Full wwPDB X-ray Structure Validation Report (i)

Aug 28, 2023 – 03:40 AM EDT

PDB ID	:	3K5E
Title	:	The structure of human kinesin-like motor protein Kif11/KSP/Eg5 in complex with ADP and enastrol.
Authors	:	Crawley, L.; Cheng, R.K.Y.; Wood, M.; Barker, J.; Felicetti, B.; Whittaker, M.
Deposited on	:	2009-10-07
Resolution	:	1.97 Å(reported)

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

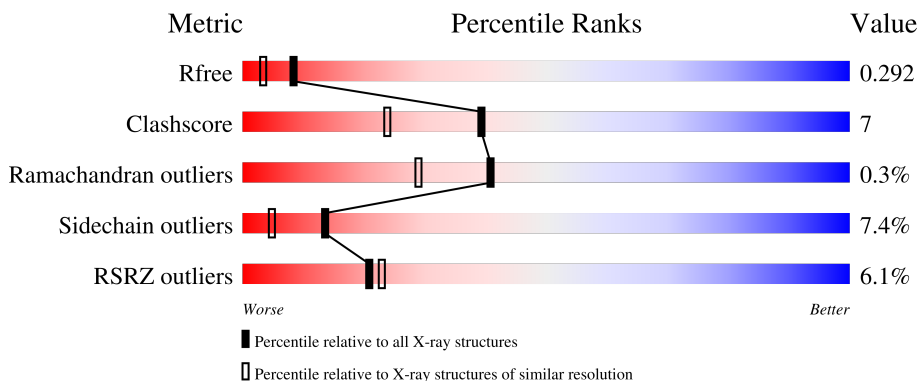|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 1.97 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	Percentile Ranks	Value
Rfree		0.292
Clashscore		7
Ramachandran outliers		0.3%
Sidechain outliers		7.4%
RSRZ outliers		6.1%

Worse *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	130704	11647 (2.00-1.96)
Clashscore	141614	1014 (1.98-1.98)
Ramachandran outliers	138981	1006 (1.98-1.98)
Sidechain outliers	138945	1006 (1.98-1.98)
RSRZ outliers	127900	11410 (2.00-1.96)

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	368	7% / 71% / 15% / · / 11%
1	B	368	4% / 71% / 14% / · / 12%

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 5701 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 Kinesin-like protein KIF11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	329	Total	C	N	O	S	0	0	0
			2588	1620	451	507	10			
1	B	324	Total	C	N	O	S	0	2	0
			2565	1607	447	501	10			

- Molecule 2 is (4S,5R)-5-hydroxy-4-(3-hydroxyphenyl)-3,4,5,6,7,8-hexahydroquinazoline-2(1H)-thione (three-letter code: K5E) (formula: $C_{14}H_{16}N_2O_2S$).
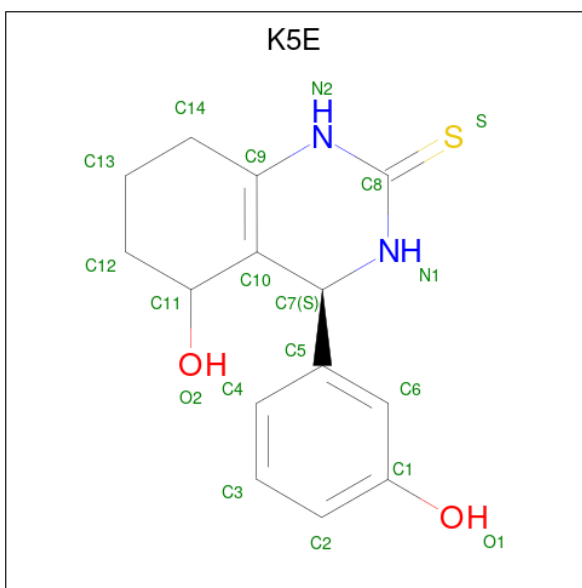
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	S	0	0
			19	14	2	2	1		
2	B	1	Total	C	N	O	S	0	0
			19	14	2	2	1		

- Molecule 3 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).

ADP

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total 27	C 10	N 5	O 10	P 2	0	0
3	B	1	Total 27	C 10	N 5	O 10	P 2	0	0

• Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

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

• Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	230	Total 230	O 230	0	0
5	B	224	Total 224	O 224	0	0

3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and 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: Kinesin-like protein KIF11

Chain A:

