Full wwPDB EM Validation Report ⓘ

Dec 8, 2025 – 01:53 PM EST

PDB ID	:	9O7Z / pdb_00009o7z
EMDB ID	:	EMD-70212
Title	:	Cryo-EM structure of apo rabbit TRPM3 having 1 resting and 3 activated subunits at 18 degrees Celsius
Authors	:	Kumar, S.; Lu, W.; Du, J.
Deposited on	:	2025-04-15
Resolution	:	3.60 Å(reported)

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

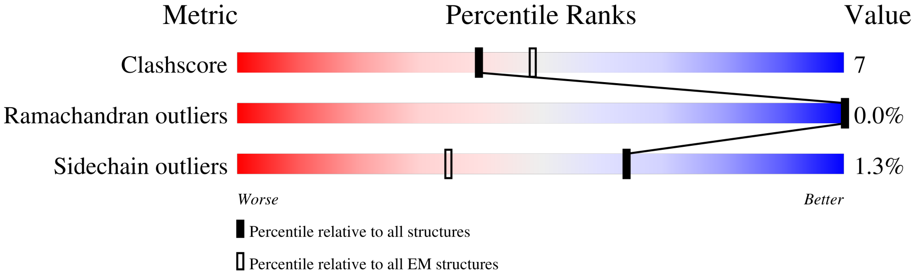
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.47

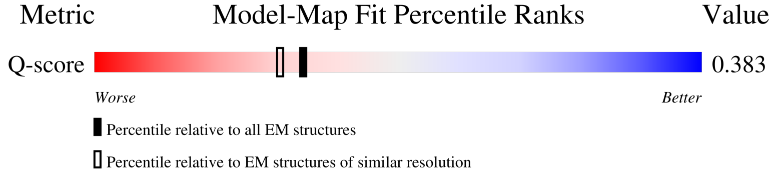
1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 3.60 Å.

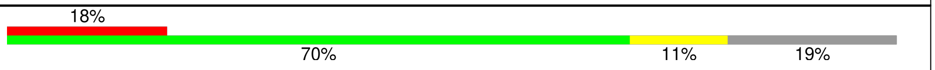
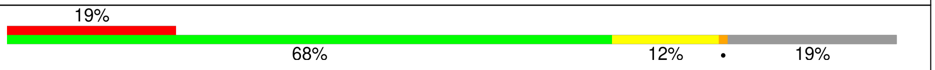
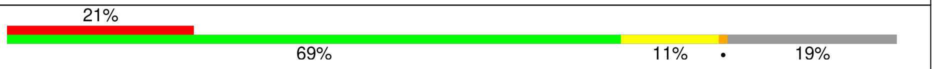
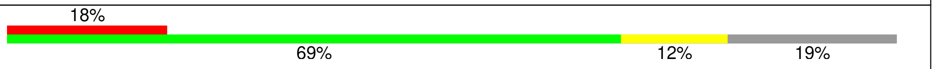
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	12797 (3.10 - 4.10)

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	1306	
1	B	1306	
1	C	1306	
1	D	1306	

2 Entry composition ⓘ

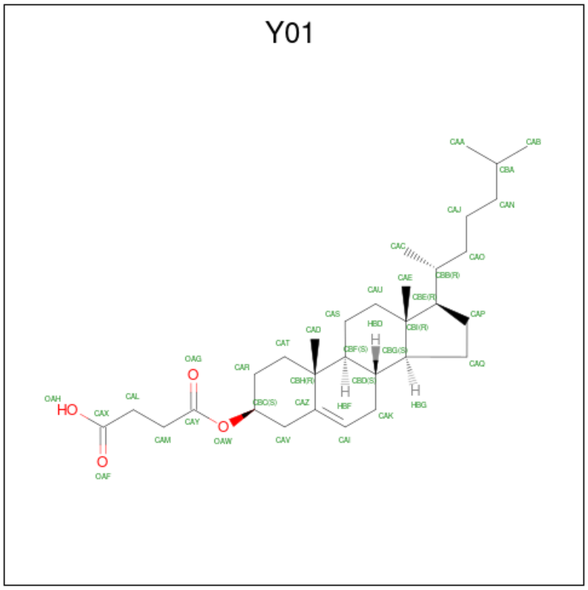
There are 2 unique types of molecules in this entry. The entry contains 32704 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 TRPM3.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1056	Total 7952	C 5151	N 1359	O 1385	S 57	1	0
1	D	1057	Total 7942	C 5139	N 1357	O 1387	S 59	1	0
1	B	1057	Total 7954	C 5150	N 1359	O 1386	S 59	1	0
1	C	1061	Total 8016	C 5194	N 1366	O 1394	S 62	2	0

- Molecule 2 is CHOLESTEROL HEMISUCCINATE (CCD ID: Y01) (formula: $C_{31}H_{50}O_4$).



Mol	Chain	Residues	Atoms			AltConf
2	A	1	Total 35	C 31	O 4	0
2	A	1	Total 35	C 31	O 4	0
2	A	1	Total 35	C 31	O 4	0

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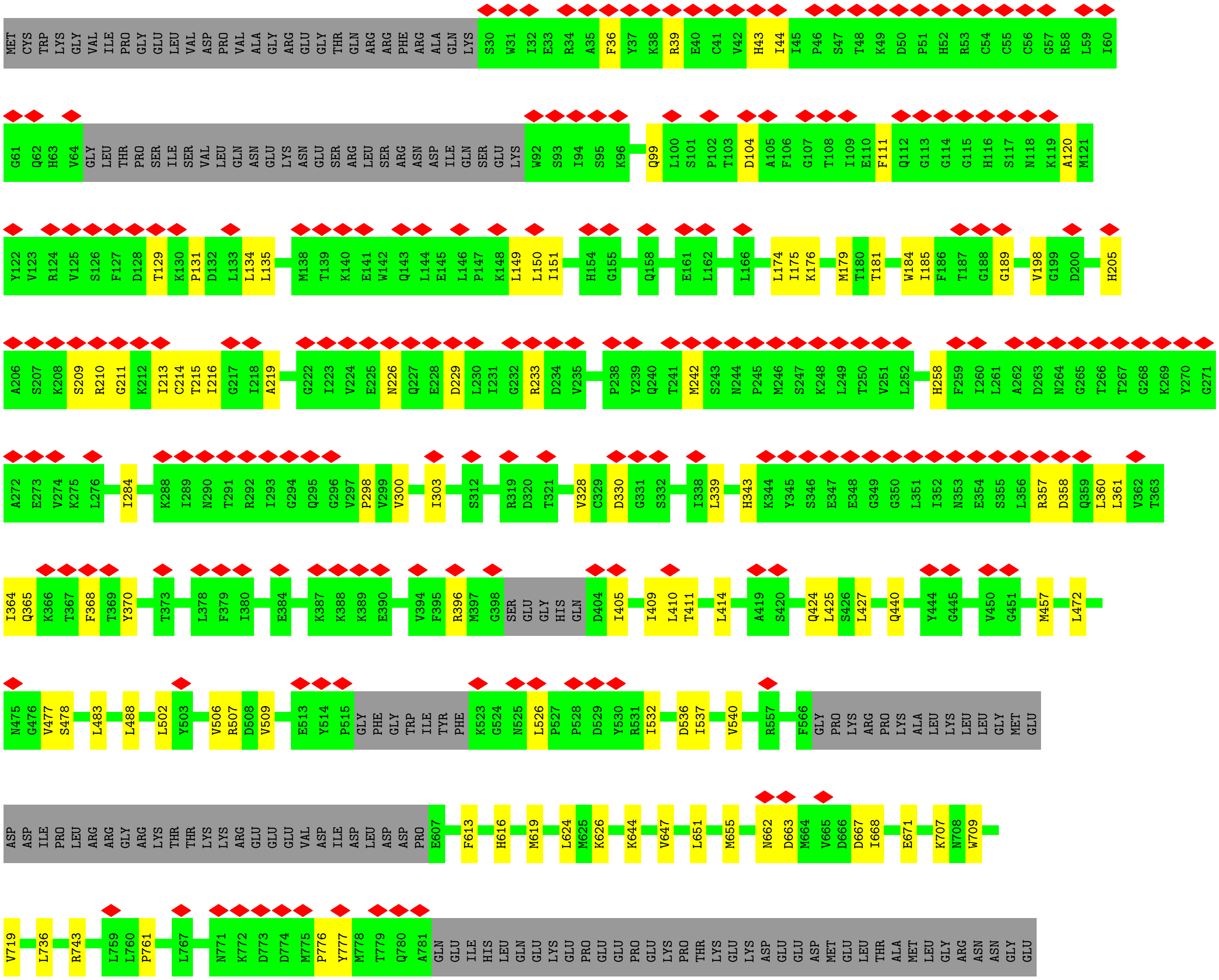
Mol	Chain	Residues	Atoms	AltConf
2	A	1	Total C O 35 31 4	0
2	A	1	Total C O 35 31 4	0
2	A	1	Total C O 35 31 4	0
2	D	1	Total C O 35 31 4	0
2	D	1	Total C O 35 31 4	0
2	D	1	Total C O 35 31 4	0
2	D	1	Total C O 35 31 4	0
2	D	1	Total C O 35 31 4	0
2	D	1	Total C O 35 31 4	0
2	B	1	Total C O 35 31 4	0
2	B	1	Total C O 35 31 4	0
2	B	1	Total C O 35 31 4	0
2	B	1	Total C O 35 31 4	0
2	B	1	Total C O 35 31 4	0
2	B	1	Total C O 35 31 4	0
2	C	1	Total C O 35 31 4	0
2	C	1	Total C O 35 31 4	0
2	C	1	Total C O 35 31 4	0
2	C	1	Total C O 35 31 4	0
2	C	1	Total C O 35 31 4	0
2	C	1	Total C O 35 31 4	0

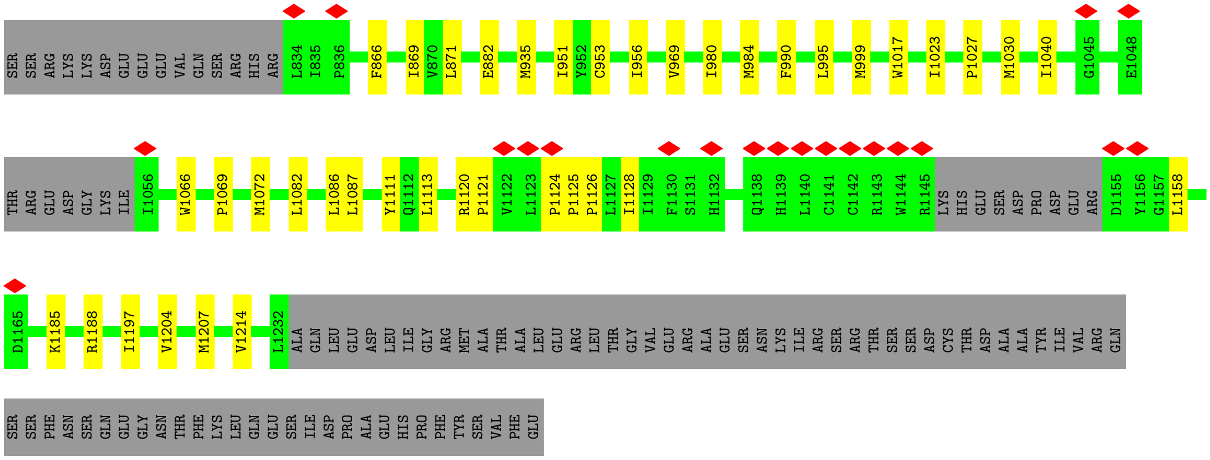
3 Residue-property plots

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: TRPM3

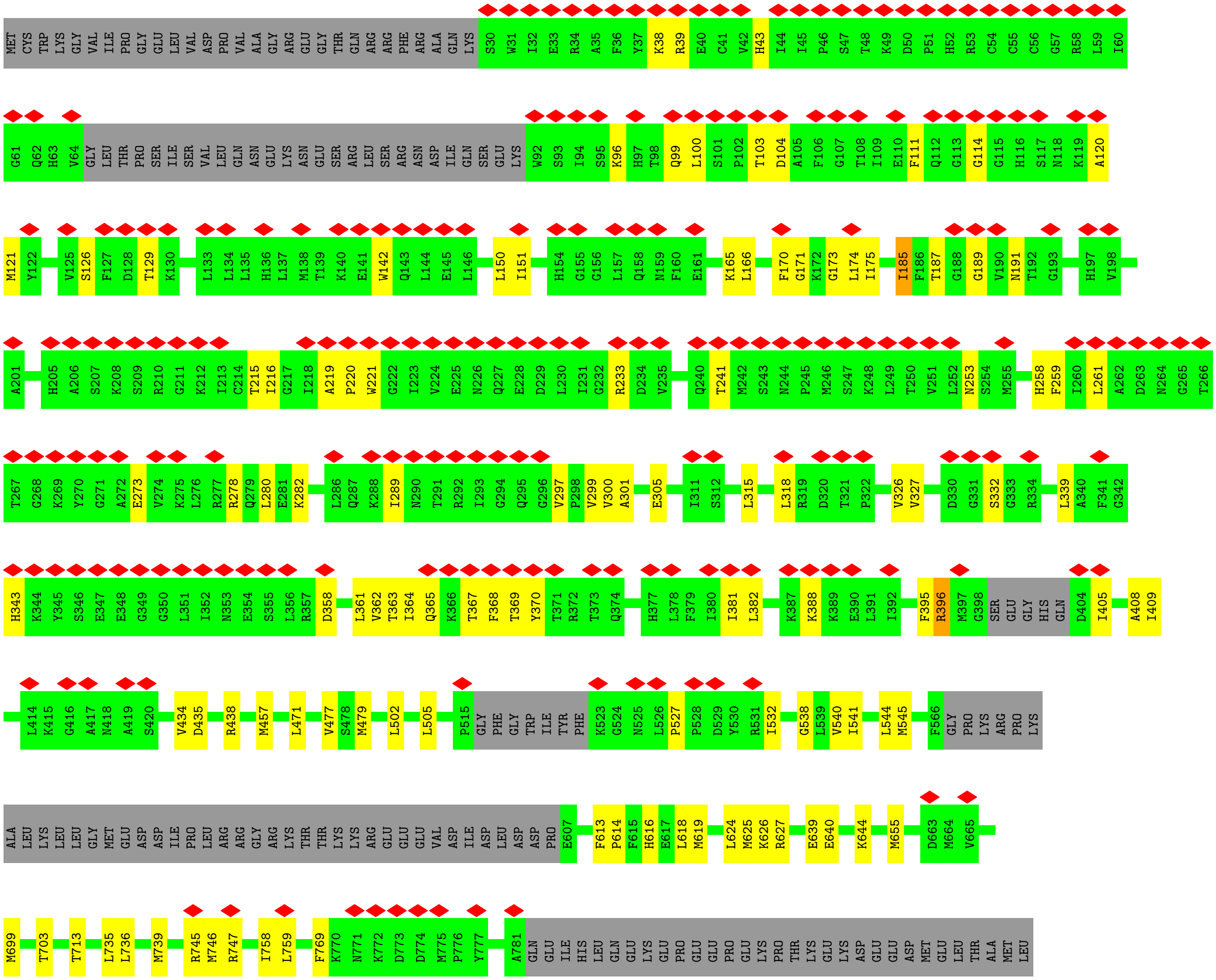
Chain A:

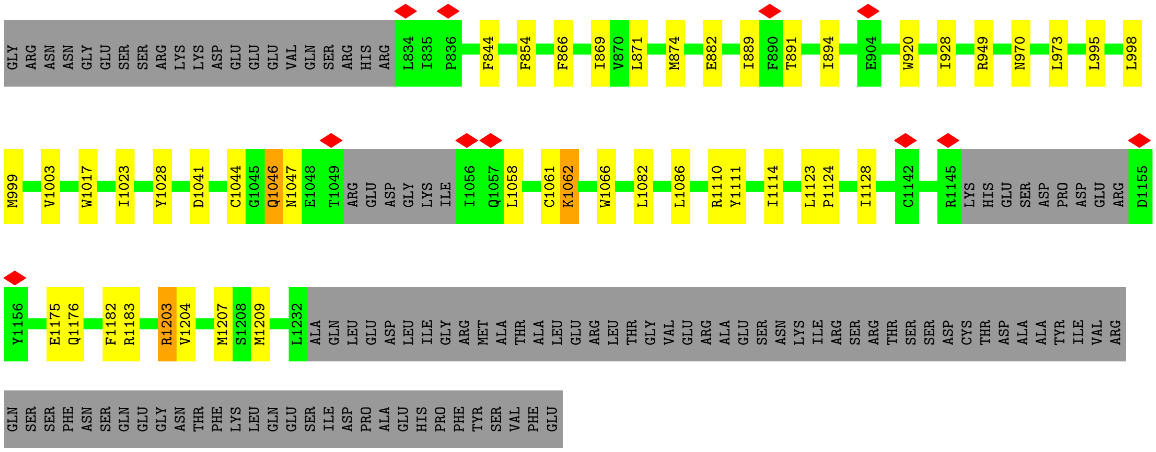




- Molecule 1: TRPM3

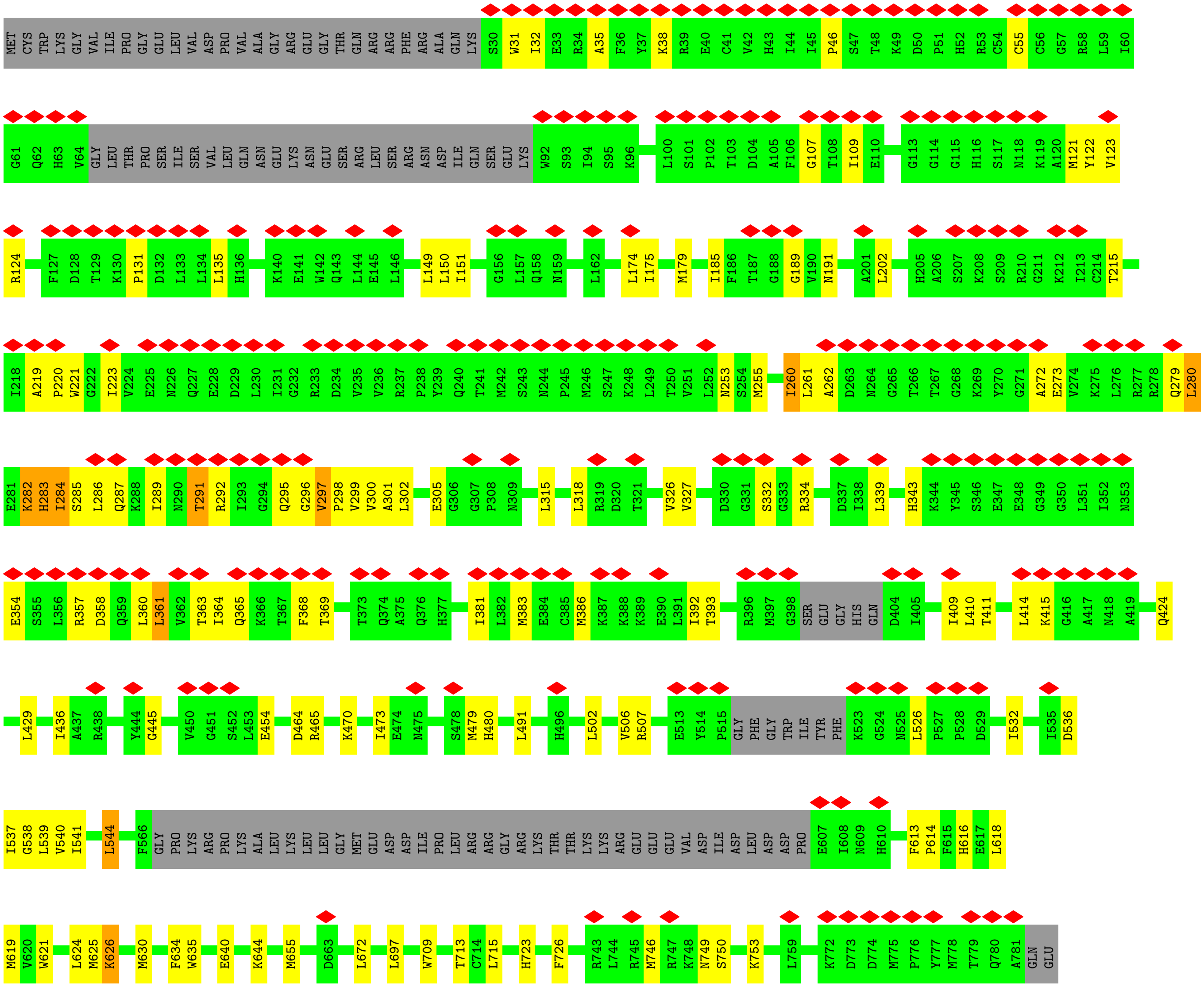
Chain D:

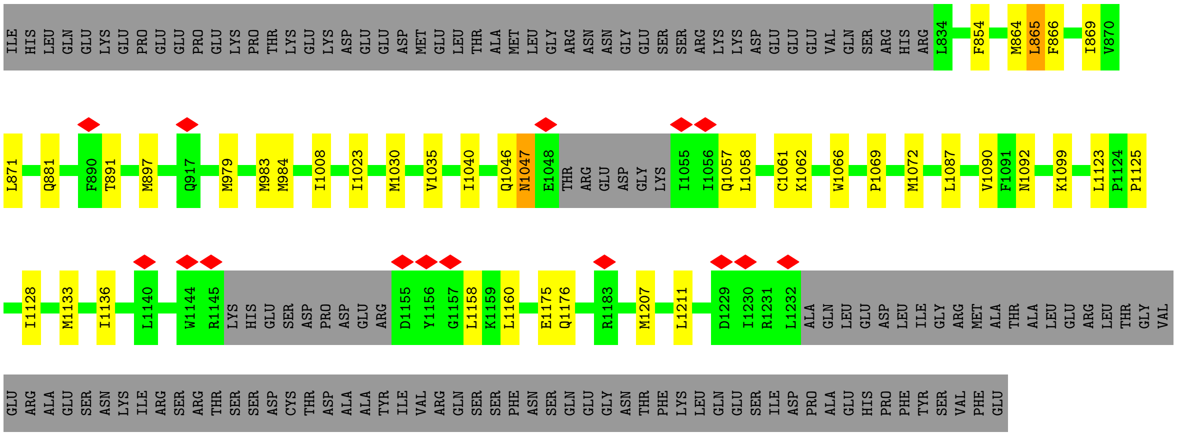




- Molecule 1: TRPM3

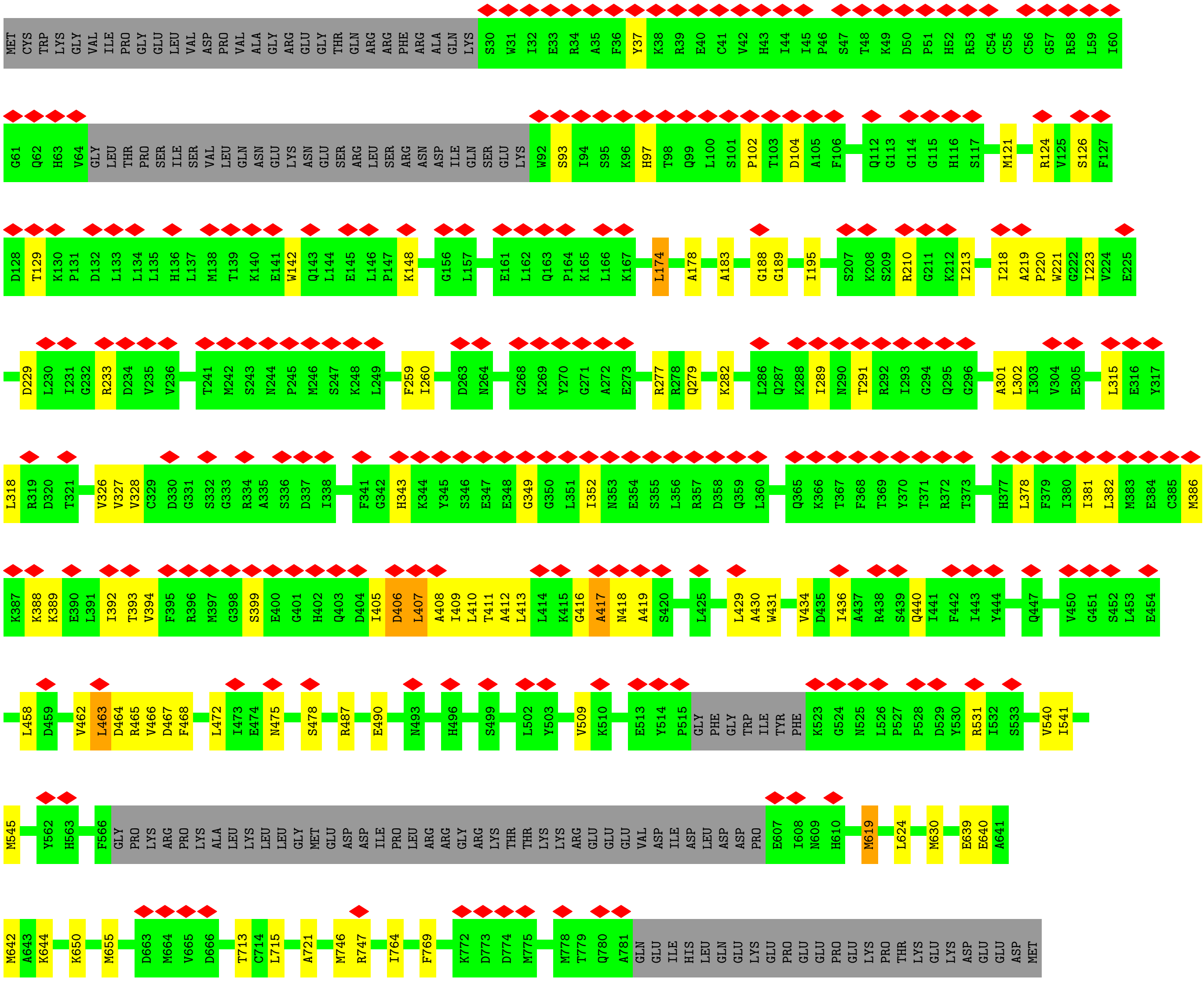
Chain B:

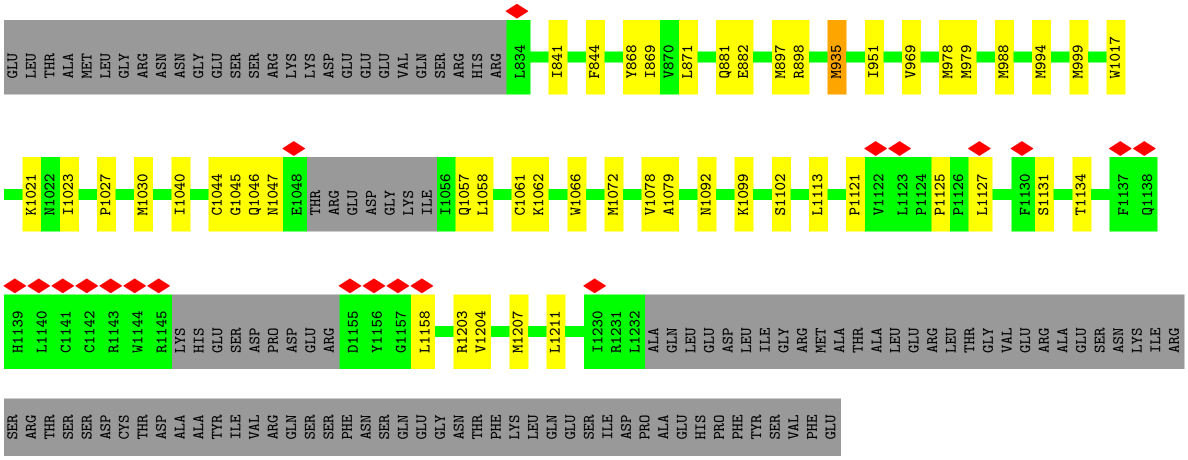




- Molecule 1: TRPM3

Chain C:




GLU
LEU
THR
ALA
MET
LEU
GLY
ARG
ASN
ASN
GLY
GLU
SER
SER
ARG
LYS
LYS
ASP
GLU
GLU
GLU
VAL
GLN
SER
ARG
HIS
ARG
L834
I841
F844
Y868
I869
V870
L871
Q881
E882
M897
R898
M935
I951
V969
M978
M979
M988
M994
M999
W1017
K1021
N1022
I1023
P1027
M1030
I1040
C1044
G1045
Q1046
N1047
E1048
THR
ARG
GLU
ASP
GLY
LYS
ILE
I1056
Q1057
L1058
C1061
K1062
W1066
M1072
V1078
A1079
N1092
K1099
S1102
L1113
P1121
V1122
L1123
P1124
P1125
P1126
L1127
F1130
S1131
T1134
F1137
Q1138
H1139
L1140
C1141
C1142
R1143
W1144
R1145
LYS
HIS
GLU
SER
ASP
PRO
ASP
GLU
ARG
D1155
Y1156
G1157
L1158
R1203
V1204
M1207
L1211
I1230
R1231
L1232
ALA
GLN
LEU
GLU
ASP
LEU
ILE
GLY
ARG
MET
ALA
THR
ALA
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THR
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ALA
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PRO
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TYR
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PHE
GLU

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	37679	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^{-}/\text{Å}^2)$	58	Depositor
Minimum defocus (nm)	1100	Depositor
Maximum defocus (nm)	1400	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.017	Depositor
Minimum map value	-0.006	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.0046	Depositor
Map size (Å)	317.184, 317.184, 317.184	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.826, 0.826, 0.826	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: Y01

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	0.42	1/8135 (0.0%)	0.74	0/11075
1	B	0.45	0/8134	0.80	6/11071 (0.1%)
1	C	0.39	0/8202	0.72	6/11162 (0.1%)
1	D	0.41	1/8124 (0.0%)	0.75	4/11059 (0.0%)
All	All	0.42	2/32595 (0.0%)	0.75	16/44367 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	527	PRO	CA-C	-8.34	1.46	1.52
1	A	761	PRO	C-N	6.21	1.39	1.33

All (16) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	406	ASP	N-CA-C	-8.18	103.30	113.28
1	B	297	VAL	N-CA-CB	6.77	120.68	111.21
1	C	429	LEU	N-CA-C	-6.59	103.78	110.97
1	D	527	PRO	O-C-N	-6.50	118.10	121.15
1	C	1125	PRO	N-CA-C	6.21	118.27	110.70
1	B	1176	GLN	N-CA-CB	5.71	118.51	110.12
1	C	407	LEU	N-CA-C	-5.39	107.35	114.31
1	C	417	ALA	N-CA-C	-5.29	104.98	111.75
1	C	399	SER	CB-CA-C	-5.18	109.63	115.79
1	D	1182	PHE	CA-C-N	-5.17	112.44	122.06
1	D	1182	PHE	C-N-CA	-5.17	112.44	122.06
1	B	749	ASN	CA-CB-CG	5.14	117.74	112.60
1	B	1175	GLU	CA-CB-CG	5.09	124.28	114.10
1	B	626	LYS	CA-CB-CG	5.06	124.21	114.10
1	D	1176	GLN	N-CA-CB	5.03	117.97	110.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	454	GLU	CB-CG-CD	5.01	121.12	112.60

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	7952	0	7575	94	0
1	B	7954	0	7594	129	0
1	C	8016	0	7657	100	0
1	D	7942	0	7541	112	0
2	A	210	0	294	13	0
2	B	210	0	294	13	0
2	C	210	0	294	13	0
2	D	210	0	294	14	0
All	All	32704	0	31543	440	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 7.

All (440) 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:D:1062:LYS:HZ3	1:D:1062:LYS:CB	1.02	1.43
1:D:1062:LYS:NZ	1:D:1062:LYS:HB3	1.11	1.25
1:D:1062:LYS:HZ3	1:D:1062:LYS:CA	1.54	1.20
1:B:429:LEU:HD11	1:B:465:ARG:HG3	1.24	1.14
1:B:429:LEU:CD1	1:B:465:ARG:HG3	1.96	0.95
1:D:1062:LYS:HB3	1:D:1062:LYS:HZ2	1.13	0.94
1:A:357:ARG:O	1:A:361:LEU:HG	1.68	0.94
1:B:150:LEU:HB2	1:B:299:VAL:HG22	1.53	0.89
1:B:289:ILE:HG23	1:B:296:GLY:O	1.74	0.88
1:B:410:LEU:CD1	1:B:436:ILE:HG13	2.05	0.87
1:A:953:CYS:O	1:A:956:ILE:HG22	1.73	0.87

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Atom-1	**Atom-2**	**Interatomic distance (Å)**	**Clash overlap (Å)**
1:D:1062:LYS:CB	1:D:1062:LYS:NZ	1.82	0.86
1:C:405:ILE:O	1:C:409:ILE:HB	1.76	0.85
1:D:1041:ASP:OD2	2:D:1401:Y01:HAI	1.75	0.85
1:B:479:MET:CE	1:B:618:LEU:HD11	2.12	0.80
1:D:1062:LYS:NZ	1:D:1062:LYS:HA	1.96	0.80
1:B:491:LEU:HB3	1:B:621:TRP:HE1	1.48	0.79
1:D:1062:LYS:NZ	1:D:1062:LYS:CA	2.32	0.77
1:B:149:LEU:HD12	1:B:298:PRO:HB2	1.67	0.76
1:B:479:MET:HE2	1:B:618:LEU:CD1	2.17	0.75
1:B:410:LEU:HD13	1:B:436:ILE:HG13	1.67	0.75
1:B:149:LEU:CD1	1:B:298:PRO:HB2	2.20	0.72
1:B:1066:TRP:HB2	2:B:1406:Y01:HAD1	1.70	0.72
1:B:479:MET:HE2	1:B:618:LEU:HD11	1.70	0.72
1:B:189:GLY:HA3	1:B:219:ALA:HB2	1.72	0.71
1:C:327:VAL:HA	1:C:393:THR:O	1.91	0.71
1:D:259:PHE:HB3	1:D:261:LEU:HD23	1.73	0.70
1:A:1027:PRO:HA	1:A:1030:MET:HG3	1.73	0.70
1:D:318:LEU:HB3	1:D:388:LYS:HD2	1.74	0.70
1:B:131:PRO:HB3	1:B:280:LEU:HD22	1.74	0.69
1:B:358:ASP:HA	1:B:361:LEU:HB2	1.74	0.69
1:B:1211:LEU:HD11	1:C:1211:LEU:HD13	1.74	0.69
1:B:538:GLY:HA2	1:B:541:ILE:HD12	1.74	0.69
1:C:315:LEU:HD22	1:C:381:ILE:HG23	1.74	0.68
1:B:491:LEU:HB3	1:B:621:TRP:NE1	2.09	0.67
1:A:1066:TRP:HB2	2:A:1406:Y01:HAD1	1.77	0.67
1:A:39:ARG:HA	1:A:99:GLN:O	1.96	0.66
1:C:509:VAL:HG11	1:C:540:VAL:HA	1.77	0.66
1:B:318:LEU:HD11	1:B:392:ILE:HD11	1.78	0.66
1:A:358:ASP:HA	1:A:361:LEU:HB2	1.78	0.66
1:C:999:MET:HE1	2:C:1403:Y01:HBA	1.78	0.65
1:A:619:MET:HE3	1:A:644:LYS:HB3	1.78	0.65
1:C:1066:TRP:HB2	2:C:1401:Y01:HAD1	1.79	0.65
1:B:135:LEU:HD13	1:B:284:ILE:HD11	1.79	0.64
1:C:327:VAL:HG22	1:C:393:THR:HB	1.78	0.64
1:D:151:ILE:HB	1:D:185:ILE:HA	1.79	0.64
1:D:1066:TRP:HB2	2:D:1401:Y01:HAD1	1.80	0.64
1:A:457:MET:HG3	1:A:477:VAL:HG11	1.80	0.64
1:C:1017:TRP:HB3	2:C:1402:Y01:HAD1	1.80	0.64
1:B:175:ILE:O	1:B:179:MET:HG2	1.97	0.63
1:A:174:LEU:CD2	1:A:198:VAL:HG12	2.29	0.63
1:C:1044:CYS:C	1:C:1061:CYS:SG	2.82	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:38:LYS:HB3	1:D:103:THR:HG22	1.80	0.63
1:B:746:MET:HE2	1:B:750:SER:HA	1.80	0.63
1:D:502:LEU:HA	1:D:505:LEU:HD12	1.80	0.62
1:C:464:ASP:HA	1:C:630:MET:HE3	1.81	0.62
1:A:151:ILE:HB	1:A:185:ILE:HA	1.81	0.62
1:B:429:LEU:HD11	1:B:465:ARG:CG	2.16	0.62
1:B:1046:GLN:HB2	1:B:1058:LEU:HD12	1.82	0.62
1:C:318:LEU:HD11	1:C:392:ILE:HD11	1.82	0.62
1:C:410:LEU:HA	1:C:413:LEU:HD12	1.81	0.62
1:C:463:LEU:O	1:C:465:ARG:NH1	2.33	0.62
1:D:1207:MET:HE2	1:C:1207:MET:HE2	1.82	0.61
1:A:707:LYS:H	1:A:707:LYS:HE2	1.64	0.61
1:B:220:PRO:HB3	1:B:272:ALA:HB3	1.83	0.61
1:D:1041:ASP:OD2	2:D:1401:Y01:HAV2	2.01	0.61
1:D:165:LYS:CB	1:D:1209:MET:SD	2.89	0.61
1:D:365:GLN:HA	1:D:370:TYR:H	1.63	0.61
1:B:1040:ILE:HD12	1:B:1072:MET:HE1	1.83	0.60
1:D:301:ALA:HB3	1:D:326:VAL:HG22	1.83	0.60
1:A:1185:LYS:HG3	1:A:1188:ARG:HH21	1.65	0.60
1:D:995:LEU:O	1:D:999:MET:HB2	2.02	0.60
1:B:410:LEU:HD12	1:B:436:ILE:HG13	1.84	0.59
1:D:1207:MET:HE2	1:C:1207:MET:CE	2.31	0.59
1:B:655:MET:HG2	1:B:672:LEU:HD13	1.84	0.59
1:D:613:PHE:HB3	1:D:616:HIS:HD1	1.67	0.59
1:D:1203:ARG:O	1:D:1207:MET:HG2	2.02	0.59
1:C:218:ILE:HG21	1:C:277:ARG:HB2	1.84	0.59
1:C:1047:ASN:HA	1:C:1057:GLN:HA	1.83	0.59
1:A:365:GLN:HA	1:A:370:TYR:H	1.67	0.58
1:D:166:LEU:O	1:D:170:PHE:HB3	2.02	0.58
1:B:621:TRP:CE2	1:B:625:MET:HE1	2.38	0.58
1:B:1061:CYS:SG	2:B:1406:Y01:OAH	2.62	0.58
1:C:458:LEU:HD21	1:C:487:ARG:HG2	1.84	0.58
1:D:1046:GLN:O	1:D:1058:LEU:HD12	2.04	0.58
1:C:472:LEU:HD23	1:C:475:ASN:HD21	1.68	0.58
1:A:457:MET:HG2	1:A:472:LEU:HD22	1.85	0.57
1:A:984:MET:SD	1:D:1082:LEU:HD21	2.44	0.57
1:D:364:ILE:HA	1:D:368:PHE:HB2	1.86	0.57
1:B:220:PRO:HB2	1:B:223:ILE:HG12	1.86	0.57
1:B:479:MET:HE3	1:B:618:LEU:HD11	1.85	0.57
1:A:364:ILE:HG23	1:A:368:PHE:HD2	1.69	0.57
1:B:464:ASP:HA	1:B:630:MET:HE1	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1045:GLY:H	1:C:1058:LEU:HB2	1.69	0.57
1:C:411:THR:HG21	1:C:440:GLN:HE21	1.69	0.57
1:D:187:THR:HG23	1:D:189:GLY:H	1.70	0.57
1:B:123:VAL:O	1:B:261:LEU:HB2	2.05	0.56
1:D:220:PRO:HG3	1:D:273:GLU:HB3	1.86	0.56
1:D:626:LYS:O	1:D:626:LYS:HG2	2.04	0.56
1:C:1044:CYS:O	1:C:1061:CYS:SG	2.63	0.56
1:A:36:PHE:HE1	1:A:129:THR:HG21	1.71	0.56
1:B:473:ILE:HD11	1:B:479:MET:SD	2.45	0.56
1:C:260:ILE:HG22	1:C:260:ILE:O	2.04	0.56
1:A:509:VAL:HG11	1:A:540:VAL:HA	1.88	0.56
1:D:639:GLU:HG2	1:D:1175:GLU:OE2	2.06	0.56
1:B:361:LEU:O	1:B:365:GLN:N	2.39	0.56
1:C:104:ASP:HA	1:C:233:ARG:HE	1.70	0.56
1:B:1023:ILE:HD11	1:C:871:LEU:HD11	1.88	0.55
1:A:179:MET:HE3	1:A:211:GLY:HA3	1.87	0.55
1:D:174:LEU:HD11	1:D:185:ILE:HD12	1.88	0.55
1:D:363:THR:O	1:D:367:THR:CB	2.54	0.55
1:B:429:LEU:CD1	1:B:465:ARG:CG	2.80	0.55
1:D:505:LEU:HD22	1:D:544:LEU:HD21	1.89	0.55
1:A:866:PHE:HA	1:A:869:ILE:HG12	1.86	0.55
1:A:149:LEU:HD23	1:A:150:LEU:N	2.21	0.55
1:C:417:ALA:C	1:C:419:ALA:N	2.62	0.55
1:D:889:ILE:HG23	1:D:928:ILE:HD12	1.89	0.55
1:C:650:LYS:HD3	1:C:721:ALA:HA	1.89	0.55
1:A:1204:VAL:HG13	1:B:1207:MET:HE1	1.88	0.55
1:C:189:GLY:HA2	1:C:259:PHE:HE1	1.72	0.55
1:C:178:ALA:HB3	1:C:213:ILE:HD13	1.88	0.54
1:B:297:VAL:O	1:B:299:VAL:HG23	2.06	0.54
1:D:289:ILE:HD12	1:D:297:VAL:HA	1.89	0.54
1:B:866:PHE:HA	1:B:869:ILE:HG12	1.89	0.54
1:C:220:PRO:HB2	1:C:223:ILE:HG12	1.88	0.54
1:D:871:LEU:HD11	1:C:1023:ILE:HD11	1.88	0.54
1:A:226:ASN:HB3	1:A:229:ASP:HB2	1.89	0.54
1:B:1069:PRO:HB2	2:B:1406:Y01:HAQ1	1.89	0.54
1:D:315:LEU:HD22	1:D:381:ILE:HG23	1.89	0.54
1:D:39:ARG:HA	1:D:99:GLN:O	2.08	0.54
1:A:1069:PRO:O	1:A:1072:MET:HB3	2.09	0.53
1:A:483:LEU:HD11	1:A:488:LEU:HD13	1.89	0.53
1:A:216:ILE:HG13	1:A:258:HIS:HB2	1.90	0.53
1:B:327:VAL:HG23	1:B:393:THR:HG23	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:502:LEU:HD13	1:A:624:LEU:HB3	1.89	0.53
1:A:330:ASP:HB2	1:A:396:ARG:HA	1.90	0.53
1:B:364:ILE:HA	1:B:368:PHE:HB2	1.90	0.53
1:C:126:SER:HB3	1:C:129:THR:HG23	1.89	0.53
1:D:866:PHE:HA	1:D:869:ILE:HG12	1.90	0.53
1:B:984:MET:HE3	2:B:1403:Y01:HAD3	1.91	0.53
1:A:995:LEU:HG	1:A:999:MET:HE2	1.91	0.53
1:C:490:GLU:HA	1:C:531:ARG:HH12	1.74	0.52
1:A:360:LEU:O	1:A:364:ILE:HG13	2.08	0.52
1:A:411:THR:HG23	1:A:440:GLN:HE22	1.74	0.52
1:B:619:MET:HE1	1:B:635:TRP:HB2	1.90	0.52
1:D:854:PHE:CE2	1:D:1124:PRO:HD3	2.44	0.52
1:D:1183:ARG:HE	1:C:210:ARG:NH1	2.07	0.52
1:C:624:LEU:HA	1:C:655:MET:HE1	1.92	0.52
1:B:410:LEU:HD13	1:B:436:ILE:HG21	1.92	0.52
1:D:121:MET:HB3	1:D:142:TRP:CZ3	2.45	0.52
1:B:479:MET:HE2	1:B:618:LEU:HD13	1.91	0.52
1:C:352:ILE:HD11	1:C:386:MET:HG2	1.91	0.52
1:B:1047:ASN:HA	1:B:1057:GLN:HA	1.92	0.51
1:B:625:MET:O	1:B:626:LYS:HB3	2.09	0.51
1:C:407:LEU:HD23	1:C:436:ILE:CD1	2.41	0.51
1:A:179:MET:CE	1:A:211:GLY:HA3	2.39	0.51
1:D:616:HIS:NE2	1:D:640:GLU:HB2	2.25	0.51
1:D:999:MET:HE1	2:D:1403:Y01:HBA	1.93	0.51
1:B:302:LEU:HA	1:B:327:VAL:HG12	1.91	0.51
2:B:1406:Y01:HAT1	2:C:1402:Y01:HAT1	1.93	0.51
1:A:210:ARG:O	1:A:210:ARG:HG2	2.09	0.51
1:D:920:TRP:HE1	2:D:1404:Y01:HAR2	1.75	0.51
1:B:746:MET:HE1	1:B:753:LYS:HB2	1.92	0.51
1:A:1125:PRO:HA	1:A:1128:ILE:HB	1.93	0.51
2:A:1406:Y01:HAR1	2:B:1401:Y01:HBC	1.93	0.51
1:D:1062:LYS:HA	1:D:1062:LYS:HZ1	1.75	0.51
1:A:624:LEU:HA	1:A:655:MET:HE1	1.92	0.51
1:D:358:ASP:HA	1:D:361:LEU:HB2	1.92	0.51
1:C:1027:PRO:HA	1:C:1030:MET:HG3	1.92	0.51
1:C:189:GLY:HA3	1:C:219:ALA:HB2	1.93	0.50
1:D:189:GLY:HA3	1:D:219:ALA:HB2	1.93	0.50
1:B:289:ILE:HD12	1:B:291:THR:HG23	1.93	0.50
1:C:881:GLN:HE21	2:C:1405:Y01:HAK2	1.76	0.50
1:A:135:LEU:HD13	1:A:284:ILE:HD12	1.92	0.50
1:A:506:VAL:HG21	1:A:532:ILE:HD13	1.93	0.50

