



Full wwPDB EM Validation Report ⓘ

Nov 6, 2022 – 02:05 AM EST

PDB ID : 6BAA
EMDB ID : EMD-7073
Title : Cryo-EM structure of the pancreatic beta-cell KATP channel bound to ATP and glibenclamide
Authors : Martin, G.M.; Yoshioka, C.; Shyng, S.L.
Deposited on : 2017-10-12
Resolution : 3.63 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
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
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) : 2.31.2

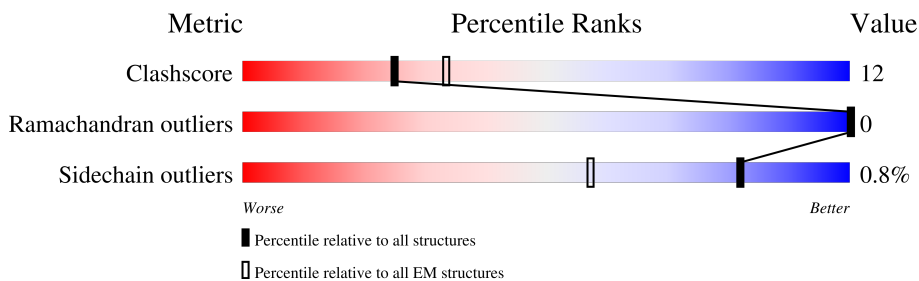
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.63 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	390	
1	B	390	
1	C	390	
1	D	390	
2	E	1582	
2	F	1582	
2	G	1582	
2	H	1582	

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 44852 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 ATP-sensitive inward rectifier potassium channel 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	321	Total 2507	C 1615	N 431	O 444	S 17	0	0
1	B	321	Total 2507	C 1615	N 431	O 444	S 17	0	0
1	C	321	Total 2507	C 1615	N 431	O 444	S 17	0	0
1	D	321	Total 2507	C 1615	N 431	O 444	S 17	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	191	PRO	LEU	conflict	UNP P70673
B	191	PRO	LEU	conflict	UNP P70673
C	191	PRO	LEU	conflict	UNP P70673
D	191	PRO	LEU	conflict	UNP P70673

- Molecule 2 is a protein called ATP-binding cassette sub-family C member 8.

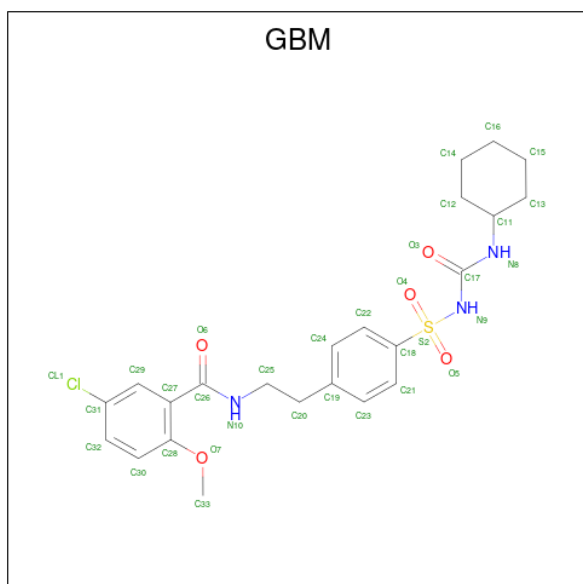
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	E	1317	Total 8642	C 5534	N 1532	O 1547	S 29	0	0
2	F	1317	Total 8642	C 5534	N 1532	O 1547	S 29	0	0
2	G	1317	Total 8642	C 5534	N 1532	O 1547	S 29	0	0
2	H	1317	Total 8642	C 5534	N 1532	O 1547	S 29	0	0

- Molecule 3 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: C₁₀H₁₆N₅O₁₃P₃) (labeled as "Ligand of Interest" by depositor).

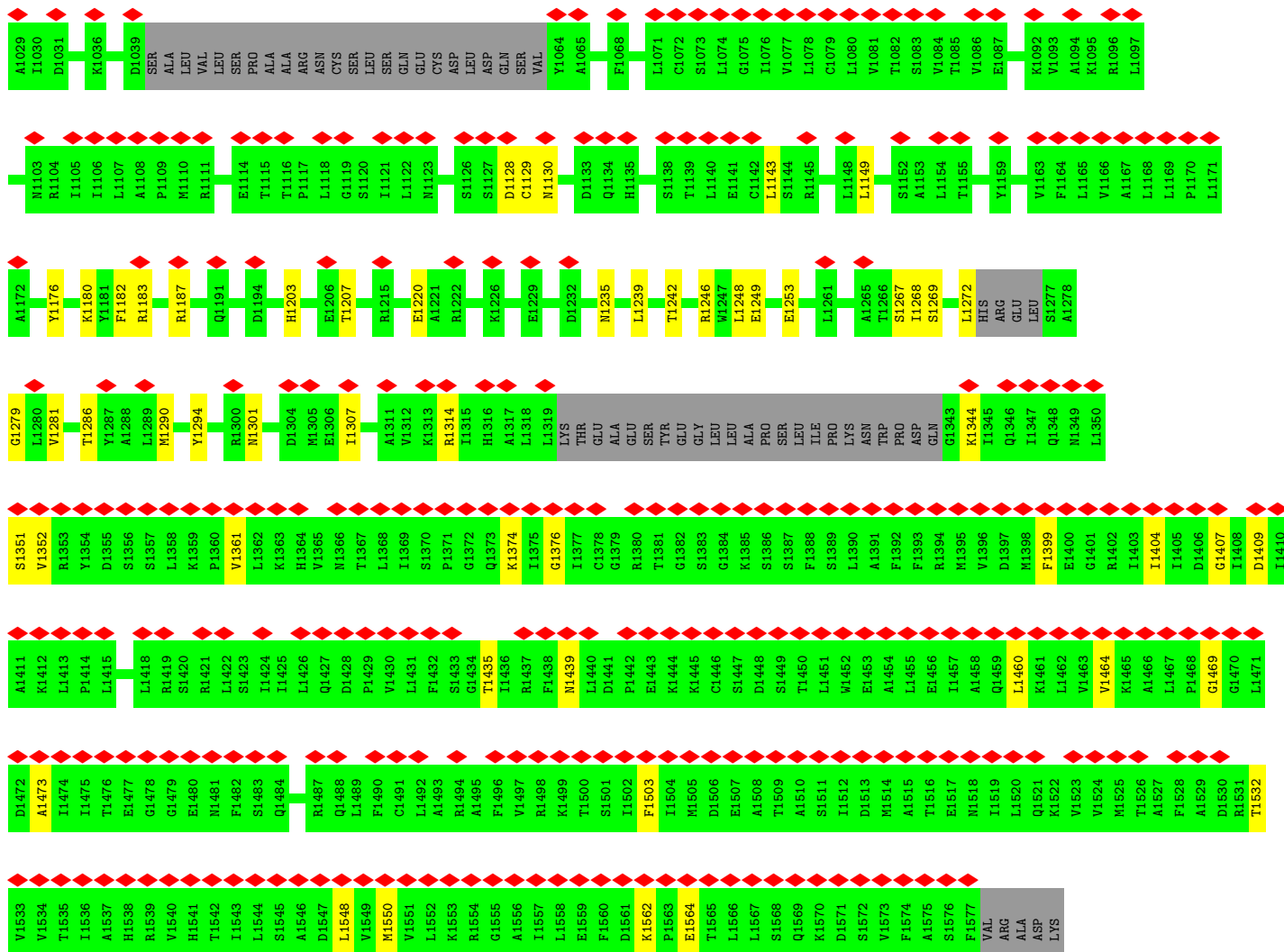


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
3	A	1	Total	C	N	O	P	0
			31	10	5	13	3	
3	B	1	Total	C	N	O	P	0
			31	10	5	13	3	
3	C	1	Total	C	N	O	P	0
			31	10	5	13	3	
3	D	1	Total	C	N	O	P	0
			31	10	5	13	3	

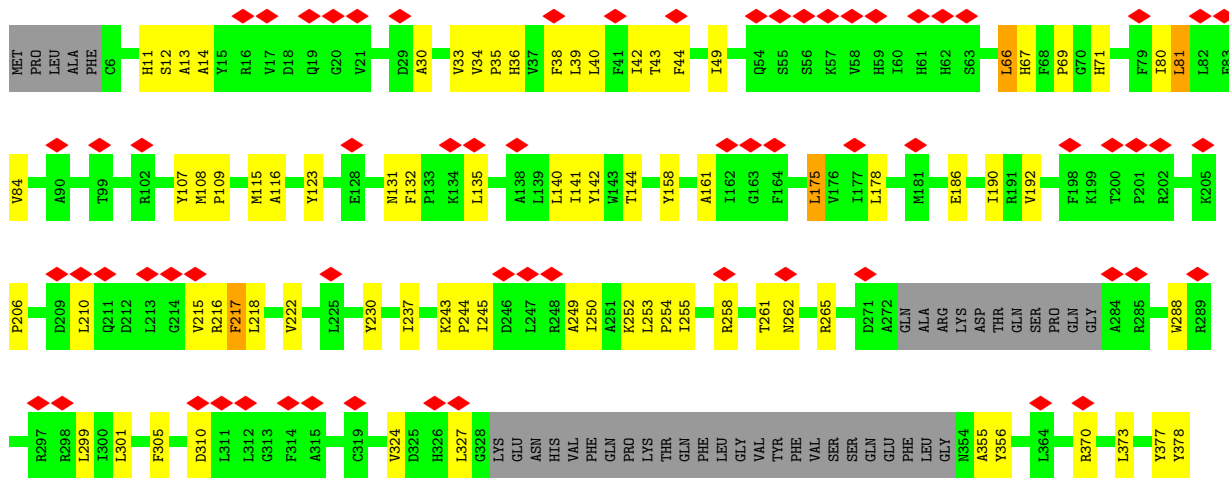
- Molecule 4 is 5-chloro-N-(2-{4-[(cyclohexylcarbamoyl)sulfamoyl]phenyl}ethyl)-2-methoxybenzamide (three-letter code: GBM) (formula: $C_{23}H_{28}ClN_3O_5S$) (labeled as "Ligand of Interest" by depositor).

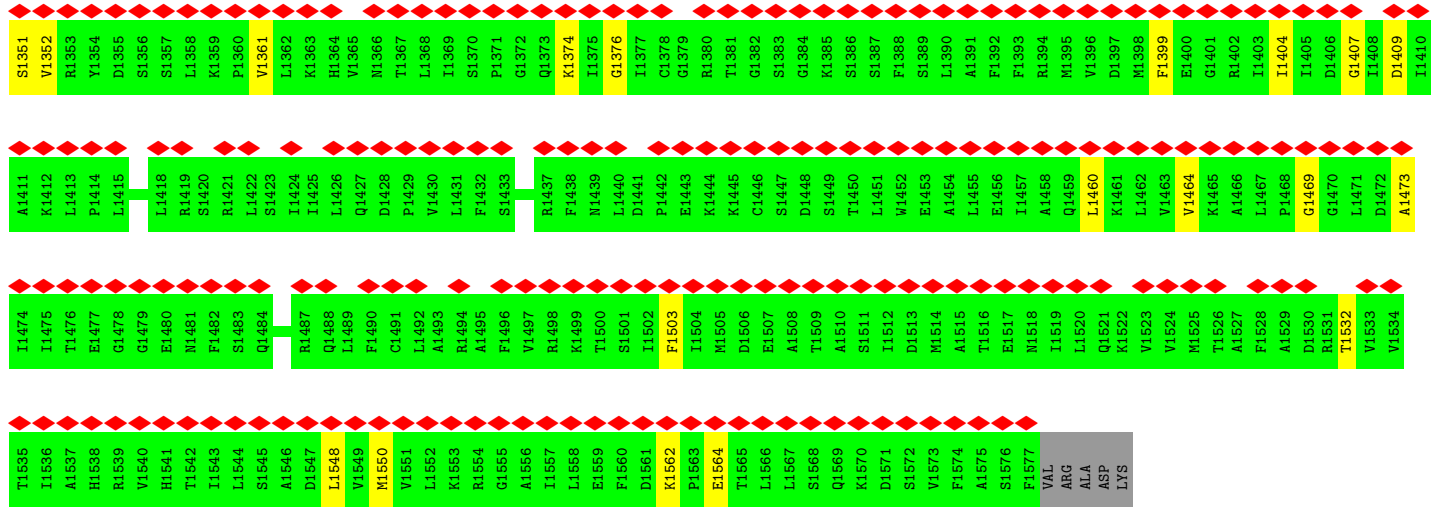


Mol	Chain	Residues	Atoms					AltConf	
			Total	C	Cl	N	O		S
4	E	1	33	23	1	3	5	1	0
4	F	1	33	23	1	3	5	1	0
4	G	1	33	23	1	3	5	1	0
4	H	1	33	23	1	3	5	1	0

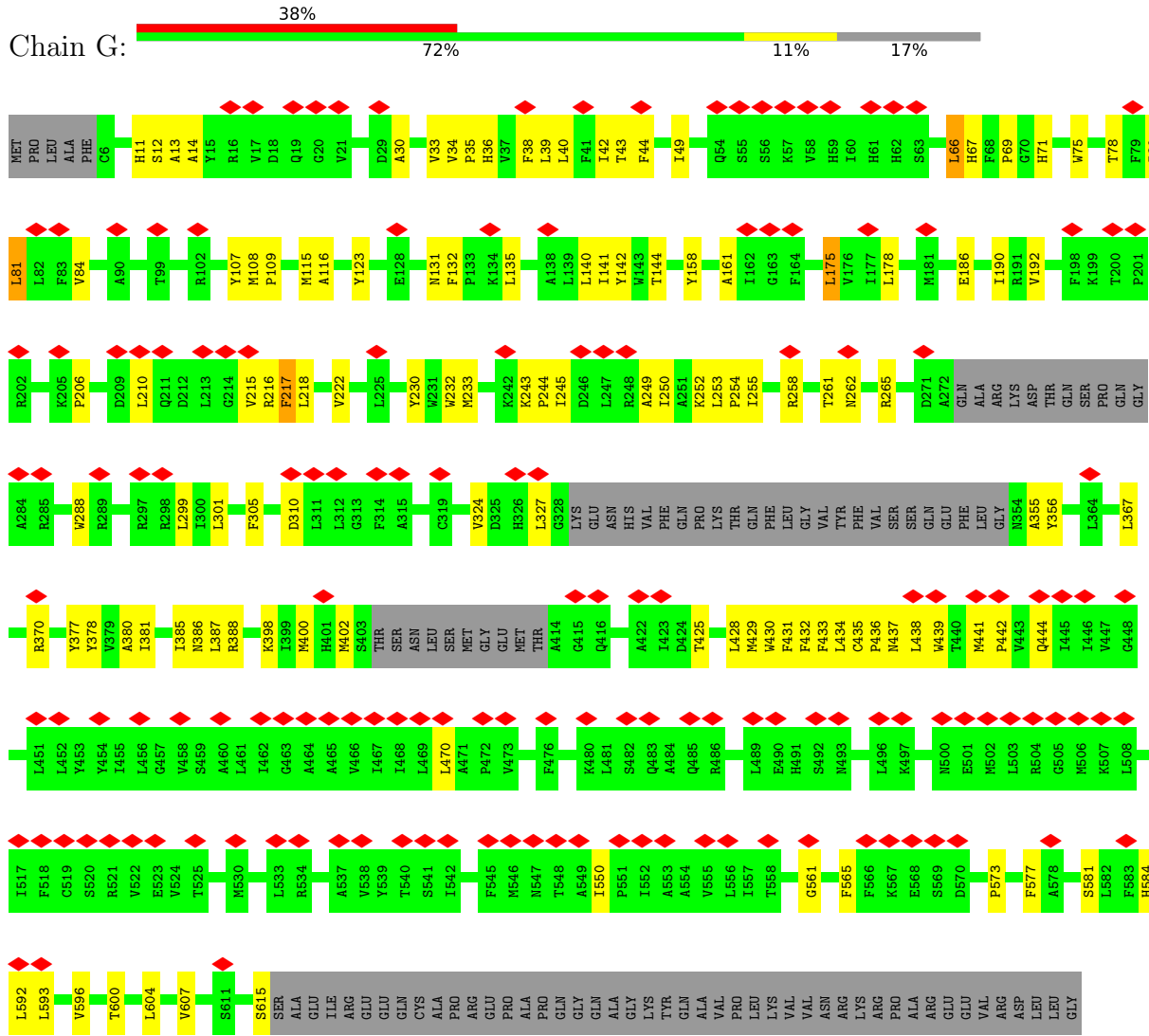


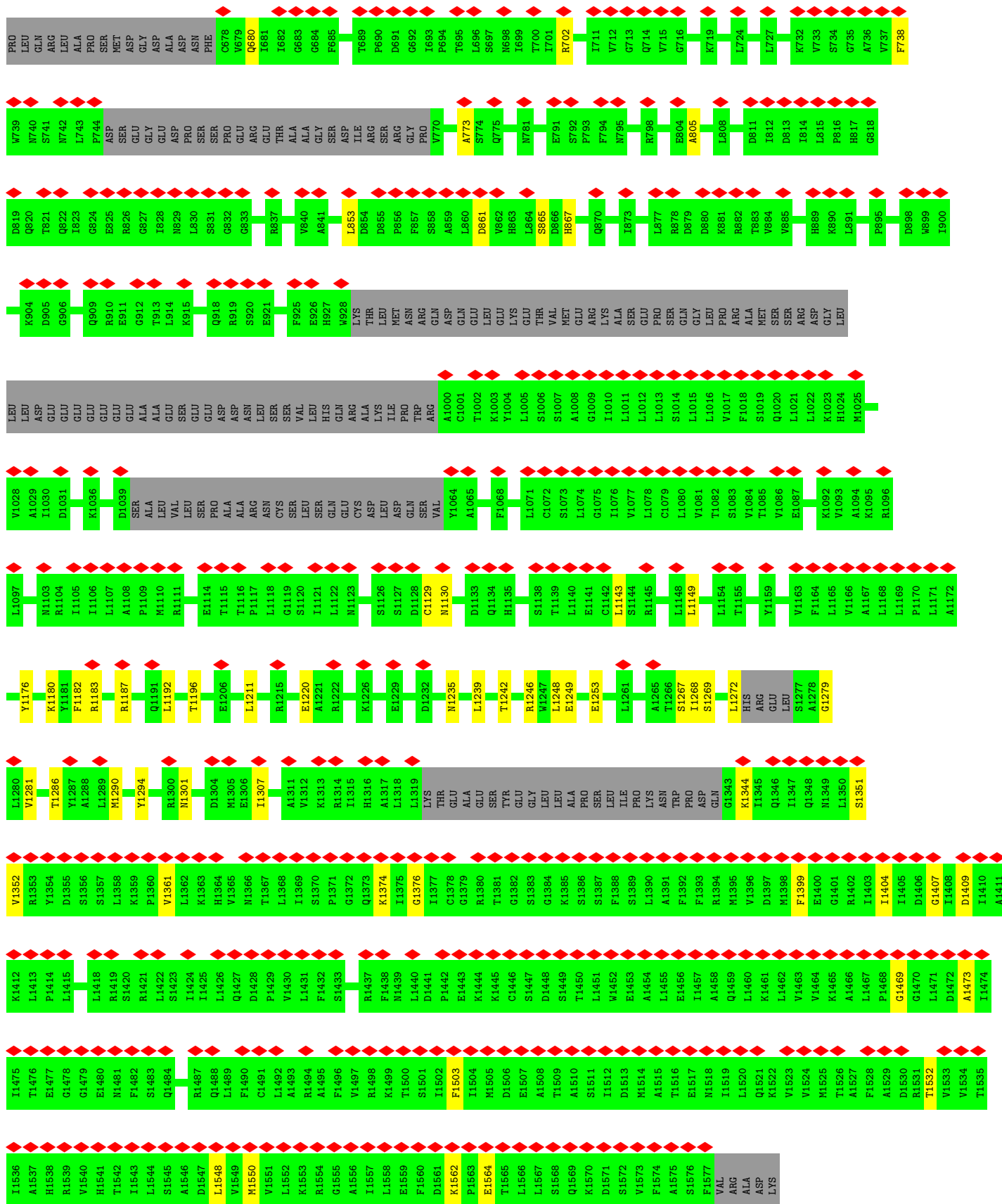
● Molecule 2: ATP-binding cassette sub-family C member 8





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- Molecule 2: ATP-binding cassette sub-family C member 8