- Molecule 1: Kinesin-like protein KIF11

Chain B:
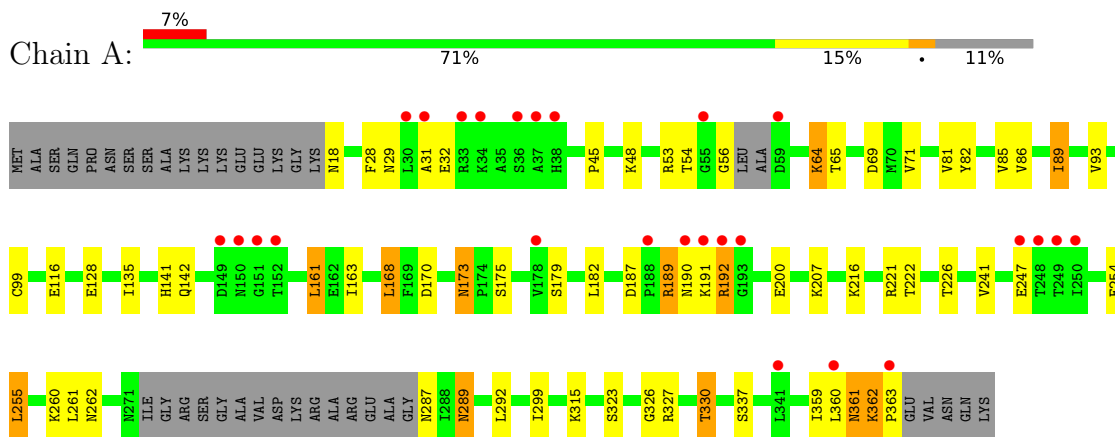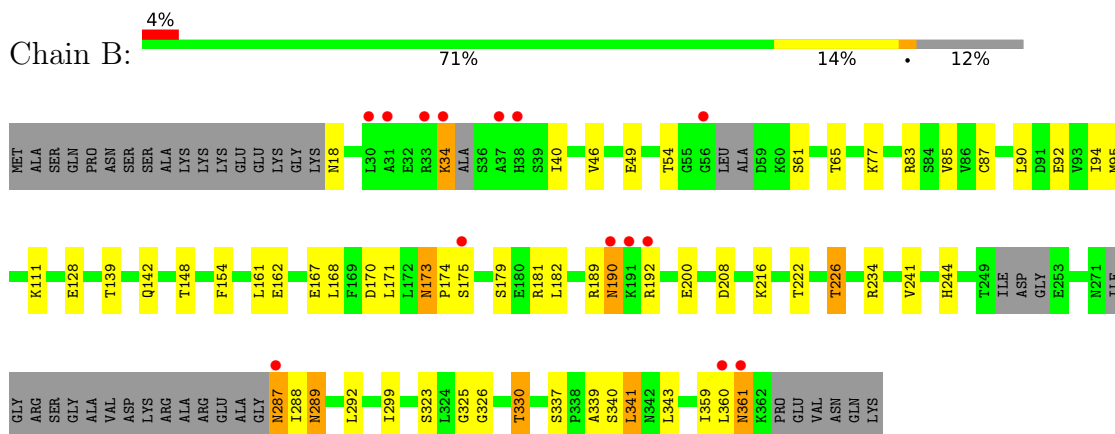
4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	160.58Å 79.80Å 69.19Å 90.00° 96.93° 90.00°	Depositor
Resolution (Å)	39.90 – 1.97 39.90 – 1.97	Depositor EDS
% Data completeness (in resolution range)	96.7 (39.90-1.97) 96.6 (39.90-1.97)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$<I/\sigma(I)>$ [1]	4.81 (at 1.97Å)	Xtriage
Refinement program	REFMAC 5.5.0102	Depositor
R, R_{free}	0.241 , 0.295 0.240 , 0.292	Depositor DCC
R_{free} test set	3026 reflections (5.09%)	wwPDB-VP
Wilson B-factor (Å^2)	24.3	Xtriage
Anisotropy	0.085	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 47.1	EDS
L-test for twinning[2]	$<|L|>= 0.40, <L^2>= 0.23$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.91	EDS
Total number of atoms	5701	wwPDB-VP
Average B, all atoms (Å^2)	27.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 10.32% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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 (i)

5.1   Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: K5E, MG, ADP

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	0.50	0/2626	0.63	0/3550
1	B	0.49	0/2605	0.63	0/3514
All	All	0.49	0/5231	0.63	0/7064

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

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	2588	0	2607	45	0
1	B	2565	0	2593	34	0
2	A	19	0	16	0	0
2	B	19	0	16	0	0
3	A	27	0	12	0	0
3	B	27	0	12	0	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
5	A	230	0	0	6	0
5	B	224	0	0	5	0
All	All	5701	0	5256	78	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 7.

All (78) 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:326:GLY:O	1:A:361:ASN:HB2	1.69	0.93
1:B:326:GLY:O	1:B:361:ASN:HB2	1.68	0.92
1:A:89:ILE:HD11	1:A:99:CYS:HB3	1.63	0.79
1:B:323:SER:O	1:B:330:THR:HG21	1.82	0.78
1:A:287:ASN:ND2	5:A:516:HOH:O	2.18	0.74
1:A:48:LYS:HD2	1:A:69:ASP:O	1.93	0.69
1:A:89:ILE:CD1	1:A:99:CYS:HB3	2.25	0.67
1:B:173:ASN:HD22	1:B:173:ASN:C	1.98	0.66
1:A:362:LYS:HE3	1:A:363:PRO:HD2	1.77	0.65
1:A:45:PRO:HA	1:A:71:VAL:HG23	1.79	0.65
1:A:81:VAL:O	1:A:85:VAL:HG22	1.97	0.65
1:B:170:ASP:HB2	1:B:182:LEU:HD11	1.79	0.63
1:A:85:VAL:O	1:A:89:ILE:HG22	2.02	0.60
1:B:173:ASN:ND2	1:B:175:SER:H	2.00	0.59
1:A:161:LEU:HD21	1:A:168:LEU:HG	1.83	0.59
1:A:53:ARG:HD3	1:A:56:GLY:HA2	1.84	0.58
1:A:299:ILE:HG23	1:A:359:ILE:HD11	1.84	0.58
1:B:339:ALA:HB1	1:B:341:LEU:HD13	1.86	0.57
1:B:92:GLU:HA	1:B:95:MET:HE3	1.87	0.55
1:B:299:ILE:HG23	1:B:359:ILE:HD11	1.87	0.55
1:A:170:ASP:HB2	1:A:182:LEU:HD11	1.89	0.55
1:A:116:GLU:OE2	1:A:221:ARG:NH1	2.36	0.54
1:A:99:CYS:O	1:A:261:LEU:HA	2.09	0.53
1:B:167:GLU:HG2	1:B:181:ARG:HH21	1.73	0.53
1:B:341:LEU:HD12	1:B:341:LEU:H	1.71	0.53
1:A:28:PHE:HB3	1:A:32:GLU:HG3	1.90	0.52
1:B:234:ARG:NH1	5:B:585:HOH:O	2.33	0.52
1:A:260:LYS:HE2	1:A:262:ASN:HD21	1.75	0.52
1:A:327:ARG:HB3	1:A:363:PRO:HD3	1.91	0.52
1:A:175:SER:HB3	1:B:34:LYS:HD3	1.92	0.51
1:B:341:LEU:H	1:B:341:LEU:CD1	2.24	0.51
1:A:315:LYS:NZ	5:A:506:HOH:O	2.43	0.51
1:A:54:THR:HG21	1:A:64:LYS:HD3	1.92	0.51
1:B:18:ASN:HB3	1:B:360:LEU:HA	1.93	0.51
1:B:40:ILE:HG21	1:B:340:SER:HB3	1.94	0.50
1:B:154:PHE:HA	1:B:244:HIS:O	2.11	0.50
1:B:173:ASN:HD22	1:B:174:PRO:N	2.09	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:173:ASN:HB2	1:B:200:GLU:HG3	1.93	0.50
1:A:222:THR:O	1:A:226:THR:HG23	2.12	0.49
1:A:323:SER:O	1:A:330:THR:HG21	2.12	0.49
5:A:395:HOH:O	1:B:208:ASP:HB3	2.12	0.49
1:A:247:GLU:HB3	1:A:255:LEU:HD23	1.94	0.48
1:A:86:VAL:HG21	1:A:135:ILE:HG12	1.94	0.48
1:A:362:LYS:CE	1:A:363:PRO:HD2	2.43	0.48
1:B:90:LEU:HD13	1:B:139:THR:HG23	1.94	0.48
1:A:289:ASN:HD22	1:A:292:LEU:H	1.61	0.47
1:B:173:ASN:C	1:B:173:ASN:ND2	2.65	0.47
1:A:289:ASN:ND2	1:A:292:LEU:H	2.12	0.47
1:B:190:ASN:O	1:B:190:ASN:ND2	2.48	0.47
1:B:289:ASN:HD22	1:B:292:LEU:H	1.61	0.47
1:A:173:ASN:CG	1:A:200:GLU:HG3	2.36	0.46
1:A:89:ILE:HD12	5:A:560:HOH:O	2.16	0.46
1:A:327:ARG:HA	1:A:362:LYS:HA	1.97	0.46
1:B:162:GLU:HG3	1:B:171:LEU:HD23	1.97	0.46
1:A:18:ASN:N	5:A:595:HOH:O	2.48	0.46
1:A:128:GLU:HB2	1:A:141:HIS:CD2	2.51	0.45
1:A:327:ARG:CB	1:A:363:PRO:HD3	2.46	0.45
1:A:241:VAL:CG1	1:A:261:LEU:HB3	2.47	0.45
1:A:163:ILE:HG12	1:A:168:LEU:HD12	2.00	0.44
1:B:54:THR:HG22	1:B:343:LEU:HD11	1.98	0.44
1:B:325:GLY:HA2	1:B:361:ASN:HB3	2.00	0.43
1:A:18:ASN:HB3	1:A:360:LEU:HA	2.00	0.43
1:B:287:ASN:HB3	1:B:288:ILE:H	1.46	0.43
1:A:82:TYR:OH	1:A:142:GLN:HG3	2.19	0.43
1:B:222:THR:O	1:B:226:THR:HG23	2.19	0.42
1:A:191:LYS:O	1:A:192:ARG:HG2	2.19	0.42
1:A:93:VAL:HG21	1:A:261:LEU:HB2	2.01	0.42
1:A:86:VAL:O	1:A:89:ILE:HG23	2.20	0.41
1:A:187:ASP:OD2	1:A:189:ARG:NH1	2.50	0.41
1:B:142:GLN:HG2	5:B:455:HOH:O	2.20	0.41
1:A:48:LYS:HA	1:A:71:VAL:HG22	2.03	0.41
1:B:90:LEU:O	1:B:94:ILE:HD13	2.20	0.41
1:A:31:ALA:HB2	5:B:559:HOH:O	2.21	0.41
1:B:83:ARG:NH2	5:B:589:HOH:O	2.42	0.41
1:A:287:ASN:ND2	5:A:546:HOH:O	2.51	0.40
1:B:289:ASN:ND2	1:B:292:LEU:H	2.19	0.40
1:B:77:LYS:HG3	5:B:501:HOH:O	2.21	0.40
1:B:111:LYS:HB2	1:B:111:LYS:HE2	1.84	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	323/368 (88%)	309 (96%)	13 (4%)	1 (0%)	41	29
1	B	315/368 (86%)	311 (99%)	3 (1%)	1 (0%)	41	29
All	All	638/736 (87%)	620 (97%)	16 (2%)	2 (0%)	41	29

