Full wwPDB EM Validation Report (i)

Jan 16, 2025 – 07:10 am GMT

PDB ID	:	8CQ2
EMDB ID	:	EMD-16793
Title	:	Photorhabdus luminescens TcdA1 prepore-to-pore intermediate, C16S, C20S, C870S, T1279C mutant
Authors	:	Nganga, P.N.; Roderer, D.; Belyy, A.; Prumbaum, D.; Raunser, S.
Deposited on	:	2023-03-03
Resolution	:	3.60 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 (i) 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 (i)) were used in the production of this report:

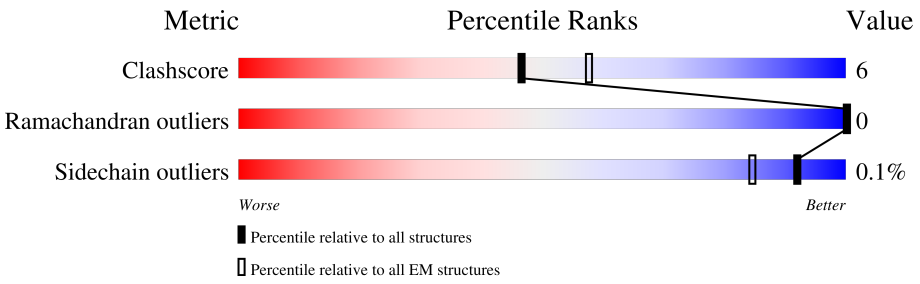
EMDB validation analysis	:	0.0.1.dev113
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.40

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 3.60 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	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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	A	2535	71% 13% 16%
1	B	2535	71% 12% 16%
1	C	2535	72% 12% 16%
1	D	2535	71% 12% 16%
1	E	2535	72% 12% 16%

2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 84390 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 TcdA1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	2122	16878	10693	2868	3262	55	0	0
1	B	2122	16878	10693	2868	3262	55	0	0
1	C	2122	16878	10693	2868	3262	55	0	0
1	D	2122	16878	10693	2868	3262	55	0	0
1	E	2122	16878	10693	2868	3262	55	0	0

There are 115 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-18	MET	-	initiating methionine	UNP Q9RN43
A	-17	ALA	-	expression tag	UNP Q9RN43
A	-16	HIS	-	expression tag	UNP Q9RN43
A	-15	HIS	-	expression tag	UNP Q9RN43
A	-14	HIS	-	expression tag	UNP Q9RN43
A	-13	HIS	-	expression tag	UNP Q9RN43
A	-12	HIS	-	expression tag	UNP Q9RN43
A	-11	HIS	-	expression tag	UNP Q9RN43
A	-10	SER	-	expression tag	UNP Q9RN43
A	-9	SER	-	expression tag	UNP Q9RN43
A	-8	GLY	-	expression tag	UNP Q9RN43
A	-7	LEU	-	expression tag	UNP Q9RN43
A	-6	GLU	-	expression tag	UNP Q9RN43
A	-5	VAL	-	expression tag	UNP Q9RN43
A	-4	LEU	-	expression tag	UNP Q9RN43
A	-3	PHE	-	expression tag	UNP Q9RN43
A	-2	GLN	-	expression tag	UNP Q9RN43
A	-1	GLY	-	expression tag	UNP Q9RN43
A	0	PRO	-	expression tag	UNP Q9RN43
A	16	SER	CYS	engineered mutation	UNP Q9RN43

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Chain	Residue	Modelled	Actual	Comment	Reference
A	20	SER	CYS	engineered mutation	UNP Q9RN43
A	870	SER	CYS	engineered mutation	UNP Q9RN43
A	1279	CYS	THR	engineered mutation	UNP Q9RN43
B	-18	MET	-	initiating methionine	UNP Q9RN43
B	-17	ALA	-	expression tag	UNP Q9RN43
B	-16	HIS	-	expression tag	UNP Q9RN43
B	-15	HIS	-	expression tag	UNP Q9RN43
B	-14	HIS	-	expression tag	UNP Q9RN43
B	-13	HIS	-	expression tag	UNP Q9RN43
B	-12	HIS	-	expression tag	UNP Q9RN43
B	-11	HIS	-	expression tag	UNP Q9RN43
B	-10	SER	-	expression tag	UNP Q9RN43
B	-9	SER	-	expression tag	UNP Q9RN43
B	-8	GLY	-	expression tag	UNP Q9RN43
B	-7	LEU	-	expression tag	UNP Q9RN43
B	-6	GLU	-	expression tag	UNP Q9RN43
B	-5	VAL	-	expression tag	UNP Q9RN43
B	-4	LEU	-	expression tag	UNP Q9RN43
B	-3	PHE	-	expression tag	UNP Q9RN43
B	-2	GLN	-	expression tag	UNP Q9RN43
B	-1	GLY	-	expression tag	UNP Q9RN43
B	0	PRO	-	expression tag	UNP Q9RN43
B	16	SER	CYS	engineered mutation	UNP Q9RN43
B	20	SER	CYS	engineered mutation	UNP Q9RN43
B	870	SER	CYS	engineered mutation	UNP Q9RN43
B	1279	CYS	THR	engineered mutation	UNP Q9RN43
C	-18	MET	-	initiating methionine	UNP Q9RN43
C	-17	ALA	-	expression tag	UNP Q9RN43
C	-16	HIS	-	expression tag	UNP Q9RN43
C	-15	HIS	-	expression tag	UNP Q9RN43
C	-14	HIS	-	expression tag	UNP Q9RN43
C	-13	HIS	-	expression tag	UNP Q9RN43
C	-12	HIS	-	expression tag	UNP Q9RN43
C	-11	HIS	-	expression tag	UNP Q9RN43
C	-10	SER	-	expression tag	UNP Q9RN43
C	-9	SER	-	expression tag	UNP Q9RN43
C	-8	GLY	-	expression tag	UNP Q9RN43
C	-7	LEU	-	expression tag	UNP Q9RN43
C	-6	GLU	-	expression tag	UNP Q9RN43
C	-5	VAL	-	expression tag	UNP Q9RN43
C	-4	LEU	-	expression tag	UNP Q9RN43
C	-3	PHE	-	expression tag	UNP Q9RN43

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Chain	Residue	Modelled	Actual	Comment	Reference
C	-2	GLN	-	expression tag	UNP Q9RN43
C	-1	GLY	-	expression tag	UNP Q9RN43
C	0	PRO	-	expression tag	UNP Q9RN43
C	16	SER	CYS	engineered mutation	UNP Q9RN43
C	20	SER	CYS	engineered mutation	UNP Q9RN43
C	870	SER	CYS	engineered mutation	UNP Q9RN43
C	1279	CYS	THR	engineered mutation	UNP Q9RN43
D	-18	MET	-	initiating methionine	UNP Q9RN43
D	-17	ALA	-	expression tag	UNP Q9RN43
D	-16	HIS	-	expression tag	UNP Q9RN43
D	-15	HIS	-	expression tag	UNP Q9RN43
D	-14	HIS	-	expression tag	UNP Q9RN43
D	-13	HIS	-	expression tag	UNP Q9RN43
D	-12	HIS	-	expression tag	UNP Q9RN43
D	-11	HIS	-	expression tag	UNP Q9RN43
D	-10	SER	-	expression tag	UNP Q9RN43
D	-9	SER	-	expression tag	UNP Q9RN43
D	-8	GLY	-	expression tag	UNP Q9RN43
D	-7	LEU	-	expression tag	UNP Q9RN43
D	-6	GLU	-	expression tag	UNP Q9RN43
D	-5	VAL	-	expression tag	UNP Q9RN43
D	-4	LEU	-	expression tag	UNP Q9RN43
D	-3	PHE	-	expression tag	UNP Q9RN43
D	-2	GLN	-	expression tag	UNP Q9RN43
D	-1	GLY	-	expression tag	UNP Q9RN43
D	0	PRO	-	expression tag	UNP Q9RN43
D	16	SER	CYS	engineered mutation	UNP Q9RN43
D	20	SER	CYS	engineered mutation	UNP Q9RN43
D	870	SER	CYS	engineered mutation	UNP Q9RN43
D	1279	CYS	THR	engineered mutation	UNP Q9RN43
E	-18	MET	-	initiating methionine	UNP Q9RN43
E	-17	ALA	-	expression tag	UNP Q9RN43
E	-16	HIS	-	expression tag	UNP Q9RN43
E	-15	HIS	-	expression tag	UNP Q9RN43
E	-14	HIS	-	expression tag	UNP Q9RN43
E	-13	HIS	-	expression tag	UNP Q9RN43
E	-12	HIS	-	expression tag	UNP Q9RN43
E	-11	HIS	-	expression tag	UNP Q9RN43
E	-10	SER	-	expression tag	UNP Q9RN43
E	-9	SER	-	expression tag	UNP Q9RN43
E	-8	GLY	-	expression tag	UNP Q9RN43
E	-7	LEU	-	expression tag	UNP Q9RN43

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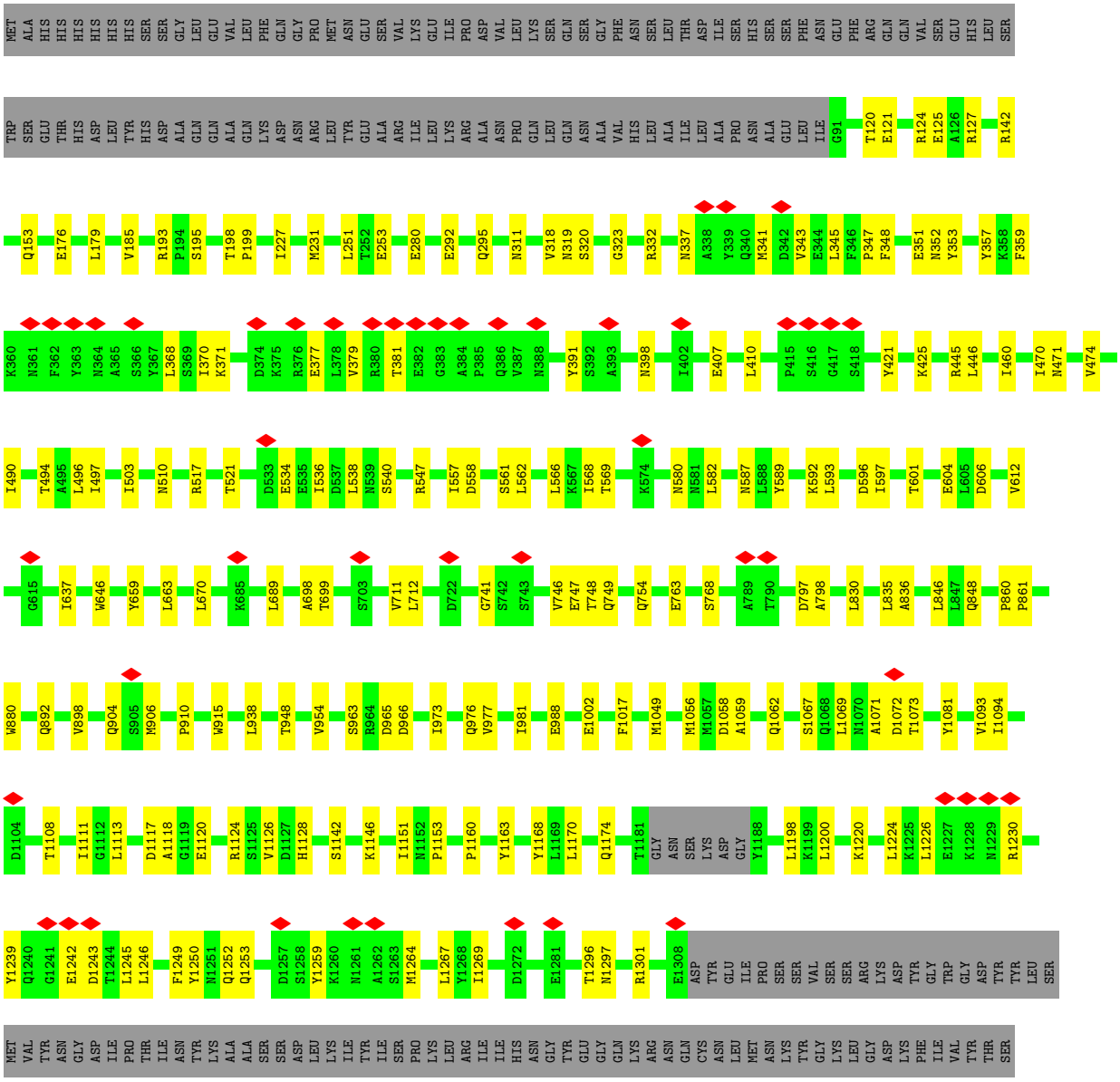
Chain	Residue	Modelled	Actual	Comment	Reference
E	-6	GLU	-	expression tag	UNP Q9RN43
E	-5	VAL	-	expression tag	UNP Q9RN43
E	-4	LEU	-	expression tag	UNP Q9RN43
E	-3	PHE	-	expression tag	UNP Q9RN43
E	-2	GLN	-	expression tag	UNP Q9RN43
E	-1	GLY	-	expression tag	UNP Q9RN43
E	0	PRO	-	expression tag	UNP Q9RN43
E	16	SER	CYS	engineered mutation	UNP Q9RN43
E	20	SER	CYS	engineered mutation	UNP Q9RN43
E	870	SER	CYS	engineered mutation	UNP Q9RN43
E	1279	CYS	THR	engineered mutation	UNP Q9RN43

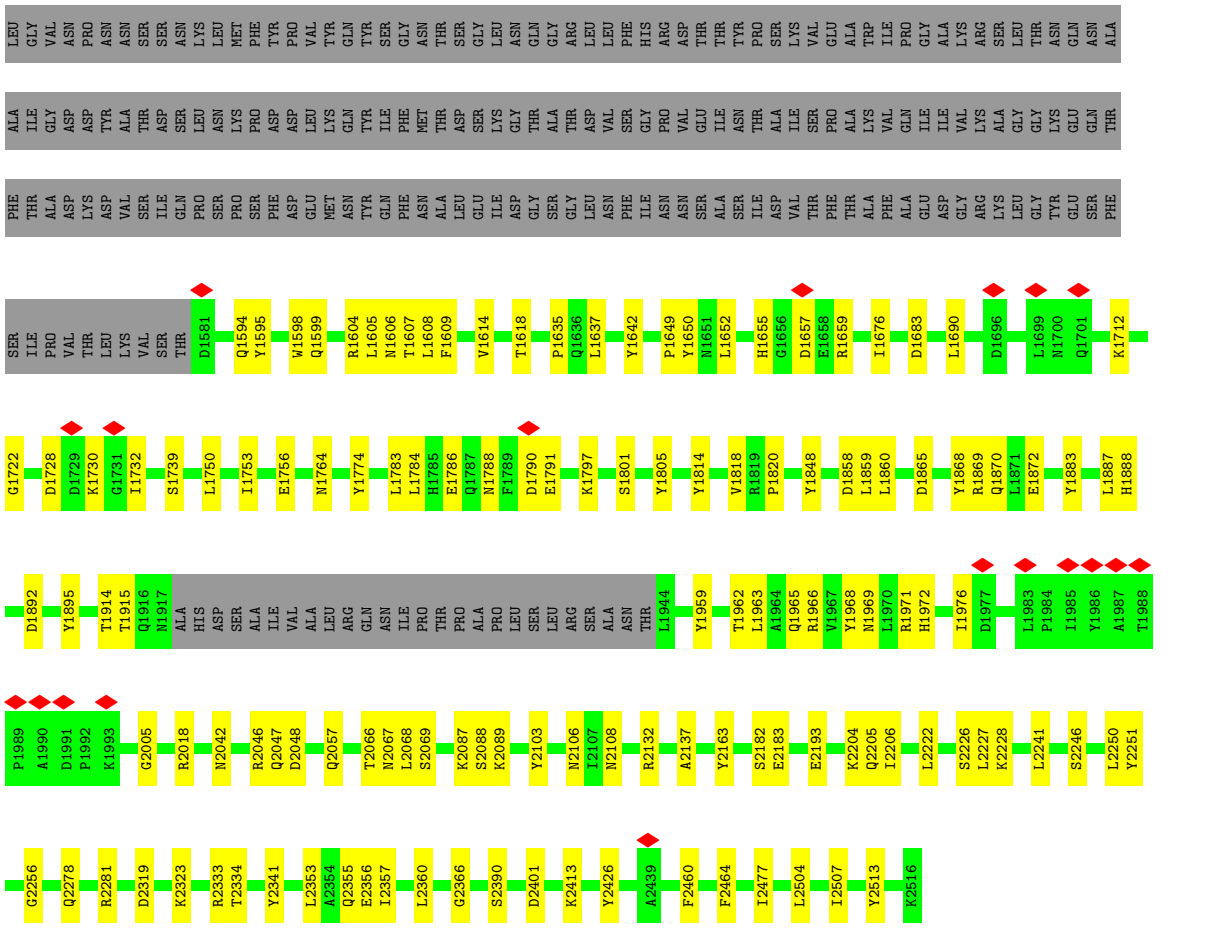
3 Residue-property plots (i)

