



Full wwPDB EM Validation Report ⓘ

May 18, 2024 – 11:32 AM EDT

PDB ID : 6WOU
EMDB ID : EMD-21861
Title : Cryo-EM structure of recombinant mouse Ryanodine Receptor type 2 mutant R176Q in complex with FKBP12.6 in nanodisc
Authors : Iyer, K.A.; Hu, Y.; Kurebayashi, N.; Murayama, T.; Samso, M.
Deposited on : 2020-04-25
Resolution : 3.27 Å (reported)
Based on initial model : 5L1D

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.dev92
MolProbity : 4.02b-467
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) : 2.36.2

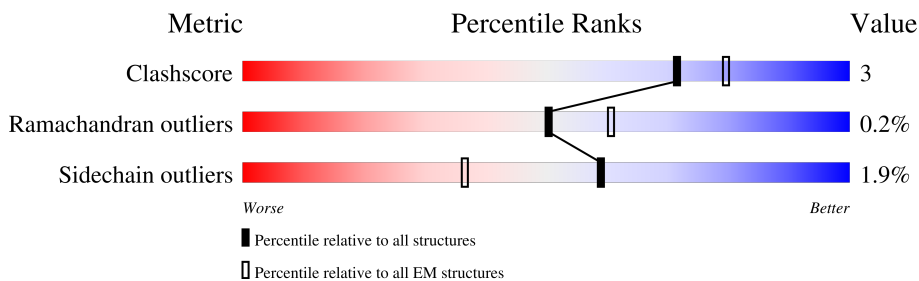
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.27 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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	4966	
1	B	4966	
1	C	4966	
1	D	4966	
2	E	107	
2	F	107	
2	G	107	
2	H	107	

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 245683 atoms, of which 120439 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Ryanodine receptor 2.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
1	A	3921	59779	19348	29287	5250	5702	192	0	0
1	B	3921	59778	19348	29286	5250	5702	192	0	0
1	C	3921	59778	19348	29286	5250	5702	192	0	0
1	D	3921	59776	19348	29284	5250	5702	192	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	176	GLN	ARG	engineered mutation	UNP E9Q401
B	176	GLN	ARG	engineered mutation	UNP E9Q401
C	176	GLN	ARG	engineered mutation	UNP E9Q401
D	176	GLN	ARG	engineered mutation	UNP E9Q401

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

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
2	E	107	1642	516	824	144	154	4	0	0
2	F	107	1642	516	824	144	154	4	0	0
2	G	107	1642	516	824	144	154	4	0	0
2	H	107	1642	516	824	144	154	4	0	0

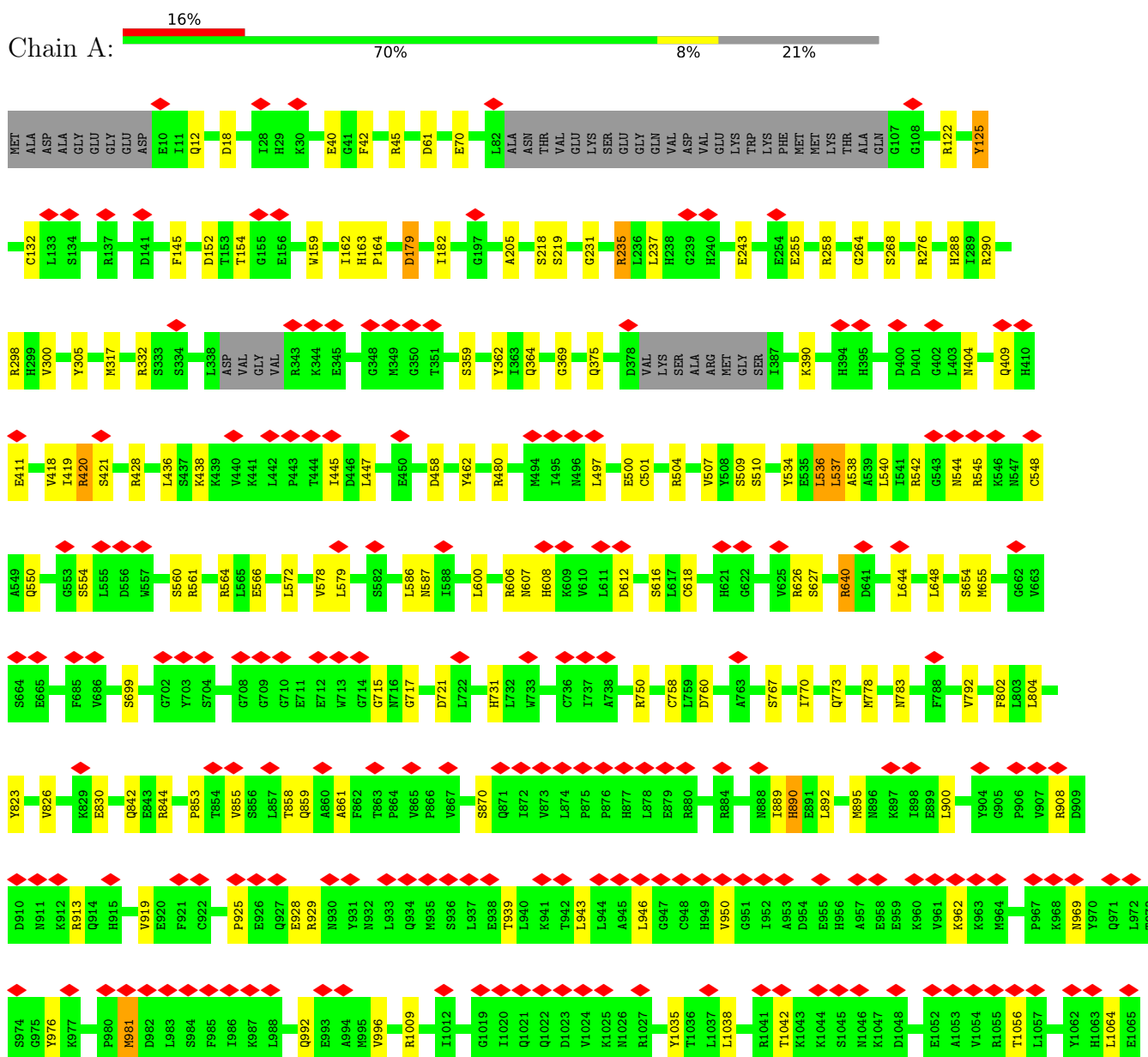
- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).

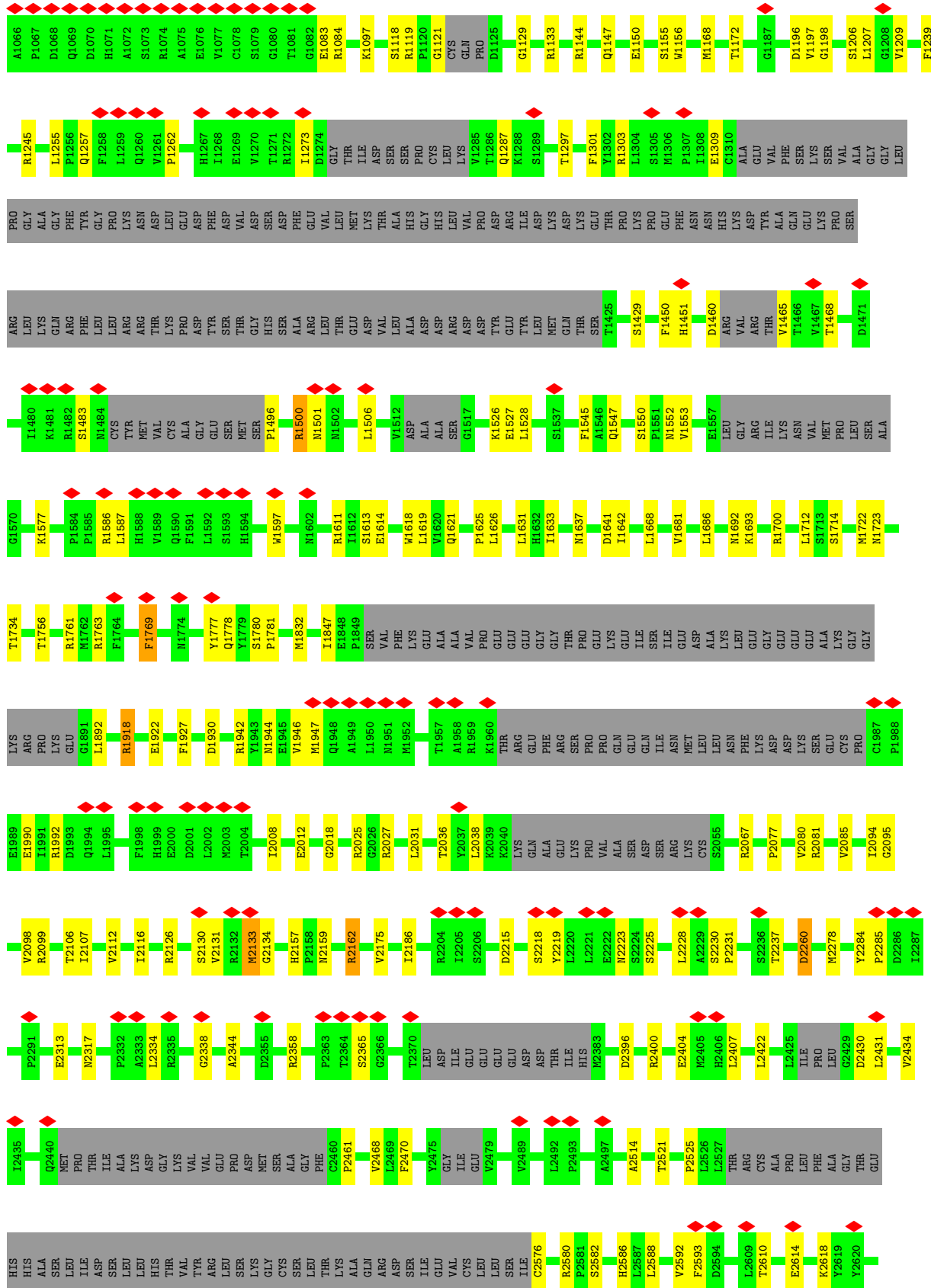
Mol	Chain	Residues	Atoms		AltConf
3	A	1	Total 1	Zn 1	0
3	B	1	Total 1	Zn 1	0
3	C	1	Total 1	Zn 1	0
3	D	1	Total 1	Zn 1	0