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	189	ARG
1	A	362	LYS

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	293/322 (91%)	274 (94%)	19 (6%)	17	7
1	B	292/322 (91%)	268 (92%)	24 (8%)	11	3
All	All	585/644 (91%)	542 (93%)	43 (7%)	13	5

All (43) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	29	ASN

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Mol	Chain	Res	Type
1	A	64	LYS
1	A	65	THR
1	A	89	ILE
1	A	161	LEU
1	A	168	LEU
1	A	173	ASN
1	A	179	SER
1	A	189	ARG
1	A	190	ASN
1	A	192	ARG
1	A	207	LYS
1	A	216	LYS
1	A	254	GLU
1	A	255	LEU
1	A	289	ASN
1	A	330	THR
1	A	337	SER
1	A	361	ASN
1	B	34	LYS
1	B	46	VAL
1	B	49	GLU
1	B	61	SER
1	B	65	THR
1	B	85	VAL
1	B	87	CYS
1	B	128	GLU
1	B	148	THR
1	B	161	LEU
1	B	168	LEU
1	B	173	ASN
1	B	179	SER
1	B	190	ASN
1	B	192	ARG
1	B	216	LYS
1	B	226	THR
1	B	241	VAL
1	B	287	ASN
1	B	289	ASN
1	B	330	THR
1	B	337	SER
1	B	341	LEU
1	B	361	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (16) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	29	ASN
1	A	142	GLN
1	A	173	ASN
1	A	205	HIS
1	A	212	GLN
1	A	229	ASN
1	A	262	ASN
1	A	287	ASN
1	A	289	ASN
1	A	361	ASN
1	B	18	ASN
1	B	173	ASN
1	B	190	ASN
1	B	229	ASN
1	B	262	ASN
1	B	289	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 6 ligands modelled in this entry, 2 are monoatomic - leaving 4 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	$\#|Z| > 2$
3	ADP	A	603	4	24,29,29	1.08	3 (12%)	29,45,45	1.41	4 (13%)
3	ADP	B	605	4	24,29,29	1.06	2 (8%)	29,45,45	1.34	3 (10%)
2	K5E	B	369	-	18,21,21	1.27	1 (5%)	23,30,30	2.00	5 (21%)
2	K5E	A	369	-	18,21,21	1.33	2 (11%)	23,30,30	2.28	5 (21%)

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
3	ADP	A	603	4	-	2/12/32/32	0/3/3/3
3	ADP	B	605	4	-	2/12/32/32	0/3/3/3
2	K5E	B	369	-	-	0/4/30/30	0/3/3/3
2	K5E	A	369	-	-	0/4/30/30	0/3/3/3

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	369	K5E	C8-S	-3.79	1.58	1.68
2	B	369	K5E	C8-S	-3.06	1.60	1.68
3	B	605	ADP	O4'-C1'	2.54	1.44	1.41
3	A	603	ADP	C2-N3	2.33	1.35	1.32
3	B	605	ADP	C5-C4	2.29	1.47	1.40
3	A	603	ADP	C5-C4	2.25	1.46	1.40
3	A	603	ADP	O4'-C1'	2.03	1.43	1.41
2	A	369	K5E	C9-N2	-2.01	1.34	1.37