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Atom-1	**Atom-2**	**Interatomic distance (Å)**	**Clash overlap (Å)**
1:B:414:LEU:HD22	1:B:424:GLN:HB3	1.92	0.50
1:B:1133:MET:HA	1:B:1136:ILE:HG22	1.93	0.50
2:B:1404:Y01:HBE	2:B:1405:Y01:HAQ1	1.94	0.50
1:D:479:MET:HE2	1:D:618:LEU:HD11	1.92	0.50
1:B:360:LEU:O	1:B:364:ILE:HB	2.11	0.50
1:D:185:ILE:HG23	1:D:215:THR:HA	1.93	0.50
1:C:898:ARG:HH12	1:C:1121:PRO:HG3	1.75	0.49
1:A:1023:ILE:HD11	1:B:871:LEU:HD11	1.93	0.49
1:D:544:LEU:HD11	1:D:655:MET:HG3	1.95	0.49
1:D:435:ASP:HA	1:D:438:ARG:HE	1.76	0.49
2:D:1404:Y01:HAN1	1:C:1078:VAL:HG21	1.93	0.49
1:C:619:MET:HE3	1:C:644:LYS:HB3	1.94	0.49
1:D:38:LYS:O	1:D:100:LEU:HA	2.12	0.49
1:C:178:ALA:HA	1:C:183:ALA:HB3	1.95	0.49
1:B:621:TRP:NE1	1:B:625:MET:HE1	2.28	0.49
1:A:613:PHE:HB3	1:A:616:HIS:HD1	1.77	0.49
1:D:114:GLY:HA3	1:D:241:THR:HG21	1.94	0.49
2:A:1401:Y01:HAT1	2:D:1401:Y01:HAT1	1.95	0.48
1:D:1044:CYS:O	1:D:1061:CYS:SG	2.71	0.48
1:B:135:LEU:HB2	1:B:283:HIS:HE1	1.78	0.48
1:C:343:HIS:CE1	1:C:389:LYS:HG2	2.48	0.48
1:B:31:TRP:O	1:B:35:ALA:HB3	2.13	0.48
1:B:354:GLU:HA	1:B:357:ARG:HG2	1.95	0.48
1:B:38:LYS:HD2	1:B:124:ARG:HH21	1.78	0.48
1:B:315:LEU:HD22	1:B:381:ILE:HG23	1.95	0.48
1:B:1211:LEU:HD22	1:C:1207:MET:HG2	1.94	0.48
2:D:1402:Y01:HBC	2:C:1401:Y01:HAR1	1.94	0.48
1:C:289:ILE:HG23	1:C:291:THR:H	1.78	0.48
1:C:994:MET:HE1	1:C:1079:ALA:HA	1.95	0.48
1:B:300:VAL:HG11	1:B:409:ILE:HG12	1.94	0.48
1:B:891:THR:HB	1:B:1128:ILE:HG22	1.95	0.48
1:C:1131:SER:O	1:C:1134:THR:HB	2.13	0.48
1:A:149:LEU:HD23	1:A:150:LEU:C	2.39	0.48
1:A:777:TYR:HB3	1:A:1158:LEU:HB3	1.95	0.48
1:D:457:MET:HG2	1:D:477:VAL:HG11	1.96	0.48
1:D:150:LEU:HB3	1:D:299:VAL:HG12	1.95	0.48
1:C:541:ILE:O	1:C:545:MET:HB2	2.14	0.48
1:C:869:ILE:HD13	1:C:882:GLU:HG3	1.94	0.48
2:D:1402:Y01:HAT1	2:C:1401:Y01:HAT1	1.95	0.48
1:B:46:PRO:HD2	1:B:55:CYS:HB2	1.96	0.48
1:B:339:LEU:O	1:B:343:HIS:HB2	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:613:PHE:HB3	1:B:616:HIS:HD1	1.78	0.48
1:C:1040:ILE:HG12	1:C:1072:MET:HE1	1.96	0.48
1:A:626:LYS:HE2	1:A:668:ILE:HG23	1.95	0.48
1:A:736:LEU:HD21	1:A:1111:TYR:HD1	1.78	0.47
1:B:506:VAL:HG21	1:B:532:ILE:HD13	1.96	0.47
1:C:405:ILE:HB	1:C:409:ILE:HG13	1.95	0.47
1:D:1017:TRP:HB3	2:D:1402:Y01:HAD1	1.96	0.47
1:C:148:LYS:HD2	1:C:430:ALA:HB1	1.96	0.47
1:A:869:ILE:HD12	1:A:882:GLU:HG3	1.96	0.47
1:C:407:LEU:HD23	1:C:436:ILE:HD12	1.95	0.47
1:D:541:ILE:O	1:D:545:MET:HB2	2.14	0.47
1:C:410:LEU:HB3	1:C:431:TRP:HZ3	1.79	0.47
1:A:866:PHE:HD1	1:A:869:ILE:HD11	1.79	0.47
2:A:1404:Y01:HAU1	2:A:1405:Y01:HAE3	1.95	0.47
1:B:713:THR:HG22	1:B:715:LEU:H	1.79	0.47
1:B:285:SER:O	1:B:297:VAL:HG23	2.14	0.47
1:C:935:MET:HE3	1:C:935:MET:HB3	1.66	0.47
1:C:188:GLY:H	1:C:195:ILE:HG12	1.80	0.47
1:A:871:LEU:HD11	1:D:1023:ILE:HD11	1.97	0.47
1:D:151:ILE:HD12	1:D:409:ILE:HD13	1.97	0.47
1:D:191:ASN:HB2	1:D:253:ASN:HA	1.97	0.47
1:C:639:GLU:HG2	1:C:640:GLU:HG3	1.96	0.47
1:B:630:MET:HE3	1:B:630:MET:HB2	1.66	0.46
1:B:502:LEU:HD11	1:B:537:ILE:HD11	1.97	0.46
2:C:1405:Y01:HBE	2:C:1406:Y01:HAQ1	1.98	0.46
1:B:221:TRP:N	1:B:262:ALA:O	2.45	0.46
1:A:980:ILE:HD11	1:D:1086:LEU:HD22	1.97	0.46
1:A:457:MET:HE3	1:A:457:MET:HB3	1.78	0.46
1:A:667:ASP:O	1:A:671:GLU:HG3	2.15	0.46
1:C:37:TYR:HA	1:C:102:PRO:HA	1.98	0.46
1:C:1203:ARG:O	1:C:1207:MET:HB2	2.16	0.46
1:A:743:ARG:HH12	1:A:776:PRO:HA	1.81	0.46
1:D:104:ASP:HA	1:D:233:ARG:HE	1.81	0.46
1:A:1124:PRO:HB2	1:A:1126:PRO:HD2	1.98	0.46
1:B:301:ALA:HB3	1:B:326:VAL:HG22	1.96	0.46
1:B:621:TRP:HZ3	1:B:634:PHE:HE2	1.64	0.45
1:C:764:ILE:HG21	1:C:841:ILE:HD13	1.98	0.45
1:C:969:VAL:HG13	1:C:1113:LEU:HD21	1.98	0.45
2:C:1404:Y01:HAP1	2:C:1404:Y01:HAO2	1.73	0.45
1:D:300:VAL:HG11	1:D:409:ILE:HG23	1.98	0.45
1:D:395:PHE:O	1:D:396:ARG:C	2.60	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:149:LEU:HG	1:A:298:PRO:HG2	1.99	0.45
1:D:736:LEU:HD21	1:D:1111:TYR:HD1	1.81	0.45
2:B:1405:Y01:HAO2	2:B:1405:Y01:HAP1	1.58	0.45
1:C:405:ILE:HA	1:C:408:ALA:HB3	1.97	0.45
1:A:111:PHE:HE2	1:A:120:ALA:HB3	1.82	0.45
2:C:1406:Y01:HAP1	2:C:1406:Y01:HAO2	1.71	0.45
1:A:414:LEU:HD22	1:A:424:GLN:HB3	1.97	0.45
1:A:647:VAL:O	1:A:651:LEU:HB2	2.17	0.45
2:B:1402:Y01:HAE3	1:C:868:TYR:HD2	1.82	0.45
1:C:462:VAL:HG23	1:C:463:LEU:HD22	1.98	0.45
1:B:191:ASN:HB2	1:B:253:ASN:HA	1.99	0.45
1:B:616:HIS:NE2	1:B:640:GLU:HB2	2.31	0.45
1:A:339:LEU:O	1:A:343:HIS:HB2	2.17	0.45
1:B:220:PRO:HG3	1:B:273:GLU:HB3	1.99	0.45
1:B:334:ARG:HB3	1:B:368:PHE:HE1	1.81	0.44
1:C:349:GLY:HA2	1:C:389:LYS:HD3	1.99	0.44
1:A:174:LEU:HD21	1:A:198:VAL:HG12	1.99	0.44
1:D:625:MET:HE2	1:D:625:MET:HB3	1.70	0.44
1:B:897:MET:HE2	1:B:897:MET:HB3	1.85	0.44
1:C:463:LEU:HD13	1:C:463:LEU:HA	1.70	0.44
1:D:758:ILE:HG22	1:D:759:LEU:HD23	1.99	0.44
1:B:135:LEU:HB2	1:B:283:HIS:CE1	2.53	0.44
1:C:713:THR:HG22	1:C:715:LEU:H	1.82	0.44
1:A:425:LEU:HD12	1:A:425:LEU:HA	1.88	0.44
1:C:406:ASP:O	1:C:410:LEU:HB2	2.16	0.44
1:A:175:ILE:HG13	1:A:205:HIS:HB2	1.99	0.44
1:A:213:ILE:HG22	1:A:215:THR:HB	1.98	0.44
1:A:303:ILE:HG12	1:A:328:VAL:HG12	1.98	0.44
2:C:1402:Y01:HAP1	2:C:1402:Y01:HAO2	1.78	0.44
1:B:109:ILE:HG13	1:B:122:TYR:CE2	2.53	0.44
1:B:470:LYS:HB2	1:B:470:LYS:HE3	1.72	0.44
1:C:318:LEU:HD13	1:C:388:LYS:HB2	1.98	0.44
1:A:951:ILE:HD13	1:A:951:ILE:HA	1.88	0.44
1:B:282:LYS:O	1:B:286:LEU:HG	2.16	0.44
2:A:1406:Y01:HAT1	2:B:1401:Y01:HAT1	2.00	0.44
1:D:43:HIS:HB3	1:D:96:LYS:HA	1.99	0.44
1:D:171:GLY:O	1:D:175:ILE:HG12	2.18	0.44
1:B:202:LEU:HD22	1:B:255:MET:HB3	1.99	0.44
2:B:1402:Y01:HAP1	2:B:1402:Y01:HAO2	1.76	0.44
1:A:131:PRO:HA	1:A:134:LEU:HG	2.00	0.44
1:A:1086:LEU:HD13	1:B:983:MET:HG3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:979:MET:HE3	1:B:979:MET:HB2	1.63	0.44
1:B:1092:ASN:HD22	1:C:1092:ASN:HD21	1.66	0.44
1:A:205:HIS:CE1	1:A:209:SER:HB3	2.53	0.43
1:A:1120:ARG:HA	1:A:1121:PRO:HD3	1.86	0.43
1:B:411:THR:HG23	1:B:415:LYS:HZ1	1.82	0.43
1:C:279:GLN:HA	1:C:282:LYS:HD3	2.00	0.43
1:C:1045:GLY:N	1:C:1058:LEU:HB2	2.33	0.43
1:D:382:LEU:HD12	1:D:382:LEU:HA	1.88	0.43
1:B:979:MET:HE2	1:B:1099:LYS:HA	2.01	0.43
1:B:1092:ASN:HD22	1:C:1092:ASN:ND2	2.16	0.43
1:B:1158:LEU:HD23	1:B:1158:LEU:HA	1.85	0.43
1:A:956:ILE:HG12	1:D:1003:VAL:HG11	2.00	0.43
1:D:434:VAL:HG23	1:D:471:LEU:HD22	2.00	0.43
1:B:289:ILE:O	1:B:292:ARG:N	2.51	0.43
1:C:378:LEU:HA	1:C:381:ILE:HD12	2.01	0.43
1:A:242:MET:HE1	1:B:445:GLY:H	1.84	0.43
1:D:221:TRP:HA	1:D:261:LEU:HD12	1.99	0.43
1:A:189:GLY:HA3	1:A:219:ALA:HB2	1.99	0.43
1:D:305:GLU:HB2	1:D:332:SER:HB2	2.00	0.43
1:D:619:MET:HE3	1:D:644:LYS:HB3	2.00	0.43
1:B:286:LEU:O	1:B:287:GLN:C	2.62	0.43
1:B:1087:LEU:HA	1:B:1090:VAL:HG12	2.00	0.43
1:C:746:MET:HB3	1:C:747:ARG:H	1.63	0.43
1:C:1021:LYS:HB2	2:C:1402:Y01:HAT2	2.01	0.43
1:A:719:VAL:HG21	1:A:1111:TYR:CD2	2.54	0.43
1:A:1207:MET:HE3	1:A:1207:MET:HB2	1.71	0.43
1:B:260:ILE:O	1:B:261:LEU:C	2.61	0.43
1:B:282:LYS:HD2	1:B:282:LYS:HA	1.51	0.43
1:B:480:HIS:HA	1:B:614:PRO:HG3	2.01	0.43
1:D:278:ARG:HG3	1:D:282:LYS:HE2	2.00	0.43
1:B:31:TRP:O	1:B:35:ALA:CB	2.67	0.43
1:B:174:LEU:HD23	1:B:174:LEU:HA	1.92	0.43
1:B:881:GLN:HE21	2:B:1404:Y01:HAK2	1.82	0.43
1:C:897:MET:HE2	1:C:897:MET:HB3	1.87	0.43
1:D:970:ASN:HB3	1:D:973:LEU:HB2	2.01	0.43
1:C:979:MET:HE2	1:C:1099:LYS:HA	2.01	0.43
2:D:1403:Y01:HAE2	2:D:1403:Y01:HBB	1.93	0.42
1:B:151:ILE:HB	1:B:185:ILE:HA	2.01	0.42
1:A:104:ASP:HA	1:A:233:ARG:HE	1.83	0.42
1:A:181:THR:HG21	1:A:410:LEU:HD21	2.00	0.42
1:C:642:MET:HE2	1:C:642:MET:HB2	1.95	0.42

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Atom-1	**Atom-2**	**Interatomic distance (Å)**	**Clash overlap (Å)**
1:B:305:GLU:HB2	1:B:332:SER:HB2	2.01	0.42
2:A:1402:Y01:HAN2	1:B:864:MET:HG2	2.01	0.42
1:D:874:MET:HE2	1:D:949:ARG:HG3	2.01	0.42
1:D:1017:TRP:HB3	2:D:1402:Y01:HAR2	2.02	0.42
1:B:1008:ILE:HD13	1:B:1008:ILE:HA	1.87	0.42
1:C:412:ALA:O	1:C:416:GLY:N	2.52	0.42
1:A:427:LEU:HD23	1:A:427:LEU:HA	1.91	0.42
1:D:365:GLN:C	1:D:369:THR:HA	2.45	0.42
1:D:614:PRO:O	1:D:618:LEU:HB2	2.19	0.42
1:C:301:ALA:HB3	1:C:326:VAL:HG22	2.02	0.42
2:A:1401:Y01:HBC	2:D:1401:Y01:HAR1	2.02	0.42
2:D:1403:Y01:HAP1	2:D:1403:Y01:HAO2	1.76	0.42
1:C:978:MET:HG3	1:C:1102:SER:HB3	2.00	0.42
1:A:405:ILE:O	1:A:409:ILE:HG12	2.20	0.42
1:A:969:VAL:HG13	1:A:1113:LEU:HD21	2.02	0.42
1:A:990:PHE:HB2	1:A:1087:LEU:HD13	2.02	0.42
1:A:1040:ILE:HD12	1:A:1072:MET:HE1	2.02	0.42
2:A:1404:Y01:HBF	2:A:1405:Y01:HAQ1	2.02	0.42
1:B:107:GLY:O	1:B:121:MET:HA	2.19	0.42
1:D:339:LEU:O	1:D:343:HIS:HB2	2.19	0.42
1:D:699:MET:HB3	1:D:735:LEU:HD13	2.01	0.42
1:C:407:LEU:O	1:C:411:THR:HB	2.19	0.42
1:D:126:SER:HB3	1:D:129:THR:HG23	2.02	0.42
1:D:624:LEU:HD23	1:D:624:LEU:HA	1.91	0.42
1:B:507:ARG:HA	1:B:526:LEU:HD21	2.02	0.42
1:B:544:LEU:HD11	1:B:655:MET:HB2	2.01	0.42
1:B:1123:LEU:HA	1:B:1123:LEU:HD23	1.84	0.42
1:A:357:ARG:C	1:A:361:LEU:HG	2.43	0.42
1:D:111:PHE:HE2	1:D:120:ALA:HB3	1.85	0.42
1:D:538:GLY:HA2	1:D:541:ILE:HD12	2.01	0.42
2:A:1401:Y01:HAP1	2:A:1401:Y01:HAO2	1.75	0.41
1:D:739:MET:HE3	1:D:739:MET:HB2	1.82	0.41
1:C:174:LEU:HD13	1:C:174:LEU:HA	1.82	0.41
1:C:769:PHE:HZ	1:C:844:PHE:HB2	1.85	0.41
1:D:540:VAL:O	1:D:544:LEU:HB2	2.21	0.41
1:D:769:PHE:HZ	1:D:844:PHE:HB2	1.85	0.41
1:D:891:THR:HB	1:D:1128:ILE:HG22	2.02	0.41
1:B:361:LEU:HD22	1:B:361:LEU:HA	1.80	0.41
1:B:1061:CYS:SG	2:B:1406:Y01:CAX	3.09	0.41
1:C:93:SER:HA	1:C:97:HIS:HA	2.03	0.41
1:A:358:ASP:HA	1:A:361:LEU:HD12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:935:MET:HE3	1:A:935:MET:HB3	1.88	0.41
1:A:1017:TRP:HB3	2:A:1401:Y01:HAD1	2.01	0.41
2:A:1403:Y01:HAP1	2:A:1403:Y01:HAO2	1.77	0.41
1:D:625:MET:HG3	1:D:627:ARG:HG3	2.03	0.41
1:D:1062:LYS:H	1:D:1062:LYS:HG2	1.53	0.41
1:D:1123:LEU:HD23	1:D:1123:LEU:HA	1.89	0.41
1:A:662:ASN:O	1:A:663:ASP:C	2.64	0.41
1:A:1082:LEU:HD12	1:A:1082:LEU:HA	1.86	0.41
1:D:327:VAL:HG21	1:D:408:ALA:HB1	2.02	0.41
1:D:894:ILE:HD13	1:D:894:ILE:HA	1.91	0.41
1:B:536:ASP:O	1:B:540:VAL:HG23	2.20	0.41
1:C:416:GLY:C	1:C:418:ASN:N	2.74	0.41
1:A:536:ASP:O	1:A:540:VAL:HG23	2.20	0.41
1:D:866:PHE:HD1	1:D:869:ILE:HD11	1.84	0.41
1:C:382:LEU:HA	1:C:382:LEU:HD12	1.84	0.41
1:C:1158:LEU:HD23	1:C:1158:LEU:HA	1.90	0.41
1:A:1017:TRP:HB3	2:A:1401:Y01:HAR2	2.03	0.41
1:D:745:ARG:O	1:D:747:ARG:HD3	2.20	0.41
1:B:697:LEU:HD23	1:B:697:LEU:HA	1.84	0.41
1:C:121:MET:HE3	1:C:142:TRP:NE1	2.36	0.41
1:C:465:ARG:HB3	1:C:468:PHE:HB2	2.03	0.41
1:A:43:HIS:HB2	1:A:44:ILE:H	1.68	0.41
1:D:173:GLY:HA3	1:D:405:ILE:HB	2.02	0.41
1:B:121:MET:H	1:B:121:MET:HG3	1.71	0.41
1:A:537:ILE:HD13	1:A:537:ILE:HA	1.92	0.41
1:A:1158:LEU:HD23	1:A:1158:LEU:HA	1.84	0.41
2:A:1405:Y01:HAP1	2:A:1405:Y01:HAO2	1.81	0.41
1:D:216:ILE:HG13	1:D:258:HIS:HB2	2.03	0.41
1:D:280:LEU:HD23	1:D:280:LEU:HA	1.92	0.41
1:D:613:PHE:HB3	1:D:616:HIS:ND1	2.32	0.41
1:D:998:LEU:HD11	1:D:1028:TYR:HA	2.03	0.41
1:B:297:VAL:O	1:B:298:PRO:C	2.63	0.41
1:C:328:VAL:HG22	1:C:394:VAL:HG22	2.03	0.41
1:B:202:LEU:HD11	1:B:215:THR:HG21	2.02	0.41
1:C:434:VAL:HG21	1:C:467:ASP:HB2	2.01	0.41
2:C:1404:Y01:HAA2	2:C:1404:Y01:HAJ2	1.95	0.41
1:A:507:ARG:HA	1:A:526:LEU:HD11	2.04	0.40
1:D:869:ILE:HD12	1:D:882:GLU:HG3	2.02	0.40
1:B:383:MET:HA	1:B:386:MET:HB3	2.03	0.40
1:B:1160:LEU:HD23	1:B:1160:LEU:HA	1.87	0.40
1:C:302:LEU:HD12	1:C:302:LEU:HA	1.91	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:358:ASP:O	1:D:362:VAL:HG12	2.21	0.40
1:D:703:THR:HA	1:D:713:THR:HG23	2.03	0.40
1:D:1082:LEU:HD12	1:D:1082:LEU:HA	1.92	0.40
1:B:723:HIS:CD2	1:B:726:PHE:HB2	2.57	0.40
1:C:951:ILE:HD13	1:C:951:ILE:HA	1.99	0.40
1:A:300:VAL:HG11	1:A:409:ILE:HG23	2.02	0.40
1:B:279:GLN:O	1:B:280:LEU:C	2.65	0.40
1:B:1125:PRO:HA	1:B:1128:ILE:HB	2.04	0.40
1:A:358:ASP:HA	1:A:361:LEU:CB	2.50	0.40
1:A:616:HIS:HD2	1:A:709:TRP:CZ2	2.38	0.40
1:B:616:HIS:HD2	1:B:709:TRP:CZ2	2.40	0.40
1:C:124:ARG:HG3	1:C:221:TRP:CD2	2.57	0.40
1:A:184:TRP:CD1	1:A:214:CYS:HB3	2.57	0.40
1:D:746:MET:HE2	1:D:746:MET:HB2	1.94	0.40
1:D:1110:ARG:HH21	1:D:1114:ILE:HD11	1.87	0.40
1:B:619:MET:SD	1:B:644:LYS:HB3	2.61	0.40
1:B:865:LEU:HD12	1:B:865:LEU:HA	1.86	0.40
1:B:1030:MET:HG2	1:B:1035:VAL:HA	2.04	0.40
1:C:417:ALA:O	1:C:419:ALA:N	2.55	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	1041/1306 (80%)	989 (95%)	52 (5%)	0	100	100
1	B	1042/1306 (80%)	987 (95%)	54 (5%)	1 (0%)	48	79
1	C	1049/1306 (80%)	1004 (96%)	45 (4%)	0	100	100
1	D	1042/1306 (80%)	1000 (96%)	42 (4%)	0	100	100
All	All	4174/5224 (80%)	3980 (95%)	193 (5%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	369	THR

5.3.2 Protein sidechains ⓘ

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	779/1162 (67%)	775 (100%)	4 (0%)	86	93
1	B	781/1162 (67%)	764 (98%)	17 (2%)	47	69
1	C	790/1162 (68%)	777 (98%)	13 (2%)	58	76
1	D	776/1162 (67%)	768 (99%)	8 (1%)	73	85
All	All	3126/4648 (67%)	3084 (99%)	42 (1%)	64	81

All (42) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	176	LYS
1	A	478	SER
1	A	1197	ILE
1	A	1214	VAL
1	D	185	ILE
1	D	396	ARG
1	D	532	ILE
1	D	1046	GLN
1	D	1047	ASN
1	D	1062	LYS
1	D	1203	ARG
1	D	1204	VAL
1	B	32	ILE
1	B	260	ILE
1	B	280	LEU
1	B	282	LYS
1	B	283	HIS
1	B	284	ILE
1	B	291	THR

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Mol	Chain	Res	Type
1	B	295	GLN
1	B	361	LEU
1	B	363	THR
1	B	539	LEU
1	B	544	LEU
1	B	624	LEU
1	B	854	PHE
1	B	865	LEU
1	B	1047	ASN
1	B	1062	LYS
1	C	174	LEU
1	C	229	ASP
1	C	463	LEU
1	C	466	VAL
1	C	478	SER
1	C	619	MET
1	C	935	MET
1	C	988[A]	MET
1	C	988[B]	MET
1	C	1046	GLN
1	C	1062	LYS
1	C	1127	LEU
1	C	1204	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (44) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	227	GLN
1	A	446	GLN
1	A	628	GLN
1	A	1046	GLN
1	A	1103	ASN
1	A	1139	HIS
1	A	1206	ASN
1	A	1215	ASN
1	D	43	HIS
1	D	258	HIS
1	D	283	HIS
1	D	440	GLN
1	D	446	GLN
1	D	689	GLN
1	D	693	GLN

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Mol	Chain	Res	Type
1	D	955	ASN
1	D	1092	ASN
1	D	1103	ASN
1	D	1118	HIS
1	D	1171	HIS
1	B	191	ASN
1	B	240	GLN
1	B	283	HIS
1	B	716	GLN
1	B	955	ASN
1	B	1047	ASN
1	B	1092	ASN
1	B	1093	ASN
1	B	1103	ASN
1	B	1104	GLN
1	B	1118	HIS
1	B	1132	HIS
1	B	1139	HIS
1	C	118	ASN
1	C	240	GLN
1	C	295	GLN
1	C	377	HIS
1	C	475	ASN
1	C	496	HIS
1	C	525	ASN
1	C	696	GLN
1	C	1093	ASN
1	C	1103	ASN
1	C	1132	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

