Full wwPDB EM Validation Report ⓘ

Nov 14, 2023 – 09:14 pm GMT

PDB ID	:	8PRW
EMDB ID	:	EMD-17840
Title	:	Cryo-EM structure of the yeast fatty acid synthase at 1.9 angstrom resolution
Authors	:	Singh, K.; Bunzel, G.; Graf, B.; Yip, K.M.; Stark, H.; Chari, A.
Deposited on	:	2023-07-12
Resolution	:	1.90 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:

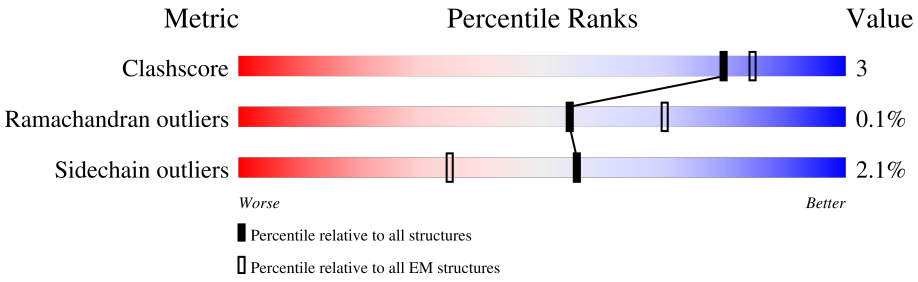
EMDB validation analysis	:	0.0.1.dev70
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 1.90 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	1887	77% 6% 16%
1	B	1887	77% 6% 16%
1	C	1887	78% 6% 16%
1	D	1887	78% 6% 16%
1	E	1887	78% 6% 16%
1	F	1887	77% 7% 16%
2	G	2051	90% 8%
2	H	2051	90% 8%

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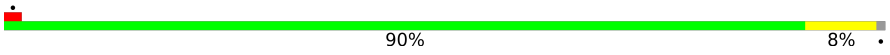
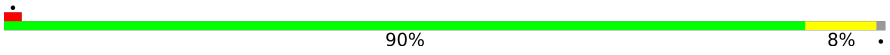
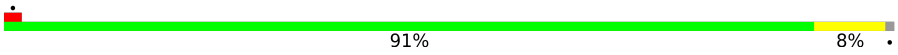
Mol	Chain	Length	Quality of chain
2	I	2051	
2	J	2051	
2	K	2051	
2	L	2051	

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 179064 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.

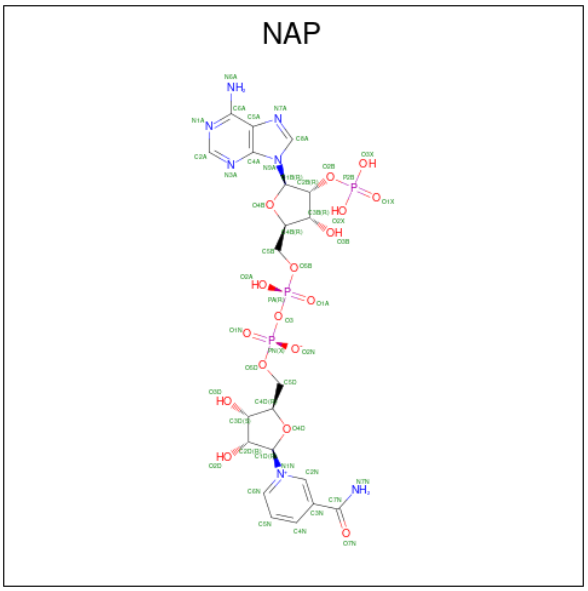
- Molecule 1 is a protein called Fatty acid synthase subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1584	Total	C	N	O	S	0	0
			12379	7837	2089	2405	48		
1	B	1584	Total	C	N	O	S	0	0
			12379	7837	2089	2405	48		
1	C	1584	Total	C	N	O	S	0	0
			12379	7837	2089	2405	48		
1	D	1584	Total	C	N	O	S	0	0
			12379	7837	2089	2405	48		
1	E	1584	Total	C	N	O	S	0	0
			12379	7837	2089	2405	48		
1	F	1584	Total	C	N	O	S	0	0
			12379	7837	2089	2405	48		

- Molecule 2 is a protein called Fatty acid synthase subunit beta.

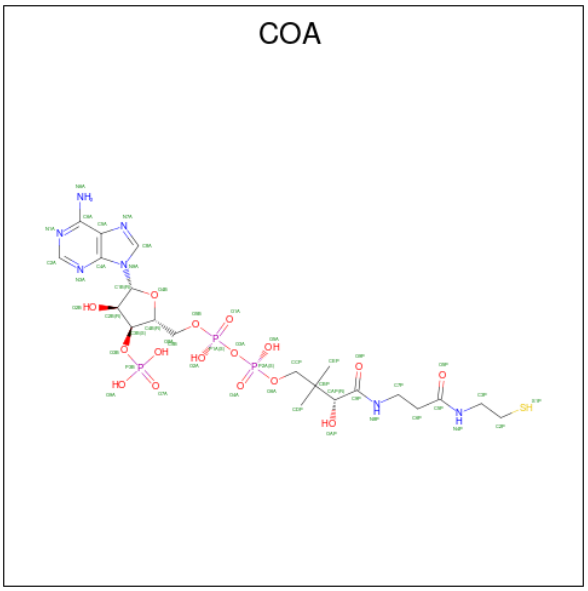
Mol	Chain	Residues	Atoms					AltConf	Trace
2	G	2034	Total	C	N	O	S	0	0
			16010	10261	2661	3032	56		
2	J	2034	Total	C	N	O	S	0	0
			16010	10261	2661	3032	56		
2	I	2034	Total	C	N	O	S	0	0
			16010	10261	2661	3032	56		
2	H	2034	Total	C	N	O	S	0	0
			16010	10261	2661	3032	56		
2	K	2034	Total	C	N	O	S	0	0
			16010	10261	2661	3032	56		
2	L	2034	Total	C	N	O	S	0	0
			16010	10261	2661	3032	56		

- Molecule 3 is NADP NICOTINAMIDE-ADENINE-DINUCLEOTIDE PHOSPHATE (three-letter code: NAP) (formula: $C_{21}H_{28}N_7O_{17}P_3$) (labeled as "Ligand of Interest" by depositor).



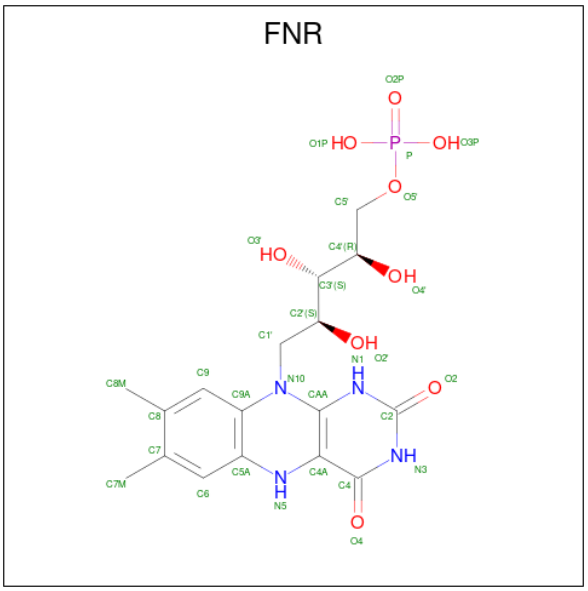
Mol	Chain	Residues	Atoms					AltConf
3	A	1	Total	C	N	O	P	0
			48	21	7	17	3	
3	G	1	Total	C	N	O	P	0
			48	21	7	17	3	
3	B	1	Total	C	N	O	P	0
			48	21	7	17	3	
3	C	1	Total	C	N	O	P	0
			48	21	7	17	3	
3	D	1	Total	C	N	O	P	0
			48	21	7	17	3	
3	E	1	Total	C	N	O	P	0
			48	21	7	17	3	
3	F	1	Total	C	N	O	P	0
			48	21	7	17	3	
3	J	1	Total	C	N	O	P	0
			48	21	7	17	3	
3	I	1	Total	C	N	O	P	0
			48	21	7	17	3	
3	H	1	Total	C	N	O	P	0
			48	21	7	17	3	
3	K	1	Total	C	N	O	P	0
			48	21	7	17	3	
3	L	1	Total	C	N	O	P	0
			48	21	7	17	3	

- Molecule 4 is COENZYME A (three-letter code: COA) (formula: $C_{21}H_{36}N_7O_{16}P_3S$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms						AltConf
4	G	1	Total	C	N	O	P	S	0
			48	21	7	16	3	1	
4	J	1	Total	C	N	O	P	S	0
			48	21	7	16	3	1	
4	I	1	Total	C	N	O	P	S	0
			48	21	7	16	3	1	
4	H	1	Total	C	N	O	P	S	0
			48	21	7	16	3	1	
4	K	1	Total	C	N	O	P	S	0
			48	21	7	16	3	1	
4	L	1	Total	C	N	O	P	S	0
			48	21	7	16	3	1	

- Molecule 5 is 1-DEOXY-1-(7,8-DIMETHYL-2,4-DIOXO-3,4-DIHYDRO-2H-BENZO[G]PTERIDIN-1-ID-10(5H)-YL)-5-O-PHOSPHONATO-D-RIBITOL (three-letter code: FNR) (formula: $C_{17}H_{23}N_4O_9P$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
5	G	1	Total	C	N	O	P	0
			31	17	4	9	1	
5	J	1	Total	C	N	O	P	0
			31	17	4	9	1	
5	I	1	Total	C	N	O	P	0
			31	17	4	9	1	
5	H	1	Total	C	N	O	P	0
			31	17	4	9	1	
5	K	1	Total	C	N	O	P	0
			31	17	4	9	1	
5	L	1	Total	C	N	O	P	0
			31	17	4	9	1	

- Molecule 6 is water.

Mol	Chain	Residues	Atoms		AltConf
6	A	914	Total	O	0
			914	914	
6	G	382	Total	O	0
			382	382	
6	B	894	Total	O	0
			894	894	
6	C	901	Total	O	0
			901	901	
6	D	908	Total	O	0
			908	908	
6	E	906	Total	O	0
			906	906	

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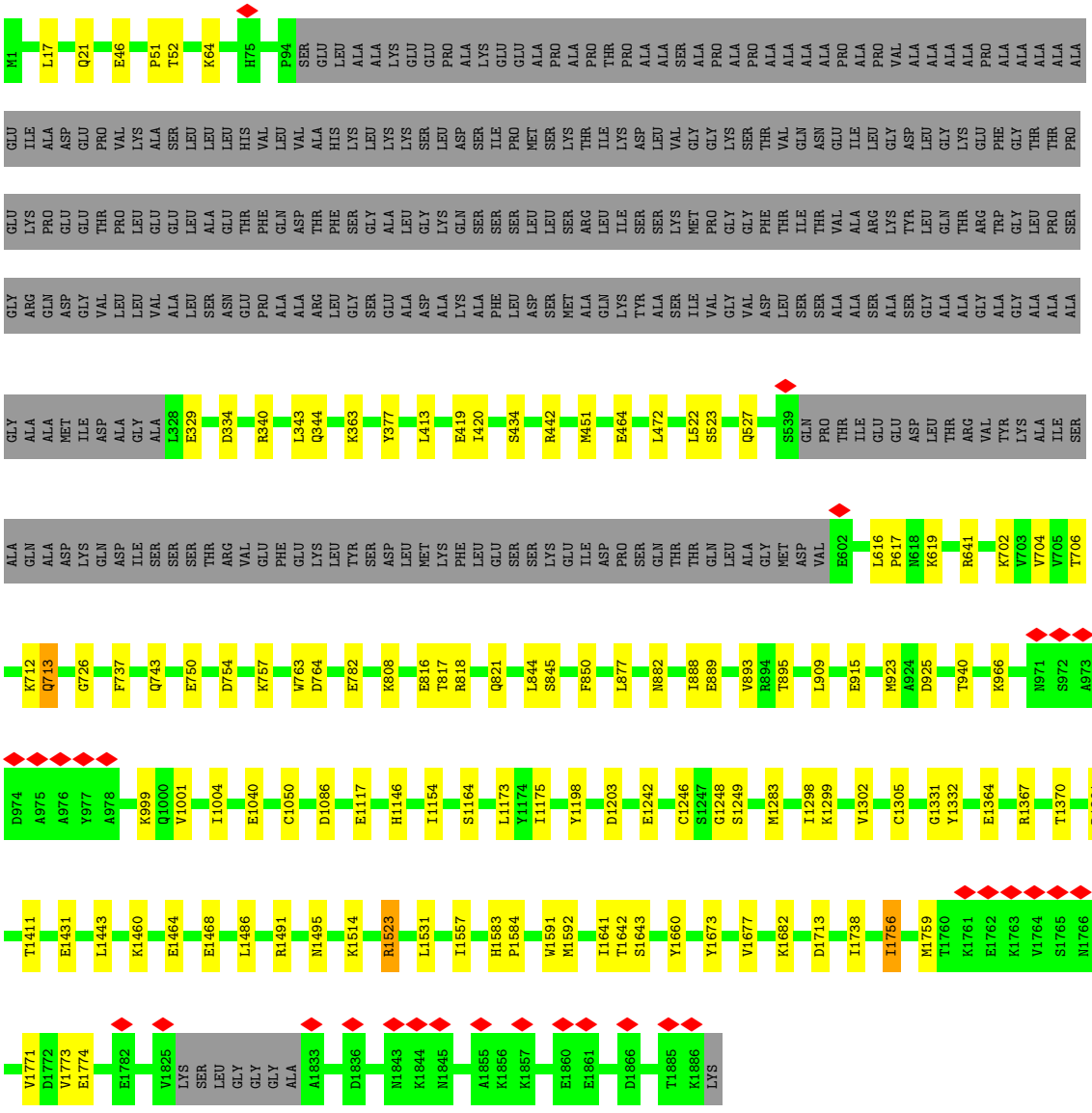
Mol	Chain	Residues	Atoms	AltConf
6	F	901	Total O 901 901	0
6	J	364	Total O 364 364	0
6	I	367	Total O 367 367	0
6	H	377	Total O 377 377	0
6	K	389	Total O 389 389	0
6	L	377	Total O 377 377	0

3 Residue-property plots (i)

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

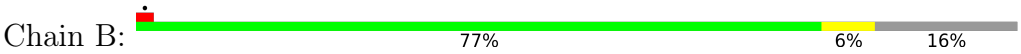
- Molecule 1: Fatty acid synthase subunit alpha

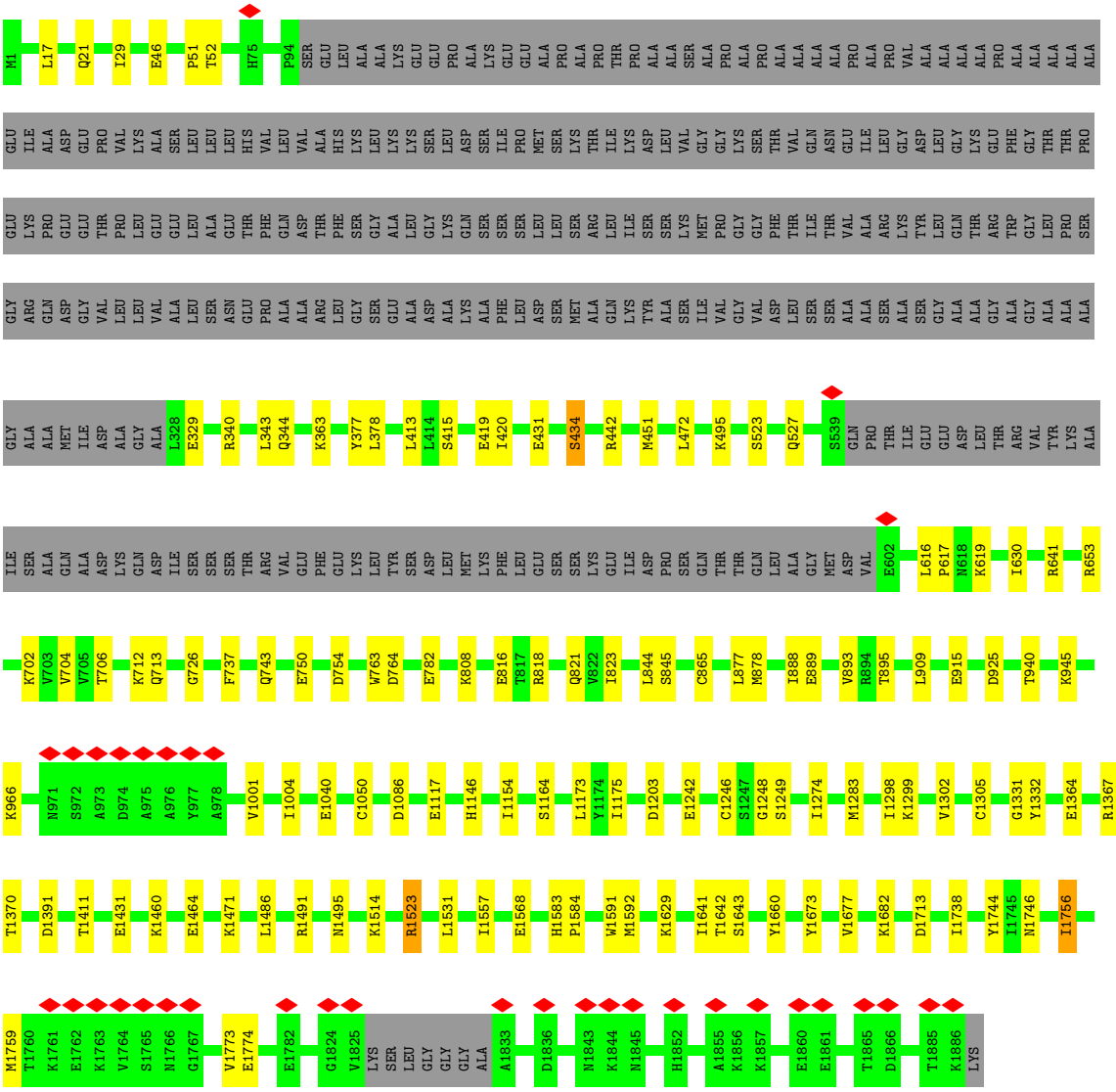
Chain A:



• Molecule 1: Fatty acid synthase subunit alpha

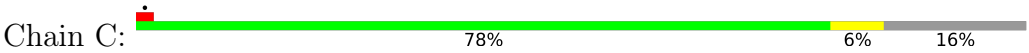
Chain B:

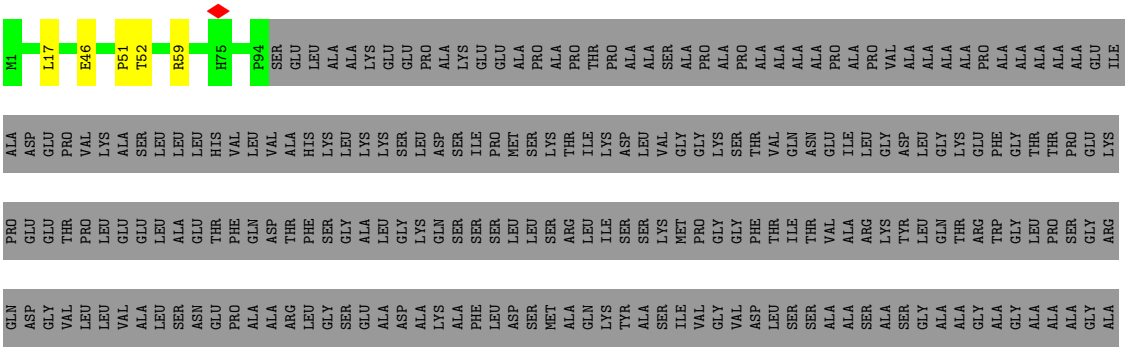


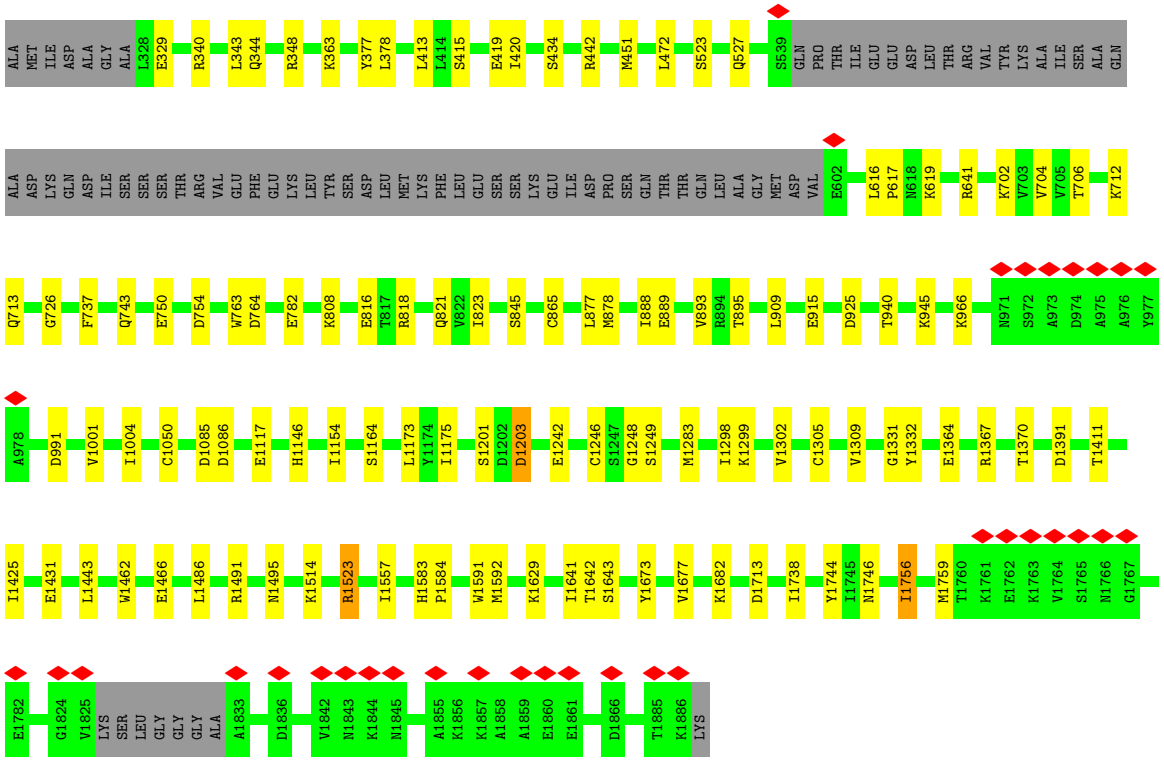


• Molecule 1: Fatty acid synthase subunit alpha

Chain C:

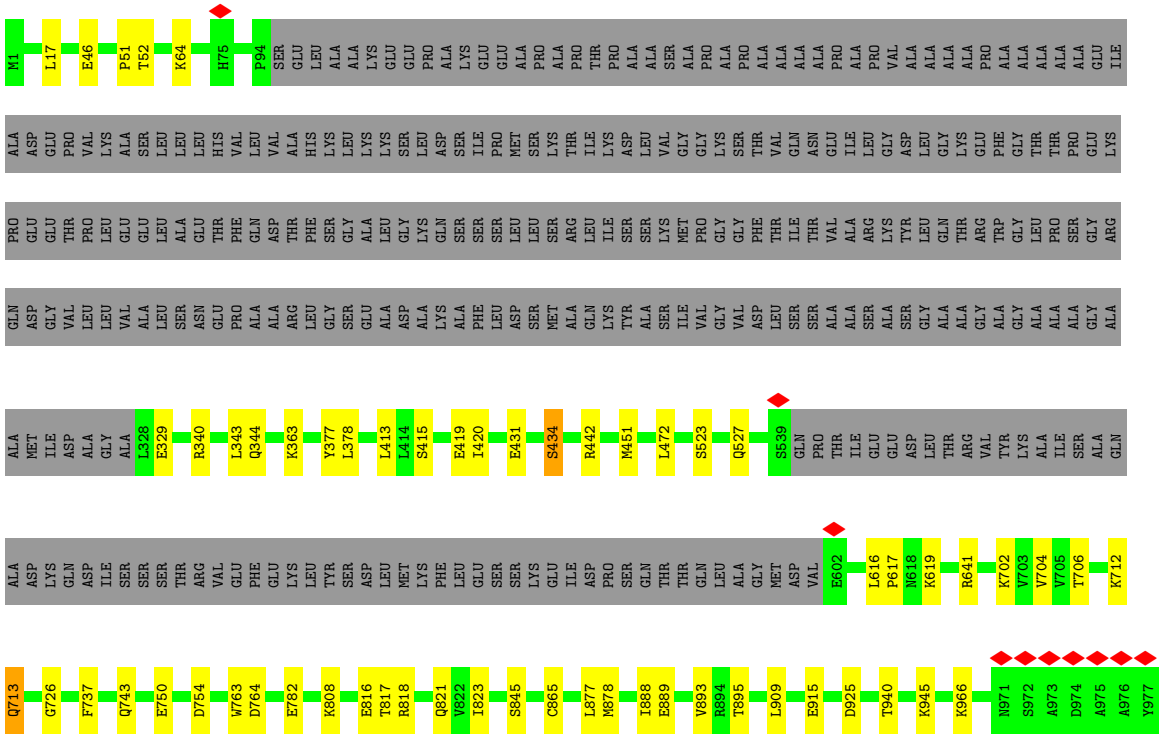


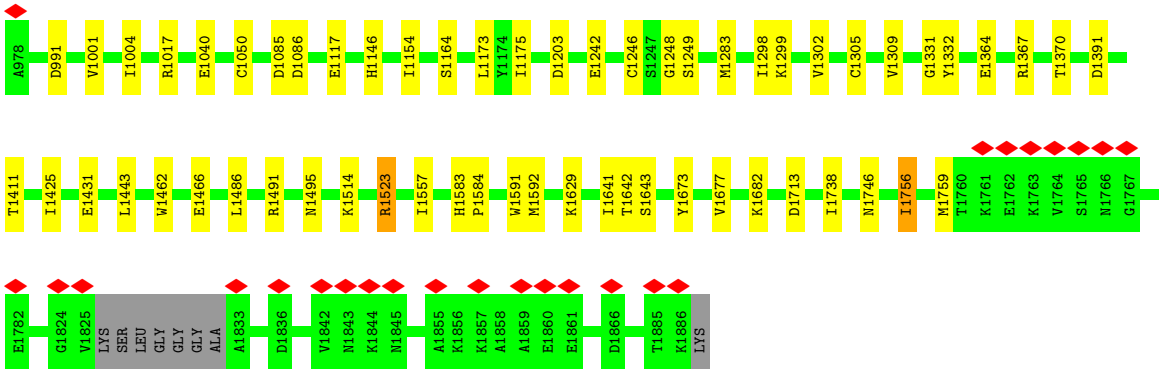




• Molecule 1: Fatty acid synthase subunit alpha

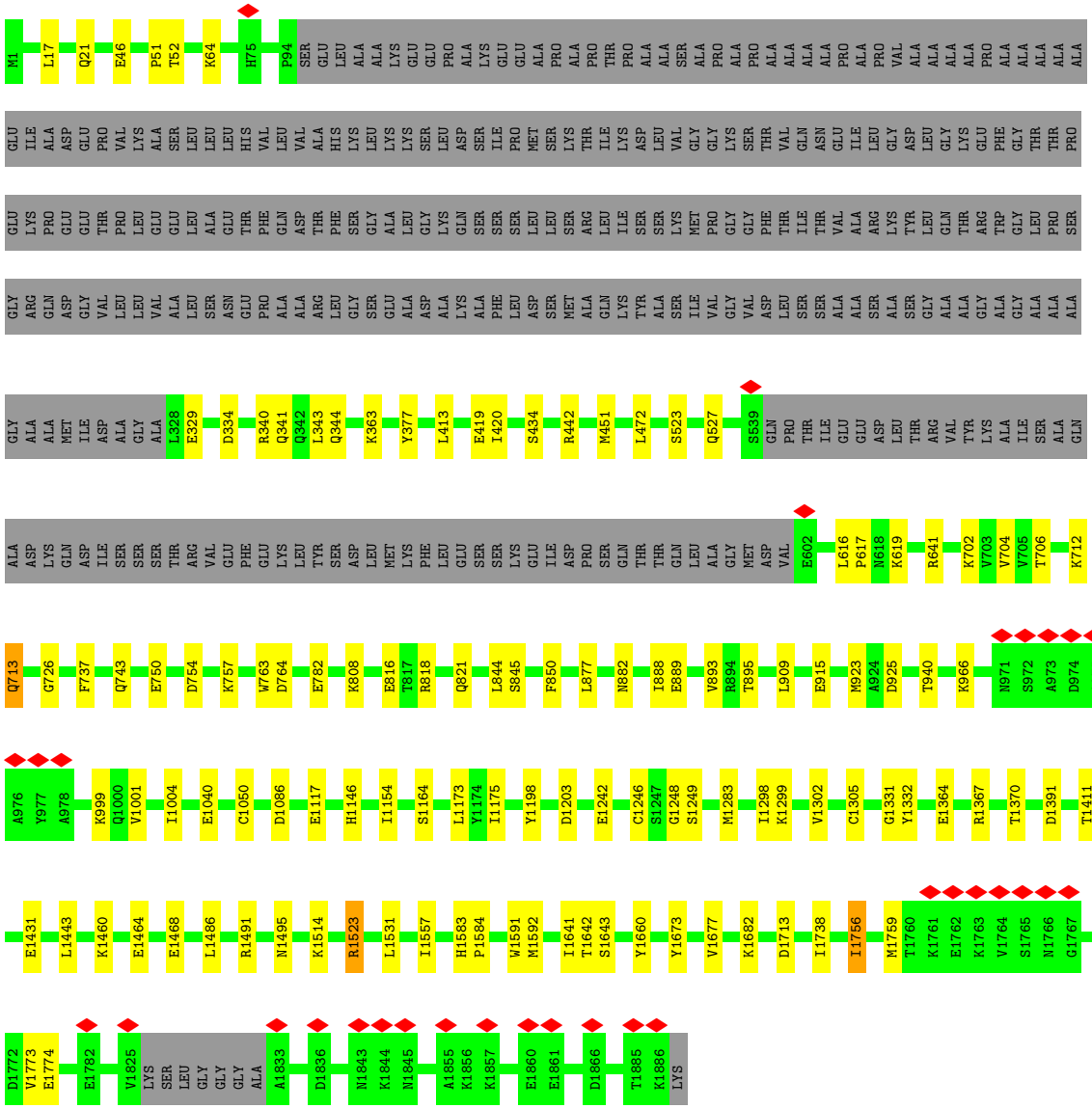
Chain D:





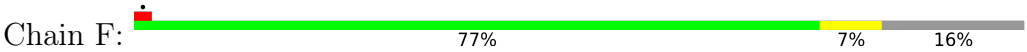
• Molecule 1: Fatty acid synthase subunit alpha

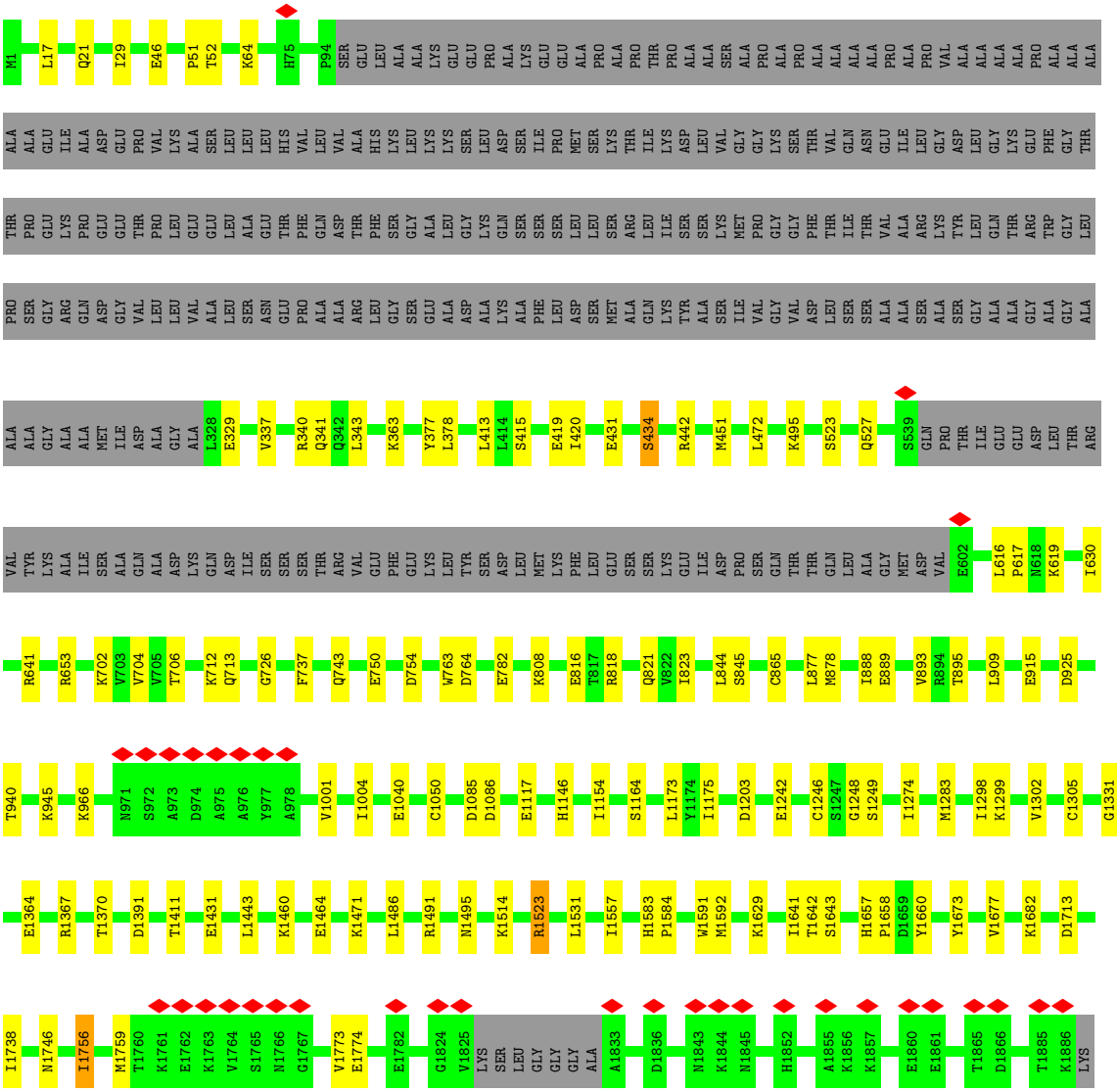
Chain E:



• Molecule 1: Fatty acid synthase subunit alpha

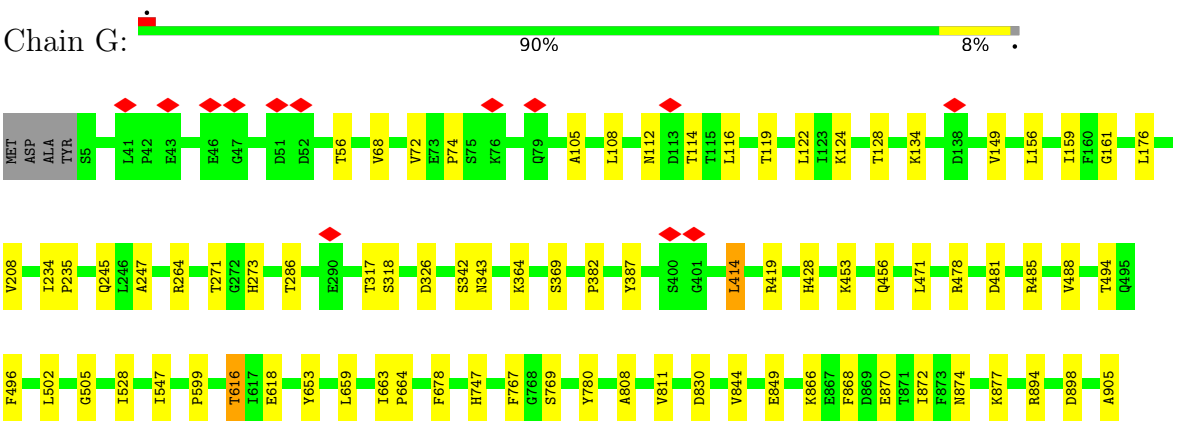
Chain F:

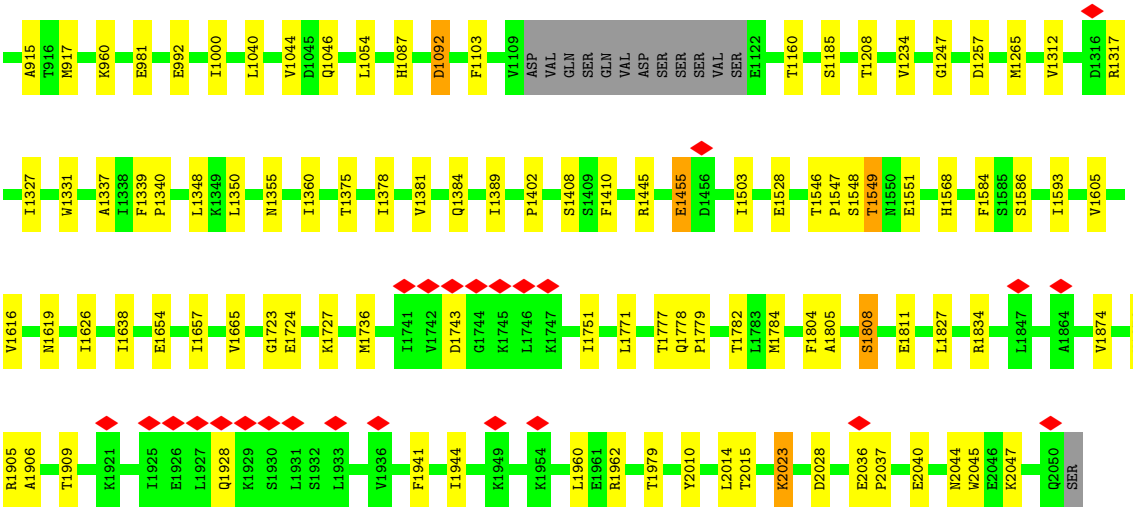




• Molecule 2: Fatty acid synthase subunit beta

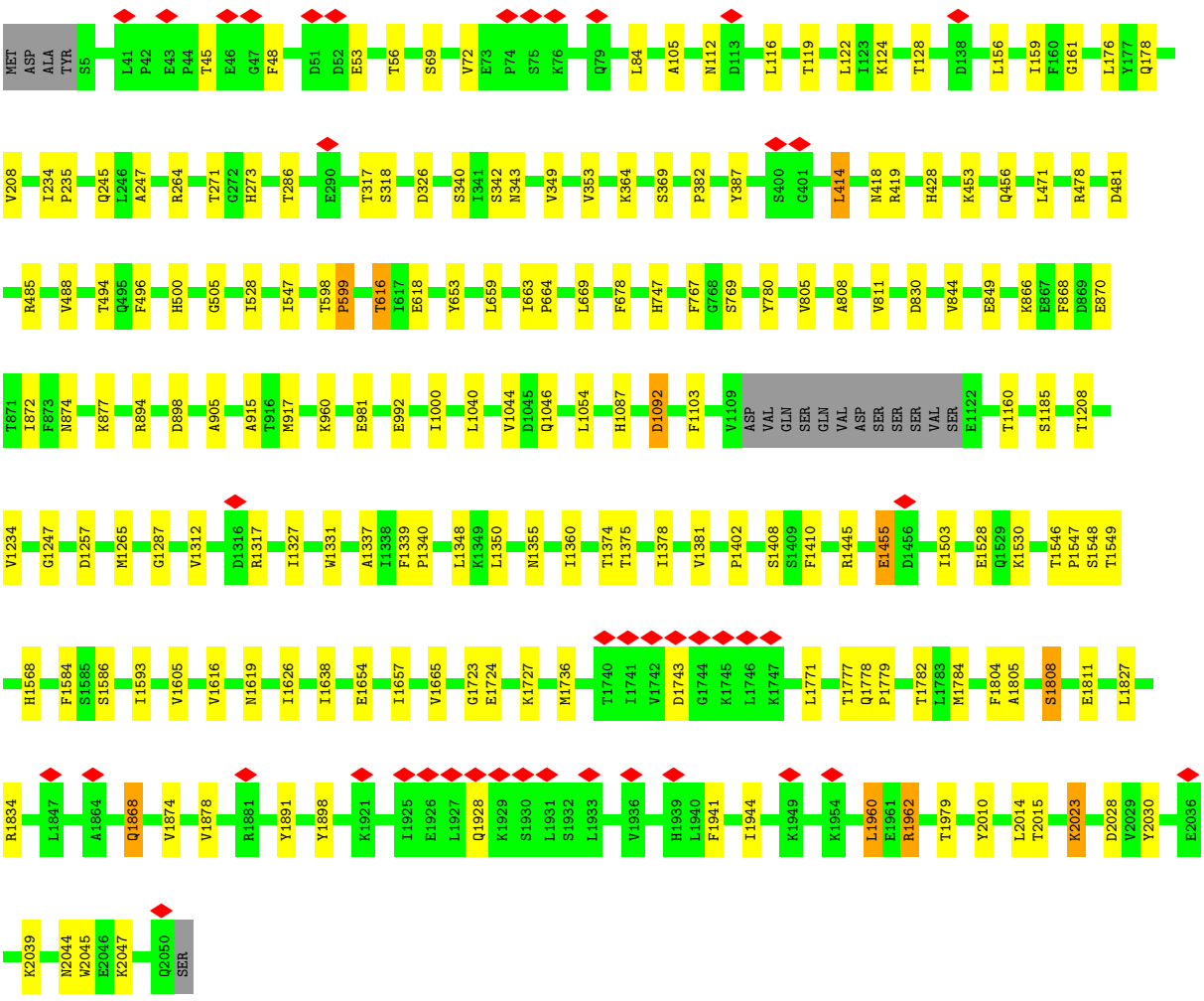
Chain G:





• Molecule 2: Fatty acid synthase subunit beta

Chain J:

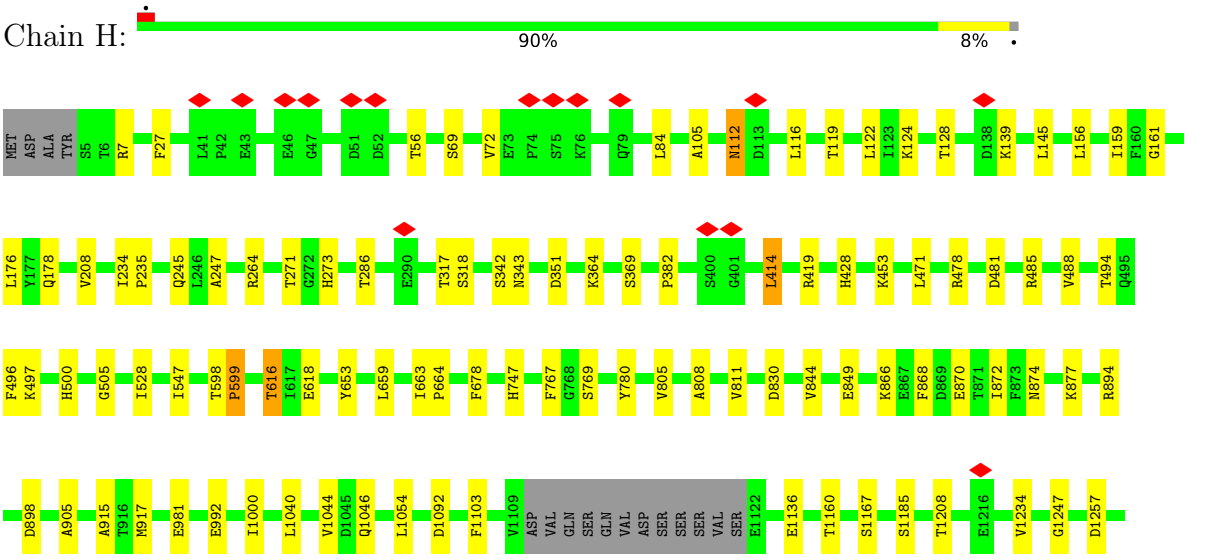


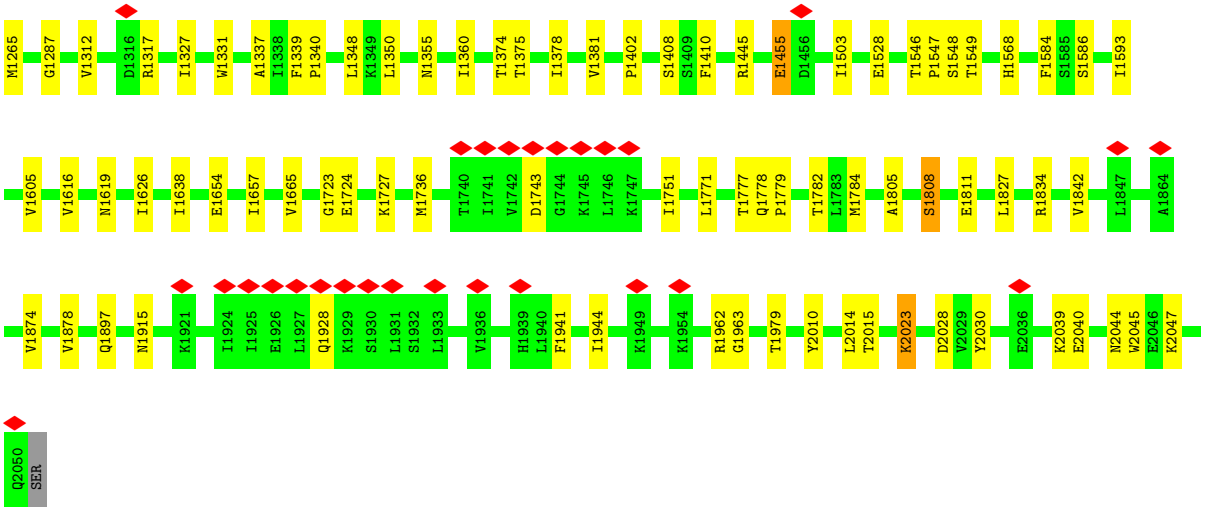
• Molecule 2: Fatty acid synthase subunit beta

Chain I:

• Molecule 2: Fatty acid synthase subunit beta

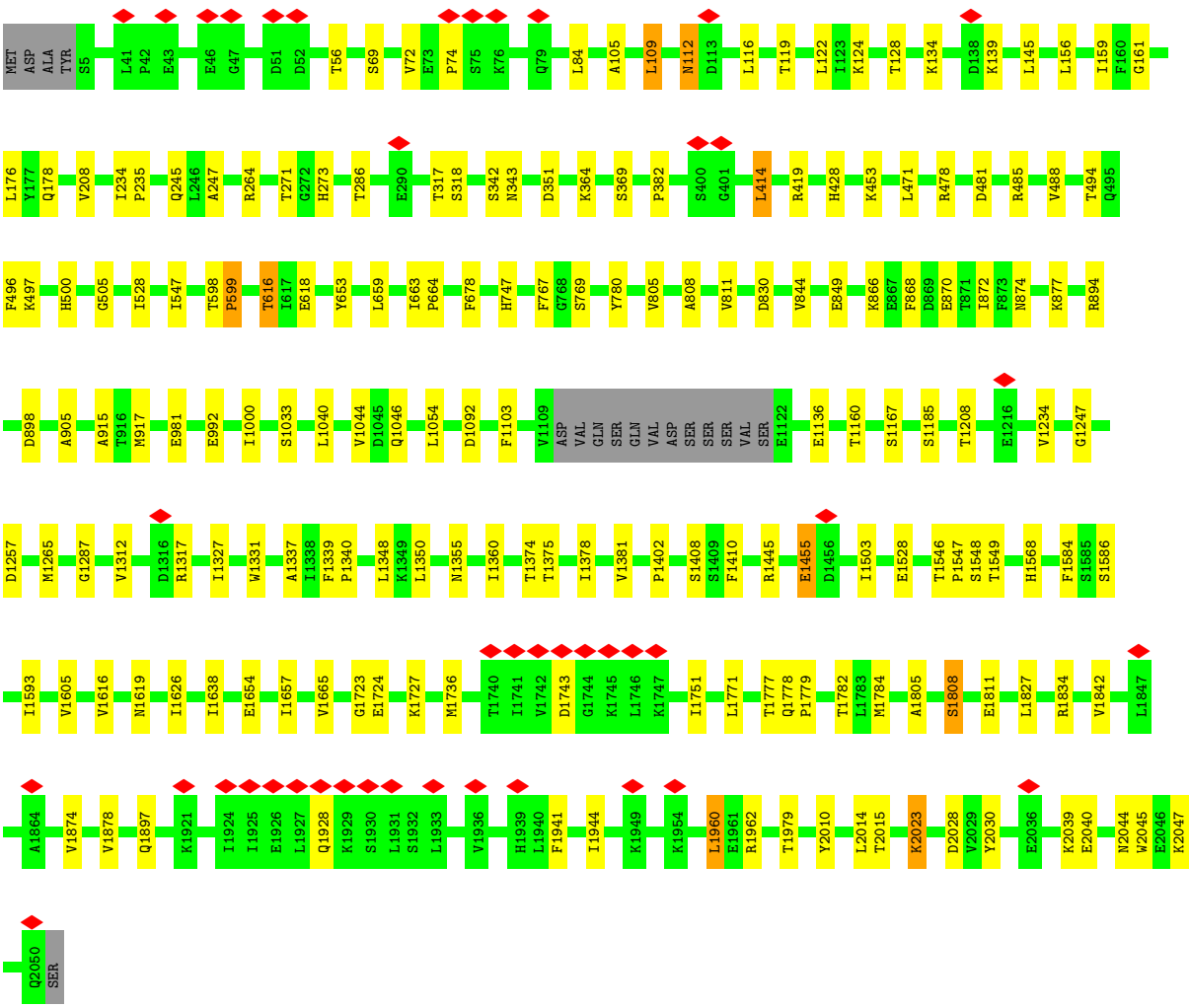
Chain H:





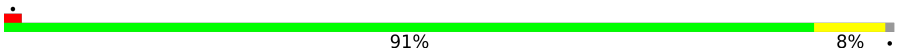
• Molecule 2: Fatty acid synthase subunit beta

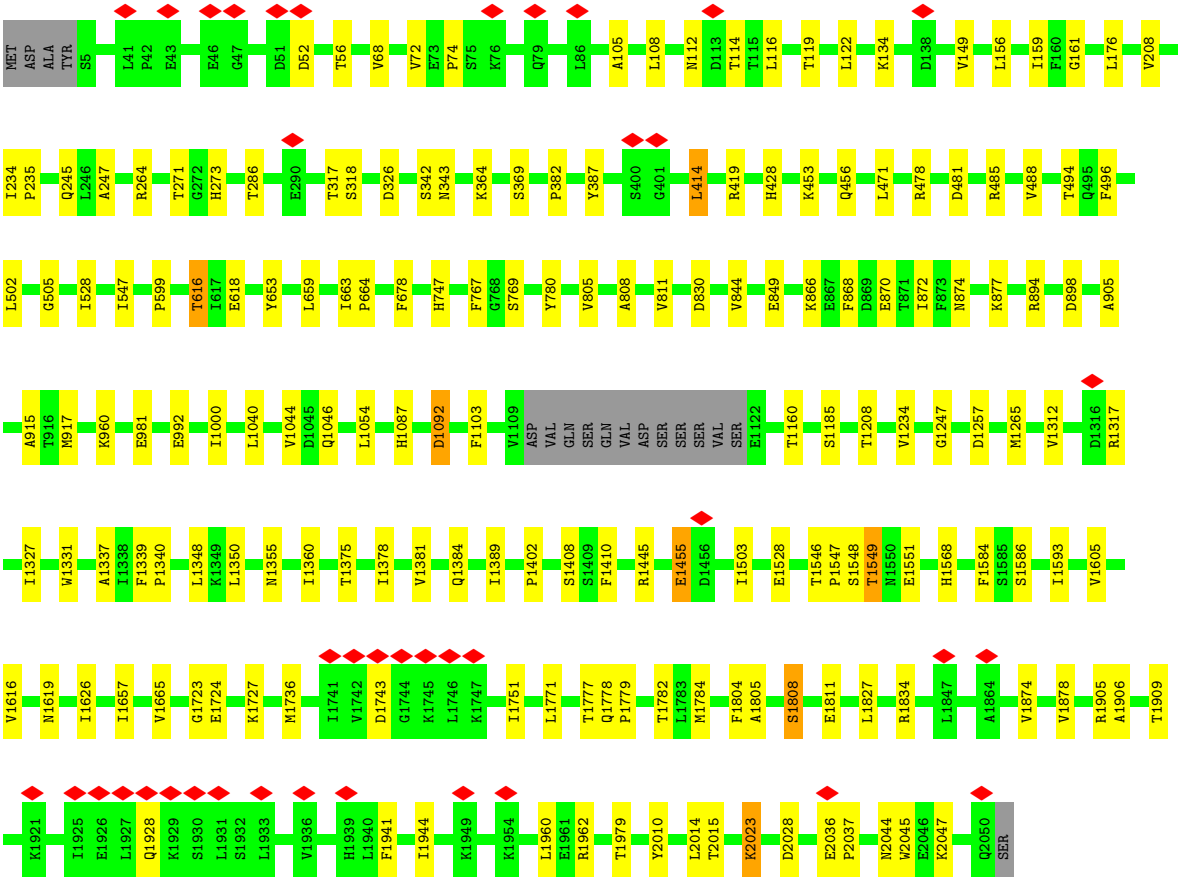
Chain K:



• Molecule 2: Fatty acid synthase subunit beta

Chain L:


91%
8%


MET ASP ALA TYR S5 L41 P42 E43 E46 G47 D51 D52 T56 V68 V72 E73 P74 S75 K76 Q79 L86 A105 L108 N112 D113 T114 T115 I116 T119 L122 K134 D138 V149 L156 I159 F160 G161 L176 V208
I234 P235 Q245 L246 A247 R264 T271 G272 H273 T286 E290 T317 S318 D326 S342 N343 K364 S369 P382 Y387 S400 G401 L414 R419 H428 K453 Q456 L471 R478 D481 R485 V488 T494 Q495 F496
L502 G505 I528 I547 P599 T616 I617 E618 Y653 L659 I663 P664 F678 H747 F767 G768 S769 Y780 V805 A808 V811 D830 V844 E849 K866 E867 F868 D869 E870 T871 I872 F873 N874 K877 R894 D898 A905
A915 T916 M917 K960 E981 E992 I1000 L1040 V1044 D1045 Q1046 L1054 H1087 D1092 F1103 V1109 ASP VAL GLN SER GLN VAL ASP SER SER SER VAL SER E1122 T1160 S1185 T1208 V1234 G1247 D1257 M1265 V1312 D1316 R1317
I1327 W1331 A1337 I1338 F1339 P1340 L1348 K1349 L1350 N1355 I1360 T1375 I1378 V1381 Q1384 I1389 P1402 S1408 S1409 F1410 R1445 E1455 D1456 I1503 E1528 T1546 P1547 S1548 T1549 N1550 E1551 H1568 F1584 S1585 S1586 I1593 V1605
V1616 N1619 I1626 I1657 V1665 G1723 E1724 K1727 M1736 I1741 V1742 D1743 G1744 K1745 L1746 K1747 I1751 L1771 T1777 Q1778 P1779 T1782 L1783 M1784 F1804 A1805 S1808 E1811 L1827 R1834 L1847 A1864 V1874 V1878 R1905 A1906 T1909
K1921 I1925 E1926 L1927 Q1928 K1929 S1930 L1931 S1932 L1933 V1936 H1939 L1940 F1941 I1944 K1949 K1954 L1960 E1961 R1962 T1979 Y2010 L2014 T2015 K2023 D2028 E2036 P2037 N2044 W2045 E2046 K2047 Q2050 SER

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	255481	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	5000	Depositor
Maximum defocus (nm)	25000	Depositor
Magnification	Not provided	
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	0.109	Depositor
Minimum map value	-0.043	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.01	Depositor
Map size (Å)	344.4, 344.4, 344.4	wwPDB
Map dimensions	560, 560, 560	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.615, 0.615, 0.615	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: J8W, FNR, COA, NAP

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	0.79	3/12613 (0.0%)	0.88	4/17048 (0.0%)
1	B	0.79	3/12613 (0.0%)	0.88	3/17048 (0.0%)
1	C	0.79	2/12613 (0.0%)	0.88	3/17048 (0.0%)
1	D	0.79	3/12613 (0.0%)	0.88	3/17048 (0.0%)
1	E	0.79	3/12613 (0.0%)	0.88	4/17048 (0.0%)
1	F	0.79	3/12613 (0.0%)	0.88	3/17048 (0.0%)
2	G	0.63	0/16362	0.80	0/22199
2	H	0.63	0/16362	0.80	0/22199
2	I	0.63	0/16362	0.80	0/22199
2	J	0.63	0/16362	0.80	0/22199
2	K	0.63	0/16362	0.80	0/22199
2	L	0.63	0/16362	0.80	0/22199
All	All	0.71	17/173850 (0.0%)	0.83	20/235482 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
2	G	0	1
2	H	0	1
2	I	0	1
2	J	0	1
2	K	0	1
2	L	0	1
All	All	0	6

All (17) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	1249	SER	CA-CB	-6.43	1.43	1.52
1	B	1249	SER	CA-CB	-6.43	1.43	1.52
1	F	1249	SER	CA-CB	-6.43	1.43	1.52
1	D	1249	SER	CA-CB	-6.39	1.43	1.52
1	A	1249	SER	CA-CB	-6.33	1.43	1.52
1	E	1249	SER	CA-CB	-6.33	1.43	1.52
1	C	1242	GLU	CD-OE1	5.62	1.31	1.25
1	D	1242	GLU	CD-OE1	5.51	1.31	1.25
1	A	1242	GLU	CD-OE1	5.42	1.31	1.25
1	B	1242	GLU	CD-OE1	5.40	1.31	1.25
1	F	1242	GLU	CD-OE1	5.40	1.31	1.25
1	E	1242	GLU	CD-OE1	5.39	1.31	1.25
1	F	1040	GLU	CD-OE1	5.23	1.31	1.25
1	B	1040	GLU	CD-OE1	5.22	1.31	1.25
1	A	1040	GLU	CD-OE1	5.20	1.31	1.25
1	E	1040	GLU	CD-OE1	5.20	1.31	1.25
1	D	1040	GLU	CD-OE1	5.09	1.31	1.25

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	1523	ARG	NE-CZ-NH2	-15.47	112.56	120.30
1	D	1523	ARG	NE-CZ-NH2	-15.43	112.59	120.30
1	F	1523	ARG	NE-CZ-NH2	-15.38	112.61	120.30
1	E	1523	ARG	NE-CZ-NH2	-15.27	112.67	120.30
1	A	1523	ARG	NE-CZ-NH2	-15.20	112.70	120.30
1	B	1523	ARG	NE-CZ-NH2	-15.20	112.70	120.30
1	E	1523	ARG	NE-CZ-NH1	9.67	125.14	120.30
1	B	1523	ARG	NE-CZ-NH1	9.66	125.13	120.30
1	C	1523	ARG	NE-CZ-NH1	9.61	125.10	120.30
1	F	1523	ARG	NE-CZ-NH1	9.60	125.10	120.30
1	A	1523	ARG	NE-CZ-NH1	9.52	125.06	120.30
1	D	1523	ARG	NE-CZ-NH1	9.49	125.05	120.30
1	D	1523	ARG	CG-CD-NE	-5.75	99.73	111.80
1	C	1523	ARG	CG-CD-NE	-5.74	99.75	111.80
1	F	1523	ARG	CG-CD-NE	-5.72	99.79	111.80
1	A	1523	ARG	CG-CD-NE	-5.71	99.81	111.80
1	E	1523	ARG	CG-CD-NE	-5.71	99.82	111.80
1	B	1523	ARG	CG-CD-NE	-5.70	99.84	111.80
1	A	1198	TYR	CB-CG-CD1	-5.03	117.98	121.00
1	E	1198	TYR	CB-CG-CD1	-5.03	117.98	121.00

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	G	1503	ILE	Peptide
2	H	1503	ILE	Peptide
2	I	1503	ILE	Peptide
2	J	1503	ILE	Peptide
2	K	1503	ILE	Peptide
2	L	1503	ILE	Peptide

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	12379	0	12317	73	0
1	B	12379	0	12317	78	0
1	C	12379	0	12317	73	0
1	D	12379	0	12317	73	0
1	E	12379	0	12317	72	0
1	F	12379	0	12317	78	0
2	G	16010	0	15979	91	0
2	H	16010	0	15979	86	0
2	I	16010	0	15979	94	0
2	J	16010	0	15979	97	0
2	K	16010	0	15979	88	0
2	L	16010	0	15979	90	0
3	A	48	0	25	2	0
3	B	48	0	25	3	0
3	C	48	0	25	3	0
3	D	48	0	25	3	0
3	E	48	0	25	2	0
3	F	48	0	25	3	0
3	G	48	0	25	1	0
3	H	48	0	25	1	0
3	I	48	0	25	1	0
3	J	48	0	25	1	0
3	K	48	0	25	1	0
3	L	48	0	25	1	0
4	G	48	0	32	0	0
4	H	48	0	32	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	I	48	0	32	1	0
4	J	48	0	32	1	0
4	K	48	0	32	1	0
4	L	48	0	32	0	0
5	G	31	0	22	3	0
5	H	31	0	22	3	0
5	I	31	0	22	3	0
5	J	31	0	22	2	0
5	K	31	0	22	3	0
5	L	31	0	22	3	0
6	A	914	0	0	10	0
6	B	894	0	0	8	0
6	C	901	0	0	9	0
6	D	908	0	0	12	0
6	E	906	0	0	9	0
6	F	901	0	0	7	0
6	G	382	0	0	2	0
6	H	377	0	0	3	0
6	I	367	0	0	3	0
6	J	364	0	0	3	0
6	K	389	0	0	4	0
6	L	377	0	0	2	0
All	All	179064	0	170400	928	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 3.

