



wwPDB EM Validation Summary Report ⓘ

Jun 25, 2025 – 04:07 PM JST

PDB ID : 8IAH / pdb_00008iah
EMDB ID : EMD-35301
Title : Structure of mammalian spectrin-actin junctional complex of membrane skeleton, State I, Global map
Authors : Li, N.; Chen, S.; Gao, N.
Deposited on : 2023-02-08
Resolution : 3.60 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.dev118
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0rc1
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.44

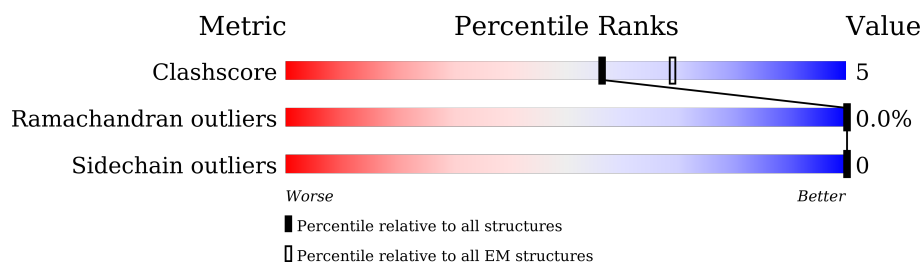
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.60 Å.

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



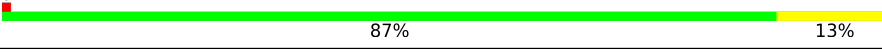
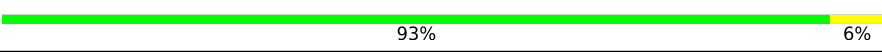
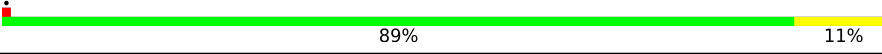
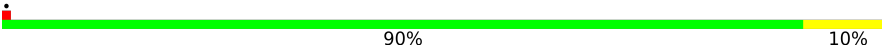
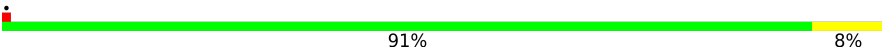
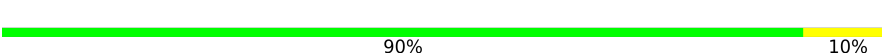
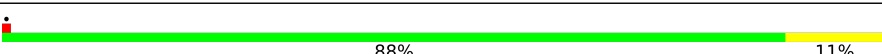
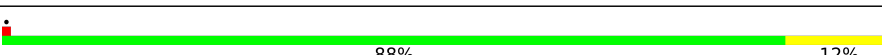
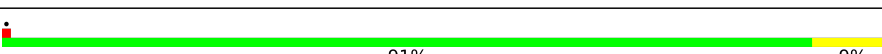
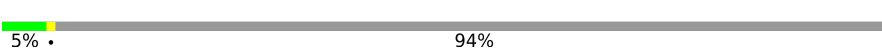
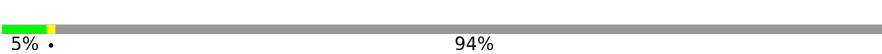
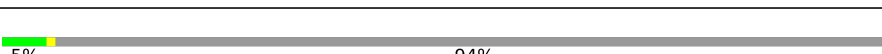
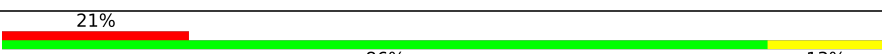
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	0	744	7% 93%
1	1	744	40% 5% 55%
1	2	744	32% 8% 60%
2	3	724	44% 6% 50%
2	4	724	33% 6% 61%
2	9	724	6% 93%
3	5	405	28% 70%
3	6	405	7% 28% 69%

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Mol	Chain	Length	Quality of chain
3	7	405	
4	8	2417	
5	A	375	
5	B	375	
5	C	375	
5	D	375	
5	E	375	
5	F	375	
5	G	375	
5	H	375	
5	I	375	
5	J	375	
5	K	375	
5	L	375	
6	M	2148	
6	N	2148	
6	O	2148	
6	P	2148	
6	Q	2148	
6	R	2148	
6	S	2148	
6	T	2148	
7	U	248	
8	V	248	
8	W	248	

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Mol	Chain	Length	Quality of chain
8	X	248	19% 80% 16%
9	Y	359	7% 79% 14% 7%
10	Z	107	79% 11% 8%

2 Entry composition [i](#)

There are 11 unique types of molecules in this entry. The entry contains 74320 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 Adducin 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	0	54	Total	C	N	O	S	0	0
			453	280	80	87	6		
1	1	334	Total	C	N	O	S	0	0
			2585	1647	448	478	12		
1	2	294	Total	C	N	O	S	0	0
			2263	1444	391	418	10		

- Molecule 2 is a protein called Beta-adducin.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	3	365	Total	C	N	O	S	0	0
			2870	1812	500	538	20		
2	4	280	Total	C	N	O	S	0	0
			2157	1369	369	403	16		
2	9	54	Total	C	N	O	S	0	0
			455	280	84	88	3		

- Molecule 3 is a protein called Dematin actin binding protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	5	123	Total	C	N	O	S	0	0
			1008	649	175	182	2		
3	6	125	Total	C	N	O	S	0	0
			963	619	163	179	2		
3	7	121	Total	C	N	O	S	0	0
			976	624	173	177	2		

- Molecule 4 is a protein called Spectrin alpha, erythrocytic 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	8	379	Total	C	N	O	S	0	0
			2799	1749	488	553	9		

- Molecule 5 is a protein called Actin, cytoplasmic 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	A	374	Total	C	N	O	S	0	0
			2907	1837	490	560	20		
5	B	374	Total	C	N	O	S	0	0
			2917	1845	490	560	22		
5	C	373	Total	C	N	O	S	0	0
			2909	1841	489	557	22		
5	D	374	Total	C	N	O	S	0	0
			2917	1845	490	560	22		
5	E	374	Total	C	N	O	S	0	0
			2917	1845	490	560	22		
5	F	374	Total	C	N	O	S	0	0
			2917	1845	490	560	22		
5	G	374	Total	C	N	O	S	0	0
			2917	1845	490	560	22		
5	H	374	Total	C	N	O	S	0	0
			2917	1845	490	560	22		
5	I	373	Total	C	N	O	S	0	0
			2909	1841	489	557	22		
5	J	374	Total	C	N	O	S	0	0
			2917	1845	490	560	22		
5	K	374	Total	C	N	O	S	0	0
			2917	1845	490	560	22		
5	L	374	Total	C	N	O	S	0	0
			2917	1845	490	560	22		

- Molecule 6 is a protein called Spectrin beta chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	M	130	Total	C	N	O	S	0	0
			1065	671	200	188	6		
6	N	122	Total	C	N	O	S	0	0
			1004	638	189	171	6		
6	O	131	Total	C	N	O	S	0	0
			1073	675	201	191	6		
6	P	117	Total	C	N	O	S	0	0
			960	609	181	164	6		
6	Q	129	Total	C	N	O	S	0	0
			1057	667	199	185	6		
6	R	117	Total	C	N	O	S	0	0
			960	609	181	164	6		
6	S	486	Total	C	N	O	S	0	0
			3983	2511	721	739	12		

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Mol	Chain	Residues	Atoms					AltConf	Trace
6	T	128	Total	C	N	O	S	0	0
			1048	660	197	185	6		

- Molecule 7 is a protein called Tropomyosin-1.9.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	U	246	Total	C	N	O	S	0	0
			1992	1208	357	421	6		

- Molecule 8 is a protein called Tropomyosin 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	V	246	Total	C	N	O	S	0	0
			2011	1218	362	421	10		
8	W	248	Total	C	N	O	S	0	0
			2017	1222	364	421	10		
8	X	241	Total	C	N	O	S	0	0
			1974	1196	356	413	9		

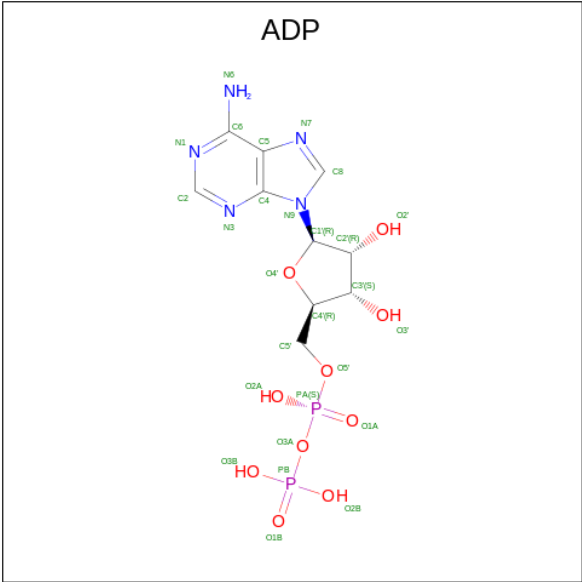
- Molecule 9 is a protein called Tropomodulin-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	Y	333	Total	C	N	O	S	0	0
			2547	1599	443	496	9		

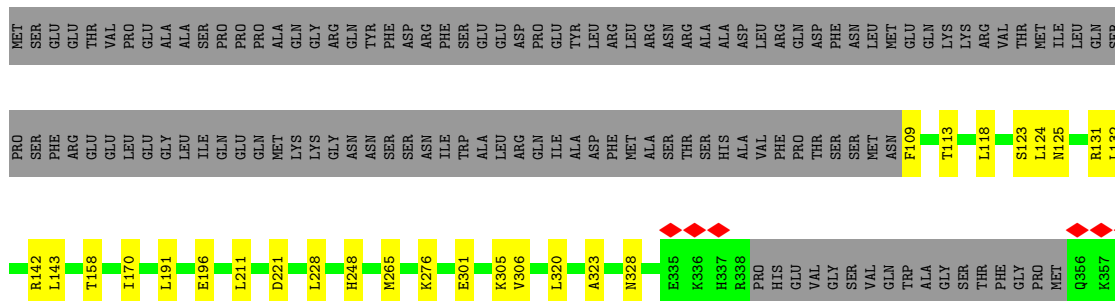
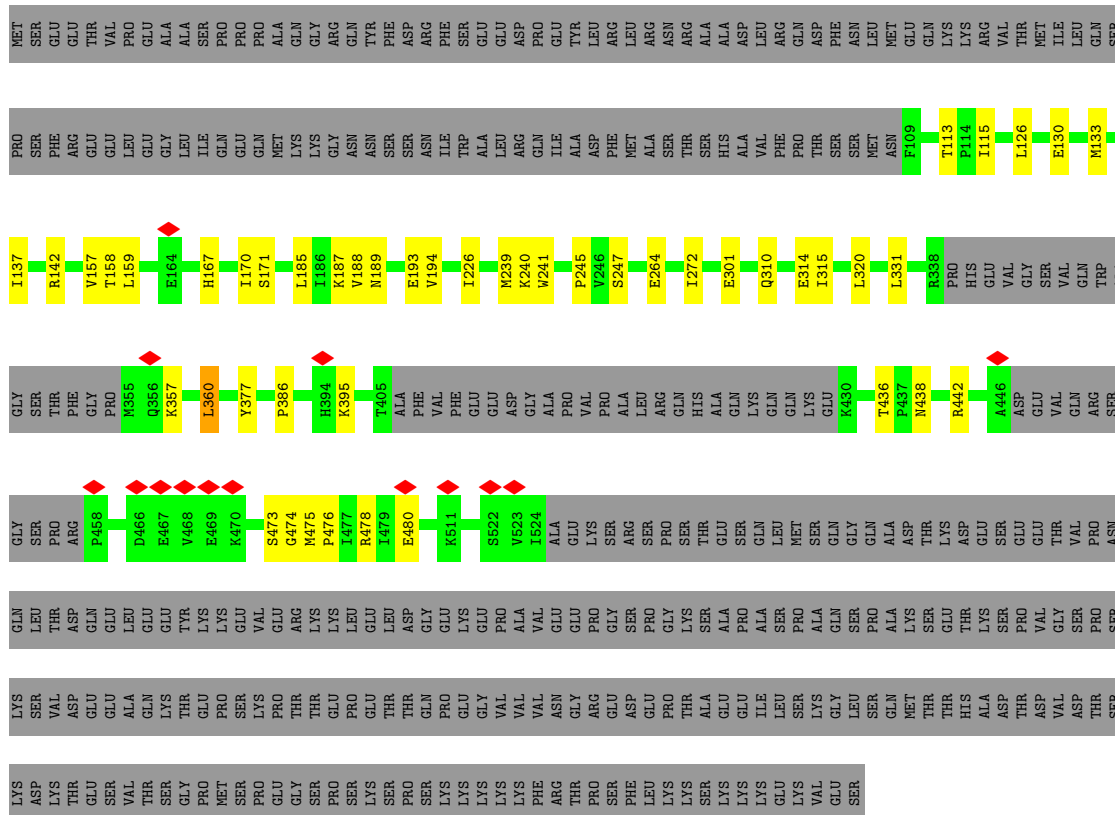
- Molecule 10 is a protein called SH3 domain-binding glutamic acid-rich-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	Z	98	Total	C	N	O	S	0	0
			798	513	131	151	3		

- Molecule 11 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: C₁₀H₁₅N₅O₁₀P₂) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
11	A	1	Total	C	N	O	P	0
			27	10	5	10	2	
11	B	1	Total	C	N	O	P	0
			27	10	5	10	2	
11	C	1	Total	C	N	O	P	0
			27	10	5	10	2	
11	D	1	Total	C	N	O	P	0
			27	10	5	10	2	
11	E	1	Total	C	N	O	P	0
			27	10	5	10	2	
11	F	1	Total	C	N	O	P	0
			27	10	5	10	2	
11	G	1	Total	C	N	O	P	0
			27	10	5	10	2	
11	H	1	Total	C	N	O	P	0
			27	10	5	10	2	
11	I	1	Total	C	N	O	P	0
			27	10	5	10	2	
11	J	1	Total	C	N	O	P	0
			27	10	5	10	2	
11	K	1	Total	C	N	O	P	0
			27	10	5	10	2	
11	L	1	Total	C	N	O	P	0
			27	10	5	10	2	

