



wwPDB EM Validation Summary Report ⓘ

Jul 29, 2024 – 12:48 PM JST

PDB ID : 8Y6Q
EMDB ID : EMD-38995
Title : Structure of the Dark/Dronc complex
Authors : Tian, L.; Li, Y.; Shi, Y.
Deposited on : 2024-02-03
Resolution : 7.00 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

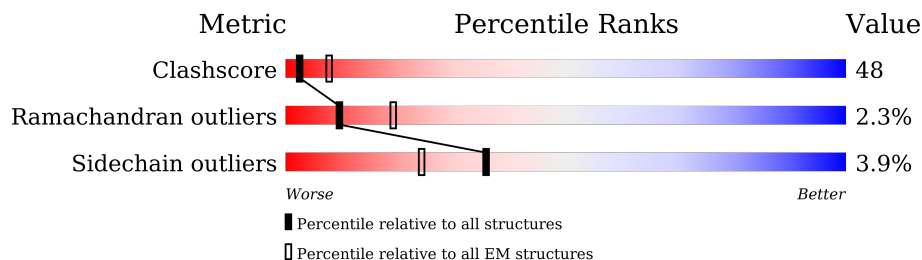
EMDB validation analysis : 0.0.1.dev92
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.37.1

1 Overall quality at a glance i

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

The reported resolution of this entry is 7.00 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	H	1237	
1	I	1237	
1	J	1237	
1	K	1237	
1	L	1237	
1	M	1237	
1	O	1237	
1	Q	1237	

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Mol	Chain	Length	Quality of chain
2	A	102	<p>14% 36% 63%</p>
2	B	102	<p>9% 44% 56%</p>
2	C	102	<p>9% 40% 59%</p>
2	D	102	<p>5% 26% 74%</p>
2	E	102	<p>10% 41% 58%</p>
2	F	102	<p>36% 36% 64%</p>
2	G	102	<p>65% 43% 56%</p>
2	N	102	<p>8% 41% 58%</p>

2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 75726 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 Apaf-1 related killer DARK.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	H	1068	Total 8621	C 5529	N 1452	O 1593	S 47	0	0
1	J	1074	Total 8672	C 5562	N 1460	O 1603	S 47	0	0
1	L	1072	Total 8656	C 5553	N 1458	O 1598	S 47	0	0
1	M	1066	Total 8607	C 5522	N 1447	O 1591	S 47	0	0
1	O	1064	Total 8592	C 5511	N 1446	O 1588	S 47	0	0
1	Q	1066	Total 8608	C 5520	N 1450	O 1591	S 47	0	0
1	I	1072	Total 8658	C 5556	N 1457	O 1598	S 47	0	0
1	K	1064	Total 8592	C 5513	N 1445	O 1587	S 47	0	0

- Molecule 2 is a protein called Caspase Dronc.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	N	102	Total 840	C 522	N 160	O 152	S 6	0	0
2	A	102	Total 840	C 522	N 160	O 152	S 6	0	0
2	B	102	Total 840	C 522	N 160	O 152	S 6	0	0
2	C	102	Total 840	C 522	N 160	O 152	S 6	0	0
2	D	102	Total 840	C 522	N 160	O 152	S 6	0	0
2	E	102	Total 840	C 522	N 160	O 152	S 6	0	0
2	F	102	Total 840	C 522	N 160	O 152	S 6	0	0

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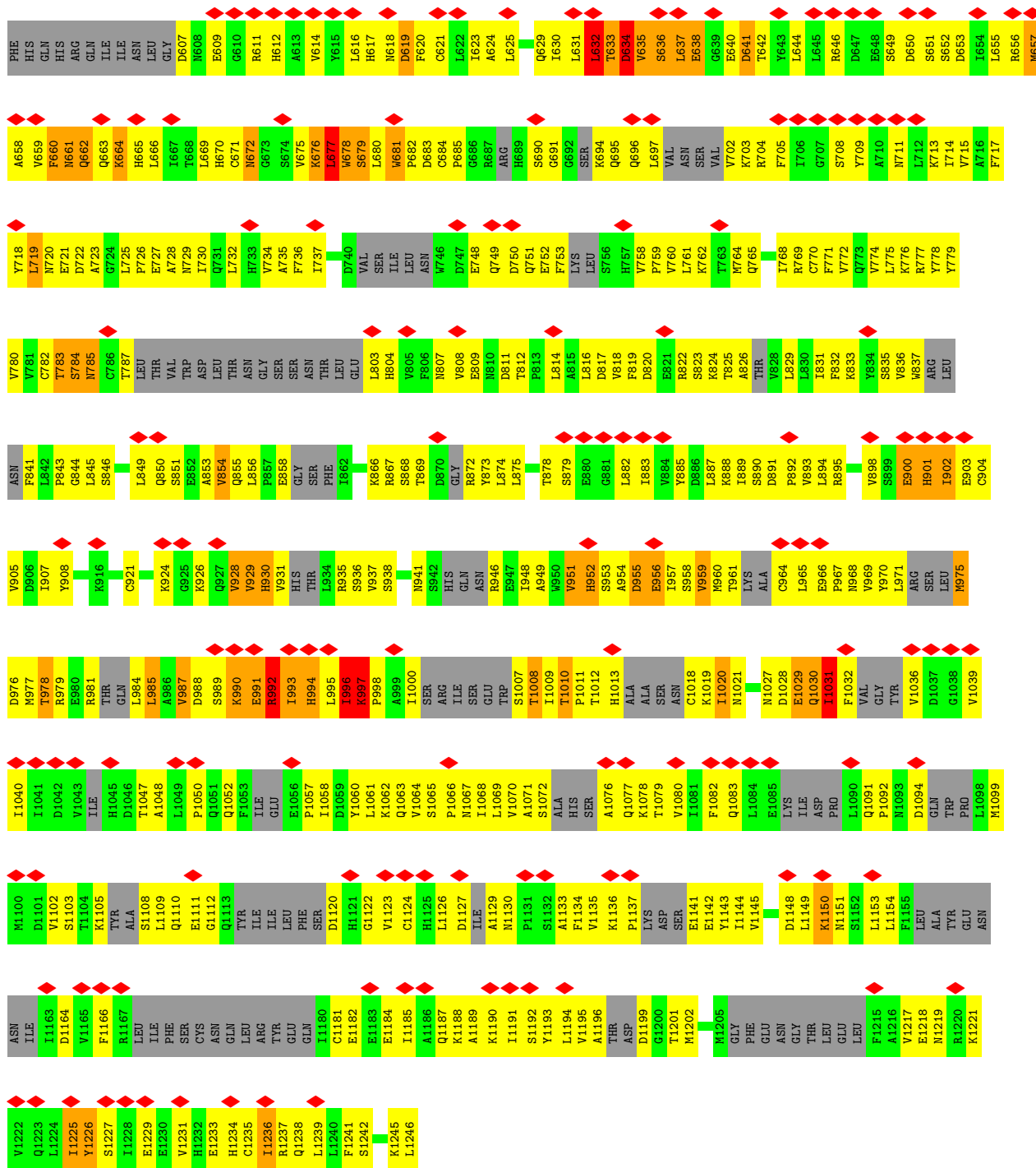
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	G	102	840	522	160	152	6	0	0

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.

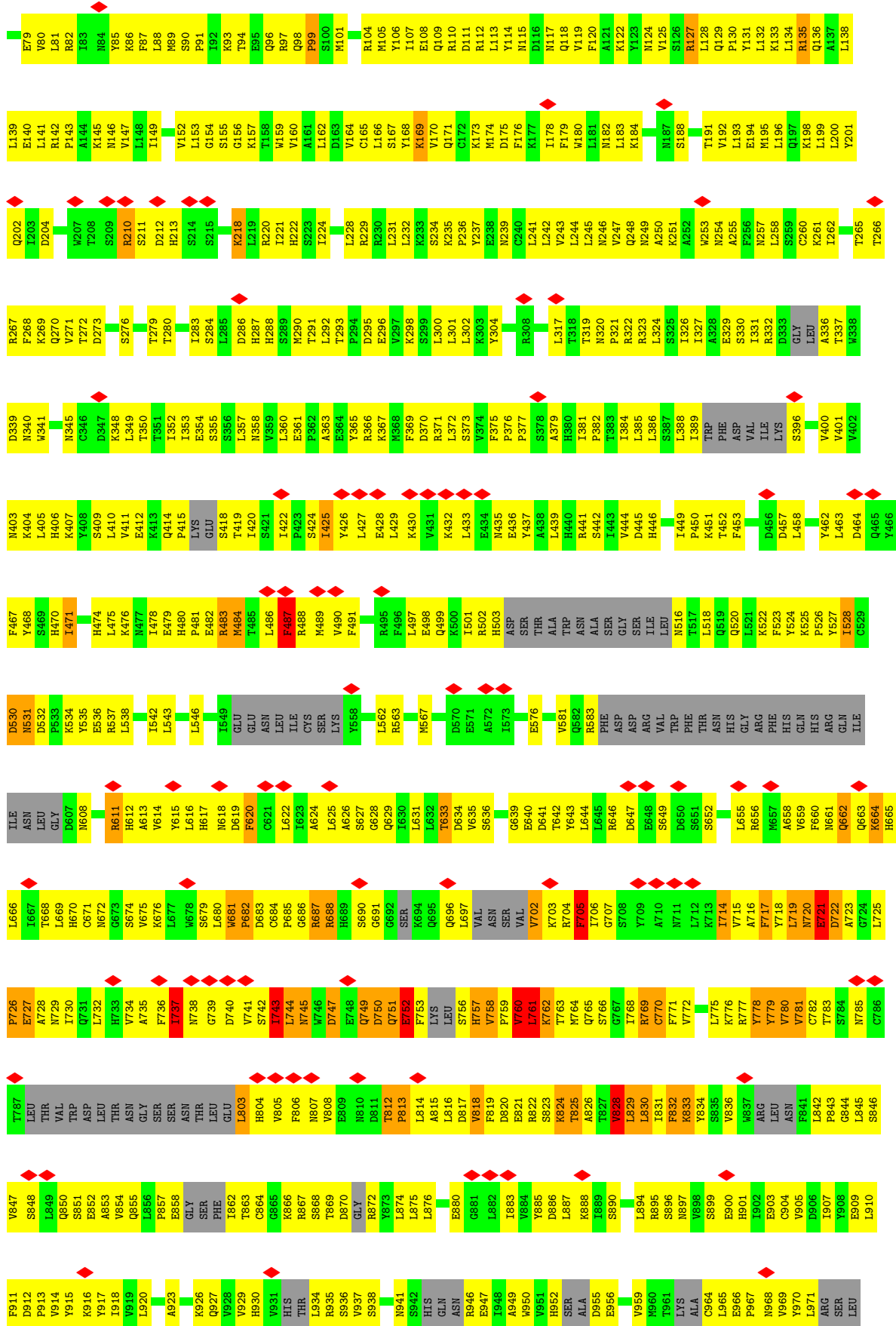
- Molecule 1: Apaf-1 related killer DARK

