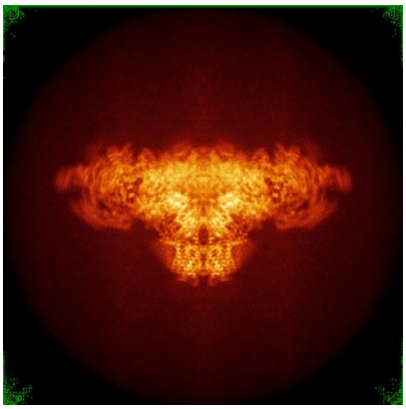


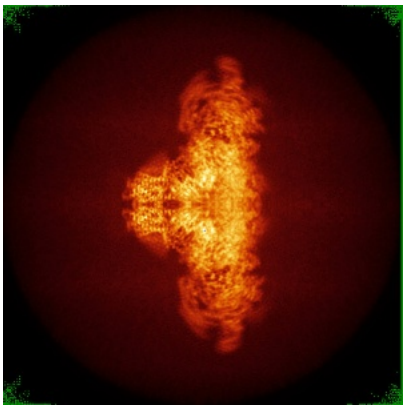
Z Index: 227

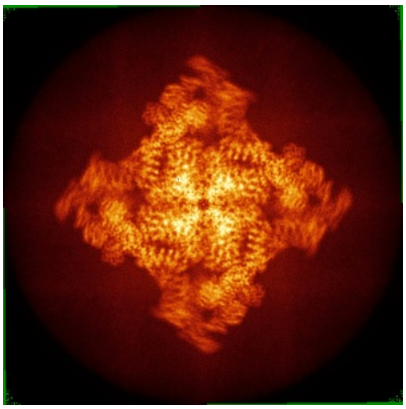
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map

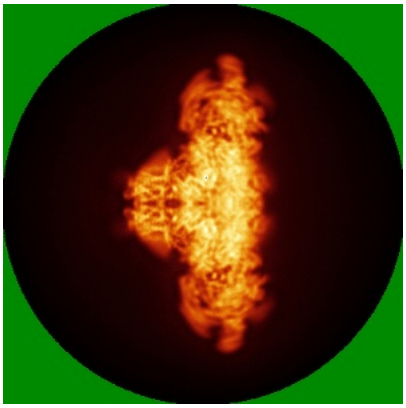

X

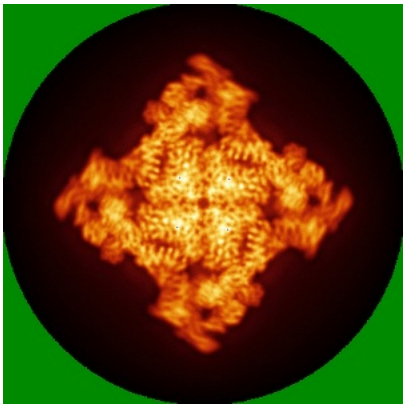

Y


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.

