



Full wwPDB EM Validation Report ⓘ

Jan 24, 2024 – 04:26 PM EST

PDB ID : 8U8B
EMDB ID : EMD-42020
Title : Cryo-EM structure of LRRK2 bound to type II inhibitor rebastinib
Authors : Zhu, H.; Sun, J.
Deposited on : 2023-09-16
Resolution : 3.70 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev70
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

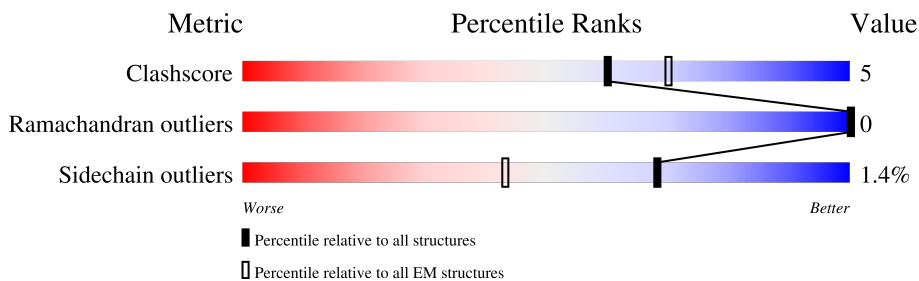
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.70 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	2527	
1	B	2527	

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 24694 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.

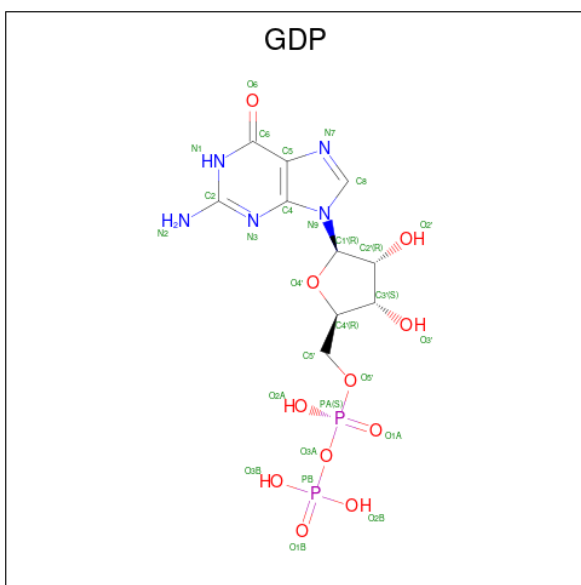
- Molecule 1 is a protein called Leucine-rich repeat serine/threonine-protein kinase 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	1712	Total 12278	C 7922	N 2090	O 2194	S 72	0	0
1	B	1712	Total 12278	C 7922	N 2090	O 2194	S 72	0	0

There are 6 discrepancies between the modelled and reference sequences:

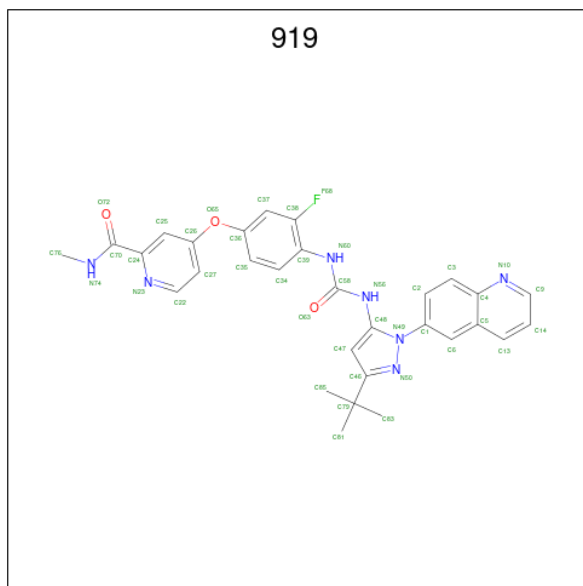
Chain	Residue	Modelled	Actual	Comment	Reference
A	50	HIS	ARG	conflict	UNP Q5S007
A	1647	THR	SER	conflict	UNP Q5S007
A	2397	THR	MET	conflict	UNP Q5S007
B	50	HIS	ARG	conflict	UNP Q5S007
B	1647	THR	SER	conflict	UNP Q5S007
B	2397	THR	MET	conflict	UNP Q5S007

- Molecule 2 is GUANOSINE-5'-DIPHOSPHATE (three-letter code: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
2	A	1	28	10	5	11	2	0
2	B	1	28	10	5	11	2	0

- Molecule 3 is 4-[4-({3-tert-butyl-1-(quinolin-6-yl)-1H-pyrazol-5-yl}carbamoyl}amino)-3-fluorophenoxy]-N-methylpyridine-2-carboxamide (three-letter code: 919) (formula: C₃₀H₂₈FN₇O₃) (labeled as "Ligand of Interest" by depositor).

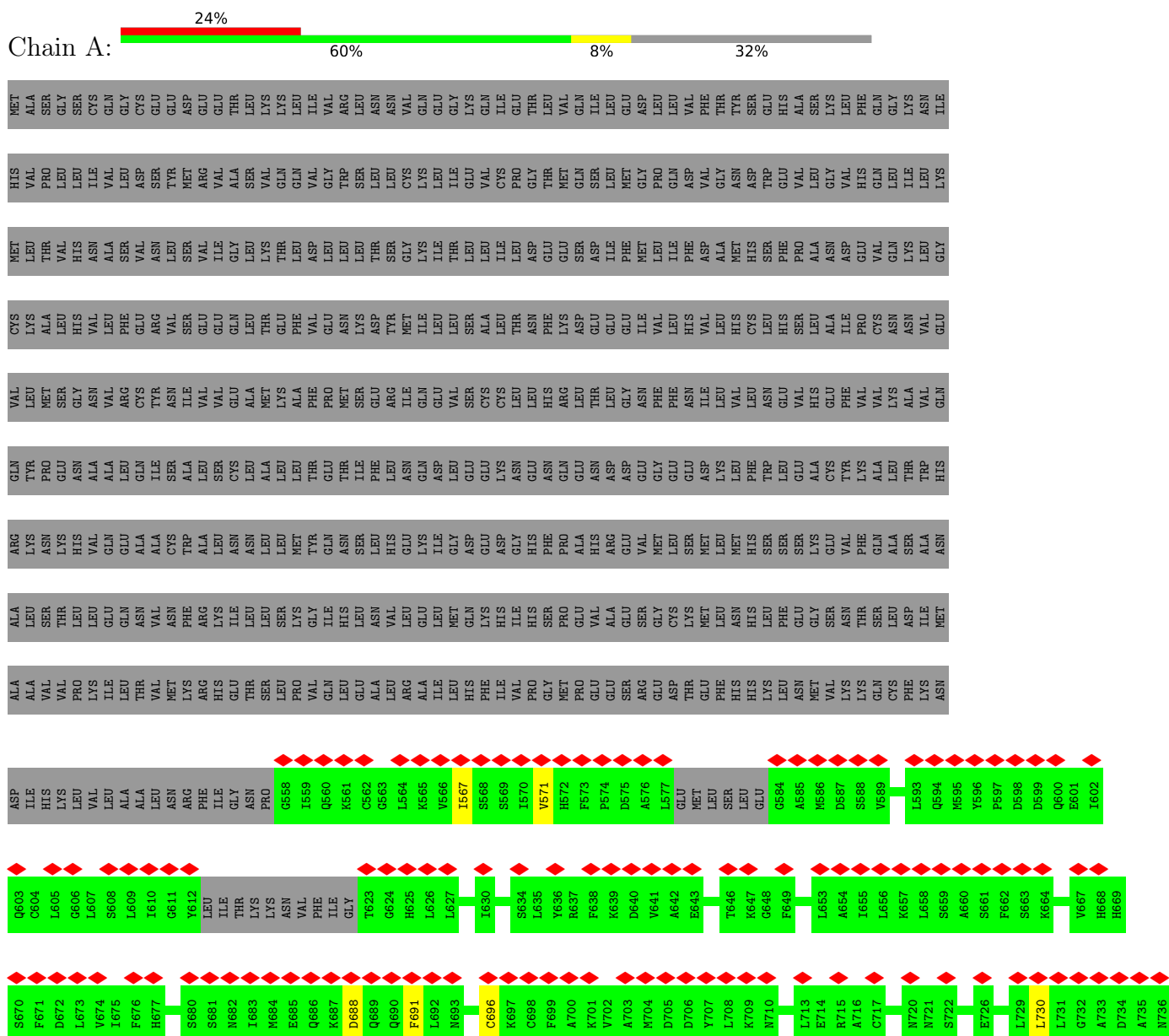


Mol	Chain	Residues	Atoms					AltConf
			Total	C	F	N	O	
3	A	1	41	30	1	7	3	0
3	B	1	41	30	1	7	3	0

3 Residue-property plots

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

- Molecule 1: Leucine-rich repeat serine/threonine-protein kinase 2



THR	GLU	THR	GLN	LYS	GLN	LYS	GLU	ASN	LYS	GLY	SER	HIS	LYS	MET	SER	TYR	S2411	G2412	R2413	T2416	L2419	Q2420	K2421	N2422	T2423	I2427	G2431	I2434	L2435	L2436	L2439	S2440	T2441	R2442	R2443	L2444	I2445	R2446	V2447	N2450	F2451	G2452	R2456	Q2462	L2463	G2464	S2465	L2466	K2467	V2472	Y2475	N2476	ARG	LYS	ASN				
T2338	R2339	T2340	S2341	Q2342	L2343	F2344	S2345	Y2346	A2347	A2348	F2349	S2350	D2351	S2352	N2353	I2354	L2355	T2356	V2359	D2360	T2361	A2362	L2363	Y2364	Q2366	N2369	S2370	P2371	V2372	V2373	E2374	V2375	V2376	D2377	K2378	K2379	T2380	E2381	K2382	L2383	C2384	G2385	L2386	I2387	D2388	C2389	V2390	H2391	F2392	L2393	R2394	E2395	V2396	THR	VAL	LYS	GLU		
K2278	T2279	V2280	K2281	L2282	K2283	G2284	A2285	A2286	P2287	L2288	K2289	L2290	L2291	N2292	L2293	G2294	N2295	V2296	S2297	T2298	P2299	L2300	N2301	C2302	L2303	S2304	E2305	S2306	T2307	N2308	S2309	T2310	E2311	N2312	N2313	V2314	N2315	N2316	G2317	G2318	C2319	G2320	T2321	K2322	L2323	I2327	D2328	S2329	S2330	F2331	F2332	L2333	K2334	L2335	I2336	E2337			
G2218	T2219	Q2220	S2221	G2222	T2223	L2224	L2225	V2226	I2227	N2228	T2229	E2230	D2231	G2232	K2233	K2234	R2235	H2236	T2237	L2238	E2239	K2240	M2241	T2242	D2243	S2244	V2245	T2246	C2247	L2248	Y2249	C2250	N2251	S2252	F2253	S2254	K2255	Q2256	S2257	K2258	Q2259	K2260	M2261	F2262	L2263	L2264	V2265	G2266	T2267	A2268	D2269	K2270	K2271	L2272	A2273	I2274	F2275	E2276	D2277
T2158	H2159	H2160	N2161	S2162	R2163	N2164	A2165	S2166	I2167	N2168	L2169	G2170	C2171	G2172	H2173	T2174	D2175	I2176	G2177	L2178	L2179	S2180	F2181	D2182	L2183	L2184	N2185	T2186	E2187	G2188	Y2189	T2190	S2191	S2192	E2193	V2194	A2195	K2196	S2197	R2198	L2199	L2200	C2201	L2202	A2203	L2204	V2205	H2206	P2208	V2209	E2210	E2212	S2213	N2214	T2215	V2216	S2217		
V2048	I2049	Y2050	Y2057	G2070	V2074	GLU	GLY	LEU	LYS	PHE	PRO	ASN	GLU	PHE	ASP	GLU	LEU	ILE	GLN	K2091	K2097	G2100	C2101	N2104	V2107	Q2120	E2121	R2122	P2123	T2124	S2134	A2135	E2136	R2143	L2146	P2147	K2148	N2149	V2150	L2151	V2152	C2153	C2154	N2155	V2156	A2157													
K1910	H1911	T1912	S1913	L1914	R1915	E1920	L1924	L1932	I1933	V1946	M1947	D1956	L1959	Q1960	Q1961	D1962	D1980	M1989	K1996	H1997	H1998	K2014	I2015	A2016	G2019	I2020	ALA	GLN	TYR	CYS	ARG	MET	GLY	ILE	LYS	THR	GLU	G2034	T2035	P2036	G2037	E1887	G1888	S1889	F1890	S1892	V1893	R1895	E1899	G1900	V1905	K1906	I1907	F1908	H1909				
ILE	CYS	GLY	GLU	G1804	E1805	Y1814	D1818	G1819	L1827	K1832	E1836	D1844	R1847	S1853	D1858	A1862	R1866	H1867	I1868	M1869	L1870	L1875	A1880	F1881	E1882	F1883	L1884	D1887	G1888	S1889	F1890	S1892	V1893	R1895	E1899	G1900	V1905	K1906	I1907	F1908	H1909																		