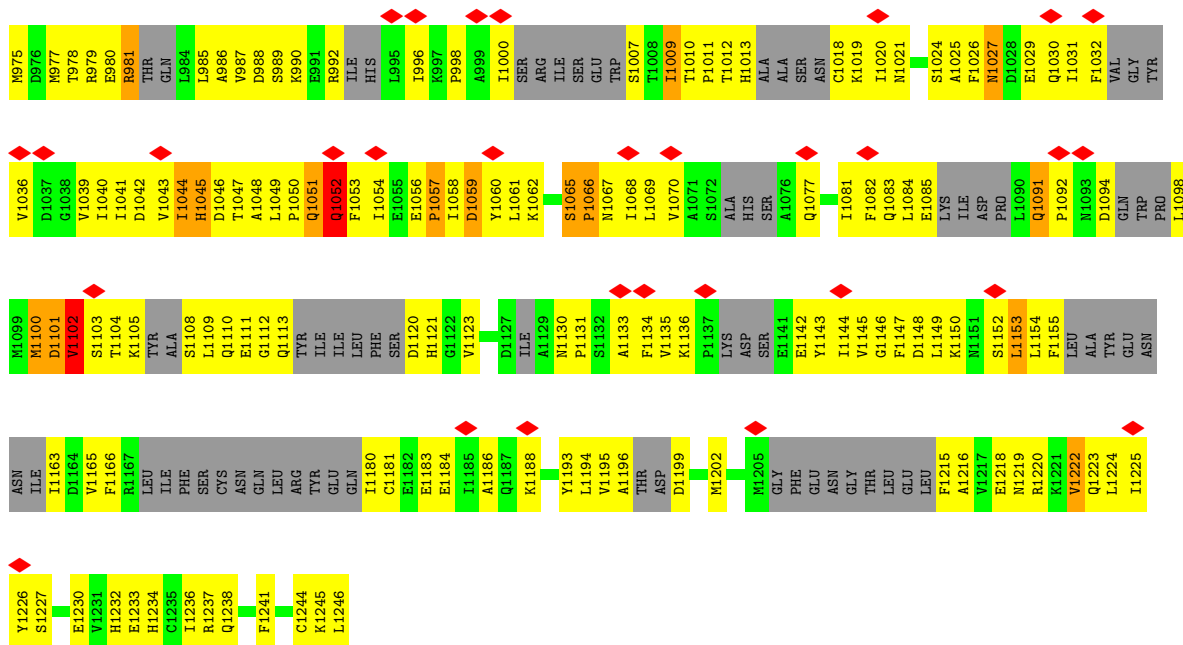




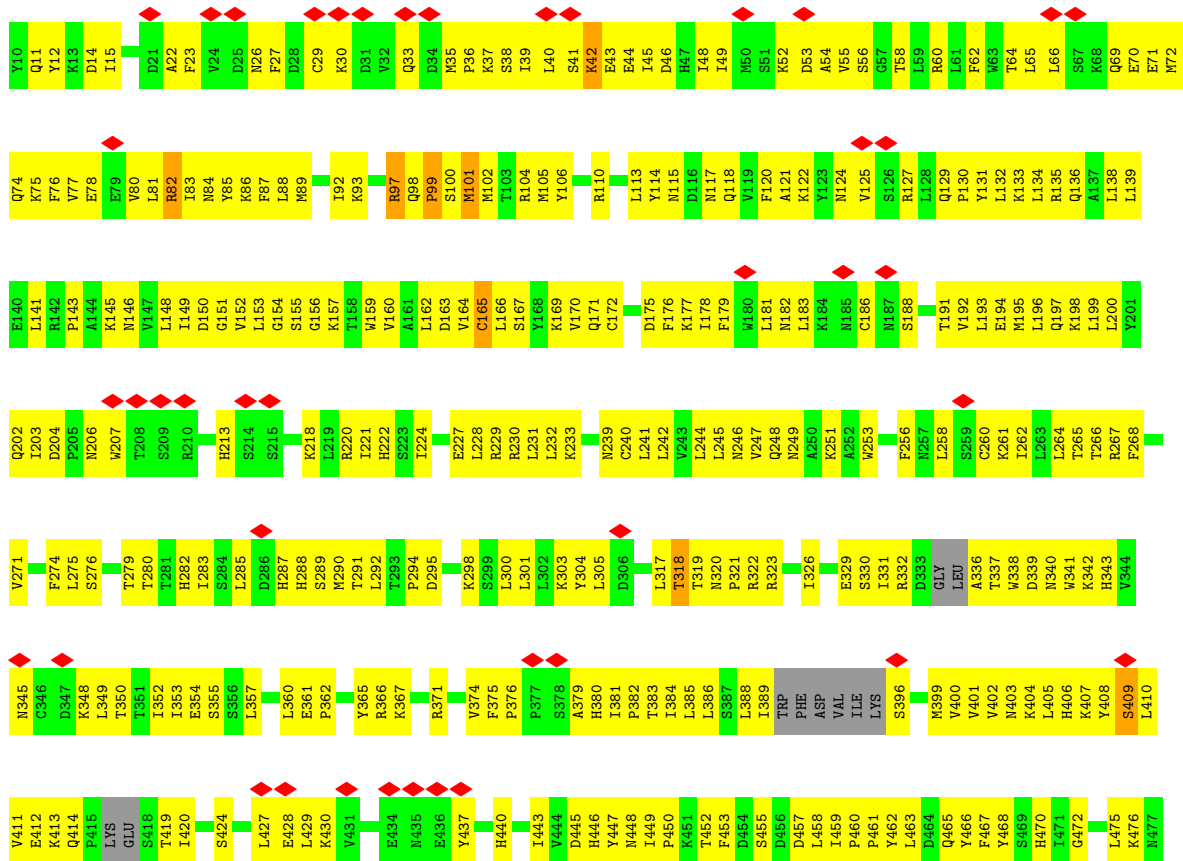
• Molecule 1: Apaf-1 related killer DARK

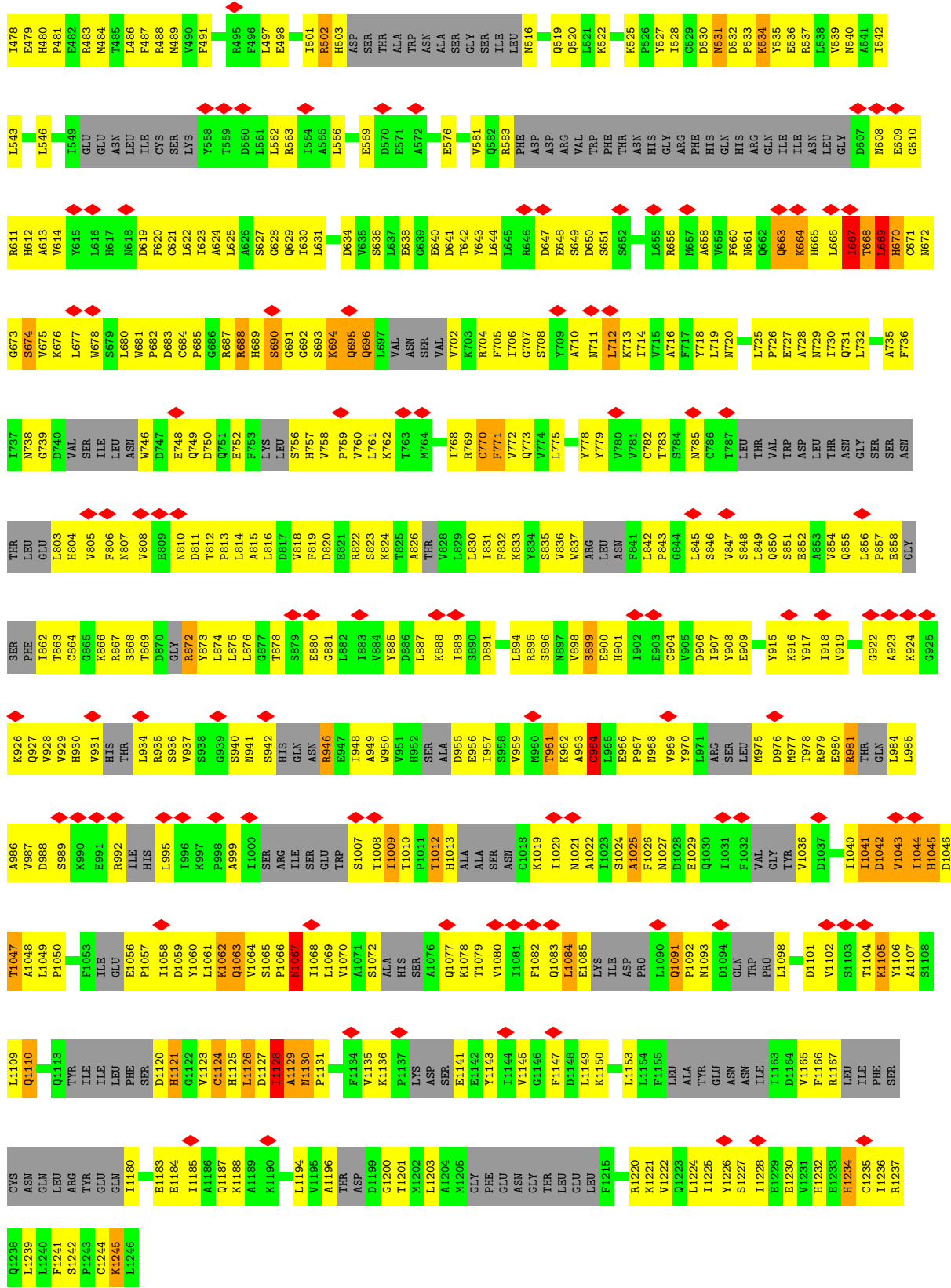




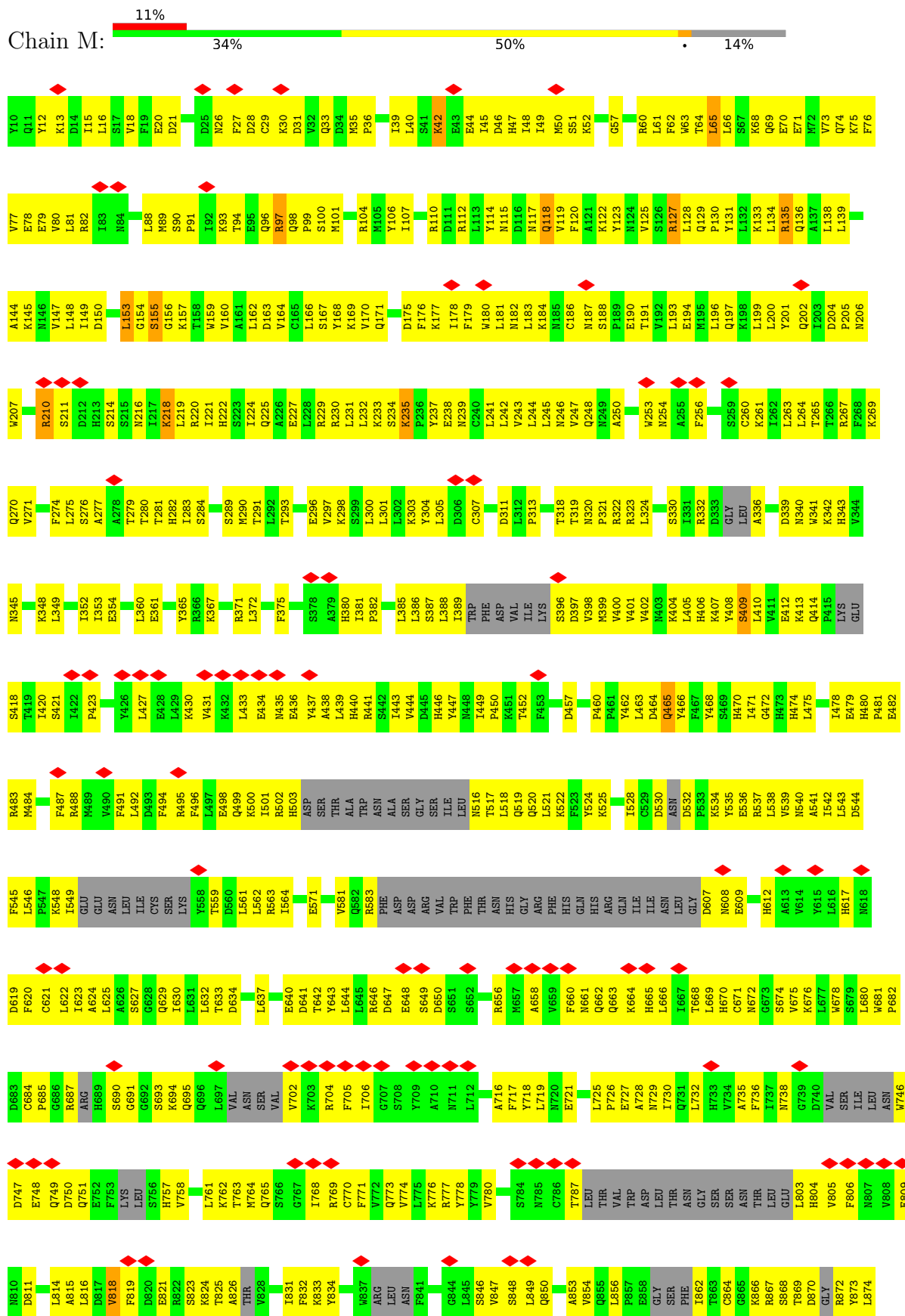


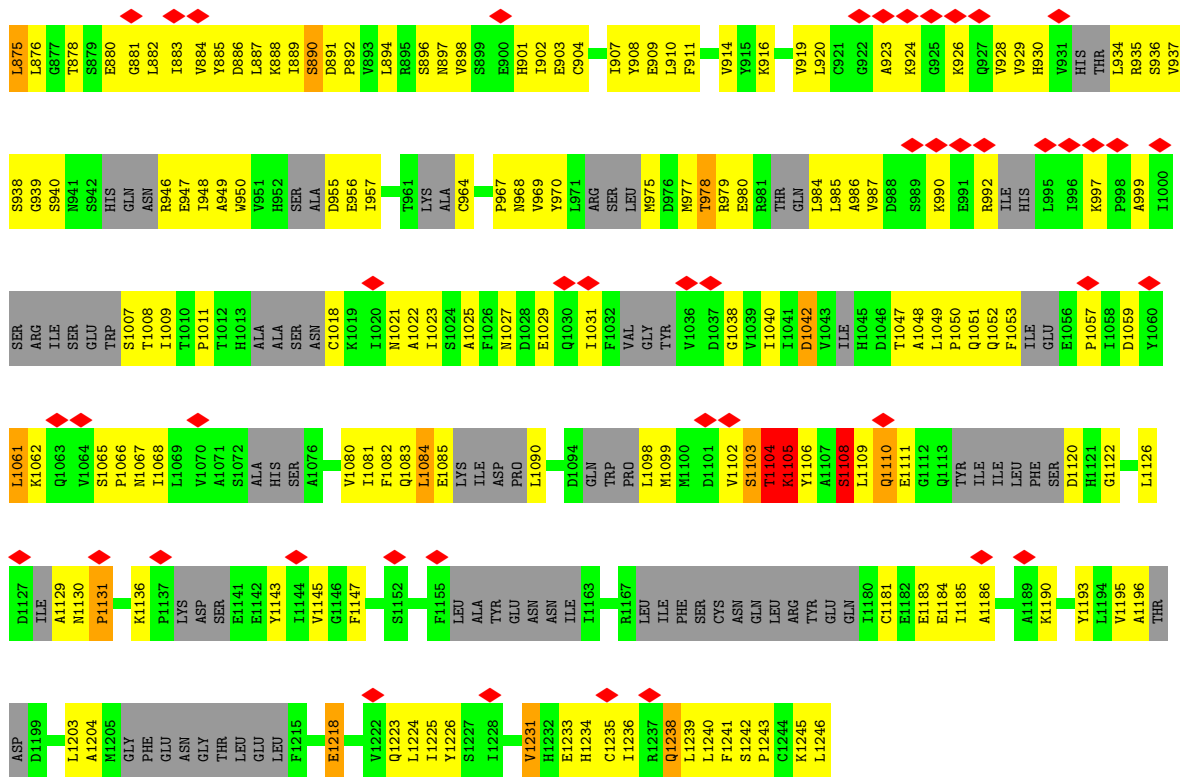
● Molecule 1: Apaf-1 related killer DARK



