



Full wwPDB EM Validation Report ⓘ

Nov 2, 2022 – 06:02 AM EDT

PDB ID : 5TAW
EMDB ID : EMD-8387
Title : Structure of rabbit RyR1 (ryanodine dataset, all particles)
Authors : Clarke, O.B.; des Georges, A.; Zalk, R.; Marks, A.R.; Hendrickson, W.A.;
Frank, J.
Deposited on : 2016-09-10
Resolution : 4.40 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.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

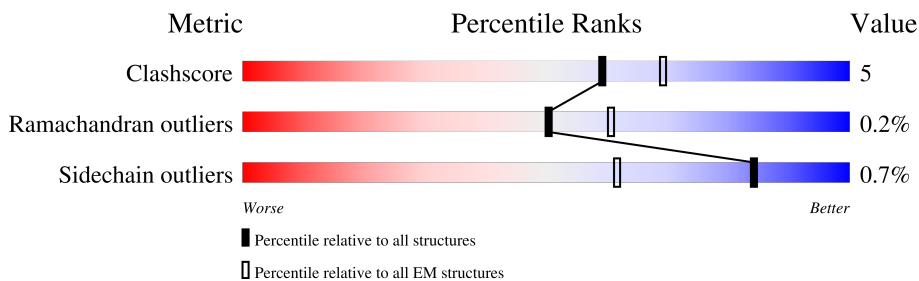
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.40 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	108	
1	F	108	
1	H	108	
1	J	108	
2	B	4416	
2	E	4416	
2	G	4416	
2	I	4416	

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 121276 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

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

- Molecule 2 is a protein called Ryanodine receptor 1.

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

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

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

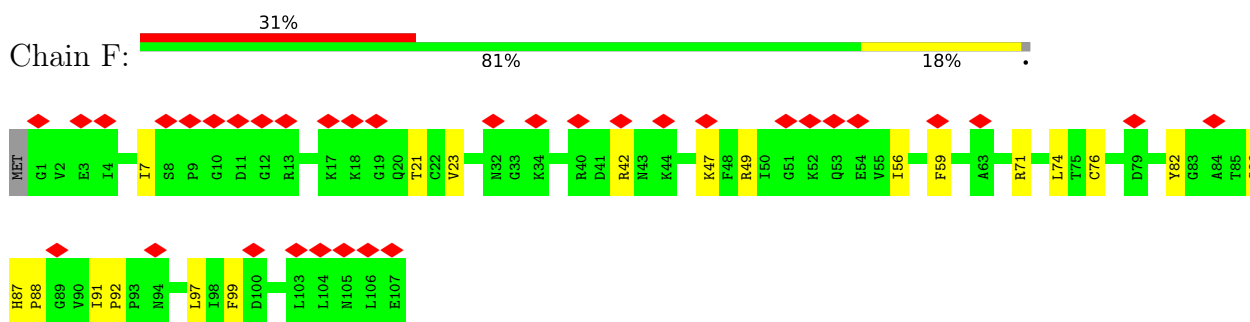
- Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca).

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

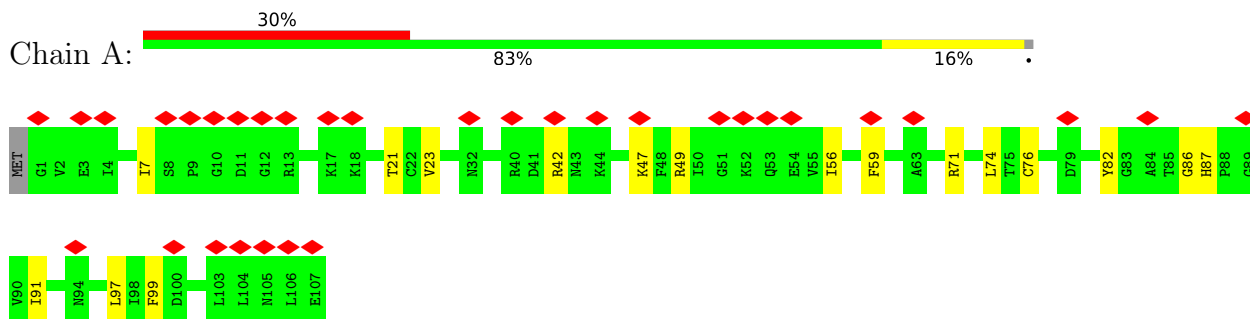
3 Residue-property plots [i](#)

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

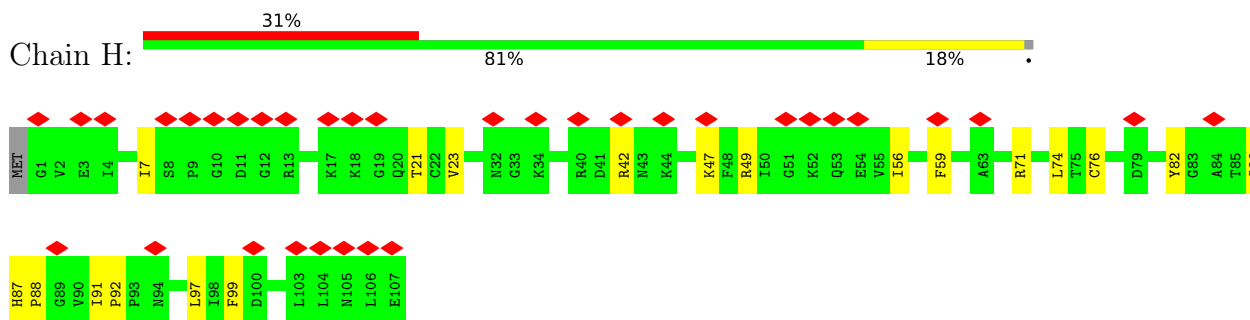
- Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B



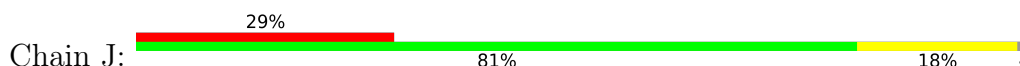
- Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B

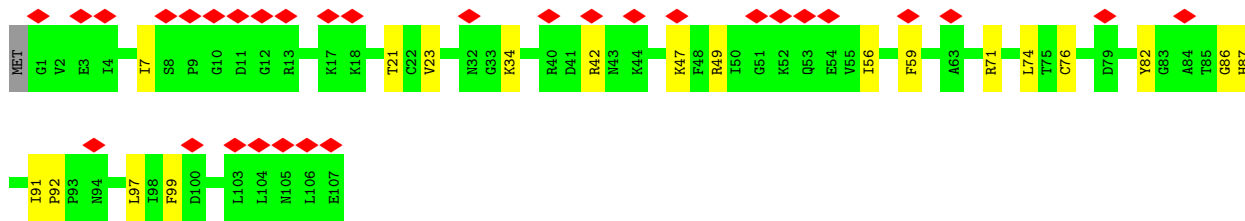


- Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B

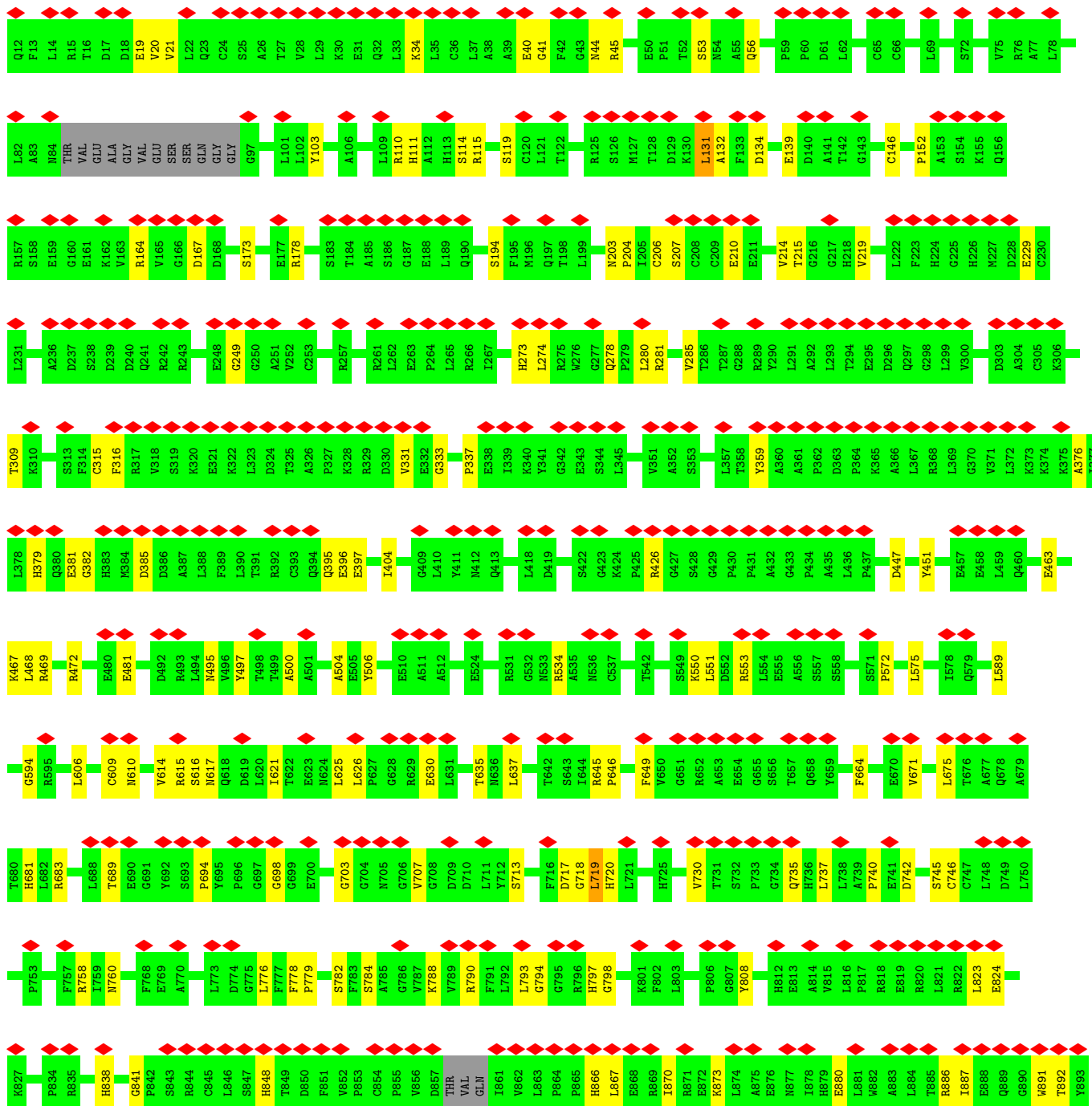
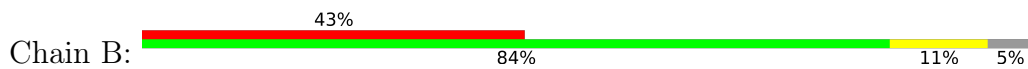


- Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B



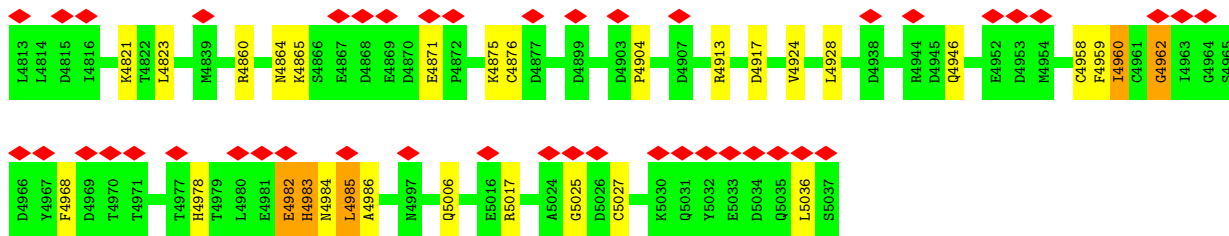


● Molecule 2: Ryanodine receptor 1

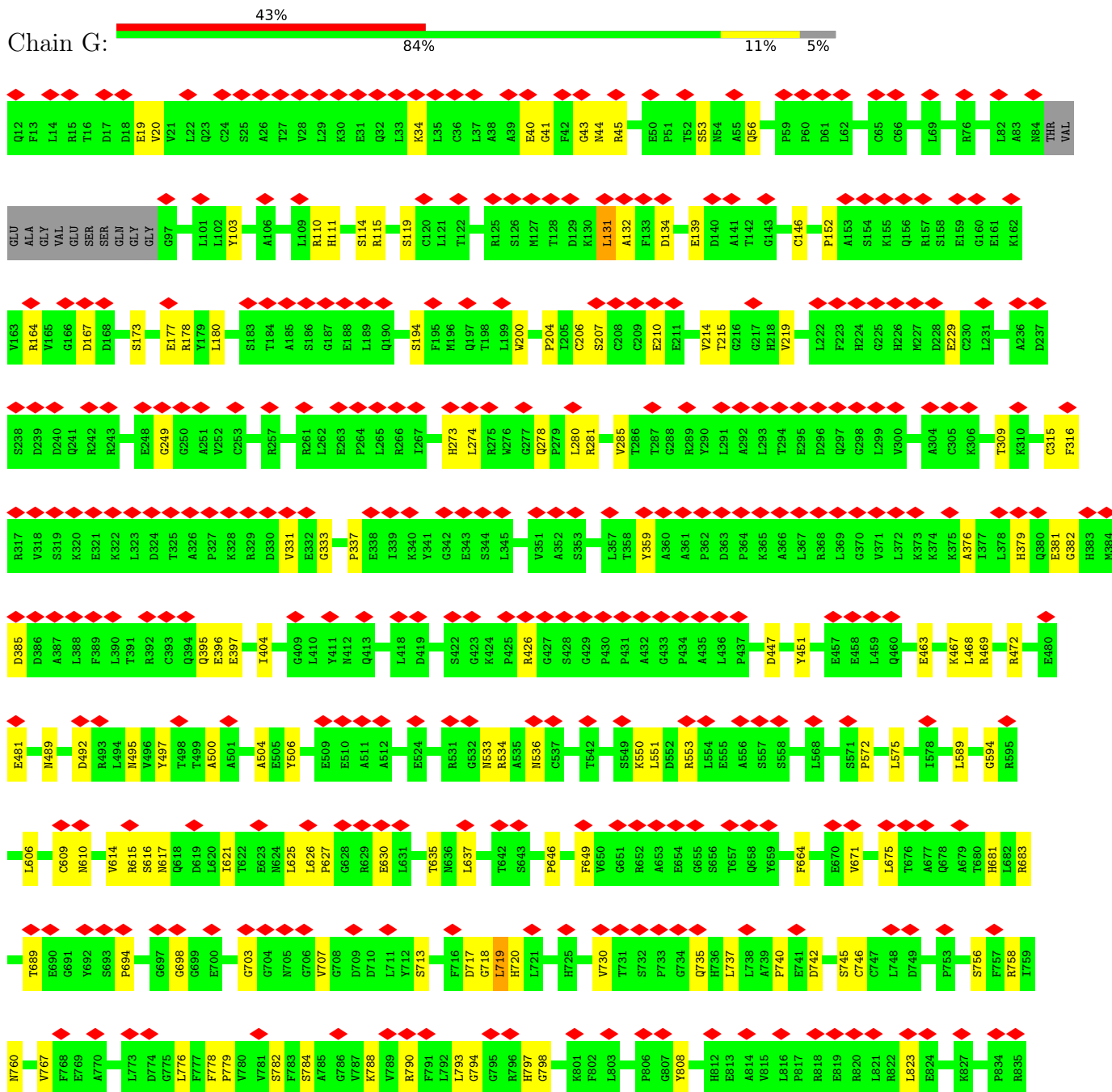


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K2897	G2898	G2899	G2900	T2901	H2902	P2903	L2904	A2905	L2906	T2907	Y2908	D2909	M2910	L2911	T2912	A2913	K2914	E2915	K2916	A2917	R2918	D2919	R2920	E2921	K3003	L3004	L3005	Q2924	E2925	R2869	E2870	L2871	Q2872	A2873	M2874	A2875	E2876	Q2877	L2878	A2879	E2880	M2881	H2882	H2883	M2884	T2885	W2886	G2887	R2888	K2889	K2890	K2891	Q2892	E2893	L2894	E2895	A2896	K2957	G2958															
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S2370	T2371	T2372	L2373	A2376	A2377	E2385	L2388	A2389	L2390	D2391	E2392	D2393	D2394	L2395	A2303	G2304	S2309	C2310	P2311	M2312	L2313	L2314	A2315	K2316	G2317	Y2318	P2319	D2320	I2321	C2326	G2327	R2330	Y2331	L2332	D2333	F2334	F2337	A2338	W2339	F2340	V2341	E2347	E2348	N2349	A2350	N2351	V2352	V2353	V2354	A2355																								

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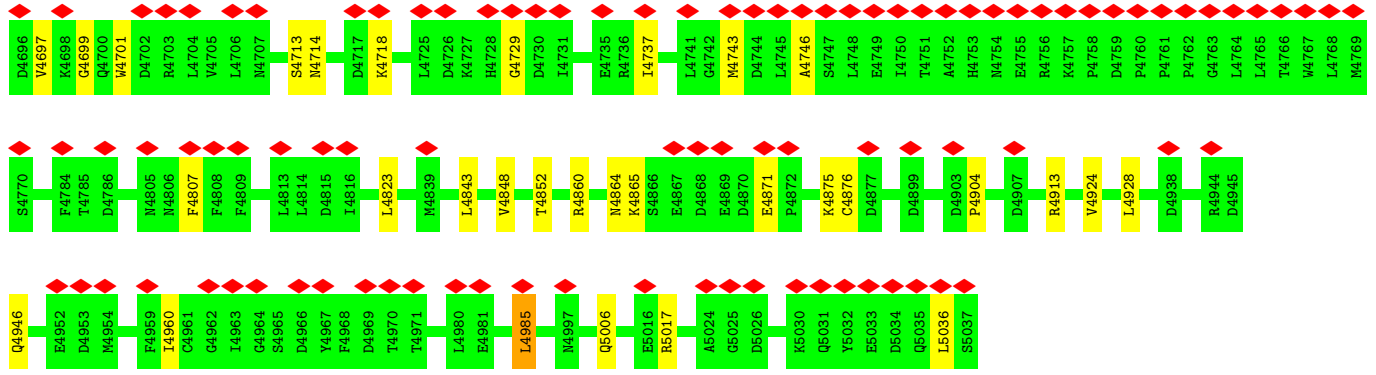


• Molecule 2: Ryanodine receptor 1

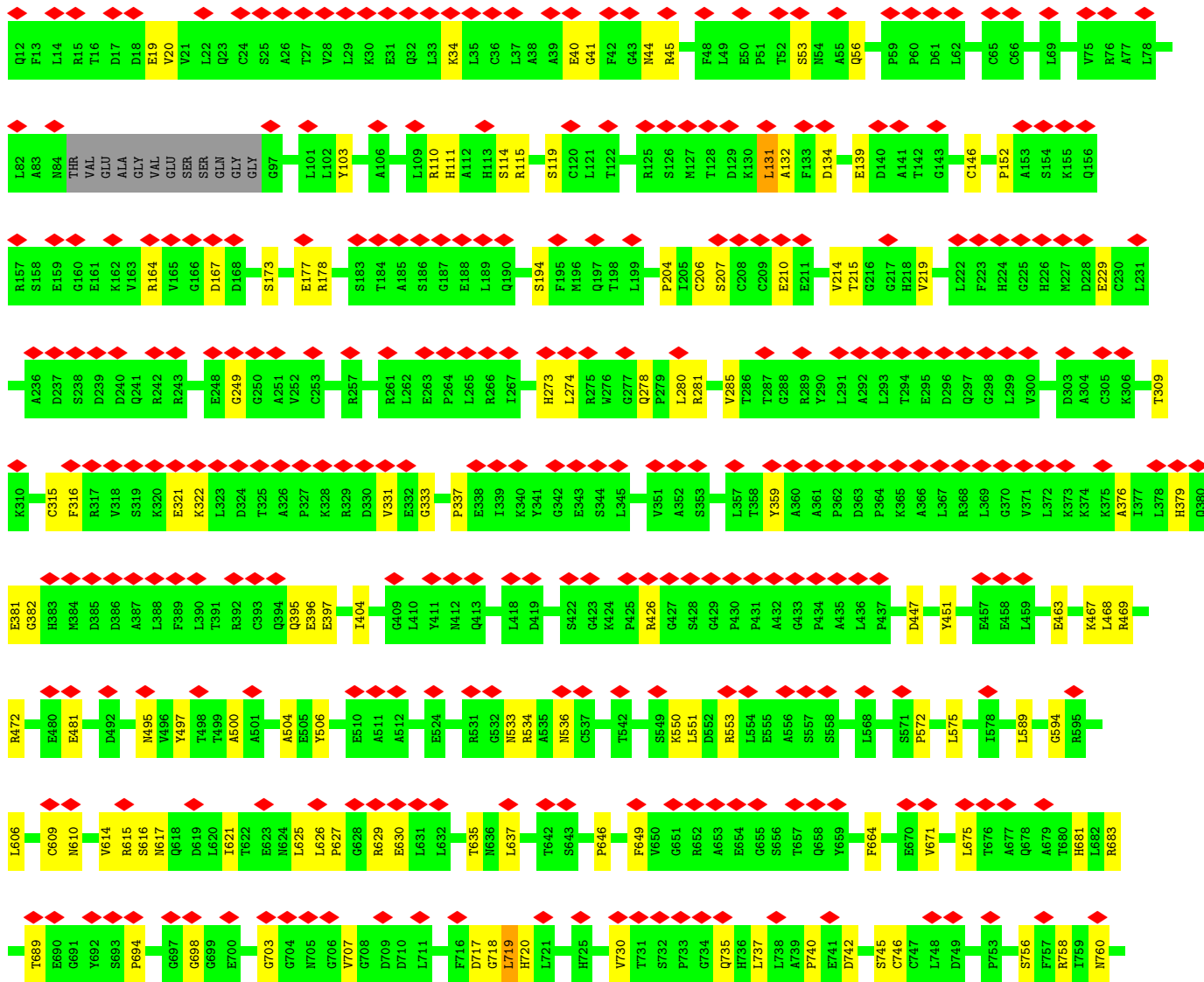
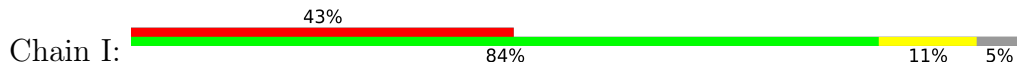