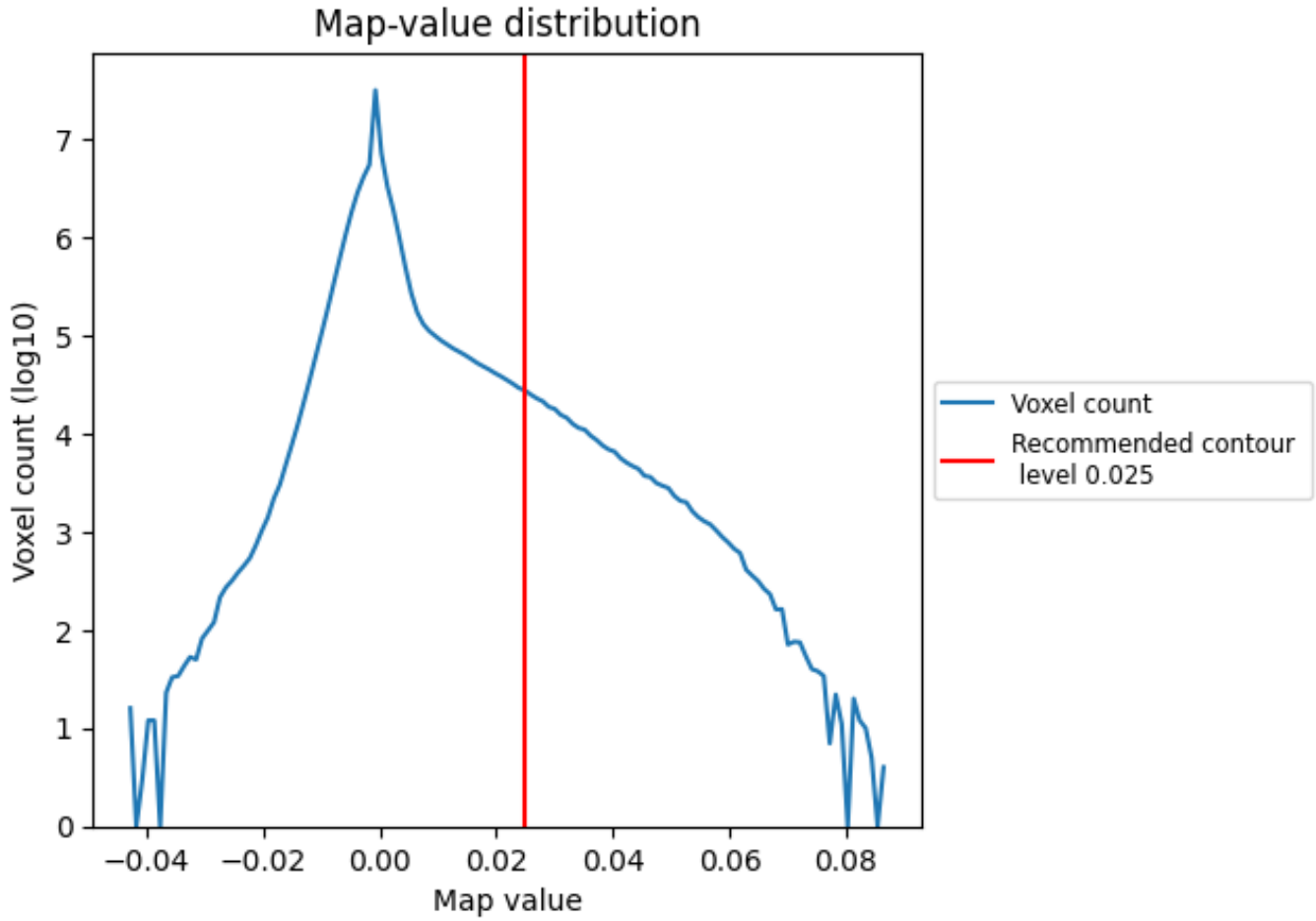
6.6 Mask visualisation (i)

