Full wwPDB X-ray Structure Validation Report ⓘ

Dec 9, 2024 – 02:27 PM EST

PDB ID	:	9CZX
Title	:	HPK1 kinase domain T165E,S171E phosphomimetic mutant in complex with compound 21
Authors	:	Johnson, E.; Mc Tigue, M.
Deposited on	:	2024-08-05
Resolution	:	1.46 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:

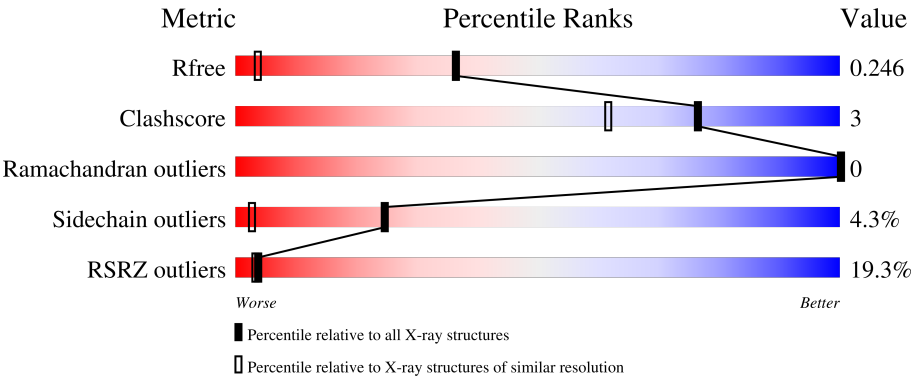
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.21
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.004 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.40

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 1.46 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}	164625	1556 (1.46-1.46)
Clashscore	180529	1653 (1.46-1.46)
Ramachandran outliers	177936	1635 (1.46-1.46)
Sidechain outliers	177891	1635 (1.46-1.46)
RSRZ outliers	164620	1556 (1.46-1.46)

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	309	14% 83% 9% • 6%
1	B	309	22% 85% 7% 8%

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 5157 atoms, of which 99 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.

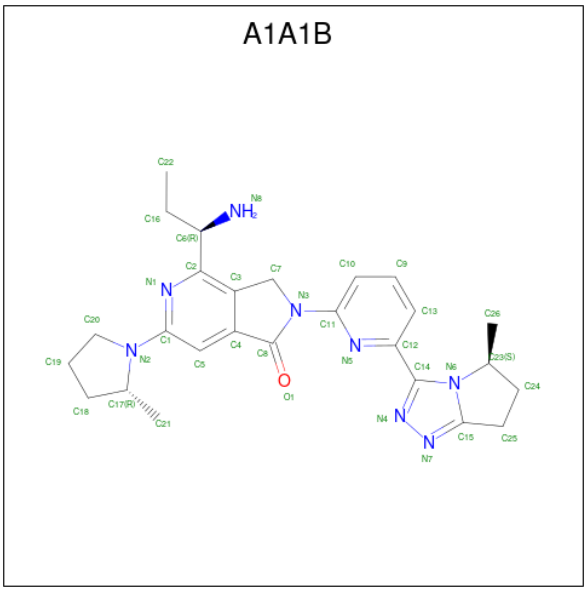
- Molecule 1 is a protein called Mitogen-activated protein kinase kinase kinase kinase 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	289	Total	C	N	O	S	0	0	0
			2281	1469	394	406	12			
1	B	285	Total	C	N	O	S	0	0	0
			2253	1451	390	401	11			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	GLY	-	expression tag	UNP Q92918
A	0	SER	-	expression tag	UNP Q92918
A	165	GLU	THR	engineered mutation	UNP Q92918
A	171	GLU	SER	engineered mutation	UNP Q92918
B	-1	GLY	-	expression tag	UNP Q92918
B	0	SER	-	expression tag	UNP Q92918
B	165	GLU	THR	engineered mutation	UNP Q92918
B	171	GLU	SER	engineered mutation	UNP Q92918

- Molecule 2 is 4-[(1R)-1-aminopropyl]-2-{6-[(4S,5S)-5-methyl-6,7-dihydro-5H-pyrrolo[2,1-c][1,2,4]triazol-3-yl]pyridin-2-yl}-6-[(2R)-2-methylpyrrolidin-1-yl]-2,3-dihydro-1H-pyrrolo[3,4-c]pyridin-1-one (three-letter code: A1A1B) (formula: $C_{26}H_{32}N_8O$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C H N O 68 26 33 8 1	33	0
2	B	1	Total C H N O 68 26 33 8 1	33	0
2	B	1	Total C H N O 68 26 33 8 1	33	0

- Molecule 3 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	1	Total Cl 1 1	0	0

- Molecule 4 is water.