V1028	A1029	I1030	D1031	K1036	D1039	SER	ALA	LEU	VAL	LEU	SER	PRO	ALA	ALA	ARG	ASN	CYS	SER	LEU	LEU	ASP	GLN	GLN	CYS	ASP	LEU	VAL	Y1064	A1065	F1068	L1071	C1072	S1073	L1074	G1075	I1076	V1077	L1078	C1079	L1080	V1081	T1082	S1083	V1084	T1085	V1086	E1087	K1092	V1093	A1094	K1095	R1096																																								
L1097	N1103	R1104	I1105	I1106	L1107	A1108	P1109	M1110	R1111	E1114	T1115	T1116	P1117	L1118	G1119	S1120	I1121	L1122	N1123	S1126	S1127	I1128	C1129	N1130	D1133	Q1134	H1135	S1138	T1139	L1140	E1141	C1142	L1143	S1144	R1145	L1148	Y1149	S1152	A1153	L1154	T1155	Y1159	V1163	F1164	L1165	V1166	A1167	L1168	L1169	P1170																																										
L1171	A1172	Y1176	K1180	V1181	F1182	R1183	R1187	Q1191	L1192	D1193	D1194	T1195	T1196	H1203	E1206	T1207	L1211	R1215	E1220	A1221	R1222	K1226	E1229	D1232	M1235	L1239	T1242	R1246	W1247	L1248	E1249	E1253	L1261	A1265	T1266	I1267	S1268	S1269	L1272	HIS	ARG	GLU	LEU	S1277	A1278	G1279	V1281	T1286	Y1287	A1288	L1289	M1290	Y1294	R1300	M1301	D1304	M1305	E1306	I1307	A1311	V1312	K1313	R1314	I1315	H1316	A1317	L1318	L1319	LYS	THR	GLU	ALA	GLU	SER	TYR	GLU	GLY	LEU	ALA	PRO	SER	LEU	I1E	PRO	LYS	ASN	TRP	PRO	ASP	GLN	G1343	K1344
I1345	Q1346	I1347	Q1348	M1349	L1350	S1351	V1352	R1353	Y1354	D1355	S1357	L1358	K1359	P1360	V1361	L1362	K1363	H1364	V1365	M1366	T1367	L1368	I1369	S1370	P1371	G1372	K1373	K1374	I1375	G1376	I1377	C1378	G1379	R1380	T1381	G1382	S1383	L1384	K1385	S1386	S1387	F1388	S1389	L1390	A1391	F1392	F1393	R1394	M1395	V1396	D1397	M1398	F1399	E1400	G1401	R1402	L1403	I1404																																		
I1405	D1406	G1407	I1408	D1409	I1410	A1411	K1412	L1413	P1414	L1415	L1418	R1419	S1420	R1421	L1422	S1423	I1424	I1425	L1426	Q1427	D1428	P1429	V1430	L1431	F1432	S1433	R1437	F1438	M1439	L1440	D1441	P1442	E1443	K1444	K1445	C1446	S1447	D1448	S1449	T1450	L1451	M1452	E1453	A1454	L1455	E1456	I1457	A1458	Q1459	L1460	K1461	L1462	V1463	V1464	K1465	A1466	L1467																																			
P1468	G1469	G1470	L1471	D1472	A1473	I1474	I1475	T1476	E1477	G1478	G1479	E1480	M1481	F1482	S1483	Q1484	R1487	Q1488	L1489	F1490	C1491	L1492	A1493	R1494	A1495	F1496	V1497	R1498	K1499	T1500	S1501	I1502	F1503	I1504	M1505	D1506	E1507	A1508	T1509	A1510	S1511	I1512	D1513	M1514	A1515	T1516	E1517	M1518	I1519	L1520	Q1521	K1522	V1523	V1524	M1525	T1526	A1527	F1528																																		
A1529	D1530	R1531	T1532	V1533	V1534	T1535	I1536	A1537	H1538	R1539	V1540	H1541	T1542	I1543	L1544	S1545	A1546	D1547	L1548	V1549	M1550	V1551	L1552	K1553	A1554	G1555	A1556	I1557	L1558	E1559	F1560	D1561	K1562	P1563	E1564	T1565	L1566	L1567	S1568	Q1569	K1570	D1571	S1572	V1573	F1574	A1575	S1576	F1577	VAL	ARG	ALA	ASP	LYS																																							

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C4	Depositor
Number of particles used	59417	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 ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	21.048	Depositor
Minimum map value	-9.948	Depositor
Average map value	0.167	Depositor
Map value standard deviation	1.369	Depositor
Recommended contour level	5.0	Depositor
Map size (Å)	256.5, 256.5, 256.5	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.855, 0.855, 0.855	Depositor

5 Model quality i

5.1 Standard geometry i

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.30	0/2565	0.59	0/3489
1	B	0.30	0/2565	0.59	0/3489
1	C	0.30	0/2565	0.59	0/3489
1	D	0.30	0/2565	0.59	0/3489
2	E	0.38	0/8801	0.60	5/12092 (0.0%)
2	F	0.38	0/8801	0.60	5/12092 (0.0%)
2	G	0.38	0/8801	0.60	5/12092 (0.0%)
2	H	0.38	0/8801	0.60	5/12092 (0.0%)
All	All	0.37	0/45464	0.60	20/62324 (0.0%)

There are no bond length outliers.

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	387	LEU	CA-CB-CG	-7.10	98.96	115.30
2	F	387	LEU	CA-CB-CG	-7.10	98.96	115.30
2	G	387	LEU	CA-CB-CG	-7.10	98.96	115.30
2	H	387	LEU	CA-CB-CG	-7.10	98.96	115.30
2	H	217	PHE	N-CA-C	-6.40	93.71	111.00
2	E	217	PHE	N-CA-C	-6.39	93.74	111.00
2	F	217	PHE	N-CA-C	-6.39	93.74	111.00
2	G	217	PHE	N-CA-C	-6.39	93.74	111.00
2	E	175	LEU	CA-CB-CG	5.84	128.73	115.30
2	F	175	LEU	CA-CB-CG	5.84	128.73	115.30
2	G	175	LEU	CA-CB-CG	5.84	128.73	115.30
2	H	175	LEU	CA-CB-CG	5.83	128.70	115.30
2	E	66	LEU	CA-CB-CG	5.09	127.00	115.30
2	F	66	LEU	CA-CB-CG	5.09	127.00	115.30
2	G	66	LEU	CA-CB-CG	5.09	127.00	115.30
2	H	66	LEU	CA-CB-CG	5.09	127.00	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	81	LEU	CA-CB-CG	5.06	126.93	115.30
2	F	81	LEU	CA-CB-CG	5.06	126.93	115.30
2	G	81	LEU	CA-CB-CG	5.06	126.93	115.30
2	H	81	LEU	CA-CB-CG	5.05	126.93	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	A	2507	0	2533	110	0
1	B	2507	0	2533	109	0
1	C	2507	0	2533	111	0
1	D	2507	0	2533	110	0
2	E	8642	0	7143	146	0
2	F	8642	0	7143	145	0
2	G	8642	0	7143	148	0
2	H	8642	0	7143	150	0
3	A	31	0	12	4	0
3	B	31	0	12	4	0
3	C	31	0	12	4	0
3	D	31	0	12	4	0
4	E	33	0	28	12	0
4	F	33	0	28	11	0
4	G	33	0	28	11	0
4	H	33	0	28	11	0
All	All	44852	0	38864	968	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 12.

