Full wwPDB EM Validation Report ⓘ

Dec 8, 2025 – 08:44 AM EST

PDB ID	:	9YNU / pdb_00009ynu
EMDB ID	:	EMD-73233
Title	:	Tra1 and core modules including core tip of ctSAGA complex
Authors	:	Mattoo, R.U.H.; Chen, D.H.; Bushnell, D.A.; Tamir, S.; Kornberg, R.D.
Deposited on	:	2025-10-12
Resolution	:	3.20 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:

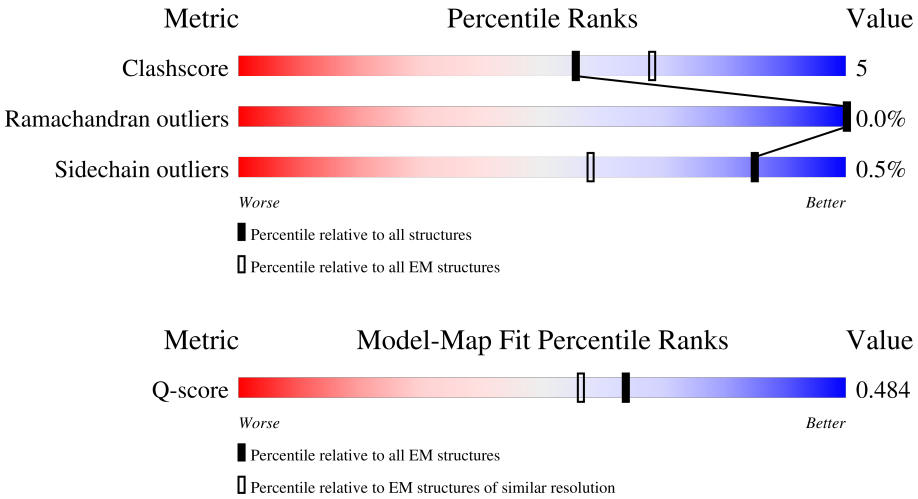
EMDB validation analysis	:	0.0.1.dev129
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.47

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.20 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	15020 (2.70 - 3.70)

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 <=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	Q	1273	95%
2	B	1192	19% 79%
3	C	433	6% 38% 8% 55%
4	D	767	19% 62% 6% 32%

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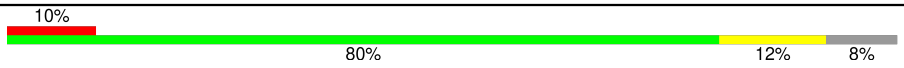
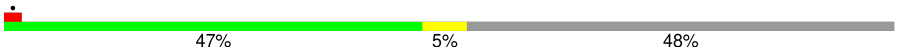
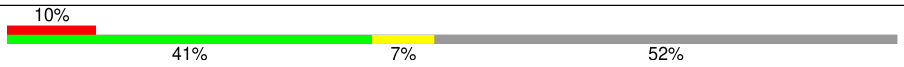
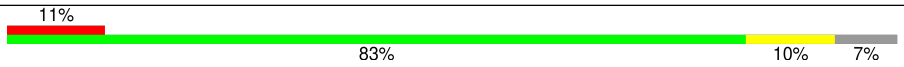
Mol	Chain	Length	Quality of chain
5	E	480	
6	F	277	
7	G	204	
8	H	485	
9	I	770	
10	K	1224	
11	A	3893	

2 Entry composition (i)

There are 11 unique types of molecules in this entry. The entry contains 100918 atoms, of which 50157 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 SCA7 domain-containing protein.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
1	Q	62	950	303	472	86	88	1	0	0

- Molecule 2 is a protein called Spt20-like SEP domain-containing protein.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
2	B	245	3987	1319	1952	341	368	7	0	0

- Molecule 3 is a protein called Uncharacterized protein.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
3	C	197	3225	1022	1607	287	303	6	0	0

- Molecule 4 is a protein called Transcription initiation factor TFIID subunit 5.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
4	D	523	8240	2632	4096	730	762	20	0	0

- Molecule 5 is a protein called Transcription initiation factor TFIID subunit 6.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
5	E	443	6959	2193	3519	598	639	10	0	0

- Molecule 6 is a protein called Putative transcription initiation factor.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
6	F	121	1461	578	546	170	166	1	0	0

- Molecule 7 is a protein called Transcription initiation factor TFIID subunit 10.

Mol	Chain	Residues	Atoms						AltConf	Trace
7	G	114	Total	C	H	N	O	S	0	0
			1762	556	879	157	166	4		

- Molecule 8 is a protein called Putative transcriptional coactivator HFI1 protein.

Mol	Chain	Residues	Atoms						AltConf	Trace
8	H	254	Total	C	H	N	O	S	0	0
			3898	1238	1920	346	382	12		

- Molecule 9 is a protein called Transcription initiation factor TFIID subunit 12.

Mol	Chain	Residues	Atoms						AltConf	Trace
9	I	154	Total	C	H	N	O	S	0	0
			2269	744	1084	215	220	6		

- Molecule 10 is a protein called SAGA complex subunit Spt7.

Mol	Chain	Residues	Atoms						AltConf	Trace
10	K	586	Total	C	H	N	O	S	0	0
			9479	2967	4730	857	907	18		

There are 28 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
K	1197	GLY	-	expression tag	UNP G0S267
K	1198	SER	-	expression tag	UNP G0S267
K	1199	ASP	-	expression tag	UNP G0S267
K	1200	TYR	-	expression tag	UNP G0S267
K	1201	LYS	-	expression tag	UNP G0S267
K	1202	ASP	-	expression tag	UNP G0S267
K	1203	HIS	-	expression tag	UNP G0S267
K	1204	ASP	-	expression tag	UNP G0S267
K	1205	GLY	-	expression tag	UNP G0S267
K	1206	ASP	-	expression tag	UNP G0S267
K	1207	TYR	-	expression tag	UNP G0S267
K	1208	LYS	-	expression tag	UNP G0S267
K	1209	ASP	-	expression tag	UNP G0S267
K	1210	ASP	-	expression tag	UNP G0S267
K	1211	ASP	-	expression tag	UNP G0S267
K	1212	ASP	-	expression tag	UNP G0S267
K	1213	LYS	-	expression tag	UNP G0S267

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Chain	Residue	Modelled	Actual	Comment	Reference
K	1214	GLY	-	expression tag	UNP G0S267
K	1215	LEU	-	expression tag	UNP G0S267
K	1216	GLU	-	expression tag	UNP G0S267
K	1217	ALA	-	expression tag	UNP G0S267
K	1218	SER	-	expression tag	UNP G0S267
K	1219	GLU	-	expression tag	UNP G0S267
K	1220	ASN	-	expression tag	UNP G0S267
K	1221	LEU	-	expression tag	UNP G0S267
K	1222	TYR	-	expression tag	UNP G0S267
K	1223	PHE	-	expression tag	UNP G0S267
K	1224	GLN	-	expression tag	UNP G0S267

- Molecule 11 is a protein called Non-specific serine/threonine protein kinase.

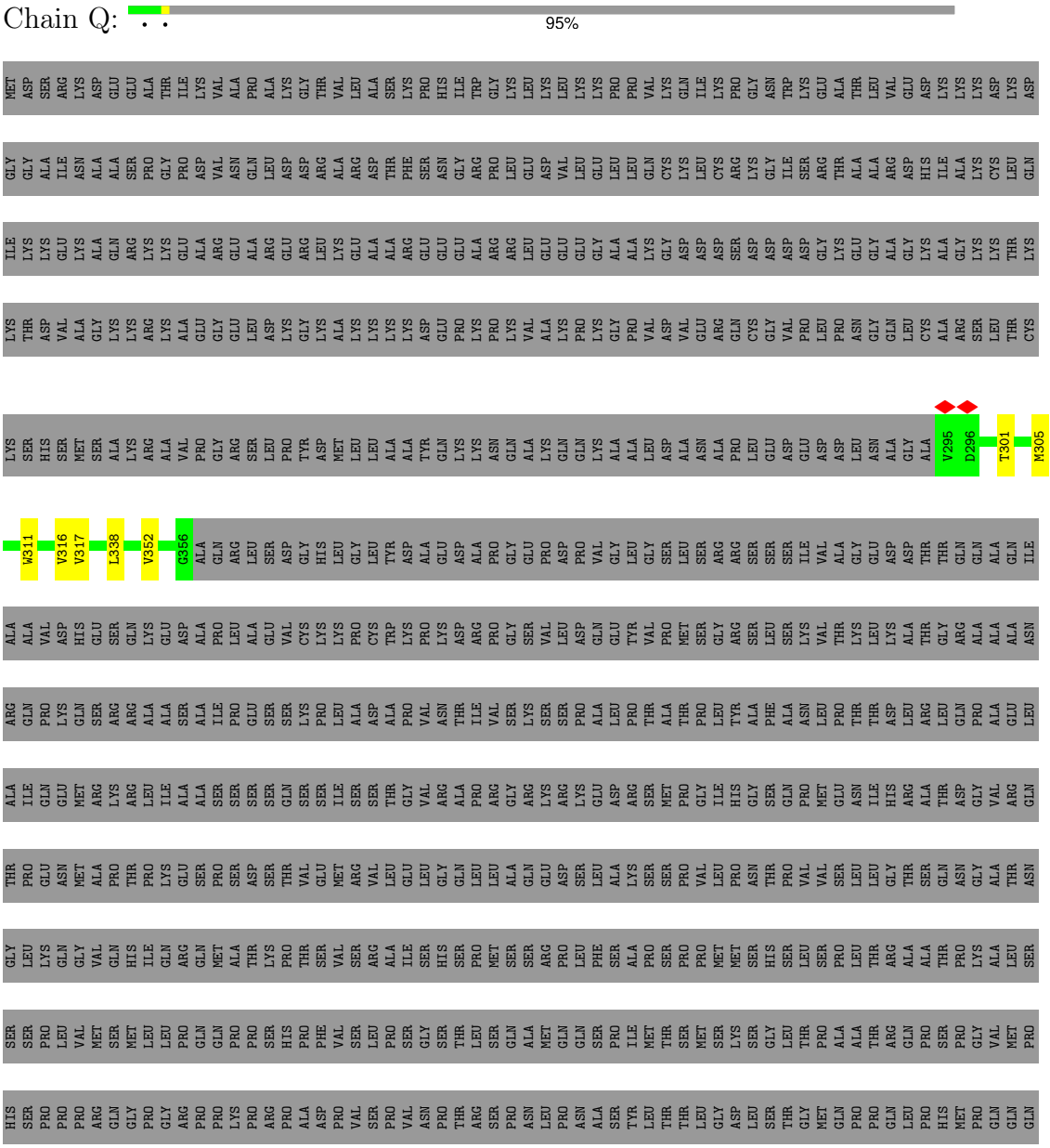
Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
11	A	3619	58688	18811	29352	5111	5270	144	0	0

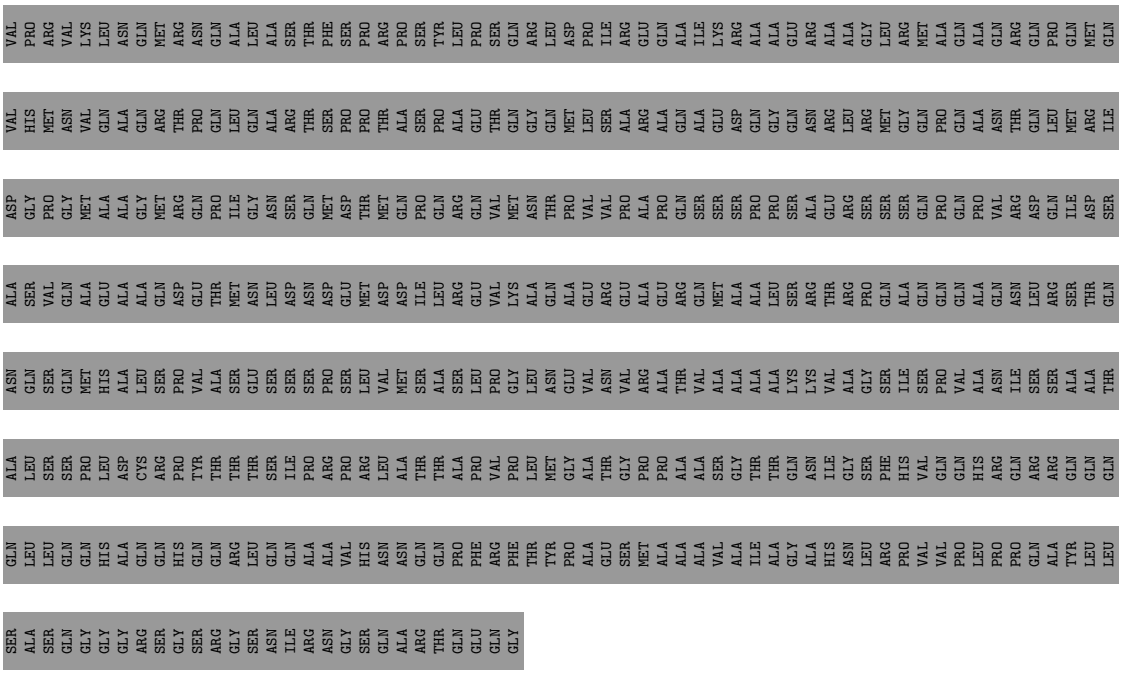
3 Residue-property plots (i)

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

- Molecule 1: SCA7 domain-containing protein

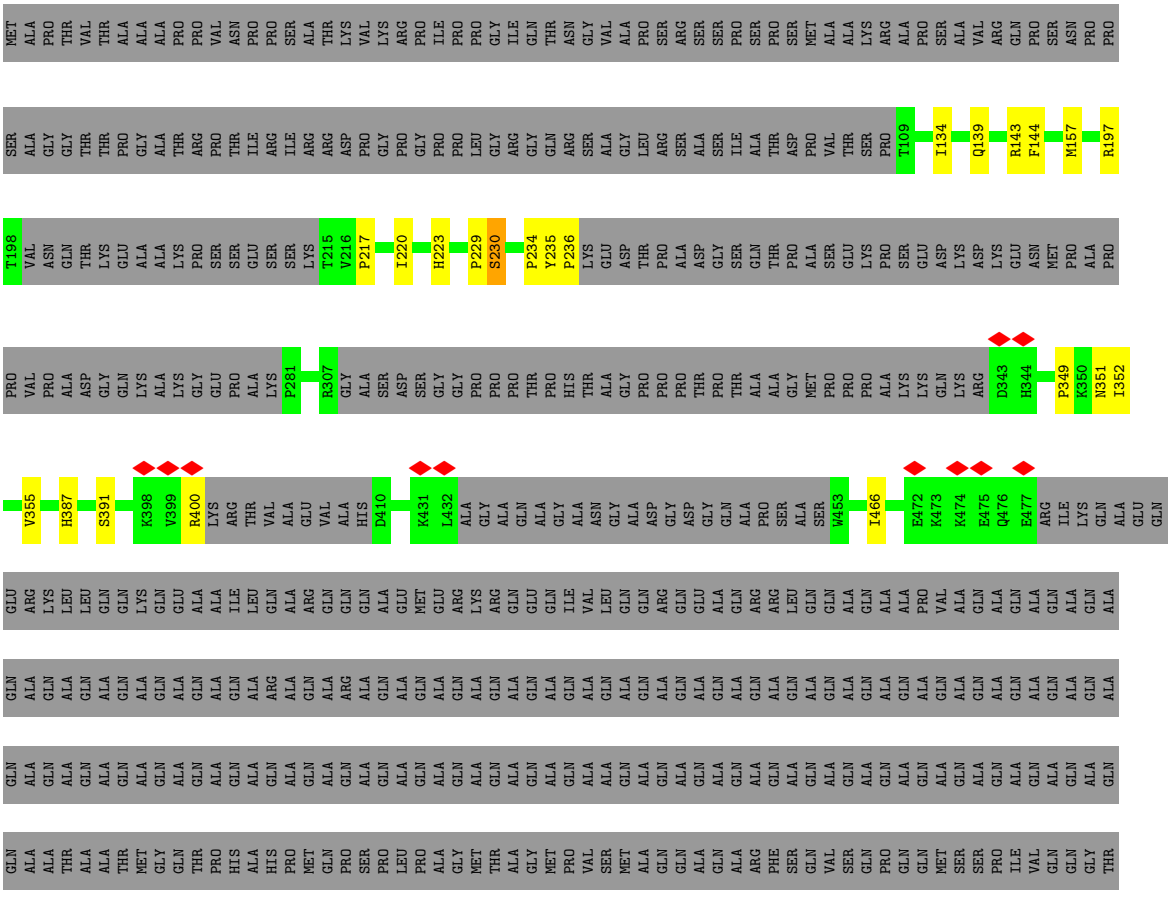
Chain Q:

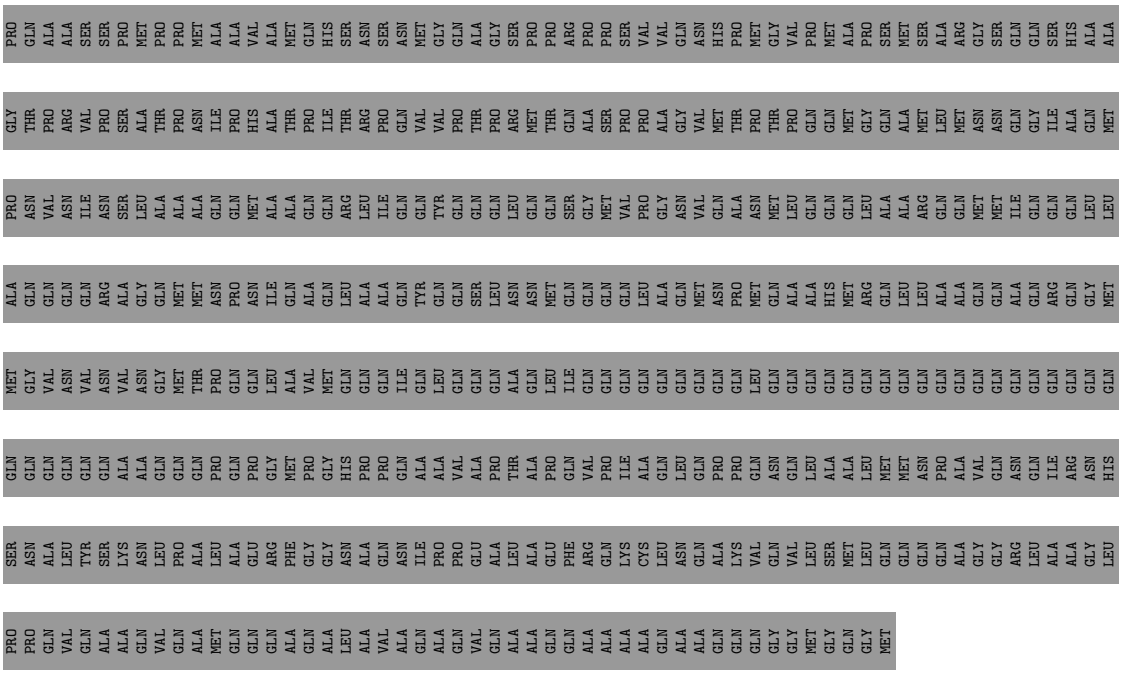




• Molecule 2: Spt20-like SEP domain-containing protein

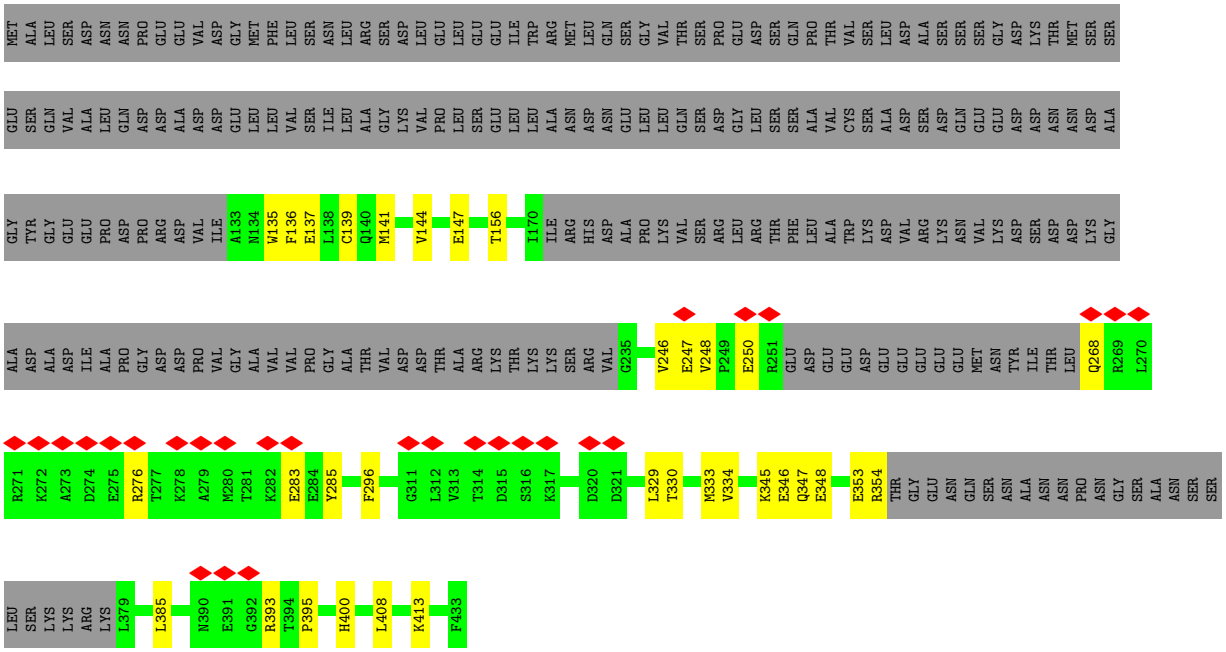
Chain B:





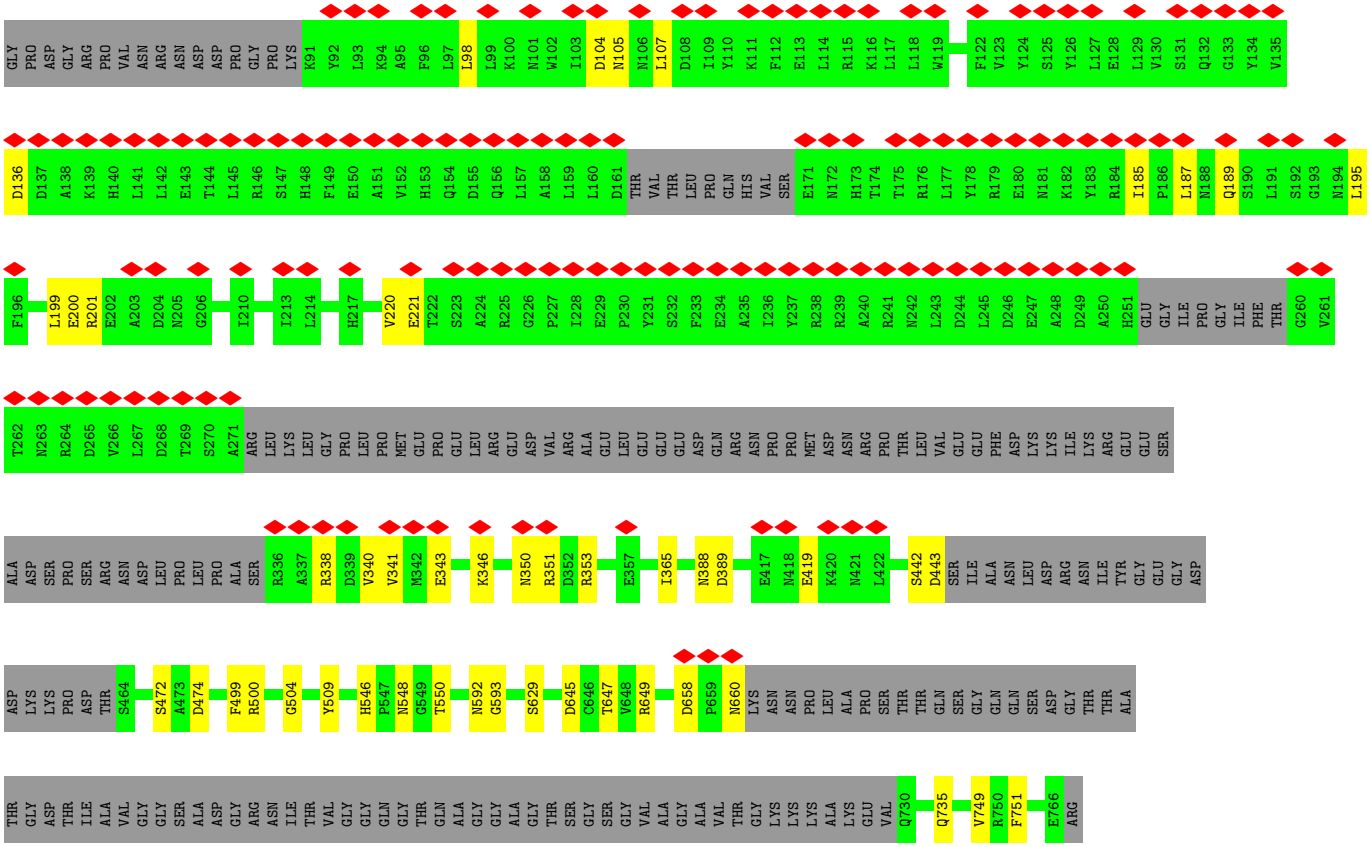
• Molecule 3: Uncharacterized protein

Chain C:



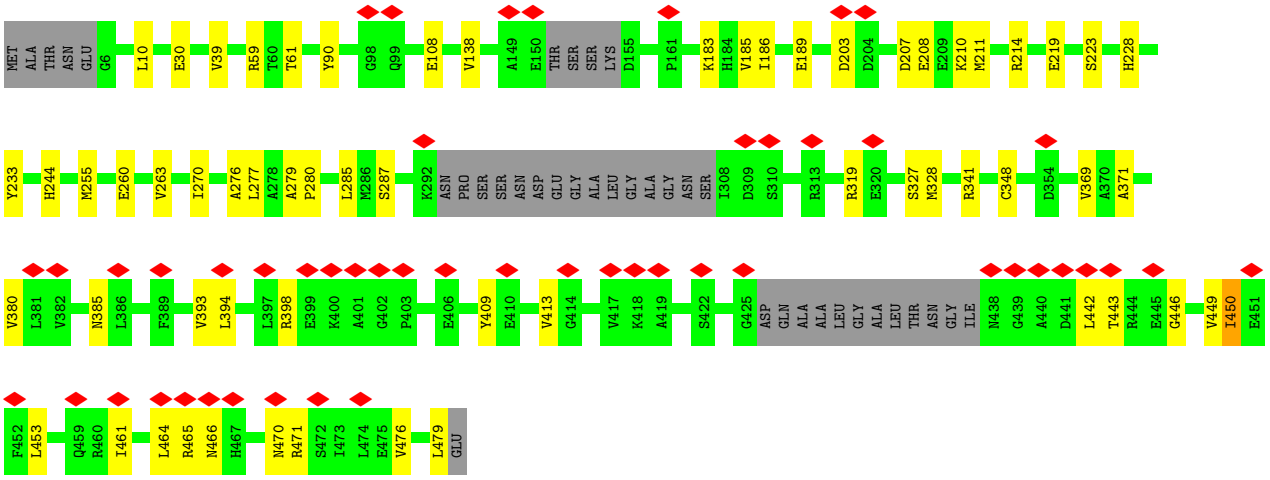
• Molecule 4: Transcription initiation factor TFIID subunit 5

Chain D:



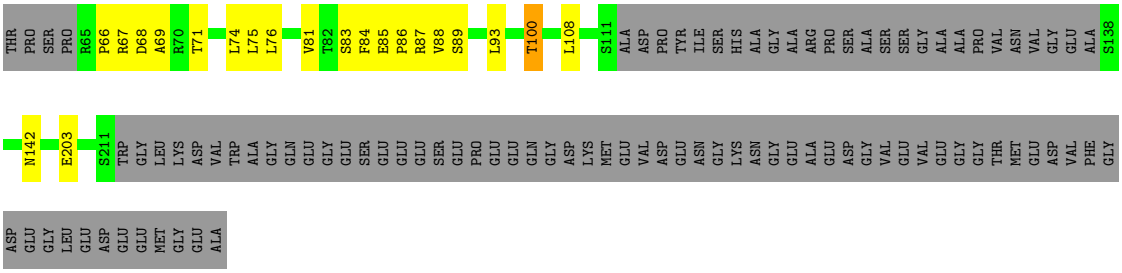
• Molecule 5: Transcription initiation factor TFIID subunit 6

Chain E:

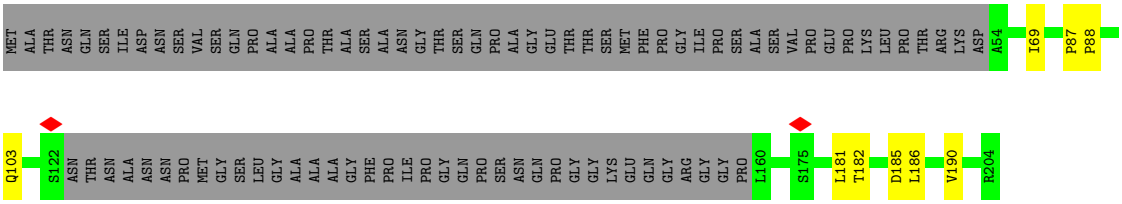


• Molecule 6: Putative transcription initiation factor

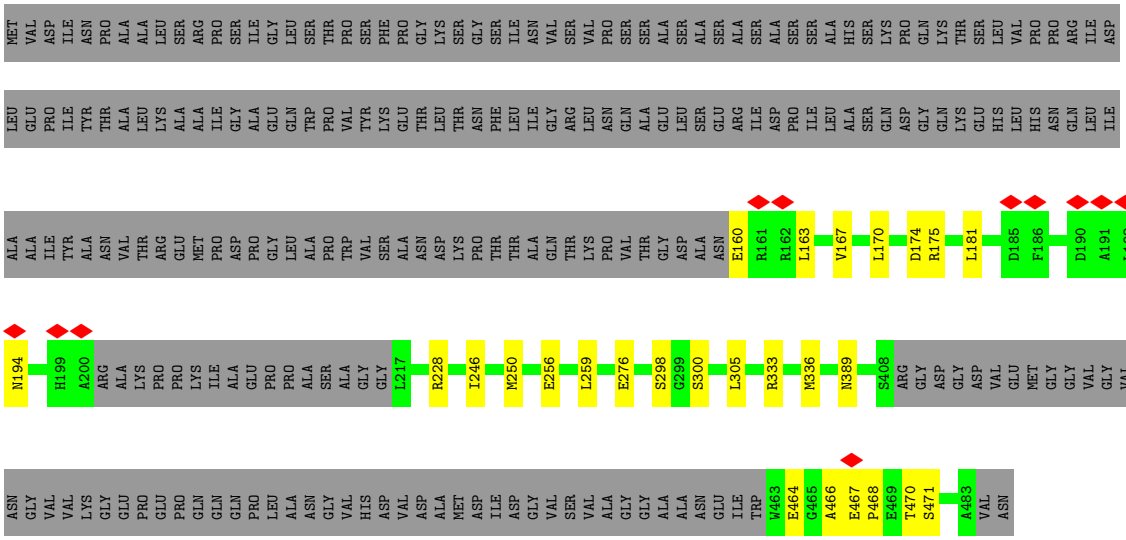
Chain F:



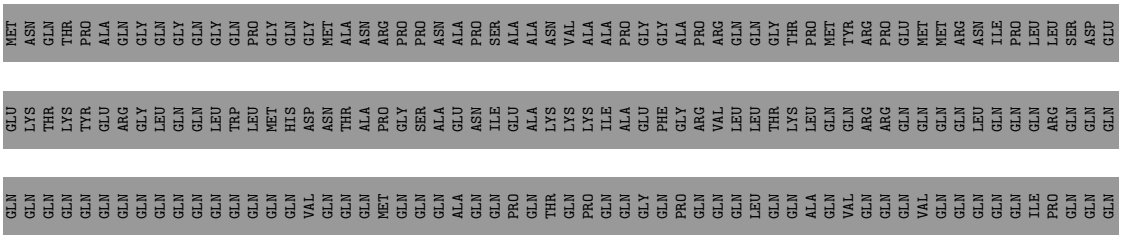
• Molecule 7: Transcription initiation factor TFIID subunit 10

