Full wwPDB EM Validation Report ⓘ

Dec 5, 2022 – 06:39 PM JST

PDB ID	:	8H7G
EMDB ID	:	EMD-34520
Title	:	Cryo-EM structure of the human SAGA complex
Authors	:	Huang, J.; Zhang, Y.
Deposited on	:	2022-10-20
Resolution	:	3.70 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

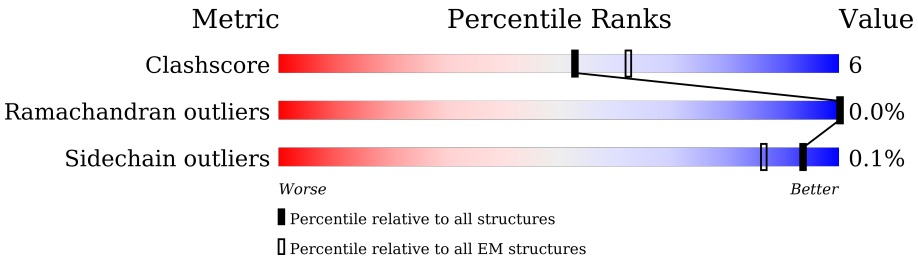
EMDB validation analysis	:	0.0.1.dev43
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.3

1 Overall quality at a glance

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

The reported resolution of this entry is 3.70 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	C	3859	19% 73% 12% 15%
2	A	1217	92% 79% 17% ·
3	B	86	49% 45% 7% 48%
4	D	779	13% 35% 6% 59%
5	E	317	32% 64% 7% 29%
6	G	374	8% 43% 7% 50%
7	H	589	20% 70% 17% 13%
8	I	455	8% 34% · 62%

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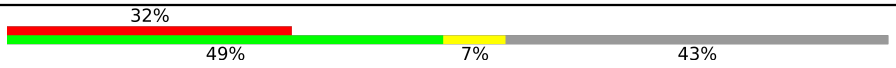
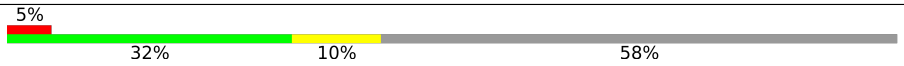
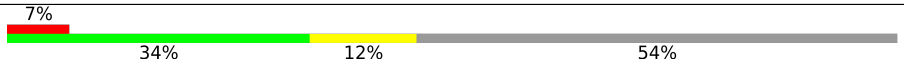
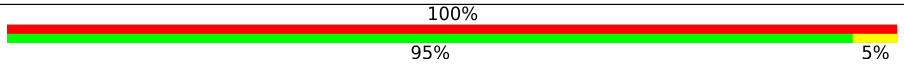
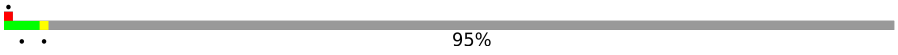
Mol	Chain	Length	Quality of chain
9	K	622	
10	M	264	
11	O	218	
12	R	161	
13	X	19	
14	L	892	

2 Entry composition (i)

There are 14 unique types of molecules in this entry. The entry contains 52609 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 Transformation/transcription domain-associated protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	C	3261	26251	16890	4519	4654	188	0	0

- Molecule 2 is a protein called Splicing factor 3B subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	A	1168	9158	5817	1558	1738	45	0	0

- Molecule 3 is a protein called Splicing factor 3B subunit 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	B	45	383	245	67	67	4	0	0

- Molecule 4 is a protein called Transcription factor SPT20 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	318	2595	1641	448	490	16	0	0

- Molecule 5 is a protein called Transcription initiation protein SPT3 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	225	1770	1116	324	318	12	0	0

- Molecule 6 is a protein called Transcriptional adapter 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	G	188	1505	951	271	277	6	0	0

There are 39 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	-38	MET	-	initiating methionine	UNP Q96BN2
G	-37	ASP	-	expression tag	UNP Q96BN2
G	-36	TYR	-	expression tag	UNP Q96BN2
G	-35	LYS	-	expression tag	UNP Q96BN2
G	-34	ASP	-	expression tag	UNP Q96BN2
G	-33	HIS	-	expression tag	UNP Q96BN2
G	-32	ASP	-	expression tag	UNP Q96BN2
G	-31	GLY	-	expression tag	UNP Q96BN2
G	-30	ASP	-	expression tag	UNP Q96BN2
G	-29	TYR	-	expression tag	UNP Q96BN2
G	-28	LYS	-	expression tag	UNP Q96BN2
G	-27	ASP	-	expression tag	UNP Q96BN2
G	-26	HIS	-	expression tag	UNP Q96BN2
G	-25	ASP	-	expression tag	UNP Q96BN2
G	-24	ILE	-	expression tag	UNP Q96BN2
G	-23	ASP	-	expression tag	UNP Q96BN2
G	-22	TYR	-	expression tag	UNP Q96BN2
G	-21	LYS	-	expression tag	UNP Q96BN2
G	-20	ASP	-	expression tag	UNP Q96BN2
G	-19	ASP	-	expression tag	UNP Q96BN2
G	-18	ASP	-	expression tag	UNP Q96BN2
G	-17	ASP	-	expression tag	UNP Q96BN2
G	-16	LYS	-	expression tag	UNP Q96BN2
G	-15	GLY	-	expression tag	UNP Q96BN2
G	-14	GLY	-	expression tag	UNP Q96BN2
G	-13	SER	-	expression tag	UNP Q96BN2
G	-12	GLY	-	expression tag	UNP Q96BN2
G	-11	GLY	-	expression tag	UNP Q96BN2
G	-10	SER	-	expression tag	UNP Q96BN2
G	-9	LEU	-	expression tag	UNP Q96BN2
G	-8	GLU	-	expression tag	UNP Q96BN2
G	-7	VAL	-	expression tag	UNP Q96BN2
G	-6	LEU	-	expression tag	UNP Q96BN2
G	-5	PHE	-	expression tag	UNP Q96BN2
G	-4	GLN	-	expression tag	UNP Q96BN2
G	-3	GLY	-	expression tag	UNP Q96BN2
G	-2	PRO	-	expression tag	UNP Q96BN2
G	-1	LEU	-	expression tag	UNP Q96BN2
G	0	ASP	-	expression tag	UNP Q96BN2

- Molecule 7 is a protein called TAF5-like RNA polymerase II p300/CBP-associated factor-associated factor 65 kDa subunit 5L.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	H	514	Total	C	N	O	S	0	0
			4084	2580	706	778	20		

- Molecule 8 is a protein called STAGA complex 65 subunit gamma.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	I	175	Total	C	N	O	S	0	0
			1419	901	253	260	5		

There are 41 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	415	GLY	-	expression tag	UNP O94864
I	416	SER	-	expression tag	UNP O94864
I	417	GLU	-	expression tag	UNP O94864
I	418	ASN	-	expression tag	UNP O94864
I	419	LEU	-	expression tag	UNP O94864
I	420	TYR	-	expression tag	UNP O94864
I	421	PHE	-	expression tag	UNP O94864
I	422	GLN	-	expression tag	UNP O94864
I	423	GLY	-	expression tag	UNP O94864
I	424	SER	-	expression tag	UNP O94864
I	425	GLY	-	expression tag	UNP O94864
I	426	THR	-	expression tag	UNP O94864
I	427	SER	-	expression tag	UNP O94864
I	428	THR	-	expression tag	UNP O94864
I	429	ALA	-	expression tag	UNP O94864
I	430	TRP	-	expression tag	UNP O94864
I	431	SER	-	expression tag	UNP O94864
I	432	HIS	-	expression tag	UNP O94864
I	433	PRO	-	expression tag	UNP O94864
I	434	GLN	-	expression tag	UNP O94864
I	435	PHE	-	expression tag	UNP O94864
I	436	GLU	-	expression tag	UNP O94864
I	437	LYS	-	expression tag	UNP O94864
I	438	THR	-	expression tag	UNP O94864
I	439	GLY	-	expression tag	UNP O94864
I	440	VAL	-	expression tag	UNP O94864
I	441	SER	-	expression tag	UNP O94864
I	442	ILE	-	expression tag	UNP O94864
I	443	THR	-	expression tag	UNP O94864
I	444	SER	-	expression tag	UNP O94864
I	445	SER	-	expression tag	UNP O94864

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Chain	Residue	Modelled	Actual	Comment	Reference
I	446	GLY	-	expression tag	UNP O94864
I	447	SER	-	expression tag	UNP O94864
I	448	TRP	-	expression tag	UNP O94864
I	449	SER	-	expression tag	UNP O94864
I	450	HIS	-	expression tag	UNP O94864
I	451	PRO	-	expression tag	UNP O94864
I	452	GLN	-	expression tag	UNP O94864
I	453	PHE	-	expression tag	UNP O94864
I	454	GLU	-	expression tag	UNP O94864
I	455	LYS	-	expression tag	UNP O94864

- Molecule 9 is a protein called TAF6-like RNA polymerase II p300/CBP-associated factor-associated factor 65 kDa subunit 6L.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	K	352	Total	C	N	O	S	0	0
			2703	1720	478	493	12		

- Molecule 10 is a protein called Transcription initiation factor TFIID subunit 9.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	M	119	Total	C	N	O	S	0	0
			957	607	168	176	6		

- Molecule 11 is a protein called Transcription initiation factor TFIID subunit 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	O	91	Total	C	N	O	S	0	0
			722	466	116	136	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
12	R	74	Total	C	N	O	S	0	0
			605	379	105	118	3		

- Molecule 13 is a protein called Unassigned sequence.

Mol	Chain	Residues	Atoms				AltConf	Trace
13	X	19	Total	C	N	O	0	0
			95	57	19	19		

- Molecule 14 is a protein called Ataxin-7.

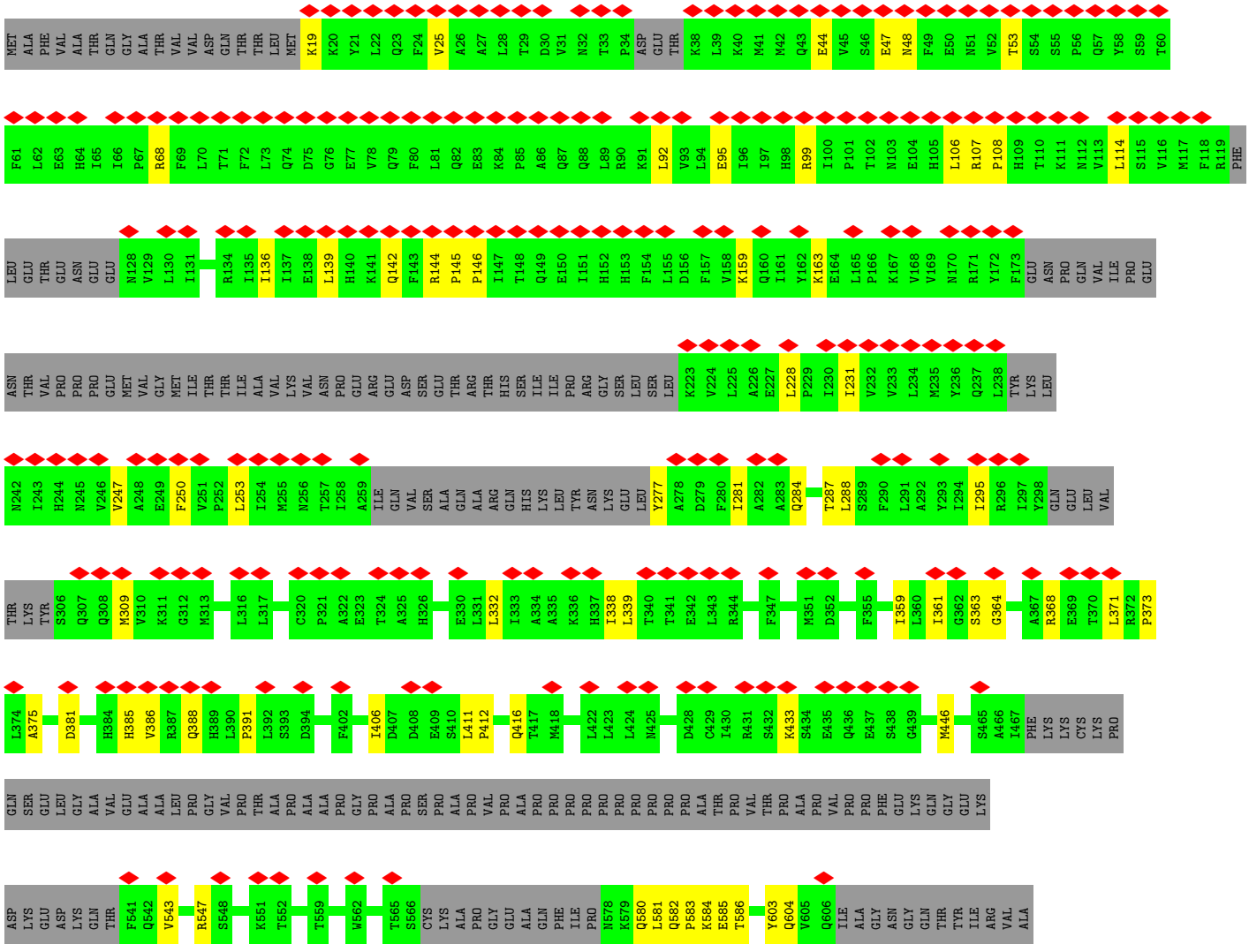
Mol	Chain	Residues	Atoms					AltConf	Trace
14	L	44	Total	C	N	O	S	0	0
			362	228	70	60	4		

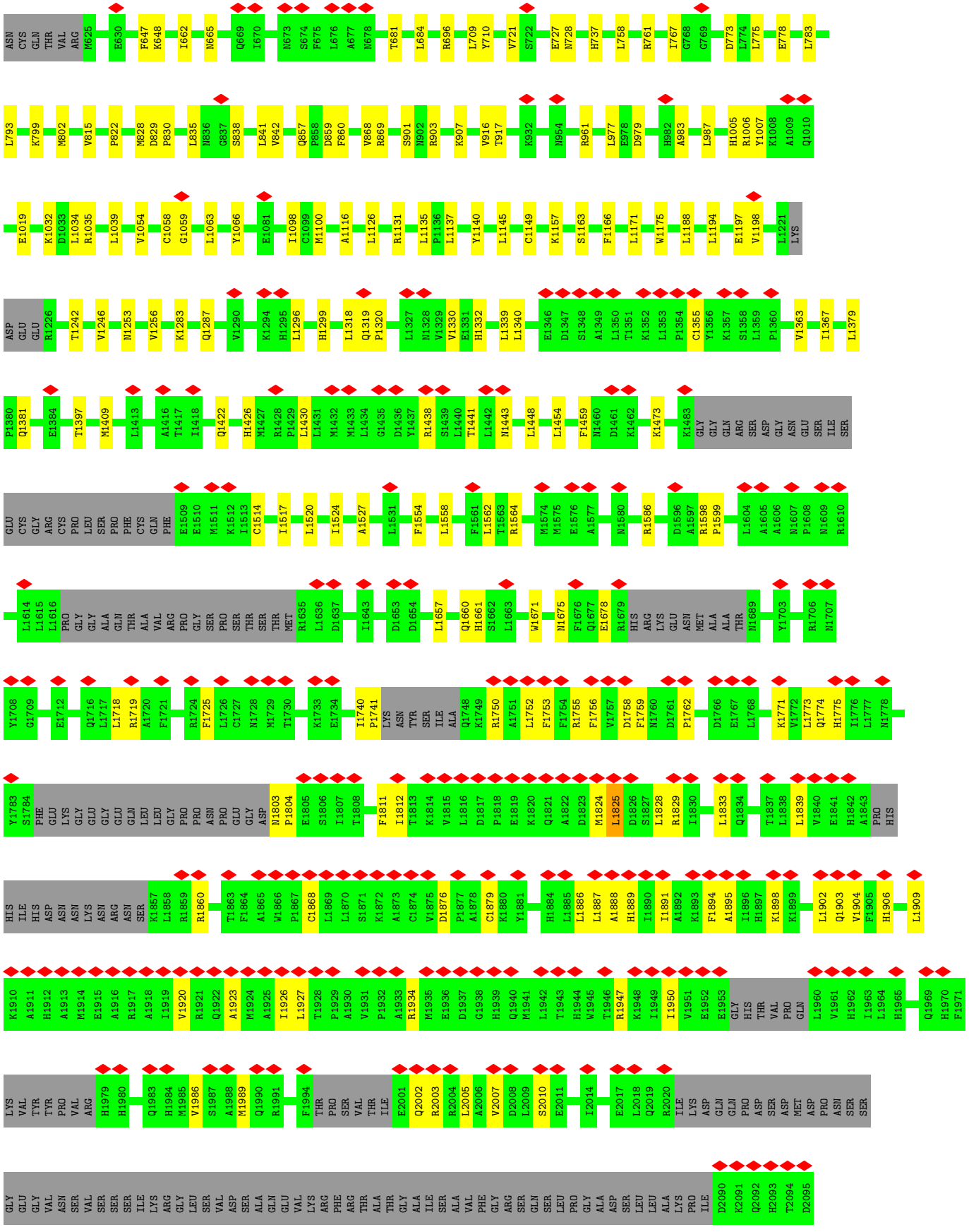
3 Residue-property plots (i)

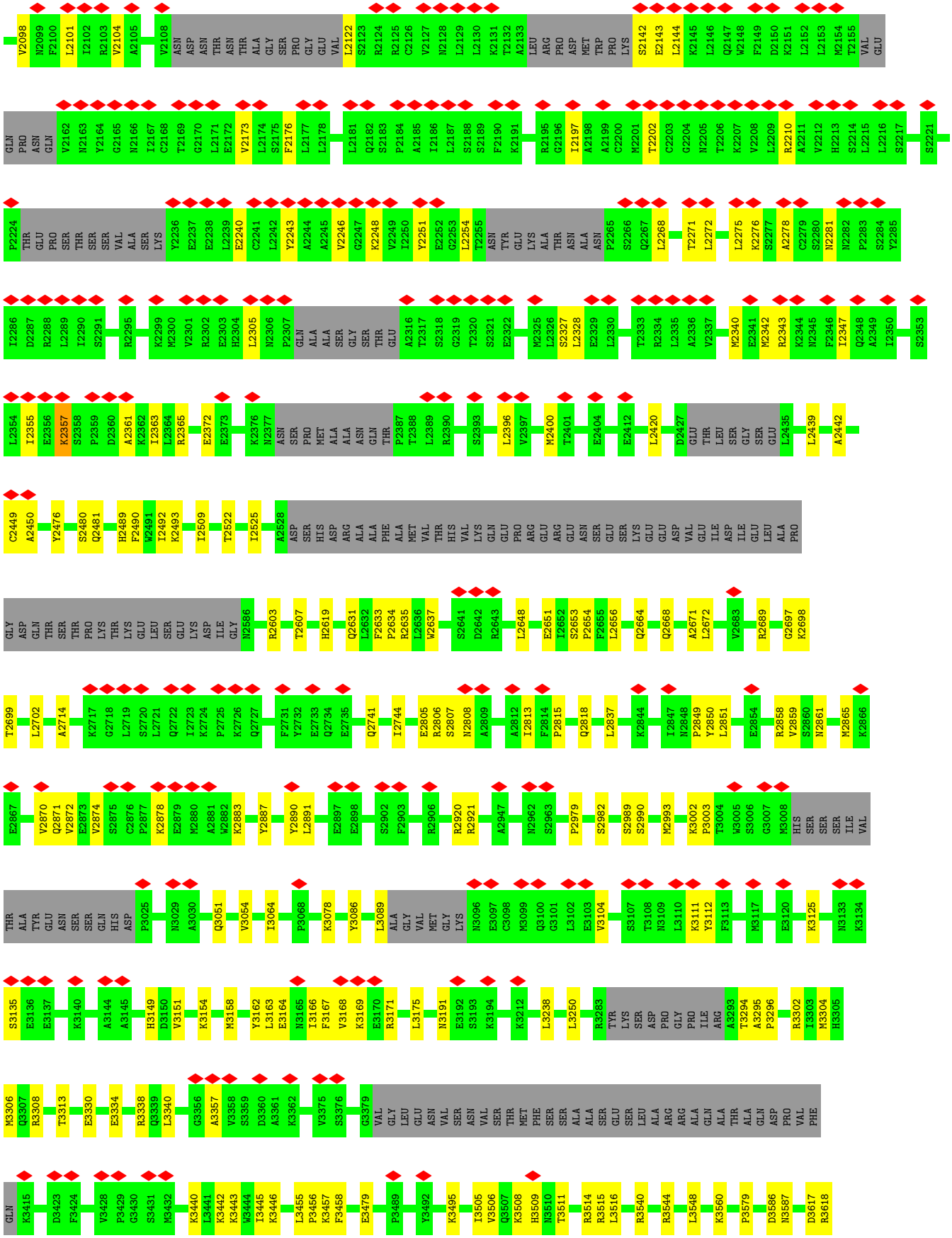
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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.