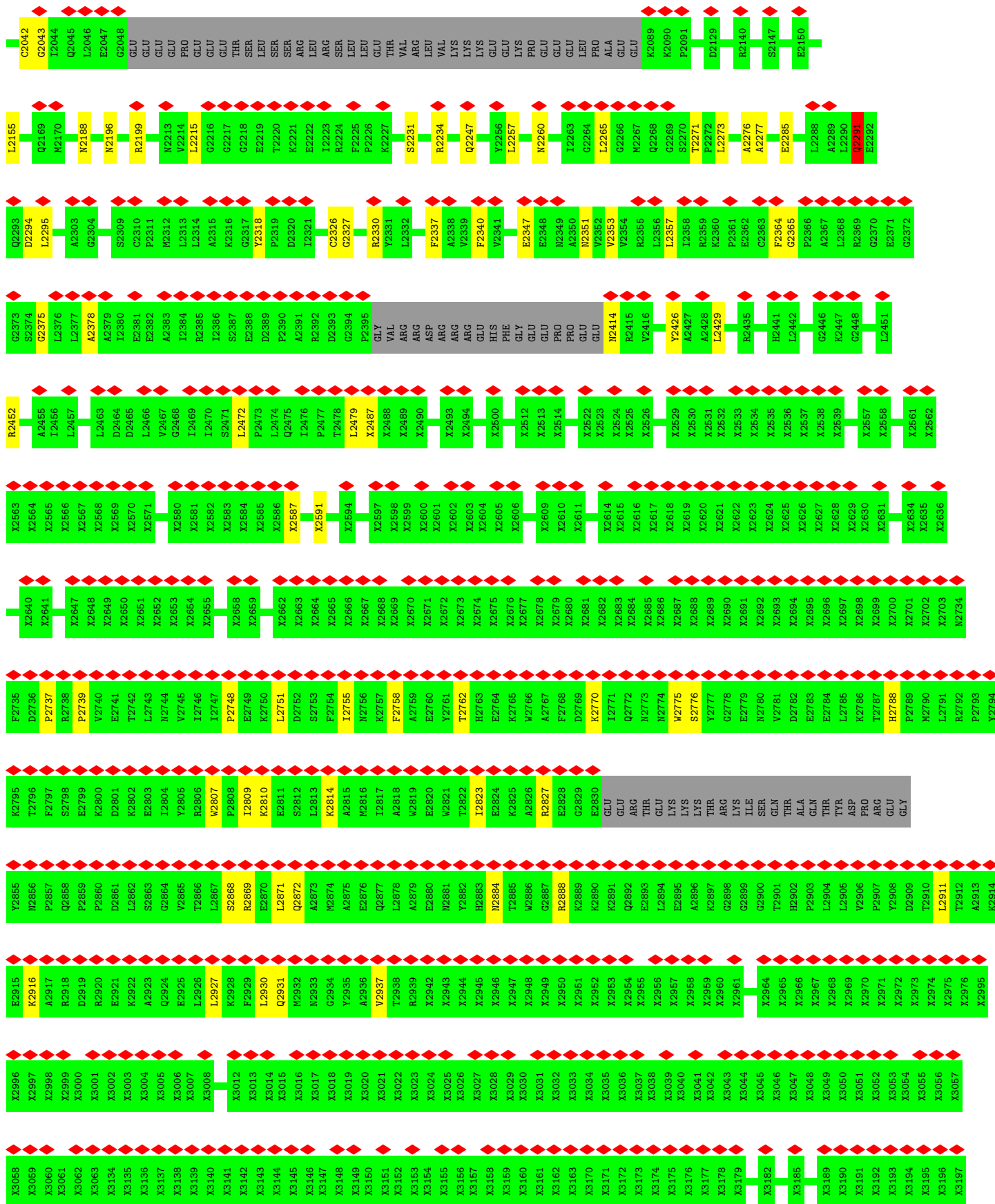
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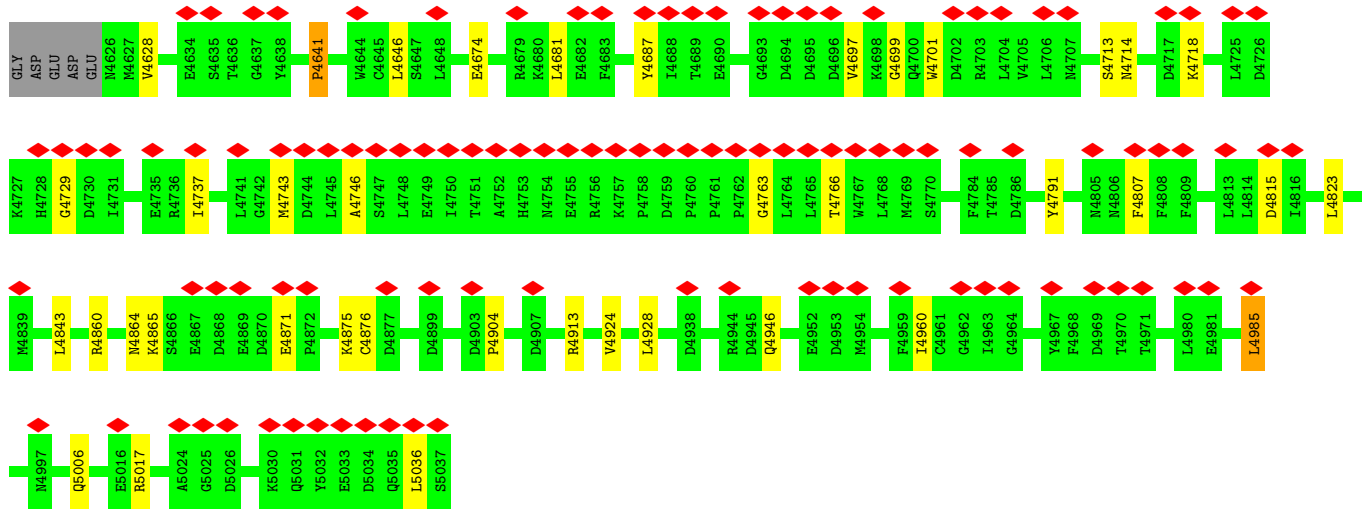


• Molecule 2: Ryanodine receptor 1

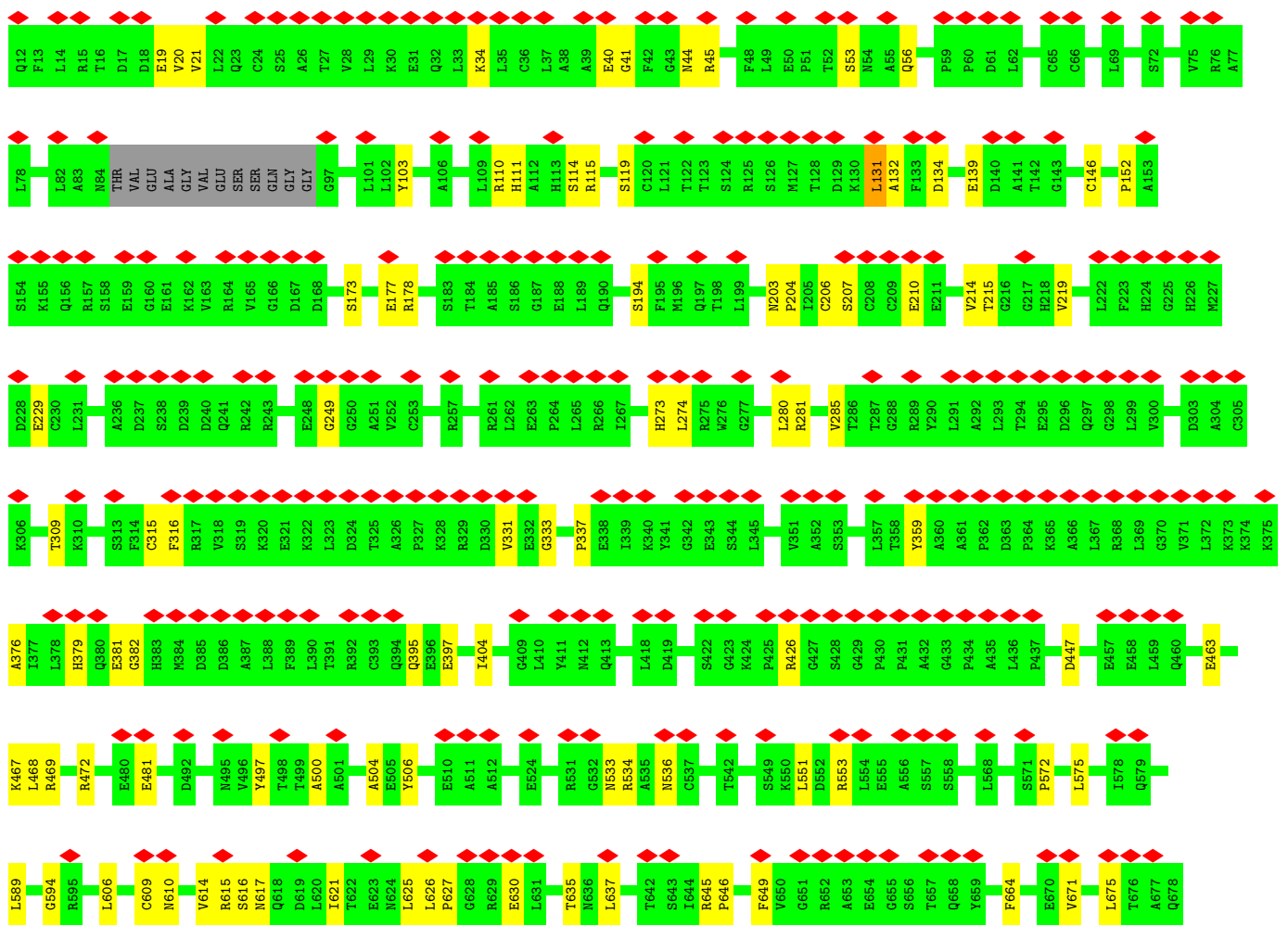
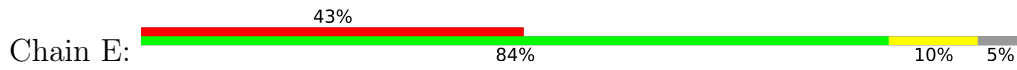




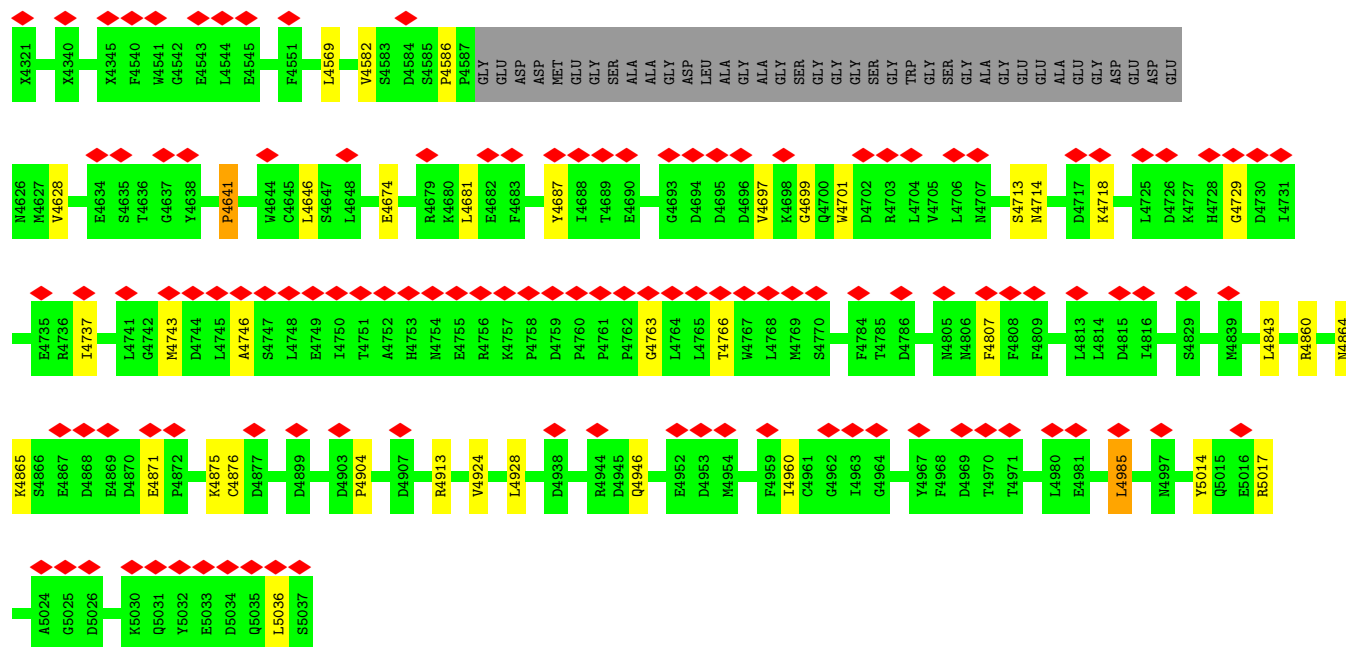
X3200	X3201	X3202	X3203	X3204	X3207	X3208	X3209	X3210	X3211	X3212	X3213	X3214	X3215	X3216	X3217	X3218	X3219	X3220	X3221	X3222	X3223	X3224	X3225	X3226	X3227	X3228	X3229	X3230	X3231	X3232	X3233	X3234	X3235	X3236	X3241	X3242	X3243	X3244	X3245	X3246	X3247	X3248	X3249	X3250	X3251	X3252	X3253	X3254	X3261	X3262	X3263	X3264	X3265	X3266	X3268				
X3270	X3271	X3272	X3273	X3274	X3275	X3276	X3277	X3278	X3279	X3280	X3281	X3282	X3283	X3284	X3285	X3286	X3287	X3288	X3289	X3290	X3291	X3292	X3293	X3294	X3295	X3296	X3297	X3298	X3299	X3300	X3301	X3302	X3303	X3304	X3305	X3306	X3307	X3308	X3309	X3310	X3311	X3312	X3313	X3314	X3315	X3316	X3317	X3318	X3319	X3320	X3321	X3322	X3323	X3324	X3325	X3326	X3327	X3328	X3329
X3330	X3331	X3332	X3333	X3334	X3335	X3336	X3337	X3338	X3339	X3340	X3341	X3342	X3343	X3344	X3345	X3346	X3347	X3348	X3349	X3350	X3351	X3352	X3353	X3354	X3355	X3356	X3357	X3358	X3359	X3360	X3361	X3362	X3363	X3364	X3365	X3366	X3367	X3368	X3369	X3370	X3371	X3372	X3373	X3374	X3375	X3376	X3377	X3378	X3379	X3380	X3381	X3382	X3383	X3384	X3385	X3386	X3387	X3388	X3389
X3390	X3391	X3392	X3393	X3394	X3395	X3396	X3397	X3398	X3399	X3400	X3401	X3402	X3403	X3404	X3405	X3406	X3407	X3408	X3409	X3410	X3411	X3412	X3413	X3414	X3417	X3418	X3419	X3420	X3421	X3422	X3423	X3426	X3427	X3428	X3429	X3430	X3431	X3432	X3433	X3434	X3435	X3436	X3437	X3438	X3439	X3440	X3441	X3442	X3443	X3446	X3450	X3451	X3452	X3453	X3454	X3455			
X3456	X3457	X3458	X3459	X3463	X3464	X3465	X3466	X3467	X3468	X3511	X3512	X3513	X3514	X3515	X3516	X3517	X3518	X3519	X3520	X3521	X3522	X3523	X3524	X3525	X3526	X3527	X3528	X3529	X3530	X3531	X3532	X3533	X3534	X3535	X3536	X3537	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	X3571	X3572	X3573	X3574	X3577	X3578	X3579	X3580	X3581	X3582	X3583	X3584	X3585	X3586	X3587	X3588	X3589	X3590	X3591	X3592	X3595	X3596	X3597	X3598	X3599	X3600	X3601	X3604	X3605	X3606	X3607	X3608	X3609	X3610	X3611	X3612	X3613	X3643	X3644	X3656	X3657	X3658	X3659					
A3690	W3661	I3662	L3663	T3664	D3666	H3667	S3668	F3669	I3674	D3675	D3676	A3680	G3681	E3682	Q3683	E3684	E3685	E3686	E3687	E3688	E3689	V3690	E3691	E3692	K3693	K3694	R3707	E3712	K3713	S3714	K3715	L3716	D3717	E3718	M3723	I3728	C3733	H3734	L3735	E3736	X3608	E3737	G3738	G3739	E3740	N3741	GLY	ALA	GLU	GLU	E3747								
E3748	V3749	E3750	V3751	S3752	F3753	E3754	E3755	K3756	I3761	R3762	Q3766	R3769	L3770	R3773	G3774	A3775	M3778	V3779	L3780	Q3781	E3689	S3784	E3691	K3787	T3804	L3805	N3809	L3817	K3921	D3922	E3925	V3926	G3927	F3928	F3929	Q3930	Q3933	M3936	L3942	D3943	Q3950	A3953	E3854	G3955															
L3856	G3857	M3858	V3859	N3860	E3861	D3862	G3863	T3864	V3865	I3866	N3867	R3868	Q3869	N3870	G3871	E3872	K3873	V3874	D3876	L4003	A4004	Q4005	D4006	L4017	D4018	L4019	D4022	N3909	T3910	T3911	I3912	I3913	M3914	I3915	R3925	D3932	Y3937	S3938	G3939	K3940	D3941	V3942	D4063	M4064	F4065	L4066	D4070	I4071	V4072	G4073	S4074								
E4075	A4076	F4077	Q4078	D4079	V4080	V4081	D4082	D4083	F4084	R4085	G4086	L4087	I4088	K4091	D4092	F4093	Q4094	K4095	A4096	M4097	D4098	S4099	Q4100	K4101	Q4102	F4103	T4104	G4105	P4106	E4107	F4110	A4117	D4118	E4119	M4120	E4121	M4122	I4123	N4124	F4125	E4126	E4127	F4128	A4129	N4130	R4131	F4132	Q4133	E4134	R4137	D4138	I4139	N4142						
E4152	P4155	H4156	D4157	P4158	R4159	L4160	R4161	L4164	W4541	E4165	I4170	F4174	R4180	M4184	G4185	A4186	S4187	R4188	R4189	I4190	E4191	Y4194	E4199	E4206	E4212	R4215	F4219	M4223	E4224	G4225	G4226	E4227	A4228	E4232	L4233	S4236	E4239	I4242	Q4246	Q4250	I4251																		
S4253	E4253	X4320	X4321	X4331	X4340	X4345	F4540	W4541	G4542	E4543	L4544	E4545	F4551	L4569	V4582	S4583	D4584	S4585	P4586	P4587	GLY	GLU	ASP	ASP	NET	GLU	GLY	SER	ALA	ALA	ASP	LEU	ALA	ALA	ALA	ALA	ALA	GLY	GLY	GLY	SER	SER	TRP	GLY	SER	GLY	ALA	ALA	ALA	GLU	GLU	ALA	GLU						



• Molecule 2: Ryanodine receptor 1



X3048	X3049	X3050	X3051	X3052	X3053	X3054	X3055	X3056	X3057	X3058	X3059	X3060	X3061	X3062	X3063	X3134	X3135	X3136	X3137	X3138	X3139	X3140	X3141	X3142	X3143	X3144	X3145	X3146	X3147	X3148	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	X3182	X3185		
X3189	X3190	X3191	X3192	X3193	X3194	X3195	X3196	X3197	X3200	X3201	X3202	X3203	X3204	X3207	X3208	X3209	X3210	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	X3271	X3272	X3273	X3274	X3275	X3276	X3277	X3278	X3279	X3280	X3281	X3282	X3283	X3284	X3285	X3286	X3287	X3288	X3289	X3290	X3291	X3292	X3293	X3294	X3295	X3296	X3297	X3298	X3299	X3300	X3301	X3302	X3303	X3304	X3305	X3306	X3307	X3308	X3309	X3310	X3311	X3312	X3313	X3314	X3315	X3316	X3317	X3318	X3319
X3320	X3321	X3322	X3323	X3324	X3325	X3326	X3327	X3328	X3329	X3330	X3331	X3332	X3333	X3334	X3335	X3336	X3337	X3338	X3339	X3340	X3341	X3342	X3343	X3344	X3345	X3346	X3347	X3348	X3349	X3350	X3351	X3352	X3353	X3354	X3355	X3356	X3357	X3358	X3359	X3360	X3361	X3362	X3363	X3364	X3365	X3366	X3367	X3368	X3369	X3370	X3371	X3372	X3373	X3374	X3375	X3376	X3377	X3378	X3379
X3380	X3381	X3382	X3383	X3384	X3385	X3386	X3387	X3388	X3389	X3390	X3391	X3392	X3393	X3394	X3395	X3396	X3397	X3398	X3399	X3400	X3401	X3402	X3403	X3404	X3405	X3406	X3407	X3408	X3409	X3410	X3411	X3412	X3413	X3414	X3417	X3418	X3419	X3420	X3421	X3422	X3423	X3426	X3427	X3428	X3429	X3430	X3431	X3432	X3433	X3434	X3435	X3436	X3437	X3438	X3439	X3440	X3441		
X3442	X3443	X3450	X3451	X3452	X3453	X3454	X3455	X3456	X3457	X3458	X3459	X3462	X3463	X3464	X3465	X3466	X3467	X3468	X3511	X3512	X3513	X3514	X3515	X3516	X3517	X3518	X3519	X3520	X3521	X3522	X3523	X3524	X3525	X3526	X3527	X3528	X3529	X3530	X3531	X3532	X3533	X3534	X3535	X3536	X3537	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	X3571	X3572	X3573	X3574	X3577	X3578	X3579	X3580	X3581	X3582	X3583	X3584	X3585	X3586	X3587	X3588	X3589	X3590	X3591	X3592	X3595	X3596	X3597	X3598	X3599	X3600	X3601	X3606	X3607	X3608	X3609	X3610	X3611	X3612	X3613				
N3643	L3644	M3652	S3656	Y3657	K3658	A3659	A3660	W3661	I3662	T3664	E3665	D3666	H3667	S3668	F3669	I3674	D3675	D3676	A3680	G3681	G3682	Q3683	S3684	E3685	E3686	E3687	S3688	E3689	V3690	E3691	E3692	K3693	R3707	E3712	K3713	S3714	K3715	L3716	D3717	F3829	E3718	H3723	I3728	C3733	H3734	L3735	E3736	E3737	G3738	G3739									
E3740	N3741	GLY	GLU	ALA	GLU	GLU	E3747	E3748	V3749	E3750	V3751	S3752	F3753	K3756	Q3761	R3762	Q3766	R3769	L3770	R3773	G3774	G3775	V3779	L3780	Q3781	S3784	K3787	I3804	L3805	N3809	L3817	K3821	D3822	E3825	V3826	G3827	F3828	R3829	Q3830	Q3833	M3836	L3842	D3843																
Q3850	A3853	E3854	G3855	L3856	G3857	M3858	V3859	N3860	D3862	G3863	T3864	V3865	L3866	H3867	R3868	R3869	N3870	G3871	E3872	K3873	V3874	D3878	L3886	Q3882	R3886	N3896	G3908	N3909	T3910	T3911	T3912	I3913	N3914	I3915	R3925	D3932	Y3937	G3938	G3939	K3940	D3941	F3942	I3943	E3944	E3945	Q3946													
N3950	M3955	K3959	N3963	G3971	P3972	C3973	N3976	Q3977	Q3978	S3979	L3980	A3981	H3982	S3983	R3984	L3985	W3986	L3993	H3994	M4000	M4001	K4002	D4006	L4017	E4018	L4019	N4022	L4030	E4032	G4033	N4034	V4035	V4036	M4037	G4038	E4050	L4058	L4059	F4062	D4063	M4064	F4065	I3943	E3944	E3945	Q3946													
D4070	I4071	V4072	G4073	S4074	E4075	A4076	F4077	Q4078	D4079	Y4080	V4081	D4082	D4083	P4084	R4085	G4086	L4087	I4088	K4091	D4092	F4093	Q4094	K4095	A4096	M4097	D4098	S4099	K4100	K4101	Q4102	F4103	T4104	P4106	E4107	I4108	Q4109	F4110	A4117	D4118	E4119	M4120	E4121	M4122	I4123	N4124	F4125	E4126	E4127	F4128	A4129	M4130	R4131	F4132	Q4133	E4134				
R4137	D4138	I4139	N4142	E4152	P4155	H4156	D4157	R4158	P4159	L4160	R4161	L4164	E4165	I4170	F4174	R4180	M4184	G4185	A4186	S4187	R4188	R4189	V4194	E4199	E4206	F4219	M4223	E4224	G4225	G4226	E4227	A4228	E4232	L4233	S4236	E4239	Q4250	I4251	S4252	E4253	X4320																		



4 Experimental information

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 ($e^-/\text{\AA}^2$)	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	0.110	Depositor
Minimum map value	-0.053	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.04	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 i

5.1 Standard geometry i

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.31	0/834	0.54	0/1123
1	F	0.31	0/834	0.54	0/1123
1	H	0.31	0/834	0.54	0/1123
1	J	0.31	0/834	0.54	0/1123
2	B	0.30	0/25428	0.54	5/34534 (0.0%)
2	E	0.30	0/25428	0.54	5/34534 (0.0%)
2	G	0.30	0/25428	0.54	5/34534 (0.0%)
2	I	0.30	0/25428	0.54	5/34534 (0.0%)
All	All	0.30	0/105048	0.54	20/142628 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	B	0	14
2	E	0	14
2	G	0	14
2	I	0	14
All	All	0	56

There are no bond length outliers.