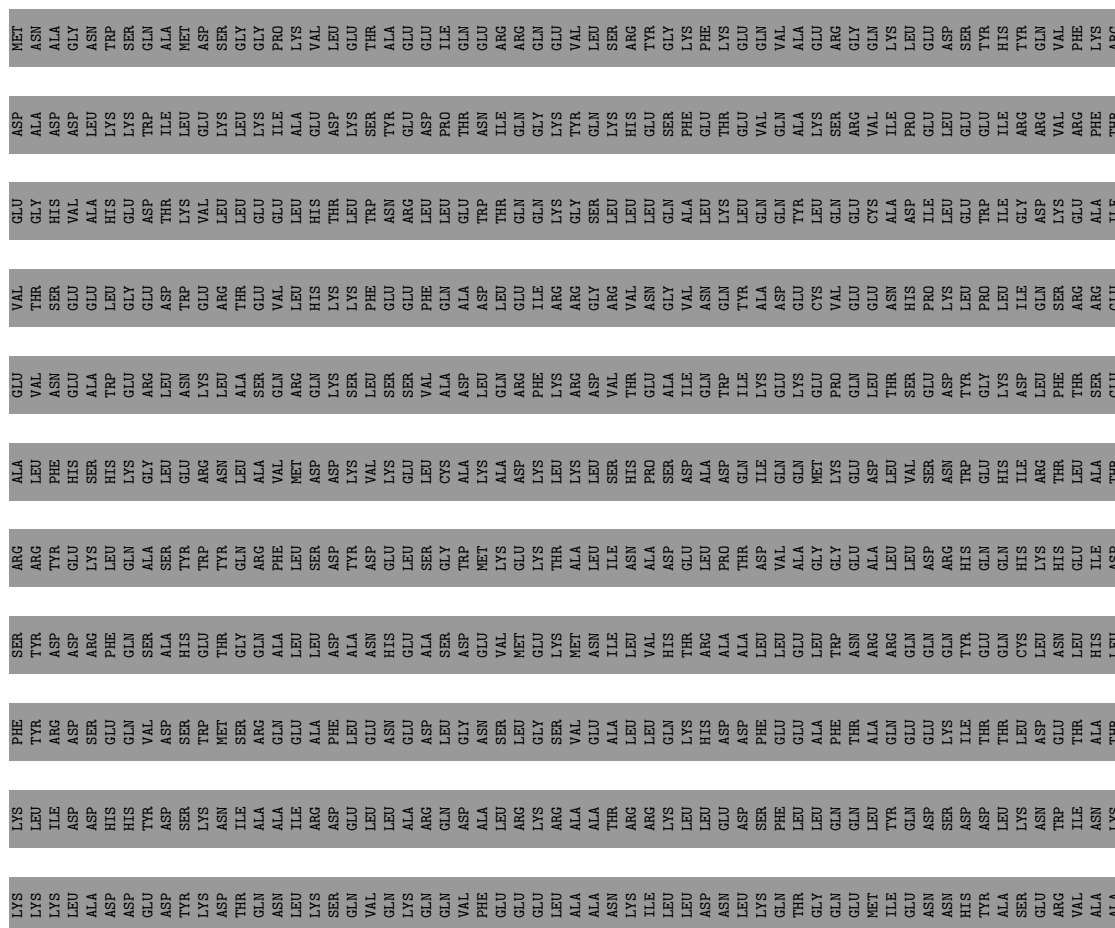




Chain 5: 28% 70%



- Molecule 4: Spectrin alpha, erythrocytic 1





LEU	LEU	ARG	GLU	D2041	L2101	E2161	L2221	F2281	L2341	P2402
GLU	LEU	LEU	ARG	L2042	E2102	Q2162	F2222	D2282	I2342	A2403
ALA	GLU	ASP	SER	F2043	L2103	N2163	E2223	E2283	I2343	G2404
LEU	ASP	GLU	SER	M2044	D2104	A2164	A2224	N2284	K2344	Y2405
ASN	ASP	HIS	THR	E2045	Q2105	S2165	L2225	L2285	E2345	D2406
PHE	ASP	SER	THR	F2046	Q2106	A2166	V2226	T2286	S2346	Y2407
ALA	PHE	ASP	ASP	A2047	T2107	F2167	L2227	G2287	E2347	V2408
GLN	PHE	GLN	LEU	H2048	K2108	L2168	D2228	R2288	N2348	G2409
ALA	GLN	ASP	LEU	K2049	A2109	N2169	I2229	L2289	I2349	T2410
GLU	ASP	ASN	GLN	A2050	L2110	W2170	K2230	S2290	K2350	I2411
LEU	TRP	LYS	VAL	S2051	N2111	I2171	F2231	H2291	S2351	N2412
GLN	ALA	ASP	VAL	A2052	V2112	L2172	S2232	K2292	S2352	Y2413
VAL	ASP	GLN	VAL	F2053	P2113	E2173	T2233	F2293	D2353	G2414
ASN	VAL	ASN	VAL	N2054	S2114	T2174	I2234	F2294	E2354	F2415
GLY	VAL	GLY	ASN	N2055	S2115	R2175	G2235	R2295	I2355	G2416
ALA	GLY	GLY	ALA	W2056	P2116	A2176	L2236	S2296	E2356	ASN
ASP	ILE	ALA	ASP	C2057	V2117	Y2177	A2237	C2297	N2357	
LEU	GLY	ALA	LEU	E2058	T2118	F2178	Q2238	L2298	F2358	
LEU	GLY	LEU	GLY	N2059	W2119	L2179	Q2239	R2299	F2359	
LEU	GLY	THR	GLY	V2060	L2120	D2180	W2240	G2300	Q2360	
LEU	THR	SER	THR	E2061	T2121	G2181	Q2242	L2301	A2361	
LEU	SER	SER	ARG	E2062	V2122	S2182	L2243	N2302		
LEU	GLY	LEU	ALA	D2063	E2123	L2183	F2244	Y2303	E2364	
GLU	ALA	LEU	ALA	L2064	A2124	K2184	Q2245	Y2304	G2365	
GLN	ASP	THR	LEU	S2065	L2125	L2185	L2246	L2305	A2367	
GLN	GLY	ASN	LEU	E2066	E2126	K2186	G2247	P2306	Y2368	
HIS	GLY	ASN	ARG	P2067	R2127	E2187	V2247	M2307	I2369	
GLY	GLY	ALA	TRP	V2068	T2128	T2187	R2249	V2308	T2370	
GLU	ASP	GLN	GLN	H2069	W2129	G2188	R2250	E2309	K2371	
ALA	LEU	LEU	LEU	C2070	K2130	T2189	Q2251	E2310	E2372	
THR	ALA	LEU	LEU	V2071	H2131	E2191	H2252	G2311	D2373	
LYS	ALA	LEU	ALA	S2072	L2132	S2192	N2253	E2312	M2374	
ILE	PHE	LEU	ALA	L2073	S2133	Q2193	L2254	E2313	K2375	
GLU	THR	GLU	GLU	D2074	D2134	L2194	E2255	E2314	Q2376	
ALA	LEU	LEU	HIS	A2075	T2135	E2195	Q2257	P2315	A2377	
ASN	LEU	ALA	ARG	I2076	L2136	A2196	T2258	K2316	L2378	
GLY	GLN	LYS	GLN	R2077	K2137	N2197	I2259	E2318	T2379	
THR	THR	ASP	LYS	Q2078	E2138	K2198	Q2259	K2319	P2380	
SER	THR	LEU	LEU	L2079	R2139	R2199	I2260	F2320	E2381	
LEU	LEU	LEU	GLY	Q2080	E2140	K2200	R2261	L2321	Q2382	
ALA	ASP	LEU	LYS	K2081	Q2141	Q2201	D2262	D2322	V2383	
LYS	ALA	LEU	GLN	D2082	E2142	K2202	T2263	A2323	S2384	
LEU	THR	ALA	LEU	H2083	L2143	E2203	P2264	V2324	F2385	
ILE	LEU	LEU	PRO	E2084	E2144	I2204	G2265	D2325	C2386	
ALA	GLN	LEU	LEU	A2085	K2145	Q2205	V2266	P2326	A2387	
ALA	SER	ALA	LEU	F2086	E2146	A2206	S2267	G2327	S2388	
TRP	PHE	GLN	GLN	A2038	E2147	M2207	E2268	R2328	H2389	
LYS	GLN	GLN	GLN	L2087	A2148	K2208	E2269	K2329	M2390	
SER	GLN	GLN	GLN	S2088	R2149	R2209	E2270	G2330	Q2391	
				S2089	Q2150	Q2210	T2271	Y2331	Q2392	
				L2090	V2151	L2211	E2272	V2332	Y2393	
				A2091	K2152	K2213	E2273	T2333	V2394	
				A2093	F2154	I2214	F2274	Q2334	D2395	
				Q2094	E2155	E2215	T2275	E2335	P2396	
				S2095	W2156	D2216	T2276	D2336	R2397	
				D2096	C2157	L2217	T2277	Y2337	G2398	
				F2097	Q2158	Y2218	R2278	T2338	R2399	
				N2098	E2159	E2219	H2280	Y2339	S2400	
				Y2099	F2160	K2220		F2340	H2401	

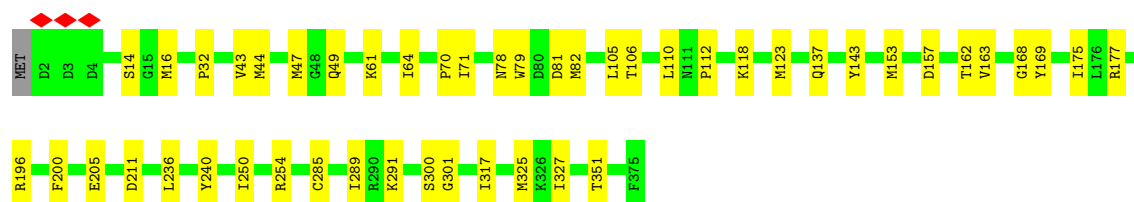
• Molecule 5: Actin, cytoplasmic 1

Chain A:  84% 16%

MET	D2	D3	A7	S14	G15	M16	C17	K18	V30	F31	P32	V43	M44	K50	Y53	Q59	S60	K61	I64	L65	P102	E107	L110	K113	R116	E117	K118	T122	M123	M132	L142	V152	M153	D154	H161	T162	V163	I175	L176
M190	R196	F200	T201	T202	T203	A204	E205	R206	E207	K213	C217	L236	V247	I248	T249	R254	R290	L299	M305	Y306	P307	M313	P332	R335	K336	Y337	S338	I341	S344	S348	Q360	E364	H371	F375					

• Molecule 5: Actin, cytoplasmic 1

Chain B:  87% 13%



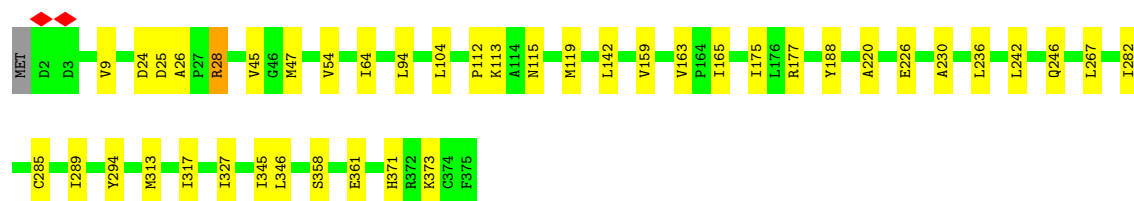
- Molecule 5: Actin, cytoplasmic 1

Chain C: 93% 6%



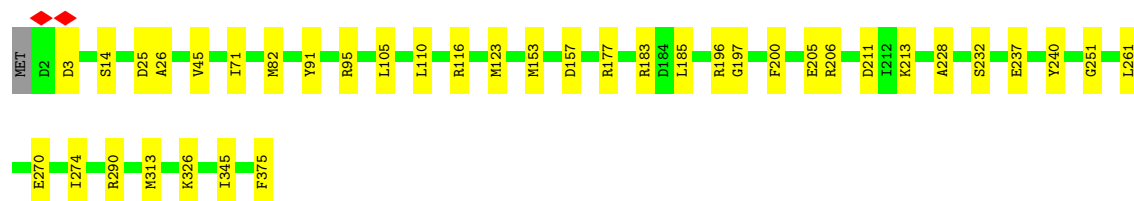
- Molecule 5: Actin, cytoplasmic 1

Chain D: 89% 11%



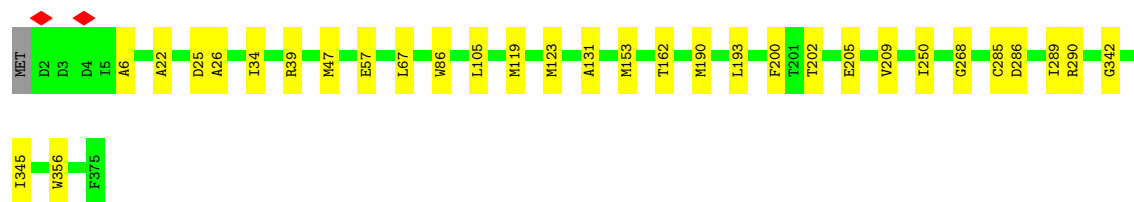
- Molecule 5: Actin, cytoplasmic 1

Chain E: 90% 10%



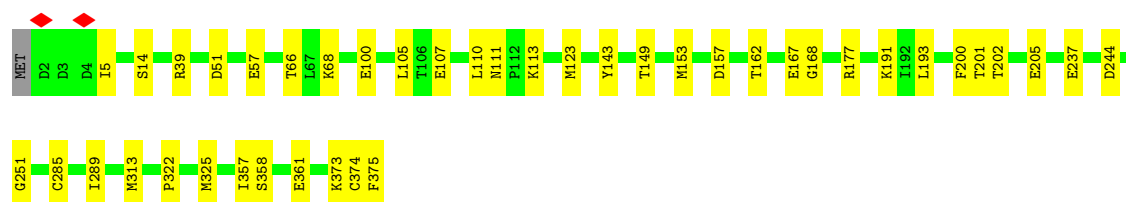
- Molecule 5: Actin, cytoplasmic 1

Chain F: 91% 8%



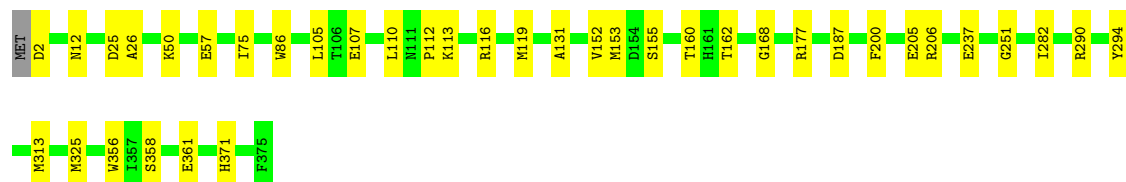
- Molecule 5: Actin, cytoplasmic 1

Chain G: 89% 11%



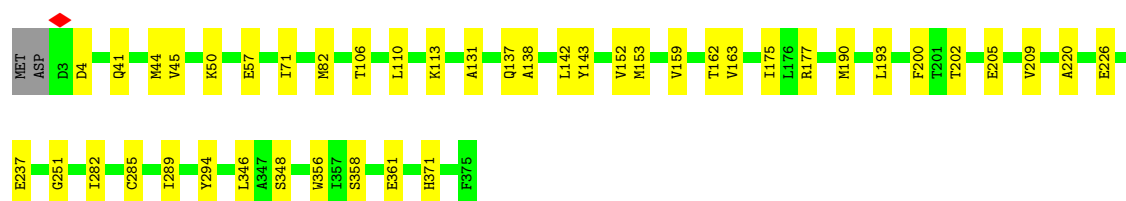
- Molecule 5: Actin, cytoplasmic 1

Chain H: 90% 10%



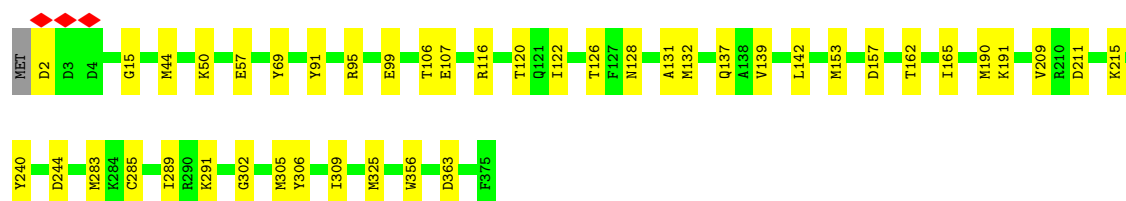
- Molecule 5: Actin, cytoplasmic 1

Chain I: 88% 11%



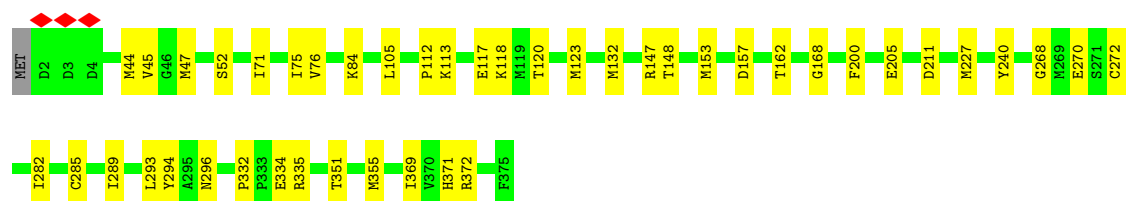
- Molecule 5: Actin, cytoplasmic 1

Chain J: 88% 11%



- Molecule 5: Actin, cytoplasmic 1

Chain K: 88% 12%



- Molecule 5: Actin, cytoplasmic 1



- Molecule 6: Spectrin beta chain

94%



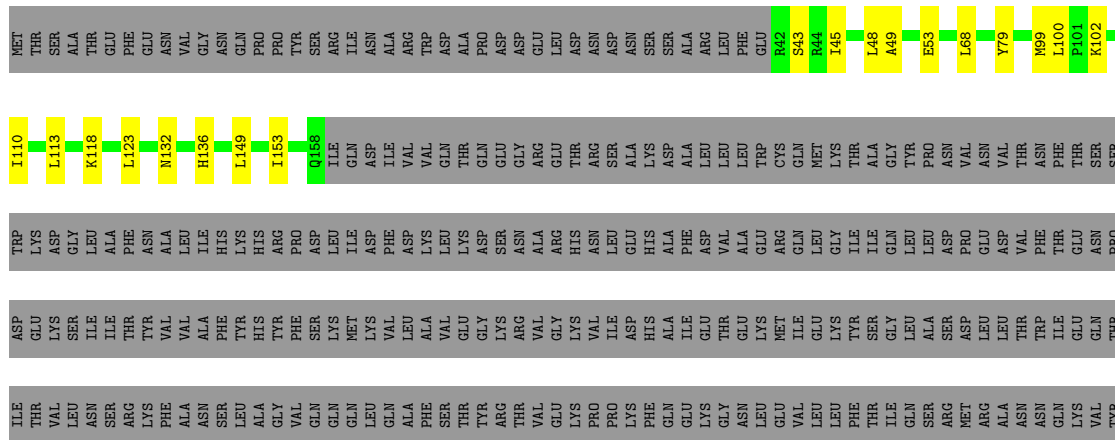




[illegible]

