Full wwPDB X-ray Structure Validation Report ⓘ

Mar 18, 2024 – 01:38 PM JST

PDB ID	:	6J28
Title	:	Crystal structure of the branched-chain polyamine synthase C9 mutein from Thermus thermophilus (Tth-BpsA C9) in complex with N4-aminopropylspermidine and 5'-methylthioadenosine
Authors	:	Mizohata, E.; Toyoda, M.; Fujita, J.; Inoue, T.
Deposited on	:	2018-12-31
Resolution	:	1.90 Å(reported)

This is a Full wwPDB X-ray Structure 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/XrayValidationReportHelp
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:

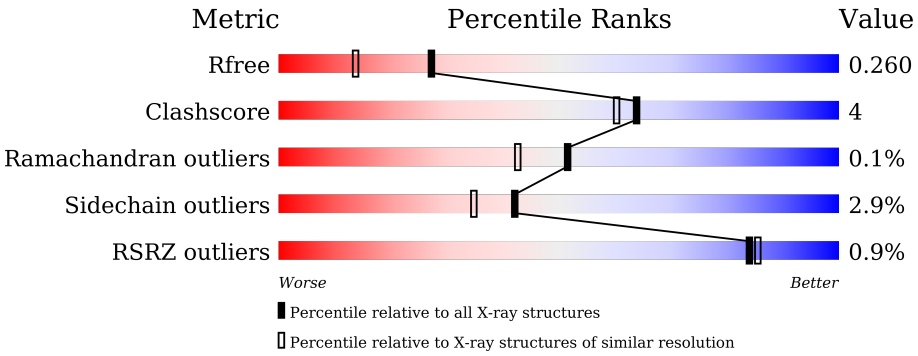
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (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:
X-RAY DIFFRACTION

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)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	6207 (1.90-1.90)
Clashscore	141614	6847 (1.90-1.90)
Ramachandran outliers	138981	6760 (1.90-1.90)
Sidechain outliers	138945	6760 (1.90-1.90)
RSRZ outliers	127900	6082 (1.90-1.90)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower 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 electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	375	83% 8% • 8%
1	B	375	82% 9% • 8%
1	C	375	% 79% 13% • 8%
1	D	375	3% 80% 12% 8%

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 11700 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 N(4)-bis(aminopropyl)spermidine synthase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	345	Total	C	N	O	S	0	3	0
			2747	1754	493	496	4			
1	B	345	Total	C	N	O	S	0	6	0
			2774	1770	506	494	4			
1	C	345	Total	C	N	O	S	0	4	0
			2756	1759	497	496	4			
1	D	345	Total	C	N	O	S	0	3	0
			2750	1754	496	496	4			

There are 120 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-20	MET	-	expression tag	UNP Q72L89
A	-19	GLY	-	expression tag	UNP Q72L89
A	-18	SER	-	expression tag	UNP Q72L89
A	-17	SER	-	expression tag	UNP Q72L89
A	-16	HIS	-	expression tag	UNP Q72L89
A	-15	HIS	-	expression tag	UNP Q72L89
A	-14	HIS	-	expression tag	UNP Q72L89
A	-13	HIS	-	expression tag	UNP Q72L89
A	-12	HIS	-	expression tag	UNP Q72L89
A	-11	HIS	-	expression tag	UNP Q72L89
A	-10	SER	-	expression tag	UNP Q72L89
A	-9	SER	-	expression tag	UNP Q72L89
A	-8	GLY	-	expression tag	UNP Q72L89
A	-7	LEU	-	expression tag	UNP Q72L89
A	-6	VAL	-	expression tag	UNP Q72L89
A	-5	PRO	-	expression tag	UNP Q72L89
A	-4	ARG	-	expression tag	UNP Q72L89
A	-3	GLY	-	expression tag	UNP Q72L89
A	-2	SER	-	expression tag	UNP Q72L89
A	-1	HIS	-	expression tag	UNP Q72L89
A	1	VAL	-	insertion	UNP Q72L89

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
A	346	TYR	-	See sequence details	UNP Q72L89
A	347	ASP	-	See sequence details	UNP Q72L89
A	348	ASP	-	See sequence details	UNP Q72L89
A	349	GLU	-	See sequence details	UNP Q72L89
A	350	GLU	-	See sequence details	UNP Q72L89
A	351	SER	-	See sequence details	UNP Q72L89
A	352	SER	-	See sequence details	UNP Q72L89
A	353	THR	-	See sequence details	UNP Q72L89
A	354	THR	-	See sequence details	UNP Q72L89
B	-20	MET	-	expression tag	UNP Q72L89
B	-19	GLY	-	expression tag	UNP Q72L89
B	-18	SER	-	expression tag	UNP Q72L89
B	-17	SER	-	expression tag	UNP Q72L89
B	-16	HIS	-	expression tag	UNP Q72L89
B	-15	HIS	-	expression tag	UNP Q72L89
B	-14	HIS	-	expression tag	UNP Q72L89
B	-13	HIS	-	expression tag	UNP Q72L89
B	-12	HIS	-	expression tag	UNP Q72L89
B	-11	HIS	-	expression tag	UNP Q72L89
B	-10	SER	-	expression tag	UNP Q72L89
B	-9	SER	-	expression tag	UNP Q72L89
B	-8	GLY	-	expression tag	UNP Q72L89
B	-7	LEU	-	expression tag	UNP Q72L89
B	-6	VAL	-	expression tag	UNP Q72L89
B	-5	PRO	-	expression tag	UNP Q72L89
B	-4	ARG	-	expression tag	UNP Q72L89
B	-3	GLY	-	expression tag	UNP Q72L89
B	-2	SER	-	expression tag	UNP Q72L89
B	-1	HIS	-	expression tag	UNP Q72L89
B	1	VAL	-	insertion	UNP Q72L89
B	346	TYR	-	See sequence details	UNP Q72L89
B	347	ASP	-	See sequence details	UNP Q72L89
B	348	ASP	-	See sequence details	UNP Q72L89
B	349	GLU	-	See sequence details	UNP Q72L89
B	350	GLU	-	See sequence details	UNP Q72L89
B	351	SER	-	See sequence details	UNP Q72L89
B	352	SER	-	See sequence details	UNP Q72L89
B	353	THR	-	See sequence details	UNP Q72L89
B	354	THR	-	See sequence details	UNP Q72L89
C	-20	MET	-	expression tag	UNP Q72L89
C	-19	GLY	-	expression tag	UNP Q72L89
C	-18	SER	-	expression tag	UNP Q72L89

Continued on next page...

Continued from previous page...

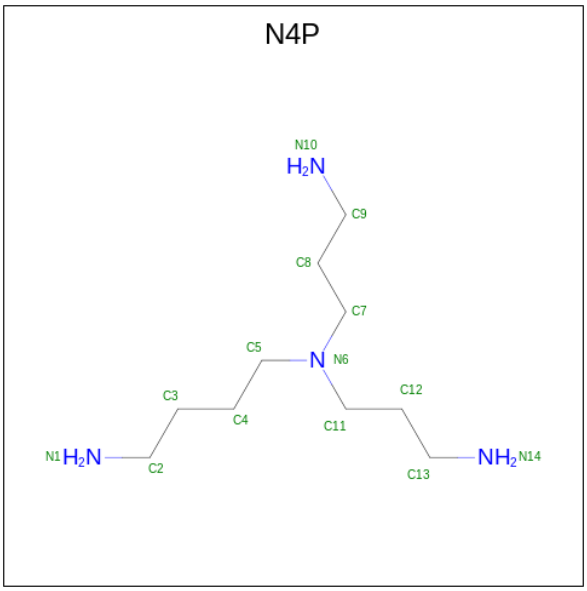
Chain	Residue	Modelled	Actual	Comment	Reference
C	-17	SER	-	expression tag	UNP Q72L89
C	-16	HIS	-	expression tag	UNP Q72L89
C	-15	HIS	-	expression tag	UNP Q72L89
C	-14	HIS	-	expression tag	UNP Q72L89
C	-13	HIS	-	expression tag	UNP Q72L89
C	-12	HIS	-	expression tag	UNP Q72L89
C	-11	HIS	-	expression tag	UNP Q72L89
C	-10	SER	-	expression tag	UNP Q72L89
C	-9	SER	-	expression tag	UNP Q72L89
C	-8	GLY	-	expression tag	UNP Q72L89
C	-7	LEU	-	expression tag	UNP Q72L89
C	-6	VAL	-	expression tag	UNP Q72L89
C	-5	PRO	-	expression tag	UNP Q72L89
C	-4	ARG	-	expression tag	UNP Q72L89
C	-3	GLY	-	expression tag	UNP Q72L89
C	-2	SER	-	expression tag	UNP Q72L89
C	-1	HIS	-	expression tag	UNP Q72L89
C	1	VAL	-	insertion	UNP Q72L89
C	346	TYR	-	See sequence details	UNP Q72L89
C	347	ASP	-	See sequence details	UNP Q72L89
C	348	ASP	-	See sequence details	UNP Q72L89
C	349	GLU	-	See sequence details	UNP Q72L89
C	350	GLU	-	See sequence details	UNP Q72L89
C	351	SER	-	See sequence details	UNP Q72L89
C	352	SER	-	See sequence details	UNP Q72L89
C	353	THR	-	See sequence details	UNP Q72L89
C	354	THR	-	See sequence details	UNP Q72L89
D	-20	MET	-	expression tag	UNP Q72L89
D	-19	GLY	-	expression tag	UNP Q72L89
D	-18	SER	-	expression tag	UNP Q72L89
D	-17	SER	-	expression tag	UNP Q72L89
D	-16	HIS	-	expression tag	UNP Q72L89
D	-15	HIS	-	expression tag	UNP Q72L89
D	-14	HIS	-	expression tag	UNP Q72L89
D	-13	HIS	-	expression tag	UNP Q72L89
D	-12	HIS	-	expression tag	UNP Q72L89
D	-11	HIS	-	expression tag	UNP Q72L89
D	-10	SER	-	expression tag	UNP Q72L89
D	-9	SER	-	expression tag	UNP Q72L89
D	-8	GLY	-	expression tag	UNP Q72L89
D	-7	LEU	-	expression tag	UNP Q72L89
D	-6	VAL	-	expression tag	UNP Q72L89