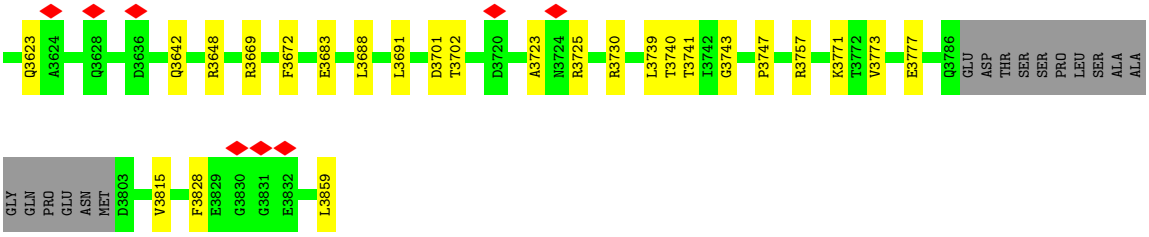
- Molecule 1: Transformation/transcription domain-associated protein

Chain C:



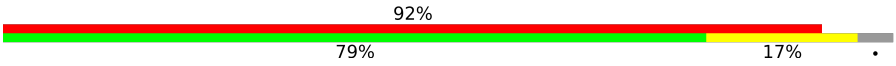

ASN CYS GLN THR VAL ARG M625 E630 F647 K648 I662 N665 Q669 I670 N673 S674 F675 L676 A677 N678 T681 L684 R696 L709 Y710 V721 S722 E727 N728 H737 L758 R761 I767 G768 G769 D773 L774 L775 E778 L783
L793 K799 M802 V815 P822 M828 D829 P830 L835 N836 G837 S838 L841 V842 Q857 P858 D859 F860 V868 R869 S901 N902 R903 K907 V916 T917 K932 N954 R961 L977 E978 D979 H982 A983 L987 H1005 R1006 Y1007 K1008 A1009 Q1010
E1019 K1032 D1033 L1034 R1035 L1039 V1054 C1058 G1059 L1063 Y1066 E1081 I1098 C1099 M1100 A1116 L1126 R1131 L1135 P1136 L1137 Y1140 L1145 C1149 K1157 S1163 F1166 L1171 W1175 L1188 L1194 E1197 V1198 L1221 LYS
ASP GLU GLU R1226 T1242 V1246 N1253 V1256 K1283 Q1287 V1290 K1294 H1295 L1296 H1299 L1318 Q1319 P1320 L1327 N1328 V1329 V1330 E1331 H1332 L1339 L1340 E1346 D1347 S1348 A1349 L1350 T1351 K1352 L1353 P1354 C1355 Y1356 K1357 S1358 L1359 P1360 V1363 I1367 L1379
P1380 Q1381 E1384 T1397 M1409 L1413 A1416 T1417 I1418 Q1422 H1426 M1427 R1428 P1429 L1430 L1431 M1432 M1433 L1434 G1435 D1436 Y1437 R1438 S1439 L1440 T1441 L1442 N1443 L1448 L1454 F1459 N1460 D1461 K1462 K1473 K1483 GLY GLY GLN ARG SER ASP GLY ASN GLU SER ILE SER
GLU CYS GLY ARG CYS PRO LEU SER PRO PHE CYS GLN PHE E1509 E1510 M1511 K1512 I1513 C1514 I1517 L1520 I1524 A1527 L1531 F1554 L1558 F1561 L1562 T1563 R1564 M1574 M1575 E1576 A1577 N1580 R1586 D1596 A1597 R1598 P1599 L1604 A1605 A1606 N1607 P1608 N1609 R1610
L1614 L1615 L1616 PRO GLY GLY ALA GLN THR ALA VAL ARG PRO GLY SER PRO SER THR SER THR MET R1635 L1636 D1637 I1643 D1653 D1654 L1657 Q1660 H1661 S1662 L1663 W1671 N1675 F1676 Q1677 E1678 R1679 HIS ARG LYS GLU ASN MET ALA ALA THR N1689 Y1703 R1706 N1707
Y1708 G1709 E1712 Q1716 L1717 L1718 R1719 A1720 F1721 R1724 F1725 L1726 C1727 N1728 M1729 T1730 K1733 E1734 I1740 P1741 LYS ASN TYR SER ILE ALA Q1748 K1749 R1750 A1751 L1752 F1753 F1754 R1755 F1756 V1757 D1758 F1759 N1760 D1761 P1762 D1766 E1767 L1768 K1771 V1772 L1773 Q1774 H1775 I1776 L1777 N1778
Y1783 S1784 PHE GLU LYS GLY GLU GLY GLU GLN LEU LEU GLY PRO PRO ASN PRO GLU GLY ASP N1803 P1804 E1805 S1806 I1807 T1808 F1811 I1812 T1813 K1814 V1815 L1816 D1817 P1818 E1819 K1820 Q1821 A1822 D1823 M1824 L1825 D1826 S1827 L1828 R1829 I1830 L1833 Q1834 T1837 L1838 L1839 V1840 E1841 H1842 A1843 PRO HIS
HIS ILE HIS ASP ASN ASN LYS ASN ARG ASN SER K1857 L1858 R1859 R1860 T1863 F1864 A1865 W1866 P1867 C1868 L1869 L1870 S1871 K1872 A1873 C1874 V1875 D1876 P1877 A1878 C1879 K1880 Y1881 H1884 L1885 L1886 L1887 A1888 H1889 L1890 I1891 A1892 K1893 F1894 A1895 L1896 H1897 K1898 K1899 L1902 Q1903 V1904 F1905 H1906 L1909
K1910 A1911 H1912 A1913 M1914 E1915 A1916 R1917 A1918 I1919 V1920 R1921 Q1922 A1923 M1924 A1925 I1926 L1927 T1928 P1929 A1930 V1931 P1932 A1933 R1934 M1935 E1936 D1937 G1938 H1939 Q1940 M1941 L1942 T1943 H1944 W1945 T1946 R1947 K1948 I1949 I1950 V1951 E1952 E1953 GLY HIS THR VAL PRO GLN L1960 V1961 H1962 I1963 L1964 H1965 Q1969 H1970 F1971
LYS VAL TYR TYR PRO VAL ARG H1979 H1980 Q1983 H1984 M1985 V1986 S1987 A1988 M1989 Q1990 R1991 F1994 THR PRO SER VAL THR ILE E2001 Q2002 R2003 R2004 L2005 A2006 V2007 D2008 L2009 S2010 E2011 I2014 E2017 L2018 Q2019 R2020 ILE LYS ASP GLN GLN PRO ASP SER ASP MET ASP PRO ASN SER SER
GLY GLU GLY VAL ASN SER VAL SER SER ILE LYS ARG GLY LEU SER VAL ASP SER ALA GLN GLU VAL LYS ARG PHE ARG THR ALA THR GLY ALA ILE SER ALA VAL PHE GLY ARG SER GLN SER LEU PRO GLY ALA ASP SER LEU LEU ALA LYS PRO ILE D2090 K2091 Q2092 H2093 T2094 D2095

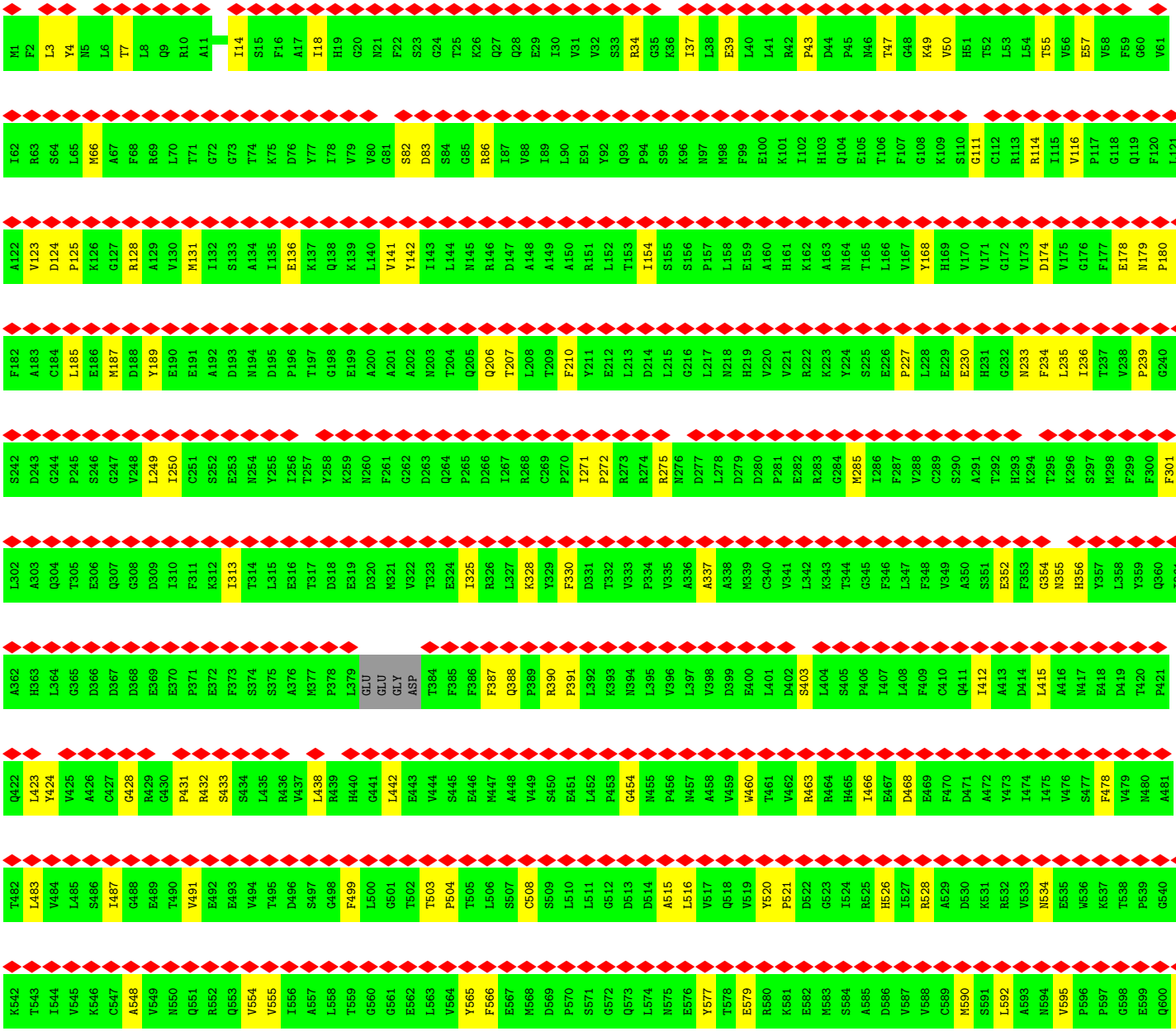


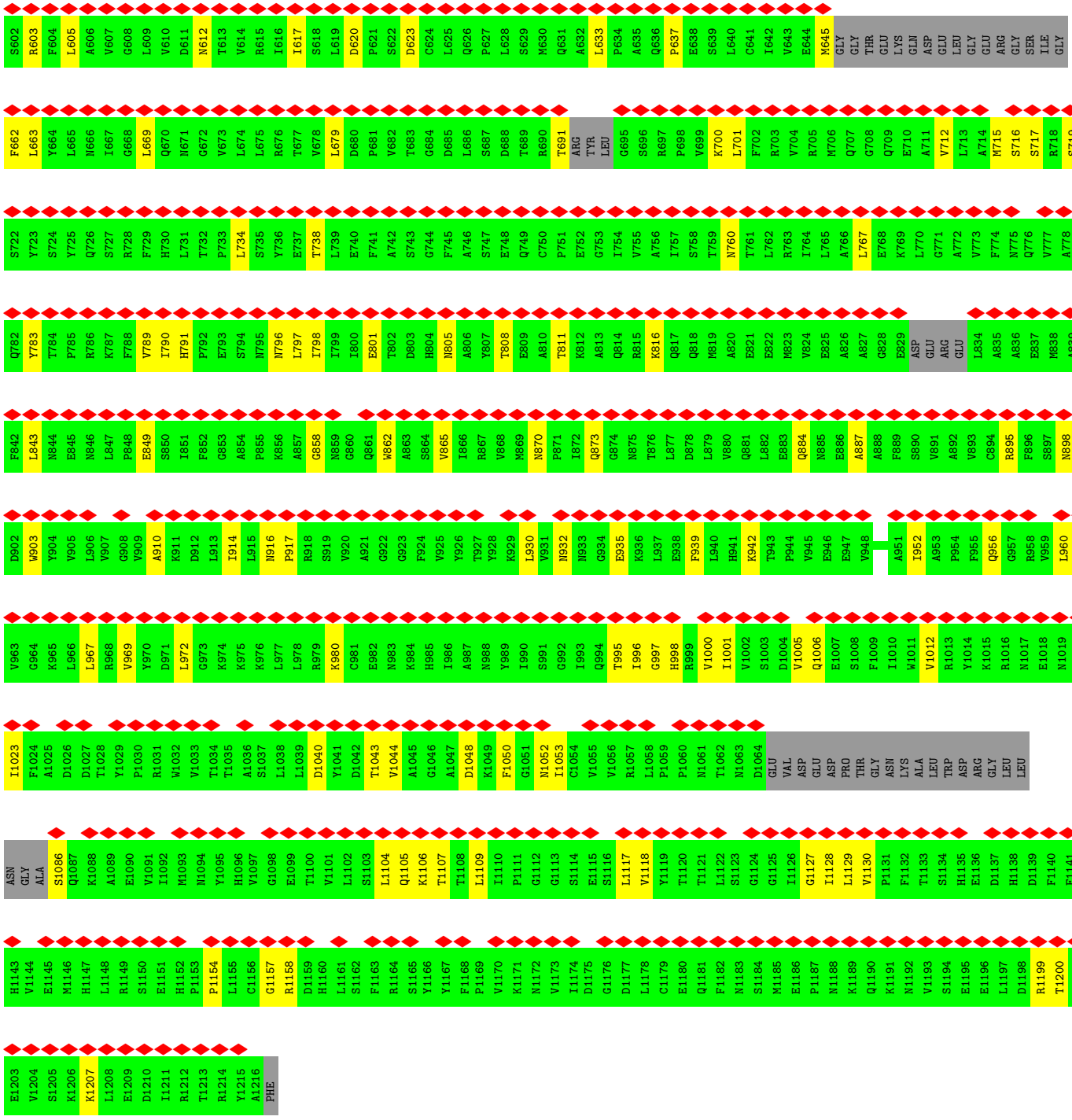


• Molecule 2: Splicing factor 3B subunit 3

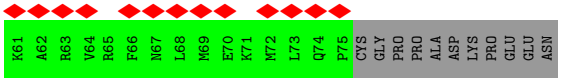
Chain A:





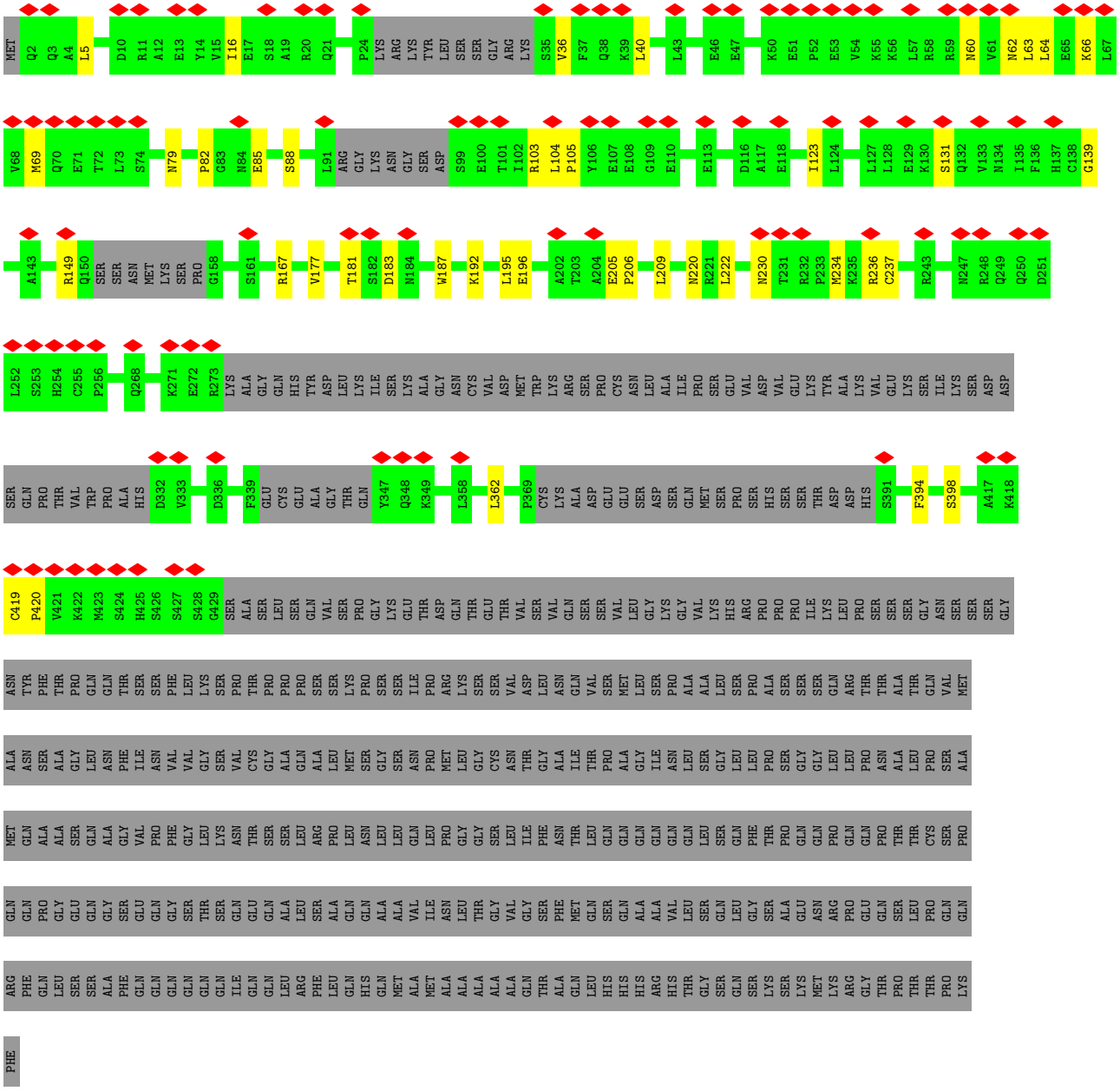


• Molecule 3: Splicing factor 3B subunit 5



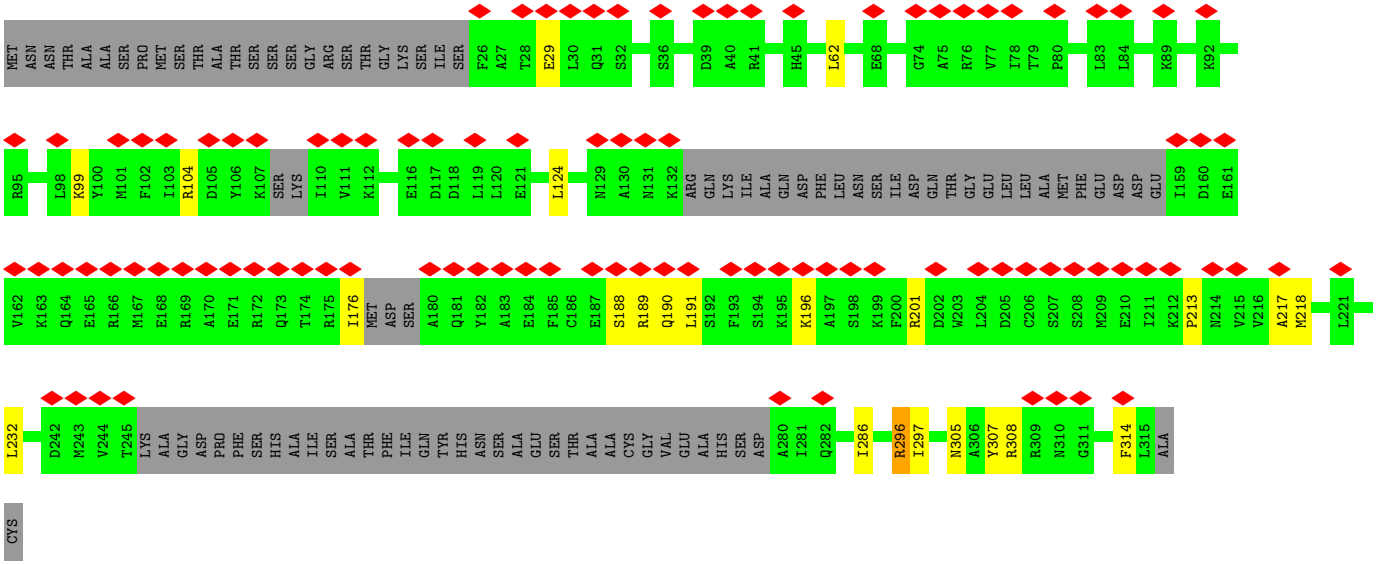
• Molecule 4: Transcription factor SPT20 homolog