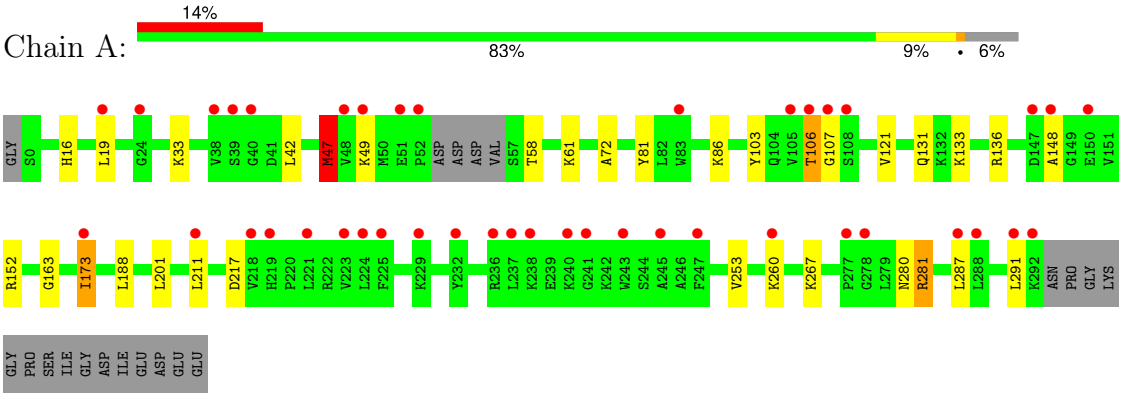
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	248	Total O 248 248	0	0
4	B	170	Total O 170 170	0	0

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.

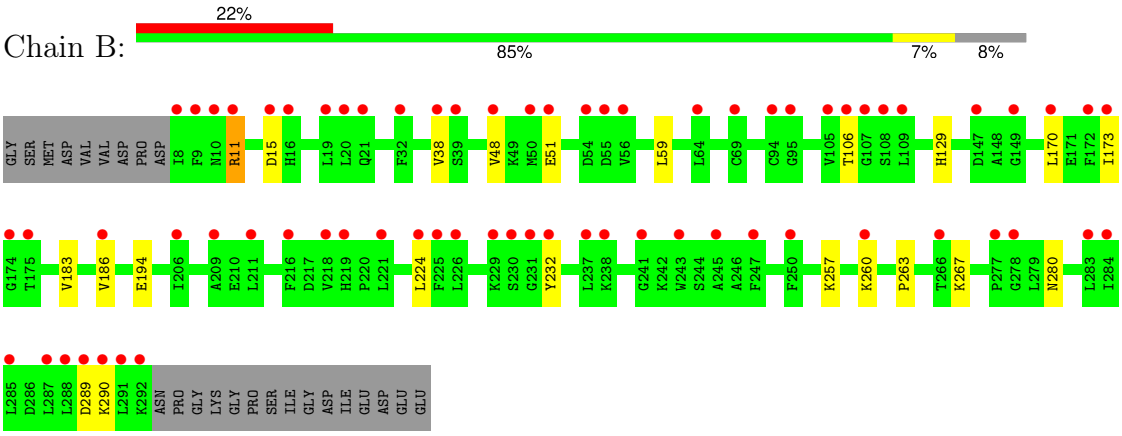
• Molecule 1: Mitogen-activated protein kinase kinase kinase kinase 1

Chain A:



• Molecule 1: Mitogen-activated protein kinase kinase kinase kinase 1

Chain B:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	67.73Å 68.28Å 72.15Å 90.00° 104.56° 90.00°	Depositor
Resolution (Å)	69.83 – 1.46 69.83 – 1.46	Depositor EDS
% Data completeness (in resolution range)	61.6 (69.83-1.46) 61.7 (69.83-1.46)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.38 (at 1.46Å)	Xtriage
Refinement program	BUSTER 2.11.7	Depositor
R, R_{free}	0.215 , 0.242 0.218 , 0.246	Depositor DCC
R_{free} test set	3434 reflections (5.09%)	wwPDB-VP
Wilson B-factor (Å^2)	27.9	Xtriage
Anisotropy	0.031	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 38.3	EDS
L-test for twinning[2]	$< \|L\| > = 0.51$, $< L^2 > = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	5157	wwPDB-VP
Average B, all atoms (Å^2)	33.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.31% 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: A1A1B, CL

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	0.45	1/2329 (0.0%)	0.59	0/3146
1	B	0.43	0/2301	0.59	0/3109
All	All	0.44	1/4630 (0.0%)	0.59	0/6255

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	47	MET	SD-CE	-5.62	1.46	1.77

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2281	0	2347	18	0
1	B	2253	0	2315	9	0
2	A	35	33	0	0	0
2	B	70	66	0	0	0
3	B	1	0	0	0	0
4	A	248	0	0	0	0
4	B	170	0	0	1	0
All	All	5058	99	4662	26	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 3.