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	75005	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	67.53	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	3.862	Depositor
Minimum map value	-2.223	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.061	Depositor
Recommended contour level	0.8	Depositor
Map size (\AA)	498.04803, 498.04803, 498.04803	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.297, 1.297, 1.297	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: 919, GDP

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.25	0/12507	0.52	0/17088
1	B	0.25	0/12507	0.52	0/17088
All	All	0.25	0/25014	0.52	0/34176

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	B	0	1
All	All	0	2

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	2104	TRP	Peptide
1	B	2104	TRP	Peptide

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	12278	0	11696	115	0
1	B	12278	0	11696	112	0
2	A	28	0	12	1	0
2	B	28	0	12	1	0
3	A	41	0	28	3	0
3	B	41	0	28	3	0
All	All	24694	0	23472	227	0

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

All (227) 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:B:1933:ILE:HD13	1:B:2014:LYS:HD2	1.77	0.67
1:B:1161:ARG:O	1:B:1163:ASN:ND2	2.28	0.67
1:A:1933:ILE:HD13	1:A:2014:LYS:HD2	1.77	0.66
1:B:2427:ILE:HB	1:B:2435:LEU:HB2	1.78	0.66
1:A:1161:ARG:O	1:A:1163:ASN:ND2	2.29	0.65
1:B:1351:LEU:HD21	1:B:1392:VAL:HG21	1.78	0.65
1:A:1653:LEU:HG	1:A:1658:ILE:HB	1.79	0.64
1:B:1653:LEU:HG	1:B:1658:ILE:HB	1.80	0.64
1:A:2427:ILE:HB	1:A:2435:LEU:HB2	1.78	0.64
1:A:1351:LEU:HD21	1:A:1392:VAL:HG21	1.79	0.63
1:B:2373:VAL:HB	1:B:2387:ILE:HB	1.81	0.62
1:A:1906:LYS:HE3	1:A:1908:PHE:HE1	1.64	0.62
1:A:1921:LEU:O	1:A:1925:CYS:HB2	2.01	0.61
1:B:1906:LYS:HE3	1:B:1908:PHE:HE1	1.64	0.61
1:A:1034:LEU:HD13	1:A:1037:LEU:HD11	1.82	0.61
1:A:2300:LEU:HA	1:A:2319:CYS:HA	1.83	0.60
1:B:2259:GLN:OE1	1:B:2328:ASN:ND2	2.34	0.60
1:B:2300:LEU:HA	1:B:2319:CYS:HA	1.83	0.60
1:B:1034:LEU:HD13	1:B:1037:LEU:HD11	1.83	0.59
1:A:2279:THR:HG22	1:A:2285:ALA:HB1	1.86	0.58
1:A:2373:VAL:HB	1:A:2387:ILE:HB	1.84	0.58
1:A:2259:GLN:OE1	1:A:2328:ASN:ND2	2.34	0.58
1:B:2236:HIS:NE2	1:B:2280:VAL:O	2.36	0.58
1:A:1041:ASP:OD1	1:A:1043:HIS:ND1	2.36	0.58
1:B:1905:VAL:HG12	1:B:1946:VAL:HG22	1.86	0.57
1:B:2279:THR:HG22	1:B:2285:ALA:HB1	1.85	0.57
1:B:688:ASP:HB3	1:B:691:PHE:HB3	1.87	0.57
1:B:1041:ASP:OD1	1:B:1043:HIS:ND1	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1932:LEU:HD22	3:B:2602:919:H85	1.87	0.56
1:B:1881:PRO:HB2	1:B:1883:PHE:HB3	1.86	0.56
1:A:688:ASP:HB3	1:A:691:PHE:HB3	1.87	0.56
1:B:1583:LEU:HG	1:B:1600:PRO:HB3	1.86	0.56
1:B:1222:LEU:HD22	1:B:1225:LEU:HD11	1.86	0.56
1:A:1128:LEU:HD12	1:A:1131:LEU:HD13	1.88	0.56
1:B:762:LEU:HD11	1:B:790:LEU:HD23	1.88	0.56
1:B:1420:ASP:OD1	1:B:1453:HIS:ND1	2.39	0.55
1:A:1932:LEU:HD22	3:A:2602:919:H85	1.87	0.55
1:B:1509:LEU:HA	1:B:1519:VAL:HG21	1.89	0.55
1:A:1583:LEU:HG	1:A:1600:PRO:HB3	1.87	0.55
1:A:2134:SER:OG	1:A:2136:GLU:OE1	2.24	0.55
1:A:1441:ARG:NH1	1:A:1791:TRP:O	2.34	0.55
1:A:2420:GLN:HE21	1:A:2424:ALA:HB3	1.72	0.55
1:B:2434:ILE:HD11	1:B:2472:VAL:HG11	1.90	0.54
1:A:1420:ASP:OD1	1:A:1453:HIS:ND1	2.41	0.54
1:A:1509:LEU:HA	1:A:1519:VAL:HG21	1.91	0.53
1:B:2419:LEU:HD11	1:B:2439:LEU:HD11	1.90	0.53
1:B:1095:LEU:HB2	1:B:1117:ASN:HD22	1.73	0.53
1:B:2152:VAL:HG21	1:B:2169:LEU:HD12	1.91	0.53
1:B:1128:LEU:HD12	1:B:1131:LEU:HD13	1.89	0.53
1:A:1222:LEU:HD22	1:A:1225:LEU:HD11	1.90	0.53
1:A:1881:PRO:HB2	1:A:1883:PHE:HB3	1.91	0.53
1:A:1905:VAL:HG12	1:A:1946:VAL:HG22	1.90	0.53
1:A:2419:LEU:HD11	1:A:2439:LEU:HD11	1.91	0.53
1:A:762:LEU:HD11	1:A:790:LEU:HD23	1.90	0.52
1:A:2152:VAL:HG21	1:A:2169:LEU:HD12	1.92	0.52
1:A:1996:LYS:HE2	1:A:1998:HIS:HB3	1.90	0.52
1:A:2236:HIS:NE2	1:A:2280:VAL:O	2.41	0.52
1:B:1375:ASP:N	1:B:1375:ASP:OD1	2.43	0.51
1:B:1996:LYS:HE2	1:B:1998:HIS:HB3	1.91	0.51
1:A:1375:ASP:OD1	1:A:1375:ASP:N	2.43	0.51
1:A:2434:ILE:HD11	1:A:2472:VAL:HG11	1.93	0.51
1:A:1870:LEU:HD21	1:A:1875:LEU:HD22	1.93	0.51
1:A:2356:THR:HG21	1:A:2416:THR:HA	1.92	0.51
1:B:2057:TYR:HD1	1:B:2122:ARG:HH12	1.58	0.51
1:B:1195:LEU:HD12	1:B:1198:LEU:HD13	1.93	0.50
1:B:1870:LEU:HD21	1:B:1875:LEU:HD22	1.93	0.50
1:B:2134:SER:OG	1:B:2136:GLU:OE1	2.25	0.50
1:B:1827:LEU:HD23	1:B:1832:LYS:HZ3	1.77	0.50
1:A:1095:LEU:HB2	1:A:1117:ASN:HD22	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1827:LEU:HD23	1:A:1832:LYS:HZ3	1.77	0.49
1:A:1906:LYS:HE3	1:A:1908:PHE:CE1	2.46	0.49
1:A:2456:ARG:NH1	1:A:2475:TYR:OH	2.46	0.49
1:B:1337:LEU:HD23	1:B:1392:VAL:HG12	1.94	0.49
1:B:1351:LEU:HD11	1:B:1392:VAL:HG11	1.95	0.49
1:A:1270:LEU:HD12	1:A:1291:LEU:HD13	1.95	0.49
1:B:1056:LYS:HE3	1:B:1080:VAL:HG22	1.95	0.49
1:B:1368:THR:OG1	2:B:2601:GDP:O1B	2.28	0.49
1:B:2355:ILE:HG22	1:B:2356:THR:HG23	1.95	0.48
1:A:2057:TYR:HD1	1:A:2122:ARG:HH12	1.61	0.48
1:B:1906:LYS:HE3	1:B:1908:PHE:CE1	2.45	0.48
1:A:1548:ILE:HD12	1:A:1598:VAL:HG21	1.95	0.48
1:B:1270:LEU:HD12	1:B:1291:LEU:HD13	1.94	0.48
1:B:1441:ARG:NH1	1:B:1791:TRP:O	2.38	0.48
1:B:2356:THR:HG21	1:B:2416:THR:HA	1.96	0.48
1:A:1036:SER:O	1:A:1036:SER:OG	2.30	0.48
1:A:1693:ARG:NH2	1:A:1858:ASP:OD1	2.47	0.48
1:B:1133:ILE:HG12	1:B:1157:SER:HB3	1.95	0.48
1:A:1695:TYR:HB2	1:A:1763:LEU:HB3	1.96	0.48
1:A:2355:ILE:HG22	1:A:2356:THR:HG23	1.95	0.48
1:B:1884:LEU:O	1:B:1895:ARG:N	2.47	0.47
1:A:2019:GLY:HA2	3:A:2602:919:H13	1.96	0.47
1:B:1023:LEU:HB2	1:B:1045:ASN:HD22	1.79	0.47
1:B:2177:GLY:N	1:B:2195:ALA:O	2.47	0.47
1:A:1056:LYS:HE3	1:A:1080:VAL:HG22	1.96	0.47
1:A:2170:GLY:HA3	1:A:2199:ILE:HD11	1.97	0.46
1:B:1548:ILE:HD12	1:B:1598:VAL:HG21	1.96	0.46
1:A:1339:ILE:HG22	1:A:1347:LYS:HG2	1.97	0.46
1:A:1375:ASP:HA	1:A:1391:ASN:HA	1.97	0.46
1:A:1351:LEU:HD11	1:A:1392:VAL:HG11	1.97	0.46
1:A:2423:THR:HB	1:A:2439:LEU:HB2	1.97	0.46
1:B:1067:ARG:HG2	1:B:1883:PHE:HE1	1.80	0.46
1:B:2276:GLU:HG3	1:B:2279:THR:H	1.81	0.46
1:B:2456:ARG:NH1	1:B:2475:TYR:OH	2.49	0.46
1:B:2143:ARG:NH2	1:B:2451:PHE:O	2.49	0.46