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	369	K5E	N2-C8-N1	8.81	122.64	116.22
2	B	369	K5E	N2-C8-N1	7.11	121.40	116.22
3	A	603	ADP	N3-C2-N1	-4.24	122.05	128.68
3	B	605	ADP	N3-C2-N1	-3.85	122.66	128.68
2	A	369	K5E	S-C8-N1	-3.08	118.92	122.68
2	A	369	K5E	C8-N2-C9	-3.07	121.98	123.84
2	B	369	K5E	S-C8-N1	-3.05	118.95	122.68

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W O R L D W I D E
wwPDB
PROTEIN DATA BANK

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	369	K5E	S-C8-N2	-2.76	118.44	122.08
3	B	605	ADP	C3'-C2'-C1'	2.69	105.03	100.98
2	B	369	K5E	C8-N2-C9	-2.61	122.26	123.84
2	B	369	K5E	C5-C7-N1	-2.41	108.14	110.87
2	B	369	K5E	C14-C9-N2	2.41	119.05	115.34
2	A	369	K5E	C14-C9-N2	2.36	118.97	115.34
3	A	603	ADP	PA-O3A-PB	-2.24	125.14	132.83
3	B	605	ADP	C4-C5-N7	-2.23	107.07	109.40
3	A	603	ADP	C2-N1-C6	2.10	122.35	118.75
3	A	603	ADP	C4-C5-N7	-2.01	107.31	109.40

There are no chirality outliers.
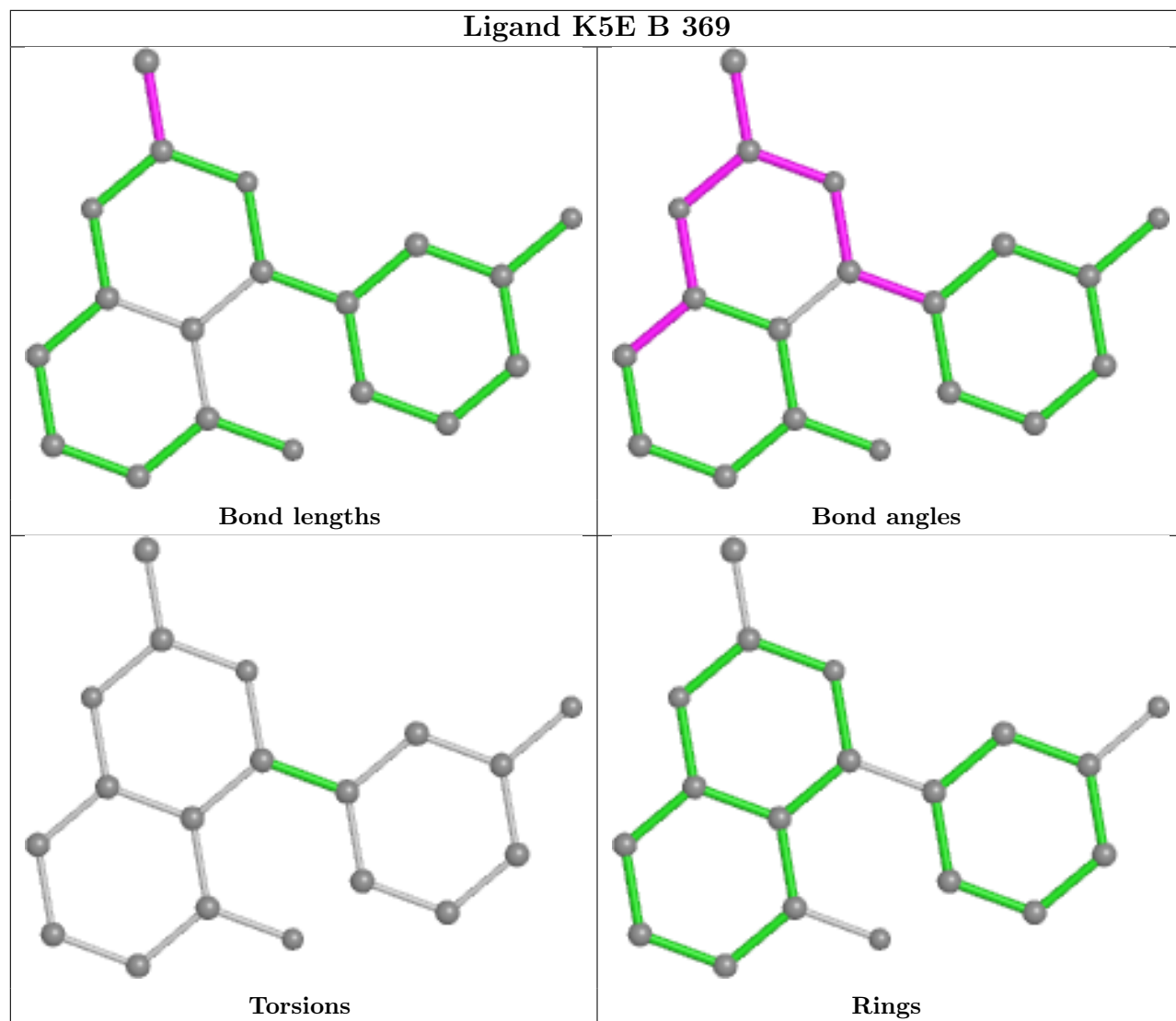
All (4) torsion outliers are listed below:

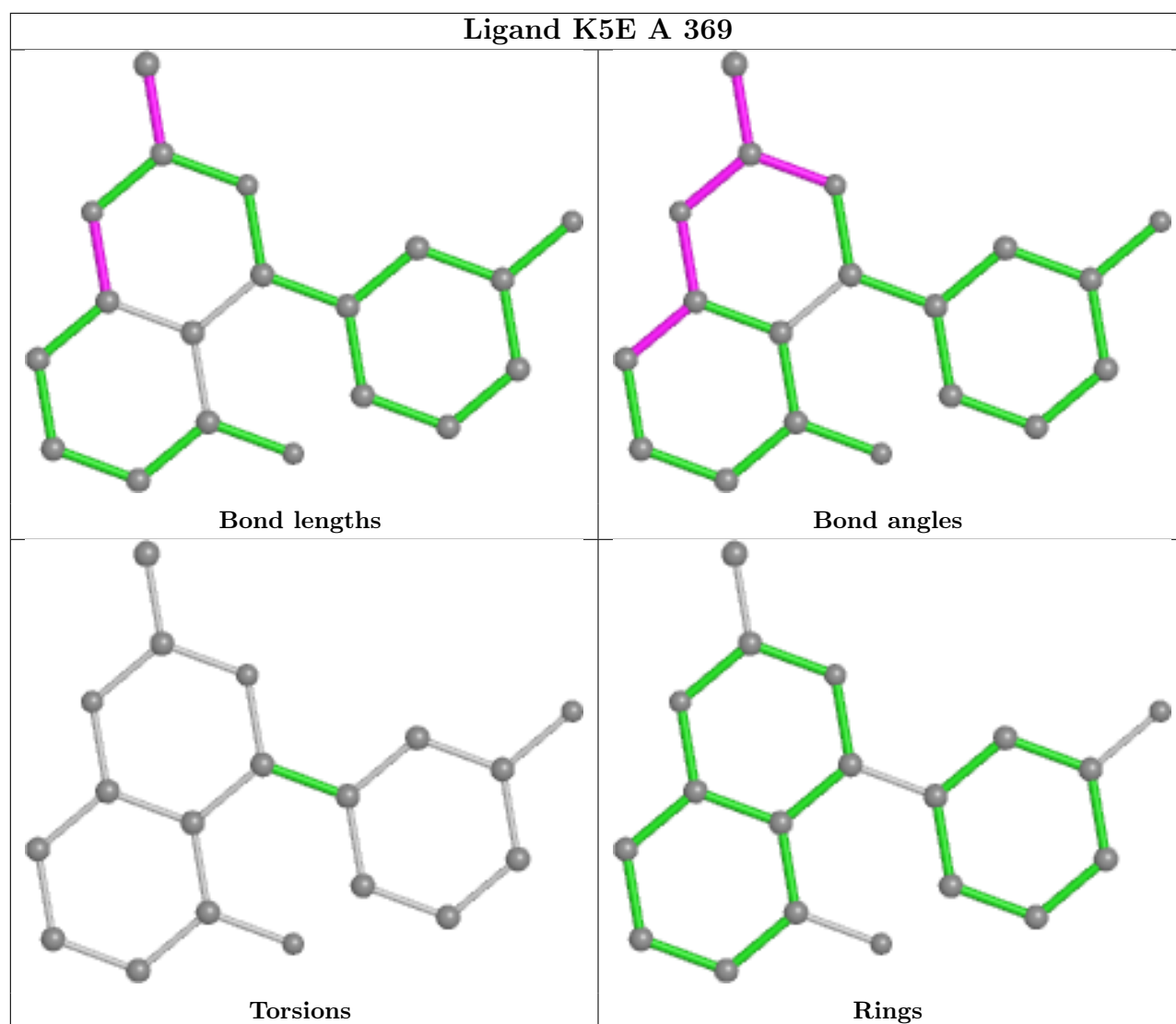| Mol	Chain	Res	Type	Atoms
3	A	603	ADP	PA-O3A-PB-O3B
3	B	605	ADP	PA-O3A-PB-O2B
3	B	605	ADP	PA-O3A-PB-O3B
3	A	603	ADP	PA-O3A-PB-O2B