Chain D:



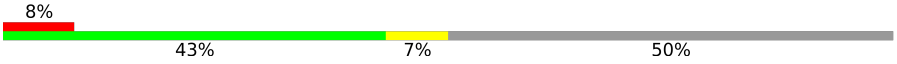
• Molecule 5: Transcription initiation protein SPT3 homolog

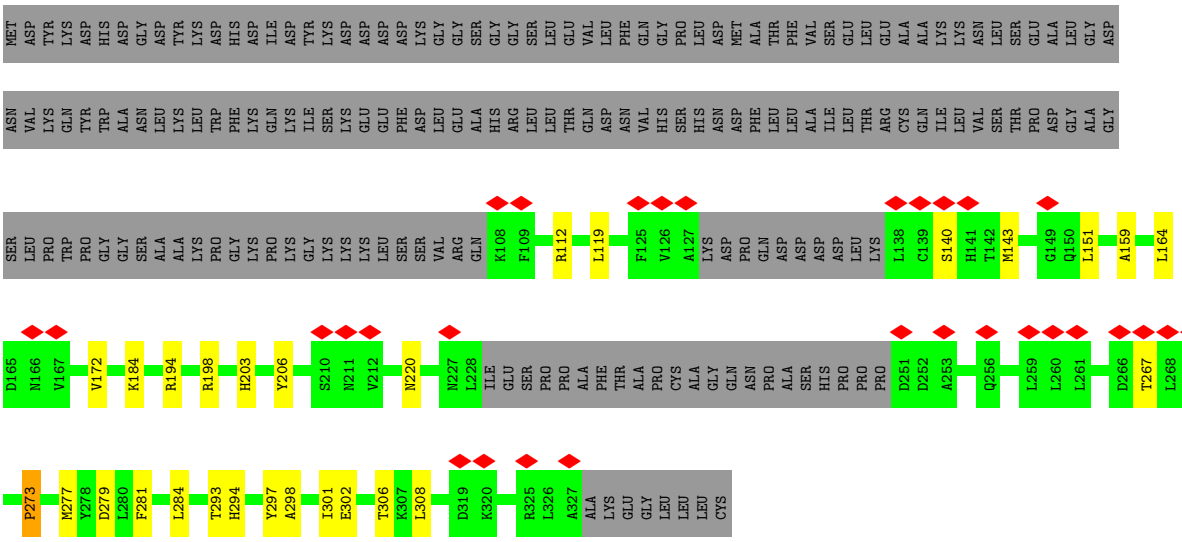
Chain E:



• Molecule 6: Transcriptional adapter 1

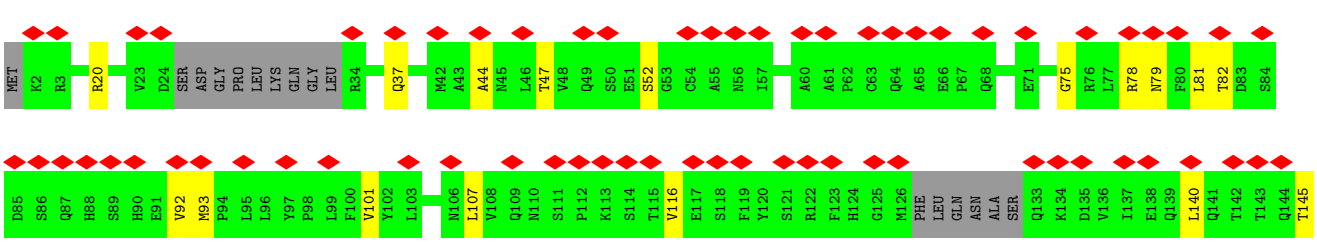
Chain G:

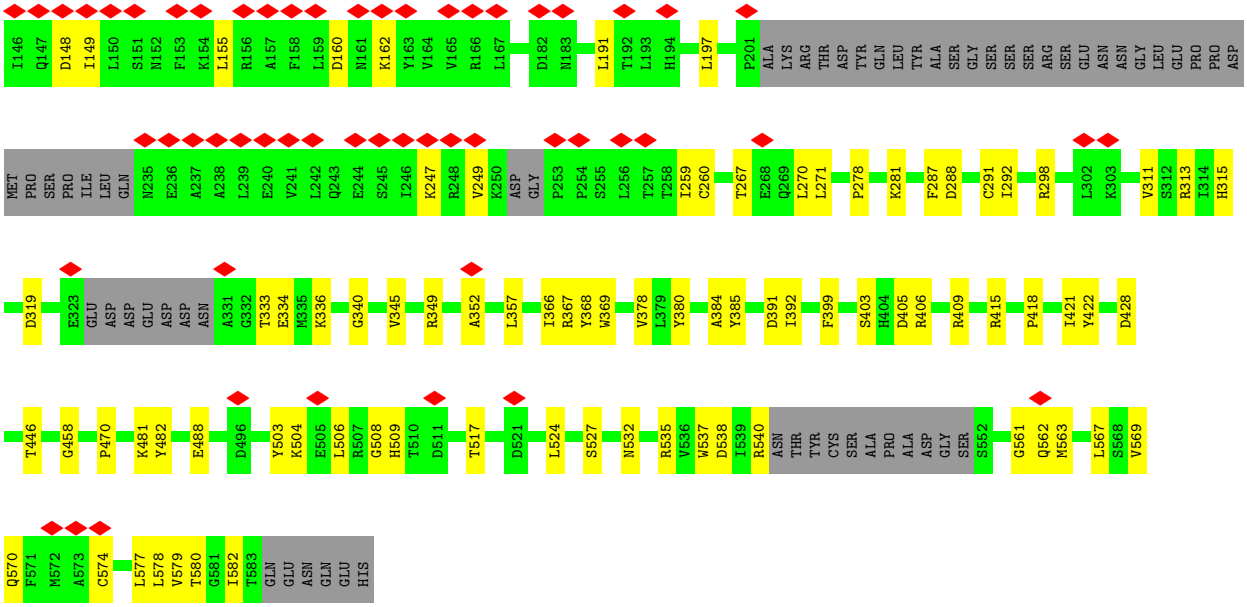




• Molecule 7: TAF5-like RNA polymerase II p300/CBP-associated factor-associated factor 65 kDa subunit 5L

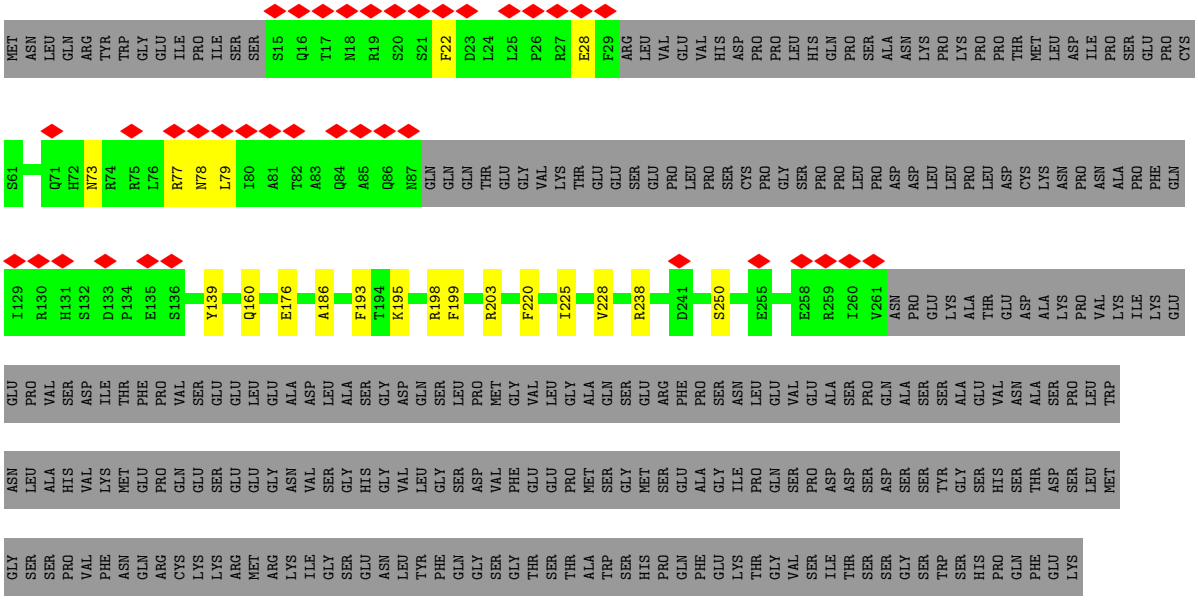
Chain H:





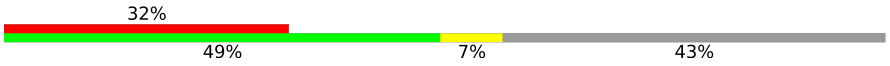
• Molecule 8: STAGA complex 65 subunit gamma

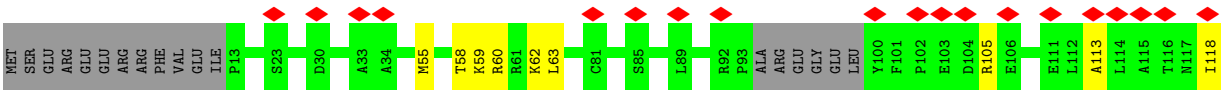
Chain I:

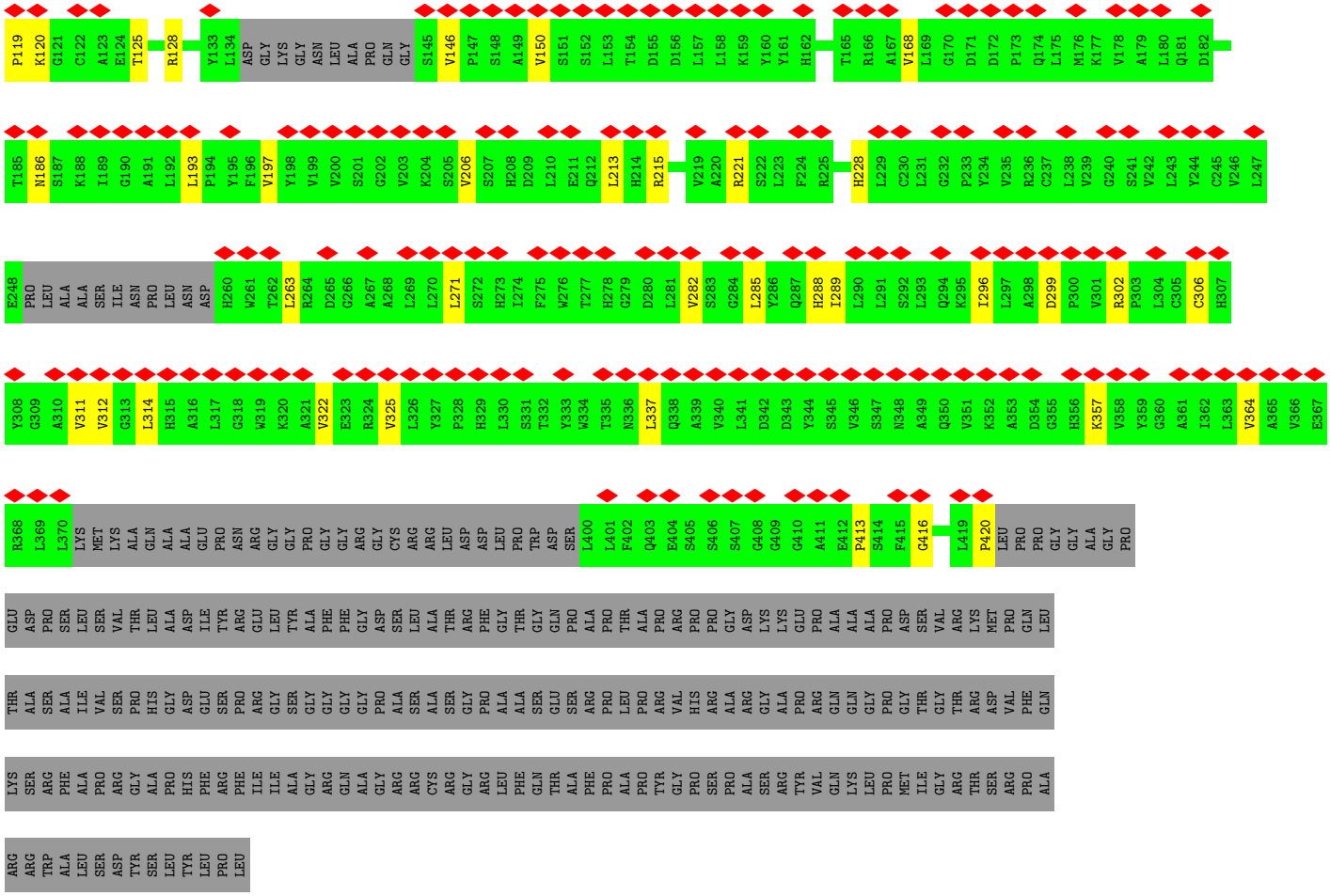


• Molecule 9: TAF6-like RNA polymerase II p300/CBP-associated factor-associated factor 65 kDa subunit 6L

Chain K:

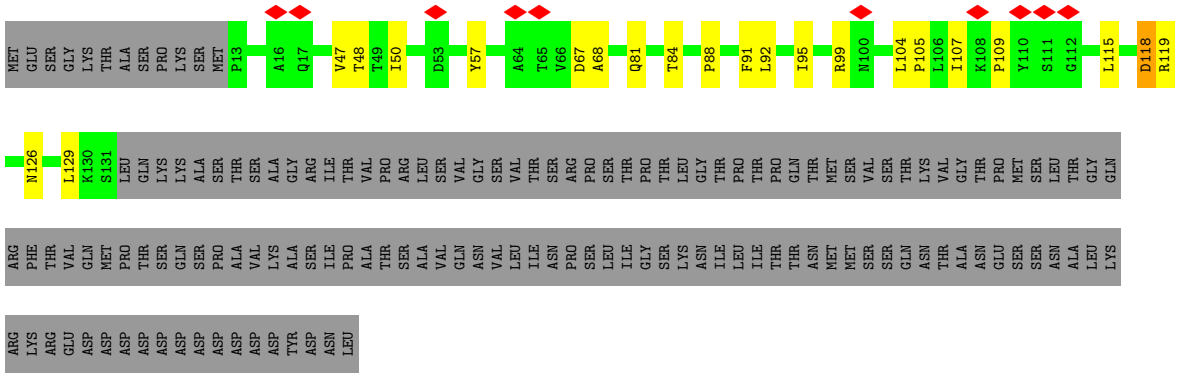






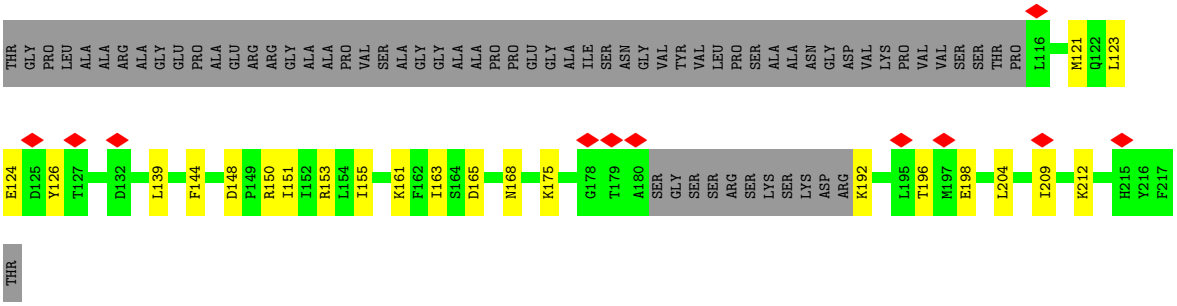
• Molecule 10: Transcription initiation factor TFIID subunit 9

Chain M:

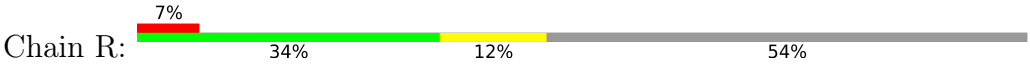


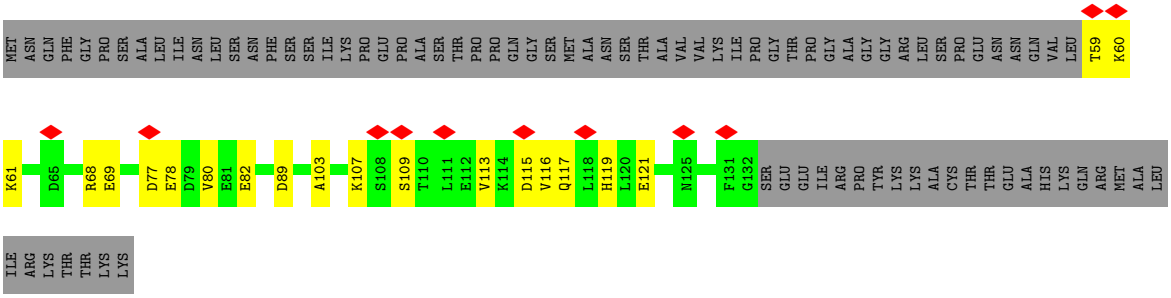
• Molecule 11: Transcription initiation factor TFIID subunit 10

Chain O:

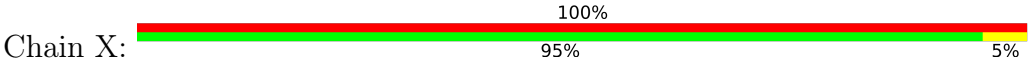


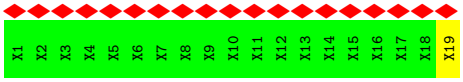
• Molecule 12: Transcription initiation factor TFIID subunit 12



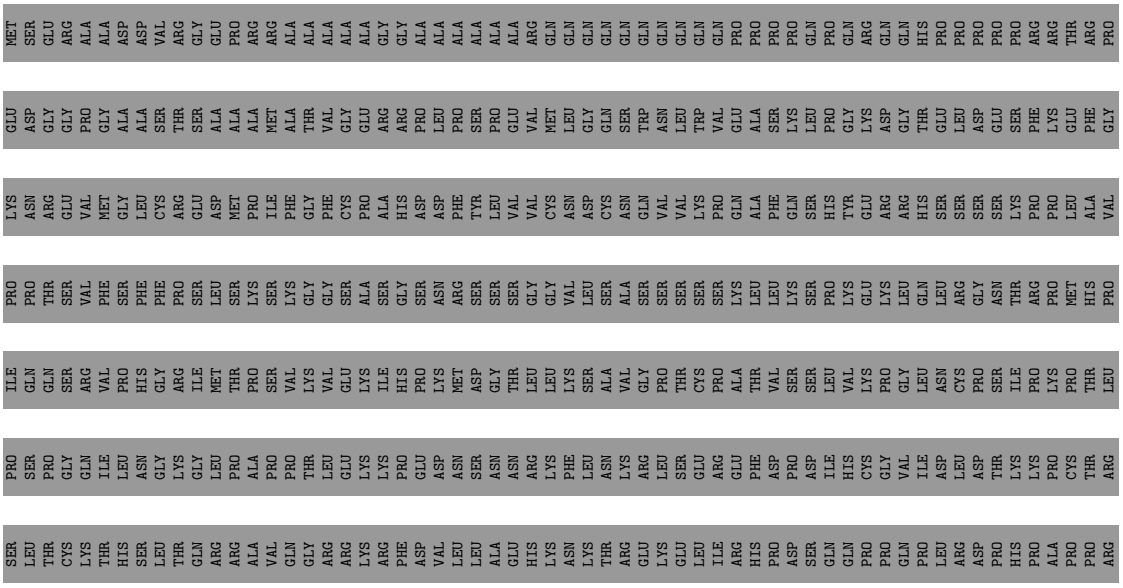


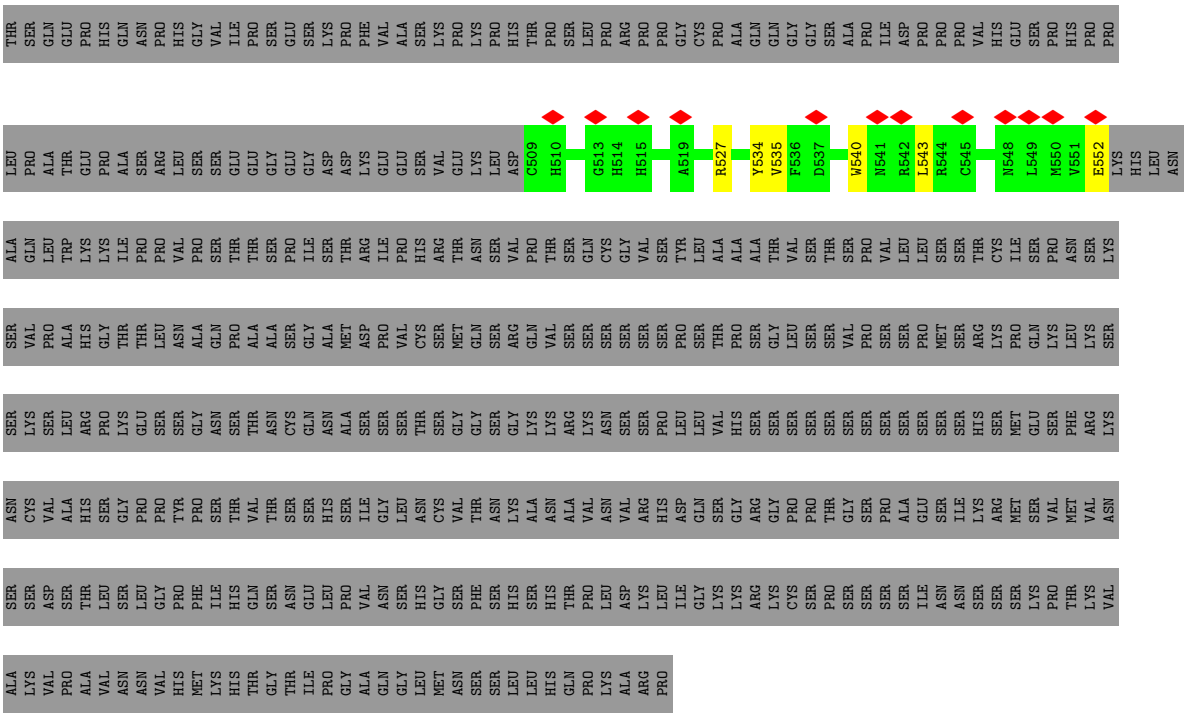
• Molecule 13: Unassigned sequence





• Molecule 14: Ataxin-7




THR SER GLN GLU PRO HIS GLN ASN PRO HIS GLY VAL ILE PRO SER GLU SER LYS PRO PHE VAL ALA SER LYS PRO LYS PRO HIS THR PRO SER LEU PRO ARG PRO PRO GLY CYS PRO ALA GLN GLN GLY GLY SER ALA PRO ILE ASP PRO PRO PRO VAL HIS GLU SER PRO HIS PRO PRO
LEU PRO ALA THR GLU PRO ALA SER ARG LEU SER SER GLU GLU GLY GLU GLY ASP ASP LYS GLU GLU SER VAL GLU LYS LEU ASP C509 H510 G513 H514 H515 A519 R527 Y534 V535 F536 D537 W540 N541 R542 L543 R544 C545 N548 L549 M550 V551 E552 LYS HIS LEU ASN
ALA GLN LEU TRP LYS LYS ILE PRO PRO VAL PRO SER THR THR SER PRO ILE SER THR ARG ILE PRO HIS ARG THR ASN SER VAL PRO THR SER GLN CYS GLY VAL SER TYR LEU ALA ALA ALA THR VAL SER THR SER PRO VAL LEU LEU SER SER THR CYS ILE SER PRO ASN SER LYS
SER VAL PRO ALA HIS GLY THR THR LEU ASN ALA GLN PRO ALA ALA SER GLY ALA MET ASP PRO VAL CYS SER MET GLN SER ARG GLN VAL SER SER SER SER SER SER PRO SER THR PRO SER GLY LEU SER SER VAL PRO SER SER PRO MET SER ARG LYS PRO GLN LYS LEU LYS SER
SER LYS SER LEU ARG PRO LYS GLU SER SER GLY GLY ASN SER THR ASN CYS GLN ASN ALA SER SER THR SER GLY GLY SER GLY LYS LYS ARG LYS ASN SER SER PRO LEU LEU VAL HIS SER SER SER SER SER SER SER SER SER SER SER HIS SER MET GLU SER PHE ARG LYS
ASN CYS VAL ALA HIS SER GLY PRO PRO PRO TYR PRO PRO SER THR VAL THR SER SER HIS SER ILE GLY LEU ASN CYS VAL THR ASN LYS ALA ASN ALA VAL ASN VAL ARG HIS ASP GLN SER GLY ARG GLY PRO PRO THR GLY SER PRO ALA GLU SER ILE LYS ARG MET SER VAL MET VAL ASN
SER SER ASP SER THR LEU SER LEU GLY PRO PHE ILE HIS GLN SER ASN GLU LEU PRO VAL ASN SER HIS SER GLY SER PHE SER HIS SER HIS THR PRO LEU ASP LYS LEU ILE GLY LYS LYS ARG LYS CYS SER PRO SER SER SER SER ILE ASN ASN SER SER SER LYS PRO THR LYS VAL
ALA LYS VAL PRO ALA VAL ASN ASN VAL HIS MET LYS HIS THR GLY THR ILE PRO GLY ALA GLN GLY LEU MET ASN SER SER LEU LEU HIS GLN PRO LYS ALA ARG PRO

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	378168	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 ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.115	Depositor
Minimum map value	-0.060	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.015	Depositor
Map size (Å)	440.0, 440.0, 440.0	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.1, 1.1, 1.1	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	C	0.24	0/26794	0.47	2/36236 (0.0%)
2	A	0.25	0/9345	0.49	1/12680 (0.0%)
3	B	0.23	0/393	0.42	0/528
4	D	0.23	0/2638	0.48	0/3559
5	E	0.23	0/1793	0.49	0/2408
6	G	0.26	0/1538	0.51	2/2089 (0.1%)
7	H	0.24	0/4167	0.49	0/5647
8	I	0.23	0/1449	0.45	0/1959
9	K	0.23	0/2757	0.50	2/3745 (0.1%)
10	M	0.24	0/979	0.50	0/1328
11	O	0.25	0/737	0.46	0/998
12	R	0.24	0/614	0.48	0/829
14	L	0.25	0/374	0.55	0/504
All	All	0.24	0/53578	0.48	7/72510 (0.0%)

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	G	273	PRO	N-CD-CG	-6.77	93.05	103.20
2	A	504	PRO	CA-N-CD	-6.12	102.94	111.50
9	K	420	PRO	N-CA-CB	5.92	110.41	103.30
6	G	273	PRO	CA-N-CD	-5.83	103.34	111.50
9	K	413	PRO	N-CA-CB	5.78	110.23	103.30
1	C	1032	LYS	C-N-CA	5.59	135.67	121.70
1	C	1825	LEU	CA-CB-CG	5.19	127.23	115.30

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	C	26251	0	26857	271	0
2	A	9158	0	9102	124	0
3	B	383	0	364	5	0
4	D	2595	0	2617	34	0
5	E	1770	0	1750	14	0
6	G	1505	0	1482	24	0
7	H	4084	0	4012	68	0
8	I	1419	0	1375	16	0
9	K	2703	0	2670	34	0
10	M	957	0	969	19	0
11	O	722	0	720	17	0
12	R	605	0	598	17	0
13	X	95	0	21	1	0
14	L	362	0	336	5	0
All	All	52609	0	52873	590	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 6.

