



Full wwPDB EM Validation Report ⓘ

Dec 4, 2023 – 02:24 PM JST

PDB ID : 8X2H
EMDB ID : EMD-38010
Title : Cryo-EM structure of the TcsL at pH 5.0 in its closed conformation
Authors : Zhan, X.; Tao, L.
Deposited on : 2023-11-09
Resolution : 2.90 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
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

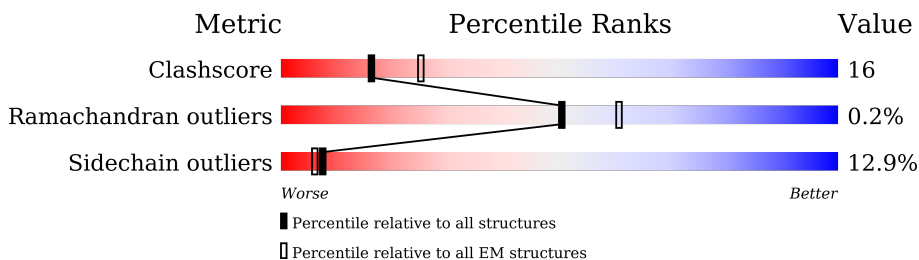
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.90 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	2372	

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 19088 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 Cytotoxin-L.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	2363	19087	12219	3035	3786	47	0	0

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	2365	HIS	-	expression tag	UNP T0D3N5
A	2366	HIS	-	expression tag	UNP T0D3N5
A	2367	HIS	-	expression tag	UNP T0D3N5
A	2368	HIS	-	expression tag	UNP T0D3N5
A	2369	HIS	-	expression tag	UNP T0D3N5
A	2370	HIS	-	expression tag	UNP T0D3N5
A	2371	HIS	-	expression tag	UNP T0D3N5
A	2372	HIS	-	expression tag	UNP T0D3N5

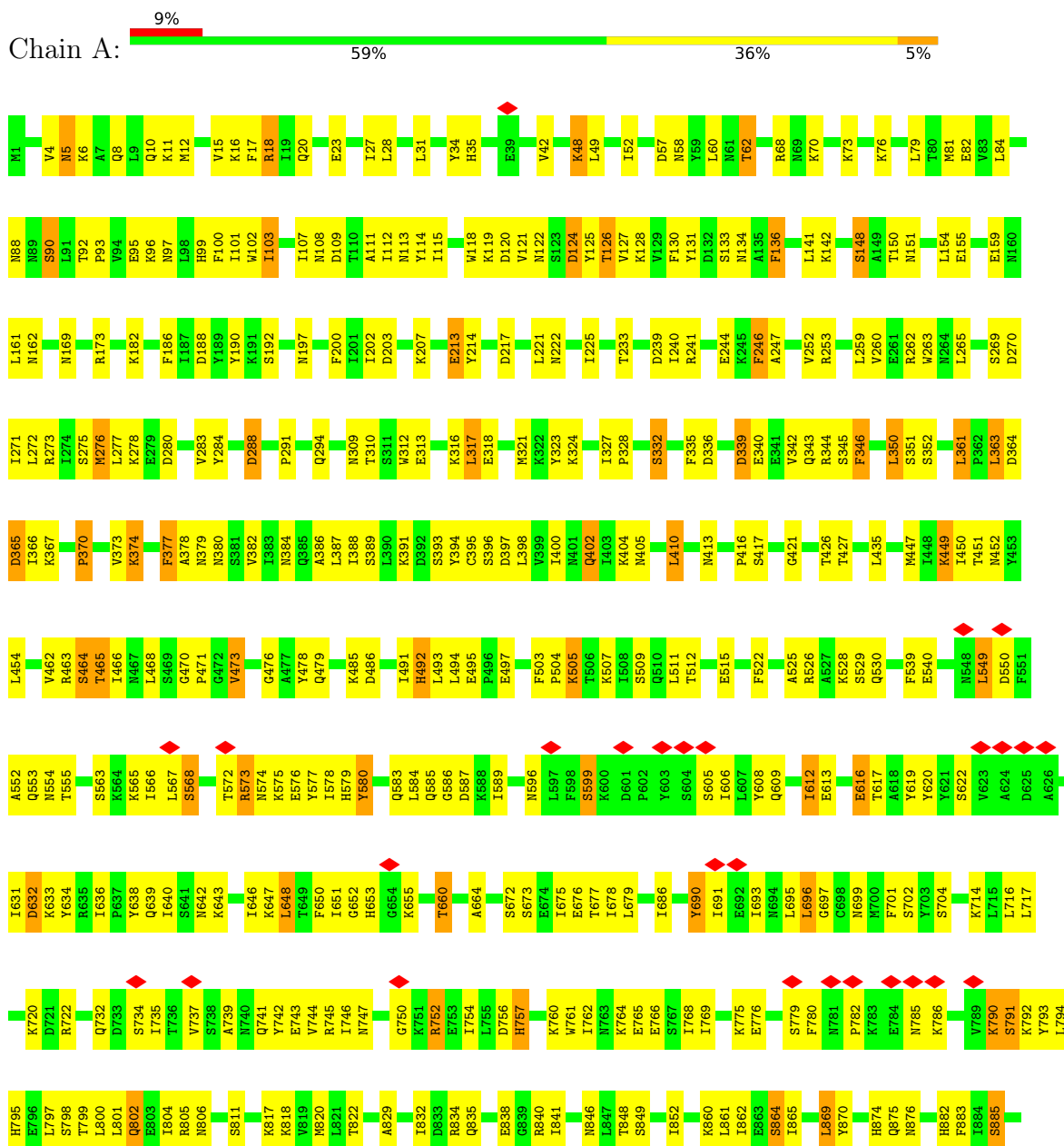
- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
2	A	1	Total	Zn	0
			1	1	

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: Cytotoxin-L



D2356	T2357	A2358	E2359	L2360	V2361	V2362	S2363	GUU	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	F2294	N2295	T2296	P2297	D2298	G2299	F2300	K2301	Y2302	F2303	A2304	H2305	Q2306	N2307	T2308	L2309	D2310	E2311	M2312	F2313	S2317	T2318	N2319	V2320	T2321	G2322	M2323	L2324	D2325	L2326	D2327	G2328	K2329	R2330	Y2331	Y2332	F2333	T2334	D2335	E2336	Y2337	T2338	A2339	M2340	T2341	G2342	S2343	L2344	T2345	T2346	D2347	G2348	Y2349	N2350	Y2351	Y2352	F2353	D2354	P2355	L2102	T2103	V2104	N2106	D2107	C2108	K2109	Y2110	Y2111	F2112	D2113	D2114	N2115	G2116	T2117	R2118	Q2119	L2120	G2121	T2124	I2125	N2126	D2127	N2128	I2129	F2130	Y2131	F2132	S2133	G2136	F2139	L2140	G2141	Y2142	Q2143	N2144	T2145	N2146	G2147	N2148	Y2151	T2152	D2153	E2154	S2155	G2156	L2157	V2158	L2159	T2160	G2161	V2162	F2163	T2165	P2166	D2167	G2168	Y2169	K2170	Y2171	F2172	A2173	T2177	V2178	N2179	D2180	N2181	I2182	Y2183	G2184	Q2185	A2186	V2187	K2188	Y2189	S2190	G2191	L2192	V2193	R2194	V2195	N2196	E2197	D2198	V2199	Y2200	Y2201	F2202	G2203	E2204	T2205	Y2206	K2207	I2208	E2209	G2210	G2211	W2212	N2215	E2216	T2217	D2218	K2219	Y2220	Y2221	F2222	D2223	P2224	E2225	T2226	K2227	K2228	A2229	Y2230	K2231	G2232	T2233	N2234	V2235	V2236	D2237	D2238	T2239	K2240	Y2241	Y2242	F2243	D2244	E2245	N2246	G2247	T2248	N2249	R2250	T2251	I2254	S2255	F2256	E2257	N2258	N2259	F2263	N2264	E2265	D2266	G2267	K2268	M2269	Q2270	F2271	G2272	Y2273	L2274	N2275	I2276	K2277	M2280	F2281	Y2282	F2283	G2284	K2285	D2286	G2287	K2288	T2291	Y2291	Y2292	F2293	A2229	Y2230	K2231	G2232	T2233	N2234	V2235	V2236	D2237	D2238	T2239	K2240	Y2241	Y2242	F2243	D2244	E2245	N2246	G2247	T2248	N2249	R2250	T2251	I2254	S2255	F2256	E2257	N2258	N2259	F2263	N2264	E2265	D2266	G2267	K2268	M2269	Q2270	F2271	G2272	Y2273	L2274	N2275	I2276	K2277	M2280	F2281	Y2282	F2283	G2284	K2285	D2286	G2287	K2288	T2291	Y2291	Y2292	F2293	L2102	T2103	V2104	N2106	D2107	C2108	K2109	Y2110	Y2111	F2112	D2113	D2114	N2115	G2116	T2117	R2118	Q2119	L2120	G2121	T2124	I2125	N2126	D2127	N2128	I2129	F2130	Y2131	F2132	S2133	G2136	F2139	L2140	G2141	Y2142	Q2143	N2144	T2145	N2146	G2147	N2148	Y2151	T2152	D2153	E2154	S2155	G2156	L2157	V2158	L2159	T2160	G2161	V2162	F2163	T2165	P2166	D2167	G2168	Y2169	K2170	Y2171	F2172	A2173	T2177	V2178	N2179	D2180	N2181	I2182	Y2183	G2184	Q2185	A2186	V2187	K2188	Y2189	S2190	G2191	L2192	V2193	R2194	V2195	N2196	E2197	D2198	V2199	Y2200	Y2201	F2202	G2203	E2204	T2205	Y2206	K2207	I2208	E2209	G2210	G2211	W2212	N2215	E2216	T2217	D2218	K2219	Y2220	Y2221	F2222	D2223	P2224	E2225	T2226	K2227	K2228
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4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	410049	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	4.347	Depositor
Minimum map value	-2.594	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.052	Depositor
Recommended contour level	0.22	Depositor
Map size (\AA)	434.80002, 434.80002, 434.80002	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.087, 1.087, 1.087	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.30	0/19471	0.52	2/26343 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	3

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
1	A	1683	TYR	CB-CA-C	-12.45	85.50	110.40
1	A	363	LEU	CA-CB-CG	5.02	126.85	115.30

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1068	ALA	Peptide
1	A	1774	SER	Peptide
1	A	841	ILE	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	19087	0	18641	598	0
2	A	1	0	0	0	0
All	All	19088	0	18641	598	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 16.