24 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	$\#\|Z\| > 2$
2	Y01	B	1405	-	38,38,38	0.43	0	57,57,57	0.56	1 (1%)
2	Y01	D	1403	-	38,38,38	0.37	0	57,57,57	0.54	0
2	Y01	C	1403	-	38,38,38	0.37	0	57,57,57	0.55	0
2	Y01	A	1406	-	38,38,38	0.44	0	57,57,57	0.55	1 (1%)
2	Y01	B	1402	-	38,38,38	0.41	0	57,57,57	0.64	0
2	Y01	A	1402	-	38,38,38	0.35	0	57,57,57	0.43	0
2	Y01	C	1405	-	38,38,38	0.42	0	57,57,57	0.62	0
2	Y01	B	1404	-	38,38,38	0.41	0	57,57,57	0.59	0
2	Y01	A	1405	-	38,38,38	0.41	0	57,57,57	0.46	0
2	Y01	D	1406	-	38,38,38	0.40	0	57,57,57	0.48	0
2	Y01	A	1403	-	38,38,38	0.35	0	57,57,57	0.47	0
2	Y01	B	1401	-	38,38,38	0.42	0	57,57,57	0.64	0
2	Y01	A	1404	-	38,38,38	0.38	0	57,57,57	0.53	1 (1%)
2	Y01	D	1402	-	38,38,38	0.42	0	57,57,57	0.65	0
2	Y01	C	1404	-	38,38,38	0.35	0	57,57,57	0.42	0
2	Y01	B	1403	-	38,38,38	0.36	0	57,57,57	0.45	0
2	Y01	D	1405	-	38,38,38	0.38	0	57,57,57	0.57	0
2	Y01	A	1401	-	38,38,38	0.42	0	57,57,57	0.66	0
2	Y01	D	1404	-	38,38,38	0.40	0	57,57,57	0.66	0
2	Y01	C	1401	-	38,38,38	0.42	0	57,57,57	0.52	0
2	Y01	B	1406	-	38,38,38	0.44	0	57,57,57	0.66	0
2	Y01	C	1402	-	38,38,38	0.43	0	57,57,57	0.60	0
2	Y01	D	1401	-	38,38,38	0.39	0	57,57,57	0.50	0
2	Y01	C	1406	-	38,38,38	0.44	0	57,57,57	0.54	1 (1%)

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
2	Y01	B	1405	-	-	11/19/77/77	0/4/4/4
2	Y01	D	1403	-	-	11/19/77/77	0/4/4/4
2	Y01	C	1403	-	-	10/19/77/77	0/4/4/4
2	Y01	A	1406	-	-	4/19/77/77	0/4/4/4
2	Y01	B	1402	-	-	11/19/77/77	0/4/4/4
2	Y01	A	1402	-	-	11/19/77/77	0/4/4/4
2	Y01	C	1405	-	-	11/19/77/77	0/4/4/4
2	Y01	B	1404	-	-	7/19/77/77	0/4/4/4
2	Y01	A	1405	-	-	7/19/77/77	0/4/4/4
2	Y01	D	1406	-	-	7/19/77/77	0/4/4/4
2	Y01	A	1403	-	-	13/19/77/77	0/4/4/4
2	Y01	B	1401	-	-	6/19/77/77	0/4/4/4
2	Y01	A	1404	-	-	5/19/77/77	0/4/4/4
2	Y01	D	1402	-	-	11/19/77/77	0/4/4/4
2	Y01	C	1404	-	-	9/19/77/77	0/4/4/4
2	Y01	B	1403	-	-	10/19/77/77	0/4/4/4
2	Y01	D	1405	-	-	5/19/77/77	0/4/4/4
2	Y01	A	1401	-	-	9/19/77/77	0/4/4/4
2	Y01	D	1404	-	-	8/19/77/77	0/4/4/4
2	Y01	C	1401	-	-	6/19/77/77	0/4/4/4
2	Y01	B	1406	-	-	5/19/77/77	0/4/4/4
2	Y01	C	1402	-	-	9/19/77/77	0/4/4/4
2	Y01	D	1401	-	-	6/19/77/77	0/4/4/4
2	Y01	C	1406	-	-	6/19/77/77	0/4/4/4

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	1404	Y01	CAP-CAQ-CBG	-2.29	100.66	105.14
2	B	1405	Y01	CAP-CAQ-CBG	-2.26	100.72	105.14
2	C	1406	Y01	CAP-CAQ-CBG	-2.17	100.89	105.14
2	A	1406	Y01	OAF-CAX-CAL	-2.01	116.72	123.09

There are no chirality outliers.

All (198) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	D	1404	Y01	CAJ-CAO-CBB-CAC
2	B	1404	Y01	CAJ-CAO-CBB-CAC
2	A	1402	Y01	CAJ-CAO-CBB-CAC
2	A	1406	Y01	CAJ-CAO-CBB-CAC
2	D	1401	Y01	CAJ-CAO-CBB-CAC
2	B	1406	Y01	CAJ-CAO-CBB-CAC
2	C	1401	Y01	CAJ-CAO-CBB-CAC
2	C	1403	Y01	CAJ-CAO-CBB-CAC
2	C	1405	Y01	CAJ-CAO-CBB-CAC
2	A	1402	Y01	CAC-CBB-CBE-CAP
2	A	1402	Y01	CAO-CBB-CBE-CBI
2	C	1404	Y01	CAO-CBB-CBE-CBI
2	D	1403	Y01	CAX-CAL-CAM-CAY
2	A	1402	Y01	CAC-CBB-CBE-CBI
2	C	1403	Y01	CAJ-CAO-CBB-CBE
2	C	1404	Y01	CAJ-CAO-CBB-CBE
2	C	1405	Y01	CAJ-CAO-CBB-CBE
2	D	1403	Y01	CAJ-CAO-CBB-CAC
2	B	1402	Y01	CAJ-CAO-CBB-CAC
2	A	1401	Y01	CAJ-CAO-CBB-CBE
2	A	1402	Y01	CAJ-CAO-CBB-CBE
2	A	1403	Y01	CAJ-CAO-CBB-CBE
2	D	1402	Y01	CAJ-CAO-CBB-CBE
2	B	1402	Y01	CAJ-CAO-CBB-CBE
2	B	1403	Y01	CAJ-CAO-CBB-CBE
2	B	1405	Y01	CAJ-CAO-CBB-CBE
2	C	1402	Y01	CAJ-CAO-CBB-CBE
2	B	1401	Y01	CAJ-CAO-CBB-CAC
2	A	1403	Y01	CAO-CBB-CBE-CBI
2	C	1405	Y01	CAO-CBB-CBE-CBI
2	D	1401	Y01	CAJ-CAO-CBB-CBE
2	D	1404	Y01	CAJ-CAO-CBB-CBE
2	B	1401	Y01	CAJ-CAO-CBB-CBE
2	B	1402	Y01	CAX-CAL-CAM-CAY
2	C	1403	Y01	CAX-CAL-CAM-CAY
2	A	1402	Y01	CAO-CBB-CBE-CAP
2	A	1405	Y01	CAJ-CAO-CBB-CBE
2	D	1403	Y01	CAJ-CAO-CBB-CBE
2	B	1406	Y01	CAJ-CAO-CBB-CBE
2	B	1401	Y01	CAO-CAJ-CAN-CBA
2	B	1403	Y01	CAO-CAJ-CAN-CBA
2	B	1406	Y01	CAO-CAJ-CAN-CBA
2	C	1401	Y01	CAO-CAJ-CAN-CBA

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Mol	Chain	Res	Type	Atoms
2	C	1404	Y01	CAO-CAJ-CAN-CBA
2	A	1401	Y01	CAO-CAJ-CAN-CBA
2	A	1406	Y01	CAO-CAJ-CAN-CBA
2	D	1401	Y01	CAO-CAJ-CAN-CBA
2	C	1404	Y01	CAC-CBB-CBE-CBI
2	C	1404	Y01	CAO-CBB-CBE-CAP
2	D	1402	Y01	CAO-CAJ-CAN-CBA
2	C	1404	Y01	CAC-CBB-CBE-CAP
2	C	1402	Y01	CAO-CAJ-CAN-CBA
2	D	1403	Y01	CAO-CBB-CBE-CBI
2	C	1405	Y01	CAN-CAJ-CAO-CBB
2	B	1403	Y01	CAO-CBB-CBE-CBI
2	A	1403	Y01	CAJ-CAN-CBA-CAB
2	A	1403	Y01	CAO-CAJ-CAN-CBA
2	C	1405	Y01	CAO-CBB-CBE-CAP
2	B	1403	Y01	CAJ-CAN-CBA-CAB
2	D	1406	Y01	CAJ-CAO-CBB-CBE
2	D	1404	Y01	CAJ-CAN-CBA-CAB
2	C	1401	Y01	CAJ-CAO-CBB-CBE
2	C	1405	Y01	CAX-CAL-CAM-CAY
2	D	1405	Y01	CAO-CAJ-CAN-CBA
2	C	1405	Y01	CAC-CBB-CBE-CAP
2	A	1403	Y01	CAJ-CAO-CBB-CAC
2	A	1403	Y01	CAJ-CAN-CBA-CAA
2	D	1402	Y01	CAJ-CAO-CBB-CAC
2	A	1403	Y01	CAC-CBB-CBE-CBI
2	A	1402	Y01	CAX-CAL-CAM-CAY
2	A	1403	Y01	CAC-CBB-CBE-CAP
2	A	1403	Y01	CAO-CBB-CBE-CAP
2	C	1404	Y01	CAJ-CAO-CBB-CAC
2	D	1401	Y01	CAN-CAJ-CAO-CBB
2	C	1405	Y01	CAC-CBB-CBE-CBI
2	A	1404	Y01	CAJ-CAO-CBB-CAC
2	B	1405	Y01	CAO-CBB-CBE-CBI
2	C	1401	Y01	CAN-CAJ-CAO-CBB
2	B	1403	Y01	CAC-CBB-CBE-CAP
2	B	1406	Y01	CAN-CAJ-CAO-CBB
2	B	1404	Y01	CAN-CAJ-CAO-CBB
2	D	1403	Y01	CAC-CBB-CBE-CAP
2	D	1403	Y01	CAC-CBB-CBE-CBI
2	B	1403	Y01	CAC-CBB-CBE-CBI
2	B	1405	Y01	CAJ-CAO-CBB-CAC

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Mol	Chain	Res	Type	Atoms
2	D	1403	Y01	CAO-CBB-CBE-CAP
2	B	1403	Y01	CAO-CBB-CBE-CAP
2	C	1404	Y01	CAJ-CAN-CBA-CAB
2	B	1405	Y01	CAC-CBB-CBE-CAP
2	D	1402	Y01	CAX-CAL-CAM-CAY
2	A	1406	Y01	CAN-CAJ-CAO-CBB
2	B	1405	Y01	CAO-CBB-CBE-CAP
2	B	1405	Y01	CAO-CAJ-CAN-CBA
2	B	1403	Y01	CAJ-CAN-CBA-CAA
2	D	1404	Y01	CAO-CBB-CBE-CAP
2	D	1404	Y01	CAO-CBB-CBE-CBI
2	C	1402	Y01	CAJ-CAO-CBB-CAC
2	A	1401	Y01	CAX-CAL-CAM-CAY
2	D	1404	Y01	CAJ-CAN-CBA-CAA
2	B	1403	Y01	CAJ-CAO-CBB-CAC
2	B	1404	Y01	CAO-CAJ-CAN-CBA
2	B	1402	Y01	CAO-CBB-CBE-CAP
2	A	1405	Y01	CAO-CBB-CBE-CBI
2	D	1406	Y01	CAO-CBB-CBE-CBI
2	C	1406	Y01	CAJ-CAO-CBB-CBE
2	B	1402	Y01	CAO-CBB-CBE-CBI
2	B	1405	Y01	CAC-CBB-CBE-CBI
2	A	1401	Y01	CAJ-CAO-CBB-CAC
2	A	1405	Y01	CAO-CBB-CBE-CAP
2	D	1406	Y01	CAO-CBB-CBE-CAP
2	A	1406	Y01	CAJ-CAO-CBB-CBE
2	C	1404	Y01	CAJ-CAN-CBA-CAA
2	B	1404	Y01	CAJ-CAO-CBB-CBE
2	D	1405	Y01	CAJ-CAO-CBB-CAC
2	A	1405	Y01	CAC-CBB-CBE-CBI
2	D	1404	Y01	CAC-CBB-CBE-CAP
2	D	1404	Y01	CAC-CBB-CBE-CBI
2	D	1406	Y01	CAC-CBB-CBE-CBI
2	B	1402	Y01	CAC-CBB-CBE-CAP
2	C	1402	Y01	CAO-CBB-CBE-CAP
2	C	1406	Y01	CAO-CBB-CBE-CAP
2	C	1403	Y01	CAO-CBB-CBE-CAP
2	A	1405	Y01	CAC-CBB-CBE-CAP
2	C	1402	Y01	CAO-CBB-CBE-CBI
2	C	1403	Y01	CAO-CBB-CBE-CBI
2	A	1404	Y01	CAO-CAJ-CAN-CBA
2	B	1402	Y01	CAC-CBB-CBE-CBI

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Mol	Chain	Res	Type	Atoms
2	A	1401	Y01	CAO-CBB-CBE-CAP
2	D	1402	Y01	CAO-CBB-CBE-CAP
2	C	1402	Y01	CAX-CAL-CAM-CAY
2	D	1406	Y01	CAC-CBB-CBE-CAP
2	B	1401	Y01	CAM-CAL-CAX-OAH
2	C	1406	Y01	CAO-CBB-CBE-CBI
2	A	1401	Y01	CAM-CAL-CAX-OAH
2	B	1404	Y01	CAO-CBB-CBE-CAP
2	A	1401	Y01	CAM-CAL-CAX-OAF
2	B	1405	Y01	CAN-CAJ-CAO-CBB
2	A	1404	Y01	CAM-CAL-CAX-OAH
2	D	1402	Y01	CAM-CAL-CAX-OAF
2	B	1401	Y01	CAM-CAL-CAX-OAF
2	C	1406	Y01	CAM-CAL-CAX-OAF
2	A	1404	Y01	CAM-CAL-CAX-OAF
2	B	1402	Y01	CAM-CAL-CAX-OAF
2	B	1405	Y01	CAM-CAL-CAX-OAF
2	D	1402	Y01	CAM-CAL-CAX-OAH
2	D	1405	Y01	CAM-CAL-CAX-OAH
2	B	1402	Y01	CAM-CAL-CAX-OAH
2	C	1406	Y01	CAM-CAL-CAX-OAH
2	B	1405	Y01	CAM-CAL-CAX-OAH
2	D	1402	Y01	CAO-CBB-CBE-CBI
2	A	1405	Y01	CAM-CAL-CAX-OAH
2	C	1405	Y01	CAM-CAL-CAX-OAH
2	B	1405	Y01	CAJ-CAN-CBA-CAB
2	A	1401	Y01	CAO-CBB-CBE-CBI
2	A	1404	Y01	CAN-CAJ-CAO-CBB
2	D	1405	Y01	CAM-CAL-CAX-OAF
2	C	1402	Y01	CAC-CBB-CBE-CBI
2	D	1406	Y01	CAM-CAL-CAX-OAH
2	C	1402	Y01	CAM-CAL-CAX-OAF
2	D	1402	Y01	CAJ-CAN-CBA-CAA
2	B	1401	Y01	CAO-CBB-CBE-CAP
2	D	1402	Y01	CAC-CBB-CBE-CBI
2	D	1403	Y01	CAM-CAL-CAX-OAH
2	A	1405	Y01	CAM-CAL-CAX-OAF
2	C	1405	Y01	CAM-CAL-CAX-OAF
2	C	1402	Y01	CAM-CAL-CAX-OAH
2	B	1404	Y01	CAM-CAL-CAX-OAH
2	A	1402	Y01	CAM-CAL-CAX-OAH
2	D	1406	Y01	CAM-CAL-CAX-OAF

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Mol	Chain	Res	Type	Atoms
2	C	1403	Y01	CAM-CAL-CAX-OAH
2	C	1406	Y01	CAC-CBB-CBE-CBI
2	C	1403	Y01	CAM-CAL-CAX-OAF
2	D	1403	Y01	CAM-CAL-CAX-OAF
2	B	1404	Y01	CAM-CAL-CAX-OAF
2	A	1402	Y01	CAM-CAL-CAX-OAF
2	B	1402	Y01	CAL-CAM-CAY-OAW
2	A	1401	Y01	CAC-CBB-CBE-CBI
2	C	1403	Y01	CAL-CAM-CAY-OAW
2	A	1402	Y01	CAL-CAM-CAY-OAW
2	D	1403	Y01	CAL-CAM-CAY-OAW
2	A	1403	Y01	CAL-CAM-CAY-OAW
2	C	1401	Y01	CAM-CAL-CAX-OAH
2	C	1403	Y01	CAL-CAM-CAY-OAG
2	D	1405	Y01	CAN-CAJ-CAO-CBB
2	A	1403	Y01	CAM-CAL-CAX-OAH
2	D	1401	Y01	CAO-CBB-CBE-CAP
2	D	1403	Y01	CAL-CAM-CAY-OAG
2	A	1402	Y01	CAL-CAM-CAY-OAG
2	B	1402	Y01	CAL-CAM-CAY-OAG
2	D	1401	Y01	CAM-CAL-CAX-OAH
2	B	1406	Y01	CAL-CAM-CAY-OAW
2	C	1401	Y01	CAM-CAL-CAX-OAF
2	C	1405	Y01	CAO-CAJ-CAN-CBA
2	C	1403	Y01	CAC-CBB-CBE-CBI
2	D	1402	Y01	CAJ-CAN-CBA-CAB
2	A	1403	Y01	CAM-CAL-CAX-OAF
2	B	1403	Y01	CAL-CAM-CAY-OAW
2	A	1403	Y01	CAL-CAM-CAY-OAG

There are no ring outliers.

22 monomers are involved in 46 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	1405	Y01	2	0
2	D	1403	Y01	3	0
2	C	1403	Y01	1	0
2	A	1406	Y01	3	0
2	B	1402	Y01	2	0
2	A	1402	Y01	1	0
2	C	1405	Y01	2	0
2	B	1404	Y01	2	0

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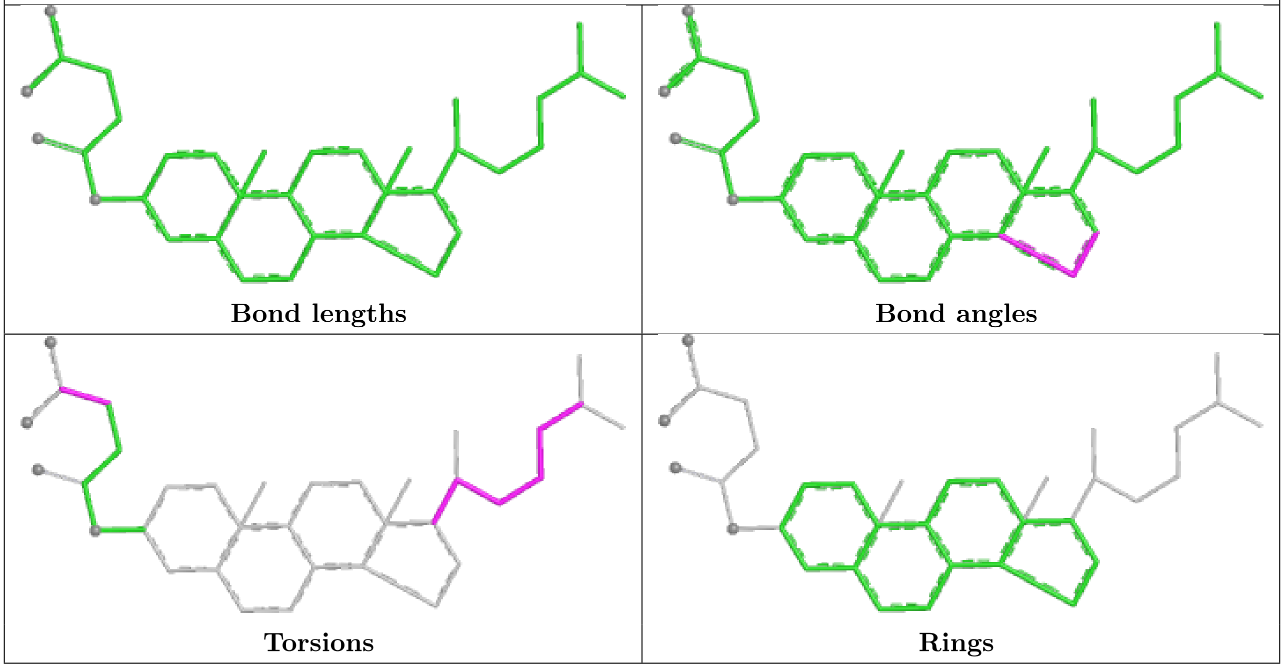
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	1405	Y01	3	0
2	A	1403	Y01	1	0
2	B	1401	Y01	2	0
2	A	1404	Y01	2	0
2	D	1402	Y01	4	0
2	C	1404	Y01	2	0
2	B	1403	Y01	1	0
2	A	1401	Y01	5	0
2	D	1404	Y01	2	0
2	C	1401	Y01	3	0
2	B	1406	Y01	5	0
2	C	1402	Y01	4	0
2	D	1401	Y01	5	0
2	C	1406	Y01	2	0

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 then 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.

