



wwPDB X-ray Structure Validation Summary Report ⓘ

Feb 21, 2024 – 06:46 PM EST

PDB ID : 4RH7
Title : Crystal structure of human cytoplasmic dynein 2 motor domain in complex with ADP.Vi
Authors : Schmidt, H.; Zalyte, R.; Urnavicius, L.; Carter, A.P.
Deposited on : 2014-10-01
Resolution : 3.41 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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

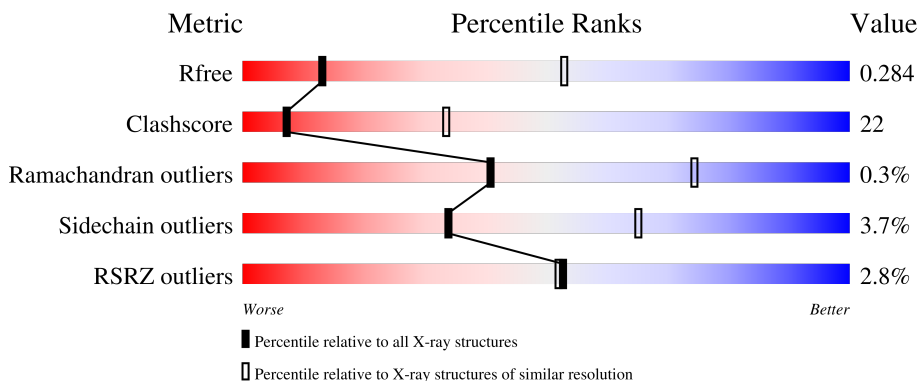
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.41 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	1486 (3.50-3.34)
Clashscore	141614	1572 (3.50-3.34)
Ramachandran outliers	138981	1534 (3.50-3.34)
Sidechain outliers	138945	1535 (3.50-3.34)
RSRZ outliers	127900	1395 (3.50-3.34)

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 $\leq 5\%$. 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	3450	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	AOV	A	4401	-	-	X	-

2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 22816 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.

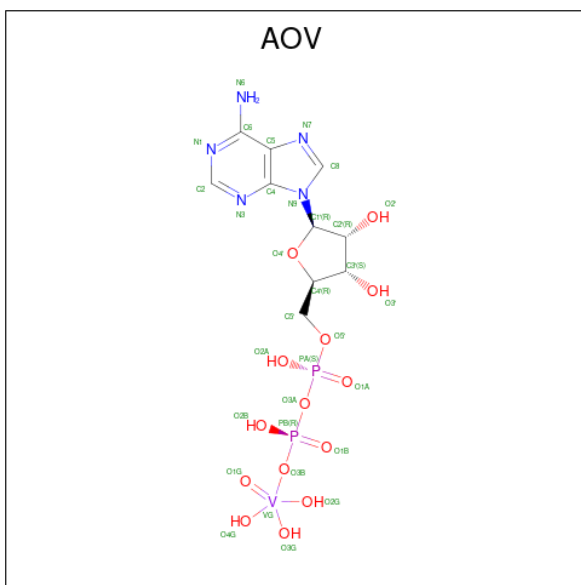
- Molecule 1 is a protein called Green fluorescent protein/Cytoplasmic dynein 2 heavy chain 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	3005	22697	14414	3922	4263	98	0	0	0

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1089	GLY	-	linker	UNP Q8NCM8
A	1090	SER	-	linker	UNP Q8NCM8
A	1413	ARG	LYS	variant	UNP Q8NCM8
A	2871	GLN	ARG	variant	UNP Q8NCM8
A	3680	VAL	ALA	variant	UNP Q8NCM8
A	4308	VAL	-	expression tag	UNP Q8NCM8

- Molecule 2 is ADP ORTHOVANADATE (three-letter code: AOV) (formula: C₁₀H₁₇N₅O₁₄P₂V).

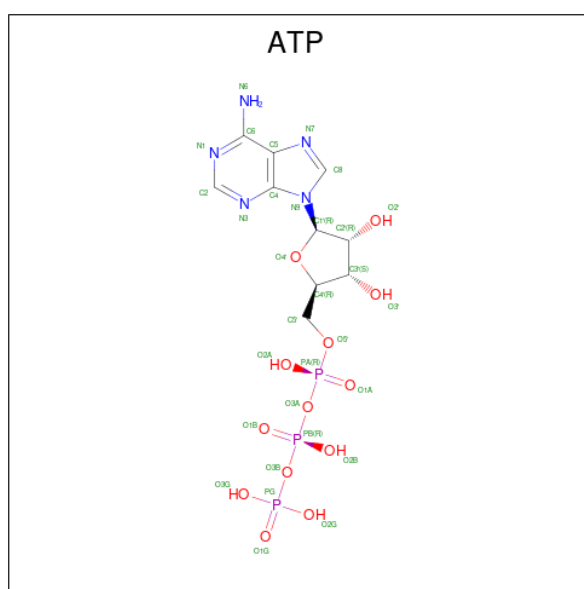


Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
			Total	C	N	O	P			V
2	A	1	32	10	5	14	2	1	0	0

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Mg		
3	A	2	2	2	0	0

- Molecule 4 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: C₁₀H₁₆N₅O₁₃P₃).