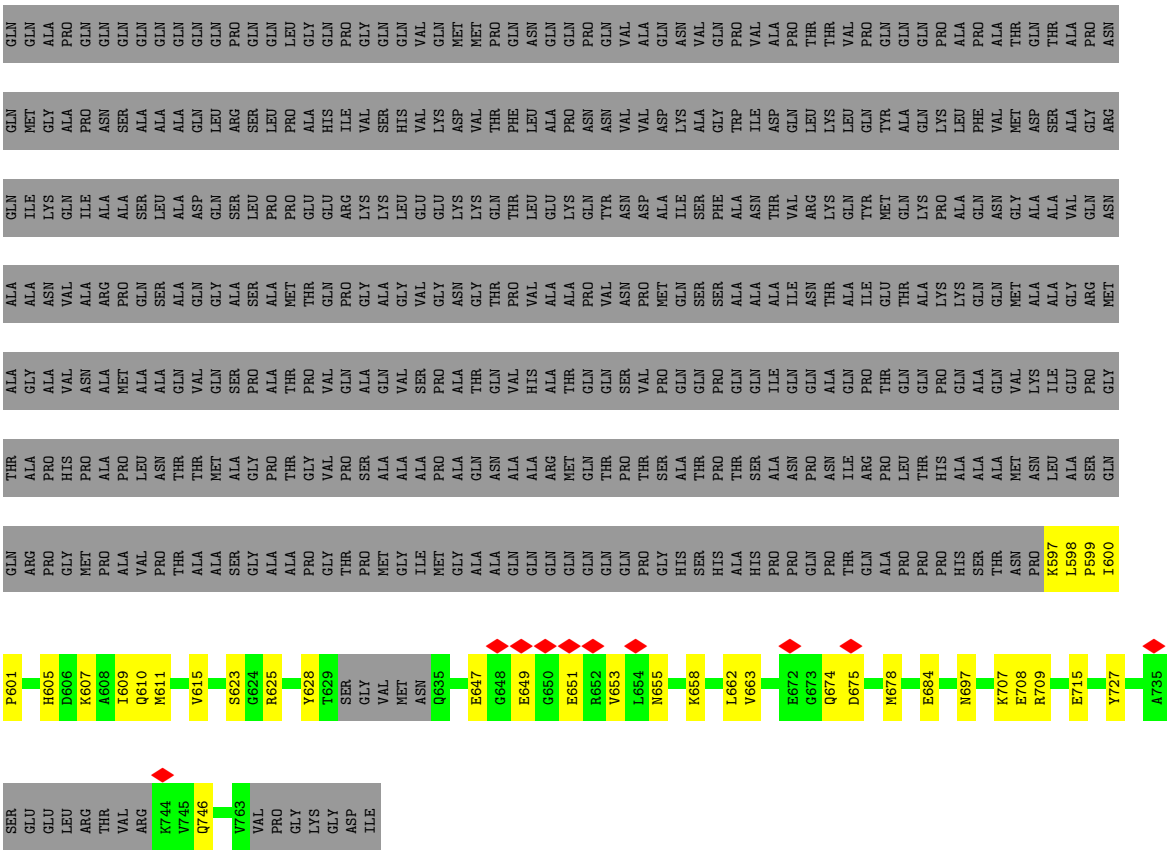


• Molecule 8: Putative transcriptional coactivator HFI1 protein

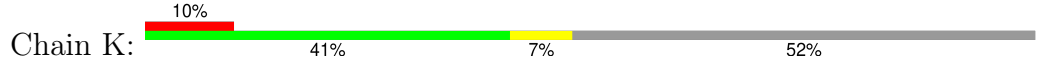


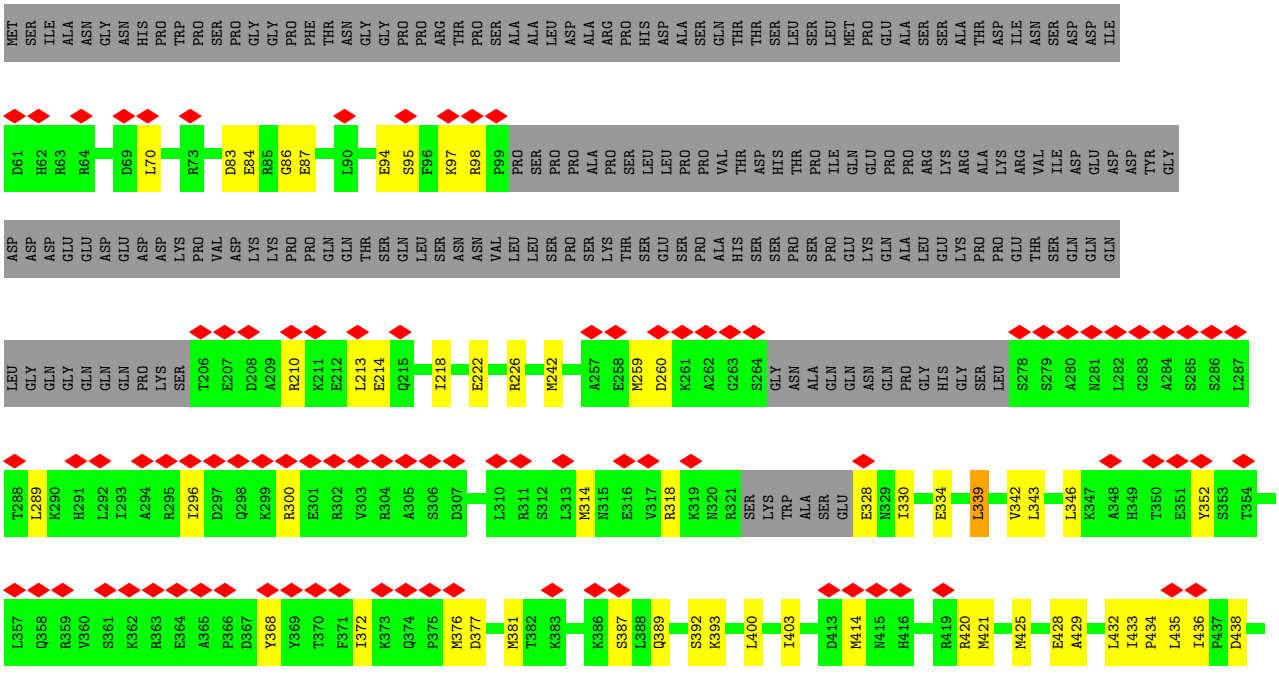
• Molecule 9: Transcription initiation factor TFIID subunit 12

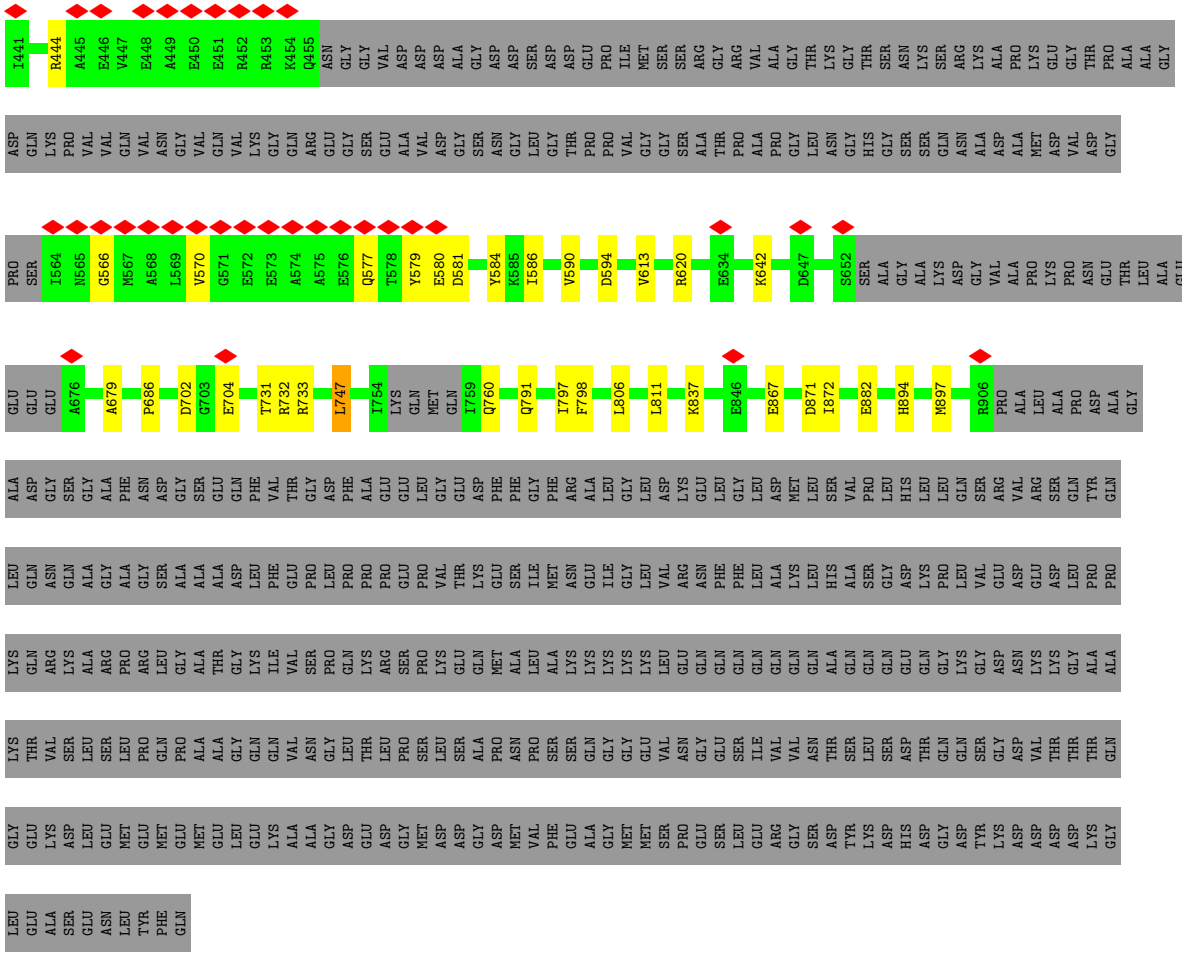




• Molecule 10: SAGA complex subunit Spt7

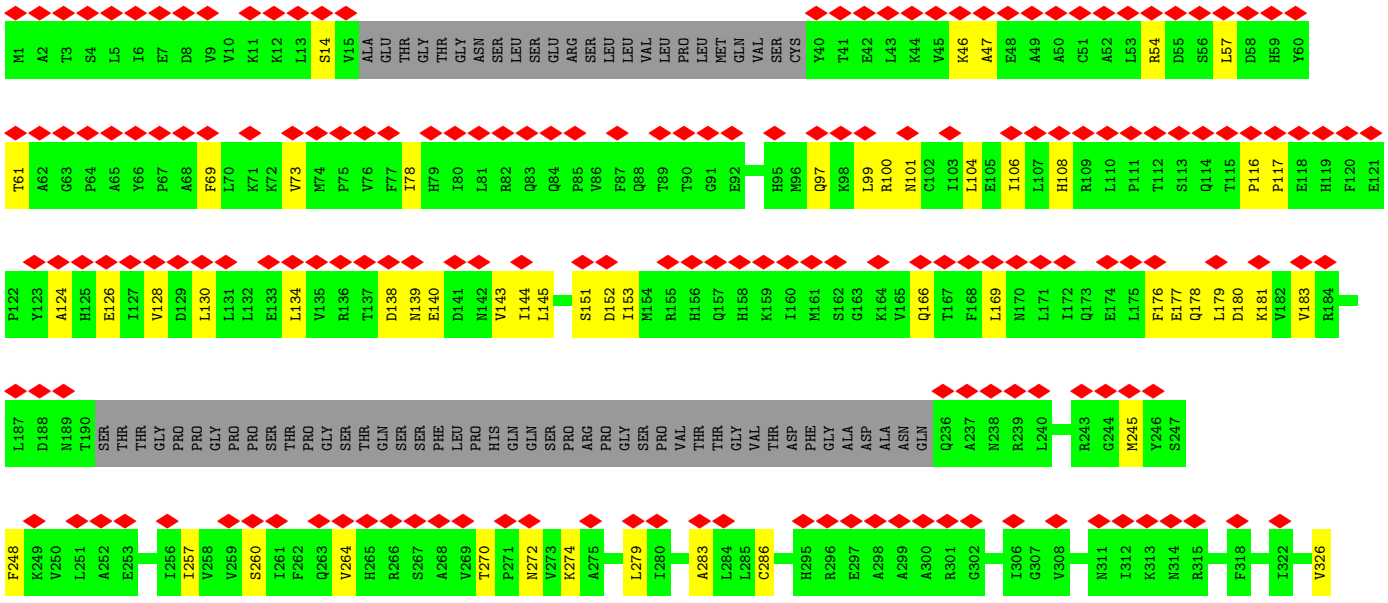


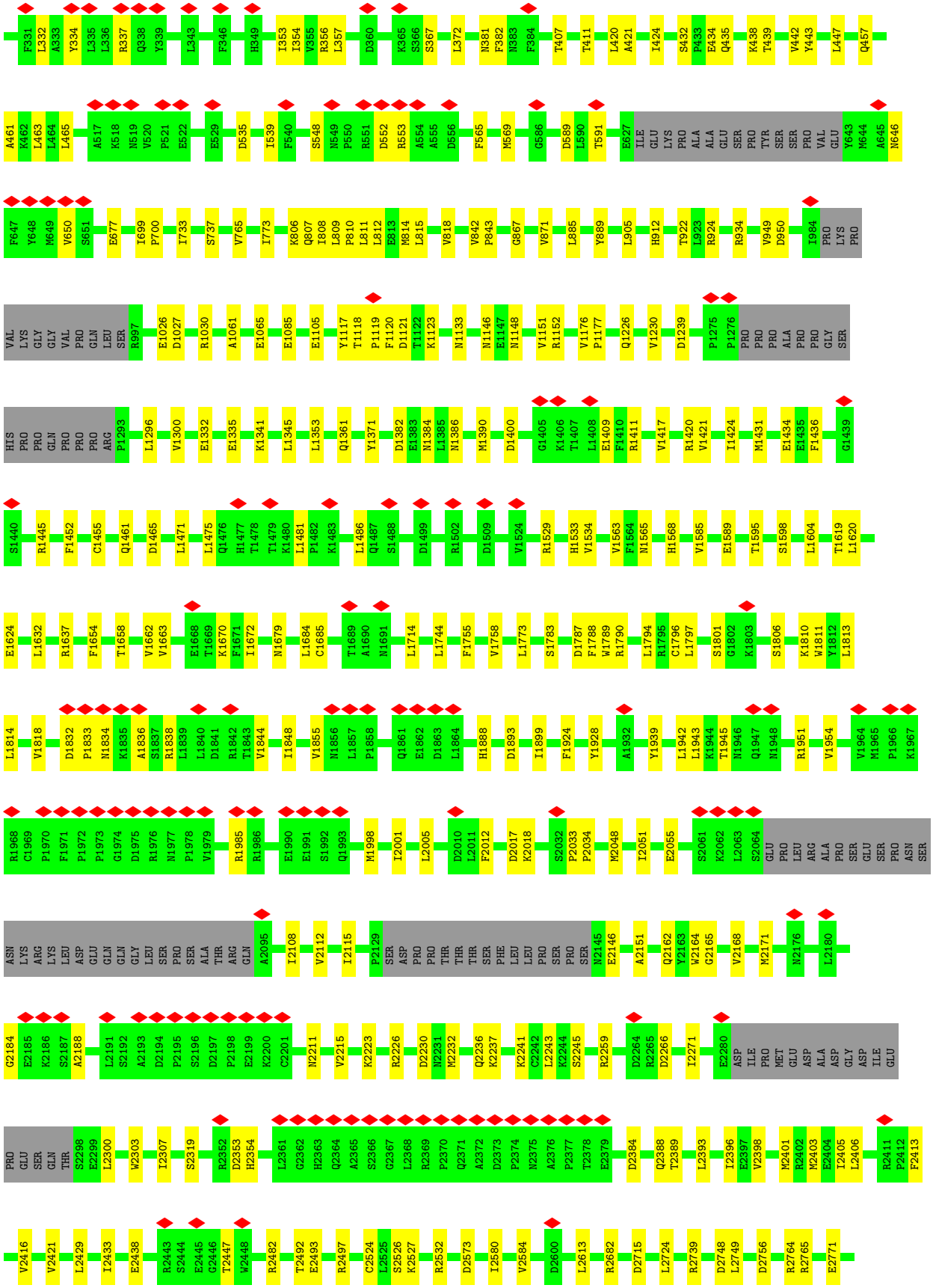


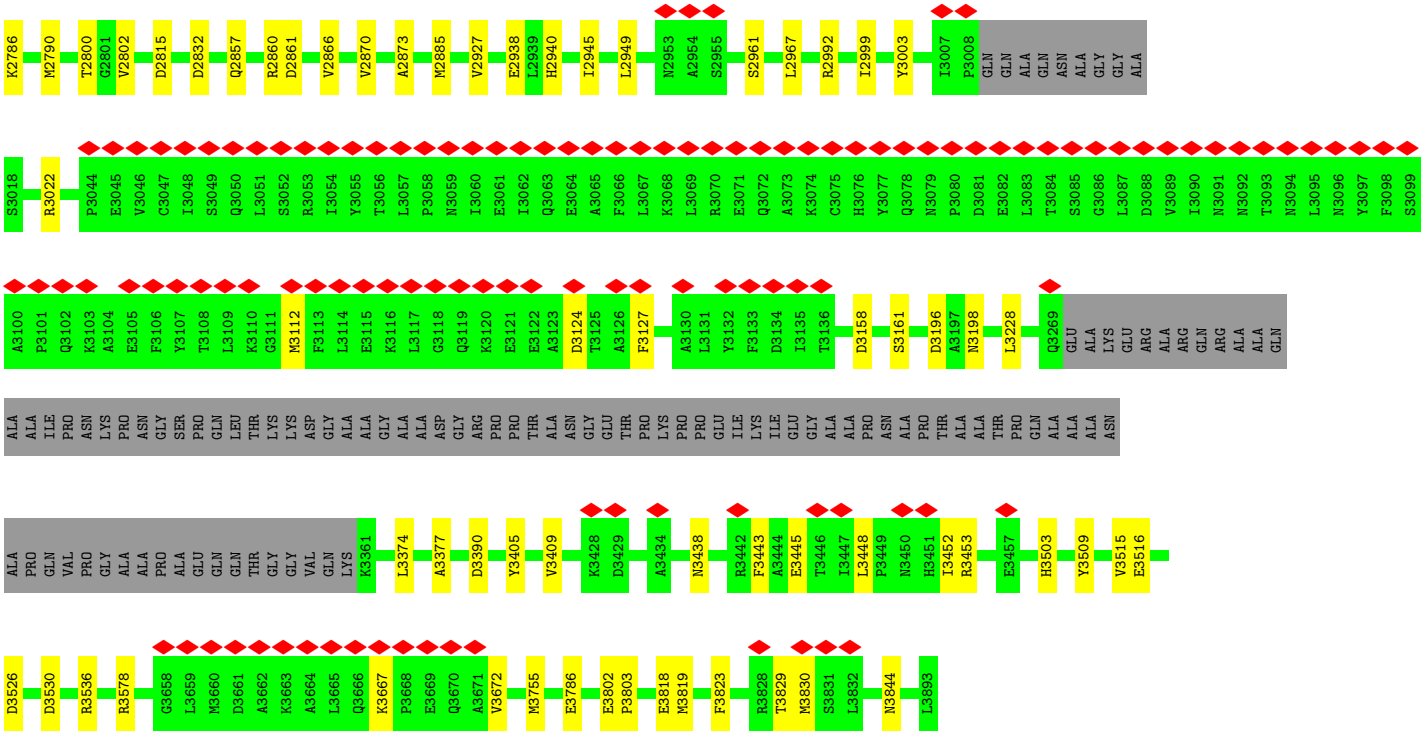


• Molecule 11: Non-specific serine/threonine protein kinase

Chain A:




F331 L332 A333 Y334 L335 L336 R337 Q338 Y339 L343 F346 H349 I353 I354 V355 R356 L357 D360 K365 S366 S367 L372 N381 F382 N383 F384 T407 T411 L420 A421 I424 S432 P433 E434 Q435 K438 T439 V442 Y443 L447 Q457
A461 K462 L463 L464 L465 A517 K518 N519 V520 P521 E522 E529 D535 I539 F540 S548 N549 P550 R551 D552 R553 A554 A555 D556 F565 M569 G586 D589 L590 T591 E627 ILE GLU LYS PRO ALA GLU SER PRO TYR SER SER PRO VAL GLU Y643 M644 A645 N646
F647 Y648 M649 V650 S651 E677 I699 P700 I733 S737 V765 I773 K806 Q807 I808 L809 P810 L811 L812 E813 M814 L815 V818 V842 P843 G867 V871 L885 Y889 L905 H912 T922 L923 R924 R934 V949 D950 I984 PRO LYS PRO
VAL LYS GLY GLY VAL PRO GLN LEU SER R997 E1026 D1027 R1030 A1061 E1065 E1085 E1105 Y1117 T1118 P1119 F1120 D1121 T1122 K1123 N1133 N1146 E1147 N1148 V1151 R1152 V1176 P1177 Q1226 V1230 D1239 P1275 P1276 PRO PRO PRO ALA PRO PRO GLY SER
HIS PRO PRO GLN PRO PRO PRO ARG P1293 L1296 V1300 E1332 E1335 K1341 L1345 L1353 Q1361 Y1371 D1382 E1383 N1384 L1385 N1386 M1390 D1400 G1405 K1406 T1407 L1408 E1409 F1410 R1411 V1417 R1420 V1421 I1424 M1431 E1434 E1435 F1436 G1439
S1440 R1445 F1452 C1455 Q1461 D1465 L1471 L1475 Q1476 H1477 T1478 T1479 K1480 L1481 P1482 K1483 L1486 Q1487 S1488 D1499 R1502 D1509 V1524 R1529 H1533 V1534 V1563 F1564 N1565 H1568 V1585 E1589 T1595 S1598 L1604 T1619 L1620
E1624 L1632 R1637 F1654 T1658 V1662 V1663 E1668 T1669 K1670 F1671 I1672 N1679 L1684 C1685 T1689 A1690 N1691 L1714 L1744 F1755 V1758 L1773 S1783 D1787 F1788 W1789 R1790 L1794 R1795 C1796 L1797 S1801 G1802 K1803 S1806 K1810 W1811 Y1812 L1813
L1814 V1818 D1832 P1833 N1834 K1835 A1836 S1837 R1838 L1839 L1840 D1841 R1842 T1843 V1844 I1848 V1855 N1856 L1857 P1858 Q1861 E1862 D1863 L1864 H1888 D1893 I1899 F1924 Y1928 A1932 Y1939 L1942 L1943 K1944 T1945 N1946 Q1947 N1948 R1951 V1954 V1964 M1965 P1966 K1967
R1968 C1969 P1970 F1971 P1972 P1973 G1974 D1975 R1976 N1977 P1978 Y1979 R1985 R1986 E1990 E1991 S1992 Q1993 M1998 I2001 L2005 D2010 L2011 F2012 D2017 K2018 S2032 P2033 P2034 M2048 I2051 E2055 S2061 K2062 L2063 S2064 GLU PRO LEU ARG ALA PRO SER GLU SER PRO ASN SER
ASN LYS ARG LYS LEU ASP GLU GLN GLN GLY LEU SER PRO SER ALA THR ARG GLN A2095 I2108 V2112 I2115 P2129 SER ASP PRO PRO THR THR THR SER PHE LEU LEU PRO SER PRO SER N2145 E2146 A2151 Q2162 Y2163 W2164 G2165 V2168 M2171 N2176 L2180
G2184 E2185 K2186 S2187 A2188 L2191 S2192 A2193 D2194 P2195 S2196 D2197 P2198 E2199 K2200 C2201 N2211 V2215 K2223 R2226 D2230 N2231 M2232 Q2236 K2237 K2241 C2242 L2243 K2244 S2245 R2259 D2264 R2265 D2266 I2271 E2280 ASP ILE PRO MET GLU ASP ALA ASP GLY ASP ILE GLU
PRO GLU SER GLN THR S2298 E2299 L2300 W2303 I2307 S2319 R2352 D2353 H2354 L2361 G2362 H2363 Q2364 A2365 S2366 C2367 L2368 R2369 P2370 Q2371 A2372 D2373 P2374 N2375 A2376 P2377 T2378 E2379 D2384 Q2388 T2389 L2393 I2396 E2397 V2398 M2401 R2402 M2403 E2404 I2405 L2406 R2411 P2412 F2413
V2416 V2421 L2429 I2433 E2438 R2443 S2444 E2445 G2446 T2447 W2448 R2482 T2492 E2493 R2497 C2524 L2525 S2526 K2527 R2532 D2573 I2580 V2584 D2600 L2613 R2682 D2715 L2724 R2739 D2748 L2749 D2756 R2764 R2765 E2771


K2786 M2790 T2800 G2801 V2802 D2815 D2832 Q2857 R2860 D2861 V2866 V2870 A2873 M2885 V2927 E2938 L2939 H2940 I2945 L2949 N2953 A2954 S2955 S2961 L2967 R2992 I2999 Y3003 I3007 P3008 GLN GLN ALA GLN ASN ALA GLY GLY ALA
S3018 R3022 P3044 E3045 V3046 C3047 I3048 S3049 Q3050 L3051 S3052 R3053 I3054 Y3055 T3056 L3057 P3058 N3059 I3060 E3061 I3062 Q3063 E3064 A3065 F3066 L3067 K3068 L3069 R3070 E3071 Q3072 A3073 K3074 C3075 H3076 Y3077 Q3078 N3079 P3080 D3081 E3082 L3083 T3084 S3085 G3086 L3087 D3088 V3089 I3090 N3091 N3092 T3093 N3094 L3095 N3096 Y3097 F3098 S3099
A3100 P3101 Q3102 K3103 A3104 E3105 F3106 Y3107 T3108 L3109 K3110 G3111 M3112 F3113 L3114 E3115 K3116 L3117 G3118 Q3119 K3120 E3121 E3122 A3123 D3124 T3125 A3126 F3127 A3130 L3131 Y3132 F3133 D3134 I3135 T3136 D3158 S3161 D3196 A3197 M3198 L3228 Q3269 GLU ALA LYS GLU ARG ALA ARG GLN ARG ALA ALA GLN
ALA ALA ILE PRO ASN LYS PRO ASN GLY SER PRO GLN LEU THR LYS LYS ASP GLY ALA ALA GLY ALA ALA ASP GLY ARG PRO PRO THR ALA ASN GLY GLU THR PRO LYS PRO PRO GLU ILE LYS ILE GLU GLY ALA ALA PRO ASN ALA PRO THR ALA ALA THR PRO GLN ALA ALA ALA ASN
ALA PRO GLN VAL PRO GLY ALA ALA PRO ALA GLU GLN GLN THR GLY GLY VAL GLN LYS K3361 L3374 A3377 D3390 Y3405 V3409 K3428 D3429 A3434 N3438 R3442 F3443 A3444 E3445 T3446 I3447 L3448 P3449 N3450 H3451 I3452 R3453 E3457 H3503 Y3509 V3515 E3516
D3526 D3530 R3536 R3578 G3658 L3659 M3660 D3661 A3662 K3663 A3664 L3665 Q3666 K3667 P3668 E3669 Q3670 A3671 V3672 M3755 E3786 E3802 P3803 E3818 M3819 F3823 R3828 T3829 M3830 S3831 L3832 N3844 L3893

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	171646	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	68.9	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	4.428	Depositor
Minimum map value	-2.344	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.082	Depositor
Recommended contour level	0.5	Depositor
Map size (Å)	499.68, 499.68, 499.68	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.041, 1.041, 1.041	Depositor

5 Model quality

5.1 Standard geometry

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	Q	0.11	0/489	0.22	0/667
2	B	0.11	0/2094	0.25	0/2842
3	C	0.10	0/1649	0.24	0/2214
4	D	0.10	0/4235	0.23	0/5730
5	E	0.10	0/3505	0.23	0/4767
6	F	0.11	0/932	0.26	0/1259
7	G	0.11	0/899	0.24	0/1213
8	H	0.10	0/2018	0.22	0/2721
9	I	0.10	0/1203	0.26	0/1624
10	K	0.11	0/4824	0.24	0/6484
11	A	0.10	0/30011	0.26	0/40686
All	All	0.10	0/51859	0.25	0/70207

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

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	Q	478	472	471	8	0
2	B	2035	1952	2013	17	0
3	C	1618	1607	1602	25	0
4	D	4144	4096	4088	35	0
5	E	3440	3519	3515	48	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	F	915	546	922	25	0
7	G	883	879	877	7	0
8	H	1978	1920	1917	22	0
9	I	1185	1084	1220	32	0
10	K	4749	4730	4729	71	0
11	A	29336	29352	29619	257	0
All	All	50761	50157	50973	491	0