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

7 Map analysis

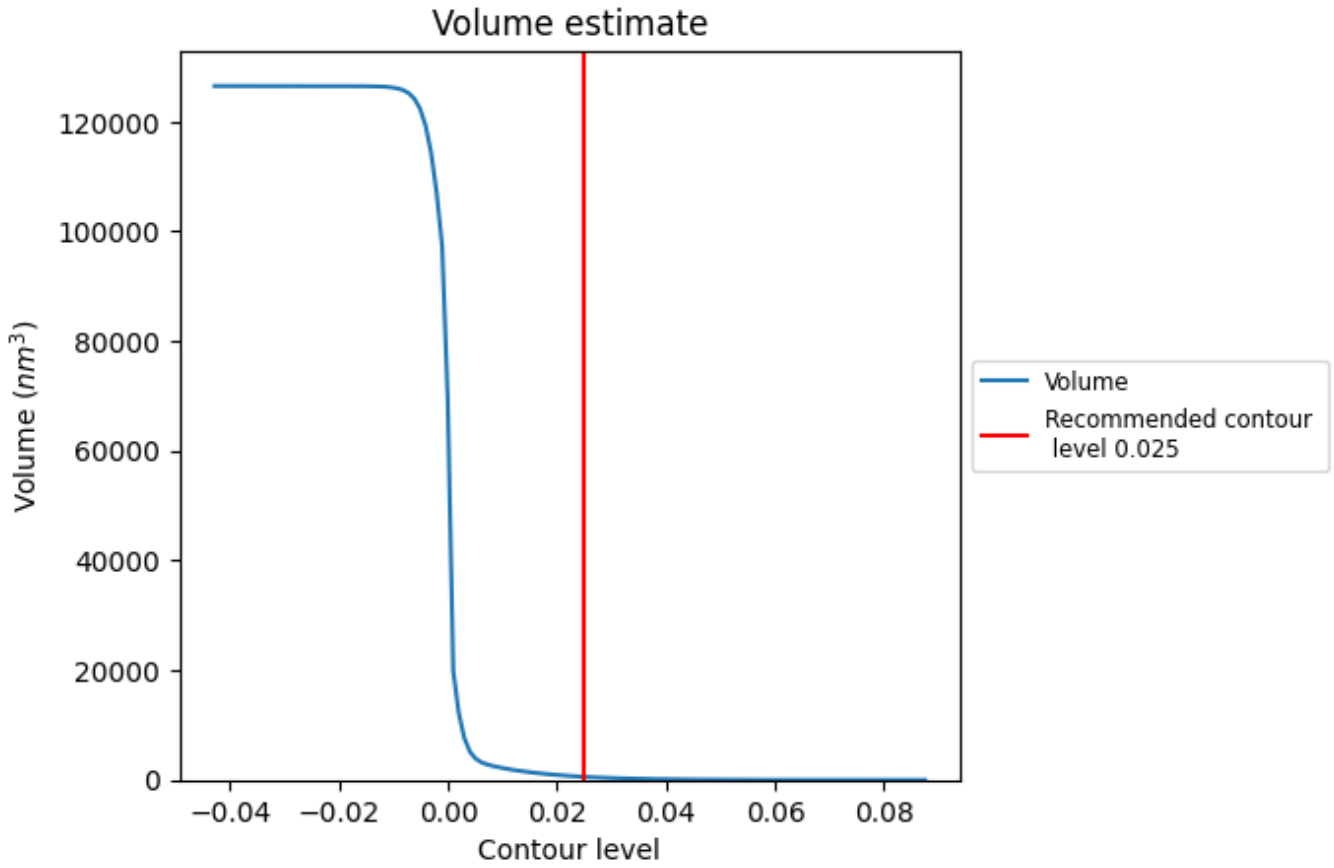
This section contains the results of statistical analysis of the map.

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.