- Molecule 6: Spectrin beta chain

Chain P: 5% . 95%

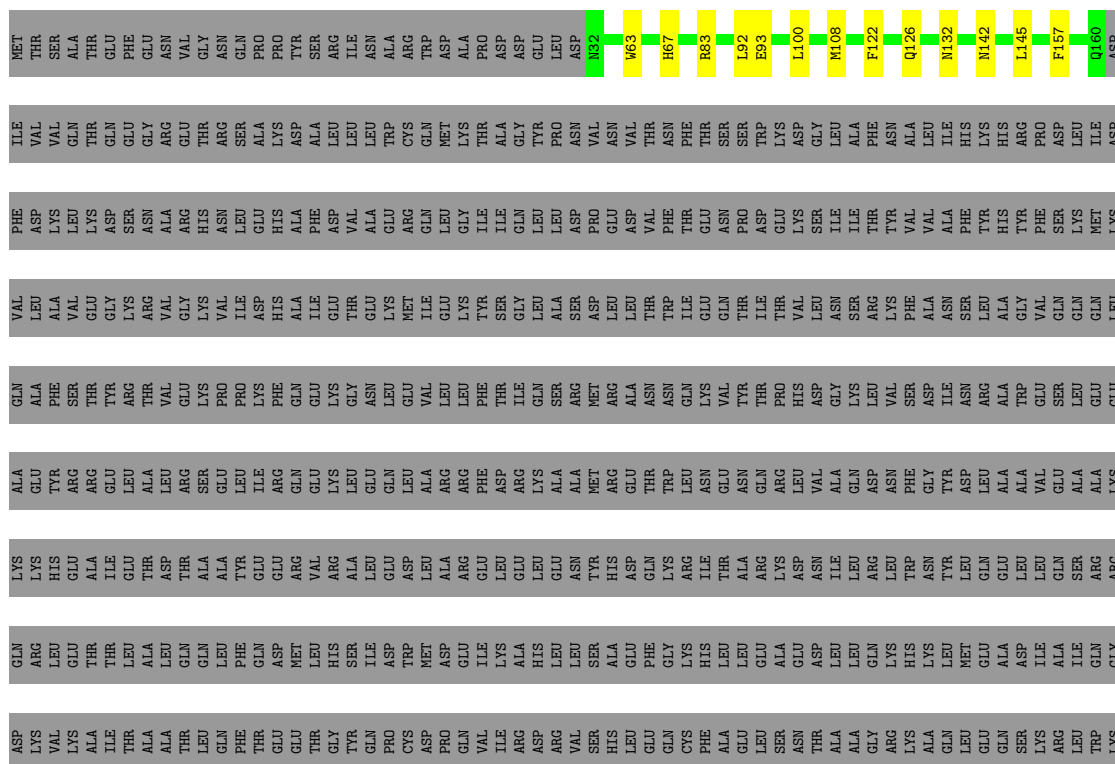




[illegible]

- Molecule 6: Spectrin beta chain

Chain Q: 5% . 94%





- Molecule 6: Spectrin beta chain

[illegible]



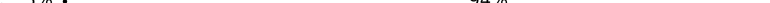
- Molecule 6: Spectrin beta chain





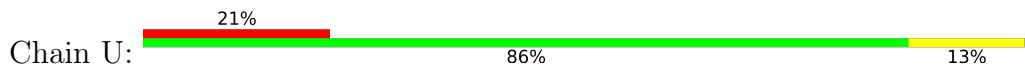
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PRO	LYS
TYR	ARG
	GLN
	THR
	PRO
	GLU
	ARG
	PRO
	LYS
	ASP
	ALA
	GLY
	GLN
	GLU
	GLU
	GLY
	THR
	ALA
	GLY
	GLU
	PRO
	ARG
	GLY
	PRO
	HIS
	ARG
	ALA
	ALA
	THR
	GLU
	ARG
	THR
	THR
	SER
	PRO
	VAL
	SER
	SER
	LEU
	SER
	HIS
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	PRO
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	ALA

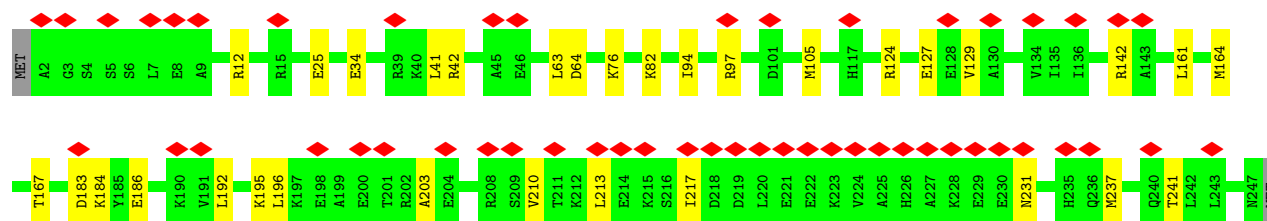
- Molecule 6: Spectrin beta chain

Chain T:  5% 94%

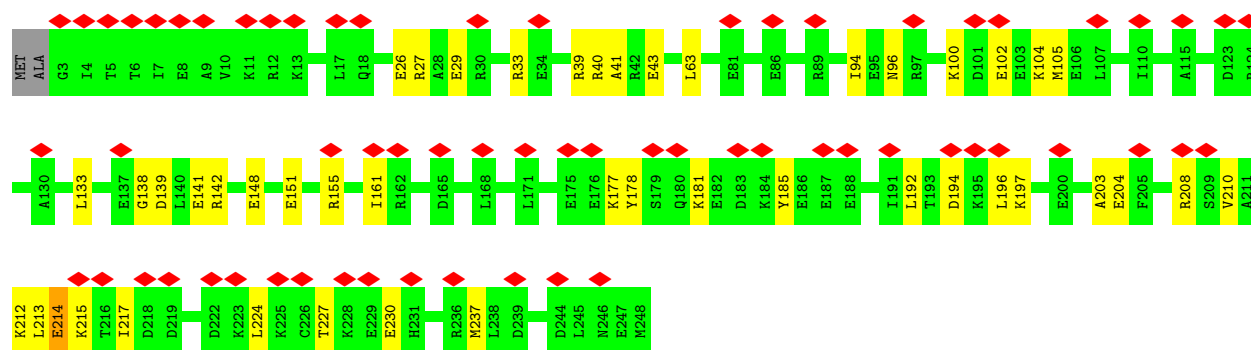
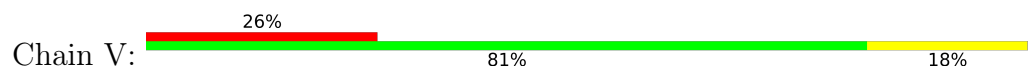
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GLU	ARG	THR	ASP	ASP	LEU	ALA	LEU	VAL	GLU	GLU	THR	GLN	VAL	LEU	GLN	SER
LEU	LEU	ARG	PRO	PRO	ALA	LYS	TRP	GLN	THR	ILE	ILE	THR	GLY	ASP	GLN	GLU
GLY	ASP	PHE	ASP	ASP	GLU	ASP	GLU	ALA	ALA	THR	THR	THR	ARG	ASN	PHE	PHE
SER	VAL	LEU	GLY	GLN	VAL	LYS	TRP	LYS	ALA	ALA	THR	THR	VAL	ASN	GLY	GLU
ASN	ALA	ALA	ALA	VAL	LEU	GLU	GLU	GLU	GLN	GLU	PRO	PRO	ILE	LEU	SER	GLN
PHE	ALA	ARG	VAL	LEU	ALA	LYS	GLU	ASP	GLU	ASP	PHE	PHE	GLY	GLU	LYS	PRO
LEU	ILE	ARG	SER	ARG	TRP	VAL	GLN	VAL	MET	ARG	GLN	GLU	VAL	ALA	ALA	ALA
GLN	ASP	VAL	GLY	GLN	GLY	LYS	GLY	GLY	HIS	ARG	LYS	GLY	THR	ASP	ALA	SER
LEU	ARG	VAL	ASP	TYR	ASP	GLU	TRP	VAL	ILE	ALA	THR	THR	VAL	LEU	LEU	ILE
ASP	VAL	ASP	GLY	GLN	VAL	GLU	TRP	VAL	SER	ALA	THR	GLN	GLU	ASP	LEU	ASP
THR	VAL	ASP	GLY	VAL	GLN	GLN	ASP	GLN	THR	ALA	TRP	ASN	THR	PHE	ASN	ASN
GLY	THR	THR	GLY	VAL	GLN	LYS	LYS	LYS	ILE	GLU	LYS	GLN	ILE	THR	PHE	ASN
SER	GLN	VAL	ASN	GLN	VAL	VAL	GLY	GLY	GLY	GLY	ARG	GLN	THR	THR	ASN	ASN
ASN	VAL	LEU	GLY	GLN	VAL	GLY	TRP	VAL	ILE	GLU	ARG	THR	THR	THR	ASN	ASN
GLN	ARG	VAL	ASP	TYR	ASP	GLU	TRP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
ASP	VAL	ASP	GLY	GLN	VAL	VAL	ASP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
ASP	ILE	ASP	GLY	GLN	VAL	SER	TRP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
GLY	ALA	ALA	GLY	VAL	GLN	GLN	GLY	GLY	THR	GLU	GLY	GLN	THR	THR	ASN	ASN
GLN	ARG	VAL	ASP	TYR	ASP	GLU	TRP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
LEU	ARG	VAL	ASP	GLY	GLN	GLY	TRP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
ASP	VAL	ASP	GLY	GLN	VAL	VAL	ASP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
ASP	ILE	ASP	GLY	GLN	VAL	SER	TRP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
GLY	ALA	ALA	GLY	VAL	GLN	GLN	GLY	GLY	THR	GLU	GLY	GLN	THR	THR	ASN	ASN
GLN	ARG	VAL	ASP	TYR	ASP	GLU	TRP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
LEU	ARG	VAL	ASP	GLY	GLN	GLY	TRP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
ASP	VAL	ASP	GLY	GLN	VAL	VAL	ASP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
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GLY	ALA	ALA	GLY	VAL	GLN	GLN	GLY	GLY	THR	GLU	GLY	GLN	THR	THR	ASN	ASN
GLN	ARG	VAL	ASP	TYR	ASP	GLU	TRP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
LEU	ARG	VAL	ASP	GLY	GLN	GLY	TRP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
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LEU	ARG	VAL	ASP	GLY	GLN	GLY	TRP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
ASP	VAL	ASP	GLY	GLN	VAL	VAL	ASP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
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LEU	ARG	VAL	ASP	GLY	GLN	GLY	TRP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
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LEU	ARG	VAL	ASP	GLY	GLN	GLY	TRP	VAL	ILE	GLU	ALA	GLN	THR	THR	ASN	ASN
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GLN	ARG	VAL	ASP	TYR												

- Molecule 7: Tropomyosin-1.9

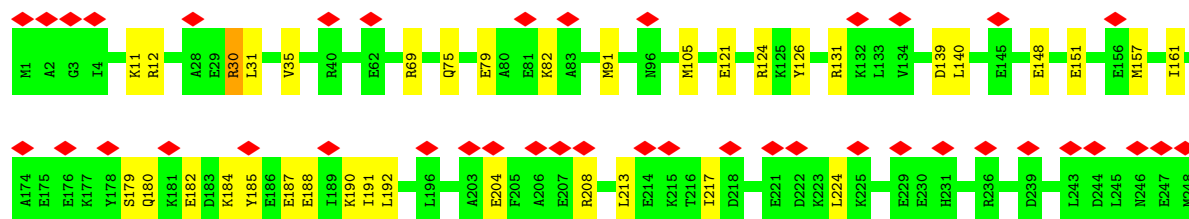
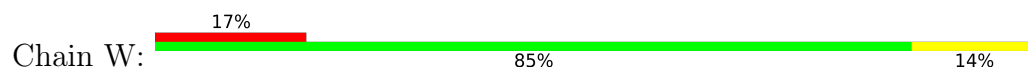




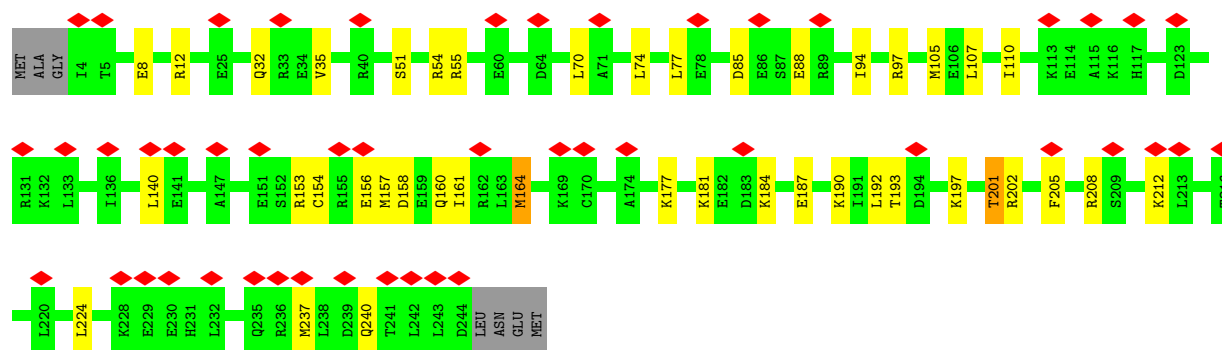
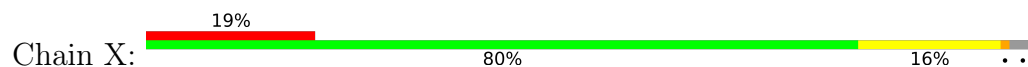
• Molecule 8: Tropomyosin 3



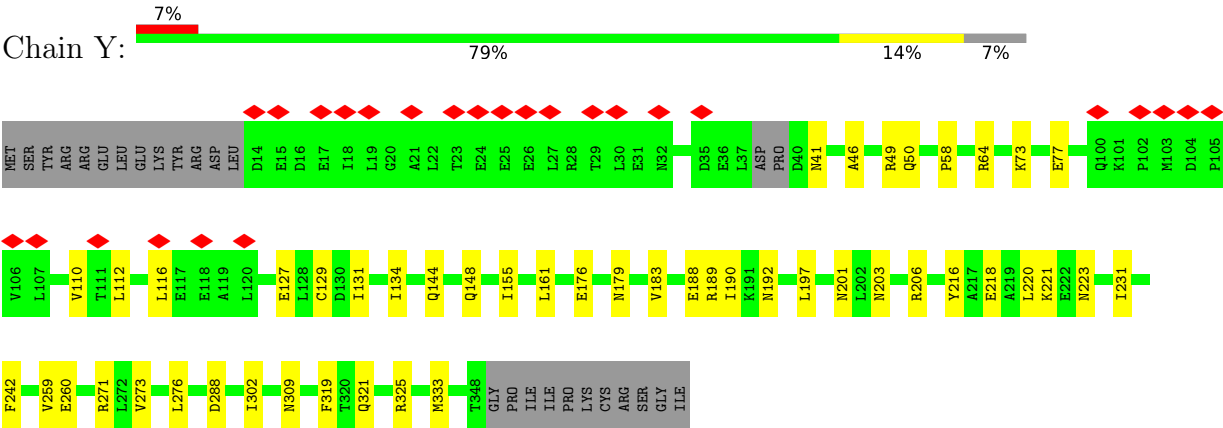
• Molecule 8: Tropomyosin 3



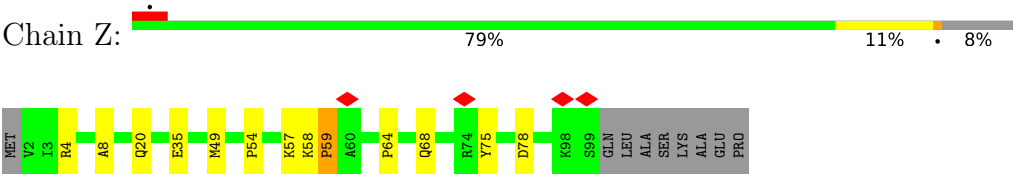
• Molecule 8: Tropomyosin 3



• Molecule 9: Tropomodulin-1



● Molecule 10: SH3 domain-binding glutamic acid-rich-like protein



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	43000	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 ($e^-/\text{\AA}^2$)	34.4	Depositor
Minimum defocus (nm)	2000	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	GATAN K2 QUANTUM (4k x 4k)	Depositor
Maximum map value	2.839	Depositor
Minimum map value	-1.150	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.071	Depositor
Recommended contour level	0.35	Depositor
Map size (Å)	657.6, 657.6, 657.6	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.37, 1.37, 1.37	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: ADP

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	0	0.24	0/459	0.66	0/609
1	1	0.17	0/2638	0.44	0/3579
1	2	0.14	0/2312	0.38	0/3139
2	3	0.18	0/2924	0.47	0/3956
2	4	0.16	0/2198	0.43	0/2978
2	9	0.29	0/459	0.77	1/610 (0.2%)
3	5	0.21	0/1040	0.58	0/1415
3	6	0.20	0/992	0.44	0/1358
3	7	0.19	0/1006	0.50	0/1369
4	8	0.26	0/2843	0.70	1/3851 (0.0%)
5	A	0.17	0/2970	0.40	0/4023
5	B	0.16	0/2980	0.35	0/4035
5	C	0.19	0/2972	0.37	0/4024
5	D	0.21	0/2980	0.42	2/4035 (0.0%)
5	E	0.20	0/2980	0.36	0/4035
5	F	0.19	0/2980	0.37	0/4035
5	G	0.18	0/2980	0.35	0/4035
5	H	0.19	0/2980	0.37	0/4035
5	I	0.20	0/2972	0.37	0/4024
5	J	0.21	0/2980	0.41	0/4035
5	K	0.19	0/2980	0.39	0/4035
5	L	0.16	0/2980	0.36	0/4035
6	M	0.19	0/1080	0.53	0/1448
6	N	0.18	0/1019	0.44	0/1365
6	O	0.20	0/1088	0.43	1/1459 (0.1%)
6	P	0.20	0/974	0.53	0/1305
6	Q	0.18	0/1072	0.40	0/1437
6	R	0.19	0/974	0.40	0/1305
6	S	0.24	0/4050	0.64	2/5458 (0.0%)
6	T	0.20	0/1063	0.42	0/1425
7	U	0.36	0/1999	0.68	1/2667 (0.0%)
8	V	0.37	0/2016	0.79	4/2687 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
8	W	0.47	0/2022	0.77	1/2696 (0.0%)
8	X	0.45	0/1979	0.79	5/2638 (0.2%)
9	Y	0.17	0/2584	0.46	0/3501
10	Z	0.51	1/817 (0.1%)	0.83	3/1099 (0.3%)
All	All	0.23	1/75342 (0.0%)	0.50	21/101740 (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
6	S	0	1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
10	Z	59	PRO	CG-CD	-12.16	1.09	1.50