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

All (491) 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)
4:D:472:SER:OG	4:D:474:ASP:OD1	1.93	0.86
9:I:628:TYR:OH	11:A:2756:ASP:OD1	1.93	0.85
11:A:435:GLN:O	11:A:439:THR:HG23	1.79	0.83
2:B:400:ARG:NH2	9:I:684:GLU:OE1	2.14	0.81
2:B:220:ILE:O	11:A:2765:ARG:NH1	2.13	0.81
1:Q:338:LEU:HD21	2:B:157:MET:HE2	1.63	0.81
5:E:10:LEU:HD13	8:H:181:LEU:HD11	1.62	0.80
11:A:1888:HIS:O	11:A:1928:TYR:OH	1.99	0.80
4:D:546:HIS:ND1	4:D:548:ASN:OD1	2.14	0.80
11:A:1436:PHE:O	11:A:1445:ARG:NH1	2.16	0.79
11:A:2526:SER:O	11:A:2532:ARG:NH1	2.15	0.79
3:C:246:VAL:HG23	10:K:897:MET:HE1	1.64	0.79
11:A:1589:GLU:OE2	11:A:1598:SER:OG	2.00	0.78
5:E:203:ASP:O	5:E:214:ARG:NH1	2.16	0.78
11:A:1400:ASP:OD1	11:A:1420:ARG:NH2	2.17	0.77
11:A:1146:ASN:O	11:A:1152:ARG:NH1	2.18	0.77
5:E:466:ASN:O	5:E:470:ASN:ND2	2.17	0.77
9:I:746:GLN:N	9:I:746:GLN:OE1	2.18	0.77
11:A:1148:ASN:O	11:A:1152:ARG:NH1	2.18	0.76
10:K:428:GLU:O	10:K:432:LEU:HD12	1.85	0.76
8:H:170:LEU:O	8:H:175:ARG:NH1	2.19	0.76
11:A:773:ILE:HD13	11:A:814:MET:HE3	1.68	0.76
5:E:203:ASP:OD2	5:E:210:LYS:NZ	2.17	0.74
6:F:203:GLU:O	10:K:837:LYS:NZ	2.20	0.74
2:B:143:ARG:NH1	2:B:144:PHE:O	2.21	0.74
4:D:645:ASP:OD1	4:D:647:THR:OG1	2.05	0.73
10:K:414:MET:O	10:K:420:ARG:NH2	2.22	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:A:1585:VAL:HG21	11:A:1604:LEU:HD13	1.71	0.73
11:A:2438:GLU:OE2	11:A:2482:ARG:NH1	2.21	0.73
10:K:210:ARG:NH2	10:K:435:LEU:O	2.21	0.73
9:I:647:GLU:N	9:I:647:GLU:OE1	2.21	0.73
5:E:263:VAL:HG21	5:E:328:MET:HE1	1.70	0.72
11:A:1026:GLU:OE1	11:A:1026:GLU:N	2.22	0.72
5:E:341:ARG:NH1	10:K:86:GLY:O	2.22	0.72
10:K:222:GLU:OE2	10:K:226:ARG:NH1	2.22	0.72
11:A:2493:GLU:OE2	11:A:2497:ARG:NH1	2.22	0.72
4:D:353:ARG:O	4:D:353:ARG:NH1	2.22	0.72
6:F:68:ASP:HA	6:F:71:THR:HG22	1.70	0.72
11:A:548:SER:O	11:A:553:ARG:NH2	2.22	0.71
4:D:338:ARG:NH2	4:D:343:GLU:OE2	2.24	0.71
4:D:365:ILE:HD11	5:E:228:HIS:HB2	1.72	0.71
10:K:352:TYR:OH	10:K:577:GLN:OE1	2.08	0.71
3:C:144:VAL:O	3:C:276:ARG:NH2	2.24	0.71
5:E:476:VAL:HG13	5:E:479:LEU:HD12	1.74	0.70
11:A:126:GLU:N	11:A:126:GLU:OE1	2.24	0.70
3:C:347:GLN:NE2	8:H:300:SER:O	2.25	0.70
11:A:1758:VAL:HG13	11:A:1813:LEU:HD22	1.72	0.70
8:H:276:GLU:OE2	9:I:662:LEU:HD22	1.92	0.69
3:C:137:GLU:N	3:C:137:GLU:OE1	2.25	0.69
4:D:499:PHE:O	4:D:500:ARG:NH1	2.26	0.69
11:A:1529:ARG:O	11:A:1533:HIS:ND1	2.26	0.69
11:A:2162:GLN:N	11:A:2162:GLN:OE1	2.25	0.69
4:D:189:GLN:NE2	5:E:211:MET:SD	2.65	0.69
11:A:2303:TRP:CE2	11:A:2307:ILE:HD11	2.28	0.68
11:A:3445:GLU:O	11:A:3453:ARG:NH1	2.25	0.68
11:A:589:ASP:OD1	11:A:591:THR:HG23	1.92	0.68
11:A:2764:ARG:NH1	11:A:3786:GLU:OE2	2.25	0.68
10:K:392:SER:OG	10:K:438:ASP:OD1	2.11	0.68
3:C:413:LYS:NZ	10:K:867:GLU:OE1	2.26	0.68
11:A:270:THR:O	11:A:274:LYS:NZ	2.24	0.68
11:A:421:ALA:HB1	11:A:463:LEU:HD22	1.76	0.68
10:K:387:SER:O	10:K:389:GLN:NE2	2.27	0.67
5:E:189:GLU:N	5:E:189:GLU:OE1	2.27	0.67
10:K:882:GLU:OE1	10:K:882:GLU:N	2.27	0.67
11:A:1085:GLU:OE1	11:A:1085:GLU:N	2.27	0.67
11:A:2171:MET:O	11:A:2223:LYS:NZ	2.27	0.67
2:B:387:HIS:O	2:B:391:SER:OG	2.13	0.66
11:A:326:VAL:HG23	11:A:372:LEU:HD23	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:A:1899:ILE:HD11	11:A:1924:PHE:CD1	2.31	0.66
4:D:346:LYS:O	4:D:350:ASN:ND2	2.29	0.66
11:A:2146:GLU:N	11:A:2146:GLU:OE1	2.28	0.65
11:A:2771:GLU:N	11:A:2771:GLU:OE1	2.29	0.65
5:E:385:ASN:CG	10:K:70:LEU:HD21	2.22	0.65
10:K:377:ASP:O	10:K:381:MET:HE2	1.97	0.65
4:D:201:ARG:NH1	5:E:219:GLU:OE2	2.30	0.65
8:H:467:GLU:O	8:H:471:SER:OG	2.09	0.65
11:A:1382:ASP:OD2	11:A:1384:ASN:ND2	2.29	0.65
10:K:429:ALA:O	10:K:433:ILE:HG23	1.97	0.64
4:D:388:ASN:ND2	4:D:443:ASP:O	2.30	0.64
5:E:108:GLU:N	5:E:108:GLU:OE1	2.31	0.63
3:C:250:GLU:OE2	3:C:250:GLU:N	2.32	0.63
5:E:186:ILE:HD11	5:E:233:TYR:CE2	2.34	0.63
9:I:651:GLU:OE1	9:I:655:ASN:ND2	2.32	0.63
9:I:625:ARG:NH1	11:A:2815:ASP:OD1	2.31	0.63
11:A:1783:SER:OG	11:A:1789:TRP:NE1	2.31	0.63
11:A:2211:ASN:O	11:A:2215:VAL:HG23	1.99	0.62
5:E:183:LYS:HB3	10:K:613:VAL:HG22	1.82	0.62
10:K:871:ASP:OD1	10:K:872:ILE:N	2.33	0.62
11:A:2949:LEU:HD11	11:A:3003:TYR:CE1	2.35	0.62
11:A:1146:ASN:HD22	11:A:1151:VAL:HG11	1.65	0.61
1:Q:311:TRP:CZ3	6:F:75:LEU:HD21	2.36	0.61
11:A:1814:LEU:O	11:A:1818:VAL:HG23	2.01	0.61
8:H:160:GLU:OE1	8:H:160:GLU:N	2.33	0.61
11:A:1475:LEU:CD2	11:A:1481:LEU:HD21	2.31	0.61
11:A:57:LEU:O	11:A:61:THR:HG23	2.01	0.61
9:I:597:LYS:O	9:I:598:LEU:HD12	2.01	0.60
4:D:388:ASN:ND2	4:D:442:SER:O	2.35	0.60
10:K:586:ILE:O	10:K:590:VAL:HG23	2.02	0.60
11:A:180:ASP:OD1	11:A:181:LYS:N	2.35	0.60
11:A:1461:GLN:NE2	11:A:1465:ASP:OD1	2.34	0.60
11:A:806:LYS:O	11:A:806:LYS:HG2	2.02	0.60
3:C:268:GLN:NE2	8:H:298:SER:O	2.34	0.60
10:K:433:ILE:O	10:K:436:ILE:HG22	2.02	0.59
6:F:76:LEU:HB2	6:F:84:PHE:HZ	1.66	0.59
11:A:166:GLN:N	11:A:166:GLN:OE1	2.34	0.59
11:A:1813:LEU:O	11:A:1813:LEU:HD23	2.02	0.59
6:F:68:ASP:O	6:F:71:THR:HG22	2.02	0.59
2:B:235:TYR:CG	2:B:236:PRO:HD2	2.37	0.59
6:F:68:ASP:HA	6:F:71:THR:CG2	2.32	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:A:421:ALA:CB	11:A:463:LEU:HD22	2.33	0.59
11:A:535:ASP:OD1	11:A:535:ASP:N	2.35	0.59
11:A:1434:GLU:N	11:A:1434:GLU:OE1	2.35	0.59
10:K:566:GLY:O	10:K:570:VAL:HG23	2.03	0.59
11:A:1998:MET:SD	11:A:1998:MET:N	2.76	0.59
11:A:1714:LEU:HD12	11:A:1714:LEU:O	2.04	0.58
11:A:286:CYS:O	11:A:356:ARG:NH2	2.35	0.58
11:A:1899:ILE:HD11	11:A:1924:PHE:CE1	2.38	0.58
11:A:183:VAL:HG22	11:A:248:PHE:CZ	2.38	0.58
11:A:1758:VAL:CG1	11:A:1813:LEU:HD22	2.33	0.58
2:B:229:PRO:O	2:B:230:SER:HB3	2.03	0.58
11:A:1353:LEU:O	11:A:1361:GLN:NE2	2.35	0.58
11:A:1836:ALA:O	11:A:1838:ARG:NH2	2.37	0.58
11:A:1985:ARG:O	11:A:1985:ARG:NH1	2.36	0.58
4:D:548:ASN:ND2	4:D:550:THR:OG1	2.36	0.57
9:I:715:GLU:OE1	9:I:715:GLU:N	2.37	0.57
11:A:3448:LEU:HD22	11:A:3452:ILE:HD11	1.85	0.57
4:D:185:ILE:O	4:D:220:VAL:HG13	2.04	0.57
9:I:697:ASN:OD1	9:I:727:TYR:OH	2.22	0.57
5:E:394:LEU:O	5:E:398:ARG:N	2.36	0.57
10:K:381:MET:HE3	10:K:403:ILE:HD11	1.85	0.57
9:I:610:GLN:OE1	9:I:610:GLN:HA	2.04	0.57
11:A:3829:THR:OG1	11:A:3830:MET:N	2.37	0.57
3:C:348:GLU:OE1	3:C:400:HIS:NE2	2.38	0.57
4:D:98:LEU:HD23	4:D:98:LEU:C	2.30	0.57
8:H:298:SER:OG	8:H:333:ARG:NH2	2.37	0.57
11:A:334:TYR:O	11:A:337:ARG:NE	2.38	0.57
11:A:1844:VAL:O	11:A:1848:ILE:HG13	2.04	0.57
3:C:246:VAL:CG2	10:K:897:MET:HE1	2.34	0.57
11:A:733:ILE:O	11:A:737:SER:OG	2.15	0.57
5:E:348:CYS:HB3	5:E:369:VAL:HG23	1.88	0.56
6:F:68:ASP:CA	6:F:71:THR:HG22	2.35	0.56
11:A:773:ILE:HD11	11:A:815:LEU:HD23	1.87	0.56
5:E:476:VAL:HG12	5:E:476:VAL:O	2.05	0.56
11:A:3158:ASP:O	11:A:3161:SER:OG	2.22	0.56
11:A:2384:ASP:O	11:A:2388:GLN:NE2	2.39	0.55
11:A:443:TYR:CE2	11:A:463:LEU:HD23	2.41	0.55
11:A:2938:GLU:OE2	11:A:2992:ARG:NH2	2.37	0.55
1:Q:352:VAL:HG22	2:B:134:ILE:HD12	1.88	0.55
3:C:248:VAL:HG13	10:K:897:MET:HE2	1.88	0.55
11:A:1797:LEU:O	11:A:1801:SER:N	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:353:GLU:OE1	3:C:354:ARG:N	2.39	0.55
11:A:434:GLU:N	11:A:434:GLU:OE1	2.39	0.55
10:K:433:ILE:HD12	10:K:434:PRO:N	2.22	0.55
10:K:760:GLN:N	10:K:760:GLN:OE1	2.37	0.55
11:A:1105:GLU:OE1	11:A:1133:ASN:ND2	2.36	0.55
11:A:124:ALA:O	11:A:128:VAL:HG22	2.05	0.55
9:I:598:LEU:HD13	11:A:924:ARG:HG3	1.89	0.55
11:A:3755:MET:HE1	11:A:3819:MET:SD	2.47	0.55
11:A:2232:MET:HE1	11:A:2300:LEU:HD22	1.89	0.55
11:A:179:LEU:O	11:A:183:VAL:HG23	2.07	0.54
11:A:1226:GLN:O	11:A:1230:VAL:HG23	2.07	0.54
1:Q:305:MET:HE1	6:F:74:LEU:HD22	1.88	0.54
6:F:86:PRO:C	6:F:87:ARG:HG3	2.33	0.54
11:A:152:ASP:OD1	11:A:153:ILE:N	2.41	0.54
10:K:368:TYR:O	10:K:372:ILE:N	2.41	0.54
1:Q:311:TRP:CE3	6:F:75:LEU:HD21	2.43	0.54
11:A:1475:LEU:HD22	11:A:1481:LEU:HD21	1.90	0.54
11:A:3112:MET:HA	11:A:3112:MET:HE2	1.90	0.54
3:C:147:GLU:OE1	3:C:393:ARG:NH2	2.41	0.54
3:C:135:TRP:CD1	3:C:156:THR:HG21	2.43	0.53
11:A:2226:ARG:NH2	11:A:2230:ASP:OD1	2.40	0.53
11:A:3228:LEU:HD12	11:A:3228:LEU:O	2.08	0.53
5:E:442:LEU:HD12	5:E:443:THR:N	2.22	0.53
11:A:2492:THR:HG22	11:A:2493:GLU:H	1.73	0.53
11:A:2748:ASP:OD2	11:A:2748:ASP:C	2.51	0.53
3:C:329:LEU:O	3:C:333:MET:HG3	2.07	0.53
6:F:89:SER:O	6:F:93:LEU:HG	2.08	0.53
4:D:107:LEU:HD11	5:E:260:GLU:CD	2.33	0.53
11:A:1332:GLU:N	11:A:1335:GLU:OE1	2.40	0.53
11:A:2786:LYS:O	11:A:2790:MET:HG2	2.09	0.53
3:C:247:GLU:OE1	3:C:247:GLU:N	2.36	0.53
8:H:228:ARG:NH2	8:H:256:GLU:OE2	2.39	0.53
10:K:387:SER:OG	10:K:389:GLN:OE1	2.07	0.53
11:A:809:LEU:N	11:A:810:PRO:HD2	2.24	0.53
11:A:1118:THR:O	11:A:1118:THR:OG1	2.27	0.52
11:A:1998:MET:HE3	11:A:2001:ILE:HD11	1.90	0.52
11:A:100:ARG:O	11:A:104:LEU:HD13	2.08	0.52
5:E:287:SER:O	5:E:319:ARG:NH2	2.40	0.52
9:I:599:PRO:HD3	11:A:2940:HIS:NE2	2.24	0.52
11:A:3196:ASP:OD1	11:A:3198:ASN:N	2.41	0.52
11:A:842:VAL:HG22	11:A:843:PRO:HD2	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:609:ILE:HG13	9:I:609:ILE:O	2.10	0.52
11:A:814:MET:O	11:A:818:VAL:HG12	2.09	0.52
5:E:39:VAL:HG21	6:F:100:THR:CG2	2.40	0.52
9:I:675:ASP:N	9:I:675:ASP:OD1	2.42	0.52
11:A:548:SER:OG	11:A:553:ARG:NH2	2.38	0.52
9:I:599:PRO:O	9:I:601:PRO:HD3	2.10	0.52
5:E:385:ASN:ND2	10:K:70:LEU:HD21	2.25	0.52
10:K:328:GLU:OE2	10:K:444:ARG:N	2.42	0.52
11:A:1239:ASP:OD1	11:A:3509:TYR:OH	2.26	0.52
11:A:1637:ARG:NH2	11:A:1679:ASN:OD1	2.43	0.52
2:B:223:HIS:CD2	2:B:236:PRO:HB3	2.45	0.52
11:A:108:HIS:ND1	11:A:152:ASP:OD2	2.40	0.52
11:A:1390:MET:HE3	11:A:1390:MET:HA	1.91	0.52
11:A:2526:SER:OG	11:A:2527:LYS:N	2.43	0.52
11:A:2800:THR:HG22	11:A:2802:VAL:HG13	1.92	0.52
11:A:14:SER:CB	11:A:46:LYS:HZ3	2.24	0.51
11:A:2421:VAL:CG1	11:A:2433:ILE:HG21	2.40	0.51
11:A:461:ALA:O	11:A:465:LEU:HD23	2.11	0.51
5:E:59:ARG:NH1	5:E:61:THR:O	2.42	0.51
11:A:353:ILE:O	11:A:357:LEU:HG	2.09	0.51
11:A:2055:GLU:OE1	11:A:2164:TRP:NE1	2.39	0.51
11:A:1619:THR:HG21	11:A:1632:LEU:HD22	1.92	0.51
4:D:105:ASN:OD1	4:D:105:ASN:C	2.53	0.51
11:A:1794:LEU:HD21	11:A:1844:VAL:HG12	1.92	0.51
10:K:334:GLU:OE1	10:K:334:GLU:N	2.44	0.51
11:A:2384:ASP:OD1	11:A:2388:GLN:NE2	2.44	0.51
7:G:69:ILE:HD11	10:K:797:ILE:HG13	1.91	0.51
9:I:663:VAL:HG11	9:I:678:MET:CB	2.41	0.51
11:A:3443:PHE:CZ	11:A:3448:LEU:HD21	2.46	0.51
10:K:214:GLU:O	10:K:218:ILE:HG12	2.11	0.51
11:A:1790:ARG:O	11:A:1794:LEU:HD23	2.11	0.51
6:F:142:ASN:ND2	9:I:708:GLU:OE1	2.41	0.50
11:A:2017:ASP:OD1	11:A:2018:LYS:N	2.43	0.50
10:K:97:LYS:O	10:K:97:LYS:NZ	2.40	0.50
10:K:342:VAL:O	10:K:346:LEU:HG	2.11	0.50
11:A:1619:THR:HG21	11:A:1632:LEU:CD2	2.41	0.50
11:A:69:PHE:O	11:A:73:VAL:HG13	2.12	0.50
11:A:773:ILE:CD1	11:A:814:MET:HE3	2.39	0.50
11:A:1239:ASP:OD2	11:A:3536:ARG:NH2	2.42	0.50
3:C:135:TRP:CD1	3:C:139:CYS:HG	2.30	0.50
4:D:658:ASP:OD1	4:D:660:ASN:N	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:K:260:ASP:OD1	10:K:260:ASP:N	2.45	0.50
10:K:84:GLU:OE1	10:K:642:LYS:NZ	2.41	0.50
6:F:68:ASP:C	6:F:71:THR:HG22	2.37	0.49
10:K:400:LEU:HA	10:K:403:ILE:HD12	1.93	0.49
11:A:457:GLN:N	11:A:457:GLN:OE1	2.45	0.49
11:A:1755:PHE:HE1	11:A:1814:LEU:HD11	1.77	0.49
10:K:433:ILE:N	10:K:434:PRO:CD	2.75	0.49
11:A:2492:THR:HG22	11:A:2493:GLU:N	2.27	0.49
8:H:464:GLU:OE1	8:H:464:GLU:N	2.45	0.49
11:A:179:LEU:C	11:A:179:LEU:HD12	2.37	0.49
11:A:2866:VAL:O	11:A:2870:VAL:HG22	2.12	0.49
11:A:1386:ASN:O	11:A:1390:MET:HG2	2.12	0.49
5:E:255:MET:HE2	5:E:255:MET:HA	1.94	0.49
11:A:677:GLU:OE1	11:A:1595:THR:N	2.45	0.49
2:B:234:PRO:O	2:B:235:TYR:HB2	2.11	0.49
11:A:47:ALA:HB2	11:A:99:LEU:CD1	2.43	0.49
11:A:447:LEU:HD23	11:A:447:LEU:O	2.13	0.49
11:A:2108:ILE:O	11:A:2112:VAL:HG23	2.13	0.49
5:E:244:HIS:NE2	10:K:242:MET:HE1	2.28	0.49
10:K:702:ASP:OD1	10:K:704:GLU:N	2.45	0.49
11:A:1796:CYS:SG	11:A:1814:LEU:HD12	2.53	0.49
11:A:2724:LEU:CD1	11:A:2749:LEU:HD12	2.42	0.49
11:A:332:LEU:C	11:A:332:LEU:HD23	2.37	0.49
10:K:732:ARG:O	10:K:733:ARG:HB3	2.13	0.49
11:A:1121:ASP:O	11:A:1123:LYS:NZ	2.35	0.49
11:A:3823:PHE:HB3	11:A:3829:THR:HG22	1.95	0.48
3:C:346:GLU:OE2	3:C:347:GLN:N	2.47	0.48
11:A:438:LYS:O	11:A:442:VAL:HG23	2.13	0.48
5:E:279:ALA:HB3	5:E:280:PRO:HD3	1.96	0.48
11:A:2393:LEU:HD12	11:A:2429:LEU:HD13	1.96	0.48
2:B:466:ILE:HD11	11:A:2832:ASP:HB2	1.96	0.48
11:A:78:ILE:HG23	11:A:130:LEU:HD13	1.94	0.48
1:Q:301:THR:OG1	8:H:167:VAL:HG21	2.14	0.48
4:D:136:ASP:OD1	4:D:136:ASP:N	2.45	0.48
5:E:223:SER:O	5:E:223:SER:OG	2.28	0.48
9:I:663:VAL:HG11	9:I:678:MET:HB3	1.96	0.48
11:A:1855:VAL:O	11:A:1855:VAL:HG13	2.12	0.48
9:I:600:ILE:HD11	11:A:924:ARG:NH2	2.28	0.48
11:A:57:LEU:O	11:A:61:THR:N	2.46	0.48
11:A:2115:ILE:HD13	11:A:2151:ALA:CB	2.43	0.48
11:A:2165:GLY:O	11:A:2168:VAL:HG22	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:A:183:VAL:HG22	11:A:248:PHE:HZ	1.77	0.48
11:A:1951:ARG:HH21	11:A:1954:VAL:HG11	1.79	0.48
11:A:3530:ASP:OD1	11:A:3530:ASP:N	2.43	0.48
4:D:629:SER:OG	4:D:749:VAL:HG22	2.13	0.48
7:G:186:LEU:O	7:G:190:VAL:HG22	2.14	0.48
11:A:134:LEU:O	11:A:138:ASP:N	2.38	0.48
11:A:140:GLU:HA	11:A:143:VAL:HG22	1.95	0.48
11:A:1027:ASP:OD2	11:A:1030:ARG:NH1	2.47	0.48
11:A:2961:SER:O	11:A:3022:ARG:NH1	2.47	0.48
1:Q:305:MET:HE3	8:H:163:LEU:HD11	1.95	0.47
11:A:1744:LEU:O	11:A:1744:LEU:HD12	2.14	0.47
11:A:179:LEU:HD21	11:A:283:ALA:HB2	1.96	0.47
11:A:905:LEU:HD22	11:A:922:THR:HG23	1.95	0.47
6:F:85:GLU:O	6:F:88:VAL:HG23	2.14	0.47
9:I:709:ARG:NH2	9:I:715:GLU:OE2	2.47	0.47
11:A:2860:ARG:HB2	11:A:2885:MET:HE1	1.95	0.47
10:K:296:ILE:O	10:K:300:ARG:N	2.47	0.47
5:E:183:LYS:CB	10:K:613:VAL:HG22	2.44	0.47
4:D:200:GLU:OE1	4:D:351:ARG:NH1	2.48	0.47
5:E:90:TYR:CG	6:F:66:PRO:HD3	2.49	0.47
6:F:76:LEU:CB	6:F:84:PHE:HZ	2.27	0.47
11:A:3405:TYR:O	11:A:3409:VAL:HG23	2.15	0.47
5:E:285:LEU:O	5:E:319:ARG:NH1	2.48	0.47
10:K:594:ASP:OD2	10:K:679:ALA:N	2.47	0.47
4:D:195:LEU:HD23	4:D:199:LEU:HD23	1.97	0.47
5:E:449:VAL:O	5:E:453:LEU:N	2.42	0.47
10:K:421:MET:O	10:K:425:MET:HG3	2.15	0.47
11:A:1998:MET:HE3	11:A:1998:MET:HA	1.97	0.47
11:A:3667:LYS:HE3	11:A:3672:VAL:HG13	1.96	0.46
4:D:104:ASP:OD2	4:D:104:ASP:N	2.48	0.46
5:E:409:TYR:O	5:E:413:VAL:HG23	2.15	0.46
3:C:141:MET:HE1	3:C:296:PHE:HD1	1.80	0.46
11:A:1534:VAL:CG2	11:A:1563:VAL:HG11	2.44	0.46
4:D:419:GLU:OE2	4:D:419:GLU:HA	2.14	0.46
5:E:207:ASP:OD1	5:E:208:GLU:N	2.49	0.46
5:E:270:ILE:O	5:E:270:ILE:HG22	2.16	0.46
4:D:221:GLU:N	4:D:221:GLU:OE1	2.49	0.46
10:K:580:GLU:OE1	10:K:580:GLU:HA	2.15	0.46
11:A:69:PHE:O	11:A:73:VAL:HG22	2.15	0.46
1:Q:316:VAL:HG12	1:Q:317:VAL:HG13	1.97	0.46
11:A:2048:MET:O	11:A:2051:ILE:HG22	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:504:GLY:N	4:D:509:TYR:O	2.49	0.46
11:A:2405:ILE:HD12	11:A:2405:ILE:O	2.15	0.46
11:A:2353:ASP:OD1	11:A:2354:HIS:N	2.48	0.46
11:A:2580:ILE:O	11:A:2584:VAL:HG22	2.16	0.46
9:I:658:LYS:O	9:I:662:LEU:HG	2.16	0.46
11:A:1061:ALA:O	11:A:1065:GLU:HG2	2.16	0.45
11:A:1119:PRO:C	11:A:1120:PHE:HD1	2.24	0.45
11:A:2184:GLY:O	11:A:2188:ALA:N	2.43	0.45
11:A:2682:ARG:HA	11:A:2682:ARG:NE	2.31	0.45
11:A:3802:GLU:CB	11:A:3803:PRO:HD3	2.46	0.45
10:K:83:ASP:OD1	10:K:87:GLU:N	2.42	0.45
11:A:2115:ILE:HD13	11:A:2151:ALA:HB3	1.98	0.45
11:A:2245:SER:O	11:A:2319:SER:OG	2.34	0.45
11:A:2398:VAL:HA	11:A:2401:MET:HE2	1.98	0.45
3:C:345:LYS:NZ	3:C:395:PRO:O	2.50	0.45
11:A:1942:LEU:HD22	11:A:1954:VAL:HG13	1.98	0.45
11:A:2403:MET:SD	11:A:2406:LEU:HD12	2.56	0.45
10:K:343:LEU:HD12	10:K:343:LEU:O	2.17	0.45
11:A:1893:ASP:N	11:A:1893:ASP:OD1	2.48	0.45
9:I:609:ILE:HG22	11:A:912:HIS:CG	2.51	0.45
11:A:1431:MET:HA	11:A:1431:MET:HE2	1.99	0.45
6:F:67:ARG:C	6:F:69:ALA:H	2.25	0.45
11:A:812:LEU:O	11:A:812:LEU:HG	2.17	0.45
9:I:615:VAL:HG11	11:A:2873:ALA:HA	1.99	0.45
10:K:87:GLU:OE1	10:K:87:GLU:HA	2.16	0.45
11:A:178:GLN:NE2	11:A:245:MET:O	2.44	0.45
11:A:3578:ARG:NH1	11:A:3818:GLU:OE1	2.49	0.45
5:E:442:LEU:HD12	5:E:443:THR:HG23	1.99	0.45
11:A:139:ASN:O	11:A:143:VAL:HG22	2.16	0.45
8:H:259:LEU:HD21	9:I:707:LYS:HB2	1.99	0.44
10:K:259:MET:SD	10:K:260:ASP:N	2.90	0.44
10:K:328:GLU:O	10:K:444:ARG:N	2.48	0.44
2:B:349:PRO:O	2:B:352:ILE:HG22	2.18	0.44
11:A:177:GLU:HG3	11:A:279:LEU:HD21	2.00	0.44
11:A:2005:LEU:HD11	11:A:2012:PHE:CD2	2.51	0.44
4:D:107:LEU:HD11	5:E:260:GLU:OE1	2.18	0.44
11:A:811:LEU:O	11:A:811:LEU:HD12	2.17	0.44
11:A:432:SER:N	11:A:435:GLN:OE1	2.41	0.44
11:A:934:ARG:HD2	11:A:2927:VAL:HG13	1.99	0.44
6:F:67:ARG:C	6:F:68:ASP:OD1	2.61	0.44
5:E:10:LEU:CD1	8:H:181:LEU:HD11	2.40	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:597:LYS:C	9:I:598:LEU:HD12	2.43	0.44
11:A:552:ASP:N	11:A:552:ASP:OD1	2.51	0.44
5:E:276:ALA:HB2	10:K:686:PRO:HG3	1.99	0.44
11:A:97:GLN:O	11:A:101:ASN:ND2	2.43	0.44
11:A:2682:ARG:NH1	11:A:2715:ASP:OD2	2.51	0.44
11:A:1481:LEU:HD22	11:A:1486:LEU:HD21	1.99	0.44
4:D:592:ASN:OD1	4:D:593:GLY:N	2.51	0.43
5:E:393:VAL:HG23	5:E:394:LEU:N	2.33	0.43
9:I:610:GLN:O	9:I:611:MET:HB3	2.17	0.43
2:B:235:TYR:CD2	2:B:236:PRO:HD2	2.53	0.43
2:B:351:ASN:O	2:B:355:VAL:HG23	2.19	0.43
4:D:98:LEU:HD23	4:D:98:LEU:O	2.19	0.43
5:E:327:SER:HB2	5:E:371:ALA:HB1	2.01	0.43
11:A:1565:ASN:O	11:A:1568:HIS:ND1	2.52	0.43
11:A:2033:PRO:N	11:A:2034:PRO:CD	2.81	0.43
11:A:407:THR:O	11:A:411:THR:OG1	2.28	0.43
5:E:138:VAL:HG21	10:K:620:ARG:HB3	2.00	0.43
8:H:467:GLU:N	8:H:468:PRO:HD2	2.33	0.43
11:A:765:VAL:CG1	11:A:807:GLN:HG2	2.49	0.43
11:A:3526:ASP:OD1	11:A:3526:ASP:N	2.52	0.43
4:D:442:SER:OG	4:D:443:ASP:N	2.51	0.43
11:A:420:LEU:HD23	11:A:424:ILE:HD12	2.00	0.43
11:A:539:ILE:HD13	11:A:1773:LEU:HD22	2.01	0.43
11:A:1417:VAL:O	11:A:1421:VAL:HG23	2.19	0.43
11:A:1624:GLU:O	11:A:1672:ILE:HG21	2.19	0.43
3:C:354:ARG:NH2	8:H:336:MET:SD	2.92	0.42
5:E:185:VAL:HG23	5:E:186:ILE:N	2.34	0.42
7:G:69:ILE:HG22	10:K:731:THR:HG22	2.00	0.42
11:A:1341:LYS:HG3	11:A:1345:LEU:HD12	2.01	0.42
11:A:2389:THR:O	11:A:2393:LEU:HD13	2.17	0.42
11:A:3390:ASP:OD2	11:A:3390:ASP:C	2.60	0.42
3:C:283:GLU:OE2	11:A:2447:THR:OG1	2.25	0.42
11:A:47:ALA:HB2	11:A:99:LEU:HD12	2.00	0.42
11:A:1411:ARG:NH1	11:A:1411:ARG:HG2	2.33	0.42
10:K:613:VAL:O	10:K:613:VAL:HG13	2.18	0.42
11:A:565:PHE:CE1	11:A:569:MET:HE3	2.55	0.42
11:A:1684:LEU:O	11:A:1685:CYS:SG	2.77	0.42
4:D:340:VAL:O	4:D:341:VAL:HB	2.19	0.42
11:A:1832:ASP:O	11:A:1834:ASN:N	2.46	0.42
11:A:2413:PHE:O	11:A:2416:VAL:HG12	2.19	0.42
10:K:95:SER:OG	10:K:98:ARG:NH2	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:A:806:LYS:HB2	11:A:806:LYS:HE3	1.84	0.42
11:A:1658:THR:O	11:A:1662:VAL:HG23	2.18	0.42
11:A:1663:VAL:HG23	11:A:1670:LYS:HB2	2.02	0.42
4:D:187:LEU:HD12	4:D:220:VAL:HG11	2.01	0.42
4:D:649:ARG:NH1	4:D:735:GLN:OE1	2.53	0.42
11:A:144:ILE:HG23	11:A:145:LEU:N	2.33	0.42
11:A:57:LEU:C	11:A:61:THR:HG23	2.45	0.42
11:A:3124:ASP:HA	11:A:3127:PHE:CZ	2.55	0.42
10:K:747:LEU:HD22	10:K:894:HIS:CE1	2.55	0.42
11:A:2243:LEU:HD21	11:A:2271:ILE:HD11	2.02	0.42
10:K:584:TYR:CD1	10:K:584:TYR:C	2.98	0.42
11:A:151:SER:HB3	11:A:257:ILE:HG23	2.01	0.42
11:A:2945:ILE:CG1	11:A:2967:LEU:HD23	2.50	0.42
2:B:139:GLN:O	2:B:197:ARG:NH1	2.49	0.42
6:F:83:SER:OG	6:F:84:PHE:N	2.53	0.42
7:G:103:GLN:HG3	10:K:797:ILE:HD11	2.02	0.42
8:H:389:ASN:OD1	8:H:389:ASN:N	2.53	0.42
10:K:330:ILE:HD11	10:K:444:ARG:HD3	2.00	0.42
11:A:699:ILE:HB	11:A:700:PRO:HD3	2.02	0.42
11:A:177:GLU:CG	11:A:279:LEU:HD21	2.51	0.41
9:I:649:GLU:OE1	9:I:653:VAL:HG11	2.20	0.41
11:A:166:GLN:O	11:A:169:LEU:HG	2.20	0.41
11:A:867:GLY:O	11:A:871:VAL:HG23	2.20	0.41
11:A:1452:PHE:HB3	11:A:1471:LEU:HD13	2.01	0.41
11:A:1620:LEU:HD13	11:A:1654:PHE:HE1	1.85	0.41
11:A:2259:ARG:NH2	11:A:2266:ASP:OD1	2.53	0.41
3:C:385:LEU:HD12	11:A:2524:CYS:CB	2.50	0.41
5:E:380:VAL:HG12	5:E:380:VAL:O	2.19	0.41
7:G:181:LEU:HD22	10:K:798:PHE:CD2	2.56	0.41
11:A:1787:ASP:O	11:A:1788:PHE:HB3	2.19	0.41
11:A:2232:MET:SD	11:A:2236:GLN:NE2	2.89	0.41
11:A:2857:GLN:NE2	11:A:2861:ASP:OD1	2.53	0.41
2:B:217:PRO:O	11:A:2739:ARG:NH1	2.53	0.41
3:C:330:THR:O	3:C:334:VAL:HG23	2.20	0.41
10:K:339:LEU:O	10:K:342:VAL:HG22	2.20	0.41
11:A:885:LEU:HD22	11:A:889:TYR:CD2	2.56	0.41
11:A:1424:ILE:HD11	11:A:1455:CYS:SG	2.61	0.41
3:C:408:LEU:HD21	8:H:305:LEU:HD13	2.02	0.41
11:A:1296:LEU:O	11:A:1300:VAL:HG23	2.21	0.41
11:A:2300:LEU:HD12	11:A:2300:LEU:O	2.19	0.41
6:F:67:ARG:HD3	8:H:174:ASP:OD2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:A:116:PRO:N	11:A:117:PRO:HD2	2.36	0.41
11:A:169:LEU:HD22	11:A:272:ASN:ND2	2.35	0.41
9:I:600:ILE:HD11	11:A:924:ARG:HH21	1.86	0.41
10:K:213:LEU:HD23	10:K:213:LEU:C	2.46	0.41
10:K:791:GLN:HE21	10:K:811:LEU:HD23	1.86	0.41
11:A:1939:TYR:CZ	11:A:1943:LEU:HD11	2.55	0.41
11:A:3819:MET:SD	11:A:3844:ASN:ND2	2.94	0.41
10:K:376:MET:HB2	10:K:381:MET:HE1	2.03	0.41
10:K:806:LEU:C	10:K:806:LEU:HD12	2.46	0.41
11:A:176:PHE:O	11:A:179:LEU:HD23	2.20	0.41
11:A:2237:LYS:O	11:A:2241:LYS:NZ	2.54	0.41
11:A:2800:THR:CG2	11:A:2802:VAL:HG13	2.51	0.41
4:D:340:VAL:HG12	4:D:341:VAL:N	2.35	0.41
5:E:442:LEU:HD21	5:E:465:ARG:CZ	2.50	0.41
6:F:76:LEU:HD13	6:F:84:PHE:HE1	1.86	0.41
9:I:605:HIS:CD2	9:I:607:LYS:HB3	2.56	0.41
10:K:94:GLU:OE2	10:K:94:GLU:HA	2.21	0.41
10:K:314:MET:O	10:K:318:ARG:N	2.52	0.41
11:A:949:VAL:O	11:A:949:VAL:HG12	2.20	0.41
11:A:1833:PRO:O	11:A:1834:ASN:C	2.64	0.41
11:A:3515:VAL:HG12	11:A:3516:GLU:N	2.36	0.41
7:G:182:THR:HG22	7:G:185:ASP:OD2	2.20	0.41
10:K:381:MET:SD	10:K:381:MET:N	2.94	0.41
11:A:54:ARG:HB2	11:A:106:ILE:HD11	2.02	0.41
11:A:1806:SER:O	11:A:1811:TRP:NE1	2.54	0.41
2:B:235:TYR:CD1	2:B:236:PRO:HD2	2.56	0.40
5:E:446:GLY:O	5:E:450:ILE:HG13	2.21	0.40
6:F:86:PRO:O	6:F:87:ARG:HG3	2.21	0.40
11:A:646:ASN:OD1	11:A:650:VAL:HG13	2.21	0.40
11:A:3667:LYS:CE	11:A:3672:VAL:HG13	2.51	0.40
3:C:346:GLU:C	3:C:346:GLU:CD	2.90	0.40
10:K:393:LYS:HD2	10:K:436:ILE:HG23	2.03	0.40
11:A:1810:LYS:O	11:A:1814:LEU:HD23	2.21	0.40
5:E:39:VAL:HG21	6:F:100:THR:HG23	2.02	0.40
6:F:81:VAL:HG12	6:F:83:SER:O	2.21	0.40
7:G:87:PRO:N	7:G:88:PRO:CD	2.84	0.40
8:H:194:ASN:OD1	8:H:194:ASN:N	2.54	0.40
8:H:466:ALA:O	8:H:470:THR:HG22	2.21	0.40
9:I:598:LEU:HA	9:I:599:PRO:HD3	1.89	0.40
11:A:152:ASP:OD1	11:A:152:ASP:C	2.63	0.40
11:A:934:ARG:CD	11:A:2927:VAL:HG13	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:461:ILE:HA	5:E:464:LEU:HG	2.02	0.40
8:H:246:ILE:O	8:H:250:MET:HG3	2.21	0.40
9:I:674:GLN:OE1	9:I:675:ASP:N	2.54	0.40
11:A:145:LEU:H	11:A:145:LEU:HD12	1.86	0.40
11:A:260:SER:O	11:A:264:VAL:HG23	2.21	0.40
11:A:381:ASN:OD1	11:A:381:ASN:C	2.64	0.40
11:A:381:ASN:OD1	11:A:382:PHE:N	2.55	0.40
11:A:950:ASP:OD1	11:A:950:ASP:N	2.55	0.40
11:A:1176:VAL:N	11:A:1177:PRO:HD2	2.36	0.40
4:D:389:ASP:OD1	4:D:389:ASP:N	2.55	0.40
10:K:579:TYR:O	10:K:579:TYR:CG	2.75	0.40
11:A:183:VAL:HG22	11:A:248:PHE:CE1	2.57	0.40
11:A:3374:LEU:O	11:A:3377:ALA:O	2.39	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	Q	60/1273 (5%)	60 (100%)	0	0	100	100
2	B	233/1192 (20%)	221 (95%)	11 (5%)	1 (0%)	30	64
3	C	189/433 (44%)	184 (97%)	5 (3%)	0	100	100
4	D	509/767 (66%)	488 (96%)	21 (4%)	0	100	100
5	E	435/480 (91%)	428 (98%)	7 (2%)	0	100	100
6	F	117/277 (42%)	110 (94%)	7 (6%)	0	100	100
7	G	110/204 (54%)	107 (97%)	3 (3%)	0	100	100
8	H	248/485 (51%)	243 (98%)	5 (2%)	0	100	100
9	I	148/770 (19%)	140 (95%)	8 (5%)	0	100	100
10	K	572/1224 (47%)	556 (97%)	16 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
11	A	3597/3893 (92%)	3433 (95%)	164 (5%)	0	100	100
All	All	6218/10998 (56%)	5970 (96%)	247 (4%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	230	SER

