Full wwPDB EM Validation Report (i)

Feb 13, 2024 – 10:19 AM EST

PDB ID	:	3JD4
EMDB ID	:	EMD-6633
Title	:	Glutamate dehydrogenase in complex with NADH and GTP, closed conformation
Authors	:	Borgnia, M.J.; Banerjee, S.; Merk, A.; Matthies, D.; Bartesaghi, A.; Rao, P.; Pierson, J.; Earl, L.A.; Falconieri, V.; Subramaniam, S.; Milne, J.L.S.
Deposited on	:	2016-03-28
Resolution	:	3.40 Å(reported)
Based on initial model	:	3MW9

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

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

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

The following versions of software and data (see references (1)) were used in the production of this report:

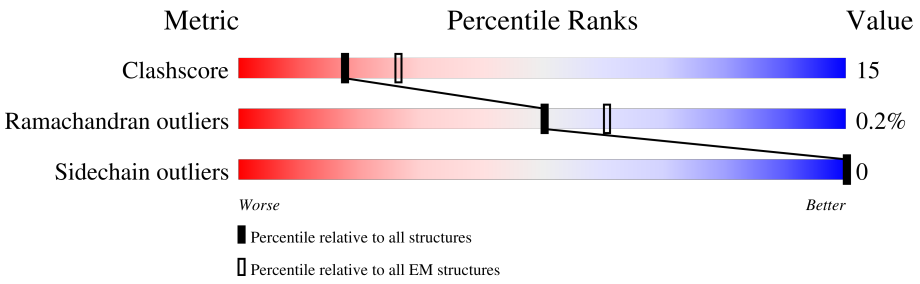
EMDB validation analysis	:	0.0.1.dev70
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 3.40 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	501	27% 64% 35% •
1	B	501	28% 64% 35% •
1	C	501	28% 64% 35% •
1	D	501	27% 64% 35% •
1	E	501	28% 64% 35% •
1	F	501	28% 64% 35% •

2 Entry composition (i)

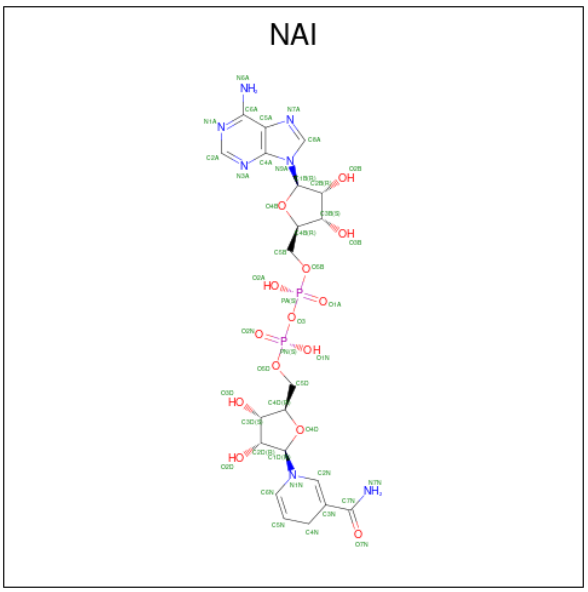
There are 3 unique types of molecules in this entry. The entry contains 24054 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Glutamate dehydrogenase 1, mitochondrial.

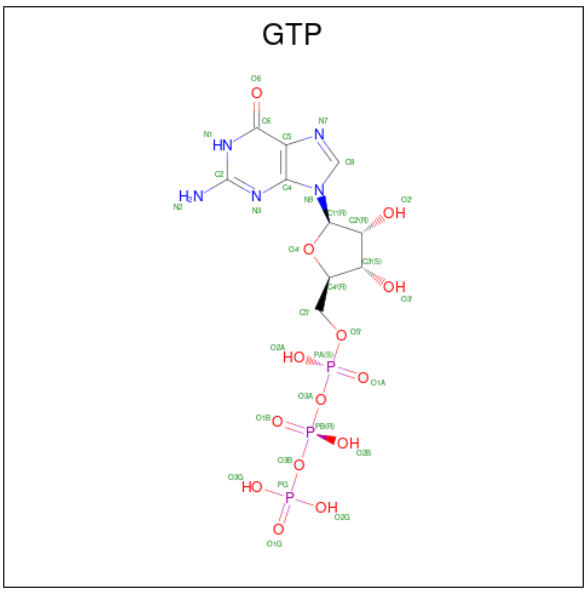
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	497	3889	2458	680	732	19	0	0
1	B	497	3889	2458	680	732	19	0	0
1	C	497	3889	2458	680	732	19	0	0
1	D	497	3889	2458	680	732	19	0	0
1	E	497	3889	2458	680	732	19	0	0
1	F	497	3889	2458	680	732	19	0	0

- Molecule 2 is 1,4-DIHYDRONICOTINAMIDE ADENINE DINUCLEOTIDE (three-letter code: NAI) (formula: $C_{21}H_{29}N_7O_{14}P_2$).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
2	A	1	44	21	7	14	2	0
			Total	C	N	O	P	
2	A	1	44	21	7	14	2	0
			Total	C	N	O	P	
2	B	1	44	21	7	14	2	0
			Total	C	N	O	P	
2	B	1	44	21	7	14	2	0
			Total	C	N	O	P	
2	C	1	44	21	7	14	2	0
			Total	C	N	O	P	
2	C	1	44	21	7	14	2	0
			Total	C	N	O	P	
2	D	1	44	21	7	14	2	0
			Total	C	N	O	P	
2	D	1	44	21	7	14	2	0
			Total	C	N	O	P	
2	E	1	44	21	7	14	2	0
			Total	C	N	O	P	
2	E	1	44	21	7	14	2	0
			Total	C	N	O	P	
2	F	1	44	21	7	14	2	0
			Total	C	N	O	P	
2	F	1	44	21	7	14	2	0

- Molecule 3 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$).



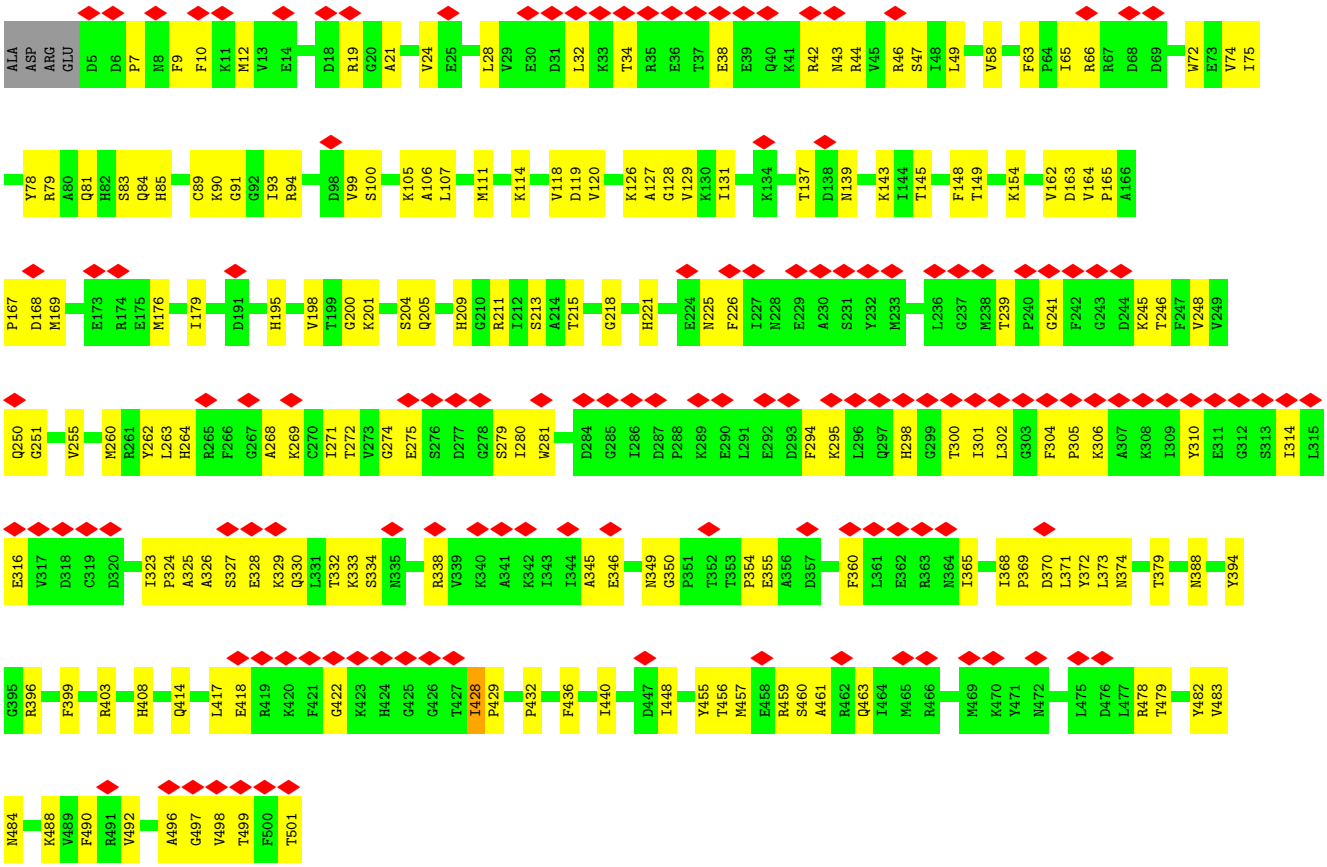
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
3	A	1	32	10	5	14	3	0
3	B	1	32	10	5	14	3	0
3	C	1	32	10	5	14	3	0
3	D	1	32	10	5	14	3	0
3	E	1	32	10	5	14	3	0
3	F	1	32	10	5	14	3	0

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.

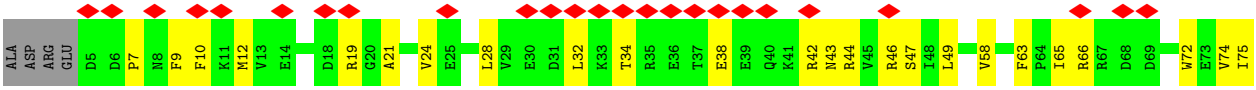
• Molecule 1: Glutamate dehydrogenase 1, mitochondrial

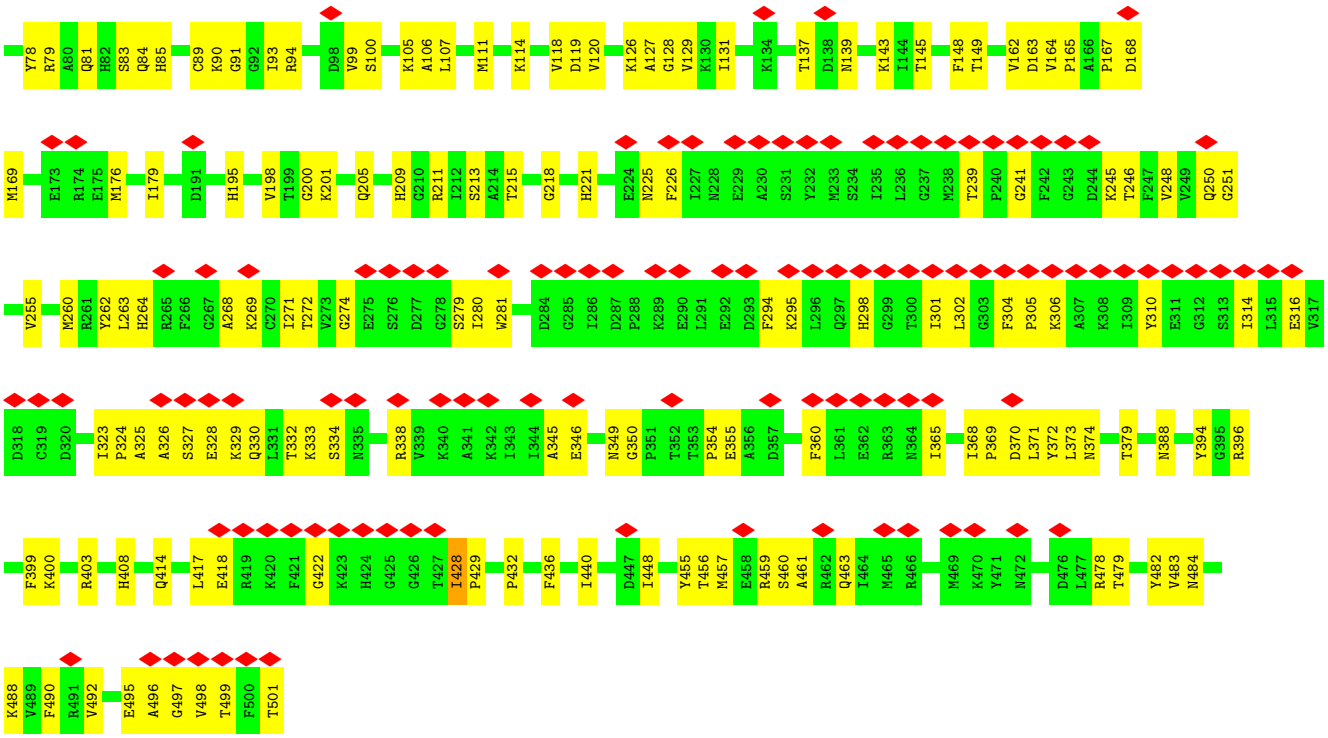
Chain A: 27% 64% 35%



• Molecule 1: Glutamate dehydrogenase 1, mitochondrial

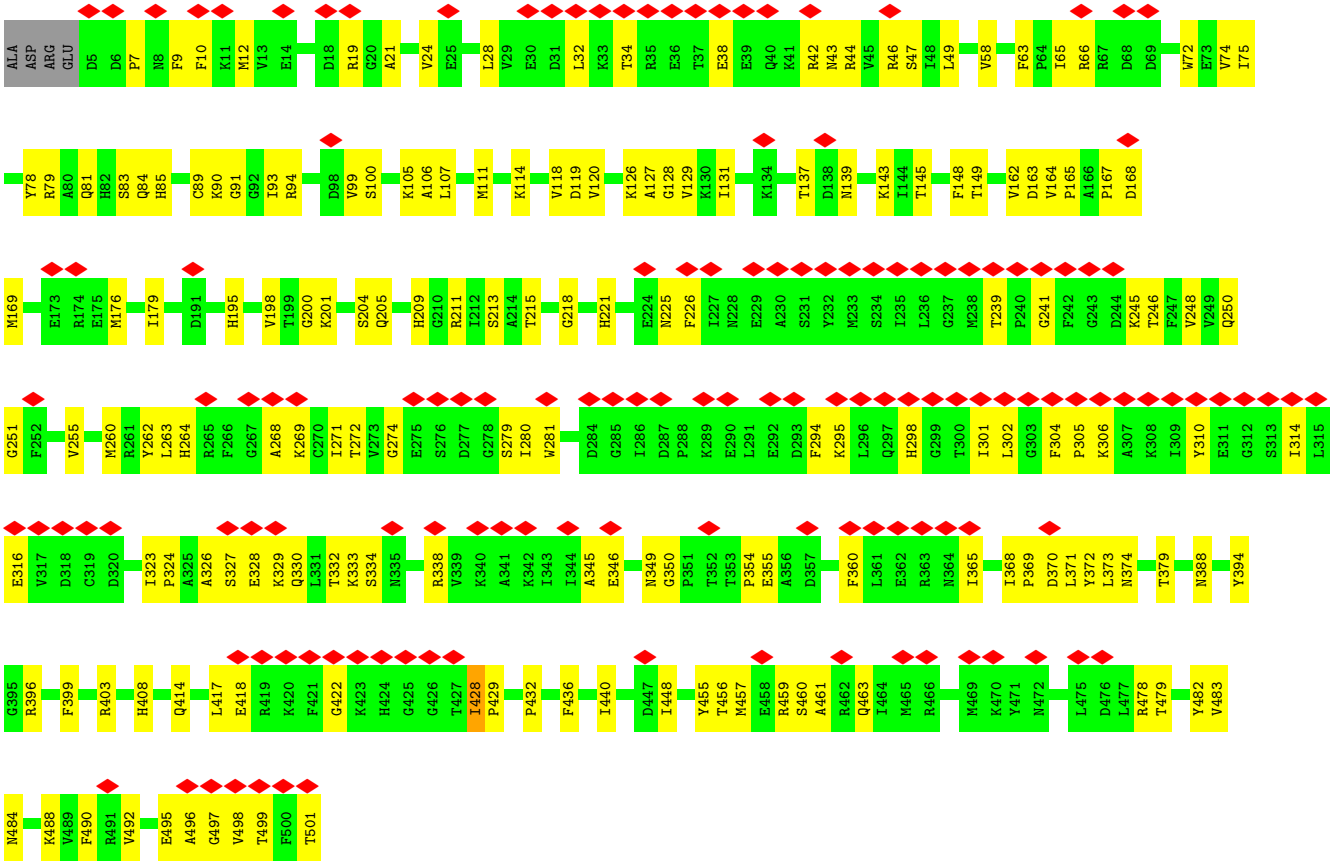
Chain B: 28% 64% 35%





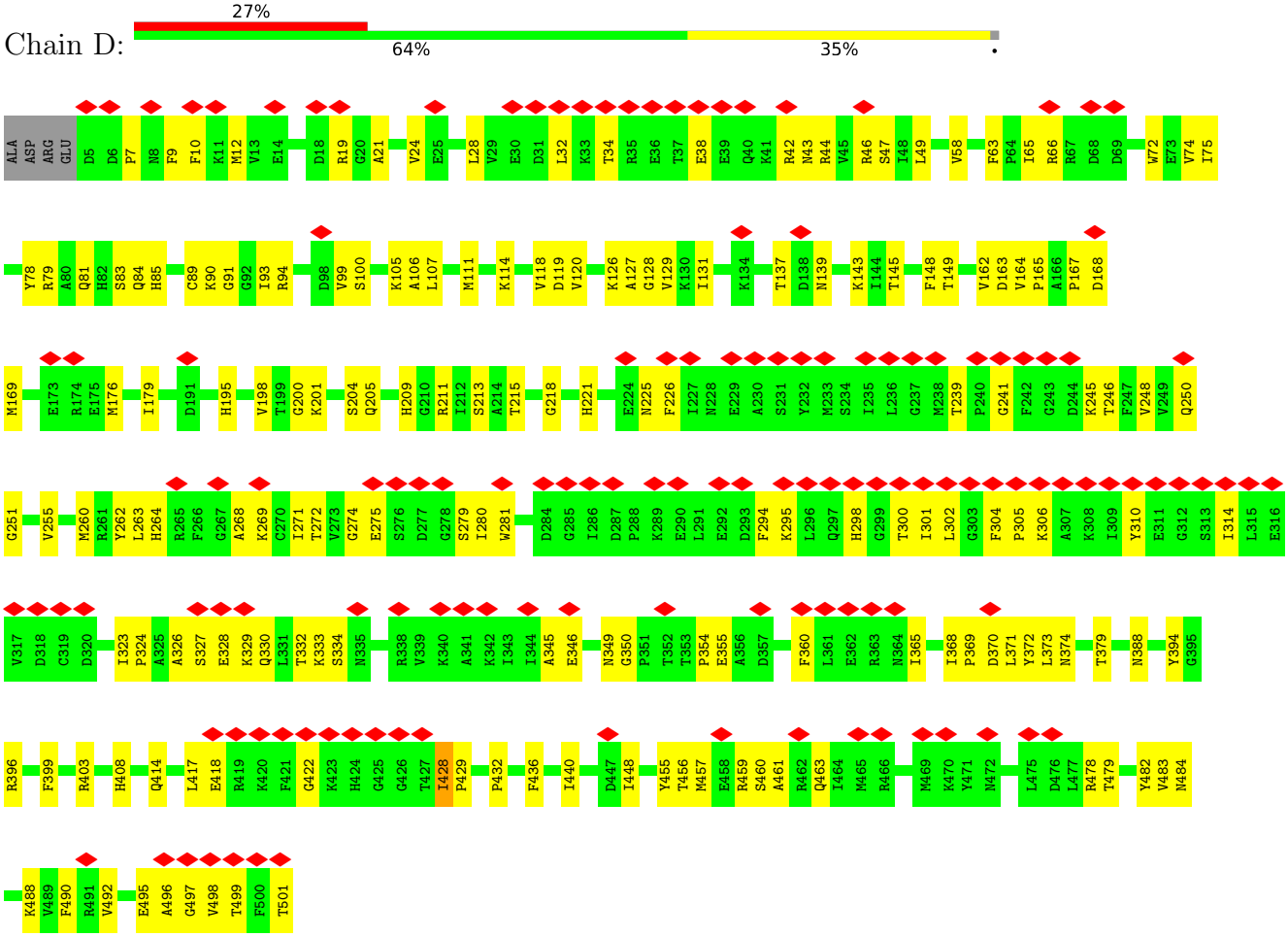
- Molecule 1: Glutamate dehydrogenase 1, mitochondrial

Chain C:



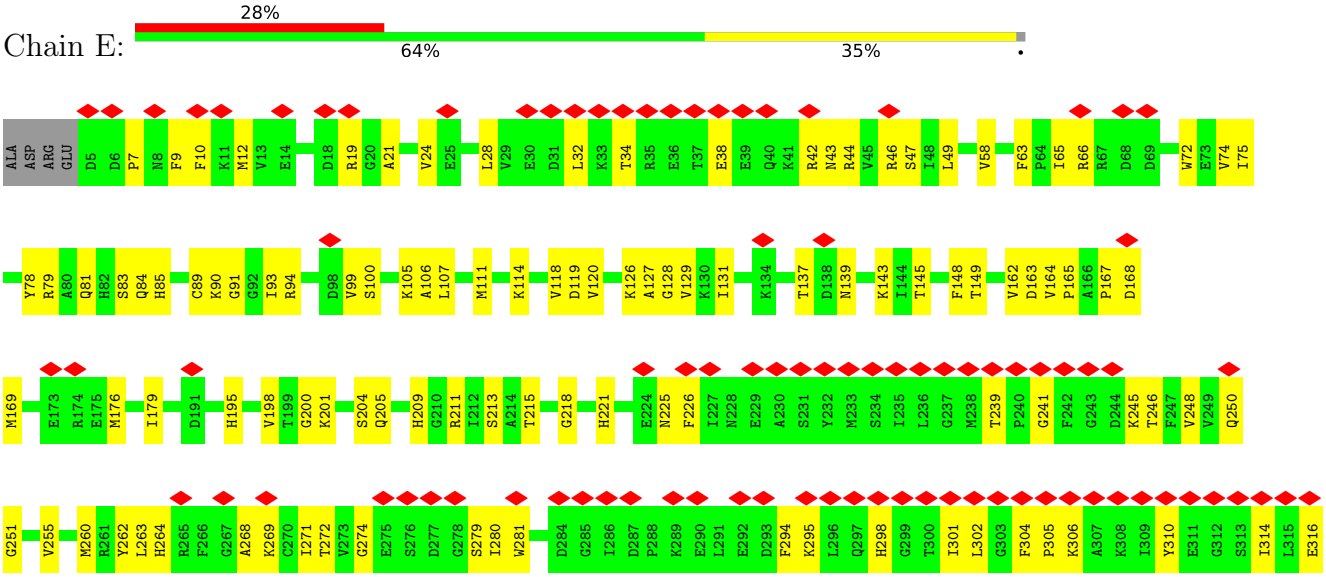
• Molecule 1: Glutamate dehydrogenase 1, mitochondrial

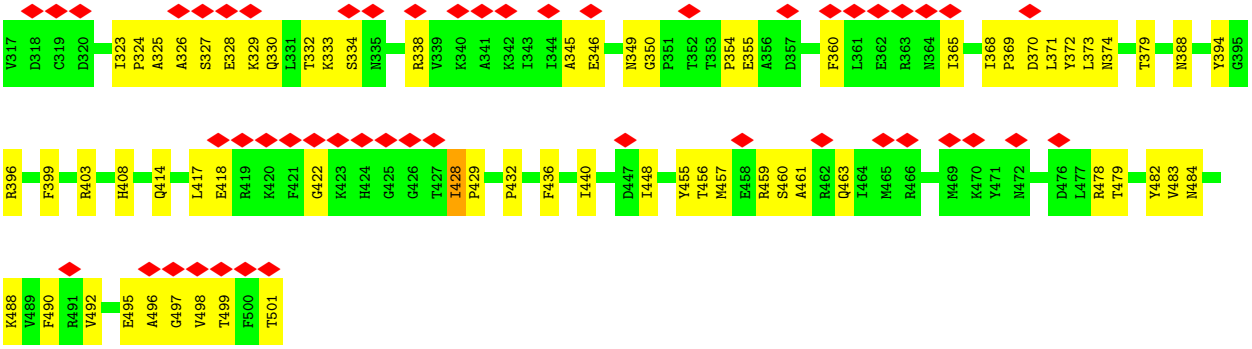
Chain D:



• Molecule 1: Glutamate dehydrogenase 1, mitochondrial

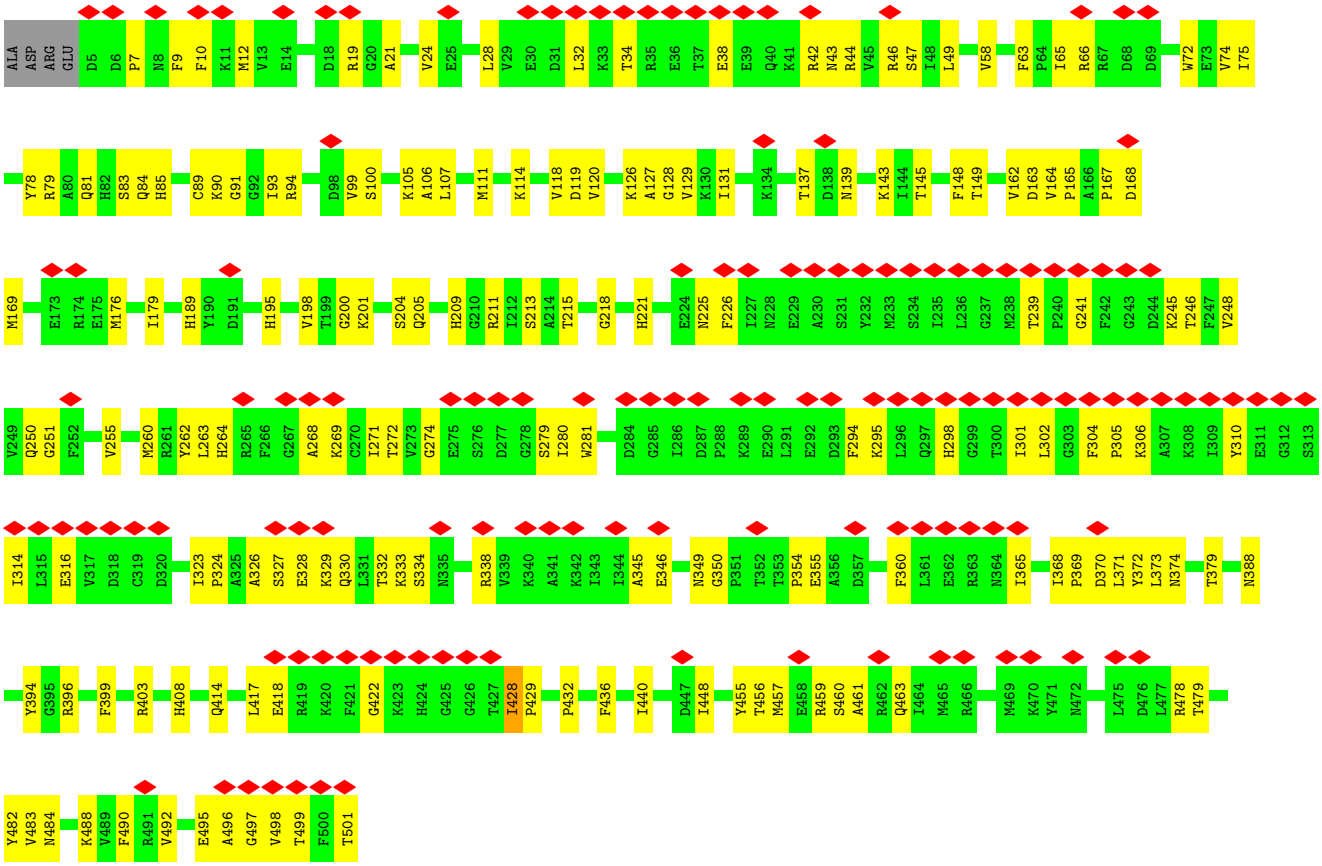
Chain E:





• Molecule 1: Glutamate dehydrogenase 1, mitochondrial

Chain F:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, D3	Depositor
Number of particles used	20429	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	Each micrograph	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	45	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	5000	Depositor
Magnification	78426	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.066	Depositor
Minimum map value	-0.029	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.02	Depositor
Map size (Å)	163.21024, 163.21024, 163.21024	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.63754, 0.63754, 0.63754	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: NAI, GTP

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\|>5$	RMSZ	$\#\|Z\|>5$
1	A	0.42	0/3972	0.49	1/5362 (0.0%)
1	B	0.41	0/3972	0.49	1/5362 (0.0%)
1	C	0.41	0/3972	0.49	1/5362 (0.0%)
1	D	0.41	0/3972	0.49	1/5362 (0.0%)
1	E	0.41	0/3972	0.49	1/5362 (0.0%)
1	F	0.41	0/3972	0.49	1/5362 (0.0%)
All	All	0.41	0/23832	0.49	6/32172 (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
1	A	0	1
1	B	0	1
1	C	0	1
1	D	0	1
1	E	0	1
1	F	0	1
All	All	0	6

There are no bond length outliers.