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	131	LEU	CA-CB-CG	7.62	132.81	115.30
2	I	131	LEU	CA-CB-CG	7.61	132.79	115.30
2	B	131	LEU	CA-CB-CG	7.59	132.75	115.30
2	G	131	LEU	CA-CB-CG	7.59	132.75	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1600	LEU	CA-CB-CG	6.68	130.67	115.30
2	E	1600	LEU	CA-CB-CG	6.67	130.64	115.30
2	I	1600	LEU	CA-CB-CG	6.67	130.63	115.30
2	G	1600	LEU	CA-CB-CG	6.66	130.61	115.30
2	G	1676	LEU	CA-CB-CG	6.63	130.54	115.30
2	E	1676	LEU	CA-CB-CG	6.63	130.54	115.30
2	B	1676	LEU	CA-CB-CG	6.62	130.53	115.30
2	I	1676	LEU	CA-CB-CG	6.61	130.50	115.30
2	B	4985	LEU	CA-CB-CG	6.05	129.21	115.30
2	G	4985	LEU	CA-CB-CG	6.03	129.17	115.30
2	I	4985	LEU	CA-CB-CG	6.03	129.17	115.30
2	E	4985	LEU	CA-CB-CG	6.03	129.16	115.30
2	E	977	LEU	CA-CB-CG	5.79	128.62	115.30
2	B	977	LEU	CA-CB-CG	5.79	128.61	115.30
2	I	977	LEU	CA-CB-CG	5.79	128.61	115.30
2	G	977	LEU	CA-CB-CG	5.78	128.59	115.30

There are no chirality outliers.

All (56) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	139	GLU	Peptide
2	B	1676	LEU	Peptide
2	B	1720	LEU	Peptide
2	B	1795	PRO	Peptide
2	B	1828	ASP	Peptide
2	B	1840	PRO	Peptide
2	B	2291	GLN	Peptide
2	B	2472	LEU	Peptide
2	B	2807	TRP	Peptide
2	B	3971	GLY	Peptide
2	B	4641	PRO	Peptide
2	B	4807	PHE	Peptide
2	B	694	PRO	Peptide
2	B	808	TYR	Peptide
2	E	139	GLU	Peptide
2	E	1676	LEU	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

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Mol	Chain	Res	Type	Group
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	694	PRO	Peptide
2	E	808	TYR	Peptide
2	G	139	GLU	Peptide
2	G	1676	LEU	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	2472	LEU	Peptide
2	G	2807	TRP	Peptide
2	G	3971	GLY	Peptide
2	G	4641	PRO	Peptide
2	G	4807	PHE	Peptide
2	G	694	PRO	Peptide
2	G	808	TYR	Peptide
2	I	139	GLU	Peptide
2	I	1676	LEU	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	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	694	PRO	Peptide
2	I	808	TYR	Peptide