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
D	-5	PRO	-	expression tag	UNP Q72L89
D	-4	ARG	-	expression tag	UNP Q72L89
D	-3	GLY	-	expression tag	UNP Q72L89
D	-2	SER	-	expression tag	UNP Q72L89
D	-1	HIS	-	expression tag	UNP Q72L89
D	1	VAL	-	insertion	UNP Q72L89
D	346	TYR	-	See sequence details	UNP Q72L89
D	347	ASP	-	See sequence details	UNP Q72L89
D	348	ASP	-	See sequence details	UNP Q72L89
D	349	GLU	-	See sequence details	UNP Q72L89
D	350	GLU	-	See sequence details	UNP Q72L89
D	351	SER	-	See sequence details	UNP Q72L89
D	352	SER	-	See sequence details	UNP Q72L89
D	353	THR	-	See sequence details	UNP Q72L89
D	354	THR	-	See sequence details	UNP Q72L89

- Molecule 2 is N,N-bis(3-aminopropyl)butane-1,4-diamine (three-letter code: N4P) (formula: $C_{10}H_{26}N_4$).



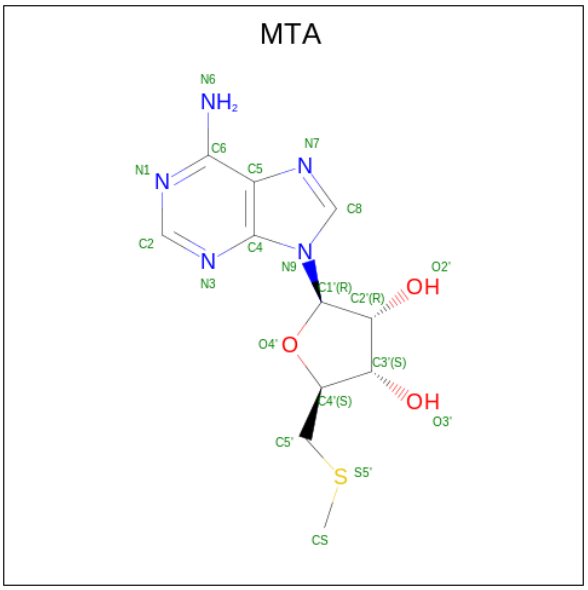
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	N	0	0
			14	10	4		
2	B	1	Total	C	N	0	0
			14	10	4		
2	C	1	Total	C	N	0	0
			14	10	4		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	D	1	Total C N 14 10 4	0	0

- Molecule 3 is 5'-DEOXY-5'-METHYLTHIOADENOSINE (three-letter code: MTA) (formula: $C_{11}H_{15}N_5O_3S$).

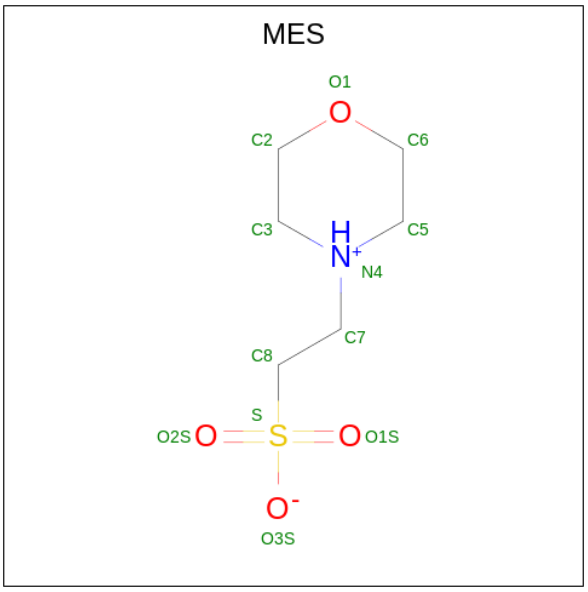


Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C N O S 20 11 5 3 1	0	0
3	B	1	Total C N O S 20 11 5 3 1	0	0
3	C	1	Total C N O S 20 11 5 3 1	0	0
3	D	1	Total C N O S 20 11 5 3 1	0	0

- Molecule 4 is FE (III) ION (three-letter code: FE) (formula: Fe).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total Fe 1 1	0	0
4	B	1	Total Fe 1 1	0	0

- Molecule 5 is 2-(N-MORPHOLINO)-ETHANESULFONIC ACID (three-letter code: MES) (formula: $C_6H_{13}NO_4S$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	B	1	Total C N O S 12 6 1 4 1	0	0
5	C	1	Total C N O S 12 6 1 4 1	0	0
5	D	1	Total C N O S 12 6 1 4 1	0	0

- Molecule 6 is water.

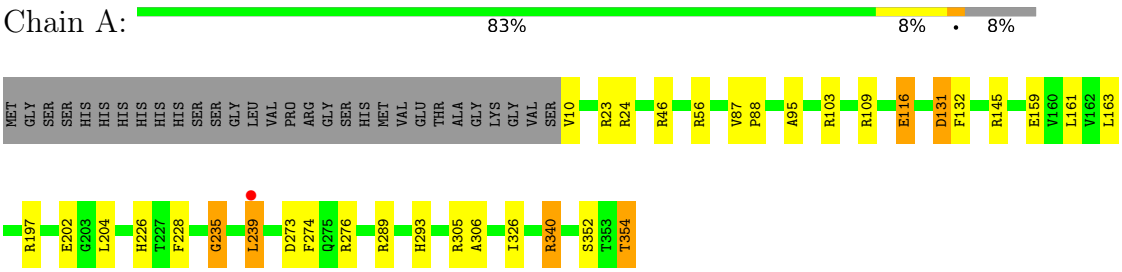
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	115	Total O 115 115	0	0
6	B	121	Total O 121 121	0	0
6	C	139	Total O 139 139	0	0
6	D	124	Total O 124 124	0	0

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 electron 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 dot above a residue indicates a poor fit to the electron density (RSRZ > 2). 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.

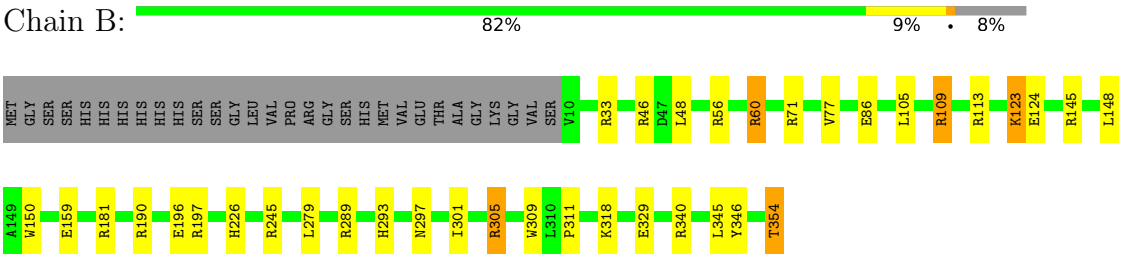
• Molecule 1: N(4)-bis(aminopropyl)spermidine synthase

Chain A:



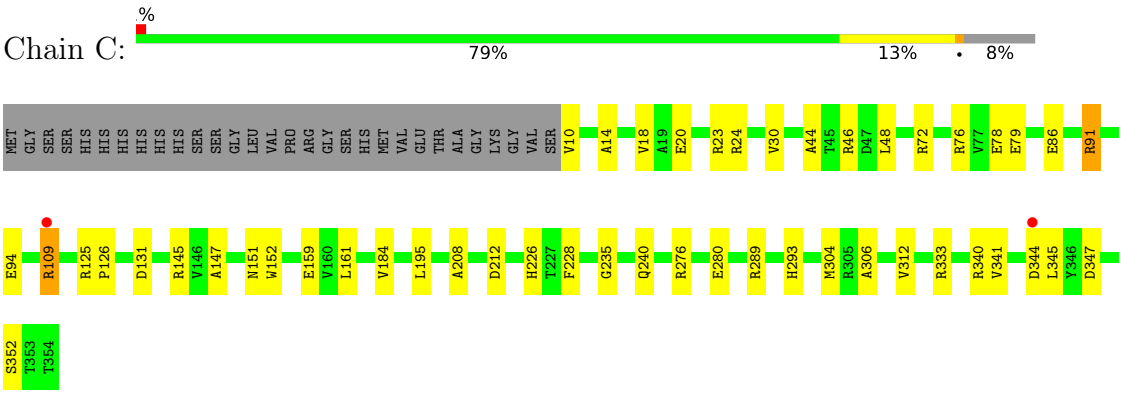
• Molecule 1: N(4)-bis(aminopropyl)spermidine synthase