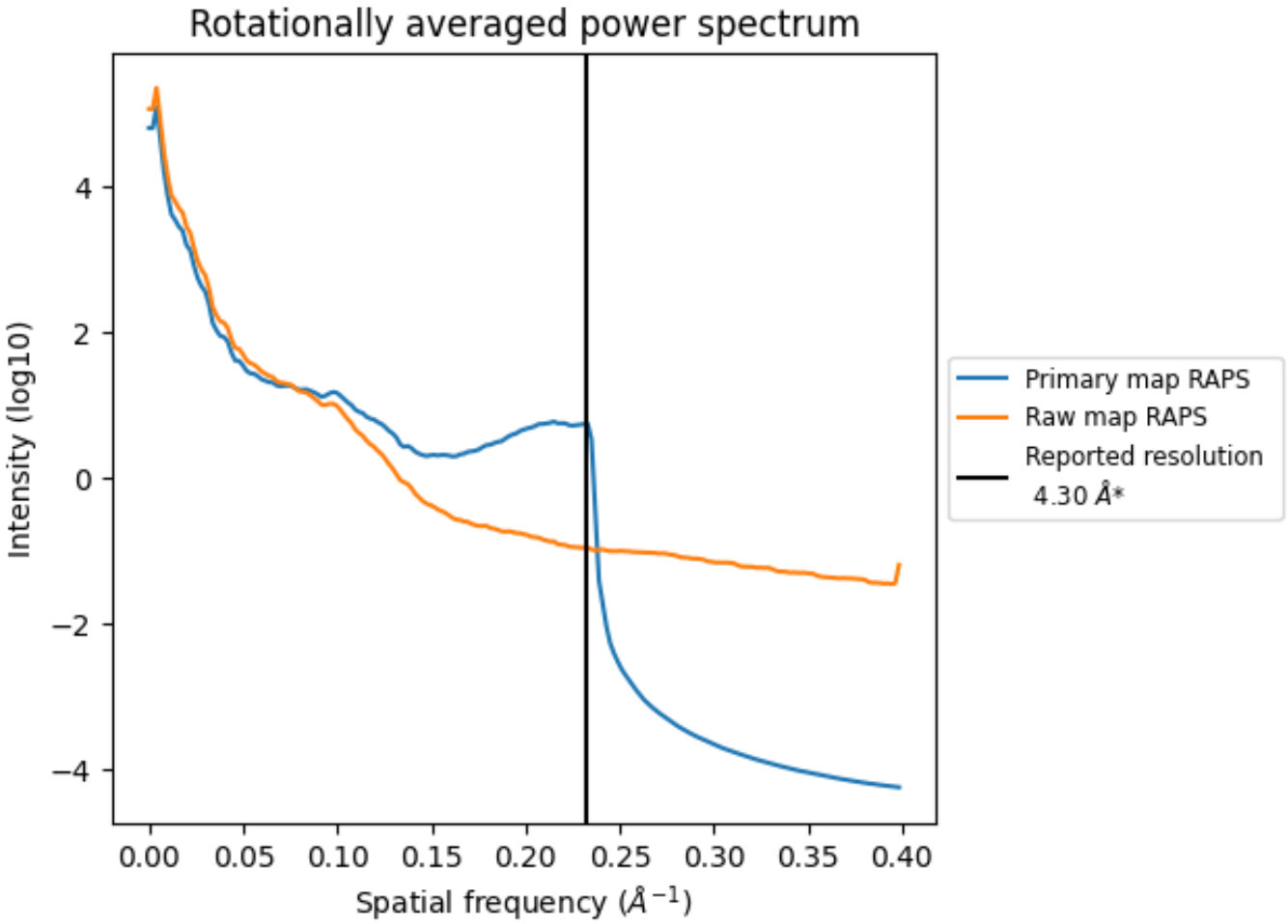
7.2 Volume estimate



The volume at the recommended contour level is 572 nm^3; this corresponds to an approximate mass of 517 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)