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: TcdA1

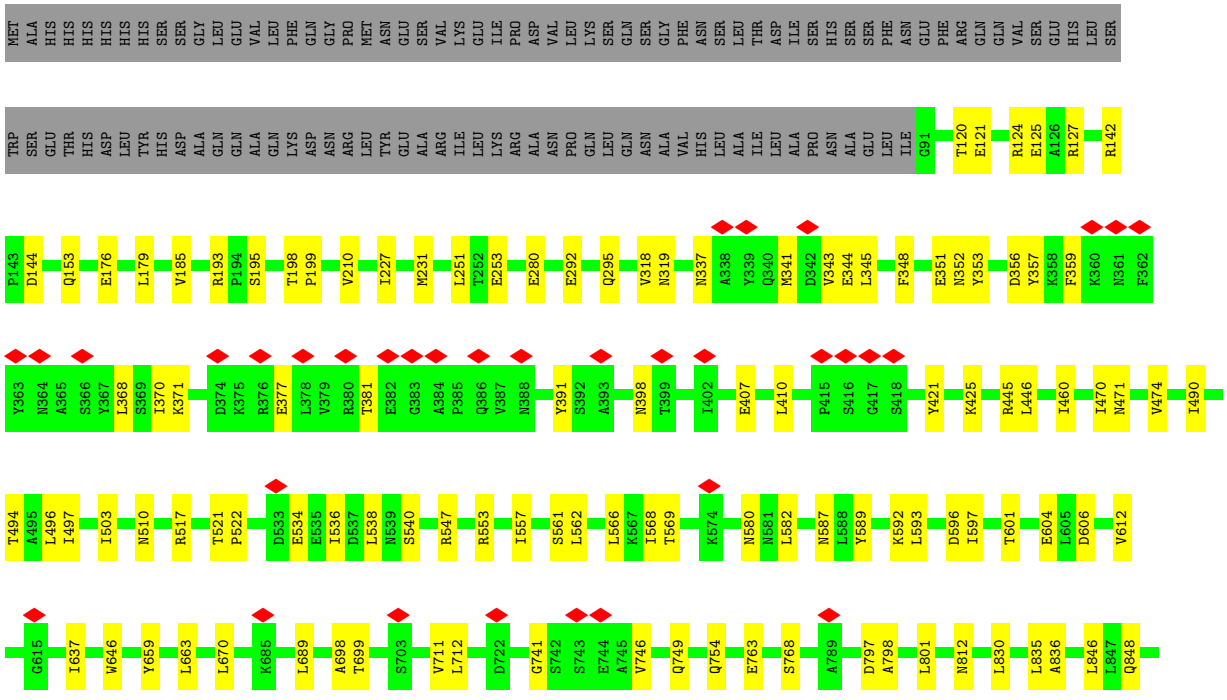
Chain A: 71% 13% 16%

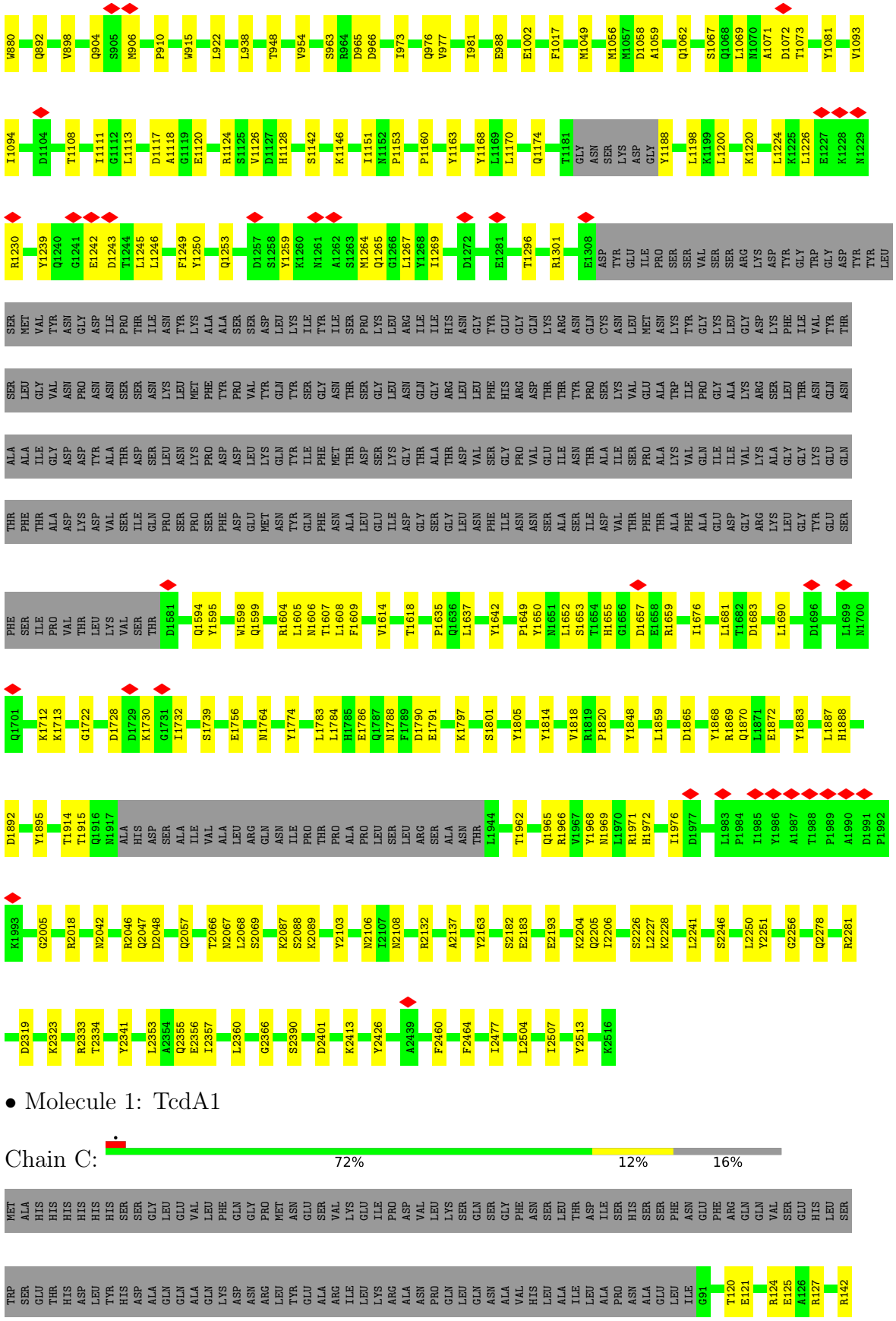




- Molecule 1: TcdA1

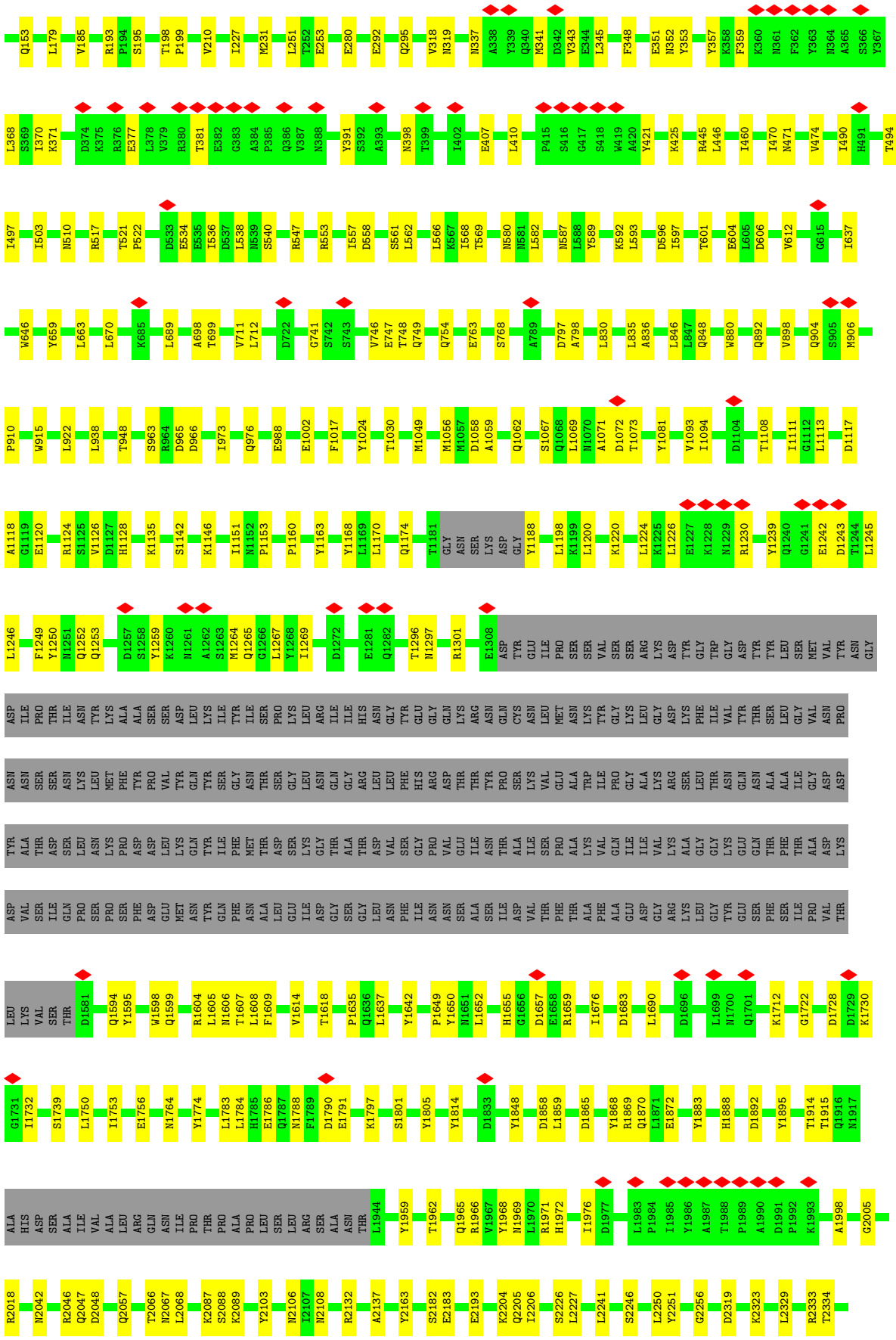
Chain B:





- Molecule 1: TcdA1

Chain C: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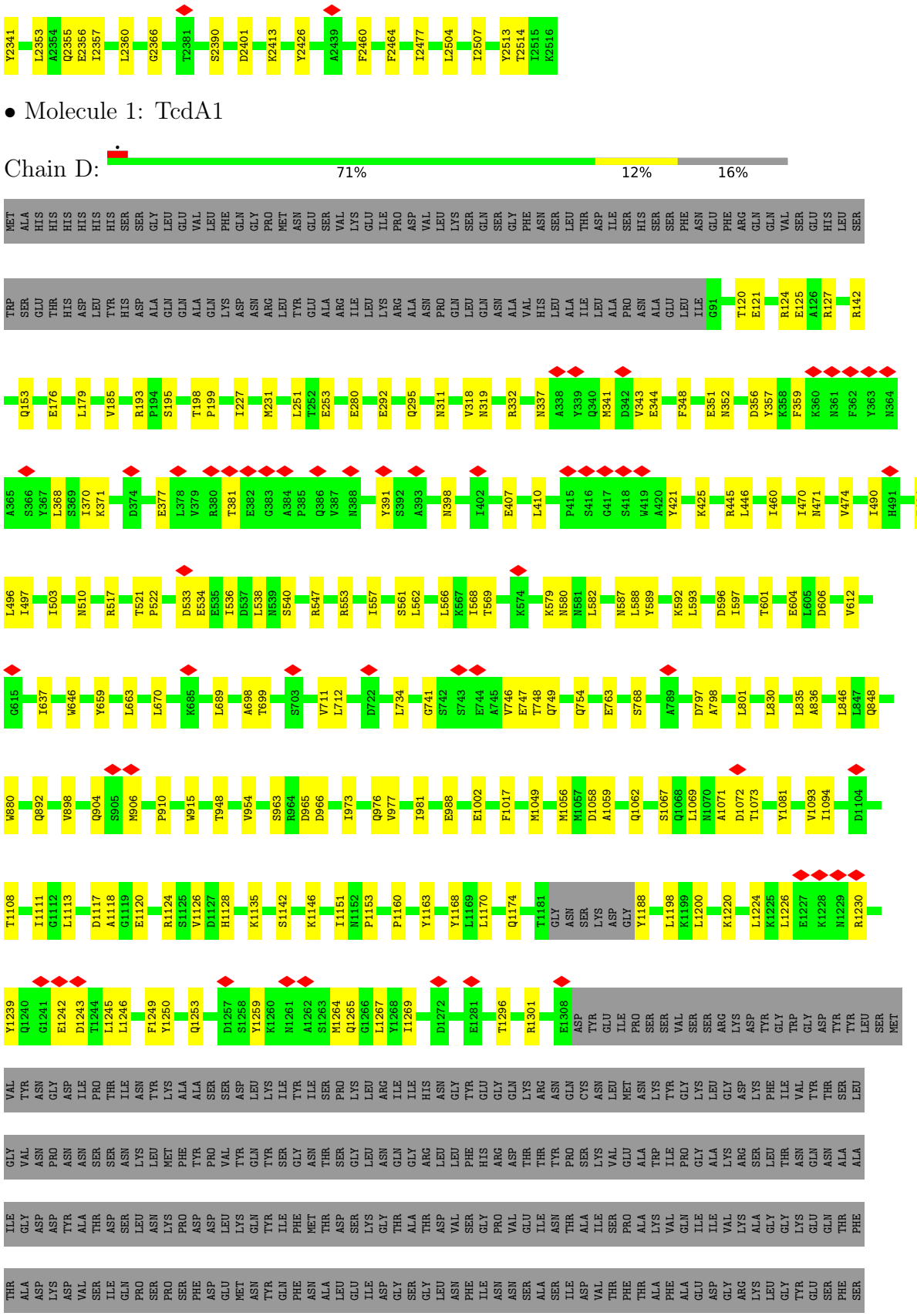
L368 S369 I370 K371 D374 K375 R376 E377 L378 V379 R380 T381 E382 G383 A384 P385 Q386 V387 N388 Y391 S392 A393 N398 T399 I402 E407 L410 P415 S416 G417 S418 W419 A420 Y421 K425 R445 L446 I460 I470 N471 V474 I490 H491 T494 A495 L496
I497 I503 N510 R517 T521 P522 D533 E534 E535 I536 D537 L538 N539 S540 R547 R553 I557 D558 S561 L562 L566 K567 I568 T569 N580 N581 L582 N587 L588 Y589 K592 L593 D596 I597 T601 E604 L605 D606 V612 G615 I637
W646 Y659 L663 L670 K685 L689 A698 T699 V711 L712 D722 G741 S742 S743 V746 E747 T748 Q749 Q754 E763 S768 A789 D797 A798 L830 L835 A836 L846 L847 Q848 W880 Q892 V898 Q904 S905 M906
P910 W915 L922 L938 T948 S963 R964 D965 D966 I973 Q976 E988 E1002 F1017 Y1024 T1030 M1049 M1056 M1057 D1058 A1059 Q1062 S1067 Q1068 L1069 N1070 A1071 D1072 T1073 Y1081 V1093 I1094 D1104 T1108 I1111 G1112 L1113 D1117
A1118 G1119 E1120 R1124 S1125 V1126 D1127 H1128 K1135 S1142 K1146 I1151 N1152 P1153 P1160 Y1163 Y1168 L1169 L1170 Q1174 T1181 GLY ASN SER LYS ASP GLY Y1188 L1198 K1199 L1200 K1220 L1224 K1225 L1226 E1227 K1228 N1229 R1230 Y1239 Q1240 G1241 E1242 D1243 T1244 L1245
L1246 F1249 Y1250 N1251 Q1252 Q1253 D1257 S1258 Y1259 K1260 N1261 A1262 S1263 M1264 Q1265 G1266 L1267 Y1268 I1269 D1272 E1281 Q1282 T1296 N1297 R1301 E1308 ASP TYR GLU ILE PRO SER SER VAL SER SER ARG LYS ASP TYR GLY TRP GLY ASP TYR TYR LEU SER MET VAL TYR ASN GLY
ASP ILE PRO THR ILE ASN TYR LYS ALA ALA SER SER ASP LEU LYS ILE TYR ILE SER PRO LYS LEU ARG ILE ILE HIS ASN GLY TYR GLU GLY GLN LYS ARG ASN GLN CYS ASN LEU MET ASN LYS TYR GLY LYS LEU LEU GLY ASP LYS PHE ILE VAL TYR THR SER LEU GLY VAL ASN PRO
ASN ASN SER SER ASN LYS LEU MET PHE TYR PRO VAL TYR GLN TYR SER GLY ASN THR SER GLY LEU ASN GLN GLY ARG LEU LEU PHE HIS ARG ASP THR THR TYR PRO SER LYS VAL GLU ALA TRP ILE PRO GLY ALA LYS ARG SER LEU THR ASN GLN ASN ALA ALA ILE GLY ASP ASP
TYR ALA THR ASP SER LEU ASN LYS PRO ASP ASP LEU LYS GLN TYR ILE PHE MET THR ASP SER LYS GLY THR ALA THR ASP VAL SER GLY PRO VAL GLU ILE ASN THR ALA ILE SER PRO ALA LYS VAL GLN ILE ILE VAL LYS ALA GLY GLY LYS GLU GLN GLN THR PHE THR ALA ASP LYS
ASP VAL SER ILE GLN PRO SER PRO SER PHE ASP GLU MET ASN TYR GLN PHE ASN ALA LEU GLU ILE ASP GLY SER GLY LEU ASN PHE ILE ASN ASN SER ALA ASN SER ILE ASP VAL THR PHE THR ALA PHE ALA GLU ASP GLY ARG LYS LEU GLY TYR GLU SER PHE SER ILE PRO VAL THR
LEU LYS VAL SER THR D1581 Q1594 Y1595 W1598 Q1599 R1604 L1605 N1606 T1607 L1608 F1609 V1614 T1618 P1635 Q1636 L1637 Y1642 P1649 Y1650 N1651 L1652 H1655 G1656 D1657 E1658 R1659 I1676 D1683 L1690 D1696 L1699 N1700 Q1701 K1712 G1722 D1728 D1729 K1730
G1731 I1732 S1739 L1750 I1753 E1756 N1764 Y1774 L1783 L1784 H1785 E1786 Q1787 N1788 F1789 D1790 E1791 K1797 S1801 Y1805 Y1814 D1833 Y1848 D1858 L1859 D1865 Y1868 R1869 Q1870 L1871 E1872 Y1883 H1888 D1892 Y1895 T1914 T1915 Q1916 N1917
ALA HIS ASP SER ALA ILE VAL ALA LEU ARG GLN ASN ILE PRO THR PRO ALA PRO LEU SER LEU ARG SER ALA ASN THR L1944 Y1959 T1962 Q1965 R1966 Y1967 Y1968 N1969 L1970 R1971 H1972 I1976 D1977 L1983 P1984 I1985 Y1986 A1987 T1988 P1989 A1990 D1991 P1992 K1993 A1998 G2005
R2018 N2042 R2046 Q2047 D2048 Q2057 T2066 N2067 L2068 K2087 S2088 K2089 Y2103 N2106 I2107 N2108 R2132 A2137 Y2163 S2182 E2183 E2193 K2204 Q2205 I2206 S2226 L2227 L2241 S2246 L2250 Y2251 G2256 D2319 K2323 L2329 R2333 T2334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• Molecule 1: TcdA1
Chain D:
71%
12%
16%
MET ALA HIS HIS HIS HIS HIS HIS SER SER GLY LEU GLU VAL LEU PHE GLN GLY PRO MET ASN GLU SER VAL LYS GLU ILE PRO ASP VAL LEU LYS SER GLN SER GLY PHE ASN SER LEU THR ASP ILE SER HIS SER SER PHE ASN GLU PHE ARG GLN GLN VAL SER GLU HIS LEU SER
TRP SER GLU THR HIS ASP LEU TYR HIS ASP ALA GLN GLN ALA GLN LYS ASP ASN ARG LEU TYR GLU ALA ARG ILE LEU LYS ARG ALA ASN PRO GLN LEU GLN ASN ALA VAL HIS LEU ALA ILE LEU ALA PRO ASN ALA GLU LEU ILE G91 T120 E121 R124 E125 A126 R127 R142
Q153 E176 L179 V185 R193 P194 S195 T198 P199 I227 M231 L251 T252 E253 E280 E292 Q295 N311 V318 N319 R332 N337 A338 Y339 Q340 M341 D342 V343 E344 F348 E351 N352 D356 Y357 K358 F359 K360 N361 F362 Y363 N364
A365 S366 Y367 L368 S369 I370 K371 D374 E377 L378 V379 R380 T381 E382 G383 A384 P385 Q386 V387 N388 Y391 S392 A393 N398 I402 E407 L410 P415 S416 G417 S418 W419 A420 Y421 K425 R445 L446 I460 I470 N471 V474 I490 H491 T494 A495
L496 I497 I503 N510 R517 T521 P522 D533 E534 E535 I536 D537 L538 N539 S540 R547 R553 I557 S561 L562 L566 K567 I568 T569 K574 K579 N580 N581 L582 N587 L588 Y589 K592 L593 D596 I597 T601 E604 L605 D606 V612
G615 I637 W646 Y659 L663 L670 K685 L689 A698 T699 S703 V711 L712 D722 L734 G741 S742 S743 E744 A745 V746 E747 T748 Q749 Q754 E763 S768 A789 D797 A798 L801 L830 L835 A836 L846 L847 Q848
W880 Q892 V898 Q904 S905 M906 P910 W915 T948 V954 S963 R964 D965 D966 I973 Q976 V977 I981 E988 E1002 F1017 M1049 M1056 M1057 D1058 A1059 Q1062 S1067 Q1068 L1069 M1070 A1071 D1072 T1073 Y1081 V1093 I1094 D1104
T1108 I1111 G1112 L1113 D1117 A1118 G1119 E1120 R1124 S1125 V1126 D1127 H1128 K1135 S1142 K1146 I1151 N1152 P1153 P1160 Y1163 Y1168 L1169 L1170 Q1174 T1181 GLY ASN SER LYS ASP GLY Y1188 L1198 K1199 L1200 K1220 L1224 K1225 L1226 E1227 K1228 N1229 R1230
Y1239 Q1240 G1241 E1242 D1243 T1244 L1245 L1246 F1249 Y1250 Q1253 D1257 S1258 Y1259 K1260 N1261 A1262 S1263 M1264 Q1265 G1266 L1267 Y1268 I1269 D1272 E1281 T1296 R1301 E1308 ASP TYR GLU ILE PRO SER SER VAL SER SER ARG LYS ASP TYR GLY TRP GLY ASP TYR TYR LEU SER MET
VAL TYR ASN GLY ASP ILE PRO THR ILE ASN TYR LYS ALA ALA SER SER ASP LEU LYS LYS ILE TYR ILE SER PRO LYS LEU ARG ILE ILE HIS ASN GLY TYR GLU GLY GLN LYS ARG ASN GLN CYS ASN LEU MET ASN LYS TYR GLY LYS LEU GLY ASP LYS PHE ILE VAL TYR THR SER LEU
GLY VAL ASN PRO ASN ASN SER SER ASN LYS LEU MET PHE TYR PRO VAL TYR GLN TYR SER GLY ASN THR SER GLY LYS LEU ASN GLN GLY ARG LEU LEU PHE HIS GLY ARG ASP THR THR TYR PRO SER LYS VAL GLU ALA TRP ILE PRO GLY ALA LYS ARG SER LEU THR ASN GLN ASN ALA ALA
ILE GLY ASP ASP TYR ALA THR ASP SER LEU ASN LYS PRO ASP ASP LEU LYS GLN TYR ILE PHE MET THR ASP SER LYS GLY THR ALA THR ASP VAL SER GLY PRO VAL GLU ILE ASN THR ALA ILE SER PRO ALA LYS VAL GLN ILE ILE VAL LYS ALA GLY GLY LYS GLU GLN THR PHE
THR ALA ASP LYS ASP VAL SER ILE GLN PRO SER PRO SER PHE ASP GLU MET ASN TYR GLN PHE ASN ALA LEU GLU GLU ILE ASP GLY SER GLY LEU ASN PHE ILE ASN ASN SER ALA SER ILE ASP VAL THR PHE THR ALA PHE ALA GLU ASP GLY ARG LYS LEU GLY TYR GLU SER PHE SER

ILE PRO VAL THR LEU LYS VAL SER THR D1581 Q1594 Y1595 W1598 Q1599 R1604 L1605 N1606 T1607 L1608 F1609 V1614 T1618 P1635 Q1636 L1637 Y1642 P1649 Y1650 N1651 L1652 H1655 G1656 D1657 E1658 R1659 I1676 D1683 L1690 D1696 L1699 N1700 Q1701 K1712 G1722

D1728 D1729 K1730 G1731 I1732 S1739 E1756 N1764 Y1774 L1783 L1784 H1785 E1786 Q1787 N1788 F1789 D1790 E1791 R1794 K1797 Y1798 S1801 Y1805 Y1814 V1818 R1819 P1820 D1833 Y1848 D1858 L1859 D1865 Y1868 R1869 Q1870 L1871 E1872 Y1883 L1887 H1888

D1892 Y1895 T1914 T1915 Q1916 N1917 ALA HIS ASP SER ALA ILE VAL ALA LEU ARG GLN ASN ILE PRO THR PRO ALA PRO LEU SER LEU ARG SER ALA ASN THR L1944 Y1959 T1962 L1963 A1964 Q1965 R1966 V1967 Y1968 N1969 L1970 R1971 H1972 I1976 D1977 L1983 P1984 I1985 Y1986 A1987 T1988 P1989

A1990 D1991 P1992 K1993 G2005 R2018 N2042 R2046 Q2047 D2048 Q2057 T2066 N2067 L2068 K2087 S2088 K2089 Y2103 N2106 I2107 N2108 R2132 A2137 Y2163 S2182 E2183 E2193 K2204 Q2205 I2206 S2226 L2227 K2228 L2241 F2245 S2246 L2250 Y2251 G2256

D2319 K2323 K2326 R2333 T2334 Y2341 L2353 A2354 Q2355 E2356 I2357 L2360 G2366 T2381 S2390 D2401 K2413 Y2426 A2439 F2460 F2464 I2477 L2504 I2507 Y2513 K2516

- Molecule 1: TcdA1

Chain E: 72% 12% 16%

MET ALA HIS HIS HIS HIS HIS SER SER GLY LEU GLU VAL LEU PHE GLN GLY PRO MET ASN GLU SER VAL LYS GLU ILE PRO ASP VAL LEU LYS SER GLN SER GLY PHE ASN SER LEU THR ASP ILE SER HIS SER SER PHE ASN GLU PHE ARG GLN GLN VAL SER GLU HIS LEU SER

TRP SER GLU THR HIS ASP LEU TYR HIS ASP ALA GLN GLN ALA GLN LYS ASP ASN ARG LEU TYR GLU ALA ARG ILE LEU LYS ARG ALA ASN PRO GLN LEU GLN ASN ALA VAL HIS LEU ALA ILE LEU ALA PRO ASN ALA GLU LEU ILE G91 T120 E121 R124 E125 A126 R127 R142

Q153 E176 L179 V185 R193 P194 S195 T198 P199 I227 M231 L251 T252 E253 E280 E292 Q295 N311 V318 N319 R332 N337 A338 Y339 Q340 M341 D342 V343 E344 L345 F348 E351 N352 Y353 Y357 K358 F359 K360 N361 F362 Y363

