



## Full wwPDB EM Validation Report ⓘ

Jul 8, 2024 – 06:18 am BST

PDB ID : 7POG  
EMDB ID : EMD-13574  
Title : High-resolution structure of native toxin A from Clostridioides difficile  
Authors : Boesen, T.; Joergensen, R.; Aminzadeh, A.; Engelbrecht Larsen, C.  
Deposited on : 2021-09-08  
Resolution : 2.83 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](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

---

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

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

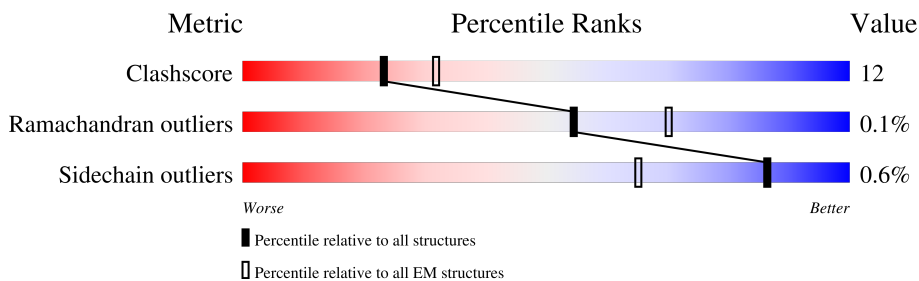
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 2.83 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  $\geq 3$ , 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	2710	

## 2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 19199 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 Toxin A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	2382	19198	12290	3103	3773	32	0	0

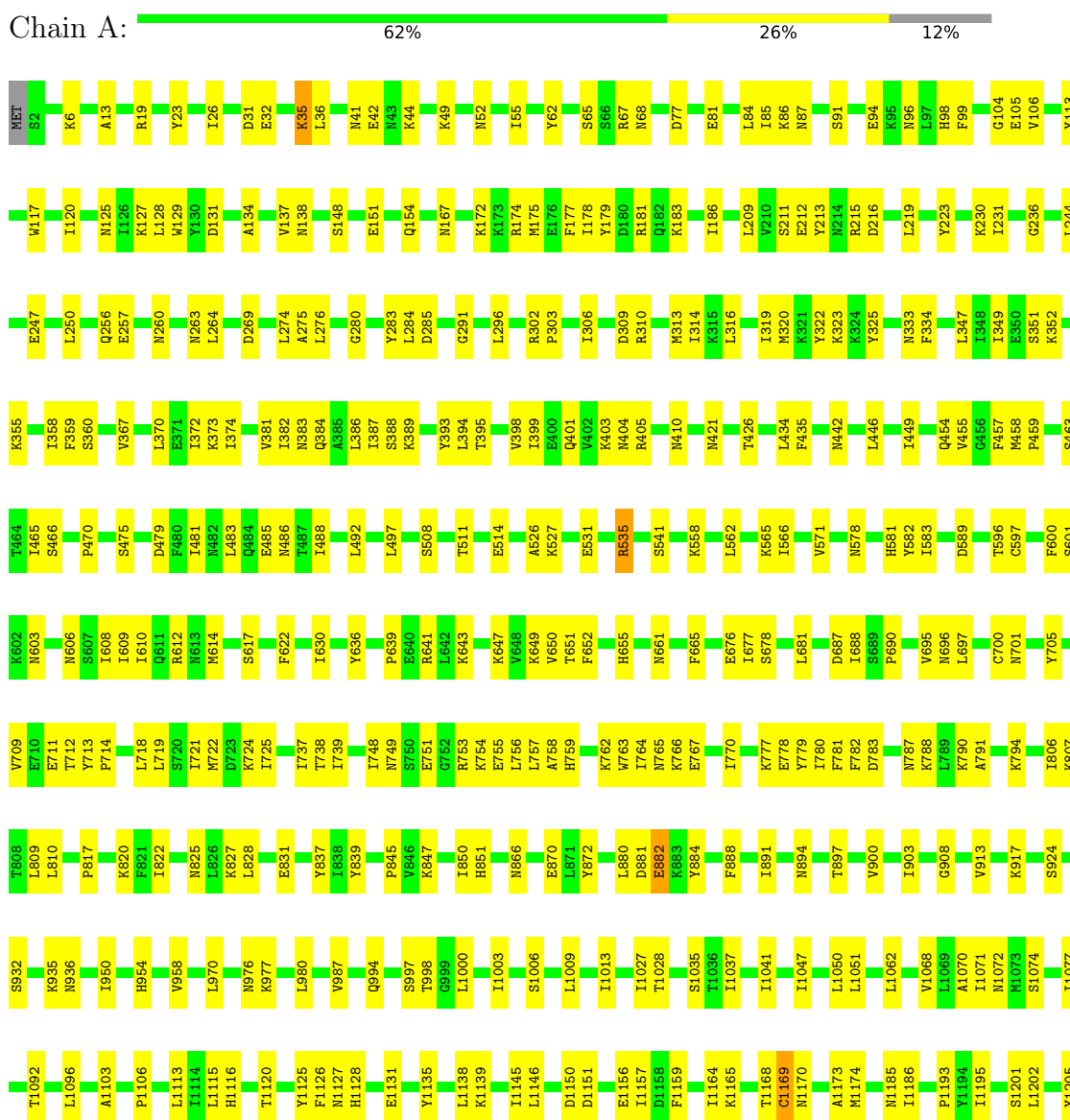
- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

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

### 3 Residue-property plots [i](#)

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

- Molecule 1: Toxin A



GLY	ALA	GLY	G2276	A2174	K2087	T1944	N1818	Y1684	F1516	C1407	T1296	I1208
LEU	ALA	SER	V2277	T2178	Y2089	R1947	A1819	I1685	M517	E1408	R1297	G1209
PHE	GLY	THR	F2284	N2182	Z2089	K1953	E1825	V1688	K1518	L1409	F1299	I1210
THR	LYS	TYR	E2285	N2183	A2097	K1953	E1825	I1689	M522	I1413	I1300	K1211
ASP	LYS	THR	Y2286	L2183	A2098	P1988	K1831	I1690	T1523	M1301	M1301	T1212
ASP	ALA	THR	A2290	N2182	Z2099	A1984	G1832	A1691	I1524	P1302	P1302	E1213
ASN	THR	TYR	N2291	L2195	T2103	L1967	L1833	P1682	T1525	E1308	E1308	N1214
ASN	THR	ASN	N2296	L2104	Z2109	L1967	F1841	Y1706	Y1528	I1309	I1309	K1220
ILE	THR	ASN	I2297	K2200	Y2110	Q1968	Y1842	Y1710	D1539	I1221	I1221	K1220
ILE	GLY	LYS	E2298	Y2203	G2106	Q1968	F1843	Y1710	F1540	Y1315	Y1315	K1220
GLY	ALA	HIS	I2302	Y2203	K2107	Y1976	L1850	I1715	S1541	S1316	S1316	M1223
VAL	THR	PHE	V2303	F2204	R2108	K1986	L1850	I1715	I1542	F1317	F1317	L1224
VAL	THR	THR	Y2304	F2204	Y2109	K1986	Q1855	P1719	S1543	D1318	D1318	A1227
VAL	THR	THR	Y2304	F2204	Y2110	K1986	Q1855	P1719	S1543	L1327	L1327	K1220
VAL	THR	THR	L2309	D2207	N2111	F1998	Q1855	Y1719	S1543	L1328	L1328	K1220
VAL	THR	THR	K2314	A2210	N2112	D1999	K1860	K1725	K1551	L1432	L1432	R1230
VAL	THR	THR	F2318	I2211	T2212	A2003	F1864	S1740	Y1562	G1433	G1433	V1231
VAL	THR	THR	S2322	A2211	T2212	A2003	T1868	E1742	Y1562	D1434	D1434	F1232
VAL	THR	THR	K2323	A2211	T2212	A2003	T1868	E1742	Y1562	L1437	L1437	T1233
VAL	THR	THR	A2324	F2224	F2132	N2034	A1870	E1754	Y1565	S1334	S1334	W1234
VAL	THR	THR	K2336	F2224	F2132	N2034	A1870	E1754	Y1565	M1338	M1338	P1240
VAL	THR	THR	Y2337	F2224	F2132	N2034	A1870	E1754	Y1565	D1343	D1343	R1243
VAL	THR	THR	V2344	F2224	F2132	N2034	A1870	E1754	Y1565	L1344	L1344	E1246
VAL	THR	THR	A2346	F2224	F2132	N2034	A1870	E1754	Y1565	E1246	E1246	E1246
VAL	THR	THR	V2346	F2224	F2132	N2034	A1870	E1754	Y1565	N1247	N1247	N1247
VAL	THR	THR	T2347	F2224	F2132	N2034	A1870	E1754	Y1565	N1248	N1248	N1248
VAL	THR	THR	G2348	F2224	F2132	N2034	A1870	E1754	Y1565	G1249	G1249	G1249
VAL	THR	THR	V2349	F2224	F2132	N2034	A1870	E1754	Y1565	T1250	T1250	T1250
VAL	THR	THR	Q2350	F2224	F2132	N2034	A1870	E1754	Y1565	K1251	K1251	K1251
VAL	THR	THR	T2351	F2224	F2132	N2034	A1870	E1754	Y1565	L1252	L1252	L1252
VAL	THR	THR	E2355	F2224	F2132	N2034	A1870	E1754	Y1565	R1257	R1257	R1257
VAL	THR	THR	K2356	F2224	F2132	N2034	A1870	E1754	Y1565	K1263	K1263	K1263
VAL	THR	THR	Y2357	F2224	F2132	N2034	A1870	E1754	Y1565	F1264	F1264	F1264
VAL	THR	THR	Y2358	F2224	F2132	N2034	A1870	E1754	Y1565	Y1265	Y1265	Y1265
VAL	THR	THR	F2359	F2224	F2132	N2034	A1870	E1754	Y1565	W1266	W1266	W1266
VAL	THR	THR	N2360	F2224	F2132	N2034	A1870	E1754	Y1565	R1267	R1267	R1267
VAL	THR	THR	A2364	F2224	F2132	N2034	A1870	E1754	Y1565	A1270	A1270	A1270
VAL	THR	THR	F2365	F2224	F2132	N2034	A1870	E1754	Y1565	F1271	F1271	F1271
VAL	THR	THR	A2366	F2224	F2132	N2034	A1870	E1754	Y1565	I1272	I1272	I1272
VAL	THR	THR	I2373	F2224	F2132	N2034	A1870	E1754	Y1565	I1276	I1276	I1276
VAL	THR	THR	D2374	F2224	F2132	N2034	A1870	E1754	Y1565	L1279	L1279	L1279
VAL	THR	THR	G2375	F2224	F2132	N2034	A1870	E1754	Y1565	K1280	K1280	K1280
VAL	THR	THR	K2376	F2224	F2132	N2034	A1870	E1754	Y1565	P1281	P1281	P1281
VAL	THR	THR	N2383	F2224	F2132	N2034	A1870	E1754	Y1565	Y1283	Y1283	Y1283
VAL	THR	THR	Y2384	F2224	F2132	N2034	A1870	E1754	Y1565	K1289	K1289	K1289
VAL	THR	THR	V2385	F2224	F2132	N2034	A1870	E1754	Y1565	I1290	I1290	I1290
VAL	THR	THR	V2386	F2224	F2132	N2034	A1870	E1754	Y1565	K1291	K1291	K1291
VAL	THR	THR	V2387	F2224	F2132	N2034	A1870	E1754	Y1565	F1404	F1404	F1404
VAL	THR	THR	V2388	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2389	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	N2390	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	I2391	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2392	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2393	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	Y2394	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2395	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2396	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2397	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2398	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2399	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2400	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2401	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2402	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2403	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2404	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2405	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2406	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2407	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2408	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2409	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2410	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2411	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2412	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2413	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2414	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2415	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2416	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2417	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2418	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2419	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2420	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2421	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2422	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2423	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2424	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2425	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2426	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2427	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2428	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2429	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2430	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2431	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2432	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2433	F2224	F2132	N2034	A1870	E1754	Y1565	F1515	F1515	F1515
VAL	THR	THR	V2434	F2224	F2132	N2034						

## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	900000	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 ( $e^-/\text{\AA}^2$ )	60	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.239	Depositor
Minimum map value	-0.090	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.0359	Depositor
Map size ( $\text{\AA}$ )	419.84, 419.84, 419.84	wwPDB
Map dimensions	656, 656, 656	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	0.64, 0.64, 0.64	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	0.27	0/19599	0.46	0/26540

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	19198	0	18832	468	0
2	A	1	0	0	0	0
All	All	19199	0	18832	468	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 12.

All (468) 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:2266:ASP:O	1:A:2271:SER:HA	1.68	0.92
1:A:310:ARG:HH21	1:A:719:LEU:HD13	1.39	0.87

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1071:ILE:HD13	1:A:1515:VAL:HG13	1.68	0.75
1:A:1944:THR:HB	1:A:1958:PRO:HA	1.69	0.74
1:A:372:ILE:HG22	1:A:394:LEU:HD22	1.69	0.73
1:A:1071:ILE:HD11	1:A:1473:ALA:HB2	1.70	0.73
1:A:2277:VAL:HG12	1:A:2286:TYR:HA	1.70	0.71
1:A:1185:ASN:O	1:A:1267:ARG:NH2	2.25	0.70
1:A:1399:LYS:HA	1:A:1422:VAL:HG21	1.73	0.70
1:A:313:MET:SD	1:A:333:ASN:ND2	2.64	0.69
1:A:405:ARG:NH1	1:A:466:SER:O	2.25	0.69
1:A:2266:ASP:O	1:A:2271:SER:CA	2.41	0.69
1:A:1283:TYR:HE2	1:A:1309:ILE:HG12	1.58	0.69
1:A:1999:ASP:HB2	1:A:2003:ALA:H	1.57	0.68
1:A:2111:PHE:HA	1:A:2118:ALA:HA	1.74	0.68
1:A:434:LEU:HD22	1:A:446:LEU:HD22	1.76	0.68
1:A:174:ARG:NH2	1:A:457:PHE:O	2.26	0.68
1:A:256:GLN:HA	1:A:260:ASN:HD22	1.59	0.67
1:A:950:ILE:HG13	1:A:1037:ILE:HD13	1.75	0.67
1:A:2112:ASN:HB2	1:A:2117:GLU:HB2	1.76	0.67
1:A:2237:THR:HG22	1:A:2242:LYS:HG2	1.76	0.67
1:A:1035:SER:HG	1:A:1609:THR:HG1	1.43	0.66
1:A:2303:VAL:HA	1:A:2322:SER:HB3	1.77	0.66
1:A:1283:TYR:CE2	1:A:1309:ILE:HG12	2.30	0.66
1:A:2028:GLY:HA3	1:A:2039:PHE:HB2	1.77	0.66
1:A:695:VAL:HB	1:A:739:ILE:HG12	1.78	0.66
1:A:608:ILE:HG22	1:A:622:PHE:HB3	1.78	0.66
1:A:738:THR:HB	1:A:779:TYR:HB3	1.77	0.66
1:A:52:ASN:HD22	1:A:483:LEU:HB2	1.61	0.66
1:A:128:LEU:HD22	1:A:231:ILE:HG23	1.78	0.65
1:A:1120:THR:HG21	1:A:2247:TYR:HB3	1.79	0.65
1:A:2043:ASN:HB2	1:A:2047:ASN:HA	1.79	0.65
1:A:306:ILE:HD12	1:A:310:ARG:HH12	1.62	0.65
1:A:1749:VAL:HG22	1:A:1762:LYS:HG2	1.77	0.65
1:A:2192:ASN:N	1:A:2204:PHE:O	2.29	0.65
1:A:754:LYS:O	1:A:765:ASN:ND2	2.30	0.64
1:A:2212:THR:HA	1:A:2224:PHE:HB2	1.78	0.64
1:A:1240:PRO:HG2	1:A:2252:GLN:HB3	1.80	0.64
1:A:401:GLN:NE2	1:A:479:ASP:OD2	2.30	0.64
1:A:1495:PHE:HB3	1:A:1503:PHE:HB3	1.80	0.64
1:A:578:ASN:ND2	1:A:1805:GLU:OE2	2.31	0.64
1:A:1543:SER:HB2	1:A:1551:LYS:HB3	1.79	0.64
1:A:209:LEU:HB3	1:A:215:ARG:HG3	1.79	0.63

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1151:ASP:HA	1:A:1227:ALA:HB2	1.81	0.63
1:A:1315:TYR:HB2	1:A:1335:MET:HG2	1.80	0.63
1:A:1609:THR:HG22	1:A:1622:ILE:HG13	1.81	0.63
1:A:77:ASP:OD2	1:A:977:LYS:NZ	2.32	0.62
1:A:850:ILE:HD12	1:A:1652:ASN:HD21	1.65	0.62
1:A:1202:LEU:HD11	1:A:1263:LYS:HB2	1.81	0.62
1:A:1413:ILE:HG12	1:A:1437:LEU:HD13	1.82	0.62
1:A:174:ARG:O	1:A:178:ILE:HG12	1.98	0.61
1:A:250:LEU:HD13	1:A:274:LEU:HD21	1.81	0.61
1:A:316:LEU:HD11	1:A:508:SER:HB2	1.81	0.61
1:A:806:ILE:HG21	1:A:827:LYS:HB2	1.80	0.61
1:A:96:ASN:ND2	1:A:125:ASN:OD1	2.30	0.61
1:A:2351:THR:HG22	1:A:2356:LYS:HB3	1.83	0.61
1:A:1202:LEU:HD12	1:A:1264:PHE:HB2	1.83	0.61
1:A:932:SER:O	1:A:936:ASN:ND2	2.34	0.61
1:A:1041:ILE:HD13	1:A:1518:LYS:HE3	1.83	0.60
1:A:756:LEU:HB3	1:A:770:ILE:HD11	1.83	0.60
1:A:1116:HIS:CE1	1:A:1125:TYR:HB2	2.35	0.60
1:A:395:THR:O	1:A:399:ILE:HD12	2.00	0.60
1:A:718:LEU:HB2	1:A:739:ILE:HD12	1.82	0.60
1:A:2182:ASN:ND2	1:A:2183:ILE:O	2.34	0.60
1:A:77:ASP:OD2	1:A:976:ASN:ND2	2.35	0.60
1:A:405:ARG:NH2	1:A:475:SER:OG	2.34	0.60
1:A:2244:TYR:HB2	1:A:2265:PHE:CE2	2.37	0.60
1:A:309:ASP:OD2	1:A:788:LYS:NZ	2.35	0.60
1:A:581:HIS:NE2	1:A:651:THR:OG1	2.29	0.60
1:A:2206:SER:OG	1:A:2207:ASP:N	2.31	0.60
1:A:807:LYS:HE2	1:A:827:LYS:HE3	1.84	0.59
1:A:1106:PRO:HA	1:A:1115:LEU:HA	1.84	0.59
1:A:1539:ASP:HB2	1:A:1556:TYR:HB3	1.84	0.59
1:A:1943:VAL:HG11	1:A:1947:ARG:HG3	1.84	0.59
1:A:381:VAL:HG13	1:A:497:LEU:HD21	1.85	0.59
1:A:622:PHE:CD2	1:A:639:PRO:HG3	2.38	0.59
1:A:1246:GLU:HA	1:A:1250:THR:HG21	1.84	0.59
1:A:1460:TYR:CE1	1:A:1462:TYR:HB2	2.38	0.59
1:A:256:GLN:NE2	1:A:410:ASN:OD1	2.32	0.59
1:A:1170:ASN:ND2	1:A:1201:SER:OG	2.35	0.59
1:A:1501:LEU:HD21	1:A:1504:ASN:HB2	1.83	0.58
1:A:1586:LEU:HA	1:A:1589:ILE:HG22	1.85	0.58
1:A:1000:LEU:HD12	1:A:1003:ILE:HG21	1.84	0.58
1:A:98:HIS:HB2	1:A:283:TYR:HA	1.85	0.58