All (26) 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:B:11:ARG:NH1	1:B:15:ASP:OD2	2.00	0.95
1:A:106:THR:HG21	1:A:287:LEU:HD11	1.87	0.56
1:A:107:GLY:HA2	1:A:211:LEU:HD21	1.89	0.54
1:B:260:LYS:HD2	1:B:260:LYS:H	1.73	0.54
1:A:47:MET:HE3	1:A:86:LYS:CG	2.39	0.52
1:A:103:TYR:HA	1:A:106:THR:HG22	1.93	0.51
1:B:48:VAL:HG23	4:B:559:HOH:O	2.11	0.51
1:A:173:ILE:HD12	1:B:224:LEU:HD11	1.93	0.51
1:A:16:HIS:HD2	1:A:81:TYR:OH	1.95	0.50
1:A:260:LYS:H	1:A:260:LYS:HD2	1.76	0.49
1:B:263:PRO:HB3	1:B:267:LYS:HD3	1.95	0.49
1:A:121:VAL:HG11	1:A:201:LEU:HD13	1.95	0.48
1:A:148:ALA:O	1:A:281:ARG:HG3	2.15	0.47
1:B:183:VAL:O	1:B:186:VAL:HG22	2.15	0.47
1:B:129:HIS:CD2	1:B:194:GLU:HB2	2.51	0.45
1:A:47:MET:HE3	1:A:86:LYS:HG2	2.00	0.44
1:A:16:HIS:CD2	1:A:81:TYR:OH	2.72	0.42
1:A:267:LYS:HB3	1:A:267:LYS:HE2	1.88	0.42
1:A:131:GLN:NE2	1:A:133:LYS:NZ	2.67	0.42
1:B:106:THR:HG23	1:B:290:LYS:HD3	2.02	0.41
1:A:33:LYS:HE3	1:A:42:LEU:HD13	2.01	0.41
1:A:47:MET:CE	1:A:86:LYS:HG2	2.51	0.40
1:A:131:GLN:HE22	1:A:133:LYS:NZ	2.20	0.40
1:A:61:LYS:HZ1	1:A:163:GLY:HA3	1.85	0.40
1:B:232:TYR:HD2	1:B:257:LYS:HD2	1.86	0.40
1:A:72:ALA:O	1:A:152:ARG:NH1	2.55	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	285/309 (92%)	279 (98%)	6 (2%)	0	100	100
1	B	283/309 (92%)	276 (98%)	7 (2%)	0	100	100
All	All	568/618 (92%)	555 (98%)	13 (2%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	246/262 (94%)	233 (95%)	13 (5%)	19	1
1	B	242/262 (92%)	234 (97%)	8 (3%)	33	6
All	All	488/524 (93%)	467 (96%)	21 (4%)	25	3

All (21) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	19	LEU
1	A	47	MET
1	A	49	LYS
1	A	58	THR
1	A	106	THR
1	A	136	ARG
1	A	173	ILE
1	A	188	LEU
1	A	217	ASP
1	A	253	VAL
1	A	280	ASN
1	A	281	ARG
1	A	291	LEU
1	B	11	ARG
1	B	38	VAL

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Mol	Chain	Res	Type
1	B	51	GLU
1	B	59	LEU
1	B	170	LEU
1	B	173	ILE
1	B	280	ASN
1	B	289	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	16	HIS
1	A	131	GLN
1	A	142	ASN
1	A	280	ASN
1	B	104	GLN
1	B	142	ASN
1	B	280	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 oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 4 ligands modelled in this entry, 1 is monoatomic - leaving 3 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	A1A1B	B	403	-	33,40,40	1.02	2 (6%)	45,60,60	1.29	6 (13%)
2	A1A1B	B	402	-	33,40,40	0.99	1 (3%)	45,60,60	1.51	7 (15%)
2	A1A1B	A	401	-	33,40,40	0.92	0	45,60,60	1.21	5 (11%)

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	A1A1B	B	403	-	-	2/16/49/49	0/6/6/6
2	A1A1B	B	402	-	-	0/16/49/49	0/6/6/6
2	A1A1B	A	401	-	-	1/16/49/49	0/6/6/6

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	402	A1A1B	C3-C2	-2.29	1.37	1.41
2	B	403	A1A1B	C12-C14	-2.28	1.43	1.47
2	B	403	A1A1B	C3-C2	-2.18	1.37	1.41

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	402	A1A1B	C24-C25-C15	-4.30	100.56	103.78
2	B	402	A1A1B	C18-C17-N2	3.35	106.54	102.38
2	A	401	A1A1B	C3-C2-N1	-3.35	119.73	122.55
2	A	401	A1A1B	C4-C5-C1	-3.08	114.39	118.79
2	B	403	A1A1B	C7-C3-C2	3.04	130.91	127.58
2	B	403	A1A1B	O1-C8-C4	-2.84	123.16	128.66
2	B	402	A1A1B	C7-C3-C2	2.80	130.65	127.58
2	B	403	A1A1B	C24-C25-C15	-2.79	101.69	103.78
2	B	402	A1A1B	C7-N3-C8	-2.78	110.04	112.39
2	B	403	A1A1B	C4-C5-C1	-2.57	115.11	118.79
2	B	402	A1A1B	O1-C8-C4	-2.52	123.78	128.66
2	B	402	A1A1B	C21-C17-C18	-2.43	109.14	113.02
2	B	403	A1A1B	C26-C23-N6	-2.43	108.22	112.04
2	B	402	A1A1B	C5-C4-C3	-2.39	121.03	123.27

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	401	A1A1B	O1-C8-C4	-2.36	124.08	128.66
2	A	401	A1A1B	C24-C25-C15	-2.20	102.13	103.78
2	A	401	A1A1B	C7-C3-C2	2.08	129.85	127.58
2	B	403	A1A1B	C3-C2-N1	-2.07	120.80	122.55

There are no chirality outliers.