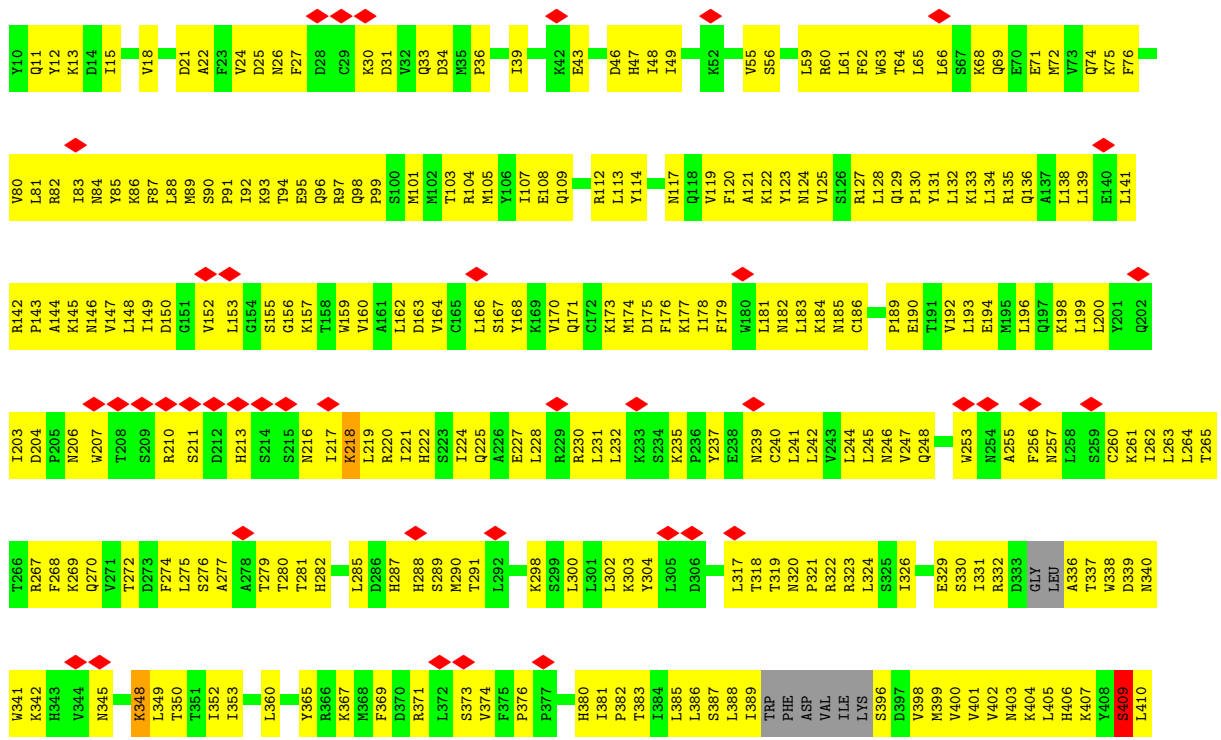


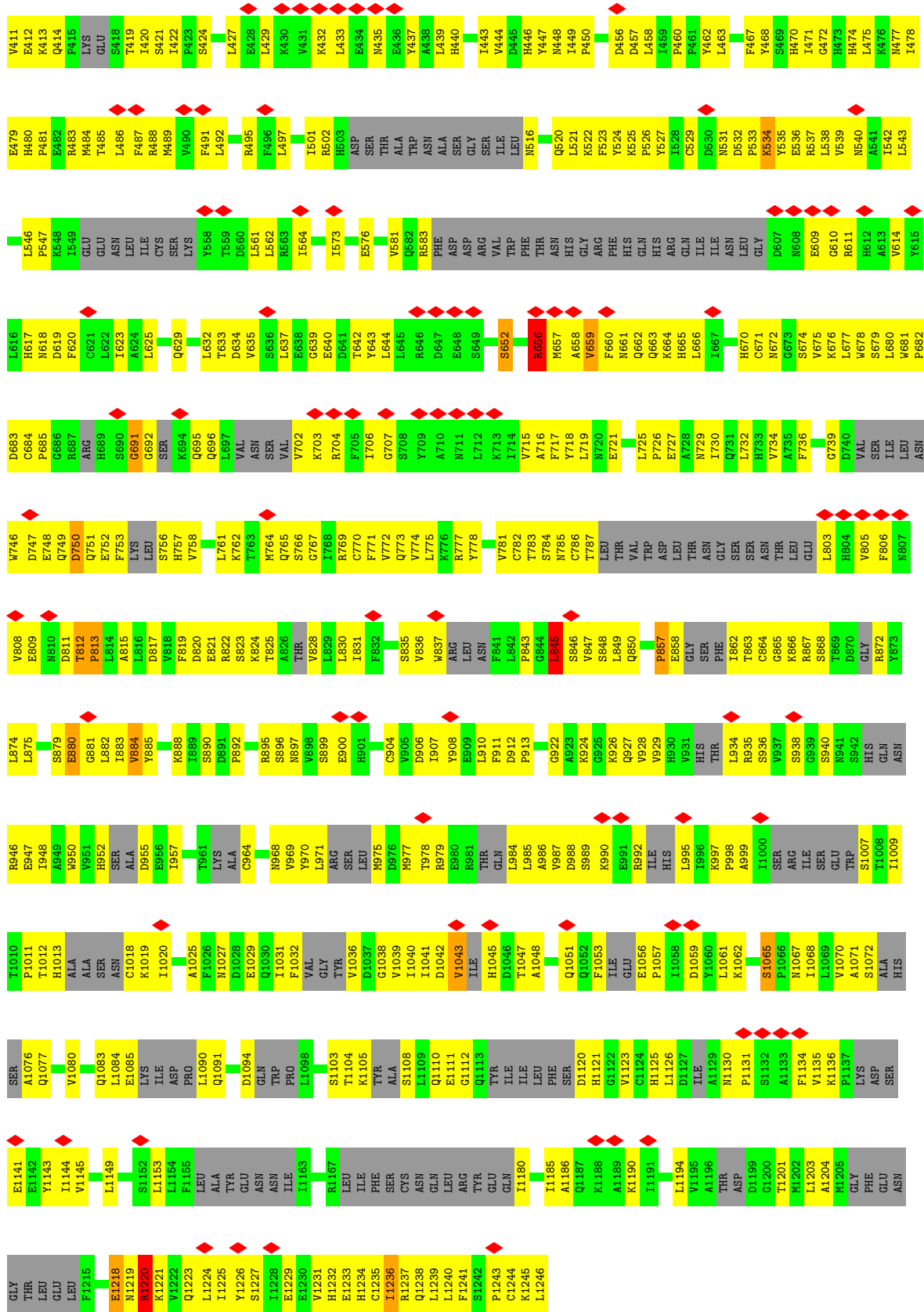
• Molecule 1: Apaf-1 related killer DARK





• Molecule 1: Apaf-1 related killer DARK

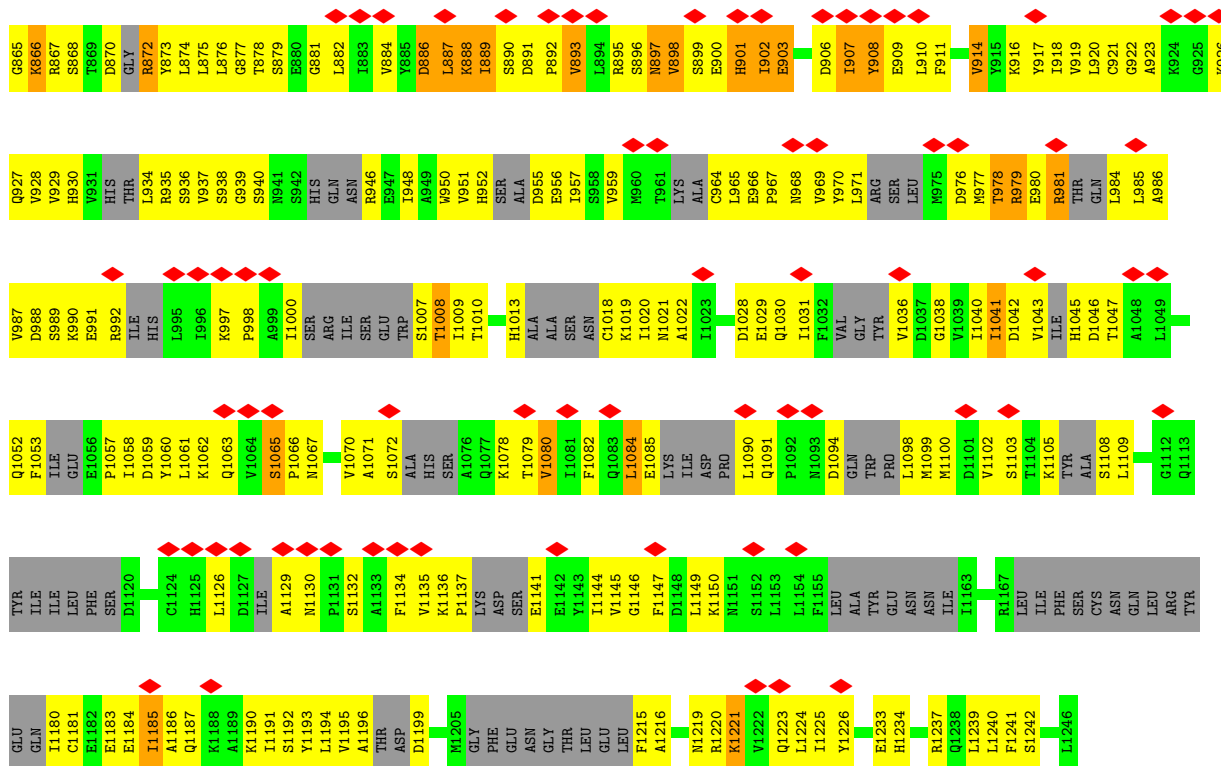




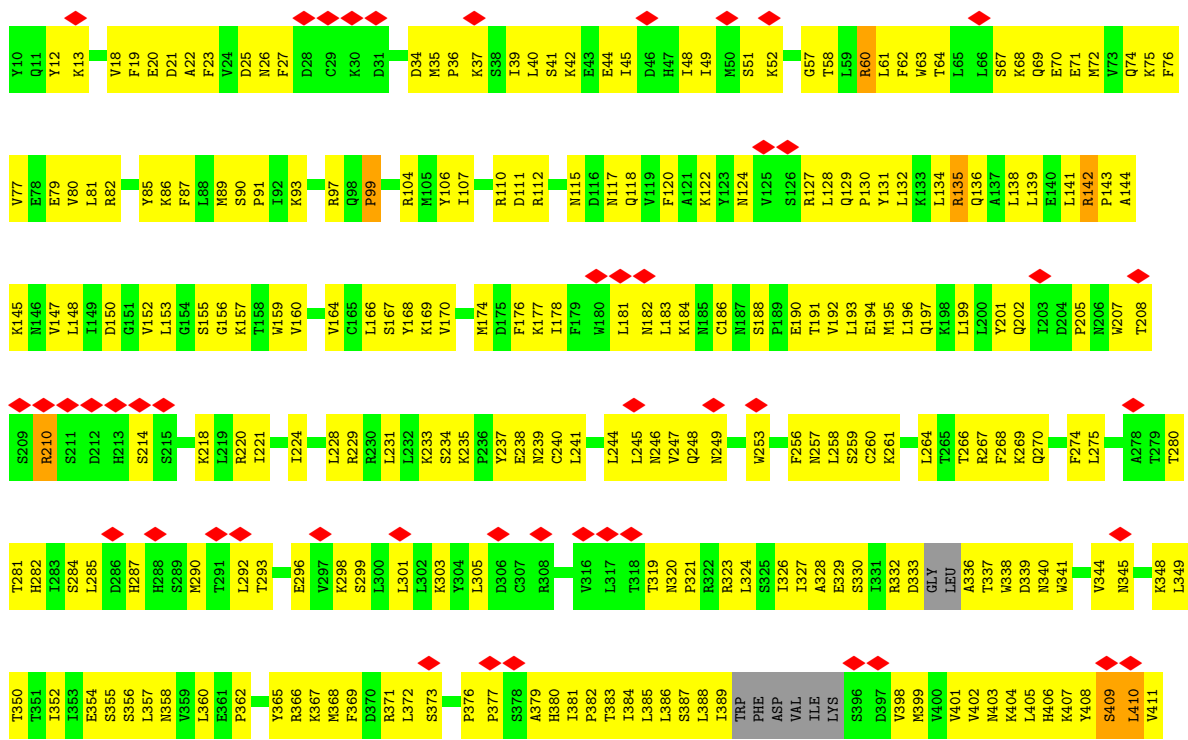
• Molecule 1: Apaf-1 related killer DARK



L803	L804	V805	F806	M807	V808	E809	M810	D811	T812	P813	L814	A815	L816	D817	V818	F819	D820	E821	R822	S823	K824	T825	T827	V828	L829	L830	L831	F832	K833	K834	S835	V836	W837	ARG	LEU	ASN	F841	L845	S846	V847	S848	L849	Q850	S851	E852	A853	V854	Q855	L856	P857	E858	GLY	ASN	ASN	THR	THR	PHE	I862	T863	C864			
D740	VAL	SER	ILE	LEU	ASN	W746	D747	F748	Q749	E752	F753	LYS	LEU	S756	P759	V760	L761	K762	T763	M764	K824	Q765	S766	G767	I768	R769	G770	F771	V772	Q773	G774	L775	K776	Y779	ARG	LEU	ASN	F841	L845	S846	V847	S848	L849	Q850	S851	E852	A853	V854	Q855	L856	P857	E858	GLY	ASN	ASN	THR	THR	PHE	I862	T863	C864		
L677	W678	S679	L680	W681	P682	D683	C684	P685	G686	R687	R688	H689	S690	L691	L692	S693	K694	D695	W696	L697	VAL	ASN	ASN	SER	VAL	K702	W703	R704	F705	I706	R646	G707	W774	L775	K776	Y779	ARG	LEU	ASN	F841	L845	S846	V847	S848	L849	Q850	S851	E852	A853	V854	Q855	L856	P857	E858	GLY	ASN	ASN	THR	THR	PHE	I862	T863	C864
H617	M618	D619	F620	C621	L622	I623	L624	A624	GLU	GLU	ASN	LEU	ILE	CYS	LYS	THR	R488	L630	L631	L632	D634	W635	S636	L637	E638	G639	E640	D641	T642	F643	L644	L645	D647	E648	S649	D650	S651	S652	D653	L654	L655	R656	M657	V658	V659	F660	F661	Q662	Q663	K664	H665	L666	H667	L668	L669	H670	A735	F736	I737	N738	V674	K676	
L538	L543	L546	F547	K548	L549	GLU	GLU	ASN	LEU	ILE	CYS	LYS	THR	R488	L630	L631	L632	D634	W635	S636	L637	E638	G639	E640	D641	T642	F643	L644	L645	D647	E648	S649	D650	S651	S652	D653	L654	L655	R656	M657	V658	V659	F660	F661	Q662	Q663	K664	H665	L666	H667	L668	L669	H670	A735	F736	I737	N738	V674	K676				
H473	H474	L475	K476	M477	L478	E479	H480	P481	E482	R483	L486	F487	R488	L489	V490	F491	F494	R495	F496	E497	E498	Q499	K500	L501	R502	H503	ASP	ARG	VAL	TRP	ALA	THR	ASN	ALA	SER	GLY	ILE	LEU	M516	Q519	K522	F523	Y524	K525	P526	Y527	L528	C529	D530	D531	D532	P533	E536	R537									
L411	E412	K413	D414	P415	GLU	S418	T419	L420	E421	L422	P423	S424	L425	V426	L427	E428	L429	K430	V431	L432	L433	E434	M435	E436	Y437	A438	L439	H440	R441	L442	L443	L444	L445	L446	L447	L448	L449	P450	L451	T452	F453	D456	D457	L458	L459	P460	L463	D464	Q465	V466	F467	V468	S469	H470	L471	G472							
R345	C346	D347	K348	L349	T350	T351	L352	E353	S354	S355	S356	N358	V359	L360	E361	Y365	K366	K367	H368	F369	D370	R371	L372	P376	P377	S378	A379	H380	L381	P382	L383	L384	L385	L386	S387	L388	L389	TRP	PHE	ASP	VAL	ILE	LYS	S396	K399	V400	V401	V402	V403	K404	L405	H406	K407	L410									
T283	S284	L285	D286	H287	H288	S289	M290	T291	L292	T293	P294	D295	K298	S299	L300	L301	L302	K303	Y304	D306	C307	R308	F309	Q310	D311	R314	E315	V316	L317	T318	R320	F321	R322	R323	L324	S325	L326	L327	D333	GLY	LEU	A336	T337	W338	D339	N340	W341	K342	H343	V344													
I149	D150	G151	V152	L153	G154	V155	H159	V160	A161	L162	D163	V164	S167	Y168	K169	V170	Q171	C172	K173	M174	D175	F176	K177	I178	F179	M180	L181	M182	L183	C186	N187	L188	P189	T191	V192	L193	L196	Q197	K198	L199	L200	K133	T265	A54	L134	R135	Q136	A137	L138	L139	E140	L141	R142	P143	A144	K145	V146	L147	L148				
K75	F76	V77	E78	E79	V80	L81	R82	I83	N84	Y85	K86	R87	L88	M89	S89	R90	P91	T94	E95	Q96	R97	Q98	P99	S100	K101	M102	T103	Y106	E107	R110	L113	Y114	S126	R127	C260	P130	Y131	L132	L133	A54	L134	R135	Q136	A137	L138	L139	E140	L141	R142	P143	A144	K145	V146	L147	L148								
S214	S215	N216	I217	K218	L219	R220	L221	H222	S223	L224	Q225	A226	E227	L228	R229	R230	L231	L232	K233	S234	Y237	E238	M239	C240	L241	L242	V243	L244	L245	W246	V247	Q248	N249	F256	N257	L258	S259	C260	K261	L262	L263	L264	T265	A54	L266	R267	F268	K269	Q270	V271	T272	D273	F274	L275	T280	T281	H282						