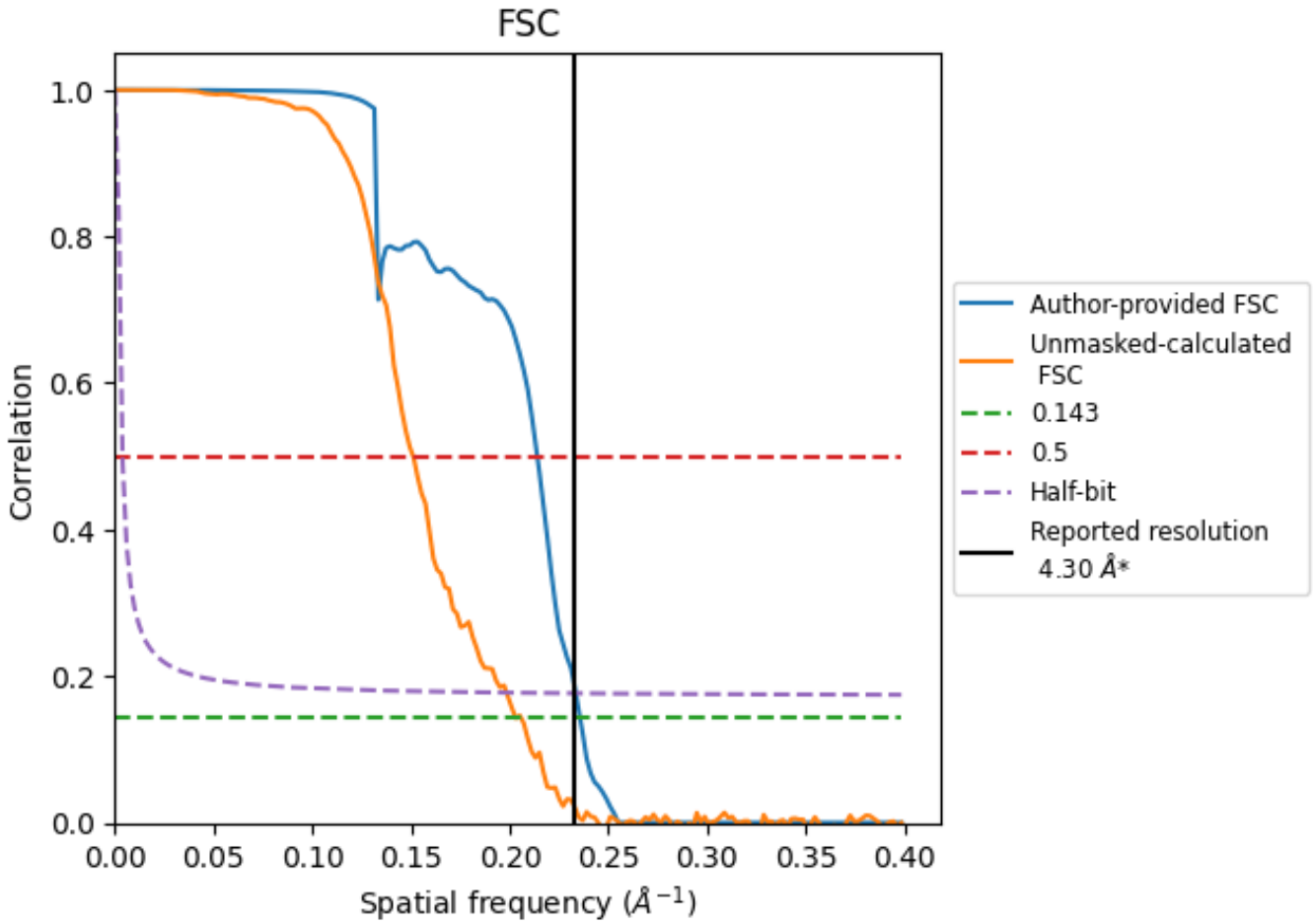


*Reported resolution corresponds to spatial frequency of 0.233 Å^{-1}

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 0.233 Å^{-1}

8.2 Resolution estimates (i)

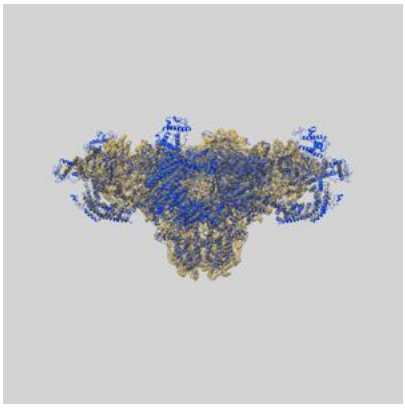
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.30	-	-
Author-provided FSC curve	4.24	4.67	4.28
Unmasked-calculated*	4.92	6.61	5.04

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.92 differs from the reported value 4.3 by more than 10 %

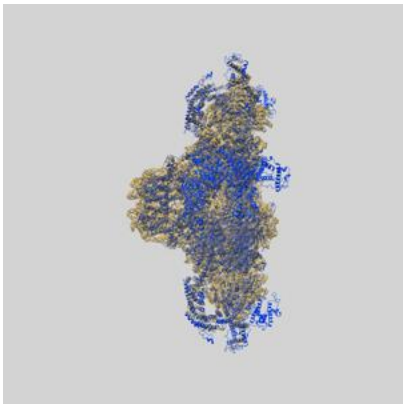
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-8378 and PDB model 5TAL. Per-residue inclusion information can be found in section 3 on page 6.