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	428	ILE	C-N-CD	5.20	139.32	128.40
1	D	428	ILE	C-N-CD	5.20	139.31	128.40
1	B	428	ILE	C-N-CD	5.18	139.29	128.40
1	C	428	ILE	C-N-CD	5.18	139.27	128.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	E	428	ILE	C-N-CD	5.17	139.26	128.40
1	F	428	ILE	C-N-CD	5.17	139.26	128.40

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	497	GLY	Peptide
1	B	497	GLY	Peptide
1	C	497	GLY	Peptide
1	D	497	GLY	Peptide
1	E	497	GLY	Peptide
1	F	497	GLY	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	3889	0	3852	132	0
1	B	3889	0	3852	127	0
1	C	3889	0	3852	125	0
1	D	3889	0	3852	129	0
1	E	3889	0	3852	127	0
1	F	3889	0	3852	127	0
2	A	88	0	54	3	0
2	B	88	0	54	3	0
2	C	88	0	54	2	0
2	D	88	0	54	2	0
2	E	88	0	54	3	0
2	F	88	0	54	2	0
3	A	32	0	12	2	0
3	B	32	0	12	2	0
3	C	32	0	12	1	0
3	D	32	0	12	2	0
3	E	32	0	12	2	0
3	F	32	0	12	1	0
All	All	24054	0	23508	718	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 15.