• Molecule 1: Apaf-1 related killer DARK

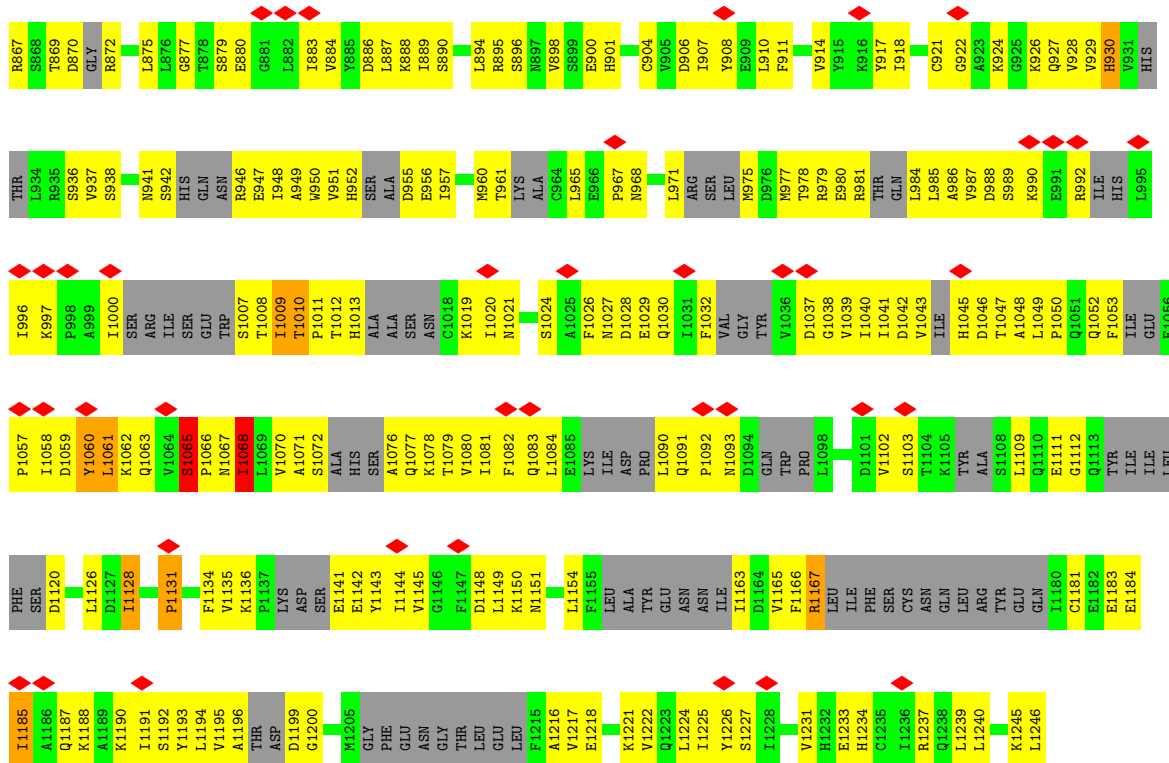


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L476	K477	I478	E479	H480	P481	E482	R483	M484	T485	L486	F487	R488	M489	V490	F491	R495	L497	Q498	Q499	K500	I501	R502	H503	ASP	SER	THR	ALA	TRP	ASN	ALA	ARG	SER	GLY	SER	ILE	LEU	ASN	N516	Q519	Q520	L521	K522	Y524	K525	P526	Y527	I528	C529	D530	N531	D532	F533	K534	S469	H470	E535	R537	
L538	V539	I542	L543	L549	GLU	L622	GLU	ASN	L623	L624	CYS	SER	LVS	Y558	T559	D560	I561	L562	I573	E576	K579	Q580	V581	Q582	R583	PHE	ASP	ASN	ALA	ARG	SER	VAL	TRP	THR	THR	LEU	ASN	HIS	GLY	ARG	A658	V659	F660	Q663	K664	H665	L666	I667	T668	L669	H670	C671	N608	E609	G610	R611	V614	
Y615	L616	H617	N618	D619	F620	C621	L622	L623	A624	L625	A626	Q629	I630	L631	L632	T633	D634	E638	G639	E640	D641	T642	Y643	L644	L645	R646	D647	E648	S649	D650	S651	D652	S653	P654	L655	R656	M657	V659	F660	Q663	K664	H665	L666	I667	T668	L669	H670	C671	N608	E609	G610	R611	V614					
S679	L680	P681	P682	D683	N607	P685	G686	ARG	R687	G691	G692	S693	K694	Q695	Q696	L697	VAL	ASN	SER	VAL	V702	K703	R704	F705	S708	Y709	A710	N711	L712	K713	I714	V715	A716	F717	Y718	L719	N720	E721	D722	L725	P726	E727	A728	N729	I730	Q731	L732	H733	V734	A735	F736	I737	N738	G739	D740	VAL		
SER	ILE	ASN	W746	D747	E748	Q749	D750	Q751	E752	F753	K754	L755	S756	H757	V758	V759	V760	L761	K762	T763	M764	Q765	S766	G767	I768	R769	C770	F771	V772	Q773	V774	L775	K776	R777	V780	V781	C782	T783	S784	N785	LEU	THR	THR	VAL	TRP	ASP	LEU	THR	ASN	GLY	SER	ASN	THR	LEU	PHE	L862		
L803	H804	W805	F806	V808	E809	N810	D811	T812	F813	L814	A815	L816	D817	W818	F819	D820	E821	R822	S823	K824	T825	A826	THR	V828	L829	L830	L831	F832	K833	Y834	R835	W836	W837	ARG	ASN	F841	L842	P843	G844	L845	S846	V847	S848	L849	Q850	S851	F852	A853	H854	Q855	L856	P857	E858	GLY	SER	PHE	L862	
K866	R867	S868	T869	D870	GLY	R872	Y873	L874	L875	L876	G877	T878	S879	E880	G881	L882	L883	D886	L887	K888	S890	V898	S899	E900	H901	I902	E903	D906	I907	Y908	D912	Y915	K916	Y919	L920	C921	G922	A923	K924	G925	K926	Q927	Y928	Y929	H930	I931	HIS	THR	L934	R935	S936							
V937	S938	G939	S940	N941	S942	HIS	GLN	ASN	R946	E947	W950	V951	H952	E953	ALA	D955	T961	ALA	C964	L965	E966	P967	N968	V969	Y970	L971	ARG	SER	LEU	M975	D976	T978	R979	E980	R981	L984	L985	A986	V987	D988	S989	K990	E991	R992	I993	H994	L995	I996	K997	P998	L1001	A999	I1000	SER				
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A1189	K1190	I1191	S1192	L1193	L1194	V1195	A1196	THR	ASP	D1199	L1203	A1204	M1205	GLY	PHE	GLU	ASN	GLY	THR	LEU	GLU	F1215	A1216	V1217	E1218	M1219	R1220	L1221	V1222	I1225	Y1226	S1227	I1228	E1229	E1230	I1231	H1232	I1236	R1237	Q1238	L1239	L1240	F1241	S1242	K1245	L1246												

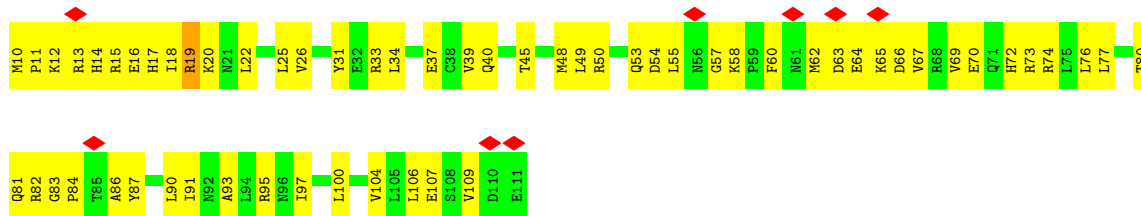
• Molecule 1: Apaf-1 related killer DARK



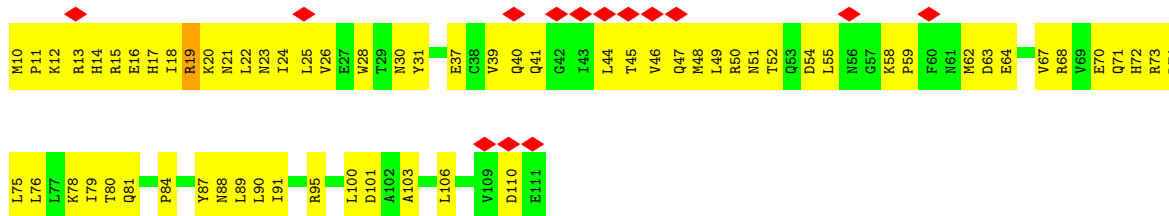
Y10	Q11	Y12	K13	D14	L15	L16	S17	V18	F19	E20	D21	A22	F23	V24	D25	D26	N27	F28	D29	D30	Q31	V32	Q33	Q34	K35	P36	K37	S38	I39	K40	E41	E42	H43	I44	M45	S51	D52	D53	A54	V55	S56	G57	T58	L59	R60	L61	T62	L63	L64	L65	L66	S67	R68	Q69	L70	L71	L72	L73	L74	L75	L76	L77	L78	L79	L80	L81	L82	L83	L84	L85	L86	L87	L88	L89	L90	L91	L92	L93	L94	L95	L96	L97	L98	L99	L100	L101	L102	L103	L104	L105	L106	L107	L108	L109	L110	L111	L112	L113	L114	L115	L116	L117	L118	L119	L120	L121	L122	L123	L124	L125	L126	L127	L128	L129	L130	L131	L132	L133	L134	L135	L136	L137	L138	L139	L140	L141	L142	L143	L144	L145	L146	L147	L148	L149	L150	L151	L152	L153	L154	L155	L156	L157	L158	L159	L160	L161	L162	L163	L164	L165	L166	L167	L168	L169	L170	L171	L172	L173	L174	L175	L176	L177	L178	L179	L180	L181	L182	L183	L184	L185	L186	L187	L188	L189	L190	L191	L192	L193	L194	L195	L196	L197	L198	L199	L200	L201	L202	L203	L204	L205	L206	L207	L208	L209	L210	L211	L212	L213	L214	L215	L216	L217	L218	L219	L220	L221	L222	L223	L224	L225	L226	L227	L228	L229	L230	L231	L232	L233	L234	L235	L236	L237	L238	L239	L240	L241	L242	L243	L244	L245	L246	L247	L248	L249	L250	L251	L252	L253	L254	L255	L256	L257	L258	L259	L260	L261	L262	L263	L264	L265	L266	L267	L268	L269	L270	L271	L272	L273	L274	L275	L276	L277	L278	L279	L280	L281	L282	L283	L284	L285	L286	L287	L288	L289	L290	L291	L292	L293	L294	L295	L296	L297	L298	L299	L300	L301	L302	L303	L304	L305	L306	L307	L308	L309	L310	L311	L312	L313	L314	L315	L316	L317	L318	L319	L320	L321	L322	L323	L324	L325	L326	L327	L328	L329	L330	L331	L332	L333	L334	L335	L336	L337	L338	L339	L340	L341	L342	L343	L344	L345	L346	L347	L348	L349	L350	L351	L352	L353	L354	L355	L356	L357	L358	L359	L360	L361	L362	L363	L364	L365	L366	L367	L368	L369	L370	L371	L372	L373	L374	L375	L376	L377	L378	L379	L380	L381	L382	L383	L384	L385	L386	L387	L388	L389	L390	L391	L392	L393	L394	L395	L396	L397	L398	L399	L400	L401	L402	L403	L404	L405	L406	L407	L408	L409	L410	L411	L412	L413	L414	L415	L416	L417	L418	L419	L420	L421	L422	L423	L424	L425	L426	L427	L428	L429	L430	L431	L432	L433	L434	L435	L436	L437	L438	L439	L440	L441	L442	L443	L444	L445	L446	L447	L448	L449	L450	L451	L452	L453	L454	L455	L456	L457	L458	L459	L460	L461	L462	L463	L464	L465	L466	L467	L468	L469	L470	L471	L472	L473	L474	L475	L476	L477	L478	L479	L480	L481	L482	L483	L484	L485	L486	L487	L488	L489	L490	L491	L492	L493	L494	L495	L496	L497	L498	L499	L500	L501	L502	L503	L504	L505	L506	L507	L508	L509	L510	L511	L512	L513	L514	L515	L516	L517	L518	L519	L520	L521	L522	L523	L524	L525	L526	L527	L528	L529	L530	L531	L532	L533	L534	L535	L536	L537	L538	L539	L540	L541	L542	L543	L544	L545	L546	L547	L548	L549	L550	L551	L552	L553	L554	L555	L556	L557	L558	L559	L560	L561	L562	L563	L564	L565	L566	L567	L568	L569	L570	L571	L572	L573	L574	L575	L576	L577	L578	L579	L580	L581	L582	L583	L584	L585	L586	L587	L588	L589	L590	L591	L592	L593	L594	L595	L596	L597	L598	L599	L600	L601	L602	L603	L604	L605	L606	L607	L608	L609	L610	L611	L612	L613	L614	L615	L616	L617	L618	L619	L620	L621	L622	L623	L624	L625	L626	L627	L628	L629	L630	L631	L632	L633	L634	L635	L636	L637	L638	L639	L640	L641	L642	L643	L644	L645	L646	L647	L648	L649	L650	L651	L652	L653	L654	L655	L656	L657	L658	L659	L660	L661	L662	L663	L664	L665	L666	L667	L668	L669	L670	L671	L672	L673	L674	L675	L676	L677	L678	L679	L680	L681	L682	L683	L684	L685	L686	L687	L688	L689	L690	L691	L692	L693	L694	L695	L696	L697	L698	L699	L700	L701	L702	L703	L704	L705	L706	L707	L708	L709	L710	L711	L712	L713	L714	L715	L716	L717	L718	L719	L720	L721	L722	L723	L724	L725	L726	L727	L728	L729	L730	L731	L732	L733	L734	L735	L736	L737	L738	L739	L740	L741	L742	L743	L744	L745	L746	L747	L748	L749	L750	L751	L752	L753	L754	L755	L756	L757	L758	L759	L760	L761	L762	L763	L764	L765	L766	L767	L768	L769	L770	L771	L772	L773	L774	L775	L776	L777	L778	L779	L780	L781	L782	L783	L784	L785	L786	L787	L788	L789	L790	L791	L792	L793	L794	L795	L796	L797	L798	L799	L800	L801	L802	L803	L804	L805	L806	L807	L808	L809	L810	L811	L812	L813	L814	L815	L816	L817	L818	L819	L820	L821	L822	L823	L824	L825	L826	L827	L828	L829	L830	L831	L832	L833	L834	L835	L836	L837	L838	L839	L840	L841	L842	L843	L844	L845	L846	L847	L848	L849	L850	L851	L852	L853	L854	L855	L856	L857	L858	L859	L860	L861	L862	L863	L864	L865	L866	L867	L868	L869	L870	L871	L872	L873	L874	L875	L876	L877	L878	L879	L880	L881	L882	L883	L884	L885	L886	L887	L888	L889	L890	L891	L892	L893	L894	L895	L896	L897	L898	L899	L900	L901	L902	L903	L904	L905	L906	L907	L908	L909	L910	L911	L912	L913	L914	L915	L916	L917	L918	L919	L920	L921	L922	L923	L924	L925	L926	L927	L928	L929	L930	L931	L932	L933	L934	L935	L936	L937	L938	L939	L940	L941	L942	L943	L944	L945	L946	L947	L948	L949	L950	L951	L952	L953	L954	L955	L956	L957	L958	L959	L960	L961	L962	L963	L964	L965	L966	L967	L968	L969	L970	L971	L972	L973	L974	L975	L976	L977	L978	L979	L980	L981	L982	L983	L984	L985	L986	L987	L988	L989	L990	L991	L992	L993	L994	L995	L996	L997	L998	L999	L1000
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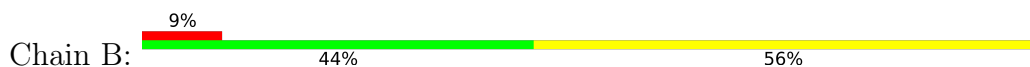
• Molecule 2: Caspase Dronc