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:183:LYS:NZ	1:A:421:ASN:O	2.35	0.58
1:A:2296:ASN:HD22	1:A:2302:ILE:HG21	1.68	0.58
1:A:322:TYR:HB2	1:A:349:ILE:HD13	1.85	0.58
1:A:749:ASN:ND2	1:A:751:GLU:OE1	2.37	0.58
1:A:565:LYS:HB3	1:A:601:SER:HB2	1.86	0.58
1:A:314:ILE:HG23	1:A:334:PHE:HD1	1.69	0.58
1:A:1173:ALA:HB2	1:A:1202:LEU:HG	1.86	0.57
1:A:970:LEU:HD13	1:A:987:VAL:HG21	1.86	0.57
1:A:2284:PHE:HB2	1:A:2324:ALA:HB3	1.86	0.57
1:A:1051:LEU:HD11	1:A:1070:ALA:HB1	1.85	0.57
1:A:1356:ILE:HG13	1:A:1363:ILE:HG23	1.86	0.57
1:A:105:GLU:HB3	1:A:223:TYR:HE1	1.70	0.57
1:A:1156:GLU:HB2	1:A:1165:LYS:HB2	1.87	0.57
1:A:1551:LYS:NZ	1:A:1605:ASP:OD2	2.35	0.57
1:A:1027:ILE:HD11	1:A:1622:ILE:HD12	1.87	0.57
1:A:2174:ALA:HB1	1:A:2178:THR:HG21	1.86	0.57
1:A:1157:ILE:HB	1:A:1290:ILE:HG12	1.87	0.56
1:A:2166:VAL:HG23	1:A:2168:ASN:H	1.69	0.56
1:A:310:ARG:O	1:A:314:ILE:HG12	2.05	0.56
1:A:1719:PRO:O	1:A:1777:LYS:NZ	2.38	0.56
1:A:465:ILE:HG23	1:A:470:PRO:HD2	1.88	0.56
1:A:2200:LYS:HE3	1:A:2230:ILE:HG21	1.87	0.56
1:A:172:LYS:NZ	1:A:822:ILE:HG13	2.21	0.56
1:A:1169:CYS:SG	1:A:1230:ARG:HD2	2.46	0.56
1:A:2099:THR:HA	1:A:2111:PHE:HB2	1.87	0.56
1:A:291:GLY:O	1:A:360:SER:N	2.39	0.56
1:A:2347:THR:O	1:A:2350:GLN:NE2	2.37	0.55
1:A:113:TYR:HE2	1:A:511:THR:HG21	1.71	0.55
1:A:527:LYS:NZ	1:A:701:ASN:OD1	2.29	0.55
1:A:1205:TYR:HA	1:A:1208:ILE:HG22	1.87	0.55
1:A:1517:MET:HG2	1:A:1522:ASN:HB3	1.88	0.55
1:A:35:LYS:HD2	1:A:35:LYS:O	2.07	0.55
1:A:6:LYS:HB2	1:A:31:ASP:HB3	1.88	0.55
1:A:296:LEU:HD11	1:A:358:ILE:HD12	1.87	0.55
1:A:211:SER:HB2	1:A:212:GLU:OE1	2.07	0.55
1:A:1426:TYR:OH	1:A:1454:ASP:OD1	2.20	0.55
1:A:2045:TYR:HB3	1:A:2054:ILE:HD12	1.87	0.55
1:A:894:ASN:ND2	1:A:897:THR:O	2.40	0.55
1:A:1185:ASN:OD1	1:A:1257:ARG:NH2	2.40	0.55
1:A:2238:ILE:O	1:A:2241:ASP:HB3	2.06	0.55
1:A:2351:THR:HA	1:A:2356:LYS:HA	1.89	0.55

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:997:SER:OG	1:A:998:THR:N	2.40	0.55
1:A:1232:PHE:CE1	1:A:1281:PRO:HB3	2.41	0.55
1:A:1927:LEU:HD21	1:A:1929:LEU:HD23	1.89	0.55
1:A:2152:TYR:HB2	1:A:2173:PHE:CE2	2.43	0.54
1:A:882:GLU:O	1:A:884:TYR:HD1	1.91	0.54
1:A:256:GLN:HA	1:A:260:ASN:ND2	2.22	0.54
1:A:1224:LEU:HB2	1:A:1302:PRO:HD3	1.90	0.54
1:A:817:PRO:HA	1:A:820:LYS:HE3	1.89	0.54
1:A:1220:LYS:HD2	1:A:1296:THR:O	2.07	0.54
1:A:714:PRO:HB2	1:A:780:ILE:HD13	1.90	0.54
1:A:935:LYS:NZ	1:A:994:GLN:O	2.41	0.54
1:A:2335:LYS:O	1:A:2366:ALA:N	2.41	0.54
1:A:1126:PHE:CE2	1:A:1253:LEU:HD21	2.43	0.54
1:A:1999:ASP:HB2	1:A:2003:ALA:N	2.23	0.54
1:A:2192:ASN:H	1:A:2205:GLY:HA2	1.73	0.54
1:A:131:ASP:HB2	1:A:134:ALA:HB3	1.90	0.54
1:A:677:ILE:HG21	1:A:721:ILE:HD13	1.89	0.54
1:A:1470:TYR:HA	1:A:1485:TYR:HB3	1.89	0.54
1:A:636:TYR:OH	1:A:676:GLU:OE2	2.21	0.53
1:A:888:PHE:HD2	1:A:924:SER:HB2	1.73	0.53
1:A:151:GLU:OE2	1:A:181:ARG:NH2	2.41	0.53
1:A:373:LYS:HD2	1:A:387:ILE:HD12	1.90	0.53
1:A:374:ILE:HD13	1:A:381:VAL:HB	1.89	0.53
1:A:1131:GLU:HB3	1:A:1135:TYR:HD2	1.72	0.53
1:A:1211:LYS:NZ	1:A:1214:ASN:O	2.41	0.53
1:A:2291:ASN:N	1:A:2296:ASN:OD1	2.41	0.53
1:A:231:ILE:HG22	1:A:236:GLY:HA3	1.91	0.53
1:A:256:GLN:O	1:A:260:ASN:HB2	2.07	0.53
1:A:1690:ILE:HG22	1:A:1692:PRO:HD3	1.90	0.53
1:A:2235:LEU:HD22	1:A:2258:ILE:HD13	1.90	0.53
1:A:85:ILE:O	1:A:86:LYS:HG2	2.09	0.53
1:A:1742:GLU:OE2	1:A:1764:ARG:NH2	2.40	0.53
1:A:36:LEU:HD23	1:A:44:LYS:HD2	1.91	0.53
1:A:1453:LEU:O	1:A:1476:LYS:NZ	2.34	0.53
1:A:137:VAL:HG11	1:A:264:LEU:HD21	1.91	0.53
1:A:1881:LYS:HB3	1:A:1918:GLN:HG3	1.91	0.53
1:A:647:LYS:HD3	1:A:649:LYS:HG3	1.91	0.52
1:A:881:ASP:O	1:A:882:GLU:HG3	2.09	0.52
1:A:1368:LEU:HD22	1:A:1451:LEU:HD21	1.91	0.52
1:A:1186:ILE:HA	1:A:1267:ARG:HH21	1.74	0.52
1:A:1328:LEU:HD12	1:A:1349:ILE:HG22	1.91	0.52

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:718:LEU:O	1:A:722:MET:HG3	2.09	0.52
1:A:1047:ILE:HD11	1:A:1068:VAL:HG11	1.92	0.52
1:A:175:MET:CE	1:A:457:PHE:HB2	2.39	0.52
1:A:755:GLU:HG2	1:A:765:ASN:HD22	1.73	0.52
1:A:2318:PHE:HA	1:A:2324:ALA:HA	1.91	0.52
1:A:26:ILE:HD11	1:A:55:ILE:HA	1.92	0.52
1:A:435:PHE:HZ	1:A:828:LEU:HD21	1.74	0.52
1:A:1947:ARG:O	1:A:1953:LYS:HA	2.09	0.52
1:A:1908:ALA:H	1:A:1916:GLU:HG3	1.73	0.52
1:A:42:GLU:HA	1:A:370:LEU:HD21	1.92	0.52
1:A:1868:THR:HG23	1:A:1870:ALA:H	1.74	0.51
1:A:582:TYR:CD2	1:A:608:ILE:HD11	2.46	0.51
1:A:1976:TYR:HB2	1:A:1998:PHE:CZ	2.45	0.51
1:A:767:GLU:OE1	1:A:809:LEU:HD11	2.11	0.51
1:A:2244:TYR:HB2	1:A:2265:PHE:HE2	1.73	0.51
1:A:872:TYR:CG	1:A:977:LYS:HG3	2.46	0.51
1:A:1384:ILE:HA	1:A:1388:GLN:O	2.11	0.51
1:A:845:PRO:HB2	1:A:847:LYS:HE3	1.93	0.51
1:A:1186:ILE:HD13	1:A:1243:ARG:HH21	1.75	0.50
1:A:1416:ILE:HB	1:A:1429:LEU:HB2	1.93	0.50
1:A:1860:LYS:HB3	1:A:1890:VAL:HG13	1.93	0.50
1:A:62:TYR:HB3	1:A:65:SER:HB2	1.93	0.50
1:A:1266:TRP:HB2	1:A:1276:ILE:HD11	1.94	0.50
1:A:1613:LYS:NZ	1:A:1614:THR:O	2.44	0.50
1:A:1682:ASP:OD1	1:A:1682:ASP:N	2.44	0.50
1:A:175:MET:HE1	1:A:457:PHE:HB2	1.94	0.50
1:A:1103:ALA:HB2	1:A:1128:HIS:CD2	2.46	0.50
1:A:1573:ASP:O	1:A:1842:TYR:OH	2.20	0.50
1:A:2360:ASN:HB3	1:A:2364:ALA:HA	1.93	0.50
1:A:1372:VAL:HG13	1:A:1373:LEU:HG	1.93	0.50
1:A:2142:GLY:HA2	1:A:2153:PHE:H	1.76	0.50
1:A:1173:ALA:HB1	1:A:1263:LYS:HD2	1.94	0.50
1:A:1379:ASN:HA	1:A:1424:LYS:HE3	1.92	0.50
1:A:1746:PHE:O	1:A:1764:ARG:HA	2.11	0.50
1:A:81:GLU:HG2	1:A:84:LEU:HD12	1.93	0.49
1:A:172:LYS:HZ2	1:A:822:ILE:HG13	1.76	0.49
1:A:367:VAL:HG12	1:A:373:LYS:HE2	1.93	0.49
1:A:778:GLU:HG3	1:A:791:ALA:HB1	1.94	0.49
1:A:2019:PHE:HD1	1:A:2024:VAL:HA	1.77	0.49
1:A:2026:LYS:HG3	1:A:2041:PRO:HG3	1.94	0.49
1:A:589:ASP:OD2	1:A:655:HIS:NE2	2.45	0.49