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

S1136	V3137	G3138	Q3139	K3140	E2948	S2949	K2950	L3144	E2952	L2953	S2954	F2955	L2956	E2957	E2958	L2852	L2856	E2963	E2964	V2965	D2975	K2979	T2868	G3019	Q3189	I3189	L3187	L3200	P3201	K3071	P3076	K3080	A3087	Y3099	L3103	K3119	L3120	K3121	K3122	T3123	E3124	D3125	K3126	K3127	R3128	K3129	L3130	E3131	E3132	F3244	L3244	C3245
LYS	GLU	GLU	LYS	LYS	ASN	SER	V2847	D2848	P2849	D2850	F2851	L2852	L2856	L2857	L2858	S2861	A2867	T2868	P2869	S2870	Q2871	F2875	R2893	G2900	V2901	S2902	E2906	A2907	K2908	A2909	L2910	V2911	D2912	S2915	A2918	G2919	S2922	D2933	A2934	A2935	L2936	Q2937	W2938	ASN	L2939	T2940	L3134	L2941	S2942			
K2943	Q2944	D2945	A2946	S2947	E2948	K2949	K2950	L3144	E2952	L2953	L2956	E2957	E2958	L2852	L2856	E2963	E2964	V2965	D2975	K2979	T2868	G3019	Q3189	I3189	L3187	L3200	P3201	K3071	P3076	K3080	A3087	Y3099	L3103	K3119	L3120	K3121	K3122	T3123	E3124	D3125	K3126	K3127	R3128	K3129	L3130	E3131	E3132	F3244	L3244	C3245		
L2723	L2730	L2733	L2734	L2739	L2744	E2745	P2746	L2749	P2750	V2764	F2765	N2766	Y2767	F2768	T2769	Y2770	R2771	L2772	Q2773	Q2774	M2782	D2783	K2802	C2803	Q2804	V2805	L2806	G2810	W2811	S2812	M2816	L2819	P2820	E2821	M2822	L2823	E2826	THR	GLY	GLY	GLY	GLY	GLU	LYS	TYR	ASN	ASP	LYS	H2718	P2720	ARG	
L2825	D2826	L2827	L2828	L2829	E2832	V2833	L2834	E2835	R2839	R2842	V2843	L2844	S2845	S2850	L2851	L2852	L2853	R2856	S2857	G2858	V2859	G2860	R2861	T2862	T2863	L2864	T2865	V2866	L2867	R2868	R2869	R2870	V2871	G2876	R2883	G2884	Y2885	Q2889	F2890	Q2899	E2704	A2705	G2706	Q2707	L2711	L2712	F2717	W2718	H2719	P2720		
A2531	R2532	R2533	L2534	F2535	R2536	E2544	L2545	F2548	A2549	L2550	L2551	L2552	T2553	Q2557	W2560	L2564	L2565	D2566	D2570	Y2573	V2574	L2575	G2576	C2577	A2578	H2579	H2580	G2583	ALA	ARG	ALA	A2587	Q2590	P2591	L2592	P2593	H2594	G2595	G2596	K2597	K2601	L2602	D2606	L2607	V2610	A2628	E2629	E2630				
S2429	I2430	D2431	D2432	R2433	R2435	I2441	Y2442	G2443	A2444	L2445	L2446	E2447	P2448	L2449	L2450	M2453	I2459	W2460	G2461	S2462	K2465	L2468	L2469	M2473	V2486	T2495	P2496	G2497	I2498	W2502	V2503	L2504	D2510	L2511	E2512	M2517	H2518	P2519	L2520	D2521	Y2522	V2523	L2524	D2527	A2528	E2529	E2530					
V2163	V2164	E2165	T2166	S2167	L2168	V2169	G2170	M2171	N2172	N2173	N2174	G2175	H2178	H2185	D2186	L2187	F2188	I2189	I2190	N2191	L2192	L2193	L2196	N2199	L2200	N2201	R2205	F2208	T2209	V2212	F2213	W2215	A2216	S2219	F2223	H2224	F2225	C2318	S2319	A2320	Q2321	T2322	L2327	R2328	A2329	T2340	V2341	V2342	E2347			
D2248	L2249	D2253	F2254	S2255	N2256	G2257	L2258	P2261	V2262	L2263	Q2264	T2265	P2266	D2267	M2268	Q2269	R2270	Y2274	I2275	K2276	P2277	K2284	F2287	L2288	P2292	E2293	C2294	G2296	K2297	L2301	Q2307	S2310	T2311	Q2312	C2318	S2319	A2320	Q2321	T2322	L2327	R2328	A2329	T2340	V2341	V2342	E2347						
V2346	R2347	P2348	C2351	E2352	R2353	L2354	V2355	Y2356	L2357	L2358	L2359	D2360	I2361	L2362	L2363	P2364	K2365	L2366	D2367	V2375	L2378	L2382	T2383	Y2384	D2389	E2390	N2391	E2393	G2396	L2397	E2398	M2399	L2400	Q2401	I2402	M2406	R2411	R2414	H2415	K2416	R2420	F2421	L2424	V2425	R2426	L2427	C2428					