1:A:795:ALA:HB2	1:A:808:PHE:HE2	1.81	0.46
1:A:1276:SER:O	1:A:1278:ASN:ND2	2.49	0.46
1:B:1339:ILE:HG22	1:B:1347:LYS:HG2	1.97	0.46
1:B:1375:ASP:HA	1:B:1391:ASN:HA	1.97	0.46
1:B:2019:GLY:HA2	3:B:2602:919:H13	1.97	0.46
1:A:1467:SER:HB2	1:A:1487:PHE:HZ	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1956:ASP:HB2	1:B:1998:HIS:HA	1.98	0.46
1:B:2170:GLY:HA3	1:B:2199:ILE:HD11	1.97	0.46
1:A:1161:ARG:HH21	1:A:1179:LYS:HB3	1.81	0.45
1:A:2177:GLY:N	1:A:2195:ALA:O	2.50	0.45
1:B:1489:ASN:OD1	1:B:1490:ALA:N	2.49	0.45
1:B:1920:GLU:HA	3:B:2602:919:H3	1.99	0.45
1:A:2104:TRP:CH2	1:A:2107:VAL:HG21	2.51	0.45
1:B:1747:TYR:CE2	1:B:1768:PRO:HG3	2.52	0.45
1:A:1489:ASN:OD1	1:A:1490:ALA:N	2.48	0.45
1:A:1730:ASN:H	1:A:1730:ASN:HD22	1.64	0.45
1:A:1980:ASP:OD2	1:A:2514:ARG:NH1	2.44	0.45
1:B:1433:PRO:O	1:B:1437:ASN:ND2	2.49	0.45
1:B:1933:ILE:HG13	1:B:2016:ALA:HB2	1.98	0.45
1:A:2152:VAL:HG21	1:A:2169:LEU:HB2	1.99	0.45
1:B:1161:ARG:HH21	1:B:1179:LYS:HB3	1.82	0.45
1:B:1276:SER:O	1:B:1278:ASN:ND2	2.49	0.45
1:B:1242:TYR:O	1:B:1245:SER:OG	2.30	0.45
1:B:1703:GLY:O	1:B:1707:ARG:HD2	2.16	0.45
1:A:1133:ILE:HG12	1:A:1157:SER:HB3	1.99	0.45
1:B:795:ALA:HB2	1:B:808:PHE:HE2	1.82	0.45
1:A:1218:LYS:HE2	1:A:1218:LYS:HB3	1.78	0.45
1:B:2104:TRP:CH2	1:B:2107:VAL:HG21	2.52	0.45
1:B:1868:ILE:HD12	1:B:1868:ILE:HA	1.81	0.44
1:A:1287:GLU:O	1:A:1290:LYS:NZ	2.48	0.44
1:A:1433:PRO:O	1:A:1437:ASN:ND2	2.50	0.44
1:A:2276:GLU:HG3	1:A:2279:THR:H	1.82	0.44
1:B:2423:THR:HB	1:B:2439:LEU:HB2	2.00	0.44
1:A:1368:THR:OG1	2:A:2601:GDP:O1B	2.32	0.44
1:A:1956:ASP:HB2	1:A:1998:HIS:HA	1.99	0.44
1:B:1695:TYR:HB2	1:B:1763:LEU:HB3	1.98	0.44
1:B:1771:ARG:NH1	1:B:1862:ALA:O	2.51	0.44
1:A:1933:ILE:HG13	1:A:2016:ALA:HB2	1.99	0.44
1:A:1672:SER:H	1:A:1735:ARG:HH12	1.65	0.44
1:A:2182:LEU:HD13	1:A:2189:TYR:HB3	2.00	0.44
1:A:2178:GLN:HA	1:A:2193:GLU:HA	2.00	0.43
1:A:1034:LEU:HB3	1:A:1037:LEU:HG	2.00	0.43
1:B:696:CYS:HB3	1:B:843:VAL:HG12	2.01	0.43
1:B:730:LEU:HD21	1:B:2441:THR:HG22	1.99	0.43
1:A:730:LEU:HD21	1:A:2441:THR:HG22	1.99	0.43
1:A:1747:TYR:CE2	1:A:1768:PRO:HG3	2.53	0.43
1:A:1885:LEU:HD12	1:A:1886:GLY:H	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1467:SER:HB2	1:B:1487:PHE:HZ	1.82	0.43
1:A:696:CYS:HB3	1:A:843:VAL:HG12	2.00	0.43
1:A:1771:ARG:NH1	1:A:1862:ALA:O	2.52	0.43
1:B:1183:ASN:N	1:B:1183:ASN:OD1	2.52	0.43
1:B:1673:LEU:HD23	1:B:1673:LEU:HA	1.86	0.43
1:A:989:LEU:HB2	1:A:1018:LEU:HD23	2.01	0.43
1:B:1672:SER:H	1:B:1735:ARG:HH12	1.66	0.43
1:A:1074:VAL:HG23	1:A:1095:LEU:HD21	2.01	0.43
1:A:1703:GLY:O	1:A:1707:ARG:HD2	2.18	0.43
1:A:1868:ILE:HD12	1:A:1868:ILE:HA	1.81	0.43
1:A:1013:LEU:HD12	1:A:1013:LEU:HA	1.89	0.43
1:A:1195:LEU:HD12	1:A:1198:LEU:HD13	2.00	0.43
1:A:1325:ARG:HG3	1:A:1524:PRO:HG3	2.00	0.43
1:B:2152:VAL:HG21	1:B:2169:LEU:HB2	2.00	0.43
1:B:2182:LEU:HD13	1:B:2189:TYR:HB3	2.00	0.43
1:B:1423:LYS:H	1:B:1423:LYS:HG2	1.67	0.42
1:A:1180:LEU:O	1:A:1203:MET:HA	2.19	0.42
1:B:1036:SER:OG	1:B:1036:SER:O	2.29	0.42
1:A:567:ILE:O	1:A:571:VAL:HG13	2.19	0.42
1:A:2202:LEU:HG	1:A:2217:SER:HB2	2.02	0.42
1:B:1218:LYS:HE2	1:B:1218:LYS:HB3	1.79	0.42
1:B:567:ILE:O	1:B:571:VAL:HG13	2.18	0.42
1:B:2154:CYS:HB3	1:B:2202:LEU:HD13	2.02	0.42
1:A:1877:PHE:HE1	1:A:1894:TYR:HB2	1.84	0.42
1:B:1980:ASP:OD2	1:B:2514:ARG:NH1	2.41	0.42
1:B:2152:VAL:HG12	1:B:2171:CYS:HB3	2.02	0.42
1:A:1920:GLU:HA	3:A:2602:919:H3	2.02	0.42
1:A:2276:GLU:HG3	1:A:2278:LYS:H	1.85	0.42
1:B:758:VAL:HG11	1:B:786:ILE:HD12	2.02	0.42
1:B:2218:GLY:HA2	1:B:2224:LEU:HG	2.01	0.42
1:B:2276:GLU:HG3	1:B:2278:LYS:H	1.84	0.42
1:A:2152:VAL:HG12	1:A:2171:CYS:HB3	2.01	0.42
1:B:1109:LEU:HB3	1:B:1128:LEU:HD13	2.02	0.42
1:B:1684:HIS:NE2	1:B:1744:PRO:O	2.53	0.42
1:B:2202:LEU:HG	1:B:2217:SER:HB2	2.02	0.42
1:A:1183:ASN:OD1	1:A:1183:ASN:N	2.52	0.42
1:A:1474:LEU:HD23	1:A:1474:LEU:HA	1.84	0.42
1:B:2444:LEU:HD21	1:B:2447:VAL:HG23	2.01	0.42
1:B:2476:ASN:N	1:B:2490:GLN:O	2.52	0.42
1:A:1924:LEU:HD21	1:A:1947:MET:HE1	2.02	0.41
1:A:2444:LEU:HD21	1:A:2447:VAL:HG23	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1888:GLY:HA3	1:A:1890:PHE:CZ	2.55	0.41
1:A:2154:CYS:HB3	1:A:2202:LEU:HD13	2.02	0.41
1:B:1474:LEU:HD23	1:B:1474:LEU:HA	1.82	0.41
1:B:2178:GLN:HA	1:B:2193:GLU:HA	2.02	0.41
1:B:1924:LEU:HD21	1:B:1947:MET:HE1	2.02	0.41
1:A:1060:ILE:O	1:A:1084:THR:OG1	2.36	0.41
1:A:1067:ARG:HG2	1:A:1883:PHE:HE1	1.86	0.41
1:A:1423:LYS:H	1:A:1423:LYS:HG2	1.68	0.41
1:A:2218:GLY:HA2	1:A:2224:LEU:HG	2.02	0.41
1:A:2413:ARG:O	1:A:2430:GLY:N	2.42	0.41
1:A:2371:PRO:HB2	1:A:2390:VAL:HG23	2.03	0.41
1:B:1711:ARG:HE	1:B:1711:ARG:HB2	1.55	0.41
1:B:1257:LEU:HD23	1:B:1257:LEU:HA	1.87	0.41
1:A:1731:ARG:HD2	1:A:1733:TYR:OH	2.21	0.41
1:B:1015:LYS:HB2	1:B:1015:LYS:HE3	1.74	0.41
1:B:1693:ARG:NH2	1:B:1858:ASP:OD1	2.53	0.41
1:A:758:VAL:HG11	1:A:786:ILE:HD12	2.03	0.41
1:A:1248:GLU:O	1:A:1271:THR:OG1	2.37	0.41
1:A:1814:TYR:HE2	1:A:1827:LEU:HB2	1.84	0.41
1:A:2438:ASP:OD1	1:A:2438:ASP:N	2.54	0.41
1:B:1814:TYR:HE2	1:B:1827:LEU:HB2	1.85	0.41
1:B:2371:PRO:HB2	1:B:2390:VAL:HG23	2.03	0.41
1:A:1852:ILE:HB	1:A:1860:ILE:HD12	2.03	0.41
1:B:2151:ILE:HD12	1:B:2151:ILE:H	1.86	0.41
1:B:2214:TRP:CZ3	1:B:2228:ASN:HB2	2.56	0.41
1:A:1860:ILE:O	1:A:1862:ALA:N	2.53	0.40
1:B:1034:LEU:HB3	1:B:1037:LEU:HG	2.02	0.40
1:B:1119:ILE:HB	1:B:1139:ASN:HD22	1.86	0.40
1:A:1045:ASN:HD22	1:A:1045:ASN:N	2.19	0.40
1:A:1337:LEU:HD23	1:A:1392:VAL:HG12	2.03	0.40
1:A:2233:LYS:NZ	1:A:2235:ARG:HH21	2.20	0.40
1:B:2233:LYS:NZ	1:B:2235:ARG:HH21	2.20	0.40
1:B:2363:LEU:HB2	1:B:2376:TRP:HB2	2.03	0.40
1:B:1959:LEU:HD13	1:B:2070:GLY:HA3	2.02	0.40
1:B:2143:ARG:NE	1:B:2492:CYS:SG	2.95	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1682/2527 (67%)	1558 (93%)	124 (7%)	0	100	100
1	B	1682/2527 (67%)	1559 (93%)	123 (7%)	0	100	100
All	All	3364/5054 (67%)	3117 (93%)	247 (7%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	1202/2281 (53%)	1186 (99%)	16 (1%)	69	83
1	B	1202/2281 (53%)	1184 (98%)	18 (2%)	65	81
All	All	2404/4562 (53%)	2370 (99%)	34 (1%)	68	82