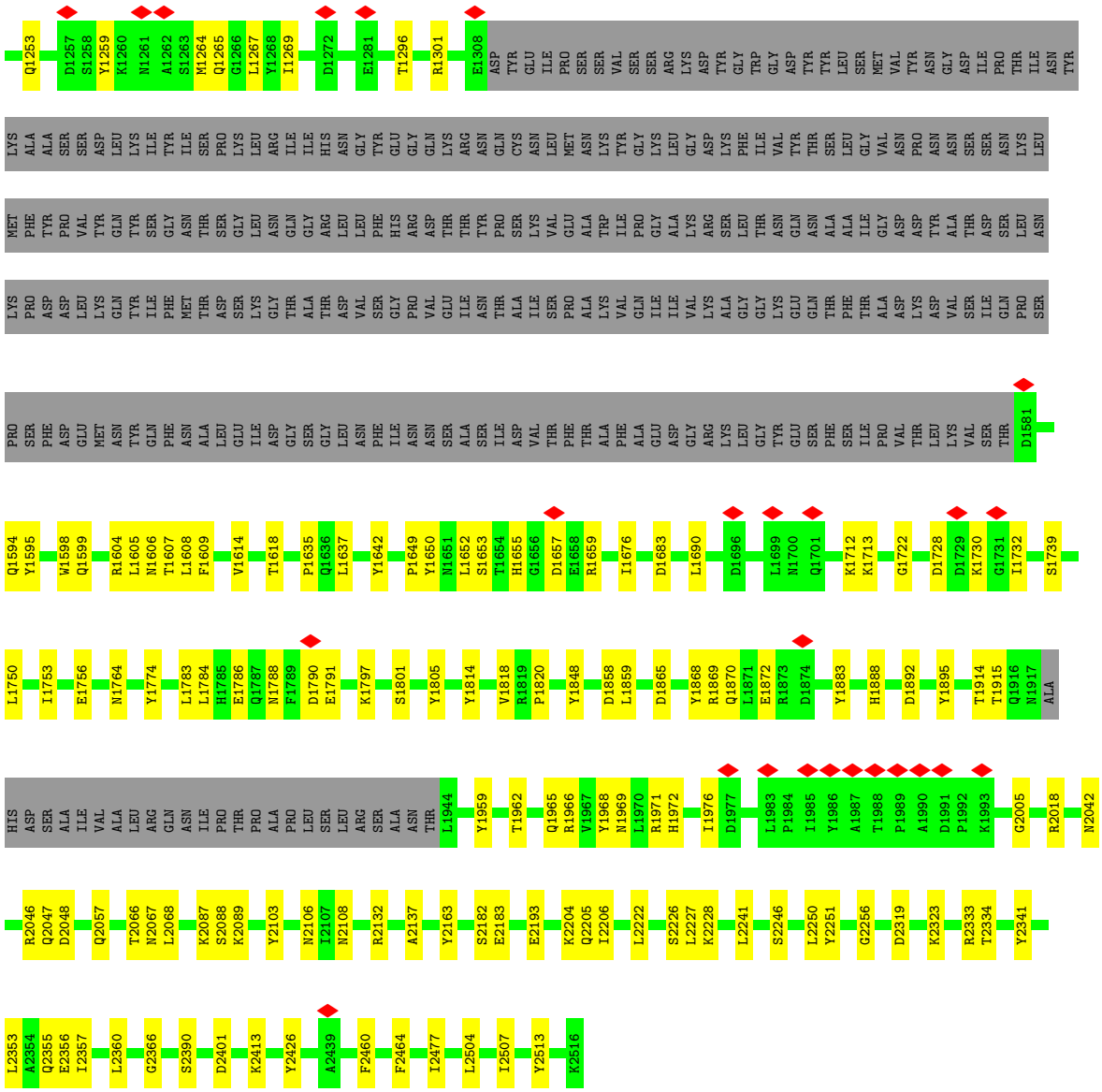
N364 A365 S366 Y367 L368 S369 I370 K371 D374 K375 R376 E377 L378 V379 R380 T381 E382 G383 A384 P385 Q386 V387 N388 Y391 S392 A393 N398 I402 E407 L410 P415 S416 G417 S418 Y421 K425 R445 L446 I460 I470 N471 V474 I490 H491 T494

A495 L496 I497 I503 N510 R517 T521 D533 E534 E535 I536 D537 L538 N539 S540 R547 I557 D558 S561 L562 L566 K567 I568 T569 K574 N580 N581 L582 N587 L588 Y589 K592 L593 D596 I597 T601 E604 L605 D606 V612 G615

I637 W646 Y659 L663 L670 K685 L689 A698 T699 V711 L712 D722 G741 S742 S743 V746 E747 T748 Q749 Q754 E763 S768 A789 D797 A798 L801 L830 L835 A836 L846 L847 Q848 W880 Q892 V898 Q904

S905 M906 P910 W915 T948 V954 S963 R964 D965 D966 I973 Q976 E988 E1002 F1017 M1049 M1056 M1057 D1058 A1059 Q1062 S1067 Q1068 L1069 N1070 A1071 D1072 T1073 Y1081 V1093 I1094 D1104 T1108 I1111 G1112 L1113 D1117 A1118 G1119 E1120

R1124 S1125 V1126 D1127 H1128 S1142 K1146 I1147 I1151 N1152 P1153 P1160 Y1163 Y1168 L1169 L1170 Q1174 T1181 GLY ASN SER LYS ASP GLY Y1188 L1198 K1199 L1200 K1220 L1224 K1225 L1226 E1227 K1228 N1229 R1230 Y1239 Q1240 G1241 E1242 D1243 T1244 L1245 L1246 F1249 Y1250


Q1253 D1257 S1258 Y1259 K1260 N1261 A1262 S1263 M1264 Q1265 G1266 L1267 Y1268 I1269 D1272 E1281 T1296 R1301 E1308
ASP TYR GLU ILE PRO SER SER VAL SER SER ARG LYS ASP TYR GLY TRP GLY ASP TYR TYR LEU SER MET VAL TYR ASN GLY ASP ILE PRO THR ILE ASN TYR
LYS ALA ALA SER SER ASP LEU LYS ILE TYR ILE SER PRO LYS LEU ARG ILE ILE HIS ASN GLY TYR GLU GLY GLN LYS ARG ASN GLN CYS ASN LEU MET ASN LYS TYR GLY LYS LEU GLY ASP LYS PHE ILE VAL TYR THR SER LEU GLY VAL ASN PRO ASN ASN SER SER ASN LYS LEU
MET PHE TYR PRO VAL TYR GLN TYR SER GLY ASN THR SER GLY LEU ASN GLN GLY ARG LEU LEU PHE HIS ARG ASP THR THR TYR PRO SER LYS VAL GLU ALA TRP ILE PRO GLY ALA LYS ARG SER LEU THR ASN GLN ASN ALA ALA ILE GLY ASP ASP TYR ALA THR ASP SER LEU ASN
LYS PRO ASP ASP LEU LYS GLN TYR ILE PHE MET THR ASP SER LYS GLY THR ALA THR ASP VAL SER GLY PRO VAL GLU ILE ASN THR ALA ILE SER PRO ALA LYS VAL GLN ILE ILE VAL LYS ALA GLY GLY LYS GLU GLN THR PHE THR ALA ASP LYS ASP VAL SER ILE GLN PRO SER
PRO SER PHE ASP GLU MET ASN TYR GLN PHE ASN ALA LEU GLU ILE ASP GLY SER GLY LEU ASN PHE ILE ASN ASN SER ALA SER ILE ASP VAL THR PHE THR ALA PHE ALA GLU ASP GLY ARG LYS LEU GLY TYR GLU SER PHE SER ILE PRO VAL THR LEU LYS VAL SER THR D1581
Q1594 Y1595 W1598 Q1599 R1604 L1605 N1606 T1607 L1608 F1609 V1614 T1618 P1635 Q1636 L1637 Y1642 P1649 Y1650 N1651 L1652 S1653 T1654 H1655 G1656 D1657 E1658 R1659 I1676 D1683 L1690 D1696 L1699 N1700 Q1701 K1712 K1713 G1722 D1728 D1729 K1730 G1731 I1732 S1739
L1750 I1753 E1756 N1764 Y1774 L1783 L1784 H1785 E1786 Q1787 N1788 F1789 D1790 E1791 K1797 S1801 Y1805 Y1814 V1818 R1819 P1820 Y1848 D1858 L1859 D1865 Y1868 R1869 Q1870 L1871 E1872 R1873 D1874 Y1883 H1888 D1892 Y1895 T1914 T1915 Q1916 N1917 ALA
HIS ASP SER ALA ILE VAL ALA LEU ARG GLN ASN ILE PRO THR PRO ALA PRO LEU SER LEU ARG SER ALA ASN THR L1944 Y1959 T1962 Q1965 R1966 V1967 Y1968 N1969 L1970 R1971 H1972 I1976 D1977 L1983 P1984 I1985 Y1986 A1987 T1988 P1989 A1990 D1991 P1992 K1993 G2005 R2018 N2042
R2046 Q2047 D2048 Q2057 T2066 N2067 L2068 K2087 S2088 K2089 Y2103 N2106 I2107 N2108 R2132 A2137 Y2163 S2182 E2183 E2193 K2204 Q2205 I2206 L2222 S2226 L2227 K2228 L2241 S2246 L2250 Y2251 G2256 D2319 K2323 R2333 T2334 Y2341
L2353 A2354 Q2355 E2356 I2357 L2360 G2366 S2390 D2401 K2413 Y2426 A2439 F2460 F2464 I2477 L2504 I2507 Y2513 K2516

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C5	Depositor
Number of particles used	80710	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	78	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.135	Depositor
Minimum map value	-0.063	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.015	Depositor
Map size (Å)	337.91998, 337.91998, 337.91998	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.87999994, 0.87999994, 0.87999994	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| >5$	RMSZ	$\#\|Z\| >5$
1	A	0.46	0/17239	0.59	0/23414
1	B	0.46	0/17239	0.59	0/23414
1	C	0.46	0/17239	0.59	0/23414
1	D	0.46	0/17239	0.59	0/23414
1	E	0.46	0/17239	0.59	0/23414
All	All	0.46	0/86195	0.59	0/117070