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	Q	50/1047 (5%)	50 (100%)	0	100	100
2	B	227/928 (24%)	227 (100%)	0	100	100
3	C	173/377 (46%)	171 (99%)	2 (1%)	67	85
4	D	450/635 (71%)	449 (100%)	1 (0%)	92	97
5	E	375/401 (94%)	371 (99%)	4 (1%)	70	86
6	F	92/212 (43%)	90 (98%)	2 (2%)	47	73
7	G	90/157 (57%)	90 (100%)	0	100	100
8	H	206/387 (53%)	206 (100%)	0	100	100
9	I	129/620 (21%)	128 (99%)	1 (1%)	79	90
10	K	506/1023 (50%)	502 (99%)	4 (1%)	79	90
11	A	3197/3412 (94%)	3184 (100%)	13 (0%)	89	94
All	All	5495/9199 (60%)	5468 (100%)	27 (0%)	85	93

All (27) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	C	136	PHE
3	C	285	TYR
4	D	751	PHE

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Mol	Chain	Res	Type
5	E	30	GLU
5	E	277	LEU
5	E	450	ILE
5	E	471	ARG
6	F	100	THR
6	F	108	LEU
9	I	623	SER
10	K	289	LEU
10	K	339	LEU
10	K	581	ASP
10	K	747	LEU
11	A	354	ILE
11	A	367	SER
11	A	808	ILE
11	A	1117	TYR
11	A	1371	TYR
11	A	1409	GLU
11	A	1945	THR
11	A	2396	ILE
11	A	2573	ASP
11	A	2613	LEU
11	A	2999	ILE
11	A	3438	ASN
11	A	3503	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (45) such sidechains are listed below:

Mol	Chain	Res	Type
1	Q	335	HIS
2	B	139	GLN
2	B	196	HIS
2	B	221	HIS
2	B	223	HIS
2	B	293	GLN
2	B	296	HIS
4	D	46	ASN
4	D	148	HIS
4	D	197	HIS
5	E	131	HIS
5	E	470	ASN
8	H	313	HIS
9	I	635	GLN

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Mol	Chain	Res	Type
9	I	701	GLN
10	K	245	GLN
10	K	772	HIS
10	K	868	ASN
10	K	894	HIS
11	A	114	GLN
11	A	349	HIS
11	A	764	HIS
11	A	873	GLN
11	A	1006	GLN
11	A	1554	ASN
11	A	1596	HIS
11	A	1807	GLN
11	A	1927	HIS
11	A	1947	GLN
11	A	1977	ASN
11	A	2105	HIS
11	A	2478	ASN
11	A	2705	HIS
11	A	2822	GLN
11	A	2891	HIS
11	A	2993	GLN
11	A	3223	GLN
11	A	3269	GLN
11	A	3584	GLN
11	A	3588	GLN
11	A	3735	HIS
11	A	3738	ASN
11	A	3745	ASN
11	A	3825	ASN
11	A	3844	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

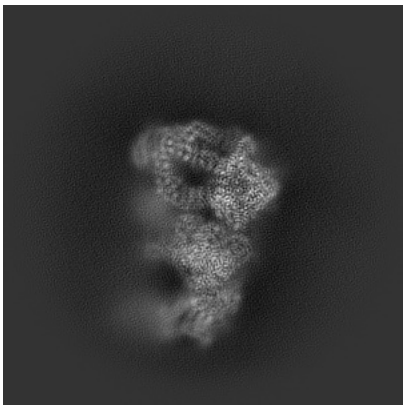
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-73233. These allow visual inspection of the internal detail of the map and identification of artifacts.