Chain B:



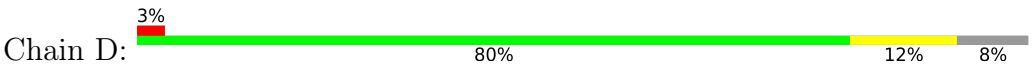
• Molecule 1: N(4)-bis(aminopropyl)spermidine synthase

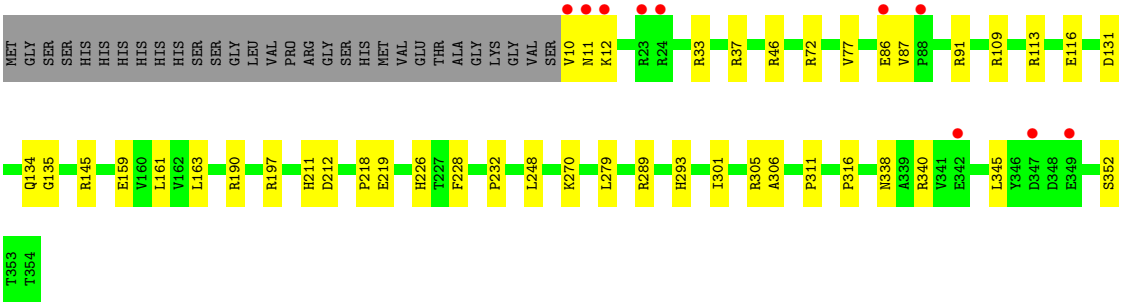
Chain C:



• Molecule 1: N(4)-bis(aminopropyl)spermidine synthase

Chain D:




MET GLY SER SER HIS HIS HIS HIS HIS HIS SER SER GLY LEU VAL PRO ARG GLY SER HIS MET VAL GLU THR ALA GLY LYS GLY VAL SER V10 N11 K12 R23 R24 R33 R37 R46 R72 V77 E86 V87 P88 R91 R109 R113 E116 D131
Q134 G135 R145 E159 V160 L161 V162 L163 R190 R197 H211 D212 P218 E219 H226 T227 F228 P232 L248 K270 L279 R289 H293 I301 R305 A306 P311 P316 N338 A339 R340 V341 E342 L345 Y346 D347 D348 E349 S352
T353 T354

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	69.78Å 158.52Å 72.02Å 90.00° 118.94° 90.00°	Depositor
Resolution (Å)	49.33 – 1.90 49.33 – 1.90	Depositor EDS
% Data completeness (in resolution range)	99.6 (49.33-1.90) 99.5 (49.33-1.90)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.91 (at 1.91Å)	Xtriage
Refinement program	REFMAC 5.8.0151	Depositor
R, R_{free}	0.200 , 0.254 0.207 , 0.260	Depositor DCC
R_{free} test set	5285 reflections (4.97%)	wwPDB-VP
Wilson B-factor (Å^2)	20.1	Xtriage
Anisotropy	0.182	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 17.4	EDS
L-test for twinning[2]	$< \|L\| > = 0.43$, $< L^2 > = 0.26$	Xtriage
Estimated twinning fraction	0.049 for -h-l,k,h 0.049 for l,k,-h-l 0.346 for h,-k,-h-l 0.053 for -h-l,-k,l 0.053 for l,-k,h	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	11700	wwPDB-VP
Average B, all atoms (Å^2)	24.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.94% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MTA, N4P, MES, FE

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	0.86	0/2823	0.98	13/3844 (0.3%)
1	B	0.84	0/2859	0.98	9/3888 (0.2%)
1	C	0.85	1/2835 (0.0%)	0.99	10/3859 (0.3%)
1	D	0.82	1/2826 (0.0%)	0.96	13/3848 (0.3%)
All	All	0.84	2/11343 (0.0%)	0.98	45/15439 (0.3%)

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

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	116	GLU	CD-OE1	6.29	1.32	1.25
1	C	152	TRP	CE3-CZ3	5.20	1.47	1.38

All (45) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	109	ARG	NE-CZ-NH1	-9.57	115.51	120.30
1	A	289	ARG	NE-CZ-NH2	-7.97	116.31	120.30
1	C	289	ARG	NE-CZ-NH2	-7.92	116.34	120.30
1	C	46	ARG	NE-CZ-NH1	-7.83	116.39	120.30
1	A	103	ARG	NE-CZ-NH1	-7.48	116.56	120.30
1	A	109	ARG	CG-CD-NE	-7.43	96.19	111.80
1	D	33	ARG	NE-CZ-NH1	7.32	123.96	120.30

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	33	ARG	NE-CZ-NH2	-7.19	116.70	120.30
1	B	181	ARG	NE-CZ-NH2	-6.88	116.86	120.30
1	A	289	ARG	NE-CZ-NH1	6.87	123.73	120.30
1	B	33	ARG	NE-CZ-NH1	6.75	123.67	120.30
1	C	72	ARG	NE-CZ-NH1	6.54	123.57	120.30
1	C	23	ARG	NE-CZ-NH2	6.53	123.56	120.30
1	D	289	ARG	NE-CZ-NH1	6.34	123.47	120.30
1	A	56	ARG	NE-CZ-NH2	-6.32	117.14	120.30
1	D	33	ARG	NE-CZ-NH2	-6.32	117.14	120.30
1	C	289	ARG	NE-CZ-NH1	6.31	123.46	120.30
1	B	71	ARG	NE-CZ-NH1	6.29	123.44	120.30
1	D	109	ARG	NE-CZ-NH2	6.18	123.39	120.30
1	C	46	ARG	NE-CZ-NH2	5.93	123.26	120.30
1	C	212	ASP	CB-CG-OD1	5.88	123.59	118.30
1	D	72	ARG	NE-CZ-NH2	-5.86	117.37	120.30
1	D	212	ASP	CB-CG-OD1	5.79	123.51	118.30
1	D	289	ARG	NE-CZ-NH2	-5.78	117.41	120.30
1	D	190	ARG	NE-CZ-NH1	5.78	123.19	120.30
1	A	273	ASP	CB-CG-OD1	5.76	123.48	118.30
1	D	197	ARG	NE-CZ-NH1	5.66	123.13	120.30
1	A	103	ARG	NE-CZ-NH2	5.64	123.12	120.30
1	D	345	LEU	CA-CB-CG	5.62	128.23	115.30
1	C	91	ARG	NE-CZ-NH1	-5.57	117.52	120.30
1	C	76	ARG	NE-CZ-NH1	5.54	123.07	120.30
1	A	340	ARG	NE-CZ-NH2	-5.51	117.55	120.30
1	D	113	ARG	NE-CZ-NH2	5.50	123.05	120.30
1	B	289	ARG	NE-CZ-NH1	5.49	123.04	120.30
1	D	190	ARG	NE-CZ-NH2	-5.36	117.62	120.30
1	B	181	ARG	NE-CZ-NH1	5.36	122.98	120.30
1	A	56	ARG	NE-CZ-NH1	5.34	122.97	120.30
1	B	56	ARG	NE-CZ-NH1	5.31	122.96	120.30
1	A	24	ARG	NE-CZ-NH1	5.19	122.89	120.30
1	A	197	ARG	NE-CZ-NH1	5.15	122.88	120.30
1	A	23	ARG	NE-CZ-NH2	5.14	122.87	120.30
1	B	190	ARG	NE-CZ-NH1	5.14	122.87	120.30
1	B	113	ARG	NE-CZ-NH1	5.07	122.83	120.30
1	A	276	ARG	NE-CZ-NH1	5.06	122.83	120.30
1	C	304	MET	CA-CB-CG	5.03	121.86	113.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	235	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	2747	0	2733	27	0
1	B	2774	0	2781	21	0
1	C	2756	0	2748	39	0
1	D	2750	0	2735	16	0
2	A	14	0	0	0	0
2	B	14	0	0	0	0
2	C	14	0	0	0	0
2	D	14	0	0	1	0
3	A	20	0	15	1	0
3	B	20	0	15	0	0
3	C	20	0	15	0	0
3	D	20	0	15	1	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
5	B	12	0	13	2	0
5	C	12	0	13	0	0
5	D	12	0	13	1	0
6	A	115	0	0	3	0
6	B	121	0	0	1	0
6	C	139	0	0	5	0
6	D	124	0	0	0	0
All	All	11700	0	11096	94	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 4.