All (598) 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:A:578:ILE:O	1:A:647:LYS:HB3	1.66	0.96
1:A:2028:LEU:HA	1:A:2040:PHE:O	1.73	0.89
1:A:2307:ASN:ND2	1:A:2312:ASN:O	2.05	0.88
1:A:1052:ASN:HD21	1:A:1057:ARG:HB3	1.40	0.86
1:A:1547:THR:O	1:A:1597:ASN:ND2	2.10	0.84
1:A:410:LEU:HD13	1:A:468:LEU:HD11	1.60	0.83
1:A:2058:ASN:ND2	1:A:2071:ASP:O	2.12	0.81
1:A:1760:ASN:HA	1:A:1849:PRO:HD3	1.62	0.81
1:A:12:MET:SD	1:A:975:LYS:NZ	2.55	0.80
1:A:5:ASN:OD1	1:A:5:ASN:N	2.15	0.79
1:A:84:LEU:O	1:A:88:ASN:ND2	2.16	0.77
1:A:1590:ASN:OD1	1:A:1593:ASN:ND2	2.19	0.76
1:A:2307:ASN:O	1:A:2309:LEU:N	2.12	0.76
1:A:124:ASP:OD1	1:A:124:ASP:N	2.17	0.76
1:A:1432:ASN:HB3	1:A:1435:LYS:HB2	1.67	0.76
1:A:2259:ASN:HB3	1:A:2288:LYS:HG2	1.67	0.76
1:A:339:ASP:OD1	1:A:339:ASP:N	2.16	0.75
1:A:1574:SER:HB2	1:A:1836:LEU:HG	1.67	0.75
1:A:109:ASP:O	1:A:113:ASN:ND2	2.21	0.74
1:A:1377:ILE:HD11	1:A:1420:LEU:HD23	1.70	0.74
1:A:119:LYS:HB3	1:A:127:VAL:HG21	1.68	0.73
1:A:1960:ASN:OD1	1:A:1960:ASN:N	2.22	0.73
1:A:2240:LYS:NZ	1:A:2269:MET:SD	2.59	0.73
1:A:1377:ILE:HD11	1:A:1420:LEU:HA	1.71	0.73
1:A:2264:ASN:HB3	1:A:2270:GLN:HE22	1.54	0.72
1:A:125:TYR:OH	1:A:363:LEU:O	2.04	0.72
1:A:2222:PHE:HA	1:A:2229:ALA:HA	1.71	0.72
1:A:366:ILE:HG12	1:A:507:LYS:HE2	1.71	0.72
1:A:95:GLU:OE1	1:A:95:GLU:N	2.18	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:646:ILE:HG23	1:A:691:ILE:HA	1.71	0.71
1:A:58:ASN:O	1:A:62:THR:OG1	2.09	0.71
1:A:373:VAL:HG23	1:A:395:CYS:HB3	1.73	0.71
1:A:1863:ASN:HD22	1:A:1894:ILE:HD13	1.56	0.71
1:A:801:LEU:HD21	1:A:805:ARG:HH11	1.56	0.71
1:A:1758:GLU:HB2	1:A:1761:GLN:HG3	1.72	0.70
1:A:754:ILE:HD11	1:A:764:LYS:HB3	1.72	0.70
1:A:1115:ASP:O	1:A:1277:LYS:NZ	2.23	0.70
1:A:1121:ILE:HD13	1:A:1245:ASN:HD21	1.56	0.70
1:A:1680:LYS:O	1:A:1683:TYR:HD2	1.74	0.70
1:A:528:LYS:NZ	1:A:699:ASN:OD1	2.24	0.69
1:A:578:ILE:HB	1:A:646:ILE:HA	1.74	0.69
1:A:148:SER:OG	1:A:182:LYS:NZ	2.24	0.69
1:A:549:LEU:HD21	1:A:589:ILE:HD12	1.73	0.69
1:A:435:LEU:HD21	1:A:447:MET:HB3	1.75	0.68
1:A:2329:LYS:HG3	1:A:2359:GLU:HG3	1.74	0.68
1:A:283:VAL:HG11	1:A:363:LEU:HD21	1.73	0.68
1:A:976:GLU:OE1	1:A:982:SER:N	2.24	0.68
1:A:2300:PHE:HB2	1:A:2339:ALA:HB3	1.76	0.68
1:A:752:ARG:HD3	1:A:752:ARG:H	1.58	0.68
1:A:2296:THR:OG1	1:A:2298:ASP:OD2	2.11	0.68
1:A:1469:THR:HG22	1:A:1471:TYR:HE2	1.57	0.68
1:A:8:GLN:NE2	1:A:870:TYR:OH	2.27	0.67
1:A:1744:ASP:OD1	1:A:1745:ASN:N	2.24	0.67
1:A:690:TYR:HB2	1:A:734:SER:HB3	1.76	0.67
1:A:1124:PHE:HA	1:A:1127:ILE:HD12	1.77	0.67
1:A:1230:PHE:HB3	1:A:1278:LEU:HD11	1.75	0.67
1:A:1156:ASP:OD1	1:A:1159:ASN:N	2.27	0.66
1:A:90:SER:O	1:A:90:SER:OG	2.10	0.66
1:A:1326:SER:HA	1:A:1347:ASP:HB3	1.76	0.66
1:A:2103:THR:O	1:A:2109:LYS:HA	1.94	0.66
1:A:207:LYS:NZ	1:A:222:ASN:OD1	2.29	0.66
1:A:273:ARG:NH1	1:A:284:TYR:OH	2.29	0.66
1:A:1340:GLU:HA	1:A:1399:ASN:HD21	1.60	0.65
1:A:802:GLN:O	1:A:806:ASN:ND2	2.24	0.65
1:A:2148:ASN:OD1	1:A:2185:GLN:NE2	2.29	0.65
1:A:795:HIS:CE1	1:A:1802:LEU:HD12	2.31	0.65
1:A:364:ASP:OD1	1:A:365:ASP:N	2.29	0.65
1:A:2144:ASN:OD1	1:A:2144:ASN:N	2.29	0.65
1:A:1531:TYR:OH	1:A:1589:ILE:O	2.10	0.65
1:A:73:LYS:HE3	1:A:1726:ILE:HG12	1.77	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:11:LYS:NZ	1:A:977:SER:O	2.28	0.65
1:A:655:LYS:O	1:A:699:ASN:ND2	2.27	0.65
1:A:1116:LYS:HZ3	1:A:1118:THR:HG22	1.61	0.65
1:A:1956:THR:HB	1:A:1986:MET:HB3	1.78	0.65
1:A:2113:ASP:HB3	1:A:2119:GLN:HE21	1.62	0.65
1:A:1307:GLN:HA	1:A:1310:LYS:HB2	1.78	0.64
1:A:1935:LYS:NZ	1:A:1965:GLU:OE2	2.29	0.64
1:A:2257:GLU:O	1:A:2259:ASN:ND2	2.31	0.64
1:A:479:GLN:HE21	1:A:493:LEU:HG	1.62	0.64
1:A:1505:LEU:HD13	1:A:1507:ILE:HD11	1.79	0.64
1:A:1407:SER:OG	1:A:1413:ASN:OD1	2.13	0.64
1:A:374:LYS:HD3	1:A:503:PHE:HA	1.79	0.63
1:A:1899:VAL:HG23	1:A:1932:ILE:HD11	1.79	0.63
1:A:1992:THR:HG22	1:A:1997:VAL:HG22	1.81	0.63
1:A:463:ARG:O	1:A:465:THR:N	2.31	0.63
1:A:1116:LYS:NZ	1:A:1118:THR:HG22	2.13	0.63
1:A:1652:ASN:O	1:A:1655:ASN:ND2	2.30	0.63
1:A:650:PHE:HB2	1:A:695:LEU:HD23	1.80	0.62
1:A:937:PHE:HB3	1:A:945:VAL:HG23	1.80	0.62
1:A:651:ILE:HG23	1:A:696:LEU:HB3	1.82	0.62
1:A:2215:ASN:HD21	1:A:2218:ASP:HB2	1.65	0.62
1:A:340:GLU:OE1	1:A:344:ARG:NH1	2.33	0.62
1:A:1407:SER:HA	1:A:1413:ASN:HA	1.82	0.62
1:A:363:LEU:HA	1:A:507:LYS:HE3	1.80	0.62
1:A:16:LYS:H	1:A:16:LYS:HD2	1.65	0.62
1:A:1367:LEU:HD11	1:A:1408:ILE:HA	1.80	0.61
1:A:97:ASN:ND2	1:A:280:ASP:OD1	2.33	0.61
1:A:932:ILE:HD11	1:A:962:ALA:HA	1.81	0.61
1:A:2112:PHE:HA	1:A:2118:ARG:HA	1.82	0.61
1:A:93:PRO:HA	1:A:367:LYS:HA	1.82	0.61
1:A:883:PHE:HB2	1:A:984:ALA:HB2	1.81	0.61
1:A:1970:LEU:HD12	1:A:1993:ILE:HD12	1.81	0.61
1:A:2182:ILE:N	1:A:2185:GLN:OE1	2.30	0.61
1:A:2215:ASN:O	1:A:2217:THR:N	2.27	0.61
1:A:794:LEU:O	1:A:798:SER:OG	2.17	0.61
1:A:1793:VAL:O	1:A:1797:ILE:HG13	2.01	0.61
1:A:2282:TYR:HB2	1:A:2303:PHE:CZ	2.36	0.61
1:A:2114:ASP:OD2	1:A:2115:ASN:ND2	2.35	0.60
1:A:1948:GLU:HB3	1:A:1958:TYR:CZ	2.36	0.60
1:A:1029:LEU:HB2	1:A:1031:ILE:HG12	1.83	0.60
1:A:1927:ILE:HD12	1:A:1941:ASP:HA	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:870:TYR:HB2	1:A:979:SER:HB3	1.83	0.60
1:A:2239:ILE:HG12	1:A:2268:LYS:HE3	1.84	0.60
1:A:1352:VAL:HG21	1:A:1406:PHE:HB2	1.82	0.60
1:A:925:ILE:HD13	1:A:968:LEU:HD21	1.83	0.60
1:A:1827:ASN:OD1	1:A:1831:ASN:N	2.34	0.59
1:A:148:SER:OG	1:A:148:SER:O	2.17	0.59
1:A:1530:ASN:HD22	1:A:1537:LYS:HG3	1.67	0.59
1:A:113:ASN:HB3	1:A:328:PRO:HD2	1.84	0.59
1:A:526:ARG:HH11	1:A:526:ARG:HG3	1.67	0.59
1:A:1400:ARG:NH2	1:A:1419:ASP:OD2	2.35	0.59
1:A:479:GLN:HE22	1:A:492:HIS:H	1.51	0.58
1:A:1276:THR:HG22	1:A:1277:LYS:H	1.67	0.58
1:A:2210:THR:HA	1:A:2222:PHE:HB2	1.84	0.58
1:A:1686:ASP:OD2	1:A:1712:ASN:ND2	2.36	0.58
1:A:239:ASP:OD1	1:A:241:ARG:N	2.26	0.58
1:A:2078:VAL:HG11	1:A:2093:ASP:HA	1.85	0.58
1:A:336:ASP:HA	1:A:343:GLN:HE22	1.68	0.58
1:A:2171:TYR:HB3	1:A:2187:VAL:HG12	1.86	0.58
1:A:169:ASN:O	1:A:173:ARG:HG3	2.03	0.58
1:A:899:ARG:HH21	1:A:901:ILE:HD11	1.69	0.58
1:A:2113:ASP:OD1	1:A:2117:ILE:N	2.36	0.58
1:A:70:LYS:HG3	1:A:1698:LEU:HD11	1.84	0.58
1:A:1221:VAL:HG22	1:A:1299:ILE:HD13	1.86	0.58
1:A:1236:TRP:HB2	1:A:2254:ILE:HA	1.85	0.58
1:A:1902:THR:OG1	1:A:1903:SER:N	2.37	0.57
1:A:363:LEU:HG	1:A:366:ILE:HD11	1.86	0.57
1:A:2171:TYR:O	1:A:2187:VAL:N	2.33	0.57
1:A:2307:ASN:O	1:A:2312:ASN:ND2	2.38	0.57
1:A:1046:LYS:HG2	1:A:1066:ILE:HD13	1.85	0.57
1:A:1520:ASN:HD22	1:A:1525:LYS:HG3	1.70	0.57
1:A:1774:SER:O	1:A:1776:THR:HG22	2.05	0.57
1:A:1868:ASP:OD1	1:A:1870:THR:HG22	2.04	0.57
1:A:1948:GLU:O	1:A:1958:TYR:HA	2.04	0.57
1:A:10:GLN:HE21	1:A:20:GLN:HE22	1.53	0.57
1:A:2039:PHE:O	1:A:2055:THR:OG1	2.21	0.57
1:A:402:GLN:HB3	1:A:473:VAL:HG22	1.87	0.57
1:A:1680:LYS:O	1:A:1683:TYR:CD2	2.57	0.56
1:A:101:ILE:HD12	1:A:284:TYR:HE1	1.70	0.56
1:A:1397:GLU:OE1	1:A:1400:ARG:NH1	2.38	0.56
1:A:1577:ASN:O	1:A:1632:ILE:N	2.31	0.56
1:A:2195:VAL:HG22	1:A:2196:ASN:H	1.69	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:801:LEU:HG	1:A:805:ARG:HE	1.70	0.56
1:A:865:ILE:HG12	1:A:921:TYR:CZ	2.40	0.56
1:A:1822:ASP:OD2	1:A:1850:LYS:NZ	2.29	0.56
1:A:2120:LEU:HD21	1:A:2133:SER:O	2.05	0.56
1:A:134:ASN:O	1:A:202:ILE:HB	2.06	0.56
1:A:756:ASP:OD1	1:A:757:HIS:N	2.39	0.56
1:A:1405:THR:O	1:A:1405:THR:OG1	2.22	0.56
1:A:573:ARG:HH21	1:A:1805:TYR:HB3	1.70	0.56
1:A:672:SER:HA	1:A:675:ILE:HD12	1.88	0.56
1:A:764:LYS:O	1:A:768:ILE:HG13	2.05	0.56
1:A:1926:PHE:HB3	1:A:1939:PHE:CD1	2.41	0.56
1:A:103:ILE:HD12	1:A:265:LEU:HD22	1.88	0.56
1:A:23:GLU:N	1:A:23:GLU:OE1	2.39	0.56
1:A:648:LEU:HG	1:A:678:ILE:HD13	1.88	0.56
1:A:1625:ILE:HD12	1:A:1633:GLN:HG3	1.89	0.55
1:A:2305:HIS:CG	1:A:2306:GLN:H	2.24	0.55
1:A:1144:ILE:HB	1:A:1220:MET:HG3	1.88	0.55
1:A:1754:ALA:HB3	1:A:1764:VAL:HB	1.89	0.55
1:A:2181:ASN:ND2	1:A:2182:ILE:O	2.40	0.55
1:A:126:THR:O	1:A:126:THR:OG1	2.25	0.55
1:A:95:GLU:OE2	1:A:391:LYS:HB2	2.06	0.55
1:A:1202:ILE:O	1:A:1205:VAL:HG22	2.07	0.55
1:A:52:ILE:HG22	1:A:79:LEU:HD11	1.87	0.54
1:A:60:LEU:HD13	1:A:73:LYS:HE2	1.89	0.54
1:A:800:LEU:O	1:A:804:ILE:HG13	2.07	0.54
1:A:1841:ASP:O	1:A:1842:SER:OG	2.23	0.54
1:A:1078:ILE:HG21	1:A:1415:ILE:HD11	1.89	0.54
1:A:2019:TYR:O	1:A:2027:GLN:NE2	2.31	0.54
1:A:1722:ASP:OD1	1:A:1722:ASP:N	2.40	0.54
1:A:2228:LYS:HZ2	1:A:2231:LYS:HE3	1.73	0.54
1:A:549:LEU:HD22	1:A:587:ASP:HB2	1.90	0.54
1:A:1111:LEU:HD13	1:A:1282:TYR:CE2	2.42	0.54
1:A:735:ILE:O	1:A:779:SER:OG	2.17	0.54
1:A:1111:LEU:HD13	1:A:1282:TYR:HE2	1.73	0.54
1:A:393:SER:OG	1:A:394:TYR:N	2.41	0.54
1:A:790:LYS:HG3	1:A:791:SER:H	1.73	0.54
1:A:1400:ARG:HA	1:A:1420:LEU:HD12	1.90	0.54
1:A:246:PHE:CD2	1:A:252:VAL:HG12	2.43	0.53
1:A:846:ASN:HD21	1:A:1767:ARG:HH22	1.56	0.53
1:A:2190:SER:HA	1:A:2202:PHE:HB2	1.90	0.53
1:A:1152:LEU:HD22	1:A:1164:LEU:HA	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1881:THR:O	1:A:1881:THR:OG1	2.24	0.53
1:A:31:LEU:O	1:A:35:HIS:HD2	1.92	0.53
1:A:148:SER:HG	1:A:182:LYS:NZ	2.06	0.53
1:A:1327:LEU:HD11	1:A:1389:ILE:HD11	1.91	0.53
1:A:1594:ILE:HG13	1:A:1595:PHE:H	1.73	0.53
1:A:932:ILE:HG21	1:A:1021:LEU:HD22	1.91	0.53