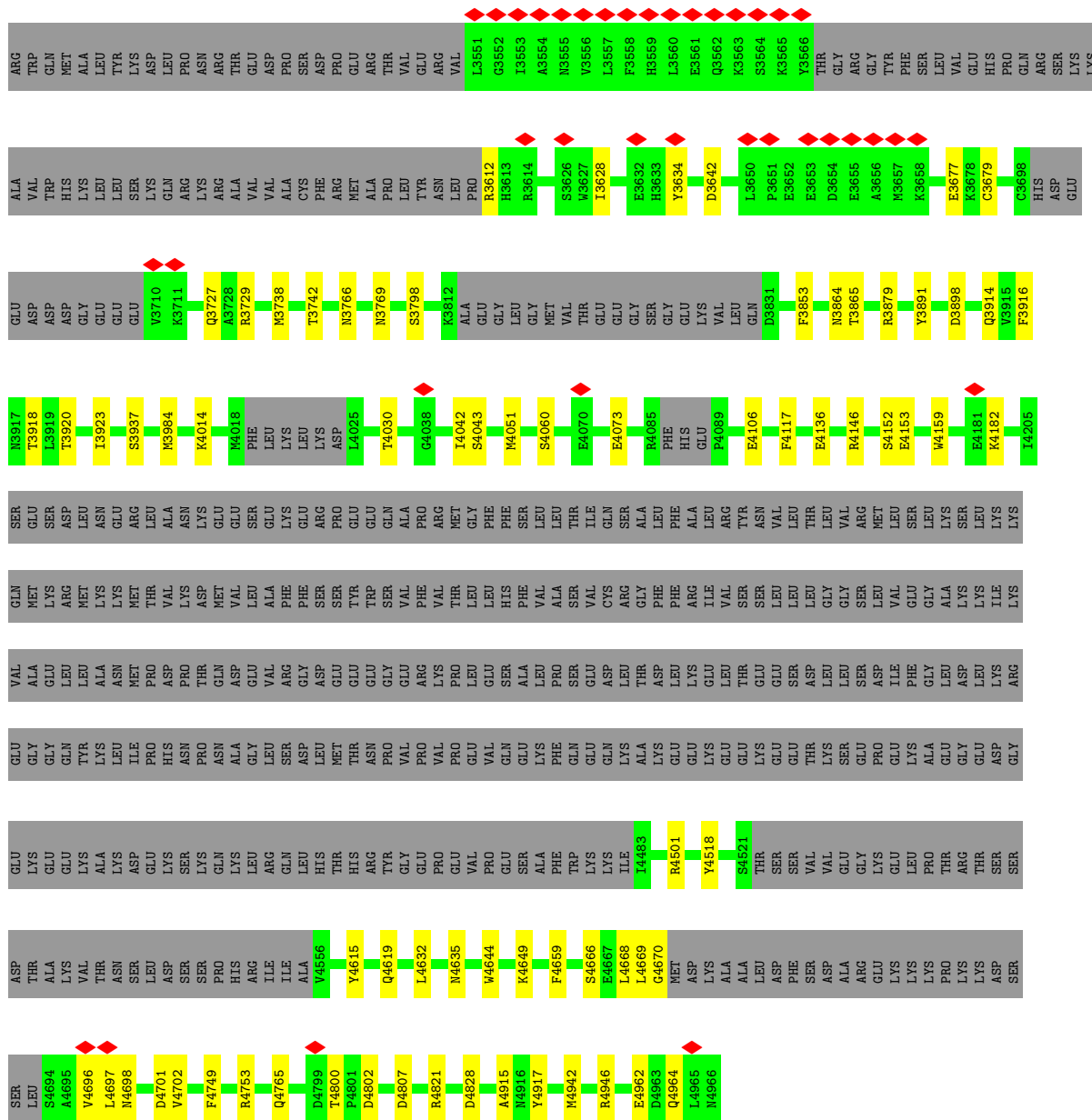
3 Residue-property plots

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

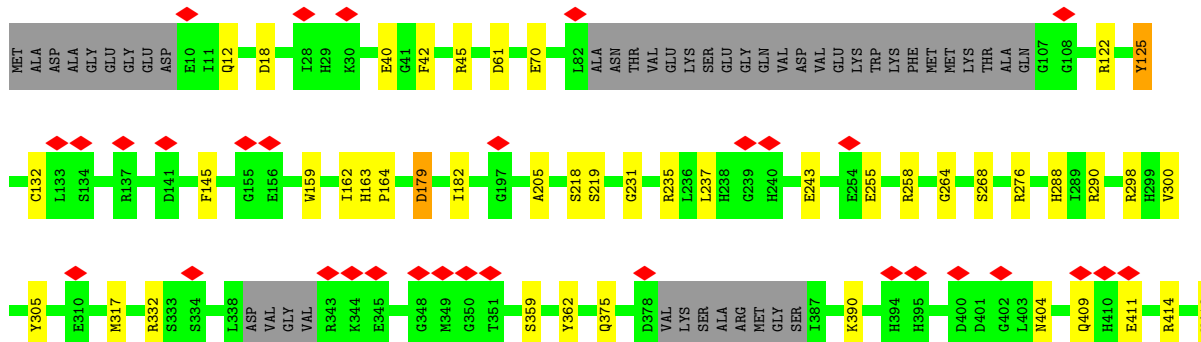
- Molecule 1: Ryanodine receptor 2

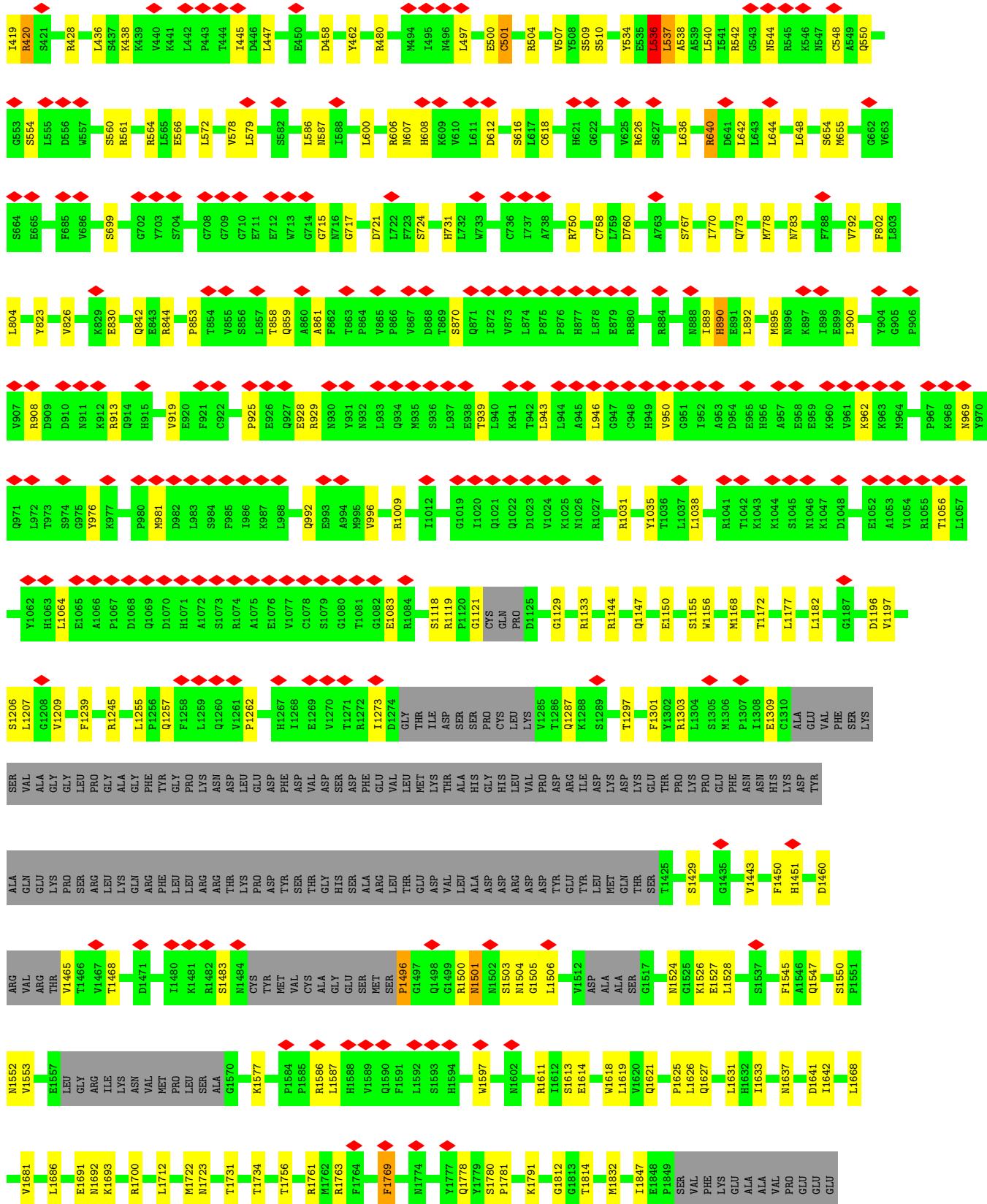


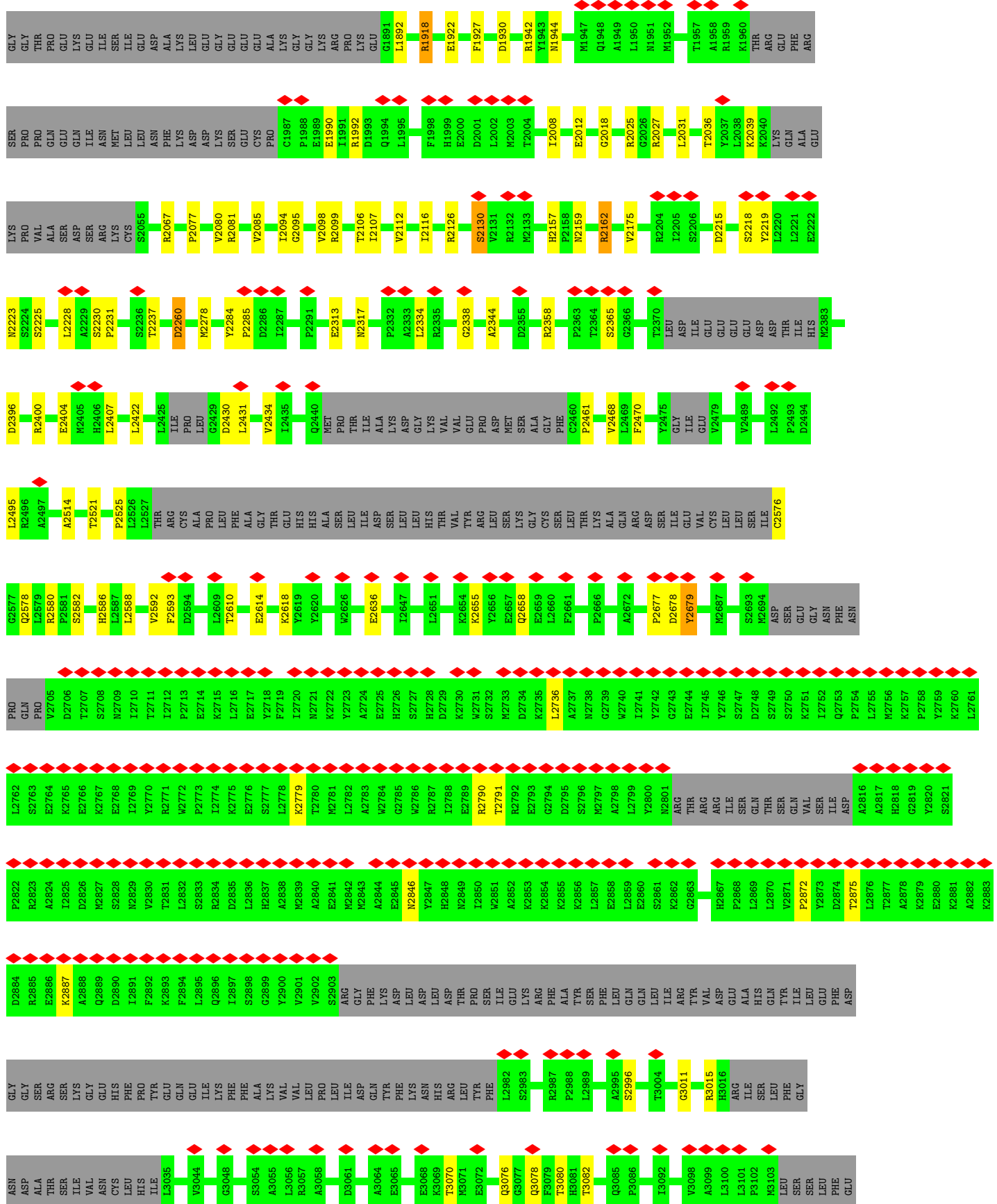


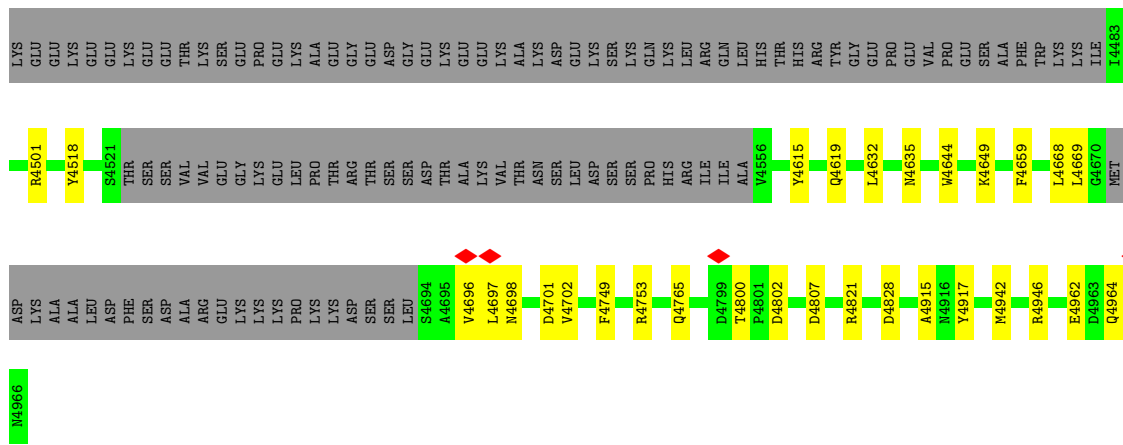


● Molecule 1: Ryanodine receptor 2

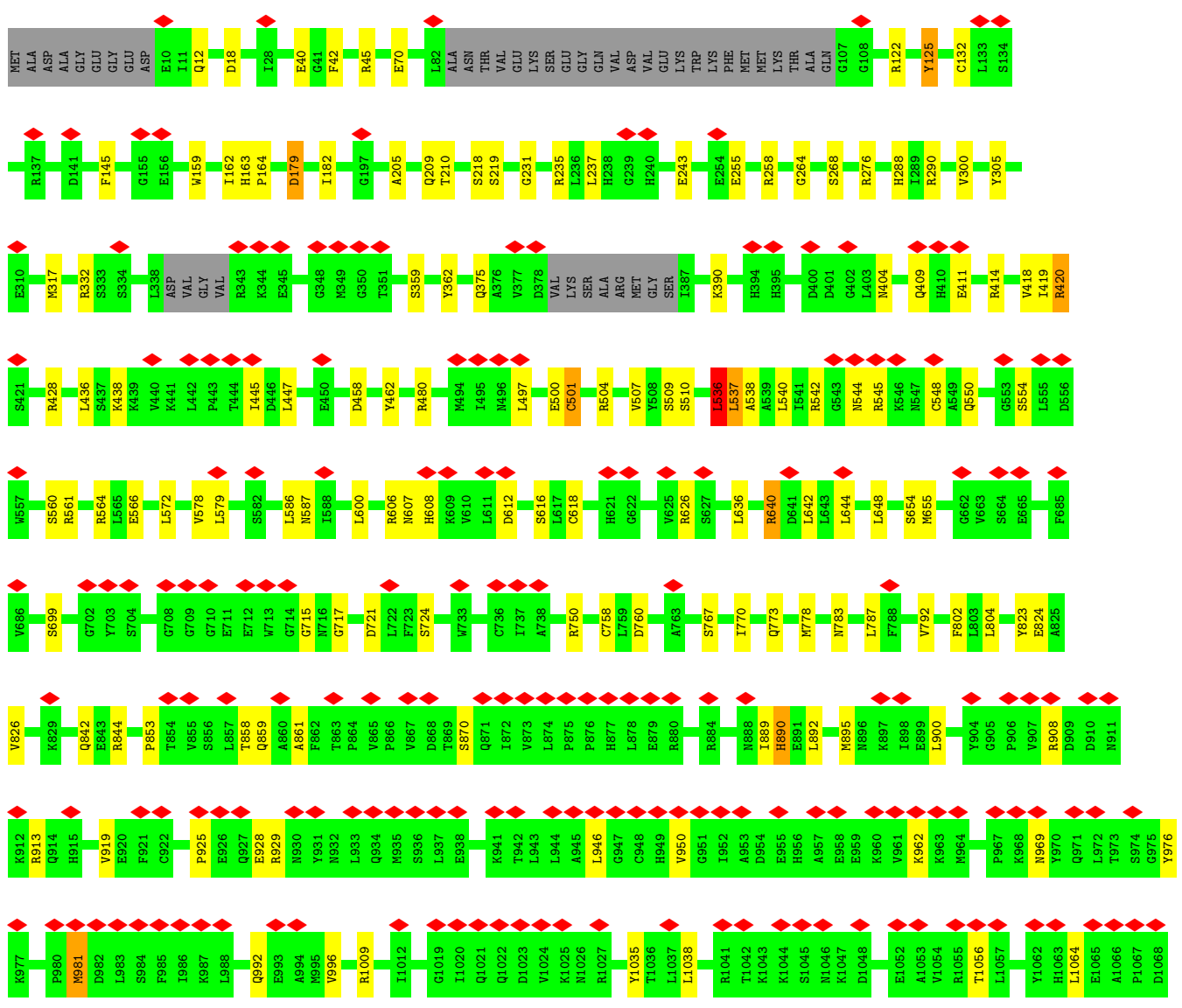




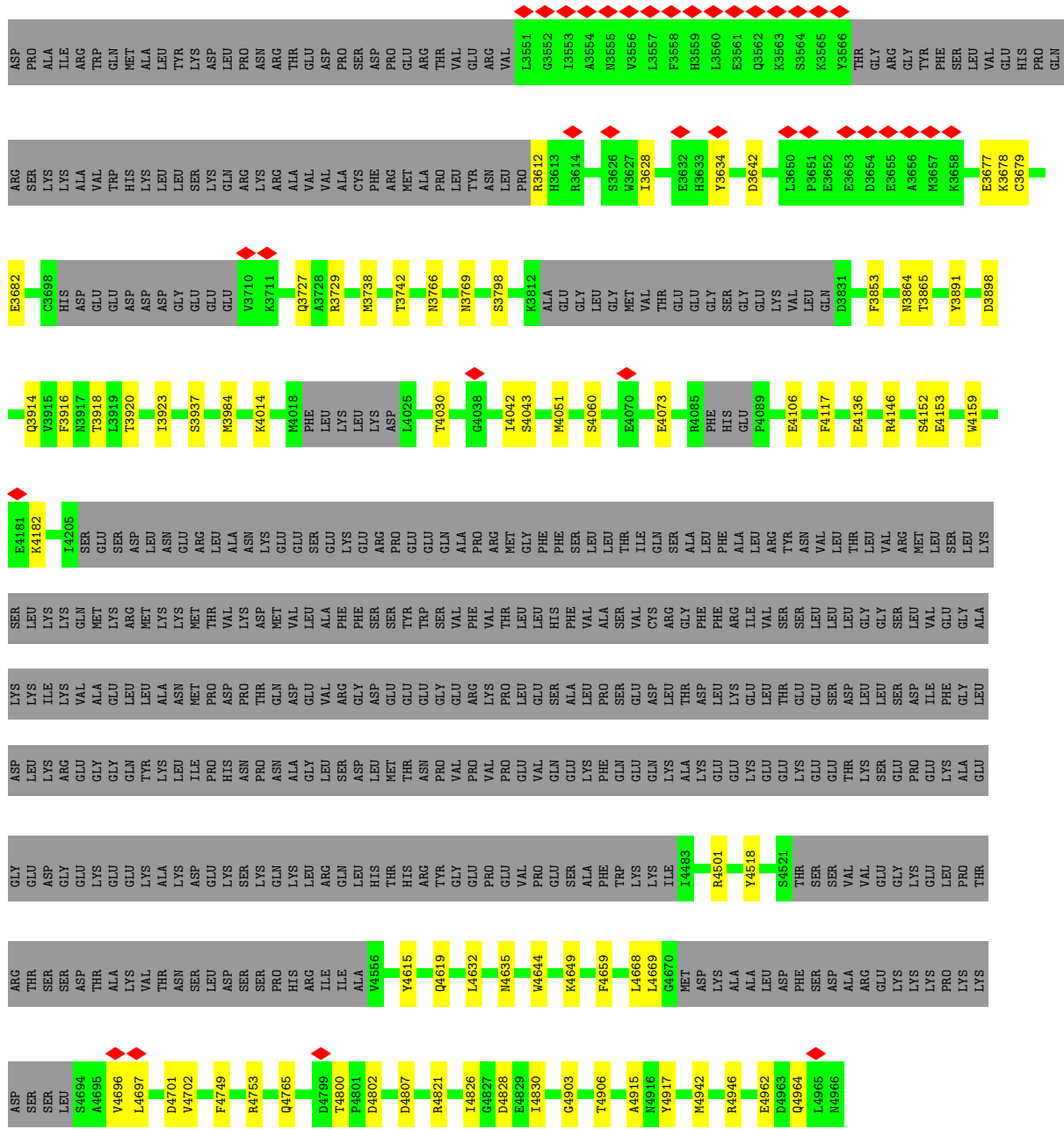




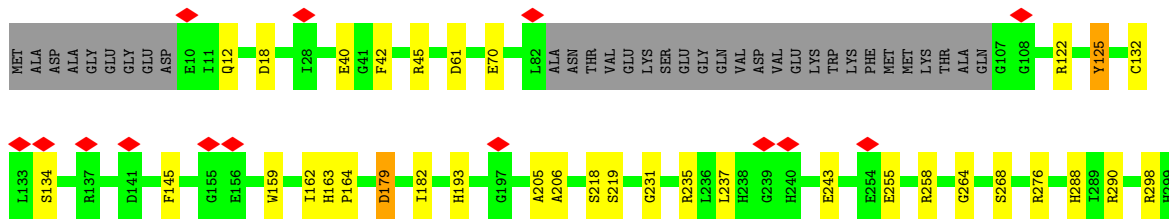
• Molecule 1: Ryanodine receptor 2

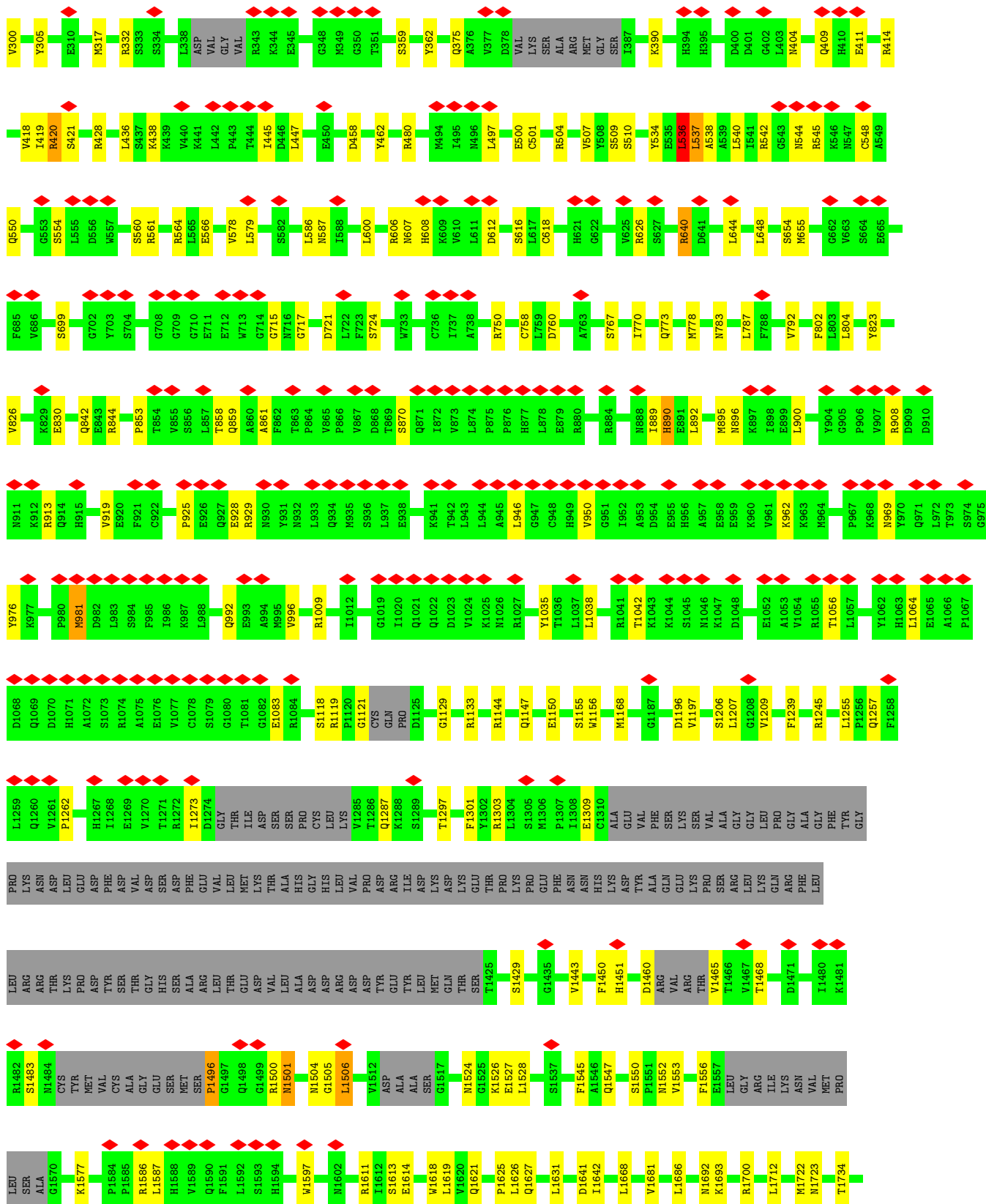


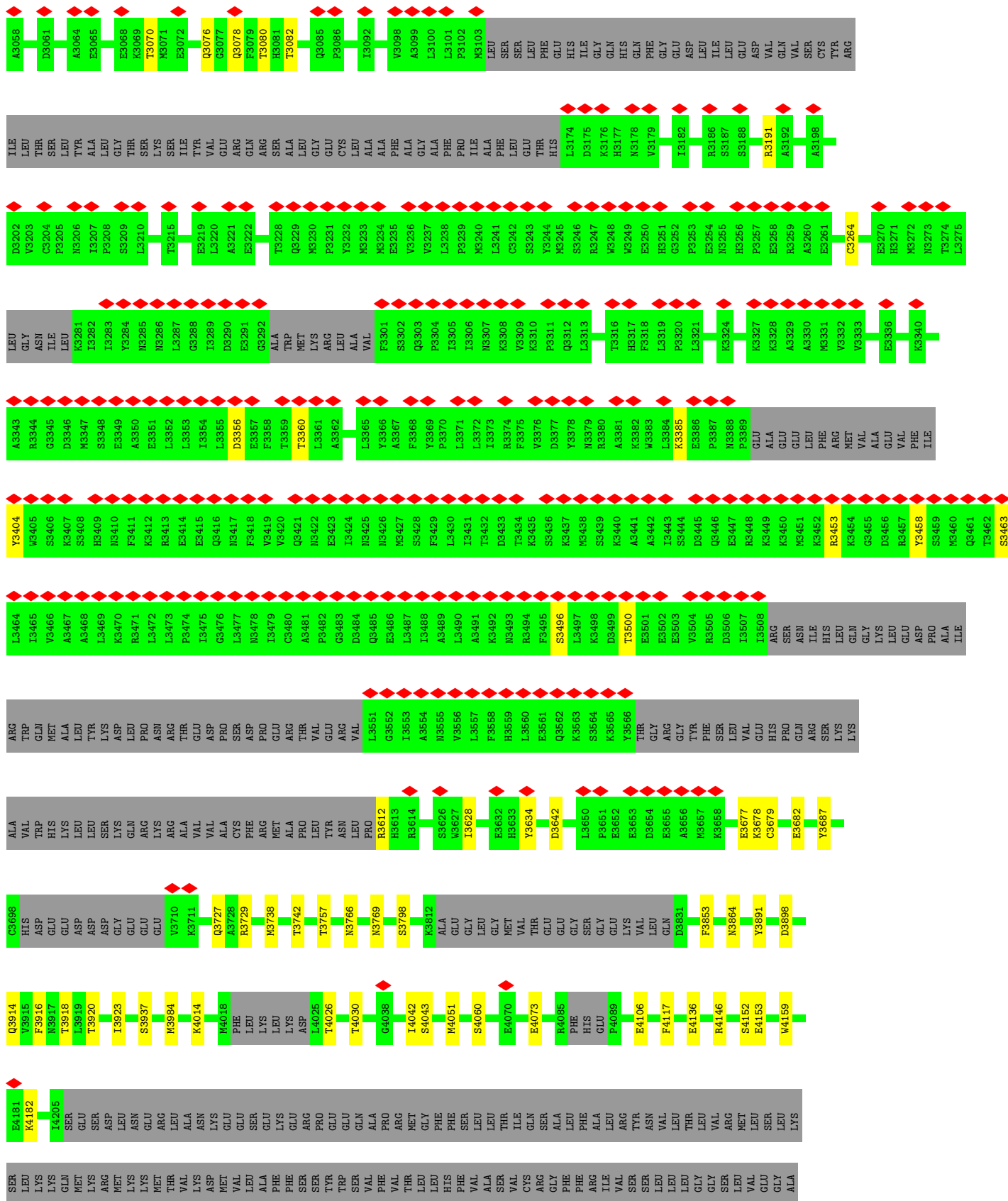
L2609	L2720	T2780	A2840	V2902	PHE	S3054	SER	A3192	M3272	E3336	GLU	M3460	M3460
E2614	N2721	M2781	E2841	S2903	ALA	A3065	CYS	A3196	N3273	R3340	VAL	Q3461	Q3461
K2618	K2722	L2782	M2842	GLY	LYS	L3056	ARG	D3202	T3274	A3343	PHE	T3462	T3462
V2619	Y2723	A2783	M2843	PHE	VAL	R3057	ILE	V3203	L3275	R3344	ILE	SS463	SS463
Y2620	A2724	M2784	A2844	LYS	LEU	A3058	THR	D3204	LEU	R3345	VAL	W3405	W3405
W2626	E2725	M2785	E2845	ASP	PRO	D3061	LEU	C3206	GLY	R3346	ASN	S3406	S3406
E2636	H2726	M2787	W2846	ASP	LEU	E3061	THR	N3206	ASN	D3347	ILE	S3407	S3407
L2647	S2727	R2787	Y2847	LEU	ASP	A3064	TYR	P3207	ALA	S3348	ALA	M3409	M3409
F2648	H2728	L2788	H2848	LEU	ASP	E3068	ALA	P3208	LEU	E3349	LEU	N3410	N3410
D2649	D2729	E2789	M2849	THR	THR	K3069	PHE	S3209	THR	A3350	THR	F3411	F3411
A2650	K2730	R2790	L2850	PRO	LYS	M3071	LYS	L3210	SER	A3351	LYS	R3412	R3412
L2651	W2731	T2791	W2851	ILE	ASN	T3070	HIS	T2215	LEU	L3352	ASN	K3413	K3413
S2652	S2732	E2792	A2852	GLU	ARG	M3072	ARG	E3219	GLU	L3353	LEU	E3414	E3414
Q2653	M2733	R2793	K2853	LYS	LEU	Q3076	ILE	L3220	GLN	L3354	LEU	E3415	E3415
K2654	D2734	G2794	K2854	ARG	THR	Q3077	THR	A3221	ARG	L3355	ALA	Q3416	Q3416
K2655	K2735	D2795	K2855	PHE	PHE	F3078	VAL	E3222	TRP	D3356	ALA	M3417	M3417
Y2656	L2736	S2796	K2856	ALA	PHE	T3080	GLU	T3228	ALA	T3357	VAL	F3418	F3418
E2657	A2737	M2797	L2857	ILE	THR	H3081	GLY	Q3229	MET	Y3358	VAL	Q3419	Q3419
F2661	N2738	A2798	E2858	ARG	ARG	T3082	LEU	F3231	LYS	L3360	VAL	N3420	N3420
P2666	N2739	L2799	L2859	THR	THR	Q3085	LEU	M3230	LYS	L3361	VAL	N3421	N3421
Y2679	G2740	W2741	E2860	ASP	ASP	P3086	LEU	M3233	ARG	L3362	VAL	N3422	N3422
M2687	L2741	N2801	S2861	THR	THR	I3092	LEU	E3235	ALA	L3366	VAL	N3423	N3423
S2689	S2742	ARG	K2862	ARG	ARG	V3098	LEU	E3236	ALA	A3367	VAL	N3424	N3424
F2694	G2743	THR	G2863	THR	THR	L3011	LEU	V3237	ALA	F3368	VAL	N3425	N3425
ASP	E2744	ARG	H2867	THR	THR	R3015	LEU	W3240	F3301	L3369	VAL	N3426	N3426
GLU	A2745	ARG	P2868	ILE	ILE	H3016	LEU	C3242	S3302	P3370	VAL	N3427	N3427
ASN	L2746	ILE	L2870	ALA	ALA	R3016	LEU	M3244	Q3303	L3371	VAL	N3428	N3428
ASN	S2747	GLN	L2871	HIS	HIS	Y3015	LEU	L3241	P3304	L3372	VAL	N3429	N3429
ASN	D2748	THR	V2871	THR	THR	L3101	LEU	S3243	Q3305	L3373	VAL	N3430	N3430
PRO	S2749	SER	P2872	THR	THR	P3102	LEU	M3245	P3306	R3374	VAL	N3431	N3431
GLN	K2750	VAL	Y2873	ILE	ILE	M3103	LEU	R3246	I3305	Y3375	VAL	N3432	N3432
PRO	K2751	ASP	D2874	PHE	PHE	LEU	LEU	S3248	M3307	D3377	VAL	N3433	N3433
V2705	I2752	ASP	T2875	ASP	ASP	SER	SER	M3248	K3308	M3379	VAL	N3434	N3434
D2706	Q2753	GLY	L2876	GLY	GLY	THR	THR	C3249	S3309	R3380	VAL	N3435	N3435
T2707	P2754	GLY	A2817	GLY	GLY	PHE	PHE	M3249	V3310	A3381	VAL	N3436	N3436
S2708	L2755	ASN	H2818	ASN	ASN	ASN	ASN	Y3244	K3311	K3382	VAL	N3437	N3437
M2709	M2756	ASN	G2819	ASN	ASN	THR	THR	S3246	Q3312	W3383	VAL	N3438	N3438
I2710	K2757	PRO	Y2820	LYS	LYS	ILE	ILE	R3247	L3313	L3384	VAL	N3439	N3439
I2711	P2758	GLY	S2821	GLY	GLY	VAL	VAL	W3248	L3314	E3385	VAL	N3440	N3440
I2712	Y2759	GLY	P2822	HIS	HIS	GLN	GLN	M3249	T3316	K3386	VAL	N3441	N3441
P2713	K2760	GLY	R2823	HIS	HIS	ASN	ASN	E3250	H3317	P3387	VAL	N3442	N3442
E2714	L2761	PRO	A2824	PRO	PRO	CYS	CYS	H3251	F3318	M3388	VAL	N3443	N3443
K2715	L2762	THR	I2825	TYR	TYR	LEU	LEU	H3252	L3319	L3389	VAL	N3444	N3444
L2716	S2763	GLY	D2826	GLY	GLY	ASP	ASP	F3253	P3320	E3390	VAL	N3445	N3445
E2717	E2764	GLU	M2827	GLU	GLU	ILE	ILE	E3254	L3321	P3389	VAL	N3446	N3446
Y2718	K2765	LEU	K2887	ILE	ILE	LEU	LEU	N3255	K3324	GLU	VAL	N3447	N3447
F2719	E2766	LYS	Q2888	LYS	LYS	LEU	LEU	H3256	A3327	ALA	VAL	N3448	N3448
	K2767	THR	A2889	THR	THR	ASP	ASP	P3257	K3328	ALA	VAL	N3449	N3449
	E2768	THR	D2890	THR	THR	VAL	VAL	E3258	A3329	GLU	VAL	N3450	N3450
	I2769	THR	L2891	THR	THR	GLN	GLN	R3259	A3330	GLU	VAL	N3451	N3451
	R2770	THR	F2892	THR	THR	GLY	GLY	E3260	A3331	LEU	VAL	N3452	N3452
	W2771	THR	F2893	THR	THR	ASP	ASP	E3261	M3331	PHE	VAL	R3453	R3453
	W2772	THR	F2894	THR	THR	GLY	GLY	E3264	V3332	ARG	VAL	K3454	K3454
	P2773	THR	L2895	THR	THR	ASP	ASP	E3265	V3333	MET	VAL	K3455	K3455
	I2774	THR	Q2896	THR	THR	VAL	VAL	H3182	K3324	ALA	VAL	D3456	D3456
	K2775	THR	I2897	THR	THR	VAL	VAL	R3186	A3327	ALA	VAL	R3457	R3457
	E2776	THR	Q2898	THR	THR	VAL	VAL	S3187	K3328	ALA	VAL	Y3458	Y3458
	S2777	THR	D2899	THR	THR	VAL	VAL	S3188	A3329	ALA	VAL	S3459	S3459
	L2778	THR	Y2900	THR	THR	VAL	VAL	R3191	A3330	ALA	VAL		
	K2779	THR	V2901	THR	THR	VAL	VAL						