5.2 Too-close contacts

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	12	0
1	H	818	0	824	12	0
1	J	818	0	824	12	0
2	B	29499	0	24749	281	0
2	E	29499	0	24749	253	0
2	G	29499	0	24750	262	0
2	I	29499	0	24749	257	0
3	B	1	0	0	0	0
3	E	1	0	0	0	0
3	G	1	0	0	0	0
3	I	1	0	0	0	0
4	B	1	0	0	0	0
4	E	1	0	0	0	0
4	G	1	0	0	0	0
4	I	1	0	0	0	0
All	All	121276	0	102293	1081	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 (1081) 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:B:4968:PHE:CE2	2:B:4978:HIS:CE1	2.28	1.20
2:B:4230:LYS:HD2	2:B:4959:PHE:HE2	0.99	1.10
2:B:4230:LYS:HD2	2:B:4959:PHE:CE2	1.92	1.04
2:B:4983:HIS:CE1	2:B:5027:CYS:SG	2.57	0.98
2:B:4230:LYS:CD	2:B:4959:PHE:HE2	1.87	0.87
2:B:4983:HIS:HE1	2:B:5027:CYS:SG	1.98	0.85
2:I:2318:TYR:HH	2:I:2414:ASN:N	1.86	0.74
2:B:4968:PHE:HE2	2:B:4978:HIS:CE1	1.98	0.72
2:E:2318:TYR:HH	2:E:2414:ASN:N	1.86	0.72
2:G:2318:TYR:HH	2:G:2414:ASN:N	1.87	0.71
2:B:2318:TYR:HH	2:B:2414:ASN:N	1.86	0.71
2:G:1260:MET:HB2	2:G:1269:CYS:H	1.57	0.69
2:I:1260:MET:HB2	2:I:1269:CYS:H	1.57	0.69
2:B:1260:MET:HB2	2:B:1269:CYS:H	1.57	0.68
2:E:1260:MET:HB2	2:E:1269:CYS:H	1.57	0.68
2:B:4968:PHE:HE2	2:B:4978:HIS:NE2	1.93	0.67
2:E:111:HIS:HD2	2:E:114:SER:H	1.43	0.67
2:E:379:HIS:HD2	2:E:382:GLY:H	1.43	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:379:HIS:HD2	2:B:382:GLY:H	1.43	0.66
2:G:111:HIS:HD2	2:G:114:SER:H	1.43	0.66
2:B:111:HIS:HD2	2:B:114:SER:H	1.43	0.66
2:G:379:HIS:HD2	2:G:382:GLY:H	1.43	0.65
2:I:111:HIS:HD2	2:I:114:SER:H	1.43	0.65
2:B:4968:PHE:CE2	2:B:4978:HIS:NE2	2.64	0.64
2:E:1685:LEU:HA	2:E:1688:HIS:HD2	1.63	0.64
2:I:379:HIS:HD2	2:I:382:GLY:H	1.43	0.64
2:B:1685:LEU:HA	2:B:1688:HIS:HD2	1.63	0.63
2:G:1685:LEU:HA	2:G:1688:HIS:HD2	1.63	0.62
2:I:1685:LEU:HA	2:I:1688:HIS:HD2	1.63	0.62
2:I:1079:LYS:NZ	2:I:1107:PRO:O	2.33	0.62
2:B:1079:LYS:NZ	2:B:1107:PRO:O	2.33	0.62
2:G:4860:ARG:HD2	2:I:4582:VAL:HG11	1.81	0.62
2:B:1637:MET:SD	2:B:1708:ARG:NH1	2.74	0.61
2:G:3937:TYR:O	2:G:4002:LYS:NZ	2.34	0.61
2:E:1637:MET:SD	2:E:1708:ARG:NH1	2.74	0.61
2:G:1079:LYS:NZ	2:G:1107:PRO:O	2.33	0.61
2:B:683:ARG:NH1	2:B:707:VAL:O	2.34	0.61
2:E:1079:LYS:NZ	2:E:1107:PRO:O	2.33	0.61
2:B:3937:TYR:O	2:B:4002:LYS:NZ	2.34	0.60
2:E:614:VAL:HG22	2:E:616:SER:H	1.66	0.60
2:B:110:ARG:HH21	2:B:115:ARG:HB3	1.67	0.60
2:I:1637:MET:SD	2:I:1708:ARG:NH1	2.74	0.60
2:G:1637:MET:SD	2:G:1708:ARG:NH1	2.74	0.60
2:G:1721:GLU:OE2	2:G:1725:ARG:NH2	2.34	0.60
2:I:3937:TYR:O	2:I:4002:LYS:NZ	2.34	0.60
2:E:110:ARG:HH21	2:E:115:ARG:HB3	1.67	0.60
2:B:614:VAL:HG22	2:B:616:SER:H	1.66	0.60
2:G:683:ARG:NH1	2:G:707:VAL:O	2.34	0.60
2:E:2022:PRO:O	2:E:2028:ARG:NH2	2.35	0.60
2:E:3937:TYR:O	2:E:4002:LYS:NZ	2.34	0.60
2:I:132:ALA:HA	2:I:194:SER:HB2	1.83	0.60
2:G:614:VAL:HG22	2:G:616:SER:H	1.66	0.60
2:G:132:ALA:HA	2:G:194:SER:HB2	1.83	0.60
2:E:1721:GLU:OE2	2:E:1725:ARG:NH2	2.34	0.60
2:B:1721:GLU:OE2	2:B:1725:ARG:NH2	2.34	0.60
2:I:173:SER:HB3	2:I:178:ARG:H	1.67	0.60
2:I:1721:GLU:OE2	2:I:1725:ARG:NH2	2.34	0.59
2:I:683:ARG:NH1	2:I:707:VAL:O	2.34	0.59
2:I:2022:PRO:O	2:I:2028:ARG:NH2	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:173:SER:HB3	2:G:178:ARG:H	1.67	0.59
2:B:173:SER:HB3	2:B:178:ARG:H	1.67	0.59
2:I:110:ARG:HH21	2:I:115:ARG:HB3	1.67	0.59
2:B:4582:VAL:HG11	2:I:4860:ARG:HD2	1.83	0.59
2:G:110:ARG:HH21	2:G:115:ARG:HB3	1.67	0.59
2:B:132:ALA:HA	2:B:194:SER:HB2	1.83	0.59
2:E:132:ALA:HA	2:E:194:SER:HB2	1.83	0.59
2:E:1667:LEU:HD23	2:E:1671:ARG:HH12	1.68	0.59
2:G:1667:LEU:HD23	2:G:1671:ARG:HH12	1.68	0.59
2:I:315:CYS:SG	2:I:316:PHE:N	2.76	0.59
2:I:614:VAL:HG22	2:I:616:SER:H	1.66	0.59
2:G:315:CYS:SG	2:G:316:PHE:N	2.76	0.58
2:E:683:ARG:NH1	2:E:707:VAL:O	2.34	0.58
2:I:40:GLU:HB3	2:I:44:ASN:HB3	1.85	0.58
2:E:4674:GLU:HG3	2:E:4714:ASN:HB3	1.85	0.58
2:B:40:GLU:HB3	2:B:44:ASN:HB3	1.85	0.58
2:E:315:CYS:SG	2:E:316:PHE:N	2.76	0.58
2:G:2022:PRO:O	2:G:2028:ARG:NH2	2.35	0.58
2:E:173:SER:HB3	2:E:178:ARG:H	1.67	0.58
2:B:315:CYS:SG	2:B:316:PHE:N	2.76	0.58
2:G:4104:THR:HG22	2:G:4106:PRO:HD2	1.86	0.58
2:I:4104:THR:HG22	2:I:4106:PRO:HD2	1.86	0.58
2:I:4674:GLU:HG3	2:I:4714:ASN:HB3	1.85	0.58
2:B:1667:LEU:HD23	2:B:1671:ARG:HH12	1.68	0.58
2:B:4860:ARG:HD2	2:E:4582:VAL:HG11	1.84	0.58
2:E:4223:ASN:OD1	2:E:4946:GLN:NE2	2.37	0.58
1:J:42:ARG:HG2	2:I:1691:GLN:HG2	1.86	0.57
2:B:2022:PRO:O	2:B:2028:ARG:NH2	2.35	0.57
2:I:4223:ASN:OD1	2:I:4946:GLN:NE2	2.37	0.57
2:B:229:GLU:HA	2:B:249:GLY:HA2	1.87	0.57
2:B:4674:GLU:HG3	2:B:4714:ASN:HB3	1.85	0.57
2:B:497:TYR:HB3	2:B:500:ALA:HB2	1.87	0.57
2:B:4104:THR:HG22	2:B:4106:PRO:HD2	1.86	0.57
2:G:497:TYR:HB3	2:G:500:ALA:HB2	1.87	0.57
2:G:4674:GLU:HG3	2:G:4714:ASN:HB3	1.85	0.57
2:E:497:TYR:HB3	2:E:500:ALA:HB2	1.87	0.57
2:B:4223:ASN:OD1	2:B:4946:GLN:NE2	2.37	0.57
2:E:229:GLU:HA	2:E:249:GLY:HA2	1.87	0.57
2:G:3762:ARG:O	2:G:3766:GLN:NE2	2.38	0.57
2:G:4223:ASN:OD1	2:G:4946:GLN:NE2	2.37	0.57
2:I:3762:ARG:O	2:I:3766:GLN:NE2	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:40:GLU:HB3	2:E:44:ASN:HB3	1.85	0.57
2:I:497:TYR:HB3	2:I:500:ALA:HB2	1.87	0.57
2:I:989:ALA:O	2:I:1035:ASN:ND2	2.38	0.57
2:E:683:ARG:HB2	2:E:782:SER:HB3	1.87	0.57
2:E:4104:THR:HG22	2:E:4106:PRO:HD2	1.86	0.57
2:I:1667:LEU:HD23	2:I:1671:ARG:HH12	1.68	0.57
2:E:2748:PRO:HD2	2:E:2751:LEU:HD12	1.87	0.57
2:B:683:ARG:HB2	2:B:782:SER:HB3	1.87	0.57
2:E:609:CYS:SG	2:E:610:ASN:N	2.78	0.57
2:B:2326:CYS:SG	2:B:2327:GLY:N	2.78	0.56
2:B:2748:PRO:HD2	2:B:2751:LEU:HD12	1.87	0.56
2:B:3762:ARG:O	2:B:3766:GLN:NE2	2.38	0.56
2:I:2748:PRO:HD2	2:I:2751:LEU:HD12	1.87	0.56
2:B:609:CYS:SG	2:B:610:ASN:N	2.78	0.56
2:B:2827:ARG:HH21	2:B:2931:GLN:HG3	1.70	0.56
2:G:683:ARG:HB2	2:G:782:SER:HB3	1.87	0.56
2:G:2748:PRO:HD2	2:G:2751:LEU:HD12	1.87	0.56
2:I:2291:GLN:HB2	2:I:2295:LEU:HG	1.88	0.56
2:I:2326:CYS:SG	2:I:2327:GLY:N	2.78	0.56
2:B:1259:ARG:HH12	2:B:1593:PRO:HA	1.70	0.56
2:B:2291:GLN:HB2	2:B:2295:LEU:HG	1.88	0.56
2:G:229:GLU:HA	2:G:249:GLY:HA2	1.87	0.56
2:I:229:GLU:HA	2:I:249:GLY:HA2	1.87	0.56
2:E:2827:ARG:HH21	2:E:2931:GLN:HG3	1.70	0.56
2:B:1764:GLY:HA3	2:B:1859:VAL:HG11	1.87	0.56
2:G:40:GLU:HB3	2:G:44:ASN:HB3	1.85	0.56
2:E:788:LYS:HG2	2:E:1630:CYS:H	1.71	0.56
2:E:1259:ARG:HH12	2:E:1593:PRO:HA	1.70	0.56
2:G:609:CYS:SG	2:G:610:ASN:N	2.78	0.56
2:G:2291:GLN:HB2	2:G:2295:LEU:HG	1.88	0.56
2:I:646:PRO:HD2	2:I:779:PRO:HB2	1.87	0.56
2:I:4860:ARG:HG3	2:I:4876:CYS:HB3	1.88	0.56
2:B:4860:ARG:HG3	2:B:4876:CYS:HB3	1.88	0.56
2:G:972:LEU:O	2:G:1044:ARG:NH2	2.39	0.56
2:G:989:ALA:O	2:G:1035:ASN:ND2	2.38	0.56
2:G:2326:CYS:SG	2:G:2327:GLY:N	2.78	0.56
2:I:1519:UNK:HA	2:I:1526:UNK:HA	1.88	0.56
2:E:1109:LEU:HA	2:E:1120:LEU:HD21	1.87	0.56
2:E:2326:CYS:SG	2:E:2327:GLY:N	2.78	0.56
2:B:646:PRO:HD2	2:B:779:PRO:HB2	1.87	0.56
2:E:1519:UNK:HA	2:E:1526:UNK:HA	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:1109:LEU:HA	2:G:1120:LEU:HD21	1.87	0.56
2:G:1519:UNK:HA	2:G:1526:UNK:HA	1.88	0.56
2:I:683:ARG:HB2	2:I:782:SER:HB3	1.87	0.56
2:I:1764:GLY:HA3	2:I:1859:VAL:HG11	1.87	0.56
2:B:1519:UNK:HA	2:B:1526:UNK:HA	1.88	0.56
2:I:609:CYS:SG	2:I:610:ASN:N	2.78	0.56
2:B:745:SER:HB2	2:B:758:ARG:HB3	1.89	0.55
2:B:1691:GLN:HE22	2:B:1802:ILE:HG12	1.71	0.55
2:B:4982:GLU:OE1	2:B:4982:GLU:HA	2.06	0.55
2:G:4860:ARG:HG3	2:G:4876:CYS:HB3	1.88	0.55
2:I:1691:GLN:HE22	2:I:1802:ILE:HG12	1.71	0.55
2:E:646:PRO:HD2	2:E:779:PRO:HB2	1.87	0.55
2:E:1691:GLN:HE22	2:E:1802:ILE:HG12	1.71	0.55
2:E:3762:ARG:O	2:E:3766:GLN:NE2	2.38	0.55
2:B:626:LEU:HD23	2:B:630:GLU:H	1.71	0.55
2:B:788:LYS:HG2	2:B:1630:CYS:H	1.71	0.55
2:G:1259:ARG:HH12	2:G:1593:PRO:HA	1.70	0.55
2:I:745:SER:HB2	2:I:758:ARG:HB3	1.88	0.55
2:E:972:LEU:O	2:E:1044:ARG:NH2	2.39	0.55
2:E:2291:GLN:HB2	2:E:2295:LEU:HG	1.88	0.55
2:G:745:SER:HB2	2:G:758:ARG:HB3	1.88	0.55
2:I:2770:LYS:HB3	2:I:2775:TRP:HB2	1.88	0.55
2:B:1109:LEU:HA	2:B:1120:LEU:HD21	1.87	0.55
2:G:2770:LYS:HB3	2:G:2775:TRP:HB2	1.89	0.55
2:E:2347:GLU:O	2:E:2351:ASN:N	2.40	0.55
2:G:626:LEU:HD23	2:G:630:GLU:H	1.71	0.55
2:G:2827:ARG:HH21	2:G:2931:GLN:HG3	1.70	0.55
2:I:1259:ARG:HH12	2:I:1593:PRO:HA	1.70	0.55
2:E:626:LEU:HD23	2:E:630:GLU:H	1.71	0.55
2:G:788:LYS:HG2	2:G:1630:CYS:H	1.71	0.55
2:E:4860:ARG:HG3	2:E:4876:CYS:HB3	1.88	0.55
2:G:2347:GLU:O	2:G:2351:ASN:N	2.40	0.55
2:E:1764:GLY:HA3	2:E:1859:VAL:HG11	1.87	0.55
2:B:972:LEU:O	2:B:1044:ARG:NH2	2.39	0.55
2:B:2737:PRO:O	2:B:2888:ARG:NH2	2.40	0.55
2:I:103:TYR:HB3	2:I:152:PRO:HD3	1.89	0.55
2:E:745:SER:HB2	2:E:758:ARG:HB3	1.88	0.55
2:G:646:PRO:HD2	2:G:779:PRO:HB2	1.87	0.55
2:G:1764:GLY:HA3	2:G:1859:VAL:HG11	1.87	0.55
2:I:1109:LEU:HA	2:I:1120:LEU:HD21	1.87	0.55
2:E:1671:ARG:NH2	2:E:1710:GLY:O	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1671:ARG:NH2	2:B:1710:GLY:O	2.40	0.54
2:G:1691:GLN:HE22	2:G:1802:ILE:HG12	1.71	0.54
2:I:626:LEU:HD23	2:I:630:GLU:H	1.71	0.54
2:B:103:TYR:HB3	2:B:152:PRO:HD3	1.89	0.54
1:H:42:ARG:HG2	2:G:1691:GLN:HG2	1.90	0.54
2:B:2770:LYS:HB3	2:B:2775:TRP:HB2	1.88	0.54
2:B:3981:ALA:HA	2:B:3986:TRP:HE1	1.72	0.54
2:I:1671:ARG:NH2	2:I:1710:GLY:O	2.40	0.54
2:I:2827:ARG:HH21	2:I:2931:GLN:HG3	1.70	0.54
2:E:989:ALA:O	2:E:1035:ASN:ND2	2.38	0.54
2:E:730:VAL:O	2:E:735:GLN:NE2	2.41	0.54
2:G:103:TYR:HB3	2:G:152:PRO:HD3	1.89	0.54
2:G:1671:ARG:NH2	2:G:1710:GLY:O	2.40	0.54
2:G:2737:PRO:O	2:G:2888:ARG:NH2	2.40	0.54
2:I:972:LEU:O	2:I:1044:ARG:NH2	2.39	0.54
1:H:23:VAL:HG22	1:H:47:LYS:HG2	1.90	0.54
2:I:637:LEU:HD23	2:I:1637:MET:HB3	1.90	0.54
2:I:2737:PRO:O	2:I:2888:ARG:NH2	2.40	0.54
2:B:989:ALA:O	2:B:1035:ASN:ND2	2.38	0.54
2:G:730:VAL:O	2:G:735:GLN:NE2	2.41	0.54
2:E:2737:PRO:O	2:E:2888:ARG:NH2	2.40	0.54
1:F:23:VAL:HG22	1:F:47:LYS:HG2	1.90	0.54
2:I:730:VAL:O	2:I:735:GLN:NE2	2.41	0.54
2:I:2347:GLU:O	2:I:2351:ASN:N	2.40	0.54
2:E:3981:ALA:HA	2:E:3986:TRP:HE1	1.72	0.54
2:B:359:TYR:HA	2:B:376:ALA:HA	1.90	0.54
1:F:42:ARG:HG2	2:E:1691:GLN:HG2	1.89	0.54
2:G:637:LEU:HD23	2:G:1637:MET:HB3	1.90	0.54
2:E:2770:LYS:HB3	2:E:2775:TRP:HB2	1.89	0.54
2:E:359:TYR:HA	2:E:376:ALA:HA	1.90	0.53
2:E:1164:LEU:HB3	2:E:1169:LEU:HD21	1.90	0.53
2:E:4924:VAL:HA	2:E:4928:LEU:HB2	1.90	0.53
2:G:41:GLY:O	2:G:45:ARG:NH1	2.42	0.53
2:G:395:GLN:HG3	2:G:397:GLU:H	1.74	0.53
2:I:359:TYR:HA	2:I:376:ALA:HA	1.90	0.53
2:I:788:LYS:HG2	2:I:1630:CYS:H	1.71	0.53
2:B:4924:VAL:HA	2:B:4928:LEU:HB2	1.90	0.53
2:G:1731:LEU:HA	2:G:1772:ARG:HH12	1.73	0.53
2:I:1731:LEU:HA	2:I:1772:ARG:HH12	1.73	0.53
2:I:3910:THR:HG23	2:I:3911:THR:HG23	1.91	0.53
2:I:3981:ALA:HA	2:I:3986:TRP:HE1	1.72	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:23:VAL:HG22	1:J:47:LYS:HG2	1.90	0.53
2:B:1164:LEU:HB3	2:B:1169:LEU:HD21	1.90	0.53
2:B:2347:GLU:O	2:B:2351:ASN:N	2.40	0.53
2:B:3910:THR:HG23	2:B:3911:THR:HG23	1.91	0.53
2:G:359:TYR:HA	2:G:376:ALA:HA	1.90	0.53
2:I:19:GLU:HB2	2:I:206:CYS:HB3	1.91	0.53
2:E:103:TYR:HB3	2:E:152:PRO:HD3	1.89	0.53
1:A:23:VAL:HG22	1:A:47:LYS:HG2	1.90	0.53
2:B:730:VAL:O	2:B:735:GLN:NE2	2.41	0.53
2:I:41:GLY:O	2:I:45:ARG:NH1	2.42	0.53
2:B:1243:PRO:HB2	2:B:1600:LEU:HD22	1.91	0.53
2:G:2755:ILE:HD13	2:G:2810:LYS:HG2	1.91	0.53
2:E:41:GLY:O	2:E:45:ARG:NH1	2.42	0.53
2:G:3910:THR:HG23	2:G:3911:THR:HG23	1.91	0.53
2:I:4924:VAL:HA	2:I:4928:LEU:HB2	1.90	0.53
2:E:19:GLU:HB2	2:E:206:CYS:HB3	1.91	0.53
2:B:395:GLN:HG3	2:B:397:GLU:H	1.74	0.53
2:B:637:LEU:HD23	2:B:1637:MET:HB3	1.90	0.53
2:B:867:LEU:HB3	2:B:929:LEU:HD13	1.91	0.53
2:B:2755:ILE:HD13	2:B:2810:LYS:HG2	1.91	0.53
2:G:3981:ALA:HA	2:G:3986:TRP:HE1	1.72	0.53
2:G:4924:VAL:HA	2:G:4928:LEU:HB2	1.90	0.53
2:E:395:GLN:HG3	2:E:397:GLU:H	1.74	0.53
2:E:637:LEU:HD23	2:E:1637:MET:HB3	1.90	0.53
2:E:867:LEU:HB3	2:E:929:LEU:HD13	1.91	0.53
2:E:1650:ILE:HG13	2:E:1707:LEU:HD21	1.91	0.53
2:B:19:GLU:HB2	2:B:206:CYS:HB3	1.91	0.52
2:B:1650:ILE:HG13	2:B:1707:LEU:HD21	1.91	0.52
2:G:1164:LEU:HB3	2:G:1169:LEU:HD21	1.90	0.52
2:I:823:LEU:HD23	2:I:1626:TRP:HB3	1.91	0.52
2:E:2755:ILE:HD13	2:E:2810:LYS:HG2	1.91	0.52
2:E:3910:THR:HG23	2:E:3911:THR:HG23	1.91	0.52
2:G:867:LEU:HB3	2:G:929:LEU:HD13	1.91	0.52
2:I:1164:LEU:HB3	2:I:1169:LEU:HD21	1.90	0.52
2:E:718:GLY:HA3	2:E:737:LEU:HA	1.92	0.52
2:E:823:LEU:HD23	2:E:1626:TRP:HB3	1.92	0.52
2:B:838:HIS:HA	2:B:1201:HIS:HB3	1.92	0.52
2:E:886:ARG:HB3	2:E:891:TRP:HB2	1.91	0.52
2:I:887:ILE:HG21	2:I:959:TYR:HA	1.92	0.52
2:I:1243:PRO:HB2	2:I:1600:LEU:HD22	1.91	0.52
2:E:1731:LEU:HA	2:E:1772:ARG:HH12	1.73	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:2911:LEU:HB2	2:E:2916:LYS:HE3	1.91	0.52
1:A:42:ARG:HG2	2:B:1691:GLN:HG2	1.91	0.52
2:B:776:LEU:HG	2:B:848:HIS:HA	1.92	0.52
2:B:886:ARG:HB3	2:B:891:TRP:HB2	1.91	0.52
2:B:887:ILE:HG21	2:B:959:TYR:HA	1.92	0.52
2:G:19:GLU:HB2	2:G:206:CYS:HB3	1.91	0.52
2:G:718:GLY:HA3	2:G:737:LEU:HA	1.91	0.52
2:G:776:LEU:HG	2:G:848:HIS:HA	1.92	0.52
2:G:823:LEU:HD23	2:G:1626:TRP:HB3	1.92	0.52
2:G:4582:VAL:HG11	2:E:4860:ARG:HD2	1.89	0.52
2:E:838:HIS:HA	2:E:1201:HIS:HB3	1.92	0.52
2:B:823:LEU:HD23	2:B:1626:TRP:HB3	1.92	0.52
2:I:2755:ILE:HD13	2:I:2810:LYS:HG2	1.91	0.52
2:G:2452:ARG:HH12	2:E:177:GLU:HG3	1.73	0.52
2:I:1650:ILE:HG13	2:I:1707:LEU:HD21	1.91	0.52
2:B:41:GLY:O	2:B:45:ARG:NH1	2.41	0.52
2:G:887:ILE:HG21	2:G:959:TYR:HA	1.92	0.52
2:B:1731:LEU:HA	2:B:1772:ARG:HH12	1.73	0.52
2:I:281:ARG:NH2	2:I:309:THR:OG1	2.43	0.52
2:I:1152:MET:HB2	2:I:1161:ILE:HB	1.92	0.52
2:E:1243:PRO:HB2	2:E:1600:LEU:HD22	1.91	0.52
2:B:2364:PHE:HD1	2:B:2429:LEU:HD21	1.75	0.52
2:G:2911:LEU:HB2	2:G:2916:LYS:HE3	1.91	0.52
2:I:776:LEU:HG	2:I:848:HIS:HA	1.92	0.52
2:I:838:HIS:HA	2:I:1201:HIS:HB3	1.92	0.52
2:E:1152:MET:HB2	2:E:1161:ILE:HB	1.92	0.52
2:E:3751:VAL:O	2:E:3756:LYS:NZ	2.43	0.52
2:E:4681:LEU:HD21	2:E:4687:TYR:HD2	1.75	0.52
2:B:1152:MET:HB2	2:B:1161:ILE:HB	1.92	0.51
2:G:838:HIS:HA	2:G:1201:HIS:HB3	1.92	0.51
2:G:1152:MET:HB2	2:G:1161:ILE:HB	1.92	0.51
2:I:2364:PHE:HD1	2:I:2429:LEU:HD21	1.75	0.51
2:E:776:LEU:HG	2:E:848:HIS:HA	1.92	0.51
2:E:887:ILE:HG21	2:E:959:TYR:HA	1.92	0.51
2:B:3751:VAL:O	2:B:3756:LYS:NZ	2.44	0.51
2:B:4126:GLU:O	2:B:4130:ASN:ND2	2.44	0.51
2:G:1243:PRO:HB2	2:G:1600:LEU:HD22	1.91	0.51
2:G:1650:ILE:HG13	2:G:1707:LEU:HD21	1.91	0.51
2:I:469:ARG:HH21	2:I:3712:GLU:HB3	1.76	0.51
2:I:886:ARG:HB3	2:I:891:TRP:HB2	1.91	0.51
2:B:281:ARG:NH2	2:B:309:THR:OG1	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:4126:GLU:O	2:I:4130:ASN:ND2	2.44	0.51
2:E:281:ARG:NH2	2:E:309:THR:OG1	2.43	0.51
2:G:56:GLN:O	2:G:309:THR:OG1	2.26	0.51
2:G:469:ARG:HH21	2:G:3712:GLU:HB3	1.76	0.51
2:I:867:LEU:HB3	2:I:929:LEU:HD13	1.91	0.51
2:I:2911:LEU:HB2	2:I:2916:LYS:HE3	1.91	0.51
2:E:2364:PHE:HD1	2:E:2429:LEU:HD21	1.75	0.51
2:B:718:GLY:HA3	2:B:737:LEU:HA	1.91	0.51
2:G:1743:ARG:O	2:G:1964:ARG:NH2	2.44	0.51
2:I:395:GLN:HG3	2:I:397:GLU:H	1.74	0.51
2:I:2042:CYS:SG	2:I:2043:GLY:N	2.81	0.51
2:B:219:VAL:HG13	2:B:285:VAL:HG21	1.93	0.51
2:B:1516:UNK:N	2:B:1529:UNK:O	2.44	0.51
2:B:1743:ARG:O	2:B:1964:ARG:NH2	2.44	0.51
2:B:2042:CYS:SG	2:B:2043:GLY:N	2.81	0.51
2:B:2911:LEU:HB2	2:B:2916:LYS:HE3	1.91	0.51
2:G:1516:UNK:N	2:G:1529:UNK:O	2.44	0.51
2:I:3751:VAL:O	2:I:3756:LYS:NZ	2.43	0.51
2:E:2365:GLY:HA3	2:E:2426:TYR:HE1	1.76	0.51
2:I:718:GLY:HA3	2:I:737:LEU:HA	1.91	0.51
2:I:2318:TYR:OH	2:I:2414:ASN:N	2.44	0.51
2:G:2364:PHE:HD1	2:G:2429:LEU:HD21	1.75	0.51
2:I:4081:VAL:HB	2:I:4088:ILE:HD12	1.93	0.51
2:E:219:VAL:HG13	2:E:285:VAL:HG21	1.93	0.51
2:E:1516:UNK:N	2:E:1529:UNK:O	2.44	0.51
2:E:3980:LEU:HD22	2:E:3985:LEU:HD22	1.93	0.51
2:E:4126:GLU:O	2:E:4130:ASN:ND2	2.44	0.51
2:G:4681:LEU:HD21	2:G:4687:TYR:HD2	1.75	0.51
2:B:469:ARG:HH21	2:B:3712:GLU:HB3	1.76	0.51
2:G:3751:VAL:O	2:G:3756:LYS:NZ	2.43	0.51
2:G:4126:GLU:O	2:G:4130:ASN:ND2	2.44	0.51
2:E:4904:PRO:HB3	2:E:4913:ARG:HD3	1.93	0.51
2:B:2365:GLY:HA3	2:B:2426:TYR:HE1	1.76	0.50
2:B:2739:PRO:HB3	2:B:2884:ASN:HB3	1.93	0.50
2:G:331:VAL:HG12	2:G:333:GLY:H	1.76	0.50
2:G:886:ARG:HB3	2:G:891:TRP:HB2	1.91	0.50
2:I:717:ASP:OD1	2:I:720:HIS:ND1	2.45	0.50
2:B:45:ARG:NH2	2:B:447:ASP:OD1	2.45	0.50
2:B:606:LEU:HG	2:B:617:ASN:HD22	1.77	0.50
2:B:671:VAL:HG22	2:B:740:PRO:HG3	1.94	0.50
2:B:717:ASP:OD1	2:B:720:HIS:ND1	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:281:ARG:NH2	2:G:309:THR:OG1	2.43	0.50
2:G:606:LEU:HG	2:G:617:ASN:HD22	1.77	0.50
2:G:794:GLY:H	2:G:798:GLY:HA3	1.76	0.50
2:G:3980:LEU:HD22	2:G:3985:LEU:HD22	1.93	0.50
2:I:794:GLY:H	2:I:798:GLY:HA3	1.76	0.50
2:I:4904:PRO:HB3	2:I:4913:ARG:HD3	1.93	0.50
2:E:56:GLN:O	2:E:309:THR:OG1	2.26	0.50
2:G:2265:LEU:HD22	2:G:2330:ARG:HB3	1.94	0.50
2:I:1516:UNK:N	2:I:1529:UNK:O	2.44	0.50
2:E:331:VAL:HG12	2:E:333:GLY:H	1.76	0.50