1:A:1224:ASN:N	1:A:1224:ASN:OD1	2.41	0.53
1:A:485:LYS:HG2	1:A:486:ASP:H	1.74	0.53
1:A:1955:GLU:HB3	1:A:1985:ILE:HG23	1.90	0.53
1:A:2177:THR:OG1	1:A:2181:ASN:OD1	2.22	0.53
1:A:136:PHE:H	1:A:203:ASP:CG	2.11	0.53
1:A:1613:ILE:HG13	1:A:1614:SER:N	2.23	0.53
1:A:100:PHE:O	1:A:101:ILE:HG13	2.09	0.53
1:A:1429:LEU:HD11	1:A:1447:ILE:HD11	1.91	0.53
1:A:1677:PHE:CZ	1:A:1692:VAL:HG11	2.43	0.53
1:A:332:SER:O	1:A:332:SER:OG	2.25	0.52
1:A:566:ILE:HG12	1:A:599:SER:HA	1.91	0.52
1:A:596:ASN:ND2	1:A:743:GLU:OE2	2.42	0.52
1:A:1113:LEU:HD23	1:A:1114:GLN:HG2	1.91	0.52
1:A:1160:ASN:O	1:A:1212:LYS:N	2.41	0.52
1:A:373:VAL:O	1:A:478:TYR:OH	2.16	0.52
1:A:975:LYS:O	1:A:979:SER:OG	2.17	0.52
1:A:1432:ASN:O	1:A:1436:LEU:N	2.36	0.52
1:A:1469:THR:HG22	1:A:1471:TYR:CE2	2.43	0.52
1:A:1988:THR:HG21	1:A:2002:ASN:HA	1.91	0.52
1:A:108:ASN:O	1:A:112:ILE:HD12	2.10	0.52
1:A:696:LEU:HD11	1:A:742:TYR:O	2.09	0.52
1:A:869:LEU:HD11	1:A:979:SER:HB2	1.91	0.52
1:A:421:GLY:HA3	1:A:427:THR:HB	1.92	0.52
1:A:744:VAL:HG22	1:A:754:ILE:HG22	1.92	0.52
1:A:1377:ILE:HG23	1:A:1423:LYS:HA	1.91	0.52
1:A:2302:TYR:HB2	1:A:2333:PHE:CZ	2.45	0.52
1:A:1730:ILE:HG12	1:A:1780:LYS:HB3	1.90	0.52
1:A:573:ARG:HG3	1:A:574:ASN:N	2.24	0.51
1:A:1284:ASP:HA	1:A:1311:ASN:HB3	1.92	0.51
1:A:1531:TYR:HD2	1:A:1532:PHE:N	2.08	0.51
1:A:1264:TRP:HB2	1:A:1275:ILE:HB	1.92	0.51
1:A:1625:ILE:HD11	1:A:1635:TYR:HD2	1.76	0.51
1:A:239:ASP:OD1	1:A:240:ILE:N	2.42	0.51
1:A:655:LYS:HB2	1:A:660:THR:HB	1.92	0.51
1:A:479:GLN:NE2	1:A:493:LEU:HG	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1384:LEU:HD22	1:A:1404:LEU:HD13	1.92	0.51
1:A:2083:LEU:HG	1:A:2085:ASP:H	1.76	0.51
1:A:2306:GLN:NE2	1:A:2307:ASN:OD1	2.44	0.51
1:A:1136:PHE:HE2	1:A:1162:ILE:HG21	1.75	0.51
1:A:1728:GLU:OE1	1:A:1728:GLU:N	2.36	0.51
1:A:2219:LYS:HB3	1:A:2219:LYS:HZ2	1.76	0.51
1:A:695:LEU:H	1:A:739:ALA:HA	1.75	0.51
1:A:2327:ASP:C	1:A:2329:LYS:H	2.14	0.51
1:A:161:LEU:HD23	1:A:162:ASN:H	1.75	0.51
1:A:504:PRO:HB2	1:A:507:LYS:HB2	1.93	0.51
1:A:246:PHE:HE1	1:A:272:LEU:HD12	1.76	0.51
1:A:606:ILE:HG12	1:A:620:TYR:HB2	1.93	0.51
1:A:1836:LEU:HD22	1:A:1843:LEU:HD11	1.92	0.51
1:A:270:ASP:HA	1:A:273:ARG:HE	1.75	0.50
1:A:1970:LEU:HD22	1:A:1977:LYS:HD3	1.93	0.50
1:A:1058:GLN:HA	1:A:1061:GLU:HG2	1.93	0.50
1:A:959:LEU:HD13	1:A:1023:PRO:HD2	1.91	0.50
1:A:1152:LEU:HD11	1:A:1162:ILE:HD12	1.93	0.50
1:A:148:SER:O	1:A:182:LYS:NZ	2.44	0.50
1:A:421:GLY:HA2	1:A:426:THR:HG22	1.94	0.50
1:A:1379:ASP:OD1	1:A:1380:ASN:N	2.45	0.50
1:A:2240:LYS:HZ2	1:A:2263:PHE:HZ	1.60	0.50
1:A:885:SER:OG	1:A:885:SER:O	2.30	0.50
1:A:2163:PHE:HB2	1:A:2172:PHE:HE2	1.77	0.50
1:A:42:VAL:HG11	1:A:90:SER:OG	2.11	0.50
1:A:587:ASP:OD1	1:A:587:ASP:N	2.44	0.50
1:A:852:ILE:HD13	1:A:1721:LEU:HD21	1.92	0.50
1:A:1569:MET:HG2	1:A:1576:LEU:HD13	1.92	0.50
1:A:765:GLU:HG2	1:A:766:GLU:H	1.77	0.50
1:A:1880:ILE:HG22	1:A:1882:ILE:HG13	1.93	0.50
1:A:103:ILE:HD11	1:A:269:SER:HB2	1.93	0.49
1:A:493:LEU:HD22	1:A:497:GLU:HG2	1.93	0.49
1:A:973:THR:HG22	1:A:975:LYS:H	1.77	0.49
1:A:1116:LYS:O	1:A:1120:VAL:HG23	2.11	0.49
1:A:1237:THR:HB	1:A:1240:PHE:HE1	1.76	0.49
1:A:1382:ILE:HD13	1:A:1418:ILE:HD12	1.94	0.49
1:A:2218:ASP:HB3	1:A:2248:ILE:HG23	1.94	0.49
1:A:2275:ASN:HB3	1:A:2280:MET:HE1	1.94	0.49
1:A:1777:ALA:HB1	1:A:1780:LYS:HD3	1.94	0.49
1:A:1481:GLU:OE1	1:A:1496:ASN:ND2	2.46	0.49
1:A:57:ASP:OD1	1:A:76:LYS:NZ	2.29	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:277:LEU:HD13	1:A:389:SER:HB3	1.94	0.49
1:A:829:ALA:O	1:A:832:ILE:HG13	2.13	0.49
1:A:96:LYS:HD2	1:A:124:ASP:HB2	1.95	0.49
1:A:892:THR:OG1	1:A:893:GLU:N	2.45	0.49
1:A:1046:LYS:HD3	1:A:1519:ILE:HG21	1.93	0.49
1:A:1036:ILE:HG21	1:A:1521:LYS:HG2	1.93	0.49
1:A:1164:LEU:HD12	1:A:1164:LEU:H	1.78	0.49
1:A:402:GLN:HE21	1:A:402:GLN:HA	1.77	0.49
1:A:552:ALA:N	1:A:586:GLY:O	2.46	0.49
1:A:1292:ASP:O	1:A:1323:TYR:OH	2.20	0.49
1:A:1418:ILE:HG23	1:A:1425:TYR:HB3	1.95	0.49
1:A:1723:ALA:HB3	1:A:1725:TYR:CZ	2.48	0.49
1:A:1035:ILE:HD12	1:A:1612:ILE:HD11	1.94	0.49
1:A:1138:LEU:HG	1:A:1141:ASP:HA	1.95	0.49
1:A:1314:TYR:HE2	1:A:1332:MET:HG2	1.77	0.49
1:A:283:VAL:HG22	1:A:388:ILE:HG23	1.94	0.49
1:A:936:ILE:HD13	1:A:944:LEU:HD22	1.94	0.49
1:A:1284:ASP:OD1	1:A:1311:ASN:ND2	2.45	0.49
1:A:2030:VAL:HG12	1:A:2037:PHE:HB3	1.95	0.49
1:A:2273:TYR:CE2	1:A:2280:MET:HG3	2.48	0.49
1:A:309:ASN:OD1	1:A:310:THR:N	2.46	0.48
1:A:386:ALA:O	1:A:387:LEU:HD23	2.13	0.48
1:A:631:ILE:HG22	1:A:632:ASP:N	2.28	0.48
1:A:765:GLU:HG2	1:A:766:GLU:N	2.27	0.48
1:A:915:LYS:HB3	1:A:917:ILE:HG22	1.94	0.48
1:A:1048:LEU:C	1:A:1050:GLU:H	2.16	0.48
1:A:550:ASP:O	1:A:553:GLN:HG2	2.12	0.48
1:A:1377:ILE:HD12	1:A:1382:ILE:HG12	1.95	0.48
1:A:2212:TRP:CE2	1:A:2221:TYR:HD2	2.31	0.48
1:A:5:ASN:O	1:A:8:GLN:N	2.45	0.48
1:A:860:LYS:HB3	1:A:860:LYS:HE2	1.50	0.48
1:A:1082:ALA:HB1	1:A:1085:ILE:HG12	1.94	0.48
1:A:2173:ALA:HB1	1:A:2177:THR:HG21	1.94	0.48
1:A:691:ILE:HG12	1:A:693:ILE:HG13	1.96	0.48
1:A:1592:LYS:HE2	1:A:1605:PHE:CD2	2.49	0.48
1:A:1612:ILE:HG12	1:A:1625:ILE:HG22	1.96	0.48
1:A:1857:PHE:CE1	1:A:1866:TYR:HB2	2.49	0.48
1:A:119:LYS:HG3	1:A:120:ASP:OD1	2.14	0.48
1:A:217:ASP:OD2	1:A:217:ASP:N	2.36	0.48
1:A:1245:ASN:OD1	1:A:1247:GLY:N	2.45	0.48
1:A:1533:LYS:HD3	1:A:1590:ASN:HD22	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:818:LYS:O	1:A:822:THR:OG1	2.24	0.48
1:A:1118:THR:O	1:A:1121:ILE:HG13	2.14	0.48
1:A:2230:TYR:HB3	1:A:2234:ASN:ND2	2.29	0.48
1:A:397:ASP:OD1	1:A:398:LEU:N	2.47	0.48
1:A:449:LYS:O	1:A:464:SER:HA	2.14	0.48
1:A:584:LEU:HB2	1:A:651:ILE:O	2.14	0.48
1:A:1380:ASN:HB2	1:A:1391:PHE:O	2.13	0.48
1:A:2100:ILE:HA	1:A:2112:PHE:HB2	1.95	0.48
1:A:151:ASN:O	1:A:155:GLU:N	2.46	0.48
1:A:578:ILE:O	1:A:647:LYS:CB	2.53	0.48
1:A:675:ILE:O	1:A:679:LEU:HG	2.14	0.48
1:A:954:HIS:O	1:A:958:THR:HG23	2.14	0.47
1:A:1177:GLY:HA3	1:A:1188:PHE:CD2	2.49	0.47
1:A:1514:LYS:HB3	1:A:1515:ASP:OD1	2.14	0.47
1:A:1787:ASP:OD1	1:A:1787:ASP:N	2.40	0.47
1:A:15:VAL:HG12	1:A:18:ARG:HB2	1.97	0.47
1:A:1169:ILE:HB	1:A:1202:ILE:HD11	1.96	0.47
1:A:1340:GLU:HA	1:A:1399:ASN:ND2	2.28	0.47
1:A:1682:LEU:HD12	1:A:1689:VAL:HG21	1.96	0.47
1:A:1498:TYR:CE1	1:A:1500:PRO:HD2	2.49	0.47
1:A:1908:TYR:CE1	1:A:1910:ALA:HB2	2.48	0.47
1:A:963:PHE:O	1:A:967:SER:OG	2.28	0.47
1:A:1269:PHE:CZ	1:A:2277:LYS:HG2	2.49	0.47
1:A:1291:LEU:HD21	1:A:1316:PHE:HD1	1.79	0.47
1:A:1948:GLU:H	1:A:1948:GLU:HG3	1.26	0.47
1:A:2342:GLY:HA2	1:A:2353:PHE:O	2.14	0.47
1:A:861:LEU:O	1:A:865:ILE:HG13	2.14	0.47
1:A:1229:VAL:HG13	1:A:1281:ARG:HD3	1.97	0.47
1:A:2049:THR:HG21	1:A:2055:THR:HG22	1.96	0.47
1:A:2112:PHE:CE1	1:A:2118:ARG:HB2	2.50	0.47
1:A:34:TYR:HB2	1:A:48:LYS:HG2	1.97	0.47
1:A:834:ARG:O	1:A:838:GLU:HG2	2.14	0.47
1:A:1382:ILE:HG13	1:A:1391:PHE:HE2	1.79	0.47
1:A:2037:PHE:HB2	1:A:2076:ALA:HB3	1.96	0.47
1:A:791:SER:HB3	1:A:840:ARG:O	2.14	0.47
1:A:1698:LEU:HB3	1:A:1724:ASN:O	2.15	0.47
1:A:2308:THR:HB	1:A:2312:ASN:HD21	1.79	0.47
1:A:747:ASN:OD1	1:A:750:GLY:N	2.48	0.47
1:A:1132:THR:OG1	1:A:1133:GLU:OE2	2.32	0.47
1:A:313:GLU:HB2	1:A:511:LEU:HD12	1.96	0.46
1:A:1025:LEU:HB2	1:A:1623:GLU:OE2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1600:ASP:HB2	1:A:1602:ASN:OD1	2.15	0.46
1:A:1679:GLN:HA	1:A:1682:LEU:HD23	1.96	0.46
1:A:917:ILE:HD11	1:A:921:TYR:OH	2.15	0.46
1:A:1532:PHE:HB3	1:A:1534:ASP:H	1.80	0.46
1:A:288:ASP:N	1:A:288:ASP:OD2	2.48	0.46
1:A:932:ILE:HD13	1:A:1021:LEU:HD22	1.97	0.46
1:A:1352:VAL:HG21	1:A:1406:PHE:CB	2.46	0.46
1:A:294:GLN:HE21	1:A:361:LEU:HB2	1.80	0.46
1:A:870:TYR:CD2	1:A:978:LEU:HB3	2.51	0.46
1:A:1186:HIS:CD2	1:A:1267:PHE:HB3	2.50	0.46
1:A:1251:LEU:O	1:A:1254:ILE:HG22	2.15	0.46
1:A:1746:ASP:HB2	1:A:1751:ILE:HD11	1.96	0.46
1:A:1937:TYR:CE1	1:A:1964:GLY:HA3	2.49	0.46
1:A:269:SER:O	1:A:269:SER:OG	2.31	0.46
1:A:1575:ALA:HB3	1:A:1577:ASN:OD1	2.16	0.46
1:A:1959:PHE:HA	1:A:1965:GLU:O	2.16	0.46
1:A:23:GLU:O	1:A:27:ILE:HG13	2.15	0.46
1:A:114:TYR:HE1	1:A:327:ILE:HG21	1.81	0.46
1:A:631:ILE:HG22	1:A:632:ASP:H	1.81	0.46
1:A:1077:ALA:O	1:A:1082:ALA:N	2.49	0.46
1:A:213:GLU:HB3	1:A:214:TYR:HD2	1.81	0.46
1:A:577:TYR:O	1:A:643:LYS:HG3	2.16	0.46
1:A:676:GLU:OE2	1:A:722:ARG:NE	2.49	0.46
1:A:865:ILE:HG12	1:A:921:TYR:CE2	2.51	0.46
1:A:1560:ASN:O	1:A:1564:GLN:HG2	2.15	0.46
1:A:1926:PHE:O	1:A:1927:ILE:HD13	2.15	0.46
1:A:2181:ASN:HD22	1:A:2185:GLN:HG2	1.81	0.46
1:A:2274:LEU:HD21	1:A:2283:PHE:HD2	1.81	0.46
1:A:512:THR:O	1:A:515:GLU:HB3	2.16	0.46
1:A:1226:PRO:HD3	1:A:1308:ILE:HG23	1.97	0.46
1:A:312:TRP:NE1	1:A:316:LYS:HE3	2.32	0.45
1:A:554:ASN:HB3	1:A:612:ILE:HG12	1.97	0.45
1:A:1433:CYS:HA	1:A:1436:LEU:HB2	1.98	0.45
1:A:2007:GLN:HB3	1:A:2011:ILE:HD13	1.96	0.45
1:A:335:PHE:HE1	1:A:346:PHE:HD1	1.65	0.45
1:A:478:TYR:N	1:A:478:TYR:CD1	2.84	0.45
1:A:1237:THR:HB	1:A:1240:PHE:CE1	2.51	0.45
1:A:2223:ASP:N	1:A:2228:LYS:O	2.46	0.45
1:A:1496:ASN:HB3	1:A:1506:PHE:CD2	2.51	0.45
1:A:1085:ILE:H	1:A:1085:ILE:HG13	1.39	0.45
1:A:1548:ASN:ND2	1:A:1600:ASP:OD1	2.37	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:221:LEU:O	1:A:225:ILE:HG13	2.17	0.45