All (94) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:125[B]:ARG:HH11	1:C:125[B]:ARG:CG	1.40	1.24
1:B:305[A]:ARG:HG3	1:B:305[A]:ARG:HH11	1.16	1.08

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:125[B]:ARG:HG3	1:C:125[B]:ARG:NH1	1.61	0.98
1:B:123:LYS:HG3	1:C:44:ALA:O	1.68	0.94
1:C:125[B]:ARG:NH1	1:C:125[B]:ARG:CB	2.31	0.92
1:C:125[B]:ARG:HH11	1:C:125[B]:ARG:HG3	0.75	0.90
1:C:125[B]:ARG:NH1	1:C:125[B]:ARG:HB2	1.89	0.88
1:C:125[B]:ARG:CG	1:C:125[B]:ARG:NH1	2.10	0.88
1:C:125[B]:ARG:HB2	1:C:125[B]:ARG:CZ	2.03	0.88
1:C:240:GLN:HE21	1:C:341:VAL:HG22	1.38	0.85
1:C:79[B]:GLU:HA	1:C:79[B]:GLU:OE1	1.77	0.81
1:B:123:LYS:CG	1:C:44:ALA:O	2.31	0.78
1:C:344:ASP:OD1	1:C:347:ASP:HB3	1.84	0.78
1:A:95:ALA:H	1:C:151:ASN:HD21	1.35	0.75
1:B:305[A]:ARG:HH11	1:B:305[A]:ARG:CG	1.98	0.72
1:A:235:GLY:HA3	6:A:586:HOH:O	1.92	0.69
1:A:116:GLU:H	1:A:116:GLU:CD	1.94	0.69
1:B:346:TYR:HB3	1:B:354:THR:HG21	1.75	0.68
1:B:305[A]:ARG:HG3	1:B:305[A]:ARG:NH1	1.97	0.68
1:A:145:ARG:HE	1:A:293:HIS:CE1	2.13	0.67
1:D:145:ARG:HE	1:D:293:HIS:CE1	2.11	0.67
1:A:116:GLU:OE2	1:B:318:LYS:HE2	1.96	0.66
1:C:125[B]:ARG:NH1	1:C:126:PRO:O	2.32	0.63
1:C:235:GLY:HA3	6:C:594:HOH:O	1.99	0.62
1:C:145:ARG:HE	1:C:293:HIS:CE1	2.17	0.62
1:B:279:LEU:HD12	1:D:279:LEU:HD12	1.84	0.59
1:C:125[B]:ARG:HH11	1:C:125[B]:ARG:CB	2.03	0.59
1:A:274:PHE:HE2	1:A:326:ILE:HD13	1.67	0.59
1:A:235:GLY:O	1:A:239[A]:LEU:HD22	2.03	0.58
1:D:159:GLU:H	1:D:226:HIS:HD2	1.52	0.58
1:A:10:VAL:HG13	1:A:88:PRO:HD3	1.85	0.57
1:A:116:GLU:CD	1:A:116:GLU:N	2.58	0.57
1:D:159:GLU:H	1:D:226:HIS:CD2	2.23	0.56
1:B:105:LEU:HD11	1:B:148:LEU:HD13	1.88	0.56
1:C:159:GLU:H	1:C:226:HIS:CD2	2.24	0.54
1:B:145[A]:ARG:HE	1:B:293:HIS:CE1	2.26	0.53
1:C:91:ARG:HG2	6:C:592:HOH:O	2.08	0.53
1:A:159:GLU:H	1:A:226:HIS:HD2	1.55	0.53
1:D:10:VAL:HG11	1:D:87:VAL:HG12	1.90	0.53
1:C:159:GLU:H	1:C:226:HIS:HD2	1.57	0.53
1:A:145:ARG:HE	1:A:293:HIS:HE1	1.58	0.49
1:D:306:ALA:HB2	1:D:352:SER:HB2	1.93	0.49
1:D:232:PRO:O	2:D:401:N4P:N10	2.46	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:131:ASP:OD1	1:A:131:ASP:N	2.45	0.49
1:A:159:GLU:H	1:A:226:HIS:CD2	2.30	0.49
1:B:329:GLU:OE1	1:D:37[B]:ARG:NH2	2.42	0.49
1:D:211:HIS:CE1	1:D:218:PRO:HD3	2.48	0.48
1:C:14:ALA:O	1:C:18:VAL:HG23	2.13	0.48
1:A:306:ALA:HB2	1:A:352:SER:HB2	1.94	0.48
1:C:184:VAL:HG11	1:C:195:LEU:CD1	2.43	0.47
1:C:184:VAL:O	1:C:208:ALA:HA	2.14	0.47
1:D:163:LEU:HD12	1:D:163:LEU:N	2.29	0.47
1:A:116:GLU:OE2	1:A:116:GLU:N	2.47	0.47
1:A:95:ALA:HA	1:C:109:ARG:HD3	1.97	0.47
1:A:239[A]:LEU:HD12	1:A:239[A]:LEU:HA	1.69	0.47
1:B:60:ARG:HD2	1:B:309:TRP:CZ3	2.49	0.46
1:C:276:ARG:O	1:C:280:GLU:HG2	2.16	0.46
1:A:235:GLY:HA3	6:A:528:HOH:O	2.16	0.46
1:A:202:GLU:HB2	1:A:204:LEU:HG	1.99	0.45
1:A:95:ALA:HB1	1:C:147:ALA:HB1	1.99	0.45
1:B:48:LEU:C	1:B:48:LEU:HD23	2.37	0.45
1:A:10:VAL:HG11	1:A:87:VAL:HG12	1.98	0.45
1:B:77:VAL:HG11	1:B:311:PRO:HB2	1.99	0.45
1:A:239[A]:LEU:HD23	6:A:595:HOH:O	2.17	0.45
1:B:123:LYS:HG2	1:C:44:ALA:O	2.15	0.44
5:D:403:MES:H82	5:D:403:MES:H52	1.89	0.44
1:B:159:GLU:H	1:B:226:HIS:HD2	1.65	0.44
1:D:248:LEU:HD21	1:D:338:ASN:HB2	1.99	0.44
1:A:163:LEU:N	1:A:163:LEU:HD12	2.32	0.44
1:A:161:LEU:O	1:A:228:PHE:HA	2.18	0.44
1:B:297:ASN:OD1	5:B:404:MES:O2S	2.35	0.44
1:A:132:PHE:O	3:A:402:MTA:H8	2.18	0.44
1:D:161:LEU:O	1:D:228:PHE:HA	2.17	0.43
1:B:305[A]:ARG:CG	1:B:305[A]:ARG:NH1	2.66	0.43
1:C:30:VAL:HA	6:C:503:HOH:O	2.19	0.43
1:C:109:ARG:H	1:C:109:ARG:CD	2.32	0.43
1:C:306:ALA:HB2	1:C:352:SER:HB2	2.00	0.43
1:C:333:ARG:CZ	6:C:542:HOH:O	2.66	0.43
1:D:134:GLN:HG2	3:D:402:MTA:H3'	2.00	0.43
1:B:109:ARG:HB2	6:B:508:HOH:O	2.18	0.43
1:C:48:LEU:HD23	1:C:48:LEU:C	2.39	0.42
1:C:125[B]:ARG:CB	1:C:125[B]:ARG:CZ	2.71	0.42
1:B:124:GLU:OE1	1:B:197:ARG:NH2	2.49	0.42
1:C:161:LEU:O	1:C:228:PHE:HA	2.20	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:184:VAL:HG21	1:C:195:LEU:HD13	2.01	0.42
1:C:10:VAL:CG1	1:C:86:GLU:O	2.68	0.41
1:A:305:ARG:HE	1:A:354:THR:HG23	1.86	0.41
1:B:150:TRP:HE1	1:D:91[B]:ARG:NH1	2.19	0.41
1:C:20:GLU:HG2	1:C:24:ARG:CZ	2.51	0.41
1:C:340:ARG:NH2	6:C:508:HOH:O	2.47	0.40
1:D:301:ILE:HD13	1:D:316:PRO:CD	2.52	0.40
1:D:77:VAL:HG11	1:D:311:PRO:HB2	2.03	0.40
5:B:404:MES:C2	1:C:94:GLU:HB2	2.51	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 X-ray entries followed by that with respect to entries of similar resolution.

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	346/375 (92%)	334 (96%)	12 (4%)	0	100	100
1	B	349/375 (93%)	338 (97%)	11 (3%)	0	100	100
1	C	347/375 (92%)	334 (96%)	13 (4%)	0	100	100
1	D	346/375 (92%)	328 (95%)	17 (5%)	1 (0%)	41	31
All	All	1388/1500 (92%)	1334 (96%)	53 (4%)	1 (0%)	51	42

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	135	GLY

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 X-ray entries followed by that with respect to entries of similar

resolution.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	277/298 (93%)	270 (98%)	7 (2%)	47	41
1	B	280/298 (94%)	266 (95%)	14 (5%)	24	15
1	C	278/298 (93%)	273 (98%)	5 (2%)	59	55
1	D	277/298 (93%)	268 (97%)	9 (3%)	39	30
All	All	1112/1192 (93%)	1077 (97%)	35 (3%)	42	32

All (35) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	46	ARG
1	A	116	GLU
1	A	131	ASP
1	A	239[A]	LEU
1	A	239[B]	LEU
1	A	340	ARG
1	A	354	THR
1	B	46	ARG
1	B	60	ARG
1	B	86	GLU
1	B	109	ARG
1	B	123	LYS
1	B	196	GLU
1	B	245	ARG
1	B	301	ILE
1	B	305[A]	ARG
1	B	305[B]	ARG
1	B	340[A]	ARG
1	B	340[B]	ARG
1	B	345	LEU
1	B	354	THR
1	C	78	GLU
1	C	109	ARG
1	C	131	ASP
1	C	312	VAL
1	C	345	LEU
1	D	11	ASN
1	D	12	LYS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	D	46	ARG
1	D	86	GLU
1	D	131	ASP
1	D	219	GLU
1	D	270	LYS
1	D	305	ARG
1	D	340	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (18) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	226	HIS
1	A	293	HIS
1	A	297	ASN
1	B	211	HIS
1	B	226	HIS
1	B	293	HIS
1	B	297	ASN
1	C	151	ASN
1	C	226	HIS
1	C	240	GLN
1	C	293	HIS
1	C	297	ASN
1	D	11	ASN
1	D	211	HIS
1	D	226	HIS
1	D	240	GLN
1	D	293	HIS
1	D	297	ASN

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)

Of 13 ligands modelled in this entry, 2 are monoatomic - leaving 11 for Mogul analysis.