All (590) 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)
11:O:139:LEU:HB3	11:O:144:PHE:HB2	1.61	0.82
1:C:411:LEU:HD12	1:C:412:PRO:HD2	1.61	0.81
2:A:701:LEU:HD11	2:A:712:VAL:HB	1.62	0.81
1:C:3455:LEU:HD12	1:C:3456:PRO:HD2	1.63	0.80
2:A:548:ALA:HB3	2:A:555:VAL:HB	1.68	0.74
1:C:1771:LYS:O	1:C:1775:HIS:ND1	2.22	0.72
1:C:373:PRO:HG3	1:C:411:LEU:HD21	1.71	0.72
2:A:18:ILE:HG21	2:A:66:MET:HA	1.72	0.72
7:H:333:THR:HG22	7:H:334:GLU:H	1.56	0.71
7:H:340:GLY:O	7:H:367:ARG:NH1	2.24	0.71
11:O:204:LEU:HB3	11:O:209:ILE:HB	1.73	0.70
2:A:128:ARG:NH2	2:A:178:GLU:O	2.24	0.69
4:D:419:CYS:HB2	4:D:420:PRO:HD3	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1752:LEU:HD22	1:C:1755:ARG:HE	1.57	0.68
7:H:535:ARG:HB3	7:H:537:TRP:HE1	1.60	0.67
7:H:532:ASN:HB3	7:H:561:GLY:HA3	1.74	0.67
1:C:2343:ARG:HG3	1:C:2347:ILE:HD12	1.77	0.66
1:C:1671:TRP:HE1	1:C:1718:LEU:HB3	1.61	0.66
2:A:719:SER:HB2	2:A:734:LEU:HB2	1.78	0.65
8:I:22:PHE:HB3	9:K:282:VAL:HG11	1.77	0.65
1:C:1889:HIS:HA	1:C:1926:ILE:HG21	1.79	0.65
2:A:415:LEU:HD11	2:A:790:ILE:HD13	1.79	0.65
2:A:428:GLY:HA3	2:A:433:SER:HA	1.77	0.65
1:C:1319:GLN:HG2	1:C:1320:PRO:HD3	1.78	0.64
2:A:3:LEU:HD23	2:A:1129:LEU:HD13	1.79	0.64
2:A:898:ASN:HD21	2:A:972:LEU:HD23	1.61	0.64
2:A:1050:PHE:HE1	3:B:49:LEU:HD13	1.63	0.64
1:C:2837:LEU:HD23	1:C:2851:LEU:HD11	1.80	0.64
5:E:305:ASN:O	5:E:308:ARG:NH1	2.30	0.64
9:K:168:VAL:O	9:K:215:ARG:NH2	2.30	0.64
7:H:357:LEU:HB3	7:H:369:TRP:HB2	1.80	0.63
9:K:60:ARG:HG2	9:K:62:LYS:H	1.63	0.63
1:C:1675:ASN:HA	1:C:1719:ARG:HH11	1.62	0.63
7:H:349:ARG:HG3	7:H:391:ASP:HA	1.81	0.63
2:A:354:GLY:HA3	2:A:432:ARG:HH12	1.62	0.63
7:H:319:ASP:OD1	11:O:150:ARG:NH2	2.26	0.63
4:D:60:ASN:ND2	7:H:160:ASP:O	2.32	0.62
2:A:791:HIS:HB3	2:A:796:ASN:H	1.64	0.62
1:C:1135:LEU:HD23	1:C:1137:LEU:H	1.64	0.62
4:D:64:LEU:HB2	4:D:69:MET:HE2	1.81	0.62
1:C:391:PRO:HA	1:C:433:LYS:HE2	1.81	0.62
1:C:3167:PHE:O	1:C:3171:ARG:NH2	2.33	0.62
1:C:1149:CYS:O	1:C:1157:LYS:NZ	2.33	0.61
2:A:554:VAL:HB	2:A:566:PHE:HB2	1.82	0.61
2:A:663:LEU:HB2	2:A:679:LEU:HD22	1.82	0.61
2:A:996:ILE:HG23	2:A:998:HIS:H	1.65	0.61
2:A:1086:SER:O	9:K:221:ARG:NH2	2.33	0.61
8:I:238:ARG:NH1	11:O:168:ASN:OD1	2.34	0.60
1:C:737:HIS:NE2	1:C:778:GLU:OE2	2.32	0.60
1:C:916:VAL:HG23	1:C:917:THR:HG23	1.83	0.60
1:C:2002:GLN:HG3	1:C:2005:LEU:HD22	1.83	0.60
2:A:960:LEU:HD12	2:A:969:VAL:HG12	1.84	0.60
7:H:259:ILE:HA	7:H:577:LEU:HB3	1.82	0.60
12:R:113:VAL:HG12	12:R:115:ASP:H	1.67	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:969:VAL:HG23	2:A:980:LYS:HB2	1.83	0.60
8:I:176:GLU:OE1	9:K:105:ARG:NH1	2.35	0.60
2:A:454:GLY:O	2:A:760:ASN:ND2	2.35	0.60
2:A:1105:GLN:HE22	2:A:1107:THR:HB	1.65	0.59
4:D:167:ARG:NH2	7:H:52:SER:OG	2.35	0.59
1:C:47:GLU:O	1:C:99:ARG:NH2	2.35	0.59
2:A:1106:LYS:HB2	2:A:1117:LEU:HD23	1.83	0.59
4:D:230:ASN:HD22	4:D:234:MET:HB2	1.67	0.59
2:A:124:ASP:HB2	2:A:180:PRO:HB3	1.85	0.59
7:H:563:MET:SD	7:H:563:MET:N	2.76	0.59
6:G:159:ALA:HB1	6:G:164:LEU:HB2	1.83	0.59
2:A:520:TYR:CD2	2:A:521:PRO:HD2	2.38	0.59
1:C:3135:SER:HG	1:C:3162:TYR:HH	1.48	0.59
1:C:1007:TYR:HE1	1:C:3456:PRO:HB3	1.68	0.58
4:D:209:LEU:HB2	7:H:37:GLN:HG3	1.84	0.58
9:K:58:THR:OG1	9:K:59:LYS:N	2.35	0.58
1:C:869:ARG:NH1	1:C:901:SER:O	2.35	0.58
4:D:63:LEU:HD12	4:D:66:LYS:HD2	1.86	0.58
7:H:107:LEU:HD13	7:H:116:VAL:HA	1.86	0.58
5:E:29:GLU:OE2	5:E:196:LYS:NZ	2.34	0.58
1:C:977:LEU:HB3	1:C:2603:ARG:HH21	1.69	0.58
1:C:2651:GLU:OE1	6:G:220:ASN:ND2	2.37	0.58
1:C:3544:ARG:NH1	1:C:3777:GLU:OE1	2.36	0.58
1:C:1145:LEU:HD13	1:C:1163:SER:HB3	1.84	0.57
1:C:1355:CYS:SG	1:C:3313:THR:OG1	2.62	0.57
1:C:2449:CYS:SG	1:C:2450:ALA:N	2.76	0.57
1:C:2698:LYS:HD3	1:C:2878:LYS:HD3	1.85	0.57
2:A:412:ILE:HG12	2:A:423:LEU:HG	1.86	0.57
2:A:903:TRP:HB2	2:A:930:LEU:HD23	1.86	0.57
1:C:1527:ALA:HB3	1:C:1564:ARG:HH12	1.69	0.57
2:A:932:ASN:ND2	2:A:935:GLU:OE1	2.38	0.57
4:D:177:VAL:HG11	4:D:196:GLU:OE2	2.03	0.57
5:E:62:LEU:HD12	5:E:314:PHE:HB2	1.87	0.57
1:C:1379:LEU:HD22	1:C:1381:GLN:HE22	1.69	0.57
1:C:1100:MET:SD	1:C:1163:SER:OG	2.62	0.57
1:C:838:SER:HB3	1:C:841:LEU:HB2	1.86	0.57
1:C:1171:LEU:HD23	1:C:1175:TRP:CE3	2.39	0.57
1:C:1657:LEU:HG	1:C:1661:HIS:HE1	1.68	0.57
1:C:721:VAL:HG23	1:C:728:ASN:HB3	1.85	0.57
2:A:125:PRO:HG2	2:A:174:ASP:HB2	1.87	0.57
2:A:463:ARG:NH1	2:A:468:ASP:O	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:3294:THR:HG22	1:C:3296:PRO:HD2	1.87	0.57
1:C:386:VAL:HG12	1:C:388:GLN:H	1.69	0.56
1:C:1318:LEU:HB3	1:C:1320:PRO:HD2	1.87	0.56
7:H:292:ILE:HD11	7:H:345:VAL:HG21	1.86	0.56
10:M:92:LEU:HD13	10:M:95:ILE:HD12	1.86	0.56
2:A:805:ASN:ND2	2:A:858:GLY:O	2.38	0.56
1:C:2631:GLN:O	1:C:2635:ARG:NH1	2.34	0.56
7:H:101:VAL:HG13	7:H:140:LEU:HD11	1.87	0.56
1:C:1253:ASN:HB3	1:C:1256:VAL:HG12	1.88	0.56
1:C:1903:GLN:HA	1:C:1906:HIS:CE1	2.41	0.56
2:A:1109:LEU:HD21	2:A:1118:VAL:HG21	1.88	0.56
7:H:287:PHE:HB2	7:H:291:CYS:HB3	1.87	0.56
7:H:278:PRO:HG2	7:H:352:ALA:HA	1.87	0.56
1:C:106:LEU:HD21	1:C:146:PRO:HG2	1.88	0.56
1:C:3672:PHE:HD2	1:C:3739:LEU:HD21	1.71	0.56
1:C:3683:GLU:HA	1:C:3688:LEU:HB2	1.88	0.56
2:A:956:GLN:HE22	2:A:997:GLY:HA2	1.70	0.56
14:L:535:VAL:HG23	14:L:540:TRP:HD1	1.71	0.56
1:C:3691:LEU:HD23	1:C:3730:ARG:HD3	1.88	0.55
2:A:801:GLU:HB2	2:A:865:VAL:HB	1.87	0.55
2:A:415:LEU:HD22	2:A:424:TYR:HE2	1.71	0.55
1:C:3505:ILE:HG12	1:C:3514:ARG:HG3	1.88	0.55
1:C:3739:LEU:O	1:C:3740:THR:OG1	2.21	0.55
8:I:220:PHE:HB3	8:I:225:ILE:HB	1.88	0.55
4:D:36:VAL:HA	4:D:40:LEU:HD13	1.89	0.55
8:I:160:GLN:NE2	9:K:113:ALA:O	2.39	0.55
1:C:136:ILE:HD12	1:C:139:LEU:HD21	1.88	0.55
2:A:717:SER:HA	2:A:738:THR:HG22	1.89	0.55
7:H:313:ARG:HB2	7:H:315:HIS:CD2	2.42	0.55
1:C:2493:LYS:HD3	1:C:2619:HIS:HA	1.87	0.55
2:A:603:ARG:NH2	2:A:623:ASP:OD2	2.40	0.55
2:A:862:TRP:O	2:A:884:GLN:NE2	2.39	0.55
1:C:2989:SER:O	1:C:2993:MET:HG2	2.07	0.54
1:C:3163:LEU:HD13	1:C:3166:ILE:HD12	1.89	0.54
8:I:139:TYR:O	11:O:150:ARG:NH1	2.40	0.54
9:K:55:MET:HE3	9:K:63:LEU:HD12	1.89	0.54
10:M:67:ASP:OD1	10:M:68:ALA:N	2.38	0.54
1:C:1891:ILE:HG23	1:C:1895:ALA:HB3	1.88	0.54
1:C:835:LEU:HA	1:C:842:VAL:HG22	1.89	0.54
2:A:783:TYR:HB2	2:A:801:GLU:HB3	1.88	0.54
12:R:77:ASP:OD1	12:R:78:GLU:N	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1063:LEU:HB2	1:C:1066:TYR:HD2	1.72	0.54
2:A:86:ARG:NH1	2:A:1157:GLY:O	2.38	0.54
1:C:228:LEU:HG	1:C:231:ILE:HD13	1.89	0.54
4:D:60:ASN:OD1	4:D:62:ASN:ND2	2.41	0.54
4:D:177:VAL:HG23	4:D:195:LEU:HD23	1.90	0.54
1:C:295:ILE:HG21	1:C:338:ILE:HG22	1.90	0.54
1:C:2272:LEU:HG	1:C:2328:LEU:HD11	1.88	0.54
1:C:2355:ILE:HD11	1:C:2363:ILE:HD11	1.88	0.54
1:C:2400:MET:HG3	1:C:2442:ALA:HB2	1.88	0.54
2:A:43:PRO:HA	2:A:50:VAL:HG22	1.90	0.54
2:A:700:LYS:O	2:A:715:MET:HG2	2.08	0.54
1:C:2982:SER:HA	1:C:3560:LYS:HG3	1.90	0.54
4:D:104:LEU:HD12	4:D:105:PRO:HD2	1.88	0.54
1:C:1811:PHE:CE1	1:C:1839:LEU:HD13	2.43	0.54
1:C:381:ASP:O	1:C:385:HIS:ND1	2.41	0.53
10:M:47:VAL:HA	10:M:50:ILE:HG22	1.90	0.53
1:C:339:LEU:O	1:C:385:HIS:NE2	2.41	0.53
8:I:78:ASN:OD1	8:I:79:LEU:N	2.41	0.53
4:D:82:PRO:HG2	4:D:149:ARG:HB2	1.88	0.53
1:C:767:ILE:HG13	1:C:775:LEU:HB3	1.90	0.53
1:C:1035:ARG:HE	1:C:1039:LEU:HD11	1.74	0.53
2:A:168:TYR:HB2	2:A:185:LEU:HB2	1.89	0.53
7:H:446:THR:HG22	7:H:470:PRO:HB3	1.91	0.53
1:C:1397:THR:O	1:C:1443:ASN:ND2	2.41	0.53
1:C:2340:MET:HG2	1:C:2342:MET:H	1.72	0.53
12:R:77:ASP:HB3	12:R:80:VAL:HG23	1.91	0.53
2:A:337:ALA:HB2	2:A:352:GLU:HB3	1.91	0.53
1:C:835:LEU:HD23	1:C:842:VAL:HA	1.91	0.53
7:H:75:GLY:O	7:H:79:ASN:ND2	2.42	0.53
1:C:25:VAL:HA	1:C:68:ARG:HH22	1.75	0.52
2:A:206:GLN:NE2	2:A:230:GLU:O	2.31	0.52
2:A:355:ASN:HA	2:A:403:SER:HB3	1.90	0.52
2:A:355:ASN:H	2:A:432:ARG:HH22	1.57	0.52
2:A:1199:ARG:HH12	2:A:1207:LYS:HG3	1.75	0.52
1:C:604:GLN:NE2	1:C:665:ASN:OD1	2.42	0.52
1:C:1126:LEU:O	1:C:1131:ARG:NH1	2.42	0.52
1:C:2870:VAL:HG11	5:E:176:ILE:HA	1.91	0.52
2:A:181:MET:CE	2:A:210:PHE:HB3	2.39	0.52
1:C:3338:ARG:HD3	1:C:3511:THR:HB	1.91	0.52
1:C:1829:ARG:NH1	1:C:1868:CYS:SG	2.82	0.52
2:A:423:LEU:HB2	2:A:438:LEU:HB2	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:592:LEU:HD13	2:A:605:LEU:HD13	1.90	0.52
4:D:236:ARG:HE	12:R:78:GLU:HG2	1.75	0.52
7:H:249:VAL:HA	7:H:540:ARG:HH12	1.75	0.52
1:C:580:GLN:NE2	1:C:581:LEU:O	2.42	0.52
2:A:1117:LEU:HB2	2:A:1129:LEU:HB2	1.92	0.52
2:A:1005:VAL:HG13	2:A:1006:GLN:HG2	1.92	0.52
7:H:403:SER:OG	7:H:405:ASP:OD1	2.28	0.52
9:K:193:LEU:O	9:K:197:VAL:HG23	2.09	0.52
1:C:859:ASP:OD1	1:C:860:PHE:N	2.43	0.52
2:A:1012:VAL:HG22	2:A:1023:ILE:HG12	1.91	0.52
7:H:415:ARG:HH12	10:M:105:PRO:HG3	1.75	0.52
1:C:1660:GLN:O	1:C:1660:GLN:HG2	2.10	0.52
2:A:37:ILE:HG12	2:A:57:GLU:HG2	1.90	0.52
7:H:247:LYS:HB3	9:K:186:ASN:HD22	1.75	0.52
1:C:2883:LYS:HE2	1:C:2887:TYR:CZ	2.45	0.51
2:A:313:ILE:HG23	2:A:325:ILE:HG23	1.91	0.51
11:O:126:TYR:O	11:O:153:ARG:NH2	2.42	0.51
11:O:161:LYS:NZ	11:O:165:ASP:OD2	2.43	0.51
2:A:548:ALA:HB2	2:A:590:MET:HG3	1.92	0.51
9:K:271:LEU:HD11	9:K:289:ILE:HD11	1.92	0.51
1:C:159:LYS:O	1:C:163:LYS:HG3	2.10	0.51
1:C:1824:MET:HG2	1:C:1828:LEU:HD22	1.93	0.51
2:A:637:PRO:HA	2:A:669:LEU:HA	1.92	0.51
6:G:140:SER:OG	12:R:89:ASP:OD1	2.29	0.51
7:H:311:VAL:HG12	8:I:198:ARG:HH12	1.75	0.51
1:C:1006:ARG:NH2	1:C:3458:PHE:O	2.44	0.51
10:M:104:LEU:HD12	10:M:105:PRO:HD2	1.93	0.51
1:C:1833:LEU:HD22	1:C:1886:LEU:HD13	1.93	0.50
1:C:1894:PHE:HA	1:C:1934:ARG:HH12	1.76	0.50
2:A:178:GLU:HG3	2:A:179:ASN:H	1.76	0.50
1:C:828:MET:HB3	1:C:868:VAL:HG21	1.94	0.50
1:C:3191:ASN:ND2	4:D:398:SER:OG	2.44	0.50
4:D:177:VAL:O	4:D:181:THR:N	2.37	0.50
7:H:481:LYS:HG3	7:H:482:TYR:CD1	2.46	0.50
1:C:1194:LEU:HB3	1:C:1198:VAL:HG13	1.94	0.50
1:C:2098:VAL:HA	1:C:2144:LEU:HD12	1.93	0.50
1:C:2476:TYR:CE2	1:C:2481:GLN:HB2	2.46	0.50
1:C:3669:ARG:HD2	1:C:3739:LEU:HA	1.94	0.50
2:A:914:ILE:HG22	2:A:917:PRO:HD2	1.92	0.50
4:D:220:ASN:HD22	10:M:107:ILE:HD12	1.75	0.50
6:G:194:ARG:NH2	6:G:273:PRO:O	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:508:GLY:HA3	7:H:537:TRP:HZ2	1.76	0.50
7:H:392:ILE:HD12	7:H:399:PHE:HB3	1.94	0.50
12:R:68:ARG:HB3	12:R:68:ARG:NH1	2.27	0.50
1:C:2813:ILE:HG13	1:C:2813:ILE:O	2.11	0.49
3:B:31:TRP:HH2	9:K:364:VAL:HG12	1.77	0.49
7:H:44:ALA:O	7:H:47:THR:OG1	2.29	0.49
7:H:517:THR:HG21	7:H:570:GLN:HA	1.93	0.49
1:C:95:GLU:OE2	1:C:99:ARG:NH2	2.36	0.49
1:C:1296:LEU:HB2	1:C:1299:HIS:HD2	1.77	0.49
1:C:3548:LEU:HD13	1:C:3773:VAL:HG21	1.94	0.49
4:D:103:ARG:HH11	4:D:103:ARG:HA	1.77	0.49
2:A:526:HIS:HB3	2:A:534:ASN:HB2	1.94	0.49
2:A:603:ARG:NH1	2:A:620:ASP:OD2	2.45	0.49
7:H:567:LEU:HD12	7:H:580:THR:HG22	1.95	0.49
1:C:359:ILE:HG22	1:C:363:SER:HB2	1.94	0.49
4:D:79:ASN:HB2	4:D:88:SER:HB3	1.92	0.49
6:G:279:ASP:OD2	8:I:203:ARG:NH2	2.43	0.49
1:C:696:ARG:NH2	1:C:710:TYR:OH	2.35	0.49
1:C:758:LEU:HD23	1:C:761:ARG:HH12	1.76	0.49
2:A:390:ARG:HG2	2:A:391:PRO:HD2	1.95	0.49
1:C:1678:GLU:HG3	1:C:1725:PHE:HE1	1.77	0.49
2:A:272:PRO:HB2	2:A:387:PHE:HD1	1.78	0.49
1:C:406:ILE:HA	1:C:416:GLN:HG2	1.94	0.49
1:C:1825:LEU:HD23	1:C:1825:LEU:O	2.12	0.49
2:A:142:TYR:HB3	2:A:154:ILE:HD11	1.94	0.49
9:K:58:THR:O	9:K:59:LYS:HG2	2.13	0.49
1:C:371:LEU:HD23	1:C:371:LEU:H	1.77	0.49
1:C:799:LYS:HB2	1:C:802:MET:HB2	1.94	0.49
1:C:1005:HIS:HB3	1:C:1140:TYR:HE1	1.78	0.49
7:H:574:CYS:HA	9:K:228:HIS:HA	1.95	0.49
1:C:1771:LYS:O	1:C:1774:GLN:HG3	2.12	0.49
1:C:3617:ASP:OD1	1:C:3618:ARG:N	2.46	0.49
1:C:1422:GLN:O	1:C:1426:HIS:ND1	2.33	0.48
1:C:2276:LYS:HD2	1:C:2327:SER:HB3	1.95	0.48
2:A:207:THR:HA	2:A:227:PRO:HA	1.95	0.48
2:A:515:ALA:HB2	2:A:528:ARG:HH11	1.78	0.48
1:C:3457:LYS:HA	1:C:3505:ILE:HD12	1.94	0.48
1:C:2490:PHE:HD2	1:C:2493:LYS:HG3	1.78	0.48
6:G:151:LEU:HD23	6:G:172:VAL:HG13	1.95	0.48
7:H:409:ARG:HD3	7:H:418:PRO:HG3	1.94	0.48
1:C:406:ILE:HD12	1:C:416:GLN:HG2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:3508:LYS:HG2	1:C:3509:HIS:H	1.78	0.48
1:C:662:ILE:HG22	1:C:709:LEU:HD11	1.94	0.48
1:C:1527:ALA:HB3	1:C:1564:ARG:NH1	2.28	0.48
1:C:2372:GLU:HG3	1:C:2420:LEU:HD12	1.94	0.48
2:A:1086:SER:N	13:X:19:UNK:O	2.46	0.48
6:G:306:THR:HA	10:M:99:ARG:HH21	1.77	0.48
7:H:93:MET:HE3	7:H:93:MET:HA	1.94	0.48
9:K:299:ASP:N	9:K:299:ASP:OD1	2.45	0.48
1:C:1759:PHE:O	1:C:1762:PRO:HD3	2.12	0.48
1:C:2197:ILE:O	1:C:2197:ILE:HG22	2.14	0.48
1:C:2251:TYR:HB2	1:C:2271:THR:HG23	1.95	0.48
2:A:691:THR:HG22	2:A:716:SER:HB2	1.95	0.48
4:D:60:ASN:HB3	7:H:162:LYS:HG2	1.95	0.48
5:E:307:TYR:HE1	11:O:209:ILE:HD13	1.79	0.48
1:C:19:LYS:HE2	1:C:53:THR:HG22	1.94	0.48
1:C:2489:HIS:O	1:C:2664:GLN:NE2	2.47	0.48
1:C:2697:GLY:HA2	1:C:2702:LEU:HB2	1.95	0.48
1:C:3540:ARG:HH22	1:C:3579:PRO:HA	1.78	0.48
1:C:3340:LEU:HB3	1:C:3445:ILE:HD11	1.96	0.47
8:I:193:PHE:HE2	11:O:155:ILE:HG12	1.79	0.47
1:C:1750:ARG:HA	1:C:1753:PHE:HB2	1.94	0.47
2:A:612:ASN:HB3	2:A:633:LEU:HB2	1.96	0.47
4:D:234:MET:HA	4:D:237:CYS:SG	2.54	0.47
5:E:213:PRO:HB3	5:E:217:ALA:HB3	1.95	0.47
7:H:366:ILE:HB	7:H:380:TYR:HB2	1.97	0.47
1:C:2689:ARG:H	6:G:267:THR:HG22	1.78	0.47
1:C:1058:CYS:SG	1:C:1059:GLY:N	2.87	0.47
12:R:59:THR:OG1	12:R:60:LYS:N	2.47	0.47
1:C:277:TYR:HB2	1:C:281:ILE:HG22	1.96	0.47
1:C:2361:ALA:O	1:C:2365:ARG:NH1	2.47	0.47
2:A:131:MET:SD	2:A:141:VAL:HG22	2.55	0.47
2:A:168:TYR:OH	2:A:187:MET:HG3	2.15	0.47
2:A:515:ALA:HB2	2:A:528:ARG:HD2	1.95	0.47
7:H:406:ARG:HH12	10:M:88:PRO:HB3	1.78	0.47
7:H:569:VAL:HG12	7:H:579:VAL:HG12	1.96	0.47
12:R:60:LYS:HG3	12:R:61:LYS:HG2	1.97	0.47
1:C:1598:ARG:HB3	1:C:1599:PRO:HD3	1.96	0.47
1:C:1657:LEU:HG	1:C:1661:HIS:CE1	2.48	0.47
1:C:1758:ASP:HA	1:C:1773:LEU:HD21	1.97	0.47
6:G:198:ARG:NE	6:G:206:TYR:OH	2.47	0.47
7:H:149:ILE:HG23	7:H:155:LEU:HB3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:3168:VAL:HG12	1:C:3169:LYS:HD3	1.97	0.47
6:G:184:LYS:NZ	12:R:69:GLU:HG2	2.30	0.47
6:G:281:PHE:HZ	7:H:384:ALA:HB2	1.80	0.47
1:C:1430:LEU:HD21	1:C:1448:LEU:HD13	1.97	0.47