1:A:882:HIS:HD2	1:A:900:PHE:HB3	1.81	0.45
1:A:115:ILE:O	1:A:118:TRP:N	2.50	0.45
1:A:769:ILE:HG12	1:A:804:ILE:HD11	1.97	0.45
1:A:865:ILE:HA	1:A:921:TYR:CE1	2.51	0.45
1:A:1441:SER:OG	1:A:1500:PRO:O	2.35	0.45
1:A:1525:LYS:O	1:A:1543:THR:HG23	2.17	0.45
1:A:775:LYS:O	1:A:792:LYS:HE2	2.17	0.45
1:A:976:GLU:OE1	1:A:981:LEU:N	2.50	0.45
1:A:1968:LYS:HD3	1:A:1982:ASP:HA	1.98	0.45
1:A:466:ILE:HA	1:A:470:GLY:HA3	1.99	0.45
1:A:1189:SER:HB3	1:A:2311:GLU:OE2	2.16	0.45
1:A:283:VAL:HG21	1:A:366:ILE:HD12	1.98	0.45
1:A:309:ASN:HD21	1:A:786:LYS:HE2	1.81	0.45
1:A:378:ALA:O	1:A:380:ASN:N	2.50	0.45
1:A:1442:ASP:OD1	1:A:1442:ASP:N	2.48	0.45
1:A:1877:ILE:HA	1:A:1889:PHE:HB2	1.99	0.45
1:A:382:VAL:HG23	1:A:471:PRO:HB3	1.99	0.44
1:A:402:GLN:HE21	1:A:402:GLN:CA	2.30	0.44
1:A:526:ARG:HG3	1:A:526:ARG:NH1	2.32	0.44
1:A:1370:ASN:HB3	1:A:1373:SER:OG	2.17	0.44
1:A:1863:ASN:ND2	1:A:1894:ILE:HD13	2.27	0.44
1:A:2341:THR:O	1:A:2353:PHE:HB2	2.17	0.44
1:A:130:PHE:CE2	1:A:276:MET:HG2	2.51	0.44
1:A:549:LEU:HD23	1:A:549:LEU:HA	1.81	0.44
1:A:583:GLN:NE2	1:A:585:GLN:O	2.50	0.44
1:A:1058:GLN:HA	1:A:1061:GLU:CG	2.46	0.44
1:A:1394:ASP:HB3	1:A:1396:ASN:HD22	1.82	0.44
1:A:48:LYS:HE2	1:A:48:LYS:HA	2.00	0.44
1:A:555:THR:O	1:A:609:GLN:NE2	2.43	0.44
1:A:1442:ASP:HA	1:A:1445:GLN:HG3	2.00	0.44
1:A:1583:MET:O	1:A:1587:GLU:HG3	2.16	0.44
1:A:377:PHE:CE1	1:A:382:VAL:HG12	2.52	0.44
1:A:396:SER:O	1:A:400:ILE:HD12	2.17	0.44
1:A:2302:TYR:O	1:A:2317:SER:HA	2.17	0.44
1:A:244:GLU:CD	1:A:244:GLU:H	2.21	0.44
1:A:549:LEU:HD11	1:A:653:HIS:CE1	2.53	0.44
1:A:673:SER:O	1:A:677:THR:HG23	2.18	0.44
1:A:795:HIS:HE1	1:A:1802:LEU:HD12	1.80	0.44
1:A:862:ILE:HG21	1:A:971:TYR:HD2	1.83	0.44
1:A:973:THR:HG22	1:A:974:THR:N	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1140:ASP:O	1:A:1142:LYS:HG3	2.17	0.44
1:A:2111:TYR:O	1:A:2119:GLN:N	2.49	0.44
1:A:2285:LYS:HB2	1:A:2285:LYS:HE2	1.72	0.44
1:A:1888:TYR:O	1:A:1896:GLN:HB2	2.18	0.44
1:A:2172:PHE:HA	1:A:2186:ALA:HA	2.00	0.44
1:A:102:TRP:CE3	1:A:107:ILE:HG13	2.53	0.44
1:A:161:LEU:HD23	1:A:162:ASN:N	2.32	0.44
1:A:835:GLN:NE2	1:A:840:ARG:HD2	2.32	0.44
1:A:2029:GLY:O	1:A:2039:PHE:HA	2.18	0.44
1:A:539:PHE:HB2	1:A:540:GLU:HG2	1.99	0.44
1:A:869:LEU:HA	1:A:918:PHE:HZ	1.83	0.44
1:A:1075:SER:HA	1:A:1078:ILE:HD12	2.00	0.44
1:A:1444:GLN:HG3	1:A:1499:MET:HB3	1.99	0.44
1:A:1918:ASN:HB2	1:A:1922:GLU:HB2	2.00	0.44
1:A:2190:SER:OG	1:A:2191:GLY:N	2.50	0.44
1:A:118:TRP:CE3	1:A:291:PRO:HG3	2.53	0.43
1:A:366:ILE:HD13	1:A:388:ILE:HD13	1.98	0.43
1:A:246:PHE:HD2	1:A:252:VAL:HG12	1.82	0.43
1:A:580:TYR:OH	1:A:633:LYS:O	2.35	0.43
1:A:765:GLU:HA	1:A:768:ILE:HD12	2.00	0.43
1:A:1545:GLU:OE2	1:A:1546:ASP:HB2	2.18	0.43
1:A:2066:LYS:HB3	1:A:2068:TYR:CE2	2.53	0.43
1:A:1370:ASN:HD22	1:A:1370:ASN:HA	1.65	0.43
1:A:2053:GLU:HG2	1:A:2054:LEU:N	2.33	0.43
1:A:259:LEU:HD12	1:A:259:LEU:HA	1.81	0.43
1:A:2163:PHE:O	1:A:2169:TYR:HA	2.18	0.43
1:A:42:VAL:HG21	1:A:370:PRO:HG2	2.00	0.43
1:A:622:SER:HA	1:A:639:GLN:HE22	1.84	0.43
1:A:716:LEU:HB2	1:A:737:VAL:HG21	2.00	0.43
1:A:1181:THR:HB	1:A:1186:HIS:CE1	2.52	0.43
1:A:1210:LYS:HE3	1:A:1210:LYS:HB2	1.83	0.43
1:A:2100:ILE:HG22	1:A:2116:GLY:HA2	2.01	0.43
1:A:2341:THR:HG22	1:A:2342:GLY:H	1.83	0.43
1:A:466:ILE:HG23	1:A:471:PRO:HD2	1.99	0.43
1:A:579:HIS:HB3	1:A:605:SER:HA	2.00	0.43
1:A:702:SER:CB	1:A:776:GLU:H	2.31	0.43
1:A:869:LEU:CD1	1:A:979:SER:HB2	2.48	0.43
1:A:1918:ASN:HD22	1:A:1924:VAL:HG12	1.83	0.43
1:A:2102:LEU:HD21	1:A:2109:LYS:HB2	2.00	0.43
1:A:2215:ASN:ND2	1:A:2218:ASP:HB2	2.30	0.43
1:A:573:ARG:NH2	1:A:1805:TYR:HB3	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:102:TRP:HZ3	1:A:111:ALA:HB2	1.83	0.43
1:A:1513:LEU:HD12	1:A:1530:ASN:O	2.18	0.43
1:A:766:GLU:HG3	1:A:820:MET:SD	2.59	0.43
1:A:897:ARG:HE	1:A:910:PHE:HE1	1.66	0.43
1:A:1352:VAL:HG12	1:A:1371:ILE:HG12	2.01	0.43
1:A:339:ASP:O	1:A:342:VAL:HG12	2.19	0.43
1:A:1352:VAL:HG23	1:A:1353:LYS:HG3	2.00	0.43
1:A:317:LEU:HA	1:A:317:LEU:HD23	1.87	0.42
1:A:553:GLN:HE21	1:A:587:ASP:HA	1.83	0.42
1:A:2307:ASN:HA	1:A:2312:ASN:O	2.19	0.42
1:A:6:LYS:HD2	1:A:28:LEU:HB3	2.02	0.42
1:A:49:LEU:HD11	1:A:82:GLU:HG3	2.01	0.42
1:A:525:ALA:HB2	1:A:701:PHE:CG	2.55	0.42
1:A:1594:ILE:HG13	1:A:1595:PHE:N	2.34	0.42
1:A:1625:ILE:H	1:A:1625:ILE:HG13	1.77	0.42
1:A:2120:LEU:HD13	1:A:2121:GLY:N	2.33	0.42
1:A:213:GLU:HB3	1:A:214:TYR:CD2	2.54	0.42
1:A:447:MET:HA	1:A:450:ILE:HG12	2.01	0.42
1:A:732:GLN:HB2	1:A:782:PRO:HG3	2.01	0.42
1:A:876:ASN:ND2	1:A:911:ILE:HG23	2.35	0.42
1:A:1622:PHE:HD1	1:A:1637:ILE:HG23	1.84	0.42
1:A:324:LYS:HA	1:A:324:LYS:HD3	1.83	0.42
1:A:643:LYS:O	1:A:686:ILE:HD11	2.20	0.42
1:A:817:LYS:HB3	1:A:817:LYS:HE3	1.78	0.42
1:A:2301:LYS:HG3	1:A:2317:SER:OG	2.20	0.42
1:A:131:TYR:HE2	1:A:133:SER:HB3	1.85	0.42
1:A:1009:GLU:O	1:A:1013:THR:HG22	2.20	0.42
1:A:1055:LEU:HD22	1:A:1401:PHE:CZ	2.54	0.42
1:A:2151:TYR:HB3	1:A:2159:LEU:HB2	2.00	0.42
1:A:2330:ARG:HD3	1:A:2330:ARG:N	2.35	0.42
1:A:154:LEU:HD23	1:A:154:LEU:HA	1.90	0.42
1:A:188:ASP:O	1:A:192:SER:OG	2.31	0.42
1:A:476:GLY:HA2	1:A:491:ILE:HD11	2.01	0.42
1:A:764:LYS:HE2	1:A:764:LYS:HA	2.00	0.42
1:A:1142:LYS:HE3	1:A:1142:LYS:HB2	1.67	0.42
1:A:1948:GLU:HB3	1:A:1958:TYR:CE2	2.55	0.42
1:A:634:TYR:CD2	1:A:678:ILE:HG13	2.54	0.42
1:A:653:HIS:O	1:A:664:ALA:N	2.51	0.42
1:A:864:SER:OG	1:A:921:TYR:OH	2.37	0.42
1:A:1919:LEU:H	1:A:1922:GLU:CD	2.23	0.42
1:A:2275:ASN:OD1	1:A:2275:ASN:N	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2301:LYS:NZ	1:A:2337:TYR:HB3	2.34	0.42
1:A:2304:ALA:HB1	1:A:2308:THR:HG21	2.01	0.42
1:A:1232:TYR:HB3	1:A:1278:LEU:HD13	2.02	0.42
1:A:1915:LEU:HD22	1:A:1924:VAL:HB	2.02	0.42
1:A:1371:ILE:HD12	1:A:1371:ILE:HA	1.91	0.42
1:A:1515:ASP:OD1	1:A:1515:ASP:N	2.53	0.42
1:A:1516:ILE:HA	1:A:1528:ILE:O	2.20	0.42
1:A:1544:ILE:HG12	1:A:1550:ILE:HG12	2.01	0.42
1:A:1567:LYS:NZ	1:A:1567:LYS:HB3	2.34	0.42
1:A:1840:ASN:C	1:A:1840:ASN:HD22	2.22	0.42
1:A:34:TYR:HD1	1:A:48:LYS:HG2	1.85	0.42
1:A:247:ALA:HA	1:A:275:SER:HB3	2.02	0.42
1:A:324:LYS:NZ	1:A:350:LEU:O	2.37	0.42
1:A:1679:GLN:HE22	1:A:1716:PRO:HD2	1.85	0.42
1:A:2182:ILE:HG22	1:A:2183:TYR:H	1.84	0.42
1:A:2198:ASP:HA	1:A:2228:LYS:HZ3	1.85	0.42
1:A:2208:ILE:HG23	1:A:2227:LYS:HE3	2.02	0.42
1:A:122:ASN:HB3	1:A:125:TYR:CD1	2.55	0.41
1:A:1552:LEU:HD22	1:A:1552:LEU:HA	1.85	0.41
1:A:452:ASN:HB3	1:A:462:VAL:HG13	2.03	0.41
1:A:505:LYS:HB3	1:A:505:LYS:HE3	1.74	0.41
1:A:616:GLU:HG3	1:A:633:LYS:HB2	2.02	0.41
1:A:652:GLY:O	1:A:697:GLY:HA3	2.19	0.41
1:A:2198:ASP:HA	1:A:2228:LYS:NZ	2.35	0.41
1:A:1557:LEU:HB3	1:A:1561:GLY:HA3	2.03	0.41
1:A:1568:PHE:CE1	1:A:1576:LEU:HD12	2.55	0.41
1:A:76:LYS:HB3	1:A:76:LYS:HE3	1.68	0.41
1:A:413:ASN:O	1:A:416:PRO:HD2	2.21	0.41
1:A:1543:THR:HG22	1:A:1544:ILE:H	1.85	0.41
1:A:10:GLN:HE21	1:A:20:GLN:NE2	2.19	0.41
1:A:1034:THR:O	1:A:1035:ILE:HG13	2.20	0.41
1:A:1520:ASN:ND2	1:A:1525:LYS:HG3	2.34	0.41
1:A:96:LYS:HA	1:A:125:TYR:CE2	2.56	0.41
1:A:246:PHE:HE1	1:A:272:LEU:CD1	2.33	0.41
1:A:1904:ASP:O	1:A:1944:ARG:NH1	2.54	0.41
1:A:1996:LYS:HA	1:A:1996:LYS:HE3	2.01	0.41
1:A:346:PHE:HD2	1:A:346:PHE:HA	1.79	0.41
1:A:714:LYS:HB2	1:A:714:LYS:HE2	1.75	0.41
1:A:793:TYR:HD1	1:A:793:TYR:HA	1.69	0.41
1:A:899:ARG:HE	1:A:901:ILE:HD11	1.85	0.41
1:A:917:ILE:O	1:A:920:GLU:HB2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1172:ALA:N	1:A:1261:GLN:O	2.49	0.41
1:A:1299:ILE:HD12	1:A:1299:ILE:H	1.86	0.41
1:A:1308:ILE:O	1:A:1312:LEU:HB2	2.21	0.41
1:A:1682:LEU:CD1	1:A:1689:VAL:HG21	2.51	0.41
1:A:1757:GLU:HB2	1:A:1758:GLU:OE1	2.19	0.41
1:A:567:LEU:HD12	1:A:568:SER:N	2.35	0.41
1:A:835:GLN:HE22	1:A:840:ARG:NH1	2.18	0.41
1:A:1276:THR:HG22	1:A:1277:LYS:HD2	2.02	0.41
1:A:1469:THR:CG2	1:A:1471:TYR:HE2	2.31	0.41
1:A:1832:MET:HB3	1:A:1832:MET:HE2	1.92	0.41
1:A:1899:VAL:CG2	1:A:1932:ILE:HD11	2.49	0.41
1:A:2153:ASP:HB3	1:A:2159:LEU:HD21	2.03	0.41
1:A:2060:ILE:O	1:A:2061:LEU:HD22	2.21	0.41
1:A:2280:MET:HB3	1:A:2317:SER:HB2	2.02	0.41
1:A:323:TYR:HD2	1:A:350:LEU:HG	1.86	0.40
1:A:1899:VAL:HG23	1:A:1932:ILE:CD1	2.48	0.40
1:A:2062:ASN:HA	1:A:2066:LYS:O	2.21	0.40
1:A:363:LEU:HD12	1:A:507:LYS:HD3	2.03	0.40
1:A:563:SER:O	1:A:566:ILE:HB	2.22	0.40
1:A:1003:ASP:HB3	1:A:1006:LYS:HD2	2.04	0.40
1:A:1116:LYS:HG2	1:A:1117:ALA:H	1.86	0.40
1:A:1152:LEU:HD22	1:A:1152:LEU:HA	1.95	0.40
1:A:1706:THR:HA	1:A:1707:PRO:HD3	1.88	0.40
1:A:1825:TYR:CZ	1:A:1839:ILE:HG12	2.56	0.40
1:A:1906:LEU:HB3	1:A:1945:ALA:HB3	2.03	0.40
1:A:271:ILE:H	1:A:271:ILE:HG13	1.67	0.40
1:A:760:LYS:HE3	1:A:760:LYS:HB3	1.81	0.40
1:A:1041:LEU:O	1:A:1045:ILE:HG12	2.21	0.40
1:A:142:LYS:HG3	1:A:263:TRP:HE3	1.85	0.40
1:A:1114:GLN:HB2	1:A:1120:VAL:HG22	2.03	0.40
1:A:760:LYS:HG2	1:A:761:TRP:N	2.37	0.40
1:A:1426:LYS:HB3	1:A:1426:LYS:HE3	1.72	0.40
1:A:1443:ILE:O	1:A:1447:ILE:HG13	2.22	0.40
1:A:1634:PRO:HG3	1:A:1688:TYR:CD1	2.56	0.40
1:A:1755:ASN:ND2	1:A:1763:GLN:HE21	2.20	0.40
1:A:2120:LEU:HD22	1:A:2120:LEU:HA	1.91	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	2361/2372 (100%)	2151 (91%)	206 (9%)	4 (0%)	47 78