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	N4P	B	401	-	13,13,13	0.54	0	13,13,13	1.73	4 (30%)
2	N4P	C	401	-	13,13,13	0.56	0	13,13,13	0.98	1 (7%)
3	MTA	D	402	-	19,22,22	1.11	2 (10%)	19,32,32	1.91	8 (42%)
2	N4P	D	401	-	13,13,13	0.52	0	13,13,13	0.80	0
5	MES	B	404	-	12,12,12	2.06	2 (16%)	14,16,16	6.84	6 (42%)
3	MTA	A	402	-	19,22,22	0.99	1 (5%)	19,32,32	1.97	6 (31%)
3	MTA	B	402	-	19,22,22	1.29	2 (10%)	19,32,32	1.43	4 (21%)
3	MTA	C	402	-	19,22,22	0.94	0	19,32,32	2.17	8 (42%)
5	MES	D	403	-	12,12,12	2.59	1 (8%)	14,16,16	1.79	2 (14%)
5	MES	C	403	-	12,12,12	1.92	1 (8%)	14,16,16	1.81	5 (35%)
2	N4P	A	401	-	13,13,13	0.77	1 (7%)	13,13,13	0.91	1 (7%)

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	N4P	B	401	-	-	4/13/13/13	-
2	N4P	C	401	-	-	2/13/13/13	-
3	MTA	D	402	-	-	0/3/23/23	0/3/3/3
2	N4P	D	401	-	-	3/13/13/13	-
5	MES	B	404	-	-	5/6/14/14	0/1/1/1

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	MTA	A	402	-	-	0/3/23/23	0/3/3/3
3	MTA	B	402	-	-	0/3/23/23	0/3/3/3
3	MTA	C	402	-	-	0/3/23/23	0/3/3/3
5	MES	D	403	-	-	1/6/14/14	0/1/1/1
5	MES	C	403	-	-	5/6/14/14	0/1/1/1
2	N4P	A	401	-	-	3/13/13/13	-

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	D	403	MES	C8-S	-8.57	1.65	1.77
5	B	404	MES	C8-S	-6.48	1.68	1.77
5	C	403	MES	C8-S	-5.69	1.69	1.77
3	B	402	MTA	C5'-S5'	-3.22	1.76	1.80
3	D	402	MTA	C5'-S5'	-2.99	1.76	1.80
3	B	402	MTA	C5-C4	2.94	1.48	1.40
2	A	401	N4P	C11-N6	2.49	1.53	1.47
3	A	402	MTA	C5-C4	2.42	1.47	1.40
5	B	404	MES	O2S-S	2.35	1.52	1.45
3	D	402	MTA	C5-N7	-2.23	1.31	1.39

All (45) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	B	404	MES	O3S-S-O1S	-16.51	70.92	111.27
5	B	404	MES	O3S-S-O2S	-12.11	81.68	111.27
5	B	404	MES	O1S-S-C8	11.82	121.15	106.92
5	B	404	MES	O3S-S-C8	-8.55	91.93	105.77
5	D	403	MES	O2S-S-C8	4.54	112.38	106.92
3	C	402	MTA	O4'-C4'-C3'	4.38	113.78	105.11
3	D	402	MTA	O4'-C4'-C3'	4.12	113.27	105.11
3	C	402	MTA	N3-C2-N1	-3.47	123.25	128.68
3	C	402	MTA	C1'-N9-C4	-3.43	120.62	126.64
3	A	402	MTA	O4'-C4'-C3'	3.37	111.77	105.11
5	C	403	MES	O3S-S-C8	3.34	111.17	105.77
2	B	401	N4P	C12-C11-N6	-3.24	105.67	113.84
2	B	401	N4P	C8-C7-N6	3.24	122.01	113.84
3	A	402	MTA	O4'-C4'-C5'	3.22	117.11	108.83
3	A	402	MTA	C1'-N9-C4	-2.87	121.59	126.64
3	C	402	MTA	O4'-C4'-C5'	2.87	116.23	108.83
3	A	402	MTA	C2-N1-C6	2.86	123.64	118.75
5	C	403	MES	O3S-S-O2S	-2.82	104.39	111.27

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	D	402	MTA	C4'-C5'-S5'	-2.77	104.62	113.82
3	A	402	MTA	C4'-C5'-S5'	-2.74	104.70	113.82
5	B	404	MES	C2-C3-N4	-2.70	106.00	110.10
2	B	401	N4P	C7-N6-C5	2.70	117.86	111.44
3	C	402	MTA	C4-C5-N7	-2.62	106.67	109.40
3	B	402	MTA	C2-N1-C6	2.59	123.19	118.75
3	C	402	MTA	C4'-C5'-S5'	-2.57	105.28	113.82
5	C	403	MES	O1S-S-C8	2.55	109.99	106.92
3	D	402	MTA	O4'-C4'-C5'	2.48	115.21	108.83
5	C	403	MES	O2S-S-C8	2.47	109.89	106.92
3	D	402	MTA	C3'-C2'-C1'	2.43	104.64	100.98
3	D	402	MTA	C4-C5-N7	-2.42	106.88	109.40
5	B	404	MES	O2S-S-O1S	2.41	122.28	113.95
3	B	402	MTA	CS-S5'-C5'	-2.38	96.93	101.30
3	C	402	MTA	O3'-C3'-C4'	2.32	117.74	111.05
2	B	401	N4P	C4-C5-N6	2.27	119.57	113.84
5	D	403	MES	O2S-S-O1S	-2.22	106.28	113.95
3	B	402	MTA	C4-C5-N7	-2.20	107.10	109.40
3	D	402	MTA	C5'-C4'-C3'	2.18	120.50	115.06
3	A	402	MTA	C5-C6-N1	-2.15	115.49	120.35
3	B	402	MTA	C5-C6-N1	-2.09	115.61	120.35
2	C	401	N4P	C12-C11-N6	2.07	119.06	113.84
2	A	401	N4P	C12-C11-N6	-2.05	108.68	113.84
3	D	402	MTA	C2'-C3'-C4'	-2.03	98.69	102.64
3	D	402	MTA	N6-C6-N1	2.03	122.80	118.57
5	C	403	MES	C6-O1-C2	2.03	116.68	109.89
3	C	402	MTA	O2'-C2'-C3'	2.00	118.31	111.82

There are no chirality outliers.

All (23) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	401	N4P	C4-C5-N6-C11
5	B	404	MES	C8-C7-N4-C3
5	B	404	MES	N4-C7-C8-S
5	B	404	MES	C7-C8-S-O1S
5	B	404	MES	C7-C8-S-O2S
5	C	403	MES	C8-C7-N4-C5
5	C	403	MES	N4-C7-C8-S
5	C	403	MES	C7-C8-S-O1S
5	C	403	MES	C7-C8-S-O3S
2	B	401	N4P	N6-C7-C8-C9

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
2	C	401	N4P	C8-C7-N6-C11
2	D	401	N4P	N6-C11-C12-C13
2	B	401	N4P	C4-C5-N6-C7
2	A	401	N4P	N6-C7-C8-C9
5	B	404	MES	C8-C7-N4-C5
2	D	401	N4P	C4-C5-N6-C11
2	A	401	N4P	N1-C2-C3-C4
2	C	401	N4P	C11-C12-C13-N14
5	C	403	MES	C7-C8-S-O2S
2	A	401	N4P	C4-C5-N6-C11
2	B	401	N4P	C8-C7-N6-C5
2	D	401	N4P	N1-C2-C3-C4
5	D	403	MES	C8-C7-N4-C5

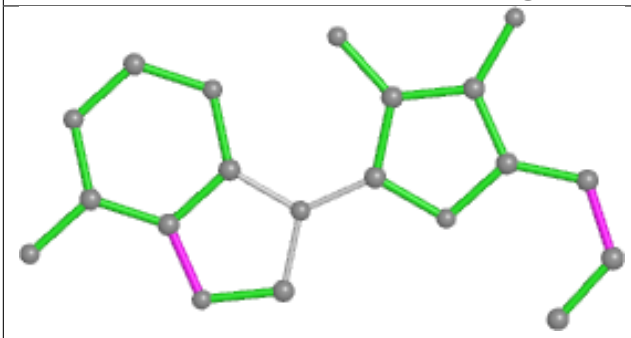
There are no ring outliers.