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1227:ALA:HB1	1:A:1230:ARG:HH21	1.75	0.49
1:A:91:SER:O	1:A:389:LYS:NZ	2.41	0.49
1:A:647:LYS:HD3	1:A:649:LYS:HE3	1.94	0.49
1:A:1630:ASP:OD1	1:A:1631:ILE:N	2.44	0.49
1:A:1343:ASP:OD1	1:A:1401:ARG:NH1	2.45	0.49
1:A:1715:ILE:HG12	1:A:1764:ARG:HG2	1.94	0.49
1:A:2026:LYS:HD2	1:A:2041:PRO:HB3	1.94	0.49
1:A:319:ILE:HA	1:A:349:ILE:HD12	1.95	0.49
1:A:1103:ALA:HB1	1:A:1125:TYR:CE1	2.47	0.49
1:A:1432:GLY:O	1:A:1460:TYR:OH	2.24	0.49
1:A:2067:LYS:HE2	1:A:2097:ALA:HB3	1.95	0.49
1:A:320:MET:HG2	1:A:325:TYR:HB2	1.95	0.49
1:A:571:VAL:HG22	1:A:748:ILE:HG13	1.95	0.49
1:A:1753:GLU:OE1	1:A:1758:LYS:HD3	2.12	0.49
1:A:2136:THR:OG1	1:A:2137:SER:N	2.46	0.49
1:A:94:GLU:OE1	1:A:94:GLU:N	2.43	0.48
1:A:531:GLU:O	1:A:535:ARG:HD3	2.13	0.48
1:A:652:PHE:HB2	1:A:697:LEU:HD23	1.95	0.48
1:A:1301:MET:HG2	1:A:1333:ILE:HD12	1.95	0.48
1:A:283:TYR:OH	1:A:285:ASP:OD1	2.26	0.48
1:A:355:LYS:HA	1:A:358:ILE:HG22	1.94	0.48
1:A:700:CYS:HB3	1:A:759:HIS:CE1	2.49	0.48
1:A:49:LYS:NZ	1:A:485:GLU:OE1	2.44	0.48
1:A:1113:LEU:HD11	1:A:1308:GLU:HB3	1.95	0.48
1:A:148:SER:HB3	1:A:177:PHE:HB2	1.95	0.48
1:A:709:VAL:O	1:A:712:THR:OG1	2.28	0.48
1:A:1281:PRO:HB2	1:A:1283:TYR:CE1	2.48	0.48
1:A:1027:ILE:HG22	1:A:1028:THR:HG23	1.94	0.48
1:A:1318:ASP:HA	1:A:1338:ASN:HB3	1.96	0.48
1:A:2348:GLY:O	1:A:2359:PHE:HB2	2.14	0.48
1:A:756:LEU:HB3	1:A:770:ILE:CD1	2.43	0.47
1:A:1138:LEU:HD12	1:A:1146:LEU:HB3	1.96	0.47
1:A:1986:LYS:HZ3	1:A:2003:ALA:HB2	1.78	0.47
1:A:2112:ASN:H	1:A:2118:ALA:H	1.62	0.47
1:A:827:LYS:O	1:A:831:GLU:HG2	2.13	0.47
1:A:1164:ILE:HG22	1:A:1212:THR:HA	1.96	0.47
1:A:1208:ILE:HG23	1:A:1210:ILE:HG12	1.96	0.47
1:A:373:LYS:O	1:A:386:LEU:HA	2.13	0.47
1:A:718:LEU:HD21	1:A:782:PHE:HB2	1.97	0.47
1:A:302:ARG:NH1	1:A:306:ILE:O	2.47	0.47
1:A:1569:VAL:HG22	1:A:1581:PHE:CZ	2.49	0.47

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2080:TRP:HZ3	1:A:2087:LYS:HE2	1.78	0.47
1:A:2203:TYR:HD2	1:A:2211:ILE:HD11	1.79	0.47
1:A:2297:ILE:HG22	1:A:2298:GLU:N	2.29	0.47
1:A:639:PRO:HB2	1:A:641:ARG:HG2	1.96	0.47
1:A:216:ASP:HB2	1:A:219:LEU:HD23	1.96	0.47
1:A:617:SER:O	1:A:617:SER:OG	2.33	0.47
1:A:678:SER:HB2	1:A:724:LYS:HE3	1.97	0.47
1:A:891:ILE:HG12	1:A:900:VAL:HG12	1.95	0.47
1:A:1551:LYS:HD2	1:A:1605:ASP:HB3	1.96	0.47
1:A:1710:TYR:CZ	1:A:1831:LYS:HD3	2.50	0.47
1:A:1911:GLN:HB3	1:A:1920:ILE:HD12	1.97	0.47
1:A:84:LEU:O	1:A:87:ASN:HB2	2.15	0.47
1:A:314:ILE:HG23	1:A:334:PHE:CD1	2.47	0.47
1:A:643:LYS:NZ	1:A:687:ASP:O	2.31	0.47
1:A:2335:LYS:HB3	1:A:2366:ALA:HB3	1.96	0.47
1:A:2290:ALA:HB2	1:A:2298:GLU:HG2	1.97	0.47
1:A:614:MET:HG2	1:A:617:SER:HB3	1.97	0.46
1:A:2048:ASN:HD22	1:A:2052:GLN:HB3	1.80	0.46
1:A:2146:ILE:HD11	1:A:2151:PHE:CE2	2.50	0.46
1:A:2172:TYR:CZ	1:A:2195:LEU:HD11	2.50	0.46
1:A:1050:LEU:HD22	1:A:1062:LEU:HD12	1.96	0.46
1:A:244:LEU:HD11	1:A:275:ALA:HA	1.98	0.46
1:A:247:GLU:OE1	1:A:403:LYS:NZ	2.49	0.46
1:A:1808:ARG:HB2	1:A:1810:HIS:CE1	2.51	0.46
1:A:2057:GLN:HA	1:A:2072:ASN:HA	1.97	0.46
1:A:2172:TYR:CE2	1:A:2174:ALA:HB2	2.51	0.46
1:A:1465:GLU:HG2	1:A:1466:SER:N	2.29	0.46
1:A:172:LYS:HB2	1:A:172:LYS:HE3	1.73	0.46
1:A:794:LYS:HB2	1:A:837:TYR:HE2	1.80	0.46
1:A:1690:ILE:N	1:A:1715:ILE:O	2.43	0.46
1:A:1810:HIS:CD2	1:A:1814:LYS:HE2	2.51	0.46
1:A:167:ASN:ND2	1:A:527:LYS:HA	2.31	0.46
1:A:758:ALA:HB3	1:A:764:ILE:HD13	1.96	0.46
1:A:2373:ILE:HG13	1:A:2374:ASP:H	1.80	0.46
1:A:753:ARG:NH2	1:A:765:ASN:OD1	2.47	0.46
1:A:1354:ARG:HG2	1:A:1368:LEU:HD23	1.98	0.46
1:A:1327:LEU:HA	1:A:1348:ASN:HB2	1.99	0.45
1:A:1814:LYS:O	1:A:1820:THR:HA	2.15	0.45
1:A:31:ASP:OD1	1:A:32:GLU:N	2.49	0.45
1:A:1785:ILE:HG12	1:A:1788:LEU:HD21	1.97	0.45
1:A:2048:ASN:ND2	1:A:2054:ILE:HD11	2.30	0.45

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:269:ASP:OD1	1:A:383:ASN:ND2	2.43	0.45
1:A:608:ILE:HG13	1:A:610:ILE:HD11	1.98	0.45
1:A:399:ILE:HG22	1:A:403:LYS:HE2	1.97	0.45
1:A:1174:MET:SD	1:A:1193:PRO:HB2	2.56	0.45
1:A:1231:VAL:O	1:A:1281:PRO:HA	2.17	0.45
1:A:1551:LYS:HA	1:A:1603:VAL:HB	1.98	0.45
1:A:2154:ASN:ND2	1:A:2160:GLN:OE1	2.49	0.45
1:A:151:GLU:O	1:A:154:GLN:HG3	2.17	0.45
1:A:394:LEU:O	1:A:398:VAL:HG23	2.17	0.45
1:A:661:ASN:ND2	1:A:711:GLU:O	2.35	0.45
1:A:756:LEU:HD21	1:A:766:LYS:HB2	1.98	0.45
1:A:777:LYS:NZ	1:A:779:TYR:OH	2.49	0.45
1:A:2304:TYR:CE1	1:A:2309:LEU:HD22	2.52	0.45
1:A:120:ILE:HD13	1:A:359:PHE:HB2	1.98	0.45
1:A:725:ILE:HG21	1:A:737:ILE:HG12	1.98	0.45
1:A:62:TYR:O	1:A:68:ASN:ND2	2.49	0.44
1:A:1510:ALA:HB3	1:A:1513:ILE:HD11	1.99	0.44
1:A:41:ASN:HA	1:A:44:LYS:HB3	1.97	0.44
1:A:310:ARG:NH2	1:A:719:LEU:HD13	2.19	0.44
1:A:757:LEU:HB2	1:A:763:TRP:CZ3	2.52	0.44
1:A:1528:TYR:HB2	1:A:1594:LEU:HD13	1.98	0.44
1:A:1576:HIS:O	1:A:1684:TYR:OH	2.25	0.44
1:A:459:PRO:HB3	1:A:526:ALA:HB2	1.98	0.44
1:A:98:HIS:NE2	1:A:280:GLY:O	2.26	0.44
1:A:681:LEU:HD21	1:A:725:ILE:HD13	1.98	0.44
1:A:1128:HIS:NE2	1:A:1150:ASP:O	2.48	0.44
1:A:1525:THR:HA	1:A:1540:PHE:O	2.18	0.44
1:A:2241:ASP:OD1	1:A:2272:LYS:HG3	2.17	0.44
1:A:382:ILE:HD12	1:A:470:PRO:HG3	2.00	0.44
1:A:481:ILE:HG13	1:A:492:LEU:HD21	1.99	0.44
1:A:535:ARG:HE	1:A:541:SER:HA	1.82	0.44
1:A:881:ASP:OD1	1:A:881:ASP:N	2.45	0.44
1:A:1904:TYR:CZ	1:A:1927:LEU:HD11	2.53	0.44
1:A:2146:ILE:O	1:A:2146:ILE:HG13	2.17	0.44
1:A:96:ASN:HB3	1:A:127:LYS:HD2	1.99	0.44
1:A:175:MET:HE1	1:A:454:GLN:HA	2.00	0.44
1:A:492:LEU:HD12	1:A:492:LEU:HA	1.87	0.44
1:A:535:ARG:NE	1:A:541:SER:O	2.51	0.44
1:A:612:ARG:NH1	1:A:676:GLU:OE1	2.48	0.44
1:A:1515:VAL:HG23	1:A:1524:ILE:HG13	2.00	0.44
1:A:2119:ALA:HB1	1:A:2132:PHE:HB3	2.00	0.44