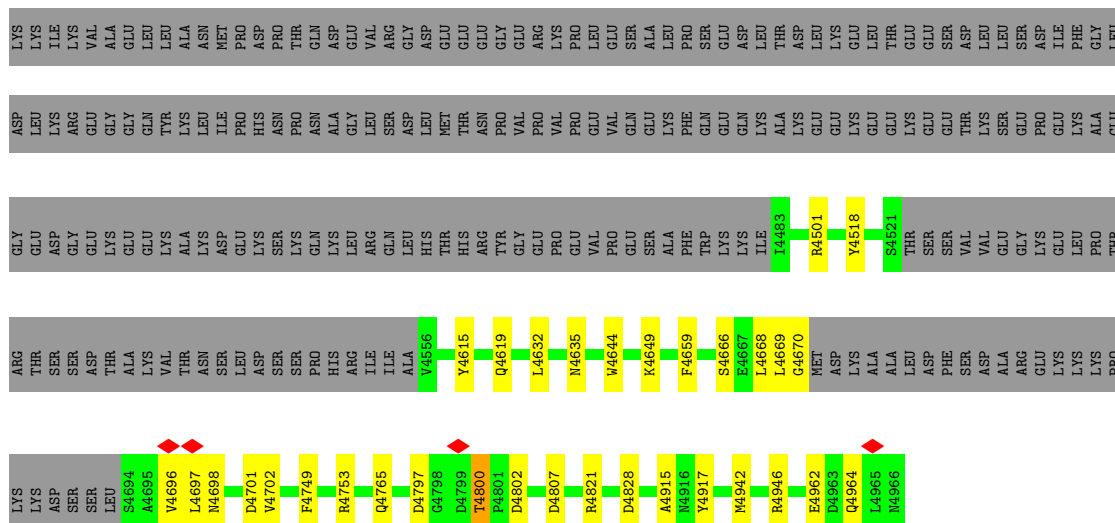


● Molecule 1: Ryanodine receptor 2

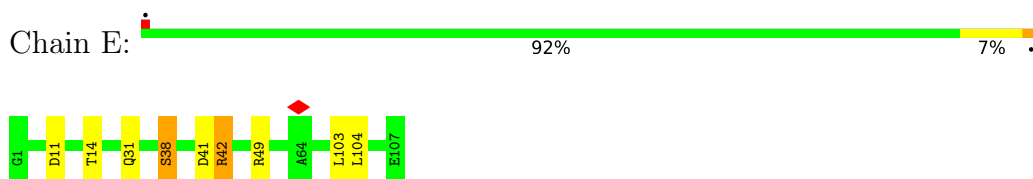




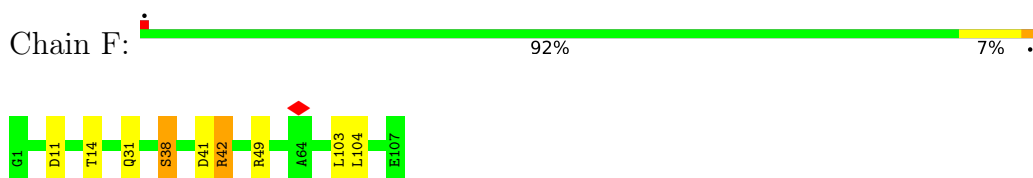




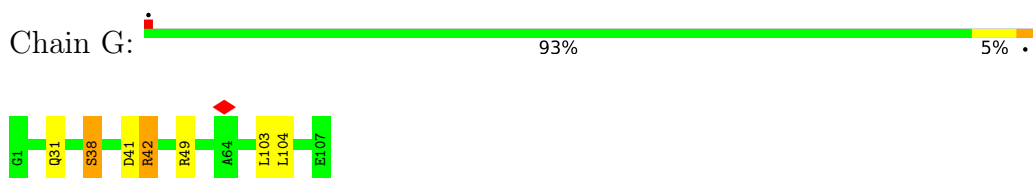
● Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1B



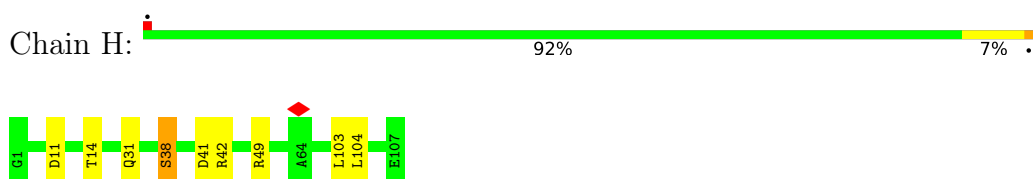
● Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1B



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



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



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C4	Depositor
Number of particles used	282778	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50, 50	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 (6k x 4k), GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.715	Depositor
Minimum map value	-0.955	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.042	Depositor
Recommended contour level	0.132	Depositor
Map size (\AA)	501.12003, 501.12003, 501.12003	wwPDB
Map dimensions	464, 464, 464	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.08, 1.08, 1.08	Depositor

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section:
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	0.38	0/31107	0.67	22/42056 (0.1%)
1	B	0.38	0/31107	0.67	16/42056 (0.0%)
1	C	0.38	0/31107	0.67	17/42056 (0.0%)
1	D	0.38	0/31107	0.67	19/42056 (0.0%)
2	E	0.31	0/834	0.65	1/1123 (0.1%)
2	F	0.31	0/834	0.65	1/1123 (0.1%)
2	G	0.31	0/834	0.64	1/1123 (0.1%)
2	H	0.31	0/834	0.64	0/1123
All	All	0.38	0/127764	0.67	77/172716 (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	9
1	B	0	9
1	C	0	9
1	D	0	7
All	All	0	34

There are no bond length outliers.

All (77) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	536	LEU	CA-CB-CG	8.00	133.70	115.30
1	A	536	LEU	CA-CB-CG	7.99	133.68	115.30
1	C	536	LEU	CA-CB-CG	7.97	133.64	115.30
1	D	536	LEU	CA-CB-CG	7.96	133.62	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	1303	ARG	NE-CZ-NH1	6.34	123.47	120.30
1	D	2162	ARG	NE-CZ-NH1	6.30	123.45	120.30
1	C	2162	ARG	NE-CZ-NH1	6.26	123.43	120.30
1	D	1303	ARG	NE-CZ-NH1	6.25	123.43	120.30
1	A	1303	ARG	NE-CZ-NH1	6.23	123.42	120.30
1	B	2162	ARG	NE-CZ-NH1	6.22	123.41	120.30
1	A	640	ARG	NE-CZ-NH1	6.21	123.40	120.30
1	B	640	ARG	NE-CZ-NH1	6.21	123.40	120.30
1	C	1303	ARG	NE-CZ-NH1	6.21	123.40	120.30
1	A	2067	ARG	NE-CZ-NH1	6.18	123.39	120.30
1	D	536	LEU	CB-CG-CD1	6.16	121.48	111.00
1	A	2162	ARG	NE-CZ-NH1	6.16	123.38	120.30
1	C	1496	PRO	N-CA-CB	6.16	110.69	103.30
1	D	1496	PRO	N-CA-CB	6.15	110.68	103.30
1	A	536	LEU	CB-CG-CD1	6.14	121.45	111.00
1	B	536	LEU	CB-CG-CD1	6.12	121.41	111.00
1	B	2067	ARG	NE-CZ-NH1	6.12	123.36	120.30
1	C	536	LEU	CB-CG-CD1	6.12	121.41	111.00
1	B	1496	PRO	N-CA-CB	6.11	110.63	103.30
1	C	2067	ARG	NE-CZ-NH1	6.05	123.33	120.30
1	D	2067	ARG	NE-CZ-NH1	6.04	123.32	120.30
1	C	1942	ARG	NE-CZ-NH1	5.99	123.30	120.30
1	B	1942	ARG	NE-CZ-NH1	5.98	123.29	120.30
1	A	1496	PRO	N-CA-CB	5.97	110.47	103.30
1	A	1942	ARG	NE-CZ-NH1	5.92	123.26	120.30
1	D	1500	ARG	N-CA-C	5.92	126.99	111.00
1	D	1942	ARG	NE-CZ-NH1	5.90	123.25	120.30
1	D	4501	ARG	NE-CZ-NH1	5.89	123.24	120.30
1	D	1700	ARG	NE-CZ-NH1	5.84	123.22	120.30
1	B	1700	ARG	NE-CZ-NH1	5.83	123.22	120.30
1	A	1700	ARG	NE-CZ-NH1	5.77	123.19	120.30
1	A	4501	ARG	NE-CZ-NH1	5.75	123.17	120.30
1	C	3729	ARG	NE-CZ-NH1	5.72	123.16	120.30
1	C	1700	ARG	NE-CZ-NH1	5.71	123.15	120.30
1	C	4501	ARG	NE-CZ-NH1	5.69	123.14	120.30
1	B	4501	ARG	NE-CZ-NH1	5.67	123.13	120.30
1	A	1500	ARG	N-CA-C	5.62	126.17	111.00
1	D	3729	ARG	NE-CZ-NH1	5.62	123.11	120.30
1	B	3729	ARG	NE-CZ-NH1	5.59	123.10	120.30
1	A	3729	ARG	NE-CZ-NH1	5.56	123.08	120.30
1	D	640	ARG	NE-CZ-NH1	5.47	123.03	120.30
1	C	640	ARG	NE-CZ-NH1	5.41	123.01	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1918	ARG	NE-CZ-NH1	5.35	122.98	120.30
1	D	4501	ARG	NE-CZ-NH2	-5.28	117.66	120.30
1	C	1918	ARG	NE-CZ-NH1	5.26	122.93	120.30
1	B	1918	ARG	NE-CZ-NH1	5.24	122.92	120.30
1	B	428	ARG	NE-CZ-NH1	5.23	122.92	120.30
1	D	1918	ARG	NE-CZ-NH1	5.23	122.91	120.30
1	D	750	ARG	NE-CZ-NH1	5.21	122.91	120.30
1	A	2679	TYR	CB-CG-CD2	5.20	124.12	121.00
1	B	750	ARG	NE-CZ-NH1	5.19	122.89	120.30
1	A	4501	ARG	NE-CZ-NH2	-5.19	117.71	120.30
1	C	1761	ARG	NE-CZ-NH1	5.19	122.89	120.30
1	A	2679	TYR	CA-CB-CG	5.18	123.24	113.40
1	C	428	ARG	NE-CZ-NH1	5.17	122.89	120.30
1	D	428	ARG	NE-CZ-NH1	5.17	122.88	120.30
1	B	4501	ARG	NE-CZ-NH2	-5.16	117.72	120.30
1	C	750	ARG	NE-CZ-NH1	5.16	122.88	120.30
1	A	428	ARG	NE-CZ-NH1	5.15	122.88	120.30
1	C	4501	ARG	NE-CZ-NH2	-5.14	117.73	120.30
1	B	1761	ARG	NE-CZ-NH1	5.14	122.87	120.30
1	D	1761	ARG	NE-CZ-NH1	5.14	122.87	120.30
2	F	42	ARG	NE-CZ-NH1	5.12	122.86	120.30
1	A	750	ARG	NE-CZ-NH1	5.11	122.86	120.30
2	G	42	ARG	NE-CZ-NH1	5.08	122.84	120.30
1	C	545	ARG	NE-CZ-NH1	5.07	122.84	120.30
1	D	1556	PHE	CB-CG-CD1	5.06	124.34	120.80
1	A	1761	ARG	NE-CZ-NH1	5.05	122.83	120.30
2	E	42	ARG	NE-CZ-NH1	5.04	122.82	120.30
1	D	545	ARG	NE-CZ-NH1	5.03	122.81	120.30
1	A	545	ARG	NE-CZ-NH1	5.02	122.81	120.30
1	A	235	ARG	NE-CZ-NH1	5.02	122.81	120.30
1	A	3879	ARG	NE-CZ-NH1	5.01	122.80	120.30

There are no chirality outliers.

All (34) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1552	ASN	Peptide
1	A	159	TRP	Peptide
1	A	1769	PHE	Peptide
1	A	1780	SER	Peptide
1	A	2038	LEU	Peptide
1	A	2131	VAL	Peptide

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Mol	Chain	Res	Type	Group
1	A	2525	PRO	Peptide
1	A	2655	LYS	Peptide
1	A	618	CYS	Peptide
1	B	1552	ASN	Peptide
1	B	159	TRP	Peptide
1	B	1769	PHE	Peptide
1	B	1780	SER	Peptide
1	B	2130	SER	Peptide
1	B	2525	PRO	Peptide
1	B	2655	LYS	Peptide
1	B	2677	PRO	Peptide
1	B	618	CYS	Peptide
1	C	1552	ASN	Peptide
1	C	159	TRP	Peptide
1	C	1769	PHE	Peptide
1	C	1780	SER	Peptide
1	C	2038	LEU	Peptide
1	C	2133	MET	Peptide
1	C	2525	PRO	Peptide
1	C	2657	GLU	Peptide
1	C	618	CYS	Peptide
1	D	1552	ASN	Peptide
1	D	159	TRP	Peptide
1	D	1769	PHE	Peptide
1	D	1780	SER	Peptide
1	D	2038	LEU	Peptide
1	D	2525	PRO	Peptide
1	D	618	CYS	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	30492	29287	29275	204	0
1	B	30492	29286	29275	212	0
1	C	30492	29286	29275	206	0
1	D	30492	29284	29275	215	0
2	E	818	824	824	4	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	F	818	824	824	4	0
2	G	818	824	824	3	0
2	H	818	824	824	4	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
All	All	125244	120439	120396	848	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 3.