1:C:2656:LEU:HD13	1:C:2672:LEU:HD11	1.96	0.47
2:A:114:ARG:NH1	3:B:37:ARG:HB3	2.30	0.47
2:A:548:ALA:HB2	2:A:590:MET:CG	2.45	0.47
3:B:39:SER:OG	9:K:416:GLY:O	2.30	0.47
5:E:232:LEU:HD21	5:E:286:ILE:HD11	1.97	0.47
7:H:421:ILE:HG13	10:M:95:ILE:HG22	1.97	0.47
10:M:126:ASN:HB3	10:M:129:LEU:HG	1.97	0.47
1:C:583:PRO:O	1:C:586:THR:OG1	2.21	0.46
1:C:648:LYS:HB3	1:C:684:LEU:HD21	1.97	0.46
2:A:595:VAL:HG13	2:A:601:ARG:HA	1.96	0.46
2:A:952:ILE:HG12	2:A:961:ILE:HG12	1.98	0.46
7:H:270:LEU:HD13	7:H:288:ASP:H	1.79	0.46
2:A:1199:ARG:HG2	2:A:1200:THR:H	1.79	0.46
9:K:302:ARG:HB3	9:K:306:CYS:SG	2.56	0.46
9:K:311:VAL:HG13	9:K:312:VAL:HG13	1.98	0.46
1:C:48:ASN:OD1	1:C:1947:ARG:NH1	2.48	0.46
1:C:2805:GLU:HG3	1:C:2806:ARG:HD2	1.96	0.46
2:A:478:PHE:HE2	2:A:483:LEU:HD22	1.81	0.46
2:A:1040:ASP:OD1	2:A:1043:THR:OG1	2.18	0.46
1:C:582:GLN:HB3	1:C:585:GLU:OE1	2.16	0.46
1:C:1888:ALA:HB1	1:C:1927:LEU:HD22	1.97	0.46
1:C:3701:ASP:OD1	1:C:3702:THR:N	2.49	0.46
1:C:1441:THR:HG23	1:C:1443:ASN:H	1.80	0.46
2:A:1048:ASP:HB3	2:A:1052:ASN:H	1.81	0.46
1:C:979:ASP:HB2	1:C:983:ALA:HB3	1.96	0.46
7:H:191:LEU:HD12	7:H:197:LEU:HD11	1.98	0.46
7:H:503:TYR:CD2	7:H:504:LYS:HG2	2.51	0.46
1:C:361:ILE:HD12	1:C:375:ALA:HB1	1.97	0.46
1:C:3723:ALA:HB1	1:C:3725:ARG:HH21	1.81	0.46
2:A:503:THR:HB	2:A:520:TYR:CE2	2.51	0.46
2:A:590:MET:HE3	2:A:605:LEU:HD11	1.98	0.46
9:K:213:LEU:HD22	9:K:263:LEU:HD22	1.97	0.46
3:B:32:LEU:O	3:B:36:HIS:ND1	2.33	0.46
4:D:236:ARG:NH2	12:R:82:GLU:OE2	2.48	0.46
1:C:2254:LEU:HD11	1:C:2268:LEU:HG	1.98	0.46
2:A:487:ILE:HA	2:A:491:VAL:HG22	1.97	0.46
6:G:184:LYS:HZ3	12:R:69:GLU:HG2	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:267:THR:HG21	9:K:125:THR:HG22	1.97	0.46
7:H:368:TYR:HB3	7:H:378:VAL:HB	1.98	0.46
7:H:385:TYR:CD2	7:H:405:ASP:HB3	2.51	0.46
1:C:2522:THR:HG23	1:C:2525:ILE:HD12	1.97	0.45
2:A:870:ASN:ND2	2:A:873:GLN:OE1	2.49	0.45
4:D:5:LEU:HD13	10:M:109:PRO:HB3	1.98	0.45
1:C:829:ASP:HB2	1:C:830:PRO:HD3	1.98	0.45
2:A:4:TYR:HB3	2:A:1130:VAL:HB	1.97	0.45
8:I:73:ASN:HD21	8:I:250:SER:HA	1.82	0.45
1:C:309:MET:SD	1:C:309:MET:N	2.89	0.45
1:C:1558:LEU:O	1:C:1562:LEU:N	2.48	0.45
4:D:183:ASP:HB3	4:D:187:TRP:HE1	1.81	0.45
1:C:253:LEU:HD23	1:C:288:LEU:HD23	1.99	0.45
1:C:1947:ARG:HA	1:C:1950:ILE:HG22	1.98	0.45
1:C:1986:VAL:HA	1:C:1989:MET:HG2	1.98	0.45
1:C:2202:THR:HG22	1:C:2246:VAL:HG13	1.98	0.45
2:A:887:ALA:HB3	2:A:910:ALA:HB3	1.97	0.45
6:G:119:LEU:HD11	14:L:534:TYR:CD2	2.52	0.45
11:O:196:THR:HG23	11:O:198:GLU:H	1.80	0.45
1:C:961:ARG:HG2	1:C:1034:LEU:HD11	1.98	0.45
1:C:2699:THR:HA	1:C:2921:ARG:HH21	1.81	0.45
1:C:2850:TYR:CZ	1:C:2872:VAL:HG13	2.51	0.45
5:E:201:ARG:HG2	5:E:218:MET:HE2	1.99	0.45
1:C:338:ILE:HG13	1:C:339:LEU:HD22	1.98	0.45
1:C:1902:LEU:H	1:C:1902:LEU:HD23	1.82	0.45
2:A:239:PRO:HD2	2:A:301:PHE:HZ	1.81	0.45
1:C:727:GLU:O	1:C:727:GLU:HG3	2.17	0.45
6:G:294:HIS:CE1	10:M:84:THR:HG23	2.52	0.45
9:K:314:LEU:HD23	9:K:322:VAL:HG13	1.99	0.45
1:C:547:ARG:HB3	1:C:603:TYR:HE1	1.81	0.45
1:C:2858:ARG:NH1	1:C:2989:SER:OG	2.49	0.45
1:C:3086:TYR:CE1	1:C:3104:VAL:HG11	2.51	0.45
2:A:233:ASN:OD1	2:A:234:PHE:N	2.45	0.45
2:A:960:LEU:HD21	2:A:967:LEU:HD11	1.99	0.45
9:K:206:VAL:HG12	9:K:206:VAL:O	2.16	0.45
1:C:247:VAL:HA	1:C:250:PHE:CE2	2.52	0.45
1:C:857:GLN:O	1:C:859:ASP:N	2.50	0.45
1:C:2142:SER:OG	1:C:2143:GLU:OE1	2.34	0.45
1:C:2305:LEU:O	1:C:2357:LYS:NZ	2.48	0.45
1:C:2714:ALA:HB2	1:C:2744:ILE:HD12	1.98	0.45
1:C:2859:VAL:HG23	1:C:2861:ASN:H	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:3757:ARG:HH11	1:C:3828:PHE:HE2	1.64	0.45
9:K:146:VAL:HG13	9:K:150:VAL:HB	1.97	0.45
14:L:527:ARG:HE	14:L:535:VAL:HG13	1.82	0.45
1:C:1019:GLU:OE2	1:C:1098:ILE:HG13	2.17	0.44
1:C:2865:MET:HB2	1:C:2891:LEU:HD21	1.99	0.44
1:C:3330:GLU:HG3	1:C:3334:GLU:HB2	2.00	0.44
4:D:236:ARG:HH21	12:R:78:GLU:HG2	1.81	0.44
8:I:186:ALA:HB2	11:O:163:ILE:HD11	1.99	0.44
10:M:48:THR:HG21	11:O:212:LYS:HD2	1.99	0.44
1:C:446:MET:SD	1:C:585:GLU:HG2	2.57	0.44
1:C:2633:PHE:HB3	1:C:2634:PRO:HD3	1.99	0.44
2:A:235:LEU:HG	2:A:250:ILE:HG13	1.98	0.44
2:A:236:ILE:HB	2:A:249:LEU:HB2	1.99	0.44
5:E:297:ILE:HG22	5:E:297:ILE:O	2.17	0.44
1:C:3304:MET:O	1:C:3308:ARG:HG2	2.17	0.44
7:H:313:ARG:HB2	7:H:315:HIS:NE2	2.32	0.44
12:R:107:LYS:C	12:R:109:SER:H	2.20	0.44
1:C:44:GLU:HG2	1:C:92:LEU:HD21	1.98	0.44
1:C:1283:LYS:O	1:C:1287:GLN:HG3	2.17	0.44
1:C:3586:ASP:OD1	1:C:3587:ASN:N	2.50	0.44
1:C:3730:ARG:NH2	1:C:3859:LEU:O	2.50	0.44
1:C:3743:GLY:HA2	1:C:3747:PRO:HD2	2.00	0.44
5:E:99:LYS:HB3	5:E:104:ARG:HH12	1.82	0.44
7:H:509:HIS:NE2	7:H:527:SER:OG	2.38	0.44
6:G:112:ARG:NH1	7:H:488:GLU:OE2	2.50	0.44
9:K:55:MET:CE	9:K:63:LEU:HA	2.48	0.44
1:C:1920:VAL:HA	1:C:1923:ALA:HB3	2.00	0.44
1:C:2240:GLU:HA	1:C:2243:TYR:CE2	2.52	0.44
1:C:2476:TYR:HD2	1:C:2480:SER:HB2	1.82	0.44
5:E:189:ARG:HG2	5:E:190:GLN:HG2	2.00	0.44
1:C:907:LYS:HD2	1:C:907:LYS:HA	1.84	0.44
1:C:3516:LEU:H	1:C:3516:LEU:HD23	1.83	0.44
2:A:431:PRO:HG3	2:A:849:GLU:HG2	1.99	0.44
7:H:506:LEU:HB3	7:H:537:TRP:CZ3	2.53	0.44
1:C:139:LEU:HA	1:C:142:GLN:HG2	1.99	0.44
1:C:1514:CYS:HB3	1:C:1554:PHE:HE1	1.83	0.44
1:C:3302:ARG:O	1:C:3306:MET:HG3	2.18	0.44
2:A:645:MET:HB2	2:A:662:PHE:HB2	2.00	0.44
11:O:148:ASP:OD2	11:O:151:ILE:HG22	2.18	0.44
1:C:783:LEU:HD11	1:C:815:VAL:HG21	2.00	0.43
1:C:3357:ALA:O	1:C:3623:GLN:NE2	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:7:THR:HA	2:A:1127:GLY:HA2	1.99	0.43
7:H:562:GLN:H	7:H:563:MET:HE3	1.82	0.43
1:C:1803:ASN:N	1:C:1804:PRO:HD2	2.33	0.43
1:C:3064:ILE:HG21	1:C:3078:LYS:HG3	1.99	0.43
4:D:131:SER:OG	14:L:552:GLU:OE2	2.35	0.43
7:H:78:ARG:O	7:H:82:THR:OG1	2.23	0.43
2:A:577:TYR:CE2	2:A:579:GLU:HB3	2.53	0.43
1:C:2509:ILE:HG12	1:C:2607:THR:HB	2.00	0.43
2:A:14:ILE:HG12	2:A:34:ARG:HH12	1.83	0.43
2:A:275:ARG:HG3	2:A:388:GLN:HG2	2.00	0.43
2:A:328:LYS:HB3	2:A:330:PHE:CZ	2.53	0.43
7:H:260:CYS:HB2	7:H:578:LEU:HD23	1.99	0.43
1:C:903:ARG:HH22	1:C:2979:PRO:HB3	1.83	0.43
1:C:2815:PRO:HA	1:C:2818:GLN:HG2	2.01	0.43
2:A:111:GLY:O	2:A:116:VAL:HG11	2.19	0.43
2:A:816:LYS:HD3	2:A:843:LEU:HG	2.01	0.43
2:A:939:PHE:HZ	2:A:942:LYS:HG3	1.84	0.43
9:K:296:ILE:HD12	9:K:302:ARG:HH12	1.84	0.43
1:C:822:PRO:HB3	4:D:394:PHE:CD1	2.54	0.43
1:C:2741:GLN:HG2	1:C:2744:ILE:HD11	2.00	0.43
1:C:3238:LEU:HD22	1:C:3250:LEU:HD11	2.01	0.43
4:D:205:GLU:HG3	4:D:206:PRO:HD2	2.00	0.43
7:H:81:LEU:HD11	7:H:92:VAL:HG21	2.00	0.43
1:C:647:PHE:CZ	1:C:681:THR:HG23	2.54	0.43
1:C:2653:SER:HB2	1:C:2654:PRO:HD3	1.99	0.43
2:A:895:ARG:HD3	2:A:903:TRP:CZ3	2.54	0.43
9:K:285:LEU:HG	9:K:288:HIS:HB2	2.00	0.43
1:C:1829:ARG:HD2	1:C:1879:CYS:HB2	2.00	0.43
1:C:2278:ALA:HA	1:C:2281:ASN:HD22	1.83	0.43
1:C:2637:TRP:HZ3	1:C:2648:LEU:HD23	1.83	0.43
12:R:117:GLN:O	12:R:121:GLU:HG2	2.19	0.43
1:C:114:LEU:HD23	1:C:114:LEU:H	1.84	0.43
1:C:987:LEU:HD21	1:C:2525:ILE:HD11	2.00	0.43
1:C:2849:PRO:HB3	1:C:2871:GLN:HE21	1.84	0.43
1:C:3771:LYS:HG2	1:C:3815:VAL:HG21	2.01	0.43
7:H:535:ARG:HB3	7:H:537:TRP:NE1	2.29	0.43
1:C:543:VAL:O	1:C:547:ARG:HG3	2.18	0.43
4:D:85:GLU:HB2	4:D:103:ARG:NH2	2.33	0.43
8:I:28:GLU:O	9:K:128:ARG:NH1	2.48	0.43
1:C:2173:VAL:HA	1:C:2176:PHE:CE1	2.53	0.42
1:C:3051:GLN:HE22	1:C:3560:LYS:HD2	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:3442:LYS:HE2	1:C:3442:LYS:HB3	1.87	0.42
4:D:16:ILE:HD11	4:D:222:LEU:HD21	2.01	0.42
1:C:1473:LYS:HE2	1:C:1473:LYS:HB3	1.84	0.42
11:O:192:LYS:HD2	11:O:192:LYS:HA	1.82	0.42
1:C:2887:TYR:HA	1:C:2890:TYR:HD2	1.84	0.42
1:C:3149:HIS:CD2	1:C:3151:VAL:HG22	2.55	0.42
2:A:271:ILE:HD13	2:A:285:MET:HG3	2.00	0.42
2:A:1118:VAL:HG22	2:A:1128:ILE:HG22	2.01	0.42
4:D:192:LYS:O	4:D:196:GLU:HG2	2.19	0.42
9:K:282:VAL:HG12	9:K:282:VAL:O	2.20	0.42
11:O:123:LEU:HD21	11:O:153:ARG:HD3	2.01	0.42
4:D:362:LEU:HD23	4:D:362:LEU:HA	1.95	0.42
1:C:284:GLN:O	1:C:287:THR:OG1	2.31	0.42
1:C:1927:LEU:H	1:C:1927:LEU:HD23	1.85	0.42
6:G:143:MET:SD	6:G:143:MET:N	2.92	0.42
7:H:336:LYS:HB3	7:H:336:LYS:HE2	1.88	0.42
5:E:124:LEU:HA	11:O:175:LYS:NZ	2.35	0.42
7:H:145:THR:HG23	7:H:148:ASP:H	1.84	0.42
7:H:428:ASP:OD1	7:H:428:ASP:N	2.52	0.42
1:C:231:ILE:H	1:C:231:ILE:HD12	1.84	0.42
1:C:3086:TYR:HE1	1:C:3104:VAL:HG11	1.85	0.42
2:A:355:ASN:OD1	2:A:356:HIS:N	2.53	0.42
2:A:790:ILE:HA	2:A:797:LEU:HD23	2.00	0.42
9:K:118:ILE:HD12	9:K:119:PRO:HD2	2.01	0.42
1:C:1409:MET:HG3	1:C:1454:LEU:HD11	2.02	0.42
2:A:1154:PRO:HG2	2:A:1158:ARG:O	2.19	0.42
1:C:647:PHE:HZ	1:C:681:THR:HG23	1.85	0.42
1:C:2007:VAL:HG21	1:C:2122:LEU:HB2	2.01	0.42
1:C:3740:THR:HG22	1:C:3741:THR:N	2.34	0.42
1:C:1803:ASN:N	1:C:1804:PRO:CD	2.83	0.42
1:C:1909:LEU:HD23	1:C:1909:LEU:H	1.85	0.42
1:C:2396:LEU:HB3	1:C:2439:LEU:HD11	2.02	0.42
1:C:2883:LYS:HA	1:C:2883:LYS:HD2	1.77	0.42
2:A:249:LEU:HD13	2:A:313:ILE:HD13	2.01	0.42
2:A:895:ARG:HD3	2:A:903:TRP:HZ3	1.85	0.42
10:M:57:TYR:CE1	12:R:119:HIS:HE1	2.38	0.42
1:C:2275:LEU:HD22	1:C:2328:LEU:HD22	2.00	0.41
2:A:460:TRP:CG	2:A:508:CYS:HB2	2.55	0.41
4:D:123:ILE:HG21	14:L:543:LEU:HD21	2.02	0.41
7:H:271:LEU:O	9:K:59:LYS:HB2	2.19	0.41
1:C:584:LYS:HE3	1:C:1586:ARG:HG2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1753:PHE:HA	1:C:1756:PHE:CE1	2.55	0.41
1:C:2807:SER:OG	1:C:2808:ASN:N	2.53	0.41
1:C:3154:LYS:O	1:C:3158:MET:HG2	2.20	0.41
9:K:314:LEU:HD11	9:K:325:VAL:HG11	2.01	0.41
10:M:118:ASP:CG	10:M:119:ARG:H	2.23	0.41
1:C:2858:ARG:NH2	1:C:2990:SER:OG	2.54	0.41
11:O:121:MET:HA	11:O:124:GLU:HG2	2.01	0.41
1:C:1812:ILE:HG12	1:C:1860:ARG:HH12	1.84	0.41
1:C:3295:ALA:HB3	1:C:3296:PRO:HD3	2.02	0.41
1:C:3440:LYS:O	1:C:3443:LYS:HG2	2.20	0.41
1:C:3642:GLN:HE21	1:C:3648:ARG:HG3	1.84	0.41
2:A:499:PHE:CE2	2:A:516:LEU:HD22	2.55	0.41
2:A:789:VAL:HB	2:A:798:ILE:HD11	2.01	0.41
4:D:139:GLY:HA2	7:H:20:ARG:NE	2.35	0.41
6:G:293:THR:HA	10:M:81:GLN:HG2	2.02	0.41
1:C:1188:LEU:HD11	1:C:1256:VAL:HG23	2.03	0.41
1:C:1811:PHE:HE1	1:C:1839:LEU:HD22	1.84	0.41
1:C:2101:LEU:HA	1:C:2104:VAL:HG12	2.02	0.41
1:C:3163:LEU:HA	1:C:3166:ILE:HD12	2.01	0.41
2:A:442:LEU:HD23	2:A:767:LEU:HD11	2.02	0.41
2:A:463:ARG:NH1	2:A:466:ILE:O	2.54	0.41
7:H:298:ARG:HA	7:H:298:ARG:HD3	1.77	0.41
7:H:524:LEU:HD23	7:H:538:ASP:HA	2.02	0.41
1:C:1330:VAL:O	1:C:1332:HIS:N	2.53	0.41
2:A:1001:ILE:HG21	2:A:1044:VAL:HG11	2.02	0.41
6:G:164:LEU:HD11	12:R:103:ALA:HB1	2.03	0.41
1:C:144:ARG:HB3	1:C:145:PRO:HD3	2.03	0.41
1:C:3163:LEU:HD12	1:C:3175:LEU:HD21	2.03	0.41
2:A:136:GLU:OE2	2:A:189:TYR:OH	2.23	0.41
7:H:508:GLY:HA3	7:H:537:TRP:CZ2	2.55	0.41
8:I:195:LYS:HG2	8:I:199:PHE:HE2	1.85	0.41
1:C:1459:PHE:HD2	1:C:1524:ILE:HD12	1.86	0.41
1:C:3111:LYS:HB2	1:C:3112:TYR:HD2	1.86	0.41
1:C:3446:LYS:HD2	1:C:3446:LYS:HA	1.75	0.41
2:A:565:TYR:OH	2:A:617:ILE:HG21	2.21	0.41
2:A:1053:ILE:HG23	2:A:1104:LEU:HD21	2.03	0.41
6:G:277:MET:HG3	6:G:308:LEU:HD23	2.02	0.41
6:G:284:LEU:HB3	6:G:297:TYR:HE1	1.85	0.41
6:G:293:THR:HG22	10:M:81:GLN:HE21	1.86	0.41
6:G:302:GLU:HB2	10:M:91:PHE:HE2	1.84	0.41
8:I:220:PHE:HE2	8:I:228:VAL:HG12	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:107:ARG:HB2	1:C:108:PRO:HD3	2.03	0.41
1:C:1054:VAL:O	1:C:1058:CYS:HB2	2.21	0.41
1:C:1339:LEU:HD12	1:C:1340:LEU:HD22	2.01	0.41
1:C:3164:GLU:HA	1:C:3167:PHE:HD2	1.85	0.41
2:A:995:THR:HG22	2:A:1000:VAL:HG13	2.02	0.41
7:H:247:LYS:HB3	9:K:186:ASN:ND2	2.36	0.41
7:H:271:LEU:HD23	7:H:582:ILE:HD11	2.03	0.41
10:M:115:LEU:HD23	10:M:115:LEU:HA	1.90	0.41
1:C:1242:THR:O	1:C:1246:VAL:HG23	2.21	0.41
1:C:1740:ILE:HB	1:C:1741:PRO:HD3	2.03	0.41
1:C:2668:GLN:NE2	1:C:2920:ARG:HD3	2.36	0.41
2:A:47:THR:HG23	2:A:49:LYS:H	1.85	0.41
8:I:73:ASN:O	8:I:77:ARG:N	2.46	0.41
1:C:1889:HIS:CD2	1:C:1926:ILE:HG13	2.56	0.40
1:C:3479:GLU:HG3	1:C:3495:LYS:HD3	2.02	0.40
1:C:3506:VAL:HG11	1:C:3515:ARG:HH12	1.86	0.40
2:A:39:GLU:HG2	2:A:55:THR:HG23	2.01	0.40
7:H:422:TYR:HE1	7:H:458:GLY:HA2	1.86	0.40
2:A:66:MET:HE3	2:A:123:VAL:HB	2.02	0.40
6:G:298:ALA:O	6:G:301:ILE:HG22	2.21	0.40
7:H:281:LYS:NZ	7:H:298:ARG:HG3	2.36	0.40
9:K:118:ILE:HG13	9:K:120:LYS:H	1.85	0.40
1:C:1363:VAL:O	1:C:1367:ILE:HG12	2.22	0.40
1:C:1887:LEU:HD23	1:C:1904:VAL:HB	2.03	0.40
1:C:2871:GLN:HA	1:C:2874:VAL:HG12	2.03	0.40
1:C:364:GLY:O	1:C:368:ARG:NE	2.54	0.40
1:C:793:LEU:HD11	1:C:1197:GLU:HG3	2.04	0.40
1:C:1514:CYS:HA	1:C:1517:ILE:HG22	2.04	0.40
1:C:2668:GLN:HE21	1:C:2920:ARG:HB3	1.86	0.40
1:C:3054:VAL:HG21	1:C:3089:LEU:HB2	2.03	0.40
2:A:82:SER:OG	2:A:83:ASP:N	2.54	0.40
2:A:808:THR:HG23	2:A:811:THR:H	1.87	0.40
5:E:188:SER:HA	5:E:191:LEU:HD12	2.04	0.40
9:K:337:LEU:HD21	9:K:357:LYS:HZ2	1.87	0.40
12:R:113:VAL:HB	12:R:116:VAL:HG22	2.02	0.40
1:C:332:LEU:HD12	1:C:371:LEU:HD12	2.03	0.40
1:C:1116:ALA:HB2	1:C:1166:PHE:HZ	1.85	0.40
1:C:1448:LEU:HG	1:C:1520:LEU:HD11	2.02	0.40
1:C:1876:ASP:HB3	1:C:1879:CYS:SG	2.61	0.40
1:C:2007:VAL:O	1:C:2010:SER:OG	2.25	0.40
1:C:2492:ILE:HD11	1:C:2671:ALA:O	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:3002:LYS:HB2	1:C:3003:PRO:HD3	2.02	0.40
2:A:916:ASN:HB2	2:A:917:PRO:HD3	2.03	0.40
5:E:296:ARG:HG3	6:G:203:HIS:ND1	2.37	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	C	3191/3859 (83%)	3008 (94%)	182 (6%)	1 (0%)	100	100
2	A	1156/1217 (95%)	1117 (97%)	39 (3%)	0	100	100
3	B	43/86 (50%)	43 (100%)	0	0	100	100
4	D	304/779 (39%)	282 (93%)	22 (7%)	0	100	100
5	E	215/317 (68%)	197 (92%)	18 (8%)	0	100	100
6	G	182/374 (49%)	176 (97%)	6 (3%)	0	100	100
7	H	500/589 (85%)	476 (95%)	24 (5%)	0	100	100
8	I	169/455 (37%)	166 (98%)	3 (2%)	0	100	100
9	K	342/622 (55%)	318 (93%)	24 (7%)	0	100	100
10	M	117/264 (44%)	111 (95%)	5 (4%)	1 (1%)	17	54
11	O	87/218 (40%)	83 (95%)	4 (5%)	0	100	100
12	R	72/161 (45%)	63 (88%)	9 (12%)	0	100	100
14	L	42/892 (5%)	35 (83%)	7 (17%)	0	100	100
All	All	6420/9833 (65%)	6075 (95%)	343 (5%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
10	M	118	ASP
1	C	773	ASP