All (718) 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:47:SER:HB2	1:E:72:TRP:HB2	1.63	0.80
1:B:326:ALA:HB3	1:B:330:GLN:HE22	1.47	0.80
1:E:326:ALA:HB3	1:E:330:GLN:HE22	1.47	0.80
1:A:326:ALA:HB3	1:A:330:GLN:HE22	1.47	0.79
1:C:195:HIS:O	1:C:201:LYS:NZ	2.16	0.79
1:F:195:HIS:O	1:F:201:LYS:NZ	2.16	0.79
1:D:326:ALA:HB3	1:D:330:GLN:HE22	1.47	0.79
1:C:326:ALA:HB3	1:C:330:GLN:HE22	1.47	0.79
1:F:326:ALA:HB3	1:F:330:GLN:HE22	1.47	0.79
1:B:72:TRP:HB2	1:D:47:SER:HB2	1.65	0.79
1:C:47:SER:HB2	1:F:72:TRP:HB2	1.65	0.79
1:D:195:HIS:O	1:D:201:LYS:NZ	2.16	0.78
1:A:195:HIS:O	1:A:201:LYS:NZ	2.16	0.78
1:C:72:TRP:HB2	1:F:47:SER:HB2	1.65	0.78
1:B:47:SER:HB2	1:D:72:TRP:HB2	1.65	0.78
1:E:195:HIS:O	1:E:201:LYS:NZ	2.16	0.78
1:B:195:HIS:O	1:B:201:LYS:NZ	2.16	0.78
1:A:72:TRP:HB2	1:E:47:SER:HB2	1.66	0.78
1:B:137:THR:HG22	1:B:139:ASN:H	1.56	0.71
1:E:137:THR:HG22	1:E:139:ASN:H	1.56	0.71
1:D:137:THR:HG22	1:D:139:ASN:H	1.56	0.71
1:A:137:THR:HG22	1:A:139:ASN:H	1.56	0.70
1:C:137:THR:HG22	1:C:139:ASN:H	1.56	0.70
1:F:137:THR:HG22	1:F:139:ASN:H	1.56	0.70
1:B:119:ASP:OD1	1:B:488:LYS:NZ	2.23	0.69
1:E:119:ASP:OD1	1:E:488:LYS:NZ	2.23	0.69
1:E:241:GLY:O	1:E:245:LYS:NZ	2.25	0.68
1:B:241:GLY:O	1:B:245:LYS:NZ	2.25	0.68
1:D:417:LEU:HB2	1:D:428:ILE:HD12	1.75	0.68
1:A:241:GLY:O	1:A:245:LYS:NZ	2.25	0.68
1:C:246:THR:HG22	1:C:269:LYS:HB3	1.76	0.68
1:F:246:THR:HG22	1:F:269:LYS:HB3	1.76	0.68
1:B:65:ILE:HD13	1:B:75:ILE:HD11	1.75	0.68
1:D:241:GLY:O	1:D:245:LYS:NZ	2.25	0.68
1:E:65:ILE:HD13	1:E:75:ILE:HD11	1.75	0.68
1:A:417:LEU:HB2	1:A:428:ILE:HD12	1.75	0.68
1:C:65:ILE:HD13	1:C:75:ILE:HD11	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:65:ILE:HD13	1:F:75:ILE:HD11	1.75	0.68
1:D:94:ARG:HG3	1:D:169:MET:HB3	1.75	0.68
1:D:246:THR:HG22	1:D:269:LYS:HB3	1.76	0.68
1:A:94:ARG:HG3	1:A:169:MET:HB3	1.75	0.68
1:A:246:THR:HG22	1:A:269:LYS:HB3	1.76	0.68
1:C:417:LEU:HB2	1:C:428:ILE:HD12	1.76	0.68
1:E:94:ARG:NH1	1:E:328:GLU:OE2	2.27	0.68
1:B:94:ARG:NH1	1:B:328:GLU:OE2	2.27	0.68
1:F:94:ARG:HG3	1:F:169:MET:HB3	1.75	0.68
1:F:417:LEU:HB2	1:F:428:ILE:HD12	1.76	0.68
1:C:94:ARG:HG3	1:C:169:MET:HB3	1.75	0.67
1:B:94:ARG:HG3	1:B:169:MET:HB3	1.75	0.67
1:A:65:ILE:HD13	1:A:75:ILE:HD11	1.75	0.67
1:E:94:ARG:HG3	1:E:169:MET:HB3	1.75	0.67
1:A:346:GLU:H	1:A:373:LEU:HD12	1.60	0.67
1:D:65:ILE:HD13	1:D:75:ILE:HD11	1.75	0.67
1:E:246:THR:HG22	1:E:269:LYS:HB3	1.76	0.67
1:B:246:THR:HG22	1:B:269:LYS:HB3	1.76	0.67
1:F:94:ARG:NH1	1:F:328:GLU:OE2	2.27	0.67
1:C:94:ARG:NH1	1:C:328:GLU:OE2	2.27	0.67
1:C:119:ASP:OD1	1:C:488:LYS:NZ	2.23	0.67
1:D:346:GLU:H	1:D:373:LEU:HD12	1.60	0.67
1:A:408:HIS:HB3	1:C:436:PHE:HB2	1.77	0.67
1:D:436:PHE:HB2	1:E:408:HIS:HB3	1.77	0.67
1:E:417:LEU:HB2	1:E:428:ILE:HD12	1.77	0.66
1:F:119:ASP:OD1	1:F:488:LYS:NZ	2.23	0.66
1:A:143:LYS:HB3	1:E:501:THR:HG23	1.78	0.66
1:B:417:LEU:HB2	1:B:428:ILE:HD12	1.77	0.66
1:A:436:PHE:HB2	1:B:408:HIS:HB3	1.78	0.66
1:B:432:PRO:HB3	1:B:436:PHE:HD2	1.60	0.66
1:B:436:PHE:HB2	1:C:408:HIS:HB3	1.77	0.66
1:E:436:PHE:HB2	1:F:408:HIS:HB3	1.77	0.66
1:A:432:PRO:HB3	1:A:436:PHE:HD2	1.60	0.66
1:B:501:THR:HG23	1:D:143:LYS:HB3	1.78	0.66
1:D:94:ARG:NH1	1:D:328:GLU:OE2	2.27	0.66
1:D:119:ASP:OD1	1:D:488:LYS:NZ	2.23	0.66
1:D:408:HIS:HB3	1:F:436:PHE:HB2	1.77	0.66
1:A:94:ARG:NH1	1:A:328:GLU:OE2	2.27	0.66
1:C:241:GLY:O	1:C:245:LYS:NZ	2.25	0.66
1:D:432:PRO:HB3	1:D:436:PHE:HD2	1.60	0.66
1:E:432:PRO:HB3	1:E:436:PHE:HD2	1.60	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:241:GLY:O	1:F:245:LYS:NZ	2.25	0.66
1:A:501:THR:HG23	1:E:143:LYS:HB3	1.77	0.66
1:B:346:GLU:H	1:B:373:LEU:HD12	1.60	0.66
1:D:349:ASN:OD1	1:D:374:ASN:ND2	2.28	0.66
1:C:346:GLU:H	1:C:373:LEU:HD12	1.60	0.66
1:E:346:GLU:H	1:E:373:LEU:HD12	1.60	0.66
1:F:346:GLU:H	1:F:373:LEU:HD12	1.60	0.66
1:A:349:ASN:OD1	1:A:374:ASN:ND2	2.28	0.66
1:B:349:ASN:OD1	1:B:374:ASN:ND2	2.28	0.65
1:E:349:ASN:OD1	1:E:374:ASN:ND2	2.28	0.65
1:F:432:PRO:HB3	1:F:436:PHE:HD2	1.60	0.65
1:C:432:PRO:HB3	1:C:436:PHE:HD2	1.60	0.65
1:C:143:LYS:HB3	1:F:501:THR:HG23	1.78	0.65
1:C:501:THR:HG23	1:F:143:LYS:HB3	1.78	0.65
1:B:143:LYS:HB3	1:D:501:THR:HG23	1.78	0.65
1:A:119:ASP:O	1:B:396:ARG:NH1	2.28	0.65
1:D:119:ASP:O	1:E:396:ARG:NH1	2.28	0.64
1:B:260:MET:O	1:B:264:HIS:N	2.31	0.64
1:D:260:MET:O	1:D:264:HIS:N	2.31	0.64
1:E:260:MET:O	1:E:264:HIS:N	2.31	0.64
1:F:349:ASN:OD1	1:F:374:ASN:ND2	2.28	0.64
1:A:260:MET:O	1:A:264:HIS:N	2.31	0.64
1:C:260:MET:O	1:C:264:HIS:N	2.30	0.64
1:C:349:ASN:OD1	1:C:374:ASN:ND2	2.28	0.64
1:F:260:MET:O	1:F:264:HIS:N	2.31	0.64
1:D:396:ARG:NH1	1:F:119:ASP:O	2.29	0.64
1:A:396:ARG:NH1	1:C:119:ASP:O	2.29	0.64
1:A:274:GLY:HA3	1:A:314:ILE:HD11	1.79	0.63
1:D:274:GLY:HA3	1:D:314:ILE:HD11	1.79	0.63
1:E:350:GLY:N	1:E:370:ASP:OD2	2.28	0.63
1:A:119:ASP:OD1	1:A:488:LYS:NZ	2.23	0.63
1:B:350:GLY:N	1:B:370:ASP:OD2	2.28	0.63
1:B:274:GLY:HA3	1:B:314:ILE:HD11	1.80	0.63
1:C:274:GLY:HA3	1:C:314:ILE:HD11	1.79	0.63
1:E:274:GLY:HA3	1:E:314:ILE:HD11	1.80	0.63
1:F:274:GLY:HA3	1:F:314:ILE:HD11	1.80	0.63
1:F:213:SER:HB3	1:F:262:TYR:HE2	1.65	0.62
1:C:213:SER:HB3	1:C:262:TYR:HE2	1.65	0.62
1:A:32:LEU:HD21	1:A:44:ARG:HD3	1.82	0.62
1:D:32:LEU:HD21	1:D:44:ARG:HD3	1.82	0.62
1:C:323:ILE:HG12	1:C:345:ALA:HB3	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:323:ILE:HG12	1:D:345:ALA:HB3	1.81	0.62
1:F:323:ILE:HG12	1:F:345:ALA:HB3	1.81	0.62
1:A:323:ILE:HG12	1:A:345:ALA:HB3	1.81	0.62
1:E:213:SER:HB3	1:E:262:TYR:HE2	1.65	0.62
1:B:32:LEU:HD21	1:B:44:ARG:HD3	1.82	0.61
1:B:213:SER:HB3	1:B:262:TYR:HE2	1.65	0.61
1:B:323:ILE:HG12	1:B:345:ALA:HB3	1.81	0.61
1:B:119:ASP:O	1:C:396:ARG:NH1	2.29	0.61
1:E:32:LEU:HD21	1:E:44:ARG:HD3	1.82	0.61
1:E:323:ILE:HG12	1:E:345:ALA:HB3	1.81	0.61
1:D:58:VAL:HG21	1:D:105:LYS:HE2	1.83	0.61
1:F:350:GLY:N	1:F:370:ASP:OD2	2.28	0.61
1:A:58:VAL:HG21	1:A:105:LYS:HE2	1.83	0.61
1:E:119:ASP:O	1:F:396:ARG:NH1	2.29	0.61
1:C:350:GLY:N	1:C:370:ASP:OD2	2.28	0.61
1:D:213:SER:HB3	1:D:262:TYR:HE2	1.65	0.60
1:C:32:LEU:HD21	1:C:44:ARG:HD3	1.82	0.60
1:A:213:SER:HB3	1:A:262:TYR:HE2	1.65	0.60
1:F:32:LEU:HD21	1:F:44:ARG:HD3	1.82	0.60
1:C:99:VAL:HG21	1:C:128:GLY:HA3	1.83	0.60
1:F:99:VAL:HG21	1:F:128:GLY:HA3	1.83	0.60
1:C:58:VAL:HG21	1:C:105:LYS:HE2	1.83	0.60
1:C:280:ILE:HD11	1:C:302:LEU:HA	1.84	0.60
1:E:99:VAL:HG21	1:E:128:GLY:HA3	1.83	0.59
1:F:280:ILE:HD11	1:F:302:LEU:HA	1.84	0.59
1:B:99:VAL:HG21	1:B:128:GLY:HA3	1.83	0.59
1:F:58:VAL:HG21	1:F:105:LYS:HE2	1.83	0.59
1:E:58:VAL:HG21	1:E:105:LYS:HE2	1.83	0.59
1:B:58:VAL:HG21	1:B:105:LYS:HE2	1.83	0.59
1:A:280:ILE:HD11	1:A:302:LEU:HA	1.84	0.59
1:A:417:LEU:CB	1:A:428:ILE:HD12	2.33	0.59
1:D:417:LEU:CB	1:D:428:ILE:HD12	2.33	0.59
1:D:280:ILE:HD11	1:D:302:LEU:HA	1.84	0.59
1:D:414:GLN:NE2	1:D:428:ILE:O	2.35	0.59
1:A:99:VAL:HG21	1:A:128:GLY:HA3	1.83	0.59
1:B:414:GLN:NE2	1:B:428:ILE:O	2.36	0.59
1:D:99:VAL:HG21	1:D:128:GLY:HA3	1.83	0.59
1:E:414:GLN:NE2	1:E:428:ILE:O	2.36	0.59
1:A:414:GLN:NE2	1:A:428:ILE:O	2.36	0.58
1:A:350:GLY:N	1:A:370:ASP:OD2	2.28	0.58
1:D:350:GLY:N	1:D:370:ASP:OD2	2.28	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:280:ILE:HD11	1:B:302:LEU:HA	1.84	0.58
1:E:280:ILE:HD11	1:E:302:LEU:HA	1.84	0.58
1:C:414:GLN:NE2	1:C:428:ILE:O	2.36	0.58
1:A:81:GLN:NE2	1:A:163:ASP:OD2	2.34	0.58
1:D:81:GLN:NE2	1:D:163:ASP:OD2	2.34	0.58
1:B:417:LEU:CB	1:B:428:ILE:HD12	2.34	0.58
1:E:417:LEU:CB	1:E:428:ILE:HD12	2.34	0.58
1:F:414:GLN:NE2	1:F:428:ILE:O	2.36	0.57
1:F:81:GLN:NE2	1:F:163:ASP:OD2	2.34	0.57
1:B:81:GLN:NE2	1:B:163:ASP:OD2	2.34	0.57
1:E:81:GLN:NE2	1:E:163:ASP:OD2	2.34	0.57
1:B:12:MET:HG3	1:B:354:PRO:HD3	1.86	0.57
1:C:81:GLN:NE2	1:C:163:ASP:OD2	2.34	0.57
1:B:200:GLY:HA2	1:B:211:ARG:HG2	1.87	0.57
1:E:12:MET:HG3	1:E:354:PRO:HD3	1.86	0.57
1:E:200:GLY:HA2	1:E:211:ARG:HG2	1.87	0.57
1:E:239:THR:O	1:E:245:LYS:NZ	2.32	0.57
1:C:417:LEU:CB	1:C:428:ILE:HD12	2.34	0.57
1:C:12:MET:HG3	1:C:354:PRO:HD3	1.86	0.57
1:F:12:MET:HG3	1:F:354:PRO:HD3	1.86	0.57
2:D:601:NAI:N7N	2:D:601:NAI:O2N	2.38	0.56
1:F:417:LEU:CB	1:F:428:ILE:HD12	2.34	0.56
2:A:601:NAI:N7N	2:A:601:NAI:O2N	2.38	0.56
1:D:12:MET:HG3	1:D:354:PRO:HD3	1.86	0.56
1:A:12:MET:HG3	1:A:354:PRO:HD3	1.86	0.56
1:C:24:VAL:HG22	1:C:483:VAL:HG13	1.88	0.56
1:C:200:GLY:HA2	1:C:211:ARG:HG2	1.87	0.56
1:F:24:VAL:HG22	1:F:483:VAL:HG13	1.88	0.56
1:B:10:PHE:HA	1:B:106:ALA:HB2	1.88	0.56
1:F:200:GLY:HA2	1:F:211:ARG:HG2	1.87	0.56
1:E:10:PHE:HA	1:E:106:ALA:HB2	1.88	0.56
1:A:200:GLY:HA2	1:A:211:ARG:HG2	1.87	0.56
1:D:200:GLY:HA2	1:D:211:ARG:HG2	1.87	0.56
1:A:149:THR:HG21	1:A:179:ILE:HG23	1.88	0.56
1:D:149:THR:HG21	1:D:179:ILE:HG23	1.88	0.56
1:D:10:PHE:HA	1:D:106:ALA:HB2	1.88	0.55
1:A:10:PHE:HA	1:A:106:ALA:HB2	1.88	0.55
1:B:24:VAL:HG22	1:B:483:VAL:HG13	1.88	0.55
1:E:24:VAL:HG22	1:E:483:VAL:HG13	1.88	0.55
1:D:43:ASN:OD1	1:D:46:ARG:NH2	2.38	0.55
1:A:43:ASN:OD1	1:A:46:ARG:NH2	2.38	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:42:ARG:HB3	1:B:46:ARG:HH12	1.72	0.55
1:E:42:ARG:HB3	1:E:46:ARG:HH12	1.72	0.55
1:C:42:ARG:HB3	1:C:46:ARG:HH12	1.72	0.55
1:F:10:PHE:HA	1:F:106:ALA:HB2	1.88	0.55
1:F:42:ARG:HB3	1:F:46:ARG:HH12	1.72	0.55
1:A:24:VAL:HG22	1:A:483:VAL:HG13	1.88	0.54
1:D:24:VAL:HG22	1:D:483:VAL:HG13	1.88	0.54
1:E:149:THR:HG21	1:E:179:ILE:HG23	1.89	0.54
1:B:149:THR:HG21	1:B:179:ILE:HG23	1.89	0.54
1:C:10:PHE:HA	1:C:106:ALA:HB2	1.88	0.54
1:C:149:THR:HG21	1:C:179:ILE:HG23	1.88	0.54
1:D:279:SER:HB2	1:D:310:TYR:HB3	1.89	0.54
1:F:149:THR:HG21	1:F:179:ILE:HG23	1.89	0.54
1:A:279:SER:HB2	1:A:310:TYR:HB3	1.89	0.54
1:D:42:ARG:HB3	1:D:46:ARG:HH12	1.72	0.54
1:A:42:ARG:HB3	1:A:46:ARG:HH12	1.72	0.54
1:B:327:SER:HB3	1:B:330:GLN:HE21	1.73	0.54
1:E:495:GLU:OE1	1:F:204:SER:OG	2.21	0.54
1:C:43:ASN:OD1	1:C:46:ARG:NH2	2.38	0.54
1:E:327:SER:HB3	1:E:330:GLN:HE21	1.73	0.54
1:C:333:LYS:HD2	1:C:355:GLU:HG2	1.90	0.53
2:C:602:NAI:N7N	2:C:602:NAI:O2N	2.42	0.53
1:F:43:ASN:OD1	1:F:46:ARG:NH2	2.38	0.53
2:F:602:NAI:O2N	2:F:602:NAI:N7N	2.42	0.53
1:B:495:GLU:OE1	1:C:204:SER:OG	2.21	0.53
1:F:333:LYS:HD2	1:F:355:GLU:HG2	1.90	0.53
1:A:327:SER:HB3	1:A:330:GLN:HE21	1.73	0.53
1:D:327:SER:HB3	1:D:330:GLN:HE21	1.73	0.53
1:E:279:SER:HB2	1:E:310:TYR:HB3	1.89	0.53
1:F:239:THR:O	1:F:245:LYS:NZ	2.32	0.53
1:B:333:LYS:HD2	1:B:355:GLU:HG2	1.90	0.53
1:E:43:ASN:OD1	1:E:46:ARG:NH2	2.38	0.53
1:A:333:LYS:HD2	1:A:355:GLU:HG2	1.90	0.53
1:E:213:SER:HB3	1:E:262:TYR:CE2	2.44	0.53
1:E:250:GLN:HB3	1:E:324:PRO:HA	1.91	0.53
1:E:333:LYS:HD2	1:E:355:GLU:HG2	1.90	0.53
1:F:42:ARG:HB3	1:F:46:ARG:NH1	2.24	0.53
1:B:213:SER:HB3	1:B:262:TYR:CE2	2.44	0.53
1:B:250:GLN:HB3	1:B:324:PRO:HA	1.91	0.53
1:B:279:SER:HB2	1:B:310:TYR:HB3	1.90	0.53
1:C:42:ARG:HB3	1:C:46:ARG:NH1	2.24	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:43:ASN:OD1	1:B:46:ARG:NH2	2.38	0.53
1:B:85:HIS:HB2	1:B:492:VAL:HG11	1.90	0.53
1:D:333:LYS:HD2	1:D:355:GLU:HG2	1.90	0.53
1:E:42:ARG:HB3	1:E:46:ARG:NH1	2.24	0.53
1:B:42:ARG:HB3	1:B:46:ARG:NH1	2.24	0.52
2:B:602:NAI:N7N	2:B:602:NAI:O2N	2.42	0.52
1:C:85:HIS:HB2	1:C:492:VAL:HG11	1.90	0.52
1:C:239:THR:O	1:C:245:LYS:NZ	2.32	0.52
1:C:327:SER:HB3	1:C:330:GLN:HE21	1.73	0.52
1:F:279:SER:HB2	1:F:310:TYR:HB3	1.89	0.52
1:C:279:SER:HB2	1:C:310:TYR:HB3	1.89	0.52
1:E:85:HIS:HB2	1:E:492:VAL:HG11	1.90	0.52
1:F:85:HIS:HB2	1:F:492:VAL:HG11	1.90	0.52
1:F:327:SER:HB3	1:F:330:GLN:HE21	1.73	0.52
1:A:42:ARG:HB3	1:A:46:ARG:NH1	2.24	0.52
2:E:602:NAI:N7N	2:E:602:NAI:O2N	2.42	0.52
1:A:85:HIS:HB2	1:A:492:VAL:HG11	1.90	0.52
1:D:42:ARG:HB3	1:D:46:ARG:NH1	2.24	0.52
1:D:213:SER:HB3	1:D:262:TYR:CE2	2.44	0.52
1:A:213:SER:HB3	1:A:262:TYR:CE2	2.44	0.52
1:D:85:HIS:HB2	1:D:492:VAL:HG11	1.90	0.52
1:F:250:GLN:HB3	1:F:324:PRO:HA	1.91	0.52
1:C:213:SER:HB3	1:C:262:TYR:CE2	2.44	0.52
1:D:349:ASN:ND2	2:D:601:NAI:O2D	2.43	0.52
1:F:213:SER:HB3	1:F:262:TYR:CE2	2.44	0.52
1:A:455:TYR:OH	1:A:459:ARG:HD2	2.10	0.52
1:C:250:GLN:HB3	1:C:324:PRO:HA	1.91	0.52
1:D:455:TYR:OH	1:D:459:ARG:HD2	2.10	0.51
1:E:360:PHE:CD1	1:E:365:ILE:HD11	2.45	0.51
1:B:360:PHE:CD1	1:B:365:ILE:HD11	2.46	0.51
1:D:250:GLN:HB3	1:D:324:PRO:HA	1.91	0.51
1:D:360:PHE:CD1	1:D:365:ILE:HD11	2.46	0.51
1:E:455:TYR:OH	1:E:459:ARG:HD2	2.10	0.51
1:A:250:GLN:HB3	1:A:324:PRO:HA	1.91	0.51
1:A:360:PHE:CD1	1:A:365:ILE:HD11	2.46	0.51
1:B:455:TYR:OH	1:B:459:ARG:HD2	2.10	0.51
1:F:360:PHE:CD1	1:F:365:ILE:HD11	2.46	0.51
1:C:162:VAL:HG23	1:C:163:ASP:H	1.75	0.51
1:C:360:PHE:CD1	1:C:365:ILE:HD11	2.46	0.51
1:F:162:VAL:HG23	1:F:163:ASP:H	1.75	0.51
1:A:162:VAL:HG23	1:A:163:ASP:H	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:162:VAL:HG23	1:D:163:ASP:H	1.75	0.51
1:E:349:ASN:ND2	2:E:602:NAI:O2D	2.45	0.50
1:F:455:TYR:OH	1:F:459:ARG:HD2	2.10	0.50
1:B:349:ASN:ND2	2:B:602:NAI:O2D	2.45	0.50
1:C:455:TYR:OH	1:C:459:ARG:HD2	2.10	0.50
1:A:372:TYR:HD1	1:A:460:SER:HG	1.57	0.50
1:B:63:PHE:HB2	1:B:75:ILE:HB	1.94	0.50
1:E:162:VAL:HG23	1:E:163:ASP:H	1.75	0.50
1:F:7:PRO:O	1:F:329:LYS:NZ	2.30	0.50
1:E:63:PHE:HB2	1:E:75:ILE:HB	1.94	0.50
1:D:372:TYR:HD1	1:D:460:SER:HG	1.57	0.50
1:B:162:VAL:HG23	1:B:163:ASP:H	1.75	0.50
1:A:349:ASN:ND2	2:A:601:NAI:O2D	2.45	0.50
1:C:7:PRO:O	1:C:329:LYS:NZ	2.30	0.50
1:F:63:PHE:HB2	1:F:75:ILE:HB	1.93	0.50
1:E:165:PRO:HD2	1:E:198:VAL:HG12	1.94	0.49
1:A:295:LYS:HD3	1:A:301:ILE:HG23	1.95	0.49
1:B:165:PRO:HD2	1:B:198:VAL:HG12	1.94	0.49
1:C:63:PHE:HB2	1:C:75:ILE:HB	1.94	0.49
1:C:165:PRO:HD2	1:C:198:VAL:HG12	1.94	0.49
1:F:295:LYS:HD3	1:F:301:ILE:HG23	1.94	0.49
1:F:349:ASN:ND2	2:F:602:NAI:O2D	2.45	0.49
1:C:295:LYS:HD3	1:C:301:ILE:HG23	1.95	0.49
1:D:295:LYS:HD3	1:D:301:ILE:HG23	1.95	0.49
1:F:165:PRO:HD2	1:F:198:VAL:HG12	1.94	0.49
1:C:349:ASN:ND2	2:C:602:NAI:O2D	2.46	0.49
1:C:372:TYR:HD1	1:C:460:SER:HG	1.59	0.49
1:D:165:PRO:HD2	1:D:198:VAL:HG12	1.94	0.49
1:A:165:PRO:HD2	1:A:198:VAL:HG12	1.94	0.49
1:A:455:TYR:HH	1:B:399:PHE:HD2	1.61	0.49
1:F:372:TYR:HD1	1:F:460:SER:HG	1.59	0.49
1:D:63:PHE:HB2	1:D:75:ILE:HB	1.94	0.49
1:D:495:GLU:OE1	1:E:204:SER:OG	2.21	0.49
1:A:63:PHE:HB2	1:A:75:ILE:HB	1.94	0.49
1:B:372:TYR:HD1	1:B:460:SER:HG	1.60	0.48
1:E:372:TYR:HD1	1:E:460:SER:HG	1.60	0.48
1:C:63:PHE:O	1:C:74:VAL:HA	2.14	0.48
1:D:7:PRO:O	1:D:329:LYS:NZ	2.30	0.48
1:F:63:PHE:O	1:F:74:VAL:HA	2.14	0.48
1:E:63:PHE:O	1:E:74:VAL:HA	2.14	0.48
1:A:38:GLU:OE2	1:A:42:ARG:NE	2.40	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:272:THR:HB	1:B:281:TRP:HD1	1.79	0.48
1:B:295:LYS:HD3	1:B:301:ILE:HG23	1.94	0.48
1:A:7:PRO:O	1:A:329:LYS:NZ	2.30	0.48
1:B:63:PHE:O	1:B:74:VAL:HA	2.14	0.48
1:B:107:LEU:HB3	1:B:126:LYS:HE3	1.96	0.48
1:E:107:LEU:HB3	1:E:126:LYS:HE3	1.96	0.48
1:D:107:LEU:HB3	1:D:126:LYS:HE3	1.96	0.48
1:E:272:THR:HB	1:E:281:TRP:HD1	1.79	0.48
1:A:107:LEU:HB3	1:A:126:LYS:HE3	1.96	0.48
1:A:314:ILE:HD12	1:A:314:ILE:H	1.78	0.48
1:D:38:GLU:OE2	1:D:42:ARG:NE	2.40	0.48
1:D:314:ILE:HD12	1:D:314:ILE:H	1.79	0.48
1:B:239:THR:O	1:B:245:LYS:NZ	2.32	0.48
1:B:304:PHE:CE2	1:B:306:LYS:HB2	2.49	0.48
1:C:314:ILE:HD12	1:C:314:ILE:H	1.79	0.48
1:E:295:LYS:HD3	1:E:301:ILE:HG23	1.95	0.48
1:C:107:LEU:HB3	1:C:126:LYS:HE3	1.96	0.48
1:D:272:THR:HB	1:D:281:TRP:HD1	1.79	0.47
1:D:304:PHE:CE2	1:D:306:LYS:HB2	2.49	0.47
1:E:304:PHE:CE2	1:E:306:LYS:HB2	2.49	0.47
1:E:314:ILE:HD12	1:E:314:ILE:H	1.78	0.47
1:F:107:LEU:HB3	1:F:126:LYS:HE3	1.96	0.47
1:F:314:ILE:HD12	1:F:314:ILE:H	1.79	0.47
1:A:272:THR:HB	1:A:281:TRP:HD1	1.79	0.47
1:B:314:ILE:H	1:B:314:ILE:HD12	1.78	0.47
1:C:372:TYR:OH	1:C:461:ALA:HB2	2.15	0.47
1:F:372:TYR:OH	1:F:461:ALA:HB2	2.15	0.47
1:A:304:PHE:CE2	1:A:306:LYS:HB2	2.49	0.47
1:C:324:PRO:HD2	1:C:345:ALA:O	2.14	0.47
1:F:324:PRO:HD2	1:F:345:ALA:O	2.14	0.47
1:A:294:PHE:HE2	1:A:305:PRO:HD2	1.79	0.47
1:C:32:LEU:HG	1:C:34:THR:HG22	1.96	0.47
1:D:294:PHE:HE2	1:D:305:PRO:HD2	1.79	0.47
1:E:324:PRO:HD2	1:E:345:ALA:O	2.14	0.47
1:A:66:ARG:H	1:E:501:THR:HG22	1.79	0.47
1:B:248:VAL:HG12	1:B:271:ILE:HB	1.96	0.47
1:B:324:PRO:HD2	1:B:345:ALA:O	2.14	0.47
1:C:248:VAL:HG12	1:C:271:ILE:HB	1.96	0.47
1:F:32:LEU:HG	1:F:34:THR:HG22	1.97	0.47
1:A:371:LEU:HD11	1:A:482:TYR:CZ	2.50	0.47
1:D:371:LEU:HD11	1:D:482:TYR:CZ	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:248:VAL:HG12	1:F:271:ILE:HB	1.96	0.47
1:B:38:GLU:OE2	1:B:42:ARG:NE	2.40	0.47
1:B:372:TYR:OH	1:B:461:ALA:HB2	2.15	0.47
1:D:455:TYR:HH	1:E:399:PHE:HD2	1.63	0.47
1:E:248:VAL:HG12	1:E:271:ILE:HB	1.96	0.47
1:E:372:TYR:OH	1:E:461:ALA:HB2	2.15	0.47
1:A:372:TYR:OH	1:A:461:ALA:HB2	2.15	0.47
1:C:272:THR:HB	1:C:281:TRP:HD1	1.79	0.47
1:C:304:PHE:CE2	1:C:306:LYS:HB2	2.49	0.47
1:D:324:PRO:HD2	1:D:345:ALA:O	2.14	0.47
1:F:304:PHE:CE2	1:F:306:LYS:HB2	2.49	0.47
1:A:63:PHE:O	1:A:74:VAL:HA	2.14	0.47
1:A:324:PRO:HD2	1:A:345:ALA:O	2.14	0.47
1:C:294:PHE:HE2	1:C:305:PRO:HD2	1.79	0.47
1:F:272:THR:HB	1:F:281:TRP:HD1	1.79	0.47
1:A:399:PHE:HD2	1:C:455:TYR:HH	1.63	0.47
1:C:91:GLY:HA2	1:C:111:MET:SD	2.55	0.47
1:D:63:PHE:O	1:D:74:VAL:HA	2.14	0.47
1:D:372:TYR:OH	1:D:461:ALA:HB2	2.15	0.47
1:E:7:PRO:O	1:E:329:LYS:NZ	2.30	0.47
1:E:38:GLU:OE2	1:E:42:ARG:NE	2.40	0.47
1:F:209:HIS:HE1	3:F:603:GTP:H5"	1.80	0.47
1:F:316:GLU:OE2	1:F:338:ARG:NE	2.28	0.47
1:F:371:LEU:HD11	1:F:482:TYR:CZ	2.50	0.47
1:A:91:GLY:HA2	1:A:111:MET:SD	2.55	0.46
1:B:221:HIS:O	1:B:225:ASN:ND2	2.48	0.46
1:B:294:PHE:HE2	1:B:305:PRO:HD2	1.79	0.46
1:B:371:LEU:HD11	1:B:482:TYR:CZ	2.50	0.46
1:B:501:THR:HG22	1:D:66:ARG:H	1.79	0.46
1:C:209:HIS:HE1	3:C:603:GTP:H5"	1.80	0.46
1:C:371:LEU:HD11	1:C:482:TYR:CZ	2.50	0.46
1:D:21:ALA:HB1	1:D:49:LEU:HD13	1.97	0.46
1:E:221:HIS:O	1:E:225:ASN:ND2	2.48	0.46
1:E:294:PHE:HE2	1:E:305:PRO:HD2	1.79	0.46
1:F:21:ALA:HB1	1:F:49:LEU:HD13	1.97	0.46
1:F:91:GLY:HA2	1:F:111:MET:SD	2.55	0.46
1:F:195:HIS:CD2	1:F:388:ASN:HB2	2.50	0.46
1:F:294:PHE:HE2	1:F:305:PRO:HD2	1.79	0.46
1:A:21:ALA:HB1	1:A:49:LEU:HD13	1.97	0.46
1:B:66:ARG:H	1:D:501:THR:HG22	1.80	0.46
1:C:21:ALA:HB1	1:C:49:LEU:HD13	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:195:HIS:CD2	1:C:388:ASN:HB2	2.51	0.46
1:C:403:ARG:HA	1:C:440:ILE:HG22	1.97	0.46
1:D:91:GLY:HA2	1:D:111:MET:SD	2.55	0.46
1:E:91:GLY:HA2	1:E:111:MET:SD	2.55	0.46
1:E:195:HIS:CD2	1:E:388:ASN:HB2	2.51	0.46
1:E:371:LEU:HD11	1:E:482:TYR:CZ	2.50	0.46
1:A:63:PHE:CZ	1:A:148:PHE:HD1	2.34	0.46
1:A:248:VAL:HG12	1:A:271:ILE:HB	1.96	0.46
1:B:21:ALA:HB1	1:B:49:LEU:HD13	1.97	0.46
1:B:195:HIS:CD2	1:B:388:ASN:HB2	2.51	0.46
1:D:63:PHE:CZ	1:D:148:PHE:HD1	2.34	0.46
1:A:195:HIS:CD2	1:A:388:ASN:HB2	2.51	0.46
1:B:91:GLY:HA2	1:B:111:MET:SD	2.55	0.46
1:C:19:ARG:NH1	1:C:479:THR:OG1	2.48	0.46
1:D:248:VAL:HG12	1:D:271:ILE:HB	1.96	0.46
1:E:21:ALA:HB1	1:E:49:LEU:HD13	1.97	0.46
1:E:417:LEU:HB3	1:E:428:ILE:CD1	2.46	0.46
1:F:403:ARG:HA	1:F:440:ILE:HG22	1.98	0.46
1:A:463:GLN:O	1:A:484:ASN:ND2	2.46	0.46
1:C:66:ARG:H	1:F:501:THR:HG22	1.80	0.46
1:C:316:GLU:OE2	1:C:338:ARG:NE	2.28	0.46
1:D:195:HIS:CD2	1:D:388:ASN:HB2	2.51	0.46
1:E:403:ARG:HA	1:E:440:ILE:HG22	1.98	0.46
1:B:403:ARG:HA	1:B:440:ILE:HG22	1.97	0.46
1:D:221:HIS:O	1:D:225:ASN:ND2	2.48	0.46
1:F:19:ARG:NH1	1:F:479:THR:OG1	2.48	0.46
1:B:7:PRO:O	1:B:329:LYS:NZ	2.30	0.46
1:B:209:HIS:HE1	3:B:603:GTP:H5"	1.80	0.46
1:B:417:LEU:HB3	1:B:428:ILE:CD1	2.46	0.46
1:D:463:GLN:O	1:D:484:ASN:ND2	2.46	0.46
1:A:32:LEU:HG	1:A:34:THR:HG22	1.97	0.46
1:A:221:HIS:O	1:A:225:ASN:ND2	2.48	0.46
1:D:19:ARG:NH1	1:D:479:THR:OG1	2.48	0.46
1:E:209:HIS:HE1	3:E:603:GTP:H5"	1.80	0.46
1:C:501:THR:HG22	1:F:66:ARG:H	1.80	0.46
1:D:32:LEU:HG	1:D:34:THR:HG22	1.97	0.46
1:A:19:ARG:NH1	1:A:479:THR:OG1	2.48	0.46
1:B:63:PHE:CZ	1:B:148:PHE:HD1	2.34	0.46
1:C:221:HIS:O	1:C:225:ASN:ND2	2.48	0.46
1:C:379:THR:HG21	1:C:456:THR:HG21	1.98	0.46
1:D:417:LEU:HB3	1:D:428:ILE:CD1	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:417:LEU:HB3	1:F:428:ILE:CD1	2.46	0.46
1:A:316:GLU:OE2	1:A:338:ARG:NE	2.28	0.45
1:C:417:LEU:HB3	1:C:428:ILE:CD1	2.46	0.45
1:E:63:PHE:CZ	1:E:148:PHE:HD1	2.34	0.45
1:F:221:HIS:O	1:F:225:ASN:ND2	2.48	0.45
1:F:379:THR:HG21	1:F:456:THR:HG21	1.98	0.45
1:B:32:LEU:HG	1:B:34:THR:HG22	1.97	0.45
1:C:63:PHE:CZ	1:C:148:PHE:HD1	2.34	0.45
1:D:168:ASP:OD1	1:D:169:MET:N	2.49	0.45
1:A:294:PHE:O	1:A:298:HIS:N	2.47	0.45
1:B:379:THR:HG21	1:B:456:THR:HG21	1.98	0.45
1:B:455:TYR:HH	1:C:399:PHE:HD2	1.63	0.45
1:D:294:PHE:O	1:D:298:HIS:N	2.47	0.45
1:E:32:LEU:HG	1:E:34:THR:HG22	1.96	0.45
1:E:379:THR:HG21	1:E:456:THR:HG21	1.98	0.45
1:A:209:HIS:HE1	3:A:602:GTP:H5"	1.80	0.45
1:B:168:ASP:OD1	1:B:169:MET:N	2.49	0.45
1:E:168:ASP:OD1	1:E:169:MET:N	2.49	0.45
1:F:63:PHE:CZ	1:F:148:PHE:HD1	2.34	0.45
1:A:417:LEU:HB3	1:A:428:ILE:CD1	2.47	0.45
1:A:403:ARG:HA	1:A:440:ILE:HG22	1.98	0.45
1:C:81:GLN:OE1	1:C:84:GLN:NE2	2.50	0.45
1:D:209:HIS:HE1	3:D:602:GTP:H5"	1.81	0.45
1:E:81:GLN:OE1	1:E:84:GLN:NE2	2.50	0.45
1:C:463:GLN:O	1:C:484:ASN:ND2	2.46	0.45
1:F:81:GLN:OE1	1:F:84:GLN:NE2	2.50	0.45
1:B:81:GLN:OE1	1:B:84:GLN:NE2	2.50	0.45
1:C:218:GLY:HA2	1:C:457:MET:SD	2.57	0.45
1:D:399:PHE:HD2	1:F:455:TYR:HH	1.65	0.45
1:D:403:ARG:HA	1:D:440:ILE:HG22	1.98	0.45
1:E:12:MET:SD	1:E:354:PRO:HD3	2.57	0.45
1:B:12:MET:SD	1:B:354:PRO:HD3	2.57	0.45
1:D:12:MET:SD	1:D:354:PRO:HD3	2.57	0.45
1:F:218:GLY:HA2	1:F:457:MET:SD	2.57	0.45
1:A:12:MET:SD	1:A:354:PRO:HD3	2.57	0.44
1:C:78:TYR:HE2	1:C:100:SER:HA	1.83	0.44
1:F:78:TYR:HE2	1:F:100:SER:HA	1.83	0.44
1:F:463:GLN:O	1:F:484:ASN:ND2	2.46	0.44
1:A:78:TYR:HE2	1:A:100:SER:HA	1.82	0.44
1:D:379:THR:HG21	1:D:456:THR:HG21	1.98	0.44
1:A:379:THR:HG21	1:A:456:THR:HG21	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:78:TYR:HE2	1:D:100:SER:HA	1.83	0.44
1:A:9:PHE:CD2	1:A:106:ALA:HB3	2.53	0.44
1:B:19:ARG:NH1	1:B:479:THR:OG1	2.48	0.44
1:B:78:TYR:HE2	1:B:100:SER:HA	1.82	0.44
1:C:9:PHE:CD2	1:C:106:ALA:HB3	2.53	0.44
1:C:93:ILE:HG12	1:C:127:ALA:HB3	2.00	0.44
1:D:9:PHE:CD2	1:D:106:ALA:HB3	2.53	0.44
1:D:81:GLN:OE1	1:D:84:GLN:NE2	2.50	0.44
1:D:263:LEU:O	1:D:268:ALA:HB3	2.18	0.44
1:E:218:GLY:HA2	1:E:457:MET:SD	2.57	0.44
1:F:9:PHE:CD2	1:F:106:ALA:HB3	2.53	0.44
1:F:93:ILE:HG12	1:F:127:ALA:HB3	2.00	0.44
1:A:263:LEU:O	1:A:268:ALA:HB3	2.18	0.44
1:B:218:GLY:HA2	1:B:457:MET:SD	2.57	0.44
1:D:90:LYS:HG2	1:D:164:VAL:HB	2.00	0.44
1:E:78:TYR:HE2	1:E:100:SER:HA	1.83	0.44
1:A:81:GLN:OE1	1:A:84:GLN:NE2	2.50	0.44
1:A:90:LYS:HG2	1:A:164:VAL:HB	2.00	0.44
1:B:118:VAL:HG23	1:B:120:VAL:HG23	2.00	0.44
1:C:12:MET:SD	1:C:354:PRO:HD3	2.57	0.44
1:C:118:VAL:HG23	1:C:120:VAL:HG23	2.00	0.44
1:E:19:ARG:NH1	1:E:479:THR:OG1	2.48	0.44
1:F:118:VAL:HG23	1:F:120:VAL:HG23	2.00	0.44
1:B:418:GLU:O	1:B:422:GLY:HA3	2.18	0.44
1:E:9:PHE:CD2	1:E:106:ALA:HB3	2.53	0.44
1:E:118:VAL:HG23	1:E:120:VAL:HG23	2.00	0.44
1:E:418:GLU:O	1:E:422:GLY:HA3	2.18	0.44
1:F:12:MET:SD	1:F:354:PRO:HD3	2.57	0.44
1:F:263:LEU:O	1:F:268:ALA:HB3	2.18	0.44
1:F:418:GLU:O	1:F:422:GLY:HA3	2.18	0.44
1:B:9:PHE:CD2	1:B:106:ALA:HB3	2.53	0.44
1:C:263:LEU:O	1:C:268:ALA:HB3	2.18	0.44
1:D:93:ILE:HG12	1:D:127:ALA:HB3	2.00	0.44
1:E:209:HIS:NE2	3:E:603:GTP:O2B	2.35	0.44
1:A:93:ILE:HG12	1:A:127:ALA:HB3	2.00	0.44
1:A:272:THR:HG1	1:A:280:ILE:C	2.22	0.44
1:B:294:PHE:O	1:B:298:HIS:N	2.47	0.44
1:C:418:GLU:O	1:C:422:GLY:HA3	2.18	0.44
1:C:455:TYR:CZ	1:C:459:ARG:HD2	2.53	0.44
1:A:218:GLY:HA2	1:A:457:MET:SD	2.57	0.43
1:A:501:THR:HG22	1:E:66:ARG:H	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:218:GLY:HA2	1:D:457:MET:SD	2.57	0.43
1:F:455:TYR:CZ	1:F:459:ARG:HD2	2.53	0.43
1:A:118:VAL:HG23	1:A:120:VAL:HG23	2.00	0.43
1:A:455:TYR:CZ	1:A:459:ARG:HD2	2.53	0.43
1:C:38:GLU:OE2	1:C:42:ARG:NE	2.40	0.43
1:D:118:VAL:HG23	1:D:120:VAL:HG23	2.00	0.43
1:E:294:PHE:O	1:E:298:HIS:N	2.47	0.43
1:F:90:LYS:HG2	1:F:164:VAL:HB	2.00	0.43
1:D:455:TYR:CZ	1:D:459:ARG:HD2	2.53	0.43
1:A:239:THR:O	1:A:245:LYS:NZ	2.32	0.43
1:C:90:LYS:HG2	1:C:164:VAL:HB	2.00	0.43
1:D:369:PRO:HB3	1:D:478:ARG:HA	2.01	0.43
1:E:369:PRO:HB3	1:E:478:ARG:HA	2.01	0.43
1:A:369:PRO:HB3	1:A:478:ARG:HA	2.01	0.43
1:D:209:HIS:NE2	3:D:602:GTP:O2B	2.36	0.43
1:E:455:TYR:HH	1:F:399:PHE:HD2	1.65	0.43
1:F:38:GLU:OE2	1:F:42:ARG:NE	2.40	0.43
1:A:72:TRP:CH2	1:E:498:VAL:HB	2.54	0.43
1:B:209:HIS:NE2	3:B:603:GTP:O2B	2.36	0.43
1:B:263:LEU:O	1:B:268:ALA:HB3	2.18	0.43
1:B:369:PRO:HB3	1:B:478:ARG:HA	2.01	0.43
1:C:369:PRO:HB3	1:C:478:ARG:HA	2.01	0.43
1:D:239:THR:O	1:D:245:LYS:NZ	2.33	0.43
1:A:83:SER:OG	1:A:85:HIS:HD2	2.02	0.43
1:D:83:SER:OG	1:D:85:HIS:HD2	2.02	0.43
1:D:272:THR:HG1	1:D:280:ILE:C	2.22	0.43
1:E:215:THR:HG21	1:E:255:VAL:HG22	2.01	0.43
1:E:226:PHE:HE2	1:E:368:ILE:HG23	1.84	0.43
1:E:263:LEU:O	1:E:268:ALA:HB3	2.18	0.43
1:B:215:THR:HG21	1:B:255:VAL:HG22	2.01	0.43
1:B:226:PHE:HE2	1:B:368:ILE:HG23	1.84	0.43
1:F:369:PRO:HB3	1:F:478:ARG:HA	2.01	0.43
1:A:418:GLU:O	1:A:422:GLY:HA3	2.18	0.43
1:B:90:LYS:HG2	1:B:164:VAL:HB	2.00	0.43
1:A:226:PHE:HE2	1:A:368:ILE:HG23	1.84	0.43
1:C:215:THR:HG21	1:C:255:VAL:HG22	2.01	0.43
1:D:226:PHE:HE2	1:D:368:ILE:HG23	1.84	0.43
1:D:418:GLU:HG2	1:D:428:ILE:HG13	2.00	0.43
1:D:418:GLU:O	1:D:422:GLY:HA3	2.18	0.43
1:E:90:LYS:HG2	1:E:164:VAL:HB	2.00	0.43
1:F:215:THR:HG21	1:F:255:VAL:HG22	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:145:THR:O	1:B:149:THR:HG23	2.19	0.42
1:B:455:TYR:CZ	1:B:459:ARG:HD2	2.53	0.42
1:C:145:THR:O	1:C:149:THR:HG23	2.19	0.42
1:F:145:THR:O	1:F:149:THR:HG23	2.19	0.42
1:A:215:THR:HG21	1:A:255:VAL:HG22	2.01	0.42
1:C:83:SER:OG	1:C:85:HIS:HD2	2.02	0.42
1:D:215:THR:HG21	1:D:255:VAL:HG22	2.01	0.42
1:E:93:ILE:HG12	1:E:127:ALA:HB3	2.00	0.42
1:E:145:THR:O	1:E:149:THR:HG23	2.19	0.42
1:E:455:TYR:CZ	1:E:459:ARG:HD2	2.53	0.42
1:A:145:THR:O	1:A:149:THR:HG23	2.19	0.42
1:E:83:SER:OG	1:E:85:HIS:HD2	2.02	0.42
1:F:83:SER:OG	1:F:85:HIS:HD2	2.02	0.42
1:F:417:LEU:CB	1:F:428:ILE:CD1	2.97	0.42
1:F:418:GLU:HG2	1:F:428:ILE:HG13	2.01	0.42
1:B:93:ILE:HG12	1:B:127:ALA:HB3	2.00	0.42
1:D:145:THR:O	1:D:149:THR:HG23	2.19	0.42
1:B:83:SER:OG	1:B:85:HIS:HD2	2.02	0.42
1:B:463:GLN:O	1:B:484:ASN:ND2	2.46	0.42
1:C:417:LEU:CB	1:C:428:ILE:CD1	2.97	0.42
1:E:316:GLU:OE2	1:E:338:ARG:NE	2.28	0.42
1:E:417:LEU:CB	1:E:428:ILE:CD1	2.98	0.42
1:A:209:HIS:NE2	3:A:602:GTP:O2B	2.36	0.42
1:A:498:VAL:HB	1:E:72:TRP:CH2	2.55	0.42
1:B:72:TRP:CH2	1:D:498:VAL:HB	2.55	0.42
1:B:498:VAL:HB	1:D:72:TRP:CH2	2.55	0.42
1:C:418:GLU:HG2	1:C:428:ILE:HG13	2.02	0.42
1:D:28:LEU:HD21	1:D:490:PHE:CG	2.55	0.42
1:A:28:LEU:HD21	1:A:490:PHE:CG	2.55	0.42
1:A:129:VAL:O	1:A:131:ILE:HG22	2.20	0.42
1:B:394:TYR:CE2	1:B:448:ILE:HG21	2.55	0.42
1:C:72:TRP:CH2	1:F:498:VAL:HB	2.55	0.42
1:D:129:VAL:O	1:D:131:ILE:HG22	2.20	0.42
1:E:463:GLN:O	1:E:484:ASN:ND2	2.46	0.42
1:D:498:VAL:HG12	1:D:499:THR:HG23	2.01	0.42
1:E:79:ARG:HH11	1:E:127:ALA:HB2	1.85	0.42
1:E:394:TYR:CE2	1:E:448:ILE:HG21	2.55	0.42
1:A:372:TYR:OH	1:A:457:MET:O	2.36	0.42
1:B:79:ARG:HH11	1:B:127:ALA:HB2	1.85	0.42
1:B:498:VAL:HG12	1:B:499:THR:HG23	2.01	0.42
1:C:167:PRO:HG3	1:C:176:MET:HG3	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:225:ASN:ND2	1:E:457:MET:O	2.53	0.42
1:A:44:ARG:O	1:A:47:SER:OG	2.35	0.42
1:A:498:VAL:HG12	1:A:499:THR:HG23	2.01	0.42
1:B:129:VAL:O	1:B:131:ILE:HG22	2.20	0.42
1:B:225:ASN:ND2	1:B:457:MET:O	2.53	0.42
1:B:417:LEU:CB	1:B:428:ILE:CD1	2.98	0.42
1:C:28:LEU:HD21	1:C:490:PHE:CG	2.55	0.42
1:C:498:VAL:HB	1:F:72:TRP:CH2	2.55	0.42
1:E:129:VAL:O	1:E:131:ILE:HG22	2.20	0.42
1:E:251:GLY:HA3	1:E:326:ALA:HB2	2.02	0.42
1:E:498:VAL:HG12	1:E:499:THR:HG23	2.01	0.42
1:F:114:LYS:O	1:F:118:VAL:HG22	2.20	0.42
1:F:332:THR:HG23	1:F:334:SER:H	1.85	0.42
1:A:225:ASN:ND2	1:A:457:MET:O	2.53	0.41
1:A:418:GLU:HG2	1:A:428:ILE:HG13	2.01	0.41
1:B:251:GLY:HA3	1:B:326:ALA:HB2	2.02	0.41
1:B:316:GLU:OE2	1:B:338:ARG:NE	2.28	0.41
1:C:114:LYS:O	1:C:118:VAL:HG22	2.20	0.41
1:C:332:THR:HG23	1:C:334:SER:H	1.85	0.41
1:D:44:ARG:O	1:D:47:SER:OG	2.35	0.41
1:D:79:ARG:HH11	1:D:127:ALA:HB2	1.85	0.41
1:D:225:ASN:ND2	1:D:457:MET:O	2.53	0.41
1:D:417:LEU:CB	1:D:428:ILE:CD1	2.97	0.41
1:E:346:GLU:H	1:E:373:LEU:CD1	2.31	0.41
1:F:28:LEU:HD21	1:F:490:PHE:CG	2.55	0.41
1:F:79:ARG:HH11	1:F:127:ALA:HB2	1.85	0.41
1:F:167:PRO:HG3	1:F:176:MET:HG3	2.02	0.41
1:B:89:CYS:HB2	1:B:163:ASP:OD1	2.20	0.41
1:B:90:LYS:NZ	1:B:90:LYS:HB3	2.36	0.41
1:D:372:TYR:OH	1:D:457:MET:O	2.36	0.41
1:E:90:LYS:HB3	1:E:90:LYS:NZ	2.36	0.41
1:B:372:TYR:OH	1:B:457:MET:O	2.36	0.41
1:C:79:ARG:HH11	1:C:127:ALA:HB2	1.85	0.41
1:C:226:PHE:HE2	1:C:368:ILE:HG23	1.84	0.41
1:E:89:CYS:HB2	1:E:163:ASP:OD1	2.20	0.41
1:F:226:PHE:HE2	1:F:368:ILE:HG23	1.84	0.41
1:A:79:ARG:HH11	1:A:127:ALA:HB2	1.85	0.41
1:A:496:ALA:HB2	1:B:205:GLN:NE2	2.36	0.41
1:B:28:LEU:HD21	1:B:490:PHE:CG	2.55	0.41
1:B:346:GLU:H	1:B:373:LEU:CD1	2.31	0.41
1:D:204:SER:OG	1:F:495:GLU:OE1	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:275:GLU:OE2	1:D:300:THR:OG1	2.26	0.41
1:F:294:PHE:O	1:F:298:HIS:N	2.47	0.41
1:F:394:TYR:CE2	1:F:448:ILE:HG21	2.55	0.41
1:A:89:CYS:HB2	1:A:163:ASP:OD1	2.20	0.41
1:C:225:ASN:ND2	1:C:457:MET:O	2.53	0.41
1:C:294:PHE:O	1:C:298:HIS:N	2.47	0.41
1:C:394:TYR:CE2	1:C:448:ILE:HG21	2.55	0.41
1:D:90:LYS:HB3	1:D:90:LYS:NZ	2.36	0.41
1:D:496:ALA:HB2	1:E:205:GLN:NE2	2.36	0.41
1:E:114:LYS:O	1:E:118:VAL:HG22	2.20	0.41
1:E:372:TYR:OH	1:E:457:MET:O	2.36	0.41
1:A:90:LYS:NZ	1:A:90:LYS:HB3	2.36	0.41
1:A:167:PRO:HG3	1:A:176:MET:HG3	2.02	0.41
1:A:394:TYR:CE2	1:A:448:ILE:HG21	2.55	0.41
1:B:114:LYS:O	1:B:118:VAL:HG22	2.20	0.41
1:C:89:CYS:HB2	1:C:163:ASP:OD1	2.20	0.41
1:C:498:VAL:HG12	1:C:499:THR:HG23	2.01	0.41
1:D:394:TYR:CE2	1:D:448:ILE:HG21	2.55	0.41
1:E:28:LEU:HD21	1:E:490:PHE:CG	2.55	0.41
1:F:89:CYS:HB2	1:F:163:ASP:OD1	2.20	0.41
1:F:225:ASN:ND2	1:F:457:MET:O	2.53	0.41
1:A:251:GLY:HA3	1:A:326:ALA:HB2	2.02	0.41
1:D:89:CYS:HB2	1:D:163:ASP:OD1	2.20	0.41
1:D:167:PRO:HG3	1:D:176:MET:HG3	2.02	0.41
1:D:251:GLY:HA3	1:D:326:ALA:HB2	2.02	0.41
1:A:114:LYS:O	1:A:118:VAL:HG22	2.20	0.41
1:C:90:LYS:NZ	1:C:90:LYS:HB3	2.36	0.41
1:C:251:GLY:HA3	1:C:326:ALA:HB2	2.02	0.41
1:D:114:LYS:O	1:D:118:VAL:HG22	2.20	0.41
1:D:414:GLN:CD	1:D:428:ILE:O	2.59	0.41
1:E:167:PRO:HG3	1:E:176:MET:HG3	2.02	0.41
1:A:325:ALA:O	2:A:601:NAI:H51N	2.21	0.41
1:A:332:THR:HG23	1:A:334:SER:H	1.85	0.41
1:A:346:GLU:H	1:A:373:LEU:CD1	2.31	0.41
1:B:167:PRO:HG3	1:B:176:MET:HG3	2.02	0.41
1:B:325:ALA:O	2:B:602:NAI:H51N	2.21	0.41
1:B:496:ALA:HB2	1:C:205:GLN:NE2	2.36	0.41
1:D:205:GLN:NE2	1:F:496:ALA:HB2	2.36	0.41
1:E:325:ALA:O	2:E:602:NAI:H51N	2.21	0.41
1:E:496:ALA:HB2	1:F:205:GLN:NE2	2.36	0.41
1:F:90:LYS:NZ	1:F:90:LYS:HB3	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:498:VAL:HG12	1:F:499:THR:HG23	2.01	0.41
1:A:275:GLU:OE2	1:A:300:THR:OG1	2.26	0.41
1:A:414:GLN:CD	1:A:428:ILE:O	2.60	0.41
1:A:455:TYR:HB2	1:B:400:LYS:HB2	2.03	0.41
1:F:251:GLY:HA3	1:F:326:ALA:HB2	2.02	0.41
1:A:168:ASP:OD1	1:A:169:MET:N	2.49	0.40
1:A:205:GLN:NE2	1:C:496:ALA:HB2	2.36	0.40
1:C:168:ASP:OD1	1:C:169:MET:N	2.49	0.40
1:E:332:THR:HG23	1:E:334:SER:H	1.85	0.40
1:F:129:VAL:O	1:F:131:ILE:HG22	2.20	0.40
1:A:154:LYS:HD3	1:F:189:HIS:CE1	2.56	0.40
1:A:204:SER:OG	1:C:495:GLU:OE1	2.22	0.40
1:A:417:LEU:CB	1:A:428:ILE:CD1	2.98	0.40
1:B:332:THR:HG23	1:B:334:SER:H	1.85	0.40
1:C:129:VAL:O	1:C:131:ILE:HG22	2.20	0.40
1:C:372:TYR:OH	1:C:457:MET:O	2.36	0.40
1:D:332:THR:HG23	1:D:334:SER:H	1.85	0.40
1:F:372:TYR:OH	1:F:457:MET:O	2.36	0.40
1:B:414:GLN:HG3	1:B:428:ILE:O	2.21	0.40
1:D:346:GLU:H	1:D:373:LEU:CD1	2.31	0.40
1:E:414:GLN:HG3	1:E:428:ILE:O	2.21	0.40
1:C:414:GLN:HG3	1:C:428:ILE:O	2.21	0.40
1:F:168:ASP:OD1	1:F:169:MET:N	2.49	0.40
1:F:346:GLU:H	1:F:373:LEU:CD1	2.31	0.40
1:F:414:GLN:HG3	1:F:428:ILE:O	2.21	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	495/501 (99%)	460 (93%)	34 (7%)	1 (0%)	47 78