All (848) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:612:ASP:O	1:D:616:SER:OG	2.07	0.72
1:C:612:ASP:O	1:C:616:SER:OG	2.07	0.70
1:B:612:ASP:O	1:B:616:SER:OG	2.07	0.70
1:A:612:ASP:O	1:A:616:SER:OG	2.07	0.69
1:C:2278:MET:SD	1:C:2284:TYR:OH	2.51	0.69
1:A:2278:MET:SD	1:A:2284:TYR:OH	2.51	0.69
1:D:2278:MET:SD	1:D:2284:TYR:OH	2.51	0.69
1:B:2278:MET:SD	1:B:2284:TYR:OH	2.51	0.69
1:D:1586:ARG:NH2	1:D:1587:LEU:O	2.27	0.68
1:A:235:ARG:NE	1:A:268:SER:O	2.27	0.68
1:A:900:LEU:O	1:A:913:ARG:NH2	2.26	0.68
1:B:1586:ARG:NH2	1:B:1587:LEU:O	2.27	0.68
1:D:900:LEU:O	1:D:913:ARG:NH2	2.26	0.68
1:A:1586:ARG:NH2	1:A:1587:LEU:O	2.27	0.68
1:B:235:ARG:NE	1:B:268:SER:O	2.27	0.68
1:C:235:ARG:NE	1:C:268:SER:O	2.27	0.68
1:C:699:SER:OG	1:C:721:ASP:OD2	2.12	0.68
1:B:900:LEU:O	1:B:913:ARG:NH2	2.26	0.67
1:C:1586:ARG:NH2	1:C:1587:LEU:O	2.27	0.67
1:C:900:LEU:O	1:C:913:ARG:NH2	2.26	0.67
1:B:1756:THR:OG1	1:B:1922:GLU:OE2	2.12	0.67
1:C:1756:THR:OG1	1:C:1922:GLU:OE2	2.13	0.67
1:D:1990:GLU:OE1	1:D:1992:ARG:NH1	2.28	0.67
1:A:1245:ARG:NH1	1:A:1693:LYS:O	2.28	0.67
1:D:1119:ARG:NH2	1:D:1196:ASP:O	2.28	0.67
1:B:699:SER:OG	1:B:721:ASP:OD2	2.13	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:4106:GLU:OE2	1:D:4146:ARG:NH1	2.28	0.67
1:B:1245:ARG:NH1	1:B:1693:LYS:O	2.28	0.67
1:D:235:ARG:NE	1:D:268:SER:O	2.27	0.67
1:D:699:SER:OG	1:D:721:ASP:OD2	2.13	0.67
1:B:1990:GLU:OE1	1:B:1992:ARG:NH1	2.28	0.67
1:B:3078:GLN:O	1:B:3082:THR:OG1	2.13	0.67
1:C:1119:ARG:NH2	1:C:1196:ASP:O	2.28	0.67
1:A:1756:THR:OG1	1:A:1922:GLU:OE2	2.13	0.66
1:C:1990:GLU:OE1	1:C:1992:ARG:NH1	2.28	0.66
1:C:4106:GLU:OE2	1:C:4146:ARG:NH1	2.28	0.66
1:D:3891:TYR:OH	1:D:3898:ASP:OD1	2.13	0.66
1:B:4106:GLU:OE2	1:B:4146:ARG:NH1	2.28	0.66
1:D:870:SER:OG	1:D:1009:ARG:NH1	2.28	0.66
1:D:1245:ARG:NH1	1:D:1693:LYS:O	2.28	0.66
1:D:1756:THR:OG1	1:D:1922:GLU:OE2	2.13	0.66
1:A:4106:GLU:OE2	1:A:4146:ARG:NH1	2.28	0.66
1:B:3891:TYR:OH	1:B:3898:ASP:OD1	2.13	0.66
1:C:721:ASP:O	1:C:724:SER:OG	2.12	0.66
1:A:1119:ARG:NH2	1:A:1196:ASP:O	2.28	0.66
1:C:778:MET:O	1:C:1468:THR:OG1	2.14	0.66
1:C:870:SER:OG	1:C:1009:ARG:NH1	2.28	0.66
1:C:1245:ARG:NH1	1:C:1693:LYS:O	2.28	0.66
1:A:699:SER:OG	1:A:721:ASP:OD2	2.13	0.66
1:A:778:MET:O	1:A:1468:THR:OG1	2.14	0.66
1:B:300:VAL:HG21	1:B:419:ILE:HD12	1.77	0.66
1:B:870:SER:OG	1:B:1009:ARG:NH1	2.28	0.66
1:B:1119:ARG:NH2	1:B:1196:ASP:O	2.28	0.66
1:B:969:ASN:ND2	1:B:981:MET:SD	2.69	0.66
1:A:1990:GLU:OE1	1:A:1992:ARG:NH1	2.28	0.66
1:A:3078:GLN:O	1:A:3082:THR:OG1	2.13	0.66
1:C:3891:TYR:OH	1:C:3898:ASP:OD1	2.13	0.66
1:A:560:SER:OG	1:A:561:ARG:NH2	2.29	0.66
1:A:3727:GLN:OE1	1:A:3769:ASN:ND2	2.29	0.66
1:B:497:LEU:O	1:B:501:CYS:N	2.29	0.66
1:D:969:ASN:ND2	1:D:981:MET:SD	2.69	0.66
1:D:3727:GLN:OE1	1:D:3769:ASN:ND2	2.29	0.66
1:B:778:MET:O	1:B:1468:THR:OG1	2.14	0.65
1:C:497:LEU:O	1:C:501:CYS:N	2.29	0.65
1:C:560:SER:OG	1:C:561:ARG:NH2	2.29	0.65
1:A:870:SER:OG	1:A:1009:ARG:NH1	2.28	0.65
1:A:1309:GLU:OE1	1:A:1577:LYS:N	2.30	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:969:ASN:ND2	1:C:981:MET:SD	2.69	0.65
1:C:3727:GLN:OE1	1:C:3769:ASN:ND2	2.29	0.65
1:B:3727:GLN:OE1	1:B:3769:ASN:ND2	2.29	0.65
1:C:1443:VAL:O	1:C:1496:PRO:N	2.29	0.65
1:A:969:ASN:ND2	1:A:981:MET:SD	2.69	0.65
1:C:1309:GLU:OE1	1:C:1577:LYS:N	2.30	0.65
1:A:1723:ASN:O	1:A:1918:ARG:NH2	2.30	0.65
1:A:627:SER:OG	1:A:2134:GLY:N	2.30	0.65
1:C:300:VAL:HG21	1:C:419:ILE:HD12	1.77	0.65
1:A:300:VAL:HG21	1:A:419:ILE:HD12	1.77	0.65
1:A:3891:TYR:OH	1:A:3898:ASP:OD1	2.14	0.65
1:B:560:SER:OG	1:B:561:ARG:NH2	2.29	0.65
1:D:300:VAL:HG21	1:D:419:ILE:HD12	1.77	0.65
1:D:3078:GLN:O	1:D:3082:THR:OG1	2.13	0.65
1:B:1309:GLU:OE1	1:B:1577:LYS:N	2.30	0.65
1:B:1443:VAL:O	1:B:1496:PRO:N	2.31	0.65
1:C:2018:GLY:O	1:C:2025:ARG:NH2	2.30	0.65
1:D:1309:GLU:OE1	1:D:1577:LYS:N	2.30	0.65
1:D:1723:ASN:O	1:D:1918:ARG:NH2	2.30	0.65
1:D:778:MET:O	1:D:1468:THR:OG1	2.14	0.64
1:D:4635:ASN:ND2	1:D:4668:LEU:O	2.30	0.64
1:B:1723:ASN:O	1:B:1918:ARG:NH2	2.30	0.64
1:D:497:LEU:O	1:D:501:CYS:N	2.30	0.64
1:A:4749:PHE:O	1:A:4753:ARG:NH1	2.30	0.64
1:C:1121:GLY:O	1:C:1133:ARG:NH1	2.31	0.64
1:C:4635:ASN:ND2	1:C:4668:LEU:O	2.30	0.64
1:D:1121:GLY:O	1:D:1133:ARG:NH1	2.30	0.64
1:D:4749:PHE:O	1:D:4753:ARG:NH1	2.30	0.64
1:C:1723:ASN:O	1:C:1918:ARG:NH2	2.30	0.64
1:C:4749:PHE:O	1:C:4753:ARG:NH1	2.30	0.64
1:B:1121:GLY:O	1:B:1133:ARG:NH1	2.30	0.64
1:B:4749:PHE:O	1:B:4753:ARG:NH1	2.30	0.64
1:A:2018:GLY:O	1:A:2025:ARG:NH2	2.31	0.64
1:B:4635:ASN:ND2	1:B:4668:LEU:O	2.30	0.64
1:D:2018:GLY:O	1:D:2025:ARG:NH2	2.31	0.64
1:A:1121:GLY:O	1:A:1133:ARG:NH1	2.30	0.64
1:B:2018:GLY:O	1:B:2025:ARG:NH2	2.31	0.64
1:C:626:ARG:NH1	1:C:1668:LEU:O	2.31	0.64
1:A:497:LEU:O	1:A:501:CYS:N	2.30	0.63
1:A:4635:ASN:ND2	1:A:4668:LEU:O	2.30	0.63
1:B:332:ARG:N	1:B:362:TYR:O	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:890:HIS:NE2	1:A:919:VAL:O	2.32	0.63
1:A:626:ARG:NH1	1:A:1668:LEU:O	2.32	0.63
1:D:332:ARG:N	1:D:362:TYR:O	2.32	0.63
1:A:2106:THR:OG1	1:A:3612:ARG:O	2.16	0.62
1:D:890:HIS:NE2	1:D:919:VAL:O	2.32	0.62
1:A:842:GLN:OE1	1:A:844:ARG:NH2	2.32	0.62
1:A:2358:ARG:NH1	1:A:2365:SER:O	2.31	0.62
1:B:3360:THR:O	1:B:3404:TYR:OH	2.17	0.62
1:C:3078:GLN:O	1:C:3082:THR:OG1	2.13	0.62
1:A:332:ARG:N	1:A:362:TYR:O	2.32	0.62
1:B:40:GLU:OE1	1:B:420:ARG:NH1	2.32	0.62
1:B:890:HIS:NE2	1:B:919:VAL:O	2.32	0.62
1:D:842:GLN:OE1	1:D:844:ARG:NH2	2.32	0.62
1:B:2358:ARG:NH1	1:B:2365:SER:O	2.32	0.62
1:A:4136:GLU:O	1:A:4917:TYR:OH	2.18	0.62
1:C:332:ARG:N	1:C:362:TYR:O	2.32	0.62
1:C:2358:ARG:NH1	1:C:2365:SER:O	2.32	0.62
1:D:4014:LYS:NZ	1:D:4060:SER:O	2.33	0.62
1:B:4014:LYS:NZ	1:B:4060:SER:O	2.33	0.62
1:C:890:HIS:NE2	1:C:919:VAL:O	2.32	0.62
1:D:40:GLU:OE1	1:D:420:ARG:NH1	2.32	0.62
1:D:1501:ASN:O	1:D:1505:GLY:N	2.32	0.62
1:C:842:GLN:OE1	1:C:844:ARG:NH2	2.32	0.62
1:D:1443:VAL:O	1:D:1496:PRO:N	2.33	0.62
1:A:2215:ASP:O	1:A:2218:SER:OG	2.15	0.62
1:A:2580:ARG:NH1	1:A:2614:GLU:OE1	2.33	0.62
1:A:4014:LYS:NZ	1:A:4060:SER:O	2.33	0.62
1:C:40:GLU:OE1	1:C:420:ARG:NH1	2.32	0.62
1:C:4014:LYS:NZ	1:C:4060:SER:O	2.33	0.62
1:B:842:GLN:OE1	1:B:844:ARG:NH2	2.32	0.61
1:A:40:GLU:OE1	1:A:420:ARG:NH1	2.32	0.61
1:B:721:ASP:O	1:B:724:SER:OG	2.12	0.61
1:C:480:ARG:NH1	1:C:3677:GLU:OE2	2.33	0.61
1:D:480:ARG:NH1	1:D:3677:GLU:OE2	2.33	0.61
1:D:2215:ASP:O	1:D:2218:SER:OG	2.15	0.61
1:D:2358:ARG:NH1	1:D:2365:SER:O	2.32	0.61
1:D:4136:GLU:O	1:D:4917:TYR:OH	2.18	0.61
1:B:480:ARG:NH1	1:B:3677:GLU:OE2	2.33	0.61
1:C:1614:GLU:O	1:C:1619:LEU:N	2.34	0.61
1:D:560:SER:OG	1:D:561:ARG:NH2	2.34	0.61
1:A:1614:GLU:O	1:A:1619:LEU:N	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:480:ARG:NH1	1:A:3677:GLU:OE2	2.33	0.61
1:D:1614:GLU:O	1:D:1619:LEU:N	2.34	0.60
1:D:2580:ARG:NH1	1:D:2614:GLU:OE1	2.34	0.60
1:C:859:GLN:NE2	1:C:859:GLN:O	2.34	0.60
1:B:626:ARG:NH1	1:B:1668:LEU:O	2.34	0.60
1:B:1614:GLU:O	1:B:1619:LEU:N	2.34	0.60
1:B:859:GLN:O	1:B:859:GLN:NE2	2.34	0.60
1:B:4136:GLU:O	1:B:4917:TYR:OH	2.18	0.60
1:C:2215:ASP:O	1:C:2218:SER:OG	2.14	0.60
1:A:1631:LEU:HD13	1:A:1642:ILE:HD11	1.83	0.60
1:D:859:GLN:O	1:D:859:GLN:NE2	2.34	0.60
1:A:859:GLN:O	1:A:859:GLN:NE2	2.34	0.60
2:F:38:SER:OG	2:F:41:ASP:OD1	2.20	0.60
2:E:38:SER:OG	2:E:41:ASP:OD1	2.20	0.60
1:C:1631:LEU:HD13	1:C:1642:ILE:HD11	1.82	0.60
2:H:38:SER:OG	2:H:41:ASP:OD1	2.20	0.60
1:A:1465:VAL:O	1:A:1483:SER:N	2.35	0.59
1:C:2580:ARG:NH1	1:C:2614:GLU:OE1	2.34	0.59
1:A:858:THR:OG1	1:A:861:ALA:O	2.17	0.59
2:G:38:SER:OG	2:G:41:ASP:OD1	2.20	0.59
1:B:1631:LEU:HD13	1:B:1642:ILE:HD11	1.83	0.59
1:B:2580:ARG:NH1	1:B:2614:GLU:OE1	2.36	0.59
1:A:1144:ARG:N	1:A:1150:GLU:O	2.36	0.59
1:B:1465:VAL:O	1:B:1483:SER:N	2.35	0.59
1:B:1501:ASN:N	1:B:1505:GLY:O	2.36	0.59
1:B:2106:THR:OG1	1:B:3612:ARG:O	2.16	0.59
1:D:1465:VAL:O	1:D:1483:SER:N	2.35	0.59
1:D:1631:LEU:HD13	1:D:1642:ILE:HD11	1.82	0.59
1:C:3360:THR:O	1:C:3404:TYR:OH	2.17	0.58
1:C:4136:GLU:O	1:C:4917:TYR:OH	2.18	0.58
1:A:3356:ASP:O	1:A:3360:THR:OG1	2.16	0.58
1:B:1144:ARG:N	1:B:1150:GLU:O	2.36	0.58
1:C:1144:ARG:N	1:C:1150:GLU:O	2.36	0.58
1:D:1144:ARG:N	1:D:1150:GLU:O	2.36	0.58
1:A:255:GLU:OE2	1:A:258:ARG:NH1	2.37	0.58
1:A:3385:LYS:O	1:A:3453:ARG:NH1	2.36	0.58
1:C:1465:VAL:O	1:C:1483:SER:N	2.35	0.58
1:D:2576:CYS:O	1:D:2618:LYS:NZ	2.36	0.58
1:B:770:ILE:O	1:B:773:GLN:NE2	2.36	0.58
1:C:255:GLU:OE2	1:C:258:ARG:NH1	2.37	0.58
1:C:770:ILE:O	1:C:773:GLN:NE2	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:770:ILE:O	1:D:773:GLN:NE2	2.37	0.58
1:A:770:ILE:O	1:A:773:GLN:NE2	2.36	0.58
1:D:3385:LYS:O	1:D:3453:ARG:NH1	2.37	0.58
1:C:2576:CYS:O	1:C:2618:LYS:NZ	2.36	0.58
1:D:3076:GLN:O	1:D:3080:THR:HG23	2.04	0.58
1:B:255:GLU:OE2	1:B:258:ARG:NH1	2.37	0.58
1:B:3385:LYS:O	1:B:3453:ARG:NH1	2.37	0.58
1:B:2576:CYS:O	1:B:2618:LYS:NZ	2.37	0.57
1:C:3385:LYS:O	1:C:3453:ARG:NH1	2.37	0.57
1:D:255:GLU:OE2	1:D:258:ARG:NH1	2.37	0.57
1:B:1504:ASN:O	1:B:1524:ASN:ND2	2.38	0.57
1:A:1763:ARG:O	1:A:1778:GLN:N	2.37	0.57
1:C:1763:ARG:O	1:C:1778:GLN:N	2.37	0.57
1:D:889:ILE:HD12	1:D:892:LEU:HD12	1.86	0.57
1:B:889:ILE:HD12	1:B:892:LEU:HD12	1.86	0.57
1:C:889:ILE:HD12	1:C:892:LEU:HD12	1.86	0.57
1:C:925:PRO:O	1:C:929:ARG:N	2.38	0.57
1:D:3360:THR:O	1:D:3404:TYR:OH	2.17	0.57
1:C:3076:GLN:O	1:C:3080:THR:HG23	2.04	0.57
1:A:3076:GLN:O	1:A:3080:THR:HG23	2.04	0.57
1:D:858:THR:OG1	1:D:861:ALA:O	2.16	0.57
1:A:889:ILE:HD12	1:A:892:LEU:HD12	1.86	0.56
1:A:1550:SER:O	1:A:1550:SER:OG	2.22	0.56
1:A:2036:THR:HG21	1:A:3628:ILE:HG23	1.87	0.56
1:B:3076:GLN:O	1:B:3080:THR:HG23	2.04	0.56
1:C:2159:ASN:OD1	1:C:2162:ARG:NH2	2.38	0.56
1:D:2159:ASN:OD1	1:D:2162:ARG:NH2	2.38	0.56
1:B:2636:GLU:OE1	1:B:2679:TYR:OH	2.16	0.56
1:B:4696:VAL:HG13	1:B:4697:LEU:HG	1.87	0.56
1:C:2396:ASP:OD1	1:C:2400:ARG:NE	2.39	0.56
1:C:2106:THR:OG1	1:C:3612:ARG:O	2.17	0.56
1:B:925:PRO:O	1:B:929:ARG:N	2.38	0.56
1:B:2036:THR:HG21	1:B:3628:ILE:HG23	1.88	0.56
1:B:2215:ASP:O	1:B:2218:SER:OG	2.15	0.56
1:D:2106:THR:OG1	1:D:3612:ARG:O	2.16	0.56
1:C:564:ARG:O	1:C:1586:ARG:NH2	2.39	0.56
1:B:2159:ASN:OD1	1:B:2162:ARG:NH2	2.38	0.56
1:B:858:THR:OG1	1:B:861:ALA:O	2.16	0.56
1:C:2430:ASP:O	1:C:2434:VAL:HG13	2.05	0.56
1:B:2430:ASP:O	1:B:2434:VAL:HG13	2.05	0.56
1:D:218:SER:OG	1:D:219:SER:N	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:2430:ASP:O	1:D:2434:VAL:HG13	2.05	0.56
1:A:2430:ASP:O	1:A:2434:VAL:HG13	2.05	0.55
1:D:4696:VAL:HG13	1:D:4697:LEU:HG	1.87	0.55
1:A:1144:ARG:NH1	1:A:1150:GLU:OE2	2.40	0.55
1:A:4696:VAL:HG13	1:A:4697:LEU:HG	1.87	0.55
1:B:564:ARG:O	1:B:1586:ARG:NH2	2.39	0.55
1:C:2036:THR:HG21	1:C:3628:ILE:HG23	1.88	0.55
1:A:925:PRO:O	1:A:929:ARG:N	2.38	0.55
1:D:3458:TYR:O	1:D:3463:SER:N	2.39	0.55
1:A:2576:CYS:O	1:A:2618:LYS:NZ	2.38	0.55
1:B:2396:ASP:OD1	1:B:2400:ARG:NE	2.39	0.55
1:B:3191:ARG:NE	1:B:3191:ARG:O	2.40	0.55
1:C:2223:ASN:O	1:C:2225:SER:OG	2.22	0.55
1:D:70:GLU:OE1	1:D:122:ARG:NH1	2.40	0.55
1:D:1144:ARG:NH1	1:D:1150:GLU:OE2	2.40	0.55
1:C:4696:VAL:HG13	1:C:4697:LEU:HG	1.88	0.55
1:D:925:PRO:O	1:D:929:ARG:N	2.38	0.55
1:D:3191:ARG:O	1:D:3191:ARG:NE	2.40	0.55
1:A:2077:PRO:HA	1:A:2080:VAL:HG12	1.88	0.55
1:B:218:SER:OG	1:B:219:SER:N	2.39	0.55
1:B:1763:ARG:O	1:B:1778:GLN:N	2.38	0.55
1:A:3191:ARG:O	1:A:3191:ARG:NE	2.39	0.55
1:B:1144:ARG:NH1	1:B:1150:GLU:OE2	2.39	0.55
1:C:3191:ARG:O	1:C:3191:ARG:NE	2.39	0.55
1:A:218:SER:OG	1:A:219:SER:N	2.39	0.55
1:A:2159:ASN:OD1	1:A:2162:ARG:NH2	2.38	0.55
1:A:3360:THR:O	1:A:3404:TYR:OH	2.20	0.55
1:B:3458:TYR:O	1:B:3463:SER:N	2.40	0.55
1:C:1913:CYS:SG	1:C:2090:GLN:NE2	2.80	0.55
1:C:2077:PRO:HA	1:C:2080:VAL:HG12	1.88	0.55
1:C:3458:TYR:O	1:C:3463:SER:N	2.40	0.55
1:D:2396:ASP:OD1	1:D:2400:ARG:NE	2.39	0.55
1:A:70:GLU:OE1	1:A:122:ARG:NH1	2.40	0.54
1:C:237:LEU:O	1:C:404:ASN:N	2.40	0.54
1:D:1763:ARG:O	1:D:1778:GLN:N	2.37	0.54
1:B:2077:PRO:HA	1:B:2080:VAL:HG12	1.88	0.54
1:C:70:GLU:OE1	1:C:122:ARG:NH1	2.40	0.54
1:B:606:ARG:O	1:B:608:HIS:ND1	2.41	0.54
1:B:783:ASN:ND2	1:B:1460:ASP:O	2.41	0.54
1:C:1144:ARG:NH1	1:C:1150:GLU:OE2	2.40	0.54
1:D:2036:THR:HG21	1:D:3628:ILE:HG23	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:892:LEU:HD13	1:C:1056:THR:HG21	1.89	0.54
1:A:564:ARG:O	1:A:1586:ARG:NH2	2.39	0.54
1:A:606:ARG:O	1:A:608:HIS:ND1	2.41	0.54
1:A:2396:ASP:OD1	1:A:2400:ARG:NE	2.39	0.54
1:B:892:LEU:HD13	1:B:1056:THR:HG21	1.89	0.54
1:C:218:SER:OG	1:C:219:SER:N	2.40	0.54
1:C:305:TYR:O	1:C:317:MET:N	2.40	0.54
1:D:892:LEU:HD13	1:D:1056:THR:HG21	1.89	0.54
1:B:2223:ASN:O	1:B:2225:SER:OG	2.22	0.54
1:B:70:GLU:OE1	1:B:122:ARG:NH1	2.40	0.54
1:B:237:LEU:O	1:B:404:ASN:N	2.40	0.54
1:D:2077:PRO:HA	1:D:2080:VAL:HG12	1.88	0.54
1:A:305:TYR:O	1:A:317:MET:N	2.40	0.54
1:D:1913:CYS:SG	1:D:2090:GLN:NE2	2.80	0.54
1:A:783:ASN:ND2	1:A:1460:ASP:O	2.41	0.53
1:A:3458:TYR:O	1:A:3463:SER:N	2.40	0.53
1:C:359:SER:O	1:C:404:ASN:ND2	2.41	0.53
1:C:2588:LEU:O	1:C:2592:VAL:HG23	2.08	0.53
1:A:2588:LEU:O	1:A:2592:VAL:HG23	2.08	0.53
1:D:564:ARG:O	1:D:1586:ARG:NH2	2.39	0.53
1:D:654:SER:OG	1:D:655:MET:N	2.42	0.53
1:D:1129:GLY:O	1:D:1147:GLN:N	2.42	0.53
1:A:359:SER:O	1:A:404:ASN:ND2	2.41	0.53
1:A:1129:GLY:O	1:A:1147:GLN:N	2.42	0.53
1:C:654:SER:OG	1:C:655:MET:N	2.42	0.53
1:D:1712:LEU:HD22	1:D:1832:MET:SD	2.49	0.53
1:A:892:LEU:HD13	1:A:1056:THR:HG21	1.89	0.53
1:C:606:ARG:O	1:C:608:HIS:ND1	2.41	0.53
1:D:606:ARG:O	1:D:608:HIS:ND1	2.42	0.53
1:D:783:ASN:ND2	1:D:1460:ASP:O	2.41	0.53
1:A:654:SER:OG	1:A:655:MET:N	2.42	0.53
1:A:2223:ASN:O	1:A:2225:SER:OG	2.22	0.53
1:B:359:SER:O	1:B:404:ASN:ND2	2.41	0.53
1:C:783:ASN:ND2	1:C:1460:ASP:O	2.41	0.53
1:C:1712:LEU:HD22	1:C:1832:MET:SD	2.49	0.53
1:D:2588:LEU:O	1:D:2592:VAL:HG23	2.08	0.53
1:A:237:LEU:O	1:A:404:ASN:N	2.41	0.52
1:B:305:TYR:O	1:B:317:MET:N	2.40	0.52
1:B:2588:LEU:O	1:B:2592:VAL:HG23	2.08	0.52
1:D:305:TYR:O	1:D:317:MET:N	2.40	0.52
1:D:359:SER:O	1:D:404:ASN:ND2	2.41	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:12:GLN:N	1:C:12:GLN:OE1	2.41	0.52
1:C:1692:ASN:OD1	1:C:1693:LYS:N	2.43	0.52
1:D:2112:VAL:O	1:D:2116:ILE:HD12	2.10	0.52
1:A:572:LEU:HD13	1:A:612:ASP:CB	2.40	0.52
1:A:2112:VAL:O	1:A:2116:ILE:HD12	2.10	0.52
1:C:1129:GLY:O	1:C:1147:GLN:N	2.42	0.52
1:C:2112:VAL:O	1:C:2116:ILE:HD12	2.10	0.52
1:B:1712:LEU:HD22	1:B:1832:MET:SD	2.49	0.52
1:C:1930:ASP:OD1	1:C:2027:ARG:NH2	2.43	0.52
1:A:1712:LEU:HD22	1:A:1832:MET:SD	2.49	0.52
1:C:1847:ILE:HG22	1:C:1892:LEU:HB3	1.92	0.52
1:D:1692:ASN:OD1	1:D:1693:LYS:N	2.43	0.52
1:D:1847:ILE:HG22	1:D:1892:LEU:HB3	1.92	0.52
1:D:1930:ASP:OD1	1:D:2027:ARG:NH2	2.43	0.52
1:A:1297:THR:O	1:A:1547:GLN:NE2	2.43	0.52
1:B:1692:ASN:OD1	1:B:1693:LYS:N	2.43	0.52
1:B:2112:VAL:O	1:B:2116:ILE:HD12	2.10	0.52
1:D:1297:THR:O	1:D:1547:GLN:NE2	2.43	0.52
1:B:12:GLN:N	1:B:12:GLN:OE1	2.43	0.52
1:B:1297:THR:O	1:B:1547:GLN:NE2	2.43	0.52
1:B:2334:LEU:N	1:B:2338:GLY:O	2.43	0.52
1:D:237:LEU:O	1:D:404:ASN:N	2.41	0.52
1:C:1172:THR:O	1:C:1172:THR:OG1	2.28	0.52
1:D:1527:GLU:O	1:D:1528:LEU:HD23	2.10	0.52
1:A:12:GLN:OE1	1:A:12:GLN:N	2.43	0.51
1:A:1930:ASP:OD1	1:A:2027:ARG:NH2	2.43	0.51
1:B:654:SER:OG	1:B:655:MET:N	2.42	0.51
1:C:550:GLN:O	1:C:554:SER:N	2.44	0.51
1:D:162:ILE:O	1:D:163:HIS:ND1	2.44	0.51
1:A:162:ILE:O	1:A:163:HIS:ND1	2.44	0.51
1:A:409:GLN:NE2	1:A:3864:ASN:OD1	2.43	0.51
1:C:1297:THR:O	1:C:1547:GLN:NE2	2.43	0.51
1:A:418:VAL:HG12	1:A:462:TYR:HE2	1.76	0.51
1:B:162:ILE:O	1:B:163:HIS:ND1	2.44	0.51
1:C:162:ILE:O	1:C:163:HIS:ND1	2.44	0.51
1:A:1692:ASN:OD1	1:A:1693:LYS:N	2.43	0.51
1:B:1847:ILE:HG22	1:B:1892:LEU:HB3	1.92	0.51
1:D:12:GLN:N	1:D:12:GLN:OE1	2.43	0.51
1:D:946:LEU:HD23	1:D:1064:LEU:HD11	1.93	0.51
1:A:1526:LYS:HG3	1:A:1528:LEU:HD21	1.93	0.51
1:A:2334:LEU:N	1:A:2338:GLY:O	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:992:GLN:O	1:B:996:VAL:HG23	2.11	0.51
1:B:2334:LEU:HD21	1:B:2344:ALA:CB	2.41	0.51
1:D:1035:TYR:CD1	1:D:1038:LEU:HD12	2.46	0.51
1:A:1035:TYR:CD1	1:A:1038:LEU:HD12	2.46	0.51
1:A:2334:LEU:HD21	1:A:2344:ALA:CB	2.41	0.51
1:B:418:VAL:HG12	1:B:462:TYR:HE2	1.76	0.51
1:D:418:VAL:HG12	1:D:462:TYR:HE2	1.76	0.51
1:D:1501:ASN:O	1:D:1504:ASN:N	2.44	0.51
1:A:992:GLN:O	1:A:996:VAL:HG23	2.11	0.51
1:D:992:GLN:O	1:D:996:VAL:HG23	2.11	0.51
1:D:2334:LEU:HD21	1:D:2344:ALA:CB	2.41	0.51
1:B:1625:PRO:O	1:B:1626:LEU:HD12	2.11	0.51
1:B:2422:LEU:O	1:B:2431:LEU:HD11	2.11	0.51
1:C:436:LEU:HD13	1:C:447:LEU:HB2	1.92	0.51
1:C:992:GLN:O	1:C:996:VAL:HG23	2.11	0.51
1:C:2334:LEU:N	1:C:2338:GLY:O	2.43	0.51
1:B:1035:TYR:CD1	1:B:1038:LEU:HD12	2.46	0.50
1:C:2422:LEU:O	1:C:2431:LEU:HD11	2.11	0.50
1:D:626:ARG:NH1	1:D:1668:LEU:O	2.43	0.50
1:A:946:LEU:HD23	1:A:1064:LEU:HD11	1.94	0.50
1:A:1625:PRO:O	1:A:1626:LEU:HD12	2.12	0.50
1:B:436:LEU:HD13	1:B:447:LEU:HB2	1.92	0.50
1:B:1930:ASP:OD1	1:B:2027:ARG:NH2	2.43	0.50
1:C:418:VAL:HG12	1:C:462:TYR:HE2	1.76	0.50
1:C:2334:LEU:HD21	1:C:2344:ALA:CB	2.41	0.50
1:A:1847:ILE:HG22	1:A:1892:LEU:HB3	1.92	0.50
1:B:1129:GLY:O	1:B:1147:GLN:N	2.42	0.50
1:C:3916:PHE:O	1:C:3920:THR:HG23	2.12	0.50
1:D:2223:ASN:O	1:D:2225:SER:OG	2.22	0.50
1:D:2334:LEU:N	1:D:2338:GLY:O	2.43	0.50
1:C:1722:MET:SD	1:C:2126:ARG:NH1	2.84	0.50
1:D:550:GLN:O	1:D:554:SER:N	2.43	0.50
1:A:804:LEU:HD12	1:A:1618:TRP:CZ3	2.47	0.50
1:B:946:LEU:HD23	1:B:1064:LEU:HD11	1.94	0.50
1:C:946:LEU:HD23	1:C:1064:LEU:HD11	1.94	0.50
1:D:1625:PRO:O	1:D:1626:LEU:HD12	2.12	0.50
1:D:2422:LEU:O	1:D:2431:LEU:HD11	2.11	0.50
1:A:436:LEU:HD13	1:A:447:LEU:HB2	1.92	0.50
1:C:1526:LYS:HG3	1:C:1528:LEU:HD21	1.93	0.50
1:D:4152:SER:OG	1:D:4153:GLU:N	2.45	0.50
1:C:4701:ASP:OD1	1:C:4702:VAL:N	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:436:LEU:HD13	1:D:447:LEU:HB2	1.92	0.50
1:D:4030:THR:HG21	1:D:4051:MET:SD	2.52	0.50
1:C:804:LEU:HD12	1:C:1618:TRP:CZ3	2.47	0.50
1:C:908:ARG:NH1	1:C:928:GLU:OE2	2.45	0.50
1:D:2996:SER:OG	1:D:3070:THR:HG21	2.12	0.50
1:A:908:ARG:NH1	1:A:928:GLU:OE2	2.45	0.49
1:B:908:ARG:NH1	1:B:928:GLU:OE2	2.45	0.49
1:C:288:HIS:O	1:C:290:ARG:NH1	2.45	0.49
1:C:1035:TYR:CD1	1:C:1038:LEU:HD12	2.46	0.49
1:C:1625:PRO:O	1:C:1626:LEU:HD12	2.12	0.49
1:D:804:LEU:HD12	1:D:1618:TRP:CZ3	2.47	0.49
1:C:2996:SER:OG	1:C:3070:THR:HG21	2.12	0.49
1:A:2422:LEU:O	1:A:2431:LEU:HD11	2.12	0.49
1:A:4152:SER:OG	1:A:4153:GLU:N	2.45	0.49
1:D:243:GLU:OE1	1:D:264:GLY:N	2.46	0.49
1:D:3687:TYR:OH	1:D:3757:THR:OG1	2.19	0.49
1:D:3916:PHE:O	1:D:3920:THR:HG23	2.12	0.49
1:B:4152:SER:OG	1:B:4153:GLU:N	2.45	0.49
1:D:4701:ASP:OD1	1:D:4702:VAL:N	2.45	0.49
1:A:4159:TRP:CZ2	1:A:4915:ALA:HB2	2.48	0.49
1:B:804:LEU:HD12	1:B:1618:TRP:CZ3	2.47	0.49
1:B:1526:LYS:HG3	1:B:1528:LEU:HD21	1.93	0.49
1:B:4030:THR:HG21	1:B:4051:MET:SD	2.52	0.49
1:D:288:HIS:O	1:D:290:ARG:NH1	2.46	0.49
1:B:4701:ASP:OD1	1:B:4702:VAL:N	2.45	0.49
1:C:145:PHE:O	1:C:205:ALA:N	2.43	0.49
1:D:1273:ILE:O	1:D:1287:GLN:N	2.46	0.49
1:A:243:GLU:OE1	1:A:264:GLY:N	2.46	0.49
1:A:550:GLN:O	1:A:554:SER:N	2.44	0.49
1:A:1631:LEU:HD13	1:A:1642:ILE:CD1	2.43	0.49
1:A:2996:SER:OG	1:A:3070:THR:HG21	2.12	0.49
1:A:4030:THR:HG21	1:A:4051:MET:SD	2.52	0.49
1:B:3916:PHE:O	1:B:3920:THR:HG23	2.12	0.49
1:C:243:GLU:OE1	1:C:264:GLY:N	2.45	0.49
1:B:1631:LEU:HD13	1:B:1642:ILE:CD1	2.43	0.49
1:D:2779:LYS:NZ	1:D:2846:ASN:OD1	2.46	0.49