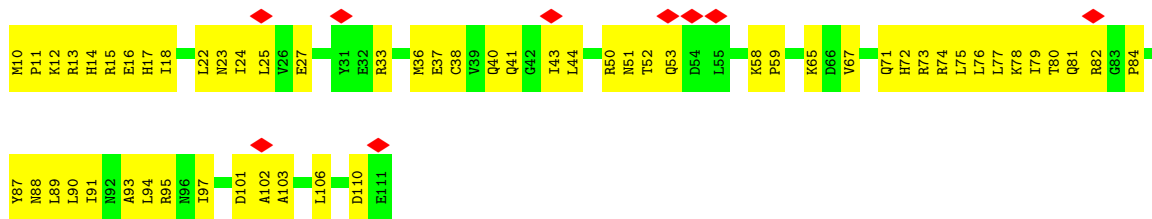


• Molecule 2: Caspase Dronc

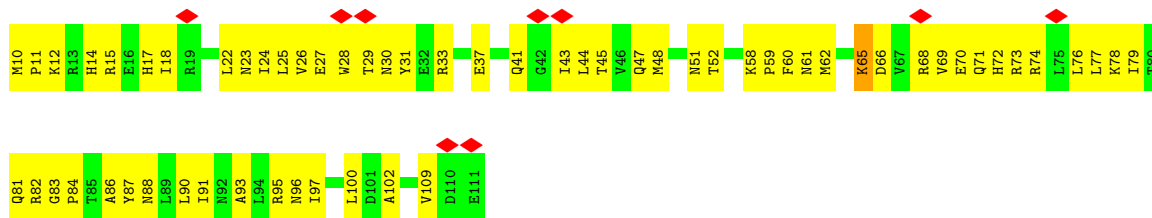


• Molecule 2: Caspase Dronc

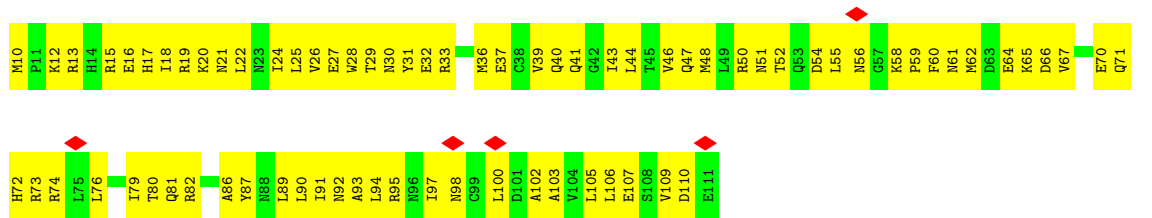




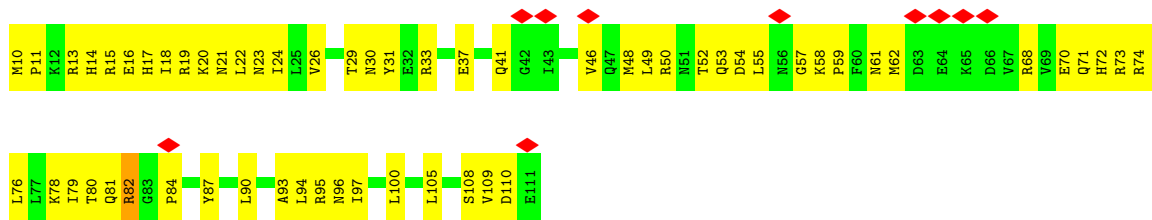
• Molecule 2: Caspase Dronc



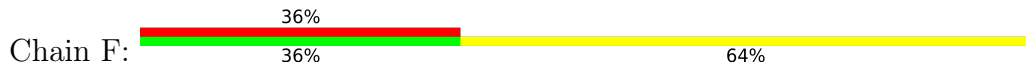
• Molecule 2: Caspase Dronc



• Molecule 2: Caspase Dronc

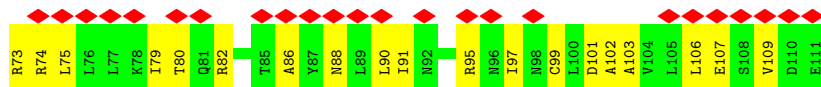
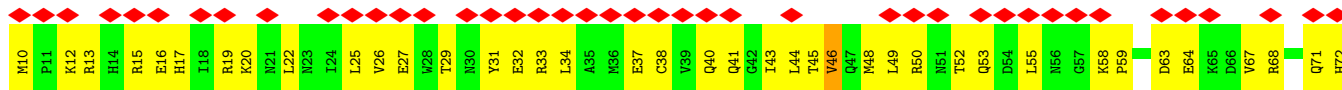
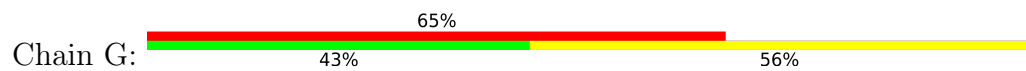


• Molecule 2: Caspase Dronc





- Molecule 2: Caspase Dronc



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	2710	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.530	Depositor
Minimum map value	-0.233	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.038	Depositor
Recommended contour level	0.18	Depositor
Map size (\AA)	426.80002, 426.80002, 426.80002	wwPDB
Map dimensions	440, 440, 440	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	0.97, 0.97, 0.97	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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	H	0.31	1/8768 (0.0%)	0.62	0/11830
1	I	0.29	0/8809	0.59	0/11890
1	J	0.32	0/8821	0.63	0/11907
1	K	0.31	0/8736	0.58	0/11783
1	L	0.30	0/8807	0.60	0/11888
1	M	0.30	0/8753	0.56	0/11808
1	O	0.30	0/8736	0.55	0/11783
1	Q	0.29	0/8754	0.61	0/11810
2	A	0.31	0/850	0.58	0/1146
2	B	0.25	0/850	0.52	0/1146
2	C	0.26	0/850	0.53	0/1146
2	D	0.28	0/850	0.57	0/1146
2	E	0.29	0/850	0.57	0/1146
2	F	0.25	0/850	0.53	0/1146
2	G	0.26	0/850	0.56	0/1146
2	N	0.25	0/850	0.54	0/1146
All	All	0.30	1/76984 (0.0%)	0.59	0/103867

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	H	661	ASN	C-N	9.35	1.55	1.34

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen

atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	H	8621	0	8600	980	0
1	I	8658	0	8647	834	0
1	J	8672	0	8665	1162	0
1	K	8592	0	8575	746	0
1	L	8656	0	8648	877	0
1	M	8607	0	8584	717	0
1	O	8592	0	8570	725	0
1	Q	8608	0	8591	863	0
2	A	840	0	863	68	0
2	B	840	0	863	50	0
2	C	840	0	863	53	0
2	D	840	0	863	69	0
2	E	840	0	863	60	0
2	F	840	0	863	66	0
2	G	840	0	863	60	0
2	N	840	0	863	63	0
All	All	75726	0	75784	7311	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 48.

The worst 5 of 7311 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:977:MET:SD	1:I:989:SER:HB2	1.36	1.66
1:L:964:CYS:SG	1:L:980:GLU:HA	1.43	1.57
1:J:620:PHE:CE2	1:J:662:GLN:HB2	1.42	1.54
1:J:620:PHE:CE1	1:J:887:LEU:HD11	1.44	1.52
1:Q:866:LYS:CD	1:Q:876:LEU:HB2	1.38	1.52

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	H	992/1237 (80%)	793 (80%)	173 (17%)	26 (3%)	5	31
1	I	1002/1237 (81%)	843 (84%)	128 (13%)	31 (3%)	4	27
1	J	1004/1237 (81%)	823 (82%)	147 (15%)	34 (3%)	3	26
1	K	984/1237 (80%)	841 (86%)	129 (13%)	14 (1%)	11	46
1	L	1004/1237 (81%)	824 (82%)	156 (16%)	24 (2%)	6	33
1	M	988/1237 (80%)	839 (85%)	128 (13%)	21 (2%)	7	36
1	O	984/1237 (80%)	840 (85%)	127 (13%)	17 (2%)	9	42
1	Q	990/1237 (80%)	812 (82%)	145 (15%)	33 (3%)	4	26
2	A	100/102 (98%)	94 (94%)	6 (6%)	0	100	100
2	B	100/102 (98%)	95 (95%)	5 (5%)	0	100	100
2	C	100/102 (98%)	93 (93%)	7 (7%)	0	100	100
2	D	100/102 (98%)	95 (95%)	5 (5%)	0	100	100
2	E	100/102 (98%)	96 (96%)	4 (4%)	0	100	100
2	F	100/102 (98%)	97 (97%)	3 (3%)	0	100	100
2	G	100/102 (98%)	87 (87%)	12 (12%)	1 (1%)	15	54
2	N	100/102 (98%)	95 (95%)	5 (5%)	0	100	100
All	All	8748/10712 (82%)	7367 (84%)	1180 (14%)	201 (2%)	9	34

5 of 201 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	H	52	LYS
1	H	99	PRO
1	H	409	SER
1	H	662	GLN
1	H	783	THR

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	H	973/1140 (85%)	914 (94%)	59 (6%)	18	44
1	I	977/1140 (86%)	938 (96%)	39 (4%)	31	55
1	J	980/1140 (86%)	909 (93%)	71 (7%)	14	39
1	K	970/1140 (85%)	952 (98%)	18 (2%)	57	75
1	L	976/1140 (86%)	926 (95%)	50 (5%)	24	48
1	M	971/1140 (85%)	950 (98%)	21 (2%)	52	71
1	O	970/1140 (85%)	956 (99%)	14 (1%)	67	80
1	Q	972/1140 (85%)	920 (95%)	52 (5%)	22	47
2	A	94/94 (100%)	93 (99%)	1 (1%)	73	84
2	B	94/94 (100%)	92 (98%)	2 (2%)	53	72
2	C	94/94 (100%)	93 (99%)	1 (1%)	73	84
2	D	94/94 (100%)	93 (99%)	1 (1%)	73	84
2	E	94/94 (100%)	93 (99%)	1 (1%)	73	84
2	F	94/94 (100%)	94 (100%)	0	100	100
2	G	94/94 (100%)	94 (100%)	0	100	100
2	N	94/94 (100%)	93 (99%)	1 (1%)	73	84
All	All	8541/9872 (86%)	8210 (96%)	331 (4%)	36	56

5 of 331 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	Q	634	ASP
1	I	693	SER
1	Q	660	PHE
1	Q	872	ARG
1	I	993	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 146 such sidechains are listed below:

Mol	Chain	Res	Type
1	I	202	GLN
1	K	1077	GLN
1	I	465	GLN
1	K	115	ASN
1	L	930	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](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

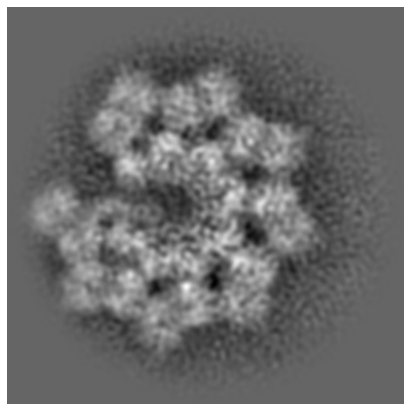
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-38995. These allow visual inspection of the internal detail of the map and identification of artifacts.