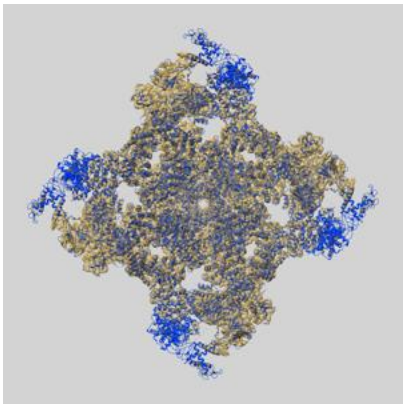
9.1 Map-model overlay



X



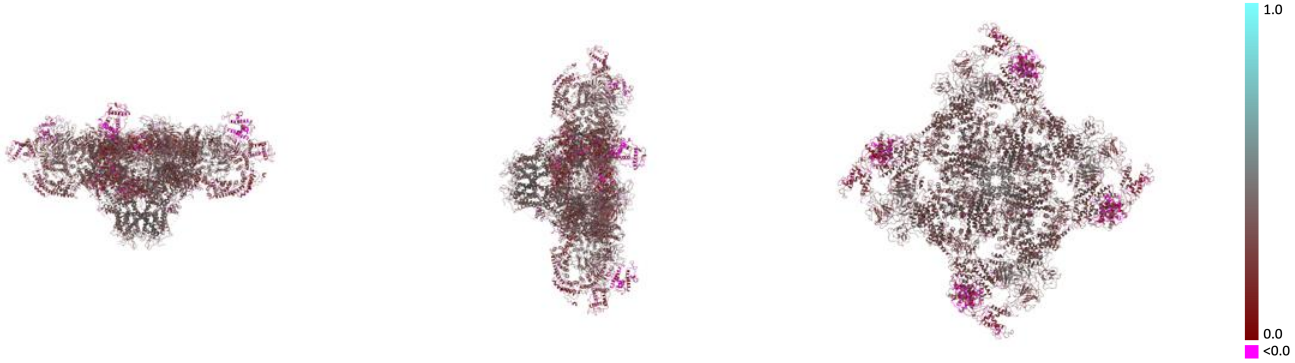
Y



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.