All (34) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	793	ARG
1	A	1045	ASN
1	A	1066	SER
1	A	1088	PHE
1	A	1251	HIS
1	A	1269	ASN
1	A	1288	MET
1	A	1310	HIS

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Mol	Chain	Res	Type
1	A	1485	TYR
1	A	1707	ARG
1	A	1770	CYS
1	A	1853	SER
1	A	1889	SER
1	A	1915	ARG
1	A	2020	ILE
1	A	2446	ARG
1	B	562	CYS
1	B	793	ARG
1	B	1066	SER
1	B	1088	PHE
1	B	1251	HIS
1	B	1269	ASN
1	B	1288	MET
1	B	1310	HIS
1	B	1485	TYR
1	B	1707	ARG
1	B	1770	CYS
1	B	1853	SER
1	B	1890	PHE
1	B	1892	SER
1	B	1893	VAL
1	B	1915	ARG
1	B	2020	ILE
1	B	2446	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1730	ASN
1	A	2420	GLN

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](#)

4 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
3	919	A	2602	-	42,45,45	2.17	8 (19%)	54,65,65	2.05	16 (29%)
2	GDP	A	2601	-	24,30,30	0.95	1 (4%)	30,47,47	1.32	4 (13%)
3	919	B	2602	-	42,45,45	2.16	9 (21%)	54,65,65	2.04	15 (27%)
2	GDP	B	2601	-	24,30,30	0.95	1 (4%)	30,47,47	1.33	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
3	919	A	2602	-	-	0/22/28/28	0/5/5/5
2	GDP	A	2601	-	-	2/12/32/32	0/3/3/3
3	919	B	2602	-	-	0/22/28/28	0/5/5/5
2	GDP	B	2601	-	-	2/12/32/32	0/3/3/3

All (19) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	2602	919	C70-N74	9.27	1.45	1.33
3	B	2602	919	C70-N74	9.21	1.45	1.33
3	B	2602	919	C58-N56	4.77	1.47	1.37
3	A	2602	919	C58-N56	4.69	1.47	1.37
3	A	2602	919	C58-N60	4.69	1.47	1.37
3	B	2602	919	C58-N60	4.59	1.47	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	2602	919	C48-N56	3.90	1.47	1.39
3	B	2602	919	C48-N56	3.88	1.47	1.39
3	A	2602	919	C5-C4	-3.51	1.36	1.42
3	B	2602	919	C5-C4	-3.49	1.36	1.42
3	A	2602	919	C39-N60	2.92	1.47	1.41
3	B	2602	919	C39-N60	2.91	1.47	1.41
2	A	2601	GDP	C6-N1	-2.44	1.34	1.37
2	B	2601	GDP	C6-N1	-2.42	1.34	1.37
3	B	2602	919	O72-C70	-2.22	1.18	1.23
3	A	2602	919	C6-C5	2.20	1.43	1.39
3	A	2602	919	O72-C70	-2.19	1.18	1.23
3	B	2602	919	C6-C5	2.14	1.43	1.39
3	B	2602	919	O63-C58	-2.05	1.19	1.23

All (39) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	2602	919	C24-C70-N74	8.30	121.10	115.67
3	A	2602	919	C24-C70-N74	8.24	121.06	115.67
3	A	2602	919	C79-C46-N50	5.34	126.33	120.59
3	B	2602	919	C79-C46-N50	5.16	126.13	120.59
2	B	2601	GDP	PA-O3A-PB	-4.01	119.08	132.83
2	A	2601	GDP	PA-O3A-PB	-3.92	119.38	132.83
3	A	2602	919	C22-N23-C24	3.49	121.45	116.93
3	B	2602	919	C22-N23-C24	3.42	121.36	116.93
3	B	2602	919	C3-C2-C1	-3.35	120.02	122.20
3	A	2602	919	N60-C58-N56	3.21	118.09	112.49
3	B	2602	919	N60-C58-N56	3.20	118.08	112.49
3	A	2602	919	C3-C2-C1	-3.20	120.12	122.20
3	B	2602	919	C70-C24-N23	2.99	121.01	117.48
3	A	2602	919	C70-C24-N23	2.96	120.97	117.48
3	B	2602	919	C76-N74-C70	-2.74	118.78	121.89
2	A	2601	GDP	C3'-C2'-C1'	2.69	105.03	100.98
2	B	2601	GDP	C3'-C2'-C1'	2.66	104.98	100.98
3	A	2602	919	C27-C22-N23	-2.65	120.67	123.96
3	B	2602	919	C27-C22-N23	-2.63	120.69	123.96
3	A	2602	919	C37-C38-C39	-2.63	121.00	123.50
3	A	2602	919	C76-N74-C70	-2.62	118.92	121.89
3	B	2602	919	C14-C9-N10	-2.61	119.94	123.94
3	A	2602	919	C14-C9-N10	-2.60	119.95	123.94
3	A	2602	919	C47-C46-N50	-2.60	107.64	111.41
3	B	2602	919	C47-C46-N50	-2.54	107.73	111.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	2602	919	C37-C38-C39	-2.41	121.20	123.50
3	A	2602	919	C47-C46-C79	-2.34	126.02	129.07
3	B	2602	919	C27-C26-C25	-2.34	117.32	120.53
2	B	2601	GDP	C5-C6-N1	2.32	118.06	113.95
2	A	2601	GDP	C5-C6-N1	2.30	118.01	113.95
2	B	2601	GDP	C8-N7-C5	2.30	107.37	102.99
2	A	2601	GDP	C8-N7-C5	2.28	107.34	102.99
3	A	2602	919	C27-C26-C25	-2.28	117.40	120.53
3	B	2602	919	C47-C46-C79	-2.26	126.13	129.07
3	A	2602	919	O63-C58-N56	-2.08	120.10	123.62
3	B	2602	919	C9-N10-C4	2.06	120.12	116.93
3	A	2602	919	C9-N10-C4	2.06	120.12	116.93
3	B	2602	919	O72-C70-N74	-2.04	119.38	122.47
3	A	2602	919	O72-C70-N74	-2.03	119.40	122.47

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	2601	GDP	C3'-C4'-C5'-O5'
2	B	2601	GDP	C3'-C4'-C5'-O5'
2	A	2601	GDP	O4'-C4'-C5'-O5'
2	B	2601	GDP	O4'-C4'-C5'-O5'

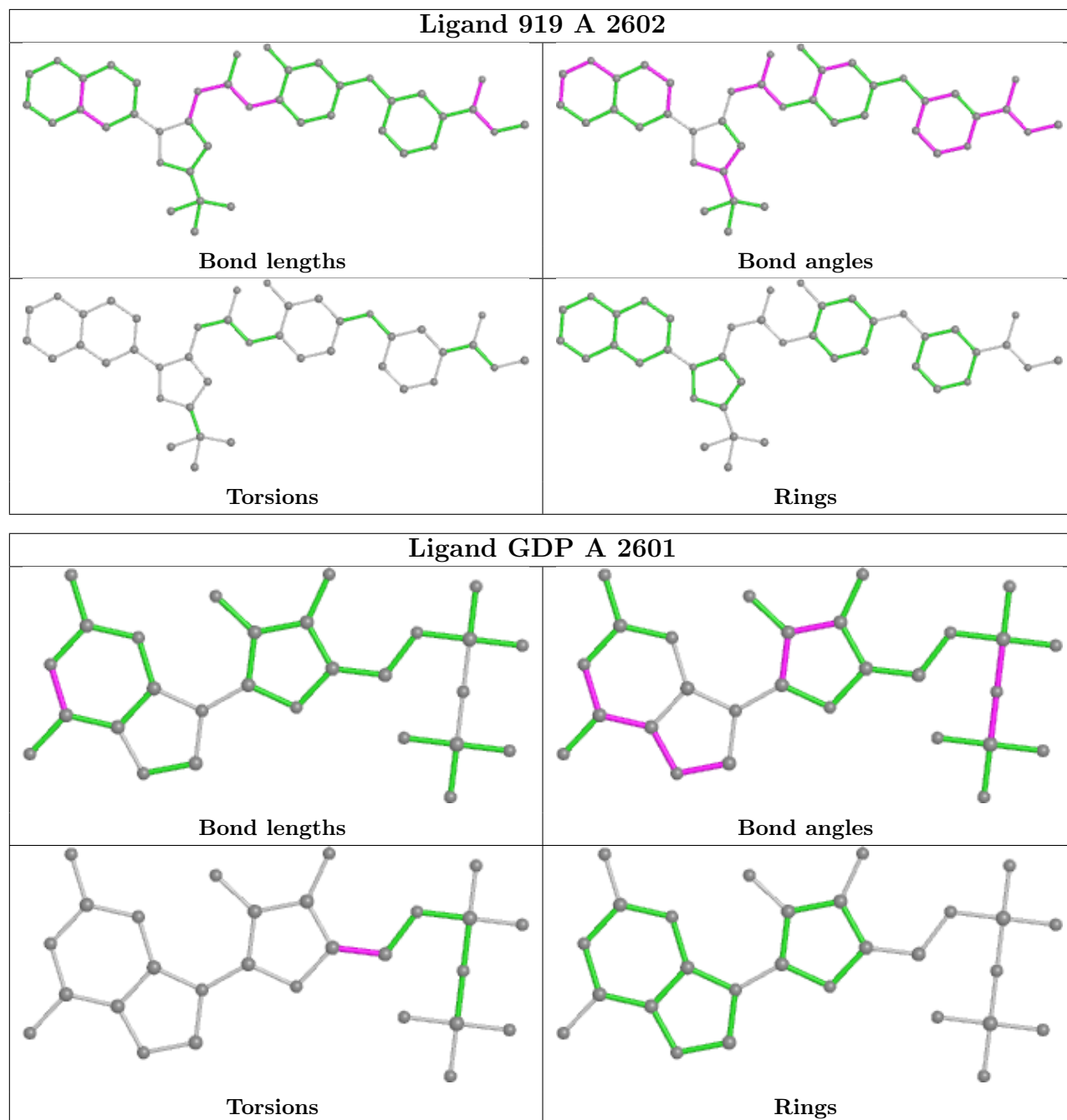
There are no ring outliers.