5 monomers are involved in 6 short contacts:

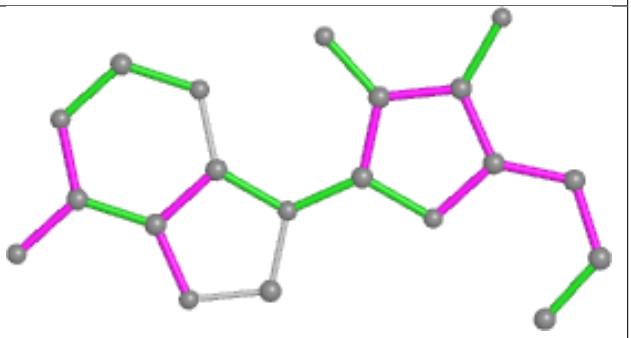
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	D	402	MTA	1	0
2	D	401	N4P	1	0
5	B	404	MES	2	0
3	A	402	MTA	1	0
5	D	403	MES	1	0

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.

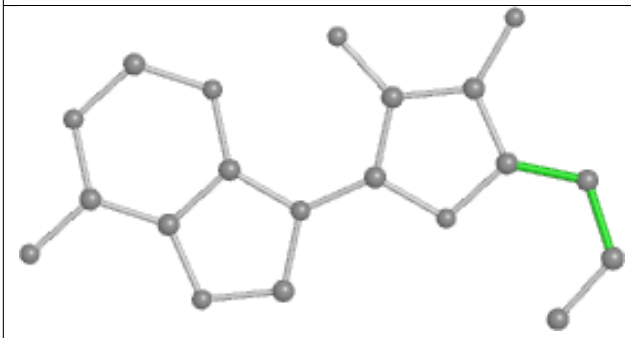
Ligand MTA D 402



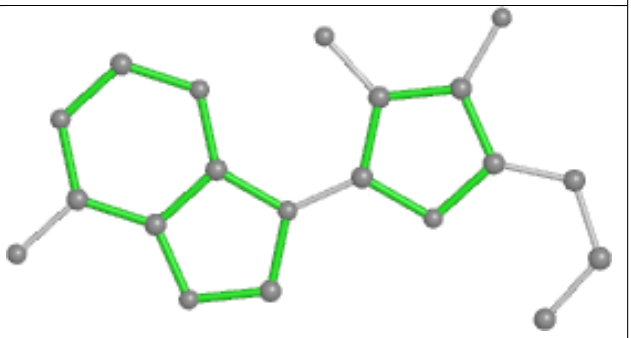
Bond lengths



Bond angles

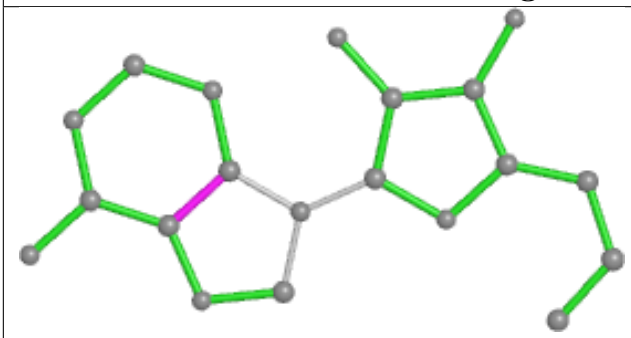


Torsions

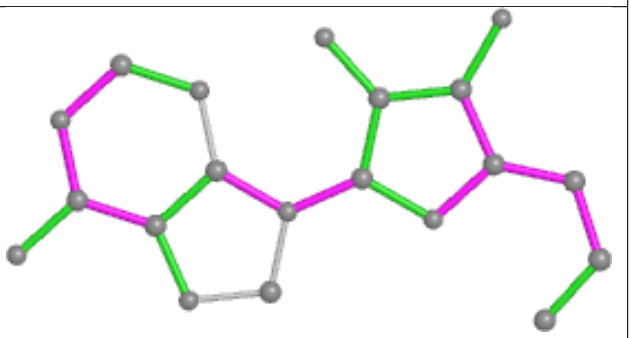


Rings

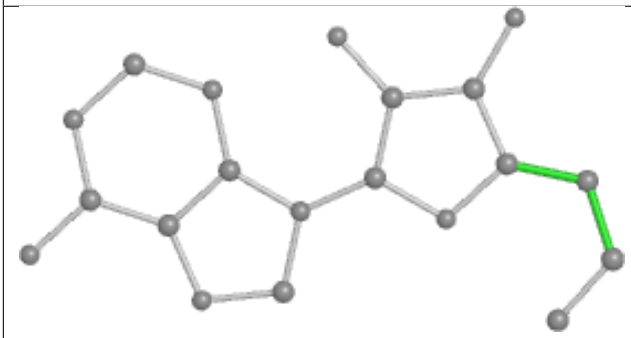
Ligand MTA A 402



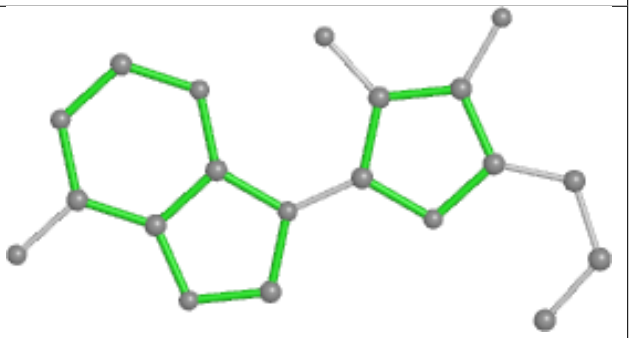
Bond lengths



Bond angles

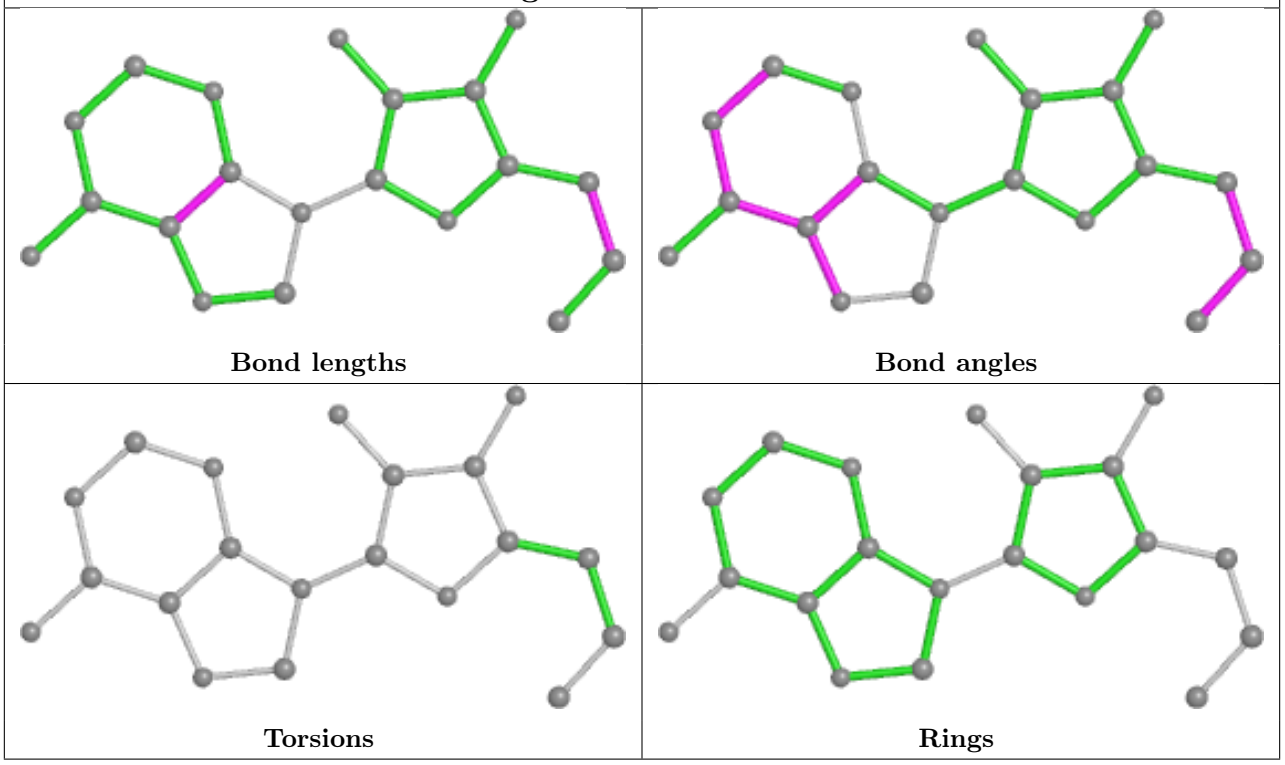


Torsions

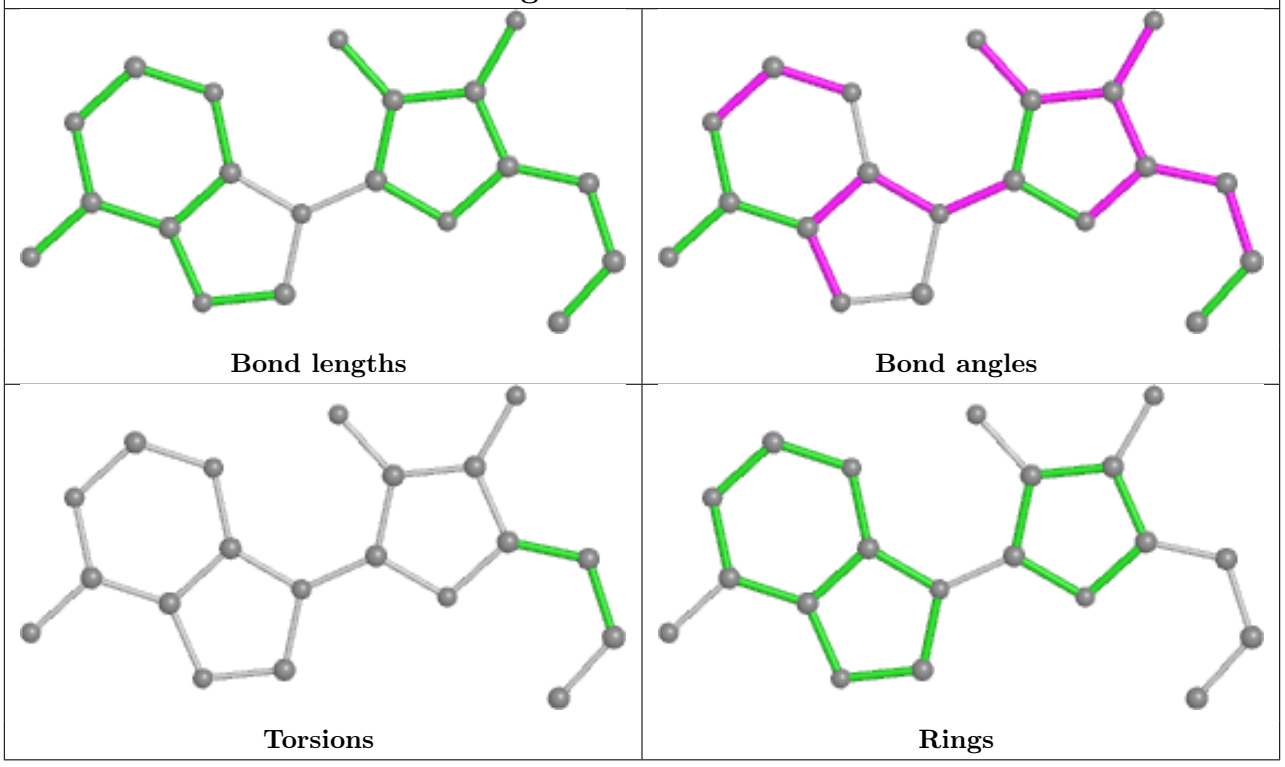


Rings

Ligand MTA B 402



Ligand MTA C 402



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 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
1	A	345/375 (92%)	-0.40	1 (0%) 94 94	12, 21, 36, 53	0
1	B	345/375 (92%)	-0.41	0 100 100	12, 21, 38, 50	0
1	C	345/375 (92%)	-0.31	2 (0%) 89 90	12, 21, 38, 58	0
1	D	345/375 (92%)	-0.26	10 (2%) 51 54	13, 21, 47, 105	0
All	All	1380/1500 (92%)	-0.34	13 (0%) 84 85	12, 21, 40, 105	0