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 ADP A 603

Bond lengths

Bond angles

Torsions

Rings

Ligand ADP B 605

Bond lengths

Bond angles

Torsions

Rings

Ligand K5E B 369

Bond lengths

Bond angles

Torsions

Rings

Ligand K5E A 369

Bond lengths

Bond angles

Torsions

Rings
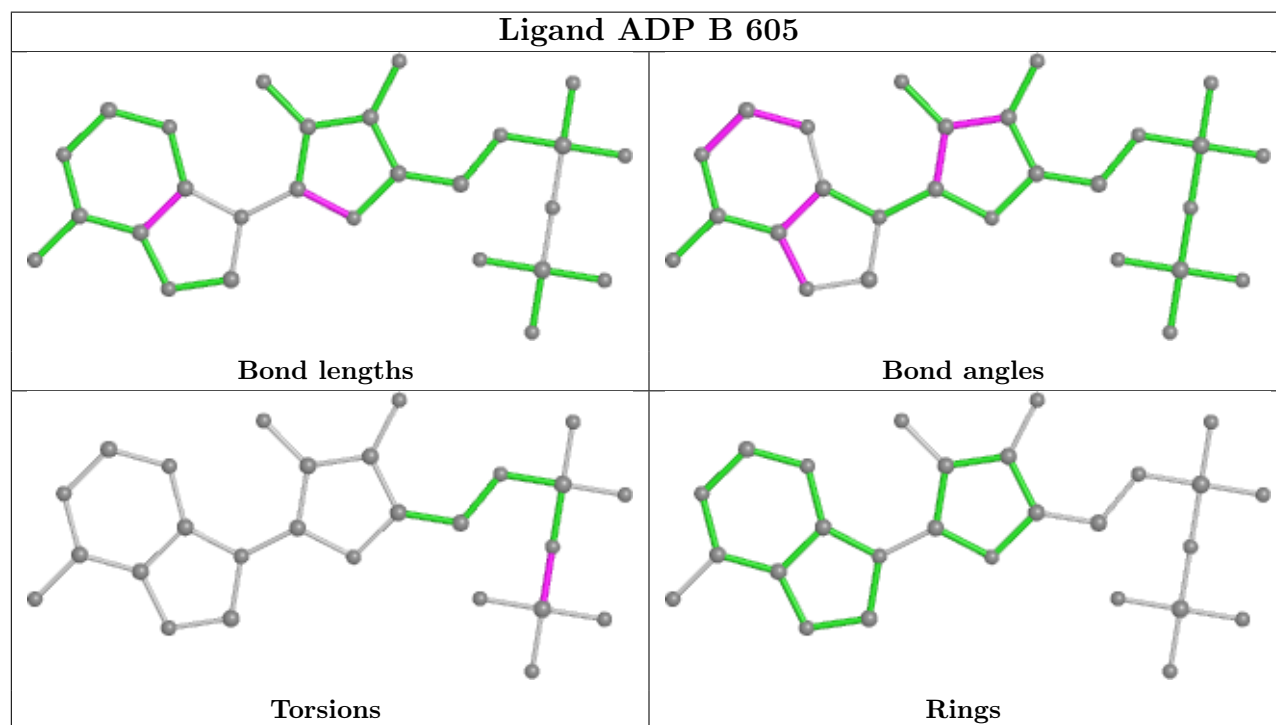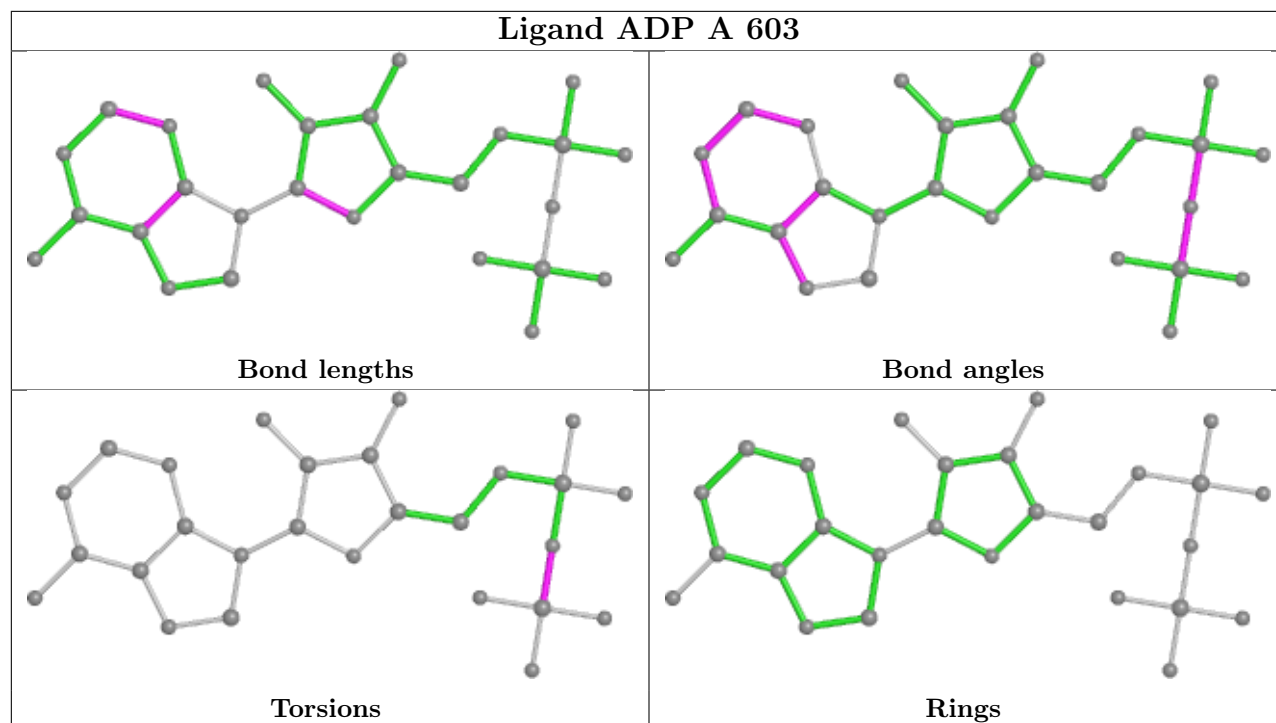
5.7 Other polymers ⓘ

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, 95th 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	329/368 (89%)	0.55	26 (7%)	12	14	10, 24, 46, 51	0
1	B	324/368 (88%)	0.41	14 (4%)	35	37	11, 25, 44, 53	0
All	All	653/736 (88%)	0.48	40 (6%)	21	23	10, 25, 45, 53	0

All (40) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	250	ILE	6.3
1	A	36	SER	5.6
1	A	249	THR	5.0
1	A	34	LYS	4.8
1	A	38	HIS	4.7
1	B	38	HIS	4.4
1	B	37	ALA	4.4
1	A	363	PRO	4.0
1	A	151	GLY	3.4
1	A	190	ASN	3.4
1	B	33	ARG	3.4
1	B	360	LEU	3.3
1	A	341	LEU	3.2
1	A	149	ASP	3.2
1	A	55	GLY	3.2
1	B	34	LYS	3.1
1	A	192	ARG	3.0
1	A	31	ALA	3.0
1	B	31	ALA	2.9
1	B	192	ARG	2.8
1	A	30	LEU	2.8
1	A	178	VAL	2.6
1	A	150	ASN	2.6
1	B	175	SER	2.6

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Mol	Chain	Res	Type	RSRZ
1	A	360	LEU	2.6
1	B	30	LEU	2.6
1	A	188	PRO	2.6
1	A	152	THR	2.5
1	A	191	LYS	2.5
1	A	247	GLU	2.4
1	A	33	ARG	2.4
1	B	190	ASN	2.4
1	A	248	THR	2.4
1	A	193	GLY	2.2
1	B	287	ASN	2.2
1	A	37	ALA	2.2
1	B	56	GLY	2.1
1	B	191	LYS	2.1
1	B	361	ASN	2.0
1	A	59	ASP	2.0