1:A:21:THR:HA	1:A:49:ARG:HA	1.94	0.50
2:B:4681:LEU:HD21	2:B:4687:TYR:HD2	1.75	0.50
2:G:219:VAL:HG13	2:G:285:VAL:HG21	1.93	0.50
2:E:2739:PRO:HB3	2:E:2884:ASN:HB3	1.93	0.50
1:J:21:THR:HA	1:J:49:ARG:HA	1.94	0.50
2:E:606:LEU:HG	2:E:617:ASN:HD22	1.77	0.50
2:E:717:ASP:OD1	2:E:720:HIS:ND1	2.44	0.50
2:E:4729:GLY:HA2	2:E:4737:ILE:HG13	1.93	0.50
1:F:21:THR:HA	1:F:49:ARG:HA	1.94	0.50
2:B:4983:HIS:ND1	2:B:4983:HIS:N	2.59	0.50
2:G:45:ARG:NH2	2:G:447:ASP:OD1	2.44	0.50
2:I:2365:GLY:HA3	2:I:2426:TYR:HE1	1.76	0.50
2:I:4681:LEU:HD21	2:I:4687:TYR:HD2	1.75	0.50
2:E:3830:GLN:HA	2:E:3833:GLN:HG2	1.94	0.50
2:B:952:LYS:HB3	2:B:968:ALA:HB1	1.94	0.50
2:G:2042:CYS:SG	2:G:2043:GLY:N	2.81	0.50
2:E:2265:LEU:HD22	2:E:2330:ARG:HB3	1.94	0.50
2:B:794:GLY:H	2:B:798:GLY:HA3	1.76	0.50
2:B:3830:GLN:HA	2:B:3833:GLN:HG2	1.94	0.50
2:B:4081:VAL:HB	2:B:4088:ILE:HD12	1.93	0.50
2:B:4904:PRO:HB3	2:B:4913:ARG:HD3	1.93	0.50
2:G:717:ASP:OD1	2:G:720:HIS:ND1	2.45	0.50
2:I:426:ARG:HB2	2:I:506:TYR:HA	1.94	0.50
2:E:469:ARG:HH21	2:E:3712:GLU:HB3	1.76	0.50
2:E:952:LYS:HB3	2:E:968:ALA:HB1	1.94	0.50
2:E:4081:VAL:HB	2:E:4088:ILE:HD12	1.93	0.50
2:G:4904:PRO:HB3	2:G:4913:ARG:HD3	1.93	0.50
2:I:2739:PRO:HB3	2:I:2884:ASN:HB3	1.93	0.50
2:I:3830:GLN:HA	2:I:3833:GLN:HG2	1.94	0.50
2:I:3980:LEU:HD22	2:I:3985:LEU:HD22	1.93	0.50
2:E:794:GLY:H	2:E:798:GLY:HA3	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2265:LEU:HD22	2:B:2330:ARG:HB3	1.94	0.49
2:G:952:LYS:HB3	2:G:968:ALA:HB1	1.94	0.49
2:I:219:VAL:HG13	2:I:285:VAL:HG21	1.93	0.49
2:I:331:VAL:HG12	2:I:333:GLY:H	1.76	0.49
2:I:635:THR:HB	2:I:1639:LEU:HD23	1.94	0.49
2:E:426:ARG:HB2	2:E:506:TYR:HA	1.94	0.49
1:H:21:THR:HA	1:H:49:ARG:HA	1.94	0.49
2:G:1111:PRO:HD3	2:G:1605:TRP:HE1	1.77	0.49
2:G:2739:PRO:HB3	2:G:2884:ASN:HB3	1.93	0.49
2:I:45:ARG:NH2	2:I:447:ASP:OD1	2.44	0.49
2:E:2257:LEU:HD11	2:E:2276:ALA:HB2	1.94	0.49
2:B:331:VAL:HG12	2:B:333:GLY:H	1.76	0.49
2:B:1111:PRO:HD3	2:B:1605:TRP:HE1	1.77	0.49
2:B:4968:PHE:CD2	2:B:4978:HIS:CE1	2.94	0.49
2:G:2758:PHE:HD2	2:G:2809:ILE:HG12	1.77	0.49
2:G:3830:GLN:HA	2:G:3833:GLN:HG2	1.94	0.49
2:B:635:THR:HB	2:B:1639:LEU:HD23	1.94	0.49
2:B:3980:LEU:HD22	2:B:3985:LEU:HD22	1.93	0.49
2:G:2318:TYR:OH	2:G:2414:ASN:N	2.44	0.49
2:G:4081:VAL:HB	2:G:4088:ILE:HD12	1.93	0.49
2:I:671:VAL:HG22	2:I:740:PRO:HG3	1.94	0.49
2:I:3850:GLN:HA	2:I:3853:ALA:HB3	1.95	0.49
2:E:45:ARG:NH2	2:E:447:ASP:OD1	2.45	0.49
2:E:2291:GLN:HB3	2:E:2294:ASP:H	1.77	0.49
2:B:615:ARG:NH2	2:B:1677:GLY:O	2.43	0.49
2:G:2365:GLY:HA3	2:G:2426:TYR:HE1	1.76	0.49
2:E:111:HIS:CD2	2:E:114:SER:H	2.29	0.49
2:G:1960:ALA:O	2:G:1964:ARG:NE	2.46	0.49
2:I:2265:LEU:HD22	2:I:2330:ARG:HB3	1.94	0.49
2:G:635:THR:HB	2:G:1639:LEU:HD23	1.94	0.49
2:G:2257:LEU:HD11	2:G:2276:ALA:HB2	1.94	0.49
2:G:3850:GLN:HA	2:G:3853:ALA:HB3	1.95	0.49
2:G:4729:GLY:HA2	2:G:4737:ILE:HG13	1.93	0.49
2:I:606:LEU:HG	2:I:617:ASN:HD22	1.77	0.49
2:I:1111:PRO:HD3	2:I:1605:TRP:HE1	1.77	0.49
2:B:2758:PHE:HD2	2:B:2809:ILE:HG12	1.77	0.49
2:G:671:VAL:HG22	2:G:740:PRO:HG3	1.93	0.49
2:G:2291:GLN:HB3	2:G:2294:ASP:H	1.78	0.49
2:E:2042:CYS:SG	2:E:2043:GLY:N	2.81	0.49
2:G:4152:GLU:OE1	2:G:4194:TYR:OH	2.31	0.49
2:I:56:GLN:O	2:I:309:THR:OG1	2.26	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:2291:GLN:HB3	2:I:2294:ASP:H	1.78	0.49
2:I:4152:GLU:OE1	2:I:4194:TYR:OH	2.31	0.48
2:E:671:VAL:HG22	2:E:740:PRO:HG3	1.93	0.48
2:E:3850:GLN:HA	2:E:3853:ALA:HB3	1.95	0.48
2:B:4729:GLY:HA2	2:B:4737:ILE:HG13	1.94	0.48
2:B:4962:GLY:H	2:B:5025:GLY:N	2.12	0.48
2:E:2758:PHE:HD2	2:E:2809:ILE:HG12	1.77	0.48
2:B:426:ARG:HB2	2:B:506:TYR:HA	1.94	0.48
2:G:1700:ASP:OD2	2:G:1708:ARG:NH2	2.47	0.48
2:G:3946:GLN:OE1	2:G:3950:ASN:ND2	2.47	0.48
2:G:4687:TYR:OH	2:G:4699:GLY:O	2.30	0.48
2:I:952:LYS:HB3	2:I:968:ALA:HB1	1.94	0.48
2:I:1743:ARG:O	2:I:1964:ARG:NH2	2.44	0.48
2:E:1700:ASP:OD2	2:E:1708:ARG:NH2	2.47	0.48
2:E:1743:ARG:O	2:E:1964:ARG:NH2	2.44	0.48
2:E:4152:GLU:OE1	2:E:4194:TYR:OH	2.31	0.48
2:B:1126:GLY:HA3	2:B:1143:TRP:CE2	2.49	0.48
2:G:426:ARG:HB2	2:G:506:TYR:HA	1.94	0.48
2:G:2337:PHE:HA	2:G:2340:PHE:HB2	1.95	0.48
2:G:3781:GLN:HA	2:G:3784:SER:HB3	1.95	0.48
2:E:34:LYS:H	2:E:53:SER:HG	1.60	0.48
2:E:635:THR:HB	2:E:1639:LEU:HD23	1.94	0.48
2:E:1111:PRO:HD3	2:E:1605:TRP:HE1	1.77	0.48
2:B:3946:GLN:OE1	2:B:3950:ASN:ND2	2.47	0.48
2:E:2337:PHE:HA	2:E:2340:PHE:HB2	1.95	0.48
2:E:3946:GLN:OE1	2:E:3950:ASN:ND2	2.47	0.48
2:B:2291:GLN:HB3	2:B:2294:ASP:H	1.77	0.48
2:G:1126:GLY:HA3	2:G:1143:TRP:CE2	2.49	0.48
2:I:2257:LEU:HD11	2:I:2276:ALA:HB2	1.94	0.48
2:E:1457:UNK:N	2:E:1497:UNK:O	2.47	0.48
2:E:4697:VAL:O	2:E:4701:TRP:N	2.47	0.48
2:B:4152:GLU:OE1	2:B:4194:TYR:OH	2.31	0.48
2:B:4586:PRO:HB3	2:B:4628:VAL:HG21	1.96	0.48
2:I:615:ARG:NH2	2:I:1677:GLY:O	2.44	0.48
2:I:1126:GLY:HA3	2:I:1143:TRP:CE2	2.49	0.48
2:I:4586:PRO:HB3	2:I:4628:VAL:HG21	1.96	0.48
2:I:4729:GLY:HA2	2:I:4737:ILE:HG13	1.94	0.48
2:B:664:PHE:HB2	2:B:746:CYS:HB2	1.96	0.48
2:B:1457:UNK:N	2:B:1497:UNK:O	2.46	0.48
2:B:2257:LEU:HD11	2:B:2276:ALA:HB2	1.94	0.48
2:B:2337:PHE:HA	2:B:2340:PHE:HB2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:3850:GLN:HA	2:B:3853:ALA:HB3	1.95	0.48
2:E:3781:GLN:HA	2:E:3784:SER:HB3	1.95	0.48
2:B:1960:ALA:O	2:B:1964:ARG:NE	2.46	0.48
2:I:280:LEU:HD21	2:I:316:PHE:HE2	1.79	0.48
2:E:4687:TYR:OH	2:E:4699:GLY:O	2.30	0.48
2:B:280:LEU:HD21	2:B:316:PHE:HE2	1.79	0.48
2:B:2375:GLY:HA3	2:B:2378:ALA:HB3	1.96	0.48
2:G:177:GLU:HG3	2:I:2452:ARG:HH12	1.79	0.48
2:I:3781:GLN:HA	2:I:3784:SER:HB3	1.95	0.48
2:E:280:LEU:HD21	2:E:316:PHE:HE2	1.79	0.48
2:E:1126:GLY:HA3	2:E:1143:TRP:CE2	2.49	0.48
2:E:2375:GLY:HA3	2:E:2378:ALA:HB3	1.96	0.48
2:B:1700:ASP:OD2	2:B:1708:ARG:NH2	2.47	0.47
2:I:1457:UNK:N	2:I:1497:UNK:O	2.46	0.47
2:I:3946:GLN:OE1	2:I:3950:ASN:ND2	2.47	0.47
2:E:1960:ALA:O	2:E:1964:ARG:NE	2.46	0.47
2:E:2318:TYR:OH	2:E:2414:ASN:N	2.44	0.47
2:B:4959:PHE:C	2:B:4959:PHE:CD2	2.86	0.47
2:I:34:LYS:H	2:I:53:SER:HG	1.60	0.47
2:I:1700:ASP:OD2	2:I:1708:ARG:NH2	2.47	0.47
2:I:2758:PHE:HD2	2:I:2809:ILE:HG12	1.77	0.47
2:G:1457:UNK:N	2:G:1497:UNK:O	2.47	0.47
2:G:4586:PRO:HB3	2:G:4628:VAL:HG21	1.96	0.47
2:B:3733:CYS:HA	2:B:3766:GLN:HG2	1.97	0.47
2:G:111:HIS:CD2	2:G:114:SER:H	2.29	0.47
2:E:615:ARG:NH2	2:E:1677:GLY:O	2.44	0.47
2:E:2751:LEU:HD11	2:E:2823:ILE:HG21	1.96	0.47
1:J:34:LYS:HD3	2:I:629:ARG:HD2	1.95	0.47
2:B:1973:GLN:O	2:B:1977:TYR:N	2.45	0.47
2:B:2318:TYR:OH	2:B:2414:ASN:N	2.44	0.47
2:G:2751:LEU:HD11	2:G:2823:ILE:HG21	1.96	0.47
2:G:3817:LEU:HD13	2:G:3899:PHE:HD1	1.80	0.47
2:G:4697:VAL:O	2:G:4701:TRP:N	2.47	0.47
2:E:2277:ALA:HB1	2:E:2337:PHE:HD2	1.80	0.47
2:E:2868:SER:O	2:E:2872:GLN:N	2.48	0.47
2:B:2277:ALA:HB1	2:B:2337:PHE:HD2	1.80	0.47
2:G:280:LEU:HD21	2:G:316:PHE:HE2	1.79	0.47
2:G:3733:CYS:HA	2:G:3766:GLN:HG2	1.97	0.47
2:I:111:HIS:CD2	2:I:114:SER:H	2.29	0.47
2:I:664:PHE:HB2	2:I:746:CYS:HB2	1.96	0.47
2:I:2375:GLY:HA3	2:I:2378:ALA:HB3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:664:PHE:HB2	2:E:746:CYS:HB2	1.96	0.47
2:B:56:GLN:O	2:B:309:THR:OG1	2.26	0.47
2:B:621:ILE:O	2:B:625:LEU:N	2.46	0.47
2:B:2452:ARG:HH12	2:I:177:GLU:HG3	1.79	0.47
2:G:664:PHE:HB2	2:G:746:CYS:HB2	1.96	0.47
2:I:2337:PHE:HA	2:I:2340:PHE:HB2	1.95	0.47
2:I:3733:CYS:HA	2:I:3766:GLN:HG2	1.97	0.47
2:I:4697:VAL:O	2:I:4701:TRP:N	2.47	0.47
2:E:2758:PHE:O	2:E:2762:THR:N	2.47	0.47
2:B:20:VAL:HG12	2:B:204:PRO:HA	1.97	0.47
2:I:1960:ALA:O	2:I:1964:ARG:NE	2.46	0.47
2:E:20:VAL:HG12	2:E:204:PRO:HA	1.97	0.47
2:E:4586:PRO:HB3	2:E:4628:VAL:HG21	1.96	0.47
2:G:2353:VAL:O	2:G:2357:LEU:N	2.48	0.47
2:I:1649:ASP:HB3	2:I:1652:GLU:HG2	1.97	0.47
2:I:2751:LEU:HD11	2:I:2823:ILE:HG21	1.96	0.47
2:I:3817:LEU:HD13	2:I:3899:PHE:HD1	1.80	0.47
2:B:2868:SER:O	2:B:2872:GLN:N	2.48	0.47
2:B:3781:GLN:HA	2:B:3784:SER:HB3	1.95	0.47
2:B:4232:GLU:OE2	2:B:5017:ARG:NH1	2.48	0.47
2:B:4864:ASN:ND2	2:B:4871:GLU:OE1	2.46	0.47
2:G:2868:SER:O	2:G:2872:GLN:N	2.48	0.47
2:G:4227:GLU:HG3	2:G:4228:ALA:H	1.79	0.47
2:G:4864:ASN:ND2	2:G:4871:GLU:OE1	2.46	0.47
2:I:20:VAL:HG12	2:I:204:PRO:HA	1.97	0.47
2:I:34:LYS:N	2:I:53:SER:OG	2.44	0.47
2:B:3817:LEU:HD13	2:B:3899:PHE:HD1	1.80	0.46
2:G:1649:ASP:HB3	2:G:1652:GLU:HG2	1.97	0.46
2:G:2277:ALA:HB1	2:G:2337:PHE:HD2	1.80	0.46
2:E:2196:ASN:OD1	2:E:2199:ARG:NH1	2.40	0.46
2:E:2927:LEU:HD23	2:E:2930:LEU:HD12	1.98	0.46
2:E:3817:LEU:HD13	2:E:3899:PHE:HD1	1.80	0.46
2:I:2810:LYS:O	2:I:2814:LYS:N	2.39	0.46
2:E:4227:GLU:HG3	2:E:4228:ALA:H	1.79	0.46
2:G:20:VAL:HG12	2:G:204:PRO:HA	1.97	0.46
2:G:615:ARG:NH2	2:G:1677:GLY:O	2.44	0.46
2:I:2155:LEU:HD13	2:I:2188:ASN:HD21	1.80	0.46
2:I:2277:ALA:HB1	2:I:2337:PHE:HD2	1.80	0.46
2:E:1973:GLN:O	2:E:1977:TYR:N	2.46	0.46
2:E:3770:LEU:HD21	2:E:3775:ALA:HB3	1.97	0.46
2:B:978:THR:HB	2:B:980:ALA:H	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2751:LEU:HD11	2:B:2823:ILE:HG21	1.96	0.46
2:B:2758:PHE:O	2:B:2762:THR:N	2.47	0.46
2:G:463:GLU:OE2	2:G:467:LYS:NZ	2.49	0.46
2:G:1973:GLN:O	2:G:1977:TYR:N	2.45	0.46
2:I:2024:PRO:HB2	2:I:2027:ILE:HG12	1.98	0.46
2:I:2247:GLN:NE2	2:I:2285:GLU:OE2	2.49	0.46
2:E:3733:CYS:HA	2:E:3766:GLN:HG2	1.96	0.46
2:B:551:LEU:HD21	2:B:589:LEU:HD13	1.98	0.46
2:B:1649:ASP:HB3	2:B:1652:GLU:HG2	1.97	0.46
2:B:1808:ARG:HD2	2:B:1854:PHE:HA	1.97	0.46
2:B:2353:VAL:O	2:B:2357:LEU:N	2.48	0.46
2:B:2927:LEU:HD23	2:B:2930:LEU:HD12	1.98	0.46
2:G:4232:GLU:OE2	2:G:5017:ARG:NH1	2.48	0.46
2:I:2003:GLN:O	2:I:2007:ASN:ND2	2.49	0.46
2:I:4864:ASN:ND2	2:I:4871:GLU:OE1	2.46	0.46
2:E:214:VAL:HG12	2:E:274:LEU:HD12	1.98	0.46
2:E:683:ARG:HG2	2:E:717:ASP:HB3	1.98	0.46
2:B:4227:GLU:HG3	2:B:4228:ALA:H	1.79	0.46
2:G:2758:PHE:O	2:G:2762:THR:N	2.47	0.46
2:I:1808:ARG:HD2	2:I:1854:PHE:HA	1.97	0.46
2:I:1973:GLN:O	2:I:1977:TYR:N	2.46	0.46
2:I:4232:GLU:OE2	2:I:5017:ARG:NH1	2.48	0.46
1:F:87:HIS:H	1:F:91:ILE:HB	1.81	0.46
2:B:2024:PRO:HB2	2:B:2027:ILE:HG12	1.98	0.46
2:B:2247:GLN:NE2	2:B:2285:GLU:OE2	2.49	0.46
2:G:2247:GLN:NE2	2:G:2285:GLU:OE2	2.49	0.46
2:I:551:LEU:HD21	2:I:589:LEU:HD13	1.98	0.46
2:I:2927:LEU:HD23	2:I:2930:LEU:HD12	1.98	0.46
2:I:4687:TYR:OH	2:I:4699:GLY:O	2.30	0.46
2:E:2353:VAL:O	2:E:2357:LEU:N	2.48	0.46
1:H:87:HIS:H	1:H:91:ILE:HB	1.81	0.46
2:G:880:GLU:OE1	2:G:968:ALA:N	2.44	0.46
2:G:2003:GLN:O	2:G:2007:ASN:ND2	2.49	0.46
2:G:2375:GLY:HA3	2:G:2378:ALA:HB3	1.96	0.46
2:E:2247:GLN:NE2	2:E:2285:GLU:OE2	2.49	0.46
2:B:111:HIS:CD2	2:B:114:SER:H	2.29	0.46
2:B:4155:PRO:HD2	2:B:5036:LEU:HD23	1.98	0.46
2:G:551:LEU:HD21	2:G:589:LEU:HD13	1.98	0.46
2:G:1808:ARG:HD2	2:G:1854:PHE:HA	1.97	0.46
2:G:2155:LEU:HD13	2:G:2188:ASN:HD21	1.81	0.46
2:G:4017:LEU:HB3	2:G:4139:ILE:HG13	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:2868:SER:O	2:I:2872:GLN:N	2.48	0.46
2:I:4227:GLU:HG3	2:I:4228:ALA:H	1.79	0.46
2:E:551:LEU:HD21	2:E:589:LEU:HD13	1.98	0.46
2:B:4713:SER:HA	2:B:4718:LYS:HE2	1.99	0.45
2:G:978:THR:HB	2:G:980:ALA:H	1.80	0.45
2:G:3770:LEU:HD21	2:G:3775:ALA:HB3	1.97	0.45
2:I:4017:LEU:HB3	2:I:4139:ILE:HG13	1.98	0.45
2:E:2024:PRO:HB2	2:E:2027:ILE:HG12	1.98	0.45
2:E:4184:MET:HE1	2:E:4188:ARG:HE	1.81	0.45
2:E:4232:GLU:OE2	2:E:5017:ARG:NH1	2.48	0.45
2:I:3770:LEU:HD21	2:I:3775:ALA:HB3	1.97	0.45
2:E:1649:ASP:HB3	2:E:1652:GLU:HG2	1.97	0.45
2:E:4155:PRO:HD2	2:E:5036:LEU:HD23	1.98	0.45
2:B:214:VAL:HG12	2:B:274:LEU:HD12	1.98	0.45
2:B:683:ARG:HG2	2:B:717:ASP:HB3	1.98	0.45
2:B:3955:MET:HG3	2:B:4019:LEU:HD22	1.98	0.45
2:B:4687:TYR:OH	2:B:4699:GLY:O	2.30	0.45
2:G:34:LYS:N	2:G:53:SER:OG	2.44	0.45
2:G:2024:PRO:HB2	2:G:2027:ILE:HG12	1.98	0.45
2:G:2927:LEU:HD23	2:G:2930:LEU:HD12	1.98	0.45
2:G:4713:SER:HA	2:G:4718:LYS:HE2	1.98	0.45
2:I:978:THR:HB	2:I:980:ALA:H	1.80	0.45
2:E:4713:SER:HA	2:E:4718:LYS:HE2	1.98	0.45
2:B:463:GLU:OE2	2:B:467:LYS:NZ	2.49	0.45
2:B:1865:MET:SD	2:B:1865:MET:N	2.90	0.45
2:G:4031:LEU:HB3	2:G:4034:ASN:HB2	1.98	0.45
2:E:892:THR:N	2:E:902:ARG:O	2.49	0.45
2:E:2155:LEU:HD13	2:E:2188:ASN:HD21	1.81	0.45
2:E:4763:GLY:O	2:E:4766:THR:OG1	2.28	0.45
1:F:7:ILE:HB	1:F:71:ARG:HB3	1.99	0.45
2:G:214:VAL:HG12	2:G:274:LEU:HD12	1.98	0.45
2:G:3361:UNK:O	2:G:3365:UNK:N	2.50	0.45
2:E:1865:MET:SD	2:E:1865:MET:N	2.90	0.45
2:E:2003:GLN:O	2:E:2007:ASN:ND2	2.49	0.45
2:E:3955:MET:HG3	2:E:4019:LEU:HD22	1.99	0.45
1:A:87:HIS:H	1:A:91:ILE:HB	1.81	0.45
1:H:7:ILE:HB	1:H:71:ARG:HB3	1.99	0.45
2:B:606:LEU:O	2:B:617:ASN:ND2	2.50	0.45
2:B:2003:GLN:O	2:B:2007:ASN:ND2	2.49	0.45
2:I:4031:LEU:HB3	2:I:4034:ASN:HB2	1.98	0.45
2:E:978:THR:HB	2:E:980:ALA:H	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:1808:ARG:HD2	2:E:1854:PHE:HA	1.97	0.45
1:J:76:CYS:HB2	1:J:97:LEU:HB2	1.98	0.45
1:J:87:HIS:H	1:J:91:ILE:HB	1.81	0.45
2:B:359:TYR:OH	2:B:385:ASP:OD2	2.32	0.45
2:B:3770:LEU:HD21	2:B:3775:ALA:HB3	1.97	0.45
2:I:790:ARG:HG2	2:I:1627:ALA:HA	1.99	0.45
2:E:621:ILE:O	2:E:625:LEU:N	2.46	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	1.99	0.45
2:B:3365:UNK:O	2:B:3369:UNK:N	2.50	0.45
2:B:4697:VAL:O	2:B:4701:TRP:N	2.47	0.45
2:B:4960:ILE:H	2:B:4960:ILE:HG12	1.51	0.45
2:B:4968:PHE:CZ	2:B:4978:HIS:CE1	2.96	0.45
2:G:34:LYS:H	2:G:53:SER:HG	1.63	0.45
2:G:606:LEU:O	2:G:617:ASN:ND2	2.50	0.45
2:G:2776:SER:O	2:G:2788:HIS:N	2.50	0.45
2:G:4155:PRO:HD2	2:G:5036:LEU:HD23	1.98	0.45
2:I:606:LEU:O	2:I:617:ASN:ND2	2.50	0.45
2:I:2353:VAL:O	2:I:2357:LEU:N	2.48	0.45
2:I:3365:UNK:O	2:I:3369:UNK:N	2.50	0.45
2:I:4155:PRO:HD2	2:I:5036:LEU:HD23	1.98	0.45
2:E:880:GLU:OE1	2:E:968:ALA:N	2.44	0.45
2:B:404:ILE:HG21	2:B:481:GLU:HG3	1.99	0.45
2:B:2155:LEU:HD13	2:B:2188:ASN:HD21	1.81	0.45
2:G:134:ASP:OD1	2:G:134:ASP:N	2.50	0.45
2:G:3365:UNK:O	2:G:3369:UNK:N	2.50	0.45
2:I:1865:MET:SD	2:I:1865:MET:N	2.90	0.45
2:I:2869:ARG:HA	2:I:2872:GLN:HB3	1.98	0.45
2:E:2869:ARG:HA	2:E:2872:GLN:HB3	1.98	0.45
1:F:76:CYS:HB2	1:F:97:LEU:HB2	1.98	0.45
2:B:1247:PRO:HA	2:B:1598:GLN:HA	1.99	0.45
2:G:683:ARG:HG2	2:G:717:ASP:HB3	1.98	0.45
2:I:404:ILE:HG21	2:I:481:GLU:HG3	1.99	0.45
2:I:1095:VAL:HB	2:I:1199:VAL:HG23	1.99	0.45
2:E:1092:PHE:N	2:E:1149:VAL:O	2.41	0.45
2:E:4864:ASN:ND2	2:E:4871:GLU:OE1	2.46	0.45
1:H:76:CYS:HB2	1:H:97:LEU:HB2	1.98	0.44
2:B:396:GLU:OE2	2:B:451:TYR:OH	2.28	0.44
2:I:4233:LEU:HA	2:I:4236:SER:HB3	1.99	0.44
2:I:4713:SER:HA	2:I:4718:LYS:HE2	1.98	0.44
2:E:2776:SER:O	2:E:2788:HIS:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:4075:GLU:HA	2:E:4078:GLN:HB2	2.00	0.44
2:G:43:GLY:N	2:G:447:ASP:OD2	2.45	0.44
2:G:621:ILE:O	2:G:625:LEU:N	2.46	0.44
2:G:1865:MET:SD	2:G:1865:MET:N	2.90	0.44
2:G:2430:ILE:HG21	2:G:2502:UNK:HA	1.99	0.44
2:G:3955:MET:HG3	2:G:4019:LEU:HD22	1.98	0.44
2:G:4233:LEU:HA	2:G:4236:SER:HB3	2.00	0.44
2:I:533:ASN:ND2	2:I:536:ASN:OD1	2.40	0.44
1:H:74:LEU:HB2	1:H:99:PHE:HB2	2.00	0.44
2:B:2231:SER:HA	2:B:2234:ARG:HG2	2.00	0.44
2:B:4017:LEU:HB3	2:B:4139:ILE:HG13	1.98	0.44
2:G:396:GLU:OE2	2:G:451:TYR:OH	2.28	0.44
2:G:790:ARG:HG2	2:G:1627:ALA:HA	1.99	0.44
2:G:3658:LYS:HA	2:G:3661:TRP:CE2	2.53	0.44
2:I:134:ASP:OD1	2:I:134:ASP:N	2.50	0.44
2:I:683:ARG:HG2	2:I:717:ASP:HB3	1.98	0.44
2:I:3955:MET:HG3	2:I:4019:LEU:HD22	1.99	0.44
2:E:533:ASN:ND2	2:E:536:ASN:OD1	2.40	0.44
2:E:4017:LEU:HB3	2:E:4139:ILE:HG13	1.98	0.44
2:B:1727:ARG:HH21	2:B:1775:HIS:CE1	2.36	0.44
2:B:2776:SER:O	2:B:2788:HIS:N	2.50	0.44
2:B:3973:CYS:SG	2:B:3976:ASN:ND2	2.91	0.44
2:G:3973:CYS:SG	2:G:3976:ASN:ND2	2.91	0.44
2:I:1727:ARG:HH21	2:I:1775:HIS:CE1	2.36	0.44
2:E:3361:UNK:O	2:E:3365:UNK:N	2.50	0.44
1:A:56:ILE:HG13	1:A:59:PHE:H	1.83	0.44
2:B:892:THR:N	2:B:902:ARG:O	2.49	0.44
2:B:983:THR:O	2:B:987:ARG:N	2.49	0.44
2:B:3658:LYS:HA	2:B:3661:TRP:CE2	2.53	0.44
2:B:4075:GLU:HA	2:B:4078:GLN:HB2	2.00	0.44
2:B:4968:PHE:CE2	2:B:4978:HIS:HE1	2.21	0.44
2:G:404:ILE:HG21	2:G:481:GLU:HG3	1.99	0.44
2:G:1095:VAL:HB	2:G:1199:VAL:HG23	1.99	0.44
2:I:164:ARG:N	2:I:167:ASP:OD2	2.46	0.44
2:I:214:VAL:HG12	2:I:274:LEU:HD12	1.98	0.44
2:I:3658:LYS:HA	2:I:3661:TRP:CE2	2.53	0.44
2:E:606:LEU:O	2:E:617:ASN:ND2	2.50	0.44
2:E:1095:VAL:HB	2:E:1199:VAL:HG23	1.99	0.44
2:E:1247:PRO:HA	2:E:1598:GLN:HA	1.99	0.44
2:E:3973:CYS:SG	2:E:3976:ASN:ND2	2.91	0.44
2:B:34:LYS:H	2:B:53:SER:HG	1.64	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:4865:LYS:HG3	2:B:4875:LYS:HZ3	1.82	0.44
2:G:1105:ALA:HB1	2:G:1109:LEU:HD21	2.00	0.44
2:G:1653:LEU:HB3	2:G:1660:GLN:HB2	2.00	0.44
2:G:1727:ARG:HH21	2:G:1775:HIS:CE1	2.36	0.44
2:I:2231:SER:HA	2:I:2234:ARG:HG2	2.00	0.44
2:I:2776:SER:O	2:I:2788:HIS:N	2.50	0.44
2:I:3973:CYS:SG	2:I:3976:ASN:ND2	2.91	0.44
2:E:1105:ALA:HB1	2:E:1109:LEU:HD21	2.00	0.44
2:E:3940:LYS:O	2:E:4002:LYS:NZ	2.49	0.44