The worst 5 of 21 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
10	Z	59	PRO	N-CD-CG	-15.33	80.20	103.20
10	Z	59	PRO	CA-CB-CG	-9.20	87.02	104.50
8	X	55	ARG	CB-CG-CD	7.82	129.27	111.30
10	Z	59	PRO	CA-N-CD	-6.68	102.65	112.00
8	X	164	MET	CB-CA-C	6.46	120.87	110.09

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	S	405	ARG	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	0	453	0	446	1	0
1	1	2585	0	2610	22	0
1	2	2263	0	2279	40	0
2	3	2870	0	2884	34	0
2	4	2157	0	2149	33	0
2	9	455	0	456	10	0
3	5	1008	0	1009	10	0
3	6	963	0	914	9	0
3	7	976	0	965	16	0
4	8	2799	0	2478	45	0
5	A	2907	0	2851	37	0
5	B	2917	0	2879	32	0
5	C	2909	0	2875	18	0
5	D	2917	0	2879	32	0
5	E	2917	0	2879	26	0
5	F	2917	0	2879	22	0
5	G	2917	0	2879	30	0
5	H	2917	0	2879	28	0
5	I	2909	0	2875	28	0
5	J	2917	0	2879	29	0
5	K	2917	0	2879	30	0
5	L	2917	0	2879	25	0
6	M	1065	0	1109	11	0
6	N	1004	0	1060	9	0
6	O	1073	0	1113	15	0
6	P	960	0	1016	14	0
6	Q	1057	0	1105	10	0
6	R	960	0	1016	4	0
6	S	3983	0	4009	52	0
6	T	1048	0	1090	8	0
7	U	1992	0	1988	29	0
8	V	2011	0	2017	32	0
8	W	2017	0	2023	31	0
8	X	1974	0	1982	33	0
9	Y	2547	0	2527	34	0
10	Z	798	0	781	7	0
11	A	27	0	12	2	0
11	B	27	0	12	0	0
11	C	27	0	12	2	0
11	D	27	0	12	0	0
11	E	27	0	12	0	0
11	F	27	0	12	0	0
11	G	27	0	12	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
11	H	27	0	12	0	0
11	I	27	0	12	0	0
11	J	27	0	12	1	0
11	K	27	0	12	1	0
11	L	27	0	12	0	0
All	All	74320	0	73682	700	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.

The worst 5 of 700 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)
6:O:31:ASP:N	6:O:34:ASN:HD22	1.46	1.12
4:8:2206:ALA:O	4:8:2209:ARG:HB3	1.48	1.11
8:W:157:MET:HE1	8:X:158:ASP:HA	1.51	0.93
2:3:167:HIS:HA	2:3:188:VAL:O	1.81	0.80
5:I:159:VAL:HG21	5:I:177:ARG:HE	1.50	0.77

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	0	52/744 (7%)	50 (96%)	2 (4%)	0	100	100
1	1	328/744 (44%)	317 (97%)	11 (3%)	0	100	100
1	2	290/744 (39%)	278 (96%)	12 (4%)	0	100	100
2	3	357/724 (49%)	335 (94%)	21 (6%)	1 (0%)	37	67
2	4	276/724 (38%)	262 (95%)	14 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	9	52/724 (7%)	50 (96%)	2 (4%)	0	100	100
3	5	117/405 (29%)	114 (97%)	3 (3%)	0	100	100
3	6	119/405 (29%)	112 (94%)	7 (6%)	0	100	100
3	7	115/405 (28%)	105 (91%)	10 (9%)	0	100	100
4	8	377/2417 (16%)	356 (94%)	19 (5%)	2 (0%)	25	59
5	A	372/375 (99%)	355 (95%)	17 (5%)	0	100	100
5	B	372/375 (99%)	365 (98%)	7 (2%)	0	100	100
5	C	371/375 (99%)	363 (98%)	8 (2%)	0	100	100
5	D	372/375 (99%)	360 (97%)	12 (3%)	0	100	100
5	E	372/375 (99%)	361 (97%)	11 (3%)	0	100	100
5	F	372/375 (99%)	359 (96%)	13 (4%)	0	100	100
5	G	372/375 (99%)	363 (98%)	9 (2%)	0	100	100
5	H	372/375 (99%)	360 (97%)	12 (3%)	0	100	100
5	I	371/375 (99%)	359 (97%)	11 (3%)	1 (0%)	37	67
5	J	372/375 (99%)	363 (98%)	9 (2%)	0	100	100
5	K	372/375 (99%)	358 (96%)	14 (4%)	0	100	100
5	L	372/375 (99%)	360 (97%)	12 (3%)	0	100	100
6	M	128/2148 (6%)	124 (97%)	4 (3%)	0	100	100
6	N	120/2148 (6%)	119 (99%)	1 (1%)	0	100	100
6	O	129/2148 (6%)	127 (98%)	2 (2%)	0	100	100
6	P	115/2148 (5%)	112 (97%)	3 (3%)	0	100	100
6	Q	127/2148 (6%)	124 (98%)	3 (2%)	0	100	100
6	R	115/2148 (5%)	110 (96%)	5 (4%)	0	100	100
6	S	482/2148 (22%)	473 (98%)	9 (2%)	0	100	100
6	T	126/2148 (6%)	124 (98%)	2 (2%)	0	100	100
7	U	244/248 (98%)	242 (99%)	2 (1%)	0	100	100
8	V	244/248 (98%)	243 (100%)	1 (0%)	0	100	100
8	W	246/248 (99%)	243 (99%)	3 (1%)	0	100	100
8	X	239/248 (96%)	239 (100%)	0	0	100	100
9	Y	329/359 (92%)	318 (97%)	11 (3%)	0	100	100
10	Z	96/107 (90%)	94 (98%)	2 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
All	All	9285/31178 (30%)	8997 (97%)	284 (3%)	4 (0%)	100	100

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	8	2068	VAL
5	I	4	ASP
4	8	2226	VAL
2	3	360	LEU

5.3.2 Protein sidechains ⓘ

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	0	51/626 (8%)	51 (100%)	0	100	100
1	1	280/626 (45%)	280 (100%)	0	100	100
1	2	243/626 (39%)	243 (100%)	0	100	100
2	3	320/637 (50%)	320 (100%)	0	100	100
2	4	235/637 (37%)	235 (100%)	0	100	100
2	9	50/637 (8%)	50 (100%)	0	100	100
3	5	113/364 (31%)	113 (100%)	0	100	100
3	6	101/364 (28%)	101 (100%)	0	100	100
3	7	107/364 (29%)	107 (100%)	0	100	100
4	8	257/2118 (12%)	257 (100%)	0	100	100
5	A	313/318 (98%)	313 (100%)	0	100	100
5	B	317/318 (100%)	317 (100%)	0	100	100
5	C	316/318 (99%)	316 (100%)	0	100	100
5	D	317/318 (100%)	317 (100%)	0	100	100
5	E	317/318 (100%)	317 (100%)	0	100	100
5	F	317/318 (100%)	317 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	G	317/318 (100%)	317 (100%)	0	100	100
5	H	317/318 (100%)	317 (100%)	0	100	100
5	I	316/318 (99%)	316 (100%)	0	100	100
5	J	317/318 (100%)	317 (100%)	0	100	100
5	K	317/318 (100%)	317 (100%)	0	100	100
5	L	317/318 (100%)	317 (100%)	0	100	100
6	M	119/1870 (6%)	119 (100%)	0	100	100
6	N	111/1870 (6%)	111 (100%)	0	100	100
6	O	120/1870 (6%)	120 (100%)	0	100	100
6	P	107/1870 (6%)	107 (100%)	0	100	100
6	Q	118/1870 (6%)	118 (100%)	0	100	100
6	R	107/1870 (6%)	107 (100%)	0	100	100
6	S	429/1870 (23%)	429 (100%)	0	100	100
6	T	117/1870 (6%)	117 (100%)	0	100	100
7	U	212/214 (99%)	212 (100%)	0	100	100
8	V	215/216 (100%)	215 (100%)	0	100	100
8	W	214/216 (99%)	214 (100%)	0	100	100
8	X	211/216 (98%)	211 (100%)	0	100	100
9	Y	271/318 (85%)	271 (100%)	0	100	100
10	Z	89/96 (93%)	89 (100%)	0	100	100
All	All	7995/27051 (30%)	7995 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 69 such sidechains are listed below:

Mol	Chain	Res	Type
6	S	447	GLN
7	U	53	ASN
9	Y	223	ASN
5	C	296	ASN
5	C	115	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

12 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
11	ADP	E	401	-	24,29,29	0.95	1 (4%)	29,45,45	1.52	4 (13%)
11	ADP	F	401	-	24,29,29	0.94	1 (4%)	29,45,45	1.49	4 (13%)
11	ADP	K	401	-	24,29,29	0.93	1 (4%)	29,45,45	1.46	4 (13%)
11	ADP	D	401	-	24,29,29	0.92	1 (4%)	29,45,45	1.47	4 (13%)
11	ADP	I	401	-	24,29,29	0.93	1 (4%)	29,45,45	1.49	4 (13%)
11	ADP	C	401	-	24,29,29	0.93	1 (4%)	29,45,45	1.47	4 (13%)
11	ADP	B	401	-	24,29,29	0.94	1 (4%)	29,45,45	1.40	5 (17%)
11	ADP	L	401	-	24,29,29	0.94	1 (4%)	29,45,45	1.47	4 (13%)
11	ADP	A	401	-	24,29,29	0.94	1 (4%)	29,45,45	1.47	4 (13%)
11	ADP	H	401	-	24,29,29	0.93	1 (4%)	29,45,45	1.48	4 (13%)
11	ADP	G	401	-	24,29,29	0.94	1 (4%)	29,45,45	1.46	4 (13%)
11	ADP	J	401	-	24,29,29	0.92	1 (4%)	29,45,45	1.56	4 (13%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the

Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns.
'-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
11	ADP	E	401	-	-	3/12/32/32	0/3/3/3
11	ADP	F	401	-	-	5/12/32/32	0/3/3/3
11	ADP	K	401	-	-	5/12/32/32	0/3/3/3
11	ADP	D	401	-	-	5/12/32/32	0/3/3/3
11	ADP	I	401	-	-	5/12/32/32	0/3/3/3
11	ADP	C	401	-	-	6/12/32/32	0/3/3/3
11	ADP	B	401	-	-	6/12/32/32	0/3/3/3
11	ADP	L	401	-	-	3/12/32/32	0/3/3/3
11	ADP	A	401	-	-	7/12/32/32	0/3/3/3
11	ADP	H	401	-	-	5/12/32/32	0/3/3/3
11	ADP	G	401	-	-	5/12/32/32	0/3/3/3
11	ADP	J	401	-	-	5/12/32/32	0/3/3/3

The worst 5 of 12 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	A	401	ADP	C5-C4	2.44	1.47	1.40
11	F	401	ADP	C5-C4	2.42	1.47	1.40
11	L	401	ADP	C5-C4	2.42	1.47	1.40
11	B	401	ADP	C5-C4	2.42	1.47	1.40
11	D	401	ADP	C5-C4	2.40	1.47	1.40

The worst 5 of 49 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	E	401	ADP	PA-O3A-PB	-4.23	118.32	132.83
11	J	401	ADP	PA-O3A-PB	-4.10	118.77	132.83
11	H	401	ADP	PA-O3A-PB	-3.87	119.54	132.83
11	I	401	ADP	PA-O3A-PB	-3.75	119.97	132.83
11	K	401	ADP	PA-O3A-PB	-3.69	120.16	132.83

There are no chirality outliers.

5 of 60 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
11	A	401	ADP	PA-O3A-PB-O3B
11	A	401	ADP	C5'-O5'-PA-O1A

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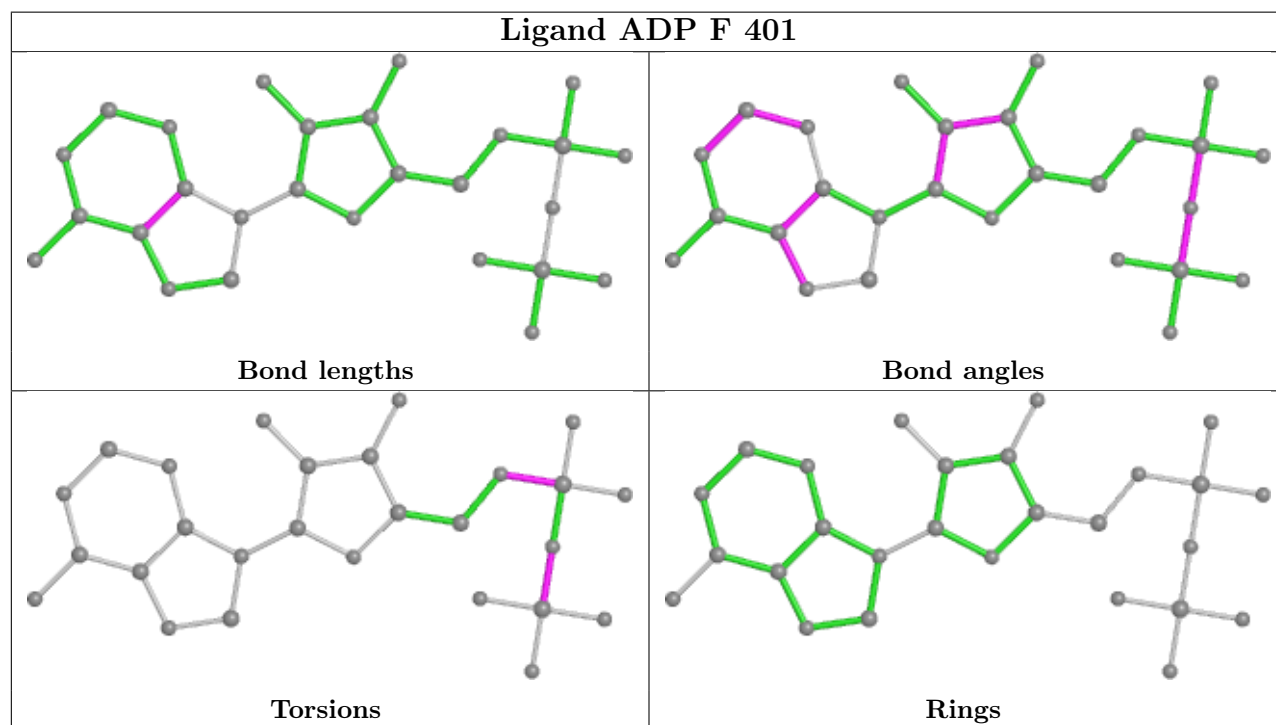
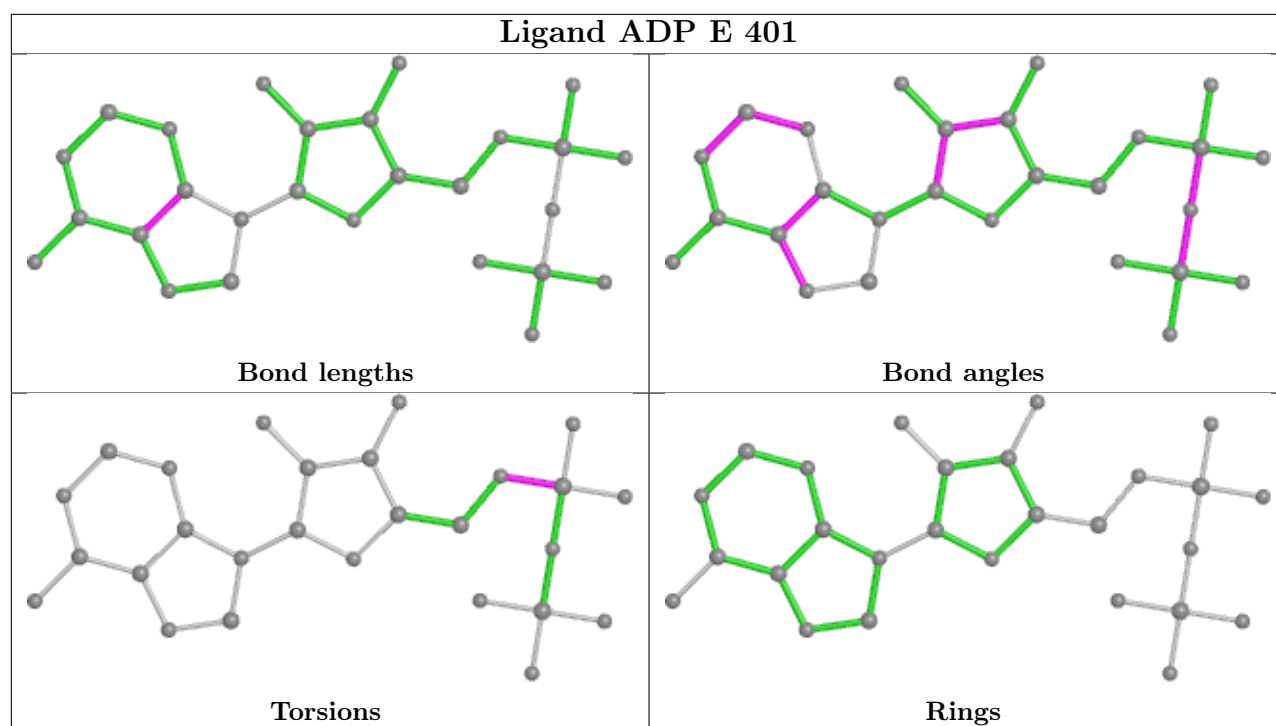
Mol	Chain	Res	Type	Atoms
11	A	401	ADP	C5'-O5'-PA-O2A
11	B	401	ADP	PA-O3A-PB-O3B
11	B	401	ADP	C5'-O5'-PA-O1A