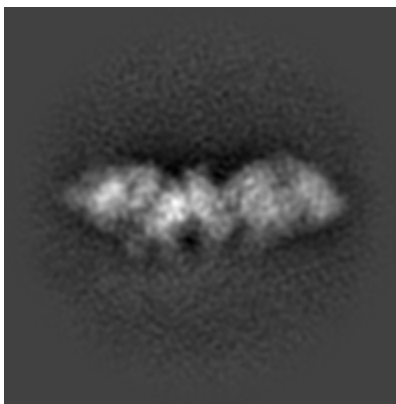
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

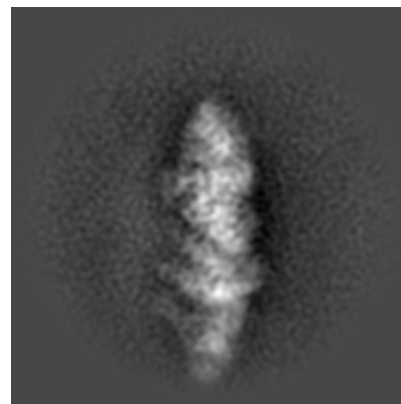
6.1.1 Primary map



X

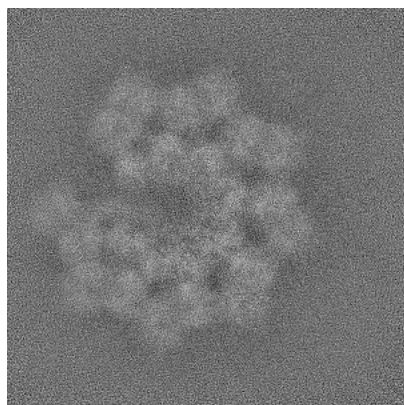


Y

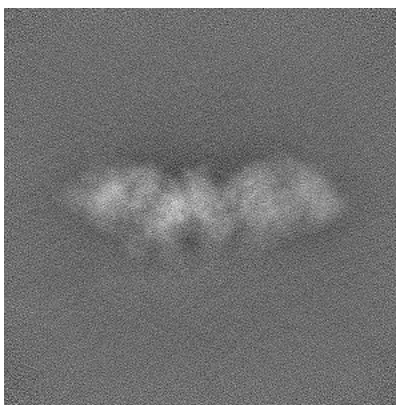


Z

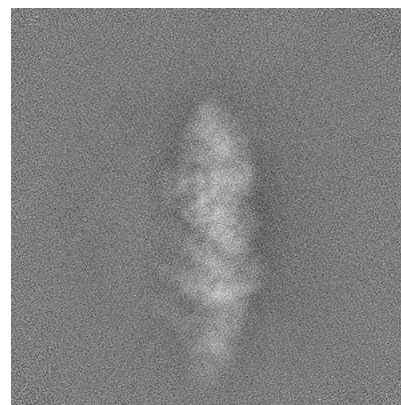
6.1.2 Raw map



X



Y

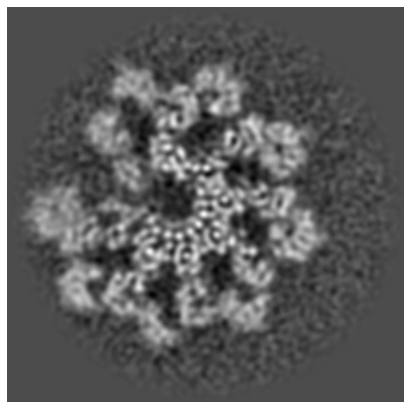


Z

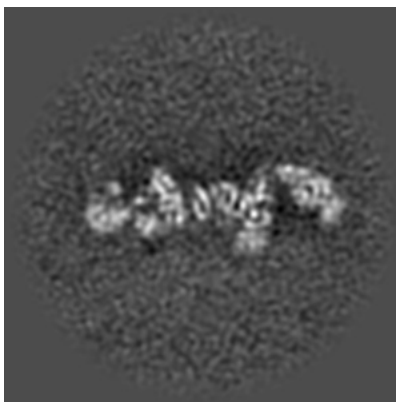
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

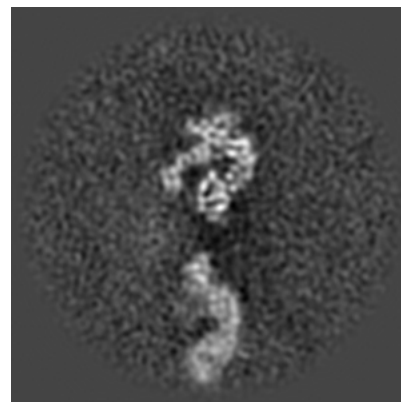
6.2.1 Primary map



X Index: 220

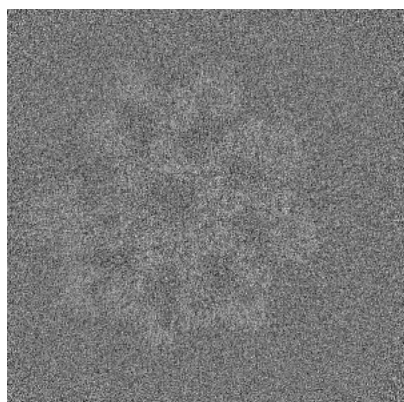


Y Index: 220

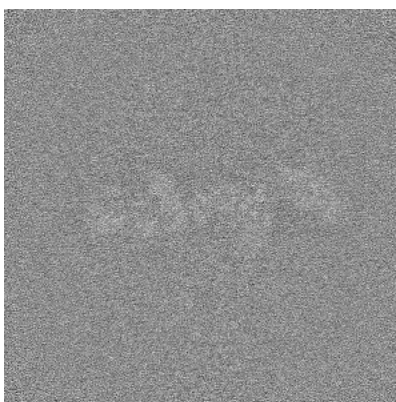


Z Index: 220

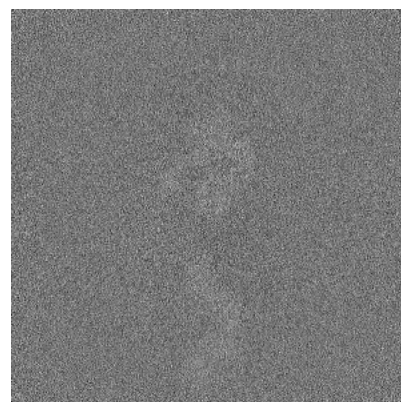
6.2.2 Raw map



X Index: 220



Y Index: 220

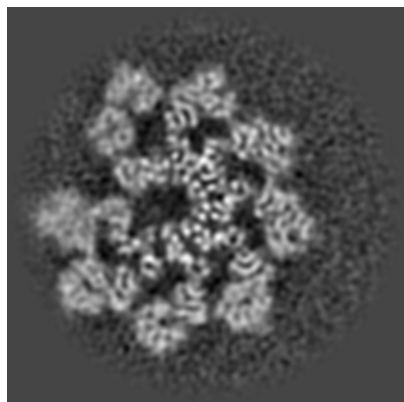


Z Index: 220

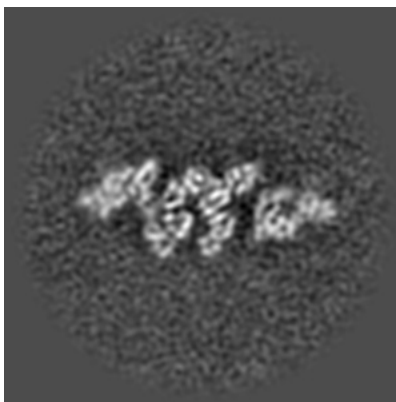
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

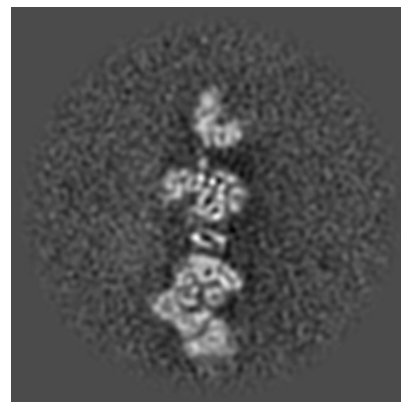
6.3.1 Primary map



X Index: 229

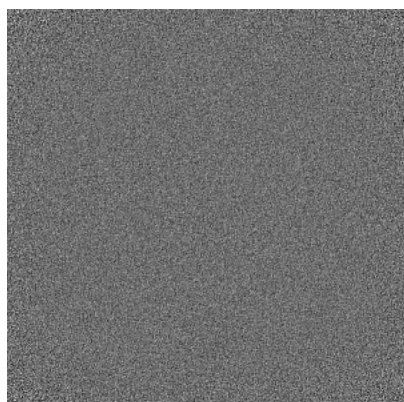


Y Index: 249

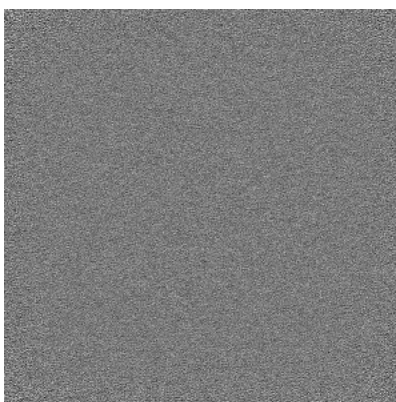


Z Index: 183

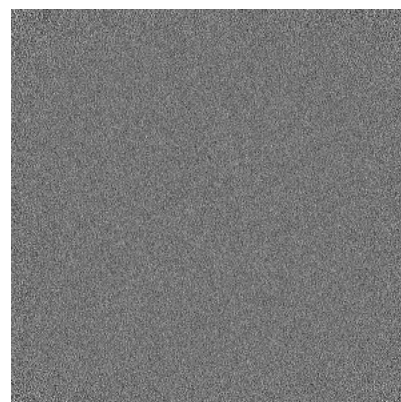
6.3.2 Raw map



X Index: 0



Y Index: 0

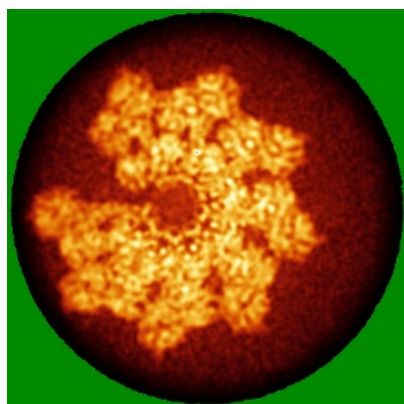


Z Index: 0

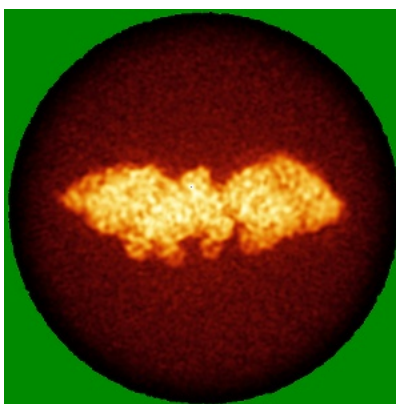
The images above show the largest variance slices of the map in three orthogonal directions.