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1706:TYR:CG	1:A:1754:GLU:HG2	2.53	0.44
1:A:783:ASP:O	1:A:787:ASN:N	2.50	0.44
1:A:1575:HIS:ND1	1:A:1833:LEU:HD23	2.33	0.44
1:A:384:GLN:NE2	1:A:514:GLU:OE1	2.51	0.43
1:A:954:HIS:O	1:A:958:VAL:HG13	2.18	0.43
1:A:866:ASN:O	1:A:870:GLU:OE1	2.36	0.43
1:A:1009:LEU:O	1:A:1013:ILE:HG12	2.17	0.43
1:A:1289:LYS:HD2	1:A:1316:SER:OG	2.19	0.43
1:A:1739:TRP:HA	1:A:1747:ILE:O	2.18	0.43
1:A:2297:ILE:CG2	1:A:2298:GLU:N	2.81	0.43
1:A:212:GLU:OE1	1:A:212:GLU:N	2.51	0.43
1:A:713:TYR:HB3	1:A:714:PRO:HD3	2.00	0.43
1:A:1096:LEU:HD11	1:A:1145:ILE:HD13	1.99	0.43
1:A:565:LYS:HD2	1:A:597:CYS:HB3	1.99	0.43
1:A:757:LEU:HD12	1:A:762:LYS:O	2.18	0.43
1:A:1270:ALA:C	1:A:1272:PHE:H	2.21	0.43
1:A:1739:TRP:HZ3	1:A:1741:THR:HG23	1.83	0.43
1:A:1875:TYR:OH	1:A:1882:HIS:ND1	2.45	0.43
1:A:1893:LEU:HD13	1:A:1907:PRO:HB3	2.01	0.43
1:A:175:MET:CE	1:A:458:MET:HG3	2.48	0.43
1:A:781:PHE:CE1	1:A:790:LYS:HB2	2.54	0.43
1:A:562:LEU:HD23	1:A:566:ILE:HD12	2.01	0.43
1:A:1221:ILE:HD13	1:A:1298:ASN:HB2	2.01	0.43
1:A:762:LYS:HG2	1:A:763:TRP:H	1.84	0.43
1:A:2087:LYS:O	1:A:2087:LYS:HD3	2.18	0.43
1:A:2132:PHE:HA	1:A:2139:ALA:HB2	2.00	0.43
1:A:583:ILE:HG22	1:A:596:THR:HG23	2.00	0.43
1:A:2103:THR:HA	1:A:2107:LYS:O	2.18	0.43
1:A:91:SER:HB3	1:A:389:LYS:HE3	1.99	0.43
1:A:257:GLU:HB3	1:A:263:ASN:O	2.19	0.43
1:A:1072:ASN:HB3	1:A:1077:ILE:HD13	2.01	0.43
1:A:2089:TYR:HB3	1:A:2111:PHE:CE1	2.54	0.43
1:A:2115:THR:OG1	1:A:2116:ALA:N	2.52	0.43
1:A:179:TYR:CE2	1:A:426:THR:HG21	2.54	0.42
1:A:276:LEU:HB3	1:A:388:SER:OG	2.19	0.42
1:A:903:ILE:HG21	1:A:1009:LEU:HD21	2.01	0.42
1:A:1106:PRO:HG3	1:A:1115:LEU:HB3	2.00	0.42
1:A:296:LEU:HG	1:A:352:LYS:HE3	2.01	0.42
1:A:1092:THR:HG21	1:A:1408:GLU:HG3	2.01	0.42
1:A:1139:LYS:HB2	1:A:1139:LYS:HE3	1.71	0.42
1:A:1234:TRP:HB3	1:A:1279:LEU:HD23	2.01	0.42

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1344:LEU:HD11	1:A:1404:PHE:HE2	1.84	0.42
1:A:1841:PHE:HB3	1:A:1850:LEU:HD21	2.01	0.42
1:A:372:ILE:HG13	1:A:388:SER:HB3	2.01	0.42
1:A:880:LEU:HD22	1:A:913:VAL:HG11	2.00	0.42
1:A:1164:ILE:O	1:A:1212:THR:HB	2.19	0.42
1:A:1349:ILE:HG13	1:A:1407:CYS:HB3	2.00	0.42
1:A:1688:VAL:O	1:A:1715:ILE:N	2.30	0.42
1:A:1706:TYR:O	1:A:1757:LYS:NZ	2.41	0.42
1:A:2146:ILE:HG13	1:A:2149:LYS:HB2	2.01	0.42
1:A:2154:ASN:OD1	1:A:2158:ILE:N	2.51	0.42
1:A:2314:LYS:HD3	1:A:2344:VAL:HG21	2.01	0.42
1:A:650:VAL:O	1:A:696:ASN:N	2.52	0.42
1:A:1896:PHE:HB2	1:A:1905:PHE:HE2	1.85	0.42
1:A:2077:VAL:O	1:A:2077:VAL:HG13	2.18	0.42
1:A:2163:VAL:HG22	1:A:2172:TYR:HD1	1.85	0.42
1:A:455:VAL:HG21	1:A:463:SER:HB2	2.02	0.42
1:A:582:TYR:CE2	1:A:608:ILE:HD11	2.54	0.42
1:A:766:LYS:O	1:A:770:ILE:HG12	2.18	0.42
1:A:888:PHE:O	1:A:924:SER:OG	2.25	0.42
1:A:1999:ASP:OD2	1:A:2002:THR:OG1	2.37	0.42
1:A:13:ALA:HB1	1:A:67:ARG:HB3	2.02	0.42
1:A:1074:SER:HB3	1:A:1077:ILE:HG22	2.01	0.42
1:A:1842:TYR:HB2	1:A:1864:PHE:CZ	2.55	0.42
1:A:558:LYS:H	1:A:558:LYS:HG3	1.64	0.42
1:A:558:LYS:HB3	1:A:630:ILE:HG13	2.02	0.42
1:A:1377:ASP:HB3	1:A:1384:ILE:HB	2.01	0.42
1:A:2170:PHE:HB2	1:A:2210:ALA:HB3	2.02	0.42
1:A:1127:ASN:OD1	1:A:1248:ASN:HB2	2.19	0.42
1:A:1377:ASP:O	1:A:1383:LEU:HD12	2.20	0.42
1:A:370:LEU:HD23	1:A:393:TYR:HB3	2.01	0.42
1:A:954:HIS:CG	1:A:1825:GLU:HB2	2.55	0.42
1:A:1817:ASP:OD2	1:A:1818:ASN:N	2.52	0.42
1:A:1937:ASP:HB3	1:A:1939:ASP:OD1	2.20	0.42
1:A:2109:TYR:HE1	1:A:2138:ILE:HA	1.84	0.42
1:A:106:VAL:HG23	1:A:230:LYS:HD2	2.01	0.41
1:A:665:PHE:CE2	1:A:697:LEU:HD22	2.55	0.41
1:A:2105:ASP:O	1:A:2107:LYS:NZ	2.41	0.41
1:A:209:LEU:HA	1:A:213:TYR:HD2	1.84	0.41
1:A:600:PHE:CD1	1:A:609:ILE:HG13	2.55	0.41
1:A:688:ILE:HG13	1:A:690:PRO:HD3	2.01	0.41
1:A:1300:ILE:HG23	1:A:1327:LEU:HD23	2.02	0.41

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1562:TYR:CD1	1:A:1612:GLY:HA3	2.55	0.41
1:A:2221:LYS:HG2	1:A:2251:LEU:HD23	2.01	0.41
1:A:99:PHE:O	1:A:129:TRP:N	2.35	0.41
1:A:302:ARG:HA	1:A:303:PRO:HD3	1.92	0.41
1:A:446:LEU:HA	1:A:449:ILE:HG12	2.02	0.41
1:A:1843:PHE:CE1	1:A:1850:LEU:HG	2.56	0.41
1:A:2337:TYR:HD2	1:A:2346:VAL:HG21	1.84	0.41
1:A:183:LYS:HA	1:A:186:ILE:HG22	2.02	0.41
1:A:1195:ILE:HG13	1:A:1234:TRP:O	2.20	0.41
1:A:1967:LEU:HD23	1:A:1967:LEU:H	1.85	0.41
1:A:2221:LYS:HB3	1:A:2251:LEU:HB3	2.03	0.41
1:A:2274:VAL:HG22	1:A:2276:GLY:H	1.86	0.41
1:A:2355:GLU:HB3	1:A:2357:TYR:CE1	2.55	0.41
1:A:323:LYS:HA	1:A:323:LYS:HD3	1.91	0.41
1:A:347:LEU:O	1:A:351:SER:HB3	2.20	0.41
1:A:1208:ILE:HD13	1:A:1210:ILE:HD11	2.02	0.41
1:A:1251:LYS:HA	1:A:1251:LYS:HD2	1.93	0.41
1:A:1338:ASN:HA	1:A:1393:SER:O	2.21	0.41
1:A:1523:THR:HA	1:A:1542:ILE:O	2.20	0.41
1:A:2268:ASN:OD1	1:A:2269:ASN:N	2.49	0.41
1:A:2145:ILE:HD13	1:A:2150:TYR:CE2	2.56	0.41
1:A:306:ILE:HG23	1:A:310:ARG:NH1	2.36	0.41
1:A:839:TYR:HA	1:A:1772:THR:HG23	2.03	0.41
1:A:870:GLU:HB2	1:A:917:LYS:NZ	2.36	0.41
1:A:1429:LEU:HD23	1:A:1459:ALA:HB3	2.03	0.41
1:A:1569:VAL:HG22	1:A:1581:PHE:HZ	1.85	0.41
1:A:2146:ILE:HD11	1:A:2151:PHE:CD2	2.56	0.41
1:A:19:ARG:HG3	1:A:23:TYR:CD2	2.56	0.41
1:A:442:ASN:HB3	1:A:488:ILE:HD12	2.03	0.41
1:A:603:ASN:ND2	1:A:606:ASN:HB2	2.36	0.41
1:A:610:ILE:HG22	1:A:610:ILE:O	2.21	0.41
1:A:719:LEU:HD23	1:A:722:MET:HE1	2.02	0.41
1:A:872:TYR:CE1	1:A:980:LEU:HD22	2.56	0.41
1:A:1096:LEU:HD23	1:A:1096:LEU:HA	1.89	0.41
1:A:1202:LEU:HD21	1:A:1263:LYS:HE2	2.01	0.41
1:A:1455:SER:O	1:A:1476:LYS:HD2	2.20	0.41
1:A:2144:THR:O	1:A:2150:TYR:HA	2.21	0.41
1:A:117:TRP:CE2	1:A:284:LEU:HD13	2.55	0.41
1:A:404:ASN:ND2	1:A:486:ASN:OD1	2.54	0.41
1:A:1725:LYS:HE2	1:A:1779:SER:HB3	2.02	0.41
1:A:1145:ILE:HD11	1:A:1300:ILE:HG13	2.03	0.40