All (968) 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:186:HIS:HB2	1:C:308:GLU:O	1.74	0.87
1:D:186:HIS:HB2	1:D:308:GLU:O	1.74	0.87
1:A:186:HIS:HB2	1:A:308:GLU:O	1.74	0.87
1:B:186:HIS:HB2	1:B:308:GLU:O	1.74	0.86
1:C:129:VAL:HG12	1:C:129:VAL:O	1.80	0.81
1:A:129:VAL:HG12	1:A:129:VAL:O	1.80	0.80
1:B:129:VAL:HG12	1:B:129:VAL:O	1.80	0.80
1:D:129:VAL:HG12	1:D:129:VAL:O	1.80	0.79
2:F:381:ILE:HG21	2:F:1242:THR:HG21	1.65	0.79
2:E:381:ILE:HG21	2:E:1242:THR:HG21	1.65	0.78
1:D:34:ARG:HH12	1:D:38:LYS:HG2	1.49	0.78
1:A:181:LEU:HD12	1:A:300:ALA:HB2	1.66	0.77
1:B:181:LEU:HD12	1:B:300:ALA:HB2	1.66	0.77
1:C:34:ARG:HH12	1:C:38:LYS:HG2	1.49	0.77
2:H:381:ILE:HG21	2:H:1242:THR:HG21	1.64	0.77
1:A:34:ARG:HH12	1:A:38:LYS:HG2	1.49	0.77
2:G:381:ILE:HG21	2:G:1242:THR:HG21	1.65	0.76
1:D:181:LEU:HD12	1:D:300:ALA:HB2	1.66	0.76
1:C:181:LEU:HD12	1:C:300:ALA:HB2	1.66	0.76
2:F:1246:ARG:HA	2:F:1246:ARG:NE	2.02	0.75
2:E:1246:ARG:HA	2:E:1246:ARG:NE	2.02	0.74
1:B:34:ARG:HH12	1:B:38:LYS:HG2	1.49	0.74
2:H:1246:ARG:HA	2:H:1246:ARG:NE	2.02	0.74
2:G:1246:ARG:NE	2:G:1246:ARG:HA	2.02	0.74
2:G:377:TYR:CD1	4:G:2001:GBM:H15	2.24	0.72
2:H:377:TYR:CD1	4:H:2001:GBM:H15	2.24	0.72
2:F:377:TYR:CD1	4:F:2001:GBM:H15	2.24	0.72
2:E:377:TYR:CD1	4:E:2001:GBM:H15	2.24	0.72
2:E:216:ARG:HH22	2:E:252:LYS:HB2	1.58	0.69
2:F:216:ARG:HH22	2:F:252:LYS:HB2	1.58	0.68
2:H:216:ARG:HH22	2:H:252:LYS:HB2	1.58	0.67
2:H:34:VAL:HB	2:H:35:PRO:HD3	1.77	0.67
2:E:588:THR:O	2:E:592:LEU:HD23	1.95	0.67
2:F:377:TYR:O	2:F:381:ILE:HG12	1.95	0.67
2:G:34:VAL:HB	2:G:35:PRO:HD3	1.77	0.67
2:G:588:THR:O	2:G:592:LEU:HD23	1.95	0.67
2:H:588:THR:O	2:H:592:LEU:HD23	1.95	0.67
2:G:216:ARG:HH22	2:G:252:LYS:HB2	1.58	0.66
1:D:186:HIS:CB	1:D:308:GLU:O	2.43	0.66
2:E:377:TYR:O	2:E:381:ILE:HG12	1.95	0.66
2:G:377:TYR:O	2:G:381:ILE:HG12	1.95	0.66
2:H:377:TYR:O	2:H:381:ILE:HG12	1.95	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:588:THR:O	2:F:592:LEU:HD23	1.95	0.66
2:G:301:LEU:HD11	2:G:305:PHE:CZ	2.31	0.66
1:C:186:HIS:CB	1:C:308:GLU:O	2.43	0.66
2:E:301:LEU:HD11	2:E:305:PHE:CZ	2.31	0.66
1:D:314:ARG:HE	1:D:339:VAL:HB	1.61	0.66
2:F:34:VAL:HB	2:F:35:PRO:HD3	1.77	0.65
1:A:186:HIS:CB	1:A:308:GLU:O	2.43	0.65
1:C:314:ARG:HE	1:C:339:VAL:HB	1.61	0.65
2:F:301:LEU:HD11	2:F:305:PHE:CZ	2.31	0.65
2:H:301:LEU:HD11	2:H:305:PHE:CZ	2.31	0.65
1:A:287:LEU:HB3	1:A:300:ALA:HB3	1.79	0.65
1:A:314:ARG:HE	1:A:339:VAL:HB	1.61	0.65
1:B:186:HIS:CB	1:B:308:GLU:O	2.43	0.65
1:D:287:LEU:HB3	1:D:300:ALA:HB3	1.79	0.65
2:E:34:VAL:HB	2:E:35:PRO:HD3	1.77	0.65
1:B:314:ARG:HE	1:B:339:VAL:HB	1.61	0.64
1:C:287:LEU:HB3	1:C:300:ALA:HB3	1.79	0.64
2:G:431:PHE:HE1	2:G:600:THR:HG22	1.62	0.64
2:F:431:PHE:HE1	2:F:600:THR:HG22	1.62	0.64
1:B:287:LEU:HB3	1:B:300:ALA:HB3	1.79	0.64
2:E:431:PHE:HE1	2:E:600:THR:HG22	1.62	0.64
2:H:431:PHE:HE1	2:H:600:THR:HG22	1.63	0.64
2:H:435:CYS:N	2:H:436:PRO:HD2	2.14	0.63
2:H:1246:ARG:NH1	4:H:2001:GBM:H18	2.14	0.63
1:B:312:GLY:HA2	1:B:341:THR:HG21	1.80	0.63
1:D:312:GLY:HA2	1:D:341:THR:HG21	1.80	0.63
2:G:435:CYS:N	2:G:436:PRO:HD2	2.14	0.63
2:E:435:CYS:N	2:E:436:PRO:HD2	2.14	0.63
2:F:435:CYS:N	2:F:436:PRO:HD2	2.14	0.63
2:H:206:PRO:HB3	2:H:255:ILE:HG13	1.81	0.63
1:C:312:GLY:HA2	1:C:341:THR:HG21	1.80	0.62
2:E:206:PRO:HB3	2:E:255:ILE:HG13	1.81	0.62
2:E:1246:ARG:NH1	4:E:2001:GBM:H18	2.14	0.62
2:H:377:TYR:HD1	4:H:2001:GBM:H15	1.64	0.62
1:A:312:GLY:HA2	1:A:341:THR:HG21	1.80	0.62
2:G:377:TYR:HD1	4:G:2001:GBM:H15	1.64	0.62
1:C:157:LEU:HD21	1:D:163:MET:HE2	1.81	0.62
2:G:1246:ARG:NH1	4:G:2001:GBM:H18	2.14	0.62
2:F:1246:ARG:NH1	4:F:2001:GBM:H18	2.14	0.62
1:C:186:HIS:CE1	1:C:310:LEU:HD12	2.35	0.62
1:D:34:ARG:NH1	1:D:38:LYS:HG2	2.15	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:186:HIS:CE1	1:D:310:LEU:HD12	2.35	0.62
1:A:84:LEU:HG	1:A:121:PHE:HE1	1.65	0.61
1:C:34:ARG:NH1	1:C:38:LYS:HG2	2.15	0.61
2:E:108:MET:N	2:E:109:PRO:CD	2.63	0.61
2:E:327:LEU:HD11	2:E:1268:ILE:HG12	1.83	0.61
1:A:186:HIS:CE1	1:A:310:LEU:HD12	2.35	0.61
2:F:108:MET:N	2:F:109:PRO:CD	2.63	0.61
2:H:40:LEU:HD11	2:H:116:ALA:HA	1.82	0.61
2:H:108:MET:N	2:H:109:PRO:CD	2.63	0.61
1:B:186:HIS:CE1	1:B:310:LEU:HD12	2.35	0.61
2:E:40:LEU:HD11	2:E:116:ALA:HA	1.82	0.61
2:E:377:TYR:HD1	4:E:2001:GBM:H15	1.64	0.61
2:G:108:MET:N	2:G:109:PRO:CD	2.63	0.61
2:F:40:LEU:HD11	2:F:116:ALA:HA	1.82	0.61
1:A:34:ARG:NH1	1:A:38:LYS:HG2	2.15	0.61
2:G:40:LEU:HD11	2:G:116:ALA:HA	1.82	0.61
2:G:206:PRO:HB3	2:G:255:ILE:HG13	1.81	0.61
1:A:65:ASP:OD1	1:B:293:THR:HG21	2.01	0.61
2:F:327:LEU:HD11	2:F:1268:ILE:HG12	1.83	0.61
1:D:84:LEU:HG	1:D:121:PHE:HE1	1.66	0.61
2:H:327:LEU:HD11	2:H:1268:ILE:HG12	1.83	0.60
1:A:36:VAL:HG23	1:A:303:SER:HB3	1.83	0.60
3:D:401:ATP:H5'1	3:D:401:ATP:C8	2.36	0.60
3:B:401:ATP:C8	3:B:401:ATP:H5'1	2.36	0.60
2:F:206:PRO:HB3	2:F:255:ILE:HG13	1.81	0.60
2:G:327:LEU:HD11	2:G:1268:ILE:HG12	1.83	0.60
1:C:65:ASP:OD1	1:D:293:THR:HG21	2.01	0.60
3:C:401:ATP:H5'1	3:C:401:ATP:C8	2.36	0.60
3:A:401:ATP:H5'1	3:A:401:ATP:C8	2.36	0.60
1:B:65:ASP:OD1	1:C:293:THR:HG21	2.02	0.60
1:B:84:LEU:HG	1:B:121:PHE:HE1	1.65	0.60
2:F:441:MET:HB2	2:F:442:PRO:HD3	1.83	0.60
2:E:441:MET:HB2	2:E:442:PRO:HD3	1.83	0.60
1:B:34:ARG:NH1	1:B:38:LYS:HG2	2.15	0.59
1:B:36:VAL:HG23	1:B:303:SER:HB3	1.83	0.59
2:E:253:LEU:CD2	2:E:1239:LEU:HD12	2.32	0.59
1:C:84:LEU:HG	1:C:121:PHE:HE1	1.65	0.59
2:F:377:TYR:HD1	4:F:2001:GBM:H15	1.64	0.59
2:G:370:ARG:HG3	2:G:1253:GLU:HB3	1.84	0.59
2:H:253:LEU:CD2	2:H:1239:LEU:HD12	2.32	0.59
1:B:63:LEU:HD21	2:F:49:ILE:HD11	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:200:LEU:C	1:A:200:LEU:HD23	2.23	0.59
2:E:370:ARG:HG3	2:E:1253:GLU:HB3	1.84	0.59
1:A:293:THR:HG21	1:D:65:ASP:OD1	2.02	0.59
2:H:370:ARG:HG3	2:H:1253:GLU:HB3	1.84	0.59
1:A:63:LEU:HD21	2:E:49:ILE:HD11	1.85	0.59
1:C:36:VAL:HG23	1:C:303:SER:HB3	1.83	0.59
1:C:63:LEU:HD21	2:G:49:ILE:HD11	1.85	0.59
2:H:434:LEU:N	2:H:434:LEU:HD12	2.18	0.59
1:D:200:LEU:C	1:D:200:LEU:HD23	2.23	0.59
1:D:36:VAL:HG23	1:D:303:SER:HB3	1.83	0.59
2:G:434:LEU:HD12	2:G:434:LEU:N	2.18	0.59
2:H:441:MET:HB2	2:H:442:PRO:HD3	1.83	0.59
1:D:63:LEU:HD21	2:H:49:ILE:HD11	1.85	0.58
2:E:435:CYS:N	2:E:436:PRO:CD	2.66	0.58
2:G:437:ASN:O	2:G:441:MET:HG2	2.04	0.58
2:H:437:ASN:O	2:H:441:MET:HG2	2.04	0.58
1:B:200:LEU:HD23	1:B:200:LEU:C	2.23	0.58
2:G:253:LEU:CD2	2:G:1239:LEU:HD12	2.32	0.58
2:F:253:LEU:CD2	2:F:1239:LEU:HD12	2.32	0.58
2:F:370:ARG:HG3	2:F:1253:GLU:HB3	1.84	0.58
2:G:441:MET:HB2	2:G:442:PRO:HD3	1.83	0.58
2:H:435:CYS:N	2:H:436:PRO:CD	2.66	0.58
1:C:200:LEU:C	1:C:200:LEU:HD23	2.23	0.58
1:B:47:LYS:N	1:C:328:VAL:O	2.37	0.58
4:E:2001:GBM:H5	4:E:2001:GBM:O3	2.04	0.58
2:F:434:LEU:N	2:F:434:LEU:HD12	2.18	0.58
2:G:435:CYS:N	2:G:436:PRO:CD	2.66	0.58
2:H:39:LEU:HD23	2:H:39:LEU:O	2.04	0.58
1:B:129:VAL:O	1:B:129:VAL:CG1	2.51	0.57
2:E:437:ASN:O	2:E:441:MET:HG2	2.04	0.57
2:F:435:CYS:N	2:F:436:PRO:CD	2.66	0.57
2:F:437:ASN:O	2:F:441:MET:HG2	2.04	0.57
2:G:39:LEU:HD23	2:G:39:LEU:O	2.04	0.57
2:G:1268:ILE:O	2:G:1272:LEU:HG	2.05	0.57
1:A:47:LYS:N	1:B:328:VAL:O	2.35	0.57
1:A:129:VAL:O	1:A:129:VAL:CG1	2.51	0.57
2:E:434:LEU:HD12	2:E:434:LEU:N	2.18	0.57
2:H:470:LEU:HD13	2:H:550:ILE:HG13	1.86	0.57
1:A:168:PHE:HE2	1:D:168:PHE:CD2	2.23	0.57
1:C:299:GLN:HG3	1:D:211:ILE:HG12	1.87	0.57
1:D:129:VAL:O	1:D:129:VAL:CG1	2.51	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F:2001:GBM:O3	4:F:2001:GBM:H5	2.04	0.57
1:B:168:PHE:CD2	1:C:168:PHE:HE2	2.23	0.57
2:E:108:MET:N	2:E:109:PRO:HD3	2.20	0.57
1:A:211:ILE:HG12	1:D:299:GLN:HG3	1.86	0.57
2:F:470:LEU:HD13	2:F:550:ILE:HG13	1.86	0.57
1:A:229:GLU:HA	1:A:229:GLU:OE1	2.05	0.57
3:A:401:ATP:H3'	3:A:401:ATP:O3A	2.05	0.57
3:D:401:ATP:H3'	3:D:401:ATP:O3A	2.05	0.57
2:E:39:LEU:HD23	2:E:39:LEU:O	2.04	0.57
2:H:108:MET:N	2:H:109:PRO:HD3	2.20	0.57
2:E:115:MET:HE3	2:E:115:MET:HA	1.87	0.57
2:E:1268:ILE:O	2:E:1272:LEU:HG	2.05	0.57
1:B:299:GLN:HG3	1:C:211:ILE:HG12	1.87	0.57
3:C:401:ATP:H3'	3:C:401:ATP:O3A	2.05	0.57
2:E:34:VAL:HB	2:E:35:PRO:CD	2.35	0.57
2:G:108:MET:N	2:G:109:PRO:HD3	2.20	0.57
2:G:470:LEU:HD13	2:G:550:ILE:HG13	1.86	0.57
1:A:168:PHE:CD2	1:B:168:PHE:HE2	2.24	0.56
1:C:229:GLU:HA	1:C:229:GLU:OE1	2.05	0.56
2:E:470:LEU:HD13	2:E:550:ILE:HG13	1.86	0.56
1:C:129:VAL:O	1:C:129:VAL:CG1	2.51	0.56
2:F:39:LEU:O	2:F:39:LEU:HD23	2.04	0.56
1:B:101:ALA:N	1:B:102:PRO:CD	2.69	0.56
1:B:312:GLY:CA	1:B:341:THR:HG21	2.36	0.56
1:D:229:GLU:OE1	1:D:229:GLU:HA	2.05	0.56
2:F:1268:ILE:O	2:F:1272:LEU:HG	2.05	0.56
2:G:34:VAL:HB	2:G:35:PRO:CD	2.35	0.56
2:H:1267:SER:HB3	2:H:1281:VAL:HG22	1.88	0.56
2:H:1268:ILE:O	2:H:1272:LEU:HG	2.05	0.56
4:H:2001:GBM:O3	4:H:2001:GBM:H5	2.04	0.56
1:A:312:GLY:CA	1:A:341:THR:HG21	2.36	0.56
1:C:168:PHE:CD2	1:D:168:PHE:HE2	2.23	0.56
2:E:1351:SER:O	2:E:1399:PHE:N	2.35	0.56
2:F:108:MET:N	2:F:109:PRO:HD3	2.20	0.56
1:B:229:GLU:OE1	1:B:229:GLU:HA	2.05	0.56
2:G:1267:SER:HB3	2:G:1281:VAL:HG22	1.88	0.56
4:G:2001:GBM:H5	4:G:2001:GBM:O3	2.04	0.56
1:B:181:LEU:CD1	1:B:300:ALA:HB2	2.36	0.56
3:B:401:ATP:H3'	3:B:401:ATP:O3A	2.05	0.56
1:D:101:ALA:N	1:D:102:PRO:CD	2.69	0.56
2:F:1267:SER:HB3	2:F:1281:VAL:HG22	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:101:ALA:N	1:A:102:PRO:CD	2.69	0.56
1:A:181:LEU:CD1	1:A:300:ALA:HB2	2.36	0.56
2:F:34:VAL:HB	2:F:35:PRO:CD	2.35	0.56
1:A:79:PHE:HE2	1:D:157:LEU:HD22	1.71	0.56
1:C:101:ALA:N	1:C:102:PRO:CD	2.69	0.56
1:D:312:GLY:CA	1:D:341:THR:HG21	2.36	0.56
2:H:34:VAL:HB	2:H:35:PRO:CD	2.35	0.56
2:H:604:LEU:N	2:H:604:LEU:HD23	2.21	0.56
1:A:185:LYS:HE3	3:A:401:ATP:O1B	2.06	0.56
2:F:604:LEU:N	2:F:604:LEU:HD23	2.21	0.56
2:H:1351:SER:O	2:H:1399:PHE:N	2.35	0.55
2:E:324:VAL:HG11	2:E:573:PRO:HB2	1.89	0.55
2:G:324:VAL:HG11	2:G:573:PRO:HB2	1.89	0.55
2:G:434:LEU:HB3	2:G:596:VAL:HG22	1.89	0.55
2:G:604:LEU:HD23	2:G:604:LEU:N	2.21	0.55
1:B:36:VAL:CG2	1:B:303:SER:HB3	2.37	0.55
2:F:434:LEU:HB3	2:F:596:VAL:HG22	1.89	0.55
1:A:36:VAL:CG2	1:A:303:SER:HB3	2.37	0.55
1:A:50:ARG:HH21	1:A:52:GLN:NE2	2.05	0.55
1:A:272:PRO:HG3	1:A:311:TRP:CZ2	2.42	0.55
1:D:36:VAL:CG2	1:D:303:SER:HB3	2.37	0.55
2:E:434:LEU:HB3	2:E:596:VAL:HG22	1.89	0.55
2:F:324:VAL:HG11	2:F:573:PRO:HB2	1.89	0.55
2:G:175:LEU:HA	2:G:178:LEU:HB2	1.89	0.55
1:C:312:GLY:CA	1:C:341:THR:HG21	2.36	0.55
2:E:1267:SER:HB3	2:E:1281:VAL:HG22	1.88	0.55
2:F:175:LEU:HA	2:F:178:LEU:HB2	1.89	0.55
1:A:101:ALA:N	1:A:102:PRO:HD3	2.22	0.55
1:C:272:PRO:HG3	1:C:311:TRP:CZ2	2.42	0.55
1:D:155:VAL:O	1:D:159:ILE:HG13	2.07	0.55
1:D:272:PRO:HG3	1:D:311:TRP:CZ2	2.42	0.55
2:H:324:VAL:HG11	2:H:573:PRO:HB2	1.89	0.55
2:H:434:LEU:HB3	2:H:596:VAL:HG22	1.89	0.55
1:B:50:ARG:HH21	1:B:52:GLN:NE2	2.04	0.55
1:C:101:ALA:N	1:C:102:PRO:HD3	2.22	0.55
1:D:50:ARG:HH21	1:D:52:GLN:NE2	2.04	0.55
1:A:299:GLN:HG3	1:B:211:ILE:HG12	1.88	0.54
1:B:155:VAL:O	1:B:159:ILE:HG13	2.07	0.54
1:B:192:ARG:HE	1:B:199:MET:HE1	1.72	0.54
1:C:50:ARG:HH21	1:C:52:GLN:NE2	2.05	0.54
1:C:155:VAL:O	1:C:159:ILE:HG13	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:157:LEU:HD22	1:D:79:PHE:HE2	1.71	0.54
1:B:101:ALA:N	1:B:102:PRO:HD3	2.22	0.54
1:B:157:LEU:HD22	1:C:79:PHE:HE2	1.70	0.54
1:C:36:VAL:CG2	1:C:303:SER:HB3	2.37	0.54
1:B:272:PRO:HG3	1:B:311:TRP:CZ2	2.42	0.54
1:D:101:ALA:N	1:D:102:PRO:HD3	2.22	0.54
2:E:175:LEU:HA	2:E:178:LEU:HB2	1.89	0.54
1:D:185:LYS:HE3	3:D:401:ATP:O1B	2.07	0.54
2:E:592:LEU:HG	4:E:2001:GBM:C32	2.38	0.54
2:F:592:LEU:HG	4:F:2001:GBM:C32	2.38	0.54
1:A:192:ARG:HE	1:A:199:MET:HE1	1.73	0.54
2:E:604:LEU:N	2:E:604:LEU:HD23	2.21	0.54
2:H:592:LEU:HG	4:H:2001:GBM:C32	2.38	0.54
1:A:328:VAL:O	1:D:47:LYS:N	2.37	0.53
1:C:291:VAL:HG12	1:C:293:THR:H	1.74	0.53
2:G:592:LEU:HG	4:G:2001:GBM:C32	2.38	0.53
1:A:155:VAL:O	1:A:159:ILE:HG13	2.07	0.53
1:B:157:LEU:HD21	1:C:163:MET:HE2	1.89	0.53
2:E:381:ILE:HA	2:E:433:PHE:CE1	2.43	0.53
2:F:388:ARG:HG3	2:F:425:THR:HG22	1.91	0.53
2:H:381:ILE:HA	2:H:433:PHE:CE1	2.43	0.53
1:A:157:LEU:HD22	1:B:79:PHE:HE2	1.72	0.53
2:H:175:LEU:HA	2:H:178:LEU:HB2	1.89	0.53
1:A:291:VAL:HG12	1:A:293:THR:H	1.74	0.53
1:B:52:GLN:HA	1:B:52:GLN:OE1	2.09	0.53
2:H:434:LEU:HD12	4:H:2001:GBM:H22	1.91	0.53
1:A:49:ILE:HG23	1:B:205:LEU:HD22	1.90	0.53
1:C:185:LYS:HE3	3:C:401:ATP:O1B	2.07	0.53
1:D:291:VAL:HG12	1:D:293:THR:H	1.74	0.53
2:F:380:ALA:HB1	2:F:433:PHE:HA	1.91	0.53
2:G:381:ILE:HA	2:G:433:PHE:CE1	2.43	0.53
1:D:52:GLN:HA	1:D:52:GLN:OE1	2.09	0.53
2:E:388:ARG:HG3	2:E:425:THR:HG22	1.91	0.53
2:G:355:ALA:HB1	2:G:1268:ILE:HG21	1.90	0.53
1:C:192:ARG:HE	1:C:199:MET:HE1	1.74	0.53
2:G:253:LEU:HD21	2:G:1239:LEU:HD12	1.91	0.53
1:A:52:GLN:OE1	1:A:52:GLN:HA	2.09	0.53
1:B:185:LYS:HE3	3:B:401:ATP:O1B	2.09	0.53
2:E:253:LEU:HD21	2:E:1239:LEU:HD12	1.91	0.53
2:E:355:ALA:HB1	2:E:1268:ILE:HG21	1.90	0.53
1:D:192:ARG:HE	1:D:199:MET:HE1	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:388:ARG:HG3	2:G:425:THR:HG22	1.91	0.53
2:G:434:LEU:HD12	4:G:2001:GBM:H22	1.91	0.53
2:H:388:ARG:HG3	2:H:425:THR:HG22	1.91	0.53
1:C:49:ILE:HG23	1:D:205:LEU:HD22	1.91	0.53
2:H:115:MET:HA	2:H:115:MET:HE3	1.91	0.53
1:C:47:LYS:N	1:D:328:VAL:O	2.36	0.52
1:C:251:LEU:C	1:C:251:LEU:HD23	2.30	0.52
2:F:310:ASP:OD1	2:F:444:GLN:NE2	2.33	0.52
2:G:380:ALA:HB1	2:G:433:PHE:HA	1.91	0.52
2:H:1246:ARG:NE	2:H:1246:ARG:CA	2.72	0.52
1:B:291:VAL:HG12	1:B:293:THR:H	1.74	0.52
2:E:434:LEU:HD12	4:E:2001:GBM:H22	1.91	0.52
2:F:115:MET:HE3	2:F:115:MET:HA	1.91	0.52
2:G:1246:ARG:NE	2:G:1246:ARG:CA	2.72	0.52
2:F:253:LEU:HD21	2:F:1239:LEU:HD12	1.91	0.52
2:F:381:ILE:HA	2:F:433:PHE:CE1	2.43	0.52
1:A:205:LEU:HD22	1:D:49:ILE:HG23	1.91	0.52
1:D:181:LEU:CD1	1:D:300:ALA:HB2	2.36	0.52
1:A:60:PHE:HE2	1:A:162:ILE:HG23	1.75	0.52
1:A:251:LEU:HD23	1:A:251:LEU:C	2.30	0.52
2:F:355:ALA:HB1	2:F:1268:ILE:HG21	1.90	0.52
1:A:163:MET:HE2	1:D:157:LEU:HD21	1.92	0.52
1:B:251:LEU:C	1:B:251:LEU:HD23	2.30	0.52
1:C:181:LEU:CD1	1:C:300:ALA:HB2	2.36	0.52
2:H:355:ALA:HB1	2:H:1268:ILE:HG21	1.90	0.52
1:C:60:PHE:O	1:C:64:VAL:HG23	2.10	0.52
2:G:218:LEU:C	2:G:218:LEU:HD12	2.30	0.52
1:A:157:LEU:HD21	1:B:163:MET:CE	2.40	0.52
1:B:49:ILE:HG23	1:C:205:LEU:HD22	1.91	0.52
2:E:434:LEU:N	2:E:434:LEU:CD1	2.73	0.52
2:H:253:LEU:HD21	2:H:1239:LEU:HD12	1.91	0.52
2:H:380:ALA:HB1	2:H:433:PHE:HA	1.91	0.52
1:B:314:ARG:NE	1:B:339:VAL:HB	2.25	0.52
2:G:299:LEU:HD12	2:G:299:LEU:O	2.10	0.52
1:A:314:ARG:NE	1:A:339:VAL:HB	2.25	0.52
1:C:52:GLN:OE1	1:C:52:GLN:HA	2.09	0.52
2:F:218:LEU:C	2:F:218:LEU:HD12	2.30	0.52
2:F:299:LEU:HD12	2:F:299:LEU:O	2.10	0.52
2:F:434:LEU:HD12	4:F:2001:GBM:H22	1.91	0.52
2:G:381:ILE:HD13	2:G:433:PHE:CD1	2.46	0.52