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

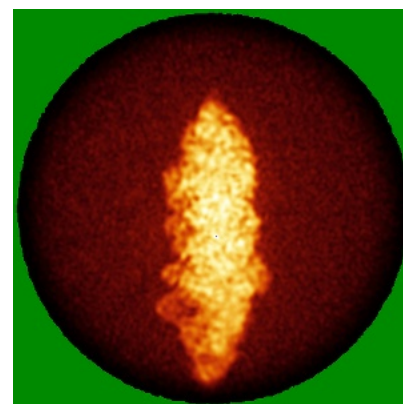
6.4.1 Primary map



X

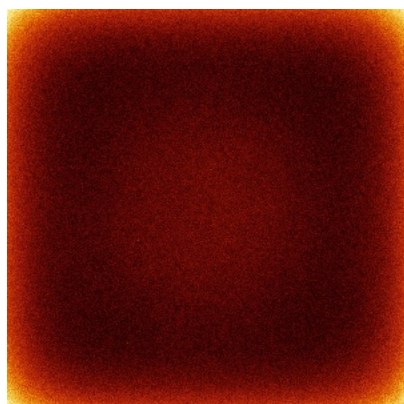


Y

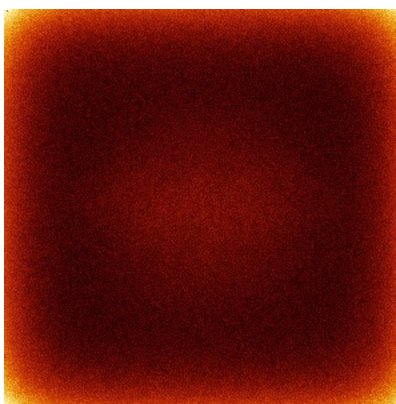


Z

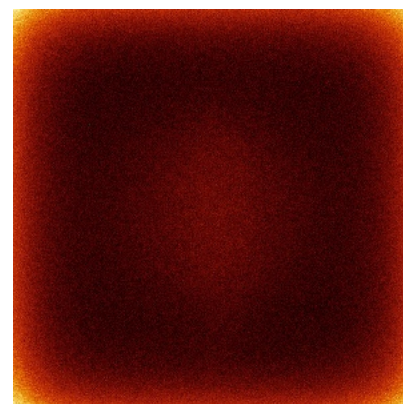
6.4.2 Raw map



X



Y

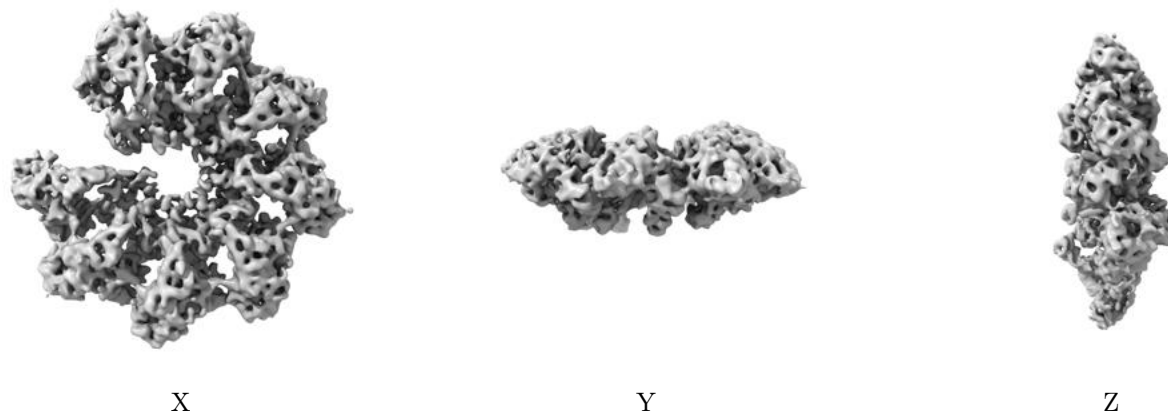


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

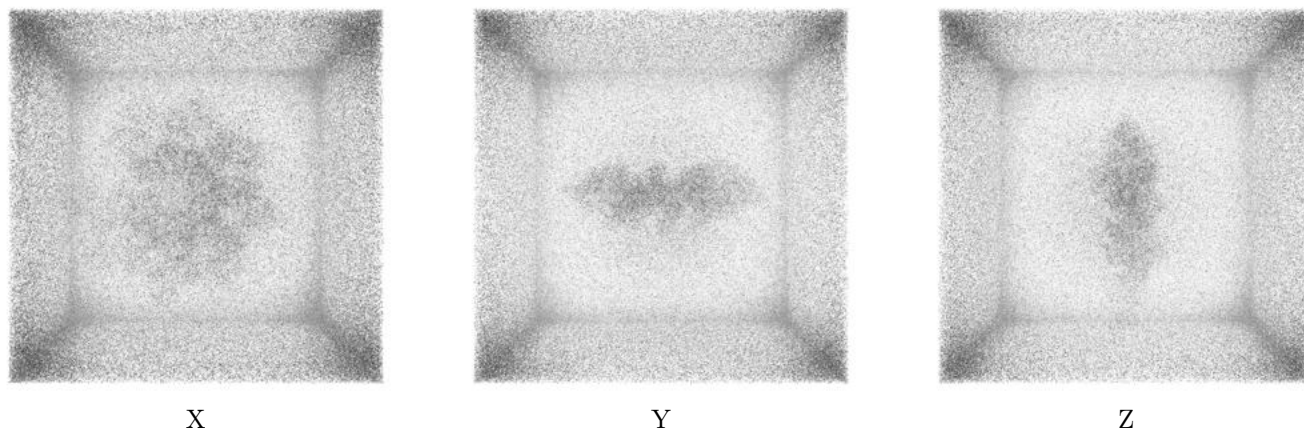
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.18. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

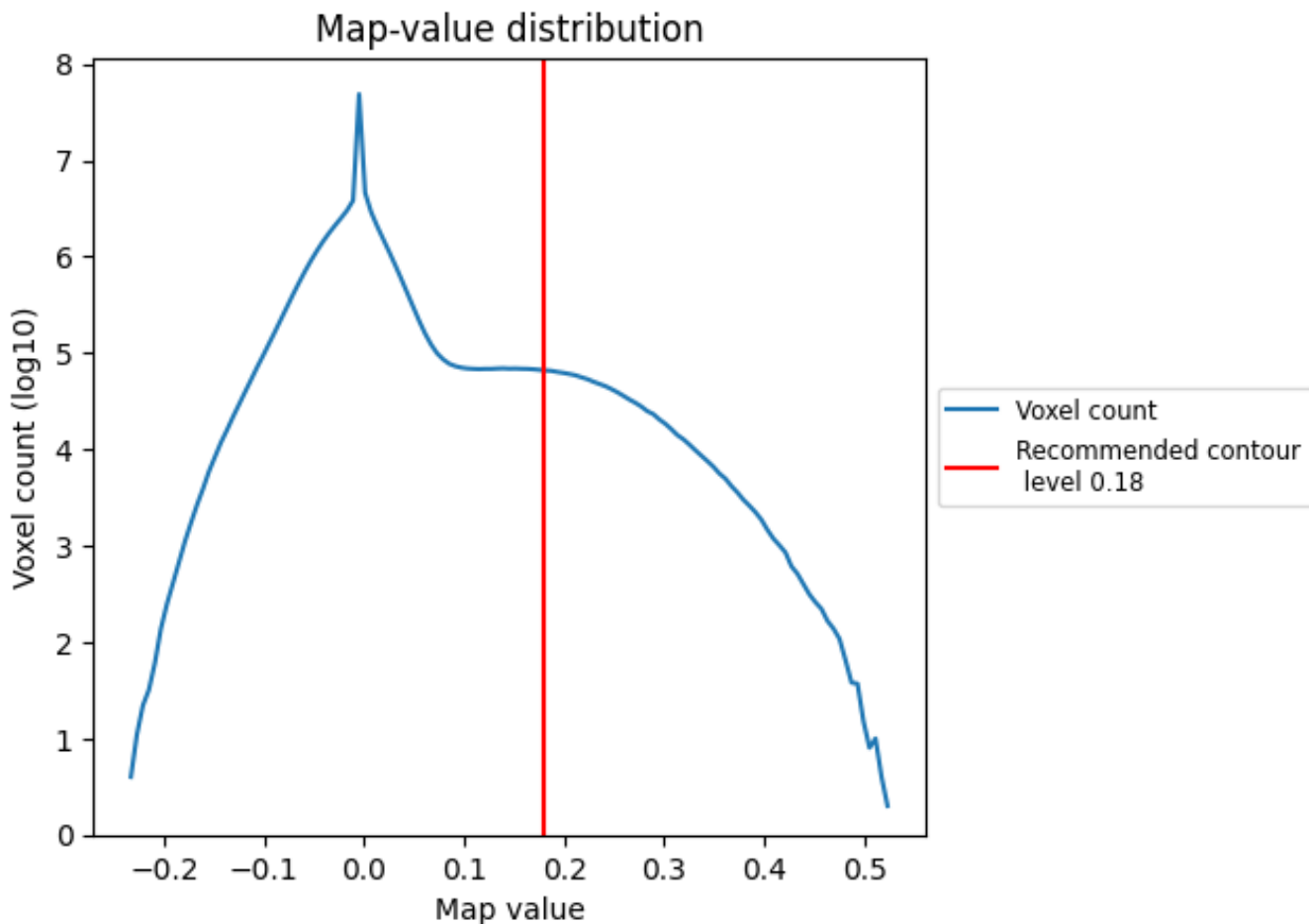
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

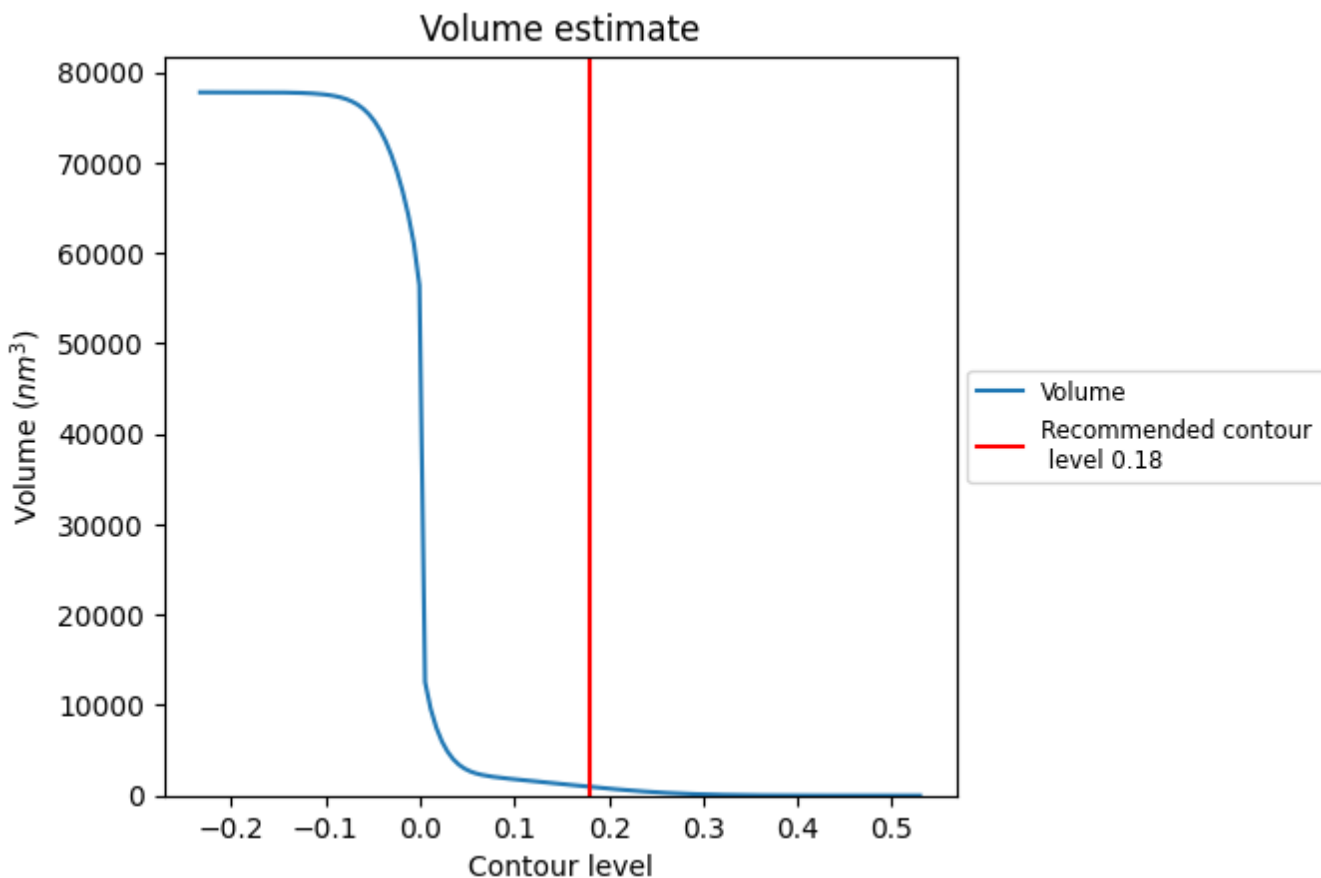
This section contains the results of statistical analysis of the map.

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.

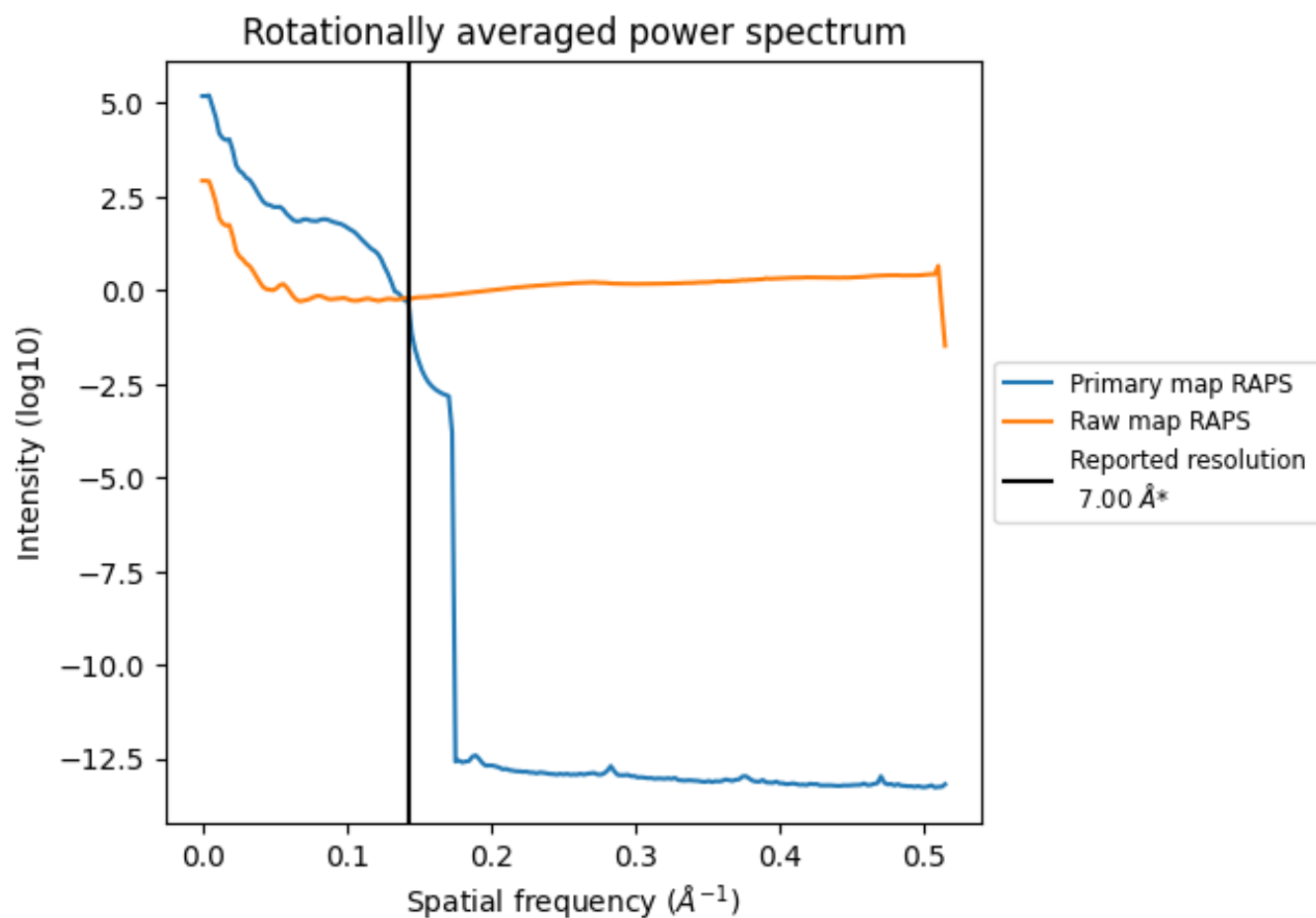
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 968 nm³; this corresponds to an approximate mass of 875 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](#)