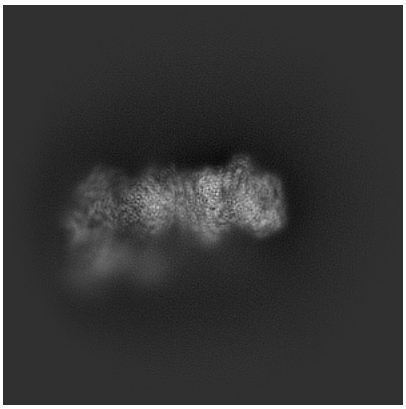
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

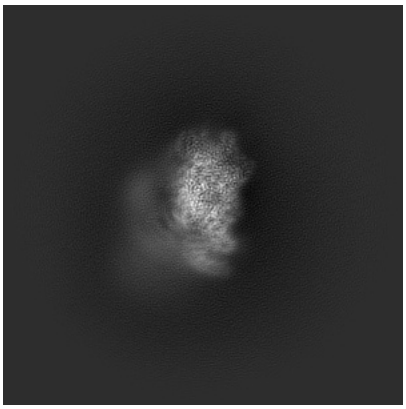
6.1.1 Primary map



X

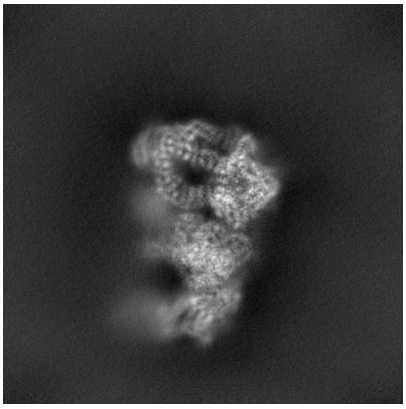


Y

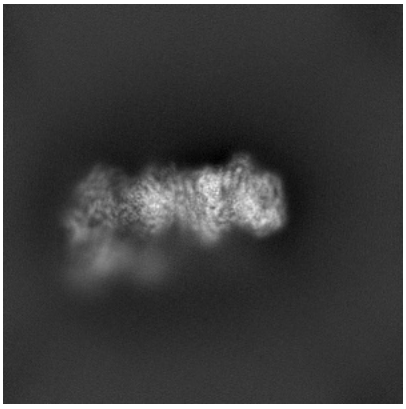


Z

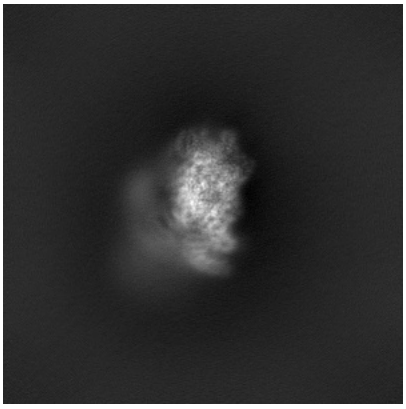
6.1.2 Raw map



X



Y

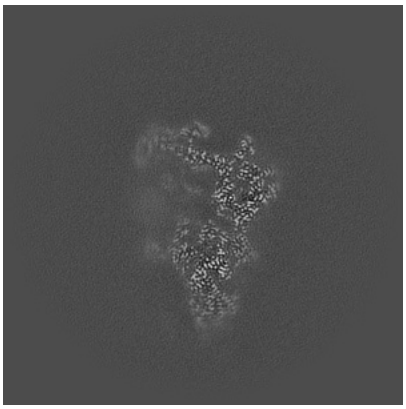


Z

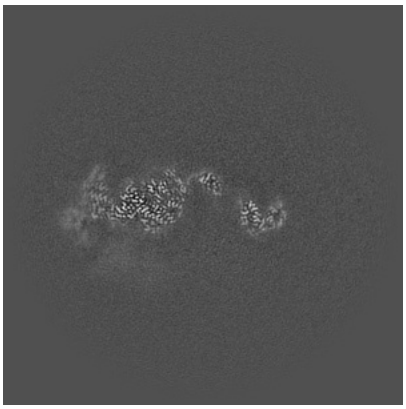
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

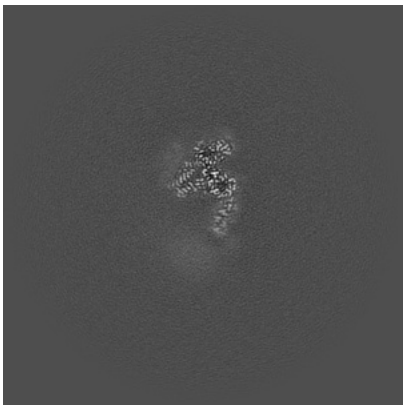
6.2.1 Primary map



X Index: 240

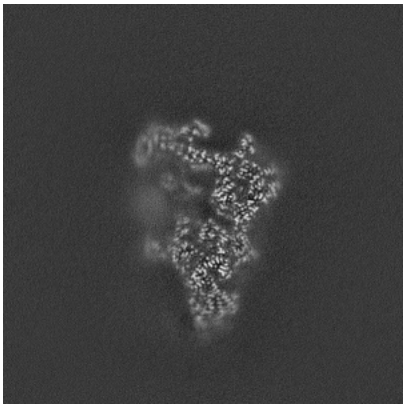


Y Index: 240

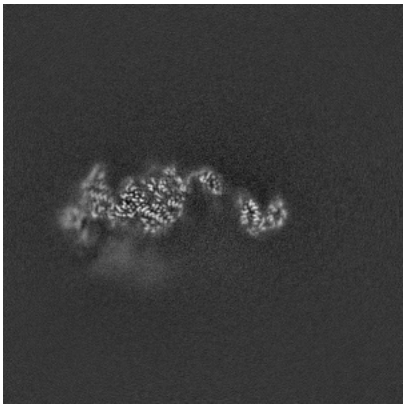


Z Index: 240

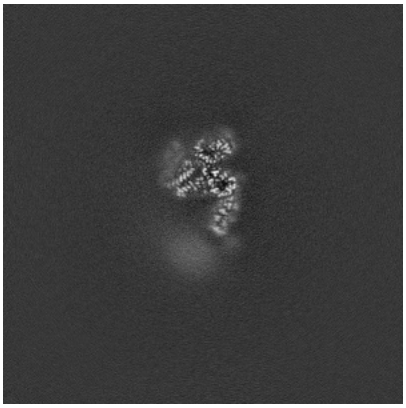
6.2.2 Raw map



X Index: 240



Y Index: 240

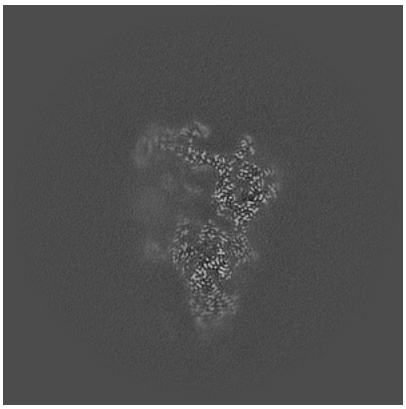


Z Index: 240

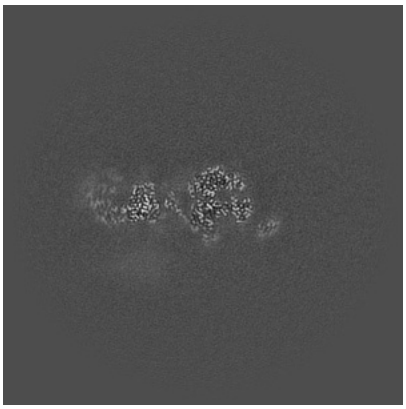
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

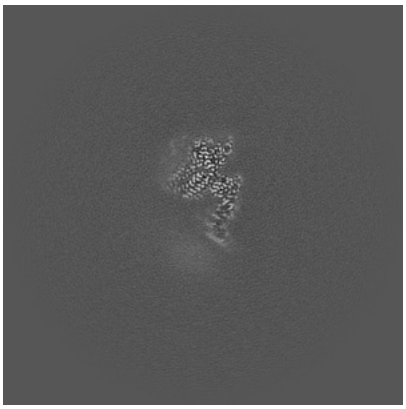
6.3.1 Primary map



X Index: 240

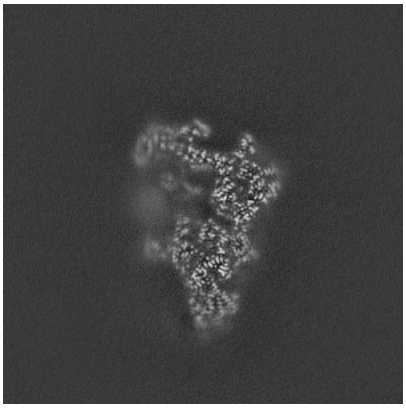


Y Index: 262

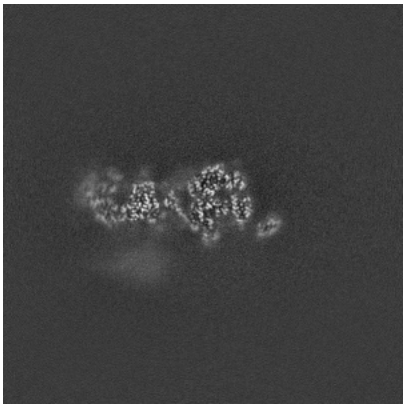


Z Index: 246

6.3.2 Raw map



X Index: 240



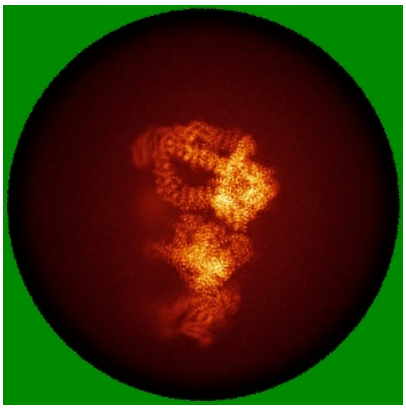
Y Index: 262

Z Index: 249

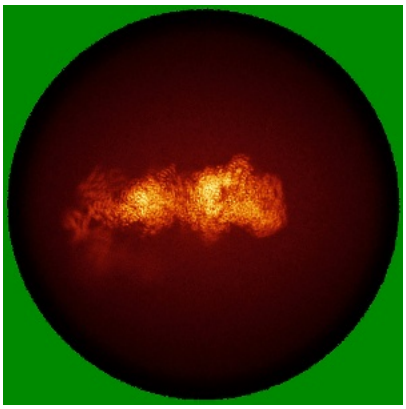
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

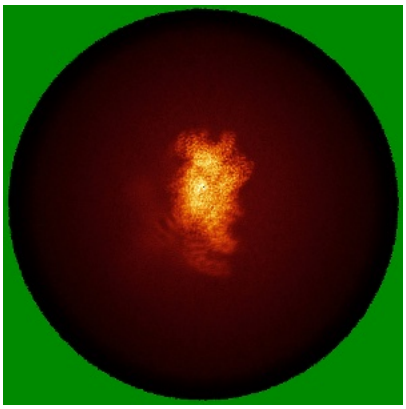
6.4.1 Primary map



X

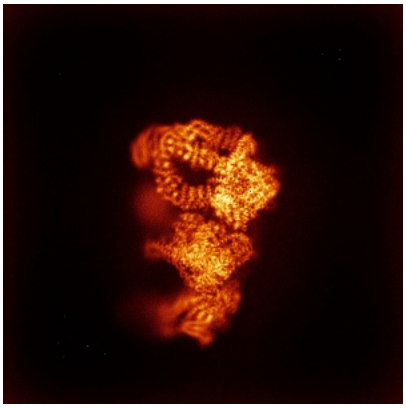


Y

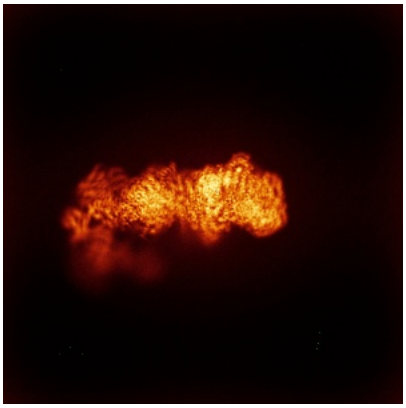


Z

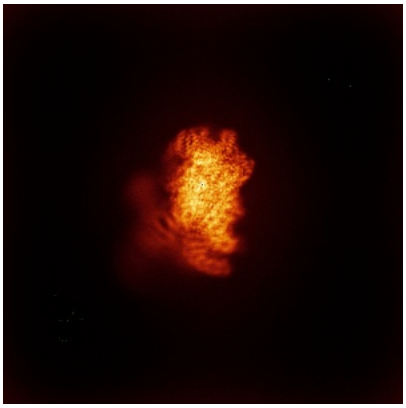
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.5. 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.

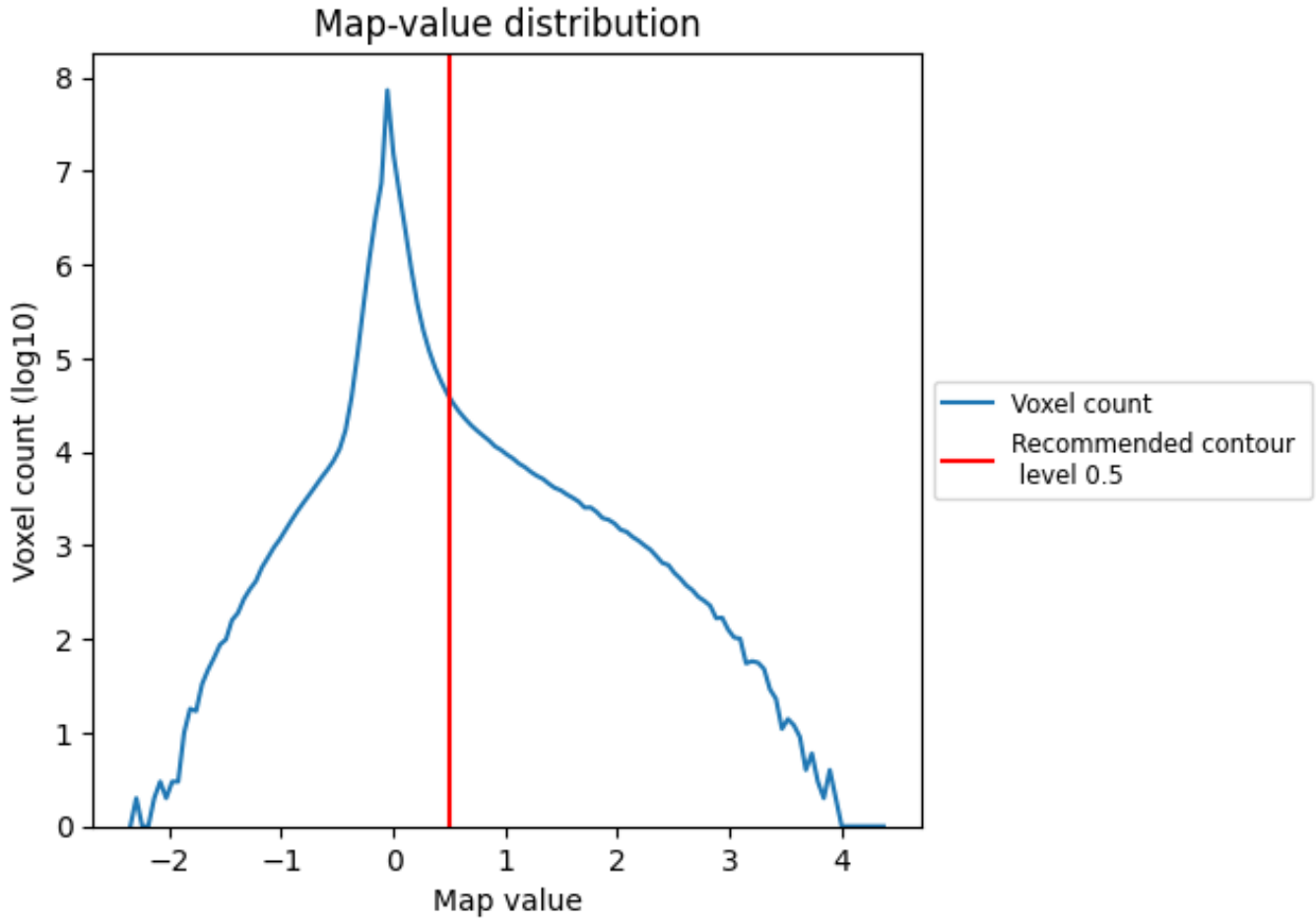
6.6 Mask visualisation (i)

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

7 Map analysis

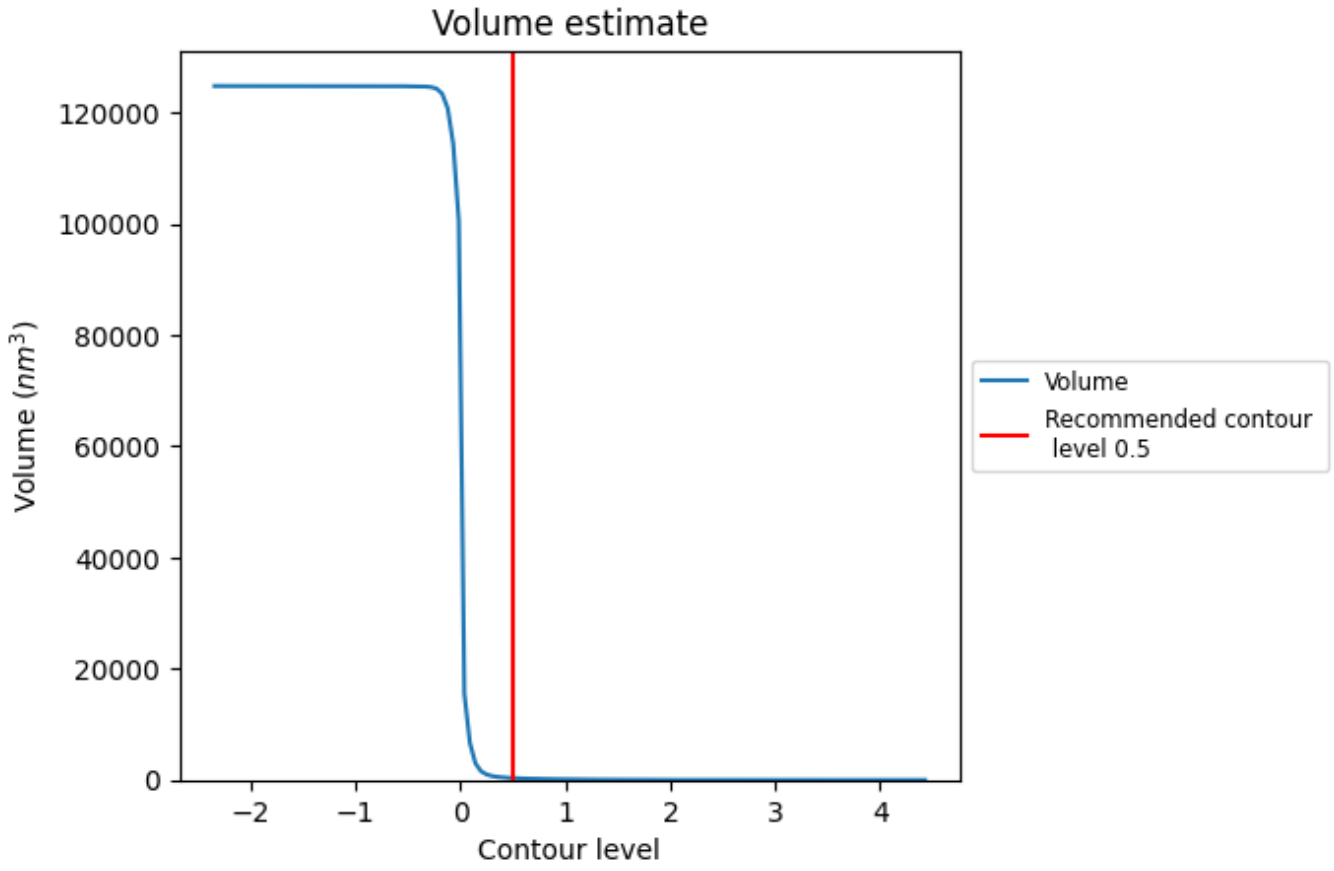
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