Ligand Y01 B 1405



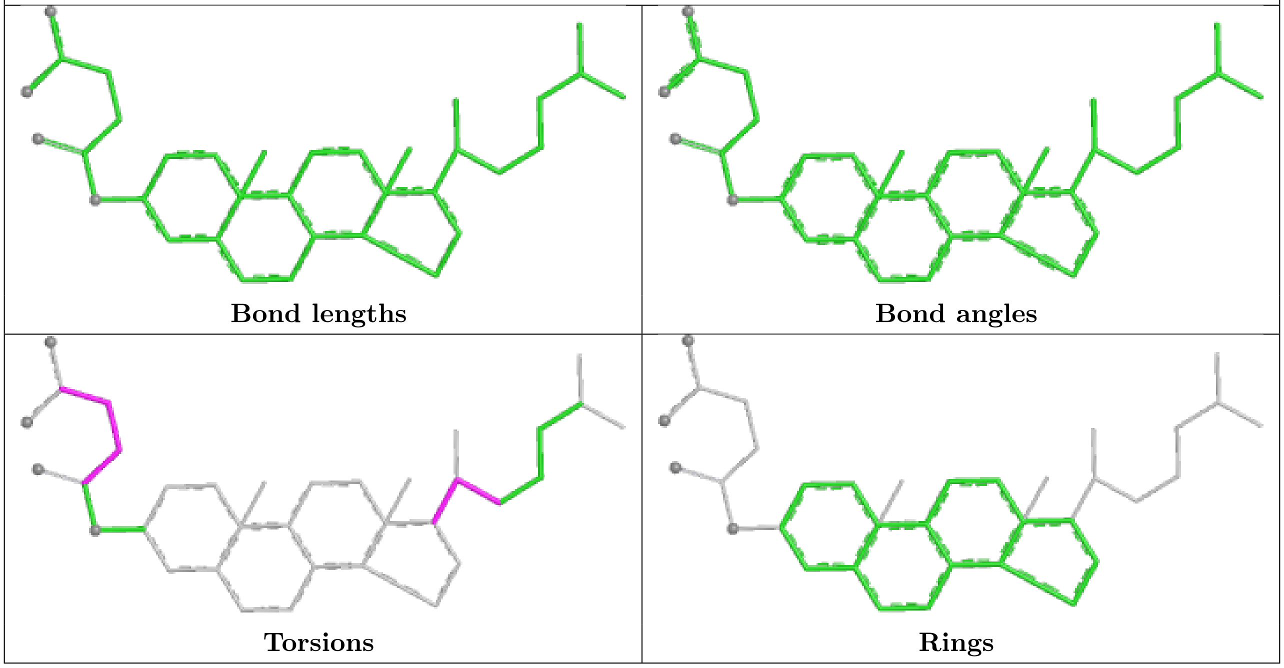
Bond lengths

Bond angles

Torsions

Rings

Ligand Y01 D 1403



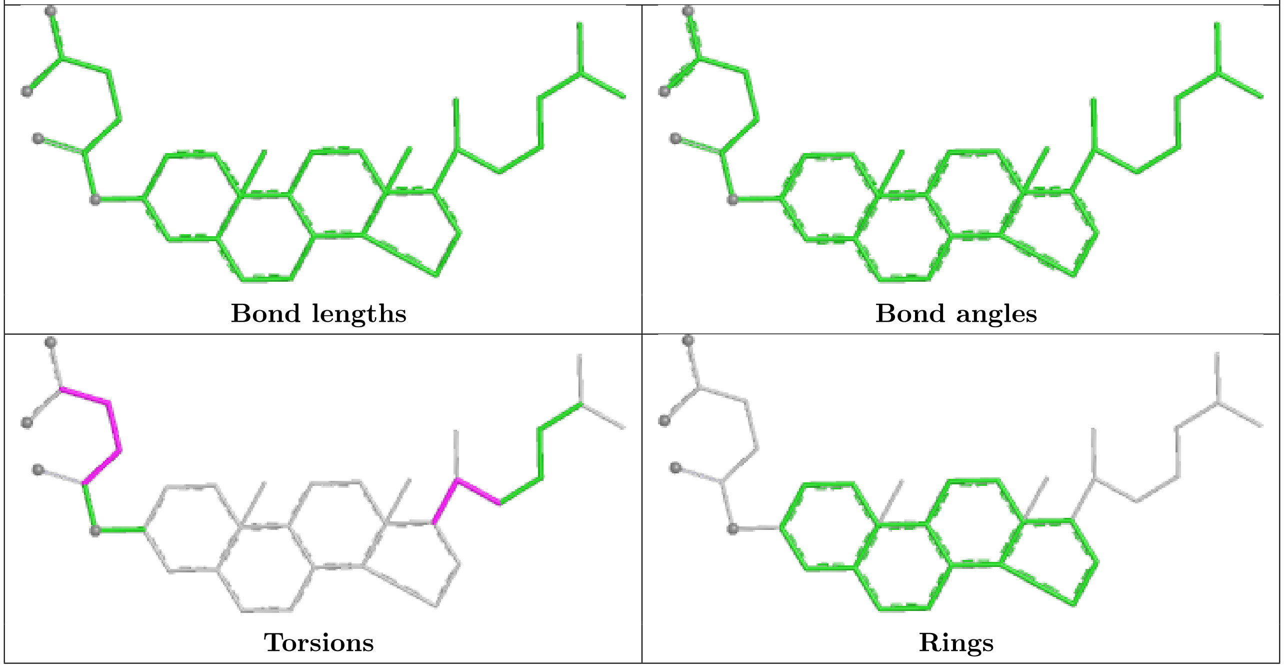
Bond lengths

Bond angles

Torsions

Rings

Ligand Y01 C 1403



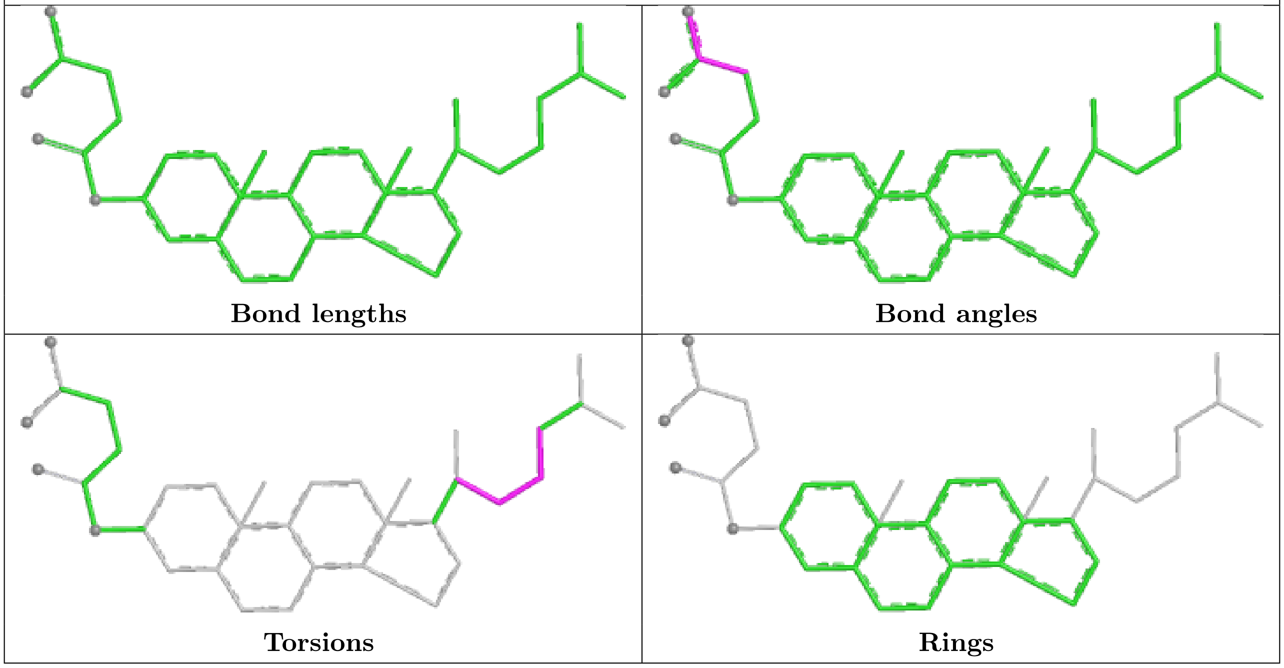
Bond lengths

Bond angles

Torsions

Rings

Ligand Y01 A 1406



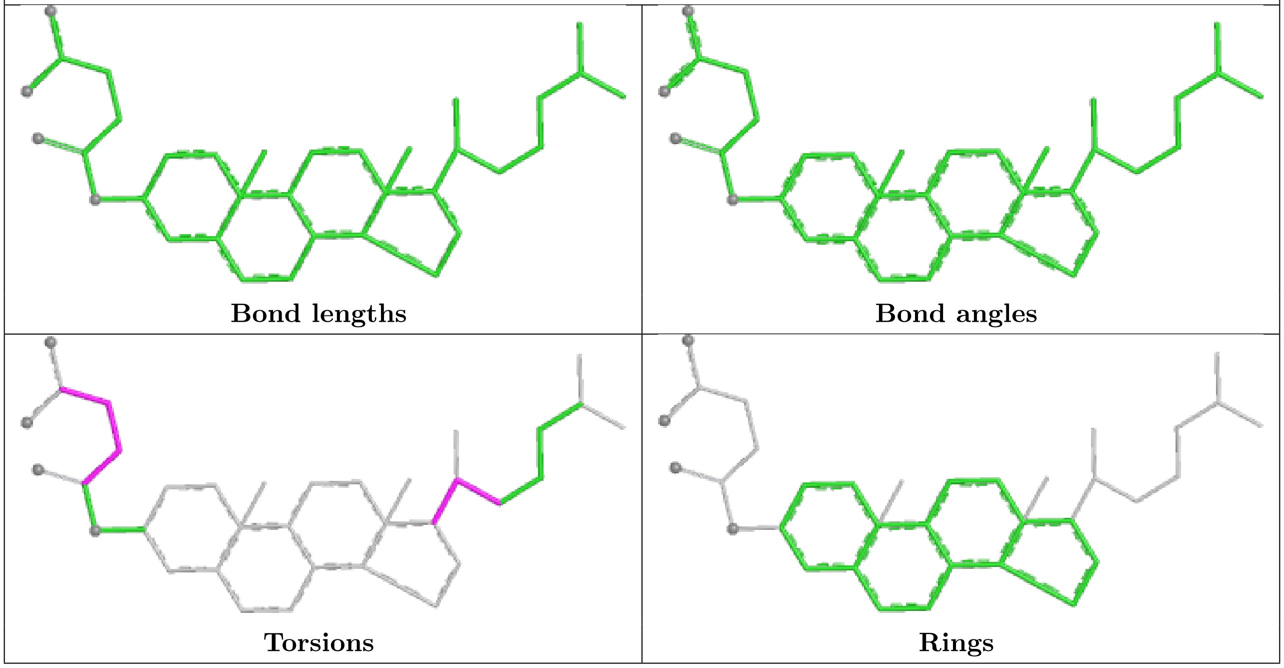
Bond lengths

Bond angles

Torsions

Rings

Ligand Y01 B 1402



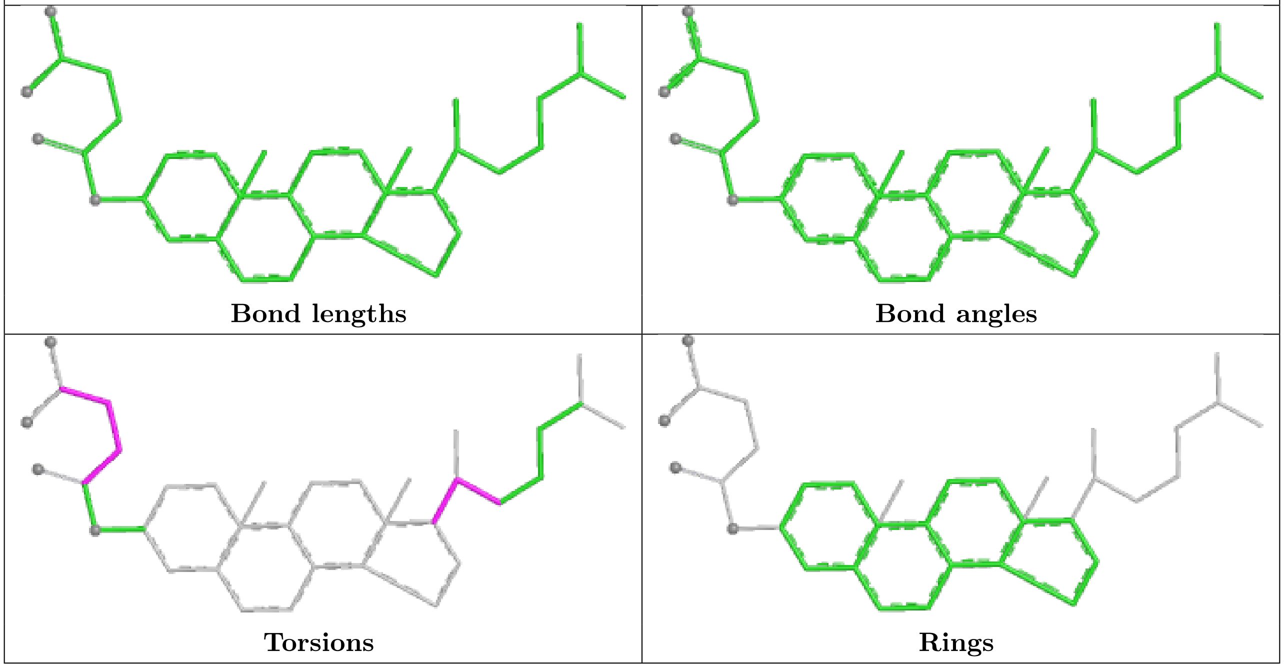
Bond lengths

Bond angles

Torsions

Rings

Ligand Y01 A 1402



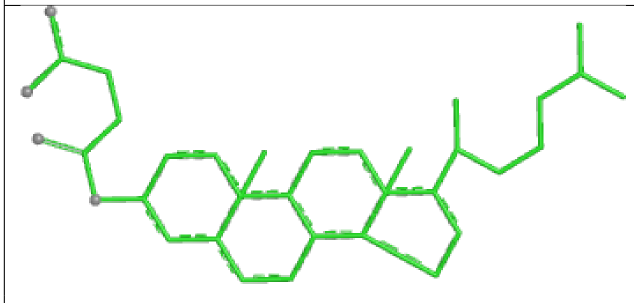
Bond lengths

Bond angles

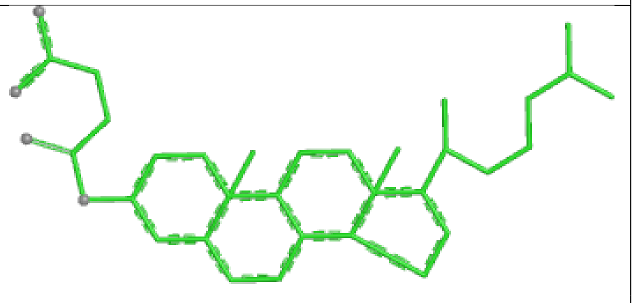
Torsions

Rings

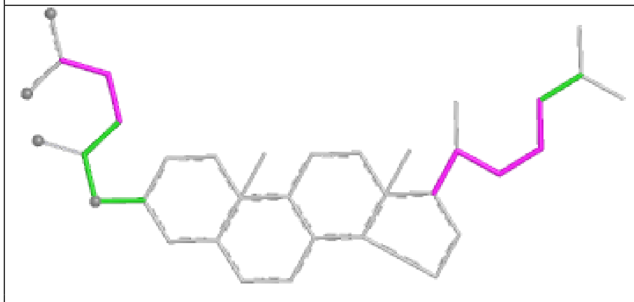
Ligand Y01 C 1405



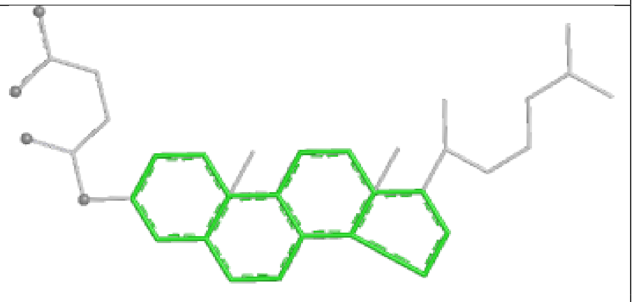
Bond lengths



Bond angles

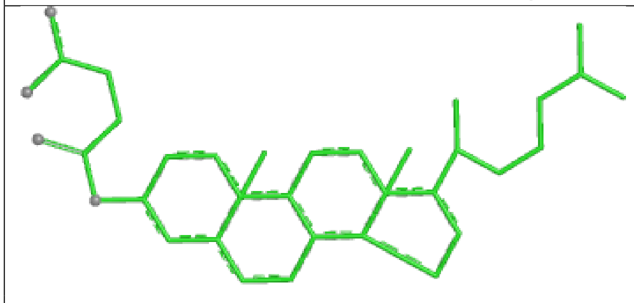


Torsions

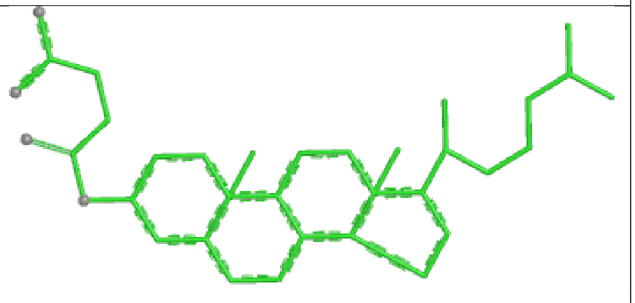


Rings

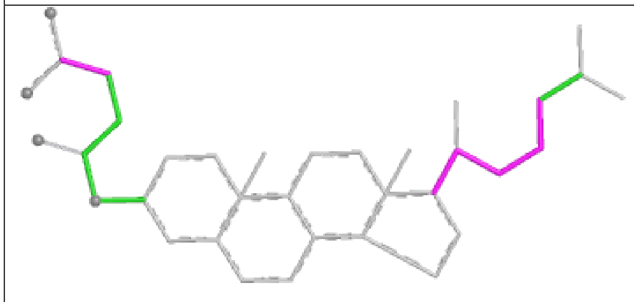
Ligand Y01 B 1404



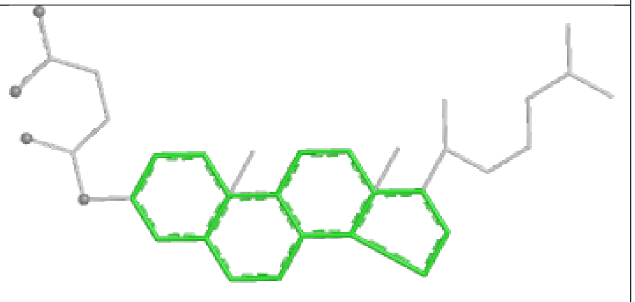
Bond lengths



Bond angles

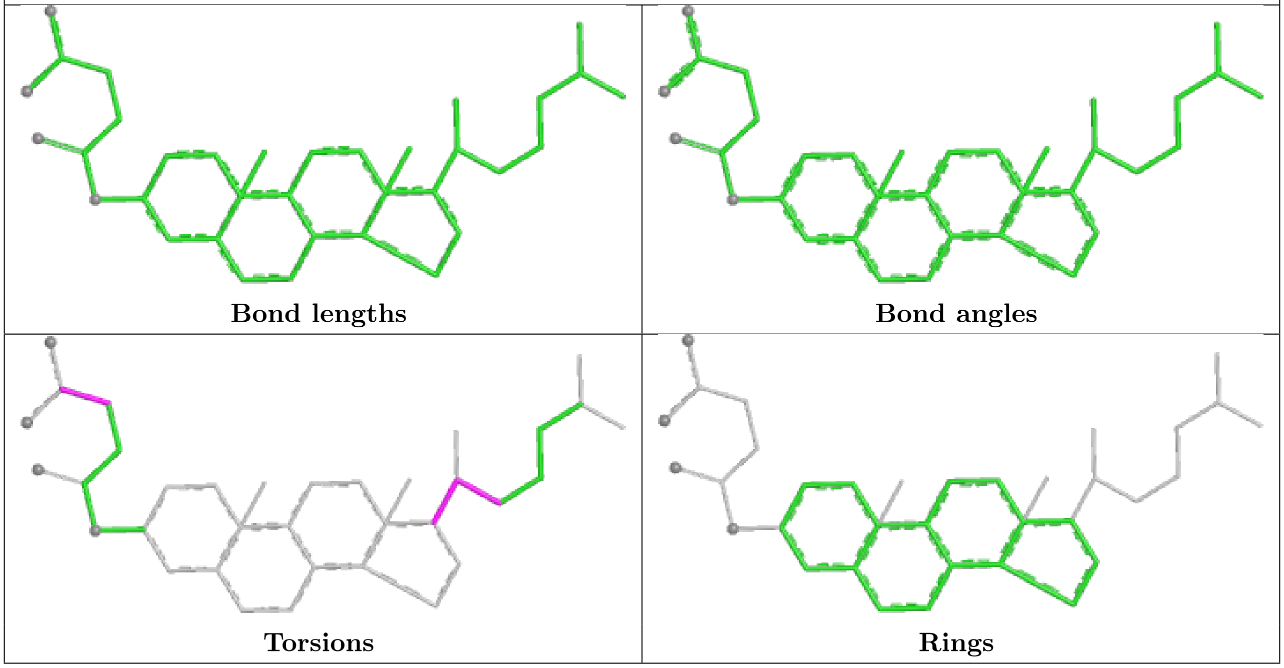


Torsions



Rings

Ligand Y01 A 1405



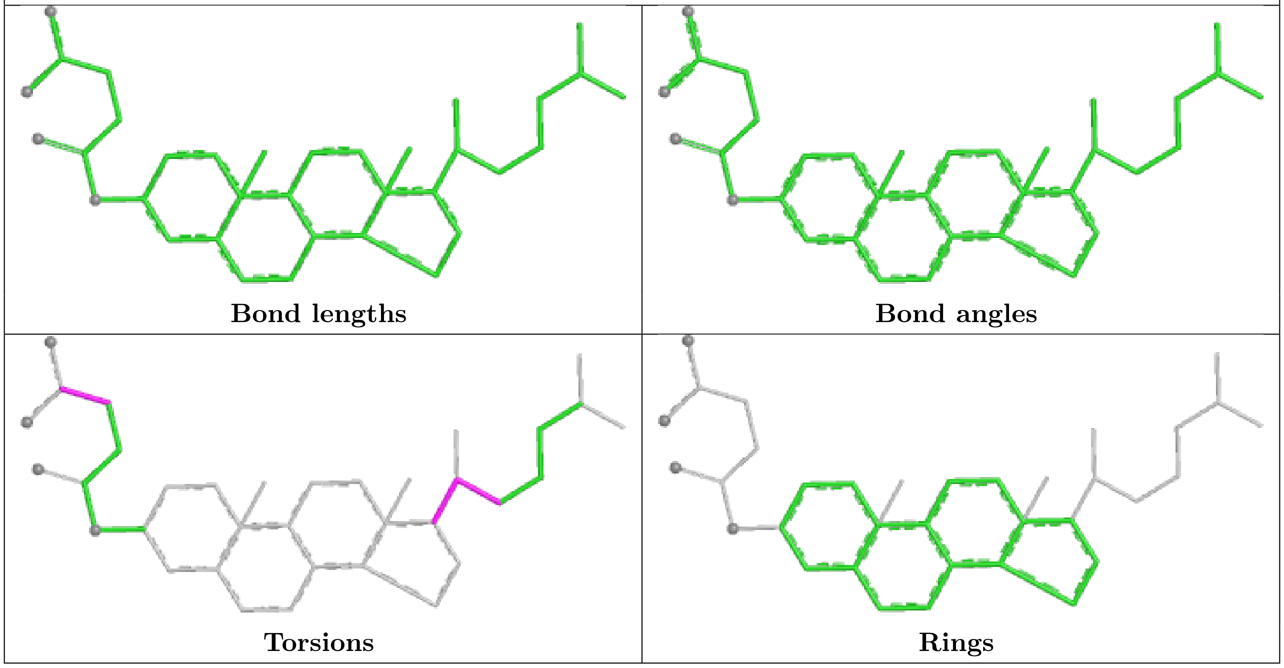
Bond lengths

Bond angles

Torsions

Rings

Ligand Y01 D 1406



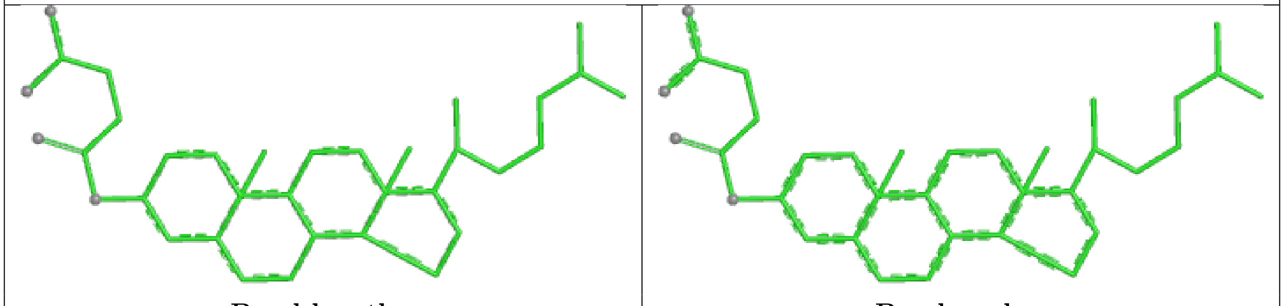
Bond lengths

Bond angles

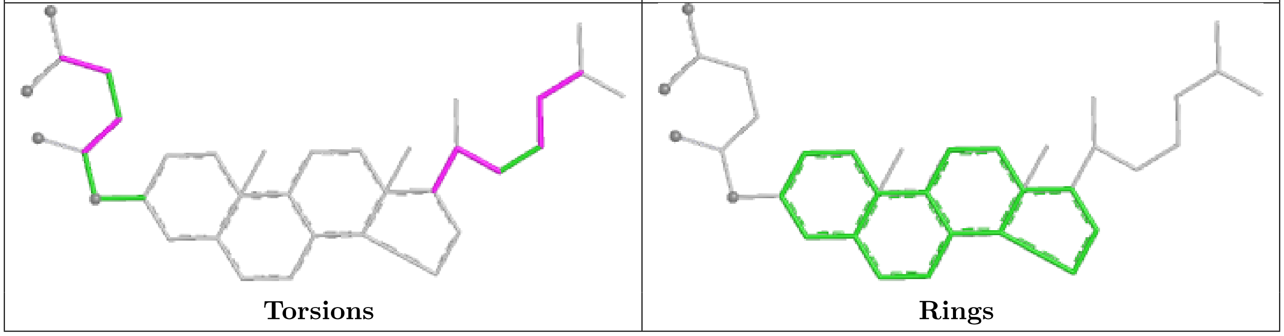
Torsions

Rings

Ligand Y01 A 1403

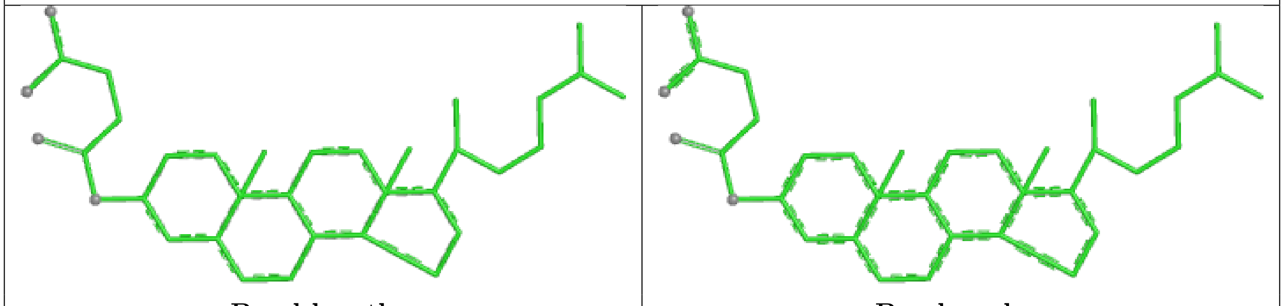


Bond lengths Bond angles

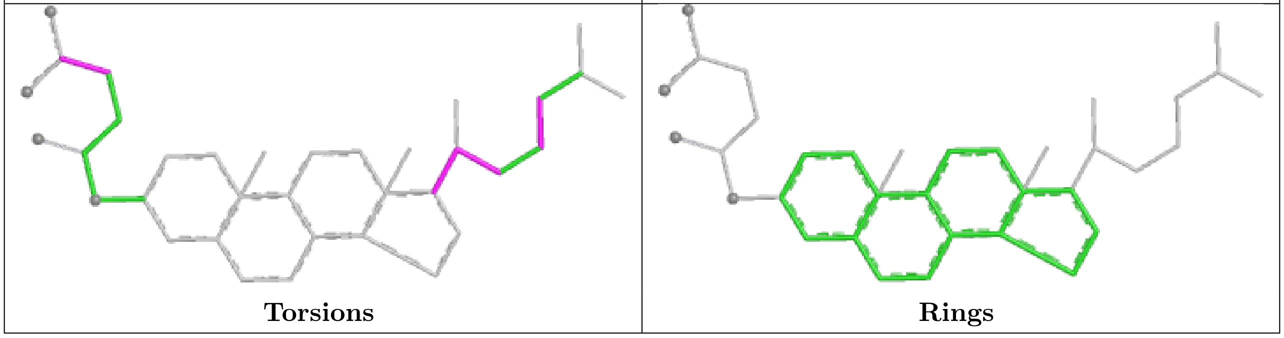


Torsions Rings

Ligand Y01 B 1401

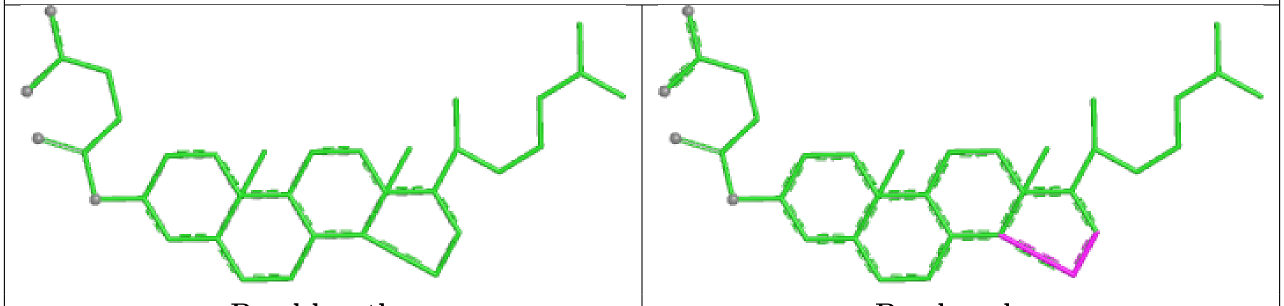


Bond lengths Bond angles



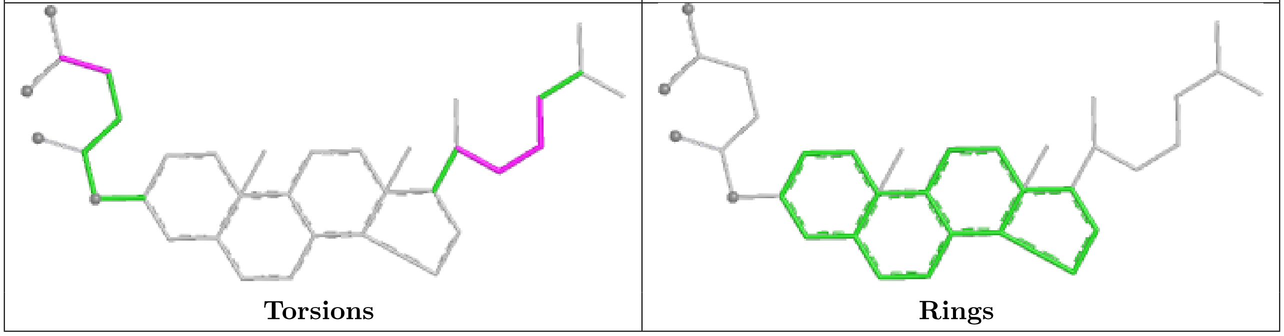
Torsions Rings

Ligand Y01 A 1404



Bond lengths

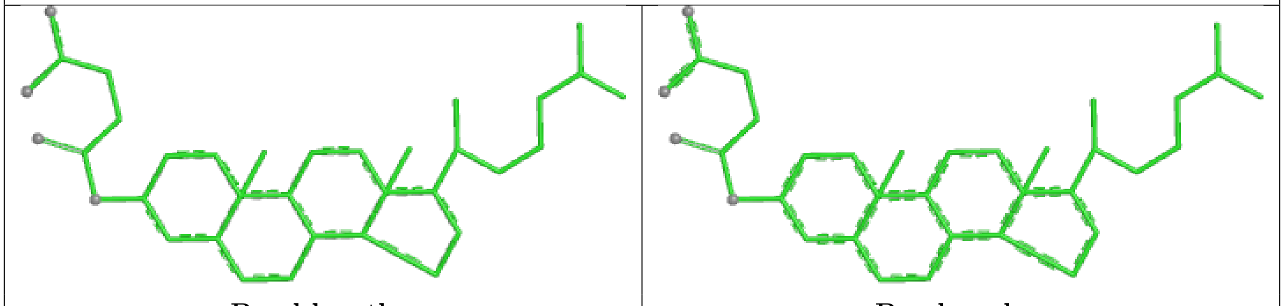
Bond angles



Torsions

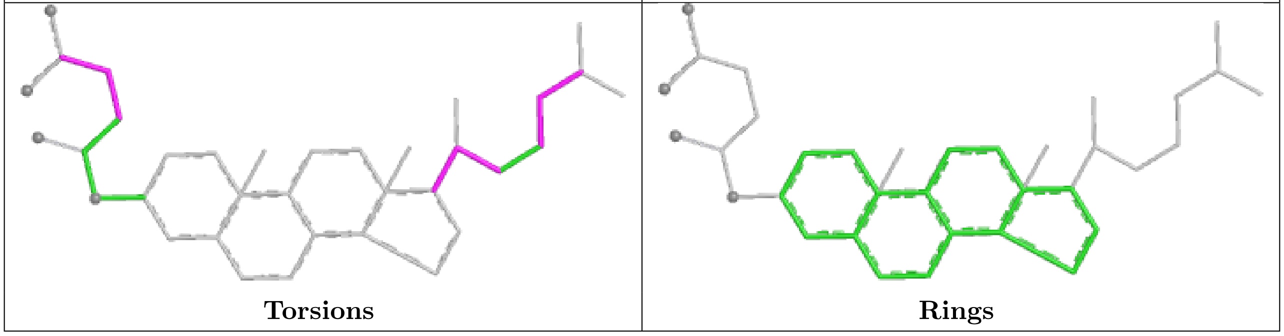
Rings

Ligand Y01 D 1402



Bond lengths

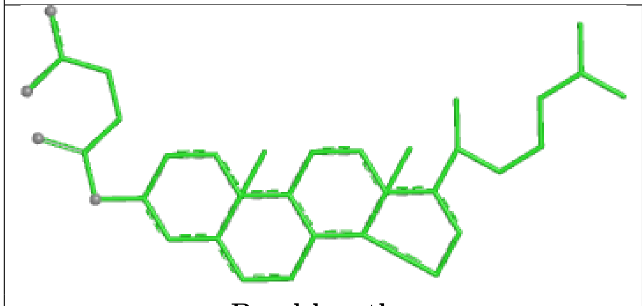
Bond angles