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1186:ILE:HD13	1:A:1243:ARG:HE	1.86	0.40
1:A:1681:ILE:HD12	1:A:1685:ILE:HD11	2.02	0.40
1:A:1943:VAL:HG21	1:A:1947:ARG:HH11	1.86	0.40
1:A:2055:VAL:HA	1:A:2074:SER:HB3	2.02	0.40
1:A:705:TYR:HB2	1:A:712:THR:HG21	2.02	0.40
1:A:1565:TYR:O	1:A:1569:VAL:HG23	2.21	0.40
1:A:1964:ALA:HB1	1:A:1968:GLN:HG3	2.03	0.40
1:A:104:GLY:HA3	1:A:138:ASN:HD22	1.86	0.40
1:A:719:LEU:HD23	1:A:719:LEU:HA	1.91	0.40
1:A:810:LEU:HD23	1:A:820:LYS:HG2	2.03	0.40
1:A:851:HIS:NE2	1:A:1766:LYS:HG3	2.36	0.40
1:A:908:GLY:HA3	1:A:1006:SER:HB3	2.03	0.40
1:A:1159:PHE:HB2	1:A:1291:LYS:O	2.20	0.40
1:A:1409:LEU:HD23	1:A:1409:LEU:HA	1.95	0.40
1:A:1855:GLN:HB2	1:A:1864:PHE:HE2	1.86	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	2380/2710 (88%)	2198 (92%)	180 (8%)	2 (0%)	51 75

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	882	GLU
1	A	1498	GLY

### 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	2151/2412 (89%)	2138 (99%)	13 (1%)	<a href="#">86</a> <a href="#">93</a>

All (13) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	35	LYS
1	A	535	ARG
1	A	825	ASN
1	A	1168	THR
1	A	1169	CYS
1	A	1223	MET
1	A	1380	LYS
1	A	1434	LYS
1	A	1487	LYS
1	A	2034	ASN
1	A	2253	ASN
1	A	2260	ARG
1	A	2376	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	431	HIS
1	A	824	ASN
1	A	1170	ASN
1	A	1892	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](#)

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 [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

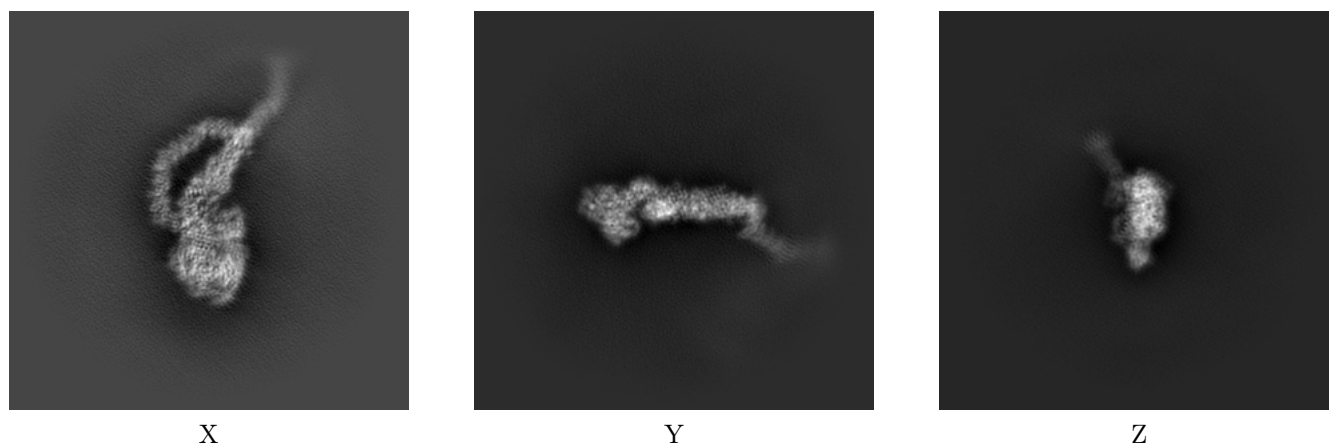
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13574. These allow visual inspection of the internal detail of the map and identification of artifacts.

No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

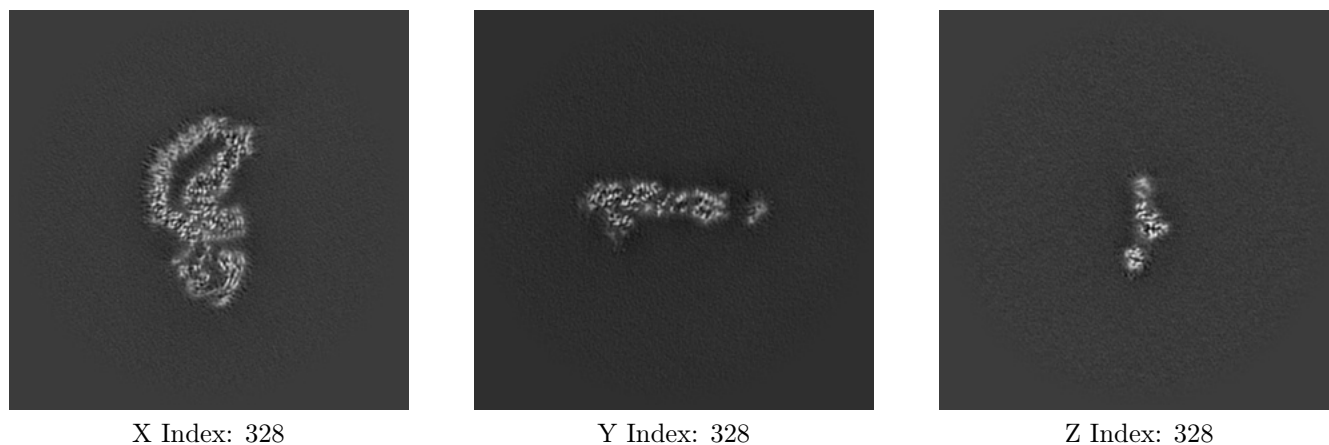
#### 6.1.1 Primary map



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

### 6.2 Central slices [i](#)

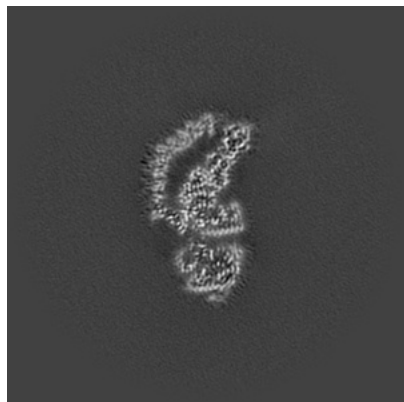
#### 6.2.1 Primary map



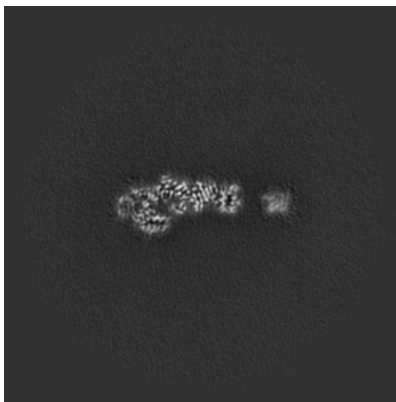
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

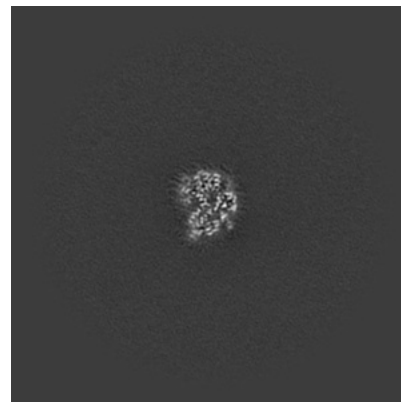
### 6.3.1 Primary map



X Index: 334



Y Index: 306



Z Index: 223

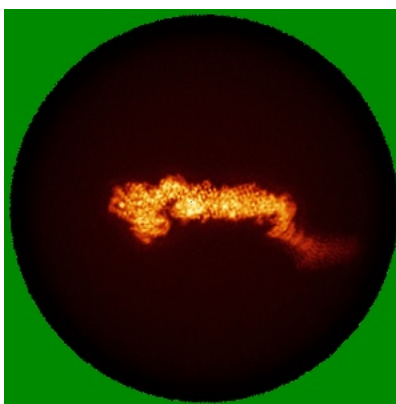
The images above show the largest variance slices of the map in three orthogonal directions.

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

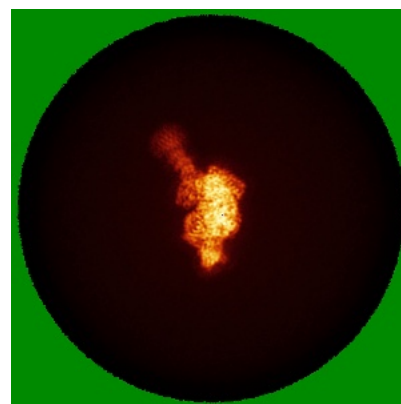
### 6.4.1 Primary map



X



Y

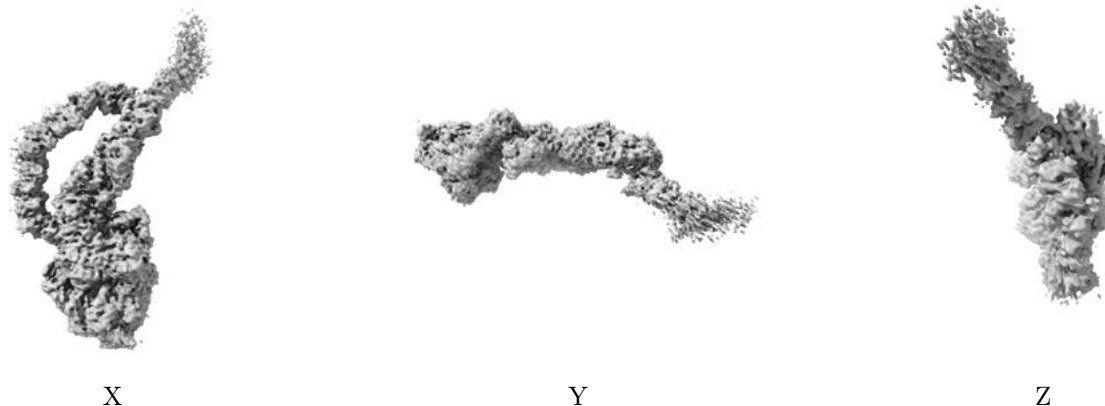


Z

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 0.0359. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