All (928) 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:A:915:GLU:OE1	6:A:2001:HOH:O	1.69	1.10
1:E:915:GLU:OE1	6:E:2001:HOH:O	1.70	1.10
1:F:915:GLU:OE1	6:F:2001:HOH:O	1.70	1.08
1:B:915:GLU:OE1	6:B:2001:HOH:O	1.70	1.08
1:C:915:GLU:OE1	6:C:2001:HOH:O	1.69	1.06
1:D:915:GLU:OE1	6:D:2001:HOH:O	1.69	1.05
1:E:882:ASN:O	6:E:2002:HOH:O	1.84	0.93
1:A:882:ASN:O	6:A:2002:HOH:O	1.85	0.92
2:K:56:THR:HG21	2:K:112:ASN:HD22	1.33	0.91
2:H:56:THR:HG21	2:H:112:ASN:HD22	1.33	0.91
1:A:1302:VAL:HG21	1:E:1302:VAL:HG21	1.59	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1302:VAL:HG21	1:F:1302:VAL:HG21	1.59	0.84
1:B:1302:VAL:HG21	1:D:1302:VAL:HG21	1.59	0.84
2:L:74:PRO:O	2:L:134:LYS:NZ	2.15	0.80
1:E:750:GLU:OE1	6:E:2003:HOH:O	2.00	0.79
1:B:750:GLU:OE1	6:B:2002:HOH:O	2.00	0.79
2:J:894:ARG:NH1	2:J:898:ASP:OD2	2.15	0.79
2:I:894:ARG:NH1	2:I:898:ASP:OD2	2.15	0.79
1:A:750:GLU:OE1	6:A:2003:HOH:O	2.00	0.79
2:G:894:ARG:NH1	2:G:898:ASP:OD2	2.15	0.79
2:L:894:ARG:NH1	2:L:898:ASP:OD2	2.15	0.79
2:K:894:ARG:NH1	2:K:898:ASP:OD2	2.15	0.78
2:H:894:ARG:NH1	2:H:898:ASP:OD2	2.16	0.78
2:G:808:ALA:O	2:G:811:VAL:HG22	1.83	0.78
1:F:750:GLU:OE1	6:F:2002:HOH:O	2.01	0.78
1:D:750:GLU:OE1	6:D:2002:HOH:O	2.02	0.77
1:A:816:GLU:OE1	6:A:2004:HOH:O	2.01	0.77
1:C:750:GLU:OE1	6:C:2002:HOH:O	2.02	0.77
1:E:816:GLU:OE2	6:E:2004:HOH:O	2.02	0.76
1:F:816:GLU:OE1	6:F:2003:HOH:O	2.03	0.76
1:B:816:GLU:OE1	6:B:2003:HOH:O	2.03	0.75
1:C:816:GLU:OE2	6:C:2003:HOH:O	2.02	0.75
1:D:816:GLU:OE2	6:D:2003:HOH:O	2.02	0.75
2:K:74:PRO:O	2:K:134:LYS:NZ	2.19	0.75
2:G:74:PRO:O	2:G:134:LYS:NZ	2.19	0.75
2:G:108:LEU:HB3	2:G:114:THR:HG21	1.70	0.72
2:L:108:LEU:HB3	2:L:114:THR:HG21	1.70	0.71
2:I:1811:GLU:OE2	2:I:2010:TYR:OH	2.08	0.71
2:J:1811:GLU:OE2	2:J:2010:TYR:OH	2.08	0.71
2:G:1811:GLU:OE2	2:G:2010:TYR:OH	2.08	0.70
2:H:1811:GLU:OE2	2:H:2010:TYR:OH	2.08	0.70
2:K:1811:GLU:OE2	2:K:2010:TYR:OH	2.08	0.70
2:L:1811:GLU:OE2	2:L:2010:TYR:OH	2.08	0.70
1:B:1486:LEU:HD22	1:B:1756:ILE:HD11	1.74	0.69
1:D:1486:LEU:HD22	1:D:1756:ILE:HD11	1.74	0.69
1:F:1486:LEU:HD22	1:F:1756:ILE:HD11	1.75	0.69
1:C:1486:LEU:HD22	1:C:1756:ILE:HD11	1.74	0.69
1:A:1486:LEU:HD22	1:A:1756:ILE:HD11	1.74	0.68
1:E:1486:LEU:HD22	1:E:1756:ILE:HD11	1.74	0.68
2:K:849:GLU:OE1	6:K:2401:HOH:O	2.13	0.67
2:H:849:GLU:OE1	6:H:2401:HOH:O	2.13	0.67
2:L:849:GLU:OE1	6:L:2401:HOH:O	2.13	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:616:THR:HG23	6:J:2462:HOH:O	1.94	0.66
2:I:849:GLU:OE1	6:I:2401:HOH:O	2.13	0.66
2:L:616:THR:HG23	6:L:2461:HOH:O	1.95	0.66
2:K:616:THR:HG23	6:K:2463:HOH:O	1.95	0.66
2:G:616:THR:HG23	6:G:2465:HOH:O	1.95	0.66
2:G:849:GLU:OE1	6:G:2401:HOH:O	2.13	0.66
2:H:616:THR:HG23	6:H:2462:HOH:O	1.95	0.66
2:I:616:THR:HG23	6:I:2459:HOH:O	1.95	0.66
2:L:326:ASP:OD2	2:L:387:TYR:OH	2.13	0.66
1:C:991:ASP:OD1	6:C:2004:HOH:O	2.13	0.66
2:J:849:GLU:OE1	6:J:2401:HOH:O	2.13	0.65
1:D:991:ASP:OD1	6:D:2004:HOH:O	2.13	0.65
1:E:1464:GLU:HG3	1:E:1773:VAL:HG13	1.78	0.65
1:A:1464:GLU:HG3	1:A:1773:VAL:HG13	1.78	0.65
1:F:1464:GLU:HG3	1:F:1773:VAL:HG13	1.78	0.65
1:B:1464:GLU:HG3	1:B:1773:VAL:HG13	1.78	0.64
1:D:1370:THR:HG23	6:D:2102:HOH:O	1.98	0.64
2:K:1771:LEU:O	2:K:1777:THR:OG1	2.14	0.64
1:C:1370:THR:HG23	6:C:2100:HOH:O	1.98	0.64
1:E:1468:GLU:OE1	1:E:1771:VAL:HG21	1.97	0.64
1:A:1468:GLU:OE1	1:A:1771:VAL:HG21	1.97	0.63
2:J:326:ASP:OD2	2:J:387:TYR:OH	2.13	0.63
2:L:1771:LEU:O	2:L:1777:THR:OG1	2.14	0.63
2:J:1771:LEU:O	2:J:1777:THR:OG1	2.14	0.63
2:G:1771:LEU:O	2:G:1777:THR:OG1	2.14	0.63
2:I:1771:LEU:O	2:I:1777:THR:OG1	2.14	0.63
1:B:706:THR:HB	1:B:737:PHE:HB3	1.81	0.63
1:F:1370:THR:HG23	6:F:2100:HOH:O	1.98	0.63
1:A:1370:THR:HG23	6:A:2105:HOH:O	1.98	0.63
1:F:706:THR:HB	1:F:737:PHE:HB3	1.81	0.63
1:B:1370:THR:HG23	6:B:2104:HOH:O	1.98	0.63
1:E:1370:THR:HG23	6:E:2112:HOH:O	1.98	0.62
2:H:1771:LEU:O	2:H:1777:THR:OG1	2.14	0.62
1:B:1302:VAL:CG2	1:D:1302:VAL:HG21	2.29	0.62
1:C:1302:VAL:HG21	1:F:1302:VAL:CG2	2.29	0.62
1:A:1673:TYR:CZ	1:A:1677:VAL:HG21	2.35	0.62
1:B:1673:TYR:CZ	1:B:1677:VAL:HG21	2.35	0.62
1:E:1673:TYR:CZ	1:E:1677:VAL:HG21	2.35	0.62
1:F:1673:TYR:CZ	1:F:1677:VAL:HG21	2.35	0.62
1:D:706:THR:HB	1:D:737:PHE:HB3	1.81	0.62
1:C:706:THR:HB	1:C:737:PHE:HB3	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:706:THR:HB	1:A:737:PHE:HB3	1.81	0.62
1:E:706:THR:HB	1:E:737:PHE:HB3	1.81	0.61
2:K:72:VAL:HG11	2:K:84:LEU:HD22	1.81	0.61
1:A:1486:LEU:CD2	1:A:1756:ILE:HD11	2.30	0.61
1:C:1302:VAL:CG2	1:F:1302:VAL:HG21	2.29	0.61
1:E:1486:LEU:CD2	1:E:1756:ILE:HD11	2.30	0.61
1:F:889:GLU:OE2	1:F:895:THR:OG1	2.16	0.61
2:I:72:VAL:HG11	2:I:84:LEU:HD22	1.81	0.61
2:H:72:VAL:HG11	2:H:84:LEU:HD22	1.81	0.61
1:B:1302:VAL:HG21	1:D:1302:VAL:CG2	2.29	0.61
1:B:889:GLU:OE2	1:B:895:THR:OG1	2.16	0.61
2:J:72:VAL:HG11	2:J:84:LEU:HD22	1.81	0.61
1:C:1673:TYR:CZ	1:C:1677:VAL:HG21	2.35	0.61
1:D:1673:TYR:CZ	1:D:1677:VAL:HG21	2.35	0.61
1:B:1486:LEU:CD2	1:B:1756:ILE:HD11	2.31	0.60
1:F:1486:LEU:CD2	1:F:1756:ILE:HD11	2.31	0.60
1:A:845:SER:OG	1:F:845:SER:OG	2.20	0.60
1:B:845:SER:OG	1:E:845:SER:OG	2.20	0.60
1:D:1486:LEU:CD2	1:D:1756:ILE:HD11	2.30	0.60
1:C:1486:LEU:CD2	1:C:1756:ILE:HD11	2.30	0.60
1:C:845:SER:OG	1:D:845:SER:OG	2.20	0.60
1:B:340:ARG:NH1	1:B:344:GLN:OE1	2.33	0.59
1:B:1173:LEU:CD2	1:D:1175:ILE:HG12	2.33	0.59
1:C:1175:ILE:HG12	1:F:1173:LEU:CD2	2.33	0.59
1:B:1175:ILE:HG12	1:D:1173:LEU:CD2	2.33	0.58
1:C:1173:LEU:CD2	1:F:1175:ILE:HG12	2.33	0.58
2:H:1548:SER:HB3	2:H:1619:ASN:HD21	1.68	0.58
1:A:1173:LEU:CD2	1:E:1175:ILE:HG12	2.33	0.58
1:A:877:LEU:HD12	3:A:1901:NAP:H2D	1.84	0.58
1:E:877:LEU:HD12	3:E:1901:NAP:H2D	1.84	0.58
2:K:1548:SER:HB3	2:K:1619:ASN:HD21	1.68	0.58
1:A:1175:ILE:HG12	1:E:1173:LEU:CD2	2.34	0.58
1:A:1302:VAL:HG21	1:E:1302:VAL:CG2	2.30	0.58
1:A:1302:VAL:CG2	1:E:1302:VAL:HG21	2.30	0.58
1:D:889:GLU:OE2	1:D:895:THR:OG1	2.16	0.58
1:C:889:GLU:OE2	1:C:895:THR:OG1	2.17	0.57
2:J:1548:SER:HB3	2:J:1619:ASN:HD21	1.68	0.57
2:I:1548:SER:HB3	2:I:1619:ASN:HD21	1.69	0.57
1:F:641:ARG:NH2	1:F:925:ASP:OD2	2.37	0.57
2:K:156:LEU:HD12	2:K:500:HIS:HB2	1.86	0.57
1:B:641:ARG:NH2	1:B:925:ASP:OD2	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:1592:MET:HE2	1:F:1641:ILE:HG23	1.87	0.57
1:A:641:ARG:NH2	1:A:925:ASP:OD2	2.37	0.57
1:E:641:ARG:NH2	1:E:925:ASP:OD2	2.37	0.57
2:I:156:LEU:HD12	2:I:500:HIS:HB2	1.87	0.57
2:H:156:LEU:HD12	2:H:500:HIS:HB2	1.87	0.57
1:B:1592:MET:HE2	1:B:1641:ILE:HG23	1.87	0.57
2:J:156:LEU:HD12	2:J:500:HIS:HB2	1.87	0.57
2:H:1103:PHE:O	2:H:1247:GLY:HA3	2.05	0.57
2:K:1103:PHE:O	2:K:1247:GLY:HA3	2.05	0.57
1:A:1592:MET:HE2	1:A:1641:ILE:HG23	1.87	0.57
2:G:1548:SER:HB3	2:G:1619:ASN:HD21	1.68	0.57
1:C:1523:ARG:NH2	6:C:2011:HOH:O	2.30	0.57
2:I:1103:PHE:O	2:I:1247:GLY:HA3	2.05	0.57
2:L:1548:SER:HB3	2:L:1619:ASN:HD21	1.68	0.57
1:E:1592:MET:HE2	1:E:1641:ILE:HG23	1.87	0.57
2:J:1103:PHE:O	2:J:1247:GLY:HA3	2.05	0.57
1:F:877:LEU:HD12	3:F:1901:NAP:H2D	1.86	0.57
1:D:1523:ARG:NH2	6:D:2014:HOH:O	2.30	0.56
1:D:877:LEU:HD12	3:D:1901:NAP:H2D	1.85	0.56
2:I:1962:ARG:NH2	4:I:2301:COA:O2B	2.37	0.56
1:B:877:LEU:HD12	3:B:1901:NAP:H2D	1.86	0.56
1:C:641:ARG:NH2	1:C:925:ASP:OD2	2.37	0.56
1:C:877:LEU:HD12	3:C:1901:NAP:H2D	1.85	0.56
1:D:641:ARG:NH2	1:D:925:ASP:OD2	2.37	0.56
2:I:56:THR:HG22	2:I:59:GLU:OE2	2.04	0.56
2:G:1103:PHE:O	2:G:1247:GLY:HA3	2.05	0.56
2:L:1103:PHE:O	2:L:1247:GLY:HA3	2.05	0.56
2:J:1808:J8W:C3	2:J:1834:ARG:HH12	2.18	0.56
2:I:1808:J8W:C3	2:I:1834:ARG:HH12	2.18	0.56
1:B:1302:VAL:CG2	1:D:1302:VAL:CG2	2.84	0.55
2:H:1054:LEU:HB2	5:H:2302:FNR:H7M2	1.87	0.55
1:C:1302:VAL:CG2	1:F:1302:VAL:CG2	2.84	0.55
2:K:1054:LEU:HB2	5:K:2302:FNR:H7M2	1.87	0.55
2:G:124:LYS:O	2:G:128:THR:OG1	2.24	0.55
1:D:1592:MET:HE2	1:D:1641:ILE:HG23	1.87	0.55
1:A:1682:LYS:HE3	2:G:992:GLU:O	2.06	0.55
1:C:1592:MET:HE2	1:C:1641:ILE:HG23	1.87	0.55
2:J:1782:THR:HG22	2:J:1827:LEU:HD21	1.89	0.55
2:I:1782:THR:HG22	2:I:1827:LEU:HD21	1.89	0.55
2:G:1808:J8W:C3	2:G:1834:ARG:HH12	2.18	0.55
1:D:1682:LYS:HE3	2:K:992:GLU:O	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:1782:THR:HG22	2:L:1827:LEU:HD21	1.89	0.55
1:A:1302:VAL:CG2	1:E:1302:VAL:CG2	2.85	0.55
2:G:1782:THR:HG22	2:G:1827:LEU:HD21	1.89	0.55
2:L:1808:J8W:C3	2:L:1834:ARG:HH12	2.18	0.55
1:F:1682:LYS:HE3	2:J:992:GLU:O	2.06	0.54
2:I:1528:GLU:HG3	2:I:1530:LYS:O	2.06	0.54
2:J:1962:ARG:NH2	4:J:2301:COA:O2B	2.40	0.54
1:C:1682:LYS:HE3	2:H:992:GLU:O	2.07	0.54
1:E:1682:LYS:HE3	2:L:992:GLU:O	2.07	0.54
2:J:1528:GLU:HG3	2:J:1530:LYS:O	2.06	0.54
2:K:1782:THR:HG22	2:K:1827:LEU:HD21	1.89	0.54
1:A:340:ARG:NH1	1:A:344:GLN:OE1	2.33	0.54
2:G:1054:LEU:HB2	5:G:2302:FNR:H7M2	1.89	0.54
1:E:1491:ARG:NH1	1:E:1495:ASN:OD1	2.41	0.54
2:H:1782:THR:HG22	2:H:1827:LEU:HD21	1.89	0.54
2:L:1054:LEU:HB2	5:L:2302:FNR:H7M2	1.89	0.54
2:K:1808:J8W:C3	2:K:1834:ARG:HH12	2.18	0.54
1:A:1491:ARG:NH1	1:A:1495:ASN:OD1	2.41	0.54
1:E:340:ARG:NH1	1:E:344:GLN:OE1	2.34	0.54
1:F:1491:ARG:NH1	1:F:1495:ASN:OD1	2.41	0.54
2:J:1054:LEU:HB2	5:J:2302:FNR:H7M2	1.89	0.54
2:H:1808:J8W:C3	2:H:1834:ARG:HH12	2.18	0.54
1:B:1491:ARG:NH1	1:B:1495:ASN:OD1	2.41	0.54
1:C:1491:ARG:NH1	1:C:1495:ASN:OD1	2.41	0.54
1:D:1491:ARG:NH1	1:D:1495:ASN:OD1	2.41	0.54
2:H:7:ARG:HD3	2:H:27:PHE:CE1	2.43	0.54
1:B:1682:LYS:HE3	2:I:992:GLU:O	2.07	0.53
2:I:1054:LEU:HB2	5:I:2302:FNR:H7M2	1.89	0.53
2:G:68:VAL:O	2:G:72:VAL:HG23	2.08	0.53
1:E:1523:ARG:NH2	6:E:2011:HOH:O	2.28	0.53
1:A:889:GLU:OE2	1:A:895:THR:OG1	2.16	0.53
1:B:1367:ARG:HD2	1:B:1370:THR:HG21	1.90	0.53
1:E:889:GLU:OE2	1:E:895:THR:OG1	2.16	0.53
1:F:1367:ARG:HD2	1:F:1370:THR:HG21	1.90	0.53
2:K:2044:ASN:O	2:K:2047:LYS:HG2	2.08	0.53
1:D:1367:ARG:HD2	1:D:1370:THR:HG21	1.90	0.53
2:H:2044:ASN:O	2:H:2047:LYS:HG2	2.08	0.53
1:A:1523:ARG:NH2	6:A:2012:HOH:O	2.29	0.53
1:C:1367:ARG:HD2	1:C:1370:THR:HG21	1.90	0.53
2:H:161:GLY:H	2:H:505:GLY:HA3	1.74	0.53
2:K:105:ALA:HB1	2:K:119:THR:CG2	2.39	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:68:VAL:O	2:L:72:VAL:HG23	2.08	0.53
1:C:46:GLU:OE2	1:C:51:PRO:HA	2.09	0.53
1:D:46:GLU:OE2	1:D:51:PRO:HA	2.09	0.53
2:K:161:GLY:H	2:K:505:GLY:HA3	1.74	0.53
2:L:161:GLY:H	2:L:505:GLY:HA3	1.74	0.53
2:G:161:GLY:H	2:G:505:GLY:HA3	1.74	0.53
2:H:105:ALA:HB1	2:H:119:THR:CG2	2.39	0.53
2:I:161:GLY:H	2:I:505:GLY:HA3	1.74	0.52
1:A:1367:ARG:HD2	1:A:1370:THR:HG21	1.90	0.52
2:G:156:LEU:HD22	2:G:502:LEU:HG	1.92	0.52
2:J:161:GLY:H	2:J:505:GLY:HA3	1.74	0.52
2:L:105:ALA:HB1	2:L:119:THR:CG2	2.39	0.52
2:G:105:ALA:HB1	2:G:119:THR:CG2	2.39	0.52
1:B:1523:ARG:NH2	6:B:2009:HOH:O	2.29	0.52
2:L:156:LEU:HD22	2:L:502:LEU:HG	1.92	0.52
1:B:46:GLU:OE1	1:B:51:PRO:HA	2.10	0.52
1:E:1367:ARG:HD2	1:E:1370:THR:HG21	1.90	0.52
1:F:1523:ARG:NH2	6:F:2009:HOH:O	2.29	0.52
1:F:46:GLU:OE1	1:F:51:PRO:HA	2.10	0.52
2:J:105:ALA:HB1	2:J:119:THR:CG2	2.39	0.52
2:I:105:ALA:HB1	2:I:119:THR:CG2	2.39	0.52
1:C:340:ARG:NH1	1:C:344:GLN:OE1	2.33	0.52
1:C:1309:VAL:HG23	6:C:2454:HOH:O	2.09	0.52
1:F:630:ILE:O	1:F:653:ARG:NH2	2.42	0.52
1:B:630:ILE:O	1:B:653:ARG:NH2	2.42	0.52
1:D:1309:VAL:HG23	6:D:2462:HOH:O	2.09	0.51
1:A:46:GLU:OE1	1:A:51:PRO:HA	2.10	0.51
1:C:712:LYS:NZ	6:C:2068:HOH:O	2.44	0.51
1:E:46:GLU:OE1	1:E:51:PRO:HA	2.10	0.51
2:G:1874:VAL:O	2:G:1878:VAL:HG23	2.11	0.51
1:D:340:ARG:NH1	1:D:344:GLN:OE1	2.33	0.51
1:D:712:LYS:NZ	6:D:2071:HOH:O	2.44	0.51
2:L:1874:VAL:O	2:L:1878:VAL:HG23	2.11	0.51
1:D:764:ASP:OD2	1:D:818:ARG:HD3	2.11	0.51
2:J:1874:VAL:O	2:J:1878:VAL:HG23	2.11	0.51
1:C:764:ASP:OD2	1:C:818:ARG:HD3	2.11	0.51
2:I:1874:VAL:O	2:I:1878:VAL:HG23	2.11	0.51
2:G:1360:ILE:CD1	2:G:1402:PRO:HB2	2.41	0.51
1:F:1471:LYS:HD3	1:F:1759:MET:HE2	1.94	0.51
2:H:69:SER:HA	2:H:72:VAL:HG12	1.93	0.51
2:L:1360:ILE:CD1	2:L:1402:PRO:HB2	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:1360:ILE:CD1	2:J:1402:PRO:HB2	2.41	0.50
2:K:69:SER:HA	2:K:72:VAL:HG12	1.93	0.50
1:B:808:LYS:HE3	1:E:782:GLU:O	2.11	0.50
1:B:1471:LYS:HD3	1:B:1759:MET:HE2	1.94	0.50
2:H:1360:ILE:CD1	2:H:1402:PRO:HB2	2.41	0.50
2:K:1360:ILE:CD1	2:K:1402:PRO:HB2	2.41	0.50
2:I:1360:ILE:CD1	2:I:1402:PRO:HB2	2.41	0.50
1:A:782:GLU:O	1:F:808:LYS:HE3	2.12	0.50
1:C:782:GLU:O	1:D:808:LYS:HE3	2.12	0.50
1:E:764:ASP:OD2	1:E:818:ARG:HD3	2.11	0.50
1:A:764:ASP:OD2	1:A:818:ARG:HD3	2.11	0.50
1:C:808:LYS:HE3	1:D:782:GLU:O	2.12	0.50
1:E:712:LYS:NZ	6:E:2069:HOH:O	2.44	0.50
2:K:1874:VAL:O	2:K:1878:VAL:HG23	2.11	0.50
2:J:69:SER:HA	2:J:72:VAL:HG12	1.93	0.50
2:I:69:SER:HA	2:I:72:VAL:HG12	1.93	0.50
1:D:1367:ARG:O	1:D:1370:THR:HB	2.12	0.50
1:F:1471:LYS:HD3	1:F:1759:MET:CE	2.42	0.50
2:H:1874:VAL:O	2:H:1878:VAL:HG23	2.11	0.50
2:H:1878:VAL:HG22	2:H:1944:ILE:HG12	1.94	0.50
2:K:1878:VAL:HG22	2:K:1944:ILE:HG12	1.94	0.50
2:L:1350:LEU:HD11	2:L:1410:PHE:HB3	1.94	0.50
1:A:712:LYS:NZ	6:A:2069:HOH:O	2.44	0.50
1:A:808:LYS:HE3	1:F:782:GLU:O	2.12	0.50
1:B:764:ASP:OD2	1:B:818:ARG:HD3	2.11	0.50
1:B:782:GLU:O	1:E:808:LYS:HE3	2.12	0.50
1:C:1367:ARG:O	1:C:1370:THR:HB	2.12	0.50
1:F:764:ASP:OD2	1:F:818:ARG:HD3	2.11	0.50
2:K:805:VAL:O	2:K:811:VAL:HG21	2.12	0.50
2:L:805:VAL:O	2:L:811:VAL:HG21	2.12	0.50
2:G:1350:LEU:HD11	2:G:1410:PHE:HB3	1.94	0.49
1:B:1464:GLU:CG	1:B:1773:VAL:HG13	2.42	0.49
1:B:1471:LYS:HD3	1:B:1759:MET:CE	2.42	0.49
1:F:1464:GLU:CG	1:F:1773:VAL:HG13	2.42	0.49
2:H:805:VAL:O	2:H:811:VAL:HG21	2.12	0.49
2:G:915:ALA:HA	2:G:1000:ILE:HD11	1.95	0.49
2:I:1350:LEU:HD11	2:I:1410:PHE:HB3	1.95	0.49
1:D:817:THR:OG1	6:D:2006:HOH:O	2.20	0.49
2:J:1350:LEU:HD11	2:J:1410:PHE:HB3	1.95	0.49
2:J:1782:THR:CG2	2:J:1827:LEU:HD21	2.43	0.49
2:K:1782:THR:CG2	2:K:1827:LEU:HD21	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:915:ALA:HA	2:L:1000:ILE:HD11	1.95	0.49
2:L:1736:MET:HG2	2:L:1751:ILE:HD13	1.94	0.49
2:G:1736:MET:HG2	2:G:1751:ILE:HD13	1.94	0.49
2:G:1782:THR:CG2	2:G:1827:LEU:HD21	2.43	0.49
1:E:1367:ARG:O	1:E:1370:THR:HB	2.12	0.49
2:J:915:ALA:HA	2:J:1000:ILE:HD11	1.95	0.49
2:I:805:VAL:O	2:I:811:VAL:HG21	2.12	0.49
2:I:915:ALA:HA	2:I:1000:ILE:HD11	1.95	0.49
2:I:1782:THR:CG2	2:I:1827:LEU:HD21	2.43	0.49
2:K:159:ILE:HA	2:K:271:THR:O	2.13	0.49
2:L:1782:THR:CG2	2:L:1827:LEU:HD21	2.43	0.49
2:H:159:ILE:HA	2:H:271:THR:O	2.13	0.49
2:H:1782:THR:CG2	2:H:1827:LEU:HD21	2.43	0.49
1:A:1367:ARG:O	1:A:1370:THR:HB	2.12	0.49
1:A:1464:GLU:CG	1:A:1773:VAL:HG13	2.42	0.49
2:J:805:VAL:O	2:J:811:VAL:HG21	2.12	0.49
2:I:159:ILE:HA	2:I:271:THR:O	2.13	0.49
1:E:1464:GLU:CG	1:E:1773:VAL:HG13	2.42	0.49
2:J:159:ILE:HA	2:J:271:THR:O	2.13	0.49
2:G:1546:THR:HG21	2:G:1616:VAL:HG11	1.95	0.49
2:I:1878:VAL:HG22	2:I:1944:ILE:HG12	1.94	0.49
2:K:915:ALA:HA	2:K:1000:ILE:HD11	1.95	0.49
2:L:1546:THR:HG21	2:L:1616:VAL:HG11	1.95	0.49
2:G:149:VAL:HG21	2:G:156:LEU:HD12	1.94	0.49
2:I:32:GLN:HA	2:H:7:ARG:NH2	2.28	0.49
2:H:1350:LEU:HD11	2:H:1410:PHE:HB3	1.95	0.49
2:K:124:LYS:O	2:K:128:THR:OG1	2.24	0.49
2:J:1878:VAL:HG22	2:J:1944:ILE:HG12	1.94	0.48
2:H:1736:MET:HG2	2:H:1751:ILE:HD13	1.94	0.48
2:L:149:VAL:HG21	2:L:156:LEU:HD12	1.94	0.48
2:J:1287:GLY:HA3	2:J:1374:THR:HG23	1.95	0.48
2:H:915:ALA:HA	2:H:1000:ILE:HD11	1.95	0.48
2:K:1350:LEU:HD11	2:K:1410:PHE:HB3	1.95	0.48
2:I:1287:GLY:HA3	2:I:1374:THR:HG23	1.95	0.48
2:H:124:LYS:O	2:H:128:THR:OG1	2.24	0.48
2:K:1736:MET:HG2	2:K:1751:ILE:HD13	1.94	0.48
2:L:1878:VAL:HG22	2:L:1944:ILE:HG12	1.94	0.48
1:B:1367:ARG:O	1:B:1370:THR:HB	2.12	0.48
1:C:877:LEU:CD1	3:C:1901:NAP:H2D	2.44	0.48
1:F:1367:ARG:O	1:F:1370:THR:HB	2.12	0.48
2:K:2044:ASN:HB3	2:K:2047:LYS:HD3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:1878:VAL:HG22	2:G:1944:ILE:HG12	1.94	0.48
2:G:1384:GLN:HE21	2:G:1389:ILE:CD1	2.27	0.48
1:D:877:LEU:CD1	3:D:1901:NAP:H2D	2.44	0.48
1:F:877:LEU:CD1	3:F:1901:NAP:H2D	2.44	0.48
2:J:1546:THR:HG21	2:J:1616:VAL:HG11	1.95	0.48
2:I:1546:THR:HG21	2:I:1616:VAL:HG11	1.95	0.48
2:H:2044:ASN:HB3	2:H:2047:LYS:HD3	1.96	0.48
2:G:159:ILE:HA	2:G:271:THR:O	2.13	0.48
2:K:1593:ILE:HD13	2:K:1626:ILE:HD13	1.96	0.48
2:L:1384:GLN:HE21	2:L:1389:ILE:CD1	2.27	0.48
2:L:1593:ILE:HD13	2:L:1626:ILE:HD13	1.96	0.48
2:G:1593:ILE:HD13	2:G:1626:ILE:HD13	1.96	0.48
1:B:712:LYS:NZ	6:B:2071:HOH:O	2.46	0.48
2:H:1593:ILE:HD13	2:H:1626:ILE:HD13	1.96	0.48
2:L:159:ILE:HA	2:L:271:THR:O	2.13	0.48
1:B:877:LEU:CD1	3:B:1901:NAP:H2D	2.44	0.48
1:F:712:LYS:NZ	6:F:2072:HOH:O	2.46	0.48
2:I:1593:ILE:HD13	2:I:1626:ILE:HD13	1.96	0.48
2:J:1593:ILE:HD13	2:J:1626:ILE:HD13	1.96	0.48
1:B:888:ILE:HD11	1:B:940:THR:HG22	1.97	0.47
1:F:888:ILE:HD11	1:F:940:THR:HG22	1.97	0.47
2:H:1355:ASN:ND2	2:H:1408:SER:OG	2.48	0.47
2:K:1355:ASN:ND2	2:K:1408:SER:OG	2.48	0.47
1:A:704:VAL:HG23	1:A:763:TRP:CZ3	2.50	0.47
2:J:48:PHE:HA	2:J:53:GLU:OE2	2.13	0.47
2:H:808:ALA:HB3	2:H:811:VAL:HG23	1.95	0.47
2:G:1778:GLN:HB2	2:G:1779:PRO:HD3	1.96	0.47
1:C:1201:SER:OG	1:C:1203:ASP:OD1	2.27	0.47
1:E:704:VAL:HG23	1:E:763:TRP:CZ3	2.50	0.47
1:F:1431:GLU:OE2	1:F:1523:ARG:HD2	2.15	0.47
2:J:45:THR:HG22	2:J:53:GLU:OE2	2.13	0.47
2:J:808:ALA:HB3	2:J:811:VAL:HG23	1.96	0.47
2:I:808:ALA:HB3	2:I:811:VAL:HG23	1.96	0.47
2:H:471:LEU:HD11	2:H:478:ARG:HG2	1.97	0.47
2:H:1287:GLY:HA3	2:H:1374:THR:HG23	1.95	0.47
2:K:109:LEU:HD12	2:K:119:THR:HG21	1.96	0.47
2:K:471:LEU:HD11	2:K:478:ARG:HG2	1.97	0.47
2:L:1778:GLN:HB2	2:L:1779:PRO:HD3	1.96	0.47
1:A:1431:GLU:OE2	1:A:1523:ARG:HD2	2.15	0.47
2:G:1234:VAL:HG12	2:G:1265:MET:HG3	1.97	0.47
1:B:1431:GLU:OE2	1:B:1523:ARG:HD2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:704:VAL:HG23	1:C:763:TRP:CZ3	2.50	0.47
1:D:704:VAL:HG23	1:D:763:TRP:CZ3	2.50	0.47
1:E:1431:GLU:OE2	1:E:1523:ARG:HD2	2.15	0.47
2:H:868:PHE:CD1	2:H:872:ILE:HD12	2.50	0.47
2:H:870:GLU:O	2:H:874:ASN:ND2	2.48	0.47
2:H:1546:THR:HG21	2:H:1616:VAL:HG11	1.95	0.47
2:H:2030:TYR:CE1	2:H:2039:LYS:HB2	2.50	0.47
2:K:808:ALA:HB3	2:K:811:VAL:HG23	1.95	0.47
2:K:868:PHE:CD1	2:K:872:ILE:HD12	2.50	0.47
2:K:870:GLU:O	2:K:874:ASN:ND2	2.48	0.47
2:K:1287:GLY:HA3	2:K:1374:THR:HG23	1.95	0.47
2:K:1546:THR:HG21	2:K:1616:VAL:HG11	1.95	0.47
2:K:2030:TYR:CE1	2:K:2039:LYS:HB2	2.50	0.47
2:L:1234:VAL:HG12	2:L:1265:MET:HG3	1.97	0.47
2:G:471:LEU:HD11	2:G:478:ARG:HG2	1.97	0.47
1:E:877:LEU:CD1	3:E:1901:NAP:H2D	2.43	0.47
2:I:414:LEU:HD12	2:I:414:LEU:O	2.15	0.47
2:L:471:LEU:HD11	2:L:478:ARG:HG2	1.97	0.47
1:A:877:LEU:CD1	3:A:1901:NAP:H2D	2.43	0.47
2:J:414:LEU:O	2:J:414:LEU:HD12	2.15	0.47
2:J:870:GLU:O	2:J:874:ASN:ND2	2.48	0.47
2:I:870:GLU:O	2:I:874:ASN:ND2	2.48	0.47
2:I:326:ASP:OD1	2:I:387:TYR:OH	2.33	0.47
2:H:1234:VAL:HG12	2:H:1265:MET:HG3	1.97	0.47
2:J:1234:VAL:HG12	2:J:1265:MET:HG3	1.97	0.46
2:I:1355:ASN:ND2	2:I:1408:SER:OG	2.47	0.46
2:H:1778:GLN:HB2	2:H:1779:PRO:HD3	1.96	0.46
2:K:1234:VAL:HG12	2:K:1265:MET:HG3	1.97	0.46
2:K:1778:GLN:HB2	2:K:1779:PRO:HD3	1.96	0.46
5:L:2302:FNR:H1	5:L:2302:FNR:H4'	1.63	0.46
2:G:870:GLU:O	2:G:874:ASN:ND2	2.48	0.46
2:J:1355:ASN:ND2	2:J:1408:SER:OG	2.47	0.46
2:K:2015:THR:HG23	2:K:2028:ASP:OD2	2.15	0.46
2:L:808:ALA:HB3	2:L:811:VAL:HG23	1.96	0.46
2:L:1355:ASN:ND2	2:L:1408:SER:OG	2.48	0.46
2:G:1355:ASN:ND2	2:G:1408:SER:OG	2.47	0.46
5:G:2302:FNR:H1	5:G:2302:FNR:H4'	1.64	0.46
2:J:1374:THR:HG21	6:J:2666:HOH:O	2.16	0.46
2:I:1234:VAL:HG12	2:I:1265:MET:HG3	1.97	0.46
2:H:2015:THR:HG23	2:H:2028:ASP:OD2	2.16	0.46
2:L:870:GLU:O	2:L:874:ASN:ND2	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1673:TYR:CE1	1:B:1677:VAL:CG2	2.99	0.46
1:F:704:VAL:HG23	1:F:763:TRP:CZ3	2.50	0.46
1:F:1673:TYR:CE1	1:F:1677:VAL:CG2	2.99	0.46
2:J:2030:TYR:CE1	2:J:2039:LYS:HB2	2.50	0.46
2:L:868:PHE:CD1	2:L:872:ILE:HD12	2.50	0.46
2:L:2015:THR:HG23	2:L:2028:ASP:OD2	2.15	0.46
2:J:1665:VAL:HA	2:J:1805:ALA:O	2.16	0.46
2:G:868:PHE:CD1	2:G:872:ILE:HD12	2.50	0.46
2:G:2015:THR:HG23	2:G:2028:ASP:OD2	2.16	0.46
1:C:1431:GLU:OE2	1:C:1523:ARG:HD2	2.15	0.46
2:J:868:PHE:CD1	2:J:872:ILE:HD12	2.50	0.46
2:I:1665:VAL:HA	2:I:1805:ALA:O	2.16	0.46
2:G:414:LEU:HD12	2:G:414:LEU:O	2.15	0.46
1:B:704:VAL:HG23	1:B:763:TRP:CZ3	2.50	0.46
1:D:1557:ILE:HD11	1:D:1642:THR:HG21	1.98	0.46
1:E:1246:CYS:HA	1:E:1299:LYS:O	2.16	0.46
2:J:2015:THR:HG23	2:J:2028:ASP:OD2	2.16	0.46
2:I:844:VAL:HG21	2:I:866:LYS:HD2	1.98	0.46
2:I:2030:TYR:CE1	2:I:2039:LYS:HB2	2.50	0.46
1:B:1557:ILE:HD11	1:B:1642:THR:HG21	1.97	0.46
1:C:420:ILE:CD1	1:C:472:LEU:HD23	2.46	0.46
1:C:1557:ILE:HD11	1:C:1642:THR:HG21	1.98	0.46
1:D:1431:GLU:OE2	1:D:1523:ARG:HD2	2.15	0.46
2:J:234:ILE:N	2:J:235:PRO:CD	2.79	0.46
2:J:844:VAL:HG21	2:J:866:LYS:HD2	1.98	0.46
2:I:868:PHE:CD1	2:I:872:ILE:HD12	2.50	0.46
2:I:1374:THR:HG21	6:I:2666:HOH:O	2.16	0.46
2:L:414:LEU:O	2:L:414:LEU:HD12	2.15	0.46
1:A:1246:CYS:HA	1:A:1299:LYS:O	2.16	0.46
2:G:1906:ALA:O	2:G:1909:THR:OG1	2.31	0.46
1:D:420:ILE:CD1	1:D:472:LEU:HD23	2.46	0.46
2:J:471:LEU:HD11	2:J:478:ARG:HG2	1.97	0.46
2:J:1778:GLN:HB2	2:J:1779:PRO:HD3	1.96	0.46
2:I:471:LEU:HD11	2:I:478:ARG:HG2	1.97	0.46
2:I:598:THR:HA	2:I:599:PRO:HA	1.82	0.46
2:I:2015:THR:HG23	2:I:2028:ASP:OD2	2.16	0.46
2:H:234:ILE:N	2:H:235:PRO:CD	2.79	0.46
1:A:1673:TYR:CE1	1:A:1677:VAL:CG2	2.99	0.46
2:I:234:ILE:N	2:I:235:PRO:CD	2.79	0.46
2:K:234:ILE:N	2:K:235:PRO:CD	2.79	0.46
2:L:1906:ALA:O	2:L:1909:THR:OG1	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:1557:ILE:HD11	1:F:1642:THR:HG21	1.98	0.45
2:J:124:LYS:O	2:J:128:THR:OG1	2.24	0.45
2:I:1778:GLN:HB2	2:I:1779:PRO:HD3	1.96	0.45
2:I:1868:GLN:HG3	2:I:1898:TYR:CE2	2.51	0.45
2:H:1665:VAL:HA	2:H:1805:ALA:O	2.16	0.45
2:K:1665:VAL:HA	2:K:1805:ALA:O	2.16	0.45
2:L:844:VAL:HG21	2:L:866:LYS:HD2	1.99	0.45
1:A:1298:ILE:HB	1:E:1411:THR:HG23	1.98	0.45
1:A:1411:THR:HG23	1:E:1298:ILE:HB	1.98	0.45
2:G:326:ASP:OD1	2:G:387:TYR:OH	2.33	0.45
2:G:844:VAL:HG21	2:G:866:LYS:HD2	1.99	0.45
2:G:1384:GLN:HE21	2:G:1389:ILE:HD12	1.81	0.45
1:E:1673:TYR:CE1	1:E:1677:VAL:CG2	2.99	0.45
2:H:414:LEU:HD12	2:H:414:LEU:O	2.15	0.45
2:L:1384:GLN:HE21	2:L:1389:ILE:HD12	1.81	0.45
1:C:1246:CYS:HA	1:C:1299:LYS:O	2.16	0.45
1:D:1246:CYS:HA	1:D:1299:LYS:O	2.16	0.45
2:J:1868:GLN:HG3	2:J:1898:TYR:CE2	2.51	0.45
2:K:414:LEU:HD12	2:K:414:LEU:O	2.15	0.45
2:L:1665:VAL:HA	2:L:1805:ALA:O	2.16	0.45
1:A:420:ILE:CD1	1:A:472:LEU:HD23	2.47	0.45
2:G:1665:VAL:HA	2:G:1805:ALA:O	2.16	0.45
1:C:1673:TYR:CE1	1:C:1677:VAL:CG2	2.99	0.45
1:D:1673:TYR:CE1	1:D:1677:VAL:CG2	2.99	0.45
1:E:420:ILE:CD1	1:E:472:LEU:HD23	2.47	0.45
2:L:1605:VAL:HG22	2:L:1657:ILE:HD12	1.99	0.45
2:G:1605:VAL:HG22	2:G:1657:ILE:HD12	1.99	0.45
1:C:1248:GLY:O	1:C:1331:GLY:HA2	2.17	0.45
1:D:1248:GLY:O	1:D:1331:GLY:HA2	2.17	0.45
2:J:598:THR:HA	2:J:599:PRO:HA	1.82	0.45
2:I:124:LYS:O	2:I:128:THR:OG1	2.24	0.45
2:H:844:VAL:HG21	2:H:866:LYS:HD2	1.98	0.45
2:K:844:VAL:HG21	2:K:866:LYS:HD2	1.98	0.45
2:G:234:ILE:N	2:G:235:PRO:CD	2.79	0.45
1:B:420:ILE:CD1	1:B:472:LEU:HD23	2.46	0.45
1:B:1246:CYS:HA	1:B:1299:LYS:O	2.16	0.45
1:F:1246:CYS:HA	1:F:1299:LYS:O	2.16	0.45
1:A:1557:ILE:HD11	1:A:1642:THR:HG21	1.97	0.45
1:E:1557:ILE:HD11	1:E:1642:THR:HG21	1.97	0.45
1:F:420:ILE:CD1	1:F:472:LEU:HD23	2.46	0.45
2:H:1374:THR:HG21	6:H:2682:HOH:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:234:ILE:N	2:L:235:PRO:CD	2.79	0.45
1:B:1248:GLY:O	1:B:1331:GLY:HA2	2.17	0.45
2:J:1547:PRO:HD3	2:J:1584:PHE:CZ	2.52	0.45
2:I:1547:PRO:HD3	2:I:1584:PHE:CZ	2.52	0.45
2:H:1605:VAL:HG22	2:H:1657:ILE:HD12	1.99	0.45
2:G:1547:PRO:HD3	2:G:1584:PHE:CZ	2.52	0.45
2:H:1782:THR:HG21	2:H:1827:LEU:HD11	1.99	0.45
2:K:663:ILE:HB	2:K:664:PRO:HD3	1.99	0.45
2:K:1605:VAL:HG22	2:K:1657:ILE:HD12	1.99	0.45
2:K:1782:THR:HG21	2:K:1827:LEU:HD11	1.99	0.45
2:L:369:SER:HB2	2:L:428:HIS:HB2	1.99	0.45
2:L:1547:PRO:HD3	2:L:1584:PHE:CZ	2.52	0.45
2:G:369:SER:HB2	2:G:428:HIS:HB2	1.99	0.45
1:F:1248:GLY:O	1:F:1331:GLY:HA2	2.17	0.45
2:H:663:ILE:HB	2:H:664:PRO:HD3	1.99	0.45
2:K:1374:THR:HG21	6:K:2691:HOH:O	2.16	0.45
1:B:1713:ASP:HB3	1:B:1738:ILE:HG21	1.99	0.44
1:F:1713:ASP:HB3	1:F:1738:ILE:HG21	1.99	0.44
2:J:960:LYS:HA	2:J:960:LYS:HE2	1.99	0.44
2:I:264:ARG:NH1	2:I:286:THR:O	2.51	0.44
2:I:663:ILE:HB	2:I:664:PRO:HD3	1.99	0.44
2:I:960:LYS:HE2	2:I:960:LYS:HA	1.99	0.44
1:A:616:LEU:N	1:A:617:PRO:CD	2.81	0.44
2:G:2044:ASN:HB3	2:G:2047:LYS:HD3	2.00	0.44
1:B:1298:ILE:HB	1:D:1411:THR:HG23	1.98	0.44
1:C:702:LYS:HD3	1:C:702:LYS:N	2.33	0.44
1:C:1411:THR:HG23	1:F:1298:ILE:HB	1.98	0.44
1:E:616:LEU:N	1:E:617:PRO:CD	2.81	0.44
2:J:264:ARG:NH1	2:J:286:THR:O	2.51	0.44
2:J:663:ILE:HB	2:J:664:PRO:HD3	1.99	0.44
2:L:2044:ASN:HB3	2:L:2047:LYS:HD3	2.00	0.44
1:D:702:LYS:HD3	1:D:702:LYS:N	2.33	0.44
1:B:743:GLN:NE2	1:E:377:TYR:CE1	2.85	0.44
2:J:1960:LEU:HD12	2:J:1960:LEU:HA	1.91	0.44
1:A:377:TYR:CE1	1:F:743:GLN:NE2	2.85	0.44
2:H:1547:PRO:HD3	2:H:1584:PHE:CZ	2.52	0.44
2:L:1782:THR:HG21	2:L:1827:LEU:HD11	1.99	0.44
2:G:1782:THR:HG21	2:G:1827:LEU:HD11	1.99	0.44
1:C:1298:ILE:HB	1:F:1411:THR:HG23	1.98	0.44
1:F:702:LYS:N	1:F:702:LYS:HD3	2.33	0.44
2:J:1605:VAL:HG22	2:J:1657:ILE:HD12	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:1605:VAL:HG22	2:I:1657:ILE:HD12	1.99	0.44
2:K:1547:PRO:HD3	2:K:1584:PHE:CZ	2.52	0.44
1:B:702:LYS:HD3	1:B:702:LYS:N	2.33	0.44
1:B:1411:THR:HG23	1:D:1298:ILE:HB	1.98	0.44
1:C:442:ARG:HD3	1:C:726:GLY:O	2.18	0.44
1:D:442:ARG:HD3	1:D:726:GLY:O	2.18	0.44
2:L:1040:LEU:O	2:L:1046:GLN:HA	2.18	0.44
1:A:442:ARG:HD3	1:A:726:GLY:O	2.18	0.44
1:C:616:LEU:N	1:C:617:PRO:CD	2.81	0.44
1:E:442:ARG:HD3	1:E:726:GLY:O	2.18	0.44
2:H:264:ARG:NH1	2:H:286:THR:O	2.50	0.44
2:K:264:ARG:NH1	2:K:286:THR:O	2.50	0.44
2:G:1040:LEU:O	2:G:1046:GLN:HA	2.18	0.44
1:D:616:LEU:N	1:D:617:PRO:CD	2.81	0.44
2:H:1040:LEU:O	2:H:1046:GLN:HA	2.18	0.44
2:G:264:ARG:NH1	2:G:286:THR:O	2.51	0.43
1:C:377:TYR:CE1	1:D:743:GLN:NE2	2.86	0.43
1:C:743:GLN:NE2	1:D:377:TYR:CE1	2.86	0.43
1:F:616:LEU:N	1:F:617:PRO:CD	2.81	0.43
2:J:618:GLU:HG2	2:J:678:PHE:CE2	2.53	0.43
2:I:528:ILE:HG21	2:I:547:ILE:HG13	2.00	0.43
2:K:1040:LEU:O	2:K:1046:GLN:HA	2.18	0.43
2:L:264:ARG:NH1	2:L:286:THR:O	2.51	0.43
1:B:616:LEU:N	1:B:617:PRO:CD	2.81	0.43
1:E:1248:GLY:O	1:E:1331:GLY:HA2	2.17	0.43
2:J:528:ILE:HG21	2:J:547:ILE:HG13	2.00	0.43
2:J:1808:J8W:O9	2:J:1834:ARG:NH1	2.38	0.43
2:I:618:GLU:HG2	2:I:678:PHE:CE2	2.53	0.43
2:I:1782:THR:HG21	2:I:1827:LEU:HD11	1.99	0.43
2:H:369:SER:HB2	2:H:428:HIS:HB2	1.99	0.43
2:H:1339:PHE:N	2:H:1340:PRO:CD	2.81	0.43
2:K:1339:PHE:N	2:K:1340:PRO:CD	2.81	0.43
1:B:442:ARG:HD3	1:B:726:GLY:O	2.18	0.43
2:J:369:SER:HB2	2:J:428:HIS:HB2	1.99	0.43
2:J:1040:LEU:O	2:J:1046:GLN:HA	2.18	0.43
2:J:1339:PHE:N	2:J:1340:PRO:CD	2.81	0.43
2:I:369:SER:HB2	2:I:428:HIS:HB2	1.99	0.43
2:K:369:SER:HB2	2:K:428:HIS:HB2	1.99	0.43
1:A:1248:GLY:O	1:A:1331:GLY:HA2	2.17	0.43
2:G:618:GLU:HG2	2:G:678:PHE:CE2	2.53	0.43
2:G:1339:PHE:N	2:G:1340:PRO:CD	2.81	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:59:ARG:NH2	4:H:2301:COA:O1A	2.50	0.43
1:F:442:ARG:HD3	1:F:726:GLY:O	2.18	0.43
1:F:1154:ILE:HA	1:F:1164:SER:O	2.19	0.43
1:F:1460:LYS:HE2	1:F:1774:GLU:OE2	2.18	0.43
2:J:317:THR:HG22	2:K:1312:VAL:HG21	2.00	0.43
2:J:1782:THR:HG21	2:J:1827:LEU:HD11	1.99	0.43
2:I:317:THR:HG22	2:H:1312:VAL:HG21	2.00	0.43
2:I:1040:LEU:O	2:I:1046:GLN:HA	2.18	0.43
2:L:618:GLU:HG2	2:L:678:PHE:CE2	2.53	0.43
1:A:1713:ASP:HB3	1:A:1738:ILE:HG21	1.99	0.43
2:G:663:ILE:HB	2:G:664:PRO:HD3	1.99	0.43
2:G:1312:VAL:HG21	2:H:317:THR:HG22	2.00	0.43
1:B:1154:ILE:HA	1:B:1164:SER:O	2.19	0.43
1:B:1460:LYS:HE2	1:B:1774:GLU:OE2	2.18	0.43
1:F:413:LEU:HG	1:F:451:MET:HG2	2.01	0.43
2:I:1339:PHE:N	2:I:1340:PRO:CD	2.81	0.43
5:I:2302:FNR:H1	5:I:2302:FNR:H4'	1.67	0.43
2:K:317:THR:HG22	2:L:1312:VAL:HG21	2.00	0.43
2:L:663:ILE:HB	2:L:664:PRO:HD3	1.99	0.43
2:L:1339:PHE:N	2:L:1340:PRO:CD	2.81	0.43
1:A:702:LYS:HD3	1:A:702:LYS:N	2.33	0.43
1:B:413:LEU:HG	1:B:451:MET:HG2	2.01	0.43
1:E:702:LYS:HD3	1:E:702:LYS:N	2.33	0.43
1:E:1154:ILE:HA	1:E:1164:SER:O	2.19	0.43
2:H:1723:GLY:O	2:H:1727:LYS:HG2	2.19	0.43
2:K:1723:GLY:O	2:K:1727:LYS:HG2	2.19	0.43
1:A:1154:ILE:HA	1:A:1164:SER:O	2.19	0.43
2:G:1327:ILE:O	2:G:1331:TRP:HB2	2.19	0.43
2:J:1723:GLY:O	2:J:1727:LYS:HG2	2.19	0.43
2:J:2044:ASN:HB3	2:J:2047:LYS:HD3	2.00	0.43
2:I:1723:GLY:O	2:I:1727:LYS:HG2	2.19	0.43
2:I:2044:ASN:HB3	2:I:2047:LYS:HD3	2.00	0.43
2:L:1327:ILE:O	2:L:1331:TRP:HB2	2.19	0.43
2:L:1723:GLY:O	2:L:1727:LYS:HG2	2.19	0.43
1:D:1713:ASP:HB3	1:D:1738:ILE:HG21	1.99	0.43
2:H:618:GLU:HG2	2:H:678:PHE:CE2	2.54	0.43
1:A:1443:LEU:HD23	1:A:1443:LEU:HA	1.89	0.43
2:G:1723:GLY:O	2:G:1727:LYS:HG2	2.19	0.43
1:B:377:TYR:CE1	1:E:743:GLN:NE2	2.85	0.43
1:E:1713:ASP:HB3	1:E:1738:ILE:HG21	1.99	0.43
2:J:264:ARG:NH1	2:J:456:GLN:HG3	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:1327:ILE:O	2:J:1331:TRP:HB2	2.19	0.43
2:I:1327:ILE:O	2:I:1331:TRP:HB2	2.19	0.43
2:K:618:GLU:HG2	2:K:678:PHE:CE2	2.54	0.43
1:C:1713:ASP:HB3	1:C:1738:ILE:HG21	1.99	0.43
2:J:2023:LYS:HG3	2:J:2045:TRP:CD2	2.54	0.43
2:I:264:ARG:NH1	2:I:456:GLN:HG3	2.34	0.43
2:I:2023:LYS:HG3	2:I:2045:TRP:CD2	2.54	0.43
2:K:1960:LEU:HD12	2:K:1960:LEU:HA	1.90	0.43
2:L:56:THR:CG2	2:L:112:ASN:HD22	2.32	0.43
2:G:56:THR:CG2	2:G:112:ASN:HD22	2.32	0.42
2:G:264:ARG:NH1	2:G:456:GLN:HG3	2.34	0.42
2:G:528:ILE:HG21	2:G:547:ILE:HG13	2.00	0.42
1:B:878:MET:HG3	3:B:1901:NAP:N7N	2.34	0.42
1:E:1443:LEU:HD23	1:E:1443:LEU:HA	1.89	0.42
1:F:878:MET:HG3	3:F:1901:NAP:N7N	2.34	0.42
2:H:176:LEU:HD13	2:H:247:ALA:HB3	2.01	0.42
2:H:481:ASP:OD2	2:H:485:ARG:NH1	2.52	0.42
2:K:481:ASP:OD2	2:K:485:ARG:NH1	2.52	0.42
2:L:481:ASP:OD2	2:L:485:ARG:NH1	2.52	0.42
2:G:481:ASP:OD2	2:G:485:ARG:NH1	2.52	0.42
1:B:1117:GLU:O	1:D:1146:HIS:HE1	2.02	0.42
1:C:878:MET:HG3	3:C:1901:NAP:N7N	2.35	0.42
1:C:1154:ILE:HA	1:C:1164:SER:O	2.19	0.42
1:D:1154:ILE:HA	1:D:1164:SER:O	2.19	0.42
1:F:378:LEU:HD23	1:F:378:LEU:HA	1.89	0.42
1:F:419:GLU:HG3	6:F:2108:HOH:O	2.18	0.42
2:J:1445:ARG:NH2	2:J:1455:GLU:O	2.52	0.42
2:I:1445:ARG:NH2	2:I:1455:GLU:O	2.53	0.42
2:H:1360:ILE:HD13	2:H:1402:PRO:HB2	2.01	0.42
5:H:2302:FNR:H4'	5:H:2302:FNR:H1	1.64	0.42
2:K:176:LEU:HD13	2:K:247:ALA:HB3	2.02	0.42
5:K:2302:FNR:H1	5:K:2302:FNR:H4'	1.64	0.42
2:L:264:ARG:NH1	2:L:456:GLN:HG3	2.34	0.42
2:L:528:ILE:HG21	2:L:547:ILE:HG13	2.01	0.42
1:A:413:LEU:HG	1:A:451:MET:HG2	2.01	0.42
1:A:1117:GLU:O	1:E:1146:HIS:HE1	2.02	0.42
1:A:1305:CYS:HB3	1:A:1583:HIS:CE1	2.54	0.42
2:G:1337:ALA:HB1	2:G:1378:ILE:HG12	2.02	0.42
1:B:419:GLU:HG3	6:B:2107:HOH:O	2.18	0.42
1:C:1146:HIS:HE1	1:F:1117:GLU:O	2.02	0.42
1:E:1305:CYS:HB3	1:E:1583:HIS:CE1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:2023:LYS:HG3	2:J:2045:TRP:CG	2.55	0.42
2:H:1445:ARG:NH2	2:H:1455:GLU:O	2.53	0.42
2:K:1445:ARG:NH2	2:K:1455:GLU:O	2.53	0.42
1:A:1673:TYR:O	1:A:1677:VAL:HG23	2.20	0.42
2:G:747:HIS:HE1	2:G:780:TYR:OH	2.03	0.42
1:D:878:MET:HG3	3:D:1901:NAP:N7N	2.35	0.42
1:E:413:LEU:HG	1:E:451:MET:HG2	2.01	0.42
1:E:850:PHE:CE2	1:E:923:MET:HE2	2.54	0.42
1:E:1460:LYS:HE2	1:E:1774:GLU:OE2	2.18	0.42
1:E:1673:TYR:O	1:E:1677:VAL:HG23	2.20	0.42
1:F:1274:ILE:HD12	1:F:1274:ILE:HA	1.90	0.42
2:H:1337:ALA:HB1	2:H:1378:ILE:HG12	2.02	0.42
2:K:1337:ALA:HB1	2:K:1378:ILE:HG12	2.02	0.42
2:L:747:HIS:HE1	2:L:780:TYR:OH	2.02	0.42
2:L:1337:ALA:HB1	2:L:1378:ILE:HG12	2.02	0.42
2:L:2023:LYS:HG3	2:L:2045:TRP:CD2	2.54	0.42
1:A:743:GLN:NE2	1:F:377:TYR:CE1	2.85	0.42
1:A:817:THR:OG1	6:A:2006:HOH:O	2.22	0.42
1:B:1673:TYR:O	1:B:1677:VAL:HG23	2.20	0.42
1:C:413:LEU:HG	1:C:451:MET:HG2	2.01	0.42
1:C:1443:LEU:HD23	1:C:1443:LEU:HA	1.89	0.42
2:J:1337:ALA:HB1	2:J:1378:ILE:HG12	2.02	0.42
2:I:1337:ALA:HB1	2:I:1378:ILE:HG12	2.02	0.42
2:I:2023:LYS:HG3	2:I:2045:TRP:CG	2.55	0.42
2:K:2023:LYS:HG3	2:K:2045:TRP:CD2	2.54	0.42
2:L:1905:ARG:O	2:L:1909:THR:HG23	2.19	0.42
1:A:1146:HIS:HE1	1:E:1117:GLU:O	2.02	0.42
1:A:1302:VAL:HG23	1:E:1302:VAL:HG23	2.02	0.42
1:A:1460:LYS:HE2	1:A:1774:GLU:OE2	2.18	0.42
2:G:1445:ARG:NH2	2:G:1455:GLU:O	2.53	0.42
2:G:2023:LYS:HG3	2:G:2045:TRP:CD2	2.54	0.42
1:F:1673:TYR:O	1:F:1677:VAL:HG23	2.20	0.42
2:I:1549:THR:OG1	2:I:1551:GLU:OE1	2.34	0.42
2:H:1915:ASN:HD21	2:H:1963:GLY:CA	2.33	0.42
2:H:2023:LYS:HG3	2:H:2045:TRP:CD2	2.54	0.42
2:L:1445:ARG:NH2	2:L:1455:GLU:O	2.53	0.42
5:G:2302:FNR:N5	3:G:2303:NAP:C4N	2.83	0.42
1:B:378:LEU:HD23	1:B:378:LEU:HA	1.89	0.42
1:B:1274:ILE:HD12	1:B:1274:ILE:HA	1.90	0.42
1:D:413:LEU:HG	1:D:451:MET:HG2	2.01	0.42
1:F:415:SER:OG	1:F:1629:LYS:NZ	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:481:ASP:OD2	2:J:485:ARG:NH1	2.52	0.42
2:I:747:HIS:HE1	2:I:780:TYR:OH	2.02	0.42
2:H:598:THR:HA	2:H:599:PRO:HA	1.82	0.42
2:K:1033:SER:OG	6:K:2402:HOH:O	2.21	0.42
2:G:1905:ARG:O	2:G:1909:THR:HG23	2.19	0.42
1:B:415:SER:OG	1:B:1629:LYS:NZ	2.53	0.42
1:F:1443:LEU:HD23	1:F:1443:LEU:HA	1.89	0.42
2:J:72:VAL:HG11	2:J:84:LEU:CD2	2.49	0.42
2:J:747:HIS:HE1	2:J:780:TYR:OH	2.02	0.42
2:J:1360:ILE:HD13	2:J:1402:PRO:HB2	2.01	0.42
2:I:72:VAL:HG11	2:I:84:LEU:CD2	2.49	0.42
2:I:1360:ILE:HD13	2:I:1402:PRO:HB2	2.02	0.42
2:H:273:HIS:CD2	2:H:488:VAL:HG11	2.55	0.42
1:B:1146:HIS:HE1	1:D:1117:GLU:O	2.02	0.42
1:D:1443:LEU:HD23	1:D:1443:LEU:HA	1.89	0.42
1:F:1305:CYS:HB3	1:F:1583:HIS:CE1	2.54	0.42
2:J:56:THR:HG22	2:J:112:ASN:HD22	1.85	0.42
2:I:481:ASP:OD2	2:I:485:ARG:NH1	2.52	0.42
2:K:273:HIS:CD2	2:K:488:VAL:HG11	2.55	0.42
2:K:528:ILE:HG21	2:K:547:ILE:HG13	2.00	0.42
2:K:1360:ILE:HD13	2:K:1402:PRO:HB2	2.01	0.42
2:L:2023:LYS:HG3	2:L:2045:TRP:CG	2.55	0.42
5:L:2302:FNR:N5	3:L:2303:NAP:C4N	2.83	0.42
1:A:419:GLU:HG3	6:A:2104:HOH:O	2.19	0.42
1:A:713:GLN:NE2	6:A:2137:HOH:O	2.53	0.42
2:G:2023:LYS:HG3	2:G:2045:TRP:CG	2.55	0.42
1:B:1305:CYS:HB3	1:B:1583:HIS:CE1	2.54	0.42
1:E:419:GLU:HG3	6:E:2109:HOH:O	2.19	0.42
1:E:713:GLN:NE2	6:E:2143:HOH:O	2.53	0.42
1:E:888:ILE:HD11	1:E:940:THR:HG22	2.02	0.42
5:J:2302:FNR:N5	3:J:2303:NAP:C4N	2.83	0.42
2:H:528:ILE:HG21	2:H:547:ILE:HG13	2.00	0.42
2:L:176:LEU:HD13	2:L:247:ALA:HB3	2.01	0.42
1:A:888:ILE:HD11	1:A:940:THR:HG22	2.02	0.41
2:G:176:LEU:HD13	2:G:247:ALA:HB3	2.01	0.41
2:G:208:VAL:HG13	2:G:235:PRO:HG2	2.02	0.41
1:C:415:SER:OG	1:C:1629:LYS:NZ	2.53	0.41
1:D:415:SER:OG	1:D:1629:LYS:NZ	2.53	0.41
5:I:2302:FNR:N5	3:I:2303:NAP:C4N	2.83	0.41
2:H:72:VAL:HG11	2:H:84:LEU:CD2	2.49	0.41
2:H:1584:PHE:CD2	2:H:1584:PHE:C	2.94	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:1584:PHE:CD2	2:K:1584:PHE:C	2.94	0.41
2:K:1897:GLN:NE2	4:K:2301:COA:H143	2.35	0.41
2:L:960:LYS:HA	2:L:960:LYS:HE2	2.02	0.41
2:L:1360:ILE:HD13	2:L:1402:PRO:HB2	2.02	0.41
1:A:1584:PRO:HG3	1:A:1591:TRP:CE3	2.55	0.41
2:G:960:LYS:HA	2:G:960:LYS:HE2	2.02	0.41
1:C:1117:GLU:O	1:F:1146:HIS:HE1	2.02	0.41
1:D:821:GLN:OE1	1:D:909:LEU:HD23	2.21	0.41
1:E:1584:PRO:HG3	1:E:1591:TRP:CE3	2.55	0.41
2:I:176:LEU:HD13	2:I:247:ALA:HB3	2.01	0.41
2:H:1327:ILE:O	2:H:1331:TRP:HB2	2.19	0.41
2:L:208:VAL:HG13	2:L:235:PRO:HG2	2.02	0.41
1:C:821:GLN:OE1	1:C:909:LEU:HD23	2.21	0.41
1:E:21:GLN:NE2	2:L:1808:J8W:O	2.47	0.41
1:F:17:LEU:HD23	2:J:2014:LEU:HD23	2.02	0.41
2:J:273:HIS:CD2	2:J:488:VAL:HG11	2.55	0.41
2:J:364:LYS:HA	2:J:382:PRO:HG2	2.03	0.41
2:I:273:HIS:CD2	2:I:488:VAL:HG11	2.55	0.41
2:I:364:LYS:HA	2:I:382:PRO:HG2	2.03	0.41
2:H:1208:THR:HB	2:H:1568:HIS:CE1	2.56	0.41
2:K:598:THR:HA	2:K:599:PRO:HA	1.82	0.41
2:K:1208:THR:HB	2:K:1568:HIS:CE1	2.56	0.41
1:A:21:GLN:NE2	2:G:1808:J8W:O	2.48	0.41
2:G:1360:ILE:HD13	2:G:1402:PRO:HB2	2.02	0.41
1:D:1305:CYS:HB3	1:D:1583:HIS:CE1	2.54	0.41
2:J:56:THR:CG2	2:J:112:ASN:HD22	2.32	0.41
2:J:176:LEU:HD13	2:J:247:ALA:HB3	2.01	0.41
2:J:1087:HIS:HA	2:J:1092:ASP:OD2	2.21	0.41
2:H:2023:LYS:HG3	2:H:2045:TRP:CG	2.55	0.41
2:K:72:VAL:HG11	2:K:84:LEU:CD2	2.49	0.41
2:K:1327:ILE:O	2:K:1331:TRP:HB2	2.19	0.41
2:K:2023:LYS:HG3	2:K:2045:TRP:CG	2.55	0.41
1:B:821:GLN:OE1	1:B:909:LEU:HD23	2.21	0.41
1:B:1568:GLU:O	6:B:2005:HOH:O	2.21	0.41
1:C:378:LEU:HD23	1:C:378:LEU:HA	1.89	0.41
1:C:1305:CYS:HB3	1:C:1583:HIS:CE1	2.54	0.41
1:C:1425:ILE:HD12	1:C:1425:ILE:HA	1.96	0.41
1:D:1425:ILE:HD12	1:D:1425:ILE:HA	1.96	0.41
2:I:1087:HIS:HA	2:I:1092:ASP:OD2	2.21	0.41
2:H:747:HIS:HE1	2:H:780:TYR:OH	2.03	0.41
5:H:2302:FNR:N5	3:H:2303:NAP:C4N	2.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:523:SER:O	1:B:527:GLN:HG3	2.21	0.41
1:C:343:LEU:C	1:C:343:LEU:HD23	2.41	0.41
1:D:343:LEU:HD23	1:D:343:LEU:C	2.41	0.41
1:D:419:GLU:HG3	6:D:2101:HOH:O	2.19	0.41
1:D:1673:TYR:O	1:D:1677:VAL:HG23	2.20	0.41
1:F:343:LEU:HD23	1:F:343:LEU:C	2.41	0.41
1:F:523:SER:O	1:F:527:GLN:HG3	2.21	0.41
1:F:821:GLN:OE1	1:F:909:LEU:HD23	2.21	0.41
2:K:747:HIS:HE1	2:K:780:TYR:OH	2.02	0.41
2:L:245:GLN:HG2	2:L:505:GLY:HA2	2.02	0.41
2:G:56:THR:HG22	2:G:112:ASN:HD22	1.85	0.41
2:G:245:GLN:HG2	2:G:505:GLY:HA2	2.03	0.41
2:G:273:HIS:CD2	2:G:488:VAL:HG11	2.55	0.41
2:G:1593:ILE:HD13	2:G:1626:ILE:CD1	2.51	0.41
1:D:378:LEU:HD23	1:D:378:LEU:HA	1.89	0.41
1:E:343:LEU:C	1:E:343:LEU:HD23	2.41	0.41
1:F:431:GLU:HA	1:F:434:SER:OG	2.21	0.41
2:L:273:HIS:CD2	2:L:488:VAL:HG11	2.55	0.41
2:L:1593:ILE:HD13	2:L:1626:ILE:CD1	2.51	0.41
1:A:343:LEU:C	1:A:343:LEU:HD23	2.41	0.41
2:G:364:LYS:HA	2:G:382:PRO:HG2	2.03	0.41
2:G:1087:HIS:HA	2:G:1092:ASP:OD2	2.21	0.41
1:B:343:LEU:C	1:B:343:LEU:HD23	2.41	0.41
1:C:1673:TYR:O	1:C:1677:VAL:HG23	2.20	0.41
5:K:2302:FNR:N5	3:K:2303:NAP:C4N	2.84	0.41
2:L:56:THR:HG22	2:L:112:ASN:HD22	1.85	0.41
2:G:317:THR:HG22	2:I:1312:VAL:HG21	2.02	0.41
2:G:905:ALA:HA	2:G:917:MET:SD	2.60	0.41
2:G:1327:ILE:HD12	2:G:1327:ILE:HA	1.99	0.41
1:B:17:LEU:HD23	2:I:2014:LEU:HD23	2.03	0.41
1:B:431:GLU:HA	1:B:434:SER:OG	2.21	0.41
1:B:1531:LEU:HD21	1:B:1660:TYR:CZ	2.56	0.41
1:C:823:ILE:HD13	1:C:865:CYS:HB3	2.03	0.41
1:F:21:GLN:NE2	2:J:1808:J8W:O	2.47	0.41
1:F:1531:LEU:HD21	1:F:1660:TYR:CZ	2.56	0.41
2:I:1584:PHE:CD2	2:I:1584:PHE:C	2.93	0.41
2:H:208:VAL:HG13	2:H:235:PRO:HG2	2.02	0.41
2:H:1897:GLN:NE2	4:H:2301:COA:H143	2.36	0.41
2:K:145:LEU:HD11	2:K:156:LEU:HD11	2.02	0.41
2:K:208:VAL:HG13	2:K:235:PRO:HG2	2.02	0.41
2:K:1638:ILE:O	2:K:1654:GLU:HA	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:364:LYS:HA	2:L:382:PRO:HG2	2.03	0.41
2:L:905:ALA:HA	2:L:917:MET:SD	2.60	0.41
2:L:1087:HIS:HA	2:L:1092:ASP:OD2	2.21	0.41
1:C:419:GLU:HG3	6:C:2104:HOH:O	2.20	0.41
1:D:823:ILE:HD13	1:D:865:CYS:HB3	2.03	0.41
1:F:1584:PRO:HG3	1:F:1591:TRP:CE3	2.55	0.41
2:H:145:LEU:HD11	2:H:156:LEU:HD11	2.02	0.41
2:L:494:THR:HA	2:L:496:PHE:CE2	2.56	0.41
1:A:850:PHE:CE2	1:A:923:MET:HE2	2.56	0.40
2:G:494:THR:HA	2:G:496:PHE:CE2	2.56	0.40
2:G:1549:THR:OG1	2:G:1551:GLU:OE1	2.34	0.40
1:B:1302:VAL:HG23	1:D:1302:VAL:HG23	2.02	0.40
1:B:1584:PRO:HG3	1:B:1591:TRP:CE3	2.55	0.40
1:C:523:SER:O	1:C:527:GLN:HG3	2.21	0.40
1:D:17:LEU:HD23	2:K:2014:LEU:HD23	2.03	0.40
1:E:1531:LEU:HD21	1:E:1660:TYR:CZ	2.56	0.40
2:J:340:SER:O	2:J:418:ASN:HA	2.21	0.40
2:J:1584:PHE:CD2	2:J:1584:PHE:C	2.94	0.40
2:H:364:LYS:HA	2:H:382:PRO:HG2	2.03	0.40
2:H:1638:ILE:O	2:H:1654:GLU:HA	2.21	0.40
2:K:364:LYS:HA	2:K:382:PRO:HG2	2.03	0.40
1:A:17:LEU:HD23	2:G:2014:LEU:HD23	2.03	0.40
1:A:1531:LEU:HD21	1:A:1660:TYR:CZ	2.56	0.40
1:C:1302:VAL:HG23	1:F:1302:VAL:HG23	2.02	0.40
1:D:431:GLU:HA	1:D:434:SER:OG	2.21	0.40
1:D:713:GLN:NE2	6:D:2161:HOH:O	2.54	0.40
1:D:1017:ARG:NH1	6:D:2060:HOH:O	2.43	0.40
1:E:523:SER:O	1:E:527:GLN:HG3	2.21	0.40
2:J:905:ALA:HA	2:J:917:MET:SD	2.60	0.40
2:J:1638:ILE:O	2:J:1654:GLU:HA	2.21	0.40
2:I:653:TYR:CD1	2:I:659:LEU:HD11	2.56	0.40
2:I:905:ALA:HA	2:I:917:MET:SD	2.60	0.40
2:I:1638:ILE:O	2:I:1654:GLU:HA	2.21	0.40
2:H:245:GLN:HG2	2:H:505:GLY:HA2	2.02	0.40
2:H:494:THR:HA	2:H:496:PHE:CE2	2.56	0.40
2:H:653:TYR:CD1	2:H:659:LEU:HD11	2.56	0.40
2:K:653:TYR:CD1	2:K:659:LEU:HD11	2.56	0.40
1:A:523:SER:O	1:A:527:GLN:HG3	2.21	0.40
1:A:821:GLN:OE1	1:A:909:LEU:HD23	2.21	0.40
2:G:1208:THR:HB	2:G:1568:HIS:CE1	2.56	0.40
2:G:1584:PHE:CD2	2:G:1584:PHE:C	2.94	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:21:GLN:NE2	2:I:1808:J8W:O	2.47	0.40
1:B:29:ILE:HG12	2:I:1891:TYR:HB3	2.04	0.40
1:C:17:LEU:HD23	2:H:2014:LEU:HD23	2.03	0.40
1:C:348:ARG:HD2	1:E:341:GLN:HE22	1.85	0.40
1:C:1584:PRO:HG3	1:C:1591:TRP:CE3	2.55	0.40
1:D:523:SER:O	1:D:527:GLN:HG3	2.21	0.40
1:D:888:ILE:HD11	1:D:940:THR:HG22	2.03	0.40
1:D:1584:PRO:HG3	1:D:1591:TRP:CE3	2.55	0.40
1:F:29:ILE:HG12	2:J:1891:TYR:HB3	2.04	0.40
1:F:337:VAL:CG1	1:F:341:GLN:NE2	2.85	0.40
2:J:208:VAL:HG13	2:J:235:PRO:HG2	2.02	0.40
2:J:494:THR:HA	2:J:496:PHE:CE2	2.56	0.40
2:J:653:TYR:CD1	2:J:659:LEU:HD11	2.56	0.40
2:J:1312:VAL:HG21	2:L:317:THR:HG22	2.02	0.40
2:I:340:SER:O	2:I:418:ASN:HA	2.22	0.40
2:I:1593:ILE:HD13	2:I:1626:ILE:CD1	2.51	0.40
2:H:905:ALA:HA	2:H:917:MET:SD	2.60	0.40
2:K:245:GLN:HG2	2:K:505:GLY:HA2	2.02	0.40
2:L:1208:THR:HB	2:L:1568:HIS:CE1	2.56	0.40
2:L:1327:ILE:HD12	2:L:1327:ILE:HA	1.99	0.40
1:A:522:LEU:HD23	1:A:522:LEU:HA	2.00	0.40
2:G:1804:PHE:CZ	2:G:2010:TYR:HB2	2.57	0.40
2:G:2036:GLU:N	2:G:2037:PRO:CD	2.84	0.40
1:B:1491:ARG:NE	1:B:1744:TYR:O	2.51	0.40
1:C:888:ILE:HD11	1:C:940:THR:HG22	2.03	0.40
1:E:17:LEU:HD23	2:L:2014:LEU:HD23	2.03	0.40
1:E:821:GLN:OE1	1:E:909:LEU:HD23	2.21	0.40
2:J:245:GLN:HG2	2:J:505:GLY:HA2	2.03	0.40
2:J:349:VAL:O	2:J:353:VAL:HG13	2.22	0.40
2:J:1208:THR:HB	2:J:1568:HIS:CE1	2.56	0.40
2:J:1593:ILE:HD13	2:J:1626:ILE:CD1	2.51	0.40
2:J:1804:PHE:CZ	2:J:2010:TYR:HB2	2.57	0.40
2:I:208:VAL:HG13	2:I:235:PRO:HG2	2.02	0.40
2:I:494:THR:HA	2:I:496:PHE:CE2	2.56	0.40
2:I:1208:THR:HB	2:I:1568:HIS:CE1	2.56	0.40
2:I:1804:PHE:CZ	2:I:2010:TYR:HB2	2.57	0.40
2:K:494:THR:HA	2:K:496:PHE:CE2	2.56	0.40
2:K:905:ALA:HA	2:K:917:MET:SD	2.61	0.40
2:L:1549:THR:OG1	2:L:1551:GLU:OE1	2.34	0.40
2:L:1584:PHE:CD2	2:L:1584:PHE:C	2.94	0.40
2:L:1804:PHE:CZ	2:L:2010:TYR:HB2	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:2036:GLU:N	2:L:2037:PRO:CD	2.84	0.40
1:A:844:LEU:HG	1:F:844:LEU:HG	2.03	0.40
2:G:653:TYR:CD1	2:G:659:LEU:HD11	2.56	0.40
2:G:1638:ILE:O	2:G:1654:GLU:HA	2.21	0.40
1:B:823:ILE:HD13	1:B:865:CYS:HB3	2.03	0.40
1:B:844:LEU:HG	1:E:844:LEU:HG	2.03	0.40
1:C:1462:TRP:CH2	1:C:1466:GLU:HG3	2.57	0.40
1:C:1491:ARG:NE	1:C:1744:TYR:O	2.51	0.40
1:D:1462:TRP:CH2	1:D:1466:GLU:HG3	2.57	0.40
1:F:823:ILE:HD13	1:F:865:CYS:HB3	2.03	0.40
1:F:1657:HIS:CG	1:F:1658:PRO:HD2	2.57	0.40
2:I:349:VAL:O	2:I:353:VAL:HG13	2.22	0.40
2:I:1960:LEU:HD12	2:I:1960:LEU:HA	1.91	0.40
2:K:1593:ILE:HD13	2:K:1626:ILE:CD1	2.51	0.40
2:L:653:TYR:CD1	2:L:659:LEU:HD11	2.56	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	1576/1887 (84%)	1527 (97%)	49 (3%)	0	100	100
1	B	1576/1887 (84%)	1527 (97%)	49 (3%)	0	100	100
1	C	1576/1887 (84%)	1526 (97%)	50 (3%)	0	100	100
1	D	1576/1887 (84%)	1528 (97%)	48 (3%)	0	100	100
1	E	1576/1887 (84%)	1527 (97%)	49 (3%)	0	100	100
1	F	1576/1887 (84%)	1527 (97%)	49 (3%)	0	100	100
2	G	2029/2051 (99%)	1966 (97%)	60 (3%)	3 (0%)	51	42
2	H	2029/2051 (99%)	1966 (97%)	60 (3%)	3 (0%)	51	42