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	464	SER
1	A	1775	ASP
1	A	2308	THR
1	A	2216	GLU

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	2137/2146 (100%)	1861 (87%)	276 (13%)	4 13

All (276) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	4	VAL
1	A	5	ASN
1	A	17	PHE
1	A	18	ARG
1	A	48	LYS
1	A	62	THR
1	A	68	ARG

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Mol	Chain	Res	Type
1	A	81	MET
1	A	90	SER
1	A	92	THR
1	A	99	HIS
1	A	103	ILE
1	A	121	VAL
1	A	124	ASP
1	A	126	THR
1	A	128	LYS
1	A	136	PHE
1	A	141	LEU
1	A	148	SER
1	A	150	THR
1	A	159	GLU
1	A	186	PHE
1	A	190	TYR
1	A	197	ASN
1	A	200	PHE
1	A	213	GLU
1	A	233	THR
1	A	246	PHE
1	A	253	ARG
1	A	260	VAL
1	A	262	ARG
1	A	276	MET
1	A	278	LYS
1	A	288	ASP
1	A	317	LEU
1	A	318	GLU
1	A	321	MET
1	A	332	SER
1	A	339	ASP
1	A	345	SER
1	A	346	PHE
1	A	350	LEU
1	A	351	SER
1	A	352	SER
1	A	361	LEU
1	A	365	ASP
1	A	370	PRO
1	A	374	LYS
1	A	377	PHE

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Mol	Chain	Res	Type
1	A	379	ASN
1	A	384	ASN
1	A	402	GLN
1	A	404	LYS
1	A	405	ASN
1	A	410	LEU
1	A	417	SER
1	A	449	LYS
1	A	451	THR
1	A	454	LEU
1	A	465	THR
1	A	473	VAL
1	A	492	HIS
1	A	494	LEU
1	A	495	GLU
1	A	505	LYS
1	A	509	SER
1	A	522	PHE
1	A	529	SER
1	A	530	GLN
1	A	549	LEU
1	A	565	LYS
1	A	568	SER
1	A	572	THR
1	A	573	ARG
1	A	575	LYS
1	A	576	GLU
1	A	580	TYR
1	A	599	SER
1	A	608	TYR
1	A	612	ILE
1	A	613	GLU
1	A	616	GLU
1	A	617	THR
1	A	619	TYR
1	A	632	ASP
1	A	636	ILE
1	A	638	TYR
1	A	640	ILE
1	A	642	ASN
1	A	648	LEU
1	A	660	THR

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Mol	Chain	Res	Type
1	A	690	TYR
1	A	696	LEU
1	A	704	SER
1	A	717	LEU
1	A	720	LYS
1	A	741	GLN
1	A	745	ARG
1	A	746	ILE
1	A	752	ARG
1	A	757	HIS
1	A	762	ILE
1	A	780	PHE
1	A	785	ASN
1	A	790	LYS
1	A	791	SER
1	A	797	LEU
1	A	799	THR
1	A	802	GLN
1	A	811	SER
1	A	848	THR
1	A	849	SER
1	A	864	SER
1	A	869	LEU
1	A	874	HIS
1	A	875	GLN
1	A	885	SER
1	A	892	THR
1	A	919	SER
1	A	926	SER
1	A	935	THR
1	A	938	ASP
1	A	939	ASN
1	A	949	ASN
1	A	961	SER
1	A	974	THR
1	A	1009	GLU
1	A	1010	LEU
1	A	1012	SER
1	A	1017	GLU
1	A	1025	LEU
1	A	1031	ILE
1	A	1045	ILE

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Mol	Chain	Res	Type
1	A	1047	GLU
1	A	1050	GLU
1	A	1055	LEU
1	A	1085	ILE
1	A	1092	LEU
1	A	1126	HIS
1	A	1149	ASP
1	A	1152	LEU
1	A	1155	ILE
1	A	1161	SER
1	A	1164	LEU
1	A	1167	CYS
1	A	1173	GLU
1	A	1192	SER
1	A	1274	LEU
1	A	1281	ARG
1	A	1282	TYR
1	A	1294	ASN
1	A	1312	LEU
1	A	1314	TYR
1	A	1340	GLU
1	A	1342	ASP
1	A	1358	GLU
1	A	1360	ASP
1	A	1366	GLU
1	A	1383	ILE
1	A	1394	ASP
1	A	1405	THR
1	A	1410	GLU
1	A	1418	ILE
1	A	1436	LEU
1	A	1459	TYR
1	A	1467	ASN
1	A	1472	ASN
1	A	1483	LEU
1	A	1485	THR
1	A	1506	PHE
1	A	1510	SER
1	A	1515	ASP
1	A	1526	LEU
1	A	1530	ASN
1	A	1531	TYR

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Mol	Chain	Res	Type
1	A	1533	LYS
1	A	1536	MET
1	A	1540	LEU
1	A	1549	THR
1	A	1552	LEU
1	A	1613	ILE
1	A	1622	PHE
1	A	1624	LEU
1	A	1625	ILE
1	A	1628	LYS
1	A	1641	ILE
1	A	1645	SER
1	A	1650	VAL
1	A	1657	ILE
1	A	1662	TYR
1	A	1663	HIS
1	A	1665	ASP
1	A	1670	ILE
1	A	1671	SER
1	A	1698	LEU
1	A	1701	ASP
1	A	1702	GLU
1	A	1706	THR
1	A	1715	CYS
1	A	1722	ASP
1	A	1735	ASN
1	A	1736	ASP
1	A	1739	ILE
1	A	1748	SER
1	A	1774	SER
1	A	1788	LYS
1	A	1792	SER
1	A	1810	PHE
1	A	1818	SER
1	A	1819	LEU
1	A	1821	ASN
1	A	1828	SER
1	A	1837	ILE
1	A	1840	ASN
1	A	1848	PRO
1	A	1853	LEU
1	A	1857	PHE

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Mol	Chain	Res	Type
1	A	1858	THR
1	A	1859	THR
1	A	1881	THR
1	A	1902	THR
1	A	1906	LEU
1	A	1931	ASN
1	A	1932	ILE
1	A	1935	LYS
1	A	1941	ASP
1	A	1947	VAL
1	A	1948	GLU
1	A	1959	PHE
1	A	1960	ASN
1	A	1970	LEU
1	A	1985	ILE
1	A	2017	TYR
1	A	2026	ARG
1	A	2027	GLN
1	A	2028	LEU
1	A	2035	ASP
1	A	2066	LYS
1	A	2085	ASP
1	A	2087	SER
1	A	2088	THR
1	A	2104	VAL
1	A	2114	ASP
1	A	2127	ASP
1	A	2140	LEU
1	A	2142	TYR
1	A	2144	ASN
1	A	2165	THR
1	A	2171	TYR
1	A	2178	VAL
1	A	2187	VAL
1	A	2194	ARG
1	A	2207	LYS
1	A	2216	GLU
1	A	2230	TYR
1	A	2231	LYS
1	A	2249	MET
1	A	2251	THR
1	A	2258	ASN