## 6.6 Mask visualisation [i](#)

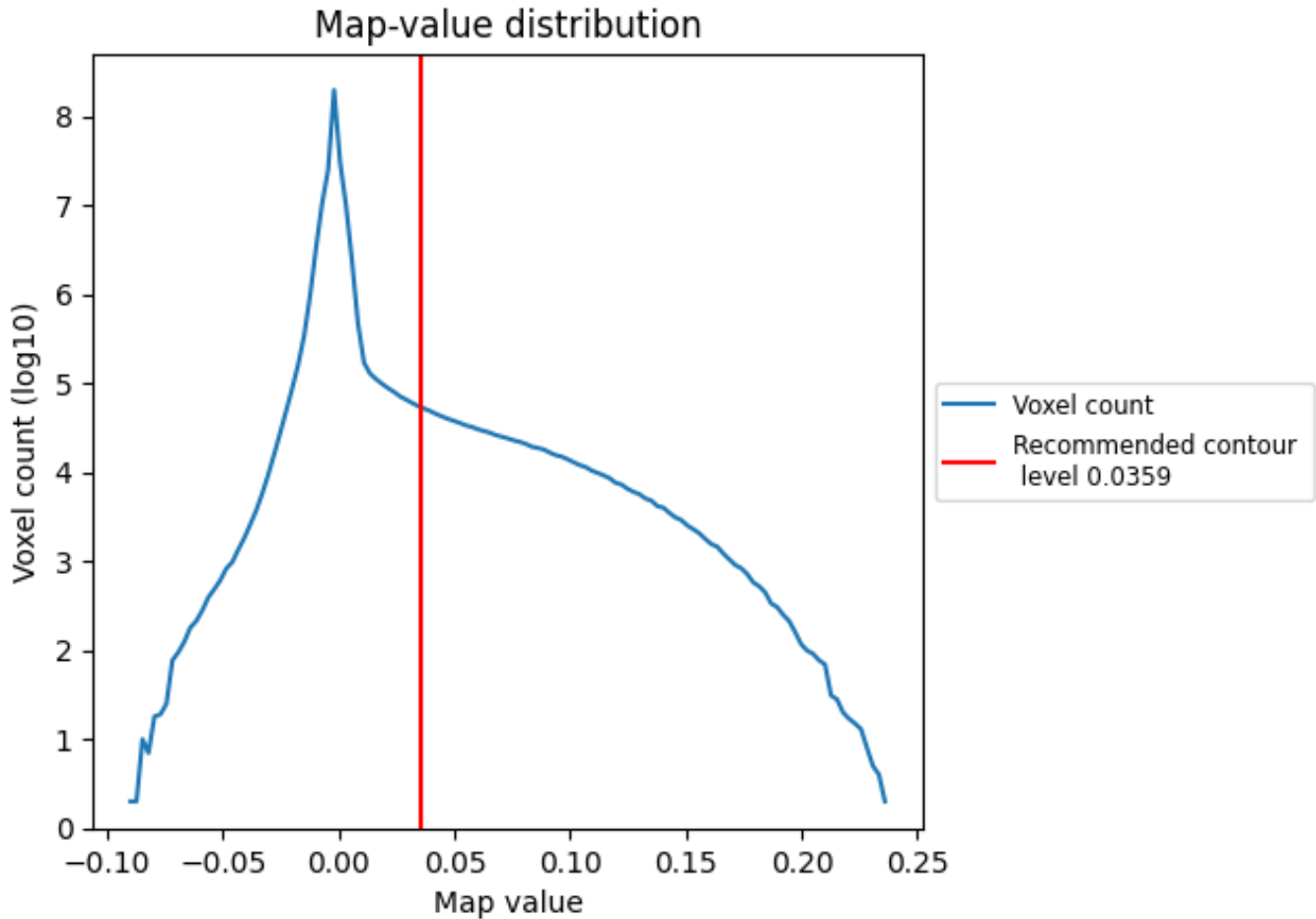
This section was not generated. No masks/segmentation were deposited.



## 7 Map analysis [i](#)

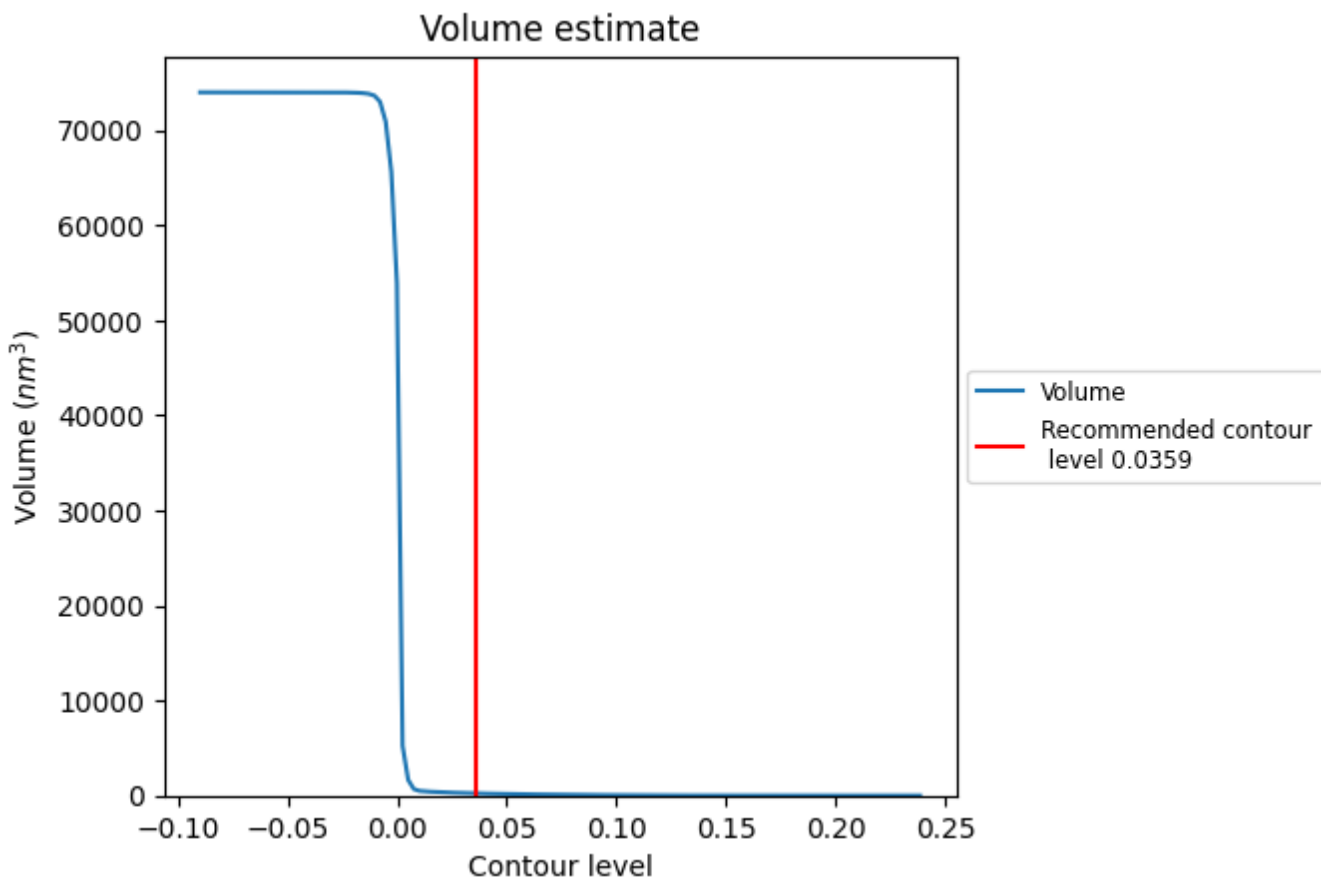
This section contains the results of statistical analysis of the map.

### 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.

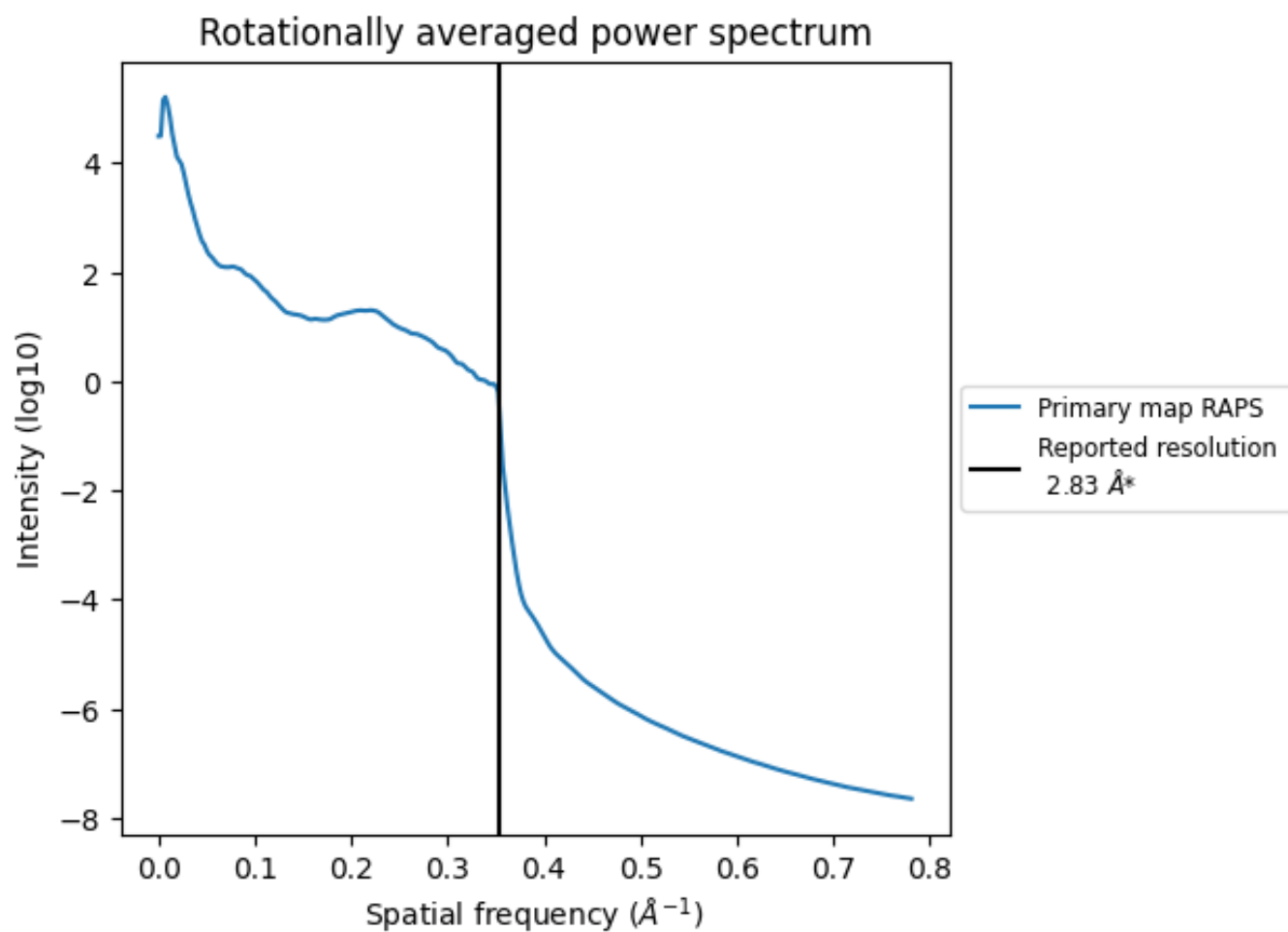
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 232  $\text{nm}^3$ ; this corresponds to an approximate mass of 210 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  $0.353 \text{\AA}^{-1}$