4 Data and refinement statistics

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α , β , γ	136.03Å 487.15Å 276.46Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	56.60 – 3.41 56.54 – 3.41	Depositor EDS
% Data completeness (in resolution range)	62.2 (56.60-3.41) 62.2 (56.54-3.41)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.10	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.49 (at 3.40Å)	Xtrriage
Refinement program	REFMAC 5.8.0073	Depositor
R, R_{free}	0.237 , 0.285 0.239 , 0.284	Depositor DCC
R_{free} test set	3915 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å ²)	108.2	Xtrriage
Anisotropy	0.050	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.25 , 110.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.44$, $\langle L^2 \rangle = 0.27$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	22816	wwPDB-VP
Average B, all atoms (Å ²)	121.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.94% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ 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: ADP, MG, AOV, ATP

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	0.61	2/23147 (0.0%)	0.78	5/31474 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	6

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	2275	PHE	CB-CG	-5.18	1.42	1.51
1	A	2826	GLU	CD-OE2	5.06	1.31	1.25

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	2426	ARG	NE-CZ-NH1	-5.89	117.35	120.30
1	A	2275	PHE	CB-CA-C	-5.82	98.76	110.40
1	A	1915	CYS	CA-CB-SG	5.68	124.22	114.00
1	A	4253	ILE	CB-CA-C	-5.50	100.59	111.60
1	A	2426	ARG	NE-CZ-NH2	5.42	123.01	120.30

There are no chirality outliers.

5 of 6 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	2238	LEU	Peptide

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Mol	Chain	Res	Type	Group
1	A	2247	GLU	Peptide
1	A	2275	PHE	Peptide
1	A	2310	SER	Peptide
1	A	2416	LYS	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	22697	0	21503	995	0
2	A	32	0	12	12	0
3	A	2	0	0	0	0
4	A	31	0	12	4	0
5	A	54	0	24	10	0
All	All	22816	0	21551	996	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 22.

The worst 5 of 996 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:3581:PRO:HA	1:A:3584:PHE:CE1	1.16	1.63
1:A:2284:LYS:CE	1:A:2401:GLN:HG3	1.33	1.55
1:A:2284:LYS:HE3	1:A:2401:GLN:CG	1.49	1.40
1:A:3291:LEU:O	1:A:3294:HIS:CE1	1.75	1.39
1:A:3581:PRO:CA	1:A:3584:PHE:CE1	2.04	1.38

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	2995/3450 (87%)	2834 (95%)	153 (5%)	8 (0%)	41 74

5 of 8 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	1820	PRO
1	A	3965	PHE
1	A	1589	SER
1	A	1645	VAL
1	A	3375	PRO

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	2286/3065 (75%)	2201 (96%)	85 (4%)	34 65

5 of 85 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3755	MET
1	A	4031	PHE
1	A	3762	LEU
1	A	3904	ASP
1	A	4164	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 13 such sidechains are listed below:

Mol	Chain	Res	Type
1	A	2580	HIS
1	A	2595	HIS

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Mol	Chain	Res	Type
1	A	4214	GLN
1	A	3738	GLN
1	A	3742	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 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
2	AOV	A	4401	3	27,34,34	5.35	3 (11%)	26,56,56	1.55	3 (11%)
5	ADP	A	4406	-	24,29,29	1.12	1 (4%)	29,45,45	1.65	7 (24%)
5	ADP	A	4405	-	24,29,29	1.07	1 (4%)	29,45,45	1.67	7 (24%)
4	ATP	A	4403	3	26,33,33	0.88	1 (3%)	31,52,52	1.99	5 (16%)

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	AOV	A	4401	3	-	0/12/39/39	0/3/3/3
5	ADP	A	4406	-	-	0/12/32/32	0/3/3/3
5	ADP	A	4405	-	-	3/12/32/32	0/3/3/3
4	ATP	A	4403	3	-	0/18/38/38	0/3/3/3