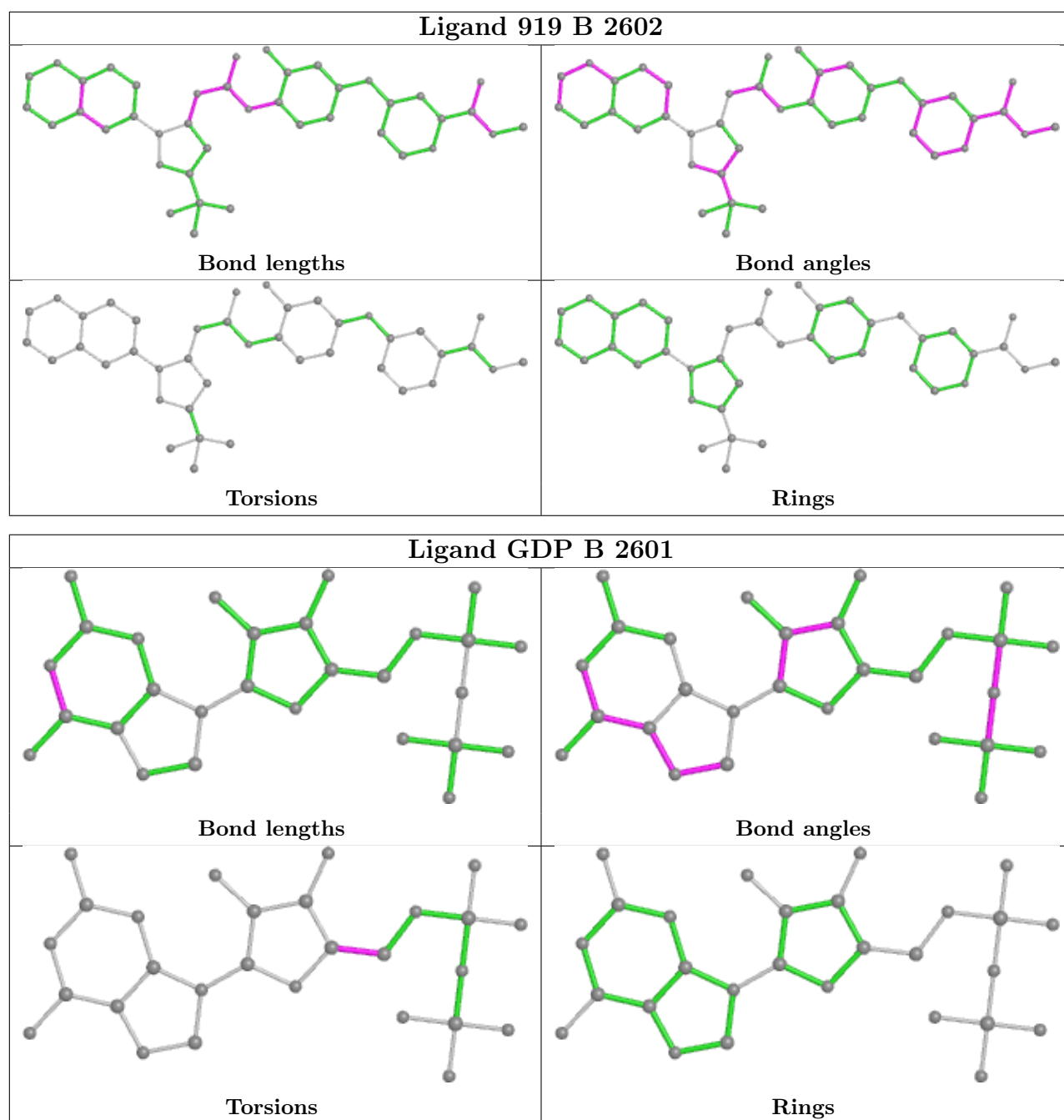
4 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	2602	919	3	0
2	A	2601	GDP	1	0
3	B	2602	919	3	0
2	B	2601	GDP	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.





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.

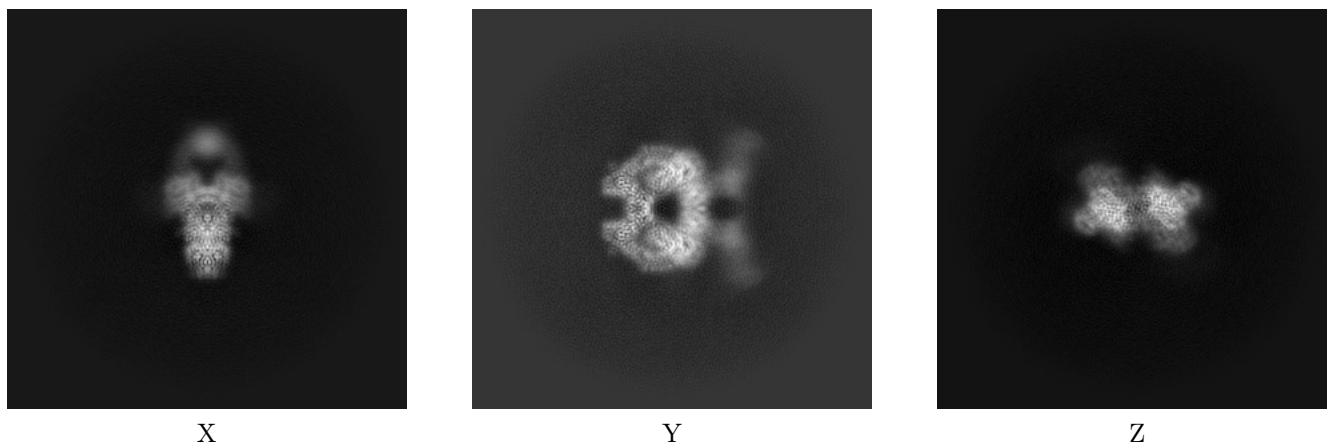
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-42020. These allow visual inspection of the internal detail of the map and identification of artifacts.

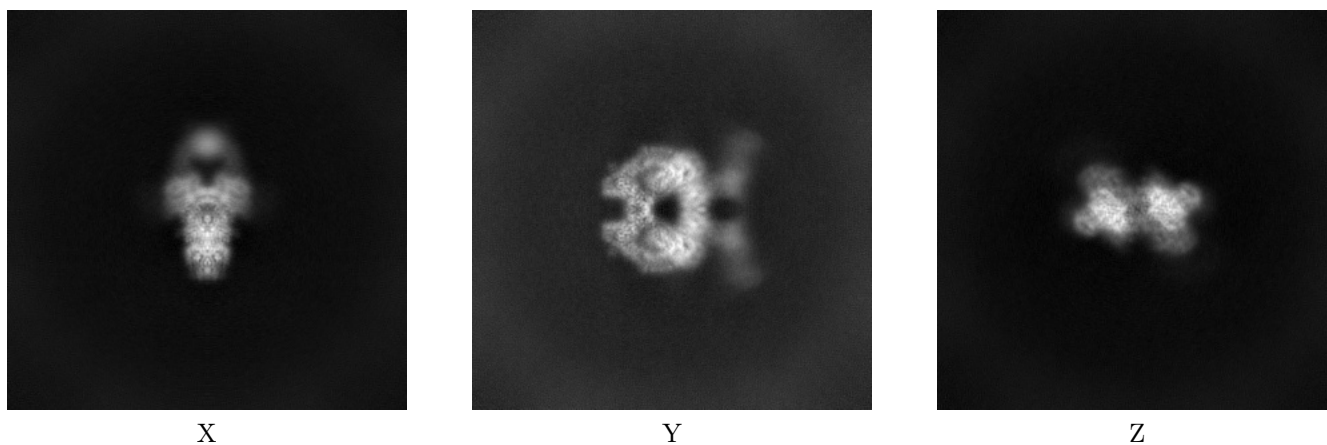
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

6.1.1 Primary map



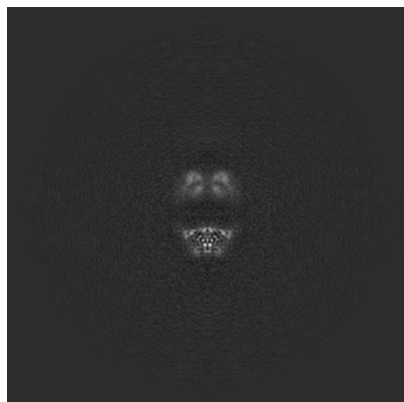
6.1.2 Raw map



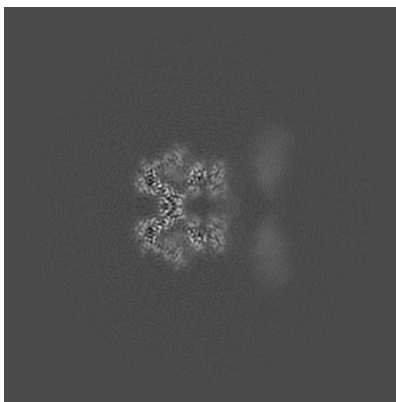
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

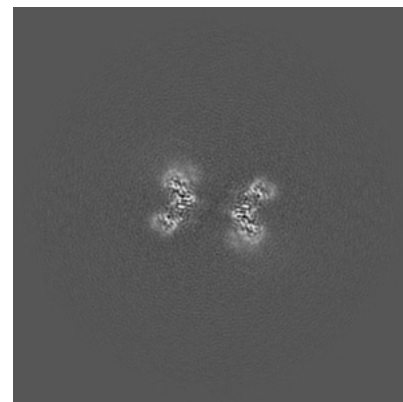
6.2.1 Primary map



X Index: 192

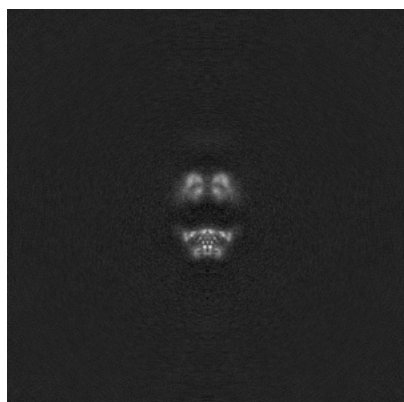


Y Index: 192

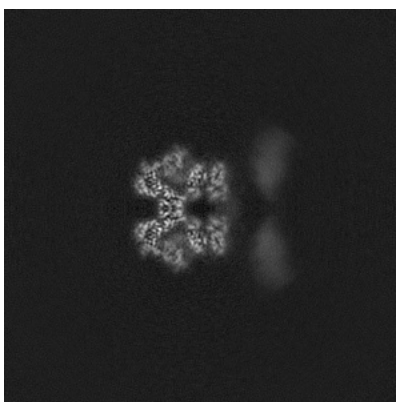


Z Index: 192

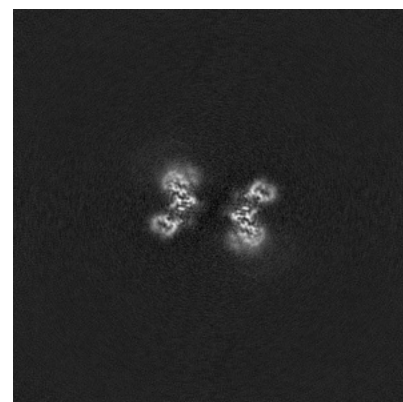
6.2.2 Raw map



X Index: 192



Y Index: 192



Z Index: 192

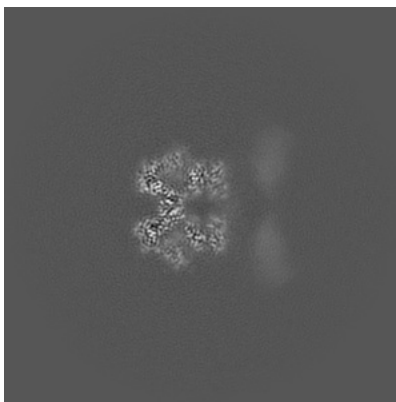
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