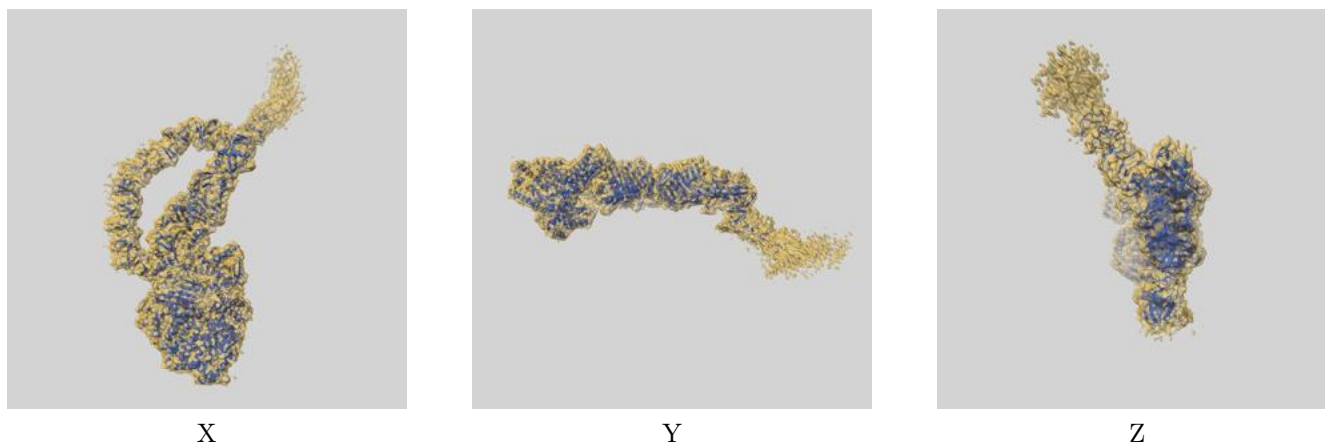
## 8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

## 9 Map-model fit [i](#)

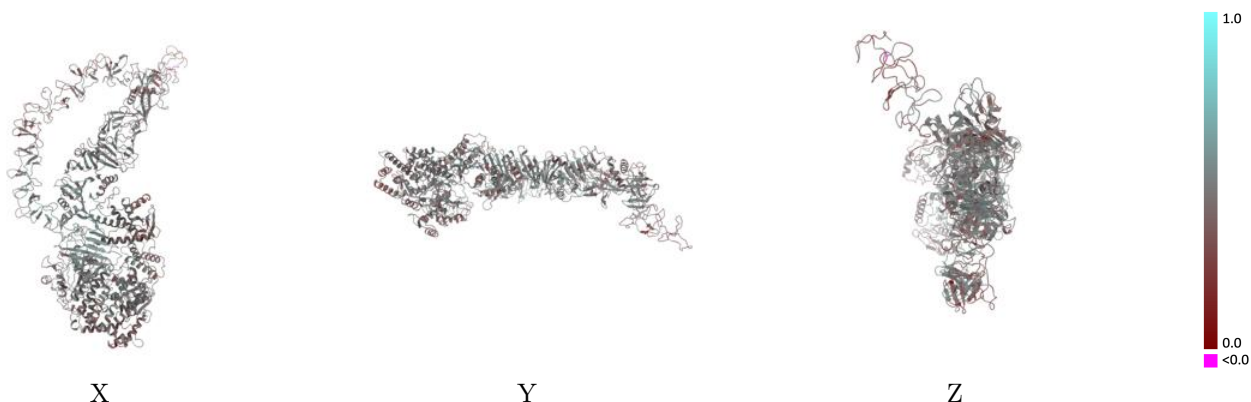
This section contains information regarding the fit between EMDB map EMD-13574 and PDB model 7POG. Per-residue inclusion information can be found in section [3](#) on page [4](#).

### 9.1 Map-model overlay [i](#)



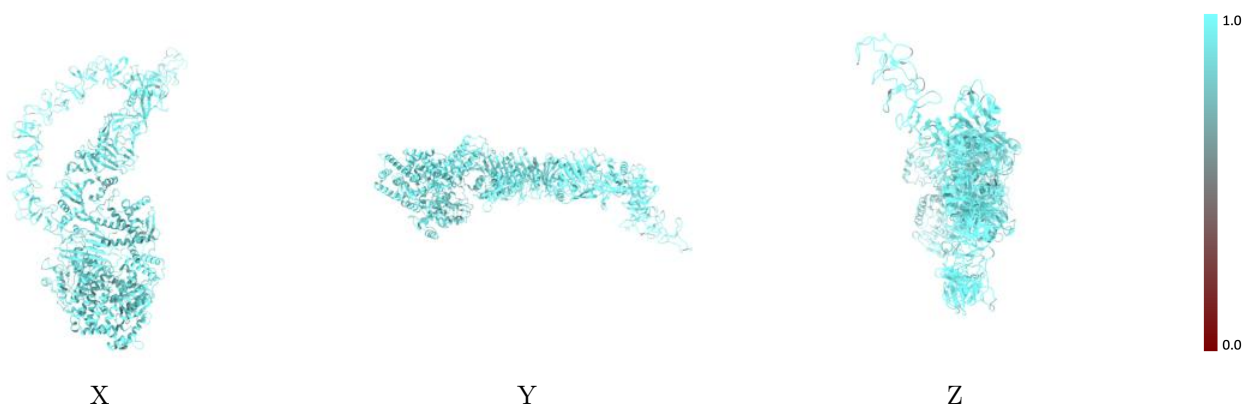
The images above show the 3D surface view of the map at the recommended contour level 0.0359 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



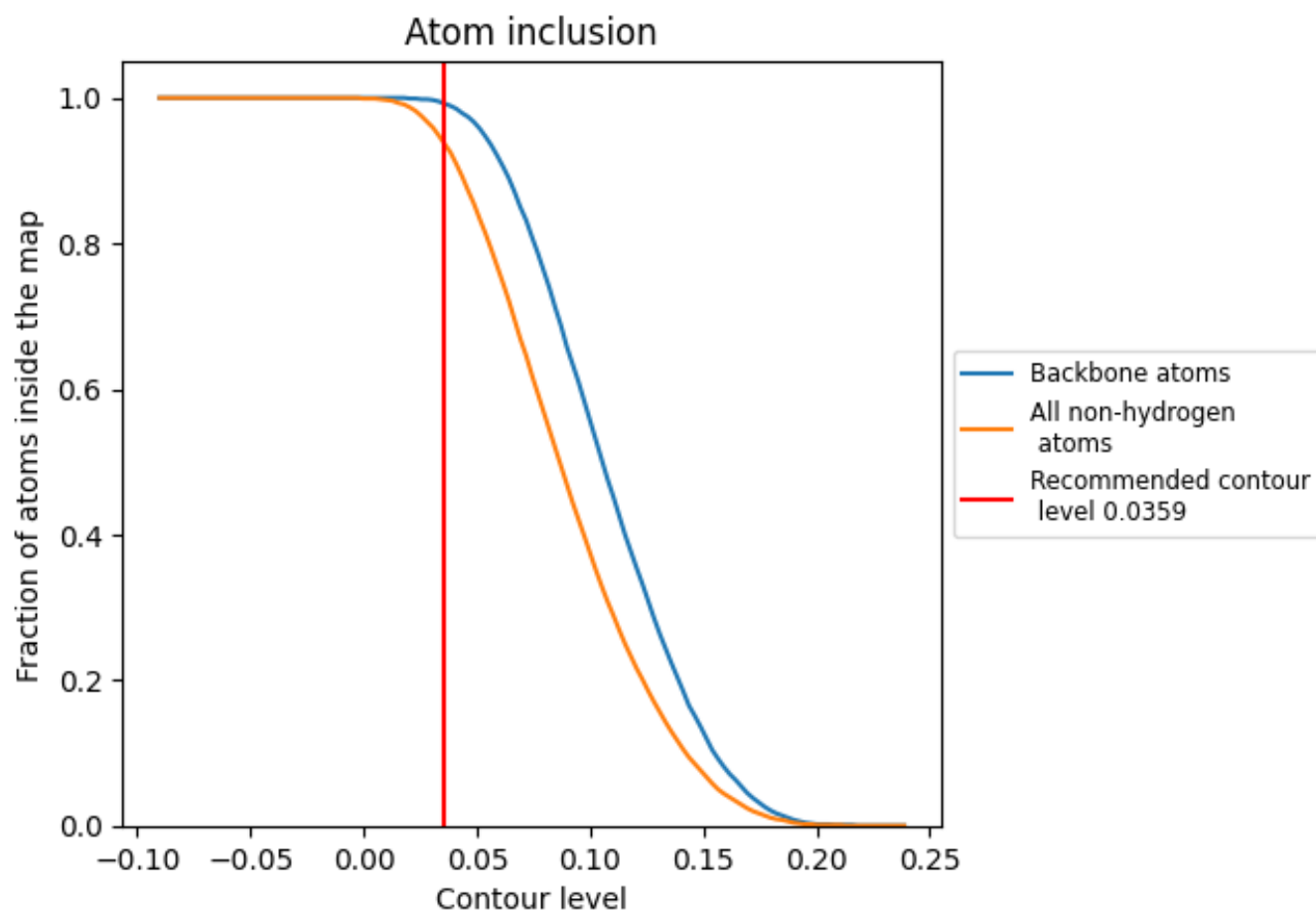
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0359).





## 9.4 Atom inclusion [i](#)



At the recommended contour level, 99% of all backbone atoms, 94% 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 (0.0359) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9360	 0.4550
A	 0.9360	 0.4550