The worst 5 of 6 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	4401	AOV	O1G-VG	27.32	2.10	1.61
5	A	4406	ADP	PB-O1B	3.16	1.60	1.50
2	A	4401	AOV	C5-C4	2.50	1.47	1.40
2	A	4401	AOV	C2-N3	2.37	1.35	1.32
5	A	4405	ADP	C4-N3	-2.31	1.32	1.35

The worst 5 of 22 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	4403	ATP	PA-O3A-PB	-6.39	110.88	132.83
4	A	4403	ATP	PB-O3B-PG	-6.11	111.86	132.83
2	A	4401	AOV	PA-O3A-PB	-4.77	116.47	132.83
5	A	4405	ADP	C4-C5-N7	-4.16	105.06	109.40
2	A	4401	AOV	C4-C5-N7	-3.87	105.36	109.40

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	4405	ADP	C5'-O5'-PA-O2A
5	A	4405	ADP	C5'-O5'-PA-O3A
5	A	4405	ADP	O4'-C4'-C5'-O5'

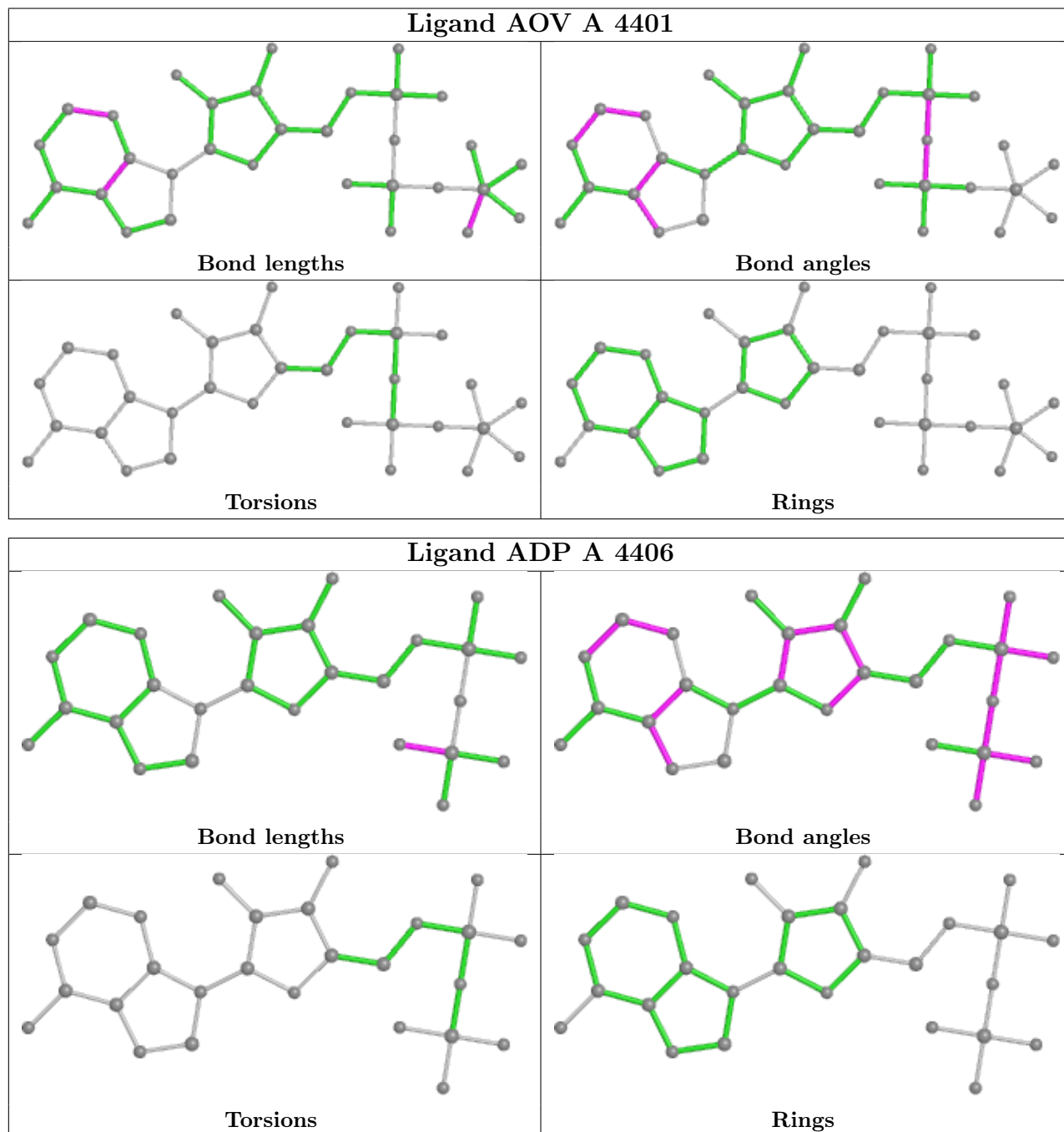
There are no ring outliers.