1:D:60:PHE:O	1:D:64:VAL:HG23	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:39:LEU:HD23	2:F:39:LEU:C	2.31	0.51
2:H:218:LEU:HD12	2:H:218:LEU:C	2.30	0.51
1:A:181:LEU:HD13	1:A:287:LEU:HD23	1.92	0.51
1:B:60:PHE:O	1:B:64:VAL:HG23	2.10	0.51
2:E:381:ILE:HG21	2:E:1242:THR:CG2	2.39	0.51
2:G:288:TRP:CZ2	2:G:607:VAL:HG11	2.46	0.51
2:G:433:PHE:HB3	4:G:2001:GBM:H16	1.93	0.51
2:H:381:ILE:HD13	2:H:433:PHE:CD1	2.46	0.51
2:H:435:CYS:H	2:H:436:PRO:HD2	1.75	0.51
1:D:251:LEU:C	1:D:251:LEU:HD23	2.30	0.51
2:E:299:LEU:O	2:E:299:LEU:HD12	2.10	0.51
2:E:380:ALA:HB1	2:E:433:PHE:HA	1.91	0.51
2:E:1182:PHE:CG	2:E:1248:LEU:HD22	2.45	0.51
2:E:1246:ARG:NE	2:E:1246:ARG:CA	2.72	0.51
2:F:1182:PHE:CG	2:F:1248:LEU:HD22	2.45	0.51
2:H:680:GLN:HA	2:H:702:ARG:HG2	1.93	0.51
1:B:60:PHE:HE2	1:B:162:ILE:HG23	1.75	0.51
1:C:60:PHE:HE2	1:C:162:ILE:HG23	1.75	0.51
2:E:218:LEU:HD12	2:E:218:LEU:C	2.30	0.51
2:F:434:LEU:N	2:F:434:LEU:CD1	2.73	0.51
2:H:253:LEU:HD11	2:H:1235:ASN:HB3	1.93	0.51
1:A:60:PHE:O	1:A:64:VAL:HG23	2.10	0.51
1:D:181:LEU:HD13	1:D:287:LEU:HD23	1.92	0.51
2:E:310:ASP:OD1	2:E:444:GLN:NE2	2.33	0.51
2:F:381:ILE:HD13	2:F:433:PHE:CD1	2.46	0.51
2:F:561:GLY:O	2:F:565:PHE:CB	2.59	0.51
2:F:805:ALA:O	2:F:867:HIS:NE2	2.44	0.51
2:G:1182:PHE:CG	2:G:1248:LEU:HD22	2.45	0.51
2:H:39:LEU:HD23	2:H:39:LEU:C	2.31	0.51
1:D:60:PHE:HE2	1:D:162:ILE:HG23	1.75	0.51
2:E:435:CYS:H	2:E:436:PRO:HD2	1.75	0.51
2:F:1246:ARG:NE	2:F:1246:ARG:CA	2.72	0.51
2:G:39:LEU:HD23	2:G:39:LEU:C	2.31	0.51
2:H:434:LEU:N	2:H:434:LEU:CD1	2.73	0.51
2:H:1182:PHE:CG	2:H:1248:LEU:HD22	2.45	0.51
2:E:381:ILE:HD13	2:E:433:PHE:CD1	2.46	0.51
2:F:288:TRP:CZ2	2:F:607:VAL:HG11	2.46	0.51
2:G:434:LEU:N	2:G:434:LEU:CD1	2.73	0.51
2:H:433:PHE:HB3	4:H:2001:GBM:H16	1.92	0.51
1:B:221:ARG:HD2	1:B:223:THR:OG1	2.11	0.51
2:E:39:LEU:HD23	2:E:39:LEU:C	2.31	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:433:PHE:HB3	4:E:2001:GBM:H16	1.93	0.51
2:H:299:LEU:HD12	2:H:299:LEU:O	2.10	0.51
1:A:221:ARG:HD2	1:A:223:THR:OG1	2.11	0.51
2:E:561:GLY:O	2:E:565:PHE:CB	2.59	0.51
2:F:435:CYS:H	2:F:436:PRO:HD2	1.75	0.51
2:F:1503:PHE:N	2:F:1532:THR:O	2.43	0.51
1:C:181:LEU:HD13	1:C:287:LEU:HD23	1.92	0.51
2:G:253:LEU:HD11	2:G:1235:ASN:HB3	1.93	0.51
2:H:805:ALA:O	2:H:867:HIS:NE2	2.44	0.51
1:A:101:ALA:HB3	2:E:13:ALA:CB	2.42	0.50
1:B:57:GLN:NE2	2:F:132:PHE:HE1	2.09	0.50
1:C:57:GLN:NE2	2:G:132:PHE:HE1	2.09	0.50
2:H:861:ASP:O	2:H:865:SER:N	2.40	0.50
2:E:253:LEU:HD11	2:E:1235:ASN:HB3	1.93	0.50
2:F:861:ASP:O	2:F:865:SER:N	2.40	0.50
1:B:101:ALA:HB3	2:F:13:ALA:CB	2.41	0.50
2:E:805:ALA:O	2:E:867:HIS:NE2	2.44	0.50
2:H:429:MET:HG2	2:H:433:PHE:CZ	2.47	0.50
1:B:181:LEU:HD13	1:B:287:LEU:HD23	1.92	0.50
1:C:314:ARG:NE	1:C:339:VAL:HB	2.25	0.50
1:D:314:ARG:NE	1:D:339:VAL:HB	2.25	0.50
2:E:429:MET:HG2	2:E:433:PHE:CZ	2.47	0.50
2:G:680:GLN:HA	2:G:702:ARG:HG2	1.93	0.50
2:H:288:TRP:CZ2	2:H:607:VAL:HG11	2.46	0.50
1:B:157:LEU:HD21	1:C:163:MET:CE	2.41	0.50
1:C:157:LEU:HD21	1:D:163:MET:CE	2.41	0.50
2:G:805:ALA:O	2:G:867:HIS:NE2	2.44	0.50
2:E:288:TRP:CZ2	2:E:607:VAL:HG11	2.46	0.50
2:E:680:GLN:HA	2:E:702:ARG:HG2	1.92	0.50
2:E:1503:PHE:N	2:E:1532:THR:O	2.43	0.50
2:G:115:MET:HE3	2:G:115:MET:HA	1.93	0.50
2:G:561:GLY:O	2:G:565:PHE:CB	2.59	0.50
1:B:201:ARG:NH2	1:B:315:PHE:HB3	2.27	0.50
2:H:39:LEU:HD12	2:H:142:TYR:CZ	2.47	0.50
2:H:381:ILE:HG21	2:H:1242:THR:CG2	2.39	0.50
1:A:201:ARG:NH2	1:A:315:PHE:HB3	2.27	0.50
1:C:201:ARG:NH2	1:C:315:PHE:HB3	2.27	0.50
1:D:221:ARG:HD2	1:D:223:THR:OG1	2.11	0.50
2:F:680:GLN:HA	2:F:702:ARG:HG2	1.93	0.50
1:C:221:ARG:HD2	1:C:223:THR:OG1	2.11	0.50
2:F:253:LEU:HD11	2:F:1235:ASN:HB3	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:680:GLN:O	2:G:738:PHE:N	2.41	0.50
2:H:80:ILE:HD11	2:H:178:LEU:HD11	1.94	0.50
2:H:561:GLY:O	2:H:565:PHE:CB	2.59	0.50
1:A:57:GLN:NE2	2:E:132:PHE:HE1	2.10	0.49
1:D:201:ARG:NH2	1:D:315:PHE:HB3	2.27	0.49
2:E:39:LEU:HD12	2:E:142:TYR:CZ	2.47	0.49
2:F:433:PHE:HB3	4:F:2001:GBM:H16	1.93	0.49
1:A:157:LEU:HD21	1:B:163:MET:HE2	1.93	0.49
2:F:400:MET:SD	2:F:1220:GLU:HB2	2.52	0.49
2:F:429:MET:HG2	2:F:433:PHE:CZ	2.47	0.49
2:G:429:MET:HG2	2:G:433:PHE:CZ	2.47	0.49
2:G:435:CYS:H	2:G:436:PRO:HD2	1.75	0.49
2:H:400:MET:SD	2:H:1220:GLU:HB2	2.52	0.49
2:F:39:LEU:HD12	2:F:142:TYR:CZ	2.47	0.49
1:D:57:GLN:NE2	2:H:132:PHE:HE1	2.10	0.49
1:D:198:PHE:O	1:D:258:TYR:HA	2.13	0.49
2:E:80:ILE:HD11	2:E:178:LEU:HD11	1.94	0.49
2:G:400:MET:SD	2:G:1220:GLU:HB2	2.52	0.49
2:G:115:MET:HA	2:G:115:MET:CE	2.43	0.49
2:G:1351:SER:O	2:G:1399:PHE:N	2.35	0.49
1:A:52:GLN:HG3	1:A:54:ARG:HH12	1.78	0.49
1:B:52:GLN:HG3	1:B:54:ARG:HH12	1.78	0.49
1:D:101:ALA:HB3	2:H:13:ALA:CB	2.43	0.49
1:D:318:ILE:HG23	1:D:329:ASP:O	2.13	0.49
2:E:1562:LYS:O	2:E:1564:GLU:N	2.41	0.49
2:G:39:LEU:HD12	2:G:142:TYR:CZ	2.47	0.49
1:C:52:GLN:HG3	1:C:54:ARG:HH12	1.78	0.49
1:A:198:PHE:O	1:A:258:TYR:HA	2.13	0.49
1:D:52:GLN:HG3	1:D:54:ARG:HH12	1.78	0.49
2:E:400:MET:SD	2:E:1220:GLU:HB2	2.52	0.49
1:B:186:HIS:HE1	1:B:336:THR:HG21	1.78	0.49
1:A:163:MET:CE	1:D:157:LEU:HD21	2.42	0.49
1:A:186:HIS:HE1	1:A:336:THR:HG21	1.78	0.49
1:B:318:ILE:HG23	1:B:329:ASP:O	2.13	0.49
2:F:80:ILE:HD11	2:F:178:LEU:HD11	1.94	0.49
2:F:1128:ASP:OD1	2:F:1314:ARG:NH2	2.39	0.49
2:G:381:ILE:HG21	2:G:1242:THR:CG2	2.39	0.49
2:E:1404:ILE:HA	2:E:1409:ASP:HA	1.95	0.48
2:H:115:MET:HA	2:H:115:MET:CE	2.43	0.48
1:B:275:LEU:O	1:B:306:ALA:HB1	2.14	0.48
1:C:318:ILE:HG23	1:C:329:ASP:O	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:80:ILE:HD11	2:G:178:LEU:HD11	1.94	0.48
2:G:1503:PHE:N	2:G:1532:THR:O	2.43	0.48
1:C:198:PHE:O	1:C:258:TYR:HA	2.13	0.48
2:E:1129:CYS:SG	2:E:1130:ASN:N	2.86	0.48
2:F:115:MET:HA	2:F:115:MET:CE	2.43	0.48
2:F:1351:SER:O	2:F:1399:PHE:N	2.35	0.48
2:F:1352:VAL:O	2:F:1361:VAL:N	2.44	0.48
1:B:79:PHE:HE1	1:B:159:ILE:HG22	1.79	0.48
1:C:186:HIS:HE1	1:C:336:THR:HG21	1.78	0.48
1:C:223:THR:HG22	1:C:224:THR:N	2.28	0.48
2:F:1129:CYS:SG	2:F:1130:ASN:N	2.86	0.48
1:C:79:PHE:HE1	1:C:159:ILE:HG22	1.79	0.48
1:C:101:ALA:HB3	2:G:13:ALA:CB	2.44	0.48
2:G:1129:CYS:SG	2:G:1130:ASN:N	2.86	0.48
2:H:1129:CYS:SG	2:H:1130:ASN:N	2.86	0.48
1:A:318:ILE:HG23	1:A:329:ASP:O	2.13	0.48
1:D:223:THR:HG22	1:D:224:THR:N	2.28	0.48
1:B:198:PHE:O	1:B:258:TYR:HA	2.13	0.48
2:E:1182:PHE:CD2	2:E:1248:LEU:HD22	2.49	0.48
2:F:1203:HIS:O	2:F:1207:THR:OG1	2.24	0.48
1:D:79:PHE:HE1	1:D:159:ILE:HG22	1.79	0.48
1:D:186:HIS:HE1	1:D:336:THR:HG21	1.78	0.48
2:G:310:ASP:OD1	2:G:444:GLN:NE2	2.33	0.48
2:G:1404:ILE:HA	2:G:1409:ASP:HA	1.95	0.48
1:A:275:LEU:O	1:A:306:ALA:HB1	2.14	0.48
2:E:262:ASN:OD1	2:E:265:ARG:NH2	2.47	0.48
2:F:1404:ILE:HA	2:F:1409:ASP:HA	1.95	0.48
2:H:441:MET:N	2:H:442:PRO:HD2	2.29	0.48
2:H:1503:PHE:N	2:H:1532:THR:O	2.43	0.48
1:A:79:PHE:HE1	1:A:159:ILE:HG22	1.79	0.48
1:B:186:HIS:CE1	1:B:310:LEU:CD1	2.97	0.48
1:B:223:THR:HG22	1:B:224:THR:N	2.28	0.48
1:D:186:HIS:CE1	1:D:310:LEU:CD1	2.97	0.48
1:D:201:ARG:HG3	1:D:201:ARG:HH11	1.79	0.48
2:E:430:TRP:HA	2:E:433:PHE:CD2	2.48	0.48
2:E:441:MET:N	2:E:442:PRO:HD2	2.29	0.48
2:G:1182:PHE:CD2	2:G:1248:LEU:HD22	2.49	0.48
2:H:430:TRP:HA	2:H:433:PHE:CD2	2.48	0.48
3:A:401:ATP:C8	3:A:401:ATP:C3'	2.97	0.47
1:B:95:PHE:HD2	1:B:95:PHE:O	1.97	0.47
1:D:275:LEU:O	1:D:306:ALA:HB1	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:430:TRP:HA	2:G:433:PHE:CD2	2.48	0.47
2:G:861:ASP:O	2:G:865:SER:N	2.40	0.47
1:A:55:PHE:HD1	1:B:206:ARG:CZ	2.27	0.47
1:B:201:ARG:HG3	1:B:201:ARG:HH11	1.79	0.47
1:C:201:ARG:HG3	1:C:201:ARG:HH11	1.79	0.47
2:E:69:PRO:HG2	2:E:192:VAL:HG11	1.96	0.47
2:F:430:TRP:HA	2:F:433:PHE:CD2	2.48	0.47
2:G:584:HIS:HB3	2:G:1290:MET:SD	2.54	0.47
2:H:584:HIS:HB3	2:H:1290:MET:SD	2.55	0.47
2:H:1182:PHE:CD2	2:H:1248:LEU:HD22	2.49	0.47
2:E:861:ASP:O	2:E:865:SER:N	2.40	0.47
2:H:217:PHE:CE1	2:H:1239:LEU:HB3	2.50	0.47
2:H:1374:LYS:O	2:H:1548:LEU:N	2.47	0.47
1:B:154:ILE:HD13	1:C:76:THR:HG23	1.97	0.47
3:B:401:ATP:C8	3:B:401:ATP:C3'	2.97	0.47
1:C:55:PHE:HD1	1:D:206:ARG:CZ	2.28	0.47
1:C:95:PHE:HD2	1:C:95:PHE:O	1.97	0.47
2:F:217:PHE:CE1	2:F:1239:LEU:HB3	2.50	0.47
1:A:251:LEU:HD23	1:A:251:LEU:O	2.14	0.47
1:C:85:LEU:HD13	2:G:38:PHE:HA	1.96	0.47
1:C:275:LEU:O	1:C:306:ALA:HB1	2.14	0.47
2:E:115:MET:HA	2:E:115:MET:CE	2.43	0.47
2:F:258:ARG:HB2	2:F:261:THR:H	1.80	0.47
2:F:441:MET:N	2:F:442:PRO:HD2	2.29	0.47
1:A:345:THR:OG1	1:A:348:GLN:HG3	2.15	0.47
1:C:154:ILE:HD13	1:D:76:THR:HG23	1.97	0.47
1:D:85:LEU:HD13	2:H:38:PHE:HA	1.96	0.47
2:H:1404:ILE:HA	2:H:1409:ASP:HA	1.95	0.47
1:A:85:LEU:HD13	2:E:38:PHE:HA	1.95	0.47
1:A:186:HIS:CE1	1:A:310:LEU:CD1	2.97	0.47
1:A:201:ARG:HH11	1:A:201:ARG:HG3	1.79	0.47
1:C:186:HIS:CE1	1:C:310:LEU:CD1	2.97	0.47
3:C:401:ATP:C8	3:C:401:ATP:C3'	2.97	0.47
2:E:584:HIS:HB3	2:E:1290:MET:SD	2.55	0.47
2:E:1344:LYS:O	2:E:1407:GLY:N	2.48	0.47
2:F:584:HIS:HB3	2:F:1290:MET:SD	2.55	0.47
2:F:1182:PHE:CD2	2:F:1248:LEU:HD22	2.49	0.47
2:F:1374:LYS:O	2:F:1548:LEU:N	2.47	0.47
2:G:441:MET:N	2:G:442:PRO:HD2	2.29	0.47
2:G:1352:VAL:O	2:G:1361:VAL:N	2.44	0.47
2:G:1469:GLY:H	2:G:1473:ALA:HB2	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:69:PRO:HG2	2:H:192:VAL:HG11	1.96	0.47
1:A:223:THR:HG22	1:A:224:THR:N	2.28	0.47
1:D:251:LEU:HD23	1:D:251:LEU:O	2.14	0.47
2:E:217:PHE:CE1	2:E:1239:LEU:HB3	2.50	0.47
2:E:258:ARG:HB2	2:E:261:THR:H	1.80	0.47
2:F:1562:LYS:O	2:F:1564:GLU:N	2.41	0.47
1:B:55:PHE:HD1	1:C:206:ARG:CZ	2.28	0.47
1:B:267:LEU:HB3	1:B:270:LEU:CD1	2.45	0.47
1:B:345:THR:OG1	1:B:348:GLN:HG3	2.15	0.47
2:F:69:PRO:HG2	2:F:192:VAL:HG11	1.96	0.47
2:F:206:PRO:O	2:F:210:LEU:CB	2.63	0.47
2:G:217:PHE:CE1	2:G:1239:LEU:HB3	2.50	0.47
2:H:258:ARG:HB2	2:H:261:THR:H	1.80	0.47
2:H:262:ASN:OD1	2:H:265:ARG:NH2	2.47	0.47
2:H:373:LEU:HD23	2:H:373:LEU:HA	1.63	0.47
2:H:441:MET:HB2	2:H:442:PRO:CD	2.45	0.47
1:A:154:ILE:HD13	1:B:76:THR:HG23	1.97	0.47
2:E:773:ALA:HB3	2:E:853:LEU:HA	1.97	0.47
2:E:1374:LYS:O	2:E:1548:LEU:N	2.47	0.47
2:F:381:ILE:HG21	2:F:1242:THR:CG2	2.39	0.47
2:G:441:MET:HB2	2:G:442:PRO:CD	2.45	0.47
2:H:773:ALA:HB3	2:H:853:LEU:HA	1.97	0.47
1:A:188:VAL:HG21	1:A:314:ARG:HA	1.97	0.46
1:A:206:ARG:CZ	1:D:55:PHE:HD1	2.29	0.46
1:B:249:ILE:HG23	1:B:249:ILE:O	2.15	0.46
1:D:188:VAL:HG21	1:D:314:ARG:HA	1.97	0.46
2:E:1469:GLY:H	2:E:1473:ALA:HB2	1.79	0.46
2:F:773:ALA:HB3	2:F:853:LEU:HA	1.97	0.46
2:G:258:ARG:HB2	2:G:261:THR:H	1.80	0.46
1:A:267:LEU:HB3	1:A:270:LEU:CD1	2.45	0.46
1:D:345:THR:OG1	1:D:348:GLN:HG3	2.15	0.46
2:E:1460:LEU:O	2:E:1464:VAL:N	2.42	0.46
2:F:1192:LEU:O	2:F:1196:THR:OG1	2.23	0.46
2:G:69:PRO:HG2	2:G:192:VAL:HG11	1.96	0.46
2:G:773:ALA:HB3	2:G:853:LEU:HA	1.97	0.46
2:G:1344:LYS:O	2:G:1407:GLY:N	2.48	0.46
2:H:253:LEU:HD11	2:H:1235:ASN:CB	2.46	0.46
2:H:1344:LYS:O	2:H:1407:GLY:N	2.48	0.46
1:B:188:VAL:HG21	1:B:314:ARG:HA	1.97	0.46
1:C:249:ILE:HG23	1:C:249:ILE:O	2.15	0.46
3:D:401:ATP:C8	3:D:401:ATP:C3'	2.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:E:2001:GBM:H27	4:E:2001:GBM:O6	2.15	0.46
2:G:206:PRO:O	2:G:210:LEU:CB	2.63	0.46
2:G:1374:LYS:O	2:G:1548:LEU:N	2.47	0.46
2:H:1469:GLY:H	2:H:1473:ALA:HB2	1.79	0.46
1:A:76:THR:HG23	1:D:154:ILE:HD13	1.98	0.46
1:A:84:LEU:HG	1:A:121:PHE:CE1	2.49	0.46
1:B:85:LEU:HD13	2:F:38:PHE:HA	1.96	0.46
1:B:200:LEU:CD1	1:B:285:VAL:HG21	2.46	0.46
1:B:251:LEU:HD23	1:B:251:LEU:O	2.14	0.46
2:F:1469:GLY:H	2:F:1473:ALA:HB2	1.79	0.46
1:B:190:THR:OG1	1:B:191:PRO:HD2	2.16	0.46
1:C:267:LEU:HB3	1:C:270:LEU:CD1	2.45	0.46
2:F:253:LEU:HD11	2:F:1235:ASN:CB	2.46	0.46
2:G:253:LEU:HD11	2:G:1235:ASN:CB	2.46	0.46
1:A:249:ILE:HG23	1:A:249:ILE:O	2.15	0.46
1:C:200:LEU:CD1	1:C:285:VAL:HG21	2.46	0.46
1:C:251:LEU:HD23	1:C:251:LEU:O	2.14	0.46
1:D:95:PHE:HD2	1:D:95:PHE:O	1.98	0.46
1:D:188:VAL:HB	1:D:313:GLN:O	2.16	0.46
2:E:253:LEU:HD11	2:E:1235:ASN:CB	2.46	0.46
2:E:441:MET:HB2	2:E:442:PRO:CD	2.45	0.46
2:F:42:ILE:HG23	2:F:43:THR:HG23	1.98	0.46
2:G:262:ASN:OD1	2:G:265:ARG:NH2	2.47	0.46
2:H:206:PRO:O	2:H:210:LEU:CB	2.63	0.46
4:H:2001:GBM:O6	4:H:2001:GBM:H27	2.15	0.46
2:E:377:TYR:CE1	4:E:2001:GBM:H15	2.51	0.46
4:F:2001:GBM:O6	4:F:2001:GBM:H27	2.15	0.46
2:G:42:ILE:HG23	2:G:43:THR:HG23	1.98	0.46
2:H:1562:LYS:O	2:H:1564:GLU:N	2.41	0.46
1:A:95:PHE:HD2	1:A:95:PHE:O	1.97	0.46
1:C:188:VAL:HG21	1:C:314:ARG:HA	1.97	0.46
1:C:345:THR:OG1	1:C:348:GLN:HG3	2.15	0.46
1:D:200:LEU:CD1	1:D:285:VAL:HG21	2.46	0.46
2:F:81:LEU:HA	2:F:84:VAL:HG22	1.97	0.46
1:A:188:VAL:HB	1:A:313:GLN:O	2.16	0.46
1:D:267:LEU:HB3	1:D:270:LEU:CD1	2.45	0.46
2:F:123:TYR:OH	2:F:135:LEU:O	2.29	0.46
2:F:262:ASN:ND2	2:F:386:ASN:OD1	2.49	0.46
2:F:680:GLN:O	2:F:738:PHE:N	2.41	0.46
1:A:200:LEU:CD1	1:A:285:VAL:HG21	2.46	0.45
2:E:373:LEU:HD23	2:E:373:LEU:HA	1.63	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:42:ILE:HG23	2:E:43:THR:HG23	1.98	0.45
2:H:262:ASN:ND2	2:H:386:ASN:OD1	2.49	0.45
1:A:190:THR:OG1	1:A:191:PRO:HD2	2.16	0.45
1:C:188:VAL:HB	1:C:313:GLN:O	2.16	0.45
1:D:242:ASN:OD1	1:D:244:VAL:HG22	2.16	0.45
1:D:249:ILE:HG23	1:D:249:ILE:O	2.15	0.45
2:E:206:PRO:O	2:E:210:LEU:CB	2.63	0.45
2:F:398:LYS:NZ	2:F:615:SER:O	2.50	0.45
2:G:75:TRP:O	2:G:78:THR:OG1	2.28	0.45
2:H:158:TYR:HA	2:H:161:ALA:HB2	1.99	0.45
2:H:377:TYR:CE1	4:H:2001:GBM:H15	2.51	0.45
1:B:130:THR:HG22	1:C:129:VAL:HG12	1.98	0.45
2:E:39:LEU:C	2:E:39:LEU:CD2	2.85	0.45
2:E:158:TYR:HA	2:E:161:ALA:HB2	1.99	0.45
2:F:373:LEU:HA	2:F:373:LEU:HD23	1.63	0.45
2:F:377:TYR:CE1	4:F:2001:GBM:H15	2.51	0.45
2:G:217:PHE:CE2	2:G:1239:LEU:HD13	2.52	0.45
2:H:217:PHE:O	2:H:217:PHE:CD2	2.70	0.45
2:H:1128:ASP:OD1	2:H:1314:ARG:NH2	2.39	0.45
1:B:188:VAL:HB	1:B:313:GLN:O	2.16	0.45
2:E:217:PHE:CD2	2:E:217:PHE:O	2.70	0.45
2:E:262:ASN:ND2	2:E:386:ASN:OD1	2.49	0.45
4:E:2001:GBM:H19	4:E:2001:GBM:H21	1.85	0.45
2:F:262:ASN:OD1	2:F:265:ARG:NH2	2.47	0.45
2:G:262:ASN:ND2	2:G:386:ASN:OD1	2.49	0.45
2:H:39:LEU:C	2:H:39:LEU:CD2	2.85	0.45
2:E:81:LEU:HA	2:E:84:VAL:HG22	1.97	0.45
2:F:39:LEU:C	2:F:39:LEU:CD2	2.85	0.45
2:G:39:LEU:C	2:G:39:LEU:CD2	2.85	0.45
2:G:158:TYR:HA	2:G:161:ALA:HB2	1.99	0.45
2:G:217:PHE:CD2	2:G:217:PHE:O	2.70	0.45
2:H:217:PHE:CE2	2:H:1239:LEU:HD13	2.52	0.45
2:H:310:ASP:OD1	2:H:444:GLN:NE2	2.33	0.45
2:H:378:TYR:O	2:H:378:TYR:CD1	2.70	0.45
2:H:1203:HIS:O	2:H:1207:THR:OG1	2.24	0.45
2:H:1246:ARG:HA	2:H:1246:ARG:HE	1.79	0.45
1:D:190:THR:OG1	1:D:191:PRO:HD2	2.16	0.45
2:E:217:PHE:CE2	2:E:1239:LEU:HD13	2.52	0.45
2:F:230:TYR:CE2	2:F:1246:ARG:HB3	2.52	0.45
2:G:230:TYR:CE2	2:G:1246:ARG:HB3	2.52	0.45
4:G:2001:GBM:H27	4:G:2001:GBM:O6	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:242:ASN:OD1	1:A:244:VAL:HG22	2.16	0.45
2:E:230:TYR:CE2	2:E:1246:ARG:HB3	2.52	0.45