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	C	2918/3423 (85%)	2911 (100%)	7 (0%)	93 97
2	A	1013/1051 (96%)	1013 (100%)	0	100 100
3	B	41/77 (53%)	41 (100%)	0	100 100
4	D	297/687 (43%)	297 (100%)	0	100 100
5	E	179/273 (66%)	178 (99%)	1 (1%)	86 93
6	G	164/320 (51%)	164 (100%)	0	100 100
7	H	457/521 (88%)	457 (100%)	0	100 100
8	I	152/405 (38%)	152 (100%)	0	100 100
9	K	286/505 (57%)	286 (100%)	0	100 100
10	M	106/235 (45%)	106 (100%)	0	100 100
11	O	78/154 (51%)	78 (100%)	0	100 100
12	R	68/141 (48%)	68 (100%)	0	100 100
14	L	38/779 (5%)	38 (100%)	0	100 100
All	All	5797/8571 (68%)	5789 (100%)	8 (0%)	93 98

All (8) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	1438	ARG
1	C	1898	LYS
1	C	2003	ARG
1	C	2210	ARG
1	C	2248	LYS
1	C	2357	LYS
1	C	3125	LYS
5	E	296	ARG

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

Mol	Chain	Res	Type
1	C	604	GLN
6	G	220	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (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.

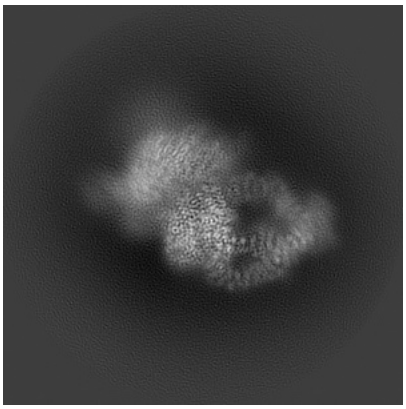
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-34520. These allow visual inspection of the internal detail of the map and identification of artifacts.

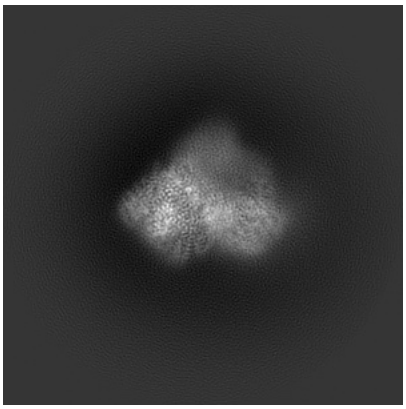
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

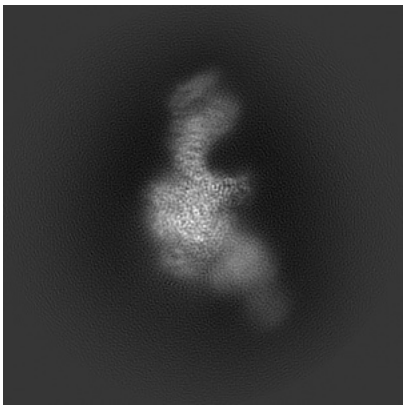
6.1.1 Primary map



X

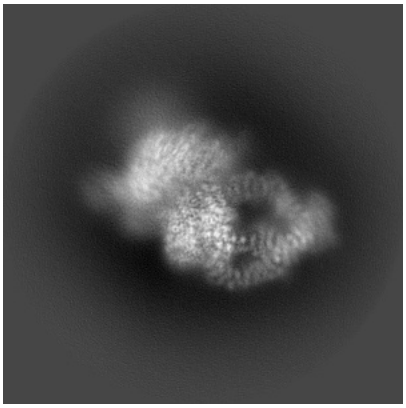


Y

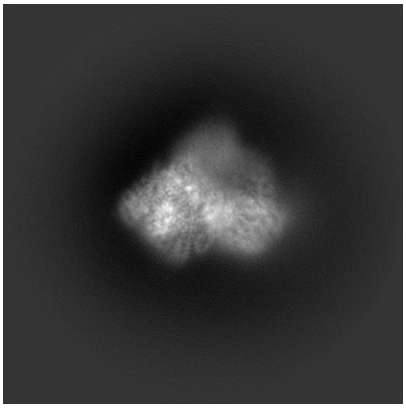


Z

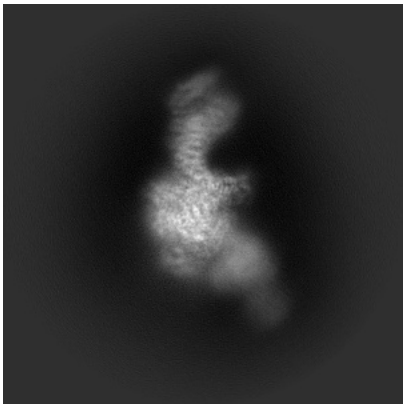
6.1.2 Raw map



X



Y

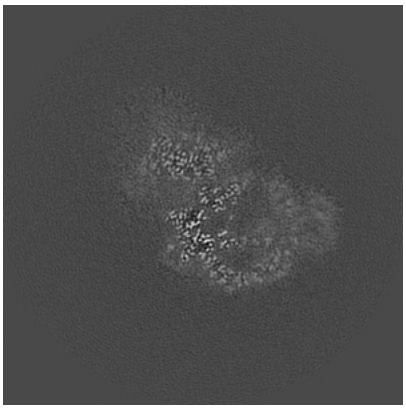


Z

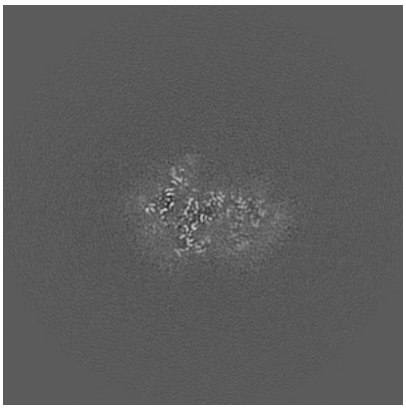
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

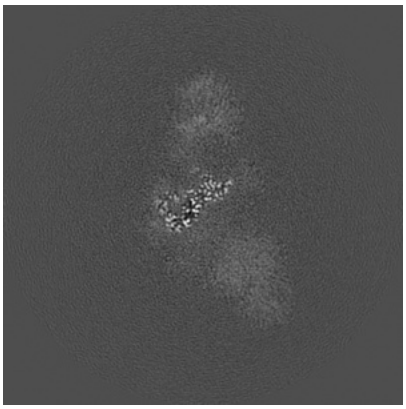
6.2.1 Primary map



X Index: 200

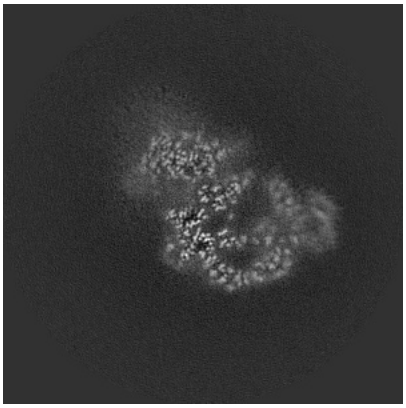


Y Index: 200

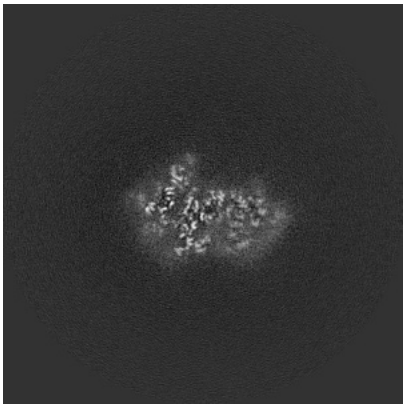


Z Index: 200

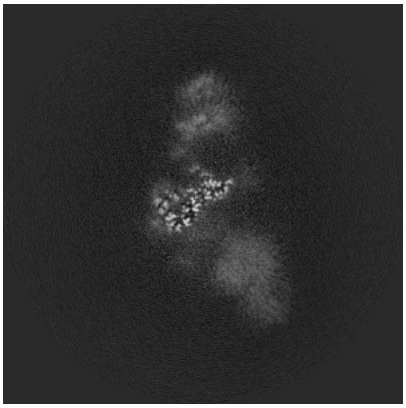
6.2.2 Raw map



X Index: 200



Y Index: 200

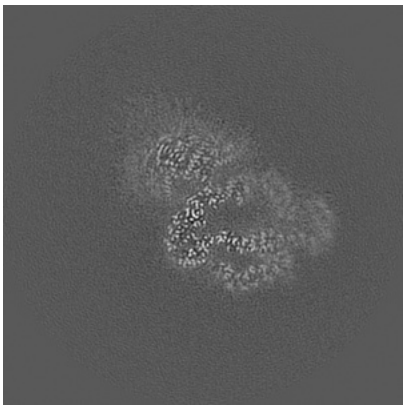


Z Index: 200

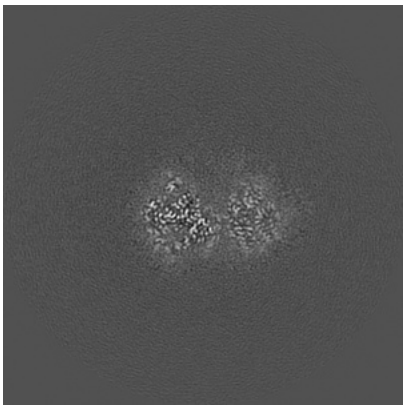
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

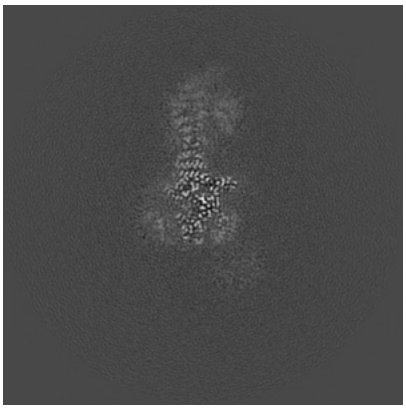
6.3.1 Primary map



X Index: 194

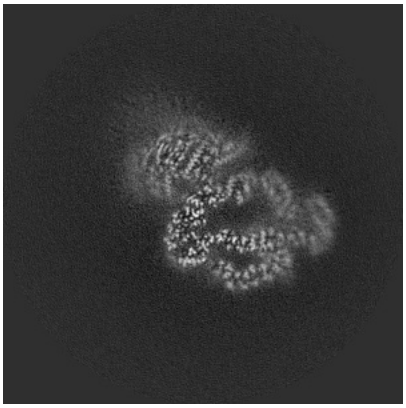


Y Index: 183

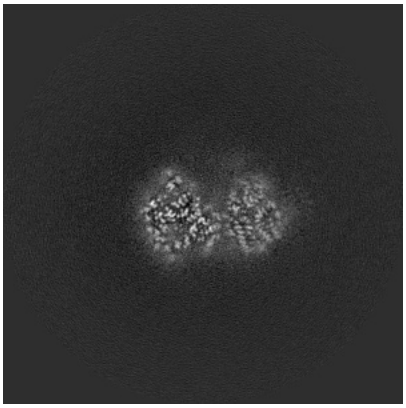


Z Index: 164

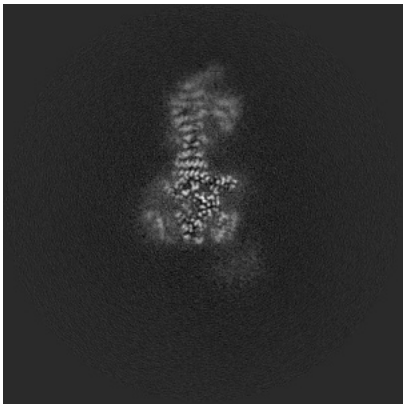
6.3.2 Raw map



X Index: 194



Y Index: 183



Z Index: 164

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

6.4 Orthogonal surface views (i)

6.4.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.015. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.4.2 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.

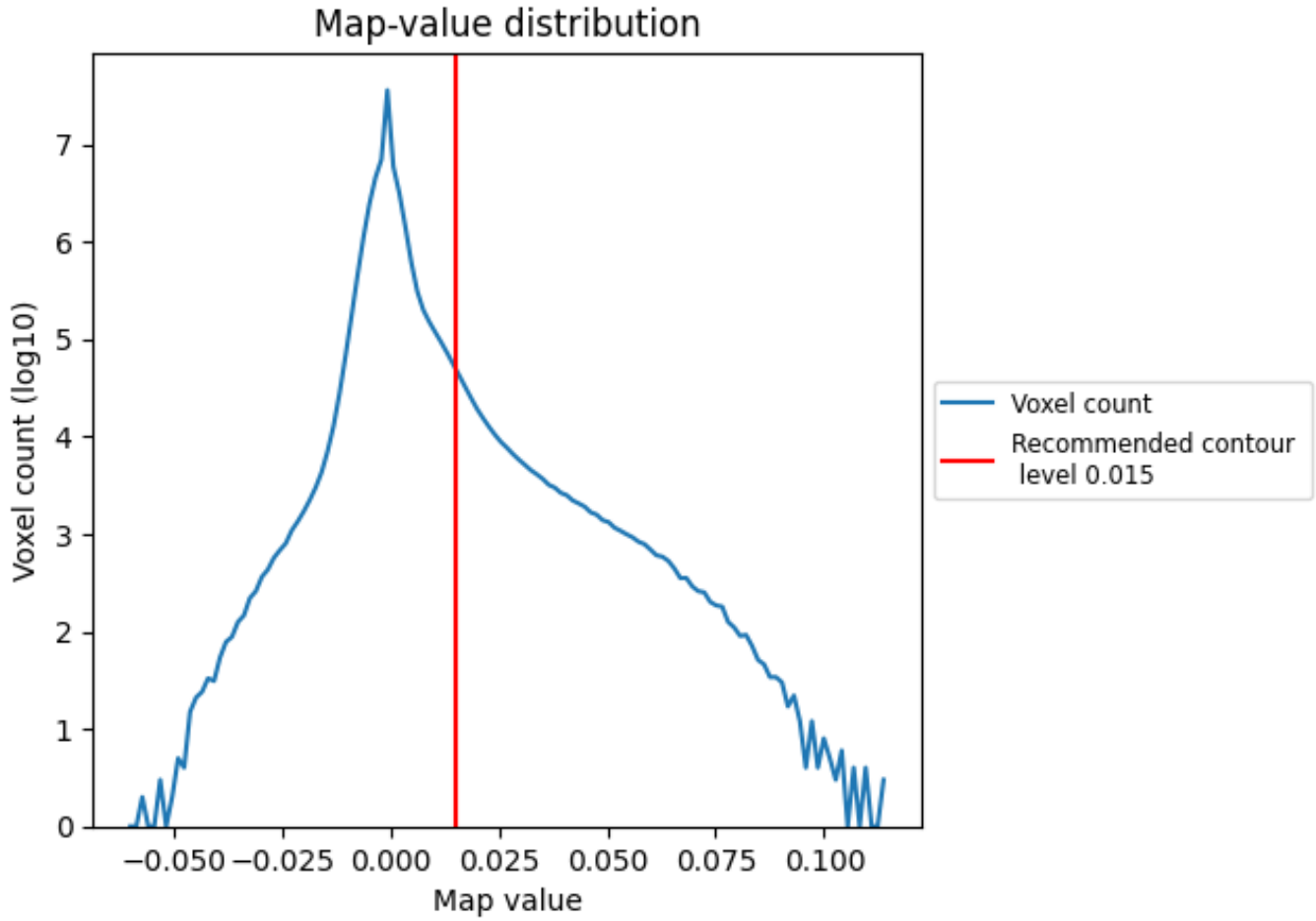
6.5 Mask visualisation (i)

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

7 Map analysis

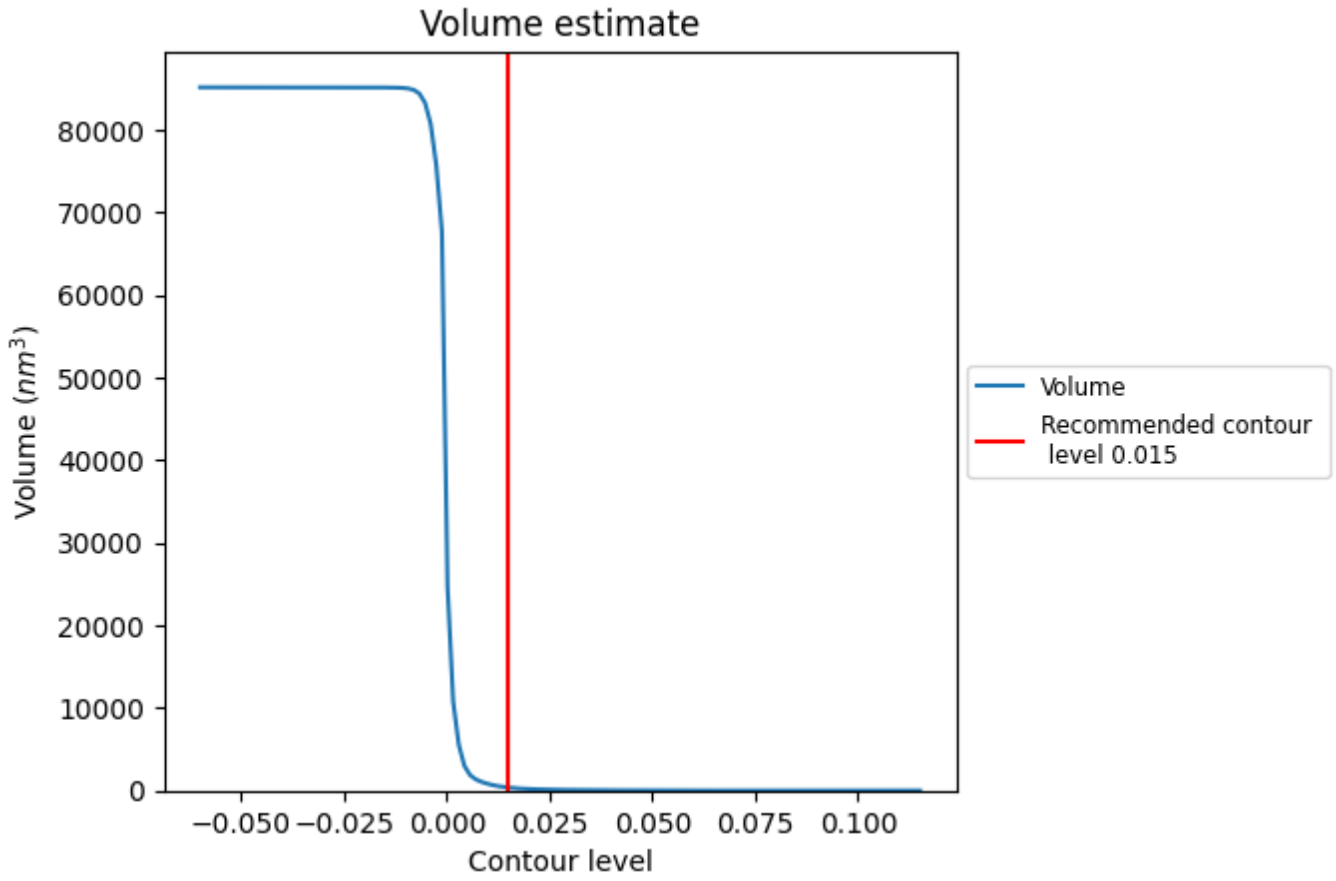
This section contains the results of statistical analysis of the map.

