How Ligands Regulate Allostery in LacI

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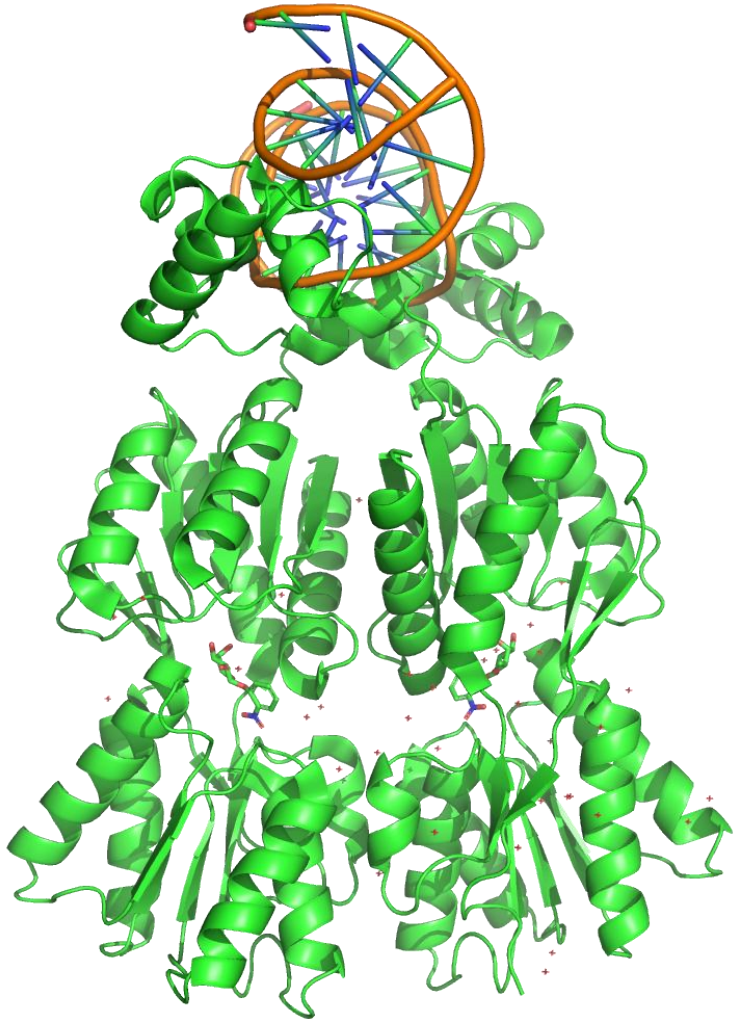
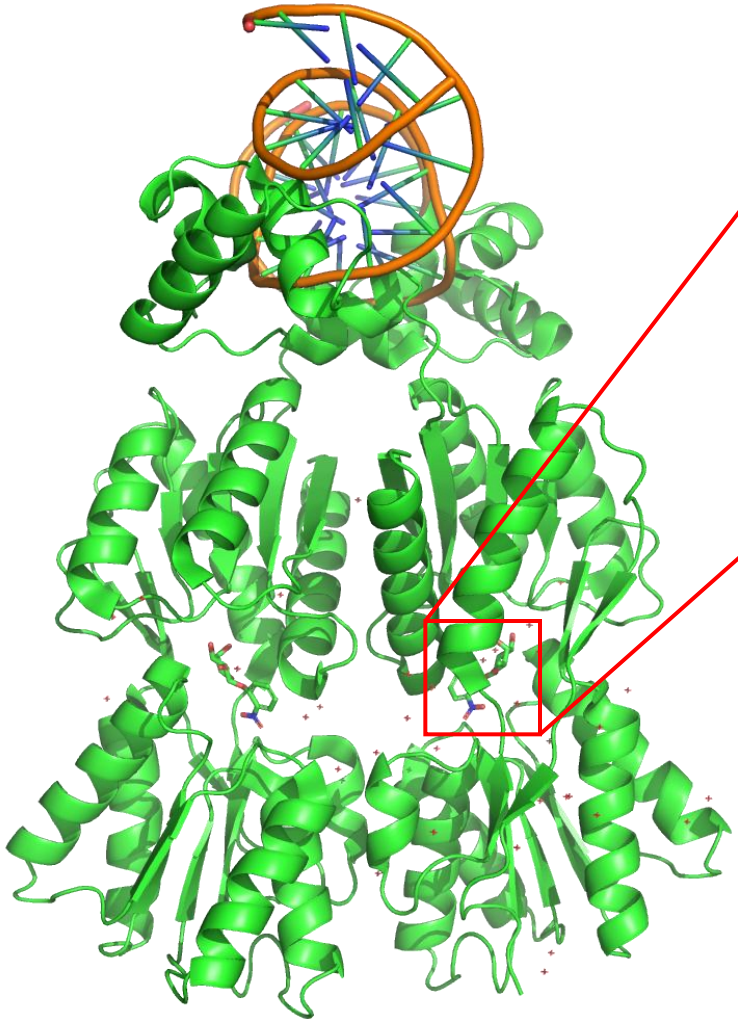
What is LacI?