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	16878	0	16508	221	0
1	B	16878	0	16508	219	0
1	C	16878	0	16508	217	0
1	D	16878	0	16508	222	0
1	E	16878	0	16508	214	0
All	All	84390	0	82540	987	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 (987) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2182:SER:HG	1:E:1067:SER:HG	1.15	0.85
1:B:540:SER:HB2	1:C:848:GLN:HE22	1.40	0.85
1:A:848:GLN:HE22	1:E:540:SER:HB2	1.41	0.84
1:D:540:SER:HB2	1:E:848:GLN:HE22	1.40	0.84
1:C:540:SER:HB2	1:D:848:GLN:HE22	1.42	0.84
1:A:540:SER:HB2	1:B:848:GLN:HE22	1.42	0.83
1:B:1067:SER:HG	1:E:2182:SER:HG	1.15	0.83
1:C:2205:GLN:OE1	1:D:2088:SER:OG	1.97	0.83
1:D:2205:GLN:OE1	1:E:2088:SER:OG	1.97	0.83
1:A:1067:SER:HG	1:D:2182:SER:HG	1.18	0.83
1:B:2205:GLN:OE1	1:C:2088:SER:OG	1.97	0.82
1:A:2205:GLN:OE1	1:B:2088:SER:OG	1.97	0.82
1:A:2088:SER:OG	1:E:2205:GLN:OE1	1.97	0.82
1:A:2204:LYS:O	1:B:2087:LYS:NZ	2.16	0.79
1:B:2182:SER:HG	1:D:1067:SER:HG	1.21	0.79
1:A:2087:LYS:NZ	1:E:2204:LYS:O	2.16	0.78
1:B:2204:LYS:O	1:C:2087:LYS:NZ	2.16	0.77
1:D:2204:LYS:O	1:E:2087:LYS:NZ	2.16	0.77
1:B:2426:TYR:HB3	1:C:2334:THR:HG21	1.67	0.75
1:A:2182:SER:HG	1:C:1067:SER:HG	1.20	0.75
1:A:2334:THR:HG21	1:E:2426:TYR:HB3	1.67	0.75
1:C:2204:LYS:O	1:D:2087:LYS:NZ	2.17	0.75
1:D:2426:TYR:HB3	1:E:2334:THR:HG21	1.68	0.75
1:A:2426:TYR:HB3	1:B:2334:THR:HG21	1.68	0.74
1:C:2426:TYR:HB3	1:D:2334:THR:HG21	1.67	0.74
1:D:2204:LYS:HG2	1:E:2087:LYS:HD3	1.70	0.73
1:A:2047:GLN:HB3	1:A:2251:TYR:HB3	1.70	0.73
1:B:2204:LYS:HG2	1:C:2087:LYS:HD3	1.70	0.73
1:A:2204:LYS:HG2	1:B:2087:LYS:HD3	1.69	0.73
1:A:830:LEU:HD21	1:A:835:LEU:HD12	1.71	0.72
1:E:2047:GLN:HB3	1:E:2251:TYR:HB3	1.70	0.72
1:D:2047:GLN:HB3	1:D:2251:TYR:HB3	1.70	0.72
1:E:1059:ALA:HA	1:E:1062:GLN:HE21	1.54	0.72
1:C:2204:LYS:HG2	1:D:2087:LYS:HD3	1.70	0.72
1:B:2047:GLN:HB3	1:B:2251:TYR:HB3	1.72	0.72
1:A:2087:LYS:HD3	1:E:2204:LYS:HG2	1.70	0.72
1:C:2047:GLN:HB3	1:C:2251:TYR:HB3	1.71	0.71
1:D:1059:ALA:HA	1:D:1062:GLN:HE21	1.55	0.71
1:C:1059:ALA:HA	1:C:1062:GLN:HE21	1.56	0.71
1:E:830:LEU:HD21	1:E:835:LEU:HD12	1.72	0.71
1:C:830:LEU:HD21	1:C:835:LEU:HD12	1.73	0.70
1:A:1059:ALA:HA	1:A:1062:GLN:HE21	1.55	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:830:LEU:HD21	1:D:835:LEU:HD12	1.72	0.70
1:C:540:SER:HB2	1:D:848:GLN:NE2	2.07	0.70
1:D:540:SER:HB2	1:E:848:GLN:NE2	2.07	0.69
1:A:848:GLN:NE2	1:E:540:SER:HB2	2.07	0.69
1:B:540:SER:HB2	1:C:848:GLN:NE2	2.07	0.69
1:B:1059:ALA:HA	1:B:1062:GLN:HE21	1.57	0.69
1:B:830:LEU:HD21	1:B:835:LEU:HD12	1.73	0.69
1:A:540:SER:HB2	1:B:848:GLN:NE2	2.08	0.69
1:A:2087:LYS:HZ2	1:E:2205:GLN:HA	1.58	0.68
1:C:368:LEU:N	1:C:381:THR:O	2.25	0.67
1:D:1226:LEU:HA	1:D:1230:ARG:HH21	1.60	0.67
1:C:1774:TYR:HH	1:C:1848:TYR:HH	1.44	0.66
1:E:689:LEU:HD11	1:E:712:LEU:HB3	1.77	0.66
1:C:1220:LYS:HE2	1:C:1267:LEU:HB3	1.78	0.66
1:D:689:LEU:HD11	1:D:712:LEU:HB3	1.77	0.66
1:E:337:ASN:ND2	1:E:421:TYR:O	2.22	0.66
1:C:1226:LEU:HA	1:C:1230:ARG:HH21	1.61	0.66
1:B:689:LEU:HD11	1:B:712:LEU:HB3	1.76	0.65
1:B:1118:ALA:HB2	1:E:2137:ALA:HB2	1.78	0.65
1:B:2089:LYS:HB2	1:B:2206:ILE:HG21	1.78	0.65
1:A:689:LEU:HD11	1:A:712:LEU:HB3	1.77	0.65
1:C:1858:ASP:OD1	1:C:1959:TYR:OH	2.08	0.65
1:D:1069:LEU:HD23	1:D:1786:GLU:HG3	1.79	0.65
1:E:1239:TYR:CD2	1:E:1242:GLU:HB3	2.32	0.65
1:E:2057:GLN:HG3	1:E:2241:LEU:HD12	1.78	0.65
1:C:2137:ALA:HB2	1:E:1118:ALA:HB2	1.79	0.64
1:E:1797:LYS:HG3	1:E:1801:SER:HB2	1.79	0.64
1:B:1604:ARG:NH2	1:B:1635:PRO:O	2.31	0.64
1:B:1220:LYS:HE2	1:B:1267:LEU:HB3	1.80	0.64
1:C:1774:TYR:OH	1:C:1848:TYR:OH	2.15	0.64
1:C:2057:GLN:HG3	1:C:2241:LEU:HD12	1.79	0.64
1:A:368:LEU:N	1:A:381:THR:O	2.26	0.64
1:A:2057:GLN:HG3	1:A:2241:LEU:HD12	1.79	0.64
1:B:1226:LEU:HA	1:B:1230:ARG:HH21	1.63	0.64
1:D:368:LEU:N	1:D:381:THR:O	2.25	0.64
1:B:2057:GLN:HG3	1:B:2241:LEU:HD12	1.79	0.64
1:C:689:LEU:HD11	1:C:712:LEU:HB3	1.78	0.64
1:A:1069:LEU:HD23	1:A:1786:GLU:HG3	1.79	0.64
1:A:1797:LYS:HG3	1:A:1801:SER:HB2	1.79	0.64
1:B:1239:TYR:CD2	1:B:1242:GLU:HB3	2.33	0.64
1:C:1239:TYR:CD2	1:C:1242:GLU:HB3	2.33	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1239:TYR:CD2	1:A:1242:GLU:HB3	2.33	0.64
1:C:1069:LEU:HD23	1:C:1786:GLU:HG3	1.79	0.64
1:D:1239:TYR:CD2	1:D:1242:GLU:HB3	2.33	0.64
1:B:368:LEU:N	1:B:381:THR:O	2.26	0.64
1:D:1220:LYS:HE2	1:D:1267:LEU:HB3	1.80	0.64
1:A:1093:VAL:HG21	1:A:1605:LEU:HD23	1.81	0.63
1:B:1093:VAL:HG21	1:B:1605:LEU:HD23	1.80	0.63
1:E:1226:LEU:HA	1:E:1230:ARG:HH21	1.63	0.63
1:A:1118:ALA:HB2	1:D:2137:ALA:HB2	1.80	0.63
1:A:2137:ALA:HB2	1:C:1118:ALA:HB2	1.80	0.63
1:E:1604:ARG:NH2	1:E:1635:PRO:O	2.32	0.63
1:A:1604:ARG:NH2	1:A:1635:PRO:O	2.32	0.63
1:E:121:GLU:HG2	1:E:124:ARG:HH21	1.64	0.63
1:C:1797:LYS:HG3	1:C:1801:SER:HB2	1.79	0.63
1:D:963:SER:OG	1:D:965:ASP:OD1	2.17	0.63
1:A:2089:LYS:HB2	1:A:2206:ILE:HG21	1.79	0.63
1:C:2089:LYS:HB2	1:C:2206:ILE:HG21	1.81	0.62
1:B:337:ASN:ND2	1:B:421:TYR:O	2.22	0.62
1:D:1797:LYS:HG3	1:D:1801:SER:HB2	1.80	0.62
1:D:2057:GLN:HG3	1:D:2241:LEU:HD12	1.79	0.62
1:C:121:GLU:HG2	1:C:124:ARG:HH21	1.63	0.62
1:E:368:LEU:N	1:E:381:THR:O	2.26	0.62
1:E:1220:LYS:HE2	1:E:1267:LEU:HB3	1.81	0.62
1:B:1069:LEU:HD23	1:B:1786:GLU:HG3	1.81	0.62
1:B:1797:LYS:HG3	1:B:1801:SER:HB2	1.81	0.62
1:E:2089:LYS:HB2	1:E:2206:ILE:HG21	1.80	0.62
1:A:1226:LEU:HA	1:A:1230:ARG:HH21	1.65	0.61
1:D:337:ASN:ND2	1:D:421:TYR:O	2.23	0.61
1:A:1965:GLN:OE1	1:A:1969:ASN:ND2	2.33	0.61
1:B:2137:ALA:HB2	1:D:1118:ALA:HB2	1.80	0.61
1:B:121:GLU:HG2	1:B:124:ARG:HH21	1.66	0.61
1:D:1774:TYR:HH	1:D:1848:TYR:HH	1.40	0.61
1:E:1072:ASP:OD1	1:E:1073:THR:N	2.34	0.61
1:A:121:GLU:HG2	1:A:124:ARG:HH21	1.66	0.61
1:A:1220:LYS:HE2	1:A:1267:LEU:HB3	1.82	0.61
1:D:121:GLU:HG2	1:D:124:ARG:HH21	1.65	0.61
1:A:142:ARG:HH21	1:A:973:ILE:HD11	1.66	0.61
1:A:612:VAL:HG22	1:A:637:ILE:HD12	1.83	0.61
1:D:1604:ARG:NH2	1:D:1635:PRO:O	2.33	0.61
1:E:1069:LEU:HD23	1:E:1786:GLU:HG3	1.83	0.61
1:A:963:SER:OG	1:A:965:ASP:OD1	2.18	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1604:ARG:NH2	1:C:1635:PRO:O	2.34	0.61
1:E:1093:VAL:HG21	1:E:1605:LEU:HD23	1.83	0.61
1:C:337:ASN:ND2	1:C:421:TYR:O	2.23	0.61
1:C:612:VAL:HG22	1:C:637:ILE:HD12	1.83	0.60
1:B:797:ASP:OD1	1:B:798:ALA:N	2.34	0.60
1:C:343:VAL:HG23	1:C:357:TYR:HB3	1.84	0.60
1:C:536:ILE:HD13	1:C:547:ARG:HB2	1.82	0.60
1:D:536:ILE:HD13	1:D:547:ARG:HB2	1.83	0.60
1:D:2183:GLU:OE1	1:E:2108:ASN:ND2	2.33	0.60
1:B:963:SER:OG	1:B:965:ASP:OD1	2.19	0.60
1:A:337:ASN:ND2	1:A:421:TYR:O	2.22	0.60
1:C:142:ARG:HH21	1:C:973:ILE:HD11	1.66	0.60
1:A:1858:ASP:OD1	1:A:1959:TYR:OH	2.10	0.60
1:B:1965:GLN:OE1	1:B:1969:ASN:ND2	2.35	0.60
1:D:612:VAL:HG22	1:D:637:ILE:HD12	1.83	0.60
1:D:1655:HIS:NE2	1:D:1659:ARG:HA	2.17	0.60
1:B:142:ARG:HH21	1:B:973:ILE:HD11	1.67	0.60
1:C:963:SER:OG	1:C:965:ASP:OD1	2.18	0.60
1:C:1655:HIS:NE2	1:C:1659:ARG:HA	2.17	0.60
1:D:1072:ASP:OD1	1:D:1073:THR:N	2.34	0.60
1:D:2089:LYS:HB2	1:D:2206:ILE:HG21	1.82	0.60
1:C:2205:GLN:HA	1:D:2087:LYS:HZ2	1.67	0.59
1:D:142:ARG:HH21	1:D:973:ILE:HD11	1.66	0.59
1:D:797:ASP:OD1	1:D:798:ALA:N	2.35	0.59
1:E:797:ASP:OD1	1:E:798:ALA:N	2.35	0.59
1:E:1965:GLN:OE1	1:E:1969:ASN:ND2	2.35	0.59
1:D:1093:VAL:HG21	1:D:1605:LEU:HD23	1.84	0.59
1:C:1965:GLN:OE1	1:C:1969:ASN:ND2	2.34	0.59
1:C:1072:ASP:OD1	1:C:1073:THR:N	2.35	0.59
1:A:153:GLN:NE2	1:E:510:ASN:OD1	2.36	0.59
1:A:460:ILE:HG12	1:A:496:LEU:HD21	1.84	0.59
1:B:536:ILE:HD13	1:B:547:ARG:HB2	1.84	0.59
1:B:1072:ASP:OD1	1:B:1073:THR:N	2.35	0.59
1:C:460:ILE:HG12	1:C:496:LEU:HD21	1.85	0.59
1:E:612:VAL:HG22	1:E:637:ILE:HD12	1.84	0.59
1:E:963:SER:OG	1:E:965:ASP:OD1	2.19	0.59
1:B:2460:PHE:HE2	1:C:2413:LYS:HD2	1.68	0.59
1:E:142:ARG:HH21	1:E:973:ILE:HD11	1.67	0.59
1:D:1965:GLN:OE1	1:D:1969:ASN:ND2	2.35	0.59
1:A:536:ILE:HD13	1:A:547:ARG:HB2	1.84	0.59
1:A:797:ASP:OD1	1:A:798:ALA:N	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:2460:PHE:HE2	1:E:2413:LYS:HD2	1.68	0.59
1:C:1093:VAL:HG21	1:C:1605:LEU:HD23	1.84	0.59
1:A:343:VAL:HG23	1:A:357:TYR:HB3	1.85	0.58
1:A:2413:LYS:HD2	1:E:2460:PHE:HE2	1.68	0.58
1:C:797:ASP:OD1	1:C:798:ALA:N	2.35	0.58
1:A:1072:ASP:OD1	1:A:1073:THR:N	2.35	0.58
1:B:1655:HIS:NE2	1:B:1659:ARG:HA	2.18	0.58
1:A:1655:HIS:NE2	1:A:1659:ARG:HA	2.18	0.58
1:B:2183:GLU:OE1	1:C:2108:ASN:ND2	2.36	0.58
1:C:1117:ASP:OD1	1:C:1118:ALA:N	2.35	0.58
1:D:1117:ASP:OD1	1:D:1118:ALA:N	2.35	0.58
1:D:1858:ASP:OD1	1:D:1959:TYR:OH	2.10	0.58
1:B:460:ILE:HG12	1:B:496:LEU:HD21	1.86	0.57
1:B:612:VAL:HG22	1:B:637:ILE:HD12	1.86	0.57
1:B:343:VAL:HG23	1:B:357:TYR:HB3	1.86	0.57
1:D:343:VAL:HG23	1:D:357:TYR:HB3	1.87	0.57
1:C:368:LEU:HG	1:C:370:ILE:HD11	1.85	0.57
1:D:460:ILE:HG12	1:D:496:LEU:HD21	1.86	0.57
1:D:510:ASN:OD1	1:E:153:GLN:NE2	2.35	0.57
1:E:536:ILE:HD13	1:E:547:ARG:HB2	1.84	0.57
1:D:1168:TYR:HD2	1:D:1200:LEU:HD11	1.69	0.57
1:A:1117:ASP:OD1	1:A:1118:ALA:N	2.34	0.57
1:A:2103:TYR:CE1	1:A:2193:GLU:HG2	2.39	0.57
1:B:2103:TYR:CE1	1:B:2193:GLU:HG2	2.40	0.57
1:D:368:LEU:HG	1:D:370:ILE:HD11	1.87	0.57
1:D:2103:TYR:CE1	1:D:2193:GLU:HG2	2.39	0.57
1:E:460:ILE:HG12	1:E:496:LEU:HD21	1.84	0.57
1:B:1168:TYR:HD2	1:B:1200:LEU:HD11	1.70	0.57
1:C:2103:TYR:CE1	1:C:2193:GLU:HG2	2.40	0.57
1:E:2103:TYR:CE1	1:E:2193:GLU:HG2	2.39	0.57
1:A:1168:TYR:HD2	1:A:1200:LEU:HD11	1.69	0.57
1:E:343:VAL:HG23	1:E:357:TYR:HB3	1.86	0.57
1:E:1655:HIS:NE2	1:E:1659:ARG:HA	2.19	0.57
1:A:2183:GLU:OE1	1:B:2108:ASN:ND2	2.36	0.57
1:A:2460:PHE:HE2	1:B:2413:LYS:HD2	1.69	0.57
1:C:2205:GLN:HA	1:D:2087:LYS:NZ	2.20	0.57
1:D:1728:ASP:OD2	1:D:1730:LYS:NZ	2.38	0.57
1:E:368:LEU:HG	1:E:370:ILE:HD11	1.86	0.57
1:D:2067:ASN:HB3	1:D:2227:LEU:HD21	1.87	0.56
1:C:510:ASN:OD1	1:D:153:GLN:NE2	2.37	0.56
1:A:1774:TYR:OH	1:A:1848:TYR:OH	2.17	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1108:THR:HG1	1:B:1128:HIS:HE2	1.52	0.56
1:B:2205:GLN:HA	1:C:2087:LYS:NZ	2.21	0.56
1:C:2460:PHE:HE2	1:D:2413:LYS:HD2	1.69	0.56
1:E:1728:ASP:OD2	1:E:1730:LYS:NZ	2.38	0.56
1:A:2087:LYS:NZ	1:E:2205:GLN:HA	2.21	0.56
1:B:368:LEU:HG	1:B:370:ILE:HD11	1.87	0.56
1:B:510:ASN:OD1	1:C:153:GLN:NE2	2.37	0.56
1:A:1607:THR:OG1	1:A:1764:ASN:OD1	2.20	0.56
1:E:1120:GLU:HB3	1:E:1146:LYS:HE2	1.88	0.56
1:A:510:ASN:OD1	1:B:153:GLN:NE2	2.35	0.56
1:A:2205:GLN:HA	1:B:2087:LYS:HZ2	1.70	0.56
1:D:2205:GLN:HA	1:E:2087:LYS:NZ	2.21	0.56
1:E:351:GLU:OE1	1:E:398:ASN:ND2	2.36	0.56
1:E:2067:ASN:HB3	1:E:2227:LEU:HD21	1.87	0.56
1:D:1239:TYR:HD2	1:D:1242:GLU:HB3	1.70	0.56
1:B:1239:TYR:HD2	1:B:1242:GLU:HB3	1.70	0.55
1:E:1168:TYR:HD2	1:E:1200:LEU:HD11	1.69	0.55
1:C:193:ARG:NH2	1:C:253:GLU:OE2	2.40	0.55
1:A:368:LEU:HG	1:A:370:ILE:HD11	1.87	0.55
1:A:1728:ASP:OD2	1:A:1730:LYS:NZ	2.37	0.55
1:B:1124:ARG:NE	1:B:1142:SER:O	2.39	0.55
1:C:351:GLU:OE1	1:C:398:ASN:ND2	2.37	0.55
1:A:2205:GLN:HA	1:B:2087:LYS:NZ	2.21	0.55
1:B:2205:GLN:HA	1:C:2087:LYS:HZ2	1.71	0.55
1:C:1168:TYR:HD2	1:C:1200:LEU:HD11	1.70	0.55
1:D:1120:GLU:HB3	1:D:1146:LYS:HE2	1.87	0.55
1:B:1120:GLU:HB3	1:B:1146:LYS:HE2	1.89	0.55
1:C:2067:ASN:HB3	1:C:2227:LEU:HD21	1.88	0.55
1:D:1239:TYR:HB2	1:D:1246:LEU:CD1	2.37	0.55
1:E:357:TYR:CE2	1:E:391:TYR:HB2	2.42	0.55
1:E:1124:ARG:NE	1:E:1142:SER:O	2.40	0.55
1:E:193:ARG:NH2	1:E:253:GLU:OE2	2.40	0.55
1:E:1117:ASP:OD1	1:E:1118:ALA:N	2.34	0.55
1:D:351:GLU:OE1	1:D:398:ASN:ND2	2.37	0.54
1:E:1858:ASP:OD1	1:E:1959:TYR:OH	2.10	0.54
1:A:1239:TYR:HD2	1:A:1242:GLU:HB3	1.71	0.54
1:B:2067:ASN:HB3	1:B:2227:LEU:HD21	1.88	0.54
1:E:120:THR:O	1:E:124:ARG:HG3	2.07	0.54
1:A:1239:TYR:HB2	1:A:1246:LEU:CD1	2.38	0.54
1:E:1239:TYR:HD2	1:E:1242:GLU:HB3	1.71	0.54
1:A:142:ARG:NH2	1:A:973:ILE:HD11	2.23	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:193:ARG:NH2	1:B:253:GLU:OE2	2.40	0.54
1:C:2333:ARG:NE	1:C:2401:ASP:OD2	2.40	0.54
1:E:1774:TYR:OH	1:E:1848:TYR:OH	2.16	0.54
1:E:1783:LEU:HD12	1:E:1788:ASN:HB3	1.89	0.54
1:B:1117:ASP:OD1	1:B:1118:ALA:N	2.35	0.54
1:E:1239:TYR:HB2	1:E:1246:LEU:CD1	2.38	0.54
1:A:120:THR:O	1:A:124:ARG:HG3	2.08	0.54
1:C:357:TYR:CE2	1:C:391:TYR:HB2	2.42	0.54
1:C:2047:GLN:NE2	1:C:2048:ASP:OD1	2.41	0.54
1:D:357:TYR:CE2	1:D:391:TYR:HB2	2.43	0.54
1:B:1783:LEU:HD12	1:B:1788:ASN:HB3	1.88	0.54
1:C:1124:ARG:NE	1:C:1142:SER:O	2.40	0.54
1:D:670:LEU:HA	1:D:699:THR:HG21	1.90	0.54
1:E:471:ASN:H	1:E:474:VAL:HG12	1.73	0.54
1:A:2333:ARG:NE	1:A:2401:ASP:OD2	2.40	0.54
1:B:568:ILE:HD11	1:B:606:ASP:HB2	1.89	0.54
1:C:1239:TYR:HD2	1:C:1242:GLU:HB3	1.72	0.54
1:D:568:ILE:HD11	1:D:606:ASP:HB2	1.90	0.54
1:D:1722:GLY:O	1:D:1739:SER:HB2	2.08	0.54
1:B:357:TYR:CE2	1:B:391:TYR:HB2	2.42	0.53
1:D:836:ALA:HB2	1:D:846:LEU:HD12	1.90	0.53
1:E:568:ILE:HD11	1:E:606:ASP:HB2	1.90	0.53
1:A:357:TYR:CE2	1:A:391:TYR:HB2	2.43	0.53
1:C:2183:GLU:OE1	1:D:2108:ASN:ND2	2.38	0.53
1:D:2477:ILE:HD11	1:D:2513:TYR:HB2	1.90	0.53
1:E:1722:GLY:O	1:E:1739:SER:HB2	2.08	0.53
1:B:120:THR:O	1:B:124:ARG:HG3	2.07	0.53
1:C:1722:GLY:O	1:C:1739:SER:HB2	2.09	0.53
1:C:1730:LYS:HZ3	1:C:1732:ILE:HD12	1.74	0.53
1:C:1120:GLU:HB3	1:C:1146:LYS:HE2	1.90	0.53
1:D:470:ILE:HA	1:D:474:VAL:HG11	1.91	0.53
1:D:471:ASN:H	1:D:474:VAL:HG12	1.73	0.53
1:D:1108:THR:HG1	1:D:1128:HIS:HE2	1.56	0.53
1:D:1607:THR:OG1	1:D:1764:ASN:OD1	2.19	0.53
1:A:2047:GLN:NE2	1:A:2048:ASP:OD1	2.42	0.53
1:B:470:ILE:HA	1:B:474:VAL:HG11	1.90	0.53
1:B:1239:TYR:HB2	1:B:1246:LEU:CD1	2.38	0.53
1:C:1239:TYR:HB2	1:C:1246:LEU:CD1	2.38	0.53
1:C:120:THR:O	1:C:124:ARG:HG3	2.09	0.53
1:A:471:ASN:H	1:A:474:VAL:HG12	1.72	0.53
1:B:1728:ASP:OD2	1:B:1730:LYS:NZ	2.38	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:568:ILE:HD11	1:C:606:ASP:HB2	1.90	0.53
1:C:836:ALA:HB2	1:C:846:LEU:HD12	1.91	0.53
1:C:1783:LEU:HD12	1:C:1788:ASN:HB3	1.90	0.53
1:D:2047:GLN:NE2	1:D:2048:ASP:OD1	2.41	0.53
1:A:470:ILE:HA	1:A:474:VAL:HG11	1.90	0.53
1:B:471:ASN:H	1:B:474:VAL:HG12	1.72	0.53
1:D:646:TRP:CZ2	1:D:768:SER:HB3	2.44	0.53
1:D:1124:ARG:NE	1:D:1142:SER:O	2.42	0.53
1:E:470:ILE:HA	1:E:474:VAL:HG11	1.90	0.53
1:A:1120:GLU:HB3	1:A:1146:LYS:HE2	1.91	0.53
1:C:646:TRP:CZ2	1:C:768:SER:HB3	2.44	0.53
1:D:120:THR:O	1:D:124:ARG:HG3	2.08	0.53
1:A:568:ILE:HD11	1:A:606:ASP:HB2	1.90	0.53
1:C:471:ASN:H	1:C:474:VAL:HG12	1.73	0.53
1:C:1607:THR:OG1	1:C:1764:ASN:OD1	2.21	0.53
1:B:2047:GLN:NE2	1:B:2048:ASP:OD1	2.41	0.52
1:D:2333:ARG:NE	1:D:2401:ASP:OD2	2.40	0.52
1:A:407:GLU:HA	1:A:425:LYS:HA	1.90	0.52
1:A:836:ALA:HB2	1:A:846:LEU:HD12	1.90	0.52
1:C:142:ARG:NH2	1:C:973:ILE:HD11	2.23	0.52
1:C:470:ILE:HA	1:C:474:VAL:HG11	1.89	0.52
1:D:142:ARG:NH2	1:D:973:ILE:HD11	2.23	0.52
1:D:2204:LYS:C	1:E:2087:LYS:HZ3	2.10	0.52
1:B:142:ARG:NH2	1:B:973:ILE:HD11	2.25	0.52
1:A:2204:LYS:C	1:B:2087:LYS:HZ3	2.11	0.52
1:C:2042:ASN:OD1	1:C:2046:ARG:NH2	2.43	0.52
1:D:1783:LEU:HD12	1:D:1788:ASN:HB3	1.91	0.52
1:A:2477:ILE:HD11	1:A:2513:TYR:HB2	1.91	0.52
1:C:2477:ILE:HD11	1:C:2513:TYR:HB2	1.90	0.52
1:A:1783:LEU:HD12	1:A:1788:ASN:HB3	1.91	0.52
1:E:2333:ARG:NE	1:E:2401:ASP:OD2	2.41	0.52
1:E:142:ARG:NH2	1:E:973:ILE:HD11	2.25	0.52
1:A:2067:ASN:HB3	1:A:2227:LEU:HD21	1.90	0.52
1:B:836:ALA:HB2	1:B:846:LEU:HD12	1.91	0.52
1:B:1722:GLY:O	1:B:1739:SER:HB2	2.10	0.52
1:E:836:ALA:HB2	1:E:846:LEU:HD12	1.91	0.52
1:A:1722:GLY:O	1:A:1739:SER:HB2	2.10	0.52
1:B:351:GLU:OE1	1:B:398:ASN:ND2	2.37	0.52
1:B:2477:ILE:HD11	1:B:2513:TYR:HB2	1.90	0.52
1:D:407:GLU:HA	1:D:425:LYS:HA	1.91	0.52