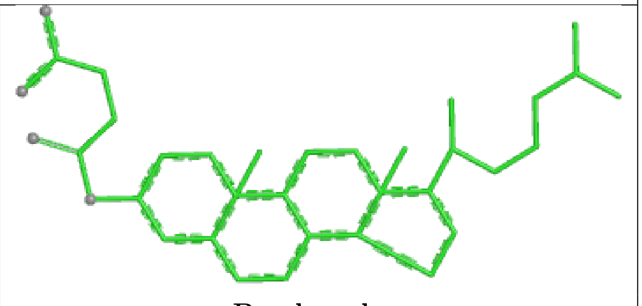
Torsions

Rings

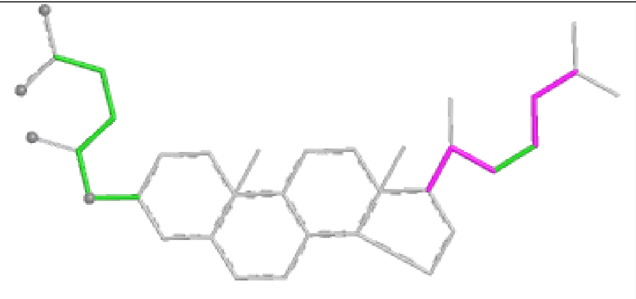
Ligand Y01 C 1404



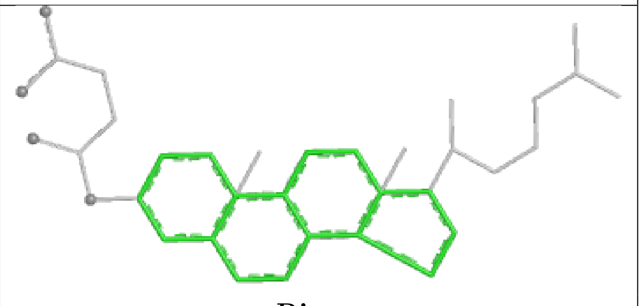
Bond lengths



Bond angles

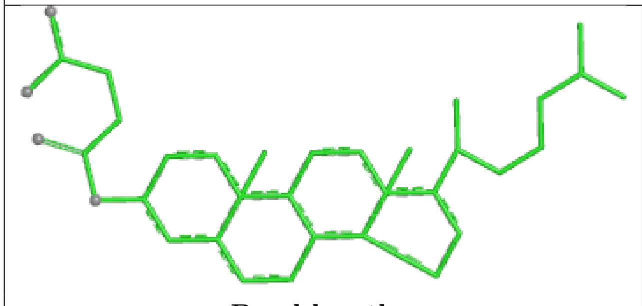


Torsions

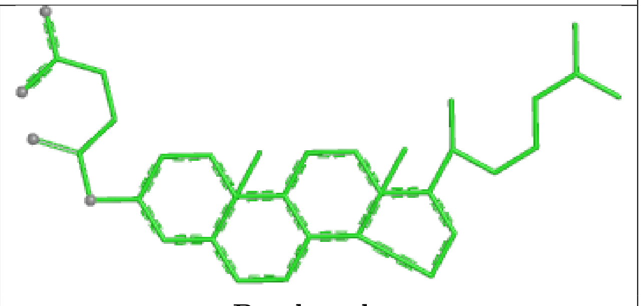


Rings

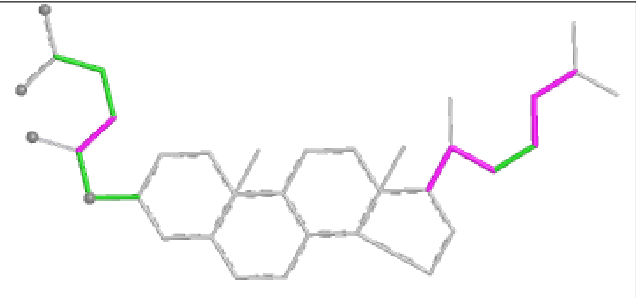
Ligand Y01 B 1403



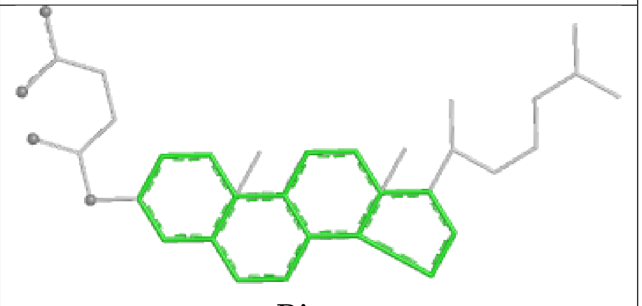
Bond lengths



Bond angles

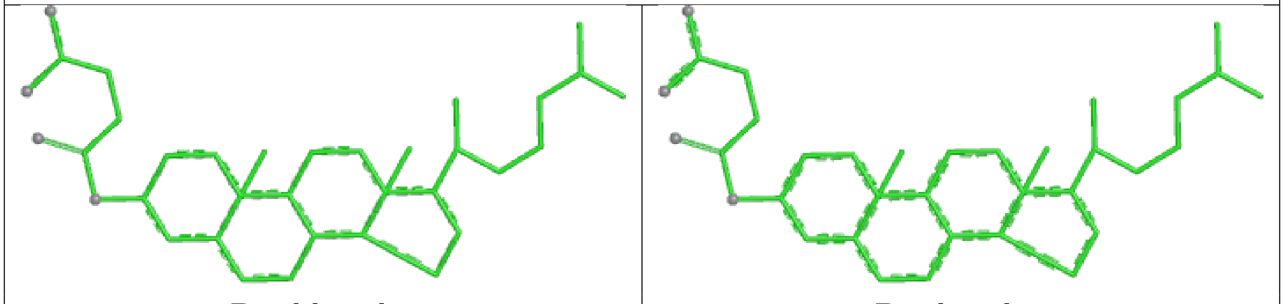


Torsions



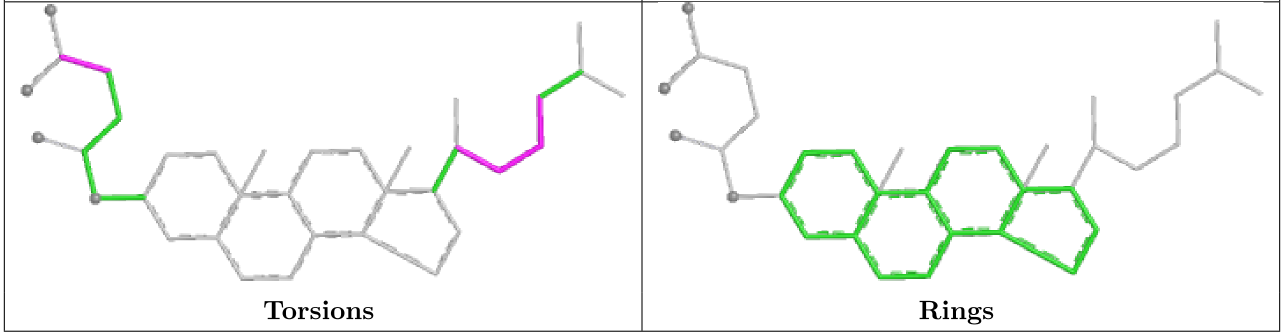
Rings

Ligand Y01 D 1405



Bond lengths

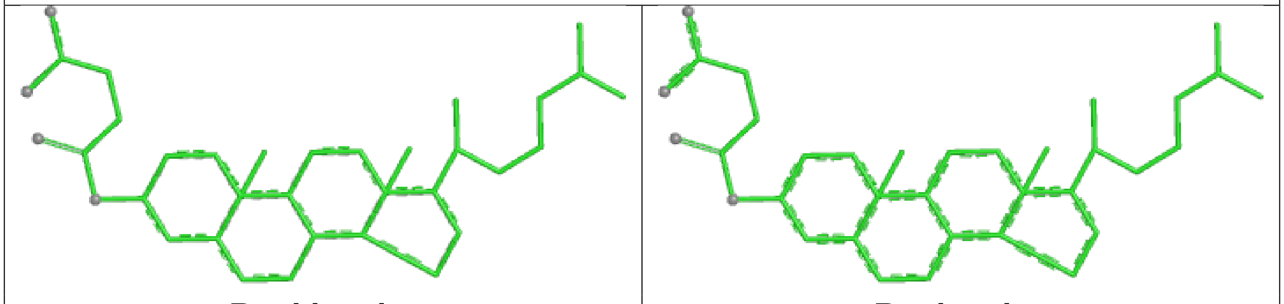
Bond angles



Torsions

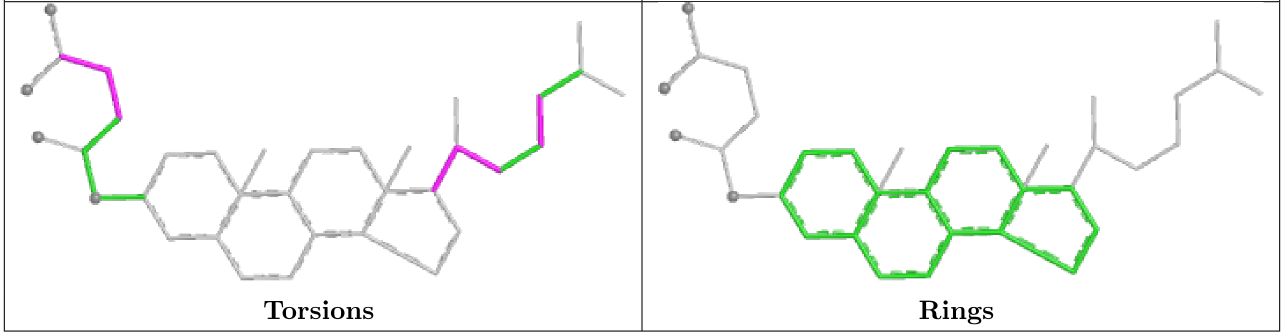
Rings

Ligand Y01 A 1401



Bond lengths

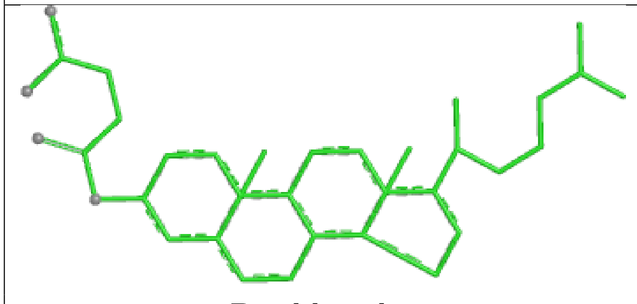
Bond angles



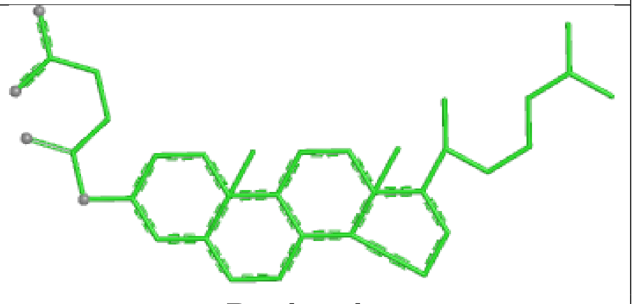
Torsions

Rings

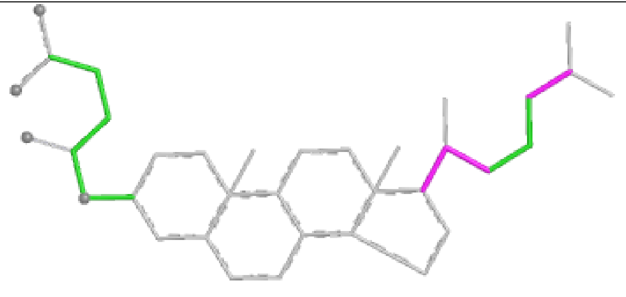
Ligand Y01 D 1404



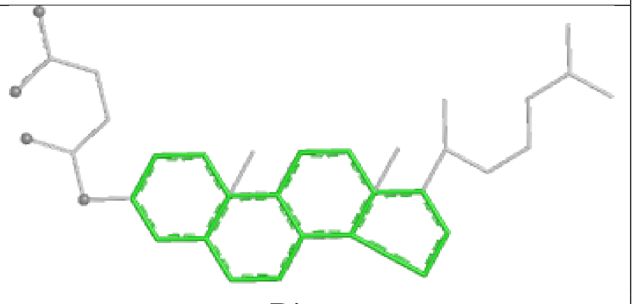
Bond lengths



Bond angles

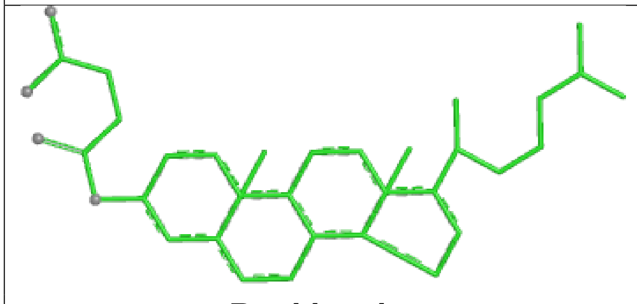


Torsions

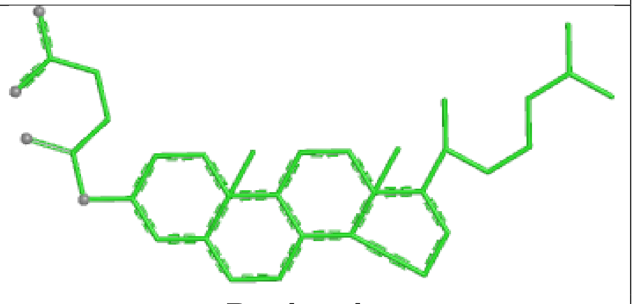


Rings

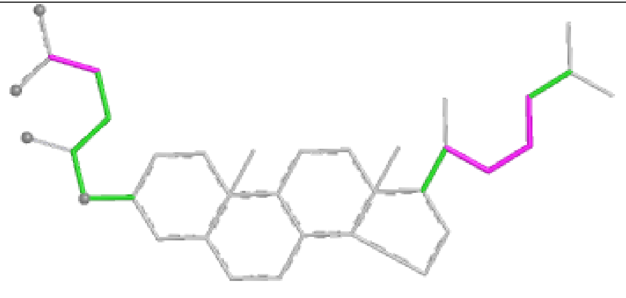
Ligand Y01 C 1401



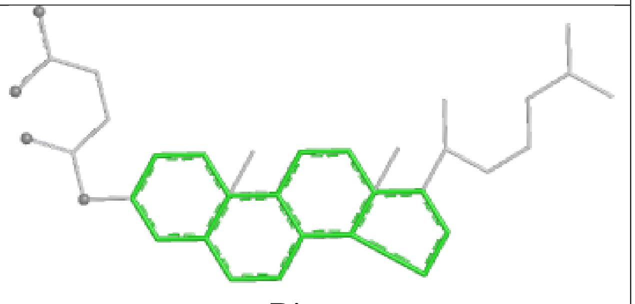
Bond lengths



Bond angles

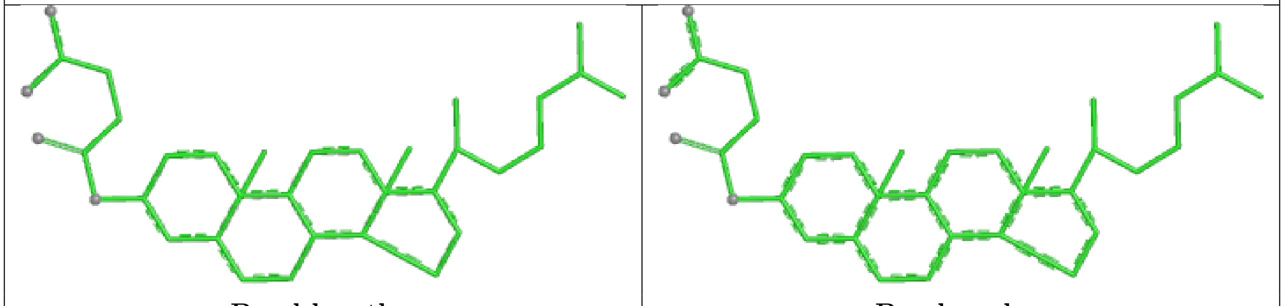


Torsions



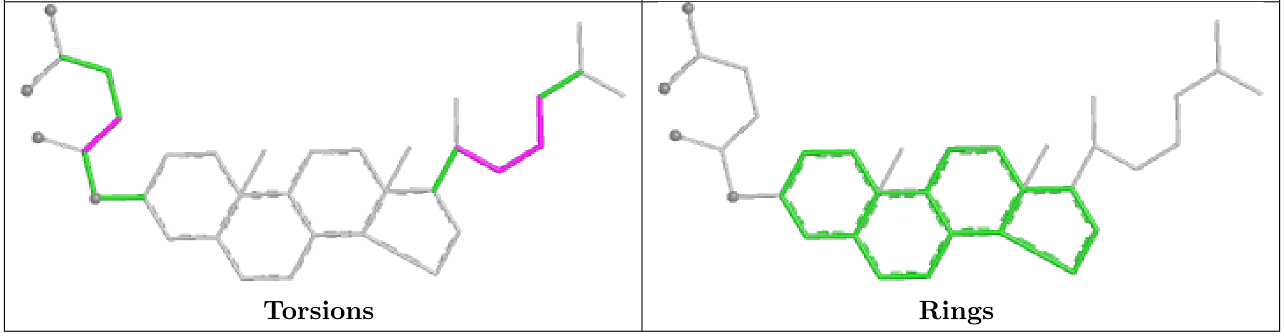
Rings

Ligand Y01 B 1406



Bond lengths

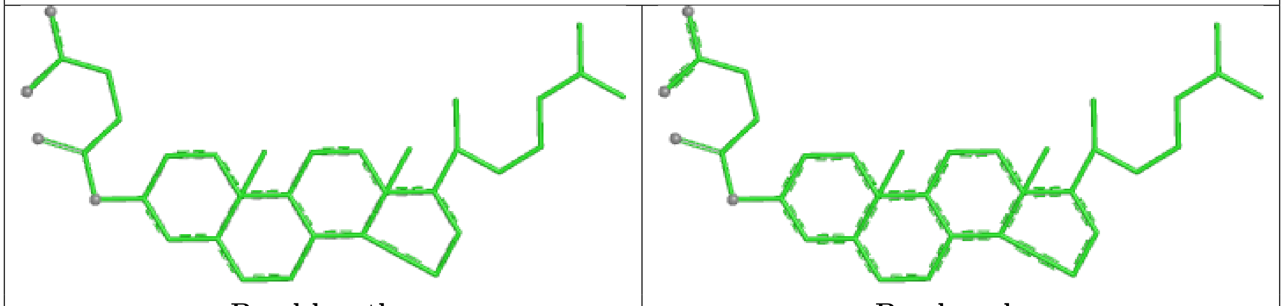
Bond angles



Torsions

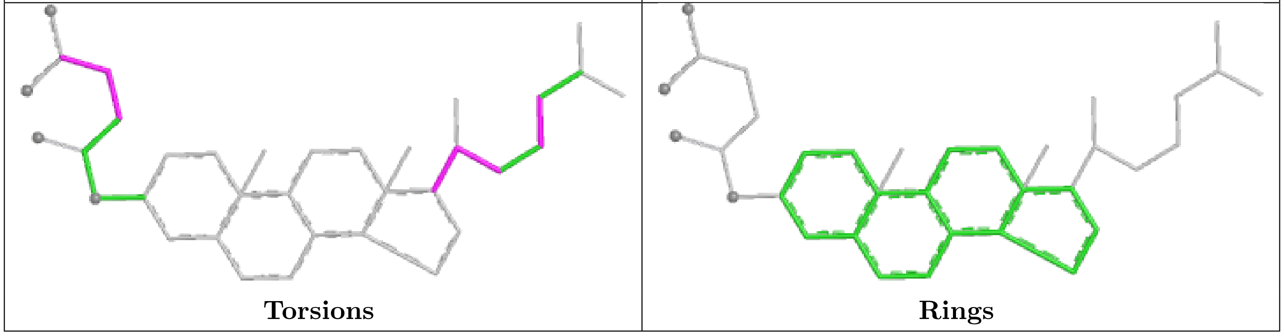
Rings

Ligand Y01 C 1402



Bond lengths

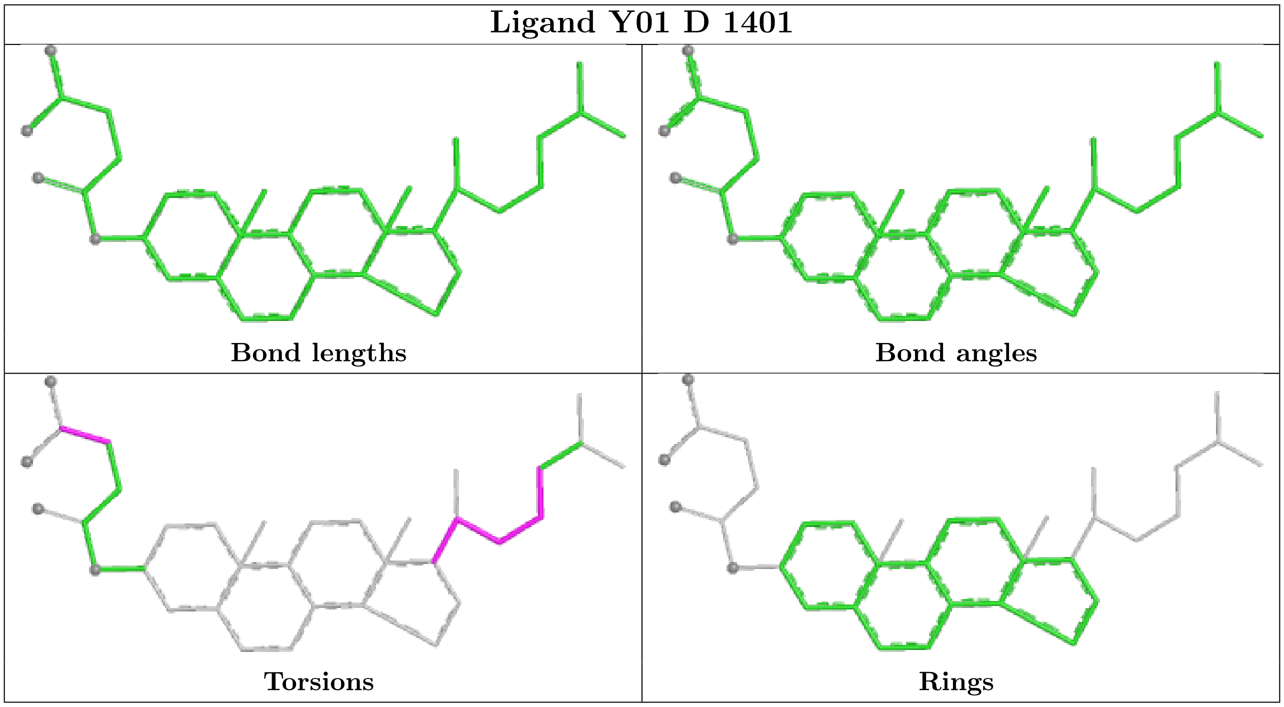
Bond angles



Torsions

Rings

Ligand Y01 D 1401



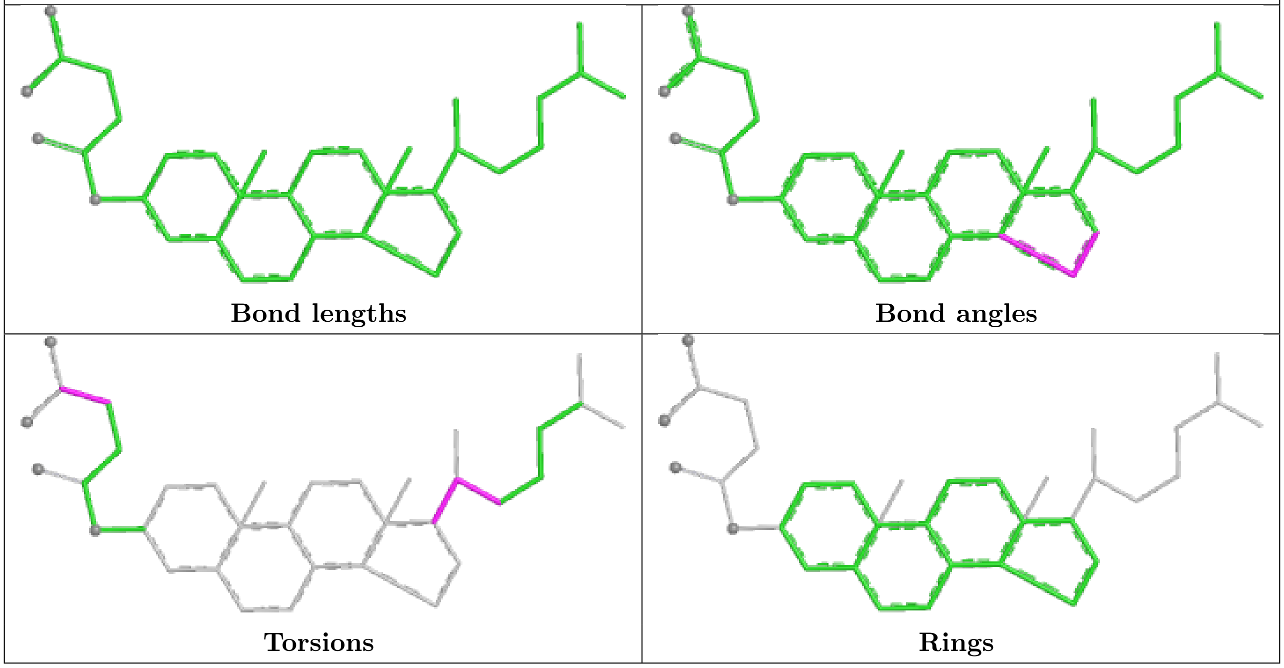
Bond lengths

Bond angles

Torsions

Rings

Ligand Y01 C 1406



Bond lengths

Bond angles

Torsions

Rings

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

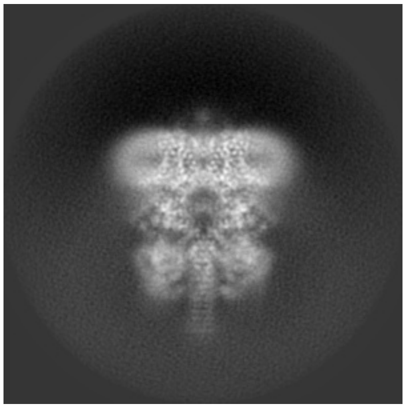