2:E:38:SER:O	2:E:42:ARG:NH2	2.46	0.49
2:F:38:SER:O	2:F:42:ARG:NH2	2.46	0.49
2:H:11:ASP:OD2	2:H:14:THR:OG1	2.16	0.49
1:A:4701:ASP:OD1	1:A:4702:VAL:N	2.45	0.49
1:D:908:ARG:NH1	1:D:928:GLU:OE2	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1273:ILE:O	1:A:1287:GLN:N	2.46	0.48
1:A:2008:ILE:HG23	1:A:2012:GLU:HB2	1.95	0.48
1:B:243:GLU:OE1	1:B:264:GLY:N	2.46	0.48
1:B:4159:TRP:CZ2	1:B:4915:ALA:HB2	2.48	0.48
1:D:4159:TRP:CZ2	1:D:4915:ALA:HB2	2.48	0.48
1:A:2582:SER:HB2	1:A:2875:THR:HG22	1.94	0.48
1:B:550:GLN:O	1:B:554:SER:N	2.44	0.48
1:C:4030:THR:HG21	1:C:4051:MET:SD	2.52	0.48
1:D:1631:LEU:HD13	1:D:1642:ILE:CD1	2.43	0.48
1:B:288:HIS:O	1:B:290:ARG:NH1	2.46	0.48
1:B:2582:SER:HB2	1:B:2875:THR:HG22	1.94	0.48
1:D:1526:LYS:HG3	1:D:1528:LEU:HD21	1.95	0.48
1:A:288:HIS:O	1:A:290:ARG:NH1	2.46	0.48
1:A:537:LEU:HD13	1:A:538:ALA:N	2.29	0.48
1:A:1722:MET:SD	1:A:2126:ARG:NH1	2.87	0.48
1:A:3916:PHE:O	1:A:3920:THR:HG23	2.12	0.48
1:B:1527:GLU:O	1:B:1528:LEU:HD23	2.14	0.48
1:B:2996:SER:OG	1:B:3070:THR:HG21	2.12	0.48
1:C:2582:SER:HB2	1:C:2875:THR:HG22	1.95	0.48
1:C:4152:SER:OG	1:C:4153:GLU:N	2.45	0.48
1:D:537:LEU:HD13	1:D:538:ALA:N	2.28	0.48
1:A:2779:LYS:NZ	1:A:2846:ASN:OD1	2.46	0.48
1:B:2228:LEU:HD12	1:B:2237:THR:HB	1.96	0.48
1:C:1527:GLU:O	1:C:1528:LEU:HD23	2.12	0.48
1:C:2228:LEU:HD12	1:C:2237:THR:HB	1.96	0.48
1:C:2779:LYS:NZ	1:C:2846:ASN:OD1	2.45	0.48
1:A:145:PHE:O	1:A:205:ALA:N	2.44	0.48
2:G:38:SER:O	2:G:42:ARG:NH2	2.46	0.48
1:A:2228:LEU:HD12	1:A:2237:THR:HB	1.96	0.48
1:B:2779:LYS:NZ	1:B:2846:ASN:OD1	2.46	0.48
1:C:1273:ILE:O	1:C:1287:GLN:N	2.46	0.48
1:C:4159:TRP:CZ2	1:C:4915:ALA:HB2	2.48	0.48
1:C:4649:LYS:HG2	1:C:4669:LEU:HD23	1.96	0.48
1:D:305:TYR:N	1:D:317:MET:O	2.46	0.48
1:D:1550:SER:O	1:D:1550:SER:OG	2.25	0.48
1:D:1722:MET:SD	1:D:2126:ARG:NH1	2.87	0.48
1:D:2582:SER:HB2	1:D:2875:THR:HG22	1.94	0.48
1:D:4649:LYS:HG2	1:D:4669:LEU:HD23	1.96	0.48
1:C:1206:SER:O	1:C:1207:LEU:HD23	2.14	0.48
1:C:4807:ASP:OD1	1:C:4807:ASP:N	2.47	0.48
1:B:537:LEU:HD13	1:B:538:ALA:N	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:4807:ASP:N	1:B:4807:ASP:OD1	2.47	0.48
2:H:38:SER:O	2:H:42:ARG:NH2	2.46	0.48
1:D:2228:LEU:HD12	1:D:2237:THR:HB	1.96	0.47
1:D:4807:ASP:OD1	1:D:4807:ASP:N	2.47	0.47
1:A:1613:SER:O	1:A:1613:SER:OG	2.32	0.47
1:B:2008:ILE:HG23	1:B:2012:GLU:HB2	1.95	0.47
1:C:1691:GLU:OE1	1:C:1791:LYS:NZ	2.33	0.47
1:D:4797:ASP:O	1:D:4800:THR:OG1	2.22	0.47
1:A:4802:ASP:OD1	1:A:4802:ASP:N	2.48	0.47
1:C:18:ASP:OD1	1:C:18:ASP:N	2.47	0.47
1:C:537:LEU:HD13	1:C:538:ALA:N	2.28	0.47
1:D:2008:ILE:HG23	1:D:2012:GLU:HB2	1.95	0.47
1:A:1206:SER:O	1:A:1207:LEU:HD23	2.14	0.47
1:B:409:GLN:NE2	1:B:3864:ASN:OD1	2.48	0.47
1:C:3914:GLN:O	1:C:3918:THR:HG23	2.14	0.47
2:G:103:LEU:HD23	2:G:104:LEU:N	2.30	0.47
1:A:853:PRO:HB2	1:A:1209:VAL:HG22	1.96	0.47
1:A:1527:GLU:O	1:A:1528:LEU:HD23	2.15	0.47
1:A:4042:ILE:HD12	1:A:4043:SER:O	2.14	0.47
1:B:1273:ILE:O	1:B:1287:GLN:N	2.46	0.47
1:D:853:PRO:HB2	1:D:1209:VAL:HG22	1.97	0.47
1:D:1206:SER:O	1:D:1207:LEU:HD23	2.14	0.47
1:C:1631:LEU:HD13	1:C:1642:ILE:CD1	2.43	0.47
2:E:11:ASP:OD2	2:E:14:THR:OG1	2.16	0.47
1:A:4649:LYS:HG2	1:A:4669:LEU:HD23	1.96	0.47
2:H:103:LEU:HD23	2:H:104:LEU:N	2.29	0.47
1:B:4042:ILE:HD12	1:B:4043:SER:O	2.15	0.47
1:C:305:TYR:N	1:C:317:MET:O	2.46	0.47
1:C:853:PRO:HB2	1:C:1209:VAL:HG22	1.97	0.47
1:D:655:MET:N	1:D:792:VAL:O	2.48	0.47
1:D:4042:ILE:HD12	1:D:4043:SER:O	2.15	0.47
1:B:1722:MET:SD	1:B:2126:ARG:NH1	2.87	0.47
1:C:2008:ILE:HG23	1:C:2012:GLU:HB2	1.95	0.47
2:F:103:LEU:HD23	2:F:104:LEU:N	2.30	0.47
1:B:1206:SER:O	1:B:1207:LEU:HD23	2.14	0.47
1:B:4649:LYS:HG2	1:B:4669:LEU:HD23	1.96	0.47
1:B:4802:ASP:OD1	1:B:4802:ASP:N	2.48	0.47
1:D:18:ASP:N	1:D:18:ASP:OD1	2.47	0.47
1:D:145:PHE:O	1:D:205:ALA:N	2.44	0.47
1:A:4807:ASP:OD1	1:A:4807:ASP:N	2.48	0.46
1:B:305:TYR:N	1:B:317:MET:O	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:4042:ILE:HD12	1:C:4043:SER:O	2.14	0.46
1:D:409:GLN:NE2	1:D:3864:ASN:OD1	2.48	0.46
1:D:1257:GLN:O	1:D:1597:TRP:N	2.48	0.46
2:E:103:LEU:HD23	2:E:104:LEU:N	2.29	0.46
1:B:18:ASP:N	1:B:18:ASP:OD1	2.47	0.46
1:C:4802:ASP:N	1:C:4802:ASP:OD1	2.47	0.46
1:D:2790:ARG:NH1	1:D:2791:THR:O	2.48	0.46
1:B:3864:ASN:OD1	1:B:3865:THR:OG1	2.15	0.46
1:B:3914:GLN:O	1:B:3918:THR:HG23	2.16	0.46
1:A:2586:HIS:NE2	1:A:2875:THR:HG21	2.31	0.46
1:B:853:PRO:HB2	1:B:1209:VAL:HG22	1.96	0.46
1:B:1257:GLN:O	1:B:1597:TRP:N	2.49	0.46
1:C:655:MET:N	1:C:792:VAL:O	2.48	0.46
1:C:2586:HIS:NE2	1:C:2875:THR:HG21	2.31	0.46
1:A:438:LYS:NZ	1:A:507:VAL:HG11	2.31	0.46
1:A:3914:GLN:O	1:A:3918:THR:HG23	2.15	0.46
1:B:612:ASP:O	1:B:616:SER:CB	2.64	0.46
1:B:655:MET:N	1:B:792:VAL:O	2.48	0.46
1:D:4802:ASP:OD1	1:D:4802:ASP:N	2.48	0.46
1:A:830:GLU:OE2	1:A:830:GLU:N	2.49	0.46
1:A:1257:GLN:O	1:A:1597:TRP:N	2.49	0.46
1:B:438:LYS:NZ	1:B:507:VAL:HG11	2.31	0.46
1:B:2586:HIS:NE2	1:B:2875:THR:HG21	2.31	0.46
1:A:231:GLY:O	1:A:276:ARG:NH1	2.48	0.46
1:D:2586:HIS:NE2	1:D:2875:THR:HG21	2.31	0.46
1:D:3914:GLN:O	1:D:3918:THR:HG23	2.15	0.46
1:B:231:GLY:O	1:B:276:ARG:NH1	2.49	0.46
1:C:950:VAL:CG1	1:C:1064:LEU:HD13	2.46	0.46
1:D:438:LYS:NZ	1:D:507:VAL:HG11	2.31	0.46
1:D:950:VAL:CG1	1:D:1064:LEU:HD13	2.46	0.46
1:A:655:MET:N	1:A:792:VAL:O	2.48	0.46
1:B:2175:VAL:HG11	1:B:2219:TYR:OH	2.16	0.46
1:A:2133:MET:SD	1:A:2186:ILE:HD13	2.55	0.46
1:C:1257:GLN:O	1:C:1597:TRP:N	2.49	0.46
1:A:612:ASP:O	1:A:616:SER:CB	2.65	0.45
1:B:572:LEU:HD13	1:B:612:ASP:CB	2.46	0.45
1:A:950:VAL:CG1	1:A:1064:LEU:HD13	2.46	0.45
1:C:4942:MET:O	1:C:4946:ARG:N	2.49	0.45
1:A:1155:SER:OG	1:A:1156:TRP:N	2.50	0.45
1:D:231:GLY:O	1:D:276:ARG:NH1	2.48	0.45
1:A:411:GLU:OE1	1:A:411:GLU:N	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1097:LYS:NZ	1:A:1198:GLY:O	2.33	0.45
1:C:231:GLY:O	1:C:276:ARG:NH1	2.48	0.45
1:C:548:CYS:SG	1:C:578:VAL:HG22	2.56	0.45
1:D:1155:SER:OG	1:D:1156:TRP:N	2.50	0.45
1:D:3678:LYS:NZ	1:D:3682:GLU:OE1	2.48	0.45
1:A:548:CYS:SG	1:A:578:VAL:HG22	2.57	0.45
1:A:1172:THR:O	1:A:1172:THR:OG1	2.34	0.45
1:B:830:GLU:N	1:B:830:GLU:OE1	2.49	0.45
1:C:572:LEU:HD13	1:C:612:ASP:CB	2.47	0.45
1:C:612:ASP:O	1:C:616:SER:CB	2.64	0.45
1:C:858:THR:OG1	1:C:861:ALA:O	2.16	0.45
1:C:1155:SER:OG	1:C:1156:TRP:N	2.50	0.45
1:D:3923:ILE:HD13	1:D:3984:MET:SD	2.57	0.45
1:A:305:TYR:N	1:A:317:MET:O	2.46	0.45
1:C:438:LYS:NZ	1:C:507:VAL:HG11	2.31	0.45
1:D:4026:THR:O	1:D:4026:THR:OG1	2.32	0.45
1:B:1155:SER:OG	1:B:1156:TRP:N	2.49	0.45
1:B:3923:ILE:HD13	1:B:3984:MET:SD	2.57	0.45
1:B:4942:MET:O	1:B:4946:ARG:N	2.49	0.45
1:D:548:CYS:SG	1:D:578:VAL:HG22	2.57	0.45
1:A:18:ASP:OD1	1:A:18:ASP:N	2.47	0.45
1:A:1550:SER:HA	1:A:1553:VAL:HG12	1.99	0.45
1:A:4942:MET:O	1:A:4946:ARG:N	2.50	0.45
1:B:950:VAL:CG1	1:B:1064:LEU:HD13	2.46	0.45
1:D:830:GLU:OE1	1:D:830:GLU:N	2.49	0.45
1:D:2468:VAL:HG11	1:D:2521:THR:HG22	1.99	0.45
1:B:2461:PRO:HG3	1:B:2514:ALA:HB1	1.99	0.45
1:A:2468:VAL:HG11	1:A:2521:THR:HG22	1.99	0.44
1:A:2790:ARG:NH1	1:A:2791:THR:O	2.50	0.44
1:B:145:PHE:O	1:B:205:ALA:N	2.44	0.44
1:B:179:ASP:N	1:B:179:ASP:OD1	2.50	0.44
1:B:2468:VAL:HG11	1:B:2521:THR:HG22	1.99	0.44
1:D:612:ASP:O	1:D:616:SER:CB	2.65	0.44
1:D:721:ASP:O	1:D:724:SER:OG	2.12	0.44
1:B:411:GLU:OE1	1:B:411:GLU:N	2.50	0.44
1:C:409:GLN:NE2	1:C:3864:ASN:OD1	2.50	0.44
1:D:1504:ASN:OD1	1:D:1526:LYS:NZ	2.50	0.44
1:A:1681:VAL:HG12	1:A:1686:LEU:HD21	2.00	0.44
1:B:548:CYS:SG	1:B:578:VAL:HG22	2.57	0.44
1:B:1172:THR:O	1:B:1172:THR:OG1	2.33	0.44
1:C:179:ASP:OD1	1:C:179:ASP:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2175:VAL:HG11	1:C:2219:TYR:OH	2.17	0.44
1:A:3923:ILE:HD13	1:A:3984:MET:SD	2.57	0.44
1:B:579:LEU:HD11	1:B:616:SER:O	2.17	0.44
1:C:579:LEU:HD11	1:C:616:SER:O	2.18	0.44
1:D:179:ASP:OD1	1:D:179:ASP:N	2.50	0.44
1:D:509:SER:OG	1:D:510:SER:N	2.51	0.44
1:A:4821:ARG:NH1	1:D:4828:ASP:OD1	2.50	0.44
1:B:164:PRO:O	1:B:182:ILE:HD12	2.18	0.44
1:C:3923:ILE:HD13	1:C:3984:MET:SD	2.57	0.44
1:B:1550:SER:HA	1:B:1553:VAL:HG12	1.99	0.44
1:C:164:PRO:O	1:C:182:ILE:HD12	2.17	0.44
1:B:2790:ARG:NH1	1:B:2791:THR:O	2.51	0.44
1:C:1614:GLU:N	1:C:1619:LEU:O	2.50	0.44
1:C:2468:VAL:HG11	1:C:2521:THR:HG22	1.99	0.44
1:C:4828:ASP:OD1	1:D:4821:ARG:NH1	2.50	0.44
1:A:2461:PRO:HG3	1:A:2514:ALA:HB1	1.99	0.44
1:A:4828:ASP:OD1	1:B:4821:ARG:NH1	2.51	0.44
1:B:237:LEU:N	1:B:404:ASN:O	2.51	0.44
1:B:4828:ASP:OD1	1:C:4821:ARG:NH1	2.51	0.44
1:D:45:ARG:NH2	1:D:458:ASP:OD2	2.50	0.44
1:D:164:PRO:O	1:D:182:ILE:HD12	2.18	0.44
1:D:1506:LEU:N	1:D:1524:ASN:OD1	2.47	0.44
1:D:1614:GLU:N	1:D:1619:LEU:O	2.50	0.44
1:B:509:SER:OG	1:B:510:SER:N	2.51	0.44
1:A:509:SER:OG	1:A:510:SER:N	2.51	0.43
1:B:40:GLU:OE2	1:B:125:TYR:OH	2.36	0.43
1:B:1927:PHE:CG	1:B:2031:LEU:HD22	2.53	0.43
1:B:4962:GLU:O	1:B:4964:GLN:N	2.51	0.43
1:D:4962:GLU:O	1:D:4964:GLN:N	2.51	0.43
1:B:1681:VAL:HG12	1:B:1686:LEU:HD21	2.00	0.43
1:C:1613:SER:O	1:C:1613:SER:OG	2.32	0.43
1:C:2461:PRO:HG3	1:C:2514:ALA:HB1	2.01	0.43
1:B:3678:LYS:NZ	1:B:3682:GLU:OE1	2.48	0.43
1:C:237:LEU:N	1:C:404:ASN:O	2.51	0.43
1:C:1550:SER:O	1:C:1550:SER:OG	2.25	0.43
1:C:1927:PHE:CG	1:C:2031:LEU:HD22	2.53	0.43
1:C:2094:ILE:O	1:C:2098:VAL:HG13	2.18	0.43
1:C:4962:GLU:O	1:C:4964:GLN:N	2.51	0.43
1:D:1681:VAL:HG12	1:D:1686:LEU:HD21	2.00	0.43
1:D:2094:ILE:O	1:D:2098:VAL:HG13	2.18	0.43
1:D:2404:GLU:CB	1:D:2407:LEU:HD13	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:2461:PRO:HG3	1:D:2514:ALA:HB1	2.00	0.43
1:D:4615:TYR:O	1:D:4619:GLN:NE2	2.52	0.43
1:A:164:PRO:O	1:A:182:ILE:HD12	2.18	0.43
1:C:2790:ARG:NH1	1:C:2791:THR:O	2.51	0.43
1:C:4073:GLU:OE1	1:C:4073:GLU:N	2.51	0.43
1:D:3496:SER:O	1:D:3500:THR:OG1	2.30	0.43
1:A:579:LEU:HD11	1:A:616:SER:O	2.17	0.43
1:A:4073:GLU:N	1:A:4073:GLU:OE1	2.51	0.43
1:B:600:LEU:HD12	1:B:600:LEU:O	2.18	0.43
1:B:1691:GLU:OE1	1:B:1791:LYS:NZ	2.33	0.43
1:B:2636:GLU:OE1	1:B:2636:GLU:N	2.48	0.43
1:B:3011:GLY:O	1:B:3015:ARG:NE	2.52	0.43
1:B:4073:GLU:OE1	1:B:4073:GLU:N	2.51	0.43
1:B:4615:TYR:O	1:B:4619:GLN:NE2	2.52	0.43
1:C:45:ARG:NH2	1:C:458:ASP:OD2	2.50	0.43
1:C:600:LEU:O	1:C:600:LEU:HD12	2.18	0.43
1:D:40:GLU:OE2	1:D:125:TYR:OH	2.36	0.43
1:D:411:GLU:OE1	1:D:411:GLU:N	2.50	0.43
1:D:1613:SER:O	1:D:1613:SER:OG	2.32	0.43
1:D:1927:PHE:CG	1:D:2031:LEU:HD22	2.53	0.43
1:D:2636:GLU:OE1	1:D:2636:GLU:N	2.49	0.43
1:A:758:CYS:SG	1:A:767:SER:OG	2.77	0.43
1:A:2175:VAL:HG11	1:A:2219:TYR:OH	2.18	0.43
1:B:1500:ARG:HA	1:B:1505:GLY:C	2.39	0.43
1:B:2404:GLU:CB	1:B:2407:LEU:HD13	2.48	0.43
1:C:509:SER:OG	1:C:510:SER:N	2.51	0.43
1:C:1550:SER:HA	1:C:1553:VAL:HG12	2.00	0.43
1:C:2404:GLU:CB	1:C:2407:LEU:HD13	2.48	0.43
1:C:4615:TYR:O	1:C:4619:GLN:NE2	2.51	0.43
1:A:179:ASP:OD1	1:A:179:ASP:N	2.50	0.43
1:B:1504:ASN:OD1	1:B:1524:ASN:ND2	2.51	0.43
1:C:758:CYS:SG	1:C:767:SER:OG	2.76	0.43
1:C:1734:THR:HG22	1:C:1756:THR:OG1	2.19	0.43
1:C:3011:GLY:O	1:C:3015:ARG:NE	2.52	0.43
1:D:3738:MET:O	1:D:3742:THR:HG23	2.19	0.43
1:A:2094:ILE:O	1:A:2098:VAL:HG13	2.18	0.43
1:A:2404:GLU:CB	1:A:2407:LEU:HD13	2.48	0.43
1:A:3738:MET:O	1:A:3742:THR:HG23	2.19	0.43
1:B:375:GLN:N	1:B:390:LYS:O	2.52	0.43
1:C:3678:LYS:NZ	1:C:3682:GLU:OE1	2.48	0.43
1:D:1734:THR:HG22	1:D:1756:THR:OG1	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4962:GLU:O	1:A:4964:GLN:N	2.51	0.43
1:B:2094:ILE:O	1:B:2098:VAL:HG13	2.18	0.43
1:D:237:LEU:N	1:D:404:ASN:O	2.51	0.43
1:D:600:LEU:HD12	1:D:600:LEU:O	2.18	0.43
1:D:1255:LEU:HD13	1:D:1451:HIS:CE1	2.54	0.43
1:B:436:LEU:HD11	1:B:445:ILE:HG23	2.01	0.42
1:C:587:ASN:N	1:C:587:ASN:OD1	2.52	0.42
1:D:579:LEU:HD21	1:D:586:LEU:CD1	2.49	0.42
1:D:587:ASN:OD1	1:D:587:ASN:N	2.52	0.42
1:D:1550:SER:HA	1:D:1553:VAL:HG12	1.99	0.42
1:A:1168:MET:HE3	1:A:1197:VAL:HG22	2.01	0.42
1:C:636:LEU:O	1:C:642:LEU:HD21	2.19	0.42
1:C:3738:MET:O	1:C:3742:THR:HG23	2.18	0.42
1:A:40:GLU:OE2	1:A:125:TYR:OH	2.36	0.42
1:A:579:LEU:HD21	1:A:586:LEU:CD1	2.49	0.42
1:A:1255:LEU:HD13	1:A:1451:HIS:CE1	2.55	0.42
1:D:579:LEU:HD11	1:D:616:SER:O	2.18	0.42
1:D:2175:VAL:HG11	1:D:2219:TYR:OH	2.18	0.42
1:A:855:VAL:HG12	1:A:1084:ARG:HD3	2.01	0.42
1:A:1927:PHE:CG	1:A:2031:LEU:HD22	2.53	0.42
1:D:436:LEU:HD11	1:D:445:ILE:HG23	2.01	0.42
1:D:3011:GLY:O	1:D:3015:ARG:NE	2.51	0.42
1:A:600:LEU:HD12	1:A:600:LEU:O	2.18	0.42
1:B:636:LEU:O	1:B:642:LEU:HD21	2.20	0.42
1:B:1255:LEU:HD13	1:B:1451:HIS:CE1	2.54	0.42
1:B:1734:THR:HG22	1:B:1756:THR:OG1	2.19	0.42
1:B:3738:MET:O	1:B:3742:THR:HG23	2.19	0.42
1:C:1255:LEU:HD13	1:C:1451:HIS:CE1	2.54	0.42
1:C:2313:GLU:O	1:C:2317:ASN:ND2	2.52	0.42
1:D:1168:MET:HE3	1:D:1197:VAL:HG22	2.01	0.42
1:A:237:LEU:N	1:A:404:ASN:O	2.51	0.42
1:A:823:TYR:O	1:A:826:VAL:HG23	2.20	0.42
1:B:823:TYR:O	1:B:826:VAL:HG23	2.20	0.42
1:C:436:LEU:HD11	1:C:445:ILE:HG23	2.01	0.42
1:C:2095:GLY:O	1:C:2099:ARG:NH1	2.53	0.42
1:D:4765:GLN:OE1	1:D:4765:GLN:N	2.52	0.42
1:A:3011:GLY:O	1:A:3015:ARG:NE	2.52	0.42
1:B:61:ASP:OD2	1:B:298:ARG:NH1	2.53	0.42
1:B:579:LEU:HD21	1:B:586:LEU:CD1	2.50	0.42
1:D:375:GLN:N	1:D:390:LYS:O	2.52	0.42
1:A:45:ARG:NH2	1:A:458:ASP:OD2	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:537:LEU:O	1:B:537:LEU:HD22	2.20	0.42
1:C:1681:VAL:HG12	1:C:1686:LEU:HD21	2.01	0.42
1:C:1812:GLY:O	1:C:1814:THR:N	2.53	0.42
1:D:2313:GLU:O	1:D:2317:ASN:ND2	2.53	0.42
1:A:2095:GLY:O	1:A:2099:ARG:NH1	2.53	0.42
1:B:45:ARG:NH2	1:B:458:ASP:OD2	2.50	0.42
1:B:1168:MET:HE3	1:B:1197:VAL:HG22	2.01	0.42
1:C:579:LEU:HD21	1:C:586:LEU:CD1	2.49	0.42
1:A:61:ASP:OD2	1:A:298:ARG:NH1	2.53	0.42
1:A:1614:GLU:N	1:A:1619:LEU:O	2.50	0.42
1:B:504:ARG:O	1:B:507:VAL:HG13	2.20	0.42
1:C:40:GLU:OE2	1:C:125:TYR:OH	2.37	0.42
1:C:537:LEU:HD22	1:C:537:LEU:O	2.20	0.42
1:D:4942:MET:O	1:D:4946:ARG:N	2.50	0.42
1:A:504:ARG:O	1:A:507:VAL:HG13	2.20	0.41
1:B:587:ASN:OD1	1:B:587:ASN:N	2.52	0.41
1:C:1168:MET:HE3	1:C:1197:VAL:HG22	2.01	0.41
1:D:823:TYR:O	1:D:826:VAL:HG23	2.20	0.41
2:F:11:ASP:OD2	2:F:14:THR:OG1	2.16	0.41
1:A:2107:ILE:HG22	1:A:2157:HIS:CE1	2.55	0.41
1:B:1731:THR:O	1:B:1734:THR:OG1	2.37	0.41
1:B:2495:LEU:HD13	1:B:2872:PRO:HD2	2.02	0.41
1:C:566:GLU:HG2	1:C:1587:LEU:HD21	2.02	0.41
1:C:2495:LEU:HD13	1:C:2872:PRO:HD2	2.02	0.41
1:D:2260:ASP:OD1	1:D:2260:ASP:N	2.53	0.41
1:A:1083:GLU:O	1:A:1209:VAL:HG23	2.20	0.41
1:A:1734:THR:HG22	1:A:1756:THR:OG1	2.19	0.41
1:A:2260:ASP:OD1	1:A:2260:ASP:N	2.53	0.41
1:B:2107:ILE:HG22	1:B:2157:HIS:CE1	2.55	0.41
1:D:504:ARG:O	1:D:507:VAL:HG13	2.20	0.41
1:B:1083:GLU:O	1:B:1209:VAL:HG23	2.20	0.41
1:B:1550:SER:O	1:B:1550:SER:OG	2.24	0.41
1:B:1633:ILE:N	1:B:1637:ASN:OD1	2.53	0.41
1:C:414:ARG:O	1:C:418:VAL:HG13	2.21	0.41
1:C:823:TYR:O	1:C:826:VAL:HG23	2.20	0.41
1:D:2495:LEU:HD13	1:D:2872:PRO:HD2	2.02	0.41
1:D:4073:GLU:N	1:D:4073:GLU:OE1	2.51	0.41
1:A:566:GLU:HG2	1:A:1587:LEU:HD21	2.03	0.41
1:A:1118:SER:OG	1:A:1119:ARG:N	2.53	0.41
1:B:414:ARG:O	1:B:418:VAL:HG13	2.21	0.41
1:B:1118:SER:OG	1:B:1119:ARG:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1614:GLU:N	1:B:1619:LEU:O	2.50	0.41
1:B:2313:GLU:O	1:B:2317:ASN:ND2	2.52	0.41
1:D:414:ARG:O	1:D:418:VAL:HG13	2.21	0.41
1:D:2095:GLY:O	1:D:2099:ARG:NH1	2.53	0.41
1:A:537:LEU:HD22	1:A:537:LEU:O	2.20	0.41
1:A:2313:GLU:O	1:A:2317:ASN:ND2	2.53	0.41
1:B:1613:SER:O	1:B:1613:SER:OG	2.32	0.41
1:B:1641:ASP:OD1	1:B:1642:ILE:N	2.54	0.41
1:C:1118:SER:OG	1:C:1119:ARG:N	2.53	0.41
1:C:1641:ASP:OD1	1:C:1642:ILE:N	2.54	0.41
1:C:2260:ASP:N	1:C:2260:ASP:OD1	2.53	0.41
1:C:4903:GLY:O	1:C:4906:THR:OG1	2.35	0.41
1:D:1641:ASP:OD1	1:D:1642:ILE:N	2.54	0.41
1:A:1038:LEU:HD13	1:A:1042:THR:HG21	2.03	0.41
1:A:1714:SER:HG	1:A:1777:TYR:HD1	1.65	0.41
1:A:2081:ARG:O	1:A:2085:VAL:HG23	2.21	0.41
1:B:566:GLU:HG2	1:B:1587:LEU:HD21	2.03	0.41
1:C:209:GLN:OE1	1:C:210:THR:N	2.54	0.41
1:C:1083:GLU:O	1:C:1209:VAL:HG23	2.20	0.41
1:D:537:LEU:HD22	1:D:537:LEU:O	2.20	0.41
1:D:579:LEU:HD21	1:D:586:LEU:HD12	2.03	0.41
1:D:4666:SER:O	1:D:4670:GLY:N	2.54	0.41
1:B:2095:GLY:O	1:B:2099:ARG:NH1	2.53	0.41
1:C:504:ARG:O	1:C:507:VAL:HG13	2.20	0.41
1:C:1946:VAL:HG12	1:C:1947:MET:H	1.86	0.41
1:A:436:LEU:HD11	1:A:445:ILE:HG23	2.01	0.41
1:A:4666:SER:O	1:A:4670:GLY:N	2.54	0.41
1:B:536:LEU:HD12	1:B:537:LEU:N	2.36	0.41
1:B:758:CYS:SG	1:B:767:SER:OG	2.79	0.41
1:B:2260:ASP:OD1	1:B:2260:ASP:N	2.53	0.41
1:B:2576:CYS:N	1:B:2578:GLN:OE1	2.54	0.41
1:B:4765:GLN:OE1	1:B:4765:GLN:N	2.52	0.41
1:C:2039:LYS:NZ	1:C:2040:LYS:O	2.42	0.41
1:C:4765:GLN:OE1	1:C:4765:GLN:N	2.52	0.41
1:C:4826:ILE:HG13	1:C:4830:ILE:HD12	2.03	0.41
1:D:536:LEU:HD12	1:D:537:LEU:N	2.36	0.41
1:D:758:CYS:SG	1:D:767:SER:OG	2.76	0.41
1:D:1038:LEU:HD13	1:D:1042:THR:HG21	2.02	0.41
1:D:2107:ILE:HG22	1:D:2157:HIS:CE1	2.55	0.41
1:D:3356:ASP:O	1:D:3360:THR:OG1	2.16	0.41
1:A:4615:TYR:O	1:A:4619:GLN:NE2	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:715:GLY:O	1:B:717:GLY:N	2.54	0.41
1:C:2081:ARG:O	1:C:2085:VAL:HG23	2.21	0.41
1:C:3864:ASN:OD1	1:C:3865:THR:OG1	2.15	0.41
1:D:1118:SER:OG	1:D:1119:ARG:N	2.54	0.41
1:D:1946:VAL:HG12	1:D:1947:MET:H	1.86	0.41
1:D:2039:LYS:NZ	1:D:2040:LYS:O	2.43	0.41
1:B:534:TYR:CD1	1:B:537:LEU:HD12	2.56	0.40
1:B:939:THR:O	1:B:943:LEU:HD22	2.22	0.40
1:B:2081:ARG:O	1:B:2085:VAL:HG23	2.21	0.40
1:C:2107:ILE:HG22	1:C:2157:HIS:CE1	2.55	0.40
1:D:534:TYR:CD1	1:D:537:LEU:HD12	2.56	0.40
1:D:2576:CYS:N	1:D:2578:GLN:OE1	2.54	0.40
1:A:375:GLN:N	1:A:390:LYS:O	2.52	0.40
1:A:587:ASN:OD1	1:A:587:ASN:N	2.53	0.40
1:A:715:GLY:O	1:A:717:GLY:N	2.54	0.40
1:A:939:THR:O	1:A:943:LEU:HD22	2.22	0.40
1:A:1633:ILE:N	1:A:1637:ASN:OD1	2.54	0.40
1:A:1641:ASP:OD1	1:A:1642:ILE:N	2.54	0.40
1:C:375:GLN:N	1:C:390:LYS:O	2.52	0.40
1:C:411:GLU:OE1	1:C:411:GLU:N	2.50	0.40
1:C:579:LEU:HD21	1:C:586:LEU:HD12	2.03	0.40
1:C:1176:THR:O	1:C:1176:THR:OG1	2.39	0.40
1:D:61:ASP:OD2	1:D:298:ARG:NH1	2.53	0.40
1:A:152:ASP:O	1:A:154:THR:HG23	2.22	0.40
1:A:4765:GLN:OE1	1:A:4765:GLN:N	2.52	0.40
1:B:1177:LEU:HD12	1:B:1182:LEU:HD11	2.03	0.40
1:D:715:GLY:O	1:D:717:GLY:N	2.54	0.40
1:D:2008:ILE:HG23	1:D:2012:GLU:CB	2.51	0.40
1:A:364:GLN:NE2	1:A:369:GLY:O	2.54	0.40
1:A:534:TYR:CD1	1:A:537:LEU:HD12	2.56	0.40
1:A:3864:ASN:OD1	1:A:3865:THR:OG1	2.15	0.40
1:C:536:LEU:HD12	1:C:537:LEU:N	2.36	0.40
1:D:134:SER:O	1:D:134:SER:OG	2.35	0.40
1:D:1083:GLU:O	1:D:1209:VAL:HG23	2.20	0.40
1:A:1946:VAL:HG12	1:A:1947:MET:H	1.86	0.40
1:B:1031:ARG:HG2	1:B:1038:LEU:HD11	2.04	0.40
1:B:1812:GLY:O	1:B:1814:THR:N	2.53	0.40
1:C:715:GLY:O	1:C:717:GLY:N	2.54	0.40
1:C:1177:LEU:HD12	1:C:1182:LEU:HD11	2.04	0.40
1:D:193:HIS:CG	1:D:206:ALA:HB3	2.57	0.40
1:D:566:GLU:HG2	1:D:1587:LEU:HD21	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:896:ASN:OD1	1:D:896:ASN:N	2.55	0.40
1:D:2468:VAL:HG11	1:D:2521:THR:CG2	2.52	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	3849/4966 (78%)	3318 (86%)	523 (14%)	8 (0%)	47	77
1	B	3849/4966 (78%)	3325 (86%)	517 (13%)	7 (0%)	47	77
1	C	3849/4966 (78%)	3323 (86%)	516 (13%)	10 (0%)	41	72
1	D	3849/4966 (78%)	3329 (86%)	512 (13%)	8 (0%)	47	77
2	E	105/107 (98%)	98 (93%)	7 (7%)	0	100	100
2	F	105/107 (98%)	98 (93%)	7 (7%)	0	100	100
2	G	105/107 (98%)	98 (93%)	7 (7%)	0	100	100
2	H	105/107 (98%)	98 (93%)	7 (7%)	0	100	100
All	All	15816/20292 (78%)	13687 (86%)	2096 (13%)	33 (0%)	50	77