All (3) torsion outliers are listed below:

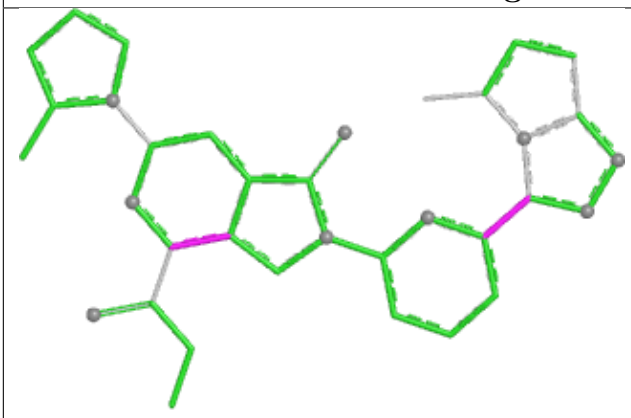
Mol	Chain	Res	Type	Atoms
2	B	403	A1A1B	C22-C16-C6-N8
2	B	403	A1A1B	C22-C16-C6-C2
2	A	401	A1A1B	C22-C16-C6-C2

There are no ring outliers.

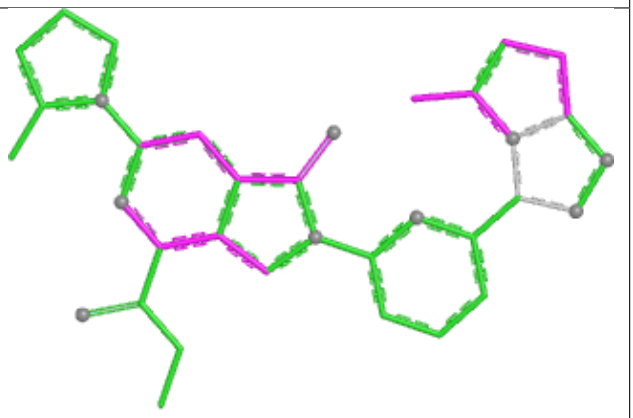
No monomer is involved in short contacts.

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.