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	495/501 (99%)	460 (93%)	34 (7%)	1 (0%)	47	78
1	C	495/501 (99%)	460 (93%)	34 (7%)	1 (0%)	47	78
1	D	495/501 (99%)	461 (93%)	33 (7%)	1 (0%)	47	78
1	E	495/501 (99%)	460 (93%)	34 (7%)	1 (0%)	47	78
1	F	495/501 (99%)	460 (93%)	34 (7%)	1 (0%)	47	78
All	All	2970/3006 (99%)	2761 (93%)	203 (7%)	6 (0%)	50	78

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	429	PRO
1	B	429	PRO
1	C	429	PRO
1	D	429	PRO
1	E	429	PRO
1	F	429	PRO

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	417/420 (99%)	417 (100%)	0	100	100
1	B	417/420 (99%)	417 (100%)	0	100	100
1	C	417/420 (99%)	417 (100%)	0	100	100
1	D	417/420 (99%)	417 (100%)	0	100	100
1	E	417/420 (99%)	417 (100%)	0	100	100
1	F	417/420 (99%)	417 (100%)	0	100	100
All	All	2502/2520 (99%)	2502 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (48) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	84	GLN
1	A	85	HIS
1	A	189	HIS
1	A	205	GLN
1	A	225	ASN
1	A	330	GLN
1	A	388	ASN
1	A	391	HIS
1	B	84	GLN
1	B	85	HIS
1	B	189	HIS
1	B	205	GLN
1	B	225	ASN
1	B	330	GLN
1	B	388	ASN
1	B	391	HIS
1	C	84	GLN
1	C	85	HIS
1	C	189	HIS
1	C	205	GLN
1	C	225	ASN
1	C	330	GLN
1	C	388	ASN
1	C	391	HIS
1	D	84	GLN
1	D	85	HIS
1	D	189	HIS
1	D	205	GLN
1	D	225	ASN
1	D	330	GLN
1	D	388	ASN
1	D	391	HIS
1	E	84	GLN
1	E	85	HIS
1	E	189	HIS
1	E	205	GLN
1	E	225	ASN
1	E	330	GLN
1	E	388	ASN
1	E	391	HIS
1	F	84	GLN
1	F	85	HIS
1	F	189	HIS

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Mol	Chain	Res	Type
1	F	205	GLN
1	F	225	ASN
1	F	330	GLN
1	F	388	ASN
1	F	391	HIS

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

18 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	NAI	B	601	-	42,48,48	0.96	2 (4%)	47,73,73	1.35	4 (8%)
2	NAI	D	601	-	42,48,48	0.97	2 (4%)	47,73,73	1.25	5 (10%)
3	GTP	D	602	-	26,34,34	1.16	1 (3%)	32,54,54	1.59	7 (21%)
2	NAI	E	602	-	42,48,48	0.97	2 (4%)	47,73,73	1.26	5 (10%)
2	NAI	B	602	-	42,48,48	0.97	2 (4%)	47,73,73	1.26	5 (10%)
2	NAI	C	602	-	42,48,48	0.97	2 (4%)	47,73,73	1.25	5 (10%)
3	GTP	A	602	-	26,34,34	1.16	1 (3%)	32,54,54	1.59	7 (21%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	NAI	D	603	-	42,48,48	0.97	2 (4%)	47,73,73	1.35	4 (8%)
2	NAI	A	601	-	42,48,48	0.97	2 (4%)	47,73,73	1.26	5 (10%)
2	NAI	A	603	-	42,48,48	0.97	2 (4%)	47,73,73	1.35	4 (8%)
3	GTP	F	603	-	26,34,34	1.16	2 (7%)	32,54,54	1.62	7 (21%)
3	GTP	B	603	-	26,34,34	1.17	2 (7%)	32,54,54	1.60	7 (21%)
2	NAI	C	601	-	42,48,48	0.96	2 (4%)	47,73,73	1.35	4 (8%)
2	NAI	E	601	-	42,48,48	0.97	2 (4%)	47,73,73	1.36	4 (8%)
3	GTP	E	603	-	26,34,34	1.17	2 (7%)	32,54,54	1.61	7 (21%)
2	NAI	F	602	-	42,48,48	0.96	2 (4%)	47,73,73	1.25	5 (10%)
3	GTP	C	603	-	26,34,34	1.17	2 (7%)	32,54,54	1.61	7 (21%)
2	NAI	F	601	-	42,48,48	0.96	2 (4%)	47,73,73	1.35	4 (8%)

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	NAI	B	601	-	-	9/25/72/72	0/5/5/5
2	NAI	D	601	-	-	8/25/72/72	0/5/5/5
3	GTP	D	602	-	-	4/18/38/38	0/3/3/3
2	NAI	E	602	-	-	9/25/72/72	0/5/5/5
2	NAI	B	602	-	-	9/25/72/72	0/5/5/5
2	NAI	C	602	-	-	8/25/72/72	0/5/5/5
3	GTP	A	602	-	-	4/18/38/38	0/3/3/3
2	NAI	D	603	-	-	9/25/72/72	0/5/5/5
2	NAI	A	601	-	-	8/25/72/72	0/5/5/5
2	NAI	A	603	-	-	9/25/72/72	0/5/5/5
3	GTP	F	603	-	-	4/18/38/38	0/3/3/3
3	GTP	B	603	-	-	4/18/38/38	0/3/3/3
2	NAI	C	601	-	-	9/25/72/72	0/5/5/5
2	NAI	E	601	-	-	9/25/72/72	0/5/5/5
3	GTP	E	603	-	-	4/18/38/38	0/3/3/3
2	NAI	F	602	-	-	8/25/72/72	0/5/5/5
3	GTP	C	603	-	-	4/18/38/38	0/3/3/3
2	NAI	F	601	-	-	9/25/72/72	0/5/5/5

All (34) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	603	GTP	C5-C6	-4.13	1.39	1.47
3	D	602	GTP	C5-C6	-4.12	1.39	1.47
3	A	602	GTP	C5-C6	-4.12	1.39	1.47
3	B	603	GTP	C5-C6	-4.11	1.39	1.47
3	E	603	GTP	C5-C6	-4.09	1.39	1.47
3	F	603	GTP	C5-C6	-4.09	1.39	1.47
2	B	602	NAI	C6N-C5N	3.15	1.39	1.33
2	E	602	NAI	C6N-C5N	3.15	1.39	1.33
2	A	601	NAI	C6N-C5N	3.13	1.38	1.33
2	D	601	NAI	C6N-C5N	3.13	1.38	1.33
2	C	602	NAI	C6N-C5N	3.12	1.38	1.33
2	A	603	NAI	C6N-C5N	3.08	1.38	1.33
2	D	603	NAI	C6N-C5N	3.07	1.38	1.33
2	F	602	NAI	C6N-C5N	3.06	1.38	1.33
2	B	601	NAI	C6N-C5N	3.05	1.38	1.33
2	E	601	NAI	C6N-C5N	3.05	1.38	1.33
2	C	601	NAI	C6N-C5N	3.05	1.38	1.33
2	F	601	NAI	C6N-C5N	3.05	1.38	1.33
2	A	601	NAI	C5A-C4A	2.33	1.47	1.40
2	B	602	NAI	C5A-C4A	2.31	1.47	1.40
2	C	602	NAI	C5A-C4A	2.30	1.47	1.40
2	E	602	NAI	C5A-C4A	2.30	1.47	1.40
2	F	602	NAI	C5A-C4A	2.29	1.47	1.40
2	D	601	NAI	C5A-C4A	2.28	1.47	1.40
2	C	601	NAI	C5A-C4A	2.08	1.46	1.40
2	F	601	NAI	C5A-C4A	2.07	1.46	1.40
2	E	601	NAI	C5A-C4A	2.06	1.46	1.40
2	A	603	NAI	C5A-C4A	2.06	1.46	1.40
3	B	603	GTP	C2-N3	2.05	1.38	1.33
2	B	601	NAI	C5A-C4A	2.05	1.46	1.40
3	F	603	GTP	C2-N3	2.03	1.38	1.33
3	C	603	GTP	C2-N3	2.02	1.38	1.33
2	D	603	NAI	C5A-C4A	2.02	1.46	1.40
3	E	603	GTP	C2-N3	2.02	1.38	1.33