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	I	2029/2051 (99%)	1966 (97%)	60 (3%)	3 (0%)	51 42
2	J	2029/2051 (99%)	1966 (97%)	60 (3%)	3 (0%)	51 42
2	K	2029/2051 (99%)	1966 (97%)	60 (3%)	3 (0%)	51 42
2	L	2029/2051 (99%)	1966 (97%)	60 (3%)	3 (0%)	51 42
All	All	21630/23628 (92%)	20958 (97%)	654 (3%)	18 (0%)	54 42

All (18) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	G	343	ASN
2	J	343	ASN
2	I	343	ASN
2	H	343	ASN
2	K	343	ASN
2	L	343	ASN
2	G	769	SER
2	J	769	SER
2	I	769	SER
2	H	769	SER
2	K	769	SER
2	L	769	SER
2	G	1044	VAL
2	J	1044	VAL
2	I	1044	VAL
2	H	1044	VAL
2	K	1044	VAL
2	L	1044	VAL

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	1340/1566 (86%)	1313 (98%)	27 (2%)	55 51
1	B	1340/1566 (86%)	1316 (98%)	24 (2%)	59 55

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	C	1340/1566 (86%)	1315 (98%)	25 (2%)	57	53
1	D	1340/1566 (86%)	1314 (98%)	26 (2%)	57	53
1	E	1340/1566 (86%)	1314 (98%)	26 (2%)	57	53
1	F	1340/1566 (86%)	1313 (98%)	27 (2%)	55	51
2	G	1772/1788 (99%)	1737 (98%)	35 (2%)	55	51
2	H	1772/1788 (99%)	1730 (98%)	42 (2%)	49	43
2	I	1772/1788 (99%)	1732 (98%)	40 (2%)	50	45
2	J	1772/1788 (99%)	1735 (98%)	37 (2%)	53	48
2	K	1772/1788 (99%)	1728 (98%)	44 (2%)	47	41
2	L	1772/1788 (99%)	1737 (98%)	35 (2%)	55	51
All	All	18672/20124 (93%)	18284 (98%)	388 (2%)	56	48

All (388) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	52	THR
1	A	64	LYS
1	A	329	GLU
1	A	334	ASP
1	A	363	LYS
1	A	434	SER
1	A	464	GLU
1	A	619	LYS
1	A	713	GLN
1	A	754	ASP
1	A	757	LYS
1	A	893	VAL
1	A	966	LYS
1	A	999	LYS
1	A	1001	VAL
1	A	1004	ILE
1	A	1050	CYS
1	A	1086	ASP
1	A	1203	ASP
1	A	1283	MET
1	A	1332	TYR
1	A	1364	GLU
1	A	1391	ASP

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Mol	Chain	Res	Type
1	A	1514	LYS
1	A	1643	SER
1	A	1756	ILE
1	A	1759	MET
2	G	116	LEU
2	G	122	LEU
2	G	318	SER
2	G	342	SER
2	G	414	LEU
2	G	419	ARG
2	G	453	LYS
2	G	599	PRO
2	G	616	THR
2	G	767	PHE
2	G	830	ASP
2	G	877	LYS
2	G	981	GLU
2	G	1092	ASP
2	G	1160	THR
2	G	1185	SER
2	G	1257	ASP
2	G	1317	ARG
2	G	1348	LEU
2	G	1375	THR
2	G	1381	VAL
2	G	1455	GLU
2	G	1528	GLU
2	G	1549	THR
2	G	1586	SER
2	G	1724	GLU
2	G	1743	ASP
2	G	1784	MET
2	G	1928	GLN
2	G	1941	PHE
2	G	1960	LEU
2	G	1962	ARG
2	G	1979	THR
2	G	2023	LYS
2	G	2040	GLU
1	B	52	THR
1	B	329	GLU
1	B	363	LYS

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Mol	Chain	Res	Type
1	B	434	SER
1	B	495	LYS
1	B	619	LYS
1	B	713	GLN
1	B	754	ASP
1	B	893	VAL
1	B	945	LYS
1	B	966	LYS
1	B	1001	VAL
1	B	1004	ILE
1	B	1050	CYS
1	B	1086	ASP
1	B	1203	ASP
1	B	1283	MET
1	B	1332	TYR
1	B	1364	GLU
1	B	1391	ASP
1	B	1514	LYS
1	B	1643	SER
1	B	1746	ASN
1	B	1756	ILE
1	C	52	THR
1	C	329	GLU
1	C	363	LYS
1	C	434	SER
1	C	619	LYS
1	C	713	GLN
1	C	754	ASP
1	C	893	VAL
1	C	945	LYS
1	C	966	LYS
1	C	1001	VAL
1	C	1004	ILE
1	C	1050	CYS
1	C	1085	ASP
1	C	1086	ASP
1	C	1203	ASP
1	C	1283	MET
1	C	1332	TYR
1	C	1364	GLU
1	C	1391	ASP
1	C	1514	LYS

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Mol	Chain	Res	Type
1	C	1643	SER
1	C	1746	ASN
1	C	1756	ILE
1	C	1759	MET
1	D	52	THR
1	D	64	LYS
1	D	329	GLU
1	D	363	LYS
1	D	434	SER
1	D	619	LYS
1	D	713	GLN
1	D	754	ASP
1	D	893	VAL
1	D	945	LYS
1	D	966	LYS
1	D	1001	VAL
1	D	1004	ILE
1	D	1050	CYS
1	D	1085	ASP
1	D	1086	ASP
1	D	1203	ASP
1	D	1283	MET
1	D	1332	TYR
1	D	1364	GLU
1	D	1391	ASP
1	D	1514	LYS
1	D	1643	SER
1	D	1746	ASN
1	D	1756	ILE
1	D	1759	MET
1	E	52	THR
1	E	64	LYS
1	E	329	GLU
1	E	334	ASP
1	E	363	LYS
1	E	434	SER
1	E	619	LYS
1	E	713	GLN
1	E	754	ASP
1	E	757	LYS
1	E	893	VAL
1	E	966	LYS

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Mol	Chain	Res	Type
1	E	999	LYS
1	E	1001	VAL
1	E	1004	ILE
1	E	1050	CYS
1	E	1086	ASP
1	E	1203	ASP
1	E	1283	MET
1	E	1332	TYR
1	E	1364	GLU
1	E	1391	ASP
1	E	1514	LYS
1	E	1643	SER
1	E	1756	ILE
1	E	1759	MET
1	F	52	THR
1	F	64	LYS
1	F	329	GLU
1	F	340	ARG
1	F	363	LYS
1	F	434	SER
1	F	495	LYS
1	F	619	LYS
1	F	713	GLN
1	F	754	ASP
1	F	893	VAL
1	F	945	LYS
1	F	966	LYS
1	F	1001	VAL
1	F	1004	ILE
1	F	1050	CYS
1	F	1085	ASP
1	F	1086	ASP
1	F	1203	ASP
1	F	1283	MET
1	F	1332	TYR
1	F	1364	GLU
1	F	1391	ASP
1	F	1514	LYS
1	F	1643	SER
1	F	1746	ASN
1	F	1756	ILE
2	J	116	LEU

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Mol	Chain	Res	Type
2	J	122	LEU
2	J	178	GLN
2	J	318	SER
2	J	342	SER
2	J	414	LEU
2	J	419	ARG
2	J	453	LYS
2	J	599	PRO
2	J	616	THR
2	J	669	LEU
2	J	767	PHE
2	J	830	ASP
2	J	877	LYS
2	J	981	GLU
2	J	1092	ASP
2	J	1160	THR
2	J	1185	SER
2	J	1257	ASP
2	J	1317	ARG
2	J	1348	LEU
2	J	1375	THR
2	J	1381	VAL
2	J	1455	GLU
2	J	1549	THR
2	J	1586	SER
2	J	1724	GLU
2	J	1736	MET
2	J	1743	ASP
2	J	1784	MET
2	J	1868	GLN
2	J	1928	GLN
2	J	1941	PHE
2	J	1960	LEU
2	J	1962	ARG
2	J	1979	THR
2	J	2023	LYS
2	I	52	ASP
2	I	56	THR
2	I	116	LEU
2	I	122	LEU
2	I	178	GLN
2	I	318	SER

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Mol	Chain	Res	Type
2	I	342	SER
2	I	414	LEU
2	I	419	ARG
2	I	453	LYS
2	I	599	PRO
2	I	616	THR
2	I	669	LEU
2	I	767	PHE
2	I	830	ASP
2	I	877	LYS
2	I	981	GLU
2	I	1092	ASP
2	I	1160	THR
2	I	1185	SER
2	I	1257	ASP
2	I	1317	ARG
2	I	1348	LEU
2	I	1375	THR
2	I	1381	VAL
2	I	1455	GLU
2	I	1549	THR
2	I	1586	SER
2	I	1724	GLU
2	I	1736	MET
2	I	1743	ASP
2	I	1784	MET
2	I	1842	VAL
2	I	1868	GLN
2	I	1928	GLN
2	I	1941	PHE
2	I	1960	LEU
2	I	1962	ARG
2	I	1979	THR
2	I	2023	LYS
2	H	112	ASN
2	H	116	LEU
2	H	122	LEU
2	H	139	LYS
2	H	178	GLN
2	H	318	SER
2	H	342	SER
2	H	351	ASP

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Mol	Chain	Res	Type
2	H	414	LEU
2	H	419	ARG
2	H	453	LYS
2	H	497	LYS
2	H	599	PRO
2	H	616	THR
2	H	767	PHE
2	H	830	ASP
2	H	877	LYS
2	H	981	GLU
2	H	1092	ASP
2	H	1136	GLU
2	H	1160	THR
2	H	1167	SER
2	H	1185	SER
2	H	1257	ASP
2	H	1317	ARG
2	H	1348	LEU
2	H	1375	THR
2	H	1381	VAL
2	H	1455	GLU
2	H	1528	GLU
2	H	1549	THR
2	H	1586	SER
2	H	1724	GLU
2	H	1743	ASP
2	H	1784	MET
2	H	1842	VAL
2	H	1928	GLN
2	H	1941	PHE
2	H	1962	ARG
2	H	1979	THR
2	H	2023	LYS
2	H	2040	GLU
2	K	109	LEU
2	K	112	ASN
2	K	116	LEU
2	K	122	LEU
2	K	139	LYS
2	K	178	GLN
2	K	318	SER
2	K	342	SER

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Mol	Chain	Res	Type
2	K	351	ASP
2	K	414	LEU
2	K	419	ARG
2	K	453	LYS
2	K	497	LYS
2	K	599	PRO
2	K	616	THR
2	K	767	PHE
2	K	830	ASP
2	K	877	LYS
2	K	981	GLU
2	K	1092	ASP
2	K	1136	GLU
2	K	1160	THR
2	K	1167	SER
2	K	1185	SER
2	K	1257	ASP
2	K	1317	ARG
2	K	1348	LEU
2	K	1375	THR
2	K	1381	VAL
2	K	1455	GLU
2	K	1528	GLU
2	K	1549	THR
2	K	1586	SER
2	K	1724	GLU
2	K	1743	ASP
2	K	1784	MET
2	K	1842	VAL
2	K	1928	GLN
2	K	1941	PHE
2	K	1960	LEU
2	K	1962	ARG
2	K	1979	THR
2	K	2023	LYS
2	K	2040	GLU
2	L	52	ASP
2	L	116	LEU
2	L	122	LEU
2	L	318	SER
2	L	342	SER
2	L	414	LEU

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Mol	Chain	Res	Type
2	L	419	ARG
2	L	453	LYS
2	L	599	PRO
2	L	616	THR
2	L	767	PHE
2	L	830	ASP
2	L	877	LYS
2	L	981	GLU
2	L	1092	ASP
2	L	1160	THR
2	L	1185	SER
2	L	1257	ASP
2	L	1317	ARG
2	L	1348	LEU
2	L	1375	THR
2	L	1381	VAL
2	L	1455	GLU
2	L	1528	GLU
2	L	1549	THR
2	L	1586	SER
2	L	1724	GLU
2	L	1743	ASP
2	L	1784	MET
2	L	1928	GLN
2	L	1941	PHE
2	L	1960	LEU
2	L	1962	ARG
2	L	1979	THR
2	L	2023	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (188) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	63	ASN
1	A	374	GLN
1	A	379	ASN
1	A	618	ASN
1	A	758	ASN
1	A	979	GLN
1	A	1272	ASN
1	A	1507	GLN
2	G	79	GLN

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Mol	Chain	Res	Type
2	G	82	GLN
2	G	102	HIS
2	G	155	GLN
2	G	224	ASN
2	G	245	GLN
2	G	440	ASN
2	G	500	HIS
2	G	718	ASN
2	G	747	HIS
2	G	1055	HIS
2	G	1202	GLN
2	G	1341	ASN
2	G	1355	ASN
2	G	1384	GLN
2	G	1512	HIS
2	G	1523	ASN
2	G	1619	ASN
2	G	1890	ASN
2	G	1896	GLN
2	G	1928	GLN
2	G	1995	ASN
2	G	2020	GLN
1	B	32	GLN
1	B	63	ASN
1	B	341	GLN
1	B	379	ASN
1	B	618	ASN
1	B	758	ASN
1	B	979	GLN
1	B	1272	ASN
1	B	1507	GLN
1	B	1746	ASN
1	B	1780	ASN
1	B	1845	ASN
1	B	1873	HIS
1	C	63	ASN
1	C	379	ASN
1	C	618	ASN
1	C	758	ASN
1	C	979	GLN
1	C	1272	ASN
1	C	1507	GLN

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Mol	Chain	Res	Type
1	C	1746	ASN
1	C	1780	ASN
1	D	379	ASN
1	D	618	ASN
1	D	758	ASN
1	D	979	GLN
1	D	1272	ASN
1	D	1507	GLN
1	D	1746	ASN
1	D	1780	ASN
1	E	63	ASN
1	E	341	GLN
1	E	374	GLN
1	E	379	ASN
1	E	618	ASN
1	E	758	ASN
1	E	979	GLN
1	E	1272	ASN
1	E	1507	GLN
1	F	32	GLN
1	F	63	ASN
1	F	379	ASN
1	F	618	ASN
1	F	758	ASN
1	F	979	GLN
1	F	1272	ASN
1	F	1507	GLN
1	F	1746	ASN
1	F	1780	ASN
1	F	1845	ASN
1	F	1873	HIS
2	J	79	GLN
2	J	102	HIS
2	J	224	ASN
2	J	245	GLN
2	J	440	ASN
2	J	500	HIS
2	J	718	ASN
2	J	747	HIS
2	J	1055	HIS
2	J	1202	GLN
2	J	1341	ASN

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Mol	Chain	Res	Type
2	J	1355	ASN
2	J	1523	ASN
2	J	1595	ASN
2	J	1619	ASN
2	J	1872	GLN
2	J	1890	ASN
2	J	1896	GLN
2	J	1928	GLN
2	J	1995	ASN
2	J	2020	GLN
2	I	79	GLN
2	I	102	HIS
2	I	224	ASN
2	I	245	GLN
2	I	440	ASN
2	I	500	HIS
2	I	718	ASN
2	I	747	HIS
2	I	1055	HIS
2	I	1202	GLN
2	I	1341	ASN
2	I	1355	ASN
2	I	1523	ASN
2	I	1595	ASN
2	I	1619	ASN
2	I	1872	GLN
2	I	1890	ASN
2	I	1896	GLN
2	I	1928	GLN
2	I	1995	ASN
2	I	2020	GLN
2	H	79	GLN
2	H	102	HIS
2	H	112	ASN
2	H	224	ASN
2	H	245	GLN
2	H	440	ASN
2	H	500	HIS
2	H	553	ASN
2	H	718	ASN
2	H	747	HIS
2	H	1055	HIS

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Mol	Chain	Res	Type
2	H	1341	ASN
2	H	1355	ASN
2	H	1512	HIS
2	H	1523	ASN
2	H	1619	ASN
2	H	1872	GLN
2	H	1890	ASN
2	H	1896	GLN
2	H	1915	ASN
2	H	1928	GLN
2	H	1995	ASN
2	H	2020	GLN
2	K	79	GLN
2	K	102	HIS
2	K	112	ASN
2	K	224	ASN
2	K	245	GLN
2	K	440	ASN
2	K	500	HIS
2	K	718	ASN
2	K	747	HIS
2	K	1055	HIS
2	K	1341	ASN
2	K	1355	ASN
2	K	1512	HIS
2	K	1523	ASN
2	K	1619	ASN
2	K	1890	ASN
2	K	1928	GLN
2	K	1995	ASN
2	K	2020	GLN
2	L	79	GLN
2	L	102	HIS
2	L	155	GLN
2	L	224	ASN
2	L	245	GLN
2	L	440	ASN
2	L	500	HIS
2	L	718	ASN
2	L	747	HIS
2	L	1055	HIS
2	L	1202	GLN

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Mol	Chain	Res	Type
2	L	1341	ASN
2	L	1355	ASN
2	L	1384	GLN
2	L	1512	HIS
2	L	1523	ASN
2	L	1619	ASN
2	L	1890	ASN
2	L	1896	GLN
2	L	1928	GLN
2	L	1995	ASN
2	L	2020	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

6 non-standard protein/DNA/RNA residues 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	J8W	G	1808	2	10,11,12	1.75	1 (10%)	9,13,15	1.52	2 (22%)
2	J8W	K	1808	2	10,11,12	1.76	1 (10%)	9,13,15	1.56	2 (22%)
2	J8W	H	1808	2	10,11,12	1.75	1 (10%)	9,13,15	1.51	2 (22%)
2	J8W	J	1808	2	10,11,12	1.75	1 (10%)	9,13,15	1.56	2 (22%)
2	J8W	I	1808	2	10,11,12	1.74	1 (10%)	9,13,15	1.51	2 (22%)
2	J8W	L	1808	2	10,11,12	1.75	1 (10%)	9,13,15	1.56	2 (22%)

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	J8W	G	1808	2	-	2/9/11/13	-
2	J8W	K	1808	2	-	2/9/11/13	-
2	J8W	H	1808	2	-	2/9/11/13	-
2	J8W	J	1808	2	-	2/9/11/13	-
2	J8W	I	1808	2	-	2/9/11/13	-
2	J8W	L	1808	2	-	2/9/11/13	-

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	H	1808	J8W	OG-C2	4.74	1.47	1.33
2	K	1808	J8W	OG-C2	4.74	1.47	1.33
2	L	1808	J8W	OG-C2	4.73	1.47	1.33
2	J	1808	J8W	OG-C2	4.72	1.47	1.33
2	G	1808	J8W	OG-C2	4.72	1.47	1.33
2	I	1808	J8W	OG-C2	4.72	1.47	1.33

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	G	1808	J8W	C3-C1-C2	-3.19	101.75	113.15
2	J	1808	J8W	C3-C1-C2	-3.19	101.77	113.15
2	K	1808	J8W	C3-C1-C2	-3.19	101.77	113.15
2	H	1808	J8W	C3-C1-C2	-3.19	101.77	113.15
2	L	1808	J8W	C3-C1-C2	-3.18	101.78	113.15
2	I	1808	J8W	C3-C1-C2	-3.18	101.80	113.15
2	G	1808	J8W	CB-OG-C2	2.25	125.45	117.12
2	L	1808	J8W	CB-OG-C2	2.25	125.45	117.12
2	H	1808	J8W	CB-OG-C2	2.24	125.41	117.12
2	K	1808	J8W	CB-OG-C2	2.23	125.40	117.12
2	J	1808	J8W	CB-OG-C2	2.23	125.37	117.12
2	I	1808	J8W	CB-OG-C2	2.22	125.36	117.12

There are no chirality outliers.