1:A:7:ILE:HB	1:A:71:ARG:HB3	1.99	0.44
2:G:2869:ARG:HA	2:G:2872:GLN:HB3	1.98	0.44
2:I:3361:UNK:O	2:I:3365:UNK:N	2.50	0.44
2:E:119:SER:HA	2:E:146:CYS:HA	1.99	0.44
2:E:914:PRO:O	2:E:918:ARG:N	2.51	0.44
1:F:92:PRO:HD3	2:E:627:PRO:HB2	1.99	0.44
1:A:76:CYS:HB2	1:A:97:LEU:HB2	1.98	0.44
2:B:2869:ARG:HA	2:B:2872:GLN:HB3	1.98	0.44
2:B:4031:LEU:HB3	2:B:4034:ASN:HB2	1.98	0.44
2:G:892:THR:N	2:G:902:ARG:O	2.49	0.44
2:G:1247:PRO:HA	2:G:1598:GLN:HA	1.99	0.44
2:G:1972:ASN:HD21	2:G:2024:PRO:HB3	1.83	0.44
2:I:793:LEU:HB2	2:I:797:HIS:H	1.83	0.44
2:E:404:ILE:HG21	2:E:481:GLU:HG3	1.99	0.44
2:E:1727:ARG:HH21	2:E:1775:HIS:CE1	2.36	0.44
2:E:3658:LYS:HA	2:E:3661:TRP:CE2	2.53	0.44
1:F:56:ILE:HG13	1:F:59:PHE:H	1.83	0.44
1:F:74:LEU:HB2	1:F:99:PHE:HB2	2.00	0.44
1:J:7:ILE:HB	1:J:71:ARG:HB3	1.99	0.44
2:B:3361:UNK:O	2:B:3365:UNK:N	2.50	0.44
2:B:4984:ASN:C	2:B:4986:ALA:H	2.21	0.44
2:G:793:LEU:HB2	2:G:797:HIS:H	1.83	0.44
2:G:2196:ASN:OD1	2:G:2199:ARG:NH1	2.40	0.44
2:G:4075:GLU:HA	2:G:4078:GLN:HB2	1.99	0.44
2:I:4075:GLU:HA	2:I:4078:GLN:HB2	1.99	0.44
2:I:4743:MET:HB3	2:I:4746:ALA:HB3	2.00	0.44
2:I:4763:GLY:O	2:I:4766:THR:OG1	2.28	0.44
2:E:790:ARG:HG2	2:E:1627:ALA:HA	1.99	0.44
1:J:74:LEU:HB2	1:J:99:PHE:HB2	2.00	0.43
2:B:3674:ILE:HD11	2:B:3728:ILE:HG22	1.99	0.43
2:B:4743:MET:HB3	2:B:4746:ALA:HB3	2.00	0.43
2:G:1727:ARG:NH2	2:G:1773:PRO:O	2.50	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:396:GLU:OE2	2:I:451:TYR:OH	2.28	0.43
2:I:572:PRO:HA	2:I:575:LEU:HD13	2.00	0.43
2:I:681:HIS:HB3	2:I:784:SER:HB3	2.00	0.43
2:E:463:GLU:OE2	2:E:467:LYS:NZ	2.49	0.43
2:E:681:HIS:HB3	2:E:784:SER:HB3	2.00	0.43
2:E:4031:LEU:HB3	2:E:4034:ASN:HB2	1.98	0.43
2:B:572:PRO:HA	2:B:575:LEU:HD13	2.00	0.43
2:B:841:GLY:HA2	2:B:1073:ARG:HD2	2.00	0.43
2:I:3674:ILE:HD11	2:I:3728:ILE:HG22	1.99	0.43
2:E:1236:THR:OG1	2:E:1608:MET:SD	2.76	0.43
2:E:1972:ASN:HD21	2:E:2024:PRO:HB3	1.83	0.43
2:E:3676:ASP:N	2:E:3676:ASP:OD1	2.50	0.43
2:B:866:HIS:O	2:B:1051:TYR:OH	2.31	0.43
2:B:1859:VAL:HA	2:B:1862:ILE:HG12	2.00	0.43
2:B:1972:ASN:HD21	2:B:2024:PRO:HB3	1.83	0.43
2:B:4233:LEU:HA	2:B:4236:SER:HB3	1.99	0.43
2:G:533:ASN:ND2	2:G:536:ASN:OD1	2.40	0.43
2:I:1653:LEU:HB3	2:I:1660:GLN:HB2	2.00	0.43
2:E:1859:VAL:HA	2:E:1862:ILE:HG12	2.01	0.43
2:B:790:ARG:HG2	2:B:1627:ALA:HA	1.99	0.43
2:B:793:LEU:HB2	2:B:797:HIS:H	1.83	0.43
2:B:1130:GLN:HG2	2:B:1138:PRO:HA	2.01	0.43
2:G:681:HIS:HB3	2:G:784:SER:HB3	2.00	0.43
2:G:1130:GLN:HG2	2:G:1138:PRO:HA	2.01	0.43
2:I:463:GLU:OE2	2:I:467:LYS:NZ	2.49	0.43
2:I:4569:LEU:HD11	2:I:4646:LEU:HD22	2.00	0.43
2:E:4743:MET:HB3	2:E:4746:ALA:HB3	2.00	0.43
1:A:7:ILE:HD13	1:A:71:ARG:HG2	2.01	0.43
1:A:82:TYR:O	1:A:86:GLY:N	2.52	0.43
1:H:82:TYR:O	1:H:86:GLY:N	2.52	0.43
2:G:119:SER:HA	2:G:146:CYS:HA	1.99	0.43
2:G:1236:THR:OG1	2:G:1608:MET:SD	2.76	0.43
2:G:1859:VAL:HA	2:G:1862:ILE:HG12	2.01	0.43
2:I:1698:LEU:N	2:I:1712:TYR:OH	2.52	0.43
2:I:3779:VAL:HG23	2:I:3780:LEU:HD12	2.01	0.43
2:E:2231:SER:HA	2:E:2234:ARG:HG2	2.00	0.43
2:B:1105:ALA:HB1	2:B:1109:LEU:HD21	2.00	0.43
2:B:3779:VAL:HG23	2:B:3780:LEU:HD12	2.01	0.43
2:G:841:GLY:HA2	2:G:1073:ARG:HD2	2.00	0.43
2:G:3674:ILE:HD11	2:G:3728:ILE:HG22	1.99	0.43
2:G:3779:VAL:HG23	2:G:3780:LEU:HD12	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:3805:LEU:HA	2:G:3809:ASN:HD22	1.84	0.43
2:I:1972:ASN:HD21	2:I:2024:PRO:HB3	1.83	0.43
2:E:206:CYS:SG	2:E:207:SER:N	2.92	0.43
2:E:793:LEU:HB2	2:E:797:HIS:H	1.83	0.43
2:E:4233:LEU:HA	2:E:4236:SER:HB3	2.00	0.43
2:B:914:PRO:O	2:B:918:ARG:N	2.51	0.43
2:B:4978:HIS:CE1	2:B:4982:GLU:HG3	2.53	0.43
2:G:3940:LYS:O	2:G:4002:LYS:NZ	2.49	0.43
2:I:1247:PRO:HA	2:I:1598:GLN:HA	1.99	0.43
2:I:1859:VAL:HA	2:I:1862:ILE:HG12	2.00	0.43
2:E:841:GLY:HA2	2:E:1073:ARG:HD2	2.00	0.43
2:E:1295:UNK:N	2:E:1454:UNK:O	2.52	0.43
2:E:1653:LEU:HB3	2:E:1660:GLN:HB2	2.00	0.43
2:G:500:ALA:HB1	2:G:504:ALA:HB2	2.01	0.43
2:G:2231:SER:HA	2:G:2234:ARG:HG2	2.00	0.43
2:G:4083:ASP:HB3	2:G:4086:GLY:H	1.84	0.43
2:G:4743:MET:HB3	2:G:4746:ALA:HB3	2.00	0.43
2:I:119:SER:HA	2:I:146:CYS:HA	1.99	0.43
2:I:841:GLY:HA2	2:I:1073:ARG:HD2	2.00	0.43
2:I:907:LEU:O	2:I:963:ASN:ND2	2.42	0.43
2:E:4083:ASP:HB3	2:E:4086:GLY:H	1.84	0.43
2:E:4569:LEU:HD11	2:E:4646:LEU:HD22	2.00	0.43
1:A:74:LEU:HB2	1:A:99:PHE:HB2	1.99	0.43
1:J:82:TYR:O	1:J:86:GLY:N	2.52	0.43
2:B:681:HIS:HB3	2:B:784:SER:HB3	2.00	0.43
2:G:1698:LEU:N	2:G:1712:TYR:OH	2.52	0.43
2:G:3804:ILE:O	2:G:3809:ASN:ND2	2.52	0.43
2:I:3676:ASP:OD1	2:I:3676:ASP:N	2.51	0.43
2:I:3804:ILE:O	2:I:3809:ASN:ND2	2.52	0.43
2:I:4083:ASP:HB3	2:I:4086:GLY:H	1.84	0.43
2:E:572:PRO:HA	2:E:575:LEU:HD13	2.00	0.43
2:E:645:ARG:N	2:E:824:GLU:O	2.43	0.43
1:H:7:ILE:HD13	1:H:71:ARG:HG2	2.01	0.43
1:H:56:ILE:HG13	1:H:59:PHE:H	1.83	0.43
1:J:56:ILE:HG13	1:J:59:PHE:H	1.83	0.43
2:B:1727:ARG:NH2	2:B:1773:PRO:O	2.50	0.43
2:B:2587:UNK:O	2:B:2591:UNK:N	2.52	0.43
2:B:3804:ILE:O	2:B:3809:ASN:ND2	2.52	0.43
2:B:3805:LEU:HA	2:B:3809:ASN:HD22	1.84	0.43
2:G:4865:LYS:HG3	2:G:4875:LYS:HZ3	1.84	0.43
2:I:206:CYS:SG	2:I:207:SER:N	2.92	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:500:ALA:HB1	2:I:504:ALA:HB2	2.01	0.43
2:E:1698:LEU:N	2:E:1712:TYR:OH	2.52	0.43
2:E:3779:VAL:HG23	2:E:3780:LEU:HD12	2.01	0.43
1:F:82:TYR:O	1:F:86:GLY:N	2.52	0.42
2:B:206:CYS:SG	2:B:207:SER:N	2.92	0.42
2:B:719:LEU:HD22	2:B:735:GLN:HG2	2.01	0.42
2:B:1295:UNK:N	2:B:1454:UNK:O	2.52	0.42
2:B:1698:LEU:N	2:B:1712:TYR:OH	2.52	0.42
2:B:2810:LYS:O	2:B:2814:LYS:N	2.39	0.42
2:I:1236:THR:OG1	2:I:1608:MET:SD	2.76	0.42
2:I:1295:UNK:N	2:I:1454:UNK:O	2.52	0.42
2:E:134:ASP:N	2:E:134:ASP:OD1	2.50	0.42
2:E:2742:THR:OG1	2:E:2811:GLU:OE1	2.31	0.42
2:E:3674:ILE:HD11	2:E:3728:ILE:HG22	1.99	0.42
2:E:3850:GLN:HB3	2:E:3873:LYS:HD3	2.00	0.42
2:B:119:SER:HA	2:B:146:CYS:HA	2.00	0.42
2:B:134:ASP:OD1	2:B:134:ASP:N	2.50	0.42
2:G:572:PRO:HA	2:G:575:LEU:HD13	2.00	0.42
2:G:2810:LYS:O	2:G:2814:LYS:N	2.39	0.42
2:I:1105:ALA:HB1	2:I:1109:LEU:HD21	2.00	0.42
2:I:1931:LEU:HB3	2:I:1935:VAL:HB	2.01	0.42
2:E:3805:LEU:HA	2:E:3809:ASN:HD22	1.84	0.42
1:J:7:ILE:HD13	1:J:71:ARG:HG2	2.01	0.42
2:B:500:ALA:HB1	2:B:504:ALA:HB2	2.01	0.42
2:B:742:ASP:HA	2:B:760:ASN:HD21	1.84	0.42
2:B:870:ILE:HD12	2:B:873:LYS:HB2	2.01	0.42
2:B:2002:PRO:HA	2:B:2005:GLN:HB3	2.02	0.42
2:B:3734:HIS:O	2:B:3738:GLY:N	2.43	0.42
2:B:4083:ASP:HB3	2:B:4086:GLY:H	1.84	0.42
2:G:870:ILE:HD12	2:G:873:LYS:HB2	2.02	0.42
2:I:675:LEU:HD11	2:I:1633:PRO:HB3	2.02	0.42
2:I:742:ASP:HA	2:I:760:ASN:HD21	1.84	0.42
2:I:2271:THR:HG22	2:I:2273:LEU:H	1.85	0.42
2:I:2871:LEU:HD22	2:I:2927:LEU:HD22	2.02	0.42
2:E:594:GLY:H	2:E:1594:ARG:HD3	1.85	0.42
2:E:719:LEU:HD22	2:E:735:GLN:HG2	2.01	0.42
2:B:880:GLU:OE1	2:B:968:ALA:N	2.44	0.42
2:B:1653:LEU:HB3	2:B:1660:GLN:HB2	2.00	0.42
2:B:2871:LEU:HD22	2:B:2927:LEU:HD22	2.02	0.42
2:B:3676:ASP:N	2:B:3676:ASP:OD1	2.50	0.42
2:B:4569:LEU:HD11	2:B:4646:LEU:HD22	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:210:GLU:HG3	2:G:337:PRO:HG3	2.02	0.42
2:I:594:GLY:H	2:I:1594:ARG:HD3	1.85	0.42
2:I:621:ILE:O	2:I:625:LEU:N	2.46	0.42
2:I:870:ILE:HD12	2:I:873:LYS:HB2	2.01	0.42
2:I:1130:GLN:HG2	2:I:1138:PRO:HA	2.01	0.42
2:I:1718:ILE:HG13	2:I:1719:HIS:CD2	2.55	0.42
2:E:2871:LEU:HD22	2:E:2927:LEU:HD22	2.01	0.42
2:B:594:GLY:H	2:B:1594:ARG:HD3	1.85	0.42
2:B:1675:ALA:HB1	2:B:1676:LEU:HD13	2.02	0.42
2:B:2271:THR:HG22	2:B:2273:LEU:H	1.84	0.42
2:B:2823:ILE:HG12	2:B:2937:VAL:HG22	2.02	0.42
2:G:1295:UNK:N	2:G:1454:UNK:O	2.52	0.42
2:G:2871:LEU:HD22	2:G:2927:LEU:HD22	2.02	0.42
2:G:3676:ASP:OD1	2:G:3676:ASP:N	2.51	0.42
2:G:4960:ILE:HD11	2:G:4985:LEU:HD23	2.02	0.42
2:E:649:PHE:HB3	2:E:776:LEU:HD13	2.02	0.42
2:E:2215:LEU:HD23	2:E:2260:ASN:HB3	2.01	0.42
2:E:3804:ILE:O	2:E:3809:ASN:ND2	2.52	0.42
2:B:675:LEU:HD11	2:B:1633:PRO:HB3	2.02	0.42
2:B:1236:THR:OG1	2:B:1608:MET:SD	2.76	0.42
2:G:215:THR:HG22	2:G:273:HIS:HA	2.02	0.42
2:G:594:GLY:H	2:G:1594:ARG:HD3	1.85	0.42
2:G:742:ASP:HA	2:G:760:ASN:HD21	1.84	0.42
2:G:3850:GLN:HB3	2:G:3873:LYS:HD3	2.00	0.42
2:I:2479:LEU:O	2:I:2487:UNK:N	2.53	0.42
2:I:4960:ILE:HD11	2:I:4985:LEU:HD23	2.02	0.42
2:E:870:ILE:HD12	2:E:873:LYS:HB2	2.02	0.42
2:E:1130:GLN:HG2	2:E:1138:PRO:HA	2.00	0.42
2:E:1727:ARG:NH2	2:E:1773:PRO:O	2.50	0.42
2:B:1718:ILE:HG13	2:B:1719:HIS:CD2	2.55	0.42
2:G:206:CYS:SG	2:G:207:SER:N	2.92	0.42
2:G:1718:ILE:HG13	2:G:1719:HIS:CD2	2.55	0.42
2:G:2012:PHE:CG	2:G:2022:PRO:HD3	2.55	0.42
2:I:2012:PHE:CG	2:I:2022:PRO:HD3	2.55	0.42
2:I:2587:UNK:O	2:I:2591:UNK:N	2.53	0.42
2:E:210:GLU:HG3	2:E:337:PRO:HG3	2.02	0.42
2:E:2587:UNK:O	2:E:2591:UNK:N	2.53	0.42
2:E:3663:LEU:H	2:E:3663:LEU:HG	1.72	0.42
2:B:649:PHE:HB3	2:B:776:LEU:HD13	2.02	0.42
2:B:2215:LEU:HD23	2:B:2260:ASN:HB3	2.01	0.42
2:G:3829:PHE:HD1	2:G:3915:ILE:HD11	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:379:HIS:CD2	2:I:381:GLU:H	2.38	0.42
2:I:2823:ILE:HG12	2:I:2937:VAL:HG22	2.02	0.42
2:I:3850:GLN:HB3	2:I:3873:LYS:HD3	2.00	0.42
2:I:4791:TYR:OH	2:I:4815:ASP:OD1	2.32	0.42
2:E:500:ALA:HB1	2:E:504:ALA:HB2	2.01	0.42
2:E:2823:ILE:HG12	2:E:2937:VAL:HG22	2.02	0.42
1:J:92:PRO:HD3	2:I:627:PRO:HB2	2.02	0.42
2:G:2271:THR:HG22	2:G:2273:LEU:H	1.85	0.42
2:I:2002:PRO:HA	2:I:2005:GLN:HB3	2.02	0.42
2:G:379:HIS:CD2	2:G:381:GLU:H	2.38	0.42
2:G:675:LEU:HD11	2:G:1633:PRO:HB3	2.02	0.42
2:G:689:THR:H	2:G:778:PHE:HE2	1.68	0.42
2:I:4865:LYS:HG3	2:I:4875:LYS:HZ3	1.85	0.42
2:B:215:THR:HG22	2:B:273:HIS:HA	2.02	0.41
2:B:3850:GLN:HB3	2:B:3873:LYS:HD3	2.00	0.41
2:G:1124:PHE:HB2	2:G:1162:PHE:CE2	2.55	0.41
2:I:689:THR:H	2:I:778:PHE:HE2	1.68	0.41
2:I:719:LEU:HD22	2:I:735:GLN:HG2	2.01	0.41
2:E:34:LYS:N	2:E:53:SER:OG	2.44	0.41
2:E:468:LEU:HB3	2:E:472:ARG:HH12	1.85	0.41
2:E:2002:PRO:HA	2:E:2005:GLN:HB3	2.01	0.41
2:E:3829:PHE:HD1	2:E:3915:ILE:HD11	1.85	0.41
1:F:7:ILE:HD13	1:F:71:ARG:HG2	2.01	0.41
2:B:698:GLY:HA2	2:B:703:GLY:HA2	2.02	0.41
2:B:3552:UNK:O	2:B:3556:UNK:N	2.54	0.41
2:G:1931:LEU:HB3	2:G:1935:VAL:HB	2.01	0.41
2:I:210:GLU:HG3	2:I:337:PRO:HG3	2.02	0.41
2:I:1675:ALA:HB1	2:I:1676:LEU:HD13	2.02	0.41
2:I:3805:LEU:HA	2:I:3809:ASN:HD22	1.84	0.41
2:I:4184:MET:HE1	2:I:4188:ARG:HE	1.85	0.41
2:E:675:LEU:HD11	2:E:1633:PRO:HB3	2.02	0.41
2:B:164:ARG:N	2:B:167:ASP:OD2	2.46	0.41
2:B:1931:LEU:HB3	2:B:1935:VAL:HB	2.01	0.41
2:G:983:THR:O	2:G:987:ARG:N	2.49	0.41
2:G:1161:ILE:HA	2:G:1177:THR:HB	2.02	0.41
2:G:2002:PRO:HA	2:G:2005:GLN:HB3	2.02	0.41
2:G:2420:HIS:HB2	2:G:2492:UNK:C	2.50	0.41
2:G:2587:UNK:O	2:G:2591:UNK:N	2.52	0.41
2:G:4569:LEU:HD11	2:G:4646:LEU:HD22	2.00	0.41
2:I:215:THR:HG22	2:I:273:HIS:HA	2.02	0.41
2:I:892:THR:N	2:I:902:ARG:O	2.49	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:1727:ARG:NH2	2:I:1773:PRO:O	2.50	0.41
2:I:2196:ASN:OD1	2:I:2199:ARG:NH1	2.40	0.41
2:I:3552:UNK:O	2:I:3556:UNK:N	2.54	0.41
2:E:983:THR:O	2:E:987:ARG:N	2.49	0.41
2:E:1931:LEU:HB3	2:E:1935:VAL:HB	2.01	0.41
2:B:34:LYS:N	2:B:53:SER:OG	2.44	0.41
2:B:1708:ARG:HG2	2:B:1711:TYR:CE2	2.55	0.41
2:B:4763:GLY:O	2:B:4766:THR:OG1	2.28	0.41
2:G:359:TYR:OH	2:G:385:ASP:OD2	2.32	0.41
2:G:468:LEU:HB3	2:G:472:ARG:HH12	1.85	0.41
2:I:278:GLN:N	2:I:315:CYS:SG	2.94	0.41
2:I:321:GLU:HB3	2:I:322:LYS:H	1.75	0.41
2:E:215:THR:HG22	2:E:273:HIS:HA	2.02	0.41
2:E:742:ASP:HA	2:E:760:ASN:HD21	1.84	0.41
2:E:4960:ILE:HD11	2:E:4985:LEU:HD23	2.02	0.41
2:B:4823:LEU:HD23	2:I:4843:LEU:HD12	2.02	0.41
2:B:4982:GLU:HB3	2:B:4983:HIS:H	1.63	0.41
2:G:1708:ARG:HG2	2:G:1711:TYR:CE2	2.55	0.41
2:G:3959:LYS:O	2:G:3963:ASN:ND2	2.53	0.41
2:I:495:ASN:HD21	2:I:550:LYS:HG3	1.86	0.41
2:E:1708:ARG:HG2	2:E:1711:TYR:CE2	2.55	0.41
2:E:3552:UNK:O	2:E:3556:UNK:N	2.54	0.41
2:E:3959:LYS:O	2:E:3963:ASN:ND2	2.53	0.41
2:B:379:HIS:CD2	2:B:381:GLU:H	2.38	0.41
2:B:1092:PHE:N	2:B:1149:VAL:O	2.41	0.41
2:B:2012:PHE:CG	2:B:2022:PRO:HD3	2.55	0.41
2:G:649:PHE:HB3	2:G:776:LEU:HD13	2.02	0.41
2:G:1078:GLU:HB3	2:G:1081:TYR:HD2	1.86	0.41
2:G:1675:ALA:HB1	2:G:1676:LEU:HD13	2.02	0.41
2:G:2823:ILE:HG12	2:G:2937:VAL:HG22	2.02	0.41
2:G:4843:LEU:HD12	2:I:4823:LEU:HD23	2.03	0.41
2:E:698:GLY:HA2	2:E:703:GLY:HA2	2.02	0.41
2:B:468:LEU:HB3	2:B:472:ARG:HH12	1.85	0.41
2:G:698:GLY:HA2	2:G:703:GLY:HA2	2.02	0.41
2:G:924:MET:O	2:G:928:THR:OG1	2.30	0.41
2:G:4848:VAL:O	2:G:4852:THR:OG1	2.29	0.41
2:I:698:GLY:HA2	2:I:703:GLY:HA2	2.02	0.41
2:I:983:THR:O	2:I:987:ARG:N	2.49	0.41
2:I:1101:ARG:HH21	2:I:1115:LEU:HB3	1.86	0.41
2:I:1708:ARG:HG2	2:I:1711:TYR:CE2	2.55	0.41
2:I:2215:LEU:HD23	2:I:2260:ASN:HB3	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:495:ASN:HD21	2:G:550:LYS:HG3	1.86	0.41
2:G:1101:ARG:HH21	2:G:1115:LEU:HB3	1.86	0.41
2:G:2215:LEU:HD23	2:G:2260:ASN:HB3	2.01	0.41
2:G:4823:LEU:HD23	2:E:4843:LEU:HD12	2.03	0.41
2:I:1124:PHE:HB2	2:I:1162:PHE:CE2	2.55	0.41
2:I:3829:PHE:HD1	2:I:3915:ILE:HD11	1.85	0.41
2:E:756:SER:HB3	2:E:767:VAL:HG22	2.03	0.41
2:E:1124:PHE:HB2	2:E:1162:PHE:CE2	2.55	0.41
2:E:1161:ILE:HA	2:E:1177:THR:HB	2.02	0.41
2:E:1718:ILE:HG13	2:E:1719:HIS:CD2	2.55	0.41
2:E:2285:GLU:HG3	2:E:2286:LEU:HG	2.03	0.41
2:B:210:GLU:HG3	2:B:337:PRO:HG3	2.02	0.41
2:B:278:GLN:N	2:B:315:CYS:SG	2.94	0.41
2:B:2196:ASN:OD1	2:B:2199:ARG:NH1	2.40	0.41
2:B:3829:PHE:HD1	2:B:3915:ILE:HD11	1.85	0.41
2:G:180:LEU:O	2:G:200:TRP:NE1	2.41	0.41
2:G:719:LEU:HD22	2:G:735:GLN:HG2	2.01	0.41
2:G:756:SER:HB3	2:G:767:VAL:HG22	2.03	0.41
2:G:2869:ARG:NH1	2:G:2945:UNK:O	2.53	0.41
2:G:3552:UNK:O	2:G:3556:UNK:N	2.54	0.41
2:I:649:PHE:HB3	2:I:776:LEU:HD13	2.02	0.41
2:I:756:SER:HB3	2:I:767:VAL:HG22	2.03	0.41
2:I:1161:ILE:HA	2:I:1177:THR:HB	2.02	0.41
2:E:379:HIS:CD2	2:E:381:GLU:H	2.38	0.41
2:E:1735:ILE:HG23	2:E:1771:LEU:HD23	2.03	0.41
2:E:2012:PHE:CG	2:E:2022:PRO:HD3	2.55	0.41
2:E:2226:PRO:HA	2:E:2229:VAL:HG12	2.03	0.41
2:E:2271:THR:HG22	2:E:2273:LEU:H	1.84	0.41
2:E:4239:GLU:OE2	2:E:5014:TYR:OH	2.36	0.41
2:B:1101:ARG:HH21	2:B:1115:LEU:HB3	1.86	0.41
2:B:1161:ILE:HA	2:B:1177:THR:HB	2.02	0.41
2:B:2430:ILE:HG21	2:B:2502:UNK:HA	2.02	0.41
2:B:2927:LEU:HA	2:B:2930:LEU:HD12	2.03	0.41
2:G:2144:ILE:H	2:G:2144:ILE:HG13	1.81	0.41
2:G:2226:PRO:HA	2:G:2229:VAL:HG12	2.03	0.41
2:I:468:LEU:HB3	2:I:472:ARG:HH12	1.85	0.41
2:I:2758:PHE:O	2:I:2762:THR:N	2.47	0.41
2:E:21:VAL:HG22	2:E:203:ASN:HB2	2.03	0.41
2:E:1675:ALA:HB1	2:E:1676:LEU:HD13	2.02	0.41
2:B:645:ARG:N	2:B:824:GLU:O	2.43	0.40
2:B:707:VAL:HG23	2:B:713:SER:HB2	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:92:PRO:HD3	2:G:627:PRO:HB2	2.02	0.40
2:B:495:ASN:HD21	2:B:550:LYS:HG3	1.86	0.40
2:B:1679:ASN:ND2	2:B:1798:LEU:O	2.54	0.40
2:B:1735:ILE:HG23	2:B:1771:LEU:HD23	2.03	0.40
2:B:2144:ILE:H	2:B:2144:ILE:HG13	1.81	0.40
2:G:707:VAL:HG23	2:G:713:SER:HB2	2.03	0.40
2:G:1679:ASN:ND2	2:G:1798:LEU:O	2.54	0.40
2:G:4191:GLU:OE1	2:G:5006:GLN:NE2	2.54	0.40
2:I:1078:GLU:HB3	2:I:1081:TYR:HD2	1.86	0.40
2:I:3959:LYS:O	2:I:3963:ASN:ND2	2.53	0.40
2:I:4242:ILE:O	2:I:4246:GLN:N	2.54	0.40
2:I:4928:LEU:HD13	2:I:4928:LEU:HA	1.92	0.40
2:E:1101:ARG:HH21	2:E:1115:LEU:HB3	1.86	0.40
1:F:87:HIS:HA	1:F:88:PRO:HD3	1.90	0.40
2:B:21:VAL:HG22	2:B:203:ASN:HB2	2.03	0.40
2:B:2291:GLN:HE21	2:B:2294:ASP:H	1.70	0.40
2:B:3959:LYS:O	2:B:3963:ASN:ND2	2.53	0.40
2:B:4913:ARG:O	2:B:4917:ASP:N	2.48	0.40
2:G:164:ARG:N	2:G:167:ASP:OD2	2.46	0.40
2:G:278:GLN:N	2:G:315:CYS:SG	2.94	0.40
2:I:4191:GLU:OE1	2:I:5006:GLN:NE2	2.54	0.40
1:H:87:HIS:HA	1:H:88:PRO:HD3	1.90	0.40
2:B:1078:GLU:HB3	2:B:1081:TYR:HD2	1.86	0.40
2:B:2674:UNK:O	2:B:2676:UNK:N	2.55	0.40
2:G:489:ASN:HA	2:G:492:ASP:HB2	2.03	0.40
2:E:689:THR:H	2:E:778:PHE:HE2	1.68	0.40
2:E:2144:ILE:H	2:E:2144:ILE:HG13	1.80	0.40
2:E:4865:LYS:HG3	2:E:4875:LYS:HZ3	1.86	0.40
2:B:689:THR:H	2:B:778:PHE:HE2	1.68	0.40
2:B:870:ILE:HD12	2:B:870:ILE:HA	1.98	0.40
2:B:2226:PRO:HA	2:B:2229:VAL:HG12	2.03	0.40
2:B:4191:GLU:OE1	2:B:5006:GLN:NE2	2.54	0.40
2:B:4673:ARG:HH22	2:B:4698:LYS:HB2	1.87	0.40
2:B:4821:LYS:HE2	2:B:4821:LYS:HB3	1.95	0.40
2:G:3662:ILE:H	2:G:3662:ILE:HG13	1.78	0.40
2:I:395:GLN:NE2	2:I:397:GLU:OE1	2.55	0.40
2:I:1679:ASN:ND2	2:I:1798:LEU:O	2.54	0.40
2:E:2810:LYS:O	2:E:2814:LYS:N	2.39	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%)	94 (90%)	11 (10%)	0	100	100
1	F	105/108 (97%)	94 (90%)	11 (10%)	0	100	100
1	H	105/108 (97%)	94 (90%)	11 (10%)	0	100	100
1	J	105/108 (97%)	94 (90%)	11 (10%)	0	100	100
2	B	3235/4416 (73%)	2894 (90%)	333 (10%)	8 (0%)	47	81
2	E	3235/4416 (73%)	2898 (90%)	332 (10%)	5 (0%)	47	81
2	G	3235/4416 (73%)	2896 (90%)	334 (10%)	5 (0%)	47	81
2	I	3235/4416 (73%)	2898 (90%)	332 (10%)	5 (0%)	47	81
All	All	13360/18096 (74%)	11962 (90%)	1375 (10%)	23 (0%)	50	81