2:F:217:PHE:CE2	2:F:1239:LEU:HD13	2.52	0.45
2:F:1344:LYS:O	2:F:1407:GLY:N	2.48	0.45
2:G:66:LEU:HG	2:G:131:ASN:HD21	1.82	0.45
2:G:1246:ARG:HA	2:G:1246:ARG:HE	1.78	0.45
2:H:81:LEU:HA	2:H:84:VAL:HG22	1.97	0.45
1:B:57:GLN:HE21	2:F:132:PHE:HE1	1.64	0.45
1:B:130:THR:CG2	1:C:129:VAL:HG12	2.47	0.45
1:C:190:THR:OG1	1:C:191:PRO:HD2	2.16	0.45
2:F:140:LEU:HB3	2:F:186:GLU:HG3	1.99	0.45
2:H:42:ILE:HG23	2:H:43:THR:HG23	1.98	0.45
2:H:66:LEU:HG	2:H:131:ASN:HD21	1.82	0.45
1:A:314:ARG:HE	1:A:339:VAL:CB	2.30	0.45
2:E:398:LYS:NZ	2:E:615:SER:O	2.50	0.45
2:E:581:SER:OG	2:E:1286:THR:HG23	2.17	0.45
2:E:1176:TYR:CZ	2:E:1180:LYS:HD2	2.52	0.45
2:G:377:TYR:CE1	4:G:2001:GBM:H15	2.51	0.45
2:G:378:TYR:O	2:G:378:TYR:CD1	2.70	0.45
2:G:1180:LYS:HG2	2:G:1183:ARG:HH21	1.82	0.45
2:H:581:SER:OG	2:H:1286:THR:HG23	2.17	0.45
2:H:1176:TYR:CZ	2:H:1180:LYS:HD2	2.52	0.45
2:E:66:LEU:HG	2:E:131:ASN:HD21	1.82	0.44
2:E:1203:HIS:O	2:E:1207:THR:OG1	2.24	0.44
2:F:217:PHE:O	2:F:217:PHE:CD2	2.70	0.44
2:F:217:PHE:CZ	2:F:1239:LEU:HD13	2.53	0.44
2:F:378:TYR:O	2:F:378:TYR:CD1	2.70	0.44
2:F:441:MET:HB2	2:F:442:PRO:CD	2.45	0.44
2:F:592:LEU:HG	4:F:2001:GBM:C30	2.47	0.44
2:G:581:SER:OG	2:G:1286:THR:HG23	2.17	0.44
2:H:230:TYR:CE2	2:H:1246:ARG:HB3	2.52	0.44
1:B:57:GLN:HG2	2:F:132:PHE:CE1	2.52	0.44
1:C:130:THR:HG22	1:D:129:VAL:HG12	1.99	0.44
2:E:680:GLN:O	2:E:738:PHE:N	2.41	0.44
2:F:158:TYR:HA	2:F:161:ALA:HB2	1.99	0.44
2:F:581:SER:OG	2:F:1286:THR:HG23	2.17	0.44
2:H:592:LEU:HG	4:H:2001:GBM:C30	2.47	0.44
1:C:242:ASN:OD1	1:C:244:VAL:HG22	2.16	0.44
2:E:1180:LYS:HG2	2:E:1183:ARG:HH21	1.82	0.44
2:F:66:LEU:HG	2:F:131:ASN:HD21	1.82	0.44
2:G:81:LEU:HA	2:G:84:VAL:HG22	1.97	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:1180:LYS:HG2	2:H:1183:ARG:HH21	1.82	0.44
1:A:129:VAL:HG12	1:D:130:THR:HG22	1.99	0.44
1:B:101:ALA:H	1:B:102:PRO:HD3	1.83	0.44
1:B:242:ASN:OD1	1:B:244:VAL:HG22	2.16	0.44
1:D:101:ALA:H	1:D:102:PRO:HD3	1.83	0.44
2:E:217:PHE:CZ	2:E:1239:LEU:HD13	2.53	0.44
2:G:592:LEU:HG	4:G:2001:GBM:C30	2.47	0.44
2:H:1376:GLY:O	2:H:1550:MET:N	2.40	0.44
2:H:217:PHE:CZ	2:H:1239:LEU:HD13	2.53	0.44
1:C:130:THR:CG2	1:D:129:VAL:HG12	2.48	0.44
1:D:50:ARG:HH21	1:D:52:GLN:HE22	1.66	0.44
2:E:140:LEU:HB3	2:E:186:GLU:HG3	1.99	0.44
2:E:592:LEU:HG	4:E:2001:GBM:C30	2.47	0.44
2:H:75:TRP:O	2:H:78:THR:OG1	2.28	0.44
1:A:50:ARG:HH21	1:A:52:GLN:HE22	1.66	0.44
2:E:370:ARG:HD2	2:E:370:ARG:HA	1.73	0.44
2:F:34:VAL:CB	2:F:35:PRO:CD	2.96	0.44
2:G:123:TYR:OH	2:G:135:LEU:O	2.29	0.44
2:G:217:PHE:CZ	2:G:1239:LEU:HD13	2.53	0.44
2:H:398:LYS:NZ	2:H:615:SER:O	2.50	0.44
1:C:181:LEU:HD21	1:C:210:ILE:CD1	2.48	0.44
2:E:378:TYR:CD1	2:E:378:TYR:O	2.70	0.44
2:E:1128:ASP:OD1	2:E:1314:ARG:NH2	2.39	0.44
2:G:1176:TYR:CZ	2:G:1180:LYS:HD2	2.52	0.44
2:H:168:ARG:O	2:H:172:THR:OG1	2.28	0.44
1:B:181:LEU:HD21	1:B:210:ILE:HD11	2.00	0.43
1:C:57:GLN:HG2	2:G:132:PHE:CE1	2.52	0.43
1:C:181:LEU:HD21	1:C:210:ILE:HD11	2.00	0.43
2:E:1376:GLY:O	2:E:1550:MET:N	2.40	0.43
2:F:243:LYS:NZ	2:F:244:PRO:O	2.45	0.43
2:F:1180:LYS:HG2	2:F:1183:ARG:HH21	1.82	0.43
2:H:11:HIS:HA	2:H:14:ALA:HB3	2.00	0.43
1:A:144:LEU:O	1:A:148:ILE:HG13	2.18	0.43
1:B:192:ARG:NE	1:B:199:MET:HE1	2.33	0.43
1:C:84:LEU:HG	1:C:121:PHE:CE1	2.49	0.43
1:C:187:ALA:HB1	1:C:199:MET:O	2.19	0.43
1:C:314:ARG:HE	1:C:339:VAL:CB	2.30	0.43
2:E:11:HIS:HA	2:E:14:ALA:HB3	2.00	0.43
2:E:66:LEU:HD22	2:E:67:HIS:H	1.84	0.43
2:F:1176:TYR:CZ	2:F:1180:LYS:HD2	2.52	0.43
2:G:398:LYS:NZ	2:G:615:SER:O	2.50	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:1562:LYS:O	2:G:1564:GLU:N	2.41	0.43
1:A:57:GLN:HE21	2:E:132:PHE:HE1	1.65	0.43
1:D:187:ALA:HB1	1:D:199:MET:O	2.19	0.43
1:D:314:ARG:HE	1:D:339:VAL:CB	2.30	0.43
2:E:356:TYR:OH	2:E:1269:SER:HB2	2.19	0.43
2:E:385:ILE:HG12	2:E:429:MET:CE	2.49	0.43
2:G:34:VAL:CB	2:G:35:PRO:CD	2.96	0.43
2:H:356:TYR:OH	2:H:1269:SER:HB2	2.19	0.43
1:A:101:ALA:H	1:A:102:PRO:HD3	1.83	0.43
1:B:84:LEU:HG	1:B:121:PHE:CE1	2.49	0.43
1:C:57:GLN:HE21	2:G:132:PHE:HE1	1.63	0.43
1:D:181:LEU:HD21	1:D:210:ILE:CD1	2.48	0.43
1:D:318:ILE:HD11	1:D:332:LYS:O	2.18	0.43
2:E:123:TYR:OH	2:E:135:LEU:O	2.29	0.43
2:G:140:LEU:HB3	2:G:186:GLU:HG3	1.99	0.43
2:G:441:MET:HG3	2:G:593:LEU:HD13	2.01	0.43
2:H:34:VAL:CB	2:H:35:PRO:CD	2.96	0.43
2:H:425:THR:HA	2:H:428:LEU:HD12	2.00	0.43
1:A:318:ILE:HD11	1:A:332:LYS:O	2.18	0.43
1:B:187:ALA:HB1	1:B:199:MET:O	2.19	0.43
2:E:441:MET:HG3	2:E:593:LEU:HD13	2.01	0.43
2:E:1187:ARG:HA	2:E:1307:ILE:HD11	2.01	0.43
2:F:438:LEU:HB3	2:F:439:TRP:CE3	2.53	0.43
1:A:130:THR:HG22	1:B:129:VAL:HG12	1.99	0.43
1:B:144:LEU:O	1:B:148:ILE:HG13	2.19	0.43
1:B:181:LEU:HD21	1:B:210:ILE:CD1	2.48	0.43
1:C:229:GLU:CD	1:D:314:ARG:HD2	2.39	0.43
1:D:57:GLN:HG2	2:H:132:PHE:CE1	2.52	0.43
2:E:1435:THR:O	2:E:1439:ASN:N	2.34	0.43
2:F:1187:ARG:HA	2:F:1307:ILE:HD11	2.01	0.43
2:G:141:ILE:HA	2:G:144:THR:HG22	2.01	0.43
2:H:140:LEU:HB3	2:H:186:GLU:HG3	1.99	0.43
1:A:187:ALA:HB1	1:A:199:MET:O	2.19	0.43
1:C:95:PHE:CE2	2:G:12:SER:O	2.72	0.43
1:D:144:LEU:O	1:D:148:ILE:HG13	2.18	0.43
2:E:438:LEU:HB3	2:E:439:TRP:CE3	2.53	0.43
1:A:181:LEU:HD21	1:A:210:ILE:CD1	2.48	0.43
1:D:57:GLN:HE21	2:H:132:PHE:HE1	1.65	0.43
2:E:218:LEU:HD12	2:E:218:LEU:O	2.19	0.43
2:F:11:HIS:HA	2:F:14:ALA:HB3	2.00	0.43
2:F:66:LEU:HD22	2:F:67:HIS:H	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:1376:GLY:O	2:F:1550:MET:N	2.40	0.43
1:B:188:VAL:HG12	1:B:310:LEU:HB2	2.01	0.43
1:B:318:ILE:HD11	1:B:332:LYS:O	2.18	0.43
2:E:425:THR:HA	2:E:428:LEU:HD12	2.00	0.43
2:G:218:LEU:HD12	2:G:218:LEU:O	2.19	0.43
2:H:141:ILE:HA	2:H:144:THR:HG22	2.01	0.43
2:H:385:ILE:HG12	2:H:429:MET:CE	2.49	0.43
2:H:441:MET:HG3	2:H:593:LEU:HD13	2.01	0.43
1:A:57:GLN:HG2	2:E:132:PHE:CE1	2.53	0.43
1:A:181:LEU:HD21	1:A:210:ILE:HD11	2.00	0.43
1:B:314:ARG:HE	1:B:339:VAL:CB	2.30	0.43
1:D:95:PHE:CE2	2:H:12:SER:O	2.72	0.43
2:E:577:PHE:HE2	2:E:1279:GLY:HA2	1.84	0.43
2:F:425:THR:HA	2:F:428:LEU:HD12	2.00	0.43
4:F:2001:GBM:H19	4:F:2001:GBM:H21	1.85	0.43
2:G:253:LEU:HA	2:G:254:PRO:HD3	1.76	0.43
2:G:425:THR:HA	2:G:428:LEU:HD12	2.00	0.43
2:G:438:LEU:HB3	2:G:439:TRP:CE3	2.53	0.43
2:H:438:LEU:HB3	2:H:439:TRP:CE3	2.53	0.43
1:A:130:THR:CG2	1:B:129:VAL:HG12	2.48	0.42
1:B:68:TRP:O	1:B:72:LEU:HG	2.19	0.42
2:F:385:ILE:HG12	2:F:429:MET:CE	2.49	0.42
2:G:66:LEU:HD22	2:G:67:HIS:H	1.84	0.42
2:G:356:TYR:OH	2:G:1269:SER:HB2	2.19	0.42
2:H:66:LEU:HD22	2:H:67:HIS:H	1.83	0.42
2:H:253:LEU:HA	2:H:254:PRO:HD3	1.76	0.42
1:A:314:ARG:HD2	1:D:229:GLU:CD	2.39	0.42
1:B:95:PHE:CE2	2:F:12:SER:O	2.72	0.42
1:C:101:ALA:H	1:C:102:PRO:HD3	1.82	0.42
1:C:144:LEU:O	1:C:148:ILE:HG13	2.18	0.42
2:E:1246:ARG:HA	2:E:1246:ARG:HE	1.79	0.42
2:F:218:LEU:HD12	2:F:218:LEU:O	2.19	0.42
2:H:107:TYR:C	2:H:109:PRO:HD2	2.40	0.42
1:B:229:GLU:CD	1:C:314:ARG:HD2	2.40	0.42
1:C:50:ARG:HH21	1:C:52:GLN:HE22	1.66	0.42
1:C:217:MET:HB3	1:C:238:ILE:HB	2.01	0.42
1:D:181:LEU:HD21	1:D:210:ILE:HD11	2.00	0.42
1:D:188:VAL:HG12	1:D:310:LEU:HB2	2.01	0.42
2:F:245:ILE:CG2	2:F:250:ILE:HD11	2.50	0.42
2:F:441:MET:HG3	2:F:593:LEU:HD13	2.01	0.42
2:G:245:ILE:CG2	2:G:250:ILE:HD11	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:1187:ARG:HA	2:G:1307:ILE:HD11	2.01	0.42
2:G:1376:GLY:O	2:G:1550:MET:N	2.40	0.42
2:H:577:PHE:HE2	2:H:1279:GLY:HA2	1.84	0.42
1:A:129:VAL:HG12	1:D:130:THR:CG2	2.48	0.42
1:C:223:THR:CG2	1:C:224:THR:N	2.82	0.42
2:E:233:MET:HE2	2:E:233:MET:HB2	1.94	0.42
2:G:385:ILE:HG12	2:G:429:MET:CE	2.49	0.42
2:H:370:ARG:HG3	2:H:1253:GLU:CB	2.49	0.42
2:H:1192:LEU:O	2:H:1196:THR:OG1	2.23	0.42
1:A:101:ALA:HB3	2:E:13:ALA:HB2	2.01	0.42
1:B:101:ALA:HB3	2:F:13:ALA:HB2	2.01	0.42
1:B:223:THR:CG2	1:B:224:THR:N	2.82	0.42
1:C:68:TRP:O	1:C:72:LEU:HG	2.19	0.42
1:D:217:MET:HB3	1:D:238:ILE:HB	2.02	0.42
2:F:1246:ARG:HA	2:F:1246:ARG:HE	1.79	0.42
2:G:11:HIS:HA	2:G:14:ALA:HB3	2.00	0.42
2:H:217:PHE:CZ	2:H:1239:LEU:HD22	2.55	0.42
2:H:218:LEU:HD12	2:H:218:LEU:O	2.19	0.42
2:H:243:LYS:NZ	2:H:244:PRO:O	2.45	0.42
2:H:1187:ARG:HA	2:H:1307:ILE:HD11	2.01	0.42
1:A:188:VAL:HG12	1:A:310:LEU:HB2	2.01	0.42
1:A:240:MET:HE2	1:A:240:MET:HA	2.00	0.42
2:H:123:TYR:OH	2:H:135:LEU:O	2.29	0.42
1:D:223:THR:CG2	1:D:224:THR:N	2.82	0.42
2:E:107:TYR:C	2:E:109:PRO:HD2	2.40	0.42
2:F:217:PHE:O	2:F:217:PHE:HD2	2.03	0.42
2:G:36:HIS:HB3	2:G:116:ALA:HB2	2.02	0.42
2:H:245:ILE:CG2	2:H:250:ILE:HD11	2.50	0.42
2:H:370:ARG:HD2	2:H:370:ARG:HA	1.73	0.42
1:A:223:THR:CG2	1:A:224:THR:N	2.82	0.42
2:F:107:TYR:C	2:F:109:PRO:HD2	2.40	0.42
2:G:107:TYR:C	2:G:109:PRO:HD2	2.40	0.42
2:H:215:VAL:CB	2:H:249:ALA:O	2.68	0.42
1:C:318:ILE:HD11	1:C:332:LYS:O	2.18	0.42
1:D:50:ARG:HE	1:D:50:ARG:HB3	1.69	0.42
2:E:75:TRP:O	2:E:78:THR:OG1	2.28	0.42
2:E:217:PHE:O	2:E:217:PHE:HD2	2.03	0.42
2:E:217:PHE:CZ	2:E:1239:LEU:HD22	2.55	0.42
2:F:356:TYR:OH	2:F:1269:SER:HB2	2.19	0.42
2:F:1143:LEU:HD13	2:F:1301:ASN:HB2	2.02	0.42
1:A:319:VAL:HG22	1:A:328:VAL:HG22	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:242:ASN:CB	1:B:246:GLY:O	2.68	0.42
1:C:93:ILE:HD12	1:C:148:ILE:HD12	2.02	0.42
1:C:188:VAL:HG12	1:C:310:LEU:HB2	2.01	0.42
2:F:577:PHE:HE2	2:F:1279:GLY:HA2	1.84	0.42
1:A:68:TRP:O	1:A:72:LEU:HG	2.19	0.41
1:A:242:ASN:CB	1:A:246:GLY:O	2.68	0.41
1:C:53:GLY:O	1:C:57:GLN:HG3	2.20	0.41
2:E:141:ILE:HA	2:E:144:THR:HG22	2.01	0.41
2:G:232:TRP:CH2	2:G:233:MET:HE2	2.55	0.41
2:G:577:PHE:HE2	2:G:1279:GLY:HA2	1.84	0.41
2:H:1239:LEU:HD23	2:H:1239:LEU:HA	1.90	0.41
1:B:217:MET:HB3	1:B:238:ILE:HB	2.01	0.41
2:G:215:VAL:CB	2:G:249:ALA:O	2.68	0.41
2:H:30:ALA:HA	2:H:33:VAL:HG23	2.03	0.41
2:H:680:GLN:O	2:H:738:PHE:N	2.42	0.41
2:H:1143:LEU:HD13	2:H:1301:ASN:HB2	2.02	0.41
1:A:53:GLY:O	1:A:57:GLN:HG3	2.20	0.41
1:D:285:VAL:HB	1:D:302:THR:HG22	2.02	0.41
2:E:1143:LEU:HD13	2:E:1301:ASN:HB2	2.02	0.41
2:G:217:PHE:O	2:G:217:PHE:HD2	2.03	0.41
2:G:1143:LEU:HD13	2:G:1301:ASN:HB2	2.02	0.41
1:A:95:PHE:CE2	2:E:12:SER:O	2.73	0.41
1:C:187:ALA:O	1:C:309:ILE:HA	2.20	0.41
1:D:68:TRP:O	1:D:72:LEU:HG	2.20	0.41
1:D:84:LEU:HG	1:D:121:PHE:CE1	2.49	0.41
1:D:93:ILE:HD12	1:D:148:ILE:HD12	2.02	0.41
2:E:245:ILE:CG2	2:E:250:ILE:HD11	2.50	0.41
2:F:36:HIS:HB3	2:F:116:ALA:HB2	2.02	0.41
2:G:217:PHE:CZ	2:G:1239:LEU:HD22	2.55	0.41
2:G:243:LYS:NZ	2:G:244:PRO:O	2.45	0.41
2:H:36:HIS:HB3	2:H:116:ALA:HB2	2.02	0.41
1:B:187:ALA:O	1:B:309:ILE:HA	2.20	0.41
1:C:319:VAL:HG22	1:C:328:VAL:HG22	2.02	0.41
2:F:370:ARG:HG3	2:F:1253:GLU:CG	2.51	0.41
2:G:402:MET:HB2	2:G:1211:LEU:HD21	2.03	0.41
1:A:187:ALA:O	1:A:309:ILE:HA	2.20	0.41
1:B:319:VAL:HG22	1:B:328:VAL:HG22	2.02	0.41
1:C:242:ASN:CB	1:C:246:GLY:O	2.68	0.41
1:C:276:HIS:HA	1:C:306:ALA:HB1	2.03	0.41
1:D:242:ASN:CB	1:D:246:GLY:O	2.68	0.41
2:E:431:PHE:CE1	2:E:600:THR:HG22	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:141:ILE:HA	2:F:144:THR:HG22	2.01	0.41
2:F:186:GLU:O	2:F:190:ILE:HG12	2.20	0.41
2:F:215:VAL:CB	2:F:249:ALA:O	2.68	0.41
2:G:67:HIS:HB3	2:G:71:HIS:CD2	2.56	0.41
2:G:186:GLU:O	2:G:190:ILE:HG12	2.20	0.41
2:G:370:ARG:HD2	2:G:370:ARG:HA	1.73	0.41
1:A:192:ARG:NE	1:A:199:MET:HE1	2.36	0.41
1:A:217:MET:HB3	1:A:238:ILE:HB	2.02	0.41
1:C:312:GLY:HA2	1:C:341:THR:CG2	2.50	0.41
1:D:201:ARG:HH21	1:D:315:PHE:HB3	1.86	0.41
1:D:319:VAL:HG22	1:D:328:VAL:HG22	2.02	0.41
2:E:370:ARG:HG3	2:E:1253:GLU:CG	2.51	0.41
2:F:30:ALA:HA	2:F:33:VAL:HG23	2.02	0.41
1:B:93:ILE:HD12	1:B:148:ILE:HD12	2.02	0.41
1:C:50:ARG:HE	1:C:50:ARG:HB3	1.69	0.41
1:D:53:GLY:O	1:D:57:GLN:HG3	2.20	0.41
2:E:30:ALA:HA	2:E:33:VAL:HG23	2.02	0.41
2:E:215:VAL:CB	2:E:249:ALA:O	2.68	0.41
2:G:370:ARG:HG3	2:G:1253:GLU:CB	2.49	0.41
2:G:550:ILE:HD13	2:G:550:ILE:HA	1.96	0.41
2:H:370:ARG:HG3	2:H:1253:GLU:CG	2.51	0.41
1:A:201:ARG:HH21	1:A:315:PHE:HB3	1.86	0.41
1:A:229:GLU:CD	1:B:314:ARG:HD2	2.41	0.41
1:A:285:VAL:HB	1:A:302:THR:HG22	2.02	0.41
1:A:305:LEU:N	1:A:305:LEU:HD22	2.36	0.41
1:C:101:ALA:HB3	2:G:13:ALA:HB2	2.03	0.41
1:C:305:LEU:N	1:C:305:LEU:HD22	2.36	0.41
1:D:101:ALA:HB3	2:H:13:ALA:HB2	2.02	0.41
2:E:67:HIS:HB3	2:E:71:HIS:CD2	2.56	0.41
2:F:67:HIS:HB3	2:F:71:HIS:CD2	2.56	0.41
2:F:217:PHE:CZ	2:F:1239:LEU:HD22	2.55	0.41
2:F:237:ILE:H	2:F:237:ILE:HG13	1.72	0.41
2:F:253:LEU:HA	2:F:254:PRO:HD3	1.76	0.41
2:G:370:ARG:HG3	2:G:1253:GLU:CG	2.51	0.41
2:G:431:PHE:CE1	2:G:600:THR:HG22	2.50	0.41
4:G:2001:GBM:H19	4:G:2001:GBM:H21	1.85	0.41
2:H:550:ILE:HD13	2:H:550:ILE:HA	1.96	0.41
2:H:1352:VAL:O	2:H:1361:VAL:N	2.44	0.41
1:B:53:GLY:O	1:B:57:GLN:HG3	2.21	0.41
1:B:276:HIS:HA	1:B:306:ALA:HB1	2.03	0.41
1:B:305:LEU:N	1:B:305:LEU:HD22	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:187:ALA:O	1:D:309:ILE:HA	2.20	0.41
2:E:36:HIS:HB3	2:E:116:ALA:HB2	2.02	0.41
2:F:402:MET:HB2	2:F:1211:LEU:HD21	2.03	0.41
1:B:312:GLY:HA2	1:B:341:THR:CG2	2.50	0.40
1:C:192:ARG:NE	1:C:199:MET:HE1	2.37	0.40
1:D:276:HIS:HA	1:D:306:ALA:HB1	2.03	0.40
2:E:1149:LEU:HB3	2:E:1294:TYR:CE2	2.56	0.40
2:G:30:ALA:HA	2:G:33:VAL:HG23	2.02	0.40
2:H:1149:LEU:HB3	2:H:1294:TYR:CE2	2.57	0.40
1:D:305:LEU:HD22	1:D:305:LEU:N	2.36	0.40
2:E:1352:VAL:O	2:E:1361:VAL:N	2.44	0.40
2:F:1460:LEU:O	2:F:1464:VAL:N	2.42	0.40
2:H:306:ARG:NH1	4:H:2001:GBM:CL1	2.91	0.40
2:H:402:MET:HB2	2:H:1211:LEU:HD21	2.03	0.40
1:A:93:ILE:HD12	1:A:148:ILE:HD12	2.02	0.40
1:C:285:VAL:HB	1:C:302:THR:HG22	2.02	0.40
2:E:186:GLU:O	2:E:190:ILE:HG12	2.20	0.40
2:E:306:ARG:NH1	4:E:2001:GBM:CL1	2.91	0.40
2:H:186:GLU:O	2:H:190:ILE:HG12	2.20	0.40
1:B:183:PHE:HE1	1:B:300:ALA:HB1	1.87	0.40
2:G:1149:LEU:HB3	2:G:1294:TYR:CE2	2.56	0.40
2:G:1192:LEU:O	2:G:1196:THR:OG1	2.24	0.40
2:H:67:HIS:HB3	2:H:71:HIS:CD2	2.56	0.40
2:G:367:LEU:HD23	2:G:367:LEU:HA	1.91	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	319/390 (82%)	309 (97%)	10 (3%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	319/390 (82%)	309 (97%)	10 (3%)	0	100	100
1	C	319/390 (82%)	309 (97%)	10 (3%)	0	100	100
1	D	319/390 (82%)	309 (97%)	10 (3%)	0	100	100
2	E	1297/1582 (82%)	1241 (96%)	56 (4%)	0	100	100
2	F	1297/1582 (82%)	1241 (96%)	56 (4%)	0	100	100
2	G	1297/1582 (82%)	1241 (96%)	56 (4%)	0	100	100
2	H	1297/1582 (82%)	1241 (96%)	56 (4%)	0	100	100
All	All	6464/7888 (82%)	6200 (96%)	264 (4%)	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	277/341 (81%)	274 (99%)	3 (1%)	73	87
1	B	277/341 (81%)	274 (99%)	3 (1%)	73	87
1	C	277/341 (81%)	274 (99%)	3 (1%)	73	87
1	D	277/341 (81%)	274 (99%)	3 (1%)	73	87
2	E	614/1373 (45%)	610 (99%)	4 (1%)	84	92
2	F	614/1373 (45%)	610 (99%)	4 (1%)	84	92
2	G	614/1373 (45%)	610 (99%)	4 (1%)	84	92
2	H	614/1373 (45%)	610 (99%)	4 (1%)	84	92
All	All	3564/6856 (52%)	3536 (99%)	28 (1%)	82	91