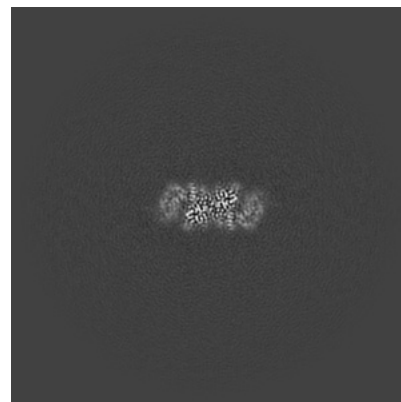
6.3.1 Primary map



X Index: 170

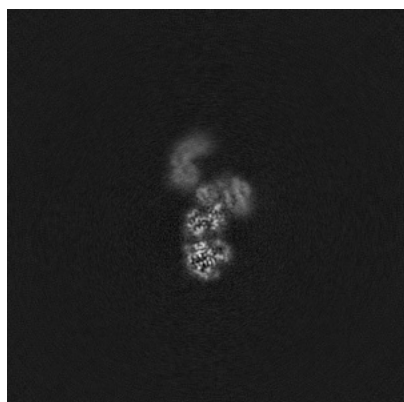


Y Index: 191

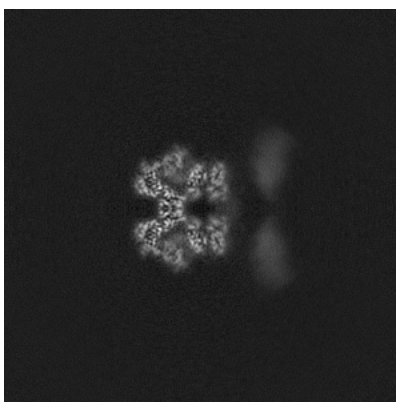


Z Index: 154

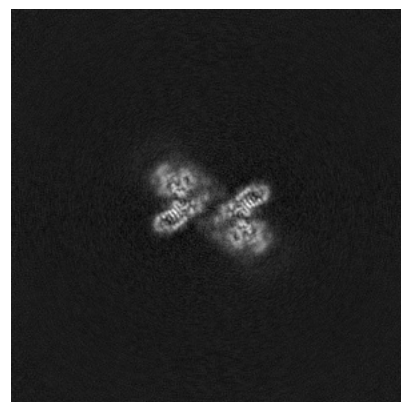
6.3.2 Raw map



X Index: 170



Y Index: 192

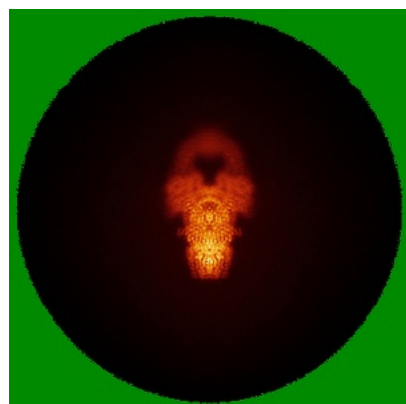


Z Index: 200

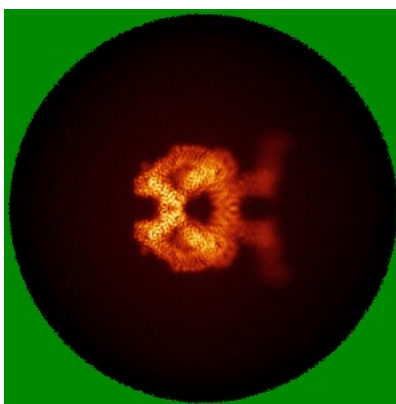
The images above show the largest variance slices of the map in three orthogonal directions.

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

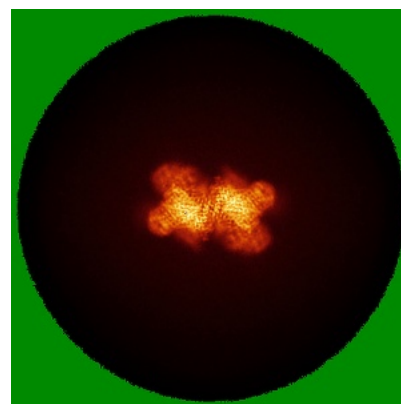
6.4.1 Primary map



X



Y

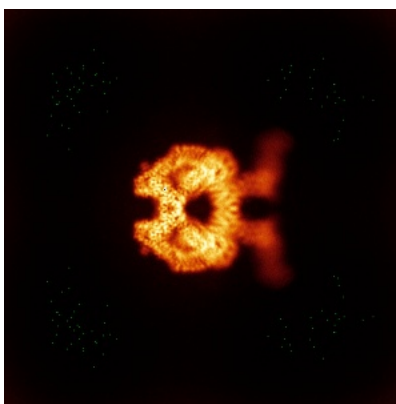


Z

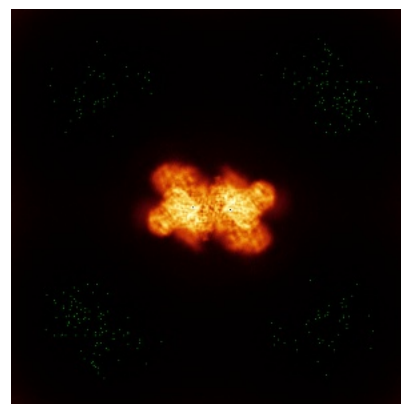
6.4.2 Raw map



X



Y

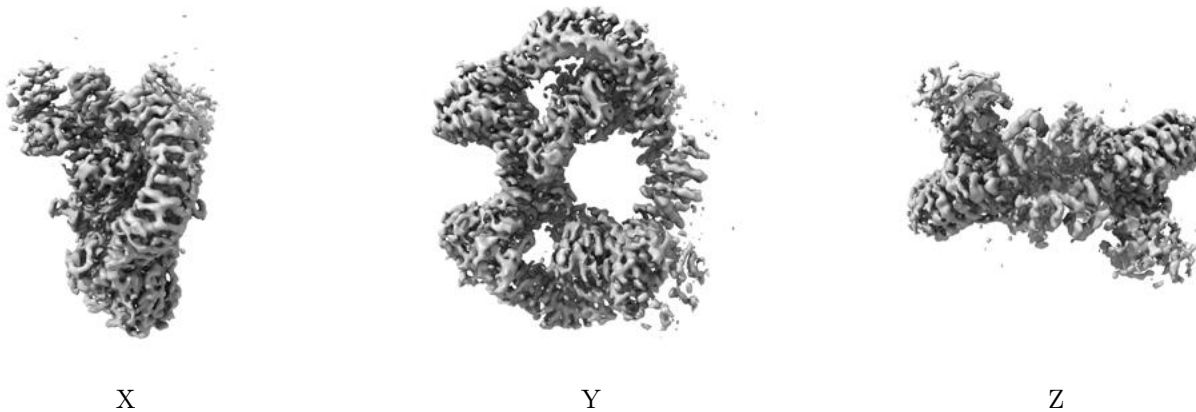


Z

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.

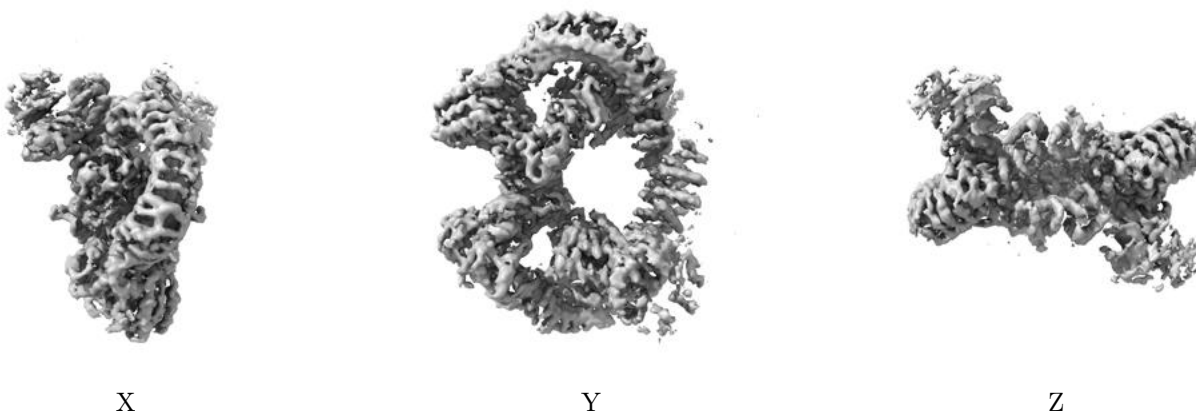
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.8. 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.

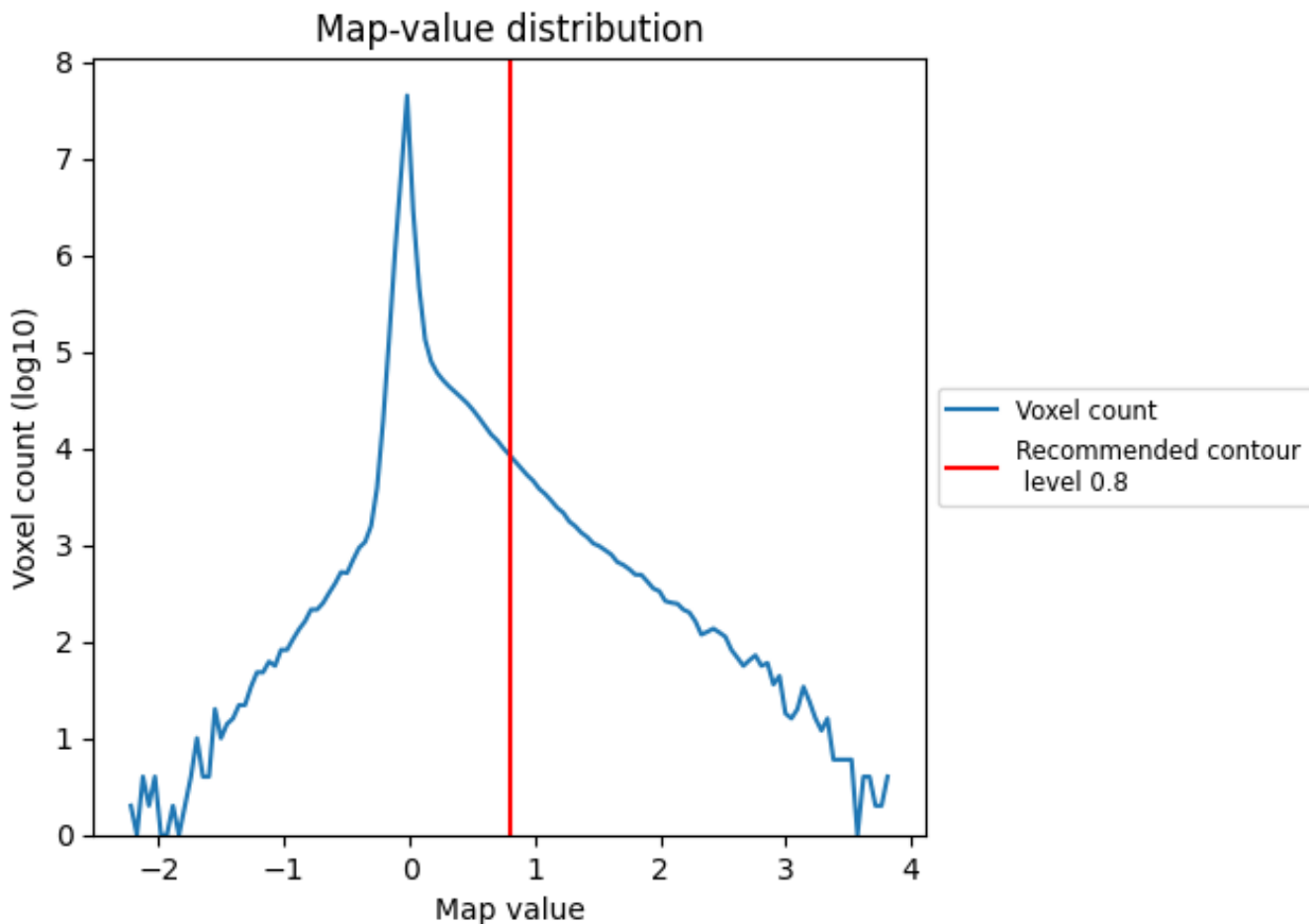
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