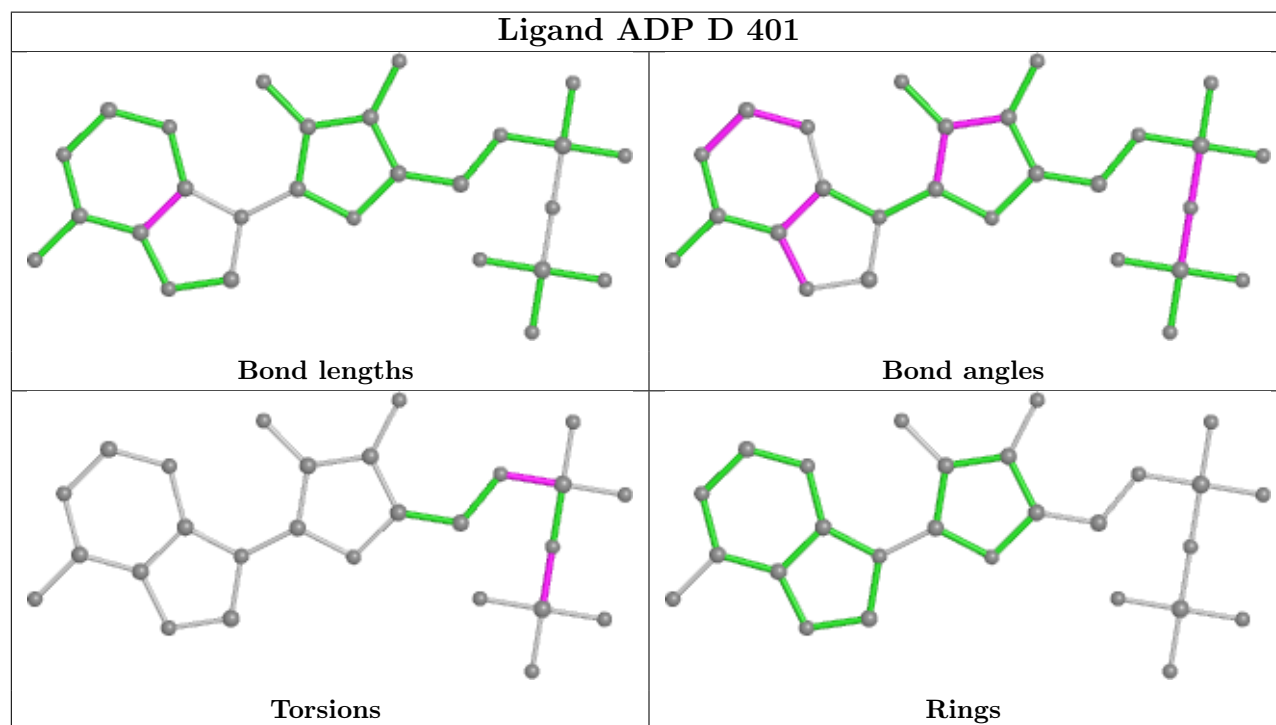
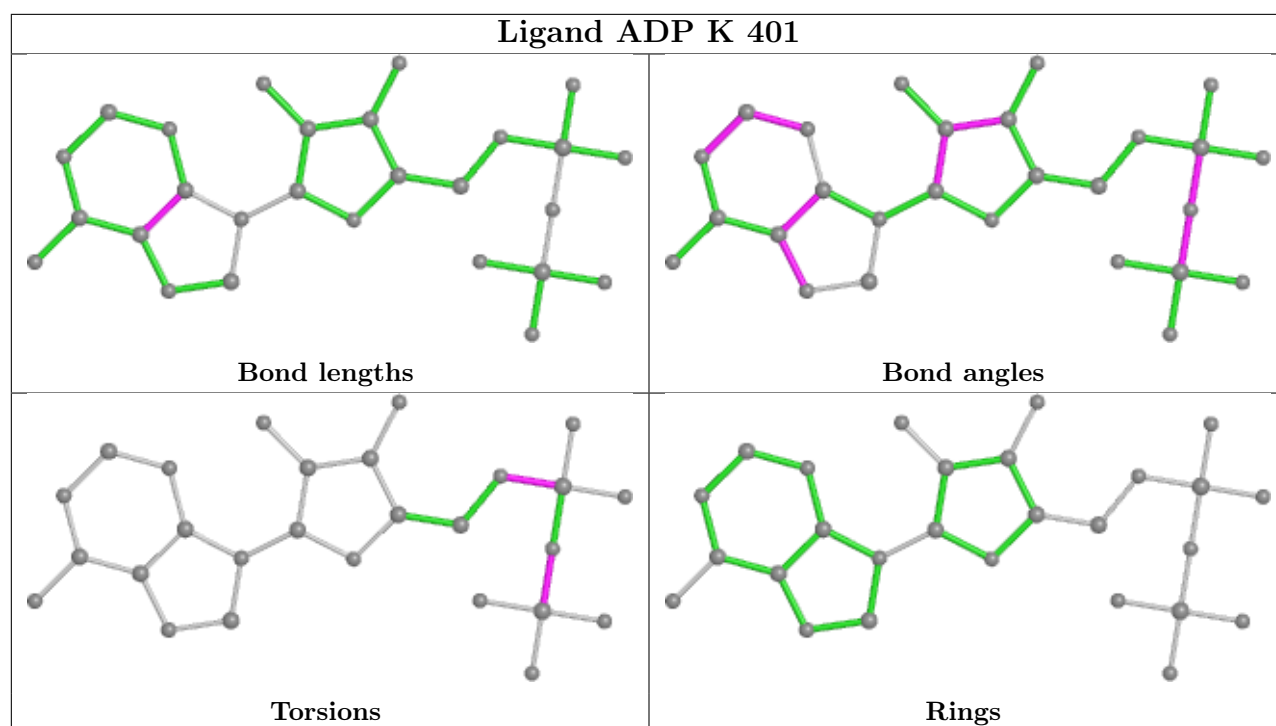
There are no ring outliers.

5 monomers are involved in 7 short contacts:

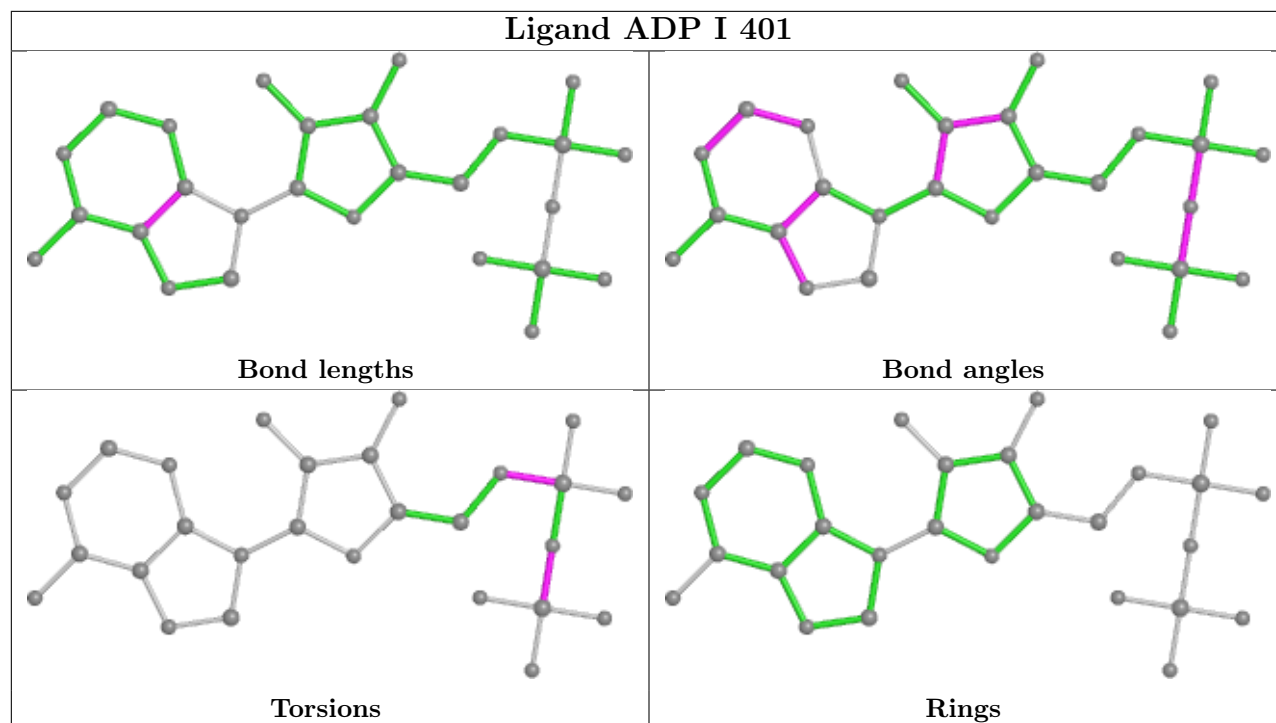
Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	K	401	ADP	1	0
11	C	401	ADP	2	0
11	A	401	ADP	2	0
11	G	401	ADP	1	0
11	J	401	ADP	1	0

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

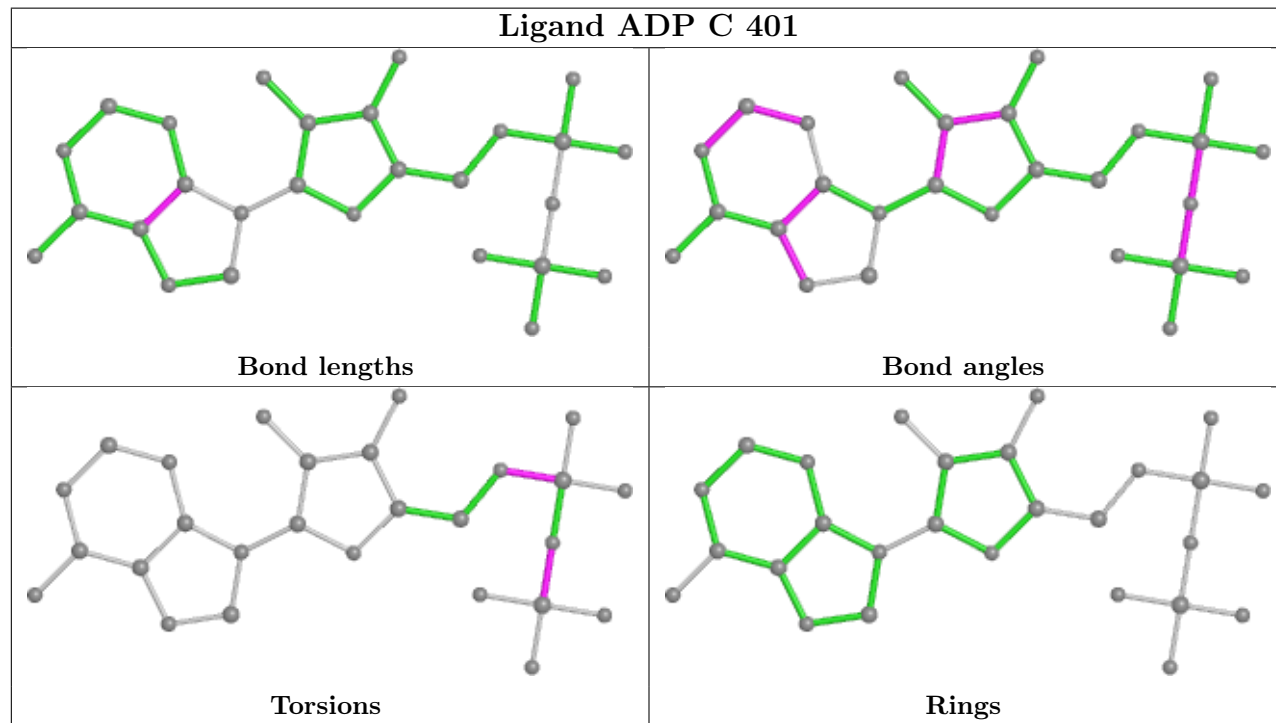


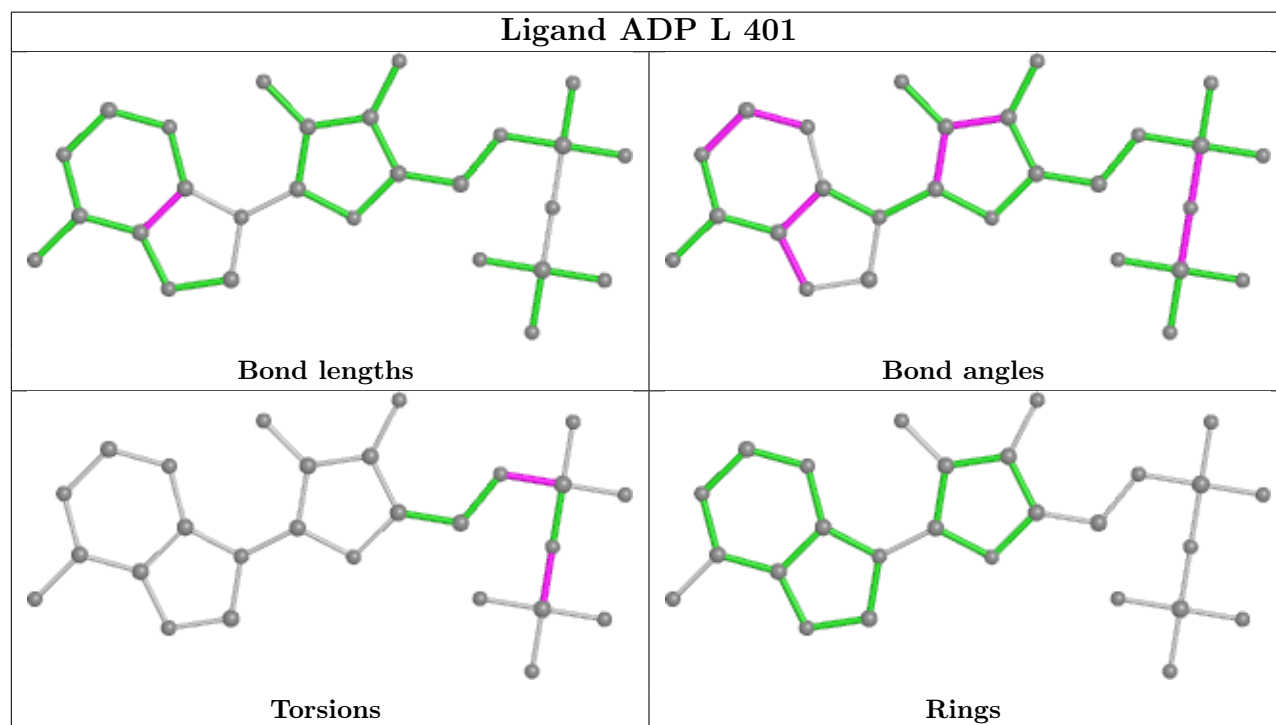
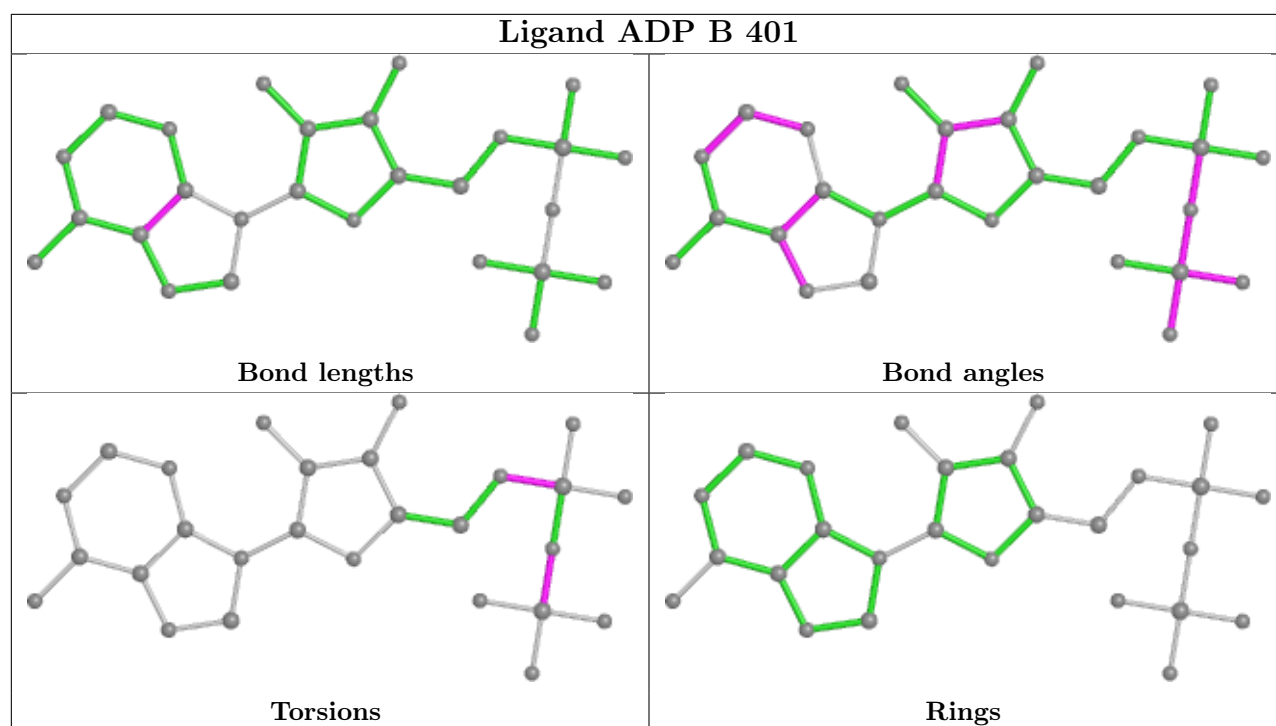