All (23) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	4962	GLY
2	B	1708	ARG
2	G	1708	ARG
2	I	1708	ARG
2	E	1708	ARG
2	B	1932	PRO
2	B	4982	GLU
2	B	4985	LEU
2	G	1932	PRO
2	I	1932	PRO
2	E	1932	PRO
2	B	1840	PRO
2	B	4641	PRO
2	G	1840	PRO
2	G	4641	PRO
2	I	1840	PRO
2	I	4641	PRO

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Mol	Chain	Res	Type
2	E	1840	PRO
2	E	4641	PRO
2	B	2291	GLN
2	G	2291	GLN
2	I	2291	GLN
2	E	2291	GLN

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	88/89 (99%)	88 (100%)	0	100	100
1	F	88/89 (99%)	88 (100%)	0	100	100
1	H	88/89 (99%)	88 (100%)	0	100	100
1	J	88/89 (99%)	88 (100%)	0	100	100
2	B	2493/3022 (82%)	2473 (99%)	20 (1%)	81	89
2	E	2493/3022 (82%)	2476 (99%)	17 (1%)	84	90
2	G	2493/3022 (82%)	2476 (99%)	17 (1%)	84	90
2	I	2493/3022 (82%)	2476 (99%)	17 (1%)	84	90
All	All	10324/12444 (83%)	10253 (99%)	71 (1%)	84	90

All (71) 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	1076	ARG
2	B	1141	ARG
2	B	1600	LEU
2	B	1676	LEU
2	B	1964	ARG

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Mol	Chain	Res	Type
2	B	3663	LEU
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	4958	CYS
2	B	4960	ILE
2	B	4983	HIS
2	G	131	LEU
2	G	534	ARG
2	G	553	ARG
2	G	719	LEU
2	G	1076	ARG
2	G	1141	ARG
2	G	1600	LEU
2	G	1676	LEU
2	G	1964	ARG
2	G	3663	LEU
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	I	131	LEU
2	I	534	ARG
2	I	553	ARG
2	I	719	LEU
2	I	1076	ARG
2	I	1141	ARG
2	I	1600	LEU
2	I	1676	LEU
2	I	1964	ARG
2	I	3663	LEU
2	I	3787	LYS
2	I	3805	LEU
2	I	3896	ASN
2	I	4034	ASN

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Mol	Chain	Res	Type
2	I	4085	ARG
2	I	4120	ASN
2	I	4131	ARG
2	E	131	LEU
2	E	534	ARG
2	E	553	ARG
2	E	719	LEU
2	E	1076	ARG
2	E	1141	ARG
2	E	1600	LEU
2	E	1676	LEU
2	E	1964	ARG
2	E	3663	LEU
2	E	3787	LYS
2	E	3805	LEU
2	E	3896	ASN
2	E	4034	ASN
2	E	4085	ARG
2	E	4120	ASN
2	E	4131	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (153) 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	71	GLN
2	B	105	HIS
2	B	111	HIS
2	B	113	HIS
2	B	379	HIS
2	B	395	GLN
2	B	413	GLN
2	B	479	GLN
2	B	797	HIS
2	B	838	HIS
2	B	1041	GLN
2	B	1598	GLN
2	B	1660	GLN

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Mol	Chain	Res	Type
2	B	1679	ASN
2	B	1688	HIS
2	B	1691	GLN
2	B	1719	HIS
2	B	1775	HIS
2	B	1972	ASN
2	B	2005	GLN
2	B	2127	GLN
2	B	2291	GLN
2	B	2324	ASN
2	B	3809	ASN
2	B	3896	ASN
2	B	3946	GLN
2	B	3950	ASN
2	B	3960	GLN
2	B	3963	ASN
2	B	3976	ASN
2	B	3994	HIS
2	B	4054	ASN
2	B	4120	ASN
2	B	4806	ASN
2	B	4978	HIS
2	B	4983	HIS
2	G	57	ASN
2	G	71	GLN
2	G	105	HIS
2	G	111	HIS
2	G	113	HIS
2	G	273	HIS
2	G	379	HIS
2	G	395	GLN
2	G	413	GLN
2	G	479	GLN
2	G	797	HIS
2	G	838	HIS
2	G	1041	GLN
2	G	1598	GLN
2	G	1660	GLN
2	G	1679	ASN
2	G	1688	HIS
2	G	1691	GLN
2	G	1719	HIS

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Mol	Chain	Res	Type
2	G	1775	HIS
2	G	1972	ASN
2	G	2005	GLN
2	G	2127	GLN
2	G	2291	GLN
2	G	2324	ASN
2	G	3809	ASN
2	G	3896	ASN
2	G	3946	GLN
2	G	3950	ASN
2	G	3960	GLN
2	G	3963	ASN
2	G	3976	ASN
2	G	3994	HIS
2	G	4054	ASN
2	G	4120	ASN
2	G	4806	ASN
2	G	4983	HIS
2	I	57	ASN
2	I	71	GLN
2	I	105	HIS
2	I	111	HIS
2	I	113	HIS
2	I	273	HIS
2	I	379	HIS
2	I	395	GLN
2	I	413	GLN
2	I	479	GLN
2	I	797	HIS
2	I	838	HIS
2	I	1041	GLN
2	I	1598	GLN
2	I	1660	GLN
2	I	1679	ASN
2	I	1688	HIS
2	I	1691	GLN
2	I	1719	HIS
2	I	1775	HIS
2	I	1972	ASN
2	I	2005	GLN
2	I	2127	GLN
2	I	2291	GLN

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Mol	Chain	Res	Type
2	I	2324	ASN
2	I	3809	ASN
2	I	3896	ASN
2	I	3946	GLN
2	I	3950	ASN
2	I	3960	GLN
2	I	3963	ASN
2	I	3976	ASN
2	I	3994	HIS
2	I	4054	ASN
2	I	4120	ASN
2	I	4806	ASN
2	I	4946	GLN
2	I	4983	HIS
2	E	57	ASN
2	E	71	GLN
2	E	105	HIS
2	E	111	HIS
2	E	113	HIS
2	E	379	HIS
2	E	395	GLN
2	E	413	GLN
2	E	479	GLN
2	E	797	HIS
2	E	838	HIS
2	E	1041	GLN
2	E	1598	GLN
2	E	1660	GLN
2	E	1679	ASN
2	E	1688	HIS
2	E	1691	GLN
2	E	1719	HIS
2	E	1775	HIS
2	E	1972	ASN
2	E	2005	GLN
2	E	2127	GLN
2	E	2291	GLN
2	E	2324	ASN
2	E	3809	ASN
2	E	3896	ASN
2	E	3946	GLN
2	E	3950	ASN

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Mol	Chain	Res	Type
2	E	3960	GLN
2	E	3963	ASN
2	E	3976	ASN
2	E	3994	HIS
2	E	4054	ASN
2	E	4120	ASN
2	E	4806	ASN
2	E	4833	ASN
2	E	4983	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 8 ligands modelled in this entry, 8 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
2	G	14
2	B	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	G	4345:UNK	C	4540:PHE	N	73.65
1	B	4345:UNK	C	4540:PHE	N	73.61
1	I	4345:UNK	C	4540:PHE	N	73.61
1	E	4345:UNK	C	4540:PHE	N	73.59
1	G	3613:UNK	C	3639:THR	N	45.21
1	B	3613:UNK	C	3639:THR	N	45.16
1	E	3613:UNK	C	3639:THR	N	45.11
1	I	3613:UNK	C	3639:THR	N	45.10
1	G	4253:GLU	C	4320:UNK	N	28.96
1	I	4253:GLU	C	4320:UNK	N	28.94
1	B	4253:GLU	C	4320:UNK	N	28.93
1	E	4253:GLU	C	4320:UNK	N	28.92
1	B	3163:UNK	C	3170:UNK	N	16.13
1	G	3163:UNK	C	3170:UNK	N	16.13
1	I	3163:UNK	C	3170:UNK	N	16.13
1	E	3163:UNK	C	3170:UNK	N	16.13
1	I	3063:UNK	C	3134:UNK	N	14.80
1	E	3063:UNK	C	3134:UNK	N	14.80
1	B	3063:UNK	C	3134:UNK	N	14.79
1	G	3063:UNK	C	3134:UNK	N	14.79
1	G	3468:UNK	C	3511:UNK	N	14.32
1	B	3468:UNK	C	3511:UNK	N	14.31
1	E	3468:UNK	C	3511:UNK	N	14.31
1	I	3468:UNK	C	3511:UNK	N	14.30
1	I	2703:UNK	C	2734:ASN	N	13.53
1	E	2703:UNK	C	2734:ASN	N	13.51
1	B	2703:UNK	C	2734:ASN	N	13.49
1	G	2703:UNK	C	2734:ASN	N	13.47
1	I	3236:UNK	C	3241:UNK	N	12.90
1	E	3236:UNK	C	3241:UNK	N	12.90
1	B	3236:UNK	C	3241:UNK	N	12.89
1	G	3236:UNK	C	3241:UNK	N	12.89

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B	2976:UNK	C	2995:UNK	N	12.39
1	I	2976:UNK	C	2995:UNK	N	12.39
1	E	2976:UNK	C	2995:UNK	N	12.39
1	G	2976:UNK	C	2995:UNK	N	12.38
1	E	1564:UNK	C	1573:MET	N	12.31
1	I	1564:UNK	C	1573:MET	N	12.30
1	B	1564:UNK	C	1573:MET	N	12.29
1	G	1564:UNK	C	1573:MET	N	12.23
1	B	3254:UNK	C	3261:UNK	N	8.56
1	G	3254:UNK	C	3261:UNK	N	8.56
1	I	3254:UNK	C	3261:UNK	N	8.56
1	E	3254:UNK	C	3261:UNK	N	8.56
1	B	1297:UNK	C	1430:UNK	N	5.76
1	G	1297:UNK	C	1430:UNK	N	5.76
1	I	1297:UNK	C	1430:UNK	N	5.75
1	E	1297:UNK	C	1430:UNK	N	5.75
1	G	2479:LEU	C	2487:UNK	N	3.50
1	B	2479:LEU	C	2487:UNK	N	3.44
1	E	2479:LEU	C	2487:UNK	N	3.38
1	I	2479:LEU	C	2487:UNK	N	3.34
1	I	2939:ARG	C	2942:UNK	N	3.22
1	E	2939:ARG	C	2942:UNK	N	3.21
1	B	2939:ARG	C	2942:UNK	N	3.20
1	G	2939:ARG	C	2942:UNK	N	3.20

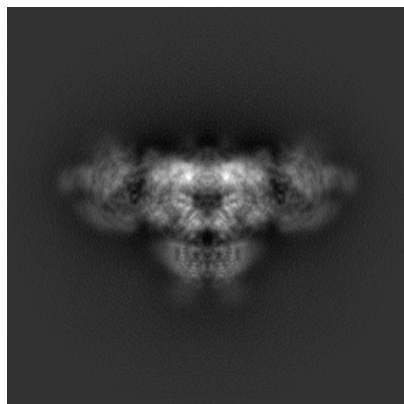
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-8387. These allow visual inspection of the internal detail of the map and identification of artifacts.

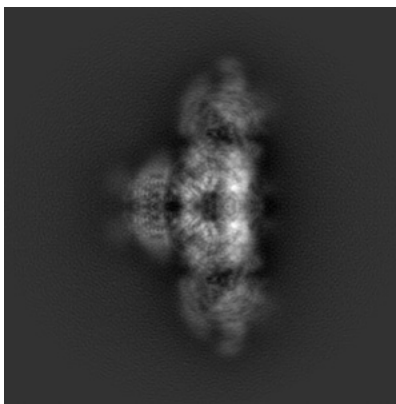
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

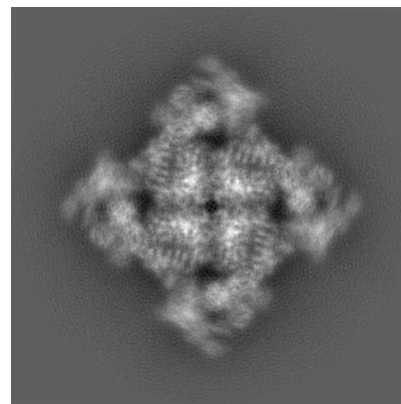
6.1.1 Primary map



X

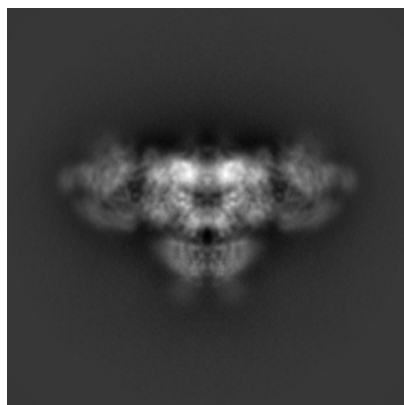


Y

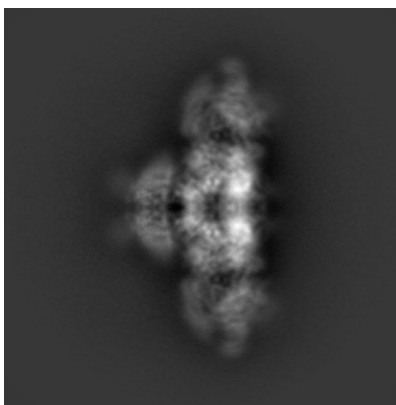


Z

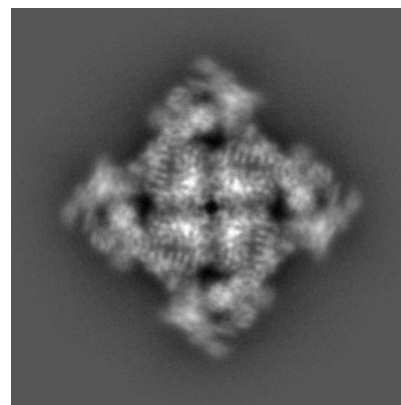
6.1.2 Raw map



X



Y

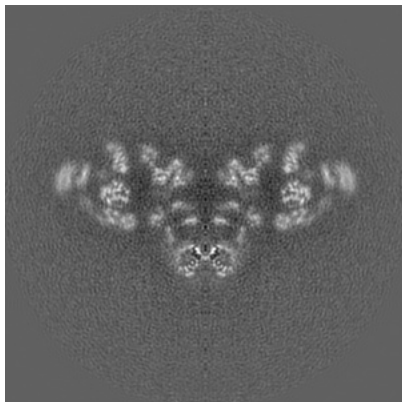


Z

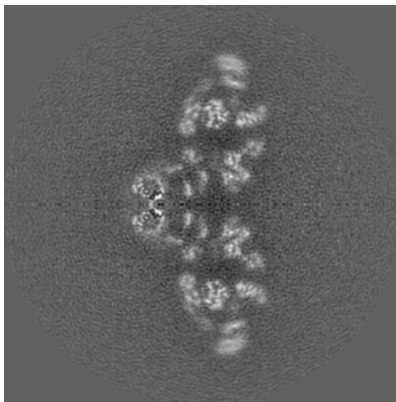
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

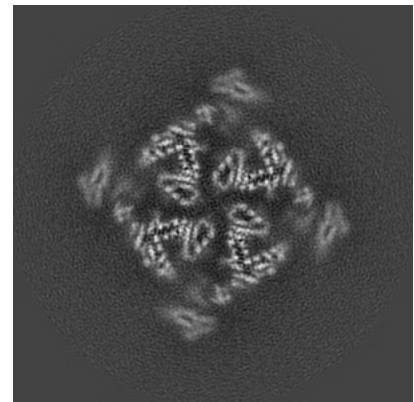
6.2.1 Primary map



X Index: 200

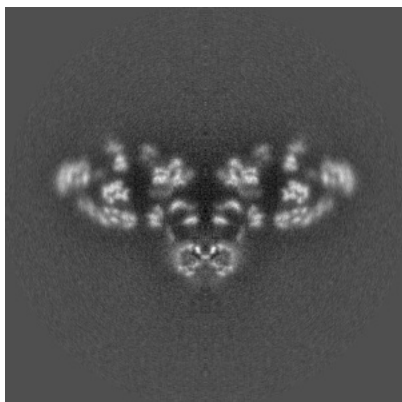


Y Index: 200

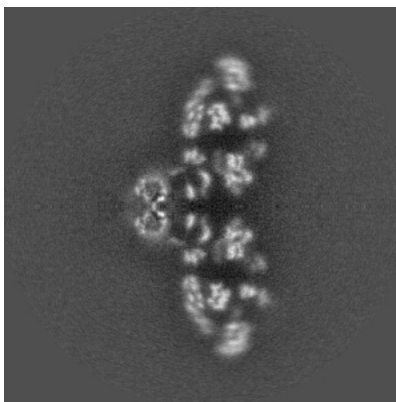


Z Index: 200

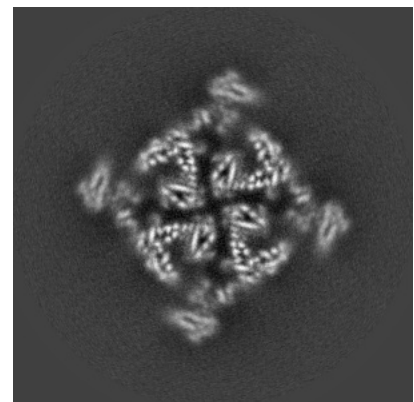
6.2.2 Raw map



X Index: 200



Y Index: 200

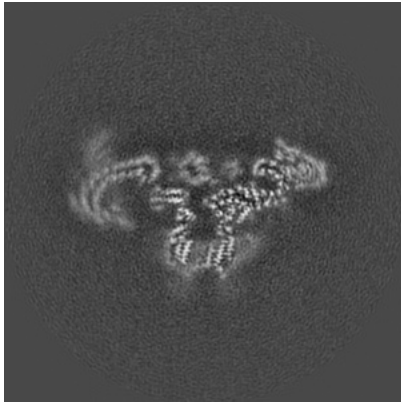


Z Index: 200

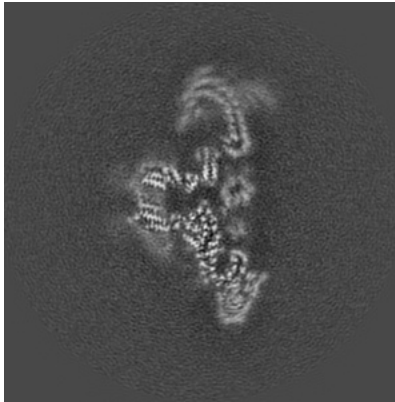
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

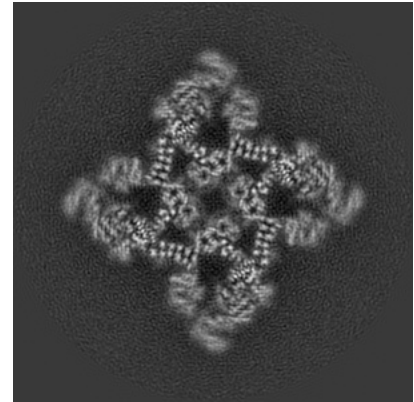
6.3.1 Primary map



X Index: 175

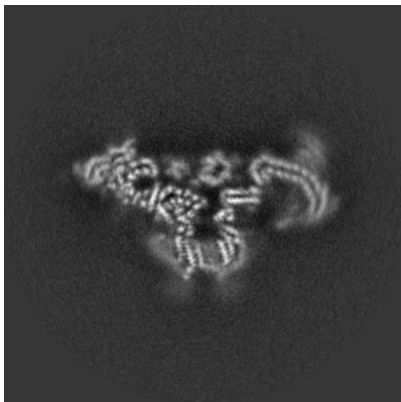


Y Index: 175

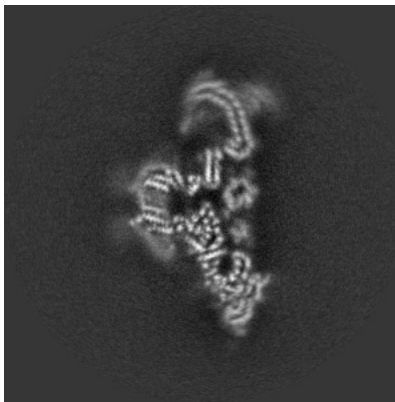


Z Index: 227

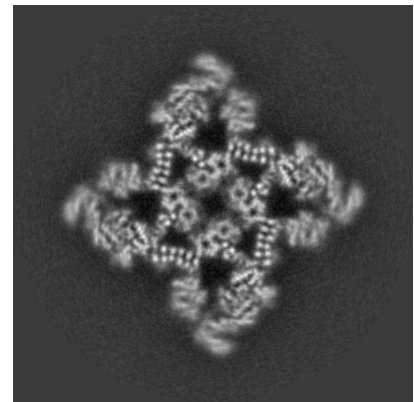
6.3.2 Raw map



X Index: 225



Y Index: 175

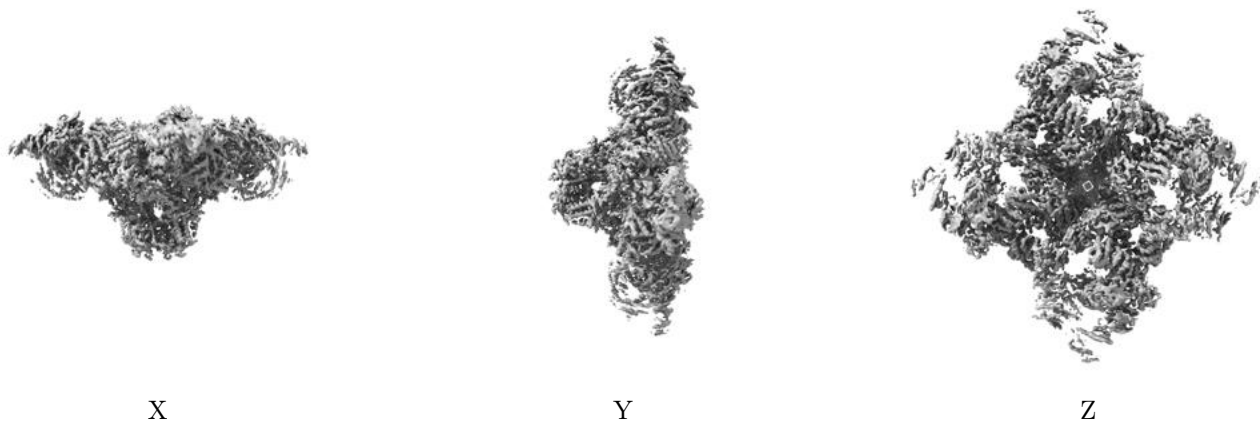


Z Index: 229

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

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.04. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.4.2 Raw map



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.