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	G	1808	J8W	C-CA-CB-OG
2	J	1808	J8W	C-CA-CB-OG
2	I	1808	J8W	C-CA-CB-OG
2	H	1808	J8W	C-CA-CB-OG

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Mol	Chain	Res	Type	Atoms
2	K	1808	J8W	C-CA-CB-OG
2	L	1808	J8W	C-CA-CB-OG
2	G	1808	J8W	O7-C2-OG-CB
2	J	1808	J8W	O7-C2-OG-CB
2	I	1808	J8W	O7-C2-OG-CB
2	H	1808	J8W	O7-C2-OG-CB
2	K	1808	J8W	O7-C2-OG-CB
2	L	1808	J8W	O7-C2-OG-CB

There are no ring outliers.

6 monomers are involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	G	1808	J8W	2	0
2	K	1808	J8W	1	0
2	H	1808	J8W	1	0
2	J	1808	J8W	3	0
2	I	1808	J8W	2	0
2	L	1808	J8W	2	0

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

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	$\#\|Z\| > 2$
4	COA	J	2301	-	41,50,50	0.64	1 (2%)	52,75,75	0.74	1 (1%)
5	FNR	G	2302	-	32,33,33	0.84	1 (3%)	40,50,50	0.92	1 (2%)
5	FNR	I	2302	-	32,33,33	0.86	2 (6%)	40,50,50	0.92	1 (2%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
4	COA	H	2301	-	41,50,50	0.64	1 (2%)	52,75,75	0.74	2 (3%)
3	NAP	H	2303	-	45,52,52	0.97	2 (4%)	56,80,80	1.29	6 (10%)
3	NAP	I	2303	-	45,52,52	0.97	2 (4%)	56,80,80	1.27	6 (10%)
3	NAP	C	1901	-	45,52,52	1.29	3 (6%)	56,80,80	1.77	14 (25%)
3	NAP	G	2303	-	45,52,52	0.97	3 (6%)	56,80,80	1.27	6 (10%)
5	FNR	H	2302	-	32,33,33	0.83	1 (3%)	40,50,50	0.91	1 (2%)
5	FNR	K	2302	-	32,33,33	0.83	1 (3%)	40,50,50	0.92	1 (2%)
4	COA	I	2301	-	41,50,50	0.63	0	52,75,75	0.74	1 (1%)
3	NAP	K	2303	-	45,52,52	0.96	2 (4%)	56,80,80	1.29	6 (10%)
3	NAP	J	2303	-	45,52,52	0.96	2 (4%)	56,80,80	1.29	6 (10%)
3	NAP	B	1901	-	45,52,52	1.29	4 (8%)	56,80,80	1.74	13 (23%)
4	COA	L	2301	-	41,50,50	0.63	0	52,75,75	0.68	1 (1%)
5	FNR	L	2302	-	32,33,33	0.84	0	40,50,50	0.92	1 (2%)
3	NAP	D	1901	-	45,52,52	1.30	3 (6%)	56,80,80	1.78	14 (25%)
4	COA	K	2301	-	41,50,50	0.64	1 (2%)	52,75,75	0.74	2 (3%)
3	NAP	A	1901	-	45,52,52	1.31	3 (6%)	56,80,80	1.73	12 (21%)
3	NAP	F	1901	-	45,52,52	1.29	4 (8%)	56,80,80	1.73	13 (23%)
3	NAP	E	1901	-	45,52,52	1.30	3 (6%)	56,80,80	1.74	14 (25%)
4	COA	G	2301	-	41,50,50	0.63	0	52,75,75	0.69	1 (1%)
3	NAP	L	2303	-	45,52,52	0.97	3 (6%)	56,80,80	1.27	5 (8%)
5	FNR	J	2302	-	32,33,33	0.84	1 (3%)	40,50,50	0.92	1 (2%)

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	COA	J	2301	-	-	13/44/64/64	0/3/3/3
5	FNR	G	2302	-	-	1/18/18/18	0/3/3/3
5	FNR	I	2302	-	-	1/18/18/18	0/3/3/3
4	COA	H	2301	-	-	13/44/64/64	0/3/3/3
3	NAP	H	2303	-	-	6/31/67/67	0/5/5/5
3	NAP	I	2303	-	-	5/31/67/67	0/5/5/5
3	NAP	C	1901	-	-	2/31/67/67	0/5/5/5
3	NAP	G	2303	-	-	5/31/67/67	0/5/5/5

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	FNR	H	2302	-	-	1/18/18/18	0/3/3/3
5	FNR	K	2302	-	-	1/18/18/18	0/3/3/3
4	COA	I	2301	-	-	12/44/64/64	0/3/3/3
3	NAP	K	2303	-	-	7/31/67/67	0/5/5/5
3	NAP	J	2303	-	-	5/31/67/67	0/5/5/5
3	NAP	B	1901	-	-	2/31/67/67	0/5/5/5
4	COA	L	2301	-	-	13/44/64/64	0/3/3/3
5	FNR	L	2302	-	-	1/18/18/18	0/3/3/3
3	NAP	D	1901	-	-	2/31/67/67	0/5/5/5
4	COA	K	2301	-	-	12/44/64/64	0/3/3/3
3	NAP	A	1901	-	-	2/31/67/67	0/5/5/5
3	NAP	F	1901	-	-	2/31/67/67	0/5/5/5
3	NAP	E	1901	-	-	2/31/67/67	0/5/5/5
4	COA	G	2301	-	-	12/44/64/64	0/3/3/3
3	NAP	L	2303	-	-	6/31/67/67	0/5/5/5
5	FNR	J	2302	-	-	1/18/18/18	0/3/3/3

All (43) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	1901	NAP	C4A-N3A	-5.09	1.28	1.35
3	E	1901	NAP	C4A-N3A	-5.04	1.28	1.35
3	C	1901	NAP	C4A-N3A	-4.85	1.29	1.35
3	B	1901	NAP	C4A-N3A	-4.84	1.29	1.35
3	D	1901	NAP	C4A-N3A	-4.82	1.29	1.35
3	F	1901	NAP	C4A-N3A	-4.76	1.29	1.35
3	L	2303	NAP	C5A-C4A	2.51	1.47	1.40
3	K	2303	NAP	C5A-C4A	2.51	1.47	1.40
3	G	2303	NAP	C5A-C4A	2.51	1.47	1.40
3	H	2303	NAP	C5A-C4A	2.50	1.47	1.40
3	J	2303	NAP	C5A-C4A	2.50	1.47	1.40
3	I	2303	NAP	C5A-C4A	2.49	1.47	1.40
3	G	2303	NAP	O4D-C1D	2.33	1.44	1.41
3	A	1901	NAP	C2N-N1N	-2.28	1.32	1.35
3	C	1901	NAP	C2N-N1N	-2.28	1.32	1.35
3	D	1901	NAP	C2N-N1N	-2.27	1.32	1.35
3	L	2303	NAP	O4D-C1D	2.25	1.44	1.41
3	I	2303	NAP	O4D-C1D	2.25	1.44	1.41
3	F	1901	NAP	C2N-N1N	-2.23	1.32	1.35
3	K	2303	NAP	O4D-C1D	2.22	1.44	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	E	1901	NAP	C2N-N1N	-2.22	1.32	1.35
3	J	2303	NAP	O4D-C1D	2.20	1.44	1.41
3	H	2303	NAP	O4D-C1D	2.19	1.44	1.41
3	C	1901	NAP	C6N-N1N	2.18	1.40	1.35
3	D	1901	NAP	C6N-N1N	2.17	1.40	1.35
3	B	1901	NAP	C6N-N1N	2.14	1.40	1.35
4	K	2301	COA	P3B-O3B	2.14	1.63	1.59
3	B	1901	NAP	C2N-N1N	-2.14	1.32	1.35
3	F	1901	NAP	O4D-C4D	-2.13	1.40	1.45
3	F	1901	NAP	C6N-N1N	2.12	1.40	1.35
3	B	1901	NAP	O4D-C4D	-2.11	1.40	1.45
3	A	1901	NAP	C6N-N1N	2.08	1.40	1.35
3	E	1901	NAP	C6N-N1N	2.08	1.40	1.35
4	H	2301	COA	P3B-O3B	2.07	1.63	1.59
3	L	2303	NAP	C2A-N3A	2.05	1.35	1.32
3	G	2303	NAP	C2A-N3A	2.04	1.35	1.32
4	J	2301	COA	P3B-O3B	2.04	1.63	1.59
5	I	2302	FNR	C6-C7	-2.02	1.36	1.39
5	G	2302	FNR	C9-C8	-2.02	1.36	1.39
5	K	2302	FNR	C9-C8	-2.01	1.36	1.39
5	J	2302	FNR	C9-C8	-2.01	1.36	1.39
5	I	2302	FNR	C9-C8	-2.01	1.36	1.39
5	H	2302	FNR	C9-C8	-2.01	1.36	1.39

All (129) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	D	1901	NAP	O7N-C7N-C3N	5.39	126.09	119.63
3	C	1901	NAP	O7N-C7N-C3N	5.37	126.06	119.63
3	D	1901	NAP	C6N-N1N-C2N	5.22	126.73	121.97
3	B	1901	NAP	O7N-C7N-C3N	5.20	125.86	119.63
3	F	1901	NAP	O7N-C7N-C3N	5.19	125.84	119.63
3	C	1901	NAP	C6N-N1N-C2N	5.18	126.70	121.97
3	E	1901	NAP	C6N-N1N-C2N	5.18	126.70	121.97
3	A	1901	NAP	O7N-C7N-C3N	5.17	125.82	119.63
3	E	1901	NAP	O7N-C7N-C3N	5.15	125.79	119.63
3	A	1901	NAP	C6N-N1N-C2N	5.09	126.61	121.97
3	F	1901	NAP	C6N-N1N-C2N	5.05	126.58	121.97
3	B	1901	NAP	C6N-N1N-C2N	5.02	126.56	121.97
3	I	2303	NAP	N3A-C2A-N1A	-3.93	122.53	128.68
3	H	2303	NAP	N3A-C2A-N1A	-3.91	122.56	128.68
3	J	2303	NAP	N3A-C2A-N1A	-3.88	122.62	128.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	G	2303	NAP	N3A-C2A-N1A	-3.87	122.63	128.68
3	K	2303	NAP	N3A-C2A-N1A	-3.85	122.66	128.68
3	L	2303	NAP	N3A-C2A-N1A	-3.80	122.73	128.68
3	D	1901	NAP	O2A-PA-O1A	3.49	129.50	112.24
3	C	1901	NAP	O2A-PA-O1A	3.47	129.40	112.24
3	E	1901	NAP	O2A-PA-O1A	3.43	129.18	112.24
3	A	1901	NAP	O2A-PA-O1A	3.39	129.02	112.24
3	B	1901	NAP	O2A-PA-O1A	3.37	128.91	112.24
3	C	1901	NAP	O4D-C4D-C3D	3.35	111.75	105.11
3	F	1901	NAP	O2A-PA-O1A	3.34	128.77	112.24
3	D	1901	NAP	O4D-C4D-C3D	3.32	111.69	105.11
3	E	1901	NAP	O4D-C4D-C3D	3.30	111.64	105.11
3	A	1901	NAP	O4D-C4D-C3D	3.30	111.64	105.11
3	F	1901	NAP	O4D-C4D-C3D	3.24	111.53	105.11
3	B	1901	NAP	O4D-C4D-C3D	3.23	111.51	105.11
3	K	2303	NAP	C3N-C7N-N7N	3.23	121.63	117.75
3	H	2303	NAP	C3N-C7N-N7N	3.23	121.62	117.75
3	J	2303	NAP	C3N-C7N-N7N	3.18	121.57	117.75
3	G	2303	NAP	C3N-C7N-N7N	3.12	121.49	117.75
3	L	2303	NAP	C3N-C7N-N7N	3.08	121.45	117.75
3	I	2303	NAP	C1B-N9A-C4A	-2.94	121.47	126.64
3	D	1901	NAP	C3N-C2N-N1N	-2.93	117.56	120.43
3	C	1901	NAP	C3N-C2N-N1N	-2.91	117.58	120.43
3	I	2303	NAP	C3N-C7N-N7N	2.88	121.20	117.75
3	H	2303	NAP	C1B-N9A-C4A	-2.84	121.65	126.64
3	J	2303	NAP	C1B-N9A-C4A	-2.84	121.66	126.64
3	K	2303	NAP	C1B-N9A-C4A	-2.81	121.71	126.64
3	D	1901	NAP	O7N-C7N-N7N	-2.78	118.62	122.58
3	C	1901	NAP	O7N-C7N-N7N	-2.76	118.66	122.58
3	B	1901	NAP	C3N-C2N-N1N	-2.75	117.74	120.43
3	F	1901	NAP	C3N-C2N-N1N	-2.74	117.75	120.43
3	G	2303	NAP	C1B-N9A-C4A	-2.73	121.84	126.64
3	L	2303	NAP	C1B-N9A-C4A	-2.73	121.84	126.64
3	G	2303	NAP	PN-O3-PA	-2.72	123.49	132.83
3	I	2303	NAP	PN-O3-PA	-2.72	123.49	132.83
3	E	1901	NAP	O7N-C7N-N7N	-2.69	118.76	122.58
3	J	2303	NAP	PN-O3-PA	-2.69	123.61	132.83
3	A	1901	NAP	O7N-C7N-N7N	-2.67	118.78	122.58
3	B	1901	NAP	O7N-C7N-N7N	-2.67	118.79	122.58
3	H	2303	NAP	PN-O3-PA	-2.67	123.68	132.83
3	F	1901	NAP	O7N-C7N-N7N	-2.65	118.81	122.58
3	E	1901	NAP	C3N-C2N-N1N	-2.65	117.84	120.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	L	2303	NAP	PN-O3-PA	-2.65	123.74	132.83
3	A	1901	NAP	C3N-C2N-N1N	-2.64	117.85	120.43
3	K	2303	NAP	PN-O3-PA	-2.63	123.80	132.83
3	E	1901	NAP	C5N-C6N-N1N	-2.57	116.71	120.40
3	A	1901	NAP	C5N-C6N-N1N	-2.54	116.75	120.40
3	B	1901	NAP	PN-O3-PA	-2.50	124.24	132.83
3	F	1901	NAP	PN-O3-PA	-2.49	124.27	132.83
3	C	1901	NAP	C5N-C6N-N1N	-2.47	116.86	120.40
5	I	2302	FNR	O3P-P-O5'	2.47	113.31	106.73
5	J	2302	FNR	O3P-P-O5'	2.47	113.31	106.73
3	D	1901	NAP	C5N-C6N-N1N	-2.46	116.87	120.40
3	B	1901	NAP	N3A-C2A-N1A	-2.43	124.88	128.68
5	L	2302	FNR	O3P-P-O5'	2.41	113.16	106.73
5	K	2302	FNR	O3P-P-O5'	2.41	113.15	106.73
3	F	1901	NAP	C5N-C6N-N1N	-2.41	116.94	120.40
3	F	1901	NAP	N3A-C2A-N1A	-2.41	124.91	128.68
3	B	1901	NAP	C5N-C6N-N1N	-2.40	116.97	120.40
5	H	2302	FNR	O3P-P-O5'	2.40	113.11	106.73
5	G	2302	FNR	O3P-P-O5'	2.39	113.10	106.73
3	C	1901	NAP	PN-O3-PA	-2.39	124.61	132.83
3	A	1901	NAP	PN-O3-PA	-2.39	124.64	132.83
3	D	1901	NAP	PN-O3-PA	-2.38	124.65	132.83
3	F	1901	NAP	O2B-P2B-O1X	-2.37	100.24	109.39
3	E	1901	NAP	PN-O3-PA	-2.36	124.73	132.83
3	B	1901	NAP	O2B-P2B-O1X	-2.34	100.35	109.39
4	J	2301	COA	C5A-C6A-N6A	2.33	123.90	120.35
3	E	1901	NAP	O2B-P2B-O1X	-2.31	100.48	109.39
4	H	2301	COA	C2B-C3B-C4B	-2.31	99.14	103.22
3	A	1901	NAP	O2B-P2B-O1X	-2.28	100.59	109.39
3	D	1901	NAP	O2B-P2B-O1X	-2.28	100.60	109.39
3	C	1901	NAP	N3A-C2A-N1A	-2.28	125.12	128.68
4	G	2301	COA	C5A-C6A-N6A	2.26	123.79	120.35
4	I	2301	COA	C5A-C6A-N6A	2.26	123.79	120.35
3	C	1901	NAP	O2B-P2B-O1X	-2.26	100.69	109.39
3	D	1901	NAP	N3A-C2A-N1A	-2.25	125.16	128.68
3	B	1901	NAP	O4D-C4D-C5D	-2.25	101.97	109.37
4	L	2301	COA	C5A-C6A-N6A	2.24	123.75	120.35
4	H	2301	COA	C5A-C6A-N6A	2.23	123.75	120.35
3	F	1901	NAP	O4D-C4D-C5D	-2.22	102.08	109.37
3	C	1901	NAP	O4D-C4D-C5D	-2.21	102.09	109.37
3	A	1901	NAP	O4D-C4D-C5D	-2.20	102.14	109.37
3	E	1901	NAP	O4D-C4D-C5D	-2.19	102.17	109.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	K	2301	COA	C5A-C6A-N6A	2.19	123.67	120.35
3	C	1901	NAP	C5N-C4N-C3N	2.18	122.92	120.34
3	D	1901	NAP	O4D-C4D-C5D	-2.17	102.22	109.37
3	K	2303	NAP	N6A-C6A-N1A	2.15	123.04	118.57
3	D	1901	NAP	C5N-C4N-C3N	2.15	122.89	120.34
3	I	2303	NAP	N6A-C6A-N1A	2.14	123.02	118.57
3	J	2303	NAP	N6A-C6A-N1A	2.14	123.02	118.57
3	I	2303	NAP	C2A-N1A-C6A	2.13	122.40	118.75
3	A	1901	NAP	N3A-C2A-N1A	-2.11	125.38	128.68
3	H	2303	NAP	N6A-C6A-N1A	2.10	122.93	118.57
3	E	1901	NAP	N3A-C2A-N1A	-2.09	125.41	128.68
3	H	2303	NAP	C2A-N1A-C6A	2.09	122.33	118.75
4	K	2301	COA	C2B-C3B-C4B	-2.08	99.54	103.22
3	C	1901	NAP	C3N-C7N-N7N	-2.07	115.26	117.75
3	D	1901	NAP	C3N-C7N-N7N	-2.07	115.26	117.75
3	G	2303	NAP	N6A-C6A-N1A	2.07	122.87	118.57
3	J	2303	NAP	C2A-N1A-C6A	2.07	122.29	118.75
3	F	1901	NAP	O2N-PN-O1N	2.06	122.44	112.24
3	L	2303	NAP	N6A-C6A-N1A	2.06	122.85	118.57
3	A	1901	NAP	O2N-PN-O1N	2.05	122.39	112.24
3	B	1901	NAP	O2N-PN-O1N	2.05	122.38	112.24
3	E	1901	NAP	O2N-PN-O1N	2.05	122.38	112.24
3	K	2303	NAP	C2A-N1A-C6A	2.04	122.24	118.75
3	G	2303	NAP	C2A-N1A-C6A	2.04	122.24	118.75
3	E	1901	NAP	C5A-C6A-N6A	2.03	123.44	120.35
3	F	1901	NAP	C3N-C7N-N7N	-2.03	115.31	117.75
3	D	1901	NAP	O2N-PN-O1N	2.02	122.25	112.24
3	C	1901	NAP	O2N-PN-O1N	2.02	122.21	112.24
3	B	1901	NAP	C3N-C7N-N7N	-2.02	115.33	117.75
3	E	1901	NAP	C5N-C4N-C3N	2.01	122.73	120.34

There are no chirality outliers.

All (127) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	G	2303	NAP	C5B-O5B-PA-O2A
3	G	2303	NAP	C5B-O5B-PA-O3
3	J	2303	NAP	C5B-O5B-PA-O2A
3	J	2303	NAP	C5B-O5B-PA-O3
3	I	2303	NAP	C5B-O5B-PA-O2A
3	I	2303	NAP	C5B-O5B-PA-O3
3	H	2303	NAP	C5B-O5B-PA-O2A

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Mol	Chain	Res	Type	Atoms
3	H	2303	NAP	C5B-O5B-PA-O3
3	K	2303	NAP	C5B-O5B-PA-O2A
3	K	2303	NAP	C5B-O5B-PA-O3
3	L	2303	NAP	C5B-O5B-PA-O2A
3	L	2303	NAP	C5B-O5B-PA-O3
4	G	2301	COA	C5B-O5B-P1A-O1A
4	G	2301	COA	C5B-O5B-P1A-O2A
4	G	2301	COA	C5B-O5B-P1A-O3A
4	J	2301	COA	C5B-O5B-P1A-O3A
4	H	2301	COA	C5B-O5B-P1A-O1A
4	H	2301	COA	C5B-O5B-P1A-O2A
4	H	2301	COA	C5B-O5B-P1A-O3A
4	K	2301	COA	C5B-O5B-P1A-O3A
4	L	2301	COA	C5B-O5B-P1A-O1A
4	L	2301	COA	C5B-O5B-P1A-O2A
4	L	2301	COA	C5B-O5B-P1A-O3A
4	L	2301	COA	C3B-C4B-C5B-O5B
4	K	2301	COA	O5P-C5P-N4P-C3P
4	H	2301	COA	O5P-C5P-N4P-C3P
4	G	2301	COA	O5P-C5P-N4P-C3P
4	L	2301	COA	O5P-C5P-N4P-C3P
4	G	2301	COA	C6P-C5P-N4P-C3P
4	J	2301	COA	C6P-C5P-N4P-C3P
4	I	2301	COA	C6P-C5P-N4P-C3P
4	H	2301	COA	C6P-C5P-N4P-C3P
4	K	2301	COA	C6P-C5P-N4P-C3P
4	L	2301	COA	C6P-C5P-N4P-C3P
4	J	2301	COA	O5P-C5P-N4P-C3P
4	G	2301	COA	C3B-C4B-C5B-O5B
4	L	2301	COA	O4B-C4B-C5B-O5B
4	I	2301	COA	O5P-C5P-N4P-C3P
4	G	2301	COA	O4B-C4B-C5B-O5B
4	J	2301	COA	O4B-C4B-C5B-O5B
4	H	2301	COA	O4B-C4B-C5B-O5B
3	J	2303	NAP	O4B-C4B-C5B-O5B
4	G	2301	COA	P1A-O3A-P2A-O4A
4	J	2301	COA	P1A-O3A-P2A-O4A
4	I	2301	COA	P1A-O3A-P2A-O4A
4	K	2301	COA	P1A-O3A-P2A-O4A
4	L	2301	COA	P1A-O3A-P2A-O4A
3	G	2303	NAP	O4B-C4B-C5B-O5B
3	I	2303	NAP	O4B-C4B-C5B-O5B

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Mol	Chain	Res	Type	Atoms
4	J	2301	COA	C3B-C4B-C5B-O5B
3	L	2303	NAP	O4B-C4B-C5B-O5B
3	J	2303	NAP	C4B-C5B-O5B-PA
3	H	2303	NAP	O4B-C4B-C5B-O5B
3	K	2303	NAP	O4B-C4B-C5B-O5B
4	H	2301	COA	C3B-C4B-C5B-O5B
3	G	2303	NAP	C4B-C5B-O5B-PA
3	I	2303	NAP	C4B-C5B-O5B-PA
3	K	2303	NAP	C4B-C5B-O5B-PA
3	L	2303	NAP	C4B-C5B-O5B-PA
4	I	2301	COA	C5B-O5B-P1A-O3A
4	I	2301	COA	O4B-C4B-C5B-O5B
4	K	2301	COA	O4B-C4B-C5B-O5B
3	A	1901	NAP	PN-O3-PA-O1A
3	B	1901	NAP	PN-O3-PA-O1A
3	C	1901	NAP	PN-O3-PA-O1A
3	D	1901	NAP	PN-O3-PA-O1A
3	E	1901	NAP	PN-O3-PA-O1A
3	F	1901	NAP	PN-O3-PA-O1A
3	H	2303	NAP	C4B-C5B-O5B-PA
5	G	2302	FNR	C4'-C5'-O5'-P
5	J	2302	FNR	C4'-C5'-O5'-P
5	I	2302	FNR	C4'-C5'-O5'-P
5	H	2302	FNR	C4'-C5'-O5'-P
5	K	2302	FNR	C4'-C5'-O5'-P
5	L	2302	FNR	C4'-C5'-O5'-P
4	J	2301	COA	C5B-O5B-P1A-O1A
4	K	2301	COA	C3B-C4B-C5B-O5B
4	H	2301	COA	CAP-CBP-CCP-O6A
4	I	2301	COA	C3B-C4B-C5B-O5B
4	H	2301	COA	CDP-CBP-CCP-O6A
4	G	2301	COA	P2A-O3A-P1A-O2A
4	G	2301	COA	P1A-O3A-P2A-O5A
4	J	2301	COA	P1A-O3A-P2A-O5A
4	I	2301	COA	P1A-O3A-P2A-O5A
4	K	2301	COA	P1A-O3A-P2A-O5A
4	L	2301	COA	P2A-O3A-P1A-O2A
4	L	2301	COA	P1A-O3A-P2A-O5A
3	C	1901	NAP	O4B-C4B-C5B-O5B
3	D	1901	NAP	O4B-C4B-C5B-O5B
4	G	2301	COA	CDP-CBP-CCP-O6A
4	I	2301	COA	CDP-CBP-CCP-O6A

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Mol	Chain	Res	Type	Atoms
4	K	2301	COA	CDP-CBP-CCP-O6A
4	L	2301	COA	CDP-CBP-CCP-O6A
3	A	1901	NAP	O4B-C4B-C5B-O5B
3	B	1901	NAP	O4B-C4B-C5B-O5B
3	E	1901	NAP	O4B-C4B-C5B-O5B
3	F	1901	NAP	O4B-C4B-C5B-O5B
4	K	2301	COA	P2A-O3A-P1A-O2A
4	J	2301	COA	CDP-CBP-CCP-O6A
4	H	2301	COA	CEP-CBP-CCP-O6A
3	J	2303	NAP	C3B-C4B-C5B-O5B
3	K	2303	NAP	C2B-O2B-P2B-O3X
4	J	2301	COA	C3B-O3B-P3B-O9A
4	H	2301	COA	C3B-O3B-P3B-O9A
4	L	2301	COA	C3B-O3B-P3B-O9A
3	G	2303	NAP	C3B-C4B-C5B-O5B
3	I	2303	NAP	C3B-C4B-C5B-O5B
3	L	2303	NAP	C3B-C4B-C5B-O5B
3	H	2303	NAP	PA-O3-PN-O1N
3	K	2303	NAP	PA-O3-PN-O1N
3	L	2303	NAP	PA-O3-PN-O1N
4	J	2301	COA	P2A-O3A-P1A-O2A
4	I	2301	COA	P2A-O3A-P1A-O1A
4	I	2301	COA	P2A-O3A-P1A-O2A
4	K	2301	COA	P2A-O3A-P1A-O1A
4	H	2301	COA	CBP-CCP-O6A-P2A
4	G	2301	COA	CCP-O6A-P2A-O4A
4	J	2301	COA	C5B-O5B-P1A-O2A
4	J	2301	COA	CCP-O6A-P2A-O4A
4	I	2301	COA	C5B-O5B-P1A-O1A
4	I	2301	COA	CCP-O6A-P2A-O4A
4	K	2301	COA	C5B-O5B-P1A-O1A
4	K	2301	COA	CCP-O6A-P2A-O4A
4	L	2301	COA	CCP-O6A-P2A-O4A
3	H	2303	NAP	C3B-C4B-C5B-O5B
3	K	2303	NAP	C3B-C4B-C5B-O5B
4	H	2301	COA	O9P-C9P-N8P-C7P

There are no ring outliers.

22 monomers are involved in 38 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	J	2301	COA	1	0

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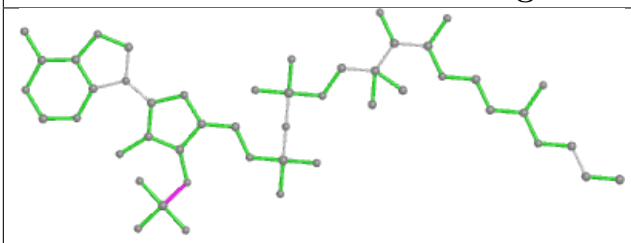
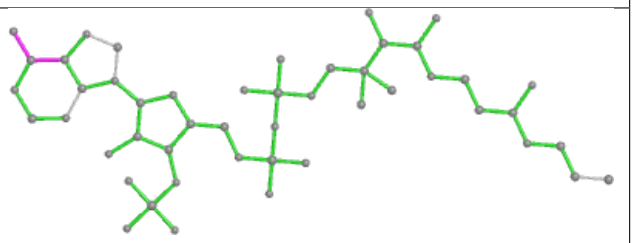
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	G	2302	FNR	3	0
5	I	2302	FNR	3	0
4	H	2301	COA	2	0
3	H	2303	NAP	1	0
3	I	2303	NAP	1	0
3	C	1901	NAP	3	0
3	G	2303	NAP	1	0
5	H	2302	FNR	3	0
5	K	2302	FNR	3	0
4	I	2301	COA	1	0
3	K	2303	NAP	1	0
3	J	2303	NAP	1	0
3	B	1901	NAP	3	0
5	L	2302	FNR	3	0
3	D	1901	NAP	3	0
4	K	2301	COA	1	0
3	A	1901	NAP	2	0
3	F	1901	NAP	3	0
3	E	1901	NAP	2	0
3	L	2303	NAP	1	0
5	J	2302	FNR	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.