All (96) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	C	601	NAI	PN-O3-PA	-4.68	116.77	132.83
2	F	601	NAI	PN-O3-PA	-4.67	116.79	132.83
2	D	603	NAI	PN-O3-PA	-4.67	116.80	132.83
2	A	603	NAI	PN-O3-PA	-4.66	116.85	132.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	E	601	NAI	PN-O3-PA	-4.65	116.86	132.83
2	B	601	NAI	PN-O3-PA	-4.65	116.86	132.83
3	C	603	GTP	PB-O3B-PG	-4.20	118.42	132.83
3	F	603	GTP	PB-O3B-PG	-4.20	118.42	132.83
3	E	603	GTP	PB-O3B-PG	-4.11	118.72	132.83
3	B	603	GTP	PB-O3B-PG	-4.10	118.75	132.83
3	D	602	GTP	PB-O3B-PG	-4.02	119.04	132.83
3	A	602	GTP	PB-O3B-PG	-4.01	119.05	132.83
2	A	601	NAI	PN-O3-PA	-3.59	120.51	132.83
2	E	602	NAI	PN-O3-PA	-3.57	120.56	132.83
2	B	602	NAI	PN-O3-PA	-3.57	120.58	132.83
2	D	601	NAI	PN-O3-PA	-3.45	121.00	132.83
3	F	603	GTP	PA-O3A-PB	-3.41	121.12	132.83
2	C	602	NAI	PN-O3-PA	-3.41	121.13	132.83
3	C	603	GTP	PA-O3A-PB	-3.41	121.13	132.83
2	F	602	NAI	PN-O3-PA	-3.40	121.14	132.83
3	A	602	GTP	PA-O3A-PB	-3.40	121.16	132.83
3	B	603	GTP	PA-O3A-PB	-3.38	121.22	132.83
3	E	603	GTP	PA-O3A-PB	-3.38	121.23	132.83
3	D	602	GTP	PA-O3A-PB	-3.38	121.23	132.83
3	E	603	GTP	C5-C6-N1	3.20	119.60	113.95
3	D	602	GTP	C5-C6-N1	3.19	119.59	113.95
3	A	602	GTP	C5-C6-N1	3.18	119.57	113.95
3	F	603	GTP	C5-C6-N1	3.18	119.56	113.95
3	C	603	GTP	C5-C6-N1	3.18	119.56	113.95
3	B	603	GTP	C5-C6-N1	3.16	119.53	113.95
2	A	601	NAI	C3B-C2B-C1B	3.10	105.64	100.98
2	D	601	NAI	C3B-C2B-C1B	3.09	105.64	100.98
2	A	603	NAI	N3A-C2A-N1A	-3.09	123.85	128.68
2	F	601	NAI	N3A-C2A-N1A	-3.07	123.87	128.68
2	C	601	NAI	N3A-C2A-N1A	-3.07	123.89	128.68
2	B	602	NAI	C3B-C2B-C1B	3.05	105.57	100.98
2	D	603	NAI	N3A-C2A-N1A	-3.05	123.91	128.68
2	E	601	NAI	N3A-C2A-N1A	-3.04	123.92	128.68
2	F	602	NAI	C3B-C2B-C1B	3.04	105.56	100.98
2	E	602	NAI	C3B-C2B-C1B	3.04	105.55	100.98
2	B	601	NAI	N3A-C2A-N1A	-3.03	123.95	128.68
2	C	602	NAI	C3B-C2B-C1B	3.00	105.49	100.98
3	D	602	GTP	C2-N1-C6	-2.99	119.60	125.10
2	B	602	NAI	N3A-C2A-N1A	-2.98	124.02	128.68
3	E	603	GTP	C2-N1-C6	-2.98	119.61	125.10
3	A	602	GTP	C2-N1-C6	-2.97	119.63	125.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	B	603	GTP	C2-N1-C6	-2.96	119.64	125.10
3	F	603	GTP	C8-N7-C5	2.96	108.63	102.99
3	C	603	GTP	C2-N1-C6	-2.96	119.65	125.10
3	A	602	GTP	C8-N7-C5	2.95	108.62	102.99
3	D	602	GTP	C8-N7-C5	2.95	108.61	102.99
3	F	603	GTP	C2-N1-C6	-2.95	119.67	125.10
2	E	602	NAI	N3A-C2A-N1A	-2.94	124.08	128.68
3	B	603	GTP	C8-N7-C5	2.94	108.59	102.99
2	D	601	NAI	N3A-C2A-N1A	-2.94	124.09	128.68
2	F	602	NAI	N3A-C2A-N1A	-2.93	124.09	128.68
2	A	601	NAI	N3A-C2A-N1A	-2.93	124.09	128.68
3	C	603	GTP	C8-N7-C5	2.93	108.58	102.99
3	E	603	GTP	C8-N7-C5	2.93	108.57	102.99
2	C	602	NAI	N3A-C2A-N1A	-2.91	124.13	128.68
2	E	601	NAI	C4A-C5A-N7A	-2.80	106.48	109.40
2	B	601	NAI	C4A-C5A-N7A	-2.79	106.49	109.40
2	A	603	NAI	C4A-C5A-N7A	-2.77	106.51	109.40
2	D	603	NAI	C4A-C5A-N7A	-2.77	106.51	109.40
2	F	601	NAI	C4A-C5A-N7A	-2.72	106.56	109.40
2	C	601	NAI	C4A-C5A-N7A	-2.71	106.58	109.40
3	F	603	GTP	C3'-C2'-C1'	2.68	105.01	100.98
3	E	603	GTP	C3'-C2'-C1'	2.68	105.01	100.98
3	C	603	GTP	C3'-C2'-C1'	2.68	105.01	100.98
3	B	603	GTP	C3'-C2'-C1'	2.66	104.98	100.98
2	E	601	NAI	C3D-C2D-C1D	2.60	106.37	101.43
3	D	602	GTP	C3'-C2'-C1'	2.60	104.89	100.98
3	A	602	GTP	C3'-C2'-C1'	2.60	104.89	100.98
2	B	601	NAI	C3D-C2D-C1D	2.57	106.31	101.43
2	A	603	NAI	C3D-C2D-C1D	2.57	106.31	101.43
2	C	601	NAI	C3D-C2D-C1D	2.56	106.28	101.43
2	F	601	NAI	C3D-C2D-C1D	2.56	106.28	101.43
2	F	602	NAI	C4A-C5A-N7A	-2.55	106.74	109.40
2	A	601	NAI	C4A-C5A-N7A	-2.55	106.74	109.40
2	D	603	NAI	C3D-C2D-C1D	2.54	106.26	101.43
2	B	602	NAI	C4A-C5A-N7A	-2.52	106.77	109.40
2	D	601	NAI	C4A-C5A-N7A	-2.52	106.77	109.40
2	E	602	NAI	C4A-C5A-N7A	-2.50	106.80	109.40
2	C	602	NAI	C4A-C5A-N7A	-2.49	106.80	109.40
3	C	603	GTP	O6-C6-C5	-2.15	120.16	124.37
3	D	602	GTP	O6-C6-C5	-2.15	120.17	124.37
3	A	602	GTP	O6-C6-C5	-2.15	120.17	124.37
3	E	603	GTP	O6-C6-C5	-2.14	120.19	124.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	F	603	GTP	O6-C6-C5	-2.14	120.19	124.37
3	B	603	GTP	O6-C6-C5	-2.12	120.23	124.37
2	D	601	NAI	C3D-C2D-C1D	2.11	105.44	101.43
2	A	601	NAI	C3D-C2D-C1D	2.11	105.43	101.43
2	B	602	NAI	C3D-C2D-C1D	2.10	105.42	101.43
2	E	602	NAI	C3D-C2D-C1D	2.10	105.41	101.43
2	C	602	NAI	C3D-C2D-C1D	2.09	105.40	101.43
2	F	602	NAI	C3D-C2D-C1D	2.07	105.36	101.43

There are no chirality outliers.

All (128) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	601	NAI	C5B-O5B-PA-O1A
2	A	601	NAI	C5B-O5B-PA-O2A
2	A	601	NAI	C5B-O5B-PA-O3
2	A	601	NAI	O4B-C4B-C5B-O5B
2	A	603	NAI	C5B-O5B-PA-O1A
2	A	603	NAI	C5B-O5B-PA-O2A
2	A	603	NAI	C5D-O5D-PN-O2N
2	B	602	NAI	C5B-O5B-PA-O1A
2	B	602	NAI	C5B-O5B-PA-O2A
2	B	602	NAI	C5B-O5B-PA-O3
2	B	602	NAI	O4B-C4B-C5B-O5B
2	B	601	NAI	C5B-O5B-PA-O1A
2	B	601	NAI	C5B-O5B-PA-O2A
2	B	601	NAI	C5D-O5D-PN-O2N
2	C	601	NAI	C5B-O5B-PA-O1A
2	C	601	NAI	C5B-O5B-PA-O2A
2	C	601	NAI	C5D-O5D-PN-O2N
2	C	602	NAI	C5B-O5B-PA-O1A
2	C	602	NAI	C5B-O5B-PA-O3
2	C	602	NAI	O4B-C4B-C5B-O5B
2	D	601	NAI	C5B-O5B-PA-O1A
2	D	601	NAI	C5B-O5B-PA-O2A
2	D	601	NAI	C5B-O5B-PA-O3
2	D	601	NAI	O4B-C4B-C5B-O5B
2	D	603	NAI	C5B-O5B-PA-O1A
2	D	603	NAI	C5B-O5B-PA-O2A
2	D	603	NAI	C5D-O5D-PN-O2N
2	E	602	NAI	C5B-O5B-PA-O1A
2	E	602	NAI	C5B-O5B-PA-O2A

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Mol	Chain	Res	Type	Atoms
2	E	602	NAI	C5B-O5B-PA-O3
2	E	602	NAI	O4B-C4B-C5B-O5B
2	E	601	NAI	C5B-O5B-PA-O1A
2	E	601	NAI	C5B-O5B-PA-O2A
2	E	601	NAI	C5D-O5D-PN-O2N
2	F	601	NAI	C5B-O5B-PA-O1A
2	F	601	NAI	C5B-O5B-PA-O2A
2	F	601	NAI	C5D-O5D-PN-O2N
2	F	602	NAI	C5B-O5B-PA-O1A
2	F	602	NAI	C5B-O5B-PA-O3
2	F	602	NAI	O4B-C4B-C5B-O5B
2	A	601	NAI	O4D-C4D-C5D-O5D
2	B	602	NAI	O4D-C4D-C5D-O5D
2	C	602	NAI	O4D-C4D-C5D-O5D
2	D	601	NAI	O4D-C4D-C5D-O5D
2	E	602	NAI	O4D-C4D-C5D-O5D
2	F	602	NAI	O4D-C4D-C5D-O5D
2	A	601	NAI	O4D-C1D-N1N-C6N
2	B	602	NAI	O4D-C1D-N1N-C6N
2	C	602	NAI	O4D-C1D-N1N-C6N
2	D	601	NAI	O4D-C1D-N1N-C6N
2	E	602	NAI	O4D-C1D-N1N-C6N
2	F	602	NAI	O4D-C1D-N1N-C6N
2	A	601	NAI	C3D-C4D-C5D-O5D
2	B	602	NAI	C3D-C4D-C5D-O5D
2	C	602	NAI	C3D-C4D-C5D-O5D
2	D	601	NAI	C3D-C4D-C5D-O5D
2	E	602	NAI	C3D-C4D-C5D-O5D
2	F	602	NAI	C3D-C4D-C5D-O5D
3	A	602	GTP	O4'-C4'-C5'-O5'
3	A	602	GTP	C3'-C4'-C5'-O5'
3	D	602	GTP	O4'-C4'-C5'-O5'
2	A	603	NAI	C5D-O5D-PN-O1N
2	B	601	NAI	C5D-O5D-PN-O1N
2	C	601	NAI	C5D-O5D-PN-O1N
2	C	602	NAI	C5B-O5B-PA-O2A
2	D	603	NAI	C5D-O5D-PN-O1N
2	E	601	NAI	C5D-O5D-PN-O1N
2	F	601	NAI	C5D-O5D-PN-O1N
2	F	602	NAI	C5B-O5B-PA-O2A
3	B	603	GTP	O4'-C4'-C5'-O5'
3	B	603	GTP	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
3	C	603	GTP	O4'-C4'-C5'-O5'
3	C	603	GTP	C3'-C4'-C5'-O5'
3	D	602	GTP	C3'-C4'-C5'-O5'
3	E	603	GTP	O4'-C4'-C5'-O5'
3	E	603	GTP	C3'-C4'-C5'-O5'
3	F	603	GTP	O4'-C4'-C5'-O5'
3	F	603	GTP	C3'-C4'-C5'-O5'
2	A	603	NAI	O4D-C1D-N1N-C2N
2	B	601	NAI	O4D-C1D-N1N-C2N
2	D	603	NAI	O4D-C1D-N1N-C2N
2	E	601	NAI	O4D-C1D-N1N-C2N
2	C	601	NAI	O4D-C1D-N1N-C2N
2	F	601	NAI	O4D-C1D-N1N-C2N
2	B	601	NAI	C2D-C1D-N1N-C2N
2	C	601	NAI	C2D-C1D-N1N-C2N
2	F	601	NAI	C2D-C1D-N1N-C2N
2	A	603	NAI	C2D-C1D-N1N-C2N
2	D	603	NAI	C2D-C1D-N1N-C2N
2	E	601	NAI	C2D-C1D-N1N-C2N
2	E	601	NAI	O4D-C4D-C5D-O5D
3	A	602	GTP	PA-O3A-PB-O3B
3	B	603	GTP	PA-O3A-PB-O3B
3	D	602	GTP	PA-O3A-PB-O3B
3	E	603	GTP	PA-O3A-PB-O3B
2	B	601	NAI	O4D-C4D-C5D-O5D
2	A	603	NAI	C5B-O5B-PA-O3
2	A	603	NAI	C5D-O5D-PN-O3
2	B	601	NAI	C5B-O5B-PA-O3
2	B	601	NAI	C5D-O5D-PN-O3
2	C	601	NAI	C5B-O5B-PA-O3
2	C	601	NAI	C5D-O5D-PN-O3
2	D	603	NAI	C5B-O5B-PA-O3
2	D	603	NAI	C5D-O5D-PN-O3
2	E	601	NAI	C5B-O5B-PA-O3
2	E	601	NAI	C5D-O5D-PN-O3
2	F	601	NAI	C5B-O5B-PA-O3
2	F	601	NAI	C5D-O5D-PN-O3
2	A	603	NAI	O4D-C4D-C5D-O5D
2	C	601	NAI	O4D-C4D-C5D-O5D
2	D	603	NAI	O4D-C4D-C5D-O5D
2	F	601	NAI	O4D-C4D-C5D-O5D
2	B	602	NAI	PN-O3-PA-O1A

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Mol	Chain	Res	Type	Atoms
2	E	602	NAI	PN-O3-PA-O1A
3	A	602	GTP	PA-O3A-PB-O2B
3	B	603	GTP	PA-O3A-PB-O2B
3	C	603	GTP	PA-O3A-PB-O2B
3	D	602	GTP	PA-O3A-PB-O2B
3	E	603	GTP	PA-O3A-PB-O2B
3	F	603	GTP	PA-O3A-PB-O2B
3	C	603	GTP	PA-O3A-PB-O3B
3	F	603	GTP	PA-O3A-PB-O3B
2	A	601	NAI	C4D-C5D-O5D-PN
2	B	602	NAI	C4D-C5D-O5D-PN
2	D	601	NAI	C4D-C5D-O5D-PN
2	E	602	NAI	C4D-C5D-O5D-PN
2	C	602	NAI	C4D-C5D-O5D-PN
2	F	602	NAI	C4D-C5D-O5D-PN

There are no ring outliers.

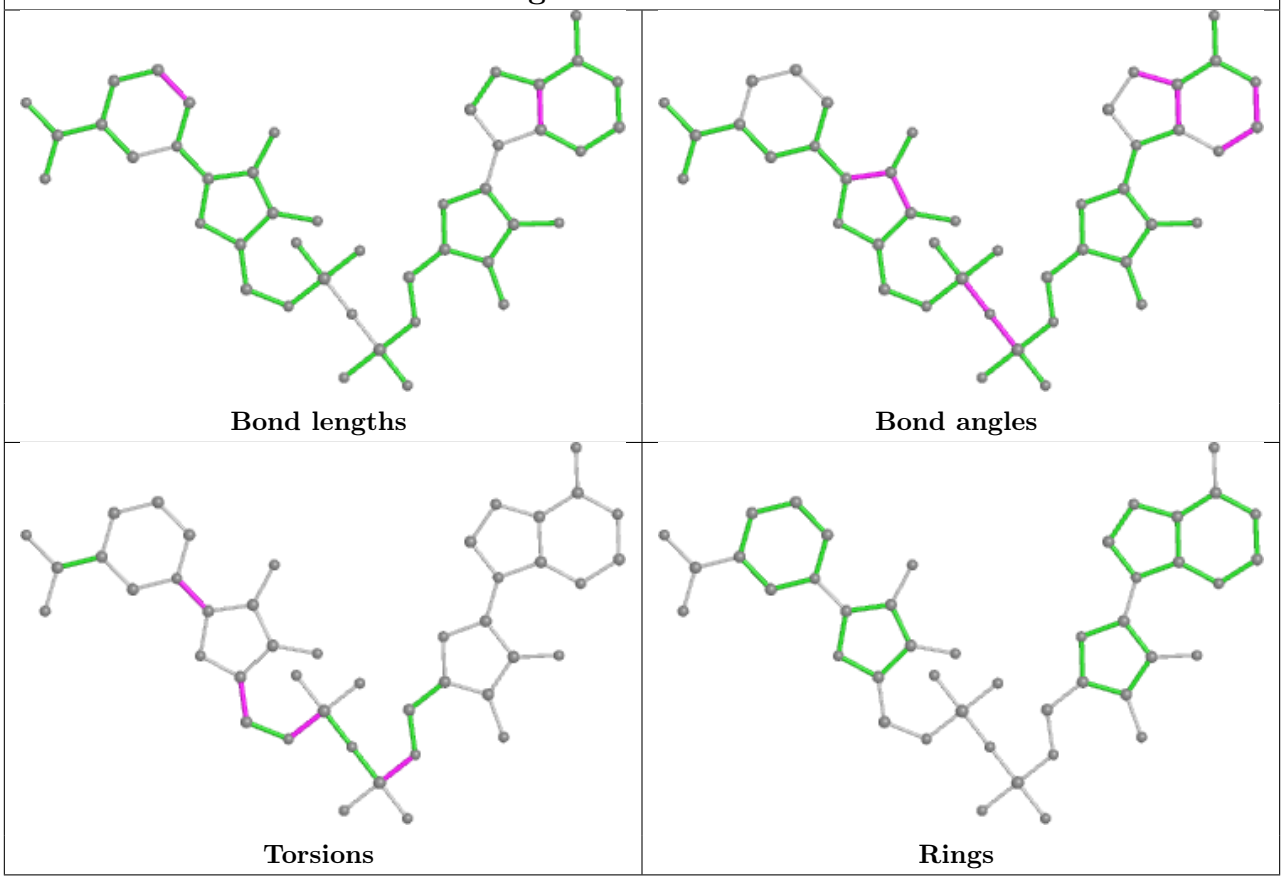
12 monomers are involved in 25 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	601	NAI	2	0
3	D	602	GTP	2	0
2	E	602	NAI	3	0
2	B	602	NAI	3	0
2	C	602	NAI	2	0
3	A	602	GTP	2	0
2	A	601	NAI	3	0
3	F	603	GTP	1	0
3	B	603	GTP	2	0
3	E	603	GTP	2	0
2	F	602	NAI	2	0
3	C	603	GTP	1	0

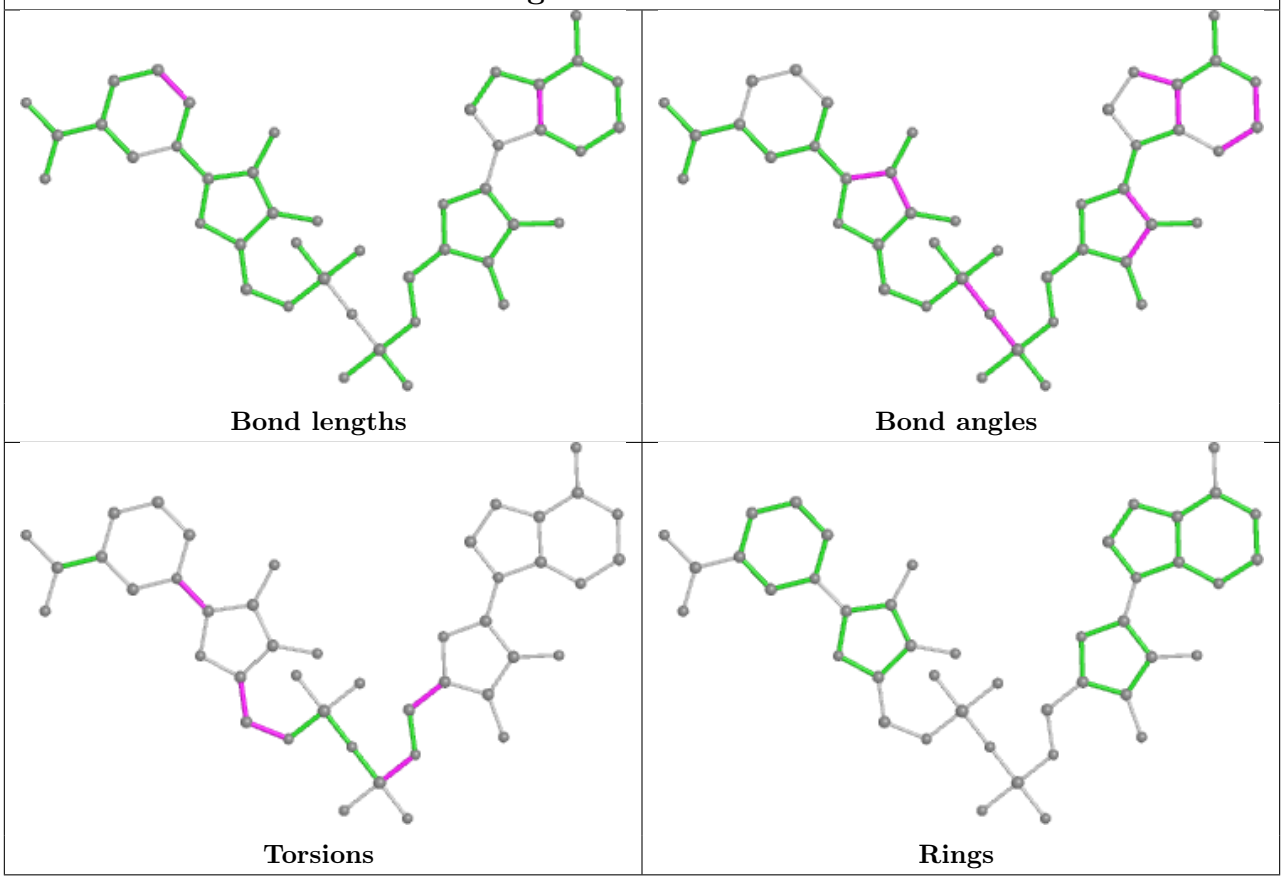
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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.