1:A:646:TRP:CZ2	1:A:768:SER:HB3	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1650:TYR:CD2	1:B:1655:HIS:CE1	2.98	0.51
1:D:348:PHE:CE1	1:D:352:ASN:HB3	2.45	0.51
1:E:2477:ILE:HD11	1:E:2513:TYR:HB2	1.90	0.51
1:B:1790:ASP:OD1	1:B:1791:GLU:N	2.43	0.51
1:B:1865:ASP:OD1	1:B:1883:TYR:OH	2.28	0.51
1:E:1108:THR:HB	1:E:1126:VAL:HG12	1.92	0.51
1:C:2226:SER:HB2	1:D:2066:THR:HG21	1.92	0.51
1:D:193:ARG:NH2	1:D:253:GLU:OE2	2.44	0.51
1:A:1108:THR:HB	1:A:1126:VAL:HG12	1.91	0.51
1:A:2108:ASN:ND2	1:E:2183:GLU:OE1	2.35	0.51
1:C:1253:GLN:HB2	1:C:1259:TYR:CE1	2.46	0.51
1:D:341:MET:HE1	1:D:410:LEU:HD22	1.91	0.51
1:E:1790:ASP:OD1	1:E:1791:GLU:N	2.44	0.51
1:E:2360:LEU:HD21	1:E:2366:GLY:HA3	1.92	0.51
1:B:646:TRP:CZ2	1:B:768:SER:HB3	2.45	0.51
1:C:348:PHE:CE1	1:C:352:ASN:HB3	2.46	0.51
1:C:670:LEU:HA	1:C:699:THR:HG21	1.93	0.51
1:C:1108:THR:HG1	1:C:1128:HIS:HE2	1.57	0.51
1:C:1728:ASP:OD2	1:C:1730:LYS:NZ	2.39	0.51
1:D:1058:ASP:O	1:D:1062:GLN:HG3	2.10	0.51
1:D:1245:LEU:HB2	1:D:1269:ILE:HB	1.93	0.51
1:B:2204:LYS:C	1:C:2087:LYS:HZ3	2.10	0.51
1:D:1790:ASP:OD1	1:D:1791:GLU:N	2.44	0.51
1:E:646:TRP:CZ2	1:E:768:SER:HB3	2.45	0.51
1:E:670:LEU:HA	1:E:699:THR:HG21	1.92	0.51
1:E:1865:ASP:OD1	1:E:1883:TYR:OH	2.29	0.51
1:B:2333:ARG:NE	1:B:2401:ASP:OD2	2.40	0.51
1:D:538:LEU:HD12	1:D:566:LEU:HD22	1.93	0.51
1:A:1790:ASP:OD1	1:A:1791:GLU:N	2.44	0.51
1:C:1790:ASP:OD1	1:C:1791:GLU:N	2.43	0.51
1:D:1108:THR:HB	1:D:1126:VAL:HG12	1.93	0.51
1:E:1253:GLN:HB2	1:E:1259:TYR:CE1	2.46	0.51
1:E:1650:TYR:CD2	1:E:1655:HIS:CE1	2.98	0.51
1:E:2042:ASN:OD1	1:E:2046:ARG:NH2	2.43	0.51
1:B:407:GLU:HA	1:B:425:LYS:HA	1.93	0.51
1:B:2360:LEU:HD21	1:B:2366:GLY:HA3	1.92	0.51
1:D:1253:GLN:HB2	1:D:1259:TYR:CE1	2.46	0.51
1:D:2360:LEU:HD21	1:D:2366:GLY:HA3	1.92	0.51
1:E:1805:TYR:HD2	1:E:1814:TYR:HE1	1.58	0.51
1:E:2047:GLN:NE2	1:E:2048:ASP:OD1	2.43	0.51
1:A:193:ARG:NH2	1:A:253:GLU:OE2	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2042:ASN:OD1	1:B:2046:ARG:NH2	2.44	0.51
1:C:1865:ASP:OD1	1:C:1883:TYR:OH	2.29	0.51
1:C:2360:LEU:HD21	1:C:2366:GLY:HA3	1.92	0.51
1:E:407:GLU:HA	1:E:425:LYS:HA	1.93	0.51
1:D:1650:TYR:CD2	1:D:1655:HIS:CE1	2.99	0.50
1:D:1784:LEU:HD21	1:D:1859:LEU:HD13	1.94	0.50
1:A:1124:ARG:NE	1:A:1142:SER:O	2.43	0.50
1:A:1650:TYR:CD2	1:A:1655:HIS:CE1	2.99	0.50
1:C:538:LEU:HD12	1:C:566:LEU:HD22	1.93	0.50
1:D:2226:SER:HB2	1:E:2066:THR:HG21	1.93	0.50
1:E:538:LEU:HD12	1:E:566:LEU:HD22	1.93	0.50
1:A:348:PHE:CE1	1:A:352:ASN:HB3	2.47	0.50
1:B:2226:SER:HB2	1:C:2066:THR:HG21	1.93	0.50
1:C:746:VAL:HB	1:C:749:GLN:HB2	1.93	0.50
1:C:1108:THR:HB	1:C:1126:VAL:HG12	1.93	0.50
1:A:670:LEU:HA	1:A:699:THR:HG21	1.92	0.50
1:B:1253:GLN:HB2	1:B:1259:TYR:CE1	2.46	0.50
1:C:2204:LYS:C	1:D:2087:LYS:HZ3	2.12	0.50
1:A:1730:LYS:HZ3	1:A:1732:ILE:HD12	1.77	0.50
1:B:2353:LEU:HD23	1:B:2357:ILE:HD11	1.94	0.50
1:A:517:ARG:HA	1:A:521:THR:HG22	1.94	0.50
1:A:538:LEU:HD12	1:A:566:LEU:HD22	1.93	0.50
1:C:292:GLU:OE1	1:C:295:GLN:NE2	2.45	0.50
1:A:2360:LEU:HD21	1:A:2366:GLY:HA3	1.93	0.50
1:B:670:LEU:HA	1:B:699:THR:HG21	1.93	0.50
1:B:1784:LEU:HD21	1:B:1859:LEU:HD13	1.94	0.50
1:C:1650:TYR:CD2	1:C:1655:HIS:CE1	2.99	0.50
1:D:663:LEU:HD22	1:D:749:GLN:NE2	2.27	0.50
1:E:1805:TYR:HD2	1:E:1814:TYR:CE1	2.30	0.50
1:A:2066:THR:HG21	1:E:2226:SER:HB2	1.94	0.50
1:A:2226:SER:HB2	1:B:2066:THR:HG21	1.93	0.50
1:A:1245:LEU:HB2	1:A:1269:ILE:HB	1.93	0.49
1:A:2042:ASN:OD1	1:A:2046:ARG:NH2	2.45	0.49
1:C:1784:LEU:HD21	1:C:1859:LEU:HD13	1.94	0.49
1:C:2132:ARG:HH11	1:C:2163:TYR:HB3	1.77	0.49
1:E:348:PHE:CE1	1:E:352:ASN:HB3	2.46	0.49
1:A:1108:THR:HG1	1:A:1128:HIS:HE2	1.53	0.49
1:A:1805:TYR:HD2	1:A:1814:TYR:HE1	1.60	0.49
1:C:1058:ASP:O	1:C:1062:GLN:HG3	2.12	0.49
1:D:2042:ASN:OD1	1:D:2046:ARG:NH2	2.45	0.49
1:A:341:MET:HE2	1:A:359:PHE:CE1	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2353:LEU:HD23	1:A:2357:ILE:HD11	1.94	0.49
1:C:2353:LEU:HD23	1:C:2357:ILE:HD11	1.94	0.49
1:D:371:LYS:HG2	1:D:377:GLU:HA	1.94	0.49
1:B:1607:THR:OG1	1:B:1764:ASN:OD1	2.19	0.49
1:C:407:GLU:HA	1:C:425:LYS:HA	1.94	0.49
1:E:1730:LYS:HZ3	1:E:1732:ILE:HD12	1.77	0.49
1:A:1058:ASP:O	1:A:1062:GLN:HG3	2.12	0.49
1:A:1253:GLN:HB2	1:A:1259:TYR:CE1	2.47	0.49
1:B:746:VAL:HB	1:B:749:GLN:HB2	1.95	0.49
1:B:1245:LEU:HB2	1:B:1269:ILE:HB	1.94	0.49
1:B:1774:TYR:OH	1:B:1848:TYR:OH	2.18	0.49
1:C:179:LEU:HD13	1:C:185:VAL:HA	1.95	0.49
1:D:1595:TYR:HB2	1:D:1637:LEU:HD12	1.95	0.49
1:E:1784:LEU:HD21	1:E:1859:LEU:HD13	1.95	0.49
1:A:1151:ILE:HG22	1:A:1153:PRO:HD3	1.95	0.49
1:B:348:PHE:CE1	1:B:352:ASN:HB3	2.47	0.49
1:B:1108:THR:HB	1:B:1126:VAL:HG12	1.93	0.49
1:B:1730:LYS:HZ3	1:B:1732:ILE:HD12	1.77	0.49
1:C:1151:ILE:HG22	1:C:1153:PRO:HD3	1.95	0.49
1:D:1151:ILE:HG22	1:D:1153:PRO:HD3	1.95	0.49
1:E:179:LEU:HD13	1:E:185:VAL:HA	1.95	0.49
1:E:2353:LEU:HD23	1:E:2357:ILE:HD11	1.93	0.49
1:A:2132:ARG:HH11	1:A:2163:TYR:HB3	1.78	0.49
1:B:517:ARG:HA	1:B:521:THR:HG22	1.93	0.49
1:E:127:ARG:HG3	1:E:127:ARG:HH11	1.78	0.49
1:A:746:VAL:HB	1:A:749:GLN:HB2	1.94	0.49
1:A:1163:TYR:OH	1:A:1243:ASP:HB2	2.13	0.49
1:B:698:ALA:HB2	1:C:2256:GLY:HA3	1.93	0.49
1:D:1002:GLU:OE1	1:E:1888:HIS:NE2	2.41	0.49
1:A:1784:LEU:HD21	1:A:1859:LEU:HD13	1.94	0.49
1:A:1869:ARG:NH1	1:A:1976:ILE:HD13	2.28	0.49
1:C:1595:TYR:HB2	1:C:1637:LEU:HD12	1.95	0.49
1:D:1869:ARG:NH1	1:D:1976:ILE:HD13	2.28	0.49
1:D:2353:LEU:HD23	1:D:2357:ILE:HD11	1.94	0.49
1:E:1249:PHE:N	1:E:1265:GLN:O	2.44	0.49
1:E:1608:LEU:HD12	1:E:1635:PRO:HG2	1.95	0.49
1:A:1111:ILE:HG13	1:A:1160:PRO:HD3	1.95	0.48
1:B:371:LYS:HG2	1:B:377:GLU:HA	1.94	0.48
1:B:2132:ARG:HH11	1:B:2163:TYR:HB3	1.78	0.48
1:C:341:MET:HE2	1:C:359:PHE:CE1	2.48	0.48
1:C:517:ARG:HA	1:C:521:THR:HG22	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1224:LEU:HD11	1:D:1249:PHE:HB3	1.95	0.48
1:D:2205:GLN:HA	1:E:2087:LYS:HZ2	1.78	0.48
1:E:341:MET:HE1	1:E:410:LEU:HD22	1.95	0.48
1:E:557:ILE:HD11	1:E:562:LEU:HD13	1.94	0.48
1:E:1058:ASP:O	1:E:1062:GLN:HG3	2.13	0.48
1:E:1163:TYR:OH	1:E:1243:ASP:HB2	2.13	0.48
1:B:1869:ARG:NH1	1:B:1976:ILE:HD13	2.27	0.48
1:C:698:ALA:HB2	1:D:2256:GLY:HA3	1.94	0.48
1:D:344:GLU:N	1:D:356:ASP:O	2.31	0.48
1:E:292:GLU:OE1	1:E:295:GLN:NE2	2.46	0.48
1:C:1869:ARG:NH1	1:C:1976:ILE:HD13	2.28	0.48
1:D:1296:THR:HG23	1:D:1301:ARG:HH12	1.78	0.48
1:D:1805:TYR:HD2	1:D:1814:TYR:CE1	2.31	0.48
1:D:2132:ARG:HH11	1:D:2163:TYR:HB3	1.77	0.48
1:A:698:ALA:HB2	1:B:2256:GLY:HA3	1.95	0.48
1:A:1056:MET:HG3	1:A:1081:TYR:CE1	2.48	0.48
1:B:1058:ASP:O	1:B:1062:GLN:HG3	2.12	0.48
1:B:1805:TYR:HD2	1:B:1814:TYR:CE1	2.31	0.48
1:C:1094:ILE:HD11	1:C:1113:LEU:HB2	1.96	0.48
1:D:127:ARG:HG3	1:D:127:ARG:HH11	1.78	0.48
1:D:557:ILE:HD11	1:D:562:LEU:HD13	1.94	0.48
1:D:1163:TYR:OH	1:D:1243:ASP:HB2	2.13	0.48
1:A:1805:TYR:HD2	1:A:1814:TYR:CE1	2.31	0.48
1:C:557:ILE:HD11	1:C:562:LEU:HD13	1.95	0.48
1:D:1594:GLN:OE1	1:D:1606:ASN:ND2	2.47	0.48
1:A:179:LEU:HD13	1:A:185:VAL:HA	1.96	0.48
1:C:1868:TYR:CD2	1:C:1976:ILE:HB	2.49	0.48
1:B:341:MET:HE2	1:B:359:PHE:CE1	2.48	0.48
1:B:538:LEU:HD12	1:B:566:LEU:HD22	1.95	0.48
1:B:1805:TYR:HD2	1:B:1814:TYR:HE1	1.61	0.48
1:E:371:LYS:HG2	1:E:377:GLU:HA	1.95	0.48
1:C:1676:ILE:HD12	1:C:1690:LEU:HD13	1.95	0.48
1:E:1607:THR:OG1	1:E:1764:ASN:OD1	2.21	0.48
1:B:557:ILE:HD11	1:B:562:LEU:HD13	1.96	0.48
1:B:1868:TYR:CD2	1:B:1976:ILE:HB	2.49	0.48
1:B:1870:GLN:HB3	1:B:1872:GLU:OE1	2.14	0.48
1:C:198:THR:HB	1:C:199:PRO:HA	1.96	0.48
1:A:127:ARG:HG3	1:A:127:ARG:HH11	1.79	0.47
1:B:497:ILE:HG21	1:B:589:TYR:HD2	1.79	0.47
1:B:1608:LEU:HD12	1:B:1635:PRO:HG2	1.96	0.47
1:C:1245:LEU:HB2	1:C:1269:ILE:HB	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:2341:TYR:OH	1:E:2390:SER:O	2.31	0.47
1:A:371:LYS:HG2	1:A:377:GLU:HA	1.95	0.47
1:A:497:ILE:HG21	1:A:589:TYR:HD2	1.80	0.47
1:A:557:ILE:HD11	1:A:562:LEU:HD13	1.96	0.47
1:A:1002:GLU:OE1	1:B:1888:HIS:NE2	2.42	0.47
1:B:198:THR:HB	1:B:199:PRO:HA	1.96	0.47
1:B:1163:TYR:OH	1:B:1243:ASP:HB2	2.13	0.47
1:B:1653:SER:O	1:B:1713:LYS:NZ	2.46	0.47
1:C:1805:TYR:HD2	1:C:1814:TYR:HE1	1.60	0.47
1:C:1805:TYR:HD2	1:C:1814:TYR:CE1	2.32	0.47
1:E:1151:ILE:HG22	1:E:1153:PRO:HD3	1.96	0.47
1:A:1676:ILE:HD12	1:A:1690:LEU:HD13	1.96	0.47
1:A:1870:GLN:HB3	1:A:1872:GLU:OE1	2.14	0.47
1:B:1056:MET:HG3	1:B:1081:TYR:CE1	2.49	0.47
1:A:1595:TYR:HB2	1:A:1637:LEU:HD12	1.96	0.47
1:B:1151:ILE:HG22	1:B:1153:PRO:HD3	1.95	0.47
1:C:1002:GLU:OE1	1:D:1888:HIS:NE2	2.41	0.47
1:D:179:LEU:HD13	1:D:185:VAL:HA	1.96	0.47
1:D:1805:TYR:HD2	1:D:1814:TYR:HE1	1.60	0.47
1:E:663:LEU:HD22	1:E:749:GLN:NE2	2.29	0.47
1:B:1002:GLU:OE1	1:C:1888:HIS:NE2	2.41	0.47
1:B:1595:TYR:HB2	1:B:1637:LEU:HD12	1.96	0.47
1:C:2355:GLN:HG2	1:C:2356:GLU:OE1	2.15	0.47
1:E:1595:TYR:HB2	1:E:1637:LEU:HD12	1.96	0.47
1:A:1865:ASP:OD1	1:A:1883:TYR:OH	2.31	0.47
1:A:1868:TYR:CD2	1:A:1976:ILE:HB	2.50	0.47
1:B:1962:THR:OG1	1:B:1966:ARG:NH2	2.48	0.47
1:D:1868:TYR:CD2	1:D:1976:ILE:HB	2.50	0.47
1:E:746:VAL:HB	1:E:749:GLN:HB2	1.96	0.47
1:E:1245:LEU:HB2	1:E:1269:ILE:HB	1.95	0.47
1:A:195:SER:OG	1:A:948:THR:HG22	2.15	0.47
1:B:127:ARG:HG3	1:B:127:ARG:HH11	1.79	0.47
1:B:663:LEU:HD22	1:B:749:GLN:NE2	2.29	0.47
1:B:2355:GLN:HG2	1:B:2356:GLU:OE1	2.15	0.47
1:C:371:LYS:HG2	1:C:377:GLU:HA	1.95	0.47
1:C:1056:MET:HG3	1:C:1081:TYR:CE1	2.50	0.47
1:C:1111:ILE:HG13	1:C:1160:PRO:HD3	1.97	0.47
1:C:1163:TYR:OH	1:C:1243:ASP:HB2	2.14	0.47
1:C:1892:ASP:OD1	1:C:1892:ASP:N	2.47	0.47
1:D:497:ILE:HG21	1:D:589:TYR:HD2	1.80	0.47
1:E:198:THR:O	1:E:445:ARG:NH1	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1296:THR:HG23	1:E:1301:ARG:HH12	1.79	0.47
1:E:2355:GLN:HG2	1:E:2356:GLU:OE1	2.15	0.47
1:A:195:SER:HB3	1:A:198:THR:OG1	2.15	0.47
1:A:292:GLU:OE1	1:A:295:GLN:NE2	2.47	0.47
1:C:343:VAL:HA	1:C:357:TYR:HA	1.96	0.47
1:C:663:LEU:HD22	1:C:749:GLN:NE2	2.29	0.47
1:C:2477:ILE:HG22	1:C:2477:ILE:O	2.15	0.47
1:D:1056:MET:HG3	1:D:1081:TYR:CE1	2.50	0.47
1:D:1892:ASP:OD1	1:D:1892:ASP:N	2.47	0.47
1:E:198:THR:HB	1:E:199:PRO:HA	1.96	0.47
1:E:1676:ILE:HD12	1:E:1690:LEU:HD13	1.96	0.47
1:C:127:ARG:HG3	1:C:127:ARG:HH11	1.78	0.47
1:C:1296:THR:HG23	1:C:1301:ARG:HH12	1.80	0.47
1:C:1870:GLN:HB3	1:C:1872:GLU:OE1	2.15	0.47
1:D:341:MET:HE2	1:D:359:PHE:CE1	2.50	0.47
1:D:343:VAL:HA	1:D:357:TYR:HA	1.97	0.47
1:D:1676:ILE:HD12	1:D:1690:LEU:HD13	1.97	0.47
1:E:1111:ILE:HG13	1:E:1160:PRO:HD3	1.96	0.47
1:E:1892:ASP:OD1	1:E:1892:ASP:N	2.47	0.47
1:E:2477:ILE:HG22	1:E:2477:ILE:O	2.15	0.47
1:A:2355:GLN:HG2	1:A:2356:GLU:OE1	2.15	0.47
1:D:195:SER:HB3	1:D:198:THR:OG1	2.15	0.47
1:D:2477:ILE:O	1:D:2477:ILE:HG22	2.15	0.47
1:E:371:LYS:HA	1:E:377:GLU:HA	1.97	0.47
1:E:1056:MET:HG3	1:E:1081:TYR:CE1	2.50	0.47
1:B:1676:ILE:HD12	1:B:1690:LEU:HD13	1.96	0.46
1:E:195:SER:OG	1:E:948:THR:HG22	2.15	0.46
1:E:341:MET:HE2	1:E:359:PHE:CE1	2.49	0.46
1:E:1869:ARG:NH1	1:E:1976:ILE:HD13	2.30	0.46
1:B:179:LEU:HD13	1:B:185:VAL:HA	1.97	0.46
1:B:318:VAL:HG23	1:B:319:ASN:H	1.80	0.46
1:B:318:VAL:HG23	1:B:319:ASN:N	2.31	0.46
1:C:318:VAL:HG23	1:C:319:ASN:N	2.31	0.46
1:D:195:SER:OG	1:D:948:THR:HG22	2.16	0.46
1:E:517:ARG:HA	1:E:521:THR:HG22	1.96	0.46
1:B:1614:VAL:O	1:B:1618:THR:HG23	2.15	0.46
1:D:198:THR:HB	1:D:199:PRO:HA	1.96	0.46
1:D:1865:ASP:OD1	1:D:1883:TYR:OH	2.32	0.46
1:E:318:VAL:HG23	1:E:319:ASN:N	2.31	0.46
1:E:534:GLU:OE2	1:E:580:ASN:ND2	2.49	0.46
1:A:2477:ILE:HG22	1:A:2477:ILE:O	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:659:TYR:HB2	1:B:754:GLN:HG2	1.98	0.46
1:B:1296:THR:HG23	1:B:1301:ARG:HH12	1.79	0.46
1:B:1594:GLN:OE1	1:B:1606:ASN:ND2	2.48	0.46
1:B:2477:ILE:HG22	1:B:2477:ILE:O	2.15	0.46
1:D:311:ASN:OD1	1:D:332:ARG:NH2	2.44	0.46
1:D:2355:GLN:HG2	1:D:2356:GLU:OE1	2.16	0.46
1:E:497:ILE:HG21	1:E:589:TYR:HD2	1.81	0.46
1:B:341:MET:CE	1:B:410:LEU:HD22	2.46	0.46
1:B:1111:ILE:HG13	1:B:1160:PRO:HD3	1.97	0.46
1:D:503:ILE:HB	1:D:582:LEU:HD11	1.97	0.46
1:D:698:ALA:HB2	1:E:2256:GLY:HA3	1.98	0.46
1:E:195:SER:HB3	1:E:198:THR:OG1	2.15	0.46
1:E:848:GLN:OE1	1:E:892:GLN:NE2	2.48	0.46
1:E:1870:GLN:HB3	1:E:1872:GLU:OE1	2.15	0.46
1:E:2132:ARG:HH11	1:E:2163:TYR:HB3	1.80	0.46
1:A:198:THR:HB	1:A:199:PRO:HA	1.97	0.46
1:A:1296:THR:HG23	1:A:1301:ARG:HH12	1.81	0.46
1:A:1892:ASP:OD1	1:A:1892:ASP:N	2.47	0.46
1:A:2256:GLY:HA3	1:E:698:ALA:HB2	1.97	0.46
1:B:124:ARG:HD3	1:B:1914:THR:HB	1.98	0.46
1:C:2341:TYR:OH	1:C:2390:SER:O	2.31	0.46
1:D:292:GLU:OE1	1:D:295:GLN:NE2	2.49	0.46
1:E:503:ILE:HB	1:E:582:LEU:HD11	1.98	0.46
1:E:1637:LEU:HD23	1:E:1637:LEU:H	1.81	0.46
1:B:292:GLU:OE1	1:B:295:GLN:NE2	2.47	0.46
1:E:801:LEU:HD23	1:E:801:LEU:HA	1.80	0.46
1:A:659:TYR:HB2	1:A:754:GLN:HG2	1.98	0.46
1:B:1094:ILE:HD11	1:B:1113:LEU:HB2	1.98	0.46
1:C:125:GLU:HG3	1:C:1017:PHE:CD2	2.51	0.46
1:D:1094:ILE:HD11	1:D:1113:LEU:HB2	1.98	0.46
1:D:1249:PHE:N	1:D:1265:GLN:O	2.44	0.46
1:E:558:ASP:OD1	1:E:558:ASP:N	2.44	0.46
1:E:1868:TYR:CD2	1:E:1976:ILE:HB	2.51	0.46
1:B:371:LYS:HA	1:B:377:GLU:HA	1.98	0.46
1:C:1962:THR:OG1	1:C:1966:ARG:NH2	2.49	0.46
1:D:711:VAL:HG11	1:D:763:GLU:OE2	2.15	0.46
1:E:659:TYR:HB2	1:E:754:GLN:HG2	1.98	0.46
1:E:1962:THR:OG1	1:E:1966:ARG:NH2	2.49	0.46
1:B:2246:SER:HA	1:B:2250:LEU:HD23	1.98	0.46
1:C:195:SER:HB3	1:C:198:THR:OG1	2.16	0.46
1:C:1657:ASP:OD1	1:C:1712:LYS:HE3	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:124:ARG:HD3	1:D:1914:THR:HB	1.98	0.46
1:D:318:VAL:HG23	1:D:319:ASN:N	2.31	0.46
1:E:973:ILE:HD12	1:E:988:GLU:OE2	2.16	0.46
1:A:343:VAL:HA	1:A:357:TYR:HA	1.98	0.45
1:C:124:ARG:HD3	1:C:1914:THR:HB	1.98	0.45
1:C:341:MET:CE	1:C:410:LEU:HD22	2.46	0.45
1:C:497:ILE:HG21	1:C:589:TYR:HD2	1.80	0.45
1:C:534:GLU:OE2	1:C:580:ASN:ND2	2.49	0.45
1:C:1608:LEU:HD12	1:C:1635:PRO:HG2	1.98	0.45
1:E:1594:GLN:OE1	1:E:1606:ASN:ND2	2.49	0.45
1:E:1614:VAL:O	1:E:1618:THR:HG23	2.16	0.45
1:A:318:VAL:HG23	1:A:319:ASN:N	2.31	0.45
1:A:351:GLU:OE1	1:A:398:ASN:ND2	2.39	0.45
1:A:973:ILE:HD12	1:A:988:GLU:OE2	2.17	0.45
1:C:318:VAL:HG23	1:C:319:ASN:H	1.81	0.45
1:D:517:ARG:HA	1:D:521:THR:HG22	1.97	0.45
1:D:1657:ASP:OD1	1:D:1712:LYS:HE3	2.16	0.45
1:D:1784:LEU:HD23	1:D:1784:LEU:HA	1.70	0.45
1:A:176:GLU:HG3	1:A:954:VAL:HG13	1.98	0.45
1:A:1094:ILE:HD11	1:A:1113:LEU:HB2	1.98	0.45
1:B:195:SER:HB3	1:B:198:THR:OG1	2.15	0.45
1:B:343:VAL:HA	1:B:357:TYR:HA	1.99	0.45
1:B:503:ILE:HB	1:B:582:LEU:HD11	1.98	0.45
1:C:195:SER:OG	1:C:948:THR:HG22	2.17	0.45
1:C:371:LYS:HA	1:C:377:GLU:HA	1.98	0.45
1:C:1652:LEU:HA	1:C:1655:HIS:HB3	1.99	0.45
1:D:341:MET:CE	1:D:410:LEU:HD22	2.46	0.45
1:E:341:MET:CE	1:E:410:LEU:HD22	2.46	0.45
1:A:534:GLU:OE2	1:A:580:ASN:ND2	2.49	0.45
1:A:663:LEU:HD22	1:A:749:GLN:NE2	2.31	0.45
1:C:503:ILE:HB	1:C:582:LEU:HD11	1.99	0.45
1:C:659:TYR:HB2	1:C:754:GLN:HG2	1.98	0.45
1:C:1598:TRP:CD1	1:C:1599:GLN:HG2	2.52	0.45
1:D:125:GLU:HG3	1:D:1017:PHE:CD2	2.52	0.45
1:D:1614:VAL:O	1:D:1618:THR:HG23	2.16	0.45
1:A:318:VAL:HG23	1:A:319:ASN:H	1.81	0.45
1:A:711:VAL:HG11	1:A:763:GLU:OE2	2.17	0.45
1:B:195:SER:OG	1:B:948:THR:HG22	2.17	0.45
1:B:1637:LEU:H	1:B:1637:LEU:HD23	1.81	0.45
1:D:1111:ILE:HG13	1:D:1160:PRO:HD3	1.97	0.45
1:D:1250:TYR:HB3	1:D:1264:MET:SD	2.57	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:142:ARG:HE	1:E:973:ILE:HD11	1.81	0.45
1:E:711:VAL:HG11	1:E:763:GLU:OE2	2.16	0.45
1:E:1224:LEU:HD11	1:E:1249:PHE:HB3	1.97	0.45
1:E:1250:TYR:HB3	1:E:1264:MET:SD	2.57	0.45
1:A:1614:VAL:O	1:A:1618:THR:HG23	2.16	0.45