All (33) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	607	ASN
1	B	607	ASN
1	B	1501	ASN
1	C	607	ASN
1	C	1497	GLY
1	C	2133	MET
1	D	607	ASN
1	D	1501	ASN

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Mol	Chain	Res	Type
1	A	1501	ASN
1	A	2230	SER
1	B	2230	SER
1	C	1500	ARG
1	C	1501	ASN
1	C	2230	SER
1	D	2230	SER
1	A	1262	PRO
1	A	1500	ARG
1	B	1262	PRO
1	C	1262	PRO
1	D	1262	PRO
1	D	2658	GLN
1	A	1781	PRO
1	B	1781	PRO
1	C	1781	PRO
1	D	1781	PRO
1	A	2231	PRO
1	B	2231	PRO
1	B	2285	PRO
1	C	2231	PRO
1	D	2231	PRO
1	A	2285	PRO
1	C	2285	PRO
1	D	2285	PRO

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	3181/4355 (73%)	3121 (98%)	60 (2%)	57 77
1	B	3181/4355 (73%)	3120 (98%)	61 (2%)	57 77
1	C	3181/4355 (73%)	3124 (98%)	57 (2%)	59 78
1	D	3181/4355 (73%)	3117 (98%)	64 (2%)	55 76
2	E	88/88 (100%)	85 (97%)	3 (3%)	37 65

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	F	88/88 (100%)	85 (97%)	3 (3%)	37	65
2	G	88/88 (100%)	85 (97%)	3 (3%)	37	65
2	H	88/88 (100%)	85 (97%)	3 (3%)	37	65
All	All	13076/17772 (74%)	12822 (98%)	254 (2%)	59	77

All (254) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	42	PHE
1	A	125	TYR
1	A	132	CYS
1	A	179	ASP
1	A	420	ARG
1	A	421	SER
1	A	500	GLU
1	A	536	LEU
1	A	537	LEU
1	A	540	LEU
1	A	542	ARG
1	A	544	ASN
1	A	640	ARG
1	A	644	LEU
1	A	648	LEU
1	A	731	HIS
1	A	760	ASP
1	A	802	PHE
1	A	890	HIS
1	A	895	MET
1	A	962	LYS
1	A	976	TYR
1	A	981	MET
1	A	1239	PHE
1	A	1301	PHE
1	A	1429	SER
1	A	1450	PHE
1	A	1506	LEU
1	A	1545	PHE
1	A	1611	ARG
1	A	1621	GLN
1	A	1769	PHE
1	A	1944	ASN

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Mol	Chain	Res	Type
1	A	2130	SER
1	A	2133	MET
1	A	2260	ASP
1	A	2470	PHE
1	A	2593	PHE
1	A	2610	THR
1	A	2659	GLU
1	A	2678	ASP
1	A	2679	TYR
1	A	2736	LEU
1	A	2887	LYS
1	A	3264	CYS
1	A	3634	TYR
1	A	3642	ASP
1	A	3679	CYS
1	A	3766	ASN
1	A	3798	SER
1	A	3853	PHE
1	A	3937	SER
1	A	4117	PHE
1	A	4182	LYS
1	A	4518	TYR
1	A	4632	LEU
1	A	4644	TRP
1	A	4659	PHE
1	A	4698	ASN
1	A	4800	THR
1	B	42	PHE
1	B	125	TYR
1	B	132	CYS
1	B	179	ASP
1	B	420	ARG
1	B	500	GLU
1	B	501	CYS
1	B	536	LEU
1	B	537	LEU
1	B	540	LEU
1	B	542	ARG
1	B	544	ASN
1	B	640	ARG
1	B	644	LEU
1	B	648	LEU