All (13) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	88	PRO	3.4
1	D	347	ASP	3.4
1	D	12	LYS	3.3
1	D	10	VAL	3.0
1	D	11	ASN	2.6
1	D	24	ARG	2.4
1	D	23	ARG	2.4
1	A	239[A]	LEU	2.2
1	C	344	ASP	2.2
1	D	349	GLU	2.1
1	D	86	GLU	2.0
1	C	109	ARG	2.0
1	D	342	GLU	2.0

6.2 Non-standard residues in protein, DNA, RNA chains

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

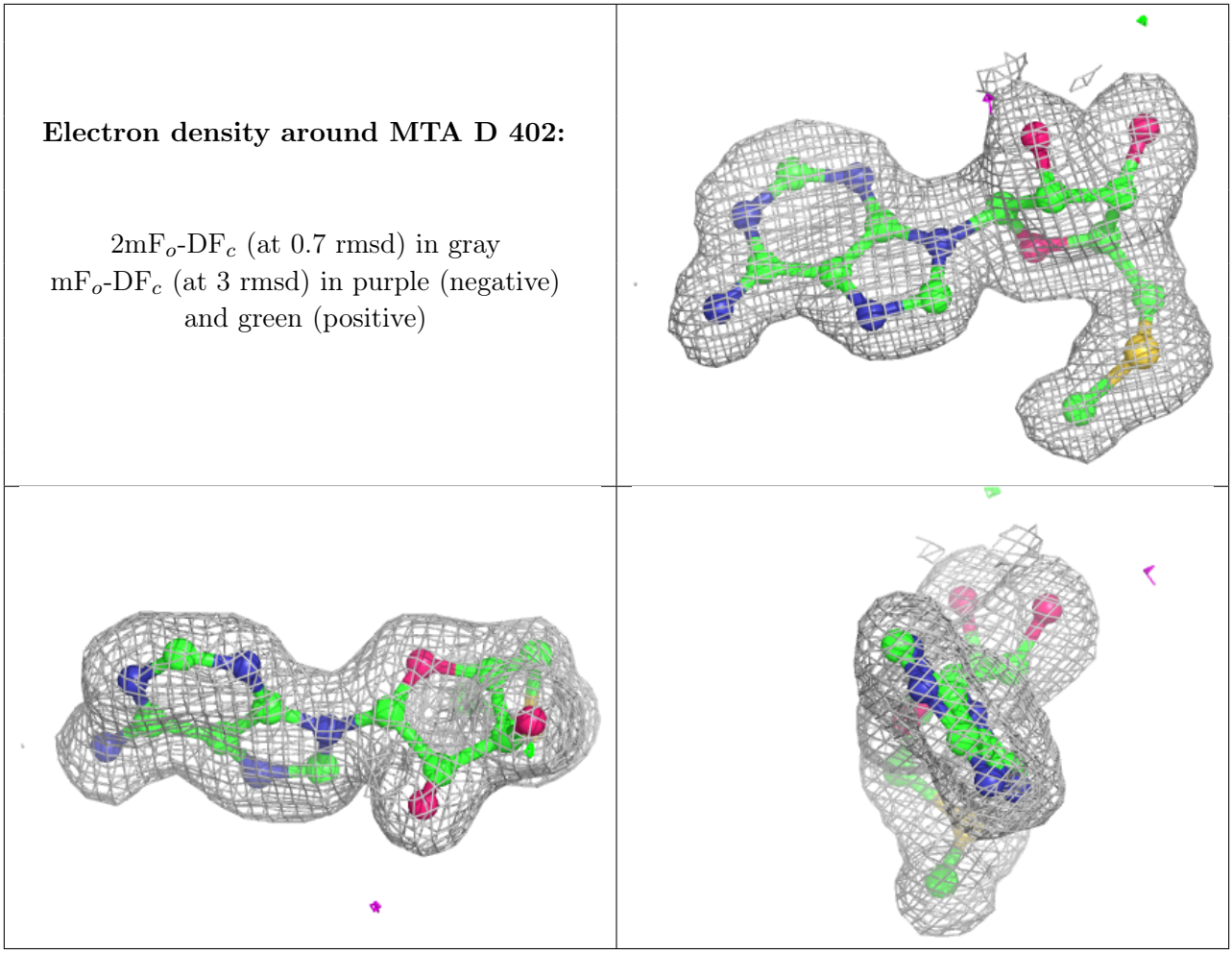
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	MES	C	403	12/12	0.66	0.22	45,53,77,77	0
5	MES	D	403	12/12	0.74	0.31	67,73,78,80	0
5	MES	B	404	12/12	0.86	0.16	40,51,53,61	0
2	N4P	A	401	14/14	0.92	0.12	15,24,29,30	0
2	N4P	C	401	14/14	0.93	0.12	24,32,36,37	0
2	N4P	D	401	14/14	0.94	0.10	18,30,36,36	0
2	N4P	B	401	14/14	0.96	0.10	16,23,32,34	0
3	MTA	D	402	20/20	0.97	0.08	17,18,20,20	0
3	MTA	A	402	20/20	0.97	0.07	15,17,19,20	0
3	MTA	B	402	20/20	0.97	0.07	14,16,17,19	0
3	MTA	C	402	20/20	0.97	0.09	16,19,22,24	0
4	FE	B	403	1/1	1.00	0.10	14,14,14,14	0
4	FE	A	403	1/1	1.00	0.07	14,14,14,14	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

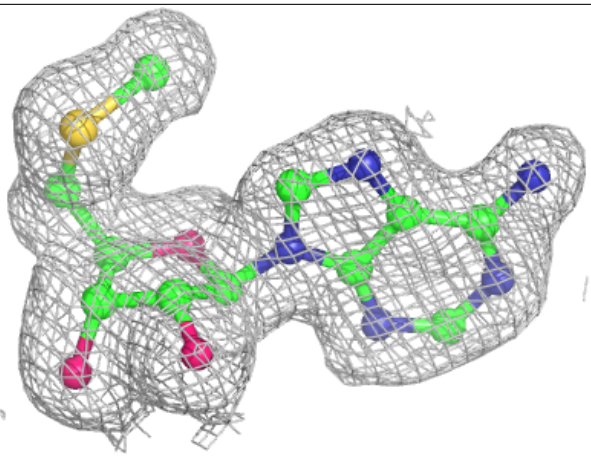
Electron density around MTA D 402:

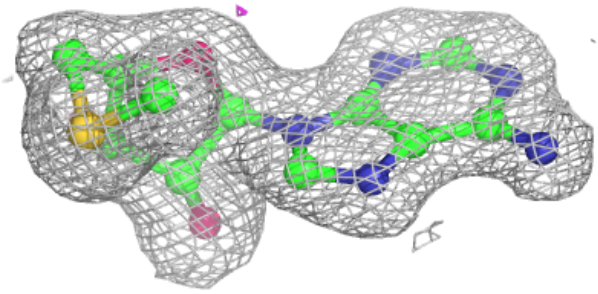
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

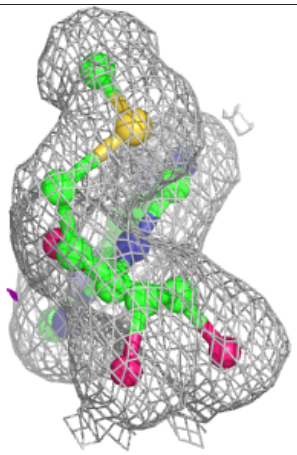


Electron density around MTA A 402:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

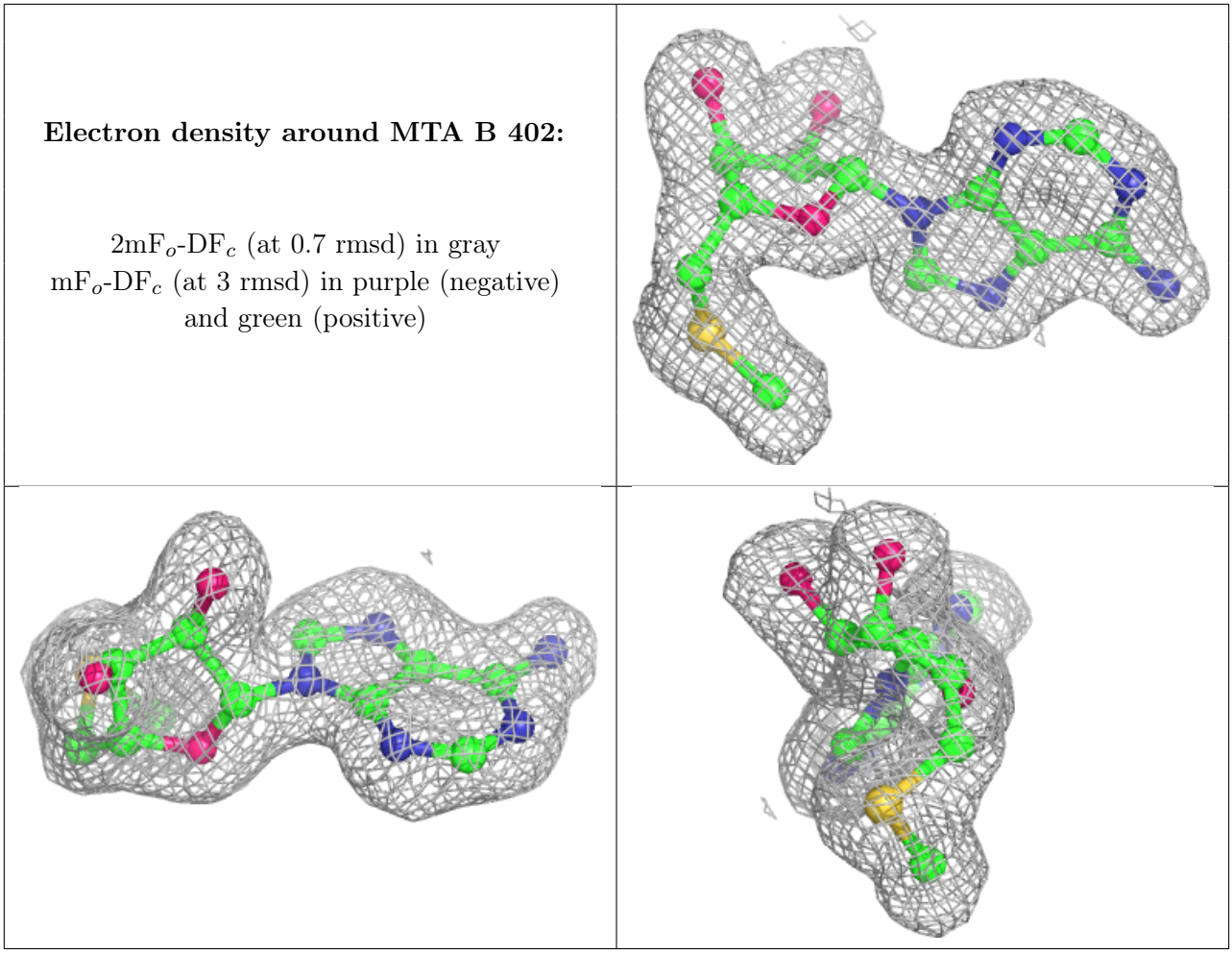






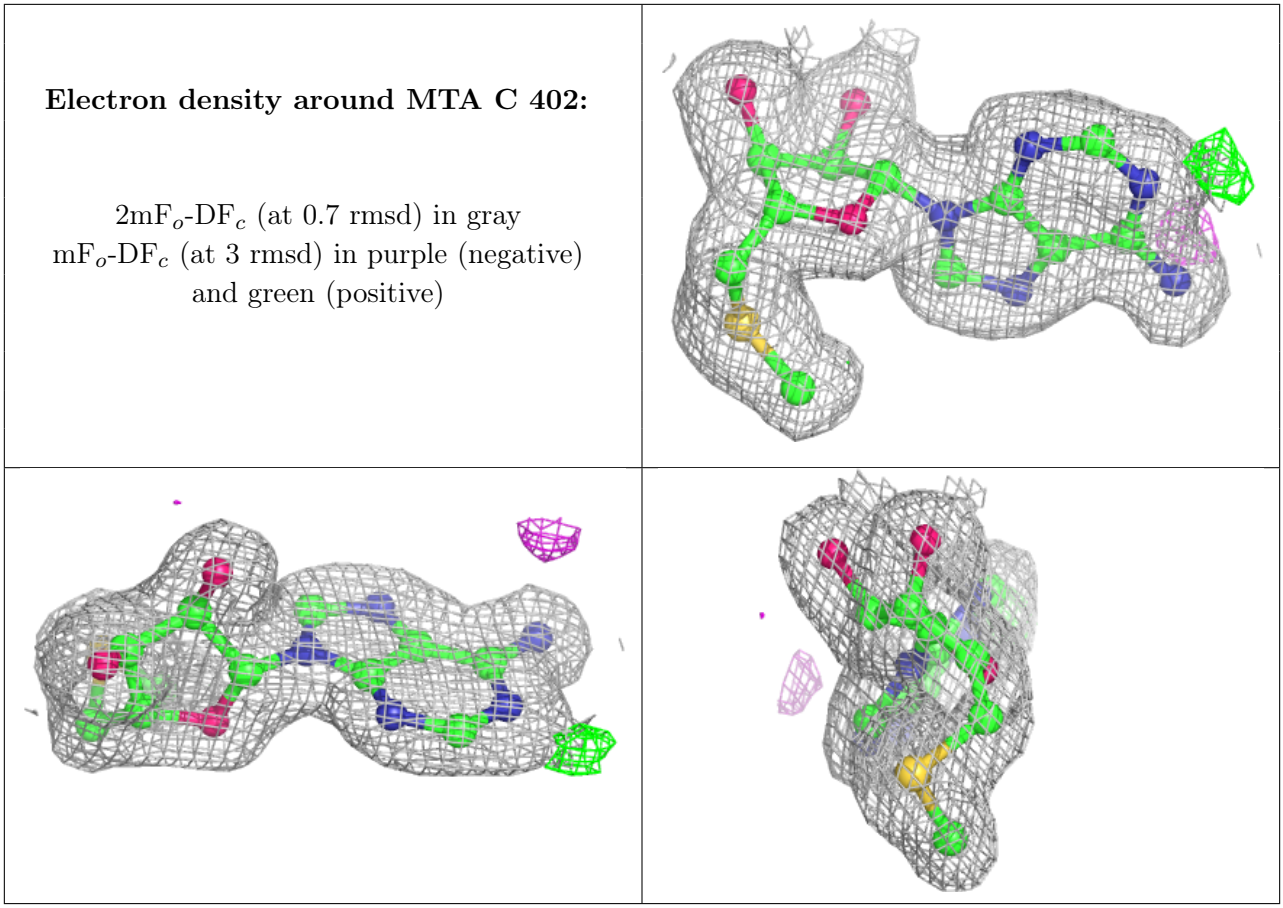
Electron density around MTA B 402:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around MTA C 402:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.5 Other polymers

There are no such residues in this entry.