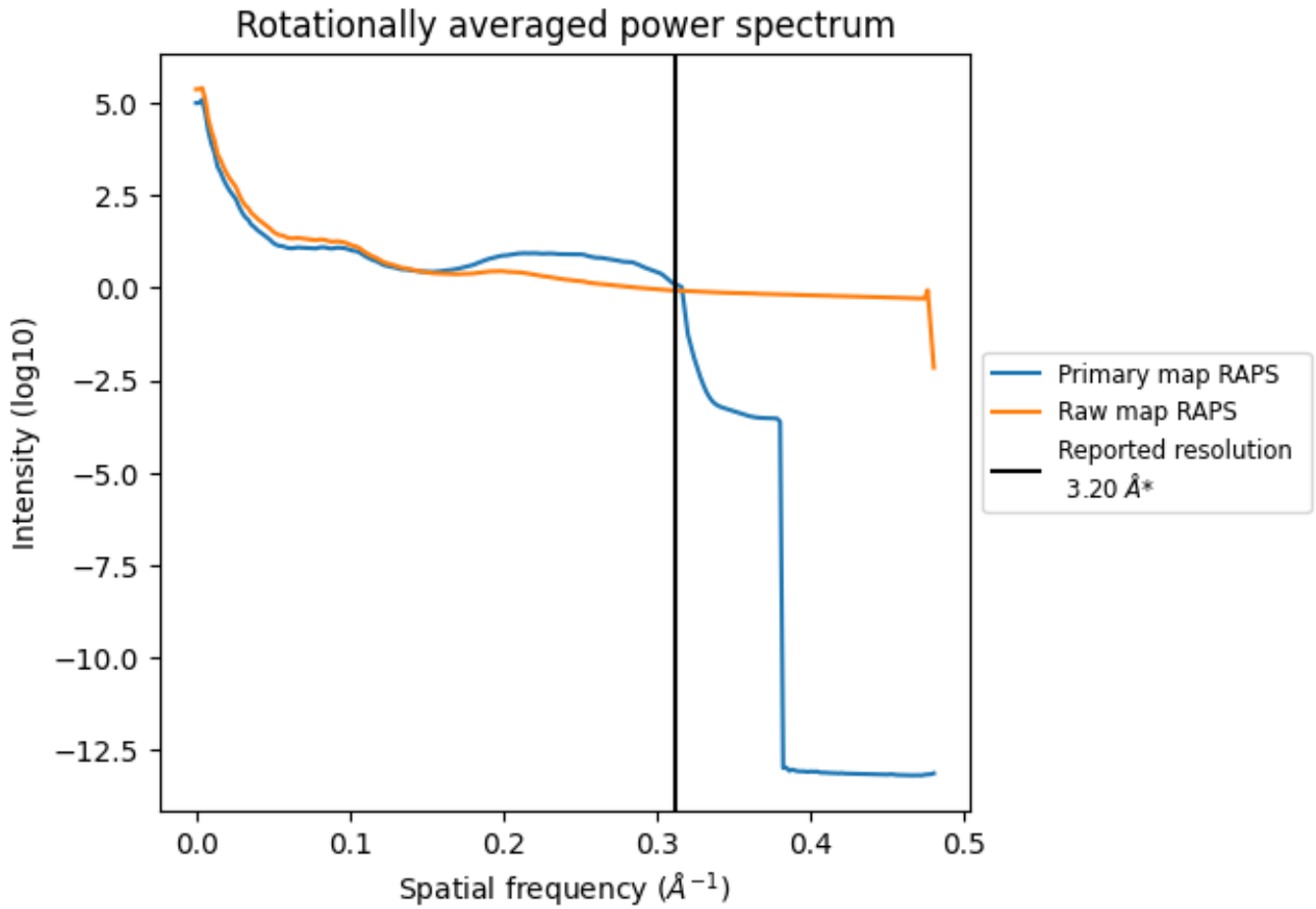
7.2 Volume estimate



The volume at the recommended contour level is 331 nm^3; this corresponds to an approximate mass of 299 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)

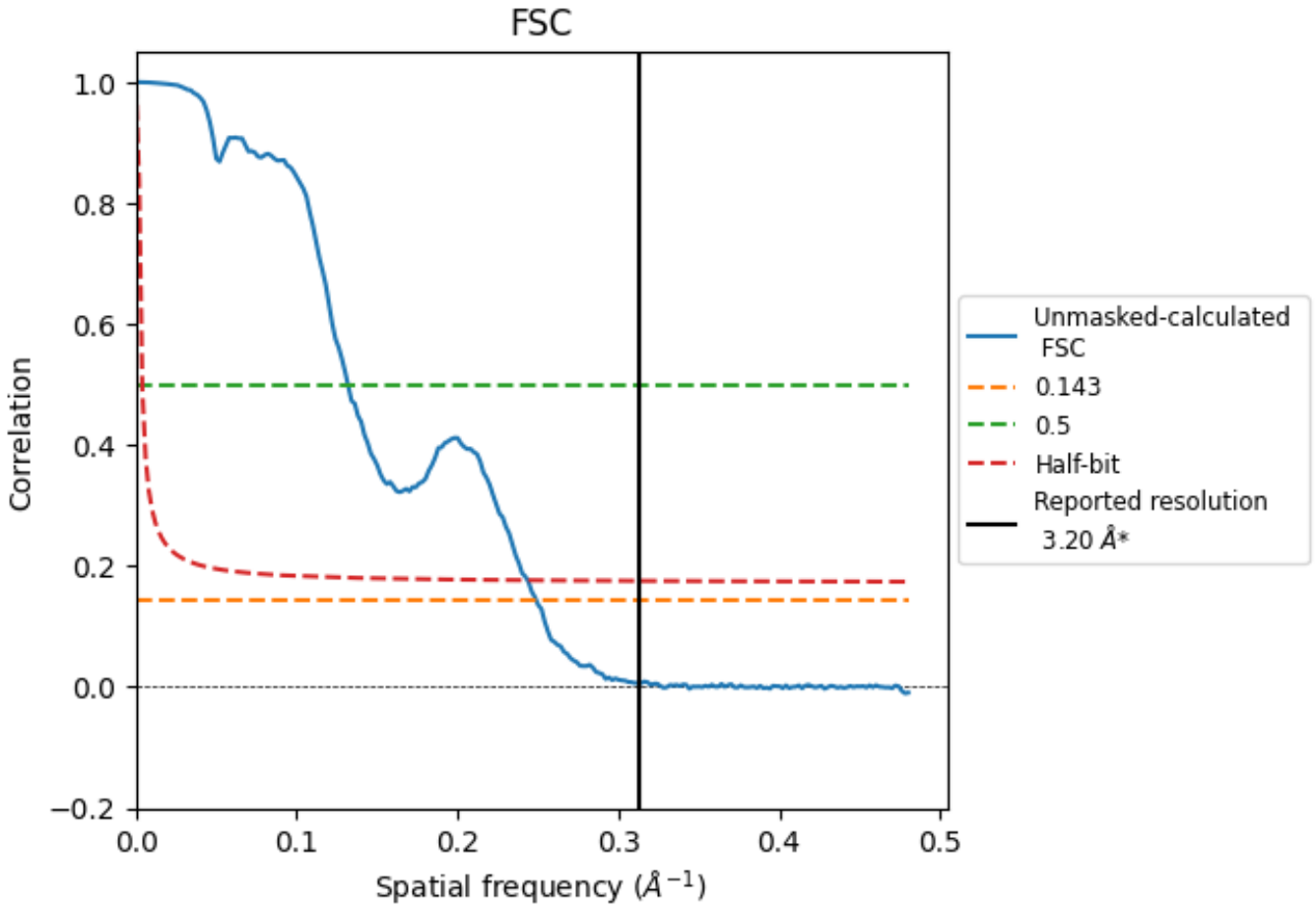


*Reported resolution corresponds to spatial frequency of 0.312 $Å^{-1}$

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.312 Å^{-1}

8.2 Resolution estimates (i)

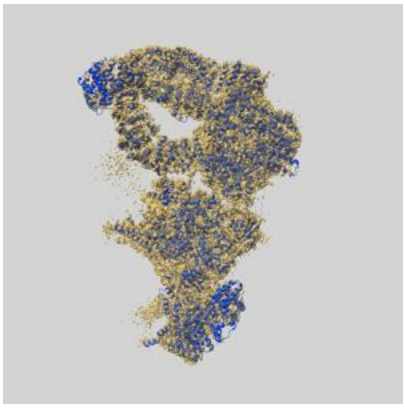
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.20	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.02	7.59	4.11

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.02 differs from the reported value 3.2 by more than 10 %

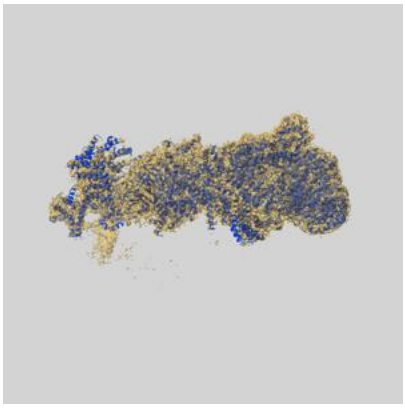
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-73233 and PDB model 9YNU. Per-residue inclusion information can be found in section 3 on page 7.

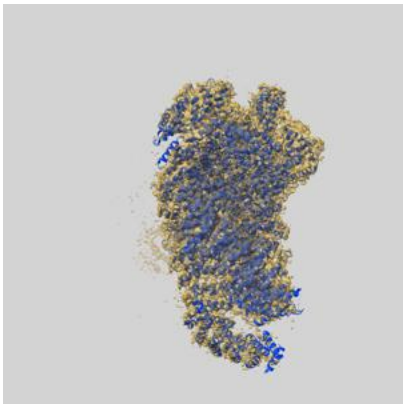
9.1 Map-model overlay



X



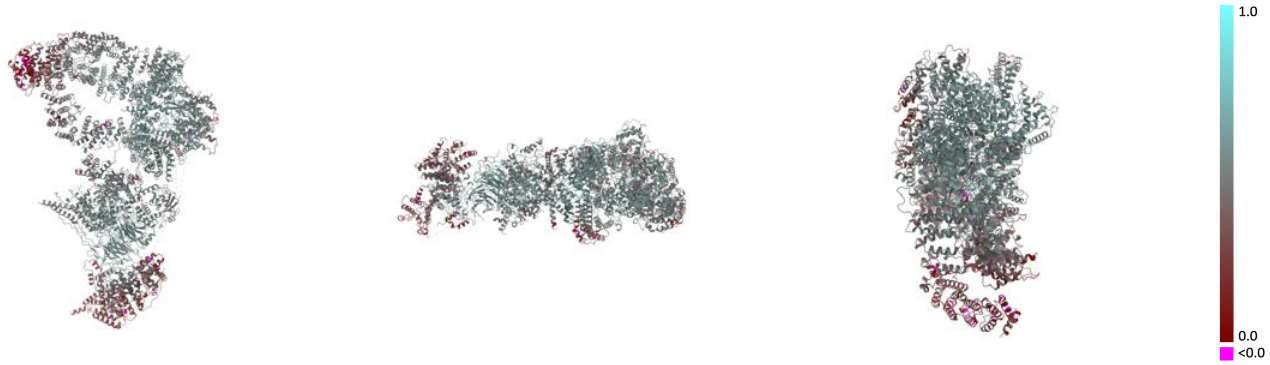
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.5 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.

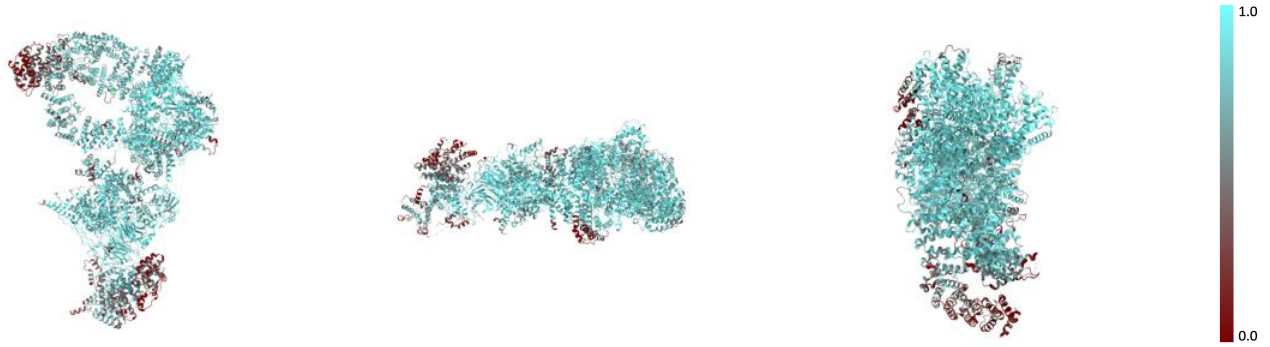
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

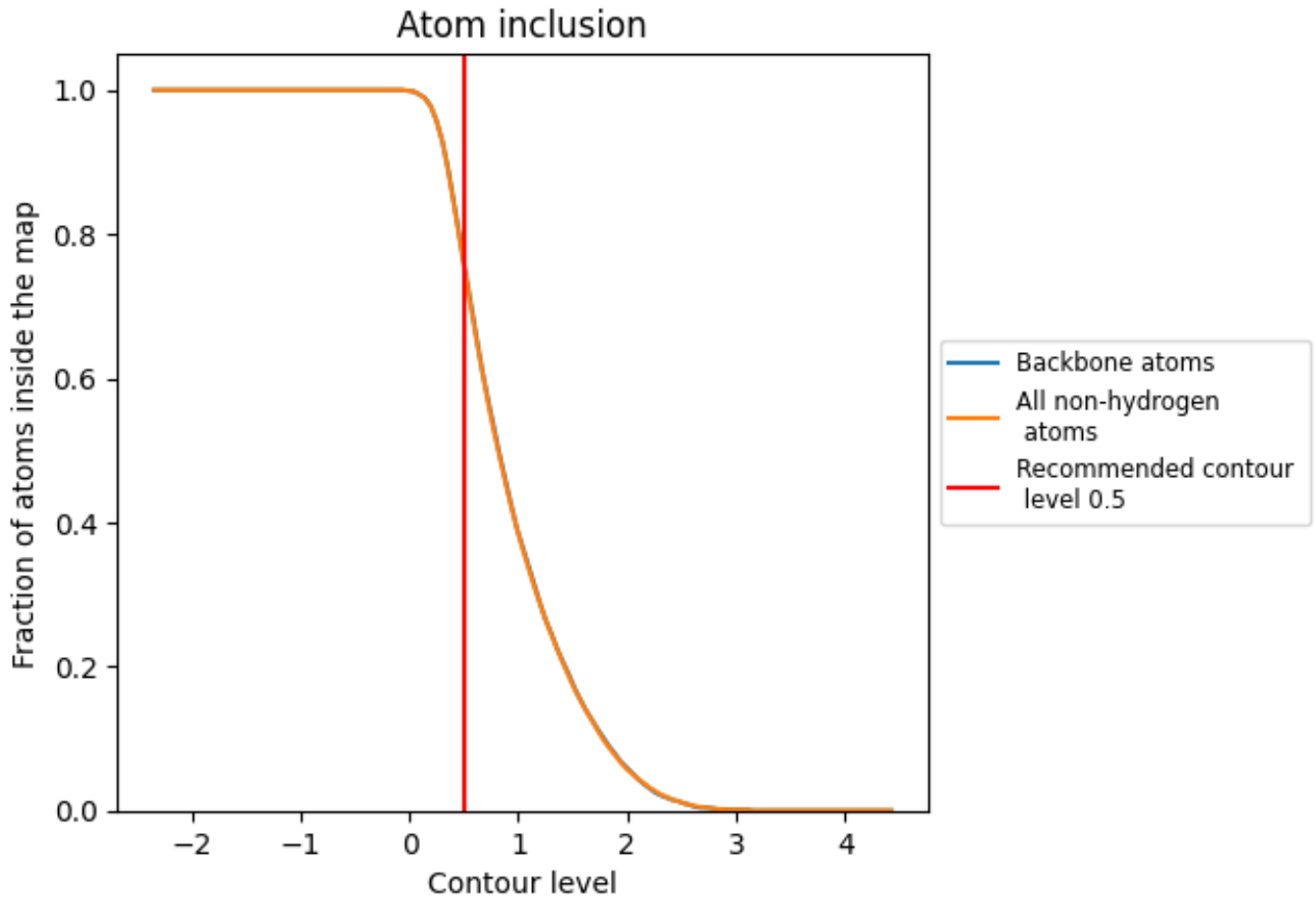
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.5).

9.4 Atom inclusion (i)



At the recommended contour level, 76% of all backbone atoms, 76% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.5) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7570	0.4840
A	0.7740	0.4860
B	0.8340	0.5280
C	0.7500	0.4880
D	0.6890	0.4890
E	0.7400	0.4760
F	0.9100	0.5550
G	0.8800	0.5450
H	0.8240	0.5260
I	0.7930	0.5280
K	0.6520	0.3990
Q	0.8570	0.5220