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Mol	Chain	Res	Type
1	B	731	HIS
1	B	760	ASP
1	B	802	PHE
1	B	890	HIS
1	B	895	MET
1	B	962	LYS
1	B	976	TYR
1	B	1239	PHE
1	B	1301	PHE
1	B	1429	SER
1	B	1450	PHE
1	B	1503	SER
1	B	1506	LEU
1	B	1545	PHE
1	B	1611	ARG
1	B	1621	GLN
1	B	1627	GLN
1	B	1769	PHE
1	B	1944	ASN
1	B	2039	LYS
1	B	2130	SER
1	B	2260	ASP
1	B	2470	PHE
1	B	2593	PHE
1	B	2610	THR
1	B	2658	GLN
1	B	2678	ASP
1	B	2679	TYR
1	B	2736	LEU
1	B	2887	LYS
1	B	3264	CYS
1	B	3634	TYR
1	B	3642	ASP
1	B	3679	CYS
1	B	3766	ASN
1	B	3798	SER
1	B	3853	PHE
1	B	3937	SER
1	B	4117	PHE
1	B	4182	LYS
1	B	4518	TYR
1	B	4632	LEU

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Mol	Chain	Res	Type
1	B	4644	TRP
1	B	4659	PHE
1	B	4698	ASN
1	B	4800	THR
1	C	42	PHE
1	C	125	TYR
1	C	132	CYS
1	C	179	ASP
1	C	420	ARG
1	C	500	GLU
1	C	501	CYS
1	C	536	LEU
1	C	537	LEU
1	C	540	LEU
1	C	542	ARG
1	C	544	ASN
1	C	640	ARG
1	C	644	LEU
1	C	648	LEU
1	C	760	ASP
1	C	787	LEU
1	C	802	PHE
1	C	824	GLU
1	C	890	HIS
1	C	895	MET
1	C	962	LYS
1	C	976	TYR
1	C	981	MET
1	C	1239	PHE
1	C	1300	MET
1	C	1301	PHE
1	C	1450	PHE
1	C	1506	LEU
1	C	1545	PHE
1	C	1611	ARG
1	C	1621	GLN
1	C	1769	PHE
1	C	1910	GLN
1	C	1944	ASN
1	C	2039	LYS
1	C	2260	ASP
1	C	2470	PHE

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Mol	Chain	Res	Type
1	C	2593	PHE
1	C	2656	TYR
1	C	2887	LYS
1	C	2897	ILE
1	C	3264	CYS
1	C	3634	TYR
1	C	3642	ASP
1	C	3679	CYS
1	C	3766	ASN
1	C	3798	SER
1	C	3853	PHE
1	C	3937	SER
1	C	4117	PHE
1	C	4182	LYS
1	C	4518	TYR
1	C	4632	LEU
1	C	4644	TRP
1	C	4659	PHE
1	C	4800	THR
1	D	42	PHE
1	D	125	TYR
1	D	132	CYS
1	D	179	ASP
1	D	420	ARG
1	D	421	SER
1	D	500	GLU
1	D	536	LEU
1	D	537	LEU
1	D	540	LEU
1	D	542	ARG
1	D	544	ASN
1	D	640	ARG
1	D	644	LEU
1	D	648	LEU
1	D	760	ASP
1	D	787	LEU
1	D	802	PHE
1	D	890	HIS
1	D	895	MET
1	D	962	LYS
1	D	976	TYR
1	D	981	MET

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Mol	Chain	Res	Type
1	D	1239	PHE
1	D	1301	PHE
1	D	1429	SER
1	D	1450	PHE
1	D	1506	LEU
1	D	1545	PHE
1	D	1611	ARG
1	D	1621	GLN
1	D	1627	GLN
1	D	1769	PHE
1	D	1910	GLN
1	D	1944	ASN
1	D	2039	LYS
1	D	2130	SER
1	D	2260	ASP
1	D	2470	PHE
1	D	2593	PHE
1	D	2610	THR
1	D	2651	LEU
1	D	2652	SER
1	D	2654	LYS
1	D	2655	LYS
1	D	2656	TYR
1	D	2679	TYR
1	D	2887	LYS
1	D	3264	CYS
1	D	3634	TYR
1	D	3642	ASP
1	D	3679	CYS
1	D	3766	ASN
1	D	3798	SER
1	D	3853	PHE
1	D	3937	SER
1	D	4117	PHE
1	D	4182	LYS
1	D	4518	TYR
1	D	4632	LEU
1	D	4644	TRP
1	D	4659	PHE
1	D	4698	ASN
1	D	4800	THR
2	E	31	GLN

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Mol	Chain	Res	Type
2	E	38	SER
2	E	49	ARG
2	F	31	GLN
2	F	38	SER
2	F	49	ARG
2	G	31	GLN
2	G	38	SER
2	G	49	ARG
2	H	31	GLN
2	H	38	SER
2	H	49	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (29) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	409	GLN
1	A	658	ASN
1	A	781	ASN
1	A	930	ASN
1	A	1440	ASN
1	A	1547	GLN
1	A	4056	HIS
1	B	409	GLN
1	B	658	ASN
1	B	781	ASN
1	B	930	ASN
1	B	1440	ASN
1	B	4056	HIS
1	C	409	GLN
1	C	658	ASN
1	C	781	ASN
1	C	930	ASN
1	C	1440	ASN
1	C	1451	HIS
1	C	1547	GLN
1	C	2090	GLN
1	C	4056	HIS
1	D	409	GLN
1	D	658	ASN
1	D	781	ASN
1	D	930	ASN
1	D	1440	ASN

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Mol	Chain	Res	Type
1	D	2090	GLN
1	D	4056	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 4 ligands modelled in this entry, 4 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

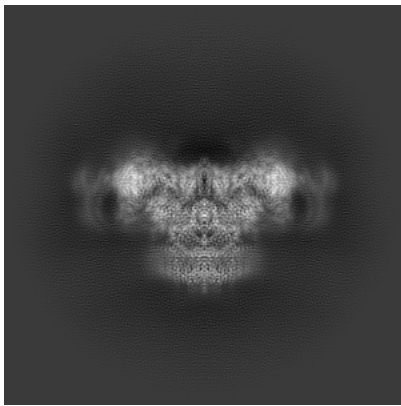
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-21861. These allow visual inspection of the internal detail of the map and identification of artifacts.

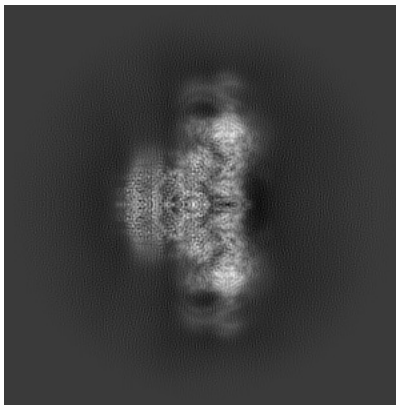
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

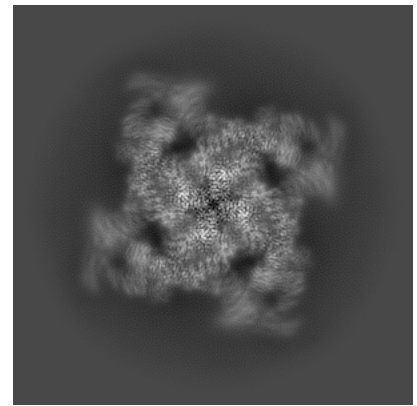
6.1.1 Primary map



X

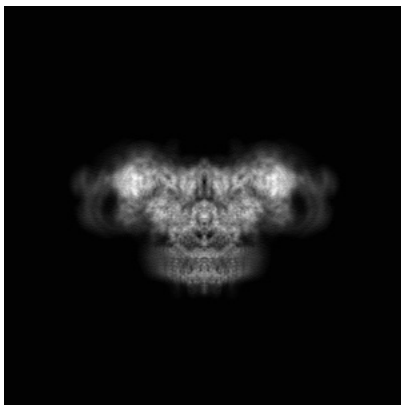


Y

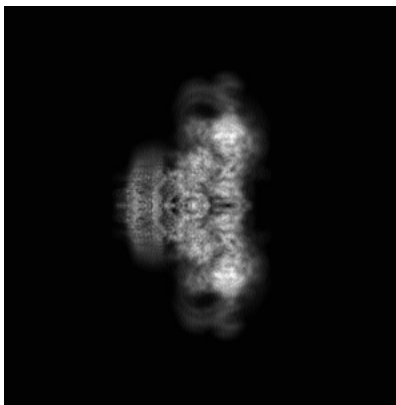


Z

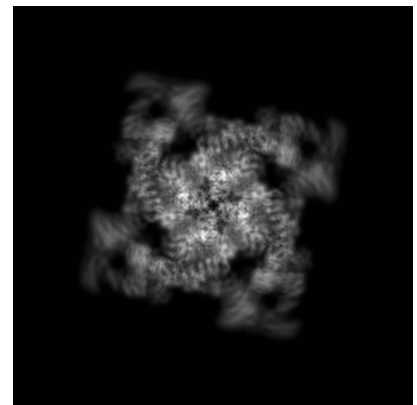
6.1.2 Raw map



X



Y

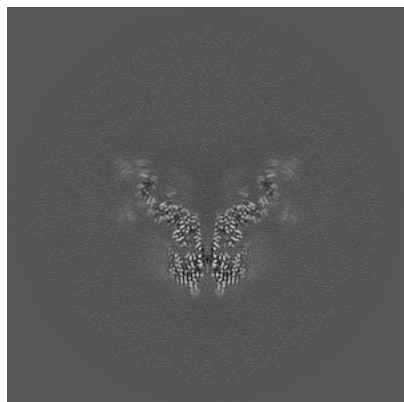


Z

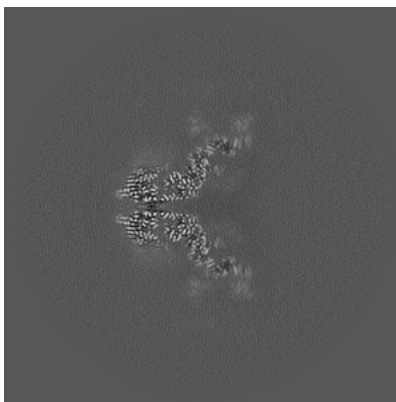
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

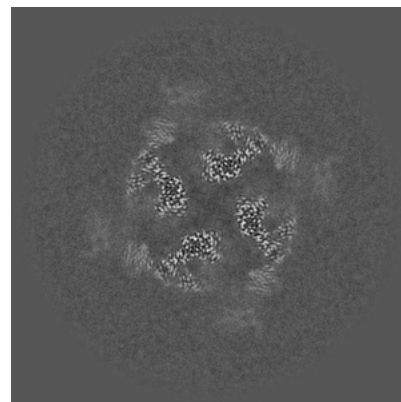
6.2.1 Primary map



X Index: 232

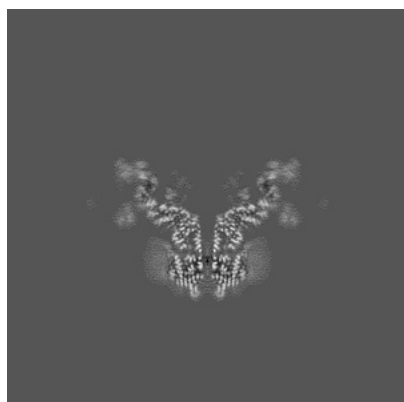


Y Index: 232

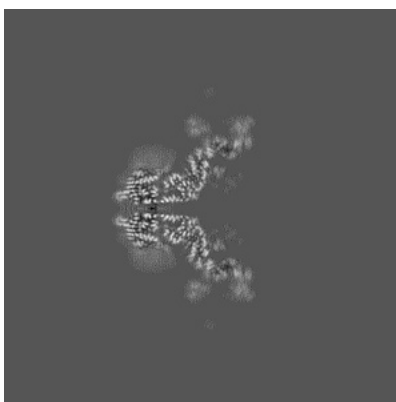


Z Index: 232

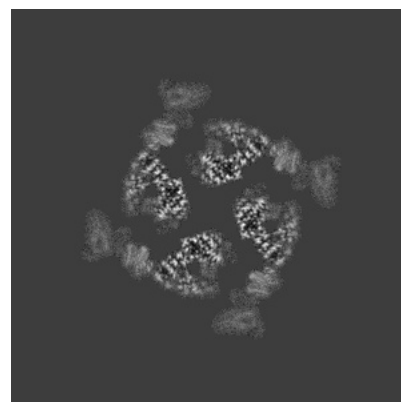
6.2.2 Raw map



X Index: 232



Y Index: 232

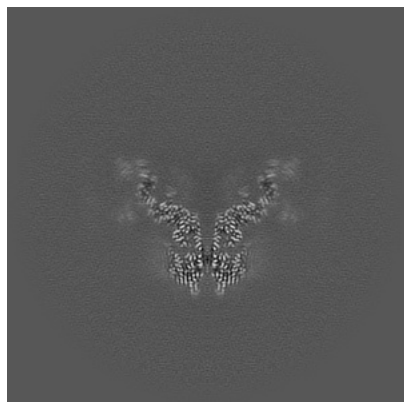


Z Index: 232

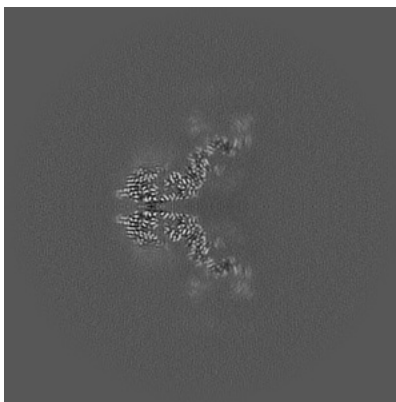
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

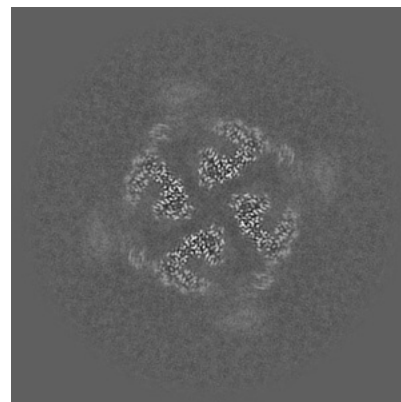
6.3.1 Primary map



X Index: 232

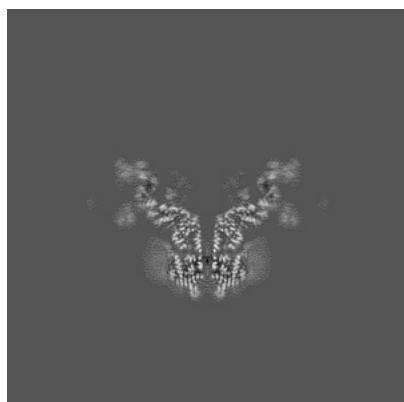


Y Index: 232

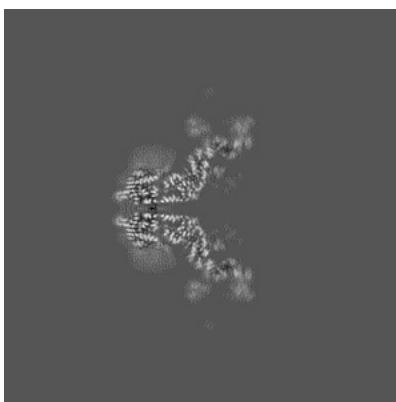


Z Index: 227

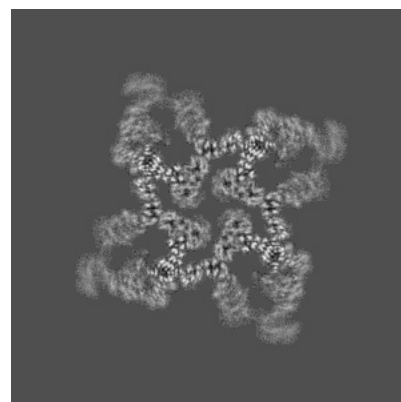
6.3.2 Raw map



X Index: 232



Y Index: 232

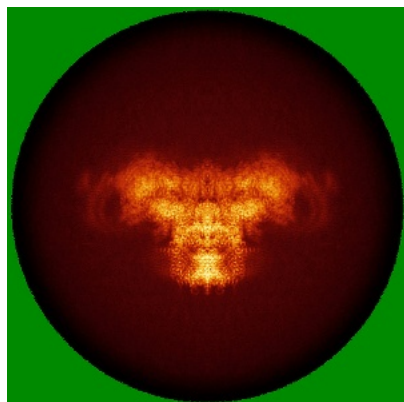


Z Index: 259

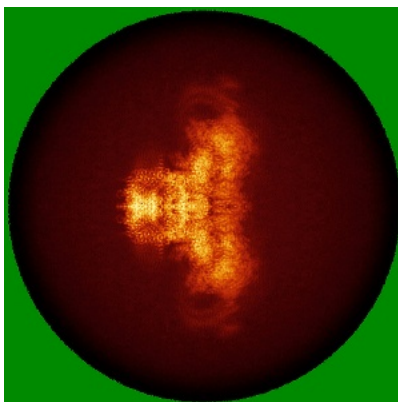
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

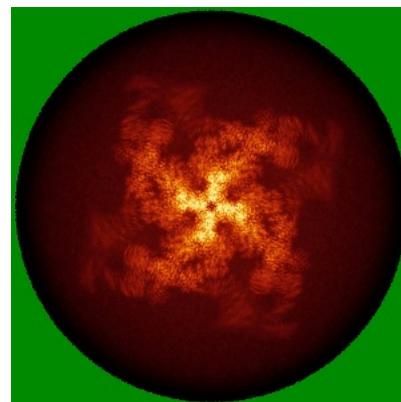
6.4.1 Primary map



X

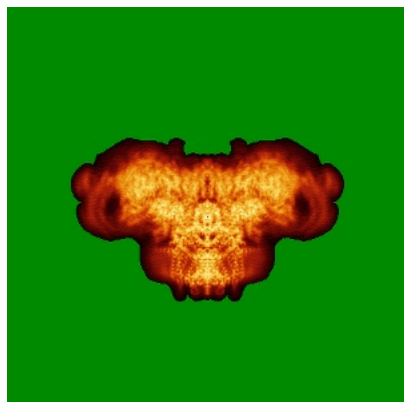


Y

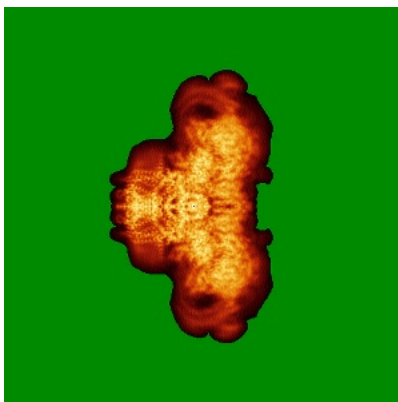


Z

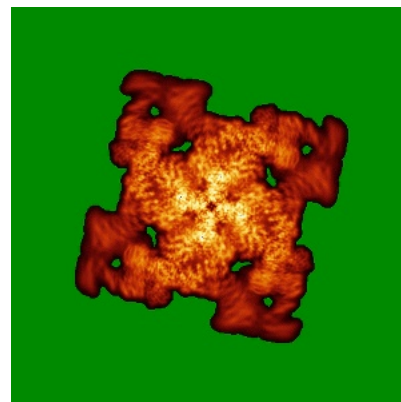
6.4.2 Raw map



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 0.132. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

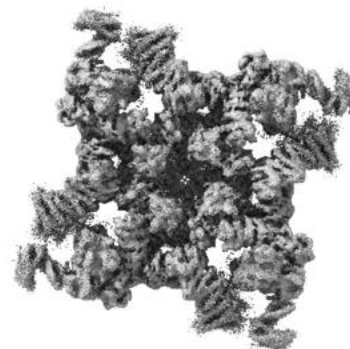
6.5.2 Raw map



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.

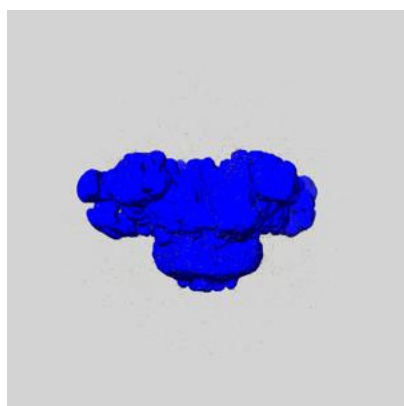
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

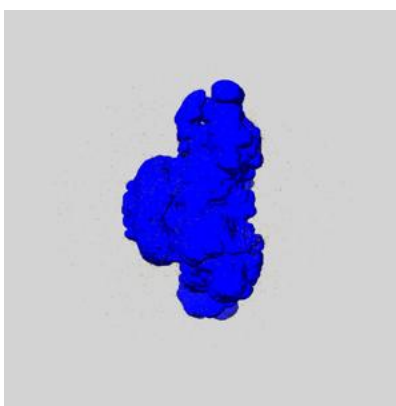
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

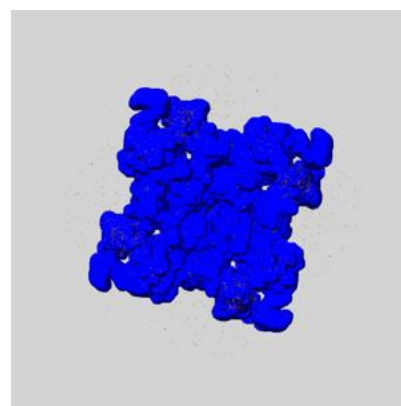
6.6.1 emd_21861_msk_1.map [i](#)