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Mol	Chain	Res	Type
1	A	2268	LYS
1	A	2273	TYR
1	A	2274	LEU
1	A	2280	MET
1	A	2285	LYS
1	A	2298	ASP
1	A	2309	LEU
1	A	2313	PHE
1	A	2317	SER
1	A	2321	THR
1	A	2329	LYS
1	A	2330	ARG
1	A	2336	GLU
1	A	2341	THR
1	A	2345	THR
1	A	2349	TYR
1	A	2363	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (50) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	8	GLN
1	A	10	GLN
1	A	20	GLN
1	A	35	HIS
1	A	36	ASN
1	A	113	ASN
1	A	212	ASN
1	A	236	ASN
1	A	294	GLN
1	A	343	GLN
1	A	379	ASN
1	A	402	GLN
1	A	405	ASN
1	A	479	GLN
1	A	510	GLN
1	A	553	GLN
1	A	596	ASN
1	A	639	GLN
1	A	653	HIS
1	A	659	ASN
1	A	835	GLN

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Mol	Chain	Res	Type
1	A	853	ASN
1	A	1052	ASN
1	A	1186	HIS
1	A	1257	HIS
1	A	1294	ASN
1	A	1307	GLN
1	A	1350	ASN
1	A	1370	ASN
1	A	1456	HIS
1	A	1503	ASN
1	A	1504	ASN
1	A	1520	ASN
1	A	1530	ASN
1	A	1553	ASN
1	A	1727	ASN
1	A	1735	ASN
1	A	1763	GLN
1	A	1784	ASN
1	A	1840	ASN
1	A	1851	ASN
1	A	1925	ASN
1	A	1976	ASN
1	A	2007	GLN
1	A	2115	ASN
1	A	2119	GLN
1	A	2176	ASN
1	A	2196	ASN
1	A	2234	ASN
1	A	2312	ASN

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

Of 1 ligands modelled in this entry, 1 is monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

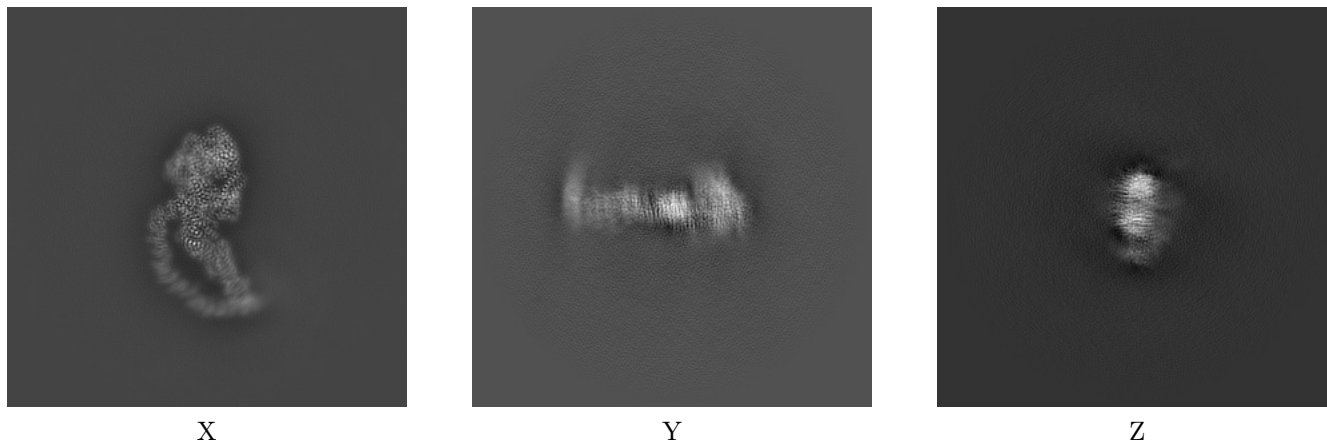
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-38010. These allow visual inspection of the internal detail of the map and identification of artifacts.

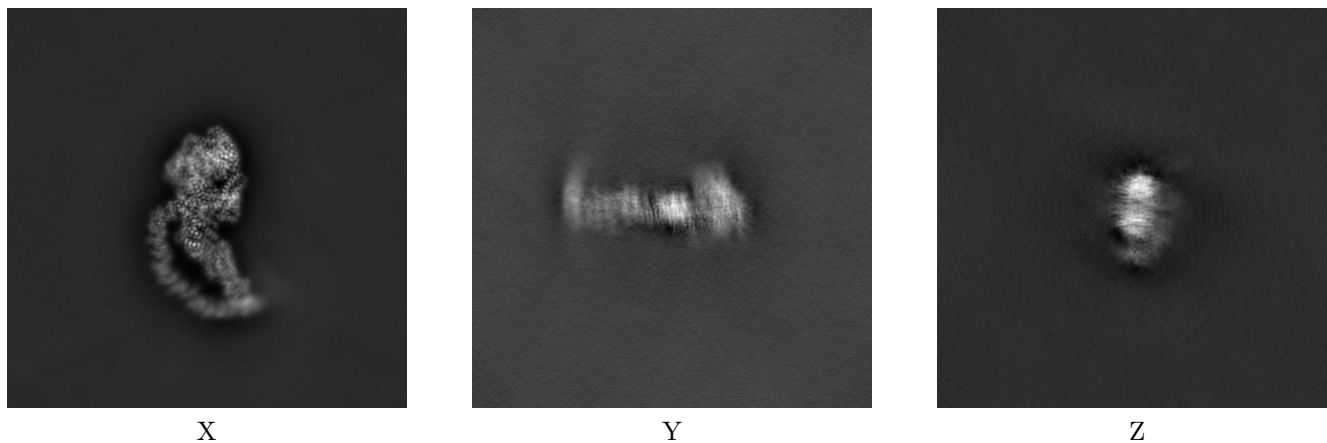
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

6.1.1 Primary map



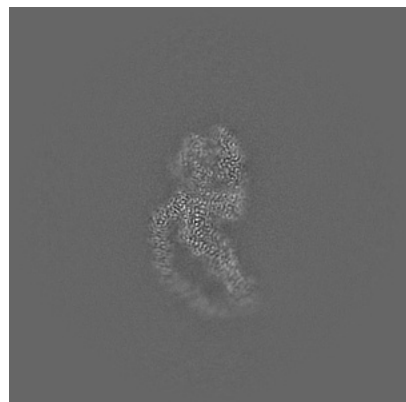
6.1.2 Raw map



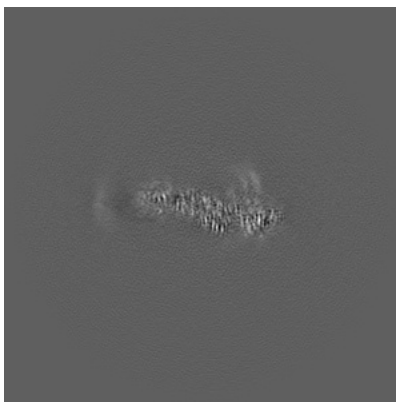
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

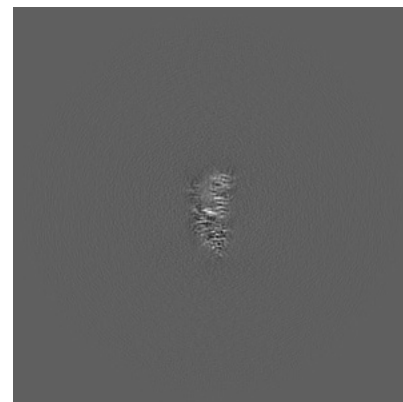
6.2.1 Primary map



X Index: 200

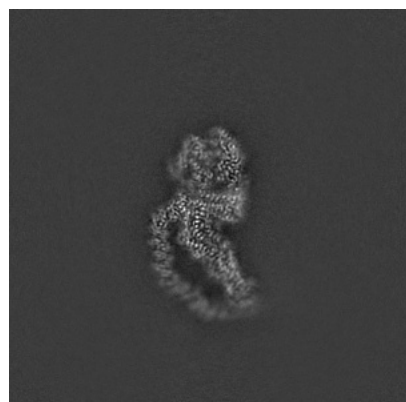


Y Index: 200

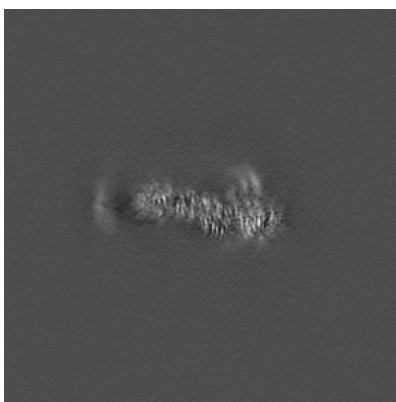


Z Index: 200

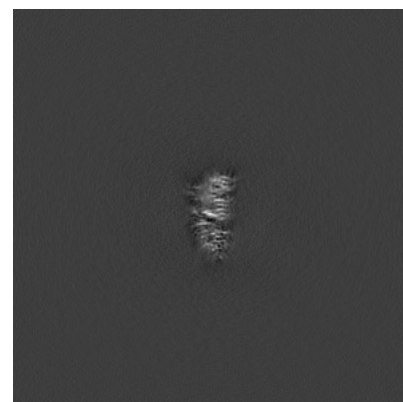
6.2.2 Raw map



X Index: 200



Y Index: 200

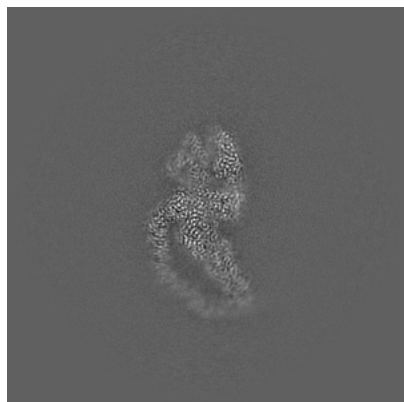


Z Index: 200

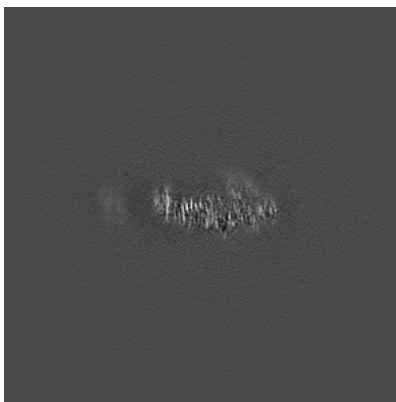
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