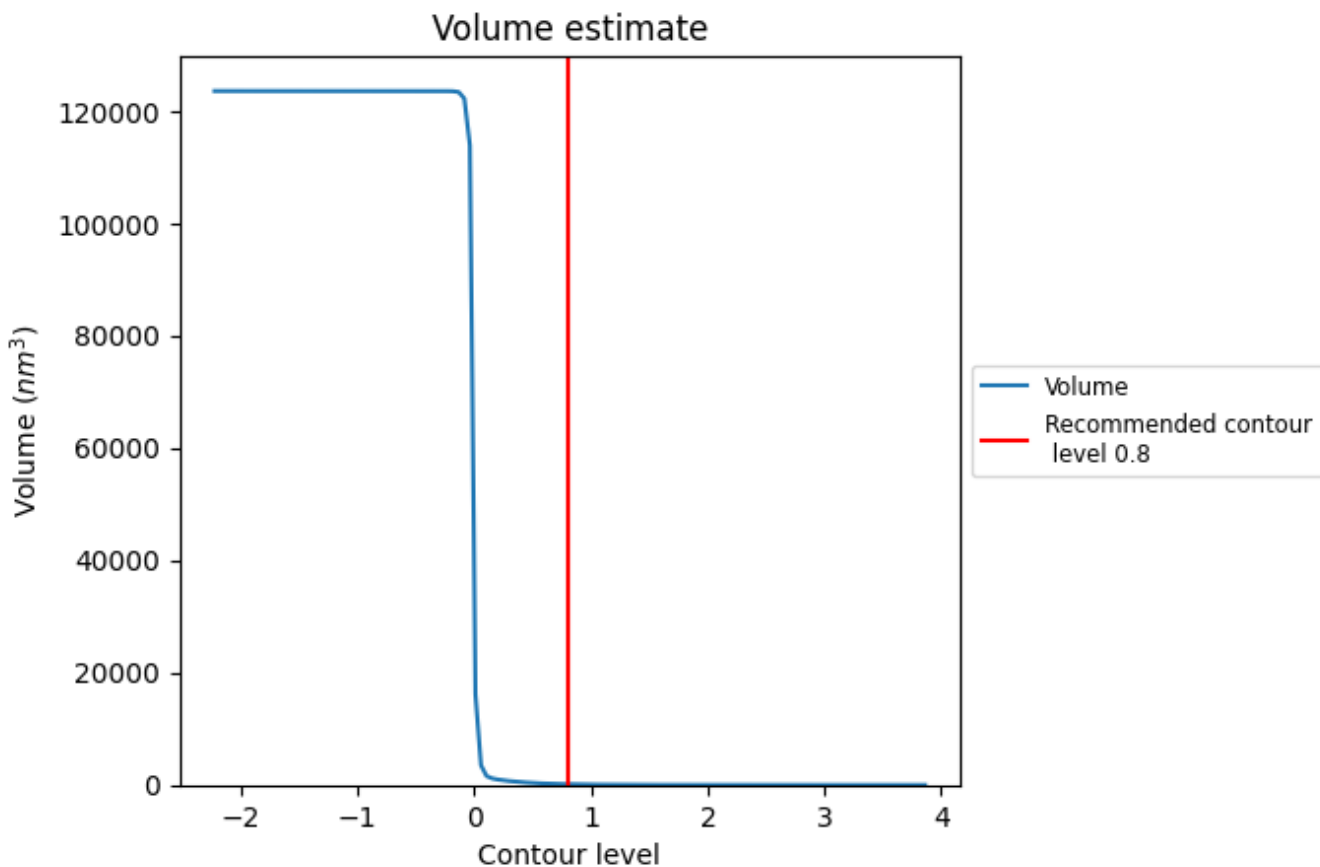
This section contains the results of statistical analysis of the map.

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.

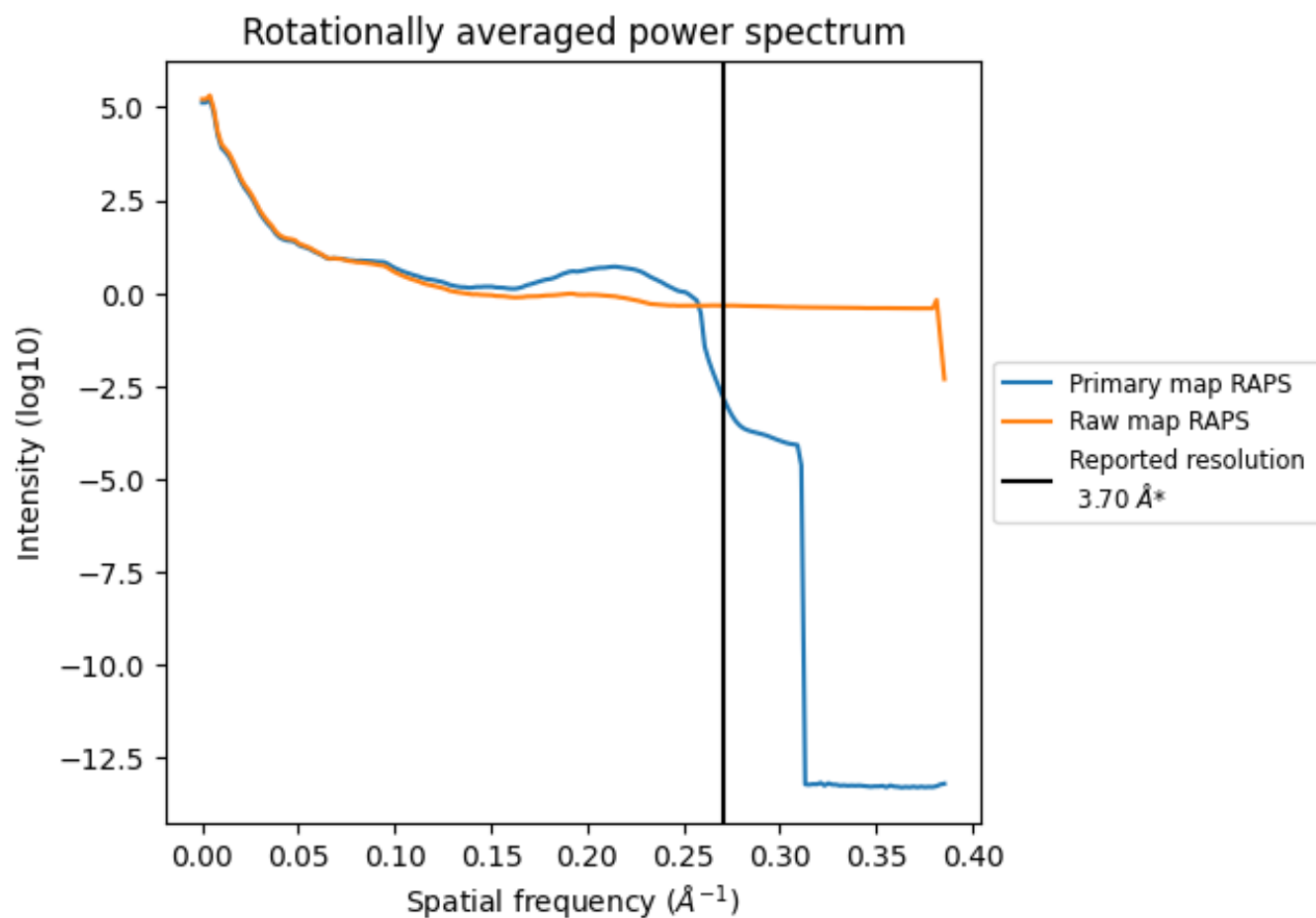
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 135 nm^3 ; this corresponds to an approximate mass of 122 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](#)