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.

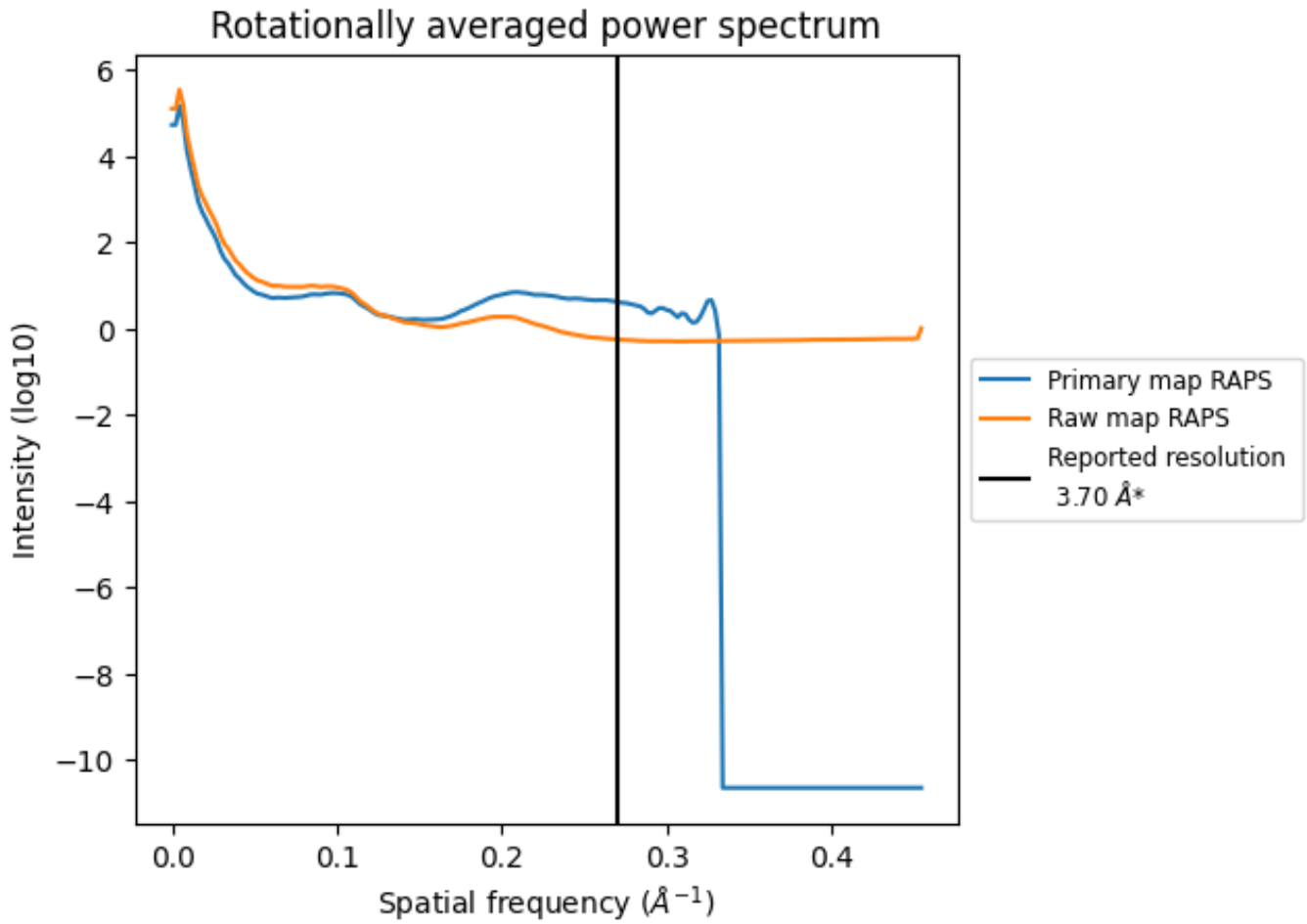
7.2 Volume estimate



The volume at the recommended contour level is 363 nm^3; this corresponds to an approximate mass of 328 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)

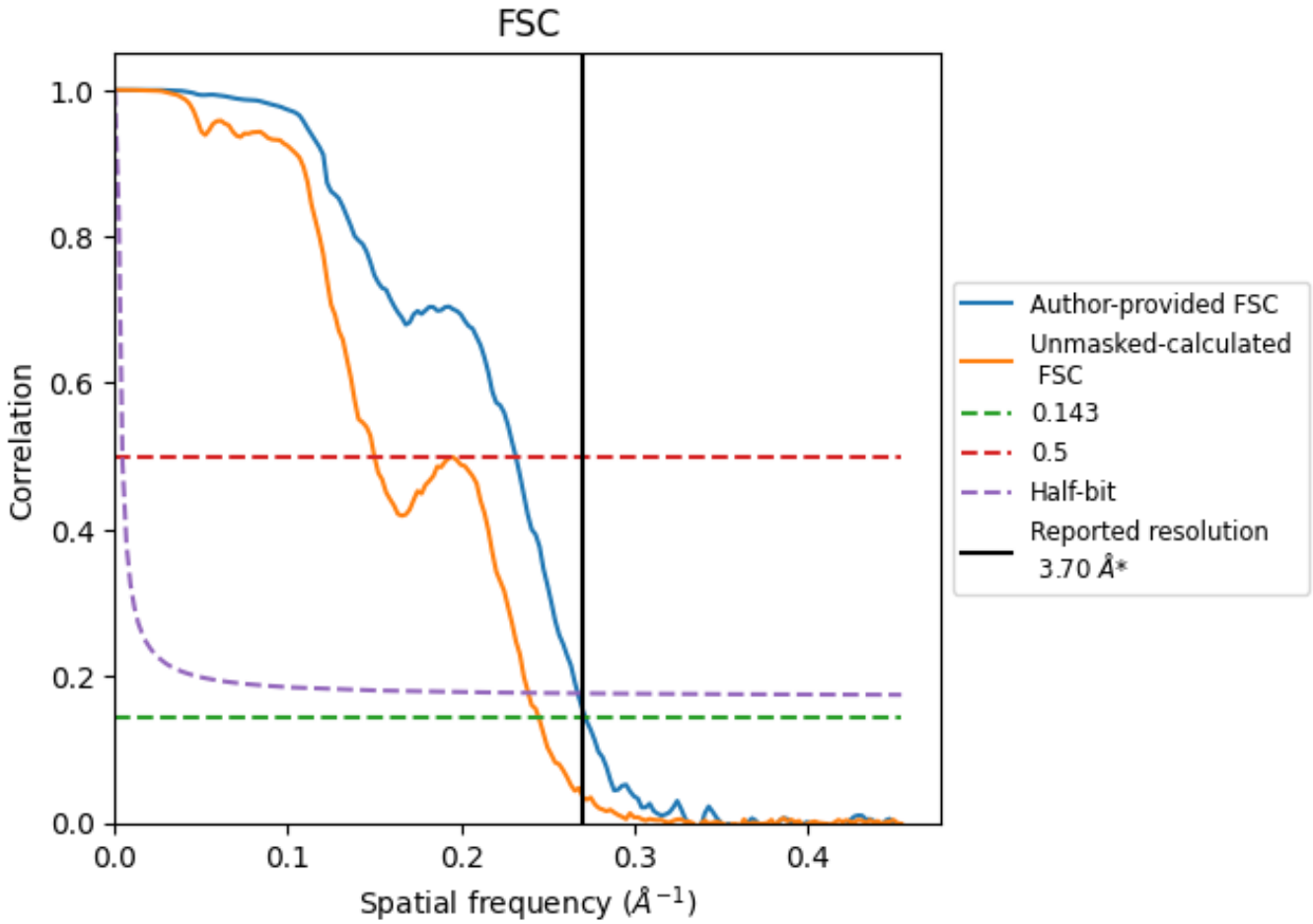


*Reported resolution corresponds to spatial frequency of 0.270 Å^{-1}

8 Fourier-Shell correlation

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 0.270 Å^{-1}

8.2 Resolution estimates (i)

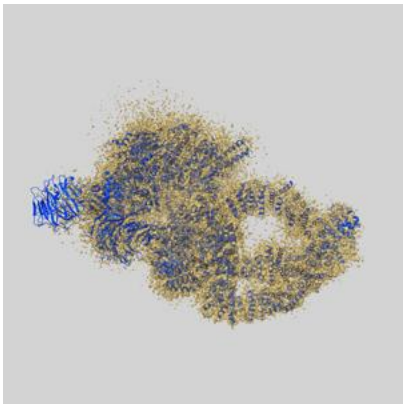
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.70	-	-
Author-provided FSC curve	3.68	4.32	3.74
Unmasked-calculated*	4.08	6.67	4.18

*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 4.08 differs from the reported value 3.7 by more than 10 %

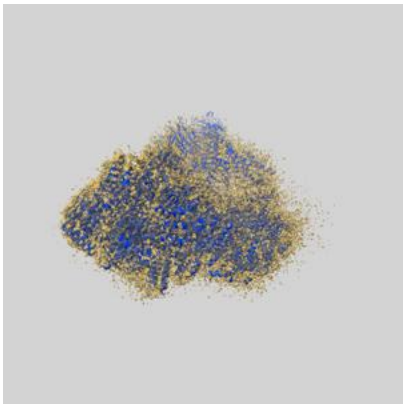
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-34520 and PDB model 8H7G. Per-residue inclusion information can be found in section 3 on page 9.

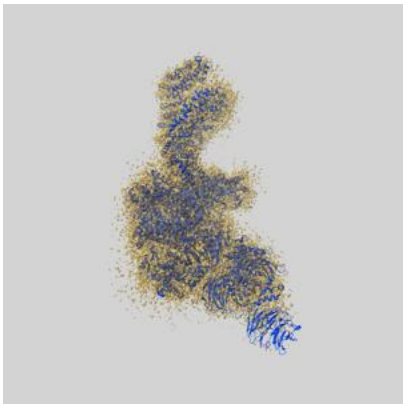
9.1 Map-model overlay



X



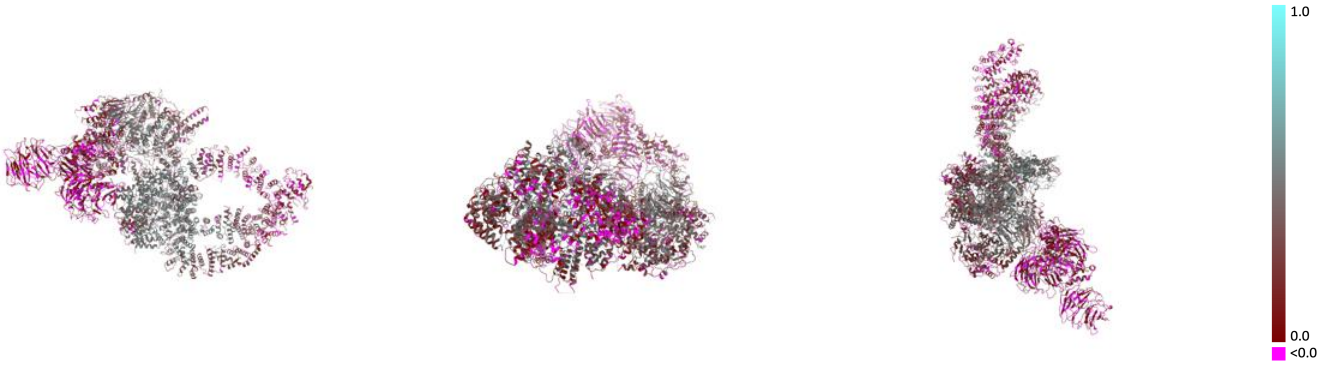
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.015 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.

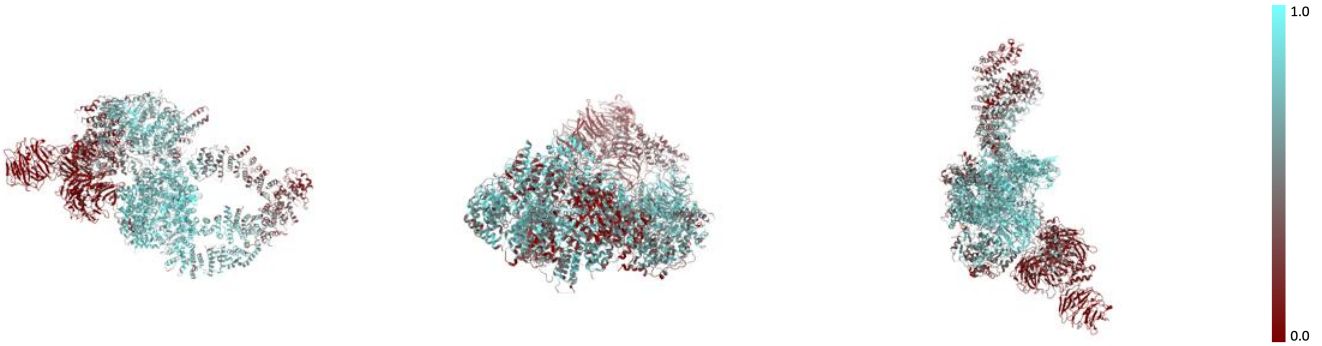
9.2 Q-score mapped to coordinate model



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.

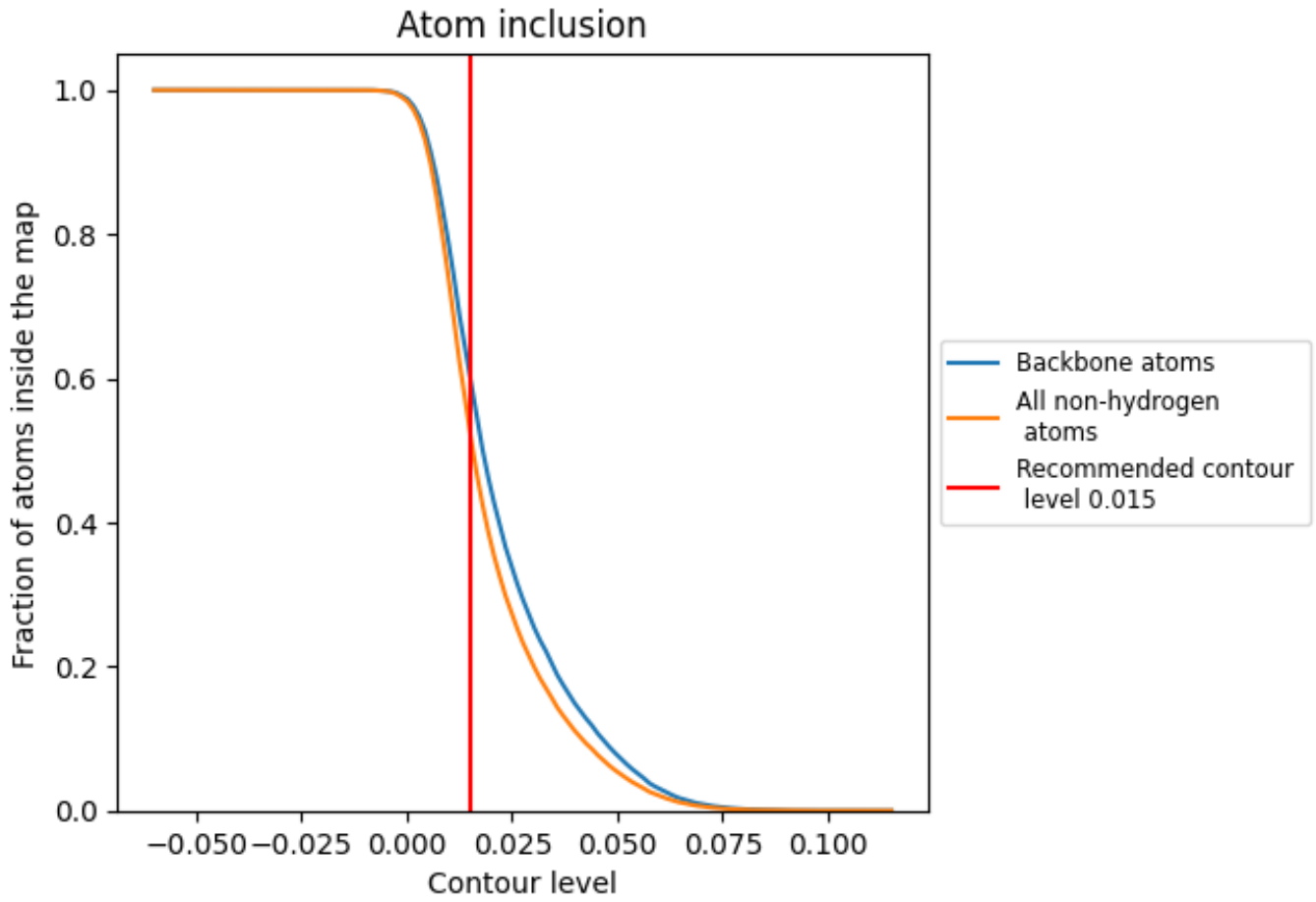
9.3 Atom inclusion mapped to coordinate model



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 (0.015).

9.4 Atom inclusion (i)



At the recommended contour level, 60% of all backbone atoms, 53% 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 (0.015) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.5260	0.2730
A	0.0922	0.0670
B	0.1769	0.0950
C	0.6581	0.3250
D	0.5242	0.2810
E	0.4648	0.2550
G	0.6703	0.3940
H	0.6185	0.3430
I	0.6446	0.3450
K	0.3868	0.2050
L	0.5460	0.2970
M	0.6842	0.3640
O	0.7197	0.3750
R	0.6857	0.3600
X	0.2000	0.1870