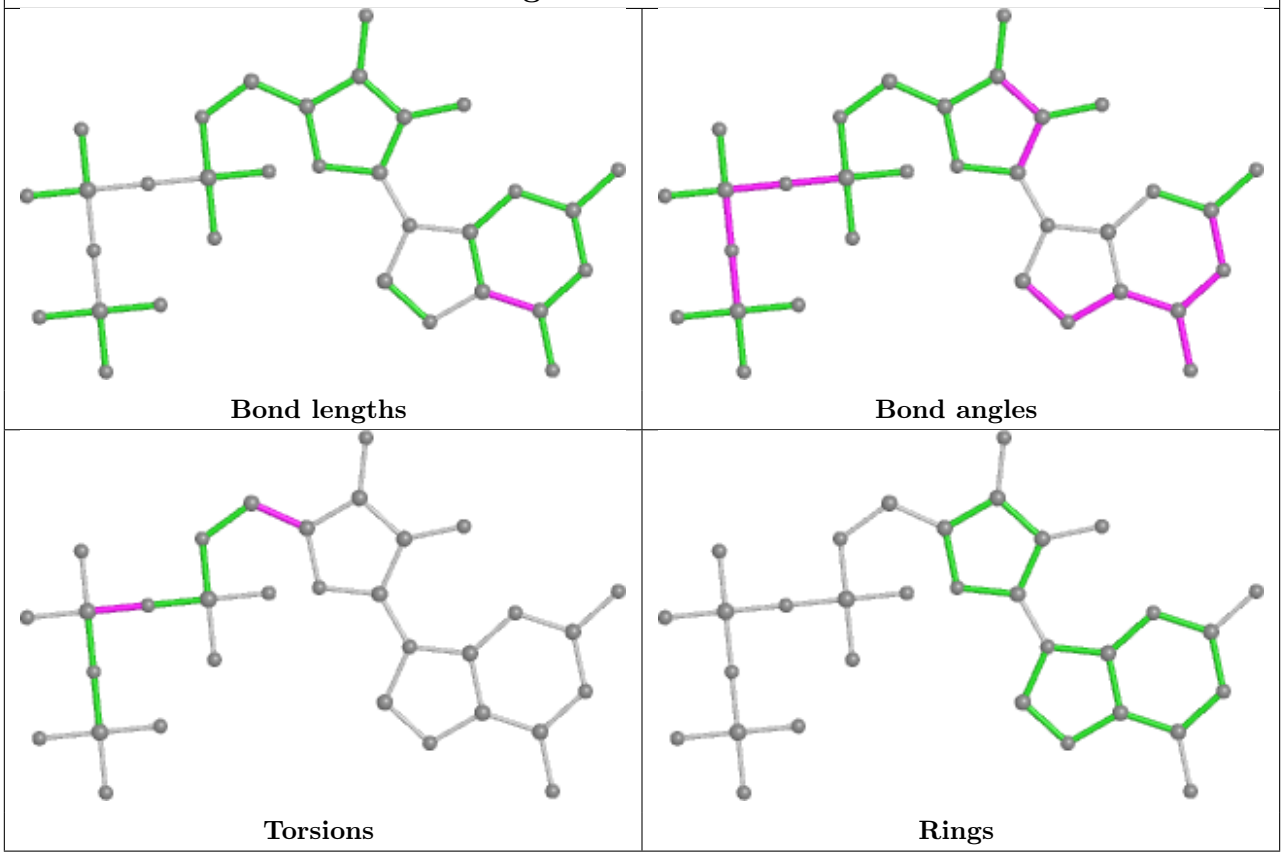
Ligand NAI B 601



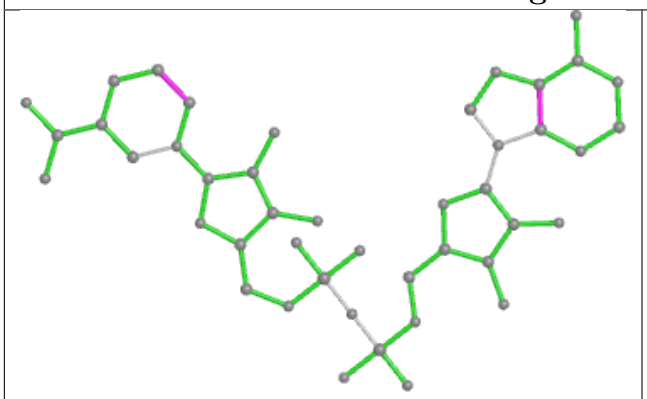
Ligand NAI D 601



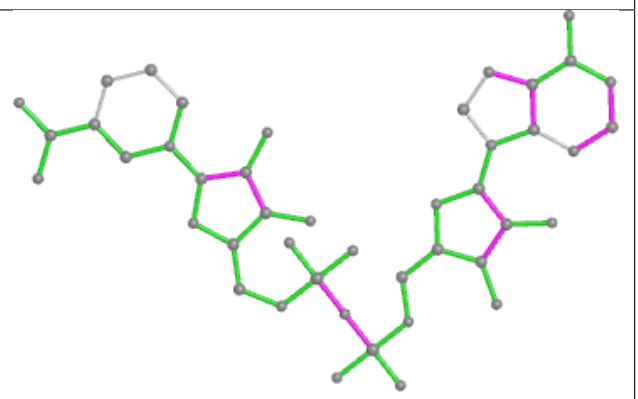
Ligand GTP D 602



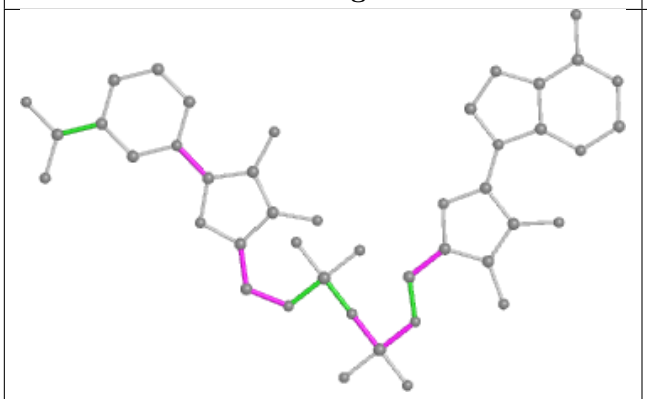
Ligand NAI E 602



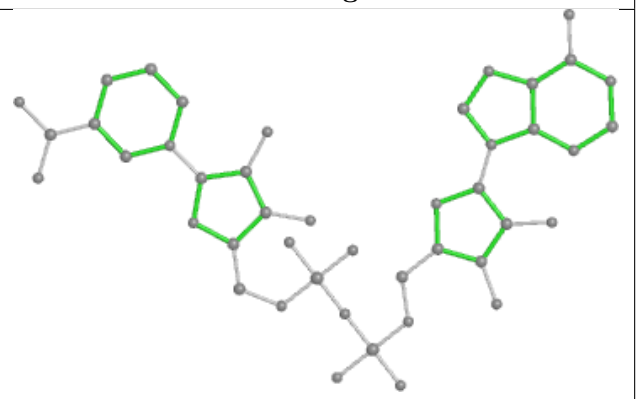
Bond lengths



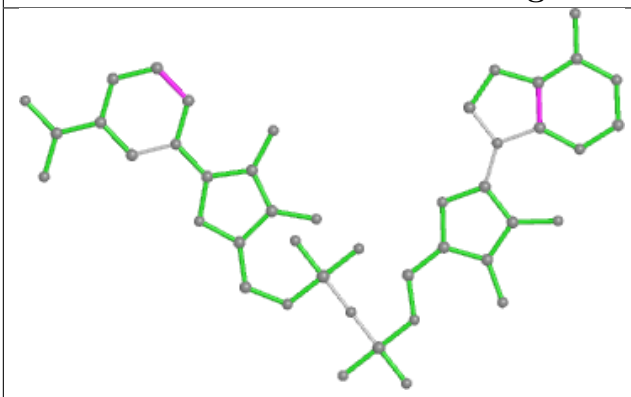
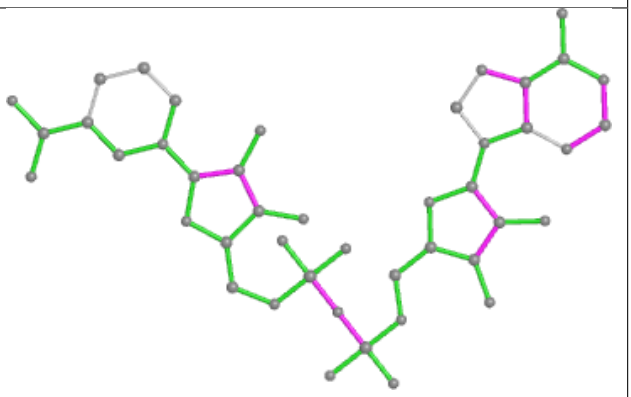
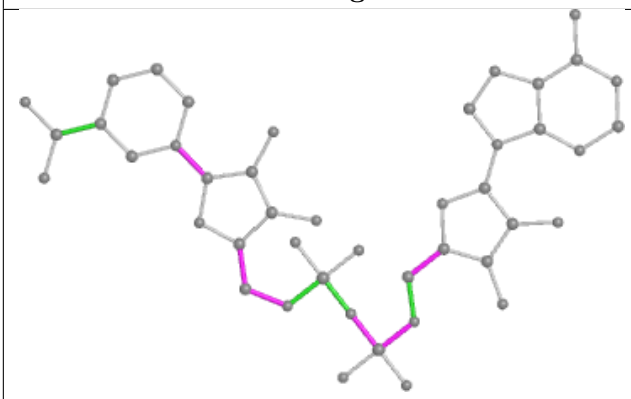
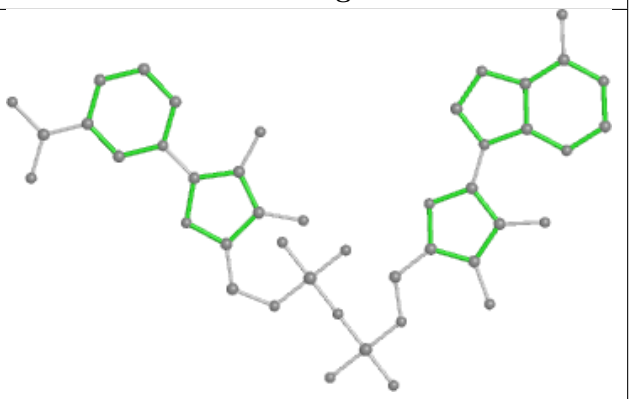
Bond angles