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-70212. These allow visual inspection of the internal detail of the map and identification of artifacts.

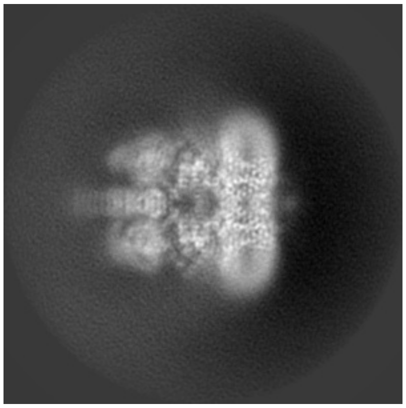
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

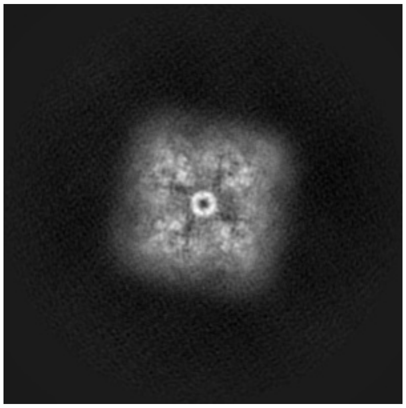
6.1.1 Primary map



X

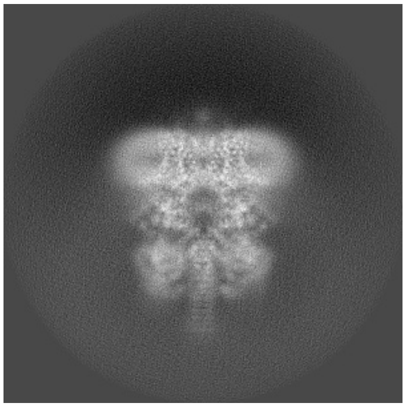


Y

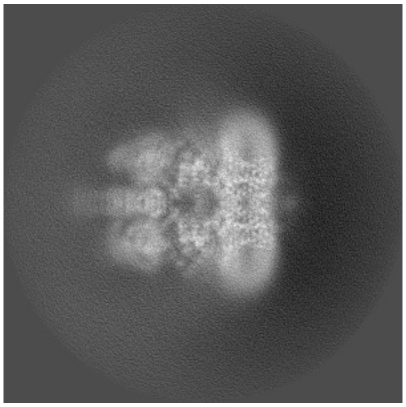


Z

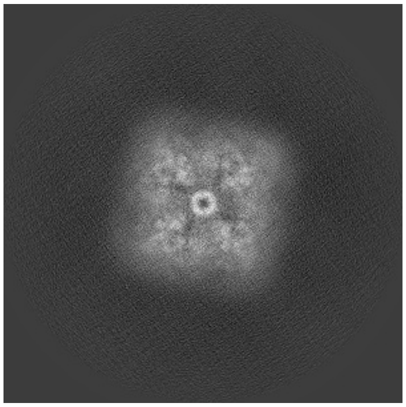
6.1.2 Raw map



X



Y

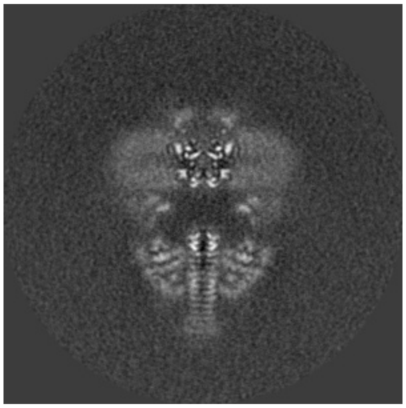


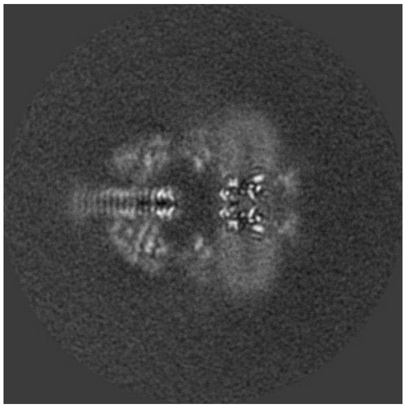
Z

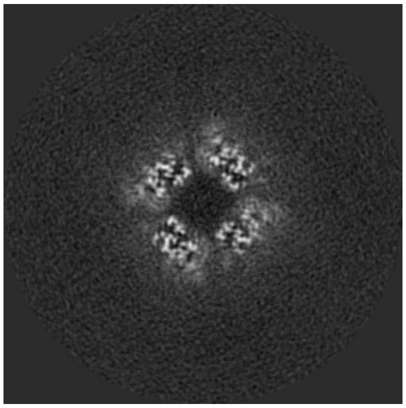
The images above show the map projected in three orthogonal directions.

6.2 Central slices

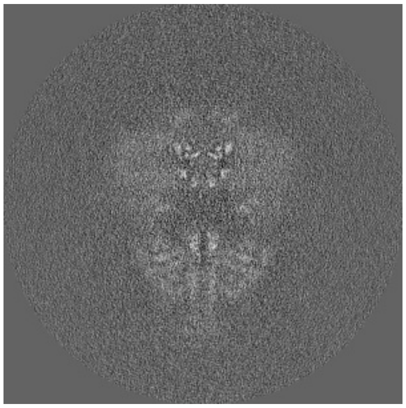
6.2.1 Primary map

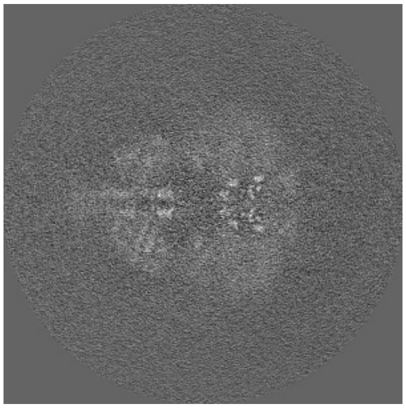

X Index: 192

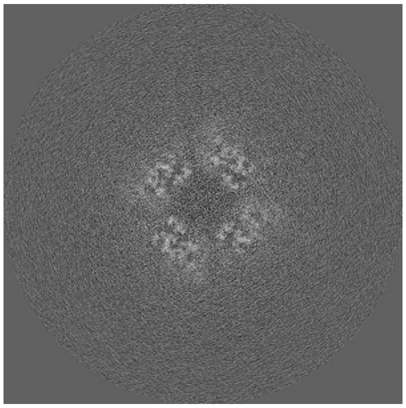

Y Index: 192


Z Index: 192

6.2.2 Raw map


X Index: 192


Y Index: 192

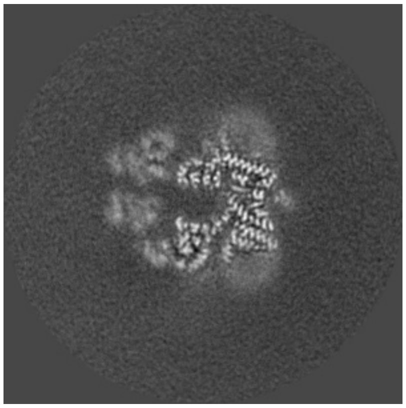

Z Index: 192

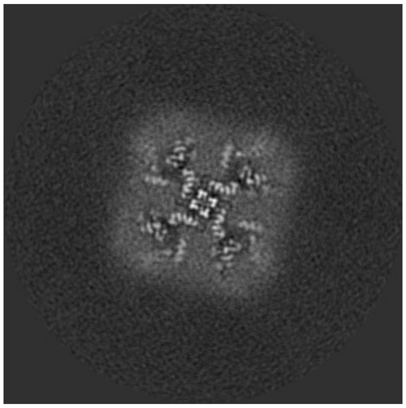
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices ⓘ

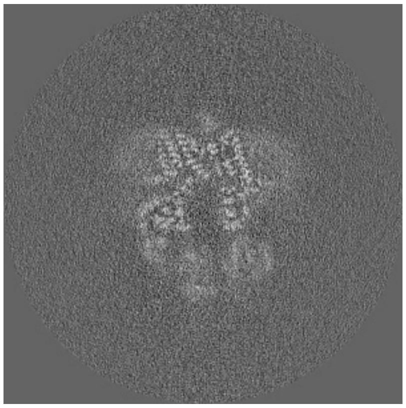
6.3.1 Primary map

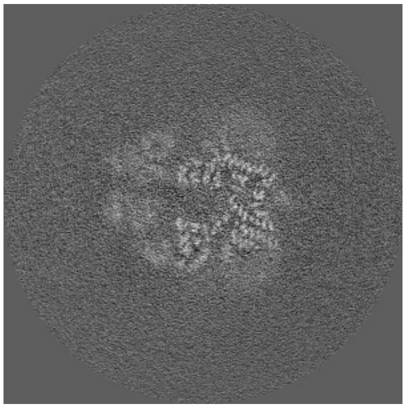

X Index: 170

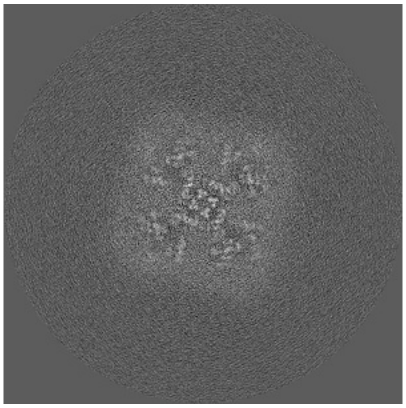

Y Index: 214


Z Index: 215

6.3.2 Raw map


X Index: 170

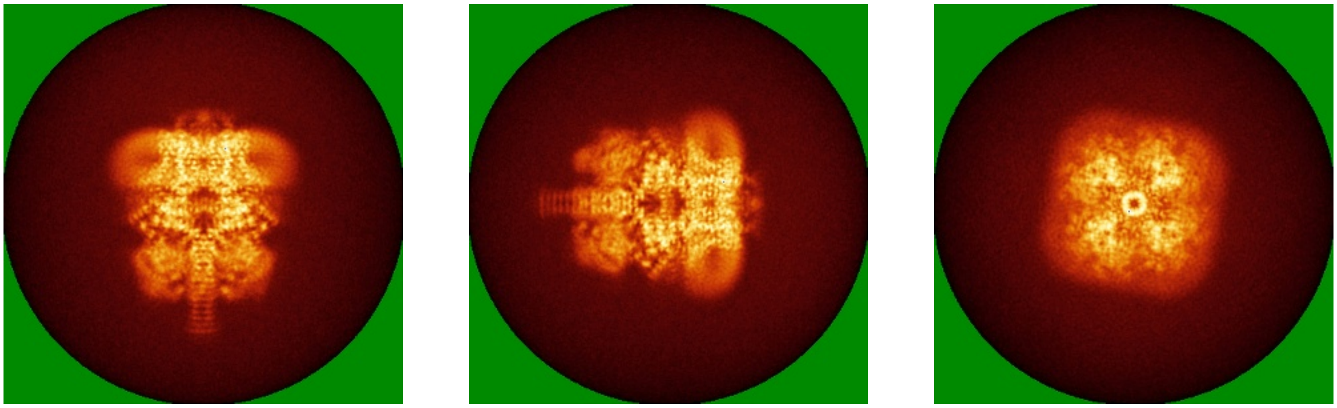

Y Index: 214


Z Index: 216

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

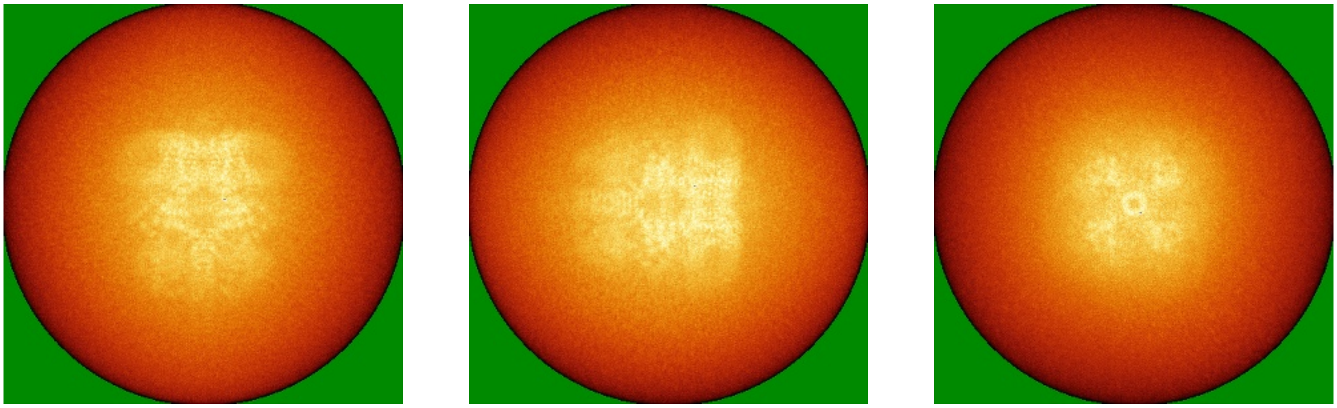
6.4 Orthogonal standard-deviation projections (False-color) ⓘ

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

6.5.1 Primary map

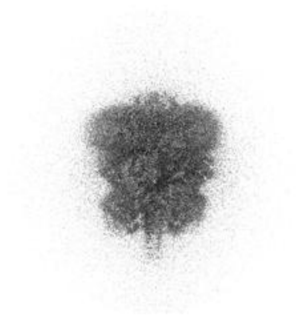
X

Y

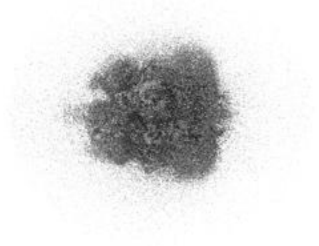
Z

The images above show the 3D surface view of the map at the recommended contour level 0.0046. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

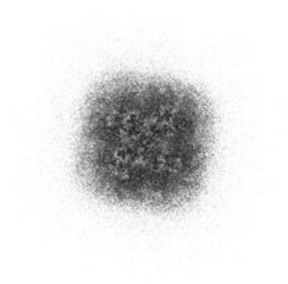
6.5.2 Raw map



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.