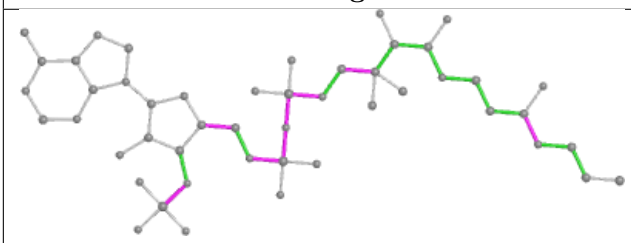
Ligand COA J 2301



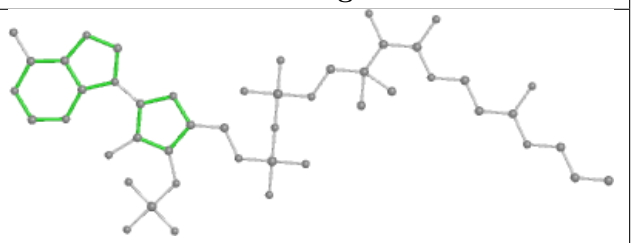
Bond lengths



Bond angles

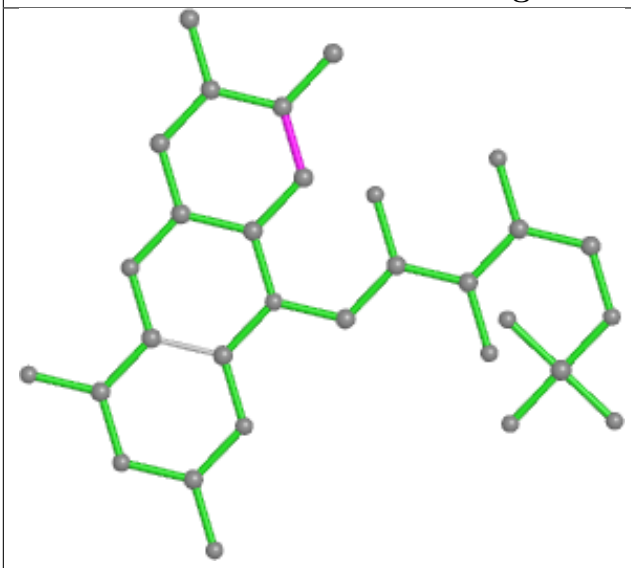


Torsions

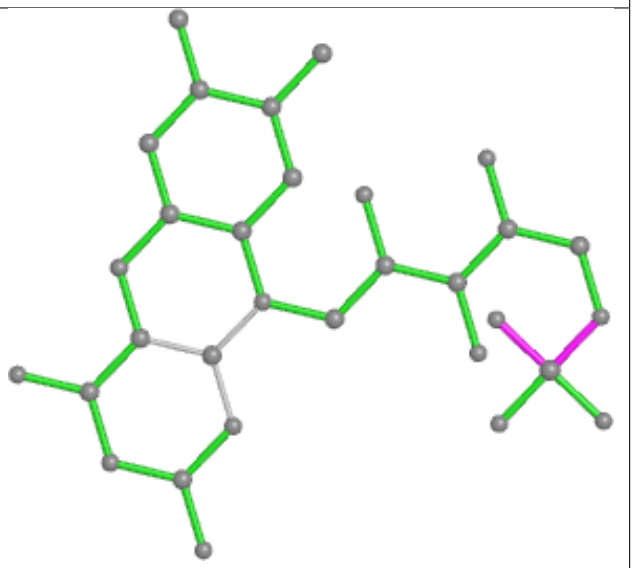


Rings

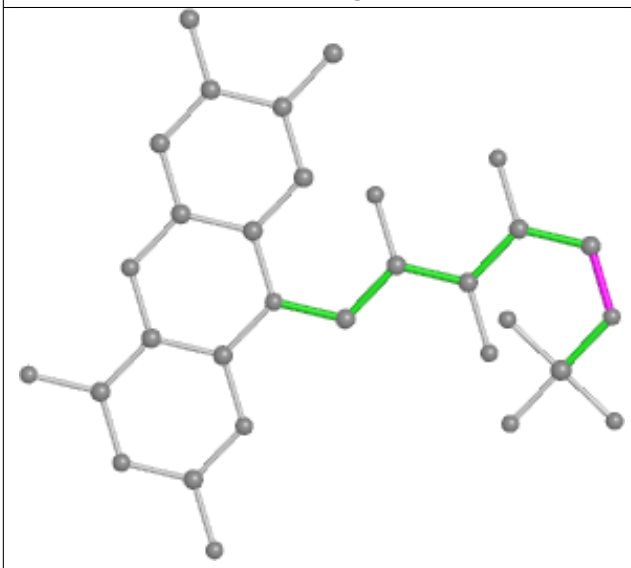
Ligand FNR G 2302



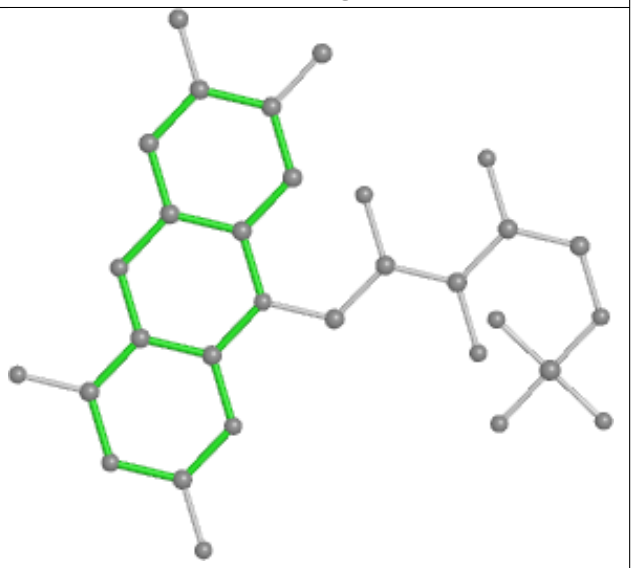
Bond lengths



Bond angles

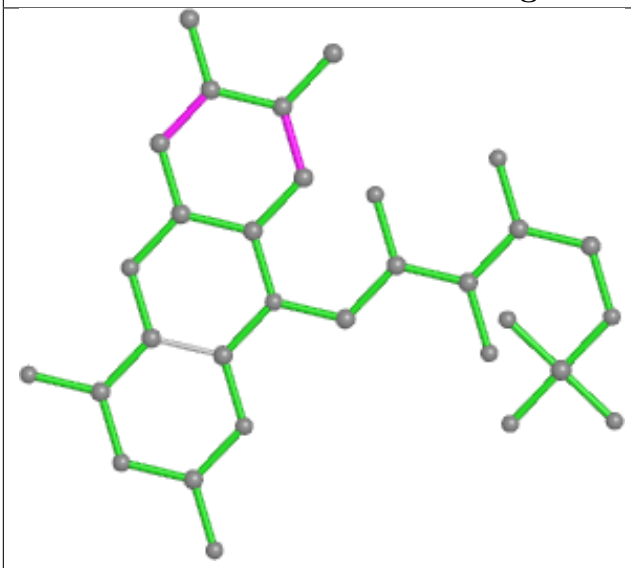


Torsions



Rings

Ligand FNR I 2302



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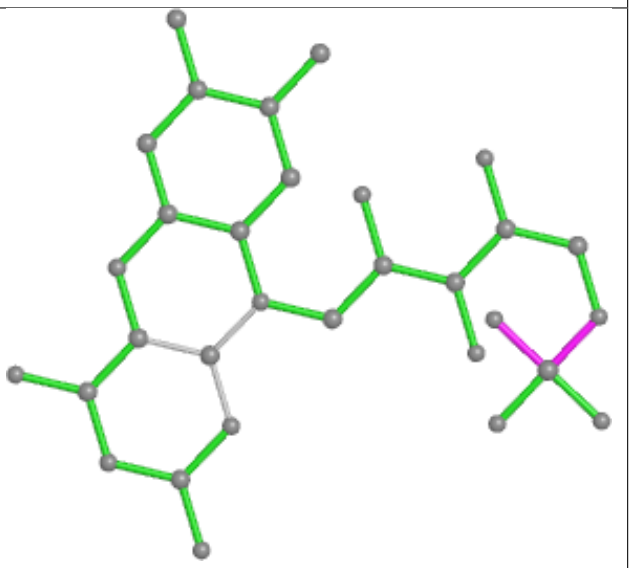
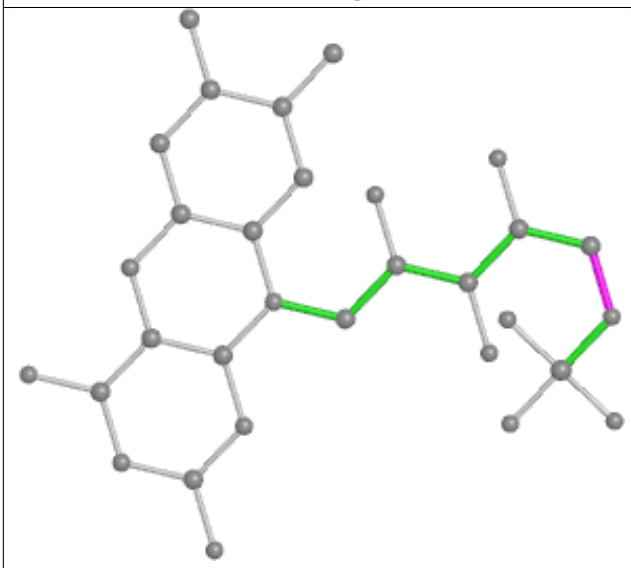


Bond angles



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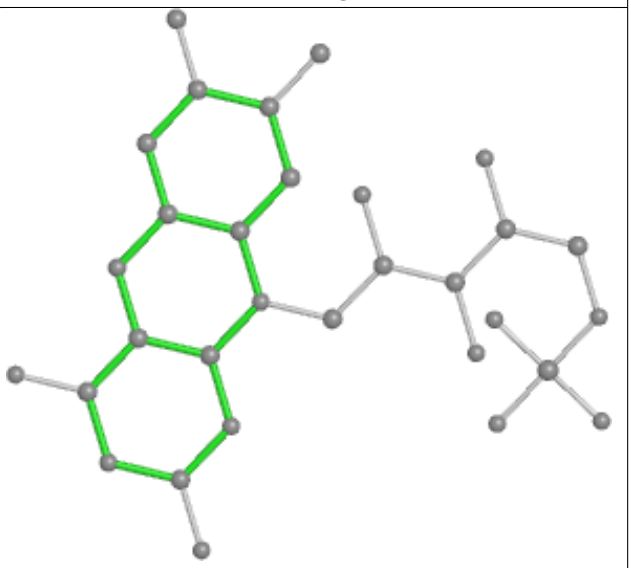
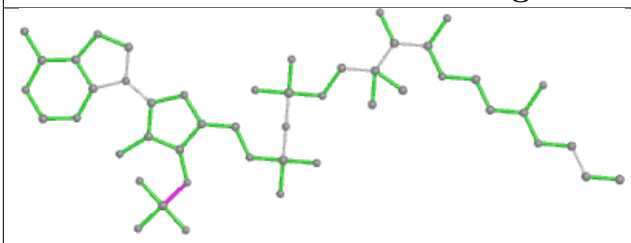


Rings

Ligand COA H 2301



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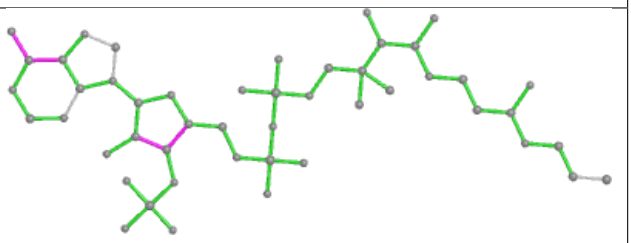
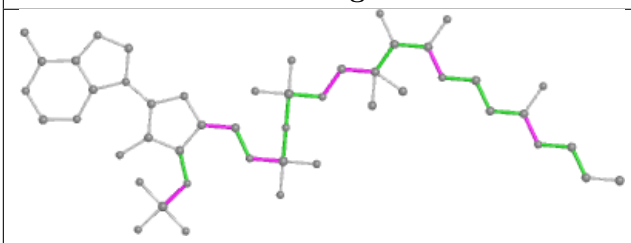


Bond angles



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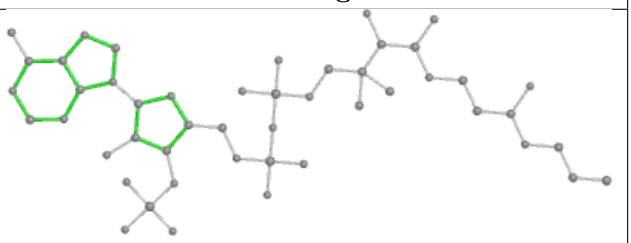
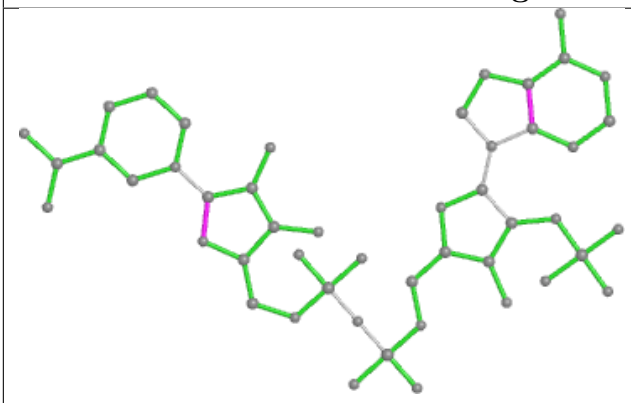


Rings

Ligand NAP H 2303



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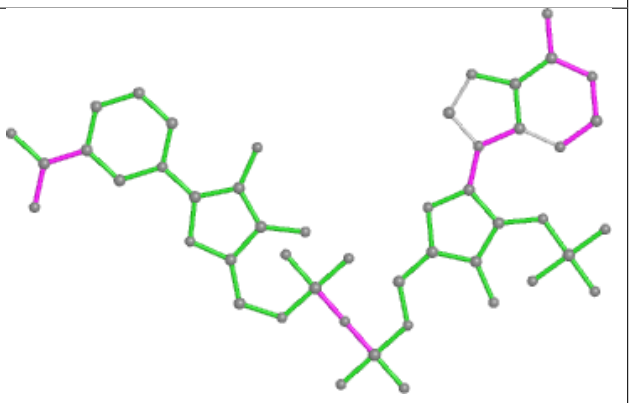
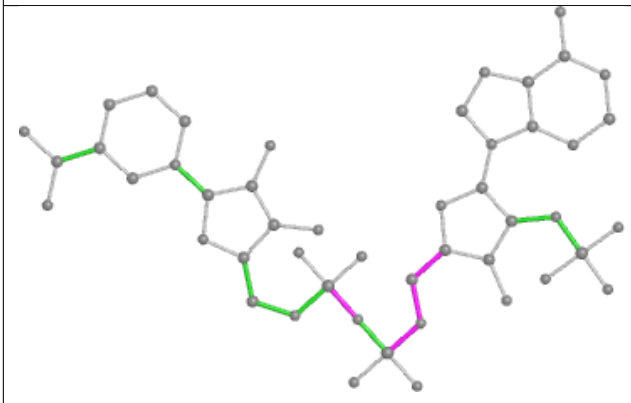


Bond angles



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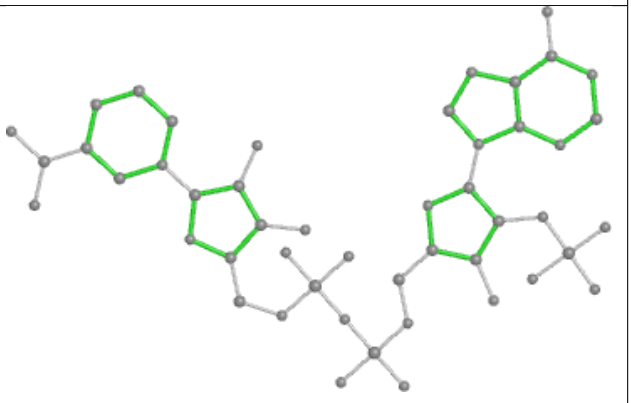
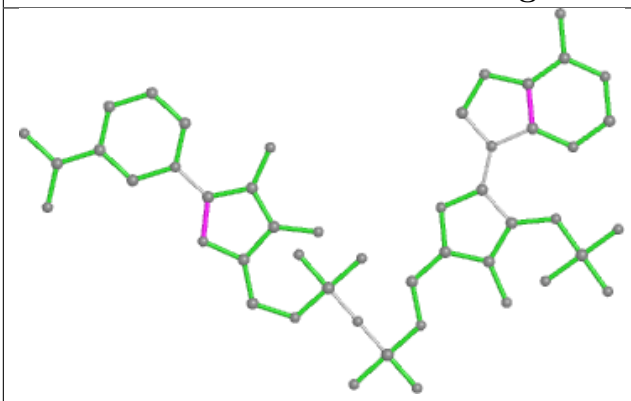


Rings

Ligand NAP I 2303



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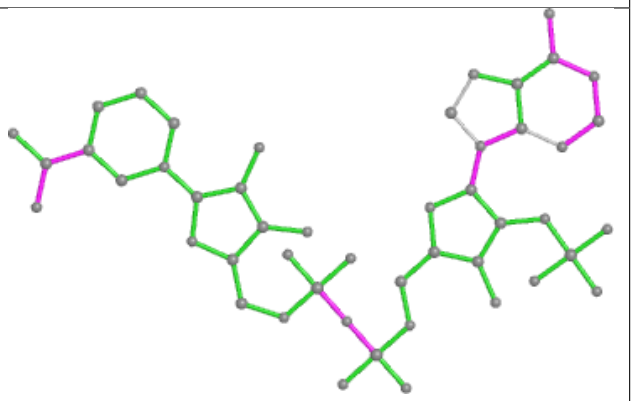

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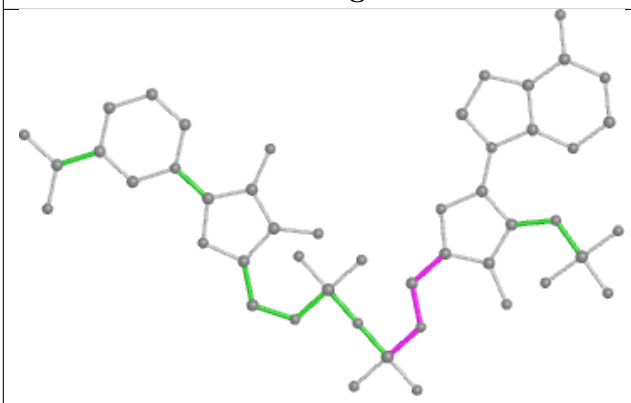

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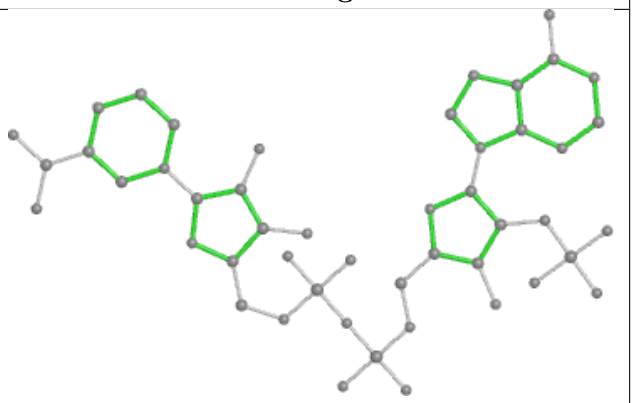
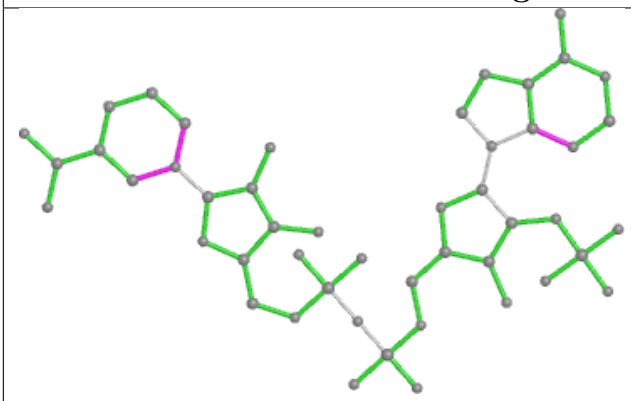


Rings

Ligand NAP C 1901



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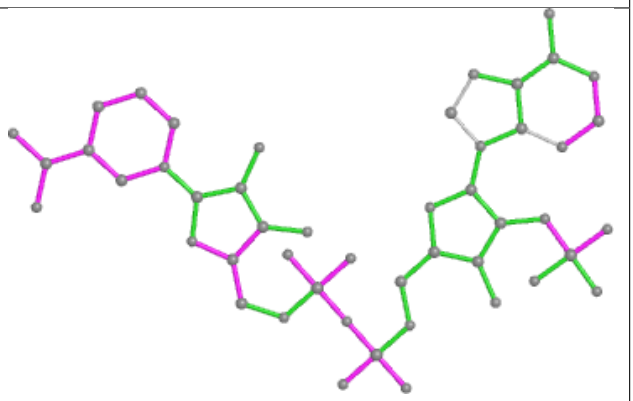

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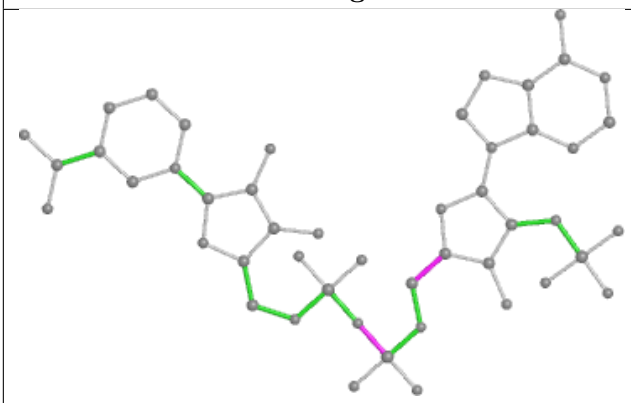

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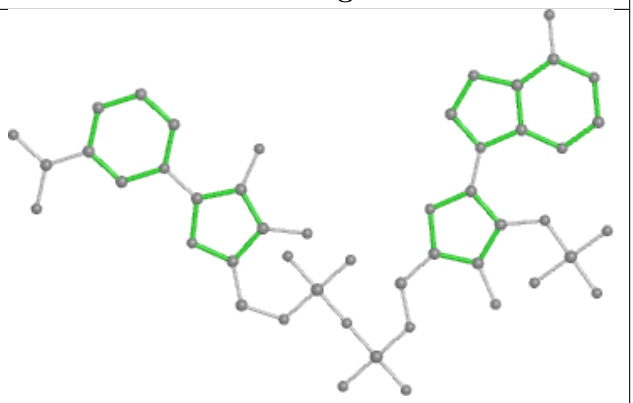
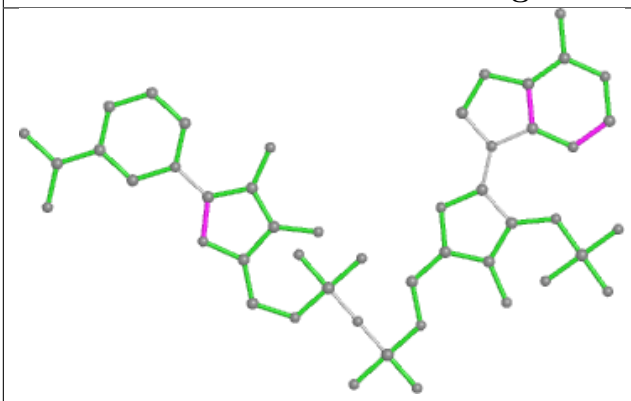


Rings

Ligand NAP G 2303



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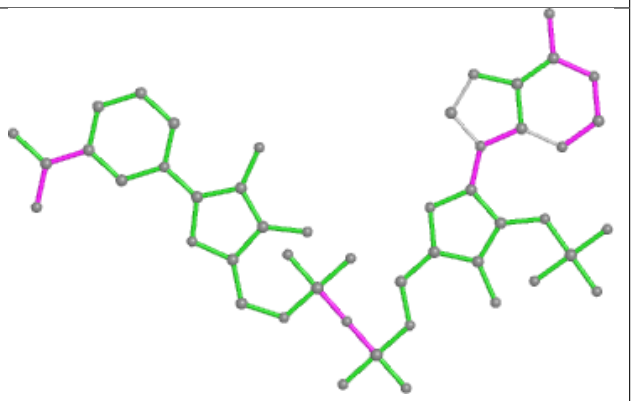

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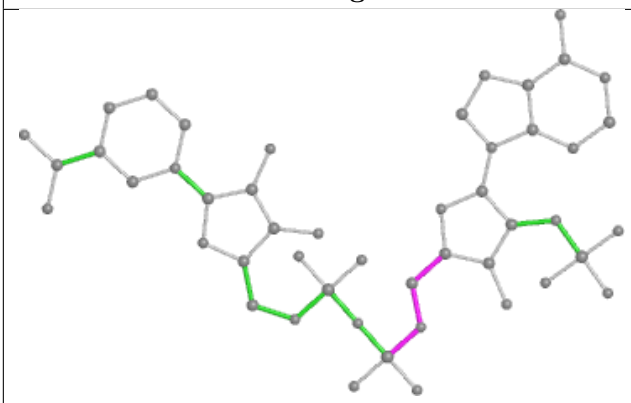

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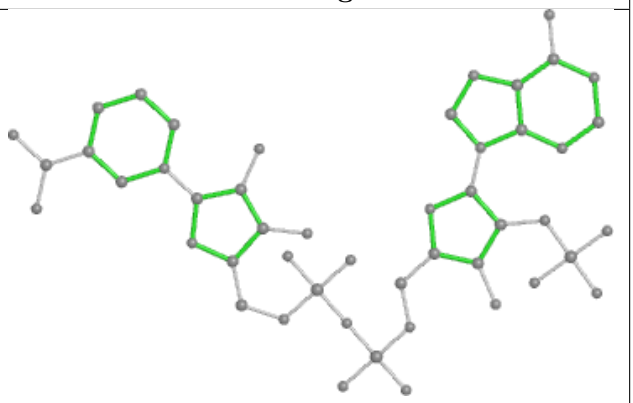
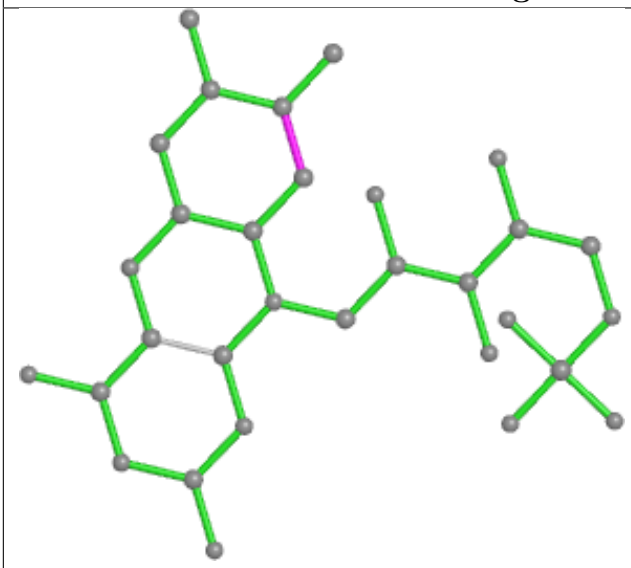


Rings

Ligand FNR H 2302



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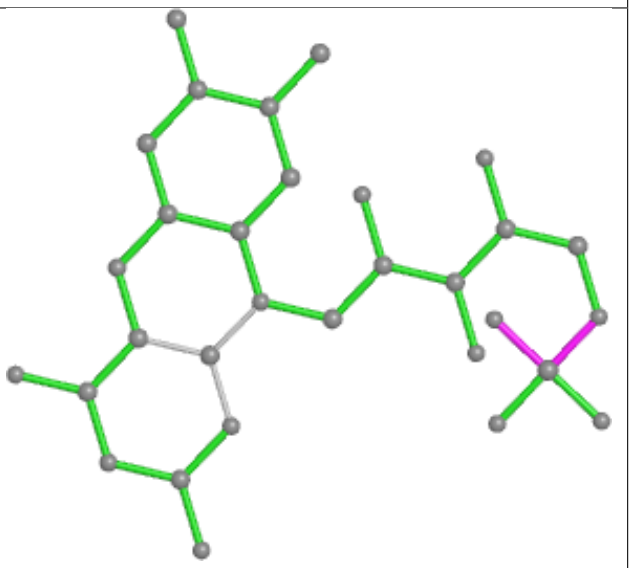

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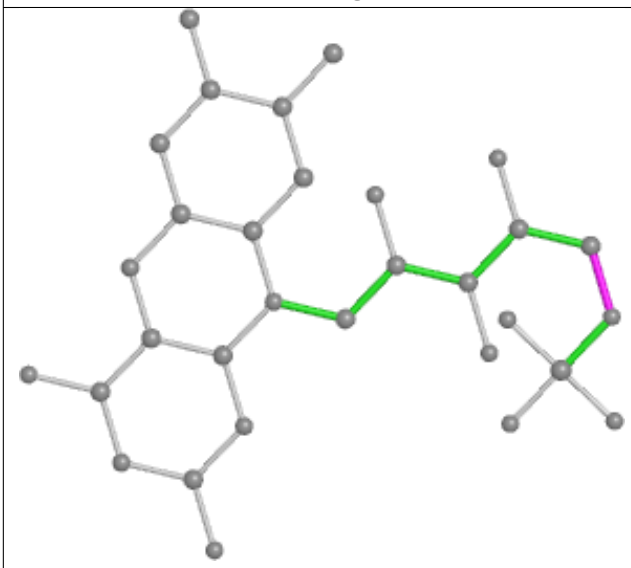

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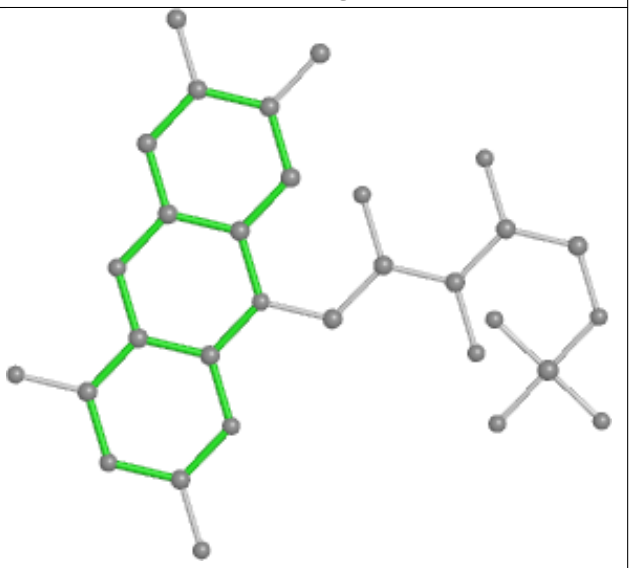
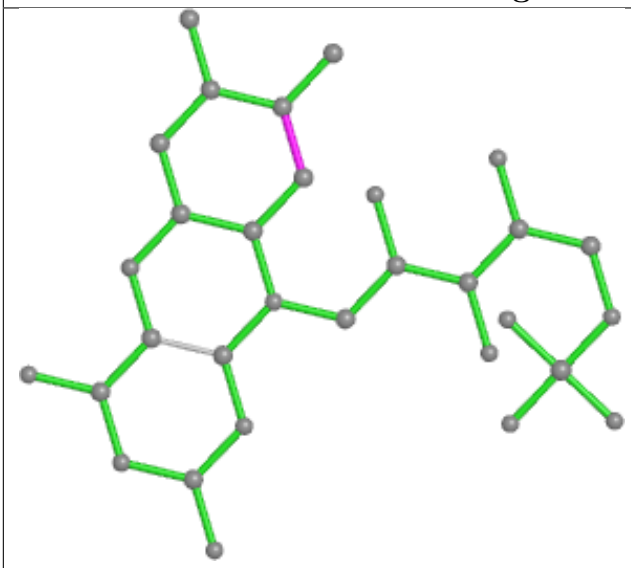


Rings

Ligand FNR K 2302



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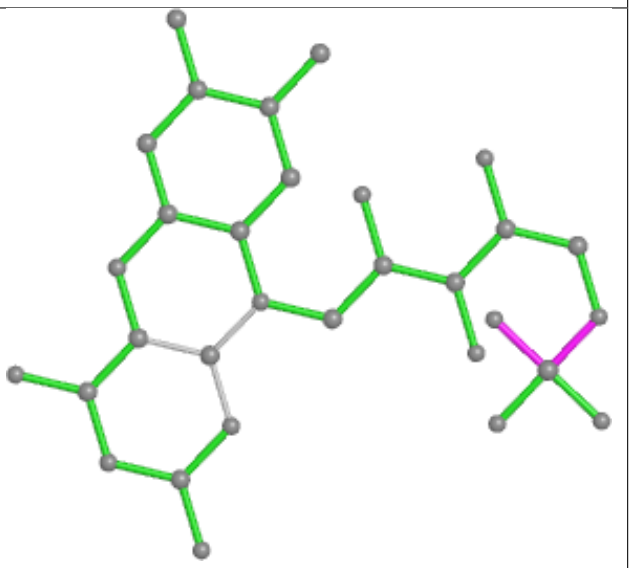

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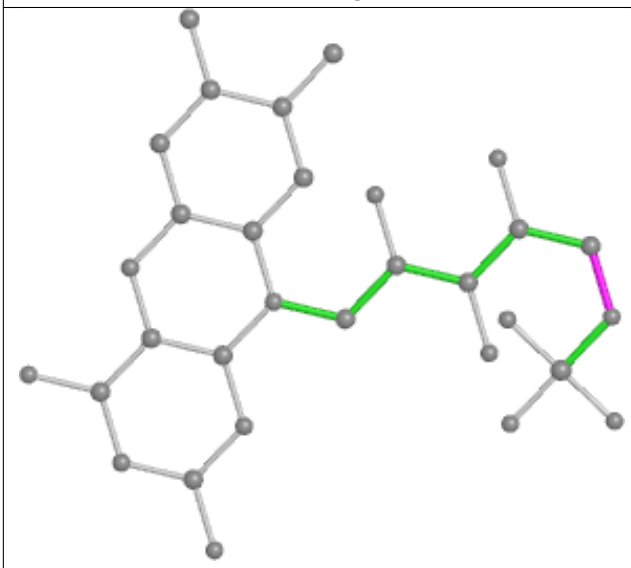

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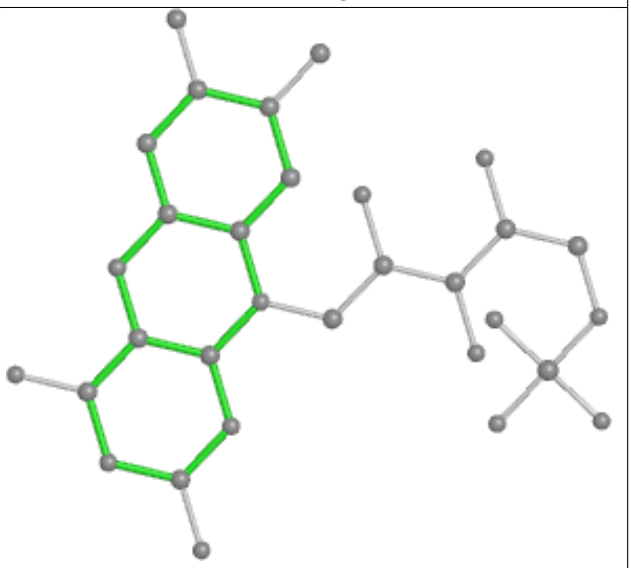
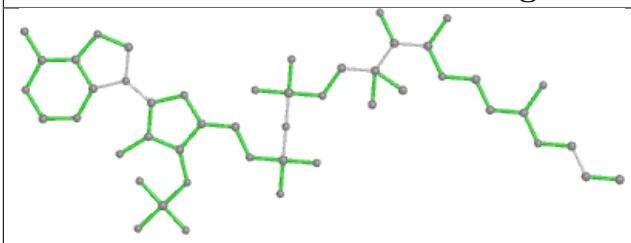


Rings

Ligand COA I 2301



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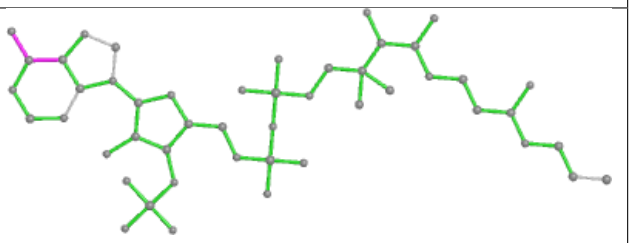
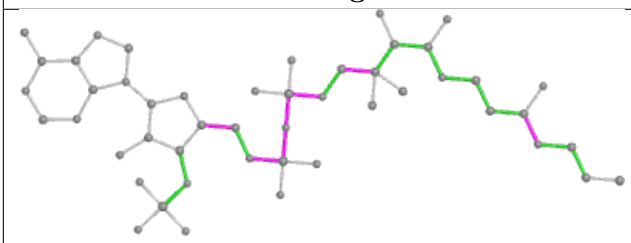


Bond angles



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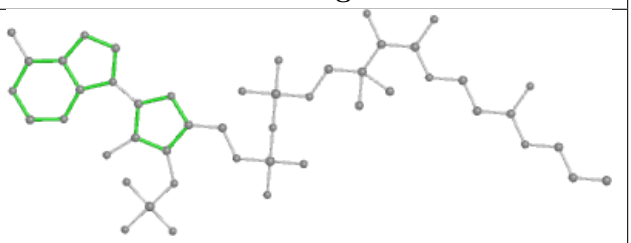
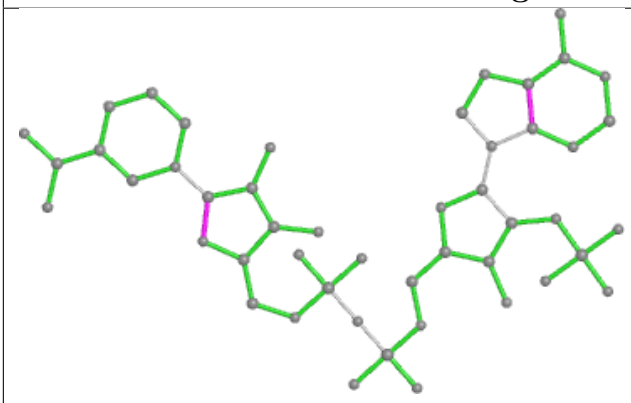


Rings

Ligand NAP K 2303



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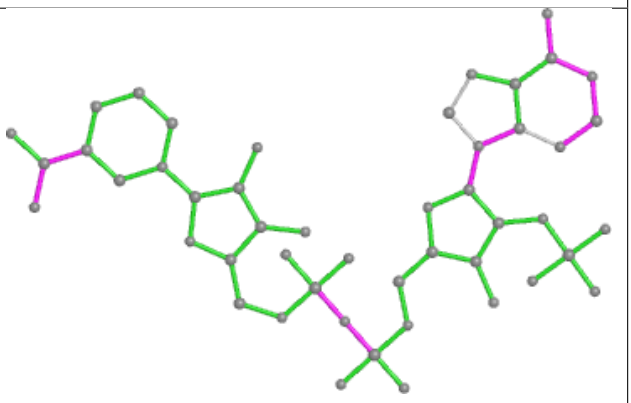
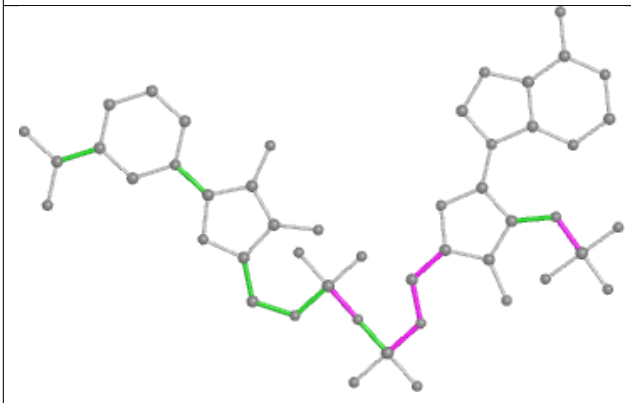


Bond angles



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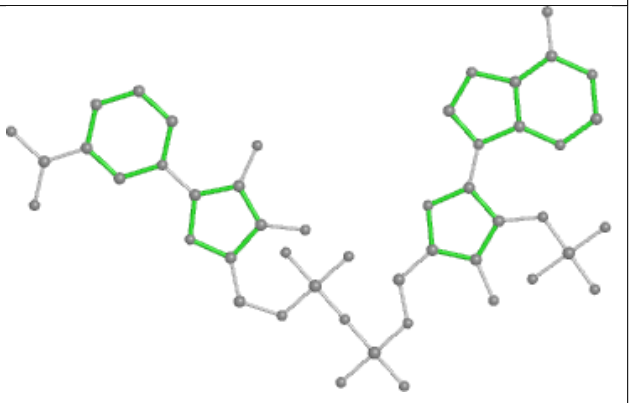
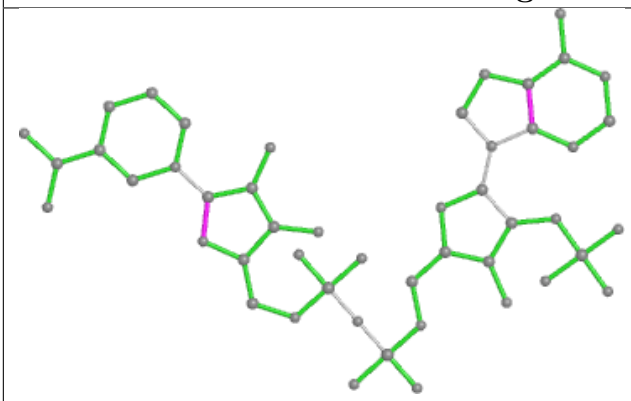


Rings

Ligand NAP J 2303



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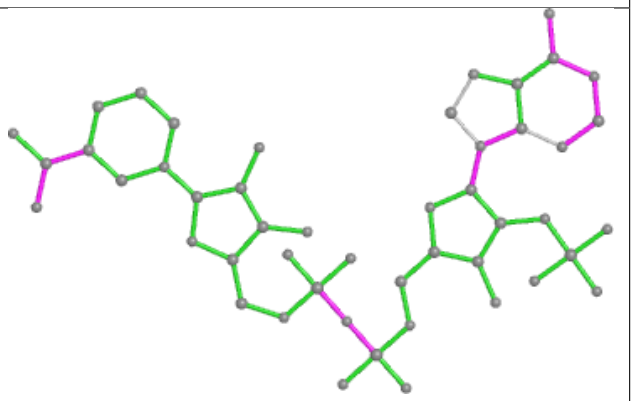
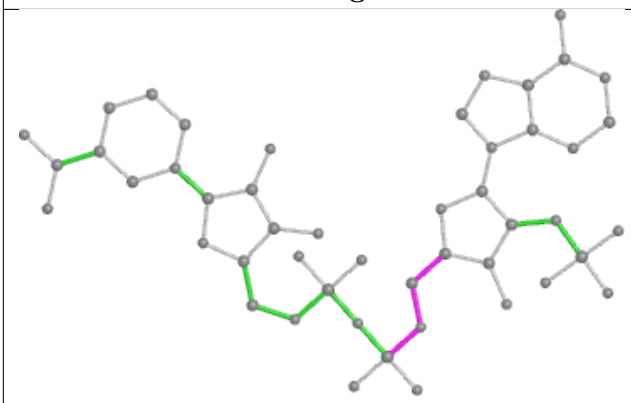


Bond angles



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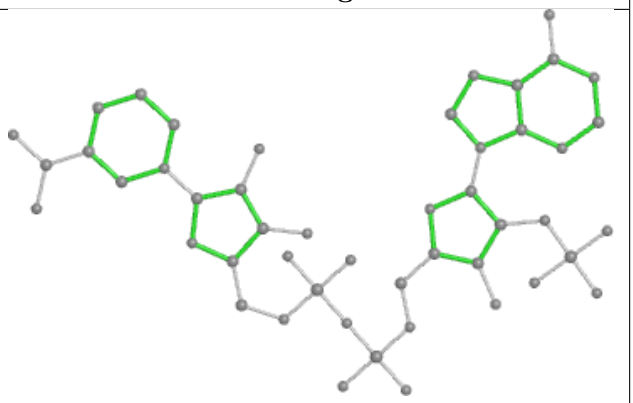
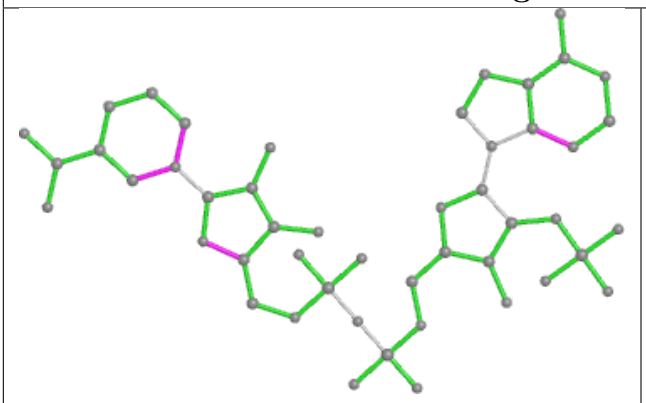