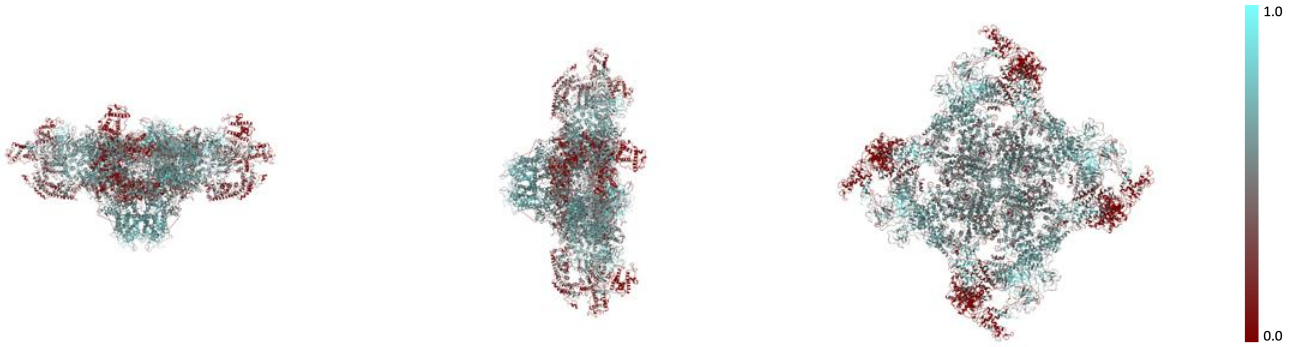
9.2 Q-score mapped to coordinate model



X Y Z

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

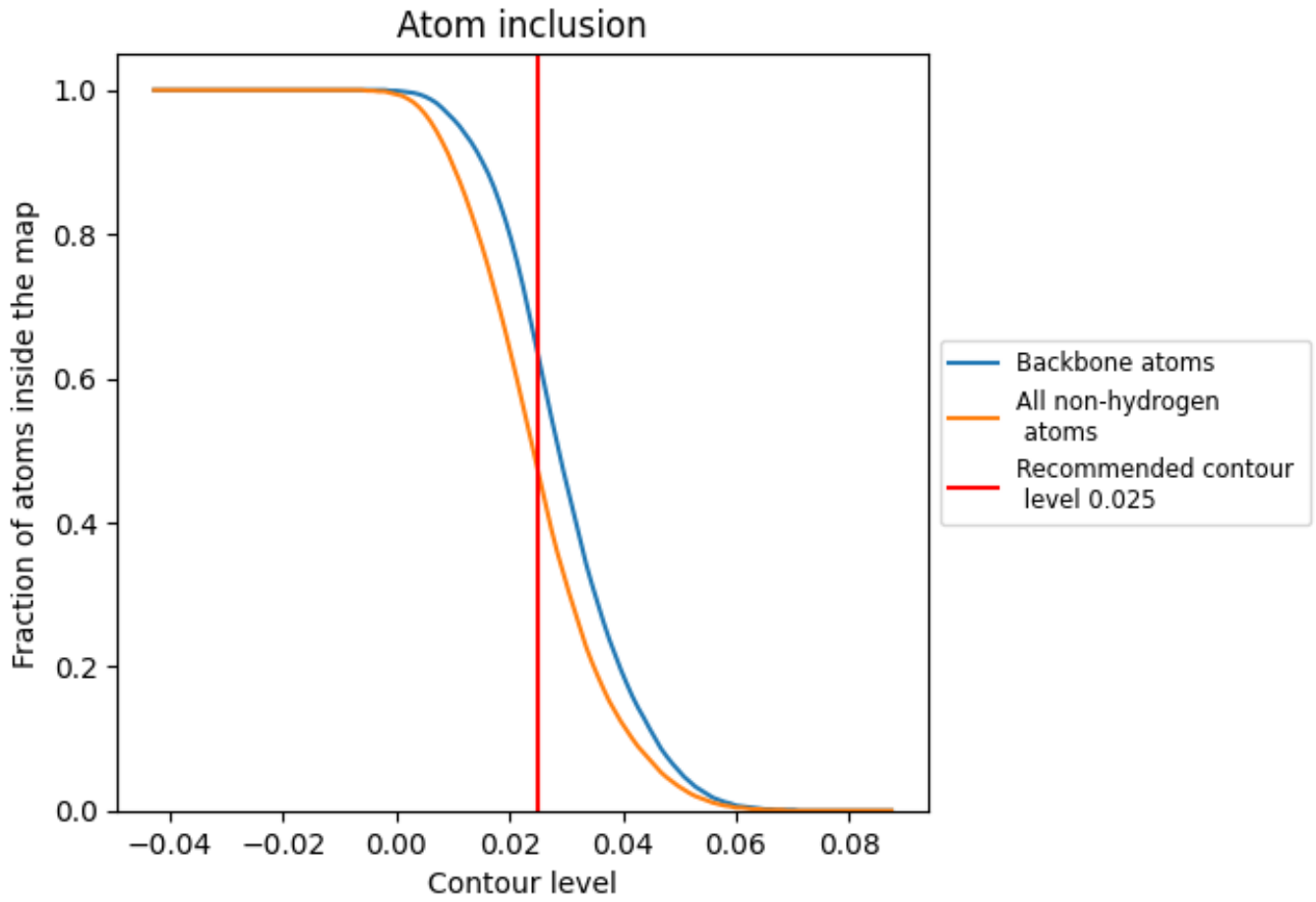
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.025).

9.4 Atom inclusion (i)



At the recommended contour level, 63% of all backbone atoms, 47% 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	0.4710	0.3030
A	0.5380	0.3550
B	0.4720	0.3050
E	0.4660	0.2980
F	0.5430	0.3580
G	0.4700	0.3030
H	0.5360	0.3570
I	0.4660	0.2990
J	0.5360	0.3550