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

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

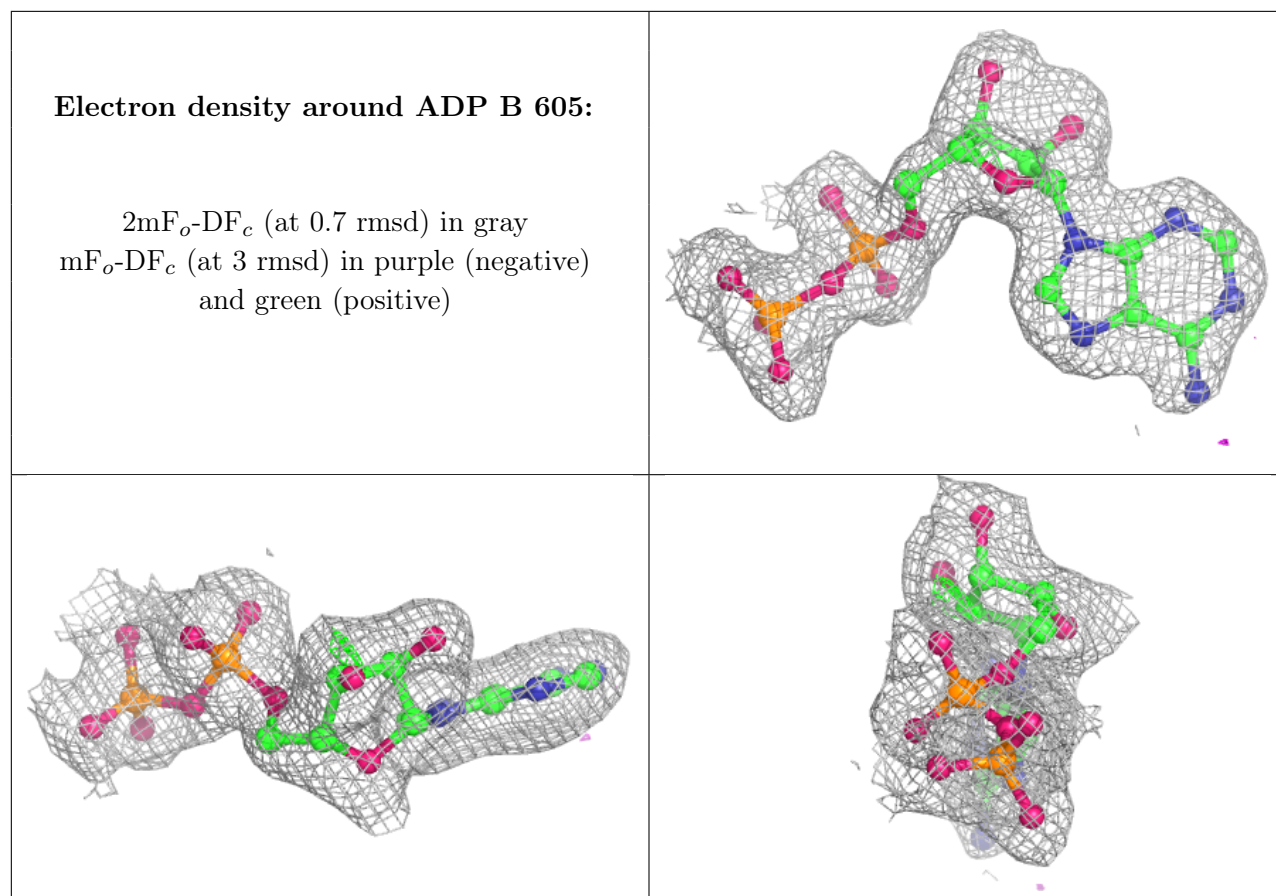## 6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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, 95th 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.

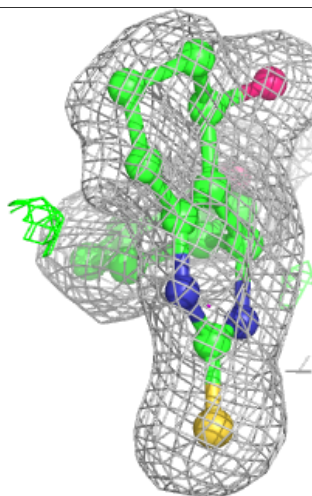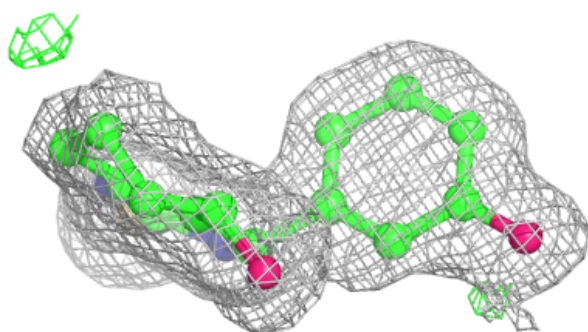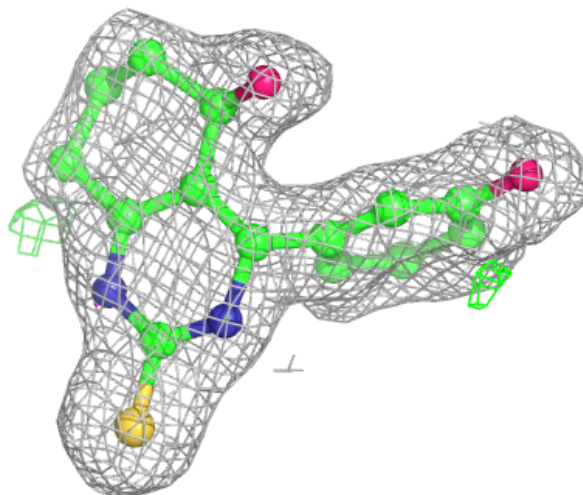| Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($Å^2$)	Q<0.9
2	K5E	B	369	19/19	0.95	0.13	19,23,27,29	0
4	MG	B	606	1/1	0.95	0.07	17,17,17,17	0
3	ADP	B	605	27/27	0.96	0.11	14,31,35,36	0
4	MG	A	604	1/1	0.96	0.17	26,26,26,26	0
2	K5E	A	369	19/19	0.96	0.10	16,20,27,27	0
3	ADP	A	603	27/27	0.97	0.10	16,26,29,31	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.
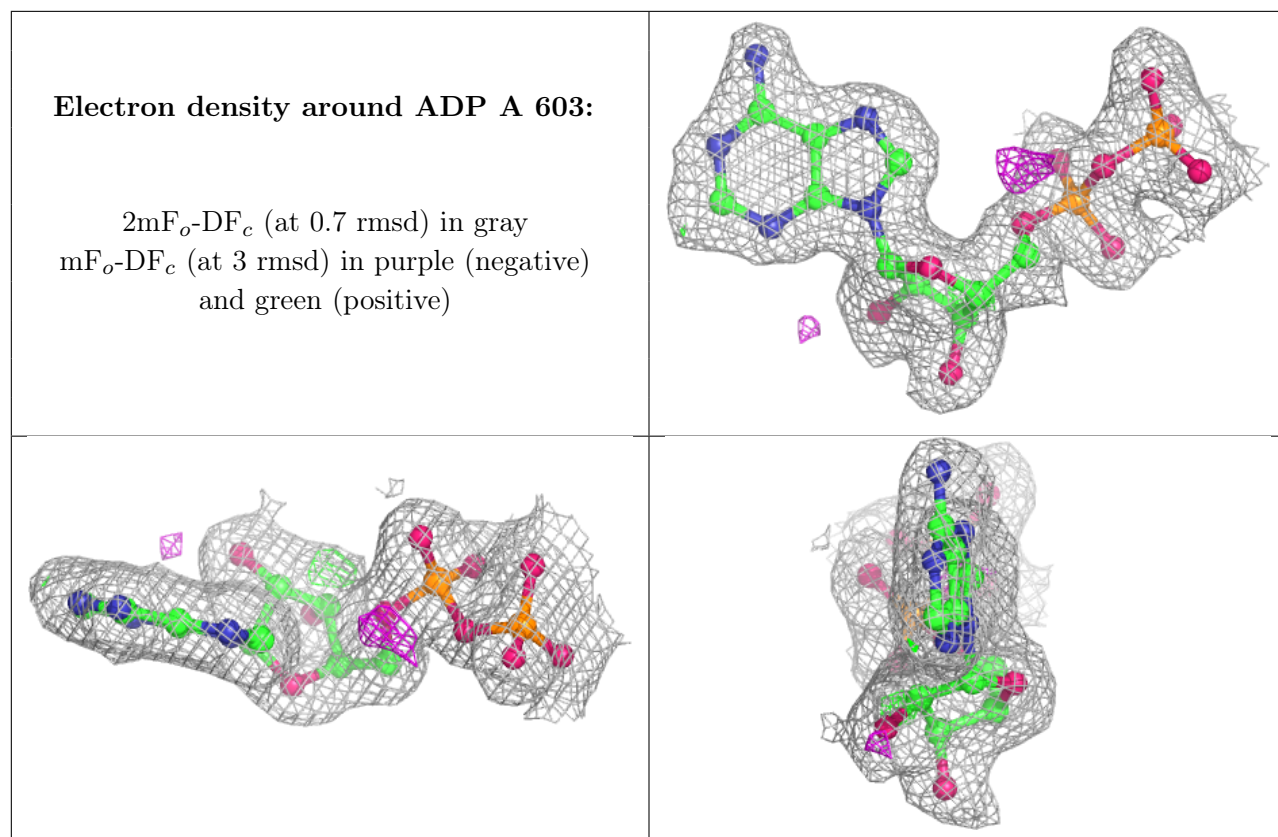
Electron density around K5E B 369:

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

Electron density around ADP B 605:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
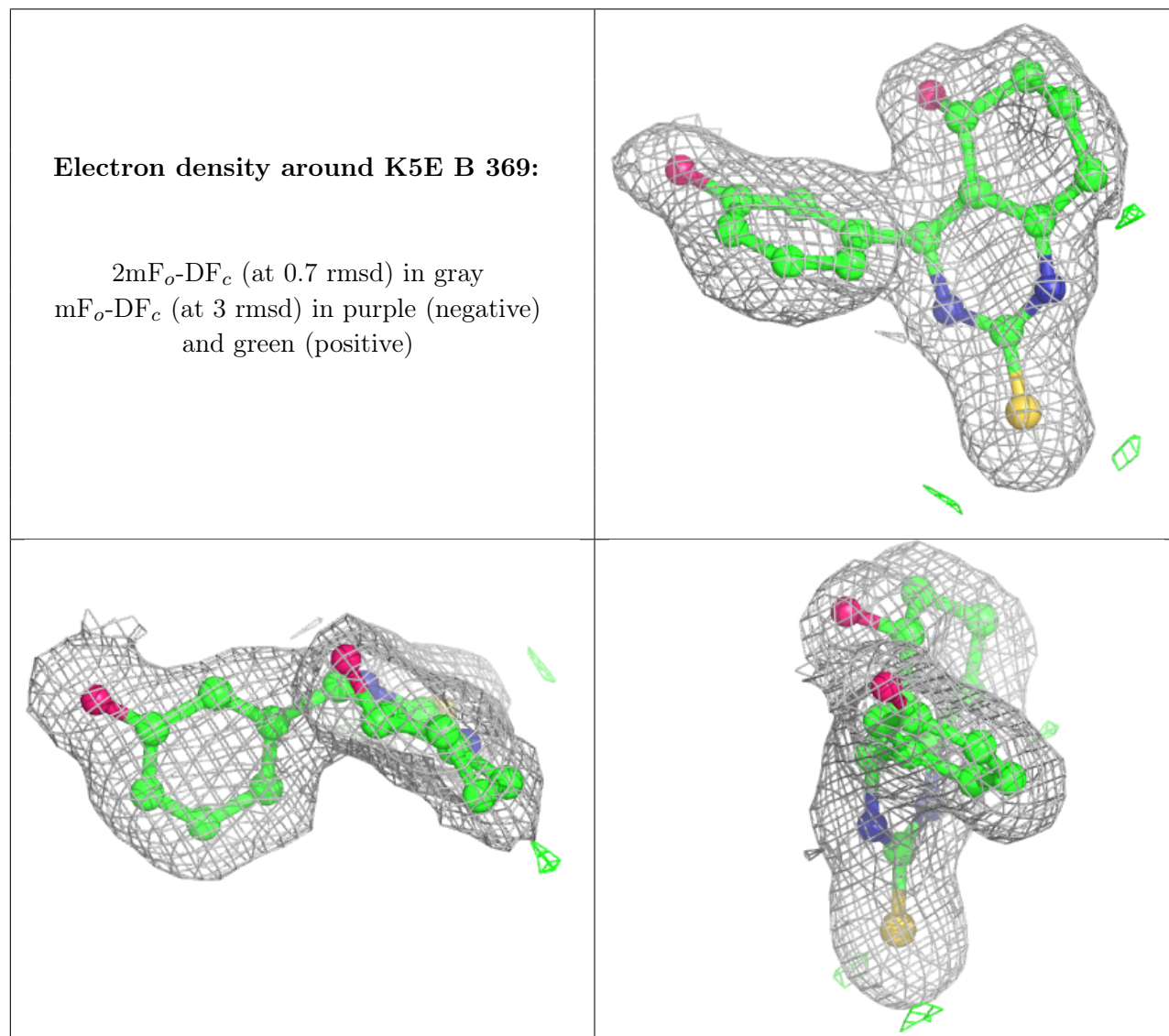
Electron density around K5E A 369:

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

Electron density around ADP A 603:

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

6.5 Other polymers ⓘ

There are no such residues in this entry.