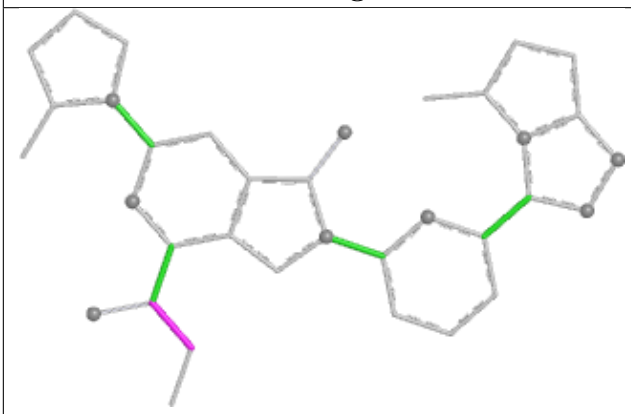
Ligand A1A1B B 403



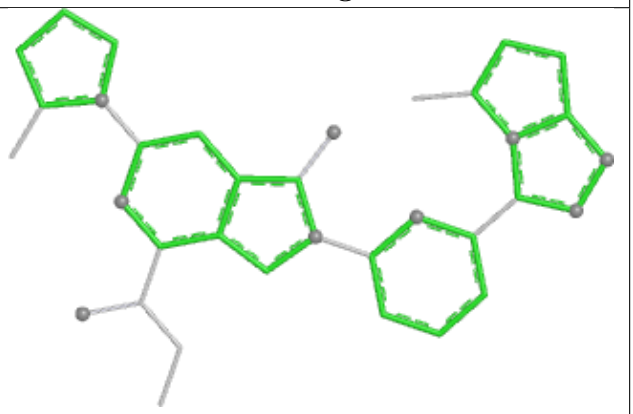
Bond lengths



Bond angles

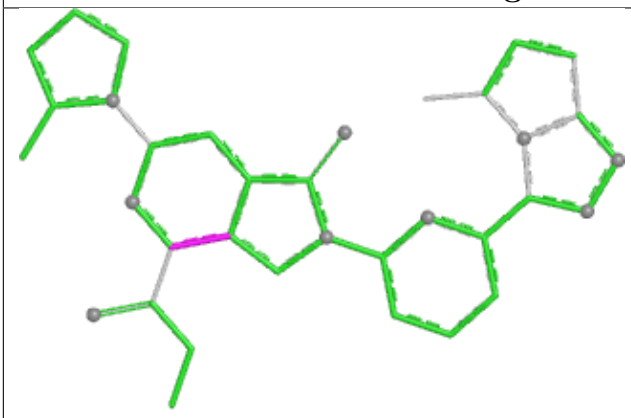


Torsions

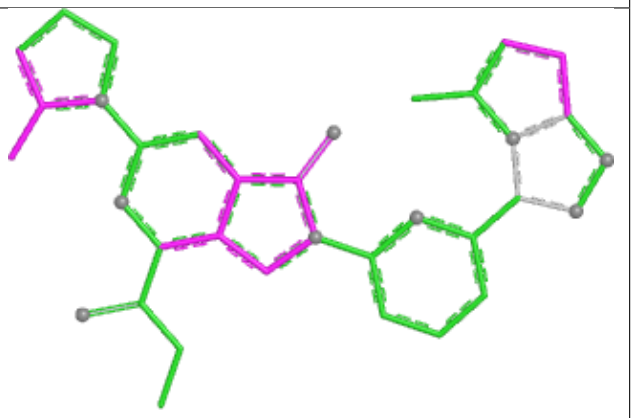


Rings

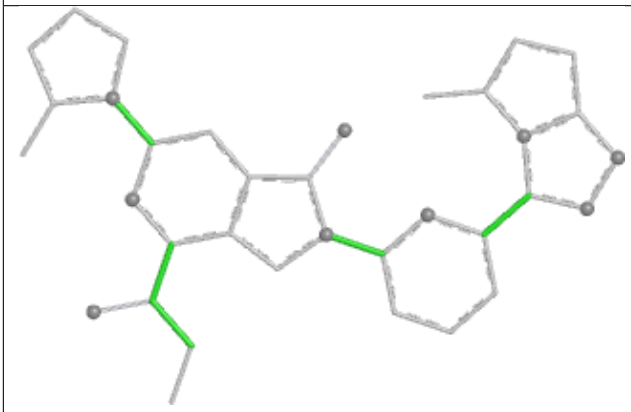
Ligand A1A1B B 402



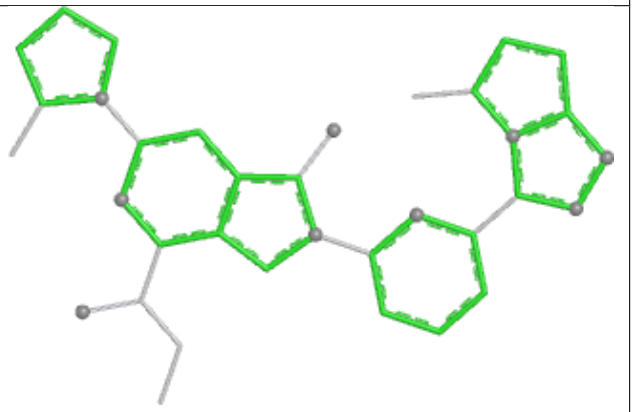
Bond lengths



Bond angles

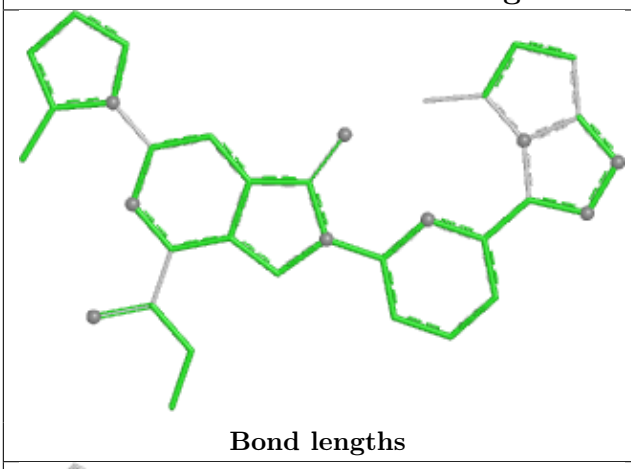


Torsions

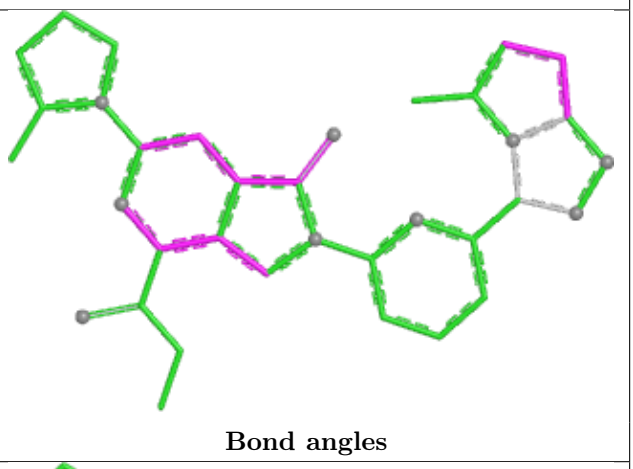


Rings

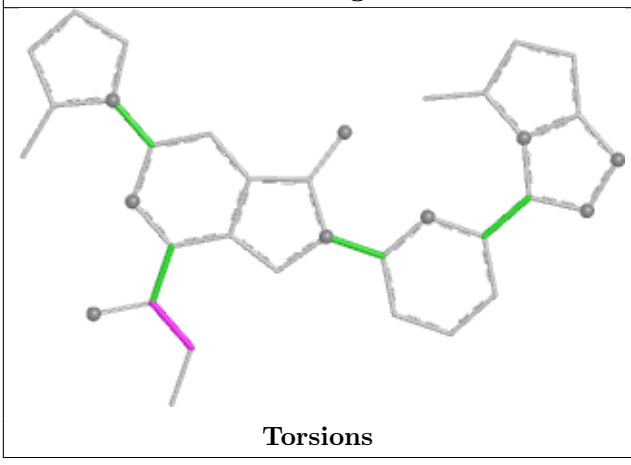
Ligand A1A1B A 401



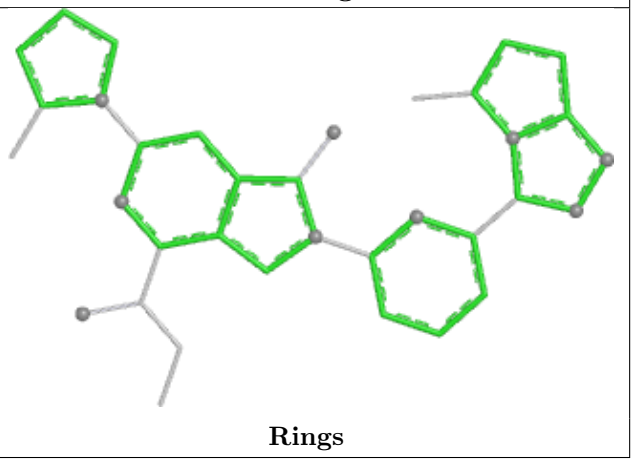
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 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	289/309 (93%)	1.00	42 (14%) 7 6	19, 29, 48, 61	0
1	B	285/309 (92%)	1.26	69 (24%) 2 2	19, 32, 51, 66	0
All	All	574/618 (92%)	1.13	111 (19%) 4 3	19, 31, 50, 66	0