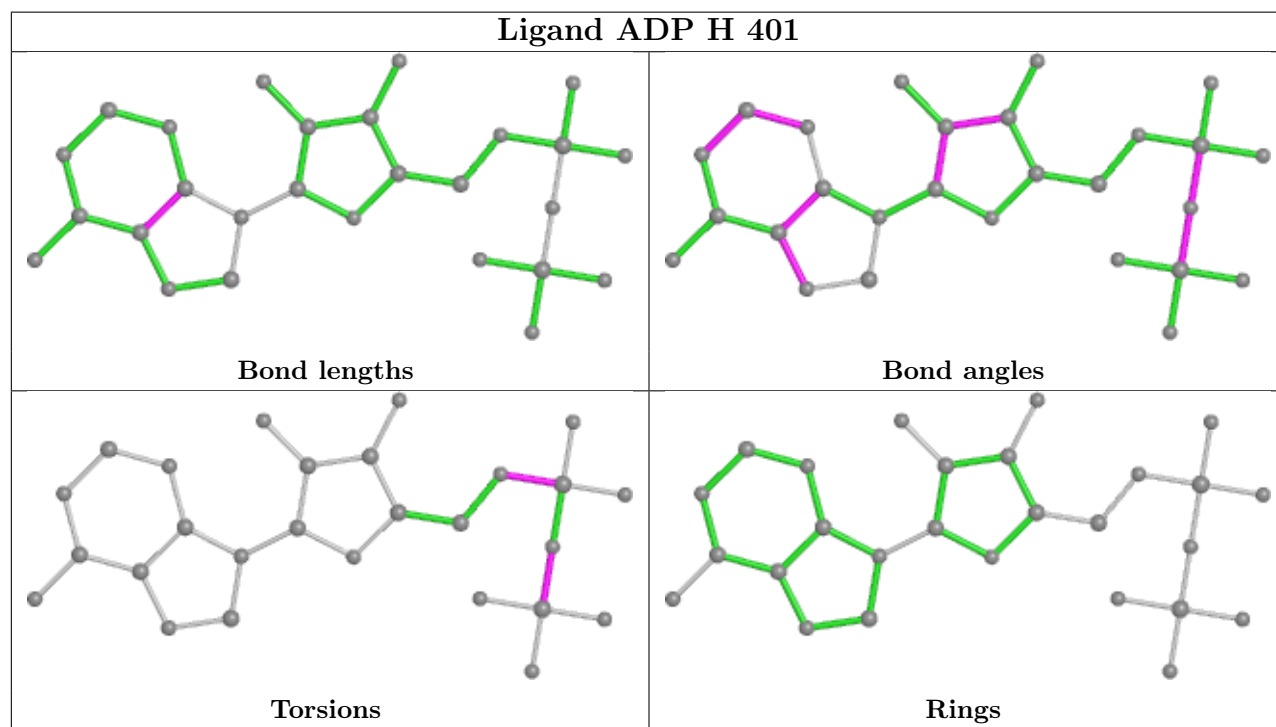
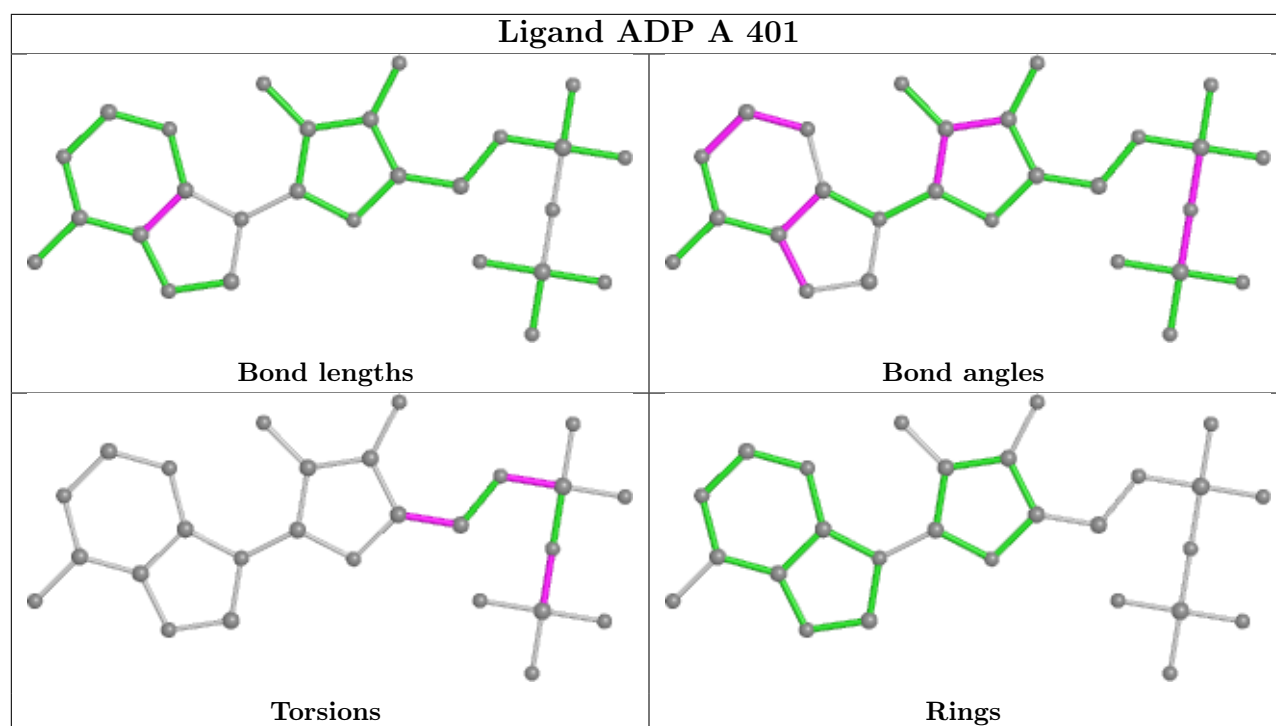
Ligand ADP I 401

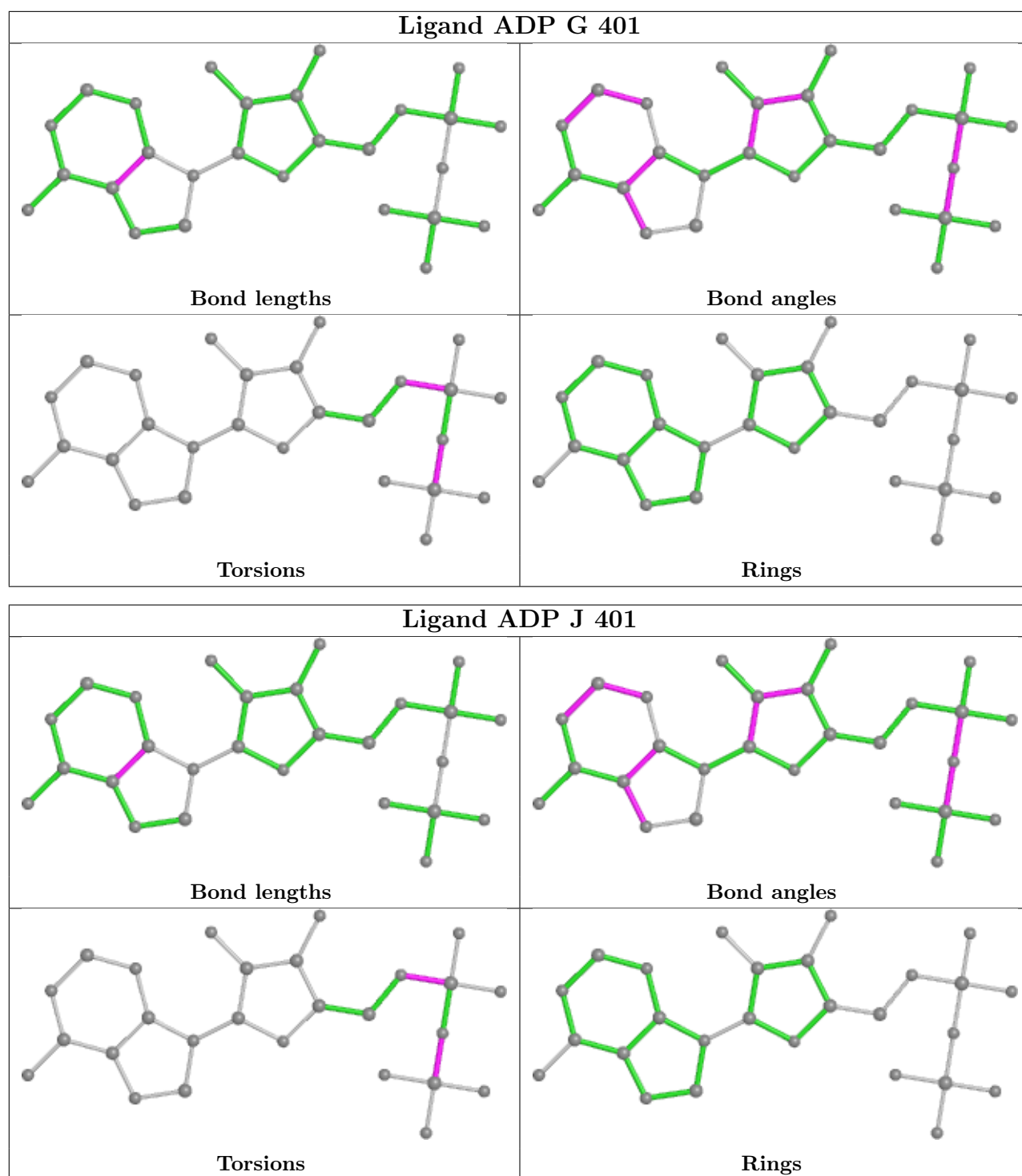


Ligand ADP C 401









5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

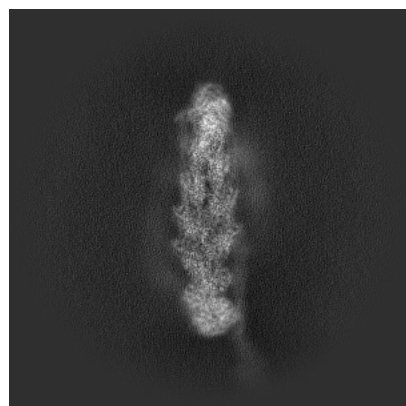
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-35301. These allow visual inspection of the internal detail of the map and identification of artifacts.

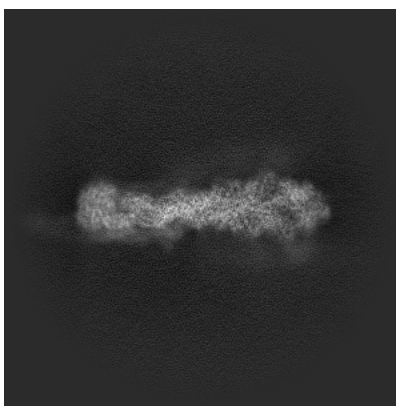
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

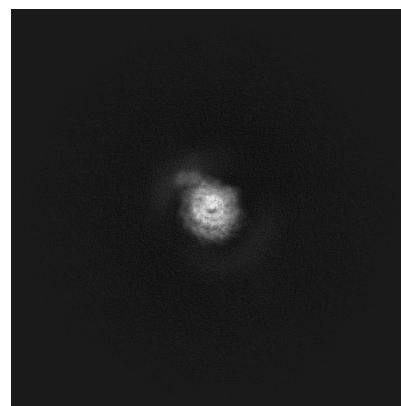
6.1.1 Primary map



X

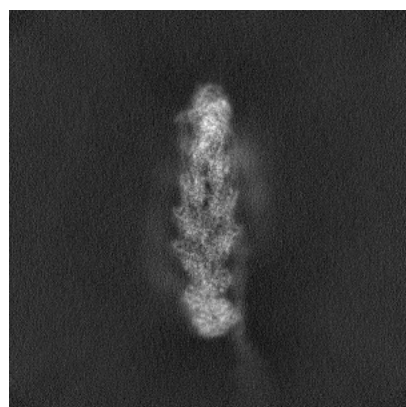


Y

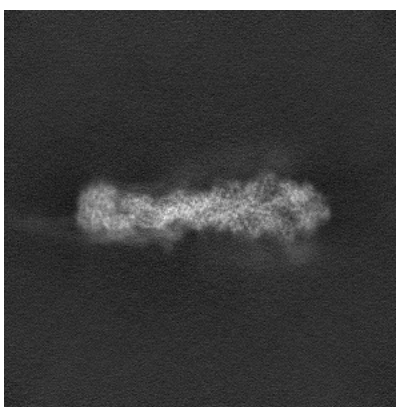


Z

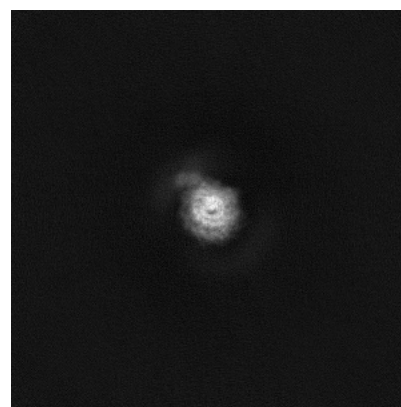
6.1.2 Raw map



X



Y

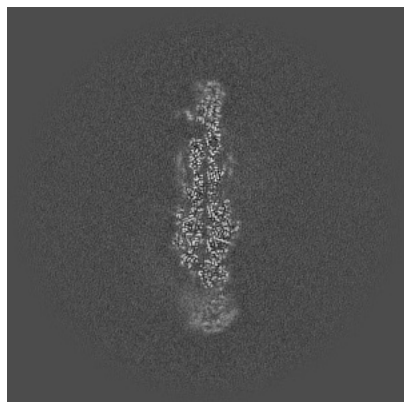


Z

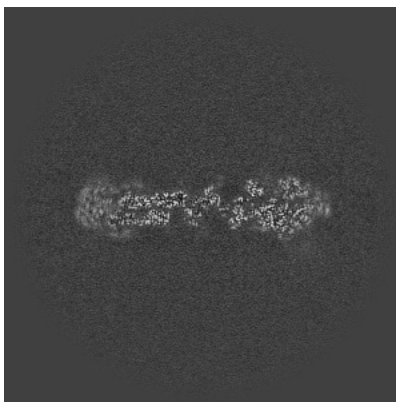
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