Rings

Ligand NAP B 1901



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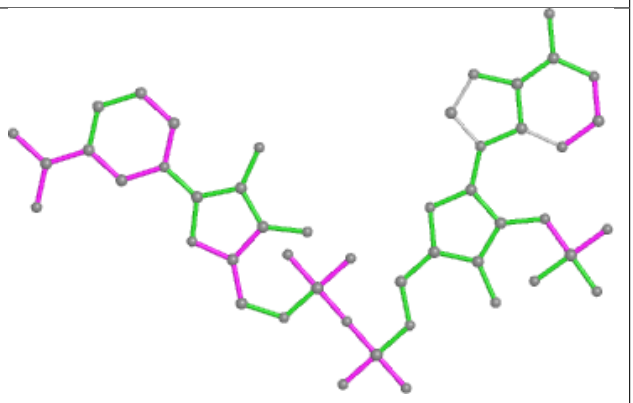
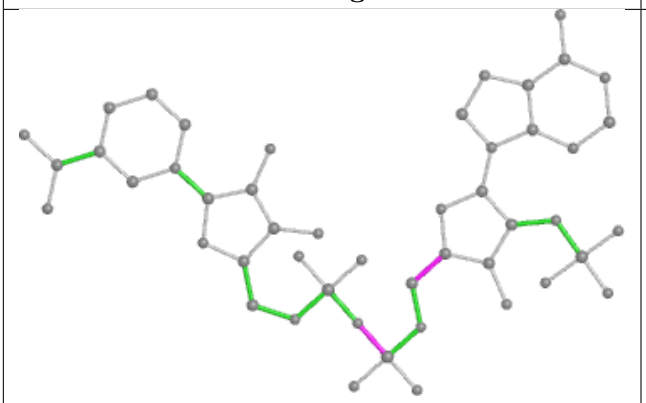


Bond angles



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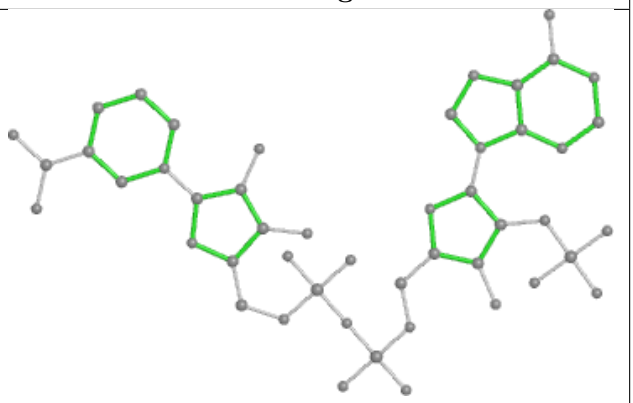
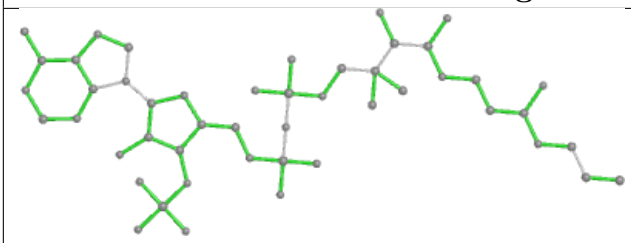


Rings

Ligand COA L 2301



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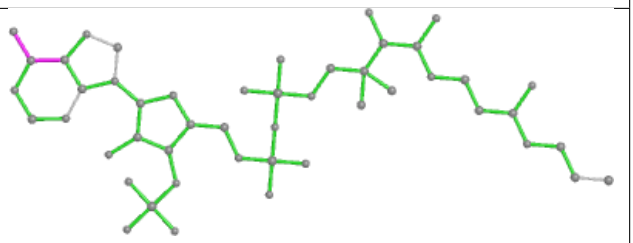
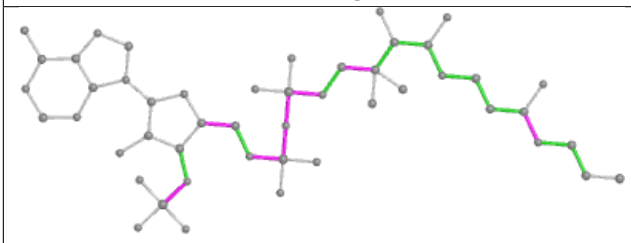


Bond angles



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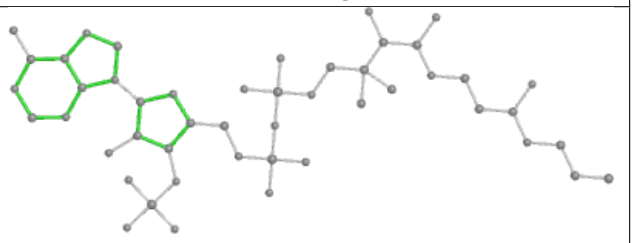
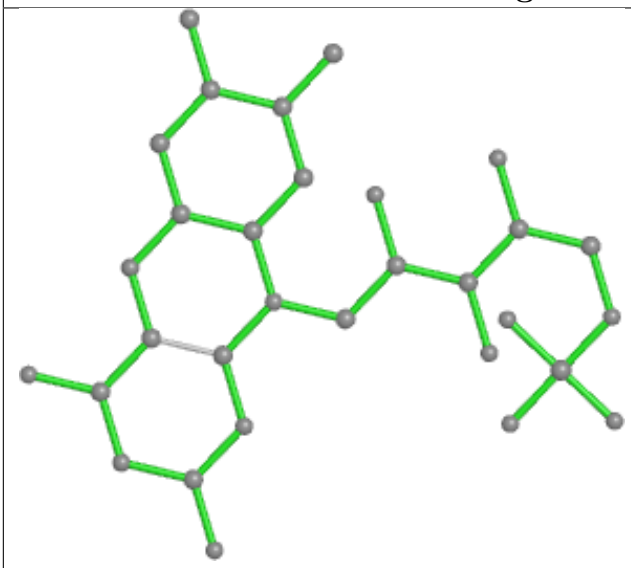
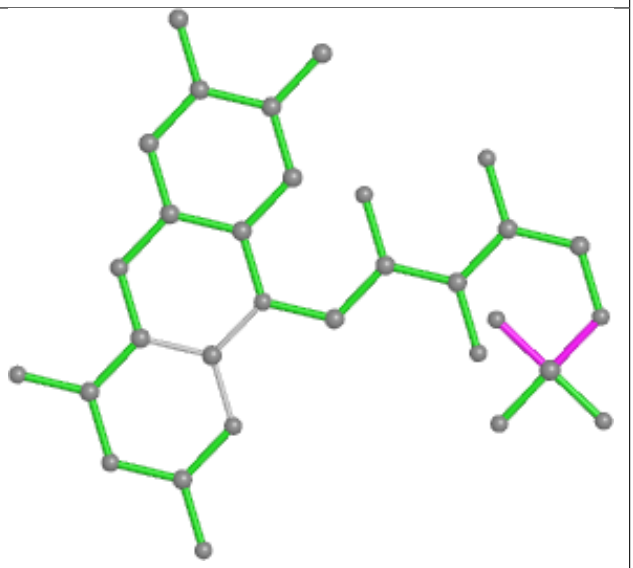


Rings

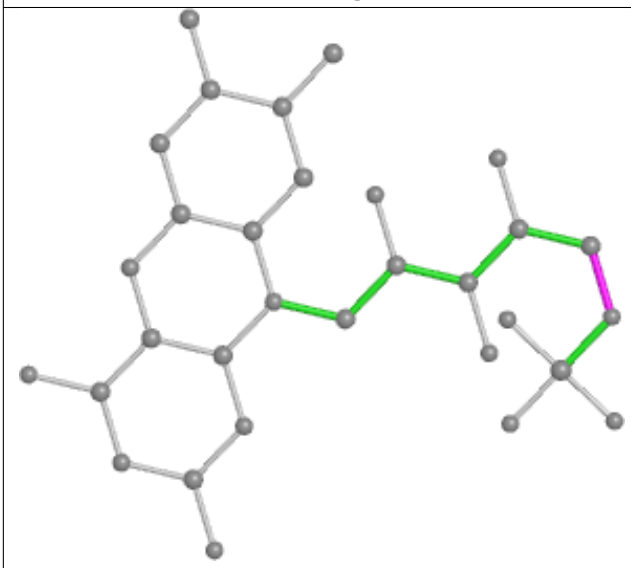
Ligand FNR L 2302



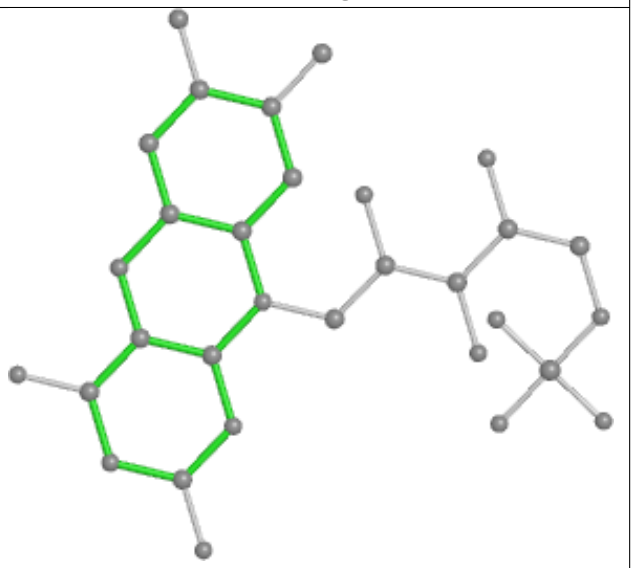
Bond lengths



Bond angles

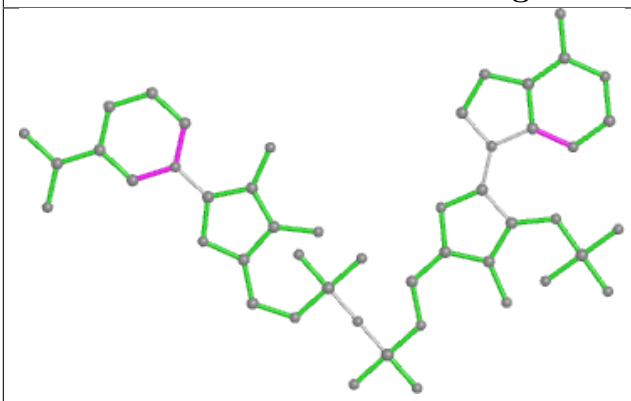


Torsions

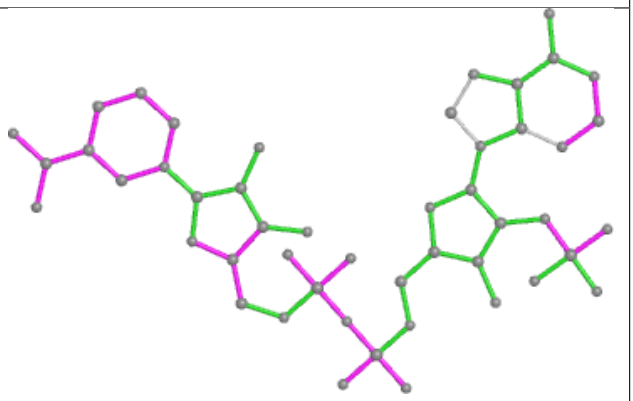


Rings

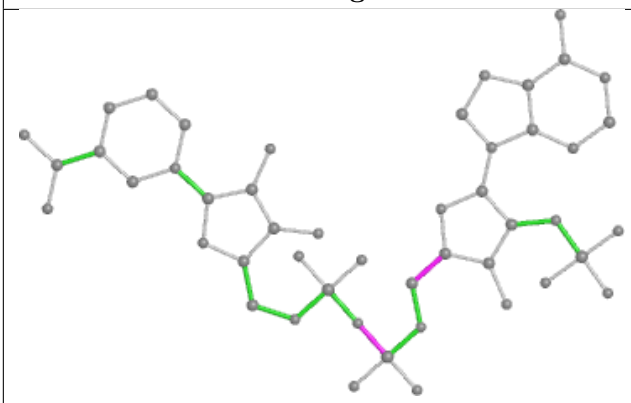
Ligand NAP D 1901



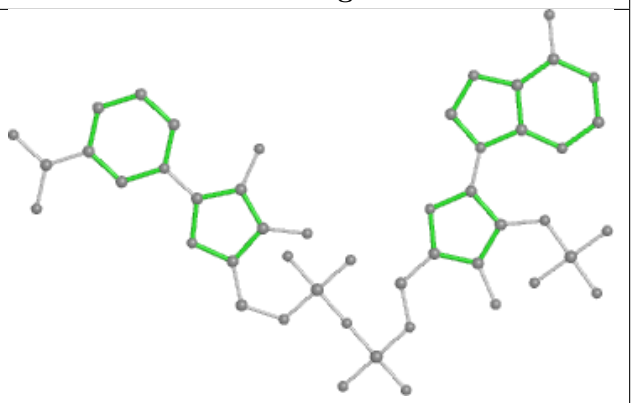
Bond lengths



Bond angles

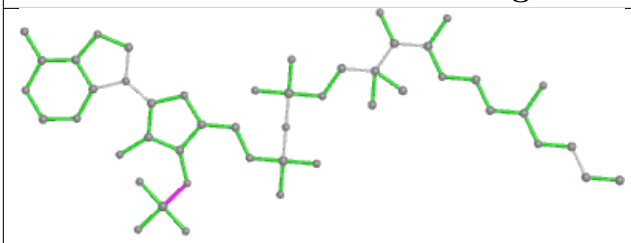


Torsions

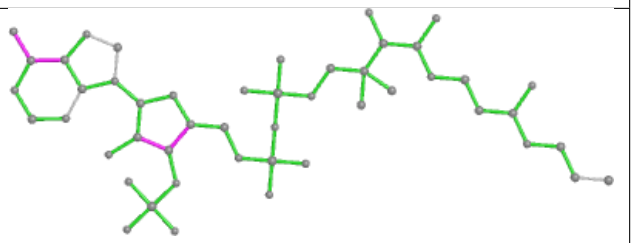


Rings

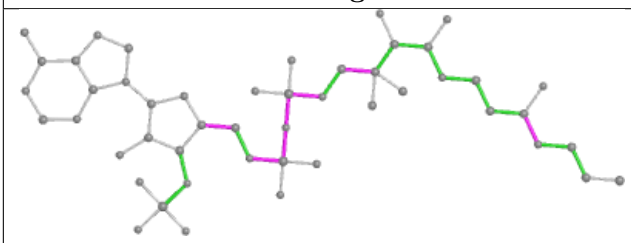
Ligand COA K 2301



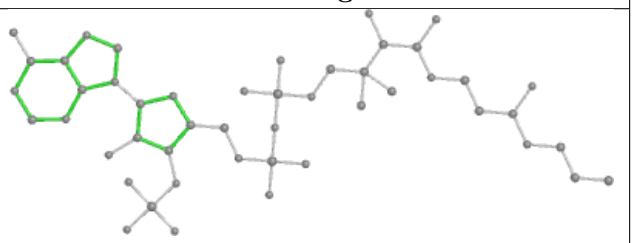
Bond lengths



Bond angles

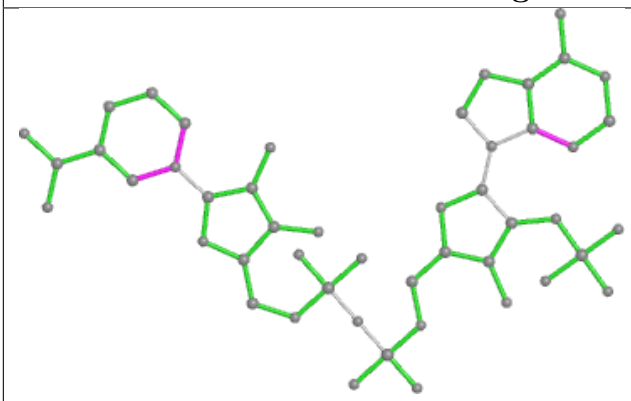


Torsions



Rings

Ligand NAP A 1901



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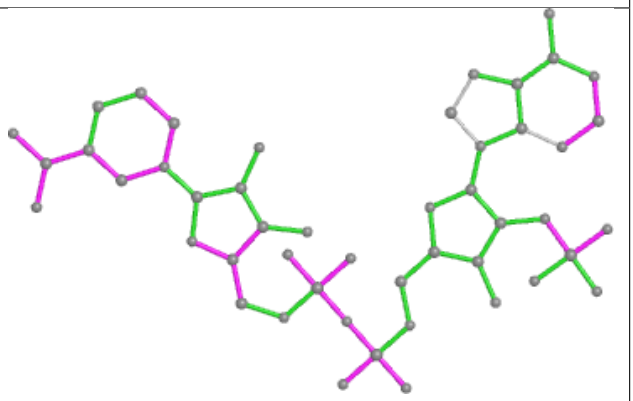
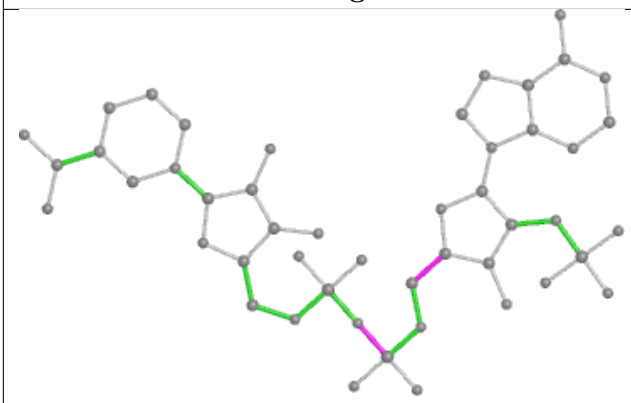
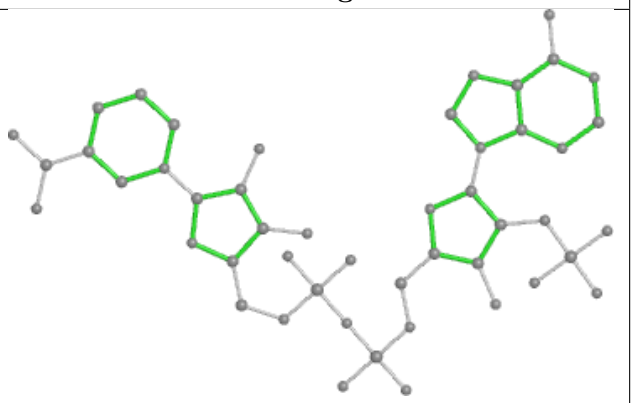


Bond angles

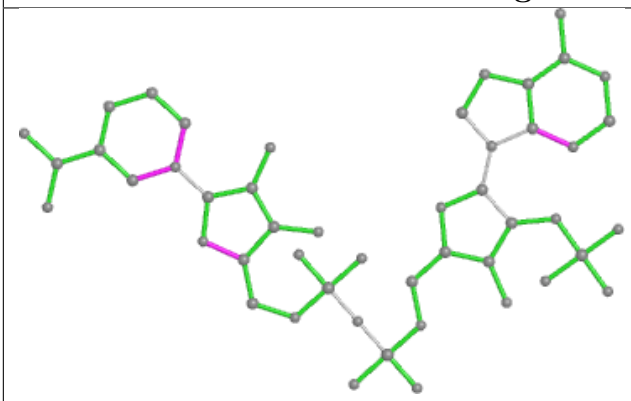


Torsions

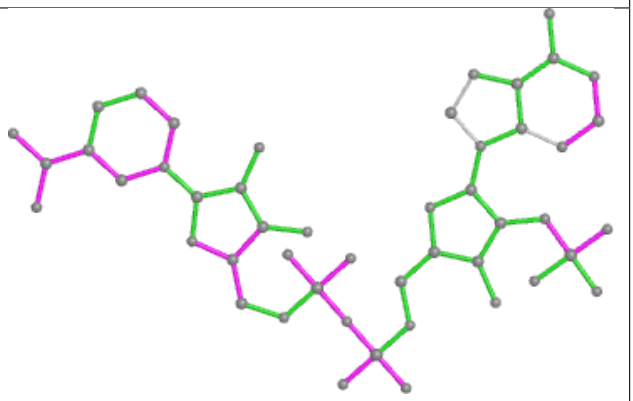


Rings

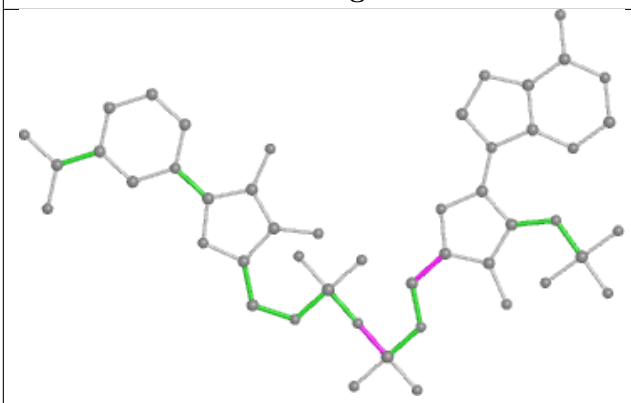
Ligand NAP F 1901



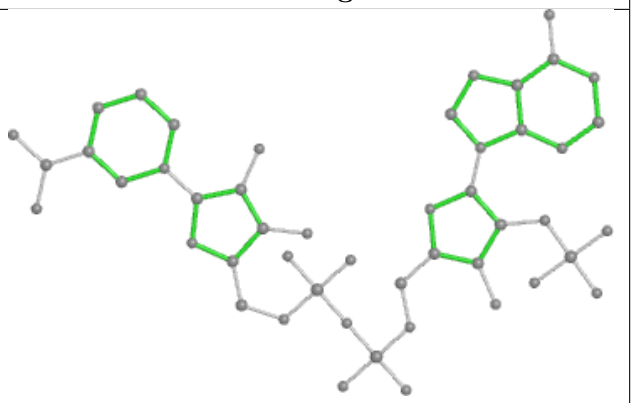
Bond lengths



Bond angles

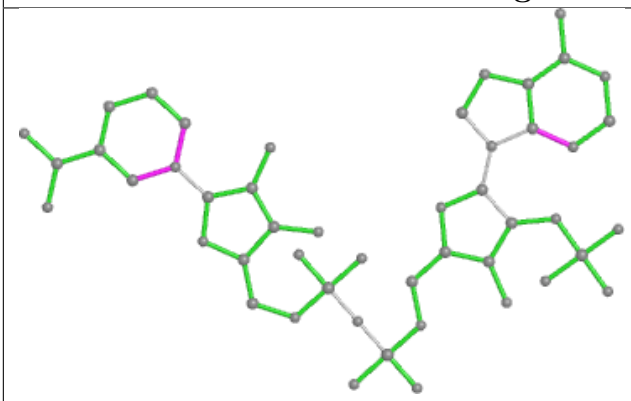


Torsions

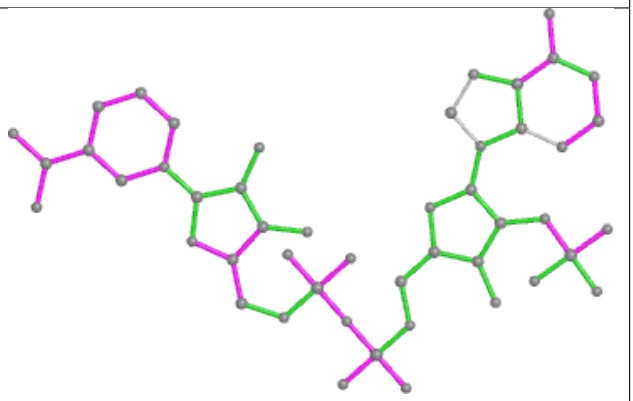


Rings

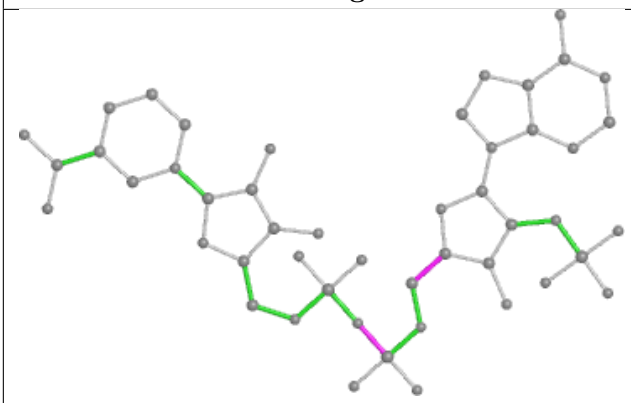
Ligand NAP E 1901



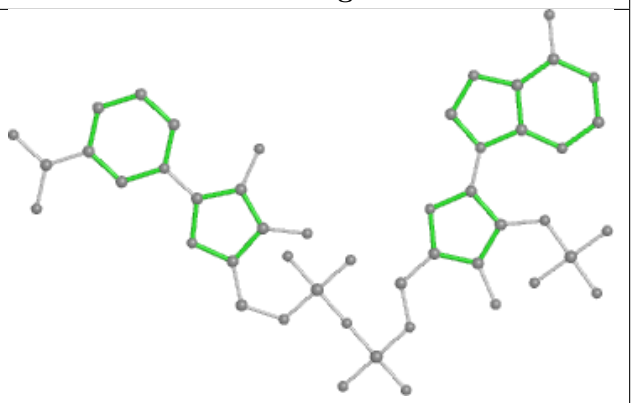
Bond lengths



Bond angles

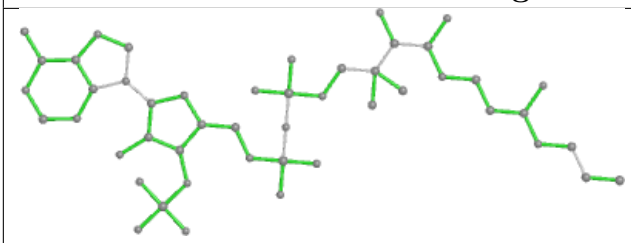


Torsions

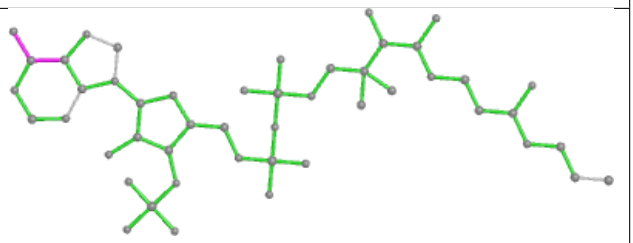


Rings

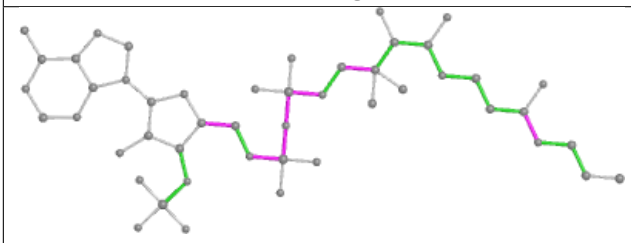
Ligand COA G 2301



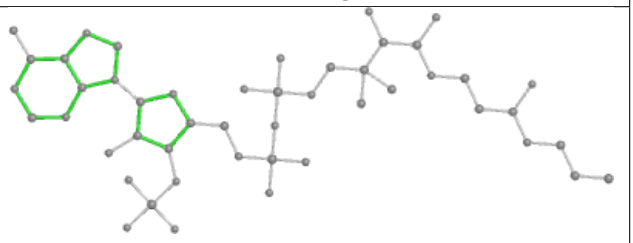
Bond lengths



Bond angles

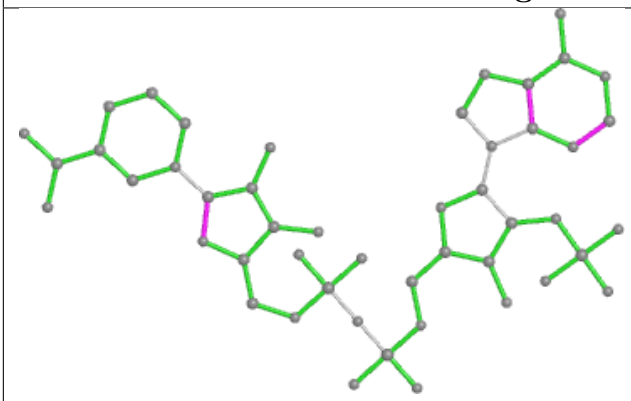


Torsions

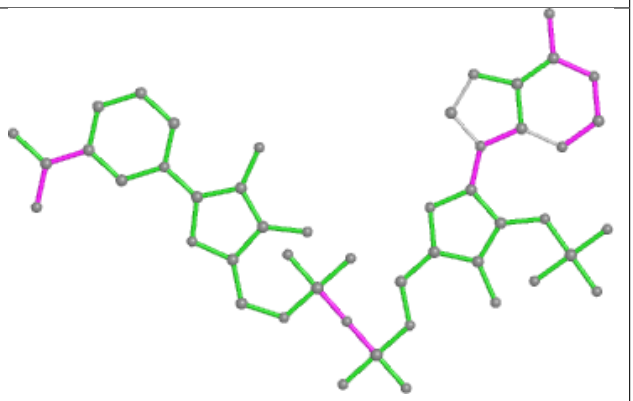


Rings

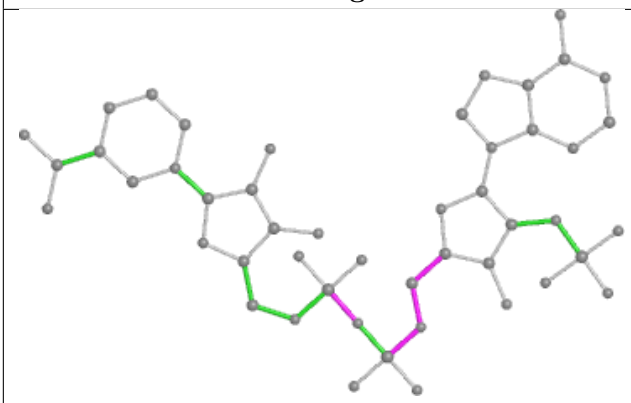
Ligand NAP L 2303



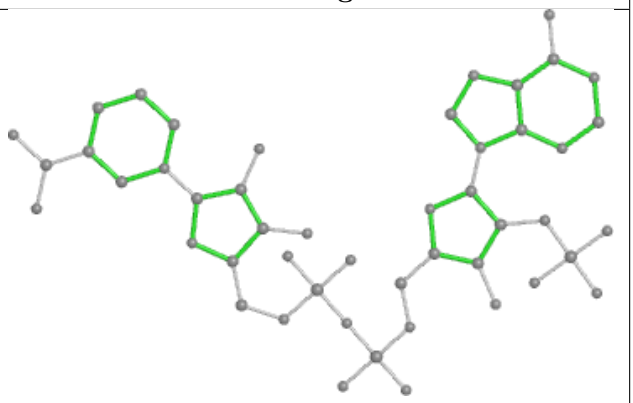
Bond lengths



Bond angles

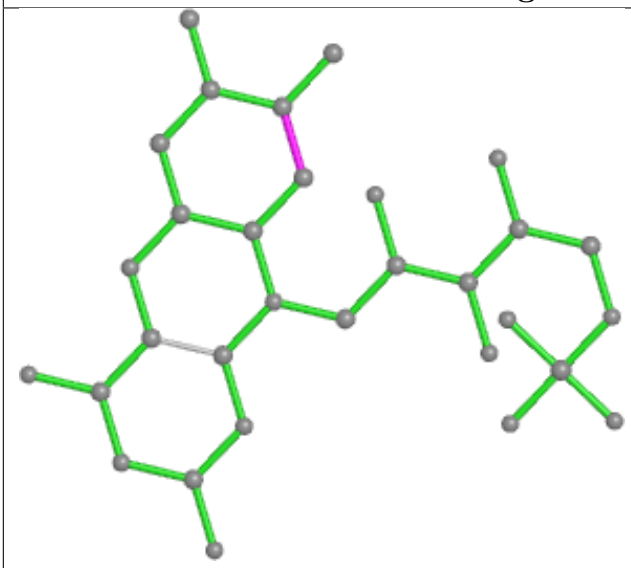


Torsions

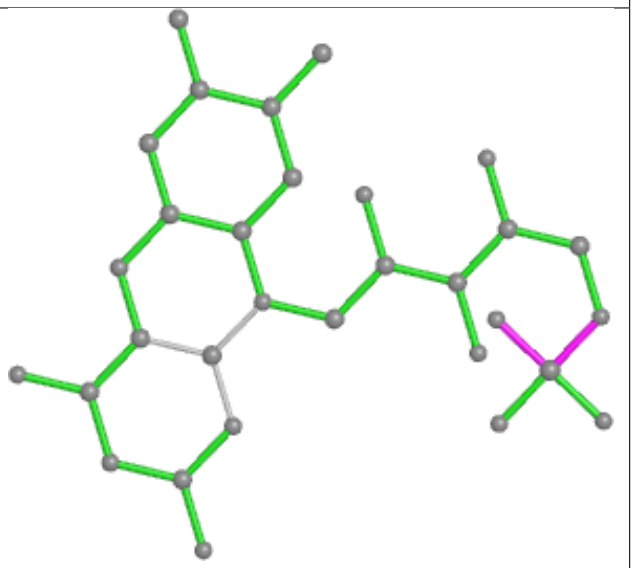


Rings

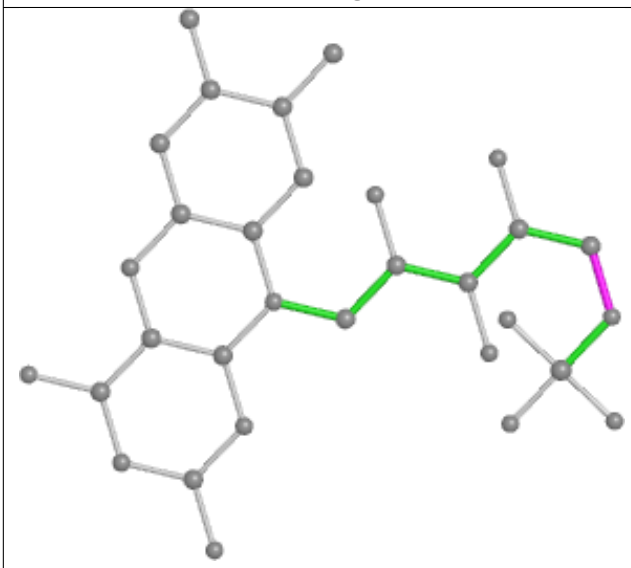
Ligand FNR J 2302



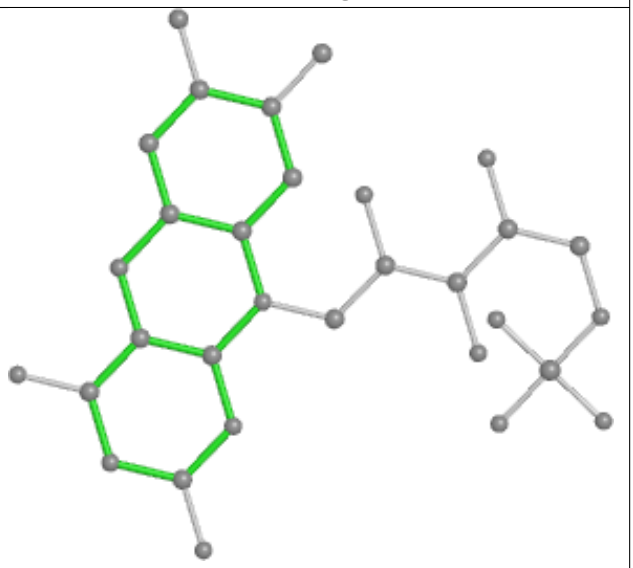
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

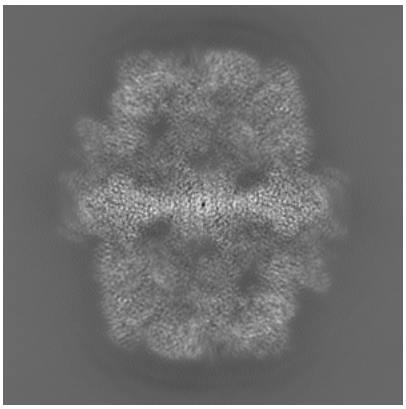
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-17840. These allow visual inspection of the internal detail of the map and identification of artifacts.