X



Y

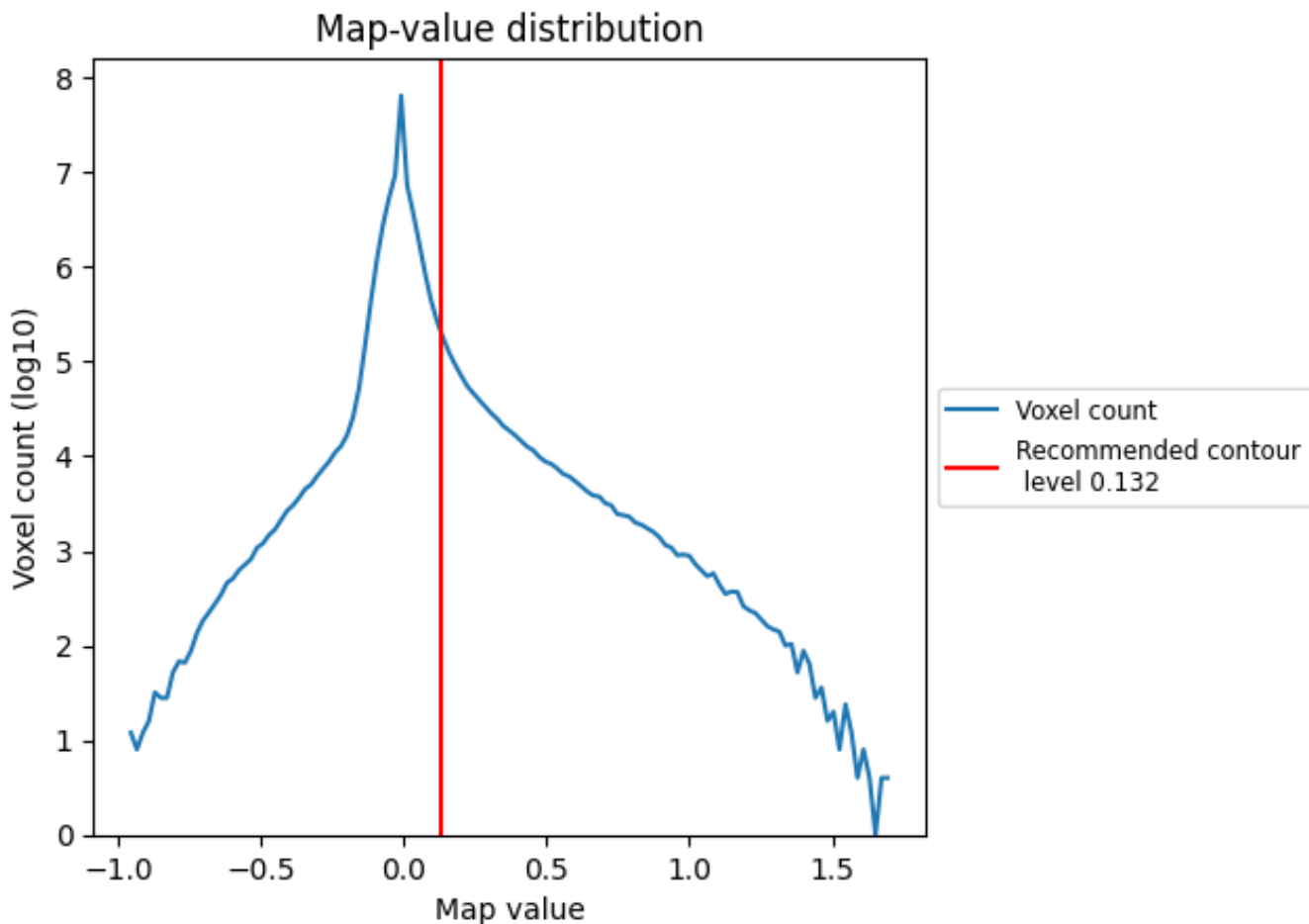


Z

7 Map analysis [i](#)

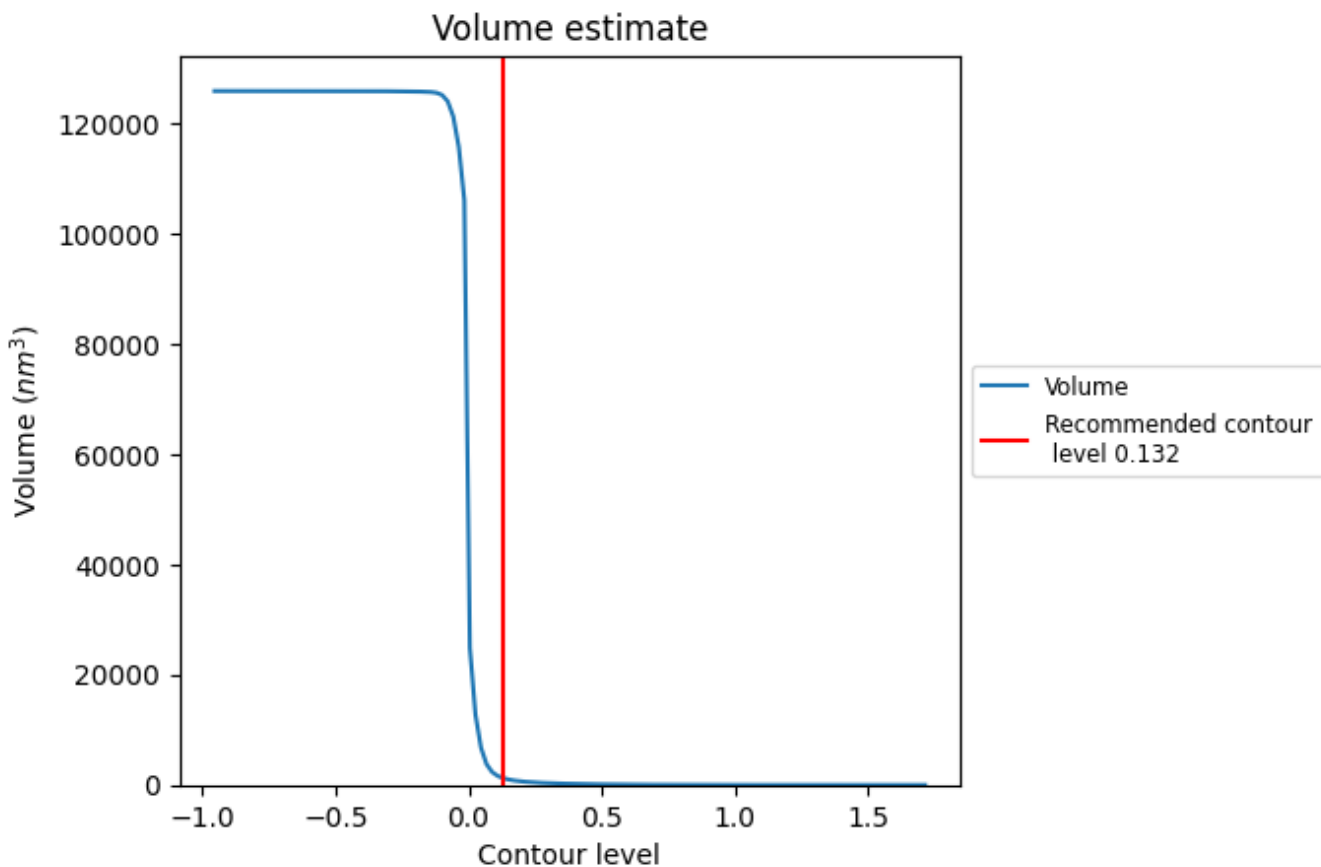
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

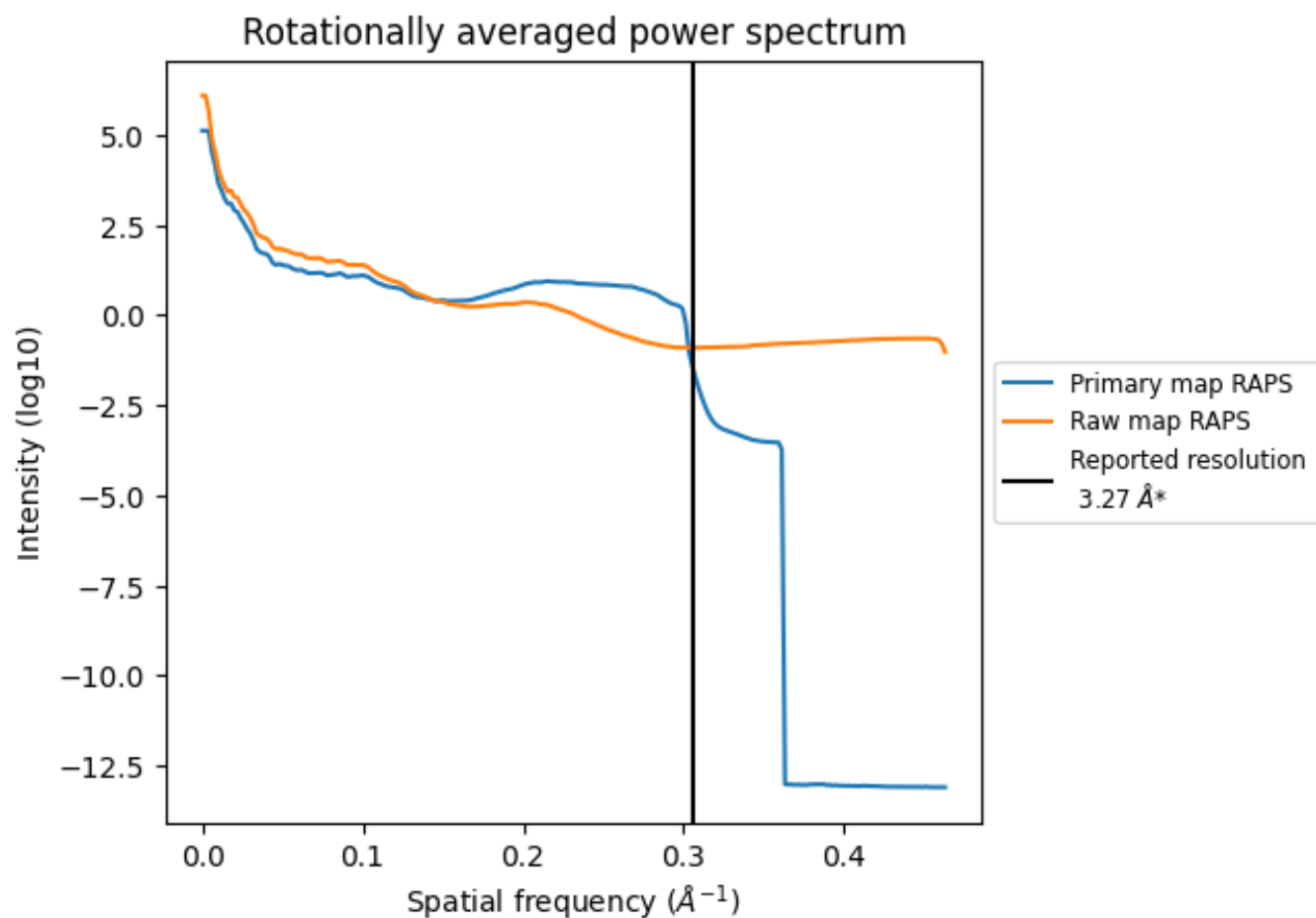
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1213 nm^3 ; this corresponds to an approximate mass of 1096 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

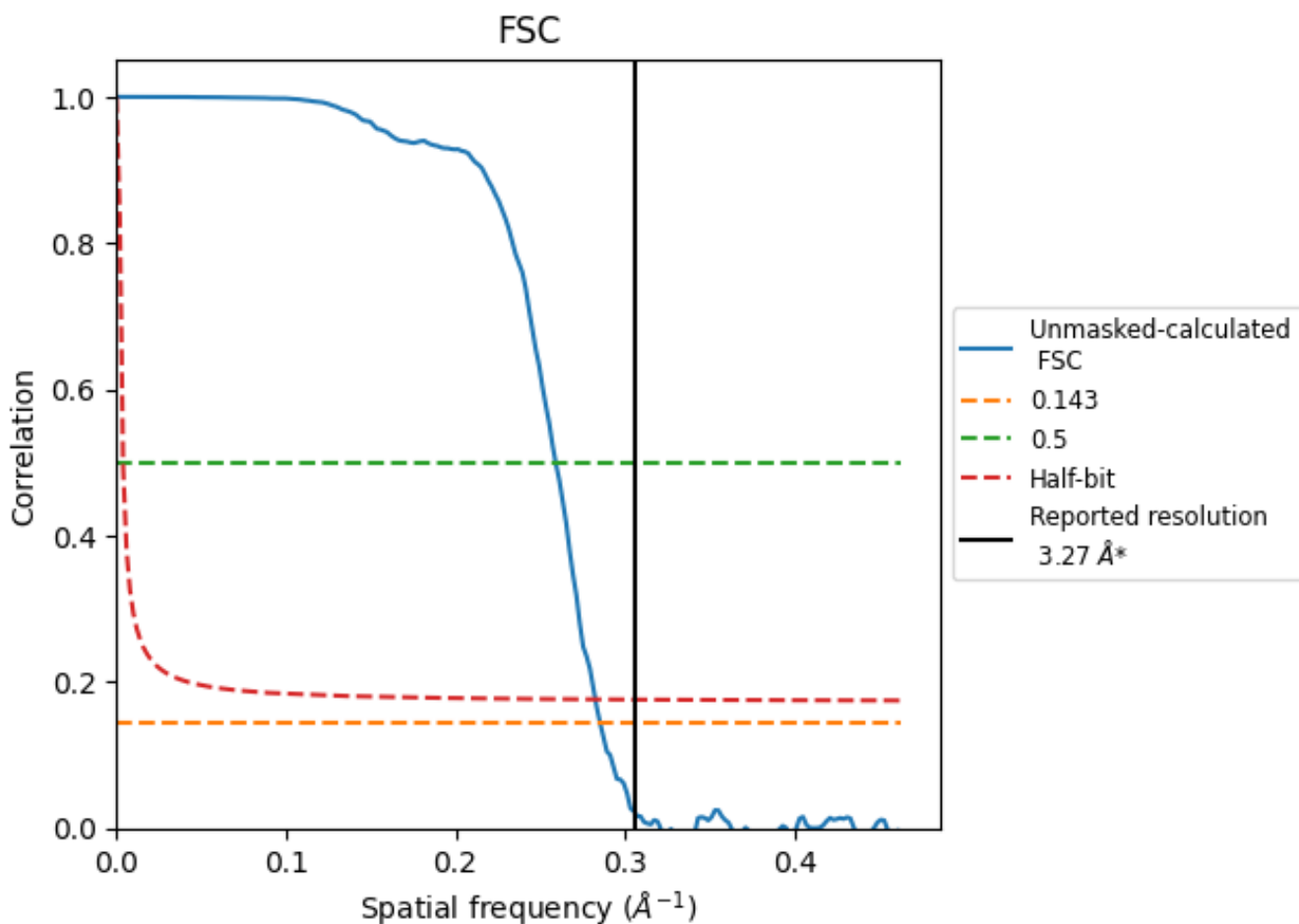


*Reported resolution corresponds to spatial frequency of 0.306 Å⁻¹

8 Fourier-Shell correlation [i](#)

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 [i](#)



*Reported resolution corresponds to spatial frequency of 0.306 Å⁻¹

8.2 Resolution estimates [i](#)

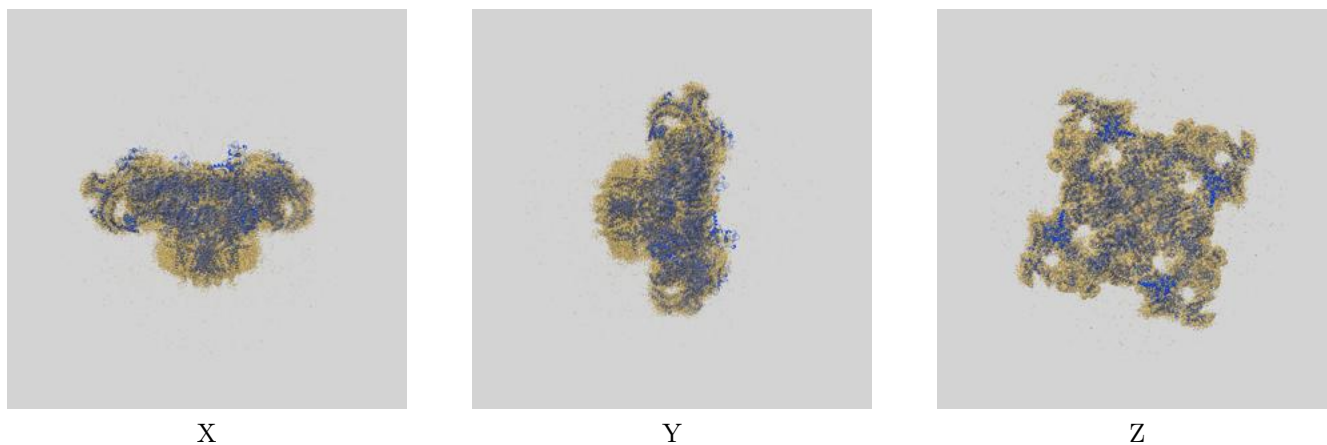
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.27	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.50	3.86	3.54

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit [i](#)

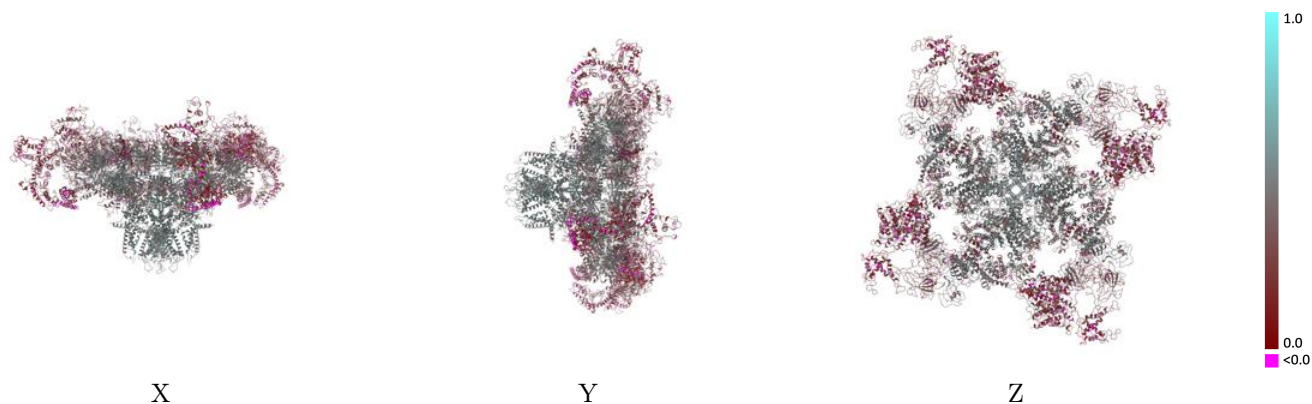
This section contains information regarding the fit between EMDB map EMD-21861 and PDB model 6WOU. Per-residue inclusion information can be found in section 3 on page 5.

9.1 Map-model overlay [i](#)



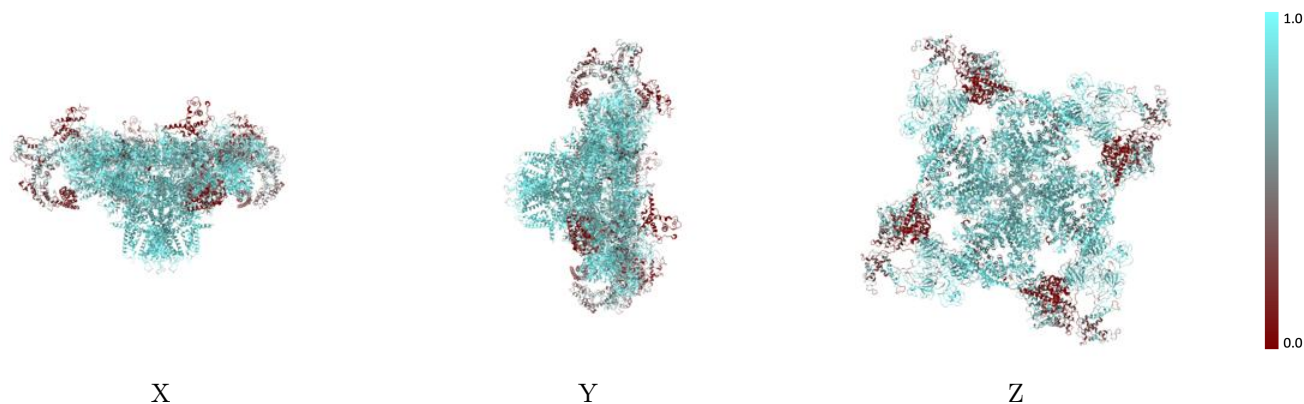
The images above show the 3D surface view of the map at the recommended contour level 0.132 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



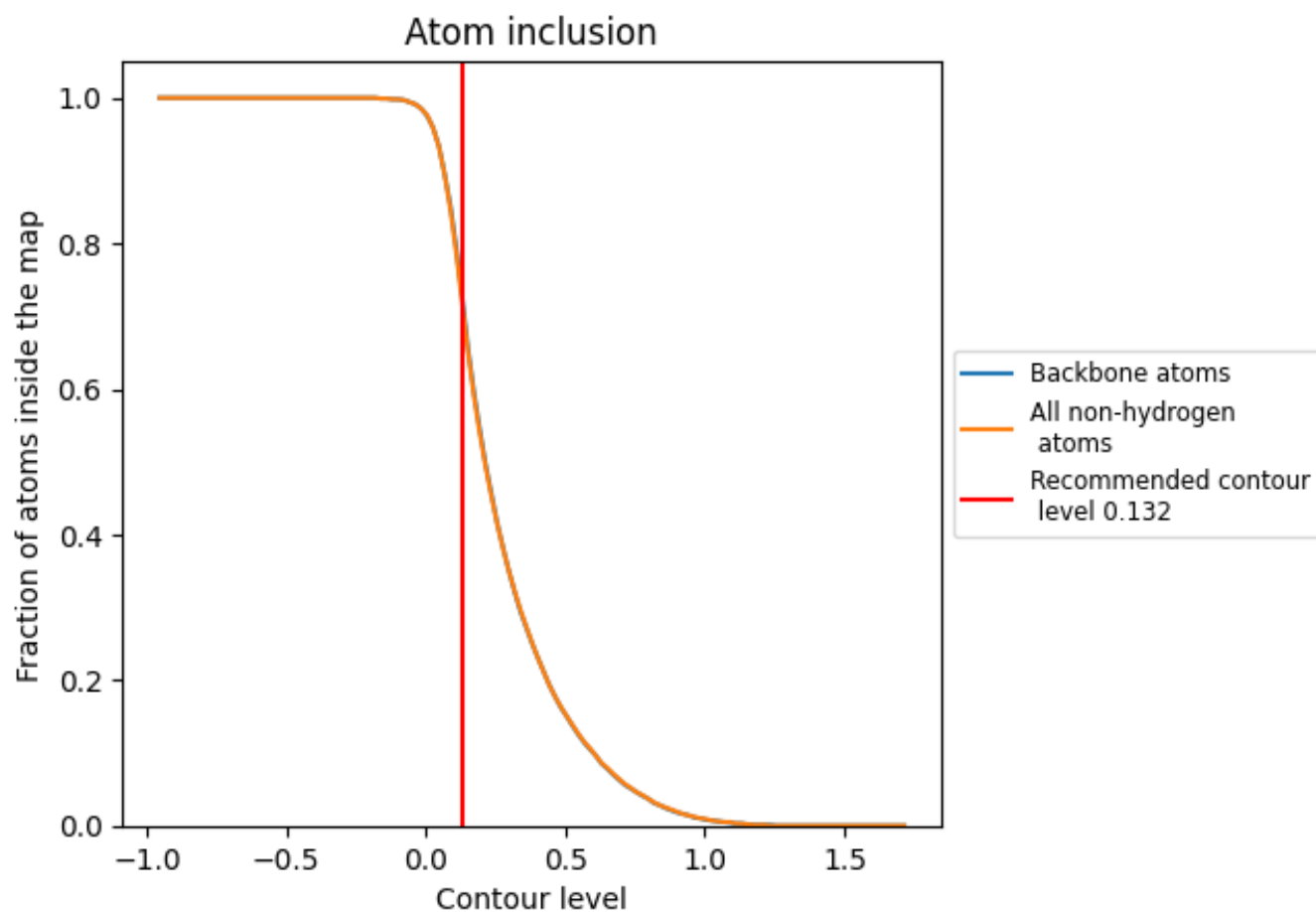
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model [i](#)



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 (0.132).



















9.4 Atom inclusion [i](#)



At the recommended contour level, 72% of all backbone atoms, 71% 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 (0.132) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7120	 0.3760
A	 0.7110	 0.3740
B	 0.7110	 0.3730
C	 0.7110	 0.3740
D	 0.7110	 0.3740
E	 0.8710	 0.4550
F	 0.8720	 0.4560
G	 0.8670	 0.4560
H	 0.8690	 0.4580