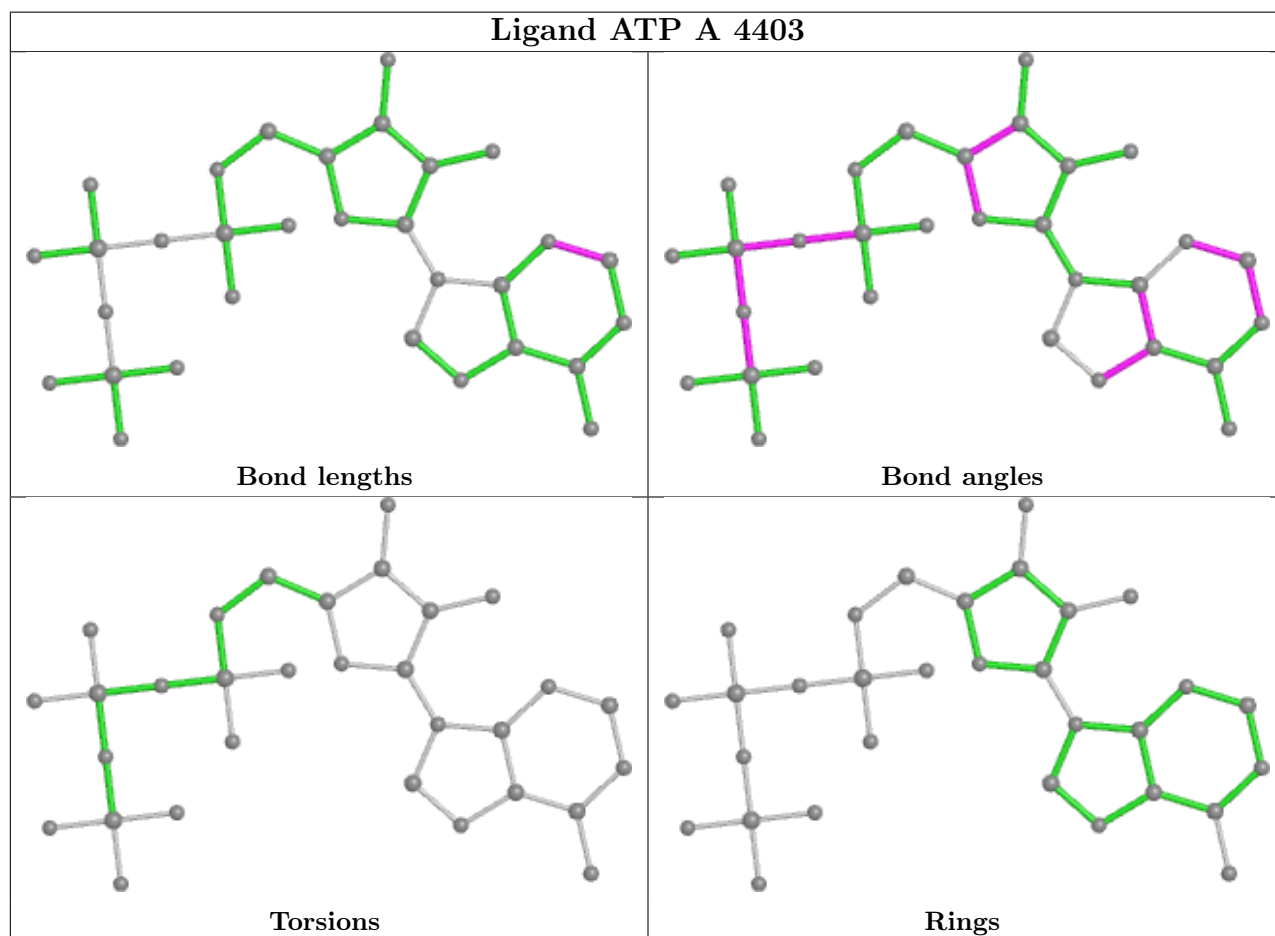
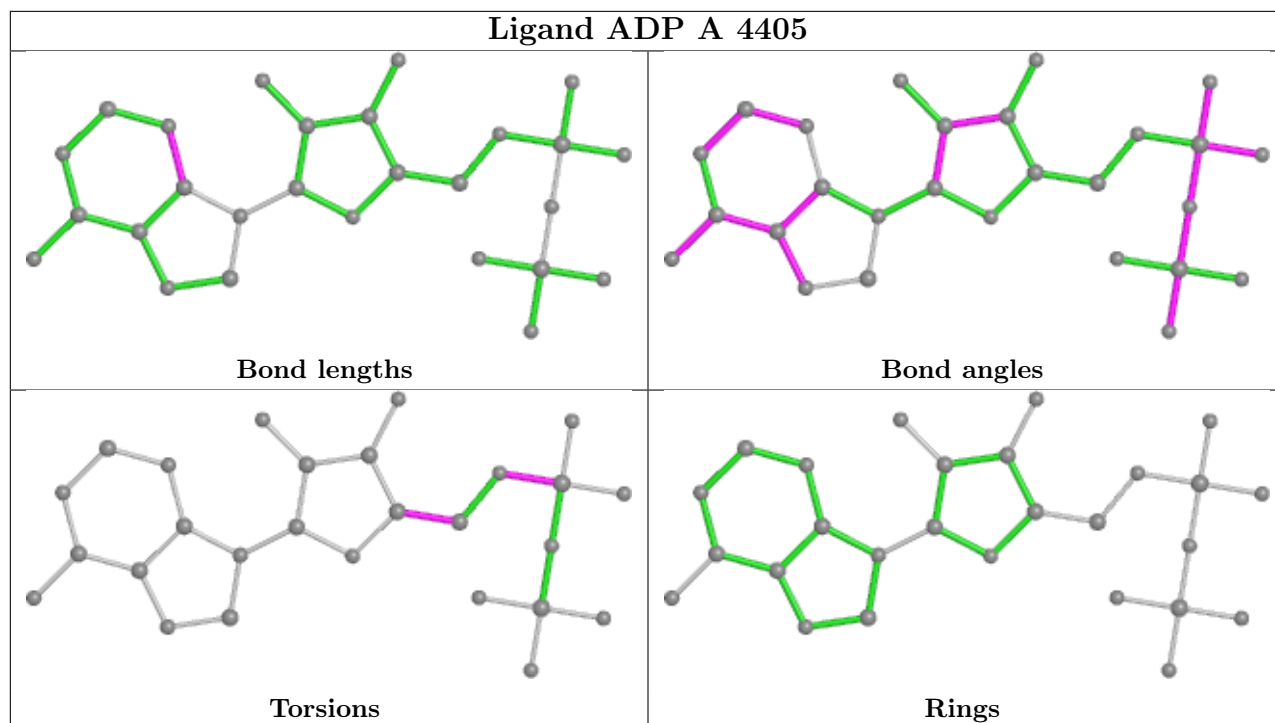
4 monomers are involved in 26 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	4401	AOV	12	0
5	A	4406	ADP	5	0
5	A	4405	ADP	5	0
4	A	4403	ATP	4	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 than 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.