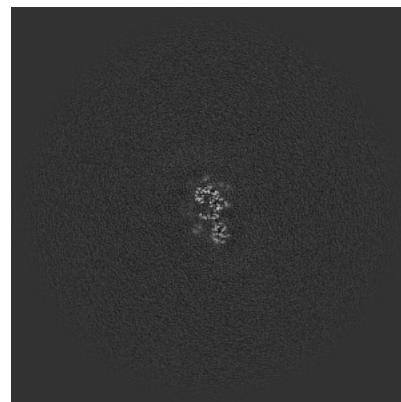
6.2.1 Primary map



X Index: 240

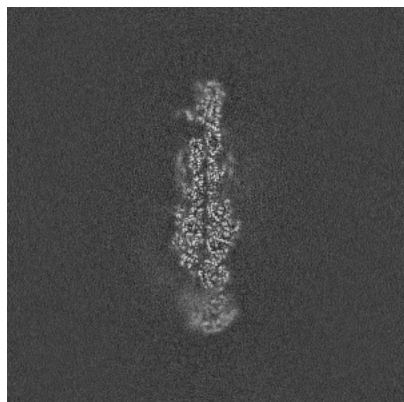


Y Index: 240



Z Index: 240

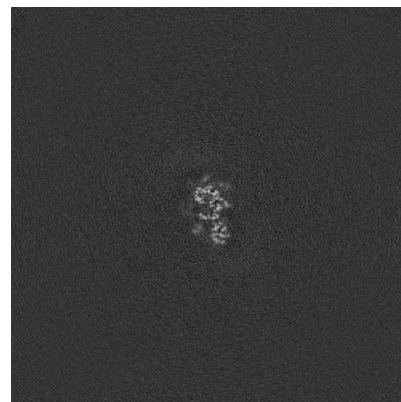
6.2.2 Raw map



X Index: 240



Y Index: 240

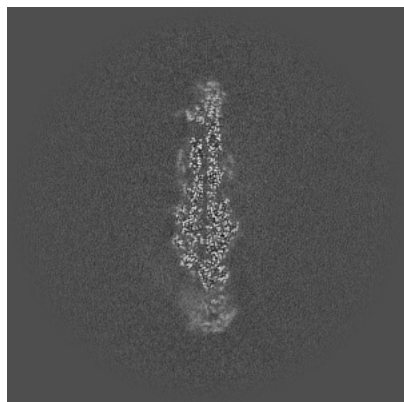


Z Index: 240

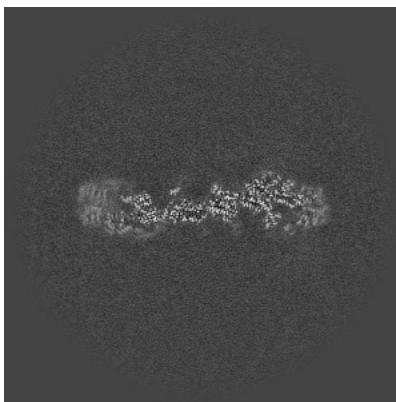
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

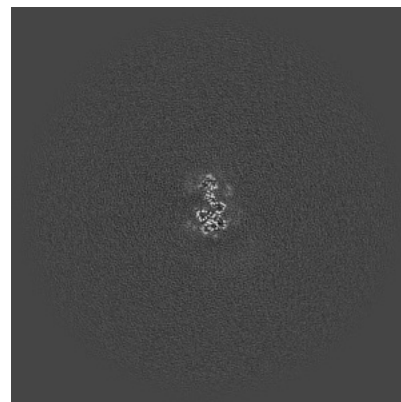
6.3.1 Primary map



X Index: 241

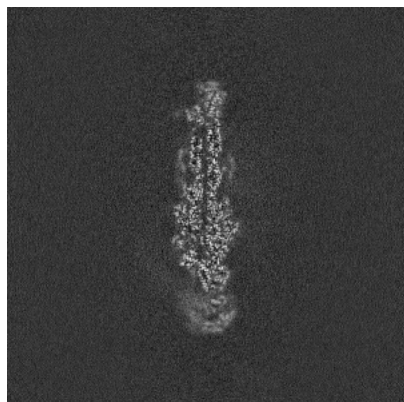


Y Index: 231

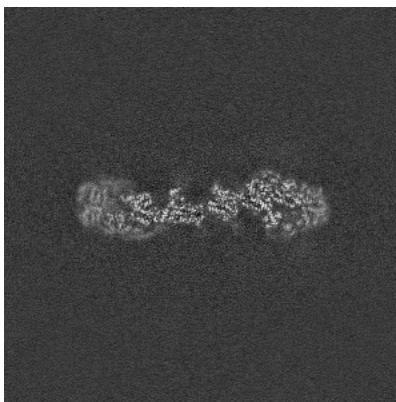


Z Index: 214

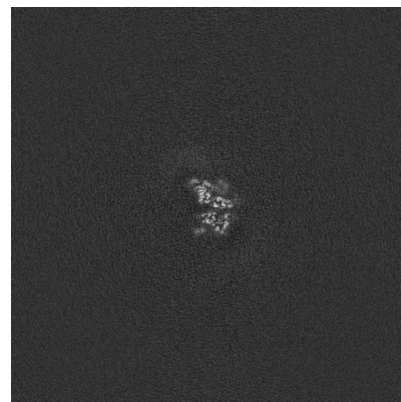
6.3.2 Raw map



X Index: 242



Y Index: 232

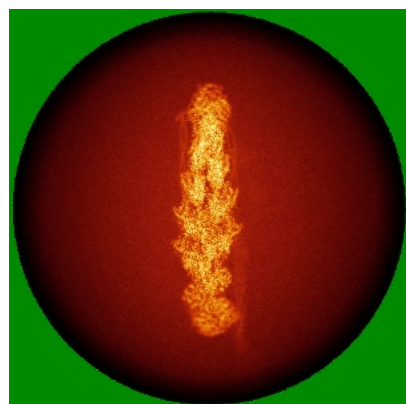


Z Index: 249

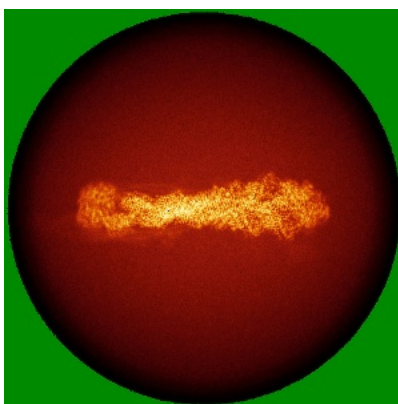
The images above show the largest variance slices of the map in three orthogonal directions.

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

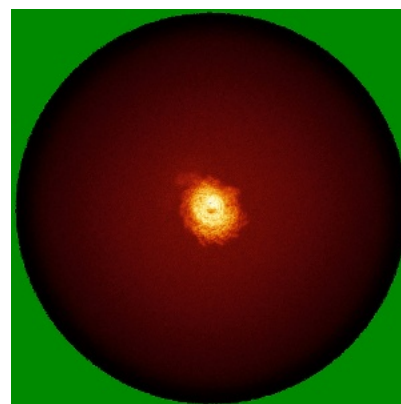
6.4.1 Primary map



X

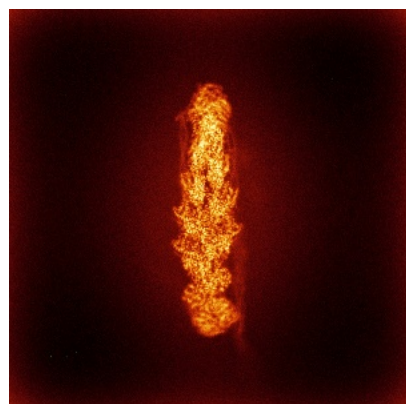


Y

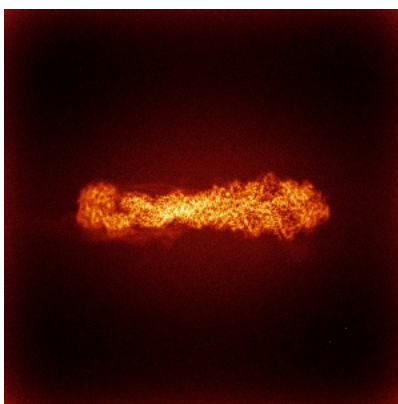


Z

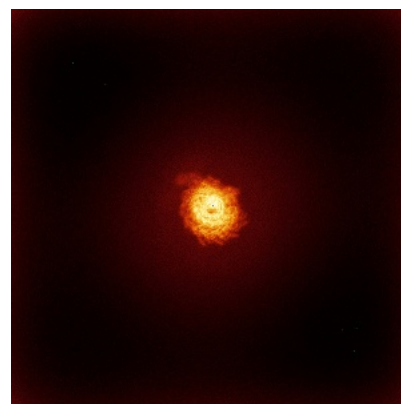
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.35. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X



Y



Z

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

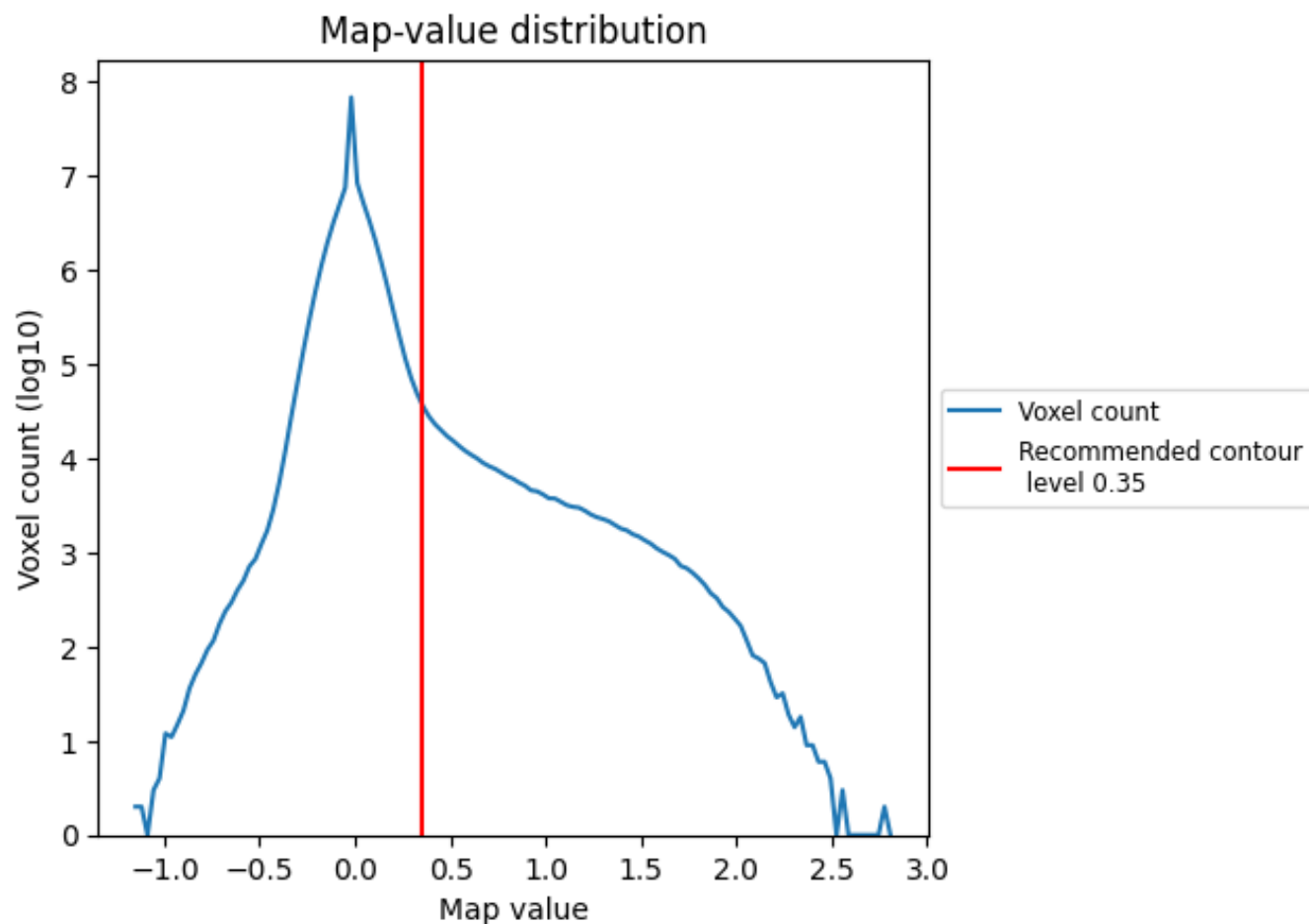
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

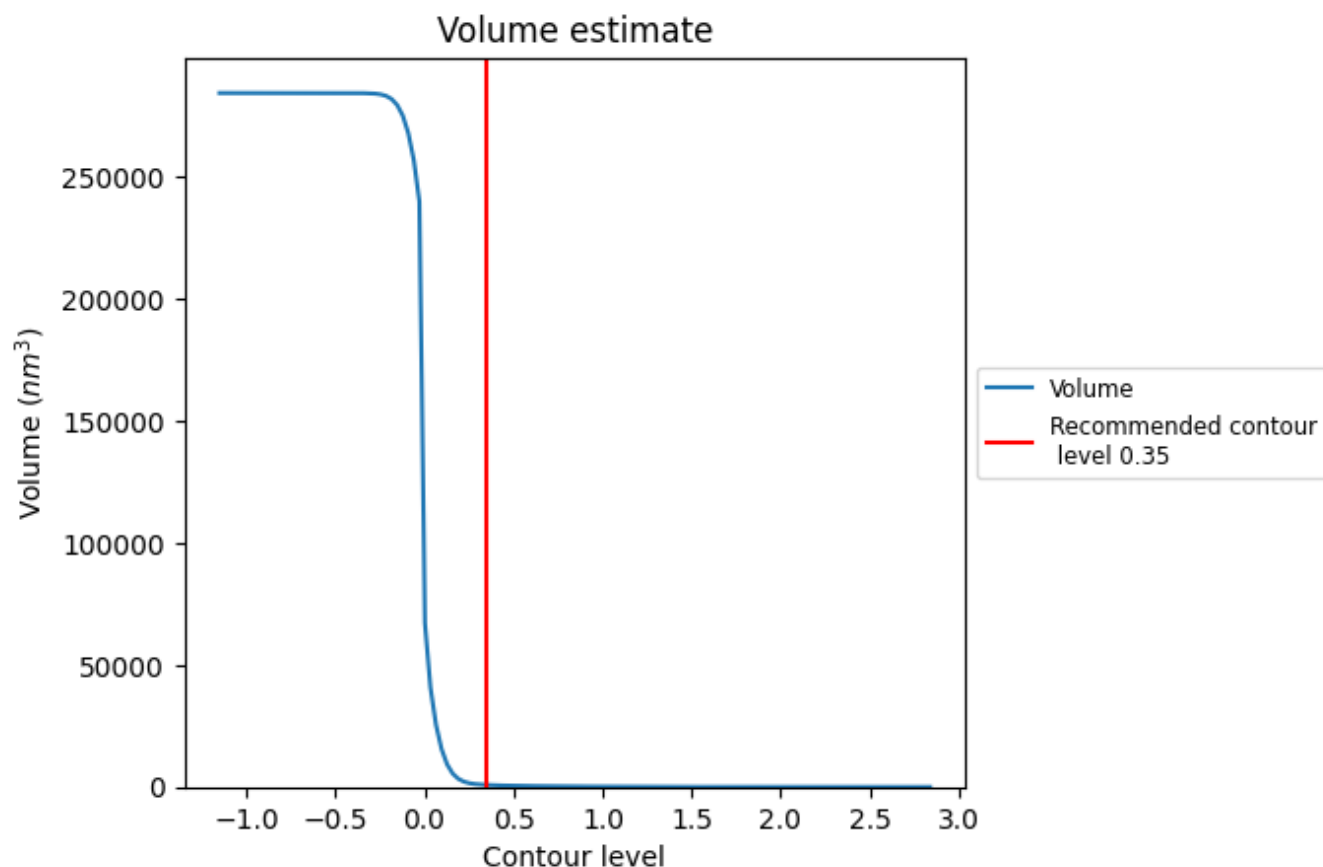
This section contains the results of statistical analysis of the map.

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.