1:A:1642:TYR:OH	1:A:1756:GLU:HB3	2.17	0.45
1:A:341:MET:CE	1:A:410:LEU:HD22	2.47	0.45
1:D:1598:TRP:CD1	1:D:1599:GLN:HG2	2.52	0.45
1:D:1870:GLN:HB3	1:D:1872:GLU:OE1	2.16	0.45
1:A:1888:HIS:NE2	1:E:1002:GLU:OE1	2.42	0.45
1:D:746:VAL:HB	1:D:749:GLN:HB2	1.98	0.45
1:D:1730:LYS:HZ3	1:D:1732:ILE:HD12	1.80	0.45
1:E:1649:PRO:HB3	1:E:1683:ASP:O	2.17	0.45
1:A:231:MET:SD	1:A:898:VAL:HA	2.57	0.45
1:A:1608:LEU:HD12	1:A:1635:PRO:HG2	1.99	0.45
1:E:1642:TYR:OH	1:E:1756:GLU:HB3	2.17	0.45
1:B:125:GLU:HG3	1:B:1017:PHE:CD2	2.52	0.45
1:B:848:GLN:OE1	1:B:892:GLN:NE2	2.50	0.45
1:B:1249:PHE:N	1:B:1265:GLN:O	2.48	0.45
1:D:318:VAL:HG23	1:D:319:ASN:H	1.81	0.45
1:E:124:ARG:HD3	1:E:1914:THR:HB	1.99	0.45
1:E:1653:SER:O	1:E:1713:LYS:NZ	2.50	0.45
1:B:1892:ASP:N	1:B:1892:ASP:OD1	2.47	0.44
1:C:1250:TYR:HB3	1:C:1264:MET:SD	2.57	0.44
1:A:503:ILE:HB	1:A:582:LEU:HD11	2.00	0.44
1:A:1637:LEU:HD23	1:A:1637:LEU:H	1.82	0.44
1:A:1652:LEU:HA	1:A:1655:HIS:HB3	1.99	0.44
1:C:2246:SER:HA	1:C:2250:LEU:HD23	1.99	0.44
1:D:965:ASP:OD1	1:D:966:ASP:N	2.50	0.44
1:E:125:GLU:HG3	1:E:1017:PHE:CD2	2.52	0.44
1:A:976:GLN:OE1	1:B:1971:ARG:NH1	2.50	0.44
1:A:1657:ASP:OD1	1:A:1712:LYS:HE3	2.17	0.44
1:B:198:THR:O	1:B:445:ARG:NH1	2.49	0.44
1:C:2068:LEU:HD22	1:C:2227:LEU:HG	2.00	0.44
1:D:1649:PRO:HB3	1:D:1683:ASP:O	2.17	0.44
1:D:1652:LEU:HA	1:D:1655:HIS:HB3	1.99	0.44
1:E:1094:ILE:HD11	1:E:1113:LEU:HB2	1.99	0.44
1:E:2246:SER:HA	1:E:2250:LEU:HD23	1.98	0.44
1:A:371:LYS:HA	1:A:377:GLU:HA	1.98	0.44
1:B:973:ILE:HD12	1:B:988:GLU:OE2	2.18	0.44
1:C:231:MET:SD	1:C:898:VAL:HA	2.58	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:345:LEU:HD11	1:C:353:TYR:HB3	2.00	0.44
1:C:711:VAL:HG11	1:C:763:GLU:OE2	2.18	0.44
1:C:973:ILE:HD12	1:C:988:GLU:OE2	2.18	0.44
1:D:176:GLU:HG3	1:D:954:VAL:HG13	1.99	0.44
1:D:534:GLU:OE2	1:D:580:ASN:ND2	2.51	0.44
1:E:1108:THR:HG1	1:E:1128:HIS:HE2	1.58	0.44
1:A:124:ARG:HD3	1:A:1914:THR:HB	2.00	0.44
1:A:848:GLN:OE1	1:A:892:GLN:NE2	2.49	0.44
1:B:280:GLU:OE2	1:C:1895:TYR:HB2	2.17	0.44
1:C:848:GLN:OE1	1:C:892:GLN:NE2	2.50	0.44
1:D:2246:SER:HA	1:D:2250:LEU:HD23	1.99	0.44
1:B:1649:PRO:HB3	1:B:1683:ASP:O	2.17	0.44
1:C:280:GLU:OE2	1:D:1895:TYR:HB2	2.17	0.44
1:C:1614:VAL:O	1:C:1618:THR:HG23	2.16	0.44
1:D:659:TYR:HB2	1:D:754:GLN:HG2	1.99	0.44
1:D:2341:TYR:OH	1:D:2390:SER:O	2.31	0.44
1:E:1607:THR:HG22	1:E:1609:PHE:H	1.83	0.44
1:E:1750:LEU:HD13	1:E:1753:ILE:HD12	2.00	0.44
1:A:125:GLU:HG3	1:A:1017:PHE:CD2	2.53	0.44
1:B:801:LEU:HD23	1:B:801:LEU:HA	1.79	0.44
1:B:2341:TYR:OH	1:B:2390:SER:O	2.31	0.44
1:D:280:GLU:OE2	1:E:1895:TYR:HB2	2.18	0.44
1:D:371:LYS:HA	1:D:377:GLU:HA	1.99	0.44
1:D:593:LEU:O	1:D:597:ILE:HG12	2.18	0.44
1:E:1657:ASP:OD1	1:E:1712:LYS:HE3	2.18	0.44
1:A:1649:PRO:HB3	1:A:1683:ASP:O	2.18	0.44
1:B:251:LEU:HD13	1:B:446:LEU:HD13	2.00	0.44
1:B:534:GLU:OE2	1:B:580:ASN:ND2	2.50	0.44
1:D:557:ILE:HB	1:D:561:SER:OG	2.17	0.44
1:D:848:GLN:OE1	1:D:892:GLN:NE2	2.51	0.44
1:D:1887:LEU:HD12	1:D:1887:LEU:HA	1.68	0.44
1:E:231:MET:SD	1:E:898:VAL:HA	2.57	0.44
1:A:2057:GLN:HG3	1:A:2241:LEU:CD1	2.48	0.44
1:D:904:GLN:OE1	1:D:906:MET:N	2.51	0.44
1:A:251:LEU:HD13	1:A:446:LEU:HD13	2.00	0.43
1:A:1962:THR:OG1	1:A:1966:ARG:NH2	2.51	0.43
1:B:711:VAL:HG11	1:B:763:GLU:OE2	2.18	0.43
1:B:2504:LEU:HD21	1:B:2507:ILE:HD11	1.99	0.43
1:C:558:ASP:OD1	1:C:558:ASP:N	2.44	0.43
1:D:231:MET:SD	1:D:898:VAL:HA	2.58	0.43
1:D:1962:THR:OG1	1:D:1966:ARG:NH2	2.50	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:2504:LEU:HD21	1:D:2507:ILE:HD11	2.00	0.43
1:E:904:GLN:OE1	1:E:906:MET:N	2.51	0.43
1:E:2228:LYS:HE3	1:E:2228:LYS:HB2	1.77	0.43
1:A:557:ILE:HB	1:A:561:SER:OG	2.18	0.43
1:A:2228:LYS:HE3	1:A:2228:LYS:HB2	1.77	0.43
1:A:2504:LEU:HD21	1:A:2507:ILE:HD11	1.99	0.43
1:C:1649:PRO:HB3	1:C:1683:ASP:O	2.18	0.43
1:E:318:VAL:HG23	1:E:319:ASN:H	1.81	0.43
1:B:1652:LEU:HA	1:B:1655:HIS:HB3	2.00	0.43
1:C:2018:ARG:NH1	1:C:2464:PHE:O	2.51	0.43
1:C:2132:ARG:NH1	1:C:2163:TYR:HB3	2.33	0.43
1:E:1652:LEU:HA	1:E:1655:HIS:HB3	2.00	0.43
1:A:1895:TYR:HB2	1:E:280:GLU:OE2	2.18	0.43
1:B:231:MET:SD	1:B:898:VAL:HA	2.59	0.43
1:B:1071:ALA:HB2	1:B:1791:GLU:OE2	2.19	0.43
1:B:2068:LEU:HD22	1:B:2227:LEU:HG	2.00	0.43
1:C:1637:LEU:HD23	1:C:1637:LEU:H	1.82	0.43
1:C:2241:LEU:HD23	1:C:2241:LEU:HA	1.86	0.43
1:D:227:ILE:HD11	1:D:880:TRP:CE2	2.53	0.43
1:D:973:ILE:HD12	1:D:988:GLU:OE2	2.18	0.43
1:D:1637:LEU:H	1:D:1637:LEU:HD23	1.82	0.43
1:D:2241:LEU:HD23	1:D:2241:LEU:HA	1.87	0.43
1:A:280:GLU:OE2	1:B:1895:TYR:HB2	2.18	0.43
1:A:1224:LEU:HD11	1:A:1249:PHE:HB3	2.00	0.43
1:A:1250:TYR:HB3	1:A:1264:MET:SD	2.59	0.43
1:B:1657:ASP:OD1	1:B:1712:LYS:HE3	2.17	0.43
1:C:210:VAL:HG11	1:C:922:LEU:HB3	2.00	0.43
1:C:1224:LEU:HD11	1:C:1249:PHE:HB3	2.00	0.43
1:E:490:ILE:HD12	1:E:494:THR:HG22	2.01	0.43
1:E:557:ILE:HB	1:E:561:SER:OG	2.18	0.43
1:E:2018:ARG:NH1	1:E:2464:PHE:O	2.51	0.43
1:A:1598:TRP:CD1	1:A:1599:GLN:HG2	2.53	0.43
1:B:1250:TYR:HB3	1:B:1264:MET:SD	2.58	0.43
1:C:142:ARG:HE	1:C:973:ILE:HD11	1.84	0.43
1:E:569:THR:HG21	1:E:587:ASN:HB3	2.01	0.43
1:A:904:GLN:OE1	1:A:906:MET:N	2.51	0.43
1:B:592:LYS:HE3	1:B:596:ASP:OD2	2.19	0.43
1:B:965:ASP:OD1	1:B:966:ASP:N	2.51	0.43
1:B:2005:GLY:HA2	1:E:741:GLY:HA2	2.01	0.43
1:C:557:ILE:HB	1:C:561:SER:OG	2.18	0.43
1:C:1249:PHE:N	1:C:1265:GLN:O	2.44	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:569:THR:HG21	1:D:587:ASN:HB3	2.01	0.43
1:D:1608:LEU:HD12	1:D:1635:PRO:HG2	2.01	0.43
1:D:1642:TYR:OH	1:D:1756:GLU:HB3	2.19	0.43
1:E:227:ILE:HD11	1:E:880:TRP:CE2	2.53	0.43
1:E:2504:LEU:HD21	1:E:2507:ILE:HD11	2.00	0.43
1:A:1594:GLN:OE1	1:A:1606:ASN:ND2	2.52	0.43
1:A:1607:THR:HG22	1:A:1609:PHE:H	1.84	0.43
1:B:1598:TRP:CD1	1:B:1599:GLN:HG2	2.54	0.43
1:B:2278:GLN:OE1	1:B:2281:ARG:NH2	2.47	0.43
1:C:227:ILE:HD11	1:C:880:TRP:CE2	2.54	0.43
1:C:904:GLN:OE1	1:C:906:MET:N	2.52	0.43
1:A:592:LYS:HE3	1:A:596:ASP:OD2	2.19	0.43
1:A:1963:LEU:HD23	1:A:1963:LEU:HA	1.88	0.43
1:B:1642:TYR:OH	1:B:1756:GLU:HB3	2.18	0.43
1:C:368:LEU:HG	1:C:370:ILE:CD1	2.48	0.43
1:C:592:LYS:HE3	1:C:596:ASP:OD2	2.19	0.43
1:D:1963:LEU:HD23	1:D:1963:LEU:HA	1.88	0.43
1:E:176:GLU:HG3	1:E:954:VAL:HG13	2.01	0.43
1:E:343:VAL:HA	1:E:357:TYR:HA	1.99	0.43
1:A:490:ILE:HD12	1:A:494:THR:HG22	2.01	0.43
1:C:124:ARG:HD2	1:C:1915:THR:OG1	2.19	0.43
1:C:198:THR:O	1:C:445:ARG:NH1	2.51	0.43
1:C:976:GLN:OE1	1:D:1971:ARG:NH1	2.52	0.43
1:D:2018:ARG:NH1	1:D:2464:PHE:O	2.52	0.43
1:D:2057:GLN:HG3	1:D:2241:LEU:CD1	2.47	0.43
1:E:345:LEU:HD11	1:E:353:TYR:HB3	2.00	0.43
1:E:846:LEU:HD23	1:E:846:LEU:HA	1.89	0.43
1:A:368:LEU:HG	1:A:370:ILE:CD1	2.49	0.42
1:A:2246:SER:HA	1:A:2250:LEU:HD23	2.00	0.42
1:E:965:ASP:OD1	1:E:966:ASP:N	2.51	0.42
1:A:965:ASP:OD1	1:A:966:ASP:N	2.52	0.42
1:A:1750:LEU:HD13	1:A:1753:ILE:HD12	2.01	0.42
1:B:227:ILE:HD11	1:B:880:TRP:CE2	2.54	0.42
1:B:2018:ARG:NH1	1:B:2464:PHE:O	2.52	0.42
1:C:1024:TYR:O	1:C:1030:THR:OG1	2.30	0.42
1:C:1071:ALA:HB2	1:C:1791:GLU:OE2	2.19	0.42
1:D:592:LYS:HE3	1:D:596:ASP:OD2	2.20	0.42
1:E:2057:GLN:HG3	1:E:2241:LEU:CD1	2.48	0.42
1:B:142:ARG:HE	1:B:973:ILE:HD11	1.85	0.42
1:B:557:ILE:HB	1:B:561:SER:OG	2.18	0.42
1:D:1607:THR:HG22	1:D:1609:PHE:H	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:592:LYS:HE3	1:E:596:ASP:OD2	2.19	0.42
1:E:1146:LYS:NZ	1:E:1147:ILE:O	2.48	0.42
1:A:741:GLY:HA2	1:C:2005:GLY:HA2	2.02	0.42
1:A:1071:ALA:HB2	1:A:1791:GLU:OE2	2.19	0.42
1:A:2132:ARG:NH1	1:A:2163:TYR:HB3	2.34	0.42
1:B:1170:LEU:HD22	1:B:1198:LEU:HD11	2.00	0.42
1:D:601:THR:HG22	1:D:604:GLU:OE1	2.20	0.42
1:D:2068:LEU:HD22	1:D:2227:LEU:HG	2.01	0.42
1:A:569:THR:HG21	1:A:587:ASN:HB3	2.00	0.42
1:C:593:LEU:O	1:C:597:ILE:HG12	2.19	0.42
1:D:1135:LYS:HA	1:D:1135:LYS:HD3	1.88	0.42
1:E:1170:LEU:HD22	1:E:1198:LEU:HD11	2.01	0.42
1:B:176:GLU:HG3	1:B:954:VAL:HG13	2.01	0.42
1:B:846:LEU:HA	1:B:846:LEU:HD23	1.86	0.42
1:B:2228:LYS:HB2	1:B:2228:LYS:HE3	1.77	0.42
1:C:490:ILE:HD12	1:C:494:THR:HG22	2.01	0.42
1:C:1594:GLN:OE1	1:C:1606:ASN:ND2	2.53	0.42
1:D:124:ARG:HD2	1:D:1915:THR:OG1	2.20	0.42
1:D:490:ILE:HD12	1:D:494:THR:HG22	2.01	0.42
1:D:976:GLN:OE1	1:E:1971:ARG:NH1	2.53	0.42
1:D:1170:LEU:HD22	1:D:1198:LEU:HD11	2.02	0.42
1:D:1794:ARG:NH2	1:D:1798:TYR:OH	2.52	0.42
1:E:1598:TRP:CD1	1:E:1599:GLN:HG2	2.54	0.42
1:E:2319:ASP:OD1	1:E:2323:LYS:HE2	2.20	0.42
1:B:593:LEU:O	1:B:597:ILE:HG12	2.19	0.42
1:B:910:PRO:HG2	1:B:915:TRP:HE1	1.85	0.42
1:C:601:THR:HG22	1:C:604:GLU:OE1	2.20	0.42
1:C:1968:TYR:HE1	1:C:1972:HIS:NE2	2.17	0.42
1:A:558:ASP:N	1:A:558:ASP:OD1	2.44	0.42
1:A:1784:LEU:HA	1:A:1784:LEU:HD23	1.73	0.42
1:A:2005:GLY:HA2	1:D:741:GLY:HA2	2.02	0.42
1:B:345:LEU:HD11	1:B:353:TYR:HB3	2.01	0.42
1:C:522:PRO:O	1:C:553:ARG:NH1	2.49	0.42
1:C:965:ASP:OD1	1:C:966:ASP:N	2.52	0.42
1:C:1135:LYS:HD3	1:C:1135:LYS:HA	1.87	0.42
1:E:311:ASN:OD1	1:E:332:ARG:NH2	2.49	0.42
1:E:601:THR:HG22	1:E:604:GLU:OE1	2.20	0.42
1:A:938:LEU:HD23	1:A:938:LEU:HA	1.80	0.42
1:A:2319:ASP:OD1	1:A:2323:LYS:HE2	2.19	0.42
1:B:1607:THR:HG22	1:B:1609:PHE:H	1.84	0.42
1:B:1968:TYR:HE1	1:B:1972:HIS:NE2	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1607:THR:HG22	1:C:1609:PHE:H	1.85	0.42
1:C:1750:LEU:HD13	1:C:1753:ILE:HD12	2.01	0.42
1:D:251:LEU:HD13	1:D:446:LEU:HD13	2.02	0.42
1:E:1071:ALA:HB2	1:E:1791:GLU:OE2	2.18	0.42
1:B:344:GLU:N	1:B:356:ASP:O	2.33	0.42
1:B:1784:LEU:HD23	1:B:1784:LEU:HA	1.73	0.42
1:B:2319:ASP:OD1	1:B:2323:LYS:HE2	2.20	0.42
1:C:2057:GLN:HG3	1:C:2241:LEU:CD1	2.48	0.42
1:C:2504:LEU:HD21	1:C:2507:ILE:HD11	2.01	0.42
1:E:124:ARG:HD2	1:E:1915:THR:OG1	2.19	0.42
1:E:2068:LEU:HD22	1:E:2227:LEU:HG	2.01	0.42
1:B:2132:ARG:NH1	1:B:2163:TYR:HB3	2.34	0.41
1:D:1071:ALA:HB2	1:D:1791:GLU:OE2	2.19	0.41
1:A:593:LEU:O	1:A:597:ILE:HG12	2.19	0.41
1:B:904:GLN:OE1	1:B:906:MET:N	2.52	0.41
1:B:2360:LEU:HD23	1:B:2360:LEU:HA	1.82	0.41
1:C:1170:LEU:HD22	1:C:1198:LEU:HD11	2.01	0.41
1:D:368:LEU:HG	1:D:370:ILE:CD1	2.49	0.41
1:D:2132:ARG:NH1	1:D:2163:TYR:HB3	2.34	0.41
1:E:368:LEU:HG	1:E:370:ILE:CD1	2.49	0.41
1:A:227:ILE:HD11	1:A:880:TRP:CE2	2.55	0.41
1:A:860:PRO:HA	1:A:861:PRO:HD3	1.97	0.41
1:A:1868:TYR:CE2	1:A:1976:ILE:HB	2.55	0.41
1:B:210:VAL:HG11	1:B:922:LEU:HB3	2.02	0.41
1:B:938:LEU:HD23	1:B:938:LEU:HA	1.81	0.41
1:C:251:LEU:HD13	1:C:446:LEU:HD13	2.02	0.41
1:D:198:THR:O	1:D:445:ARG:NH1	2.53	0.41
1:D:1163:TYR:CD1	1:D:1245:LEU:HD22	2.55	0.41
1:E:251:LEU:HD13	1:E:446:LEU:HD13	2.02	0.41
1:E:1968:TYR:HE1	1:E:1972:HIS:NE2	2.18	0.41
1:A:124:ARG:HD2	1:A:1915:THR:OG1	2.20	0.41
1:A:1968:TYR:HE1	1:A:1972:HIS:NE2	2.19	0.41
1:A:2222:LEU:HD21	1:B:2069:SER:HB2	2.03	0.41
1:B:976:GLN:OE1	1:C:1971:ARG:NH1	2.53	0.41
1:C:741:GLY:HA2	1:E:2005:GLY:HA2	2.03	0.41
1:C:1163:TYR:CD1	1:C:1245:LEU:HD22	2.55	0.41
1:C:1642:TYR:OH	1:C:1756:GLU:HB3	2.19	0.41
1:C:2329:LEU:O	1:C:2514:THR:OG1	2.21	0.41
1:A:747:GLU:HG2	1:A:748:THR:N	2.36	0.41
1:A:1860:LEU:HD23	1:A:1860:LEU:HA	1.88	0.41
1:D:2228:LYS:HB2	1:D:2228:LYS:HE3	1.77	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:593:LEU:O	1:E:597:ILE:HG12	2.20	0.41
1:A:142:ARG:HE	1:A:973:ILE:HD11	1.85	0.41
1:A:601:THR:HG22	1:A:604:GLU:OE1	2.21	0.41
1:A:1170:LEU:HD22	1:A:1198:LEU:HD11	2.02	0.41
1:A:1818:VAL:HG12	1:A:1820:PRO:HD2	2.03	0.41
1:C:747:GLU:HG2	1:C:748:THR:N	2.36	0.41
1:D:1818:VAL:HG12	1:D:1820:PRO:HD2	2.02	0.41
1:E:1818:VAL:HG12	1:E:1820:PRO:HD2	2.03	0.41
1:A:311:ASN:OD1	1:A:332:ARG:NH2	2.48	0.41
1:A:347:PRO:HB3	1:A:353:TYR:CE2	2.55	0.41
1:A:977:VAL:CG2	1:A:981:ILE:HD12	2.51	0.41
1:A:1655:HIS:CD2	1:A:1655:HIS:C	2.94	0.41
1:A:2068:LEU:HD22	1:A:2227:LEU:HG	2.02	0.41
1:B:124:ARG:HD2	1:B:1915:THR:OG1	2.20	0.41
1:B:1868:TYR:CE2	1:B:1976:ILE:HB	2.56	0.41
1:B:2106:ASN:OD1	1:B:2106:ASN:N	2.54	0.41
1:C:910:PRO:HG2	1:C:915:TRP:HE1	1.85	0.41
1:C:2319:ASP:OD1	1:C:2323:LYS:HE2	2.21	0.41
1:D:734:LEU:HD23	1:D:734:LEU:HA	1.95	0.41
1:D:801:LEU:HD23	1:D:801:LEU:HA	1.80	0.41
1:D:2245:PHE:O	1:D:2246:SER:OG	2.36	0.41
1:D:2319:ASP:OD1	1:D:2323:LYS:HE2	2.20	0.41
1:E:1163:TYR:CD1	1:E:1245:LEU:HD22	2.56	0.41
1:E:2132:ARG:NH1	1:E:2163:TYR:HB3	2.36	0.41
1:A:198:THR:O	1:A:445:ARG:NH1	2.54	0.41
1:B:490:ILE:HD12	1:B:494:THR:HG22	2.03	0.41
1:D:370:ILE:HG13	1:D:410:LEU:HG	2.03	0.41
1:E:2241:LEU:HD23	1:E:2241:LEU:HA	1.85	0.41
1:A:345:LEU:HD11	1:A:353:TYR:HB3	2.03	0.41
1:A:471:ASN:H	1:A:474:VAL:CG1	2.34	0.41
1:A:910:PRO:HG2	1:A:915:TRP:HE1	1.85	0.41
1:A:1971:ARG:NH1	1:E:976:GLN:OE1	2.54	0.41
1:A:2278:GLN:OE1	1:A:2281:ARG:NH2	2.49	0.41
1:B:569:THR:HG21	1:B:587:ASN:HB3	2.02	0.41
1:B:741:GLY:HA2	1:D:2005:GLY:HA2	2.02	0.41
1:C:569:THR:HG21	1:C:587:ASN:HB3	2.01	0.41
1:C:938:LEU:HA	1:C:938:LEU:HD23	1.81	0.41
1:C:1252:GLN:HB3	1:C:1297:ASN:OD1	2.21	0.41
1:C:2106:ASN:N	1:C:2106:ASN:OD1	2.54	0.41
1:D:588:LEU:HD23	1:D:588:LEU:HA	1.94	0.41
1:D:1655:HIS:CD2	1:D:1655:HIS:C	2.94	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:2323:LYS:O	1:D:2326:LYS:NZ	2.43	0.41
1:E:1655:HIS:CD2	1:E:1655:HIS:C	2.95	0.41
1:E:2106:ASN:OD1	1:E:2106:ASN:N	2.54	0.41
1:A:1163:TYR:CD1	1:A:1245:LEU:HD22	2.56	0.41
1:A:2018:ARG:NH1	1:A:2464:PHE:O	2.54	0.41
1:A:2106:ASN:OD1	1:A:2106:ASN:N	2.54	0.41
1:B:601:THR:HG22	1:B:604:GLU:OE1	2.21	0.41
1:B:1002:GLU:CD	1:C:1888:HIS:HE2	2.24	0.41
1:B:1163:TYR:CD1	1:B:1245:LEU:HD22	2.56	0.41
1:B:1655:HIS:CE1	1:B:1681:LEU:HB2	2.56	0.41
1:C:1655:HIS:CD2	1:C:1655:HIS:C	2.94	0.41
1:D:522:PRO:O	1:D:553:ARG:NH1	2.52	0.41
1:D:533:ASP:HA	1:D:579:LYS:NZ	2.36	0.41
1:D:910:PRO:HG2	1:D:915:TRP:HE1	1.85	0.41
1:D:1968:TYR:HE1	1:D:1972:HIS:NE2	2.18	0.41
1:E:910:PRO:HG2	1:E:915:TRP:HE1	1.86	0.41
1:B:471:ASN:H	1:B:474:VAL:CG1	2.34	0.40
1:B:812:ASN:HA	1:C:1998:ALA:HB2	2.04	0.40
1:C:471:ASN:H	1:C:474:VAL:CG1	2.34	0.40
1:B:522:PRO:O	1:B:553:ARG:NH1	2.51	0.40
1:B:1224:LEU:HD11	1:B:1249:PHE:HB3	2.01	0.40
1:B:1818:VAL:HG12	1:B:1820:PRO:HD2	2.03	0.40
1:D:142:ARG:HE	1:D:973:ILE:HD11	1.86	0.40
1:D:747:GLU:HG2	1:D:748:THR:N	2.36	0.40
1:D:2106:ASN:N	1:D:2106:ASN:OD1	2.54	0.40
1:A:320:SER:HB2	1:A:323:GLY:HA2	2.04	0.40
1:A:1252:GLN:HB3	1:A:1297:ASN:OD1	2.21	0.40
1:A:2341:TYR:OH	1:A:2390:SER:O	2.32	0.40
1:B:142:ARG:NH1	1:B:144:ASP:OD1	2.55	0.40
1:B:977:VAL:CG2	1:B:981:ILE:HD12	2.51	0.40
1:D:471:ASN:H	1:D:474:VAL:CG1	2.34	0.40
1:E:1784:LEU:HD23	1:E:1784:LEU:HA	1.70	0.40
1:A:370:ILE:HD13	1:A:379:VAL:HG13	2.04	0.40
1:A:1002:GLU:CD	1:B:1888:HIS:HE2	2.25	0.40
1:A:1887:LEU:HD12	1:A:1887:LEU:HA	1.68	0.40
1:B:1887:LEU:HD12	1:B:1887:LEU:HA	1.68	0.40
1:E:1968:TYR:HE1	1:E:1972:HIS:CD2	2.39	0.40
1:A:2069:SER:HB2	1:E:2222:LEU:HD21	2.04	0.40
1:B:1188:TYR:CE1	1:C:1188:TYR:HB2	2.57	0.40
1:C:1188:TYR:CE1	1:D:1188:TYR:HB2	2.56	0.40
1:C:1968:TYR:HE1	1:C:1972:HIS:CD2	2.40	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:977:VAL:CG2	1:D:981:ILE:HD12	2.52	0.40
1:E:747:GLU:HG2	1:E:748:THR:N	2.36	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	2114/2535 (83%)	2055 (97%)	59 (3%)	0	100	100
1	B	2114/2535 (83%)	2054 (97%)	60 (3%)	0	100	100
1	C	2114/2535 (83%)	2056 (97%)	58 (3%)	0	100	100
1	D	2114/2535 (83%)	2055 (97%)	59 (3%)	0	100	100
1	E	2114/2535 (83%)	2054 (97%)	60 (3%)	0	100	100
All	All	10570/12675 (83%)	10274 (97%)	296 (3%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	1816/2173 (84%)	1814 (100%)	2 (0%)	92	97
1	B	1816/2173 (84%)	1814 (100%)	2 (0%)	92	97