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 [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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	3005/3450 (87%)	-0.31	85 (2%) 53 52	39, 110, 274, 477	0

The worst 5 of 85 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	3130	LEU	8.1
1	A	2975	ASP	5.9
1	A	3136	SER	5.5
1	A	2942	SER	4.7
1	A	2946	ALA	4.5

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, 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.

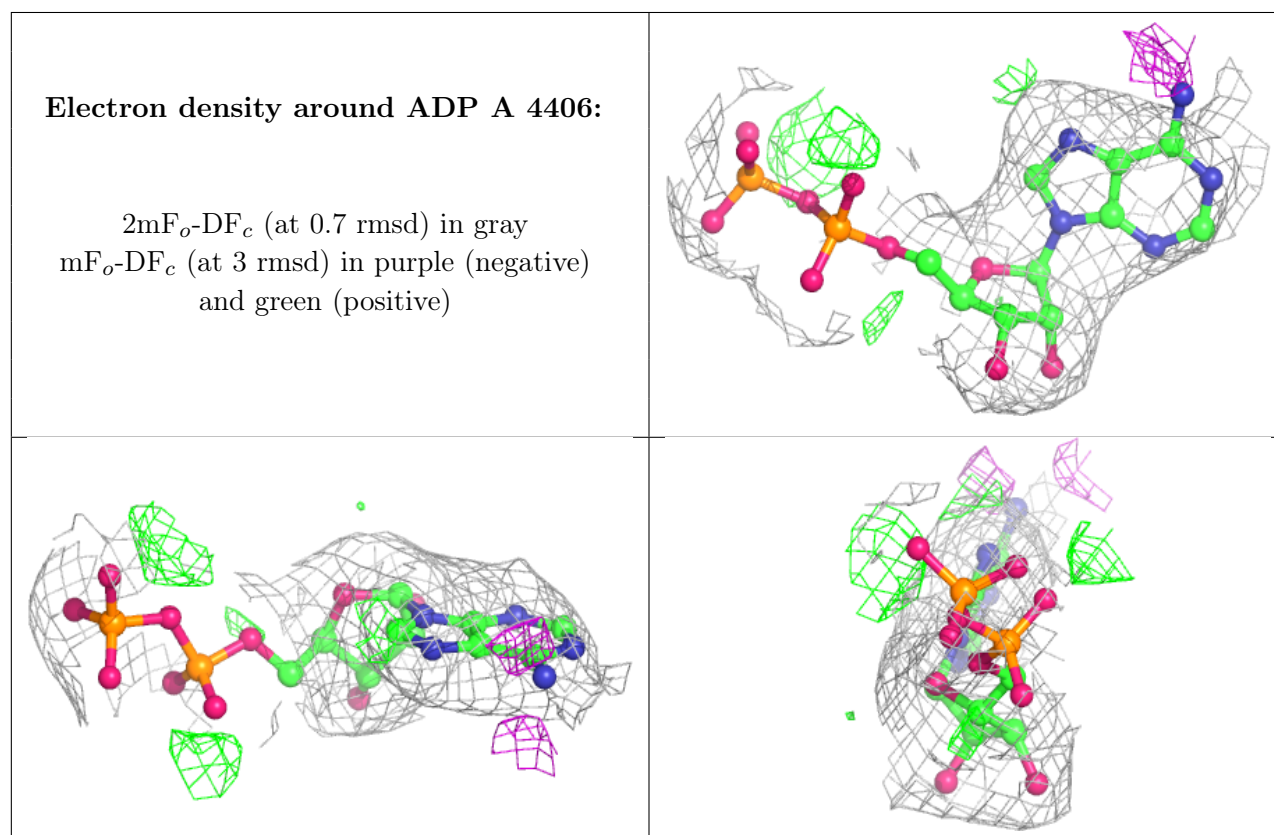
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
5	ADP	A	4406	27/27	0.95	0.20	66,85,103,111	0
5	ADP	A	4405	27/27	0.97	0.18	42,46,57,61	0

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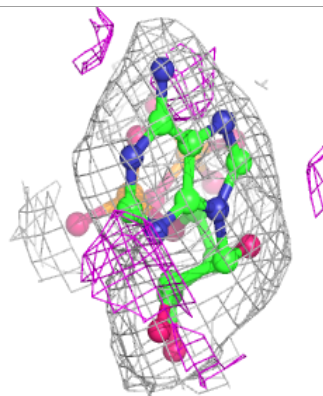
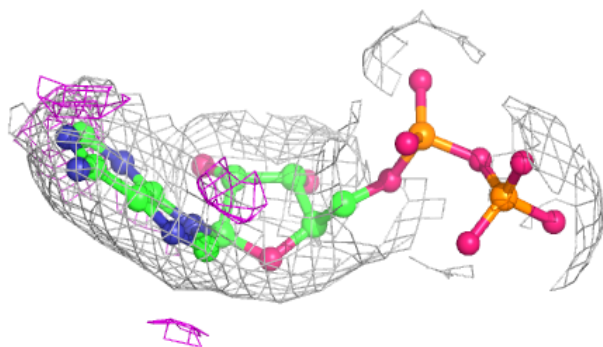
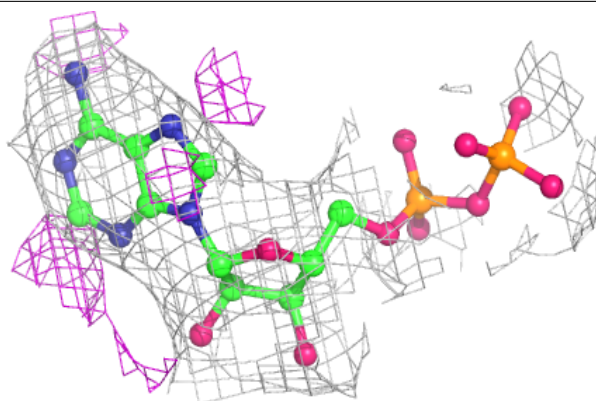
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
4	ATP	A	4403	31/31	0.97	0.18	49,80,97,108	0
2	AOV	A	4401	32/32	0.98	0.20	41,69,88,93	0
3	MG	A	4402	1/1	0.99	0.21	31,31,31,31	0
3	MG	A	4404	1/1	1.00	0.22	22,22,22,22	0

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.