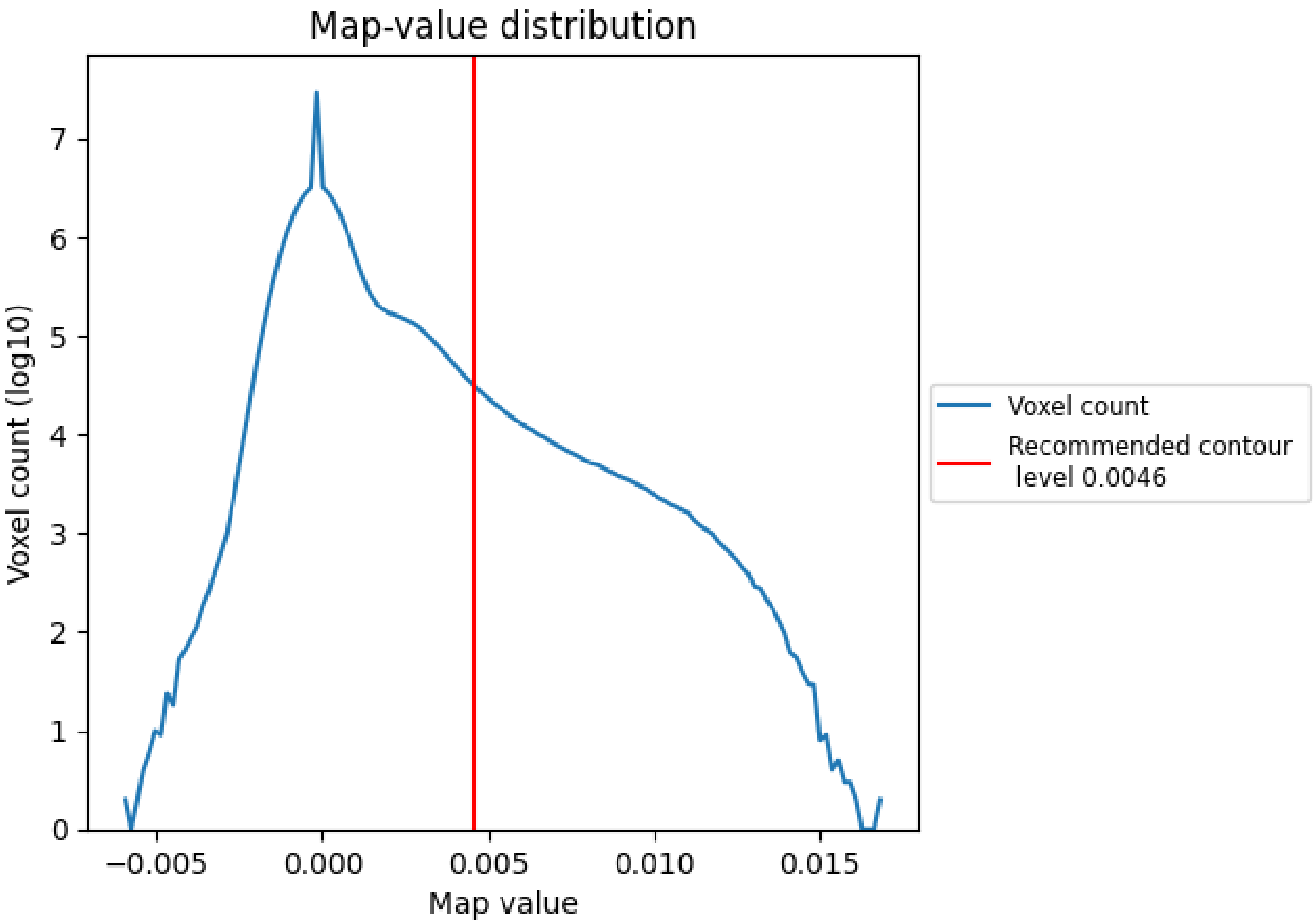
6.6 Mask visualisation

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

7 Map analysis ⓘ

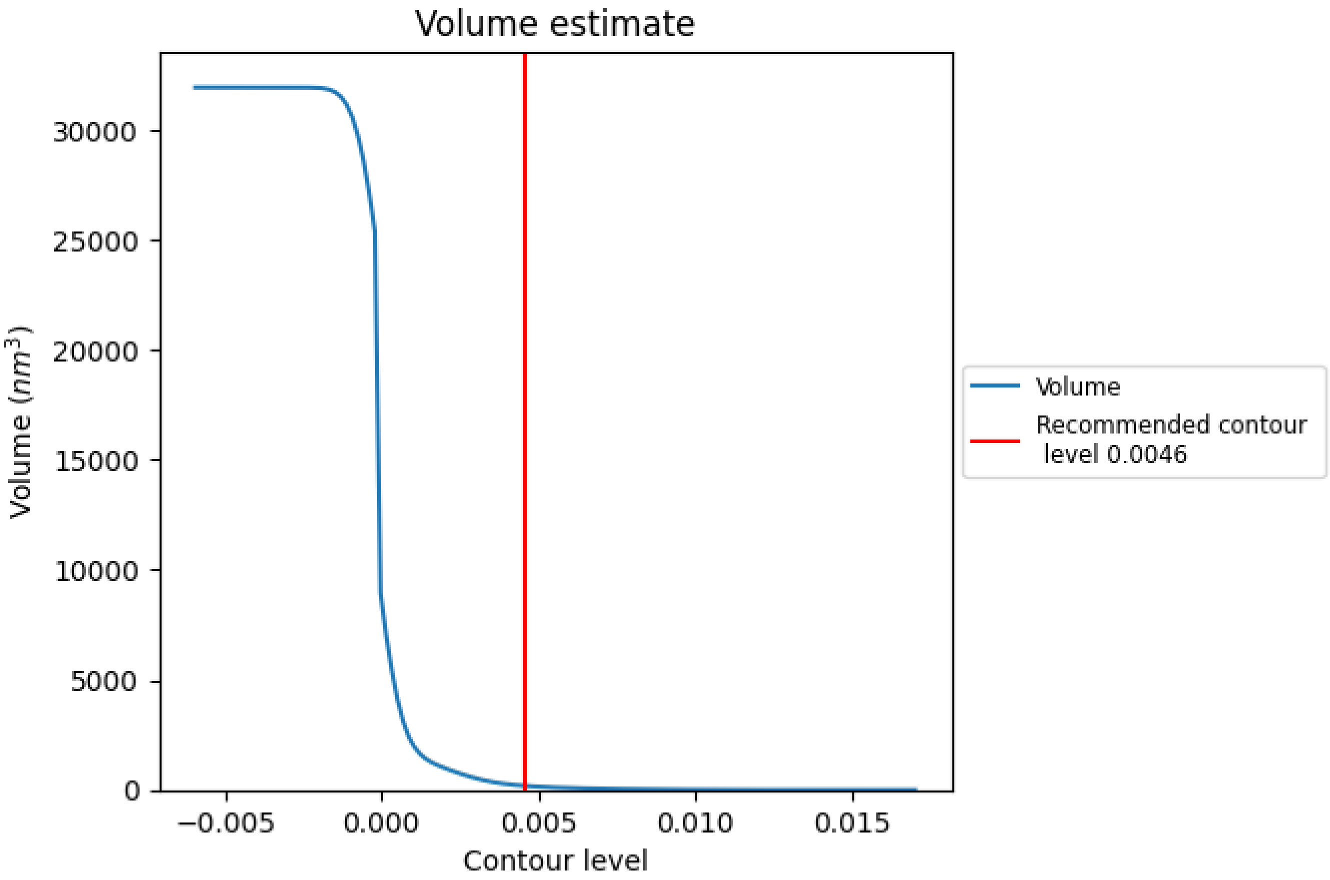
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution ⓘ



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

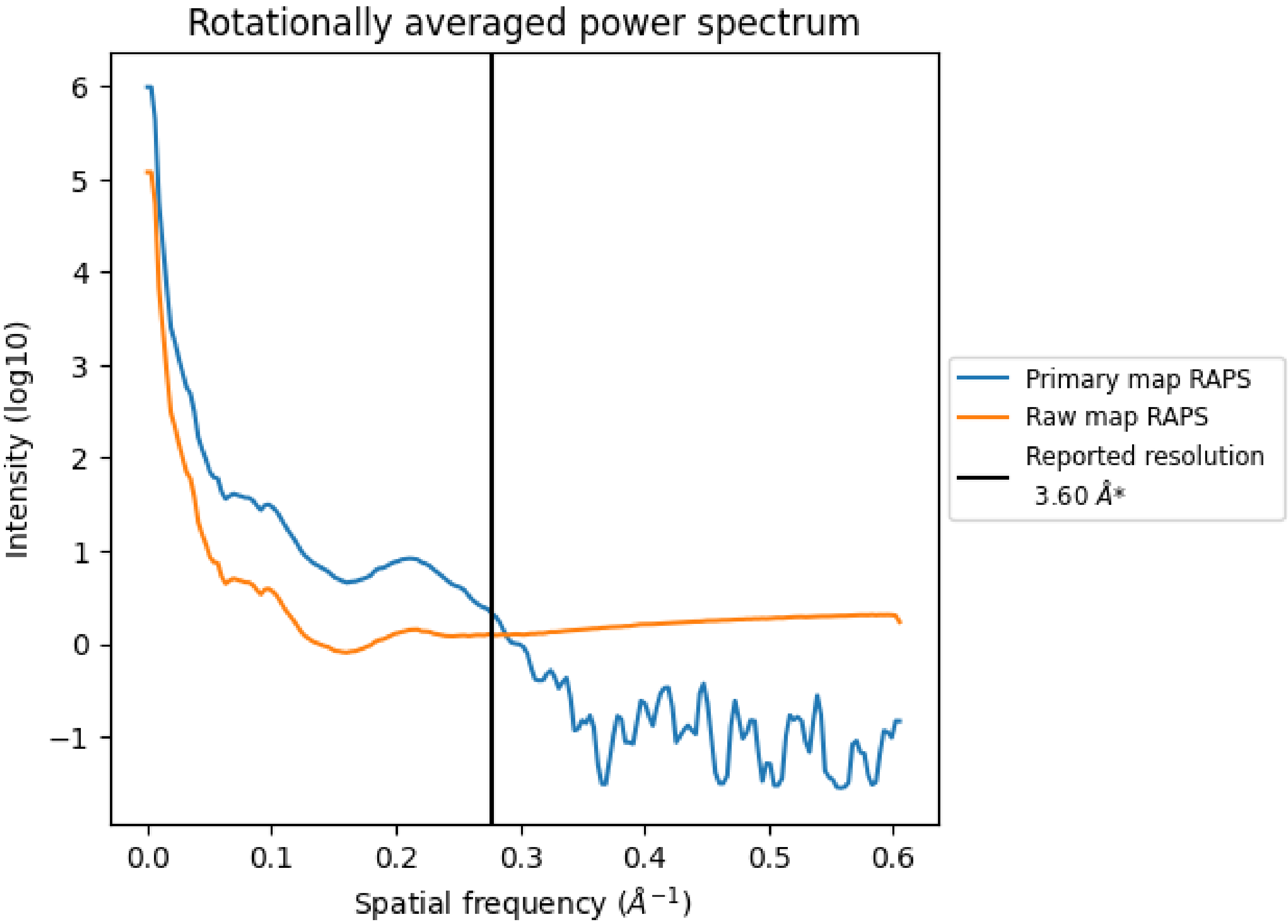
7.2 Volume estimate ⓘ



The volume at the recommended contour level is 186 nm^3; this corresponds to an approximate mass of 168 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 ⓘ

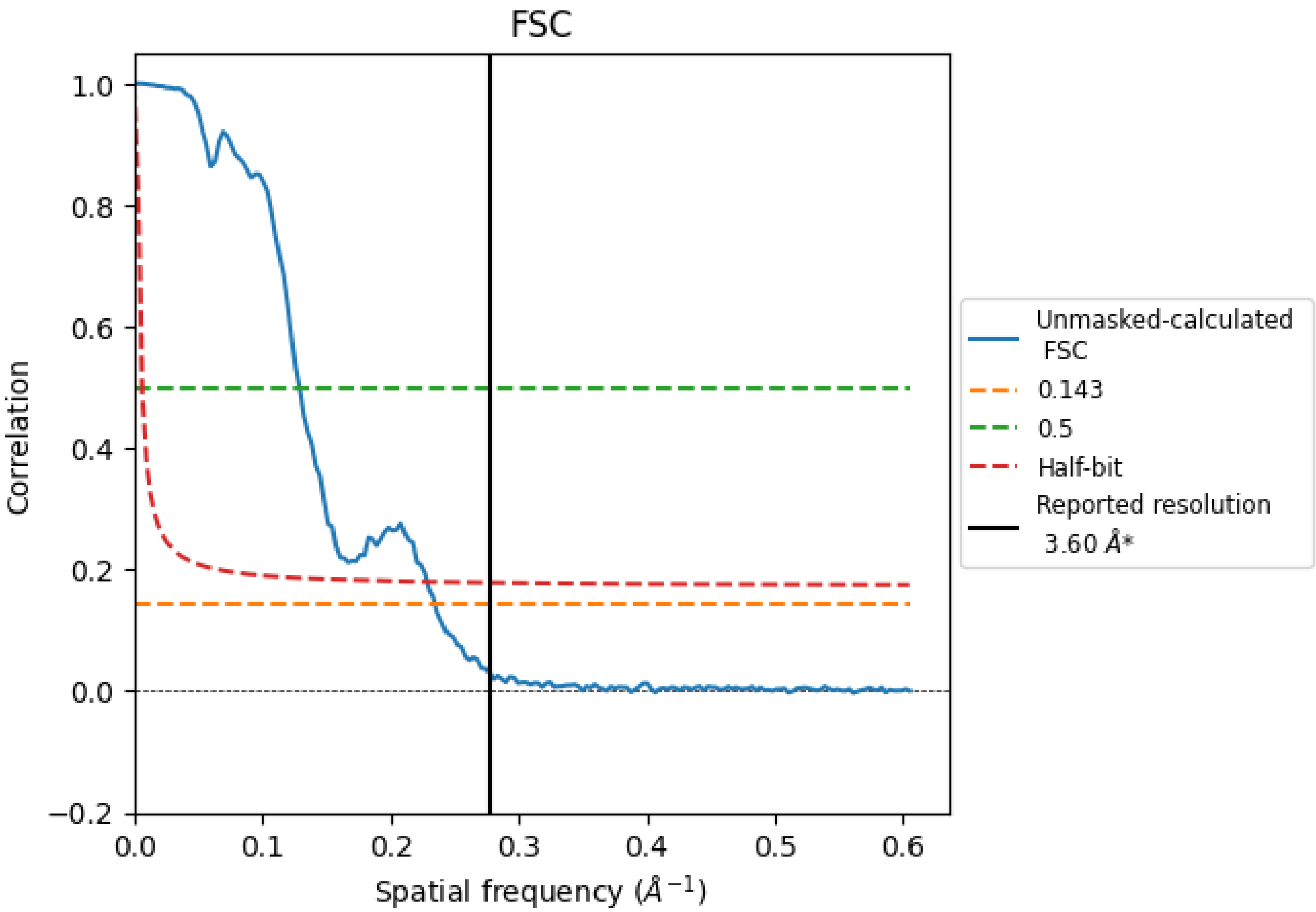


*Reported resolution corresponds to spatial frequency of 0.278 Å^{-1}

8 Fourier-Shell correlation ⓘ

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

8.1 FSC ⓘ



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

8.2 Resolution estimates ⓘ

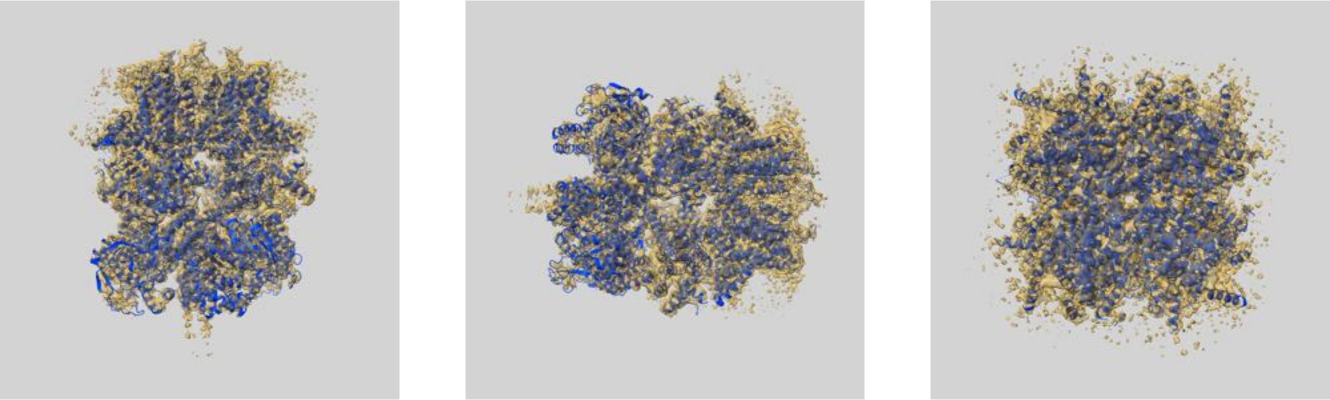
Resolution estimate (Å)	**Estimation criterion (FSC cut-off)**		
	0.143	0.5	Half-bit
Reported by author	3.60	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.26	7.76	4.37

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.26 differs from the reported value 3.6 by more than 10 %

9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-70212 and PDB model 9O7Z. Per-residue inclusion information can be found in section 3 on page 5.

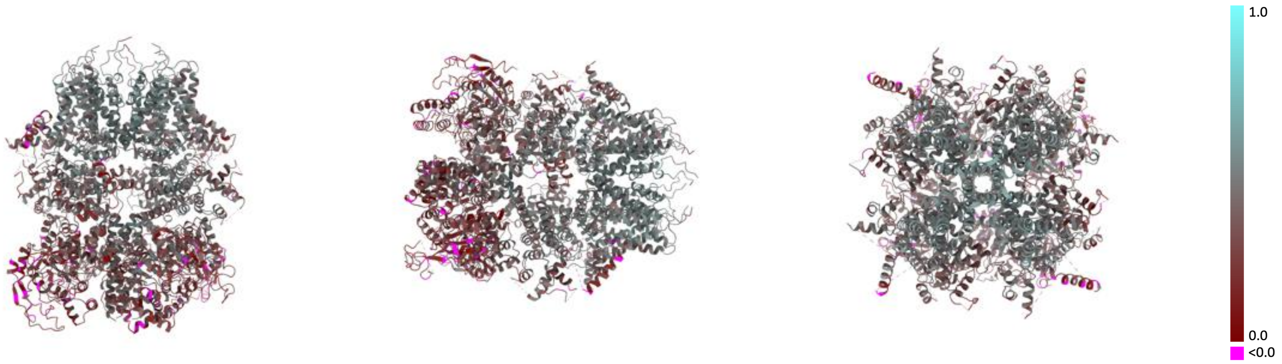
9.1 Map-model overlay



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.0046 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

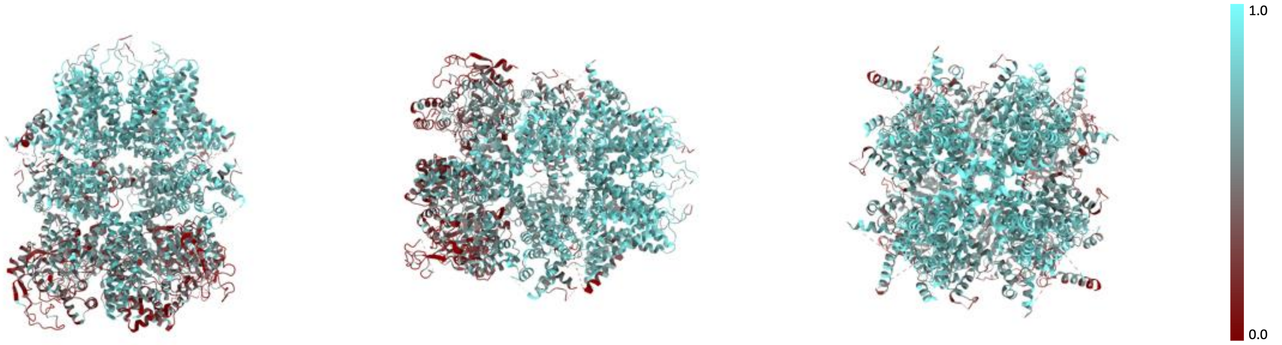
9.2 Q-score mapped to coordinate model ⓘ



X Y Z

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

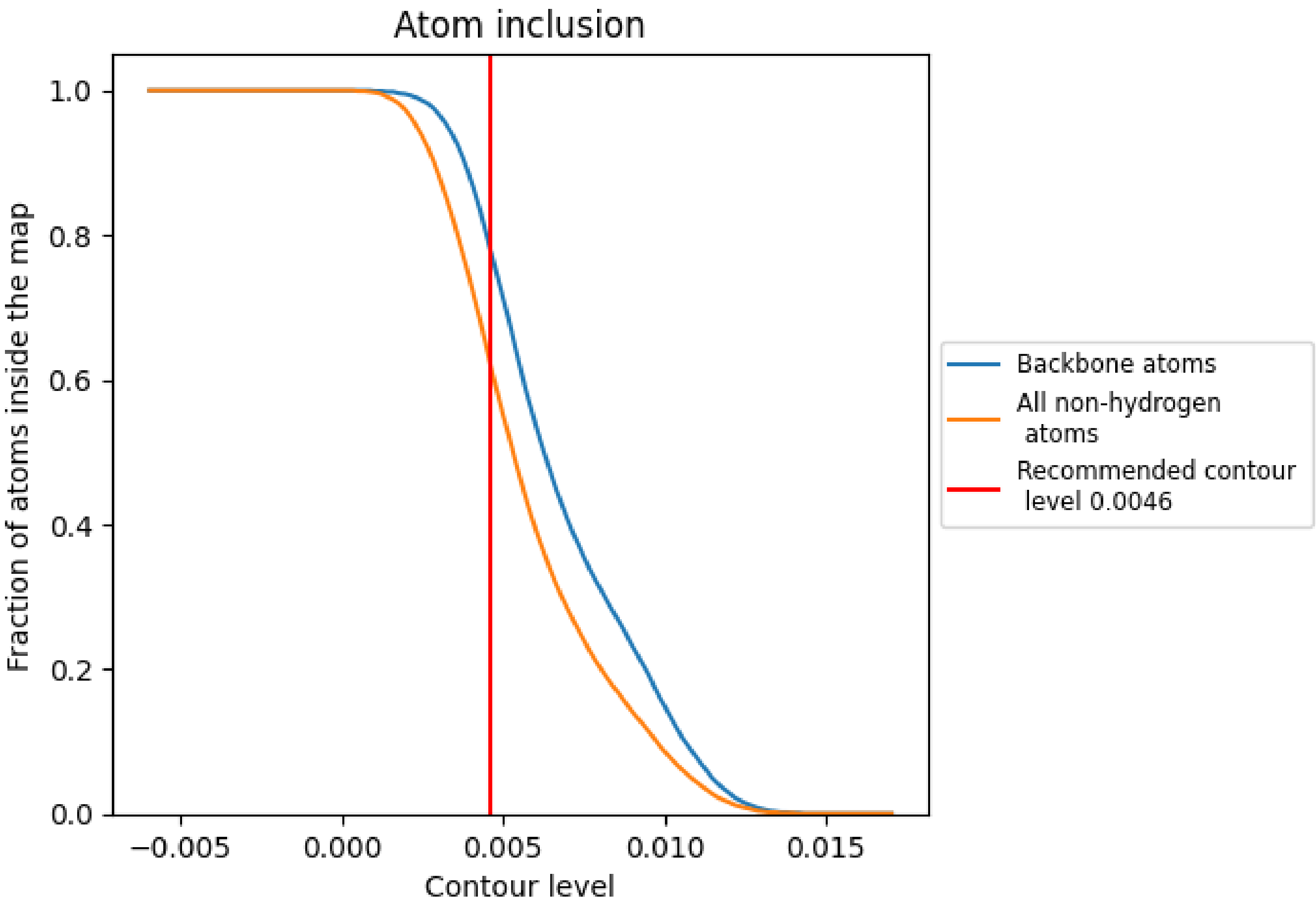
9.3 Atom inclusion mapped to coordinate model ⓘ



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0046).

9.4 Atom inclusion ⓘ



At the recommended contour level, 78% of all backbone atoms, 62% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0046) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	■ 0.6210	■ 0.3830
A	■ 0.6300	■ 0.3830
B	■ 0.6200	■ 0.3760
C	■ 0.6000	■ 0.3860
D	■ 0.6340	■ 0.3880