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	C	1816/2173 (84%)	1814 (100%)	2 (0%)	92	97
1	D	1816/2173 (84%)	1814 (100%)	2 (0%)	92	97
1	E	1816/2173 (84%)	1814 (100%)	2 (0%)	92	97
All	All	9080/10865 (84%)	9070 (100%)	10 (0%)	92	97

All (10) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1049	MET
1	A	1174	GLN
1	B	1049	MET
1	B	1174	GLN
1	C	1049	MET
1	C	1174	GLN
1	D	1049	MET
1	D	1174	GLN
1	E	1049	MET
1	E	1174	GLN

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

Mol	Chain	Res	Type
1	A	2059	GLN
1	B	2059	GLN
1	C	2059	GLN
1	E	2059	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no 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.

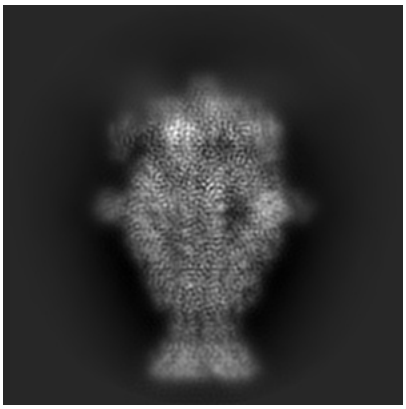
6 Map visualisation (i)

This section contains visualisations of the EMDB entry EMD-16793. These allow visual inspection of the internal detail of the map and identification of artifacts.

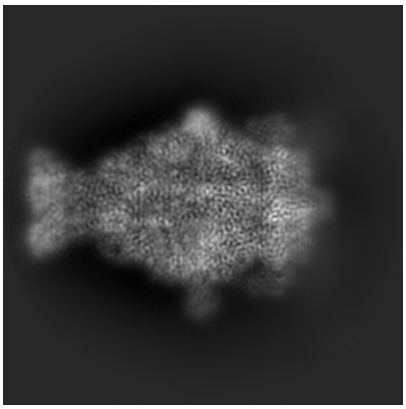
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections (i)

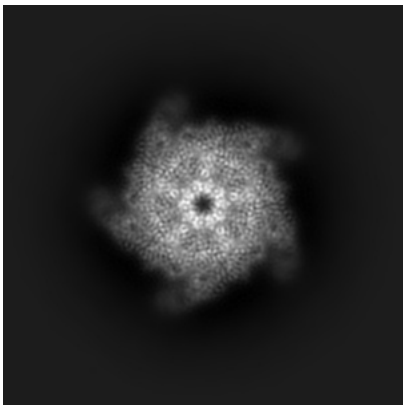
6.1.1 Primary map



X

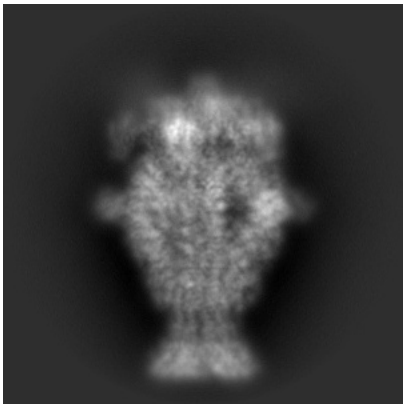


Y

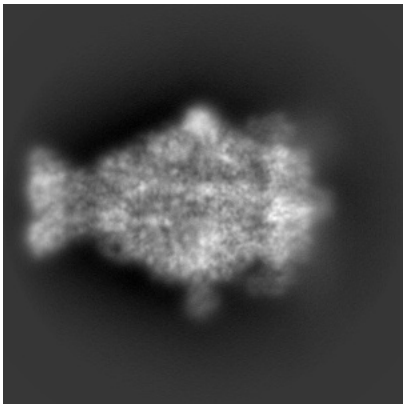


Z

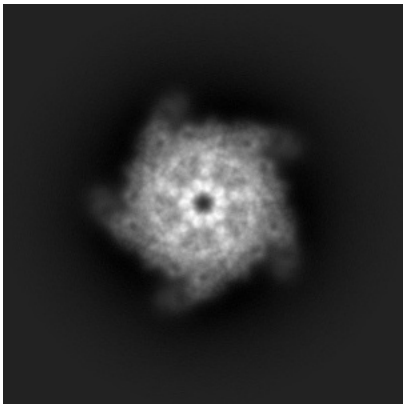
6.1.2 Raw map



X



Y

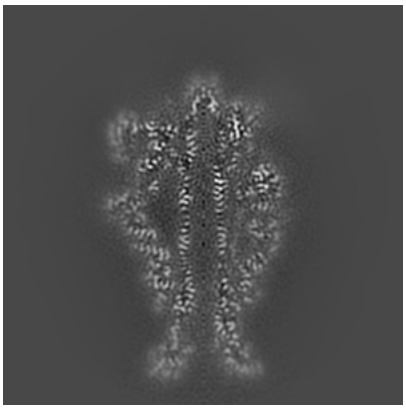


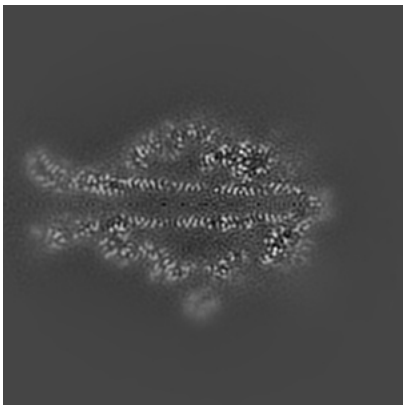
Z

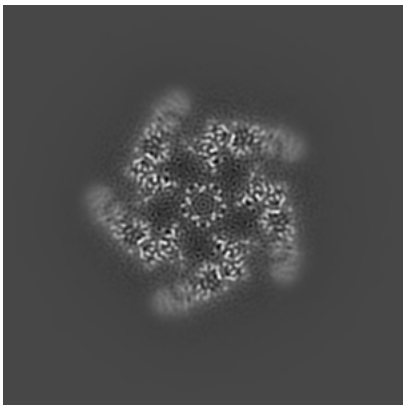
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

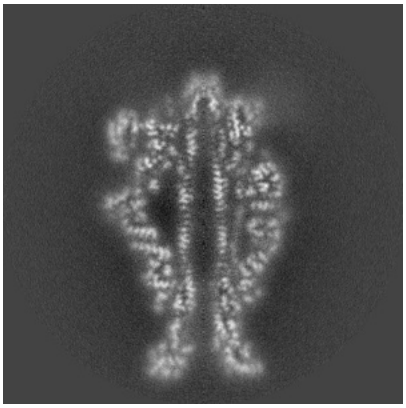
6.2.1 Primary map

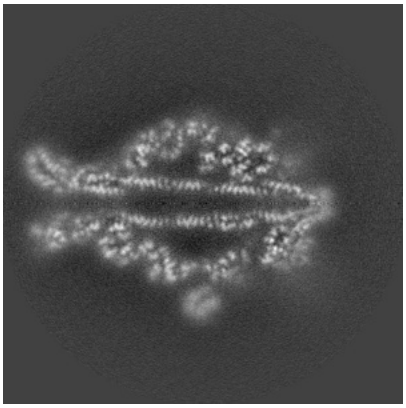

X Index: 192

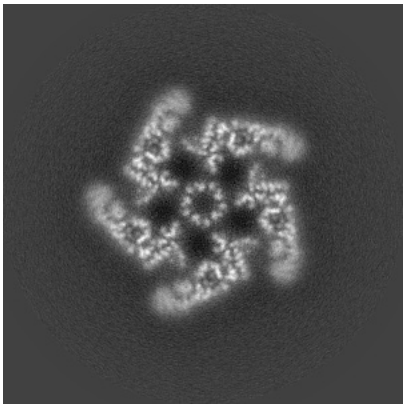

Y Index: 192


Z Index: 192

6.2.2 Raw map


X Index: 192

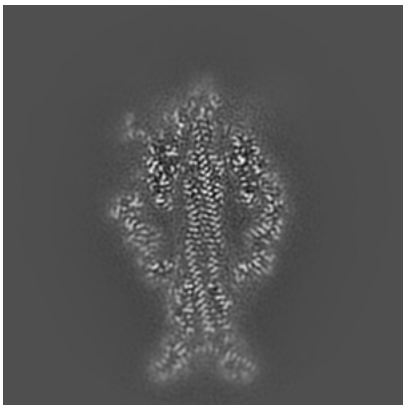

Y Index: 192

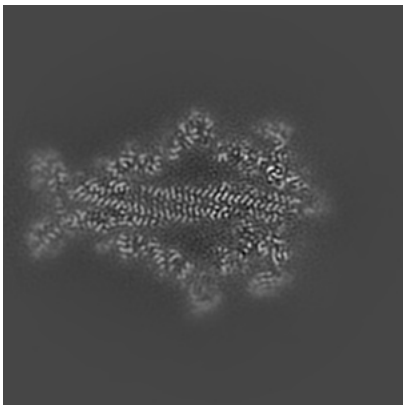

Z Index: 192

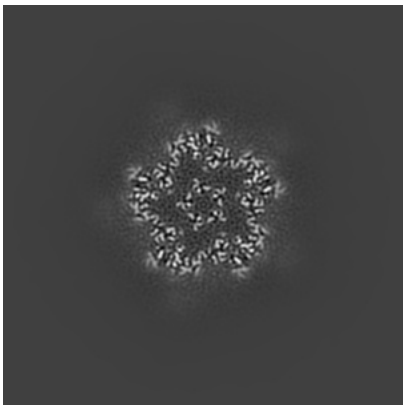
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

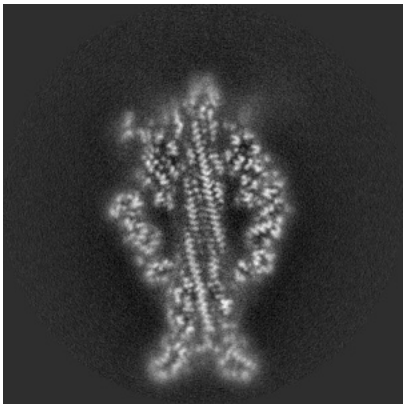
6.3.1 Primary map

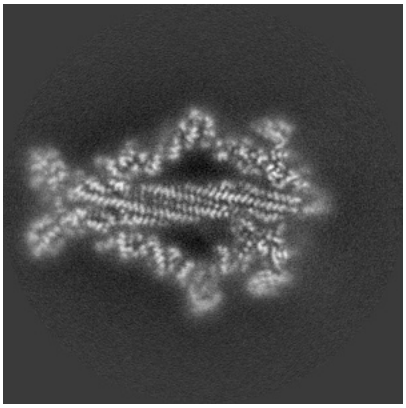

X Index: 206

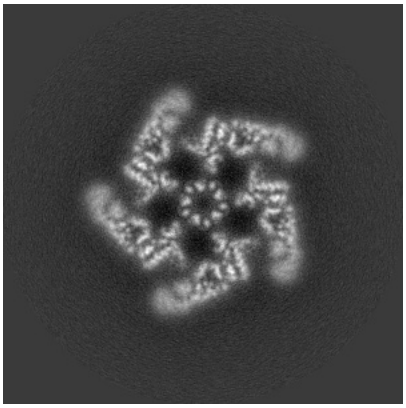

Y Index: 178


Z Index: 212

6.3.2 Raw map


X Index: 205

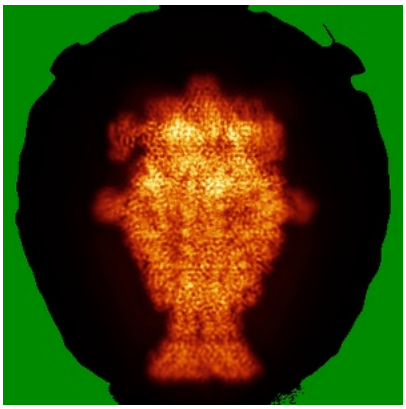

Y Index: 178

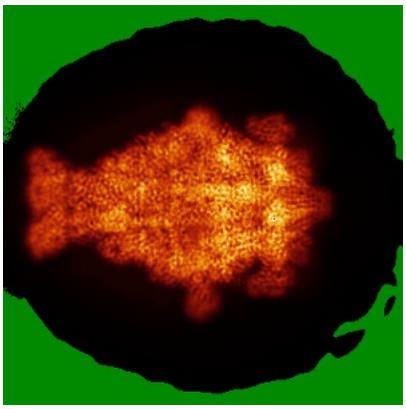

Z Index: 191

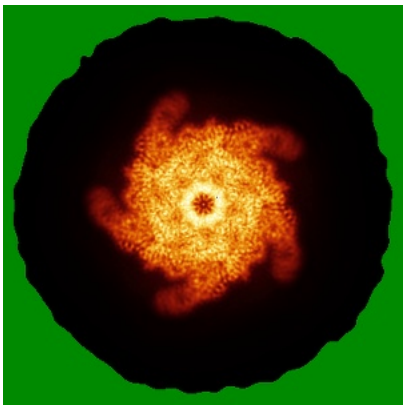
The images above show the largest variance slices of the map in three orthogonal directions.

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

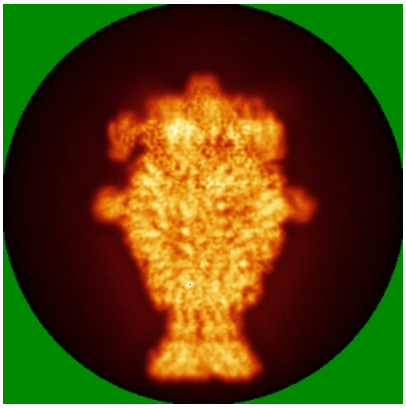
6.4.1 Primary map

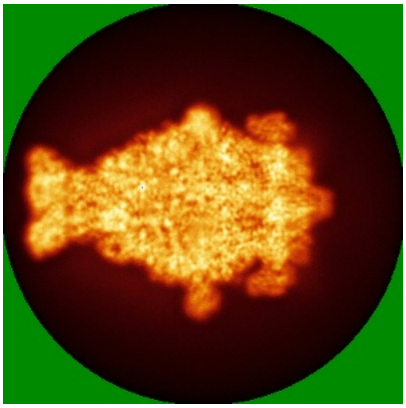

X

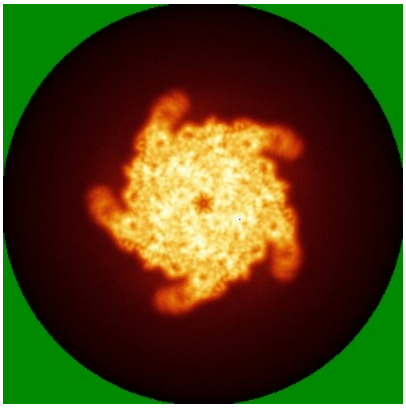

Y


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.

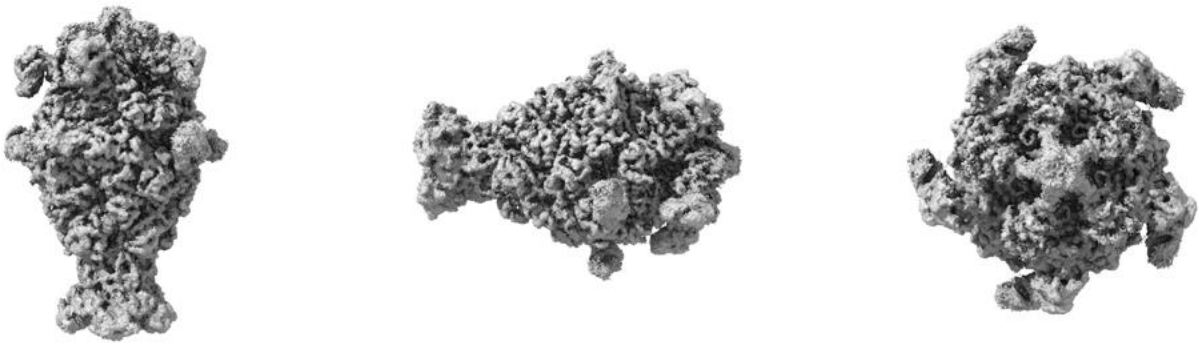
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

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

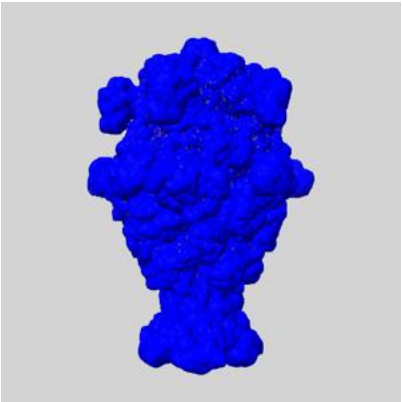
6.6 Mask visualisation (i)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

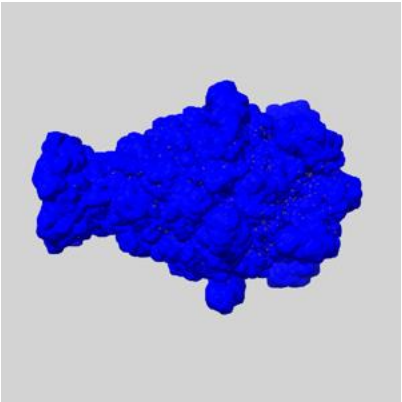
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

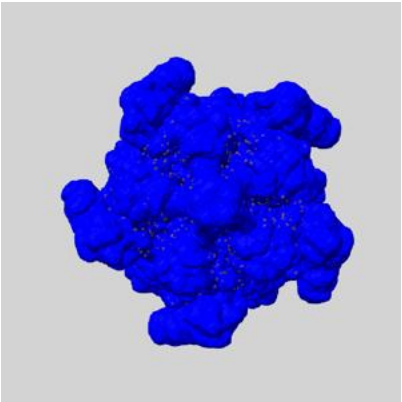
6.6.1 emd_16793_msk_2.map (i)



X

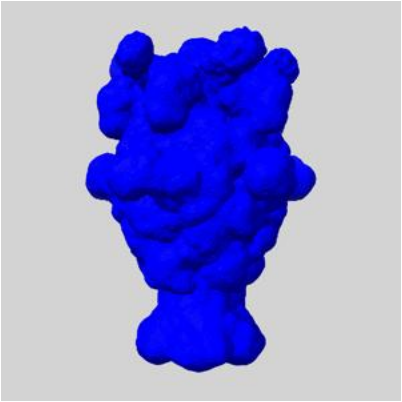


Y

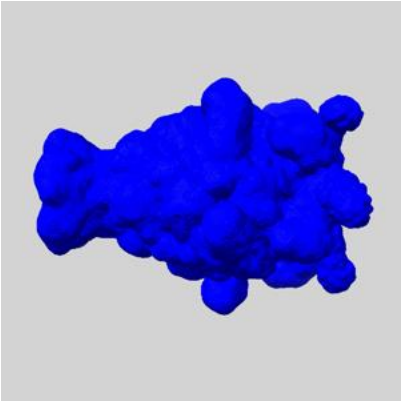


Z

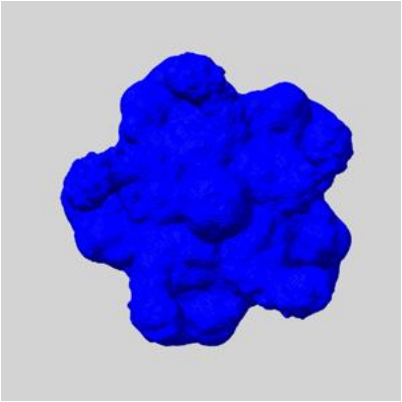
6.6.2 emd_16793_msk_1.map (i)