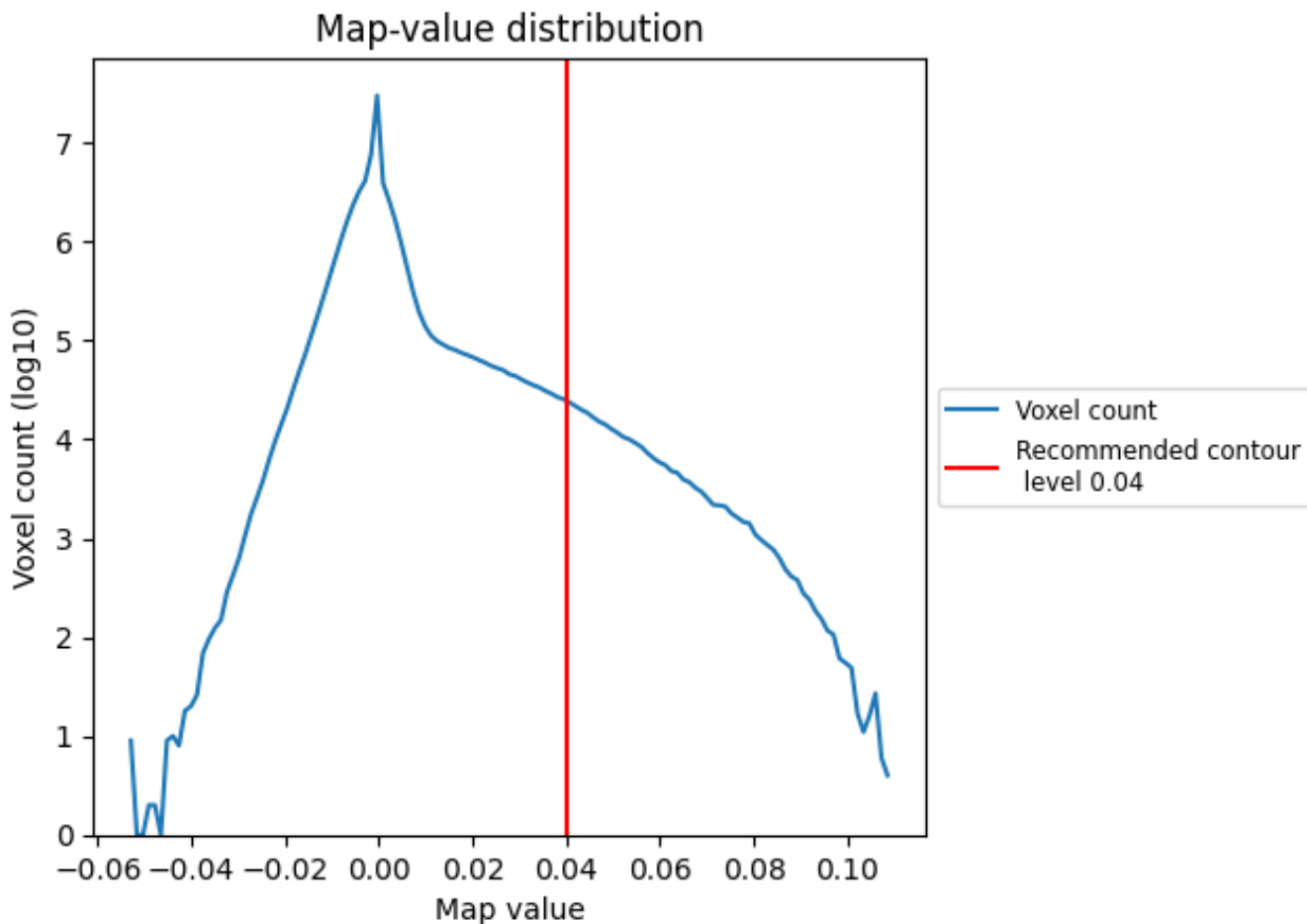
6.5 Mask visualisation [i](#)

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

7 Map analysis [i](#)

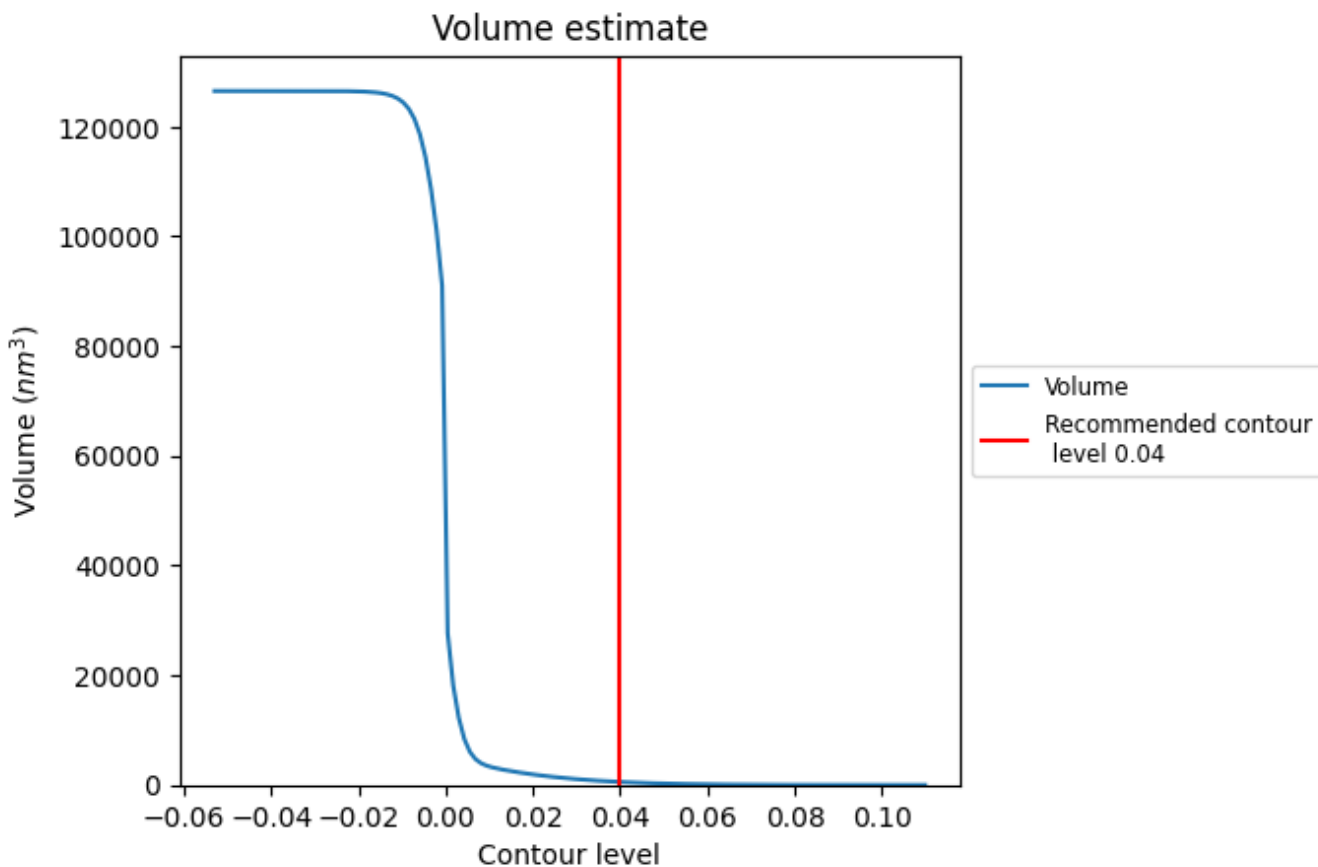
This section contains the results of statistical analysis of the map.

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.

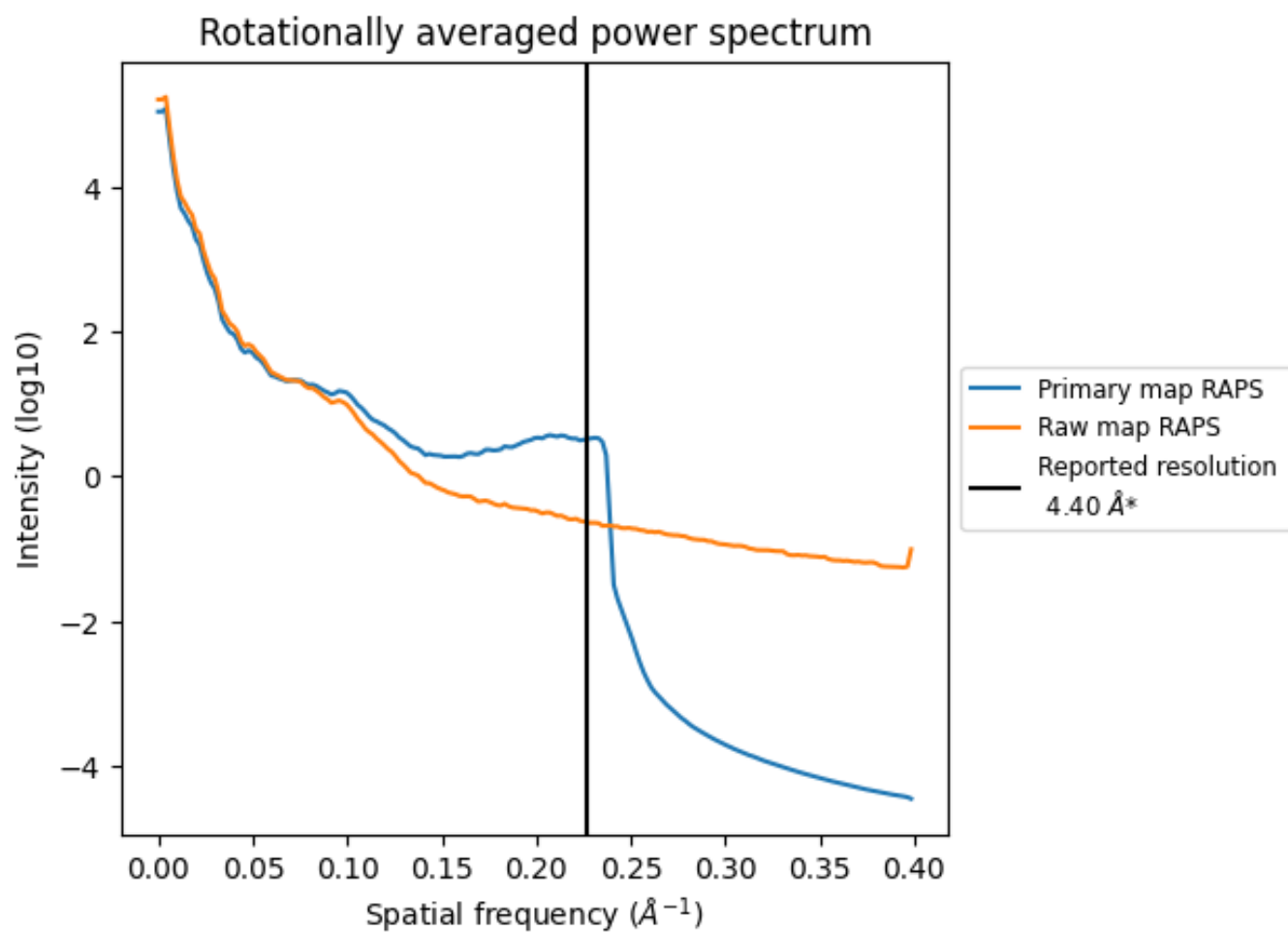
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 547 nm³; this corresponds to an approximate mass of 494 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

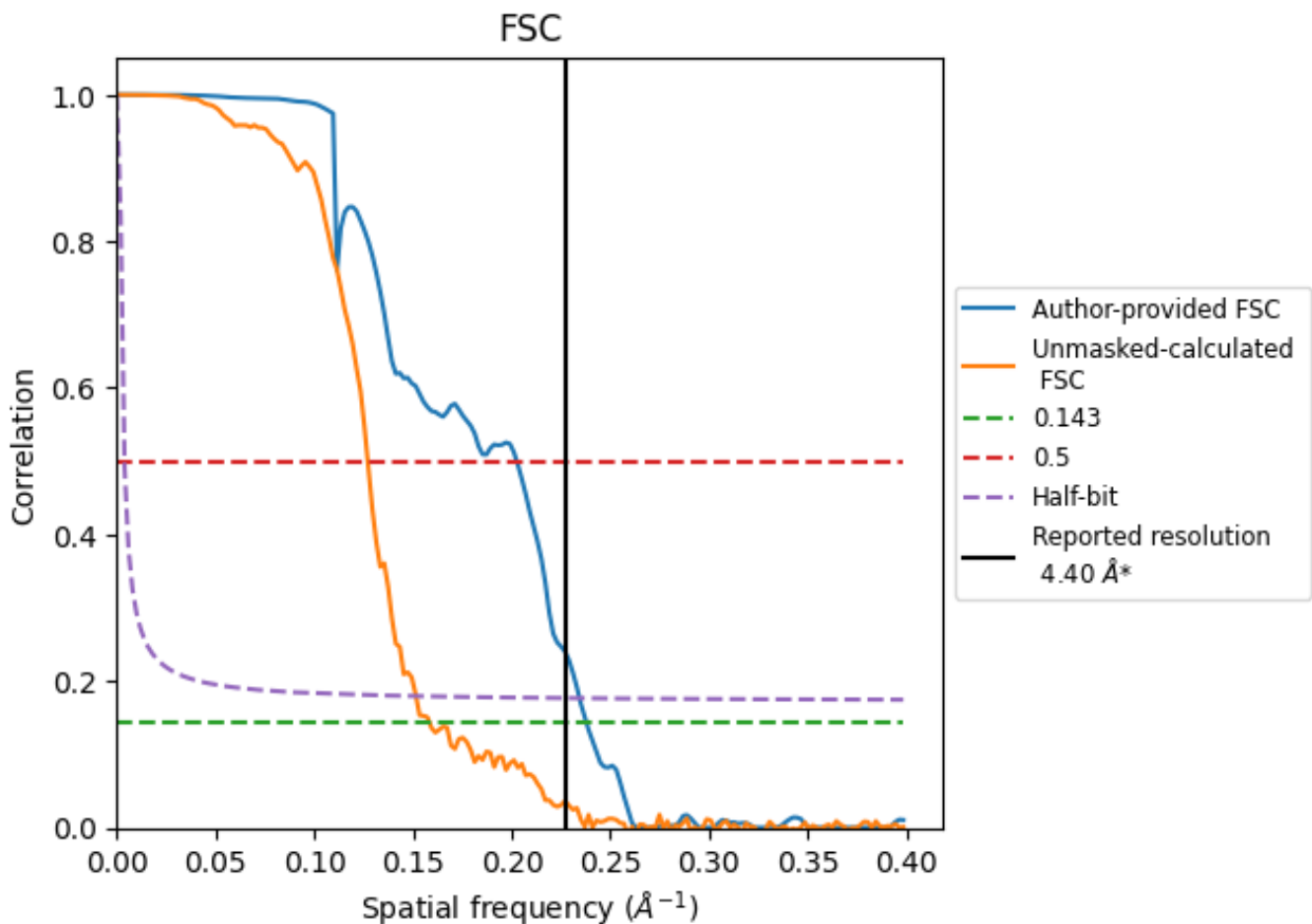


*Reported resolution corresponds to spatial frequency of 0.227 Å⁻¹

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 0.227 Å⁻¹

8.2 Resolution estimates [i](#)

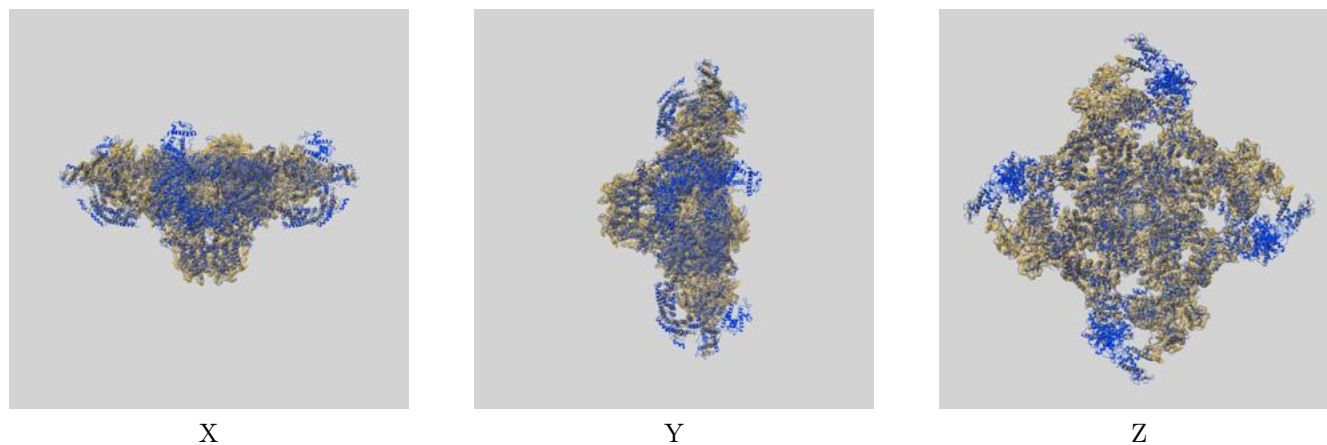
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.40	-	-
Author-provided FSC curve	4.20	4.94	4.27
Unmasked-calculated*	6.31	7.87	6.60

*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 6.31 differs from the reported value 4.4 by more than 10 %

9 Map-model fit [i](#)

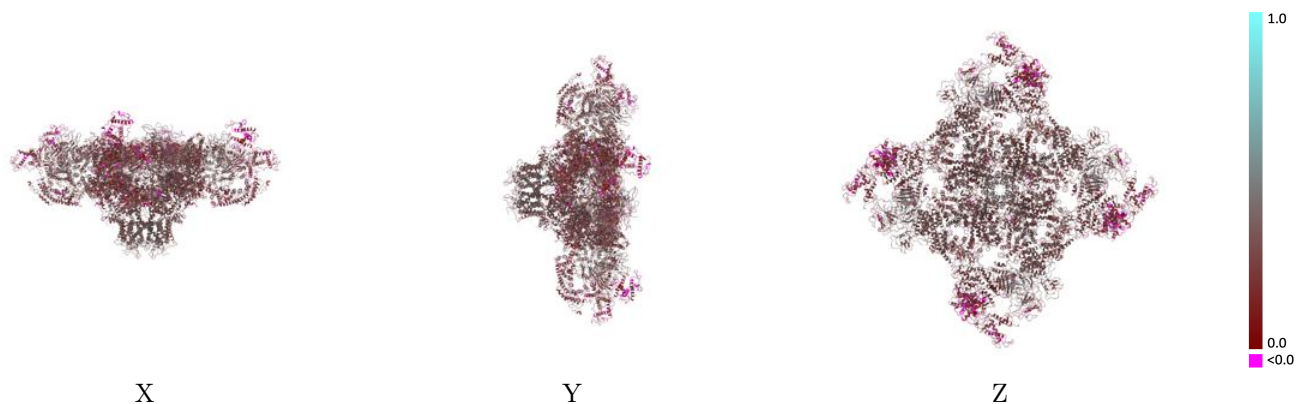
This section contains information regarding the fit between EMDB map EMD-8387 and PDB model 5TAW. Per-residue inclusion information can be found in section [3](#) on page [5](#).

9.1 Map-model overlay [i](#)



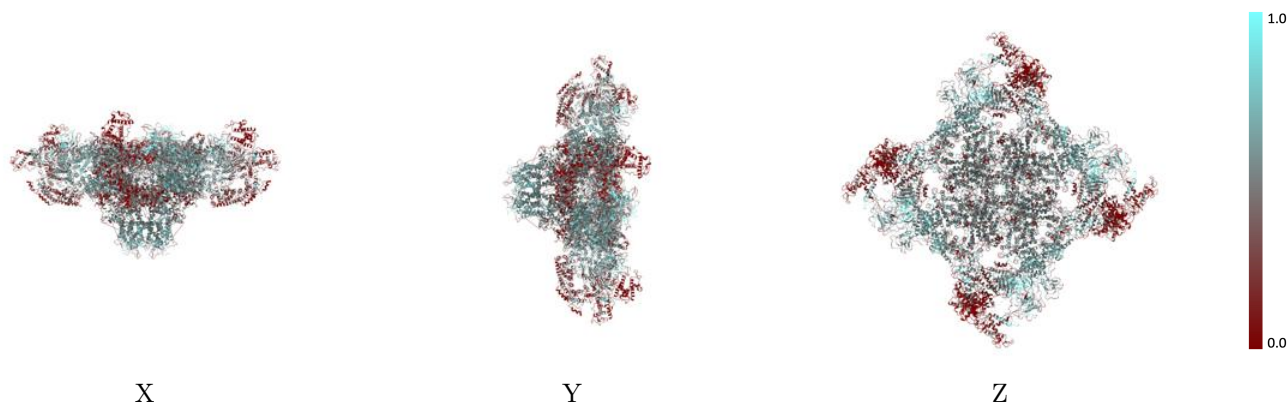
The images above show the 3D surface view of the map at the recommended contour level 0.04 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



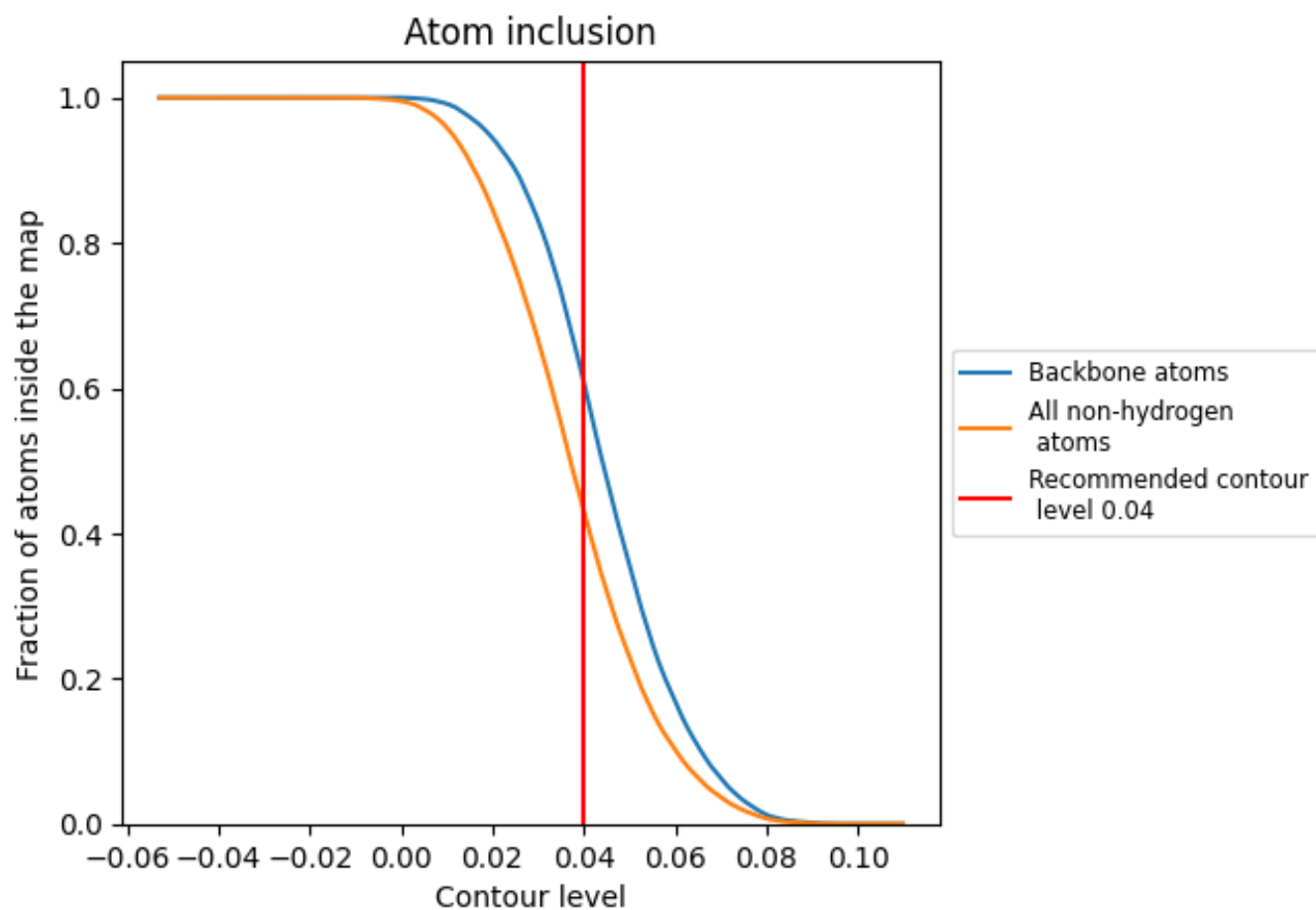
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.04).



















9.4 Atom inclusion [i](#)



At the recommended contour level, 61% of all backbone atoms, 43% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.04) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.4322	 0.2790
A	 0.4975	 0.3250
B	 0.4305	 0.2780
E	 0.4301	 0.2780
F	 0.4938	 0.3290
G	 0.4312	 0.2780
H	 0.4950	 0.3280
I	 0.4298	 0.2780
J	 0.4988	 0.3270