All (28) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	84	LEU
1	A	95	PHE

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Mol	Chain	Res	Type
1	A	333	PHE
1	B	84	LEU
1	B	95	PHE
1	B	333	PHE
1	C	84	LEU
1	C	95	PHE
1	C	333	PHE
1	D	84	LEU
1	D	95	PHE
1	D	333	PHE
2	E	44	PHE
2	E	222	VAL
2	E	432	PHE
2	E	1249	GLU
2	F	44	PHE
2	F	222	VAL
2	F	432	PHE
2	F	1249	GLU
2	G	44	PHE
2	G	222	VAL
2	G	432	PHE
2	G	1249	GLU
2	H	44	PHE
2	H	222	VAL
2	H	432	PHE
2	H	1249	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	48	ASN
1	A	186	HIS
1	B	186	HIS
1	C	48	ASN
1	C	186	HIS
1	D	186	HIS

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](#)

8 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	GBM	G	2001	-	35,35,35	4.91	9 (25%)	48,48,48	1.71	9 (18%)
3	ATP	B	401	-	26,33,33	1.55	3 (11%)	31,52,52	2.35	6 (19%)
3	ATP	C	401	-	26,33,33	1.55	3 (11%)	31,52,52	2.35	6 (19%)
4	GBM	F	2001	-	35,35,35	4.91	9 (25%)	48,48,48	1.71	9 (18%)
3	ATP	A	401	-	26,33,33	1.55	3 (11%)	31,52,52	2.35	6 (19%)
3	ATP	D	401	-	26,33,33	1.55	3 (11%)	31,52,52	2.35	6 (19%)
4	GBM	E	2001	-	35,35,35	4.91	9 (25%)	48,48,48	1.71	9 (18%)
4	GBM	H	2001	-	35,35,35	4.91	9 (25%)	48,48,48	1.71	9 (18%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	GBM	G	2001	-	-	7/27/35/35	0/3/3/3
3	ATP	B	401	-	-	4/18/38/38	0/3/3/3
3	ATP	C	401	-	-	4/18/38/38	0/3/3/3
4	GBM	F	2001	-	-	7/27/35/35	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	ATP	A	401	-	-	4/18/38/38	0/3/3/3
3	ATP	D	401	-	-	4/18/38/38	0/3/3/3
4	GBM	E	2001	-	-	7/27/35/35	0/3/3/3
4	GBM	H	2001	-	-	7/27/35/35	0/3/3/3

All (48) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	E	2001	GBM	O5-S2	19.31	1.65	1.43
4	F	2001	GBM	O5-S2	19.31	1.65	1.43
4	G	2001	GBM	O5-S2	19.31	1.65	1.43
4	E	2001	GBM	O4-S2	19.29	1.65	1.43
4	F	2001	GBM	O4-S2	19.29	1.65	1.43
4	G	2001	GBM	O4-S2	19.29	1.65	1.43
4	H	2001	GBM	O4-S2	19.29	1.65	1.43
4	H	2001	GBM	O5-S2	19.25	1.65	1.43
4	E	2001	GBM	C26-N10	5.30	1.45	1.33
4	F	2001	GBM	C26-N10	5.30	1.45	1.33
4	G	2001	GBM	C26-N10	5.30	1.45	1.33
4	H	2001	GBM	C26-N10	5.29	1.45	1.33
3	C	401	ATP	C2-N3	5.19	1.40	1.32
3	B	401	ATP	C2-N3	5.17	1.40	1.32
3	D	401	ATP	C2-N3	5.17	1.40	1.32
3	A	401	ATP	C2-N3	5.15	1.40	1.32
4	E	2001	GBM	C17-N8	4.54	1.45	1.35
4	F	2001	GBM	C17-N8	4.54	1.45	1.35
4	G	2001	GBM	C17-N8	4.54	1.45	1.35
4	H	2001	GBM	C17-N8	4.54	1.45	1.35
4	E	2001	GBM	C18-S2	3.66	1.82	1.76
4	F	2001	GBM	C18-S2	3.66	1.82	1.76
4	G	2001	GBM	C18-S2	3.66	1.82	1.76
4	H	2001	GBM	C18-S2	3.66	1.82	1.76
3	A	401	ATP	C2'-C1'	-3.16	1.49	1.53
3	B	401	ATP	C2'-C1'	-3.16	1.49	1.53
3	C	401	ATP	C2'-C1'	-3.16	1.49	1.53
3	D	401	ATP	C2'-C1'	-3.16	1.49	1.53
4	H	2001	GBM	S2-N9	2.89	1.70	1.64
4	E	2001	GBM	S2-N9	2.88	1.70	1.64
4	F	2001	GBM	S2-N9	2.88	1.70	1.64
4	G	2001	GBM	S2-N9	2.86	1.70	1.64
4	E	2001	GBM	C17-N9	2.52	1.45	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	F	2001	GBM	C17-N9	2.52	1.45	1.39
4	G	2001	GBM	C17-N9	2.52	1.45	1.39
4	H	2001	GBM	C17-N9	2.52	1.45	1.39
3	A	401	ATP	C4-N3	2.32	1.38	1.35
3	B	401	ATP	C4-N3	2.32	1.38	1.35
3	C	401	ATP	C4-N3	2.26	1.38	1.35
3	D	401	ATP	C4-N3	2.26	1.38	1.35
4	E	2001	GBM	O3-C17	-2.18	1.18	1.23
4	F	2001	GBM	O3-C17	-2.18	1.18	1.23
4	G	2001	GBM	O3-C17	-2.18	1.18	1.23
4	H	2001	GBM	O3-C17	-2.18	1.18	1.23
4	E	2001	GBM	O6-C26	-2.14	1.19	1.23
4	F	2001	GBM	O6-C26	-2.14	1.19	1.23
4	G	2001	GBM	O6-C26	-2.14	1.19	1.23
4	H	2001	GBM	O6-C26	-2.13	1.19	1.23

All (60) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	E	2001	GBM	O5-S2-O4	-7.31	110.57	119.55
4	F	2001	GBM	O5-S2-O4	-7.31	110.57	119.55
4	G	2001	GBM	O5-S2-O4	-7.31	110.57	119.55
4	H	2001	GBM	O5-S2-O4	-7.31	110.57	119.55
3	A	401	ATP	C4-C5-N7	5.61	115.25	109.40
3	C	401	ATP	C4-C5-N7	5.57	115.21	109.40
3	B	401	ATP	C4-C5-N7	5.55	115.18	109.40
3	D	401	ATP	C4-C5-N7	5.53	115.16	109.40
3	B	401	ATP	PA-O3A-PB	-5.40	114.29	132.83
3	C	401	ATP	PA-O3A-PB	-5.40	114.29	132.83
3	D	401	ATP	PA-O3A-PB	-5.40	114.30	132.83
3	A	401	ATP	PA-O3A-PB	-5.39	114.32	132.83
3	A	401	ATP	PB-O3B-PG	-5.18	115.06	132.83
3	C	401	ATP	PB-O3B-PG	-5.18	115.06	132.83
3	B	401	ATP	PB-O3B-PG	-5.17	115.08	132.83
3	D	401	ATP	PB-O3B-PG	-5.17	115.08	132.83
3	A	401	ATP	C1'-N9-C4	-4.92	118.00	126.64
3	B	401	ATP	C1'-N9-C4	-4.92	118.00	126.64
3	D	401	ATP	C1'-N9-C4	-4.92	118.00	126.64
3	C	401	ATP	C1'-N9-C4	-4.90	118.03	126.64
3	A	401	ATP	C3'-C2'-C1'	4.56	107.84	100.98
3	B	401	ATP	C3'-C2'-C1'	4.53	107.80	100.98
3	C	401	ATP	C3'-C2'-C1'	4.53	107.80	100.98

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	401	ATP	C3'-C2'-C1'	4.53	107.80	100.98
4	E	2001	GBM	C17-N9-S2	-3.09	114.79	123.62
4	F	2001	GBM	C17-N9-S2	-3.09	114.79	123.62
4	G	2001	GBM	C17-N9-S2	-3.08	114.82	123.62
4	H	2001	GBM	C17-N9-S2	-3.07	114.83	123.62
4	E	2001	GBM	C28-C27-C26	-3.02	120.65	126.16
4	F	2001	GBM	C28-C27-C26	-3.02	120.65	126.16
4	G	2001	GBM	C28-C27-C26	-3.02	120.65	126.16
4	H	2001	GBM	C28-C27-C26	-3.02	120.65	126.16
4	E	2001	GBM	C33-O7-C28	-2.79	113.31	117.53
4	F	2001	GBM	C33-O7-C28	-2.79	113.31	117.53
4	G	2001	GBM	C33-O7-C28	-2.79	113.31	117.53
4	H	2001	GBM	C33-O7-C28	-2.79	113.31	117.53
3	A	401	ATP	O2A-PA-O1A	2.58	125.00	112.24
3	B	401	ATP	O2A-PA-O1A	2.58	124.97	112.24
3	C	401	ATP	O2A-PA-O1A	2.58	124.97	112.24
3	D	401	ATP	O2A-PA-O1A	2.58	124.97	112.24
4	F	2001	GBM	O7-C28-C30	-2.56	119.98	124.37
4	G	2001	GBM	O7-C28-C30	-2.56	119.98	124.37
4	H	2001	GBM	O7-C28-C30	-2.56	119.98	124.37
4	E	2001	GBM	O7-C28-C30	-2.54	120.01	124.37
4	F	2001	GBM	O7-C28-C27	2.40	120.04	116.55
4	G	2001	GBM	O7-C28-C27	2.40	120.04	116.55
4	H	2001	GBM	O7-C28-C27	2.40	120.04	116.55
4	E	2001	GBM	C11-N8-C17	-2.38	118.00	123.02
4	F	2001	GBM	C11-N8-C17	-2.38	118.00	123.02
4	G	2001	GBM	C11-N8-C17	-2.38	118.00	123.02
4	H	2001	GBM	C11-N8-C17	-2.38	118.00	123.02
4	E	2001	GBM	O7-C28-C27	2.37	120.00	116.55
4	E	2001	GBM	O4-S2-C18	2.34	110.84	107.97
4	F	2001	GBM	O4-S2-C18	2.34	110.84	107.97
4	G	2001	GBM	O4-S2-C18	2.34	110.84	107.97
4	H	2001	GBM	O4-S2-C18	2.34	110.84	107.97
4	H	2001	GBM	C25-N10-C26	-2.20	117.06	122.08
4	E	2001	GBM	C25-N10-C26	-2.20	117.06	122.08
4	F	2001	GBM	C25-N10-C26	-2.20	117.06	122.08
4	G	2001	GBM	C25-N10-C26	-2.20	117.06	122.08

There are no chirality outliers.

All (44) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	401	ATP	C5'-O5'-PA-O2A
3	B	401	ATP	C5'-O5'-PA-O2A
3	C	401	ATP	C5'-O5'-PA-O2A
3	D	401	ATP	C5'-O5'-PA-O2A
4	E	2001	GBM	C19-C20-C25-N10
4	F	2001	GBM	C19-C20-C25-N10
4	G	2001	GBM	C19-C20-C25-N10
4	H	2001	GBM	C19-C20-C25-N10
4	E	2001	GBM	C27-C28-O7-C33
4	F	2001	GBM	C27-C28-O7-C33
4	G	2001	GBM	C27-C28-O7-C33
4	H	2001	GBM	C27-C28-O7-C33
4	E	2001	GBM	C30-C28-O7-C33
4	F	2001	GBM	C30-C28-O7-C33
4	G	2001	GBM	C30-C28-O7-C33
4	H	2001	GBM	C30-C28-O7-C33
4	E	2001	GBM	C23-C19-C20-C25
4	F	2001	GBM	C23-C19-C20-C25
4	G	2001	GBM	C23-C19-C20-C25
4	H	2001	GBM	C23-C19-C20-C25
4	E	2001	GBM	C24-C19-C20-C25
4	F	2001	GBM	C24-C19-C20-C25
4	G	2001	GBM	C24-C19-C20-C25
4	H	2001	GBM	C24-C19-C20-C25
4	E	2001	GBM	C12-C11-N8-C17
4	F	2001	GBM	C12-C11-N8-C17
4	G	2001	GBM	C12-C11-N8-C17
4	H	2001	GBM	C12-C11-N8-C17
3	A	401	ATP	C5'-O5'-PA-O3A
3	B	401	ATP	C5'-O5'-PA-O3A
3	C	401	ATP	C5'-O5'-PA-O3A
3	D	401	ATP	C5'-O5'-PA-O3A
4	E	2001	GBM	C13-C11-N8-C17
4	F	2001	GBM	C13-C11-N8-C17
4	G	2001	GBM	C13-C11-N8-C17
4	H	2001	GBM	C13-C11-N8-C17
3	A	401	ATP	O4'-C4'-C5'-O5'
3	B	401	ATP	O4'-C4'-C5'-O5'
3	C	401	ATP	O4'-C4'-C5'-O5'
3	D	401	ATP	O4'-C4'-C5'-O5'
3	A	401	ATP	C5'-O5'-PA-O1A
3	B	401	ATP	C5'-O5'-PA-O1A
3	C	401	ATP	C5'-O5'-PA-O1A

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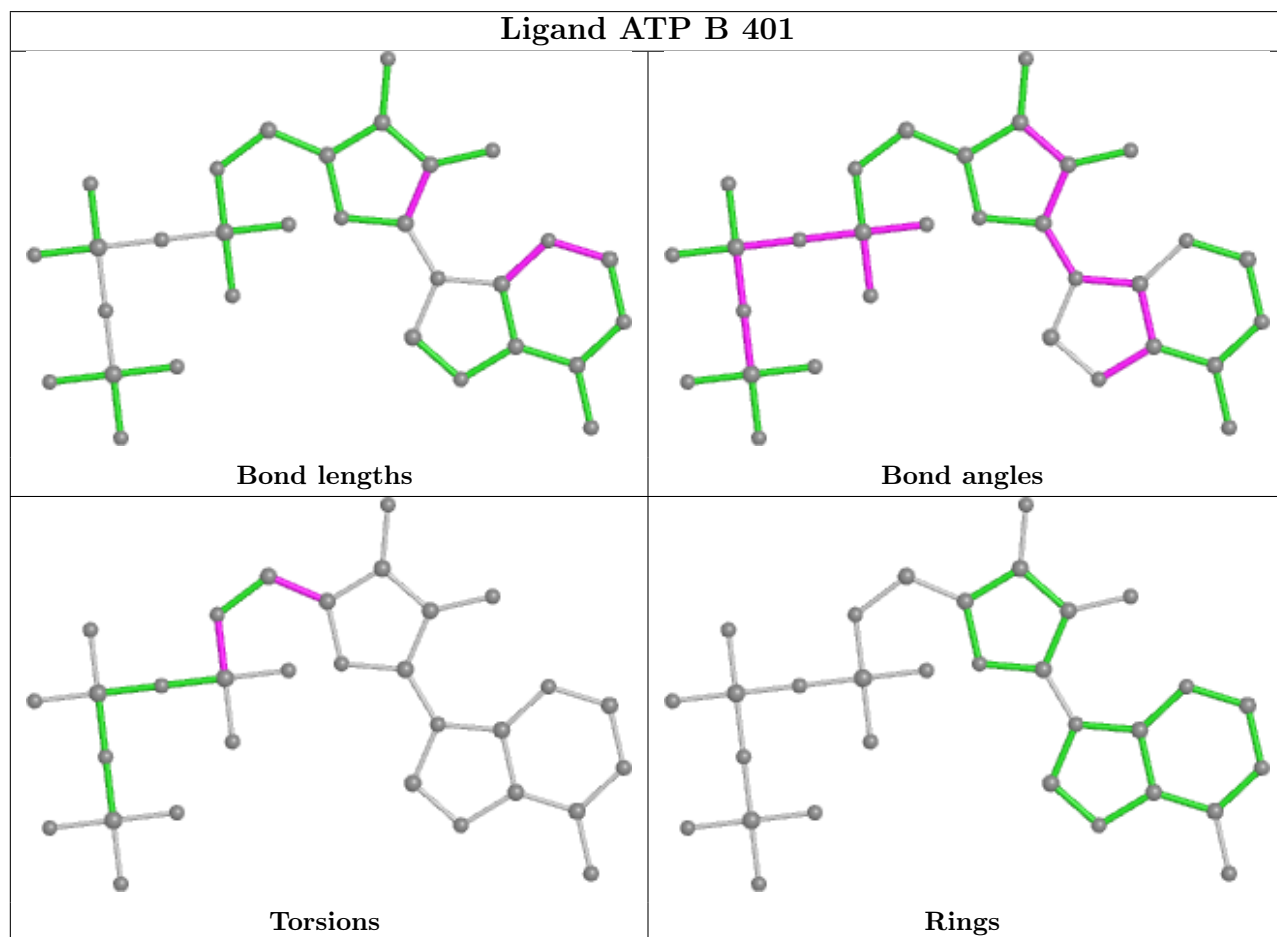
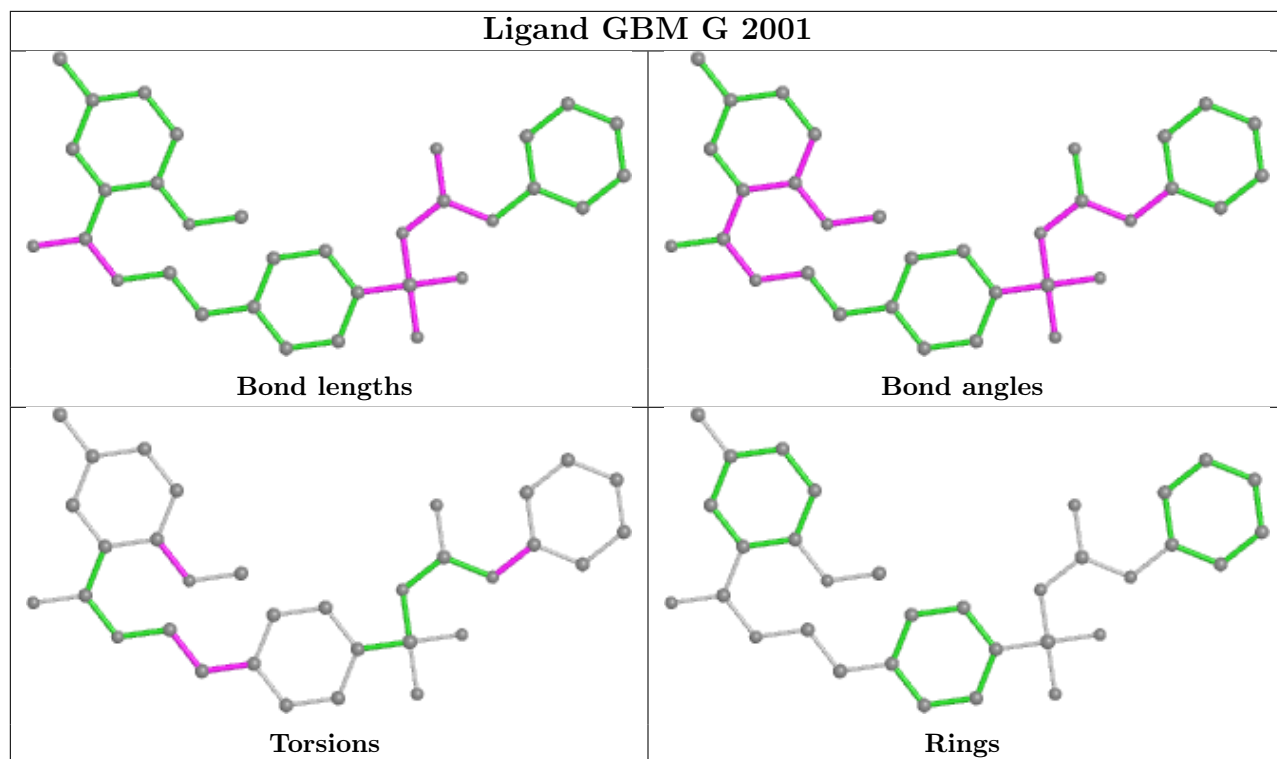
Mol	Chain	Res	Type	Atoms
3	D	401	ATP	C5'-O5'-PA-O1A

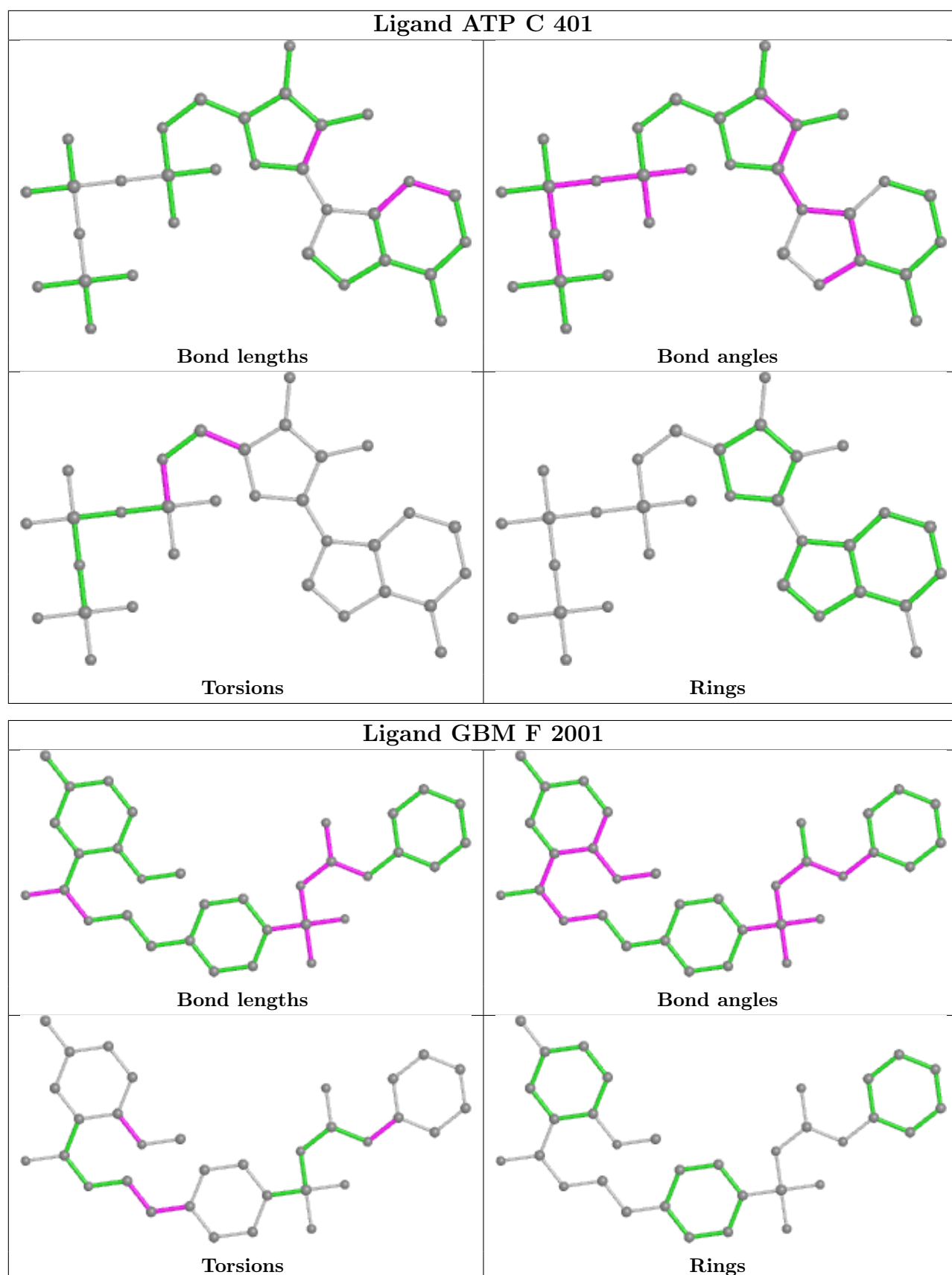
There are no ring outliers.