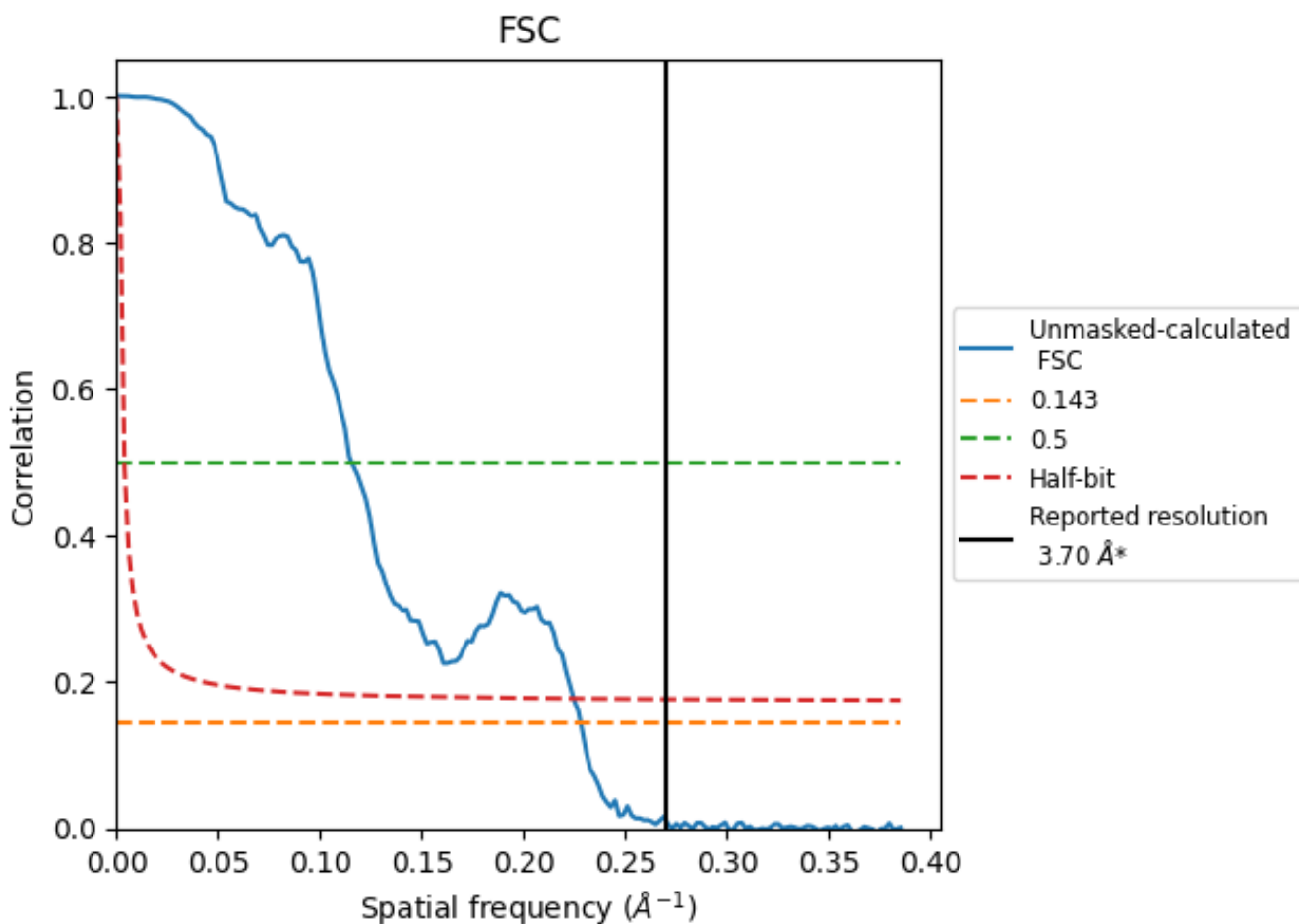


*Reported resolution corresponds to spatial frequency of 0.270 Å⁻¹

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 0.270 Å⁻¹

8.2 Resolution estimates [i](#)

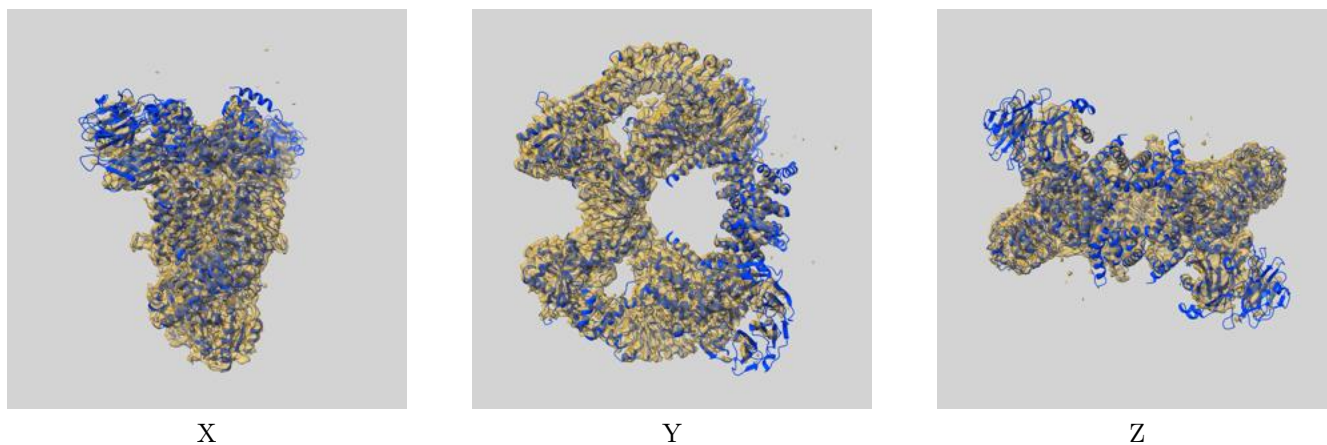
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.70	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.38	8.66	4.45

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.38 differs from the reported value 3.7 by more than 10 %

9 Map-model fit [i](#)

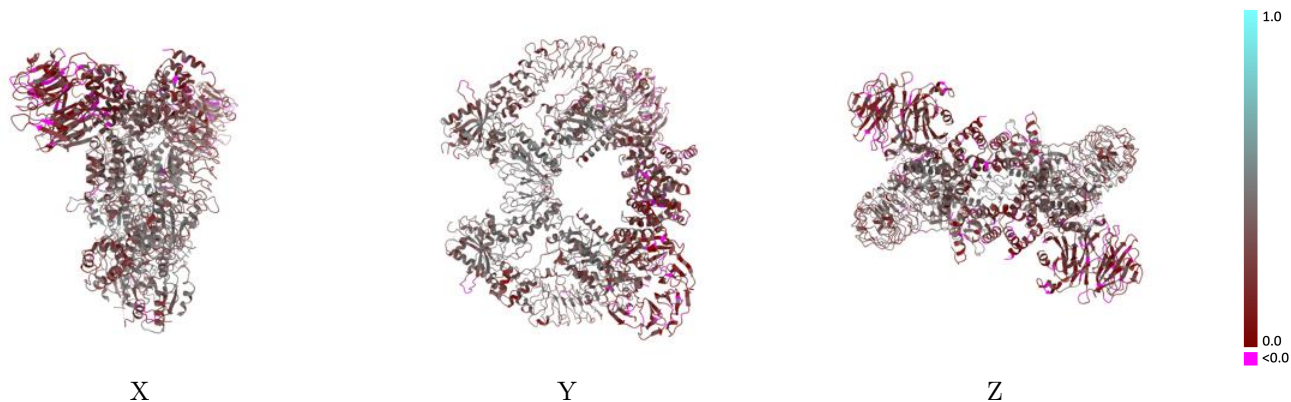
This section contains information regarding the fit between EMDB map EMD-42020 and PDB model 8U8B. Per-residue inclusion information can be found in section 3 on page 5.

9.1 Map-model overlay [i](#)



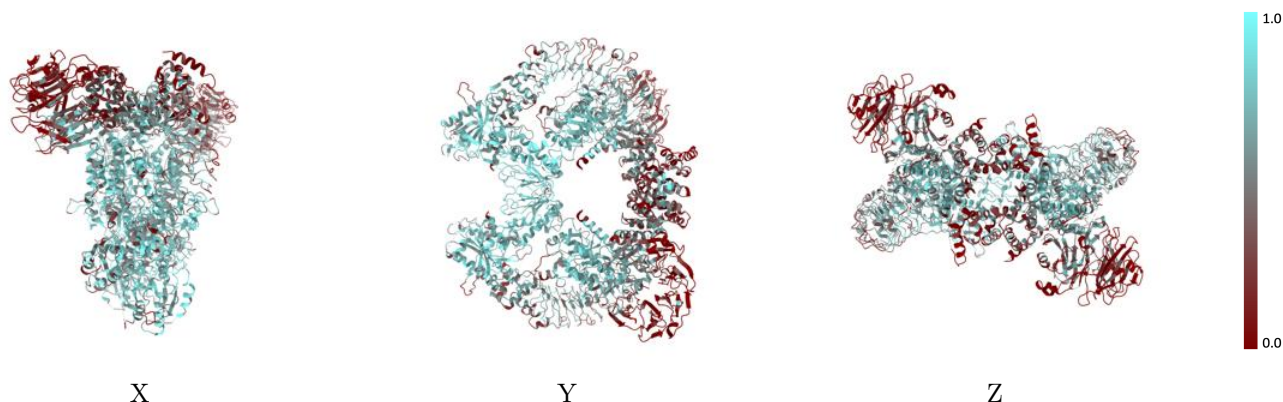
The images above show the 3D surface view of the map at the recommended contour level 0.8 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



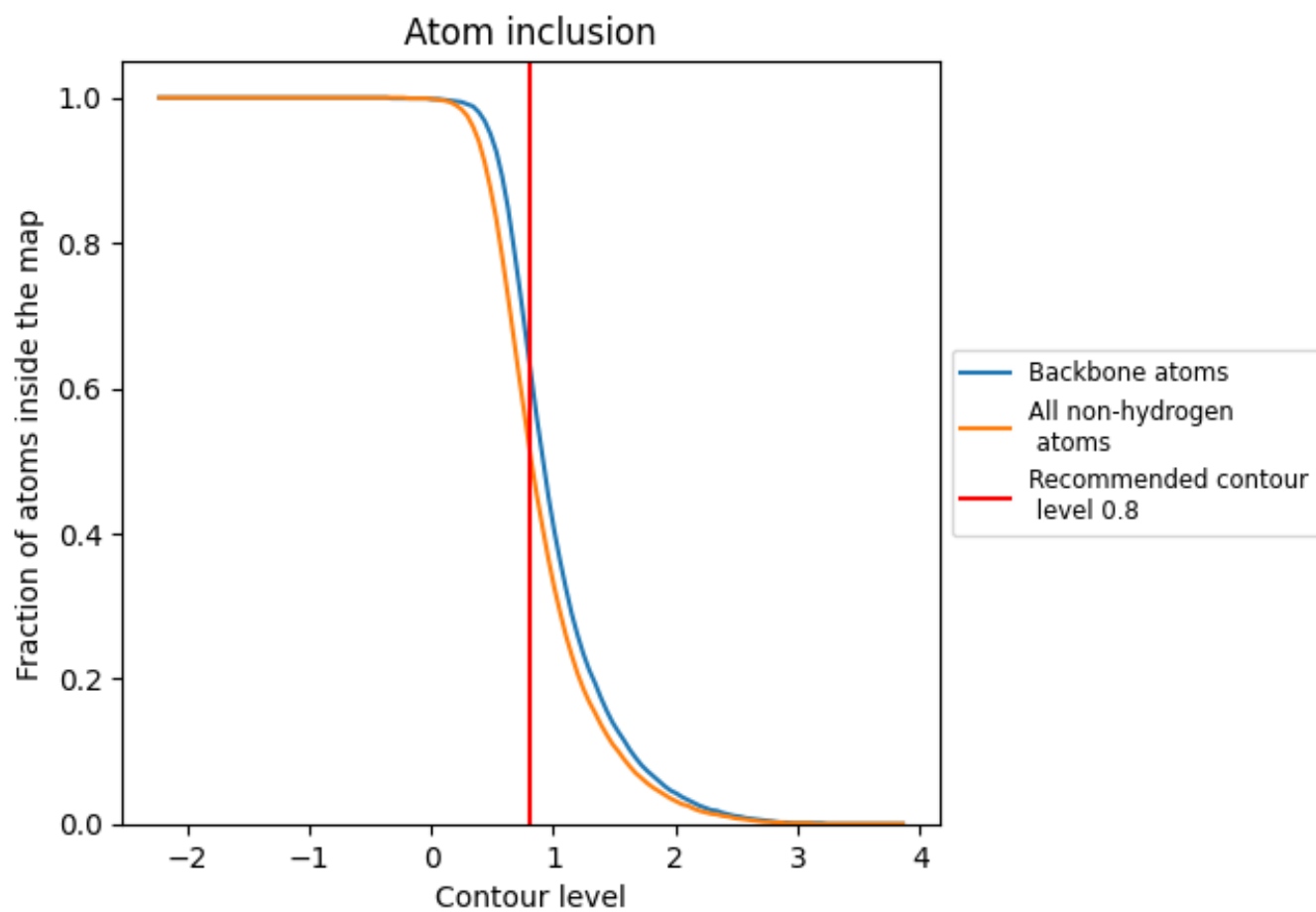
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.8).







9.4 Atom inclusion [i](#)



At the recommended contour level, 64% of all backbone atoms, 52% of all non-hydrogen atoms, are inside the map.

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

The table lists the average atom inclusion at the recommended contour level (0.8) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5230	 0.3120
A	 0.5210	 0.3060
B	 0.5250	 0.3170