All (111) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	172	PHE	7.0
1	B	173	ILE	5.6
1	B	38	VAL	5.6
1	B	291	LEU	4.9
1	B	225	PHE	4.9
1	B	284	ILE	4.8
1	B	287	LEU	4.7
1	A	225	PHE	4.6
1	A	173	ILE	4.6
1	B	19	LEU	4.5
1	A	291	LEU	4.3
1	A	52	PRO	4.2
1	A	221	LEU	4.2
1	A	148	ALA	4.1
1	B	20	LEU	4.0
1	A	247	PHE	4.0
1	A	38	VAL	3.9
1	A	105	VAL	3.9
1	B	105	VAL	3.9
1	B	292	LYS	3.8
1	A	243	TRP	3.6
1	B	237	LEU	3.6
1	B	11	ARG	3.5
1	B	107	GLY	3.5

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Mol	Chain	Res	Type	RSRZ
1	B	10	ASN	3.5
1	B	69	CYS	3.4
1	B	277	PRO	3.3
1	A	237	LEU	3.3
1	B	94	CYS	3.3
1	A	19	LEU	3.2
1	A	240	LYS	3.2
1	B	186	VAL	3.2
1	A	224	LEU	3.1
1	B	216	PHE	3.1
1	B	8	ILE	3.1
1	B	209	ALA	3.1
1	B	149	GLY	3.1
1	A	292	LYS	3.0
1	A	278	GLY	3.0
1	A	108	SER	2.9
1	A	238	LYS	2.9
1	B	232	TYR	2.9
1	B	243	TRP	2.9
1	A	288	LEU	2.9
1	B	211	LEU	2.9
1	B	175	THR	2.8
1	A	218	VAL	2.8
1	B	21	GLN	2.8
1	A	106	THR	2.8
1	A	245	ALA	2.8
1	B	221	LEU	2.8
1	A	277	PRO	2.7
1	B	9	PHE	2.7
1	A	147	ASP	2.7
1	A	83	TRP	2.7
1	A	39	SER	2.6
1	B	229	LYS	2.6
1	A	223	VAL	2.6
1	B	51	GLU	2.6
1	B	247	PHE	2.6
1	B	206	ILE	2.6
1	B	218	VAL	2.5
1	B	50	MET	2.5
1	A	219	HIS	2.5
1	B	48	VAL	2.5
1	B	290	LYS	2.5

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Mol	Chain	Res	Type	RSRZ
1	B	39	SER	2.5
1	A	211	LEU	2.5
1	A	48	VAL	2.5
1	B	283	LEU	2.4
1	B	15	ASP	2.4
1	A	40	GLY	2.4
1	A	241	GLY	2.4
1	B	250	PHE	2.4
1	B	226	LEU	2.4
1	B	260	LYS	2.4
1	A	287	LEU	2.3
1	B	231	GLY	2.3
1	A	229	LYS	2.3
1	B	170	LEU	2.3
1	B	219	HIS	2.3
1	B	266	THR	2.3
1	A	24	GLY	2.3
1	B	147	ASP	2.3
1	B	106	THR	2.3
1	A	150	GLU	2.3
1	B	285	LEU	2.2
1	A	232	TYR	2.2
1	B	54	ASP	2.2
1	B	238	LYS	2.2
1	B	289	ASP	2.2
1	B	64	LEU	2.2
1	B	109	LEU	2.2
1	B	224	LEU	2.2
1	A	49	LYS	2.2
1	B	241	GLY	2.2
1	B	55	ASP	2.1
1	B	174	GLY	2.1
1	B	245	ALA	2.1
1	A	236	ARG	2.1
1	A	107	GLY	2.1
1	B	230	SER	2.1
1	B	278	GLY	2.1
1	B	108	SER	2.1
1	B	56	VAL	2.1
1	A	260	LYS	2.1
1	B	16	HIS	2.1
1	B	288	LEU	2.1

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Mol	Chain	Res	Type	RSRZ
1	B	32	PHE	2.0
1	B	95	GLY	2.0
1	A	51	GLU	2.0

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

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)