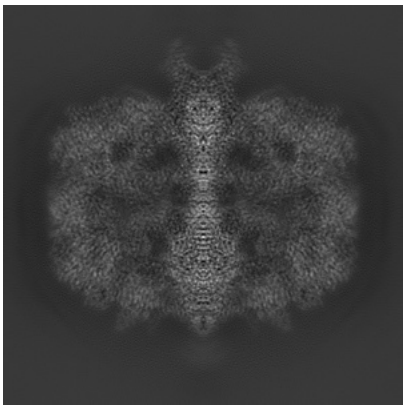
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

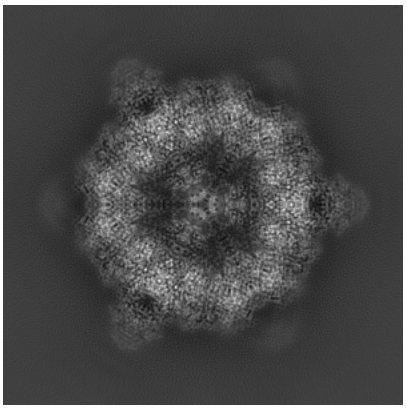
6.1.1 Primary map



X

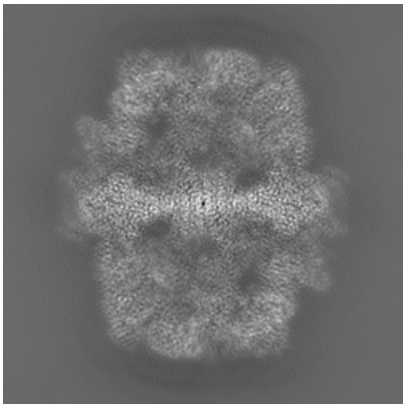


Y

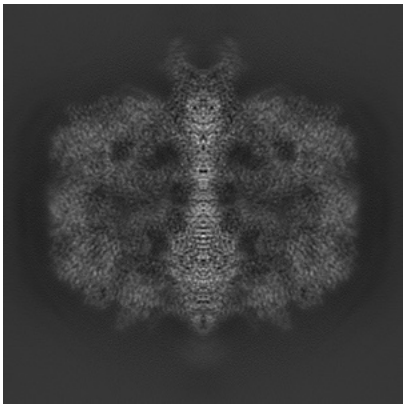


Z

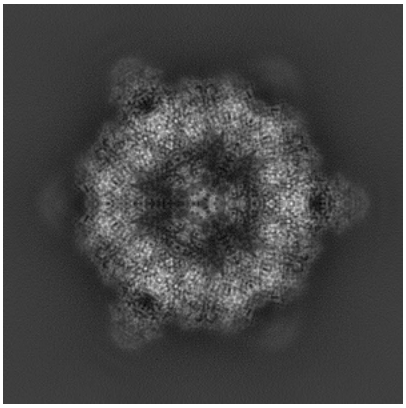
6.1.2 Raw map



X



Y

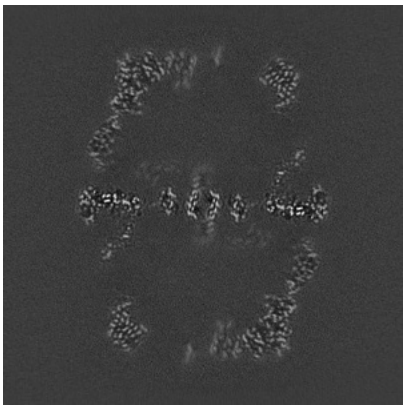


Z

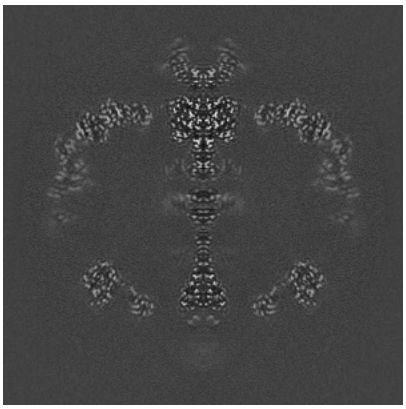
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

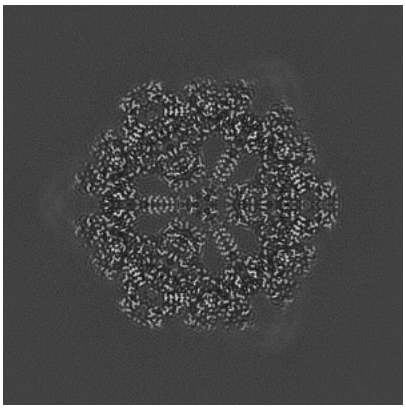
6.2.1 Primary map



X Index: 280

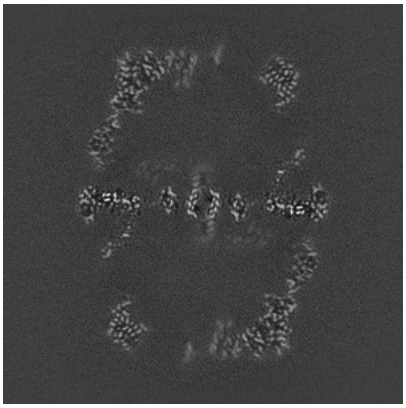


Y Index: 280

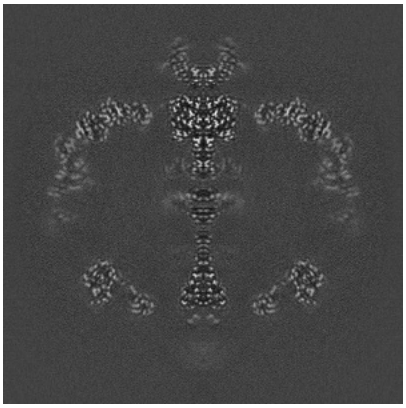


Z Index: 280

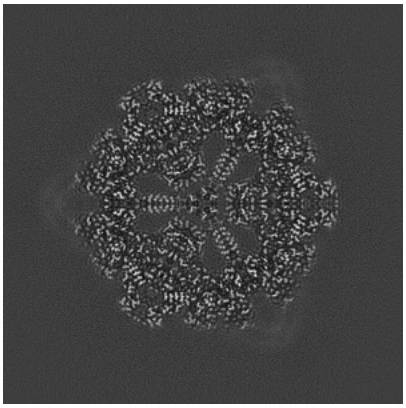
6.2.2 Raw map



X Index: 280



Y Index: 280

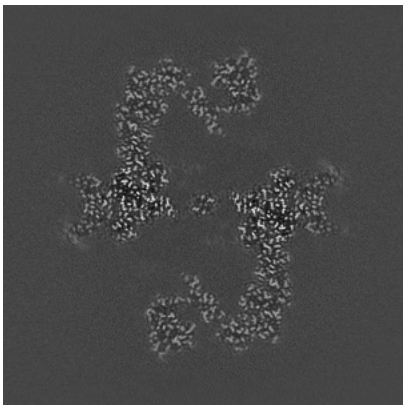


Z Index: 280

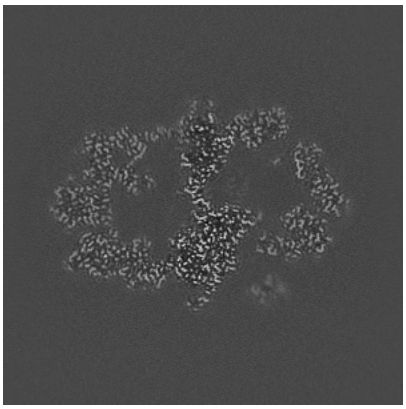
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

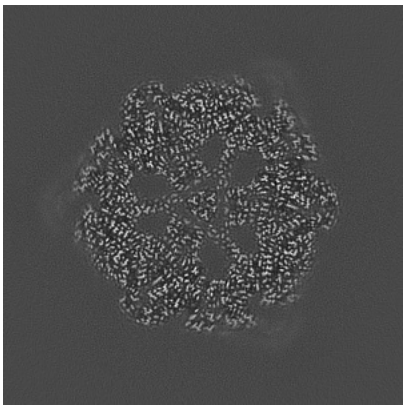
6.3.1 Primary map



X Index: 190

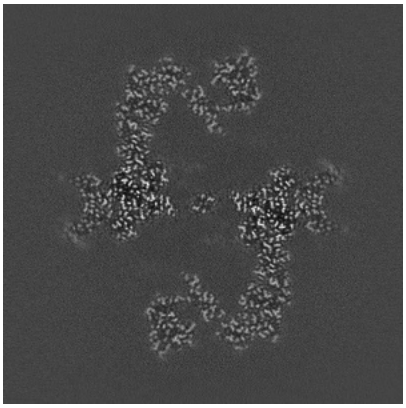


Y Index: 382

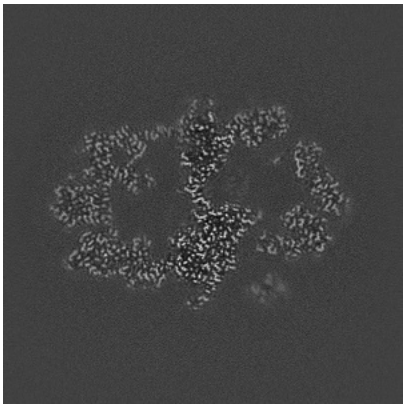


Z Index: 274

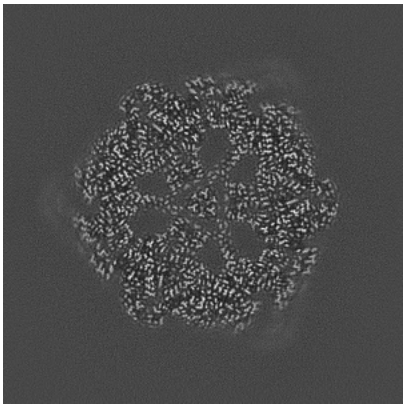
6.3.2 Raw map



X Index: 190



Y Index: 382

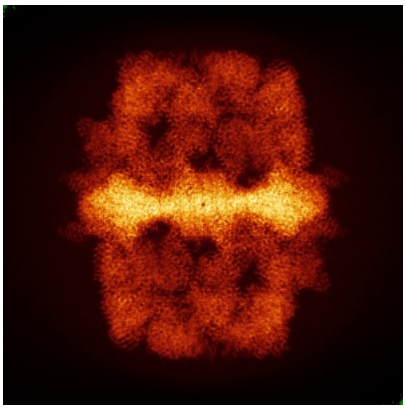


Z Index: 286

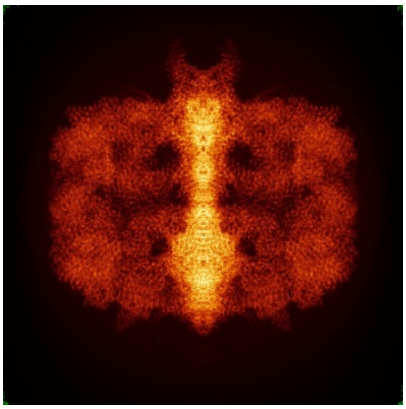
The images above show the largest variance slices of the map in three orthogonal directions.

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

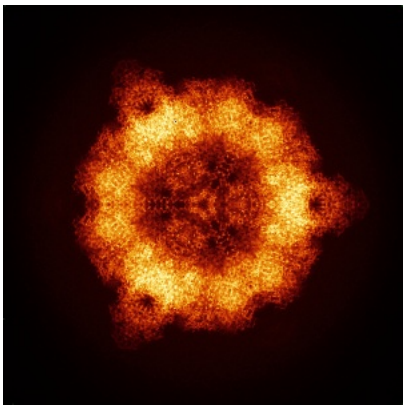
6.4.1 Primary map



X

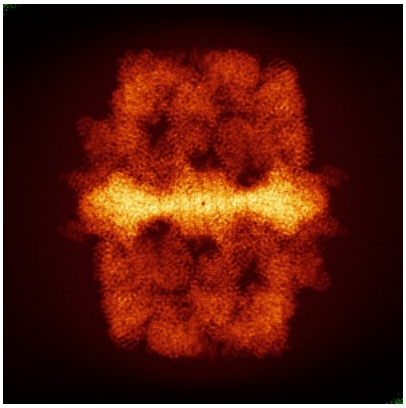


Y

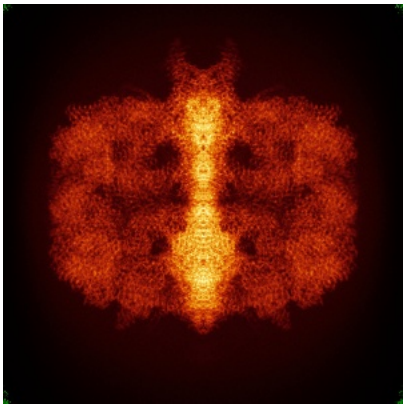


Z

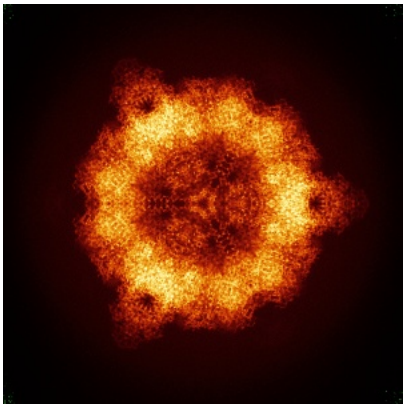
6.4.2 Raw map



X



Y

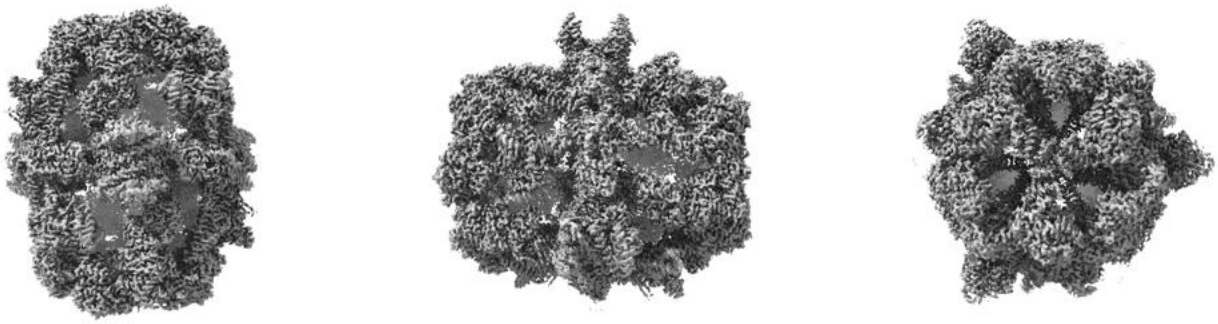


Z

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

6.5 Orthogonal surface views (i)

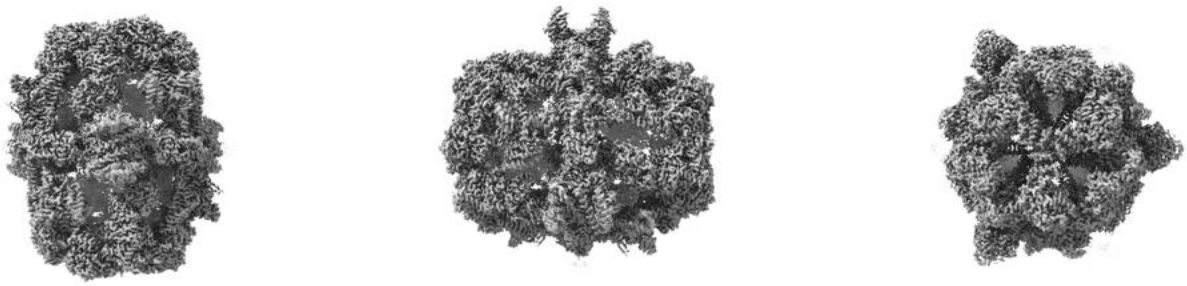
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.01. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

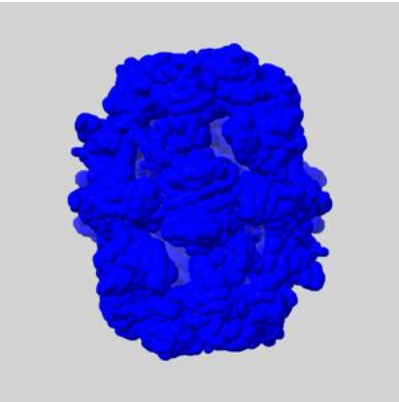
6.6 Mask visualisation (i)

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

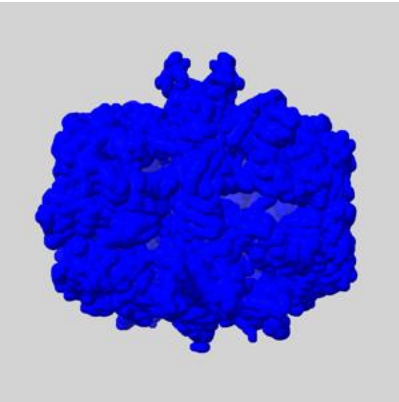
A mask typically either:

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

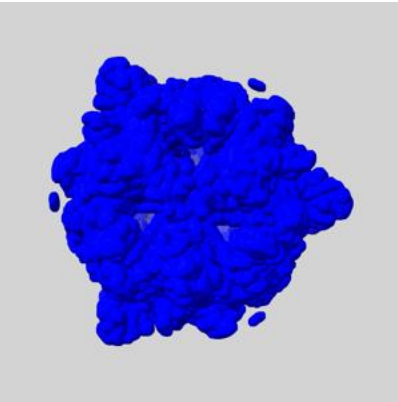
6.6.1 emd_17840_msk_1.map (i)



X



Y

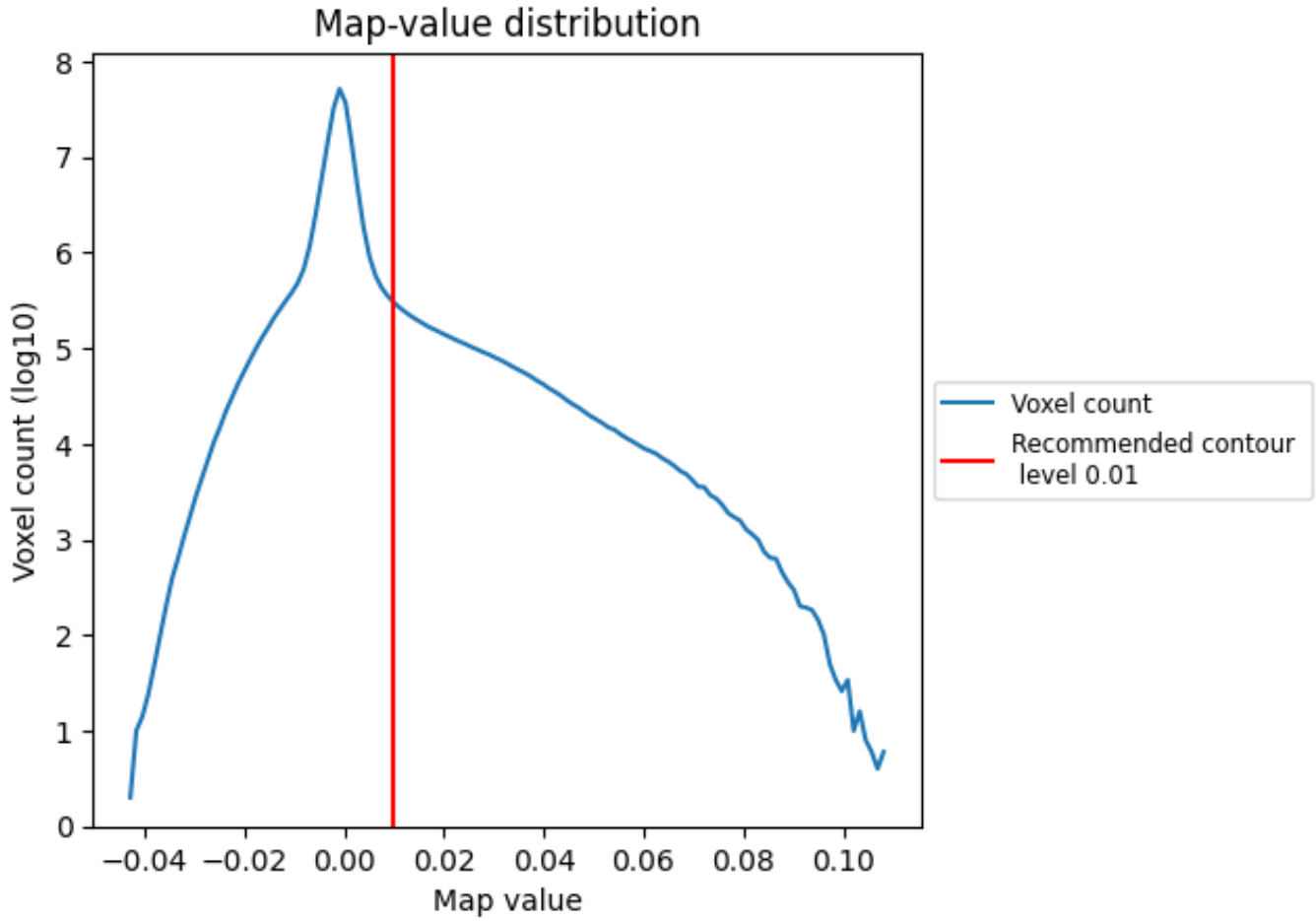


Z

7 Map analysis

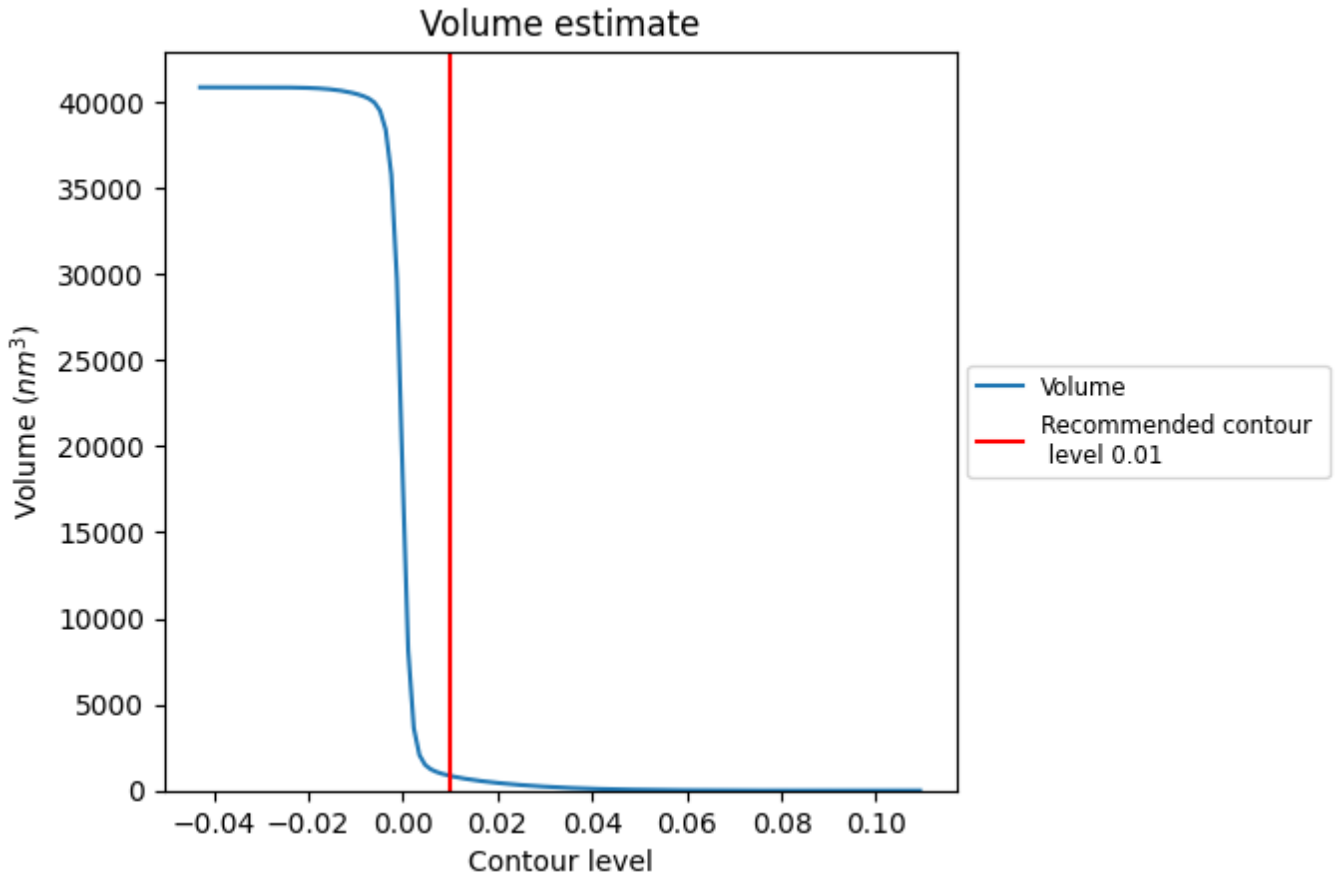
This section contains the results of statistical analysis of the map.

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.

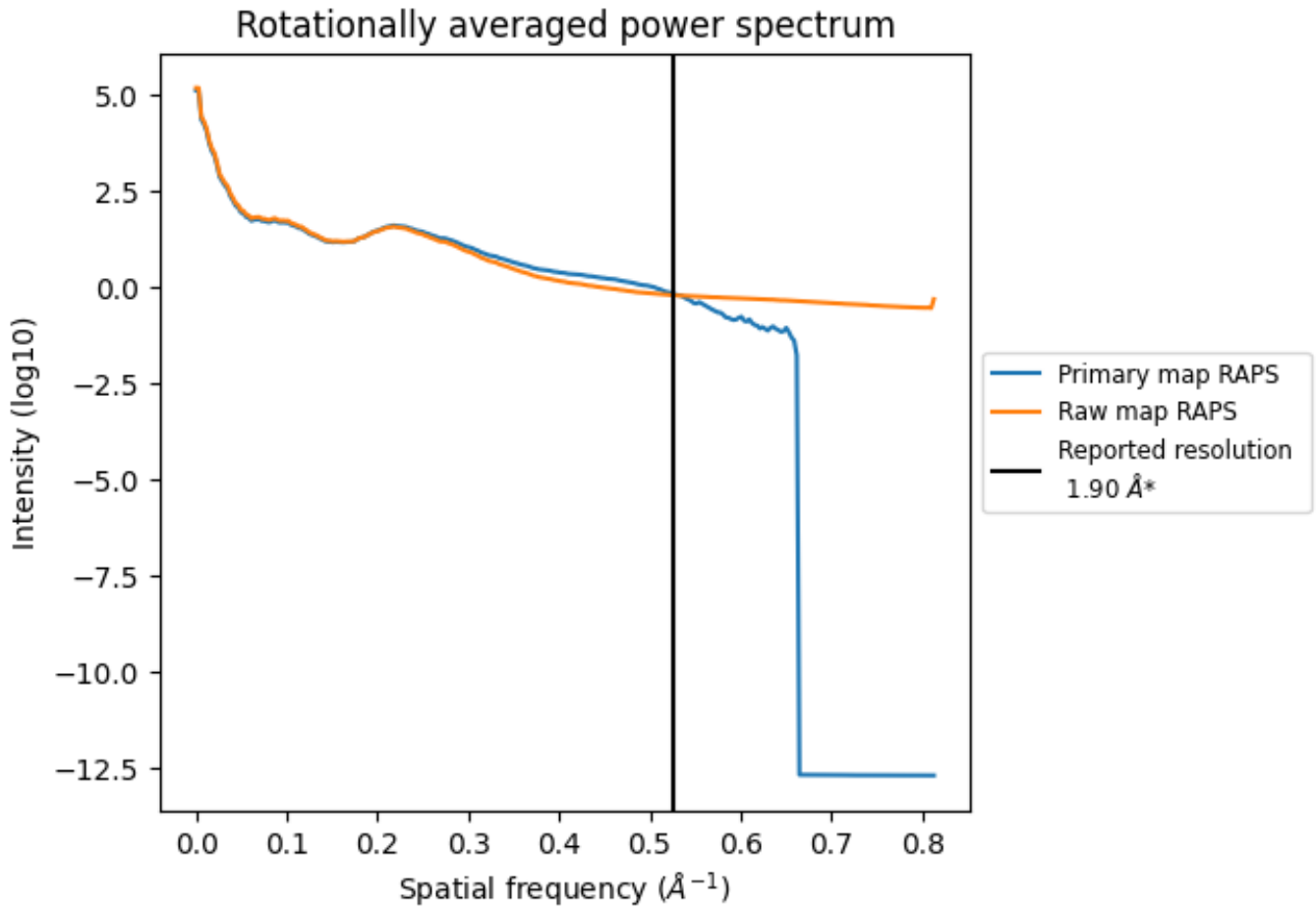
7.2 Volume estimate



The volume at the recommended contour level is 856 nm^3; this corresponds to an approximate mass of 773 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)

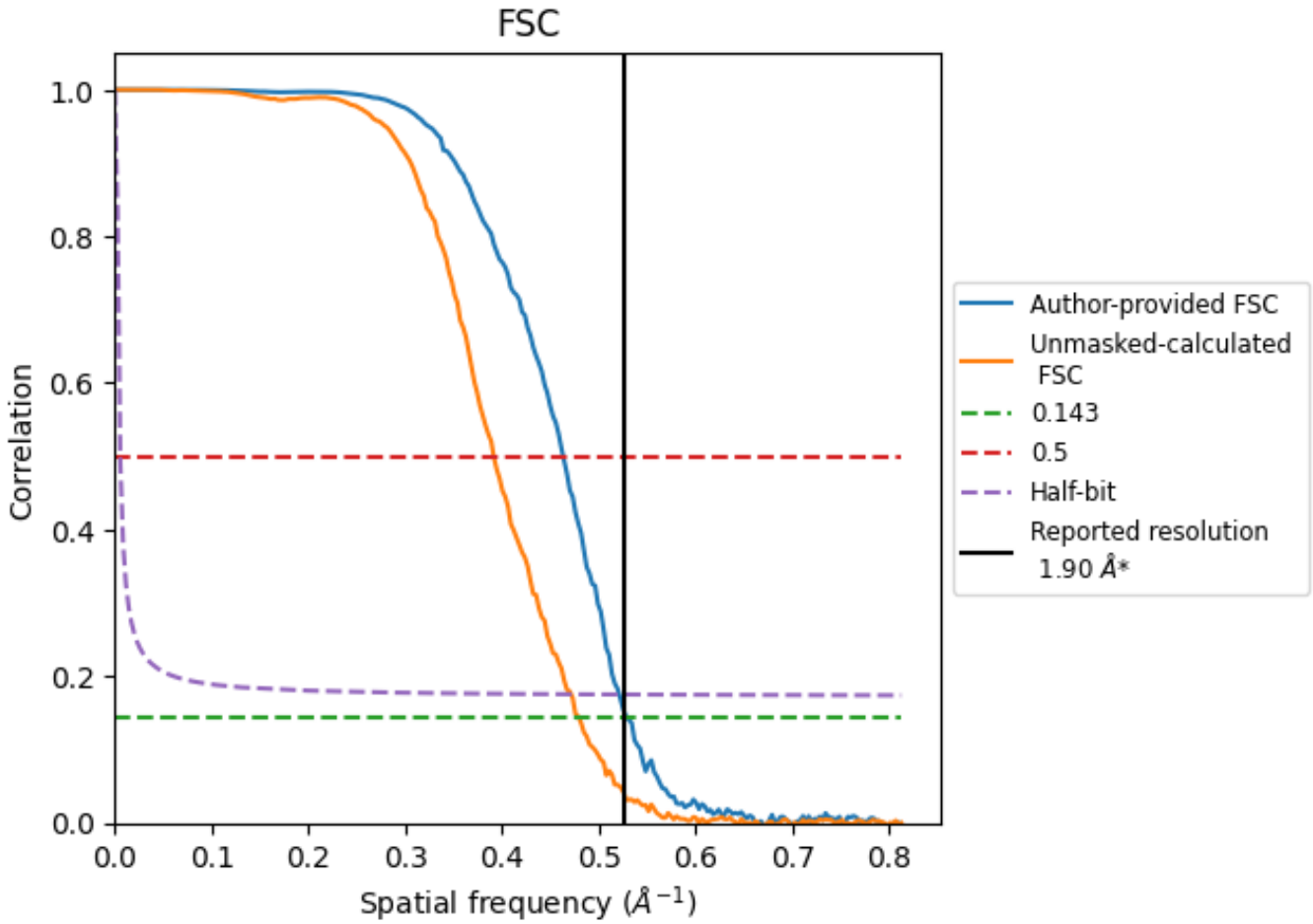


*Reported resolution corresponds to spatial frequency of 0.526 $Å^{-1}$

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 0.526 Å^{-1}

8.2 Resolution estimates (i)

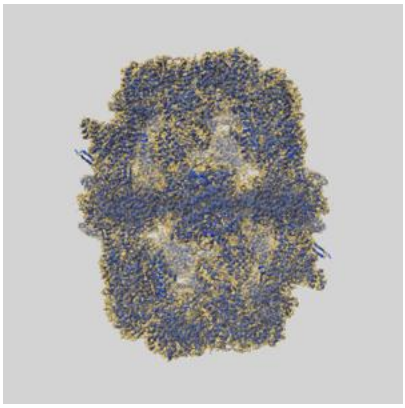
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	1.90	-	-
Author-provided FSC curve	1.89	2.16	1.92
Unmasked-calculated*	2.08	2.55	2.12

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

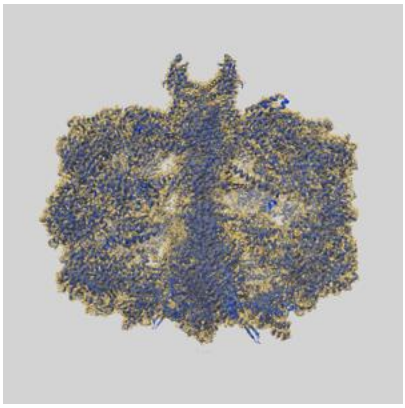
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-17840 and PDB model 8PRW. Per-residue inclusion information can be found in section 3 on page 9.

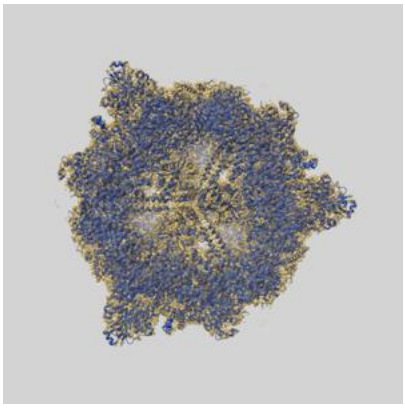
9.1 Map-model overlay



X



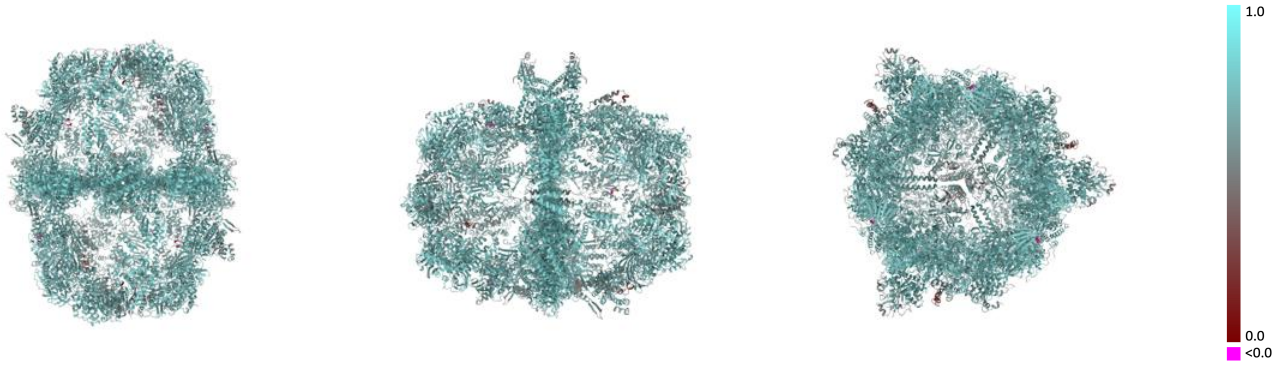
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

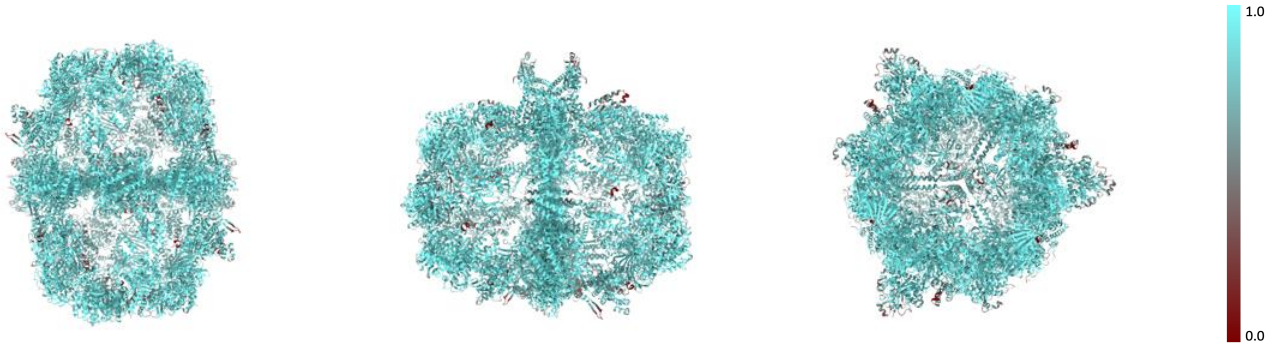
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

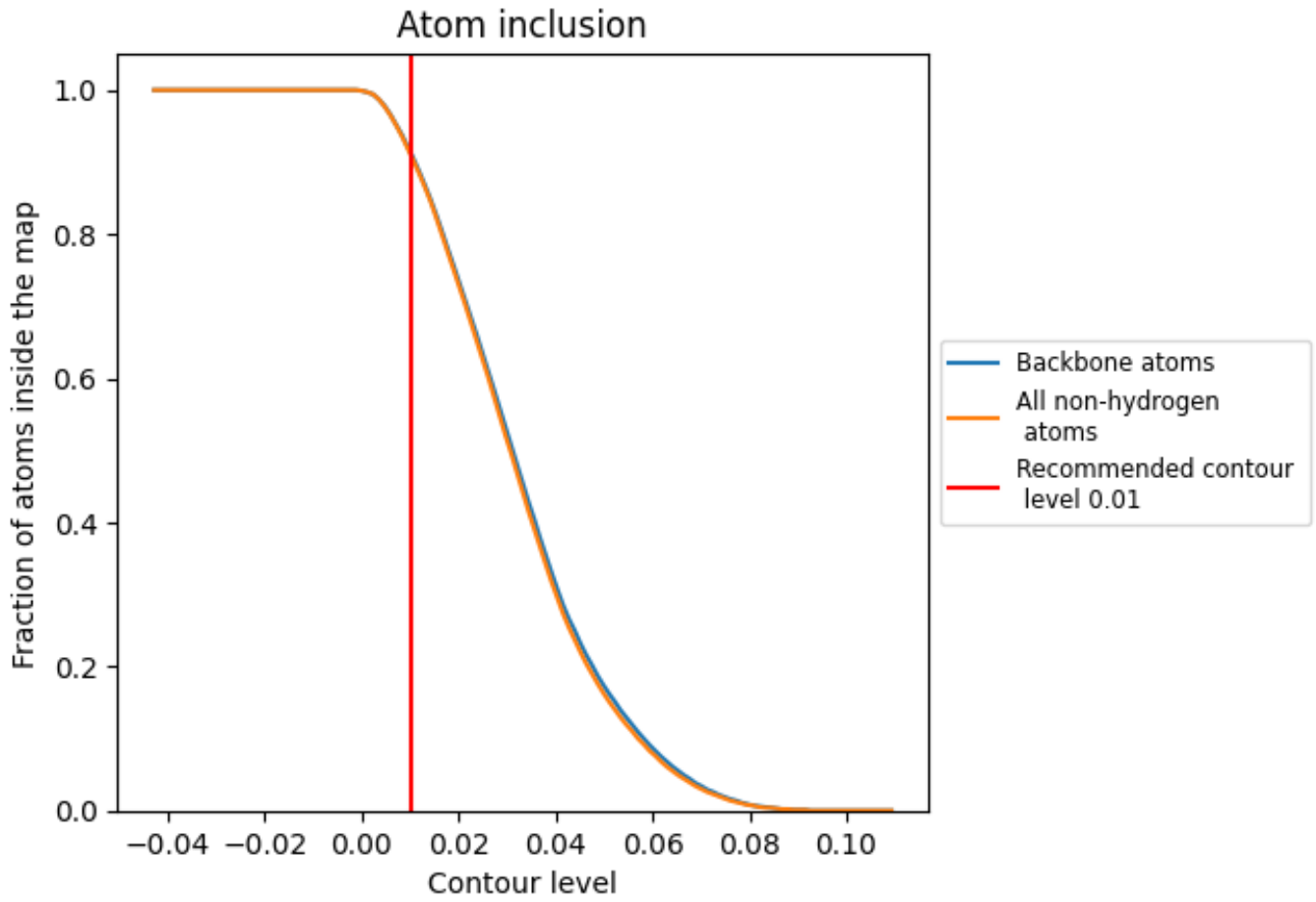
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.01).

9.4 Atom inclusion (i)



At the recommended contour level, 91% of all backbone atoms, 91% 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 (0.01) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9110	0.7120
A	0.9280	0.7410
B	0.9270	0.7400
C	0.9270	0.7400
D	0.9270	0.7400
E	0.9280	0.7410
F	0.9270	0.7410
G	0.9010	0.6900
H	0.9010	0.6890
I	0.9010	0.6890
J	0.9010	0.6900
K	0.9010	0.6900
L	0.9010	0.6890