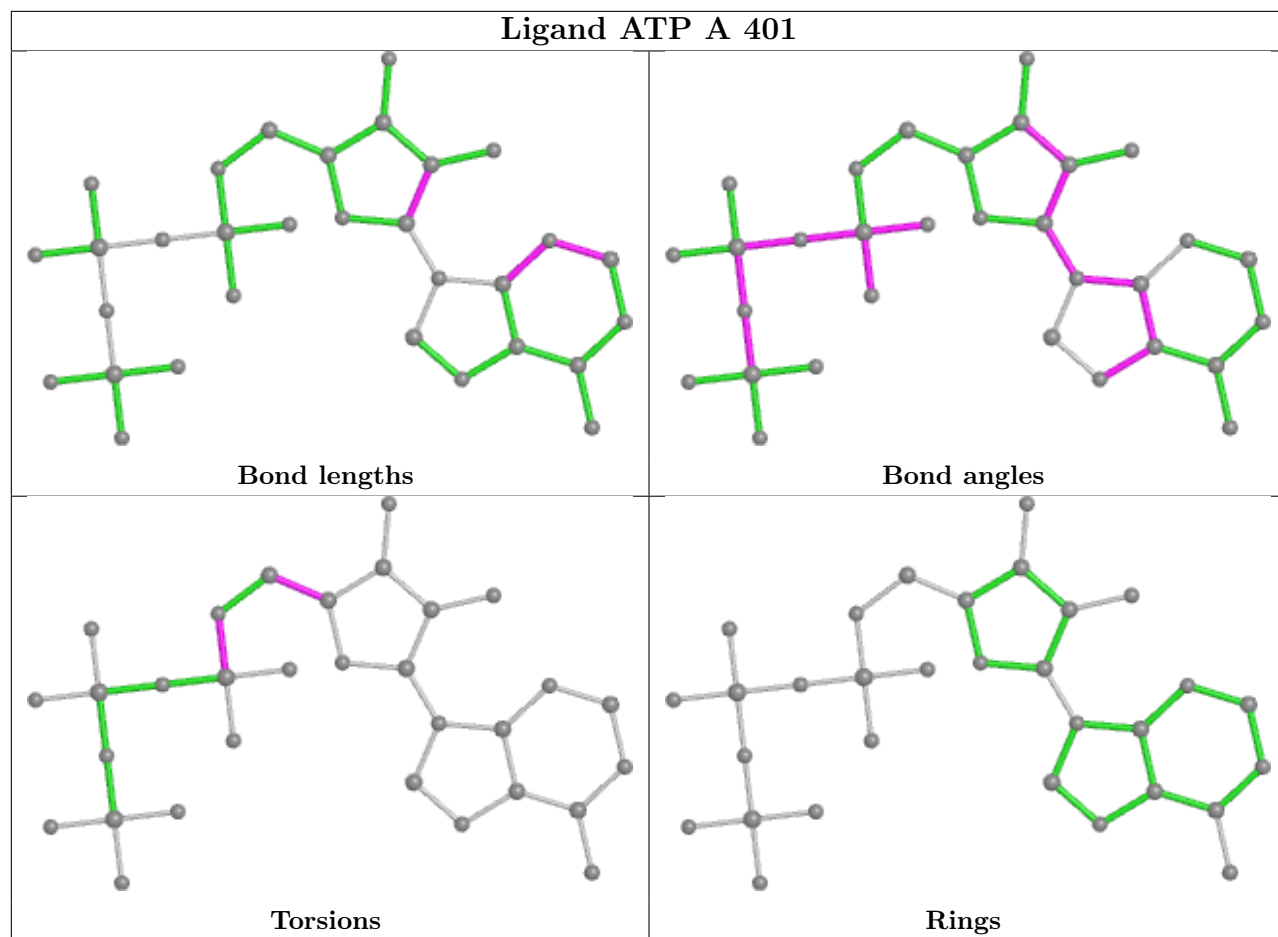
8 monomers are involved in 61 short contacts:

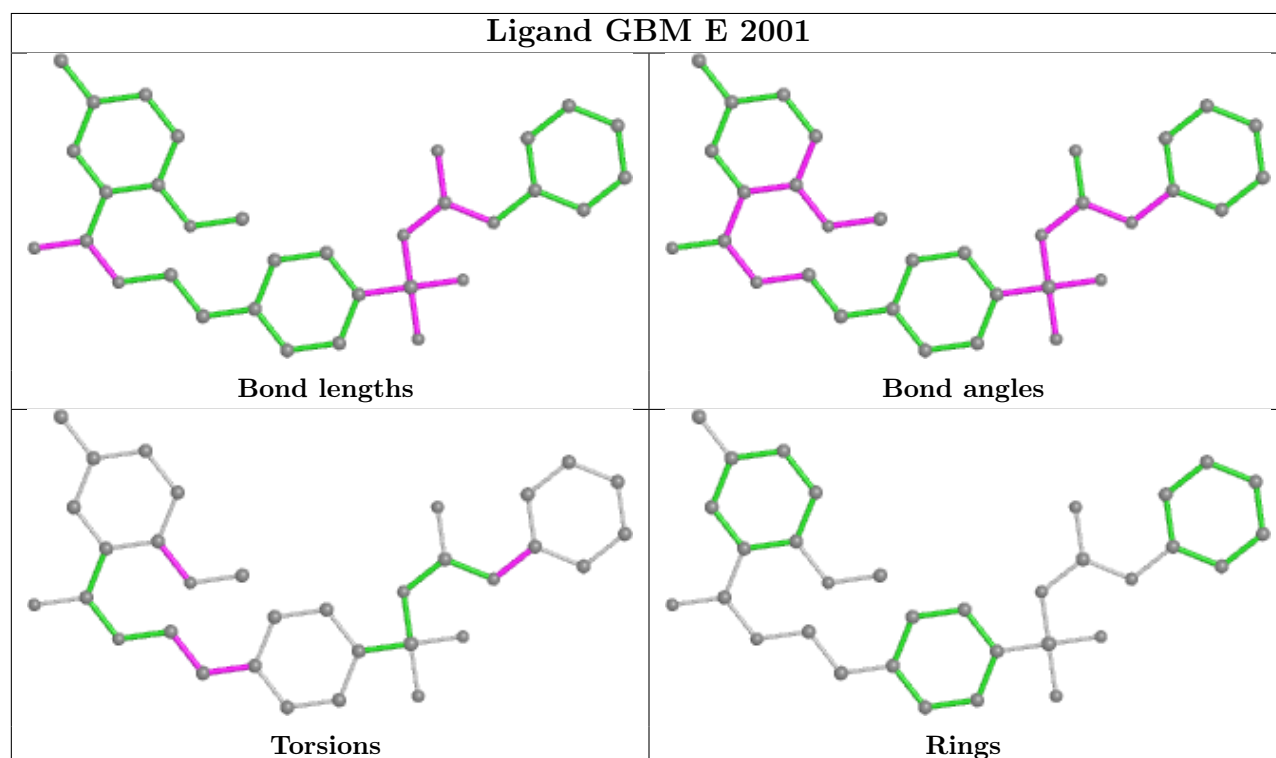
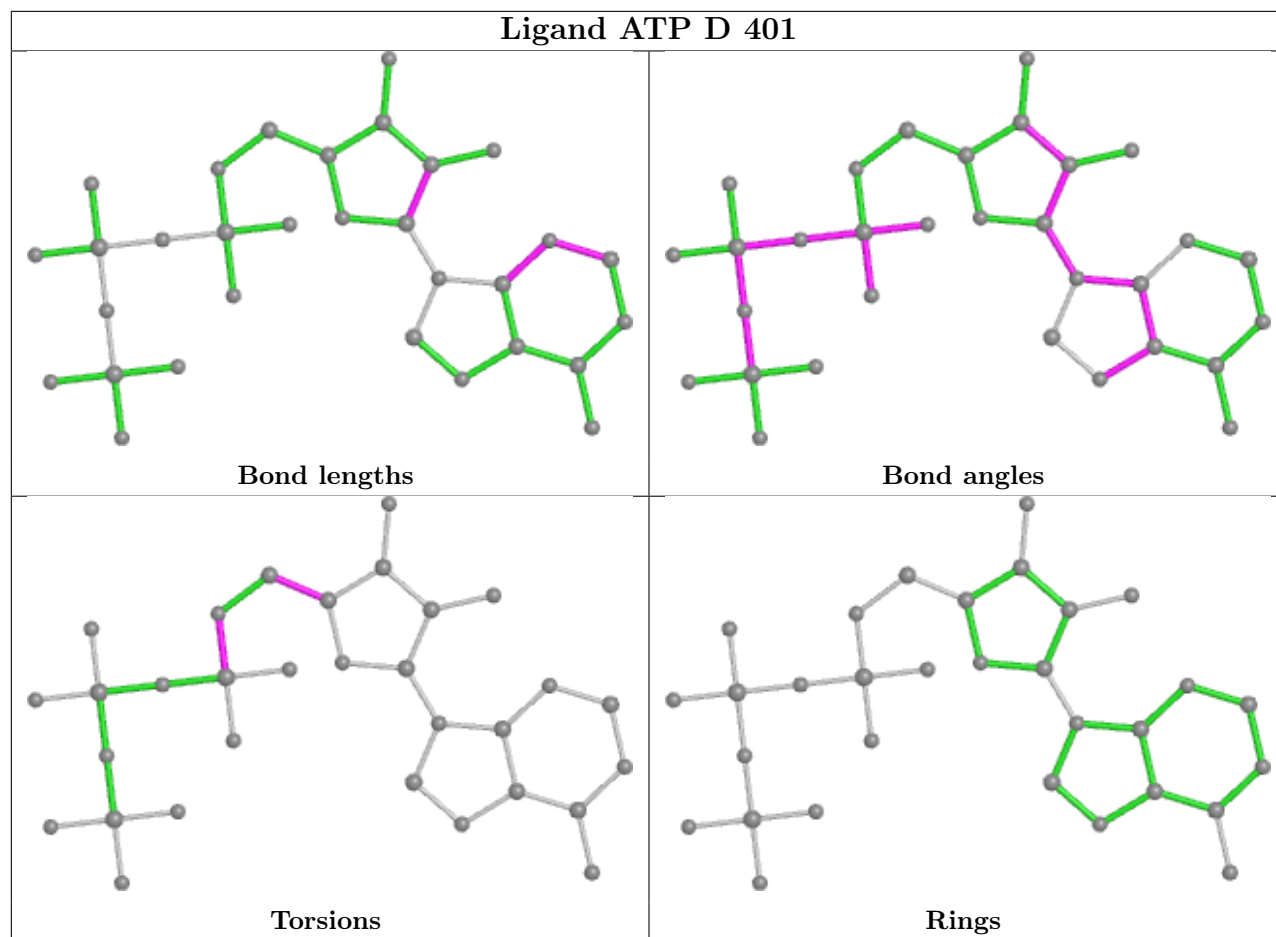
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	G	2001	GBM	11	0
3	B	401	ATP	4	0
3	C	401	ATP	4	0
4	F	2001	GBM	11	0
3	A	401	ATP	4	0
3	D	401	ATP	4	0
4	E	2001	GBM	12	0
4	H	2001	GBM	11	0

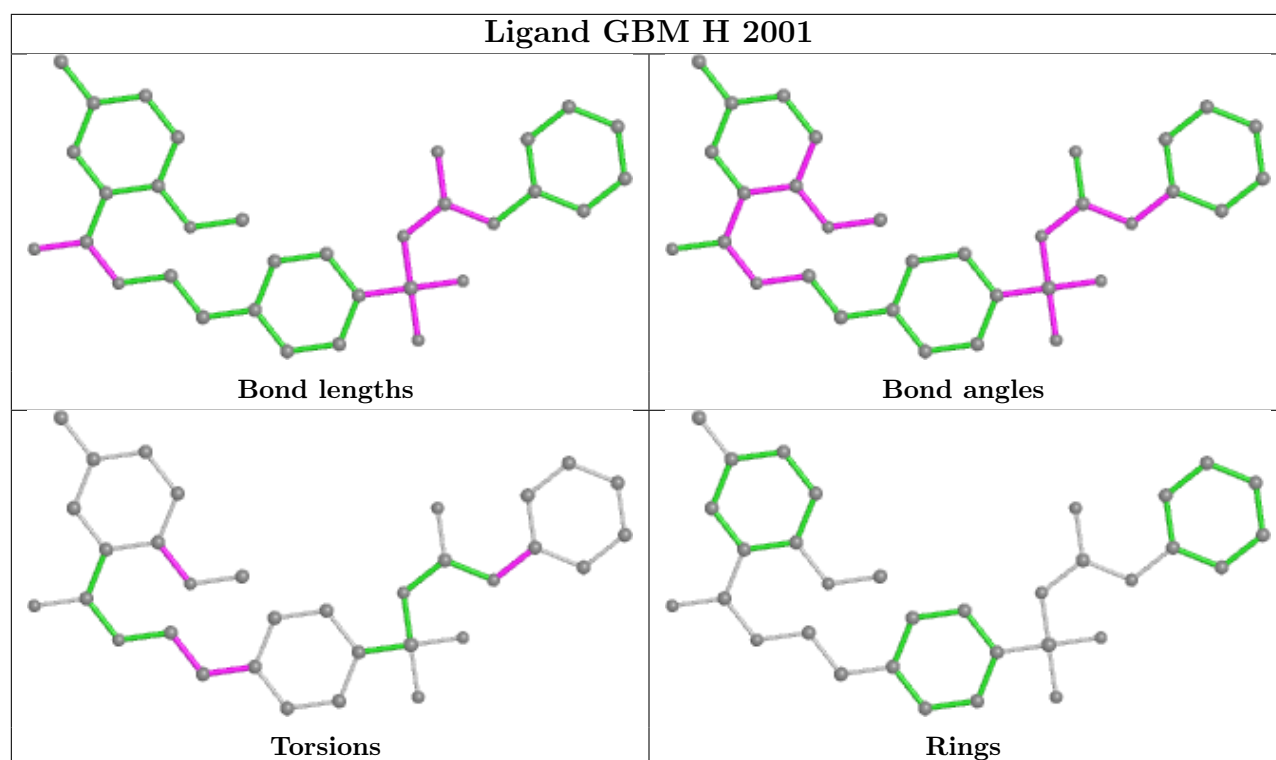
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.











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.

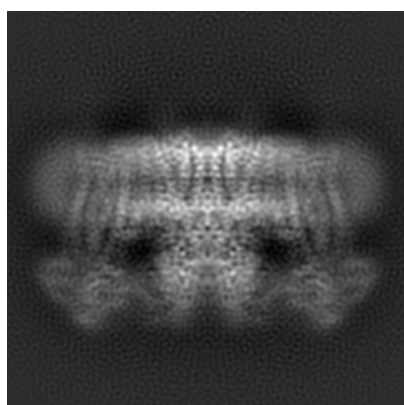
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-7073. These allow visual inspection of the internal detail of the map and identification of artifacts.

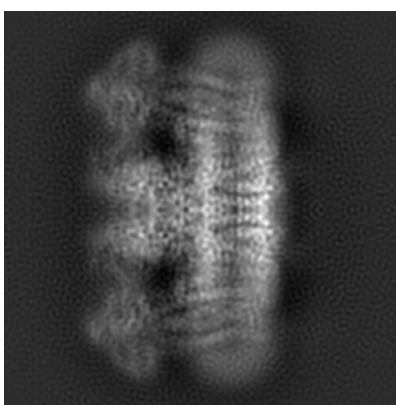
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

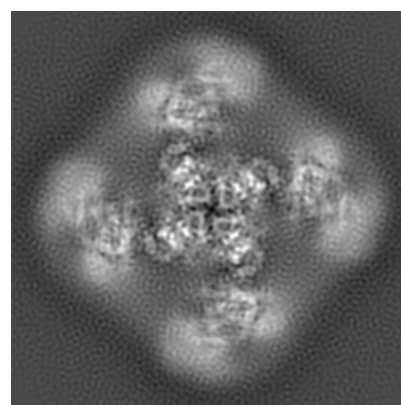
6.1.1 Primary map



X



Y

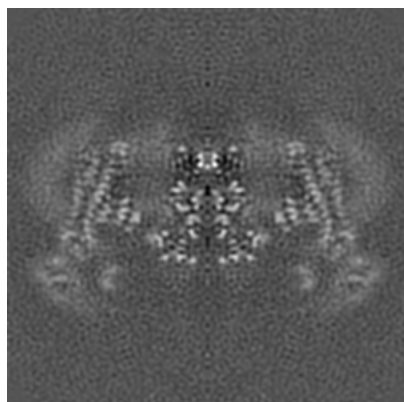


Z

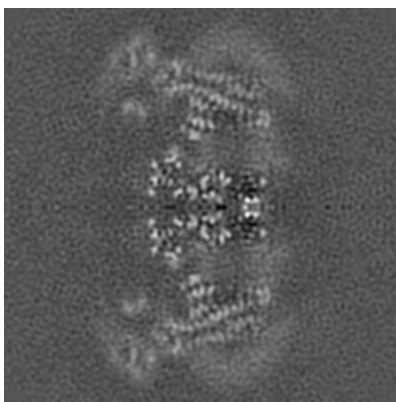
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

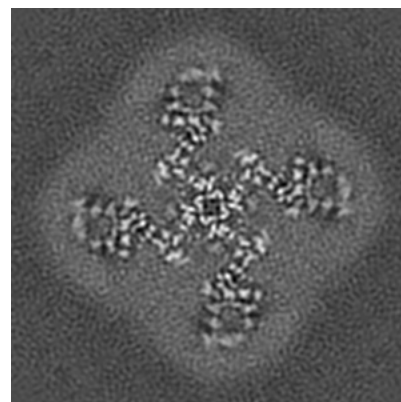
6.2.1 Primary map



X Index: 150



Y Index: 150

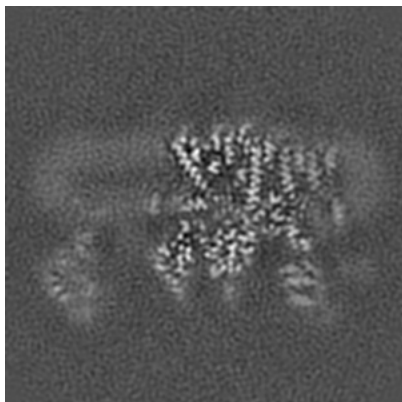


Z Index: 150

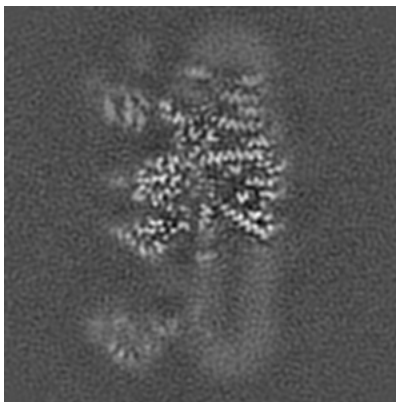
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

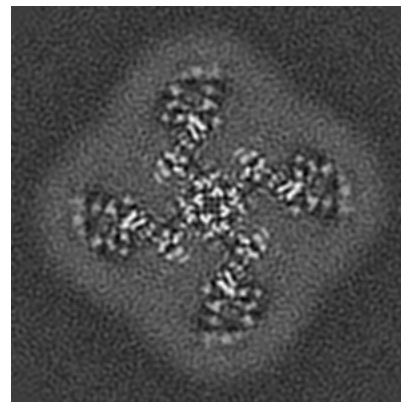
6.3.1 Primary map



X Index: 132



Y Index: 168

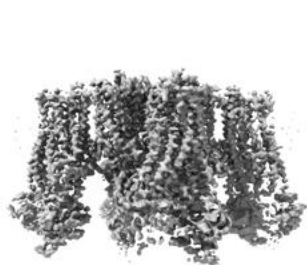


Z Index: 151

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

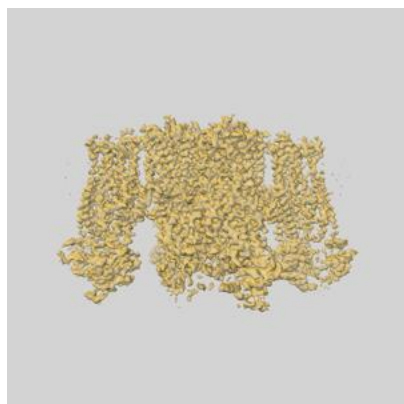
6.5 Mask visualisation [i](#)