6.3.1 Primary map



X Index: 202

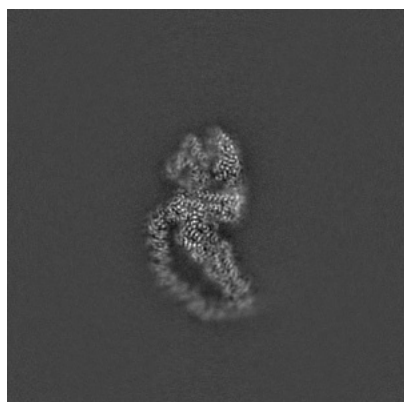


Y Index: 187

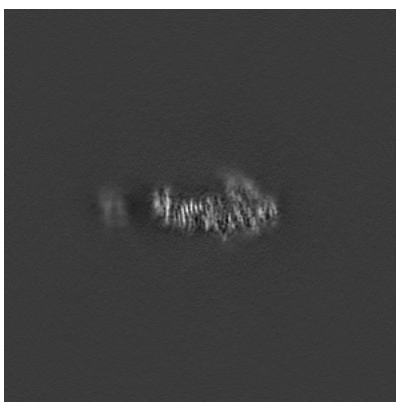


Z Index: 201

6.3.2 Raw map



X Index: 202



Y Index: 187

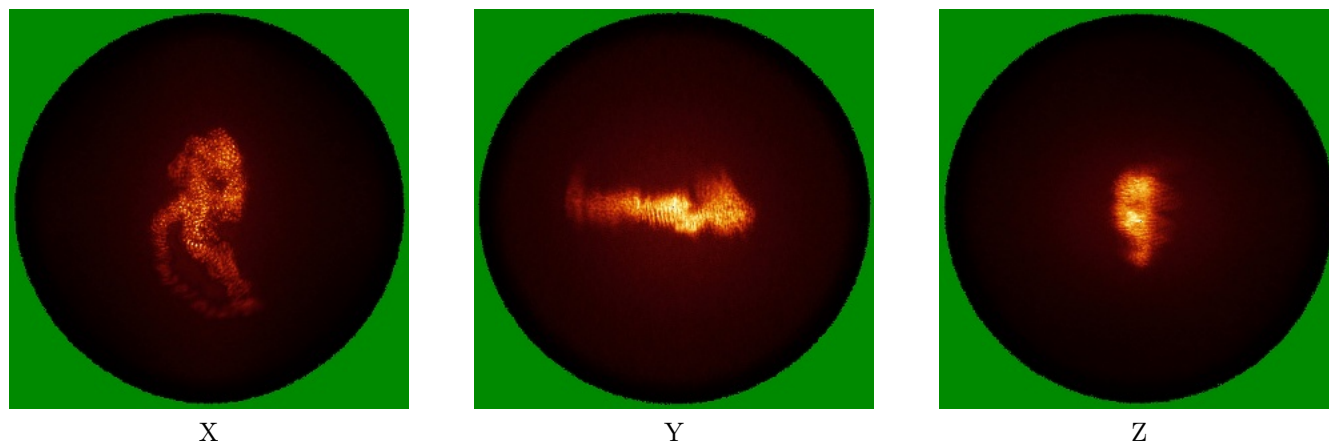


Z Index: 201

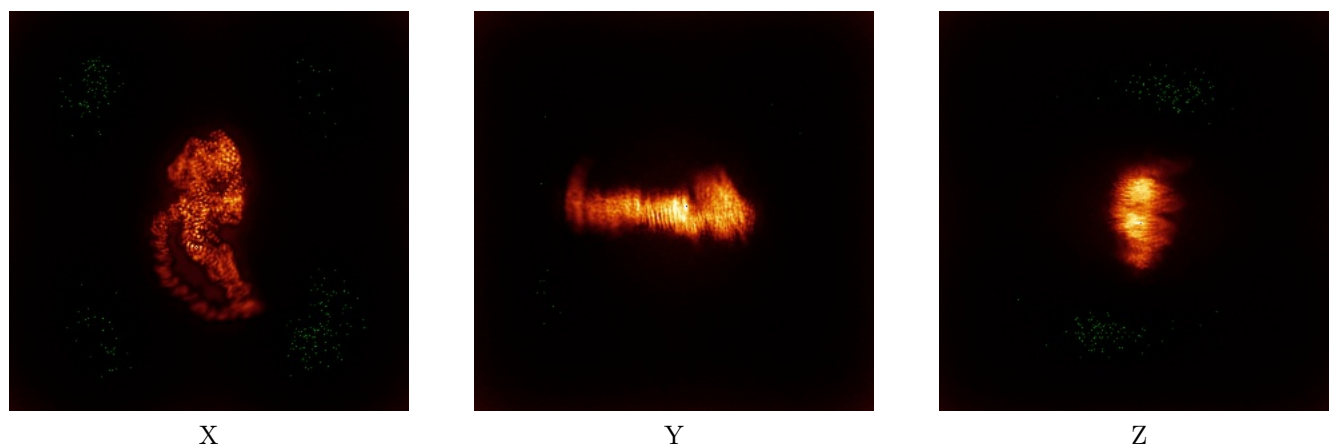
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



6.4.2 Raw map



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

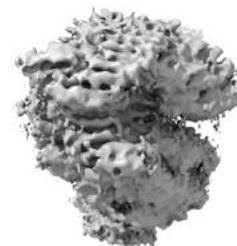
6.5.2 Raw map



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.

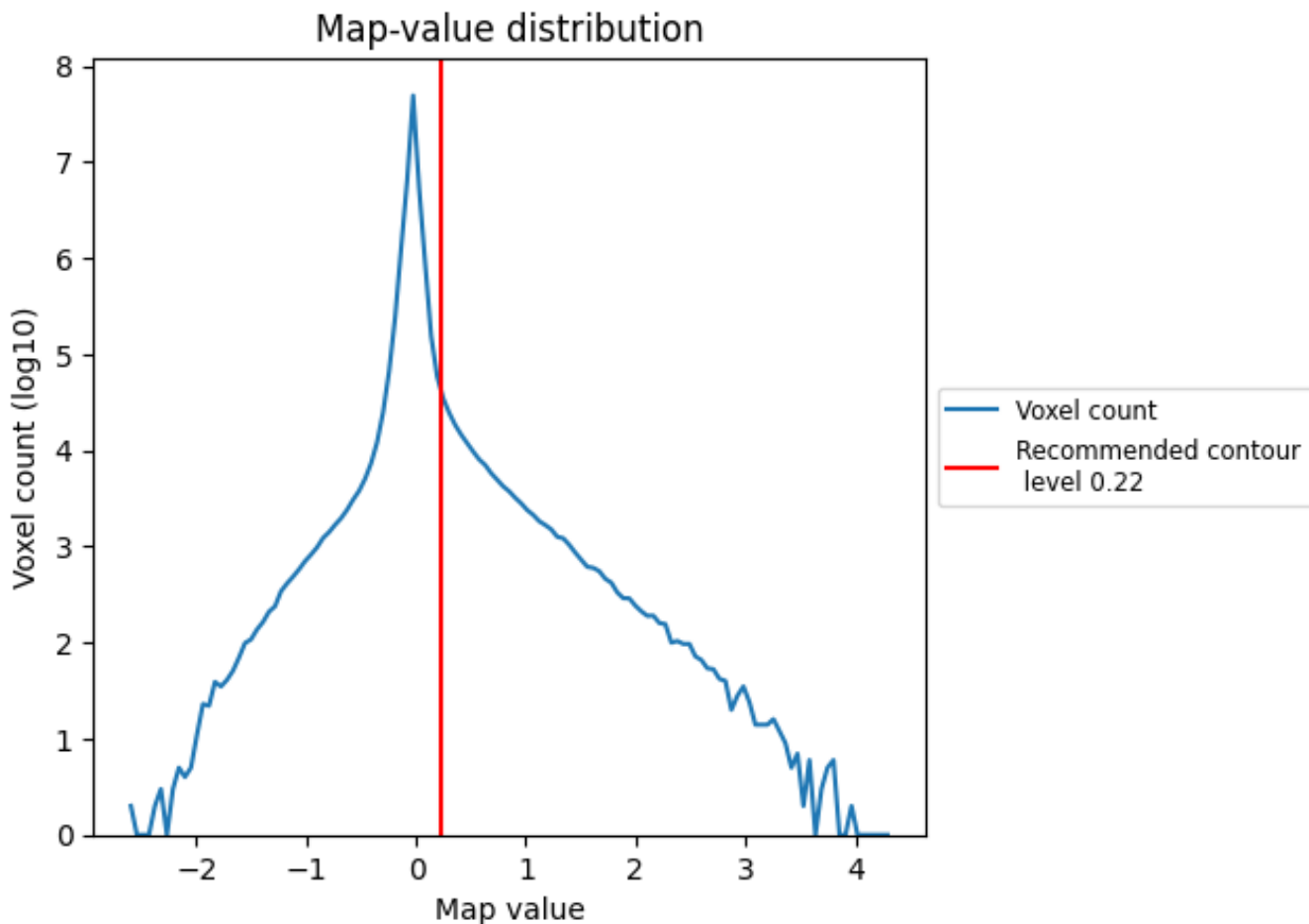
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

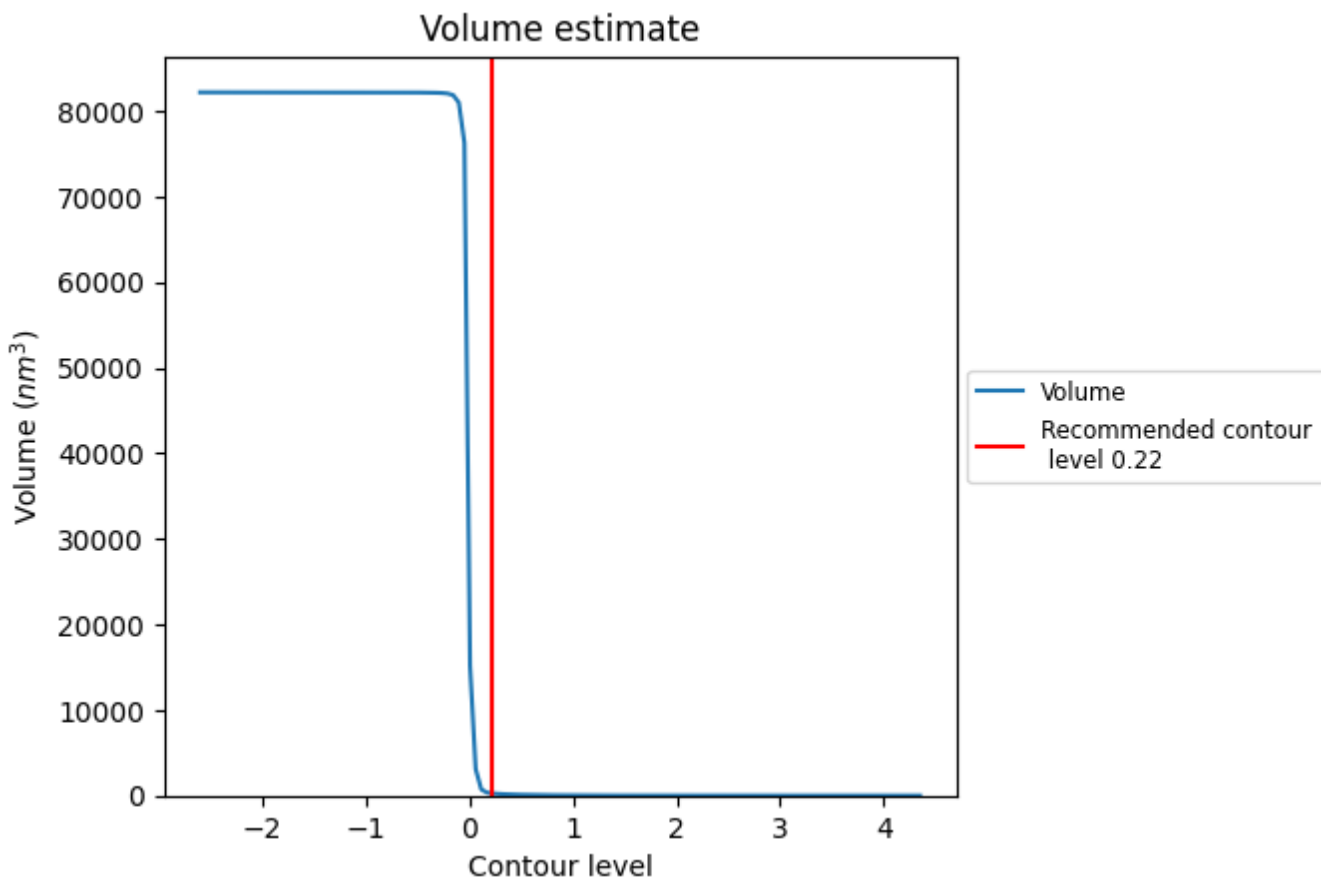
This section contains the results of statistical analysis of the map.

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.

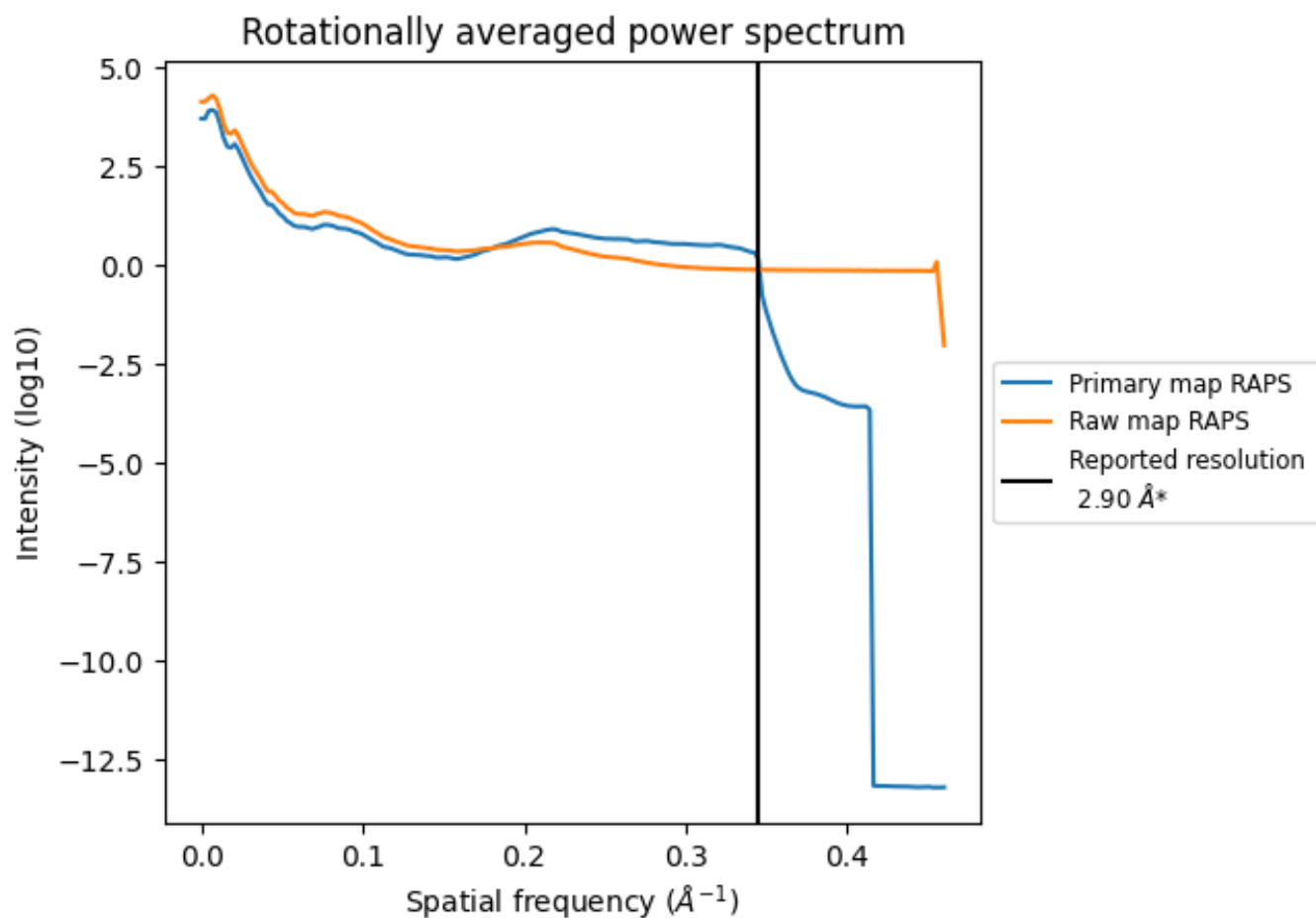
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 260 nm^3 ; this corresponds to an approximate mass of 235 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