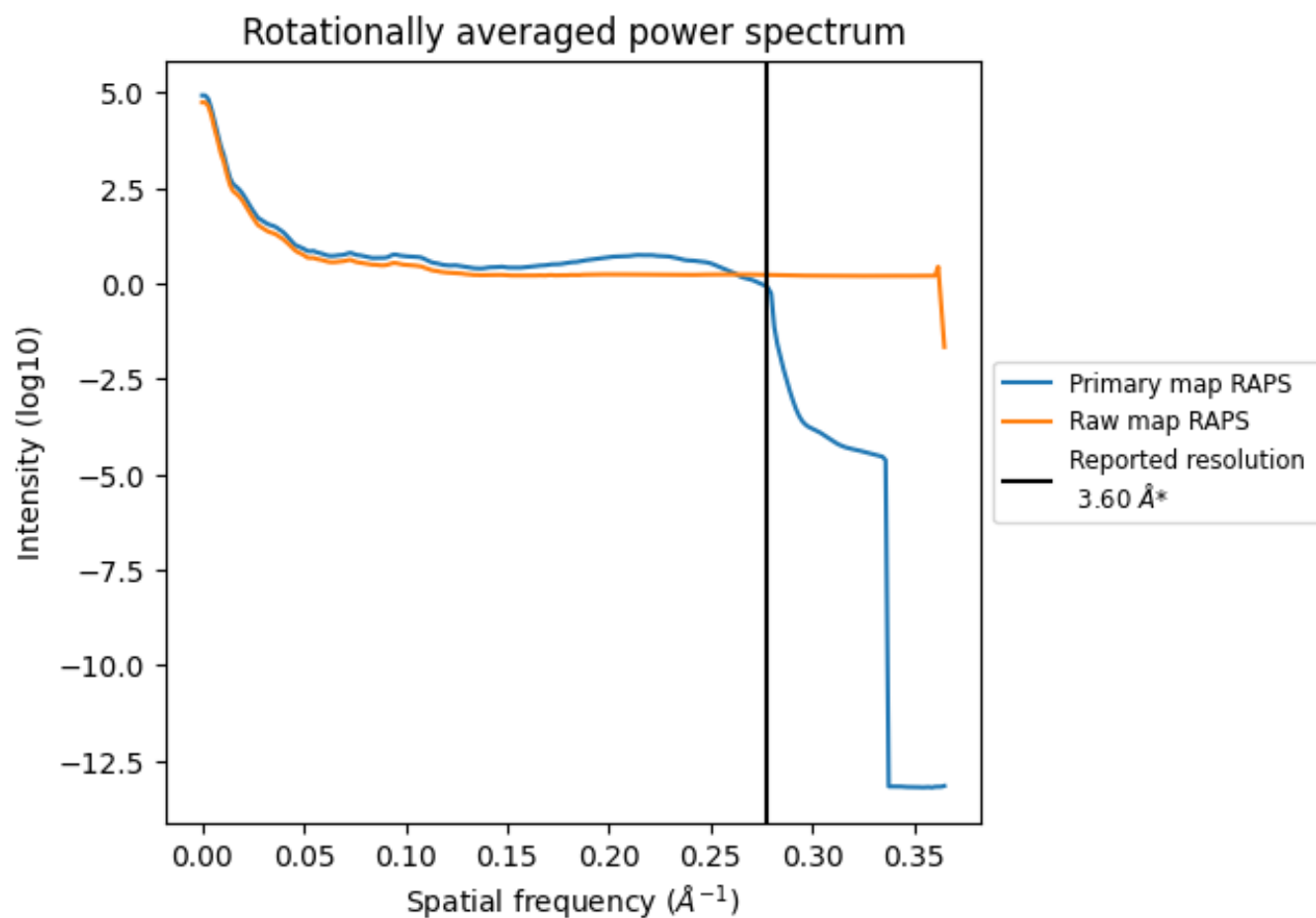
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 817 nm^3 ; this corresponds to an approximate mass of 738 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 ⓘ

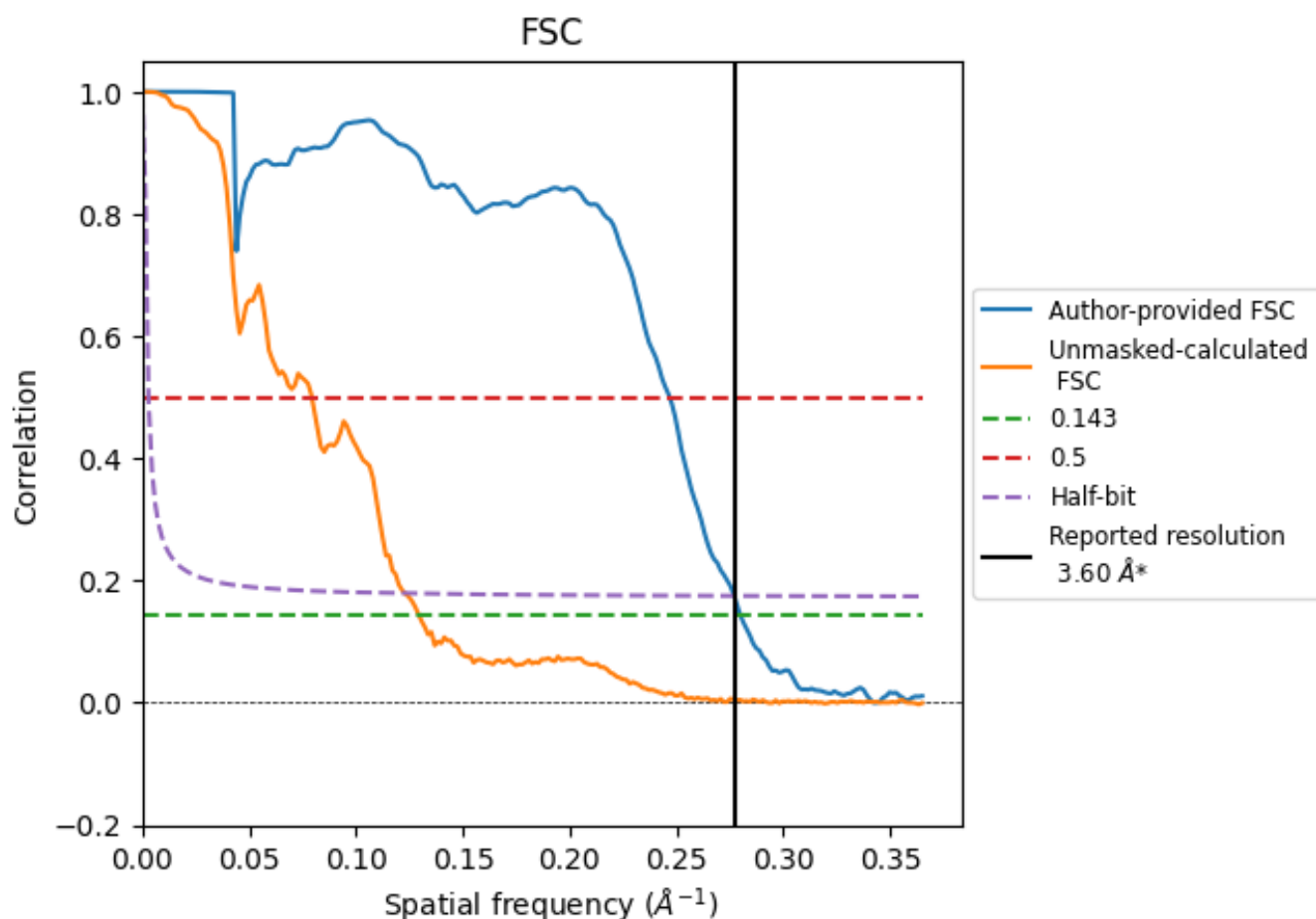


*Reported resolution corresponds to spatial frequency of 0.278 Å⁻¹

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 0.278 Å⁻¹

8.2 Resolution estimates [i](#)

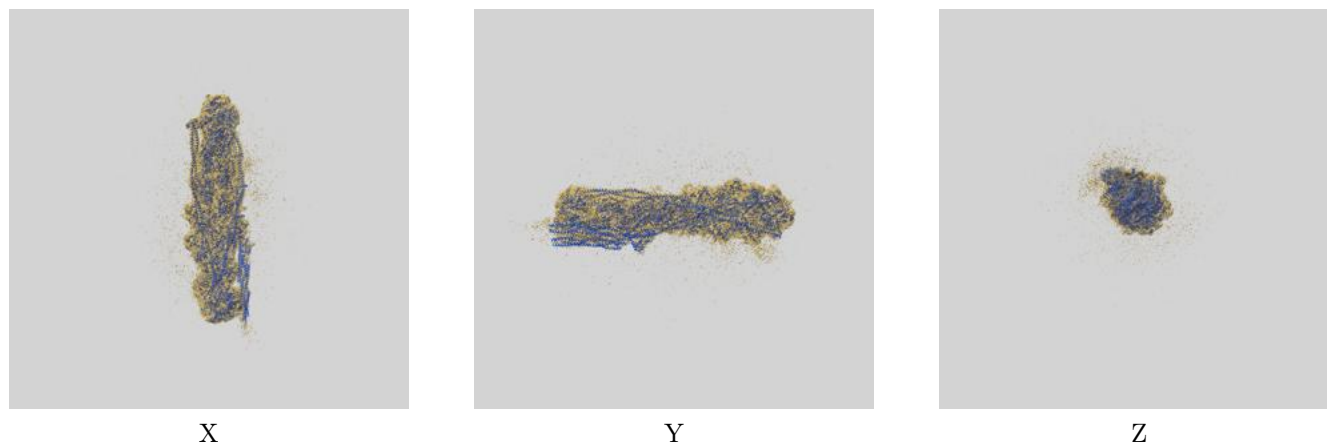
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.60	-	-
Author-provided FSC curve	3.57	4.05	3.61
Unmasked-calculated*	7.73	12.61	8.13

*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 7.73 differs from the reported value 3.6 by more than 10 %

9 Map-model fit [i](#)

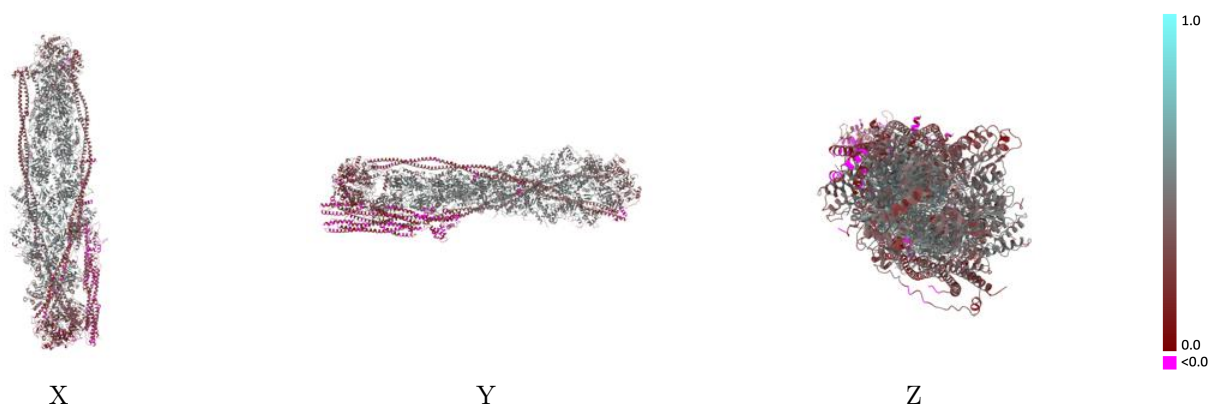
This section contains information regarding the fit between EMDB map EMD-35301 and PDB model 8IAH. Per-residue inclusion information can be found in section [3](#) on page [9](#).

9.1 Map-model overlay [i](#)



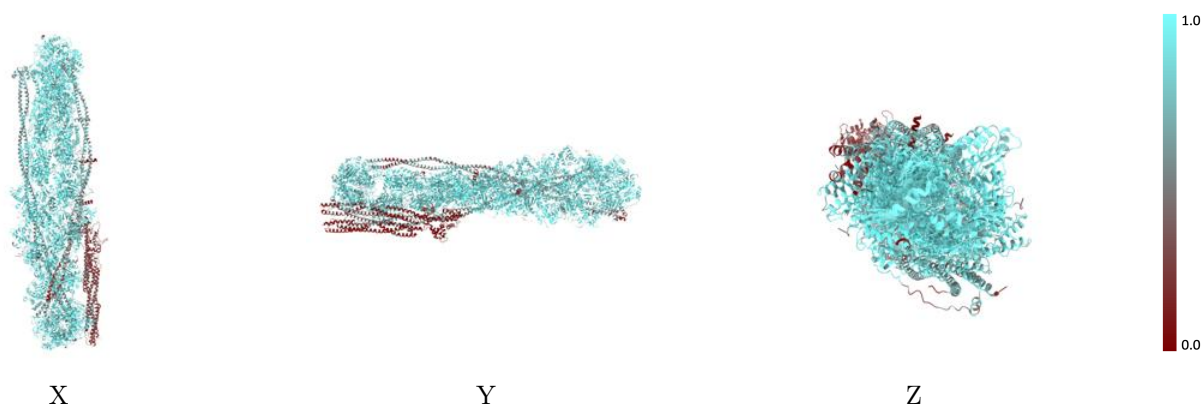
The images above show the 3D surface view of the map at the recommended contour level 0.35 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



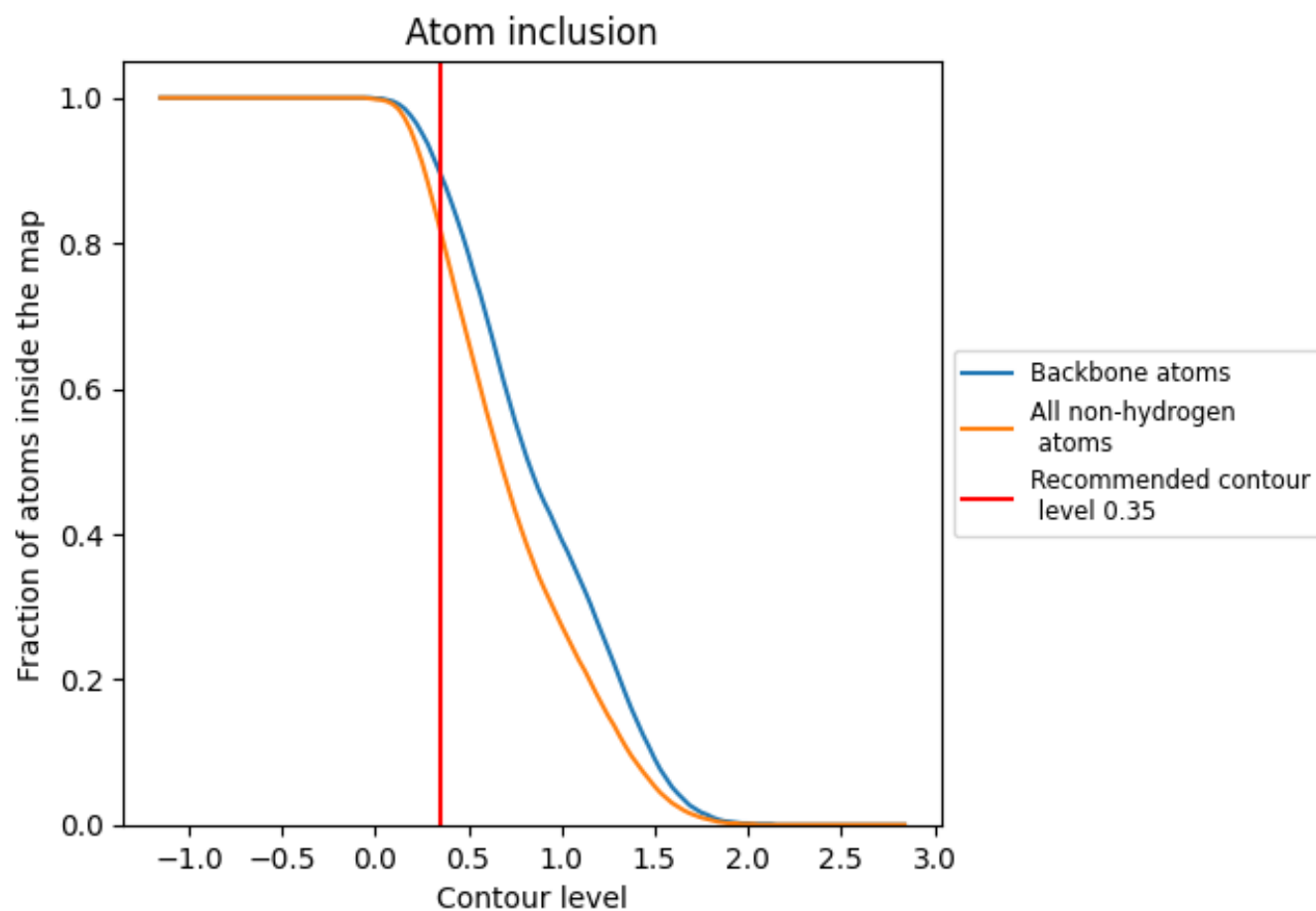
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.35).

9.4 Atom inclusion [i](#)



At the recommended contour level, 90% of all backbone atoms, 82% 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 (0.35) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8180	 0.3850
0	 0.8490	 0.2980
1	 0.8800	 0.3370
2	 0.8640	 0.2550
3	 0.8300	 0.2810
4	 0.8390	 0.2770
5	 0.7780	 0.3820
6	 0.6920	 0.3810
7	 0.7140	 0.3650
8	 0.1040	 0.0700
9	 0.8150	 0.3460
A	 0.9340	 0.4030
B	 0.9500	 0.4640
C	 0.9550	 0.4970
D	 0.9520	 0.4980
E	 0.9600	 0.5090
F	 0.9550	 0.5030
G	 0.9640	 0.5080
H	 0.9580	 0.5040
I	 0.9570	 0.5030
J	 0.9500	 0.5010
K	 0.9490	 0.4800
L	 0.9270	 0.4330
M	 0.9340	 0.4210
N	 0.8710	 0.4340
O	 0.9470	 0.4680
P	 0.9370	 0.4610
Q	 0.9610	 0.4690
R	 0.9520	 0.4720
S	 0.3960	 0.2030
T	 0.9450	 0.4540
U	 0.5690	 0.2710
V	 0.5340	 0.2430
W	 0.5970	 0.2320
X	 0.5750	 0.2260



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Chain	Atom inclusion	Q-score
Y	 0.8280	 0.3220
Z	 0.8400	 0.3540