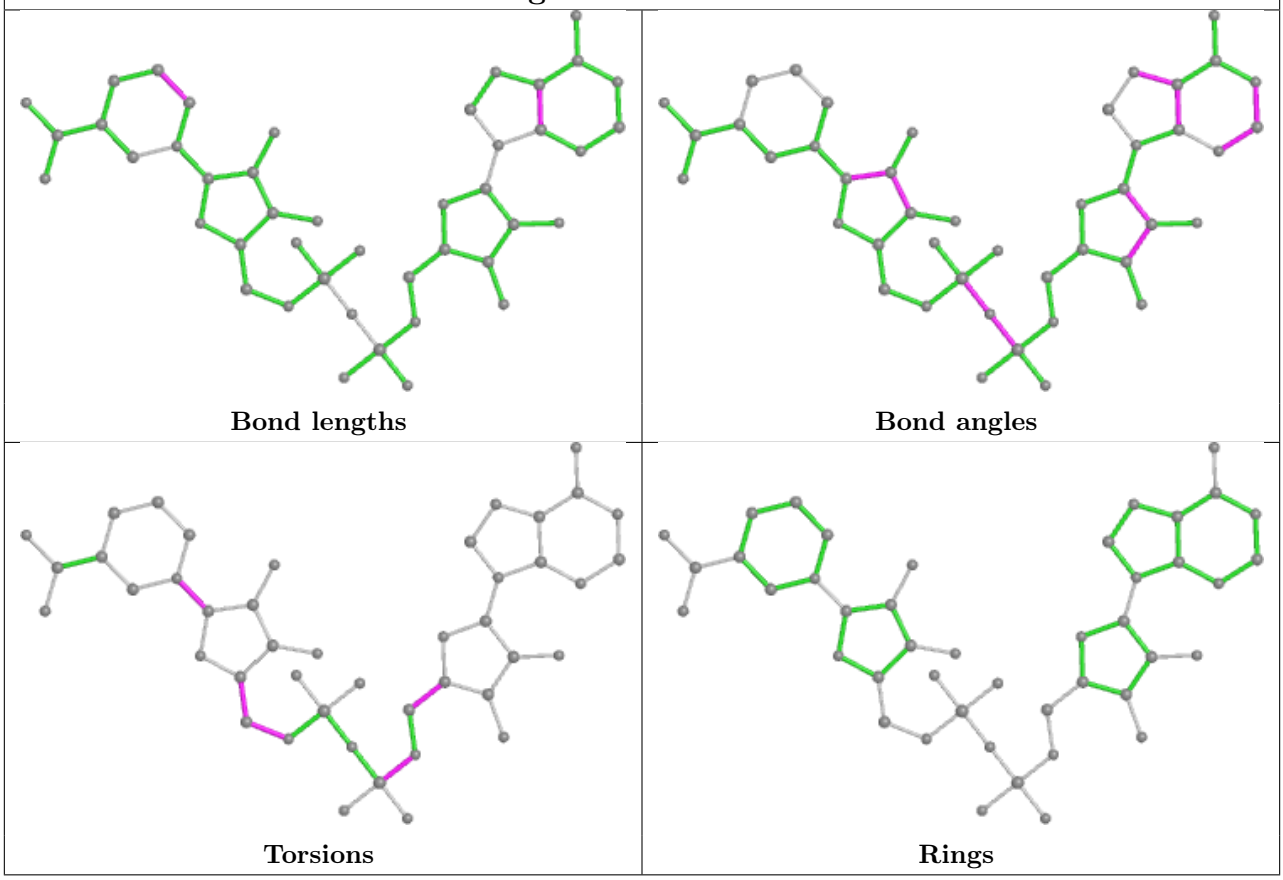
Torsions



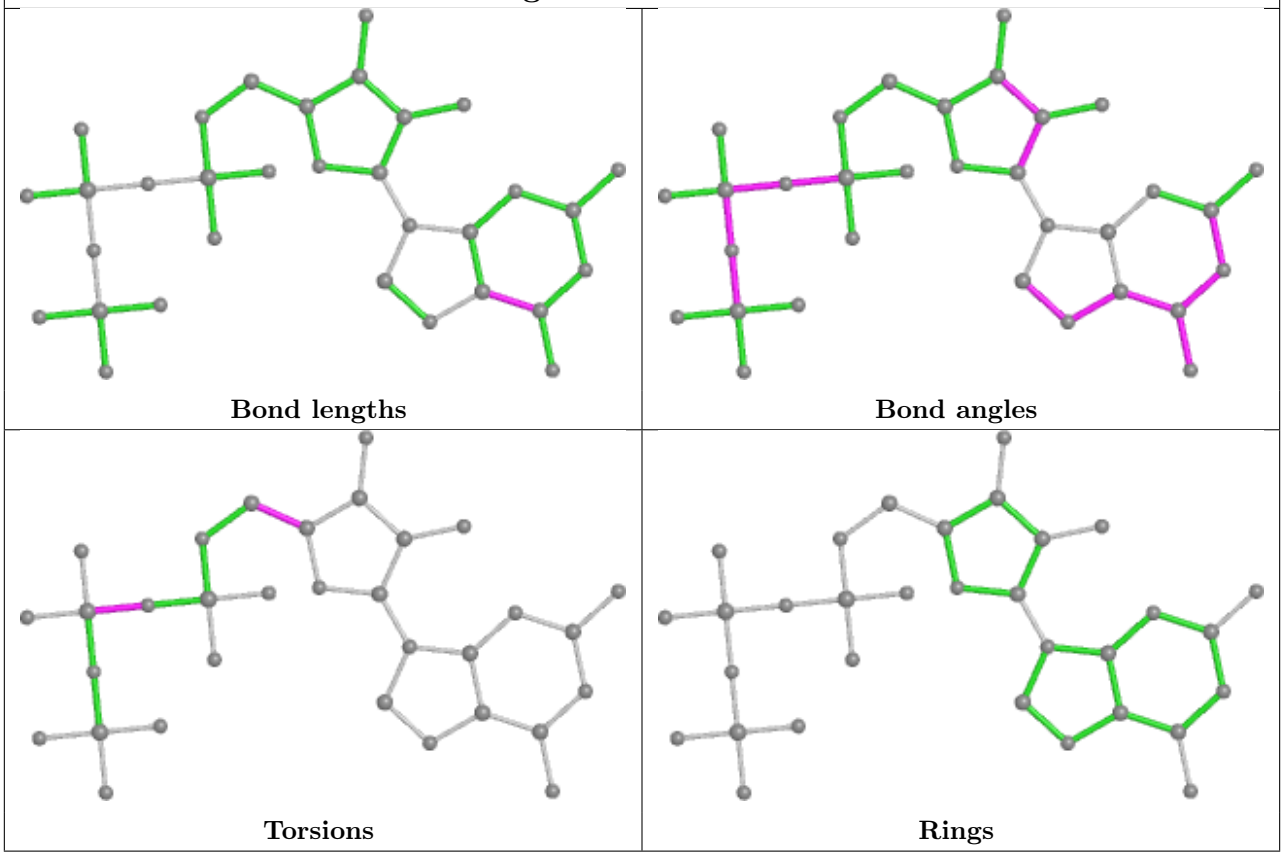
Rings

Ligand NAI B 602	
 Bond lengths	 Bond angles
 Torsions	 Rings

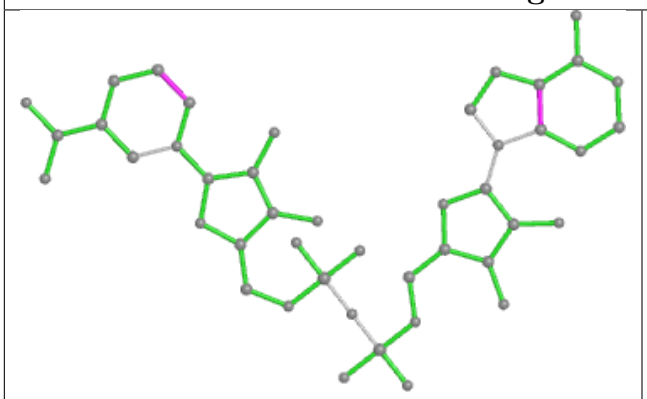
Ligand NAI C 602



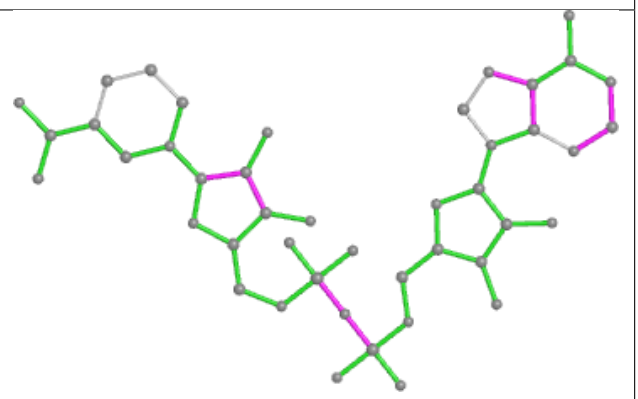
Ligand GTP A 602



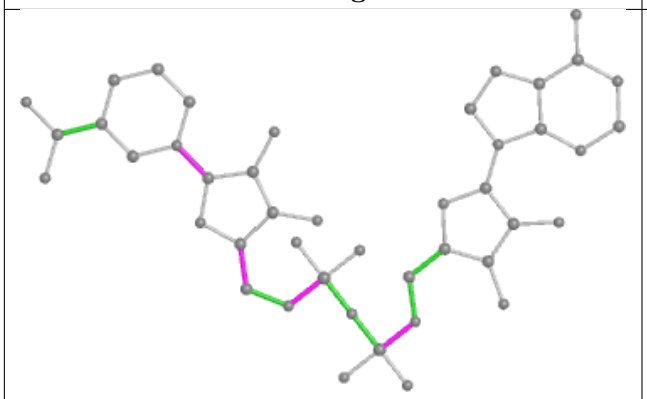
Ligand NAI D 603



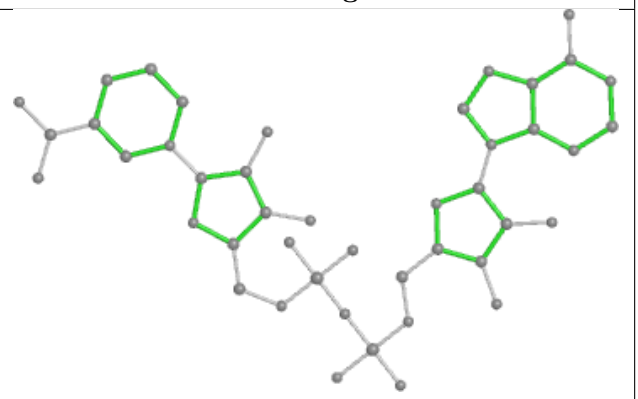
Bond lengths



Bond angles

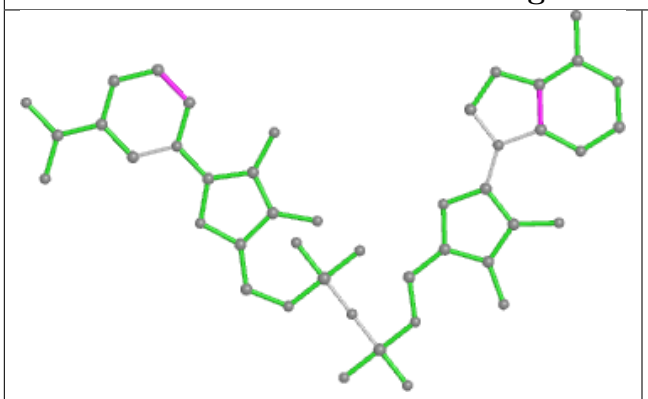


Torsions

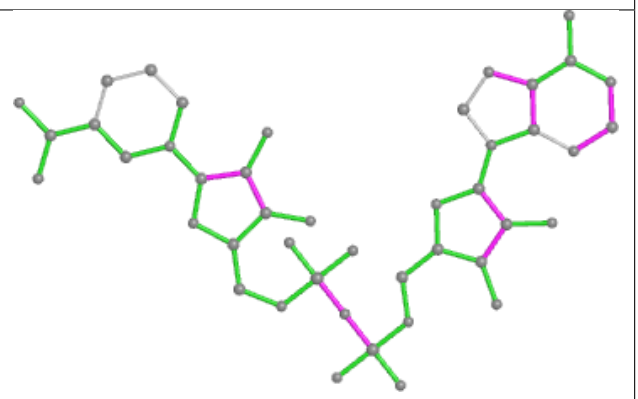


Rings

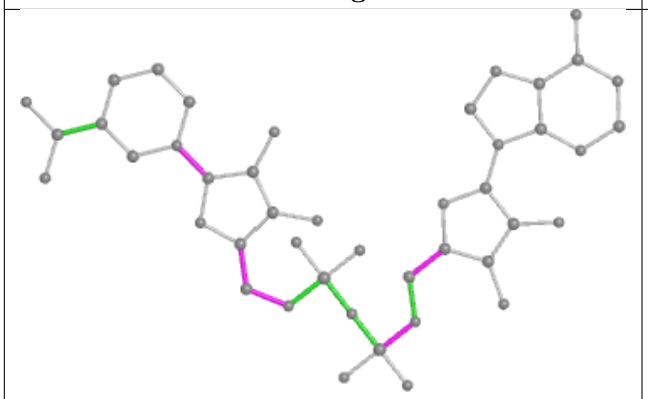
Ligand NAI A 601



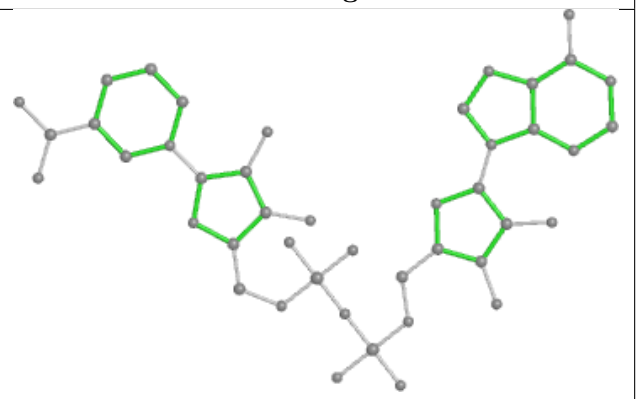
Bond lengths



Bond angles

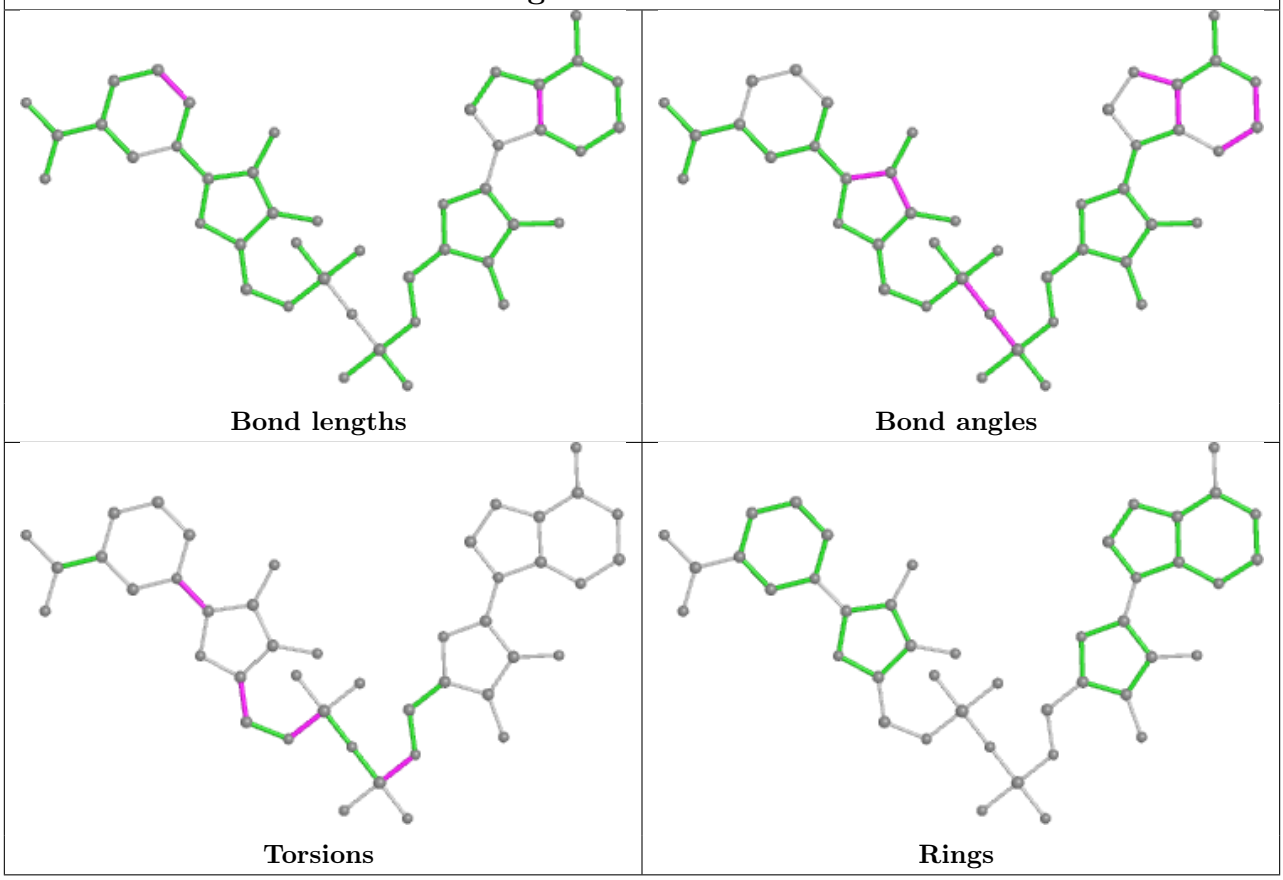


Torsions

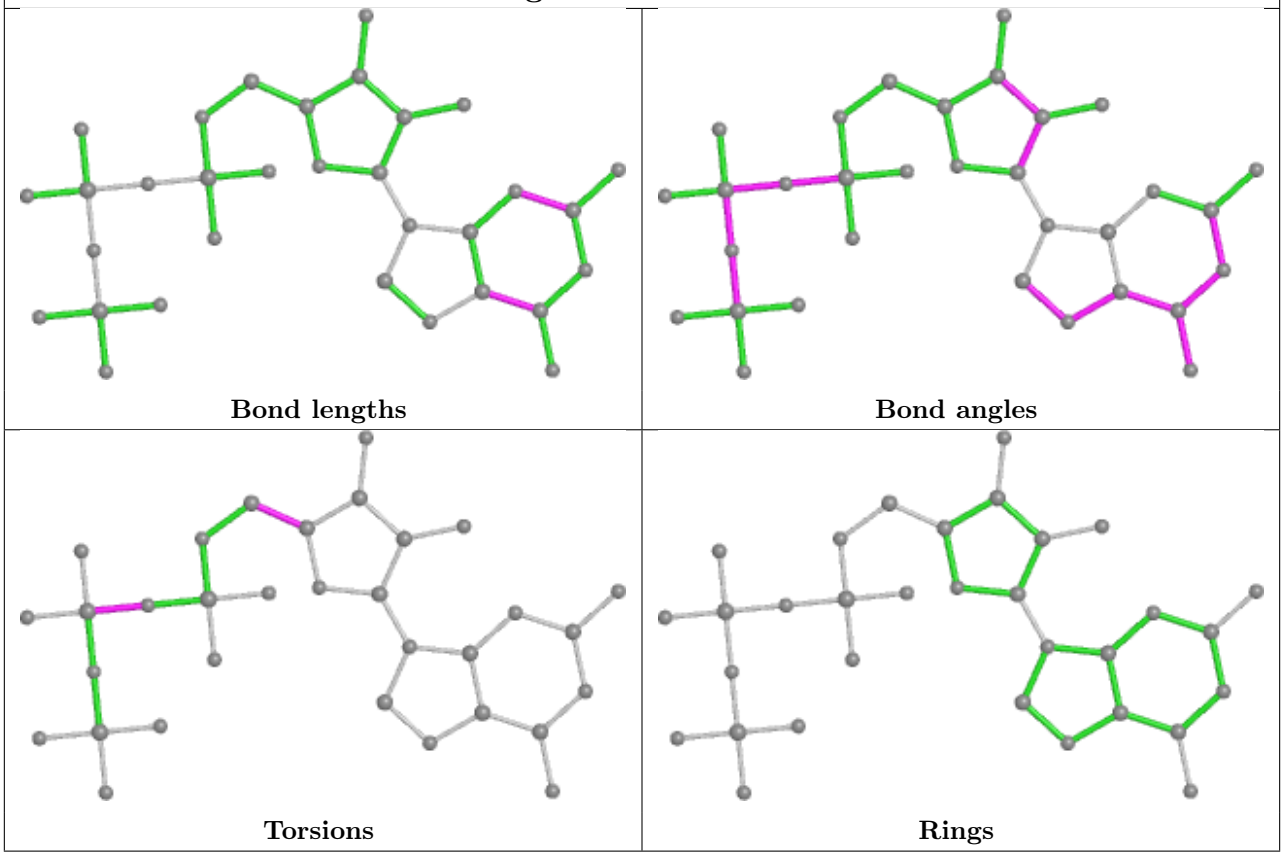


Rings

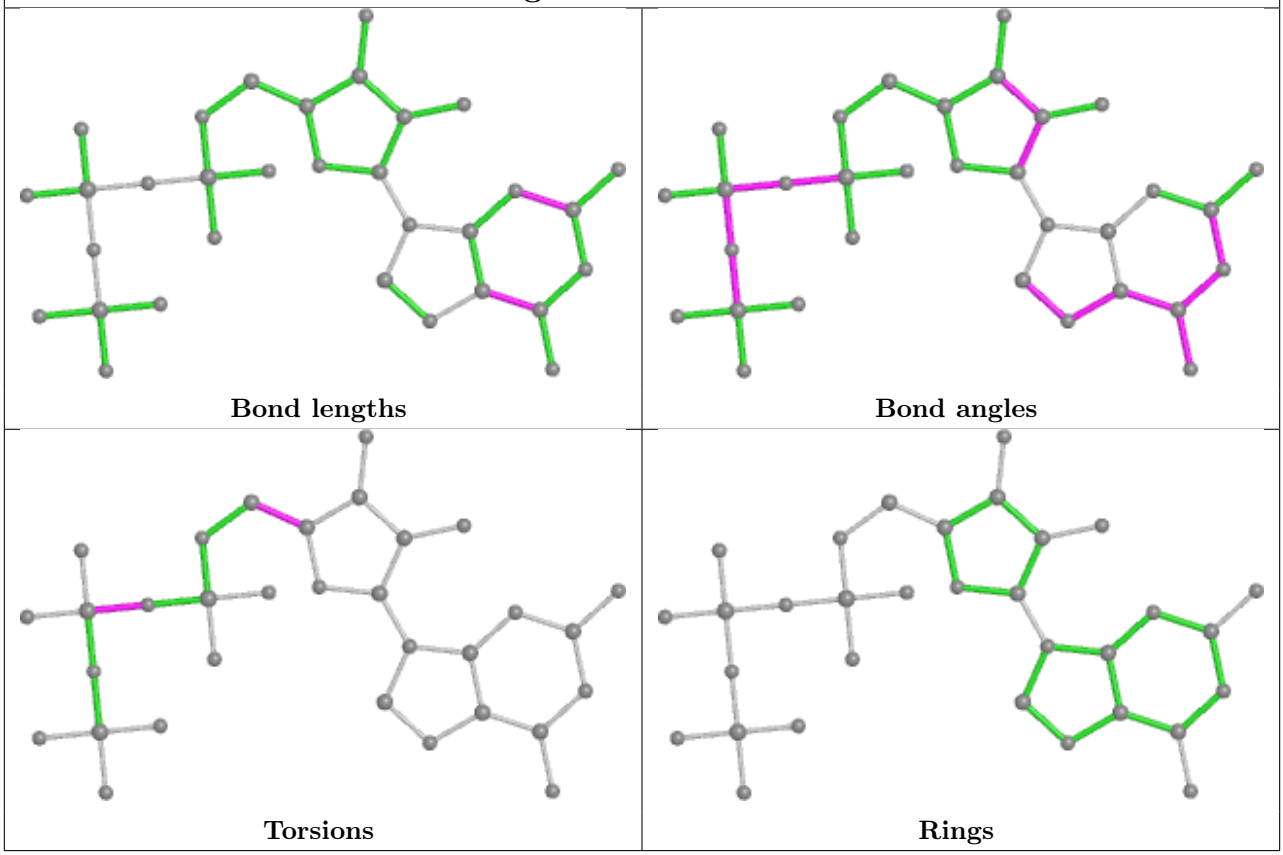
Ligand NAI A 603



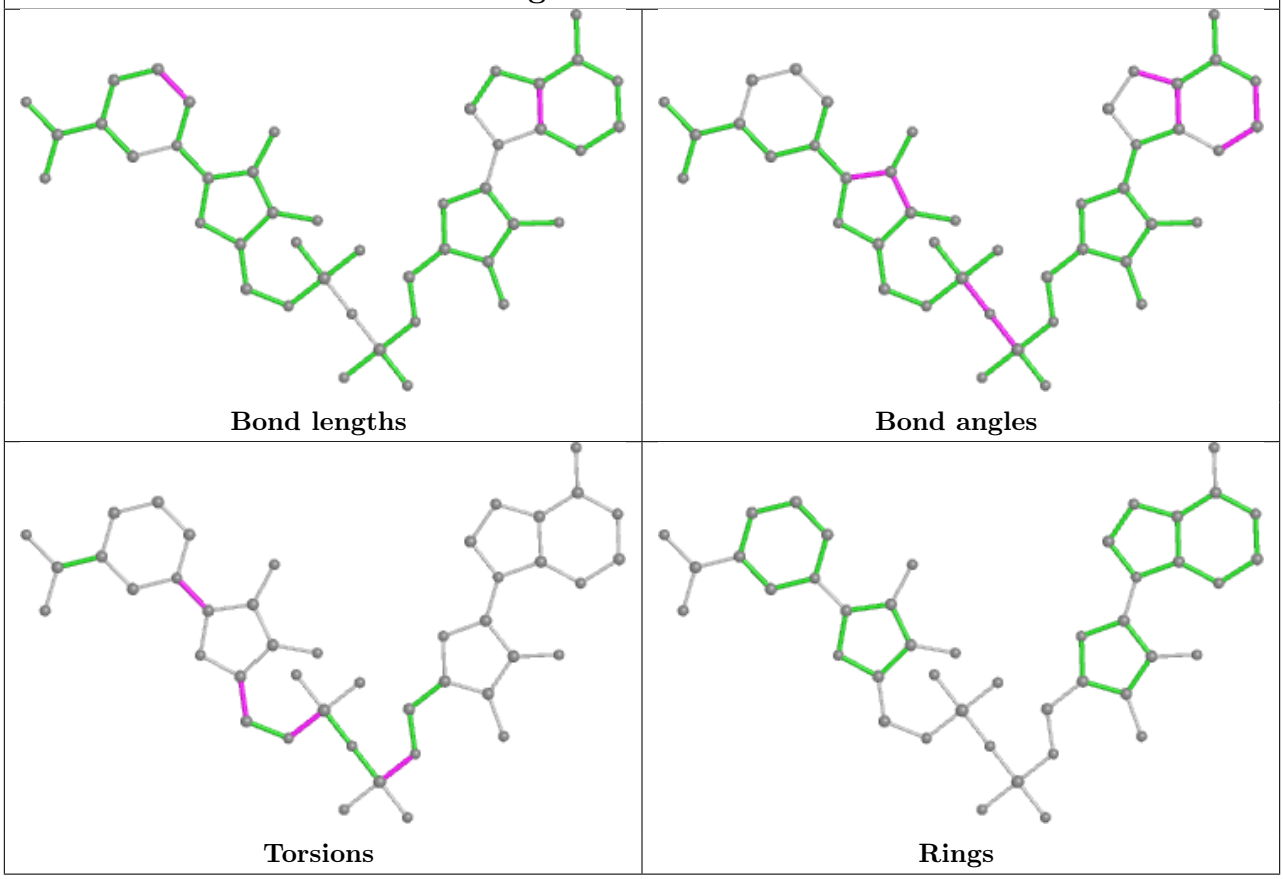
Ligand GTP F 603



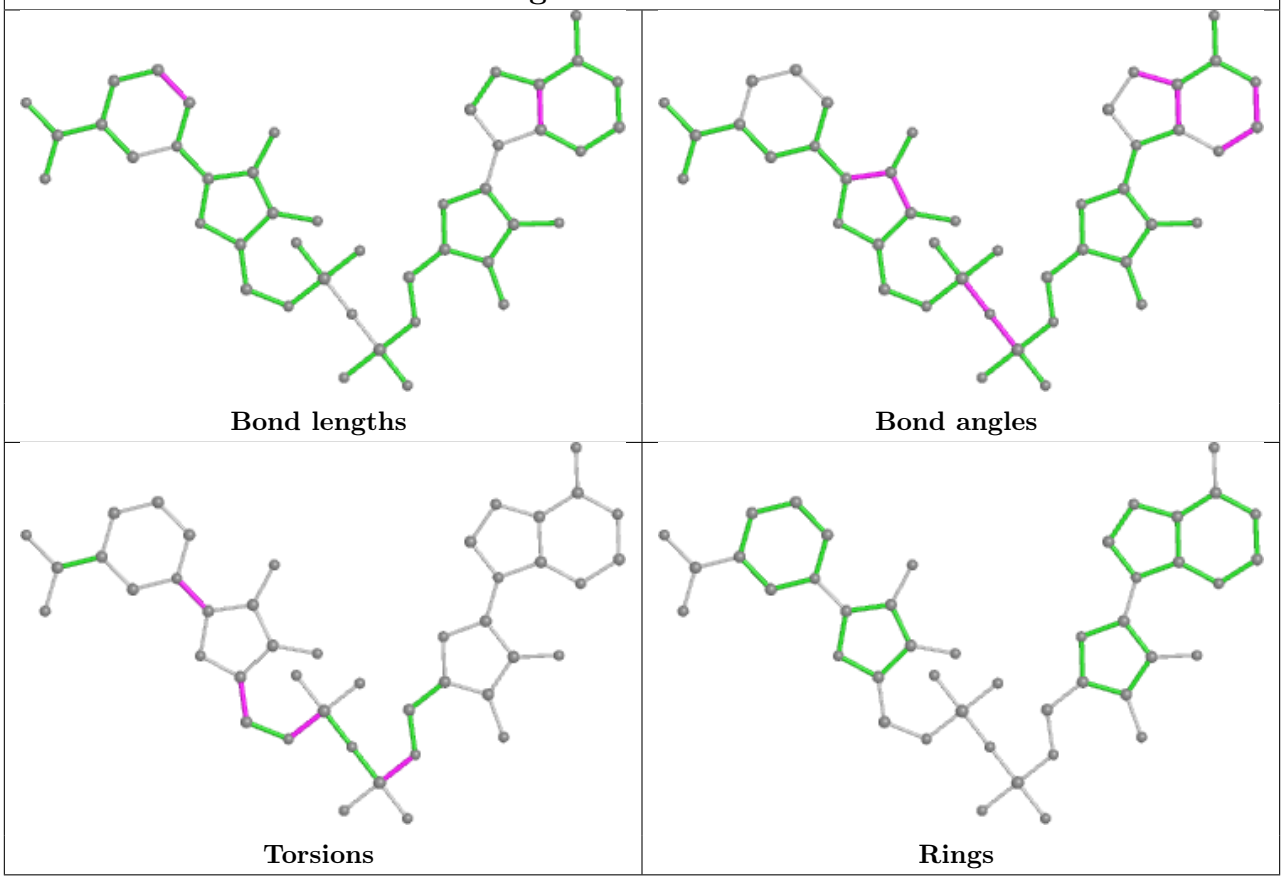
Ligand GTP B 603



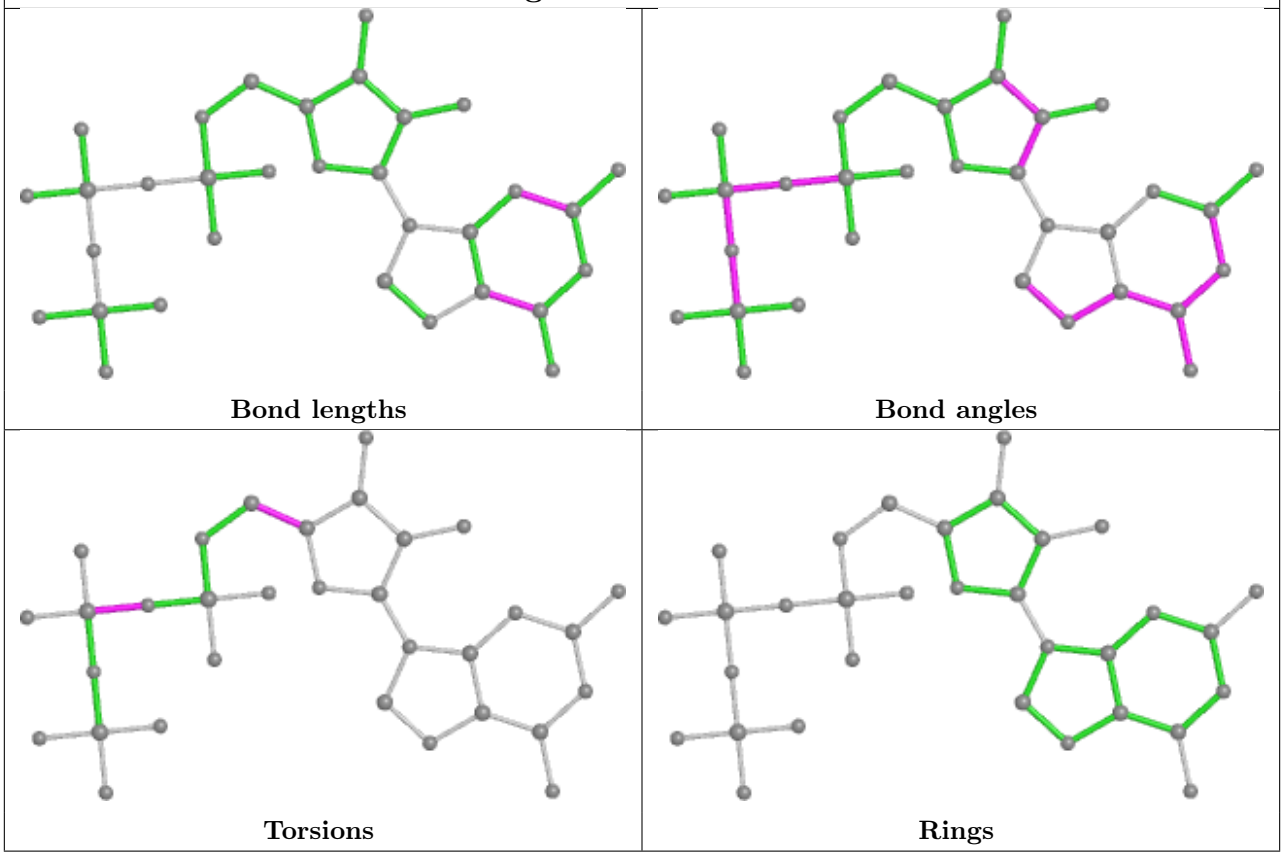
Ligand NAI C 601



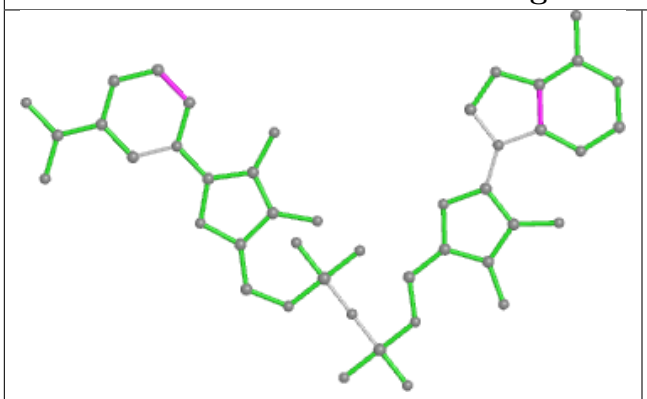
Ligand NAI E 601



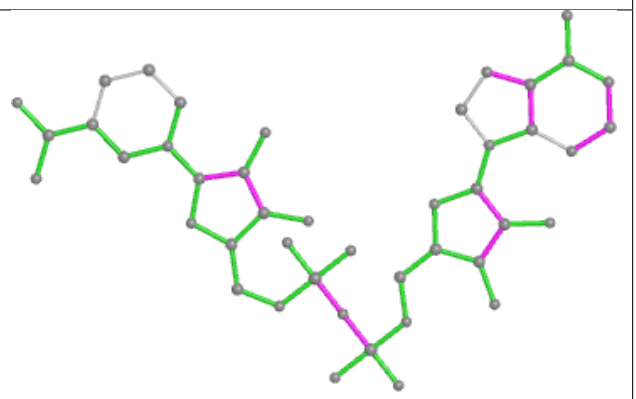
Ligand GTP E 603



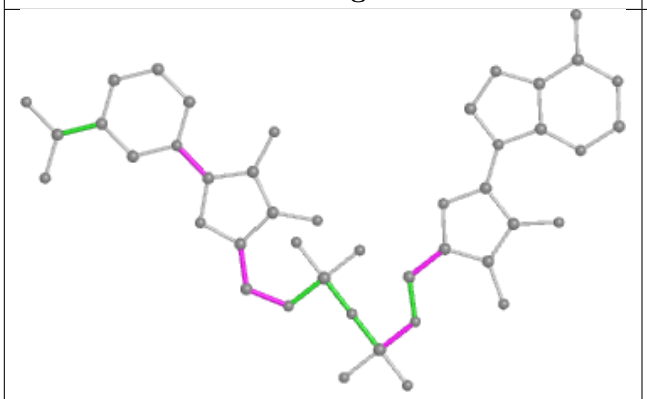
Ligand NAI F 602



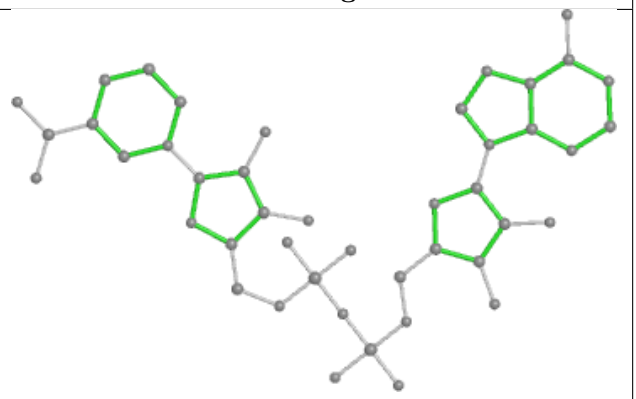
Bond lengths



Bond angles

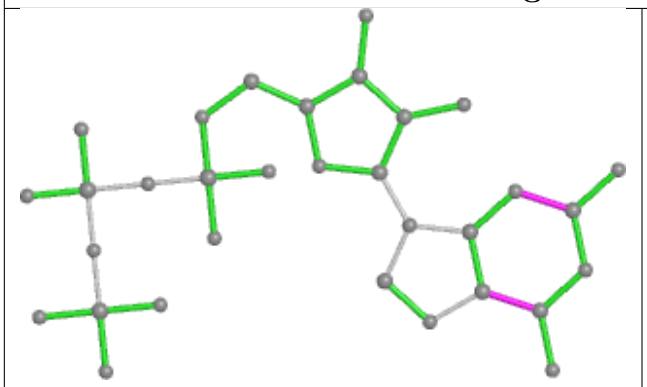


Torsions

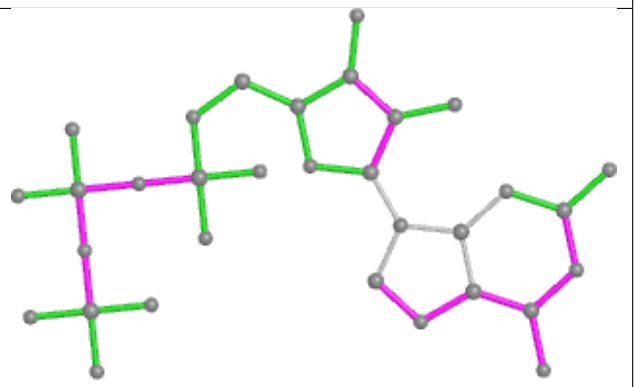


Rings

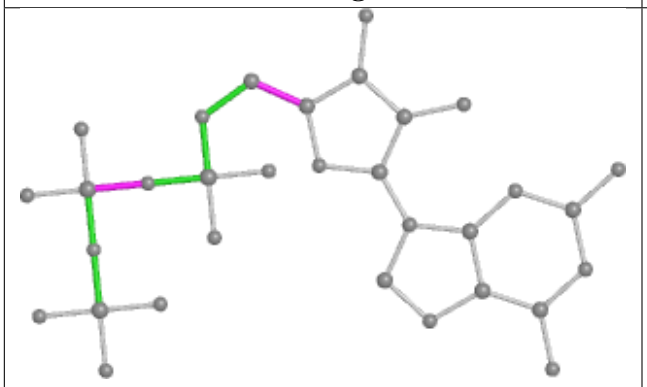
Ligand GTP C 603



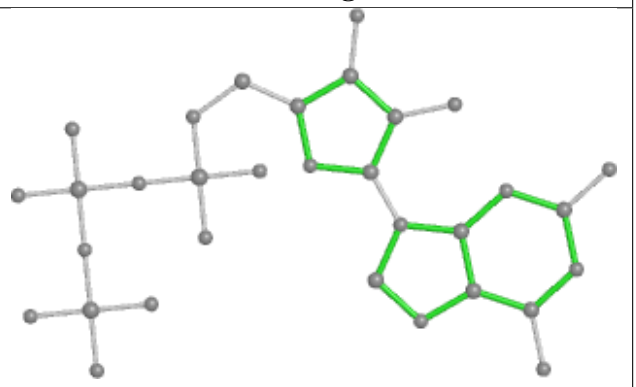
Bond lengths



Bond angles

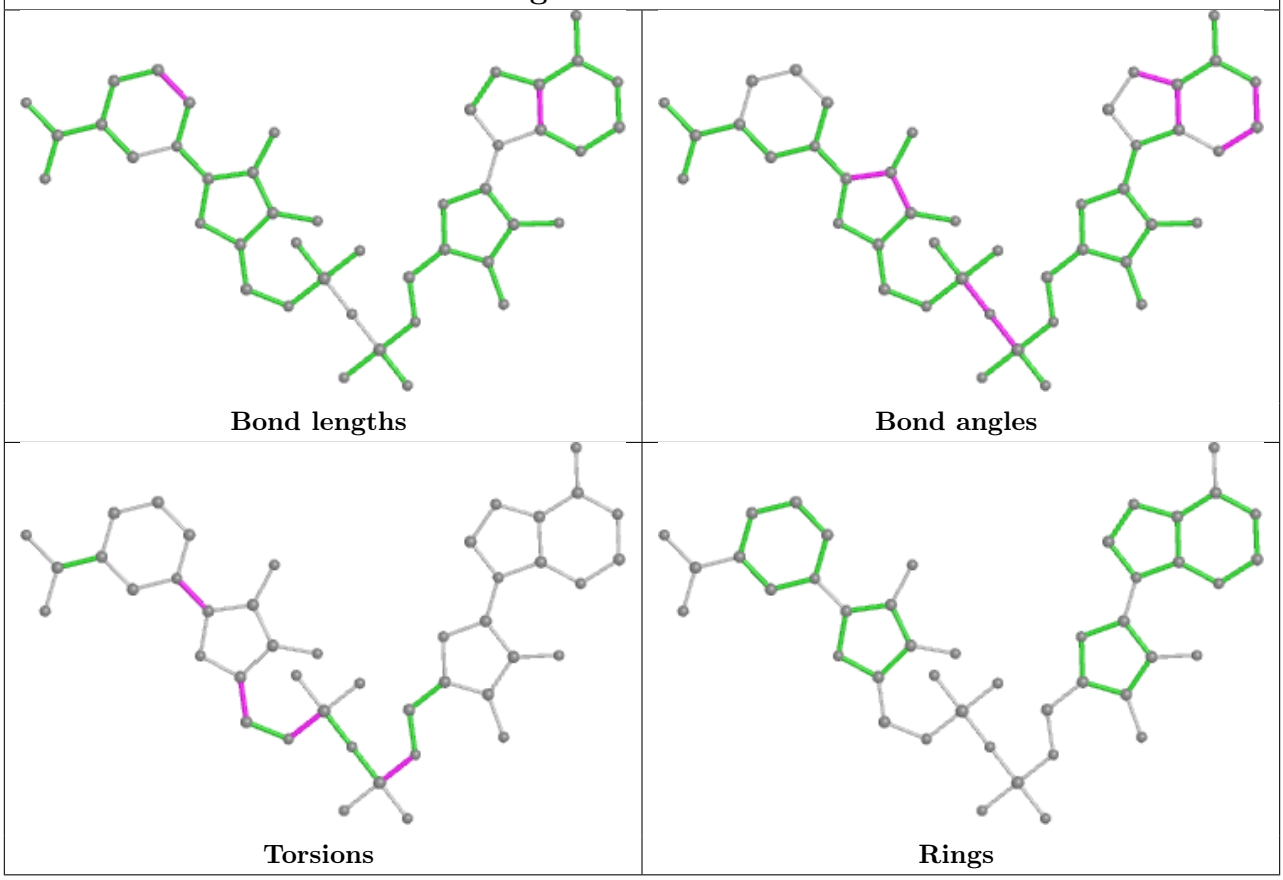


Torsions



Rings

Ligand NAI F 601



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

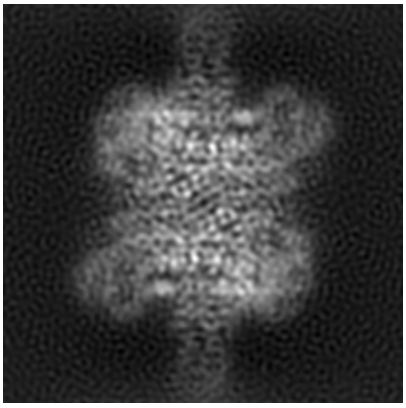
6 Map visualisation (i)

This section contains visualisations of the EMDB entry EMD-6633. These allow visual inspection of the internal detail of the map and identification of artifacts.