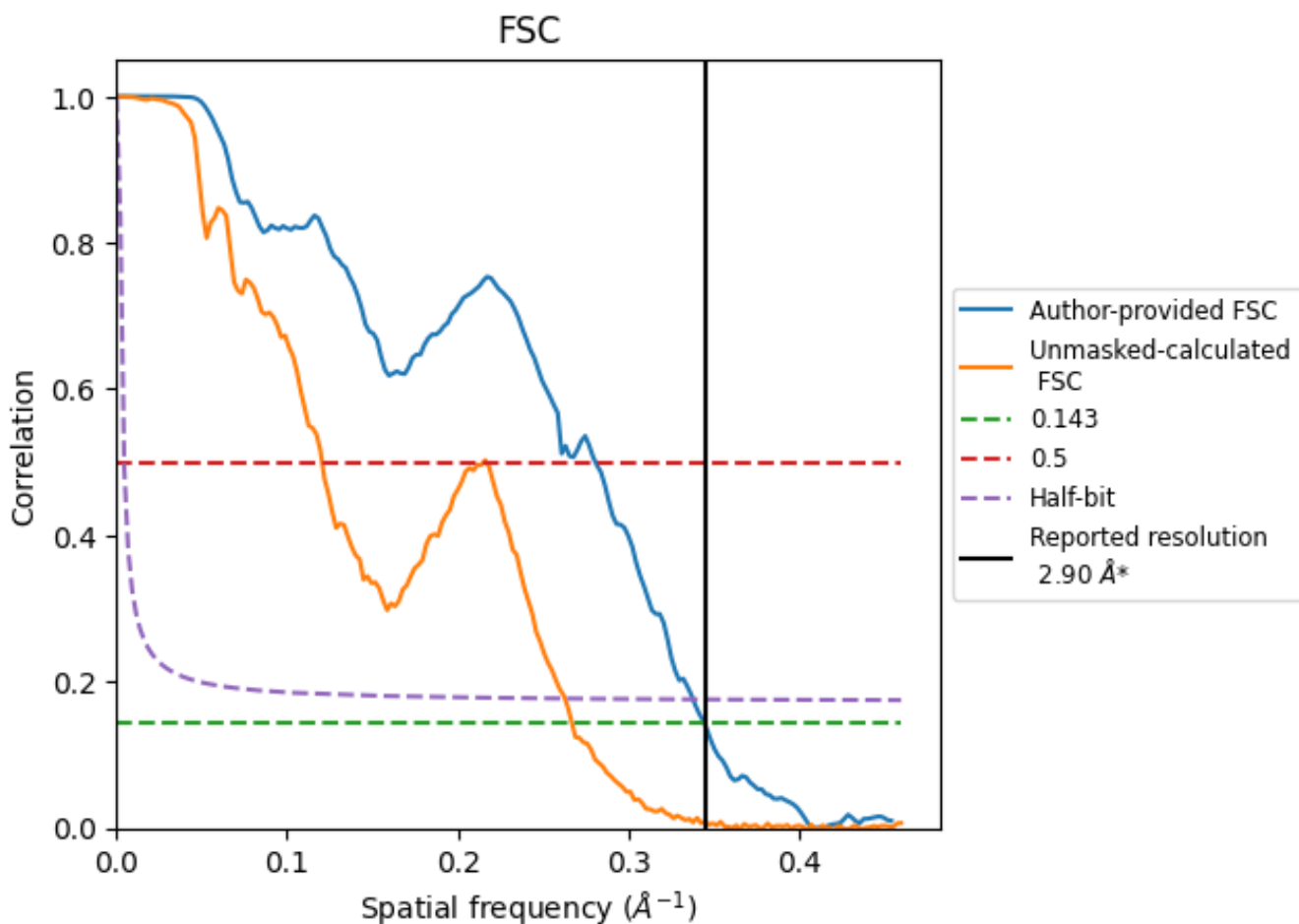


*Reported resolution corresponds to spatial frequency of 0.345 Å⁻¹

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 0.345 Å⁻¹

8.2 Resolution estimates [i](#)

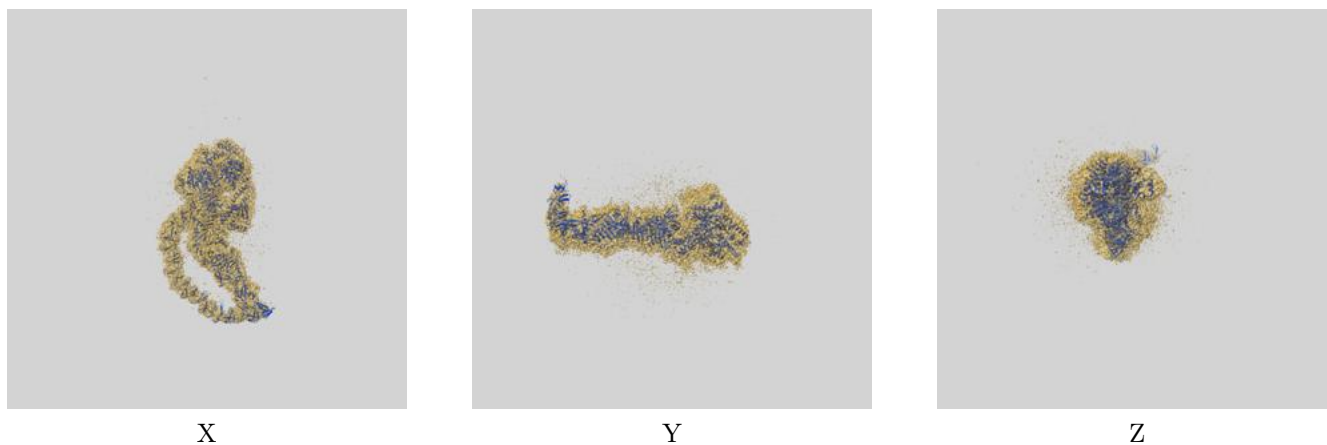
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.90	-	-
Author-provided FSC curve	2.90	3.56	2.96
Unmasked-calculated*	3.74	8.30	3.81

*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 3.74 differs from the reported value 2.9 by more than 10 %

9 Map-model fit [i](#)

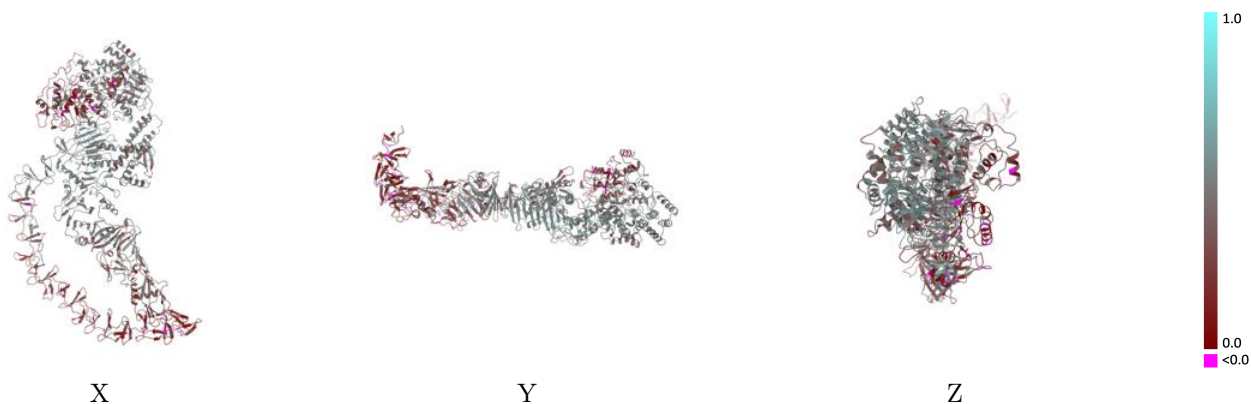
This section contains information regarding the fit between EMDB map EMD-38010 and PDB model 8X2H. Per-residue inclusion information can be found in section [3](#) on page [4](#).

9.1 Map-model overlay [i](#)



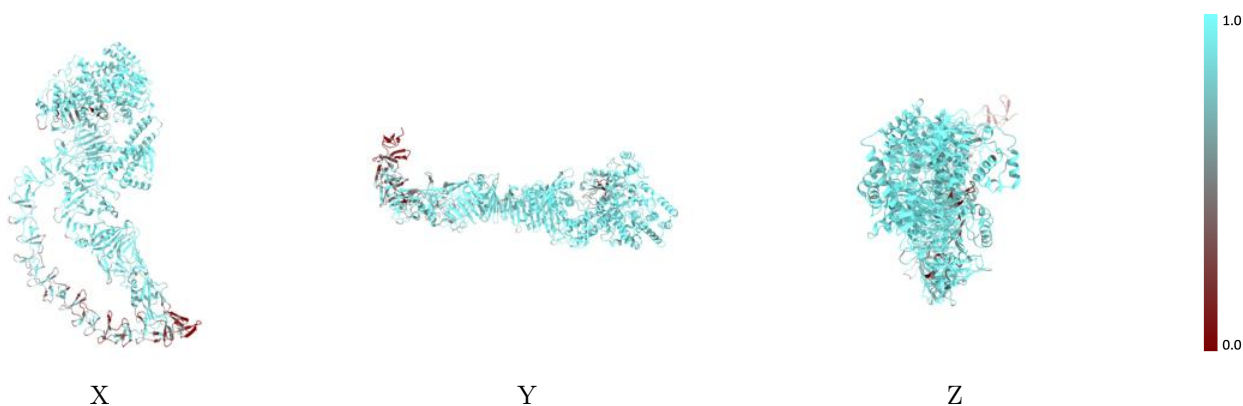
The images above show the 3D surface view of the map at the recommended contour level 0.22 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



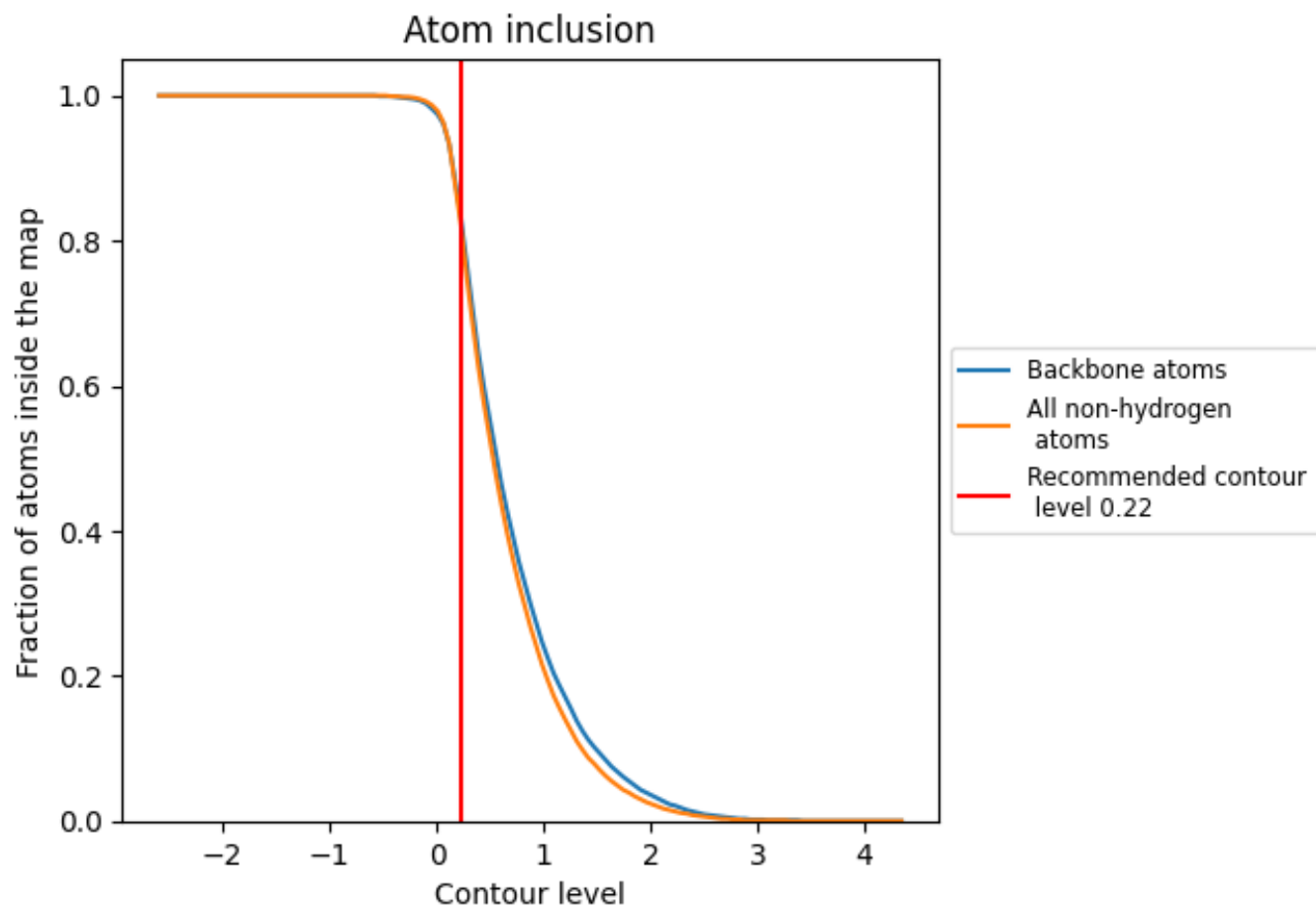
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.22).




9.4 Atom inclusion [i](#)



At the recommended contour level, 84% of all backbone atoms, 83% 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 (0.22) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8310	 0.3930
A	 0.8310	 0.3930