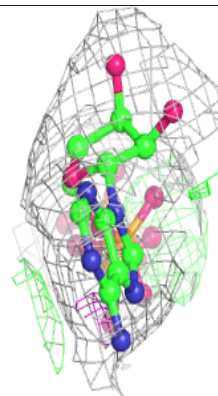
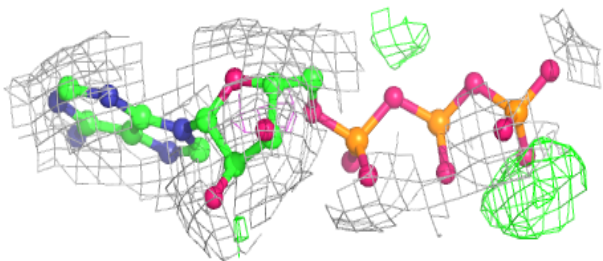
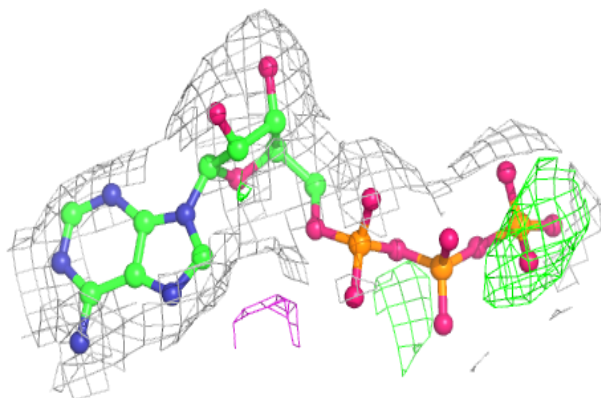


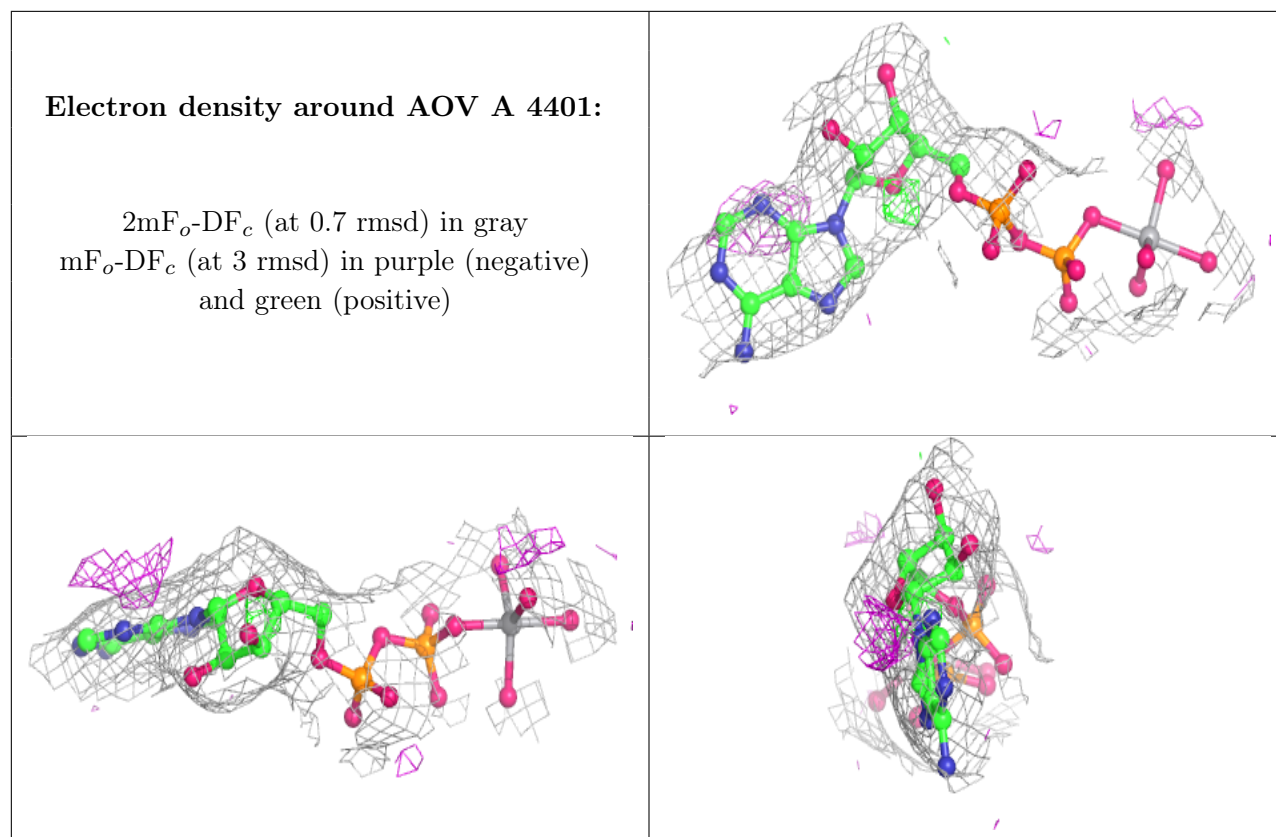
Electron density around ADP A 4405:

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

**Electron density around ATP A 4403:**

$2mF_o-DF_c$ (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.