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

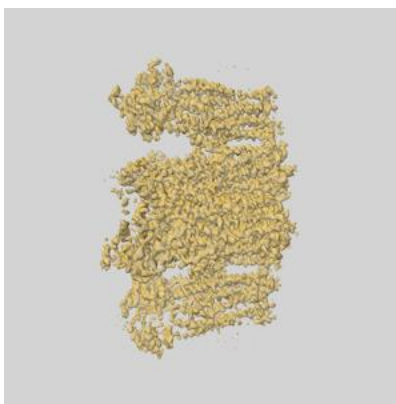
A mask typically either:

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

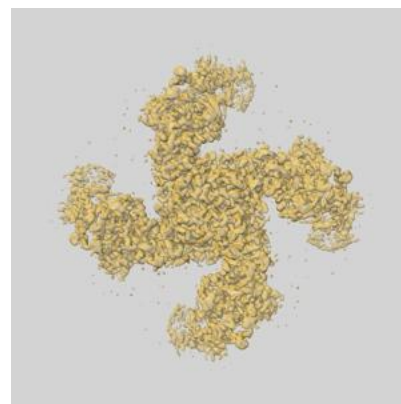
6.5.1 emd_7073_msk_1.map [i](#)



X



Y

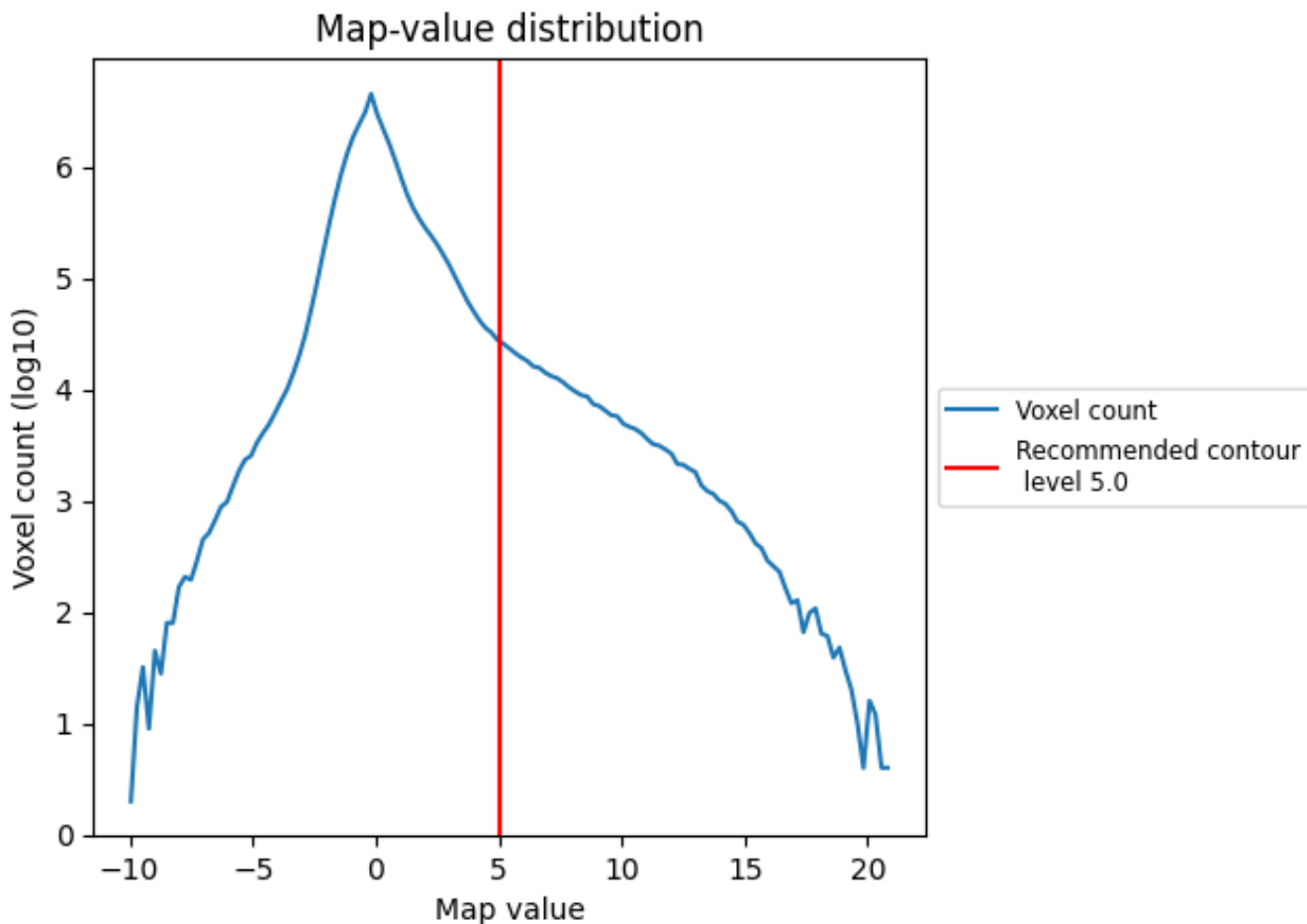


Z

7 Map analysis [i](#)

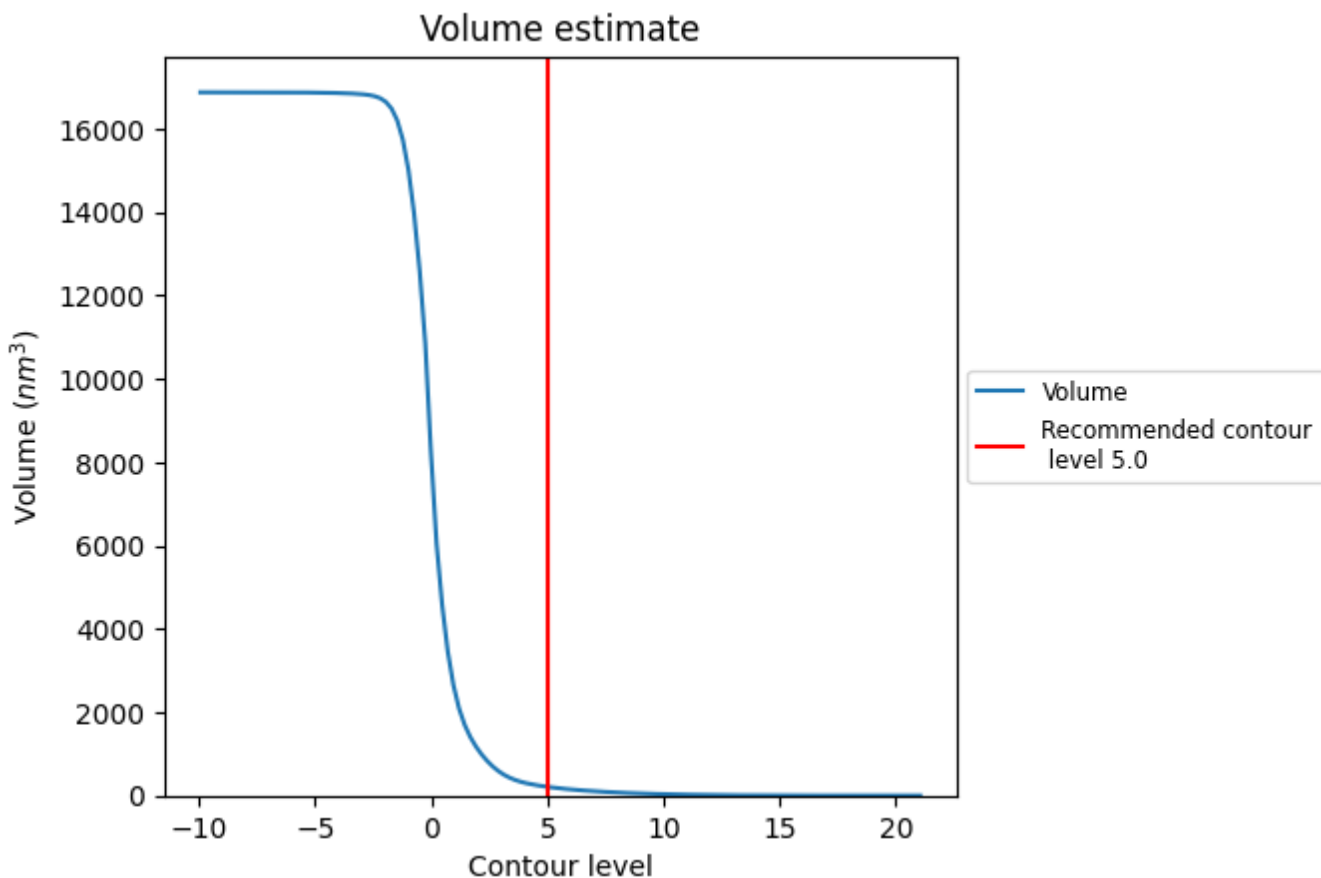
This section contains the results of statistical analysis of the map.

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.

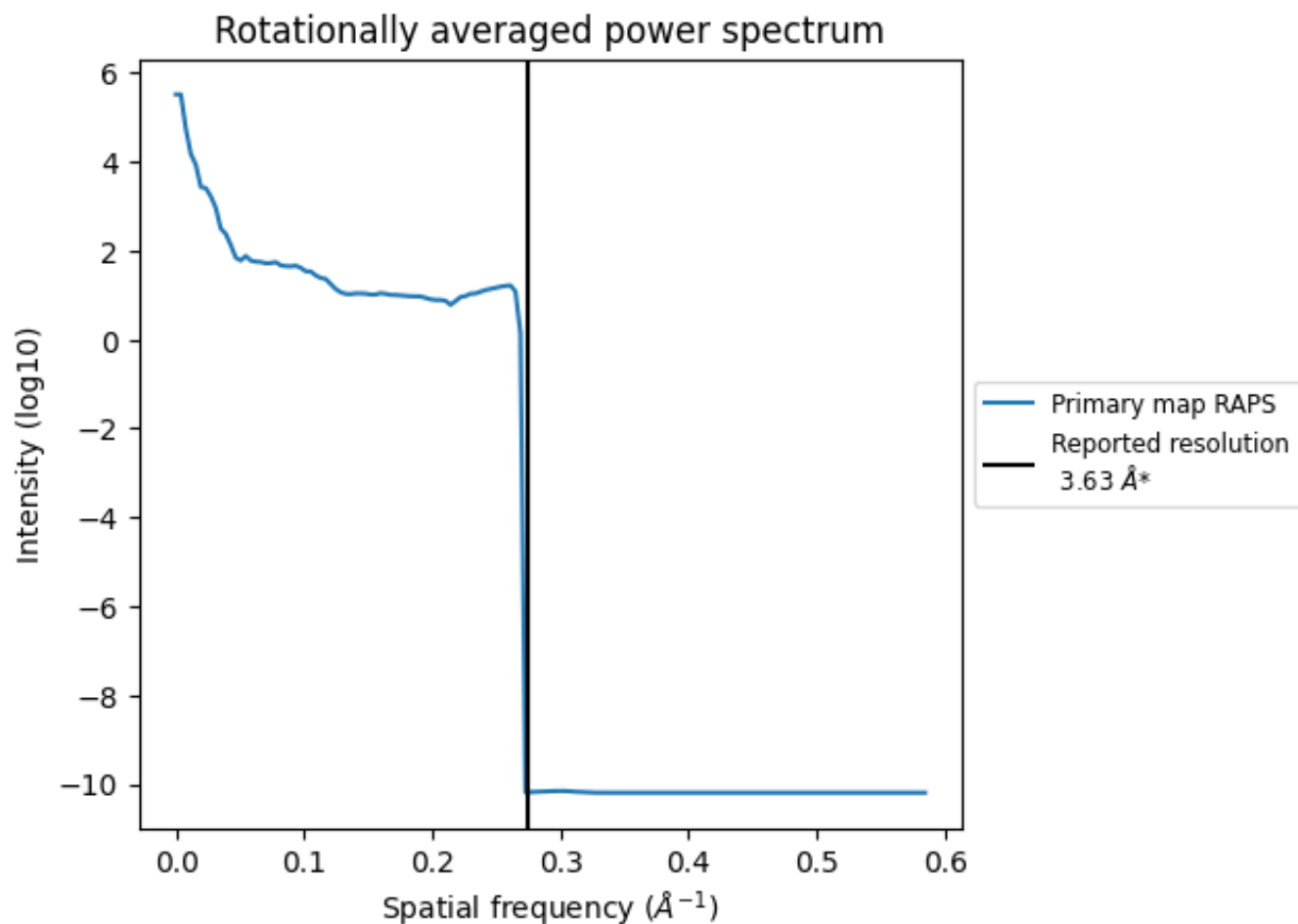
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 209 nm³; this corresponds to an approximate mass of 189 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 0.275 Å⁻¹

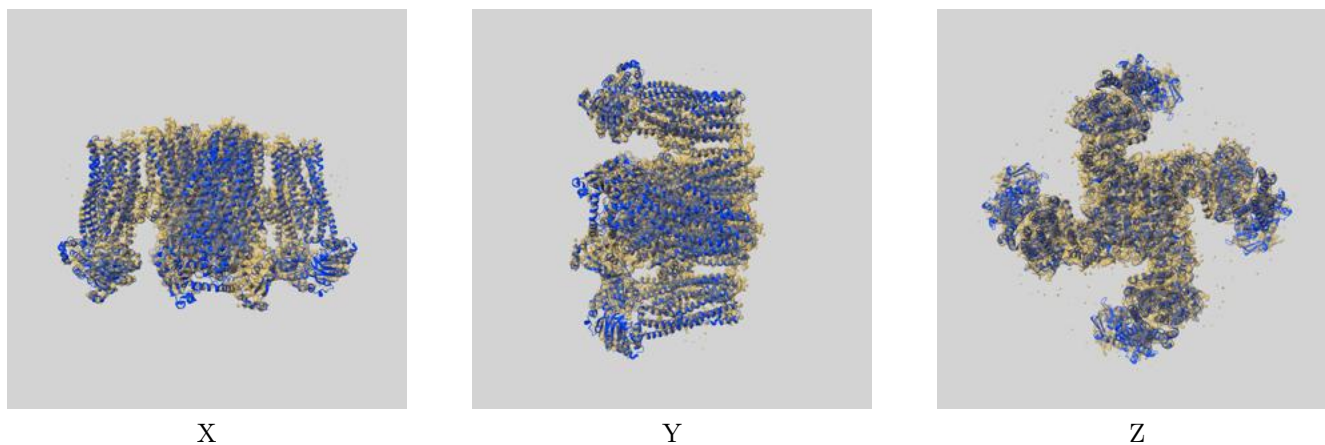
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

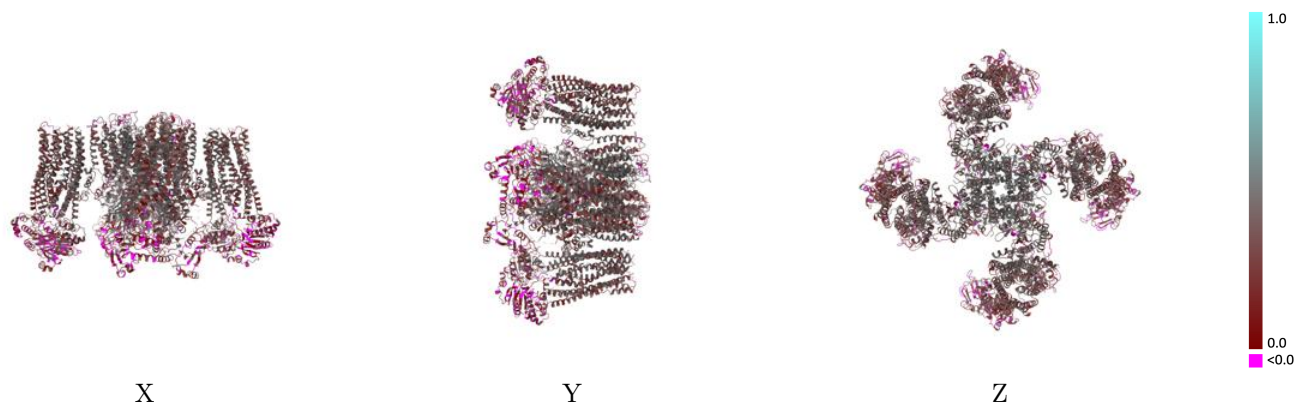
This section contains information regarding the fit between EMDB map EMD-7073 and PDB model 6BAA. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay [i](#)



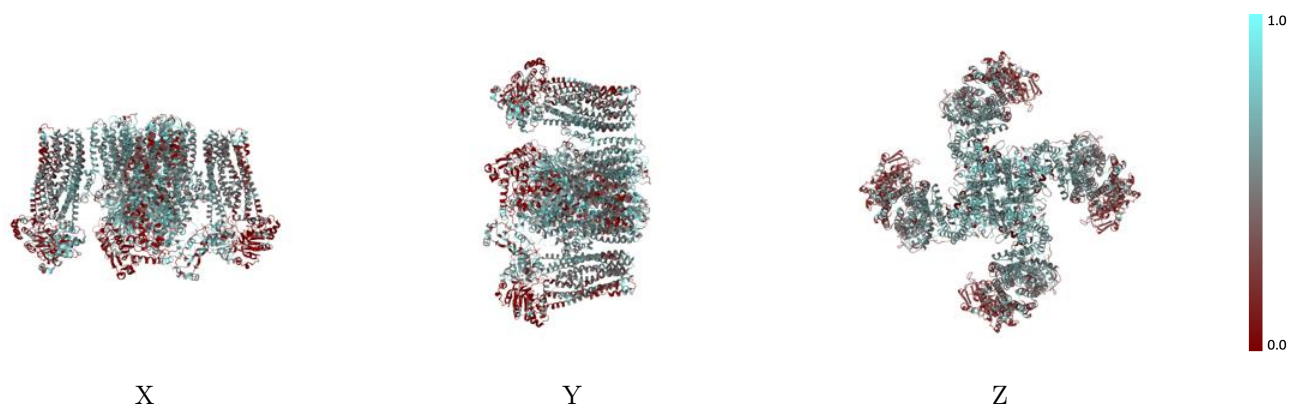
The images above show the 3D surface view of the map at the recommended contour level 5.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



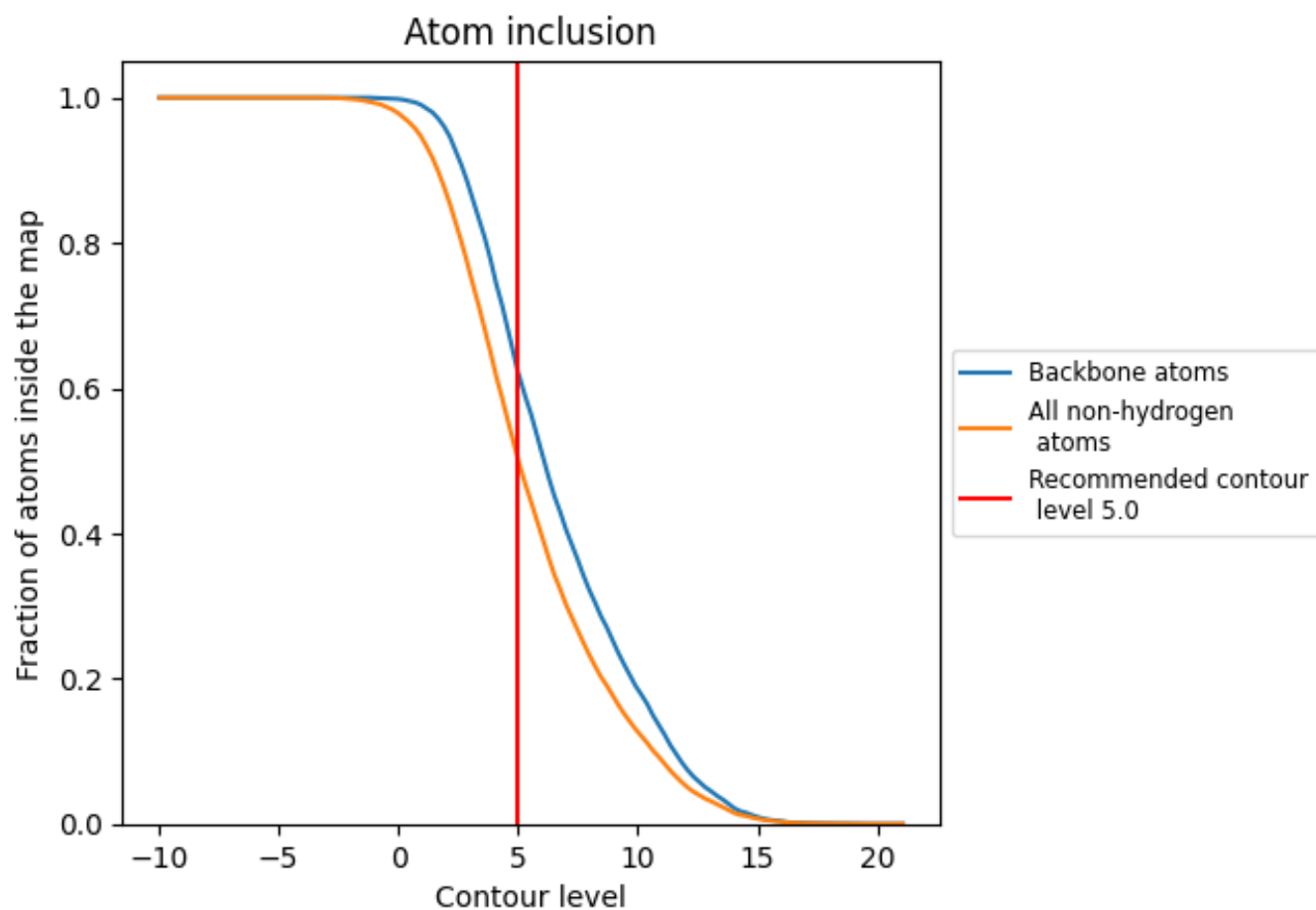
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model [\(i\)](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (5.0).



















9.4 Atom inclusion [i](#)



At the recommended contour level, 62% of all backbone atoms, 50% 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 (5.0) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5015	 0.3250
A	 0.6719	 0.4340
B	 0.6723	 0.4340
C	 0.6723	 0.4340
D	 0.6711	 0.4340
E	 0.4515	 0.2930
F	 0.4516	 0.2940
G	 0.4517	 0.2940
H	 0.4524	 0.2930