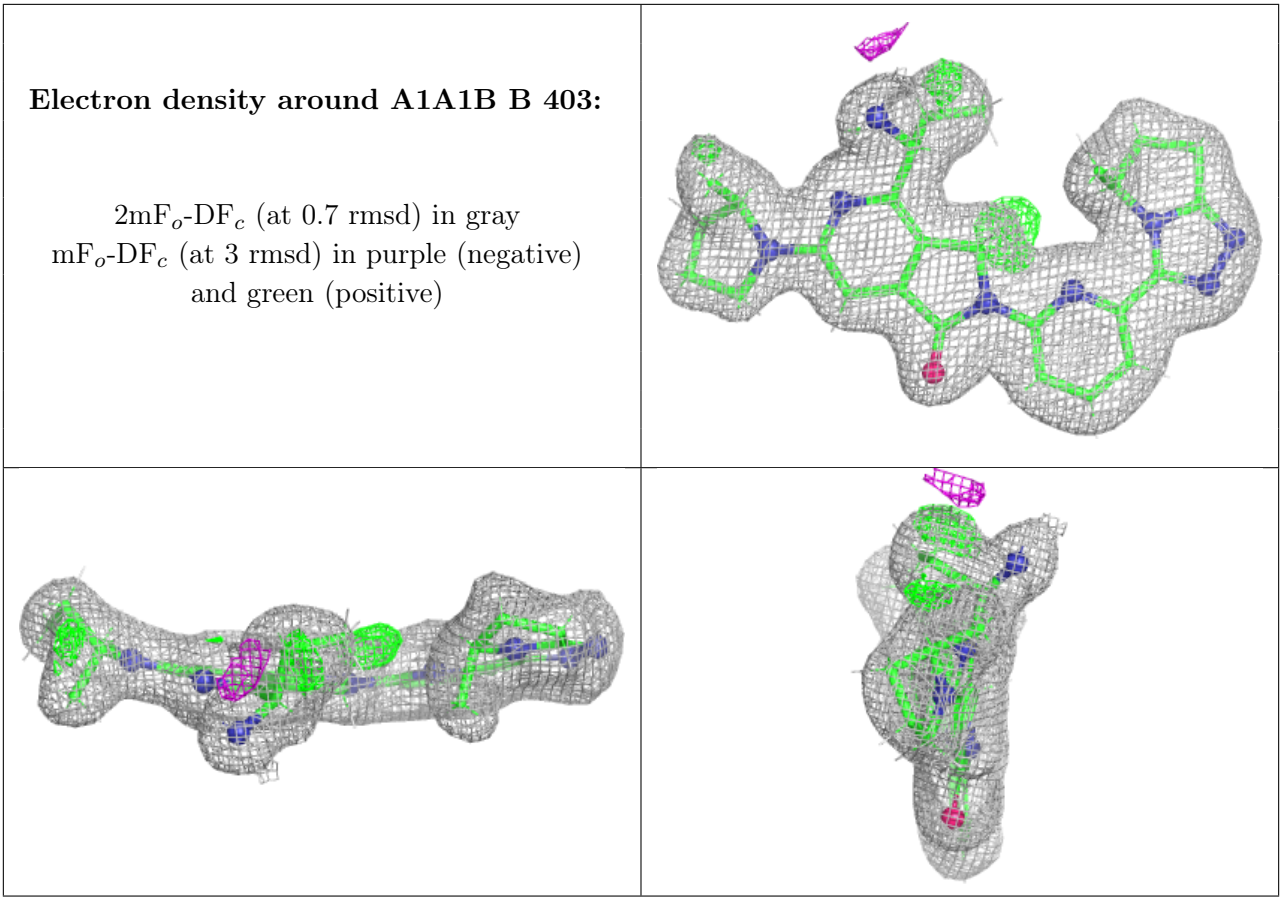
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' 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
2	A1A1B	B	403	35/35	0.91	0.10	24,31,38,39	33
2	A1A1B	B	402	35/35	0.92	0.09	22,30,42,42	33
2	A1A1B	A	401	35/35	0.95	0.07	22,27,33,33	33
3	CL	B	401	1/1	0.99	0.07	29,29,29,29	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.

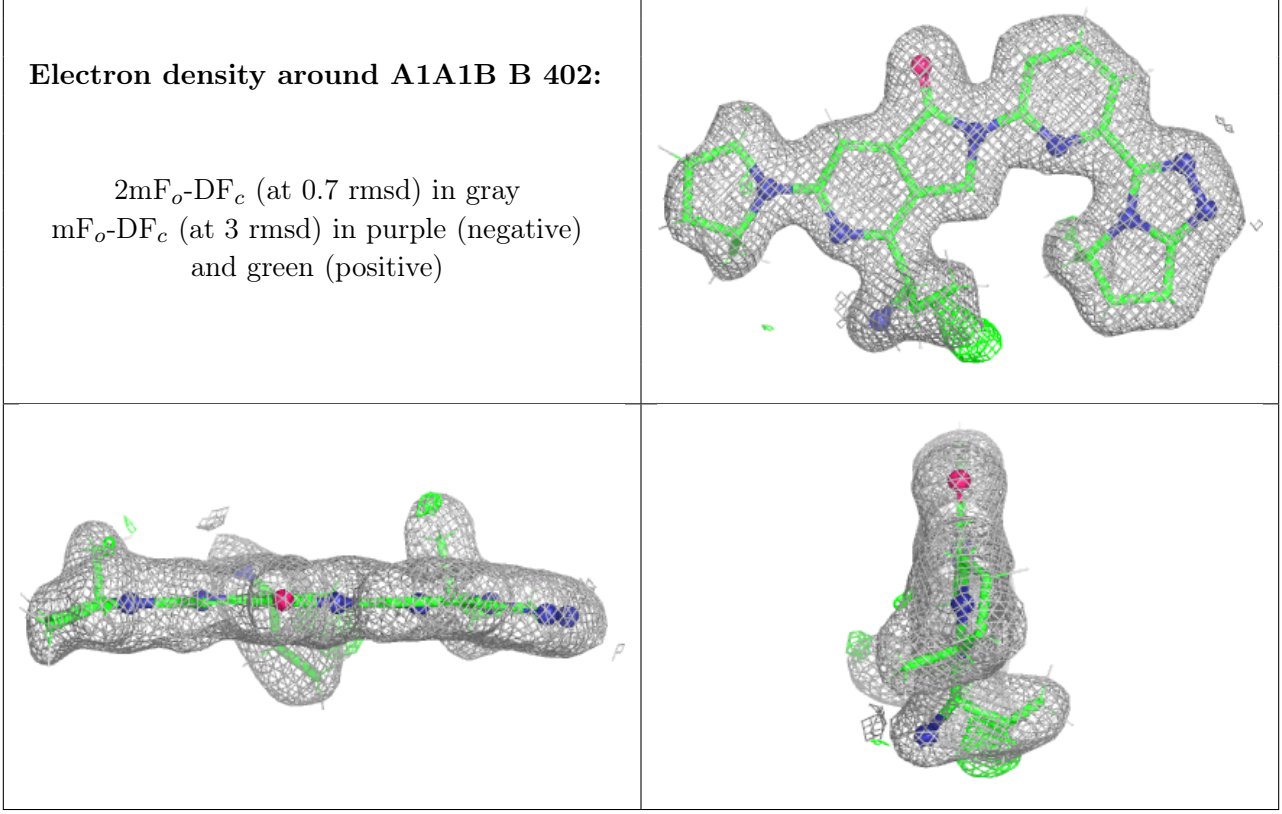
Electron density around A1A1B B 403:

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



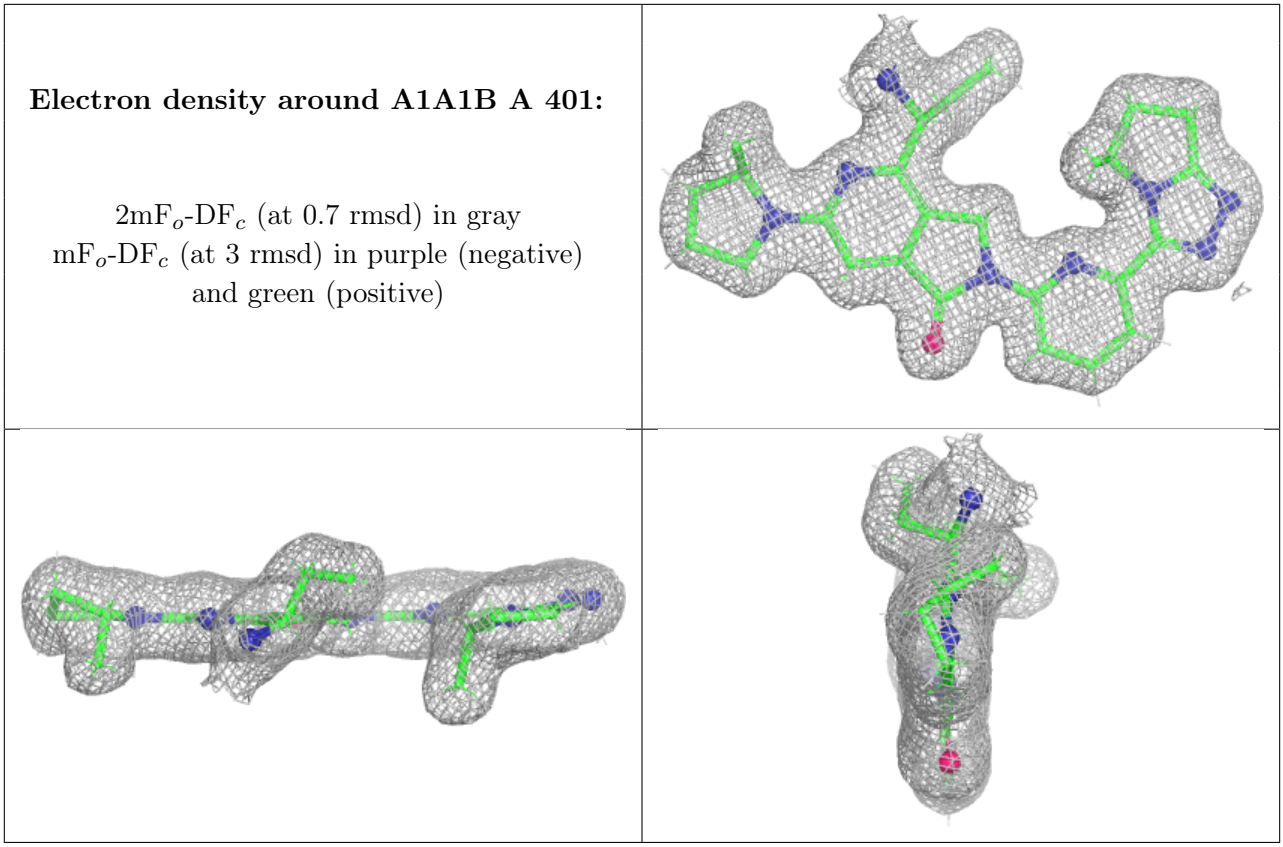
Electron density around A1A1B B 402:

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



Electron density around A1A1B A 401:

$2mF_o$-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 (i)

There are no such residues in this entry.