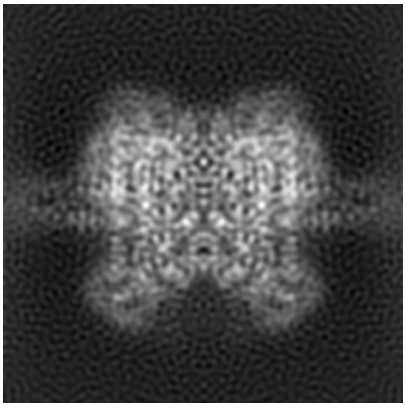
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections (i)

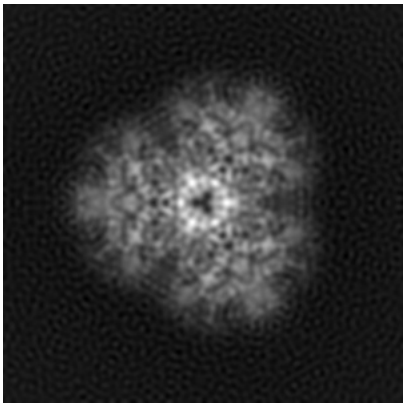
6.1.1 Primary map



X



Y

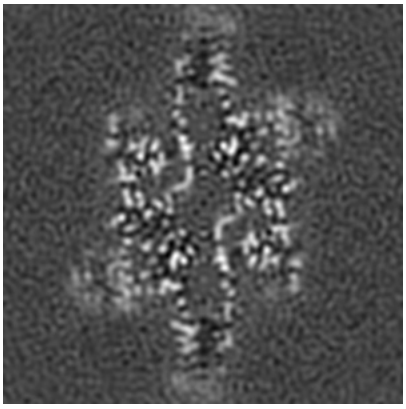


Z

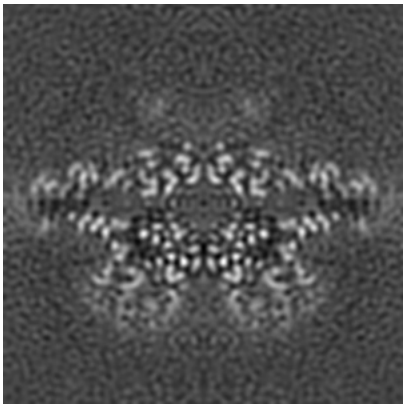
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

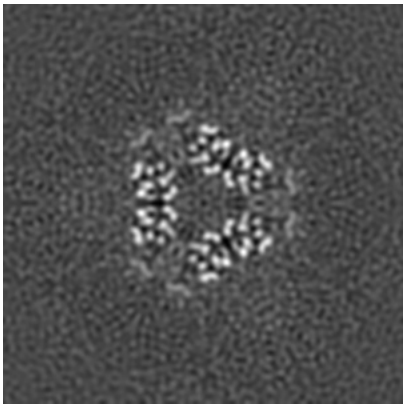
6.2.1 Primary map



X Index: 128



Y Index: 128

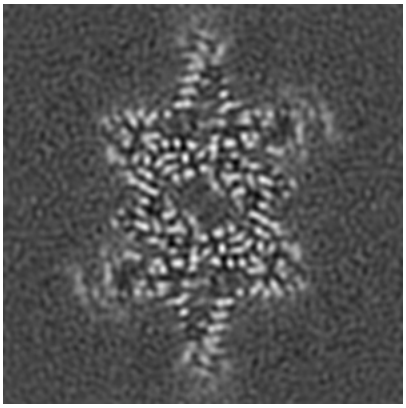


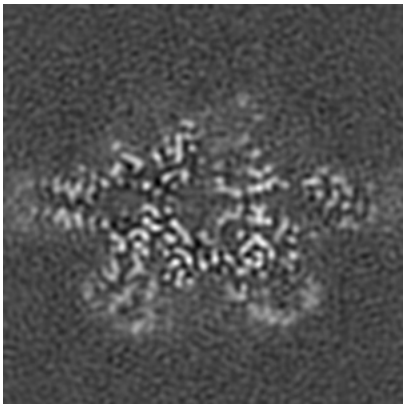
Z Index: 128

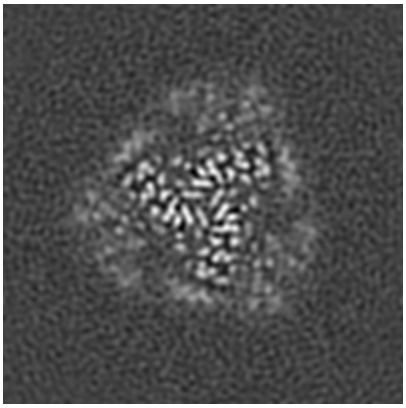
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

6.3.1 Primary map


X Index: 138

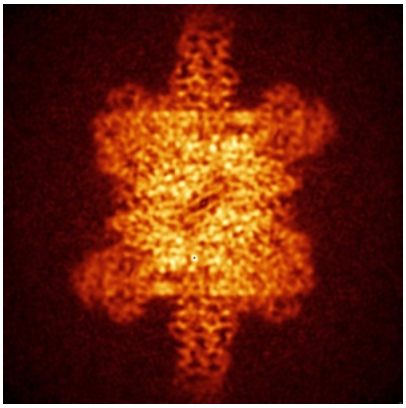

Y Index: 134

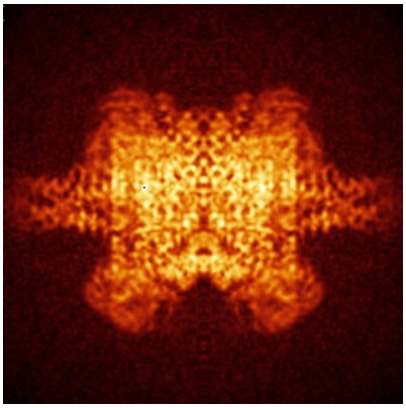

Z Index: 165

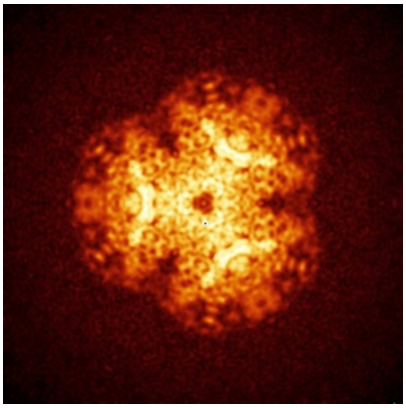
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map


X


Y


Z

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

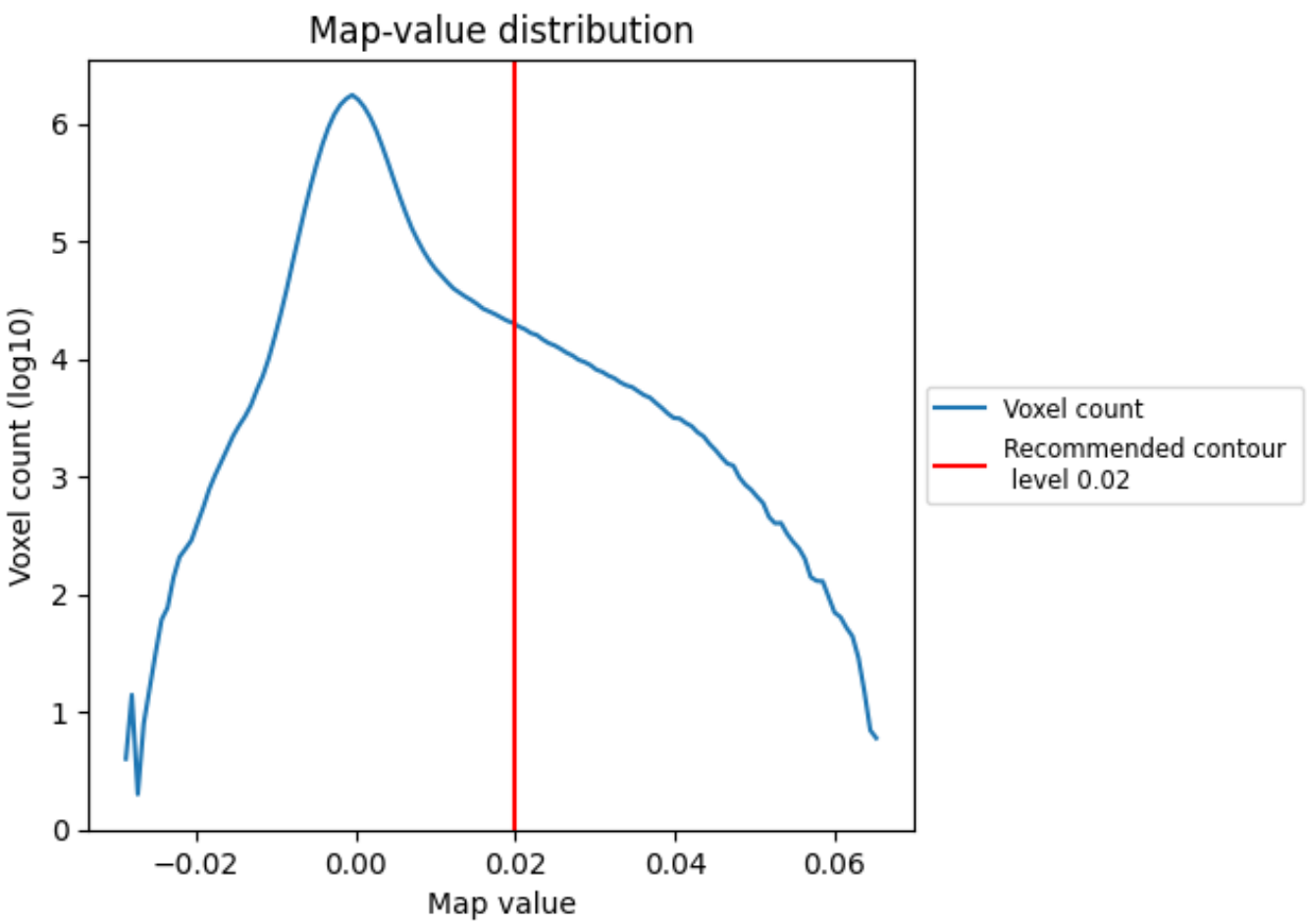
6.6 Mask visualisation (i)

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

7 Map analysis (i)

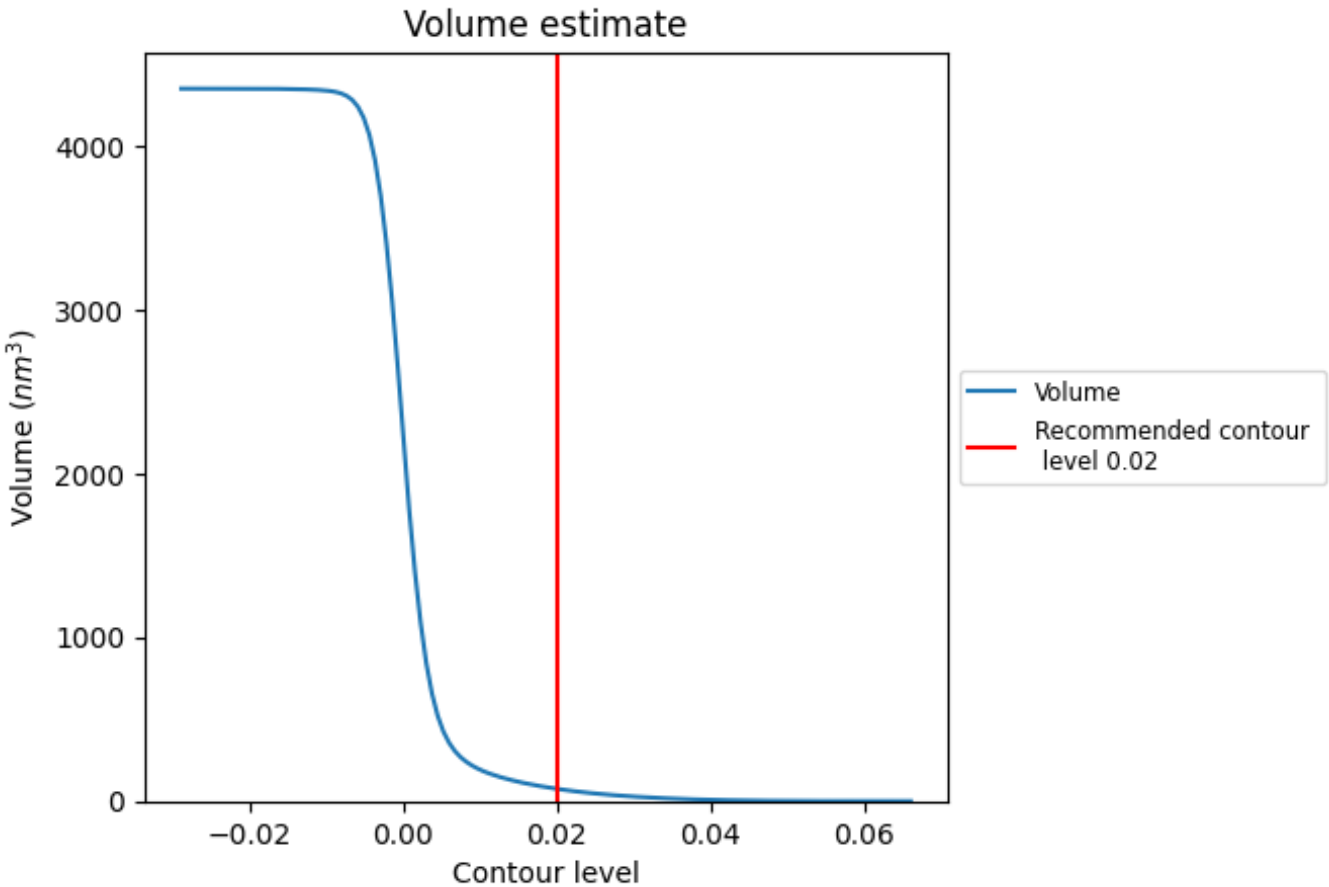
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution (i)



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

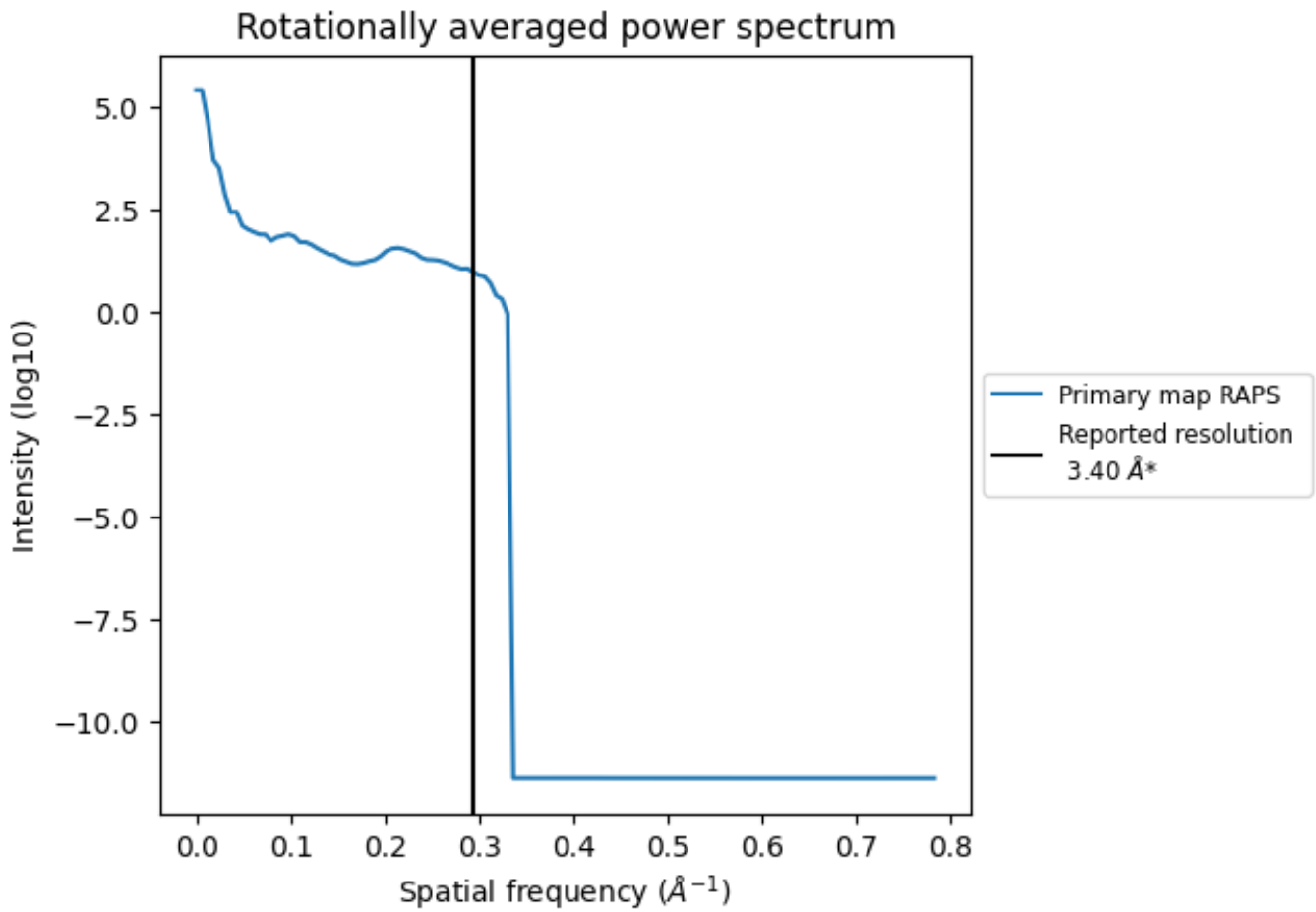
7.2 Volume estimate (i)



The volume at the recommended contour level is 75 nm^3; this corresponds to an approximate mass of 68 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 0.294 Å^{-1}

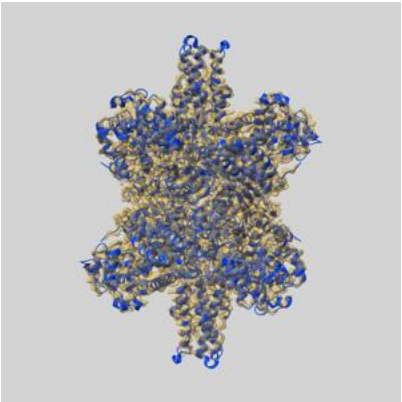
8 Fourier-Shell correlation (i)

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

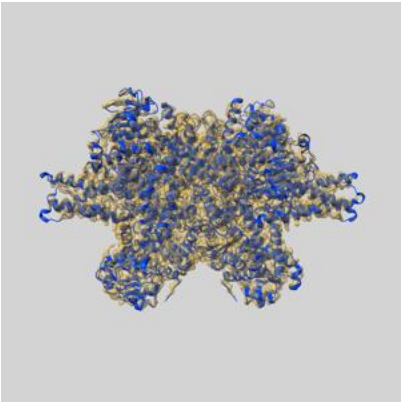
9 Map-model fit (i)

This section contains information regarding the fit between EMDB map EMD-6633 and PDB model 3JD4. Per-residue inclusion information can be found in section 3 on page 6.

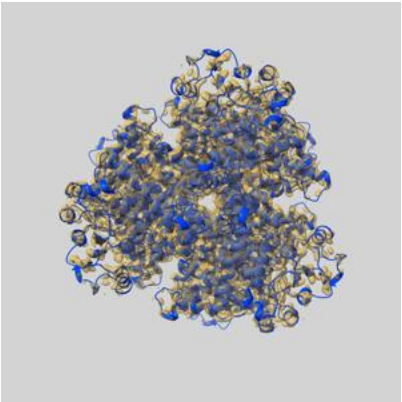
9.1 Map-model overlay (i)



X



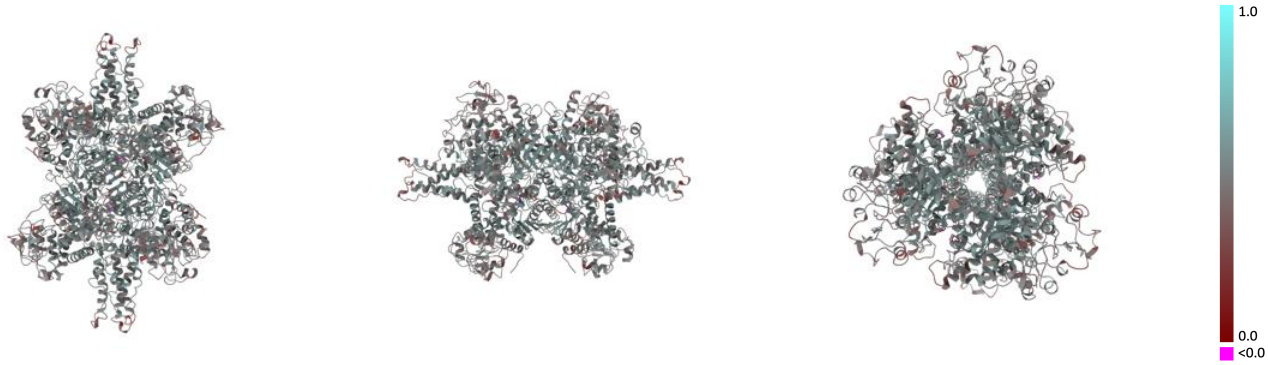
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.02 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.

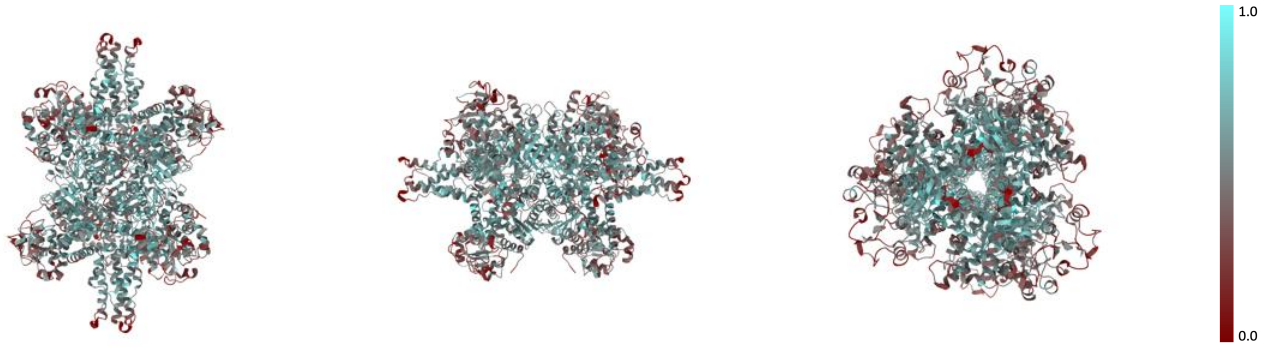
9.2 Q-score mapped to coordinate model (i)



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.

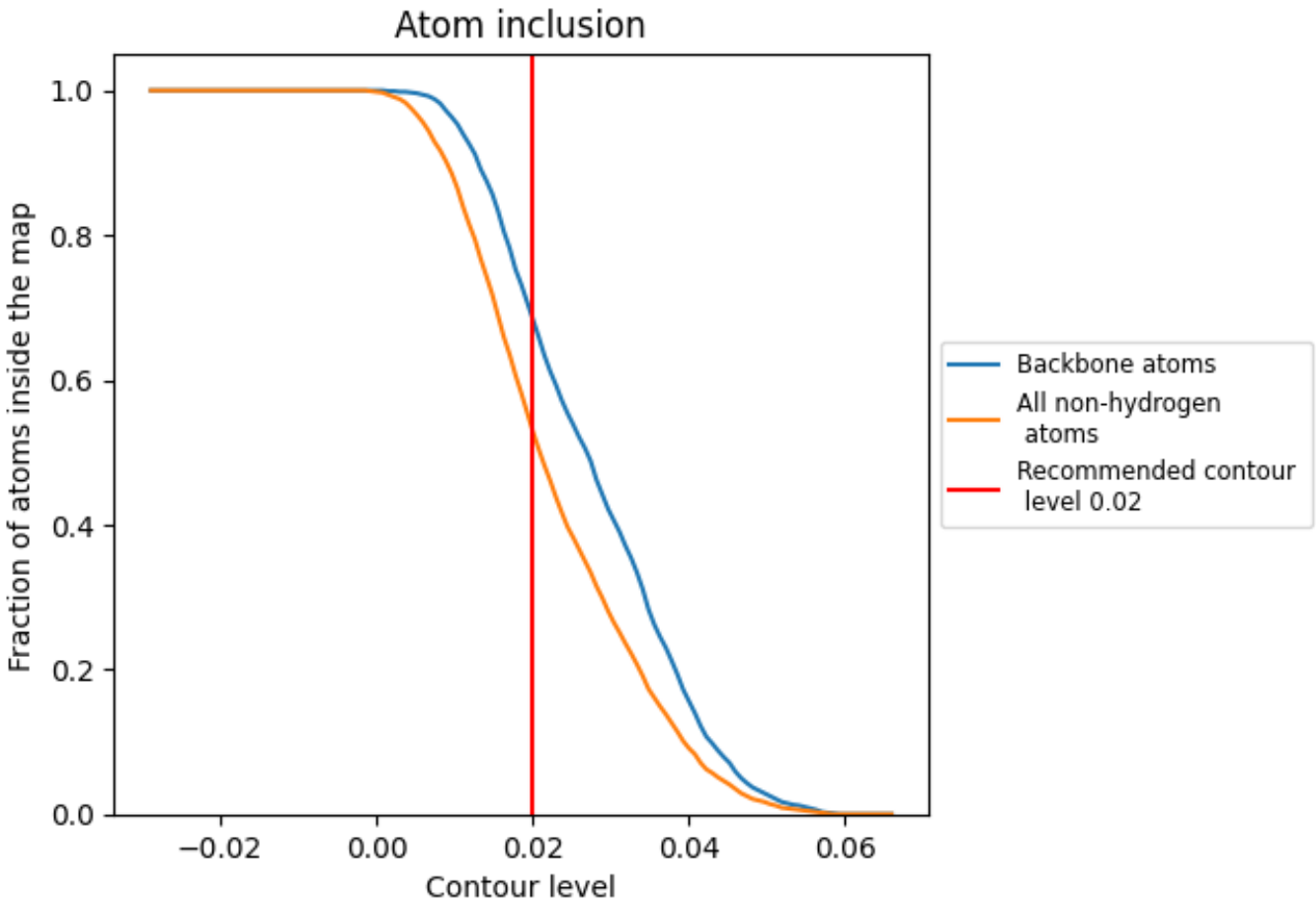
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.02).

9.4 Atom inclusion (i)



At the recommended contour level, 69% of all backbone atoms, 53% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.5310	0.4890
A	0.5320	0.4890
B	0.5310	0.4870
C	0.5300	0.4890
D	0.5330	0.4880
E	0.5310	0.4890
F	0.5300	0.4900