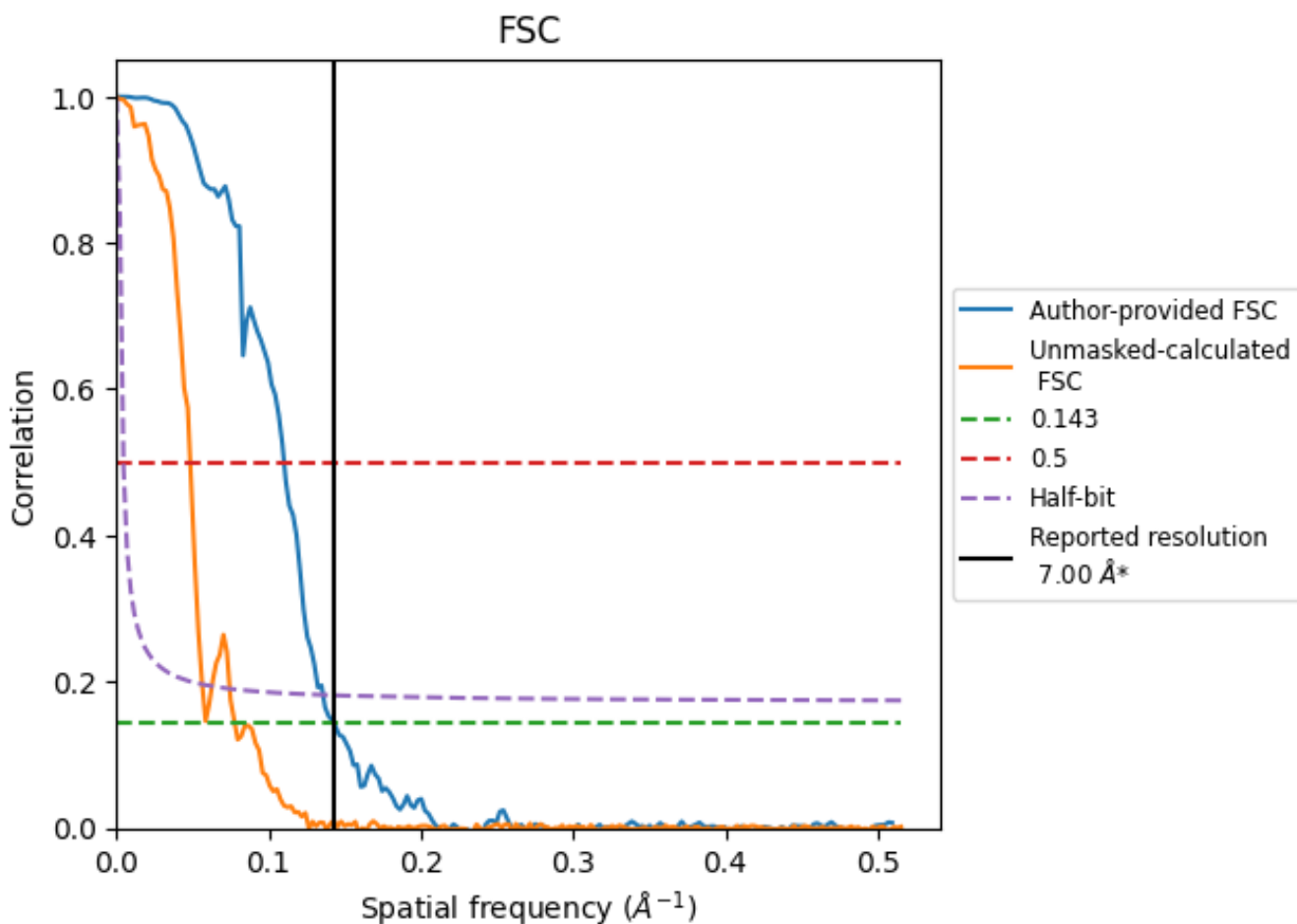


*Reported resolution corresponds to spatial frequency of 0.143 Å⁻¹

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 0.143 Å⁻¹

8.2 Resolution estimates [i](#)

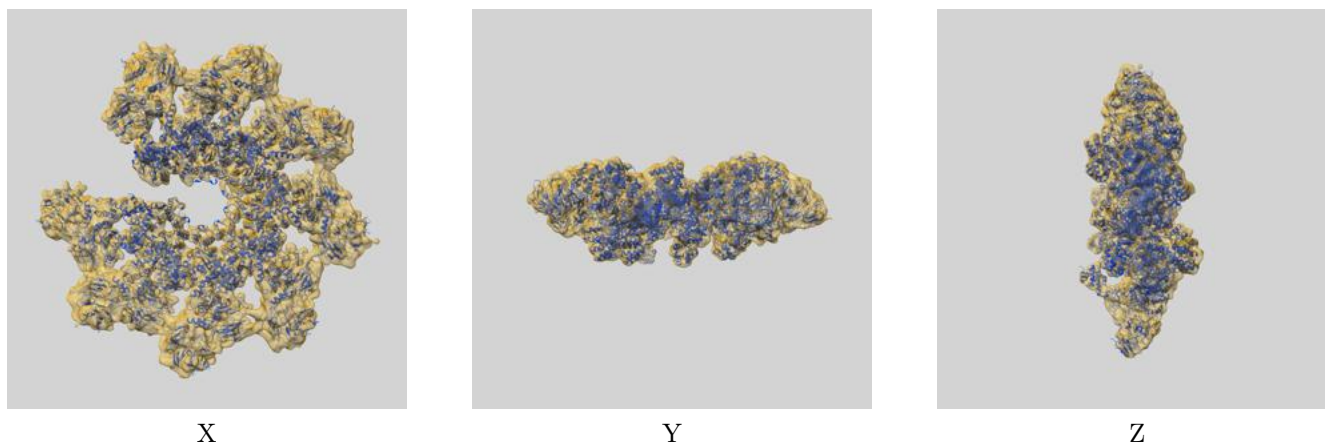
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	7.00	-	-
Author-provided FSC curve	7.01	9.08	7.37
Unmasked-calculated*	12.87	20.62	17.73

*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 12.87 differs from the reported value 7.0 by more than 10 %

9 Map-model fit [i](#)

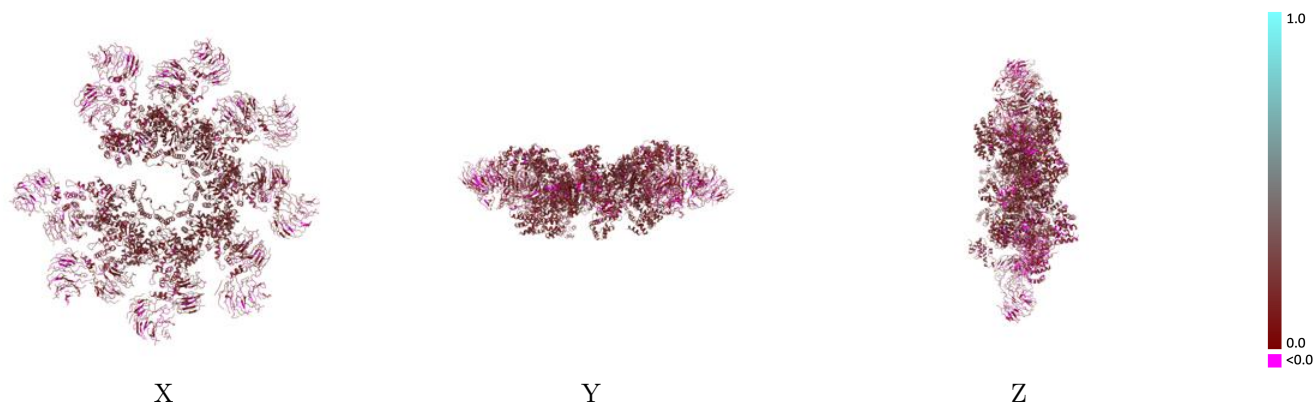
This section contains information regarding the fit between EMDB map EMD-38995 and PDB model 8Y6Q. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay [i](#)



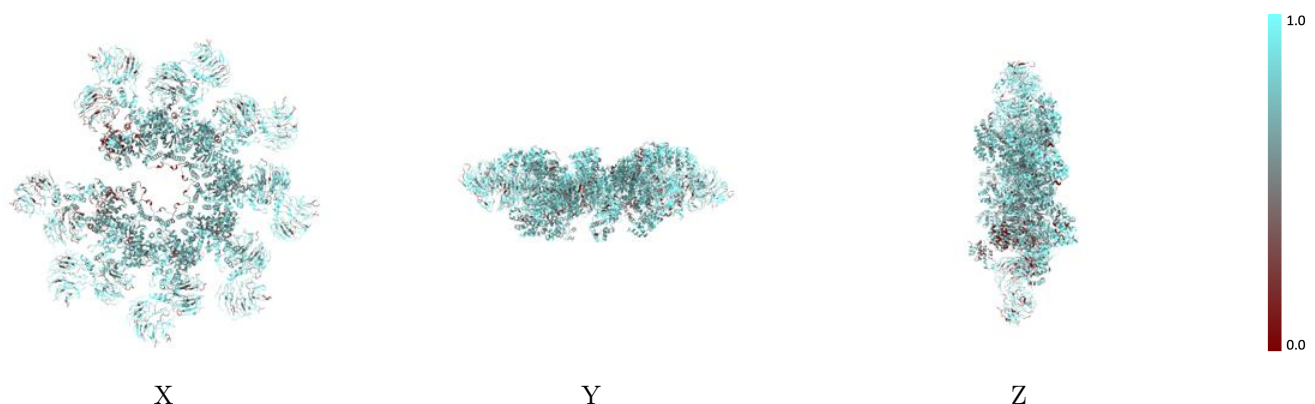
The images above show the 3D surface view of the map at the recommended contour level 0.18 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



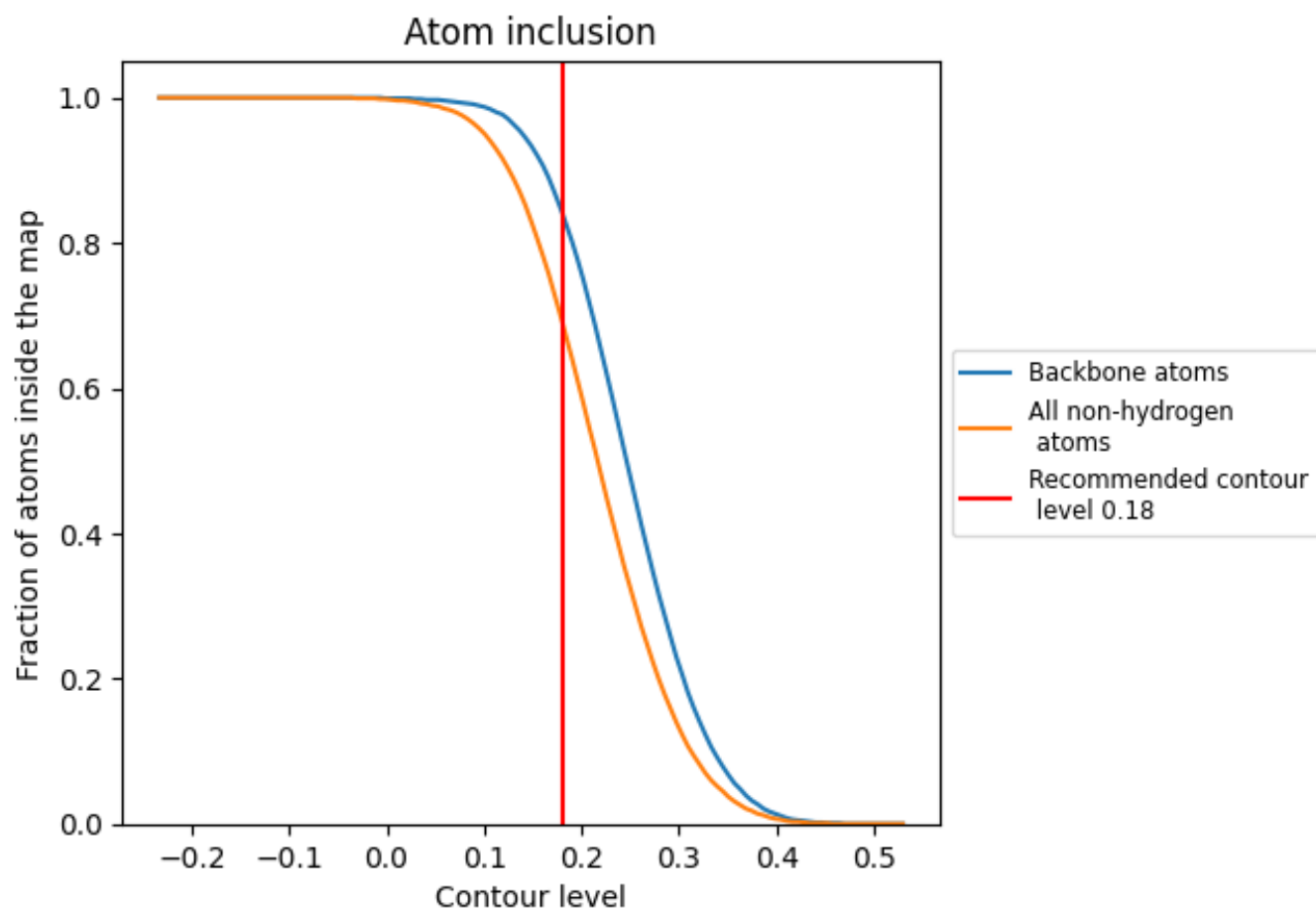
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.18).



































9.4 Atom inclusion [i](#)



At the recommended contour level, 84% of all backbone atoms, 69% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.18) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6920	 0.1540
A	 0.6550	 0.1840
B	 0.6940	 0.1990
C	 0.7000	 0.1890
D	 0.7230	 0.1940
E	 0.7310	 0.1850
F	 0.5310	 0.1670
G	 0.3330	 0.1390
H	 0.5980	 0.1310
I	 0.7150	 0.1540
J	 0.7330	 0.1560
K	 0.7450	 0.1660
L	 0.7130	 0.1590
M	 0.7260	 0.1600
N	 0.7590	 0.1960
O	 0.7210	 0.1570
Q	 0.6240	 0.1260