X



Y

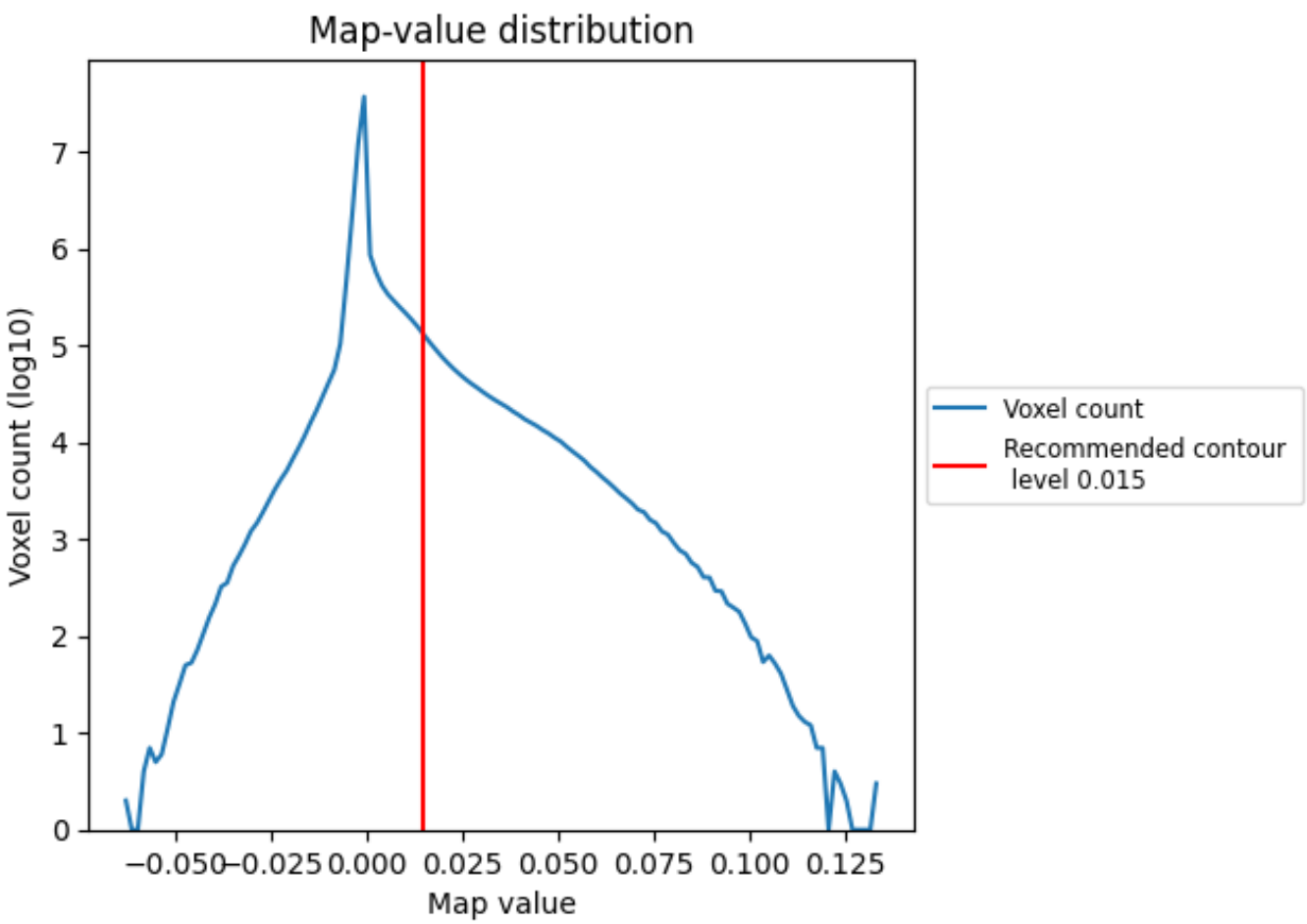


Z

7 Map analysis (i)

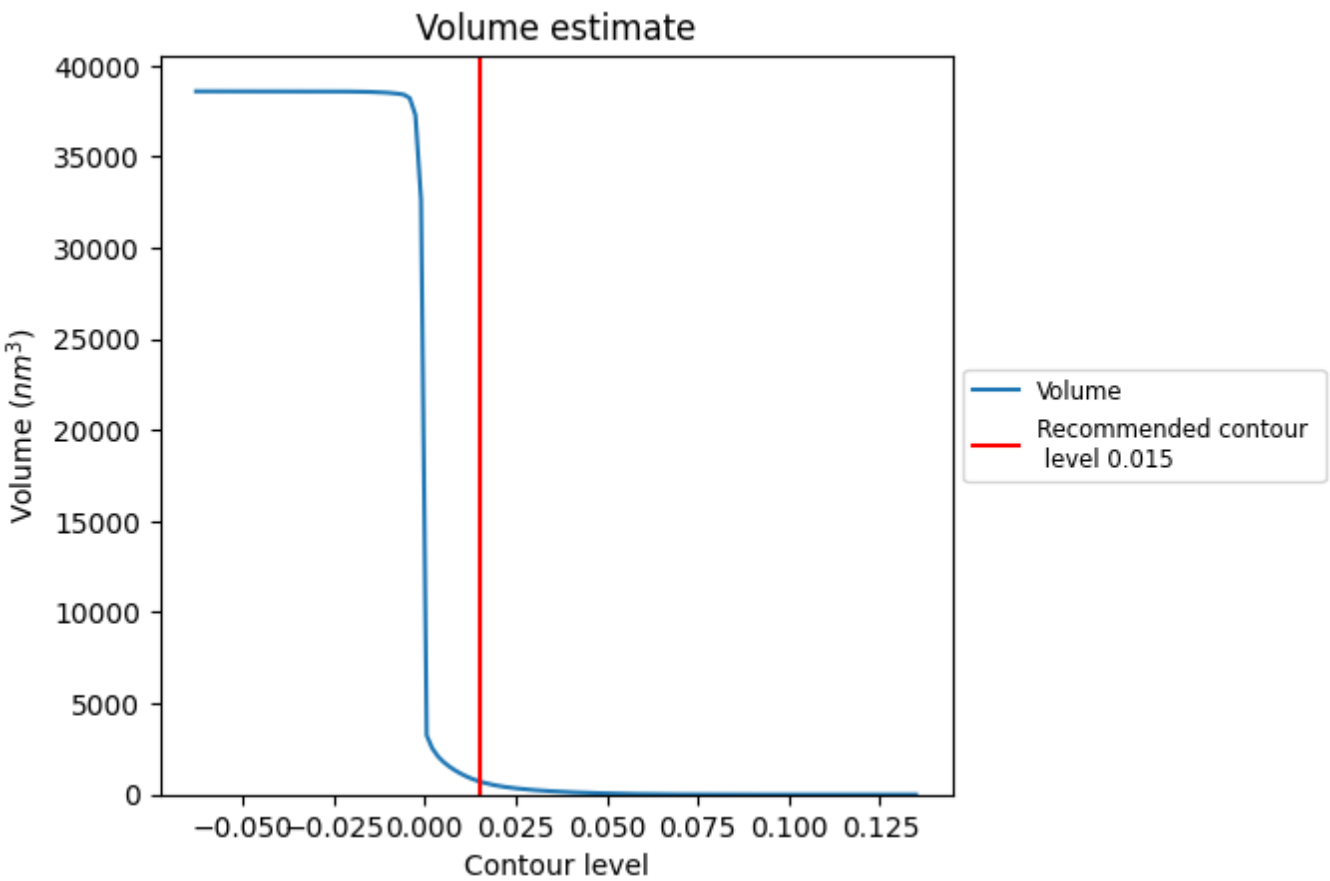
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution (i)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

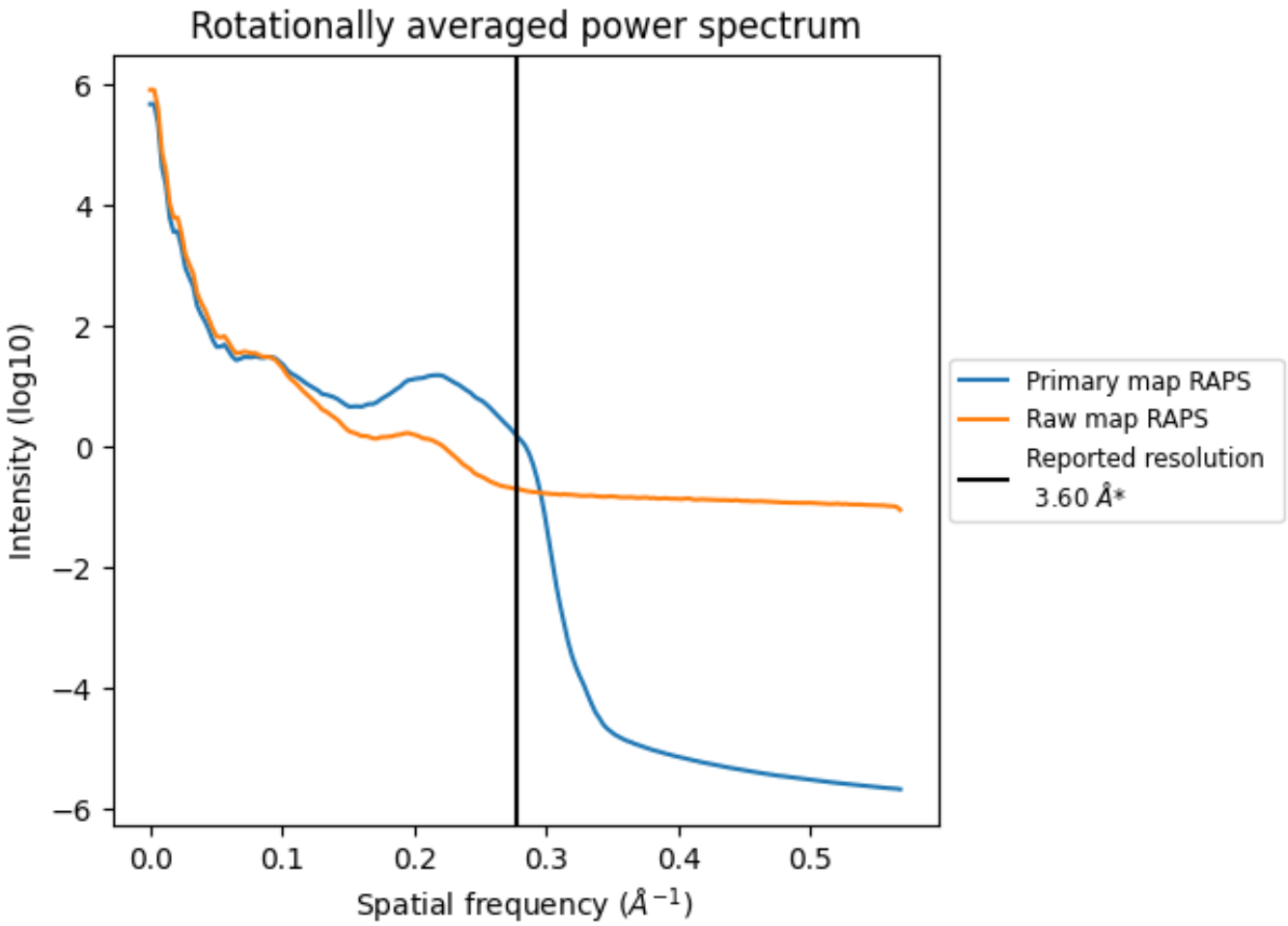
7.2 Volume estimate (i)



The volume at the recommended contour level is 727 nm^3; this corresponds to an approximate mass of 657 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)

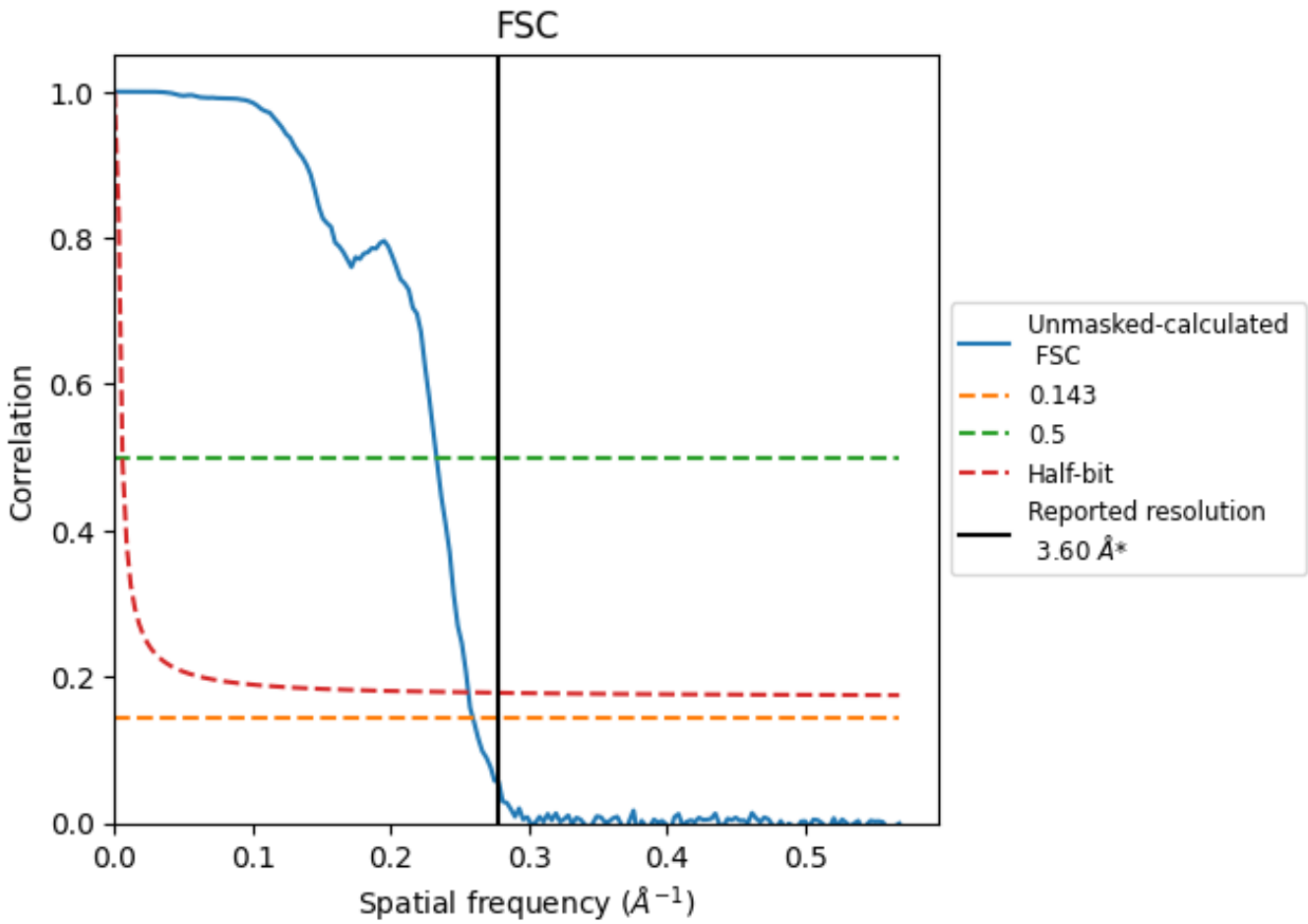


*Reported resolution corresponds to spatial frequency of 0.278 Å^{-1}

8 Fourier-Shell correlation (i)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC (i)



*Reported resolution corresponds to spatial frequency of 0.278 Å^{-1}

8.2 Resolution estimates (i)

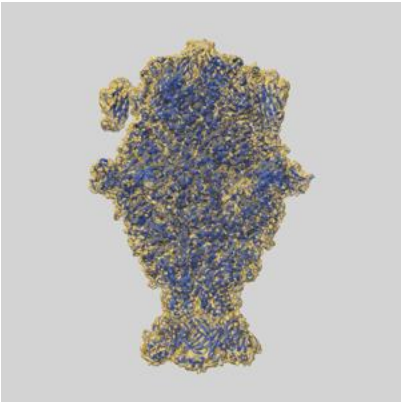
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.60	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.85	4.29	3.90

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

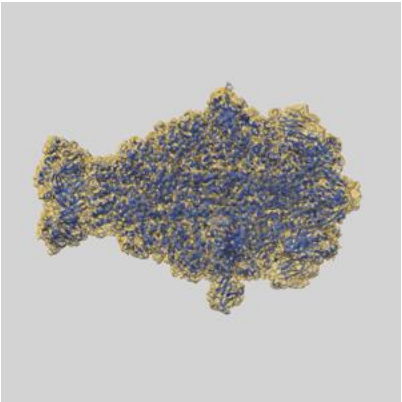
9 Map-model fit (i)

This section contains information regarding the fit between EMDB map EMD-16793 and PDB model 8CQ2. Per-residue inclusion information can be found in section 3 on page 7.

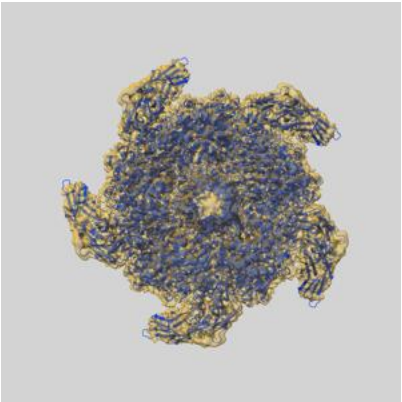
9.1 Map-model overlay (i)



X



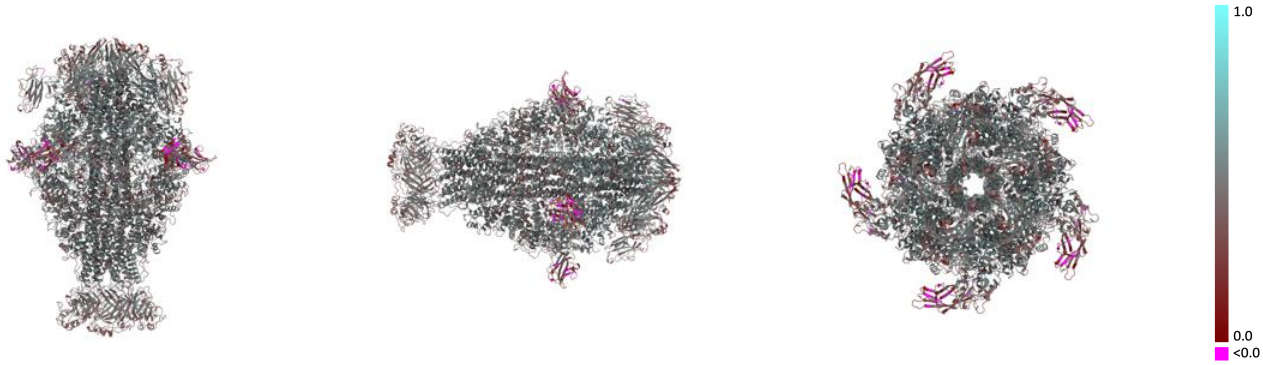
Y



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.

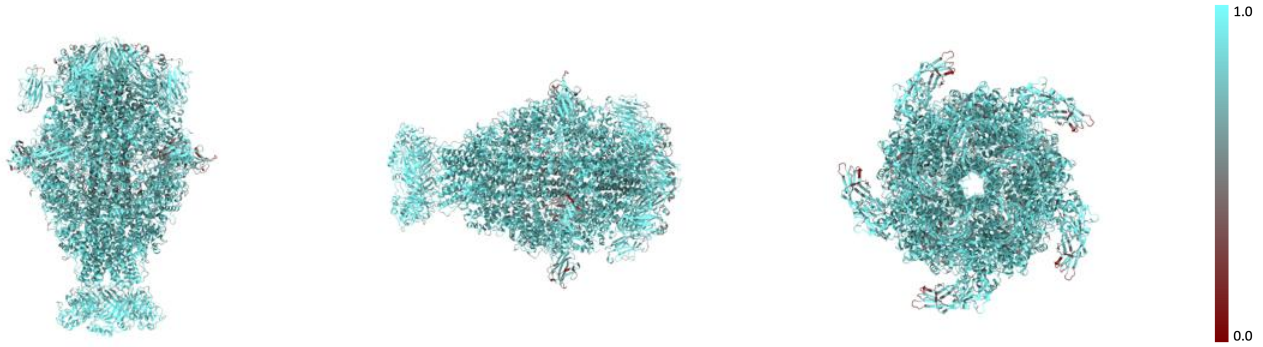
9.2 Q-score mapped to coordinate model (i)



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.

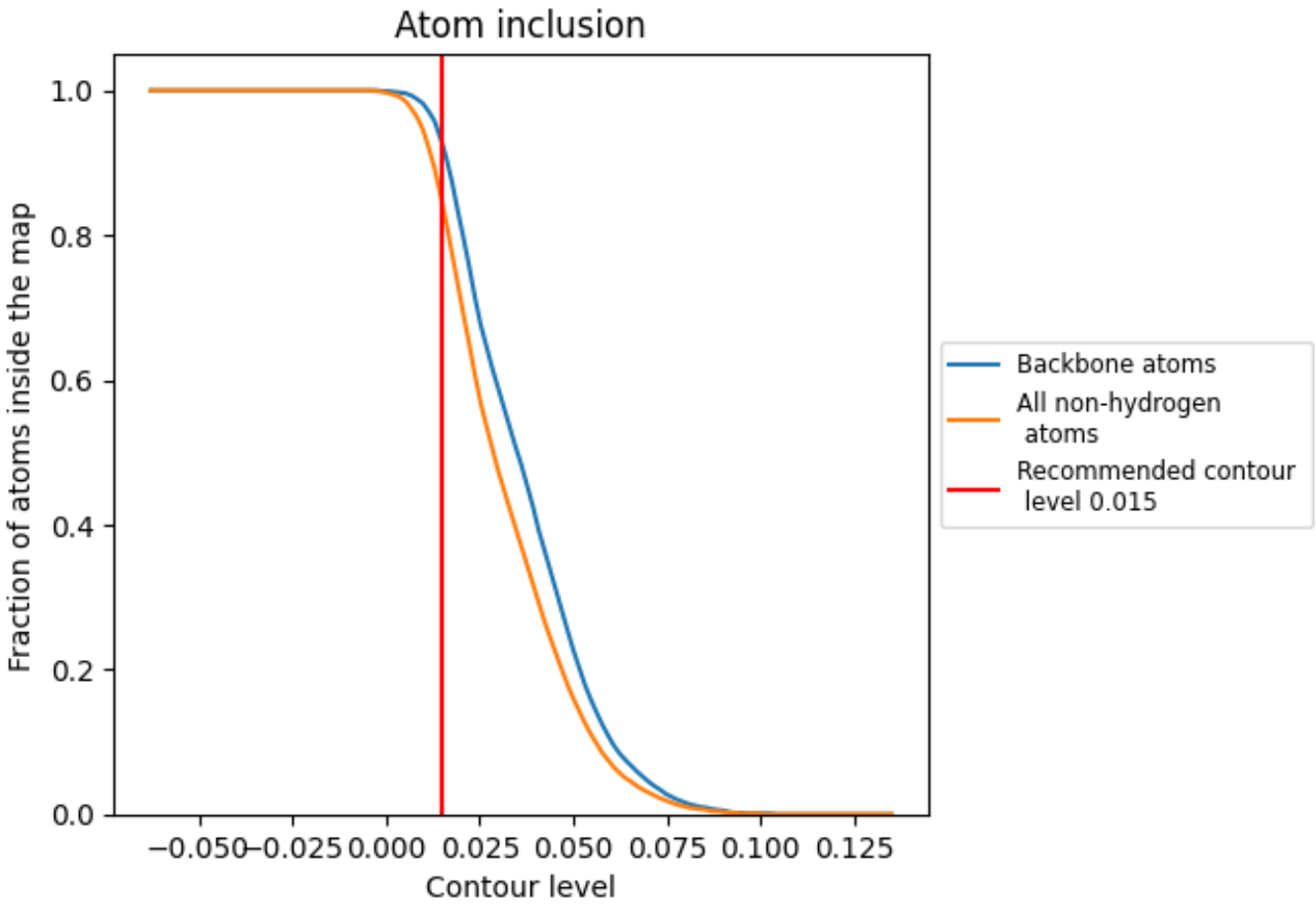
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.015).

9.4 Atom inclusion (i)



At the recommended contour level, 93% of all backbone atoms, 84% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.015) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8450	0.4480
A	0.8460	0.4480
B	0.8460	0.4470
C	0.8450	0.4470
D	0.8440	0.4480
E	0.8460	0.4480