- E. coli **lactose repressor** protein
- Binding to DNA stops creation of Lactose-processing enzymes

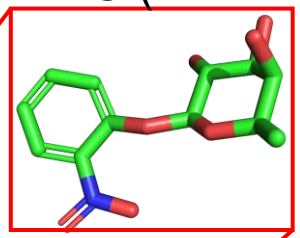


What affects binding? And How?

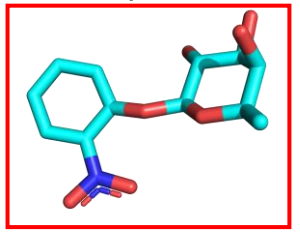
- Presence of Lactose
- But more accurately: Ligand Binding
- In nature: allolactose
- Strong Example of Allostery



IPTG (Inducer)

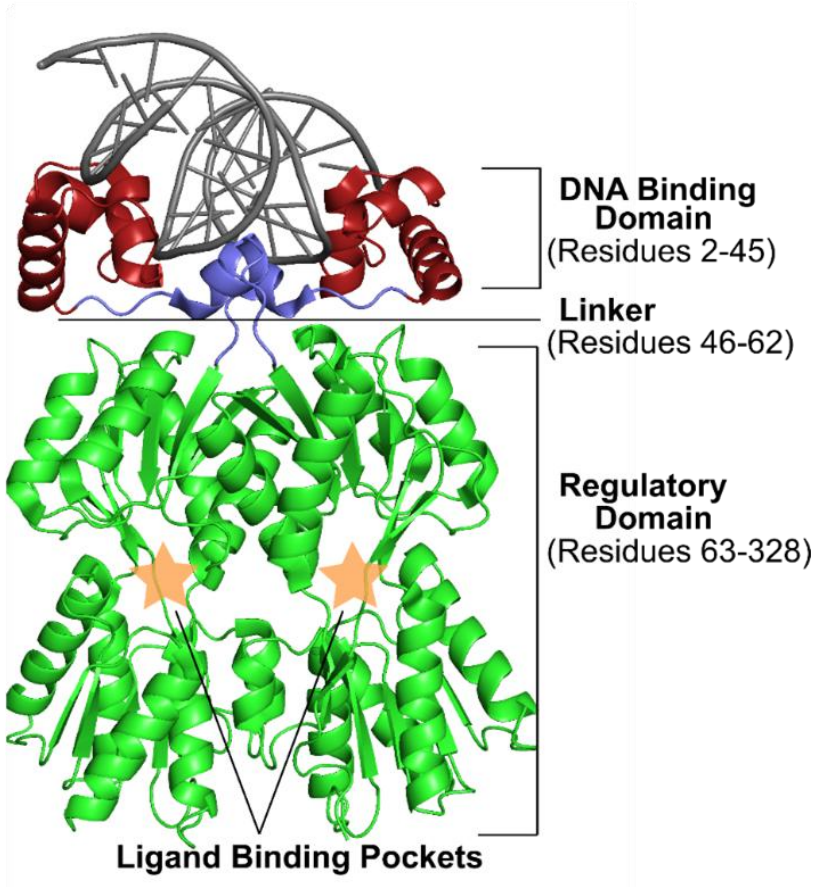


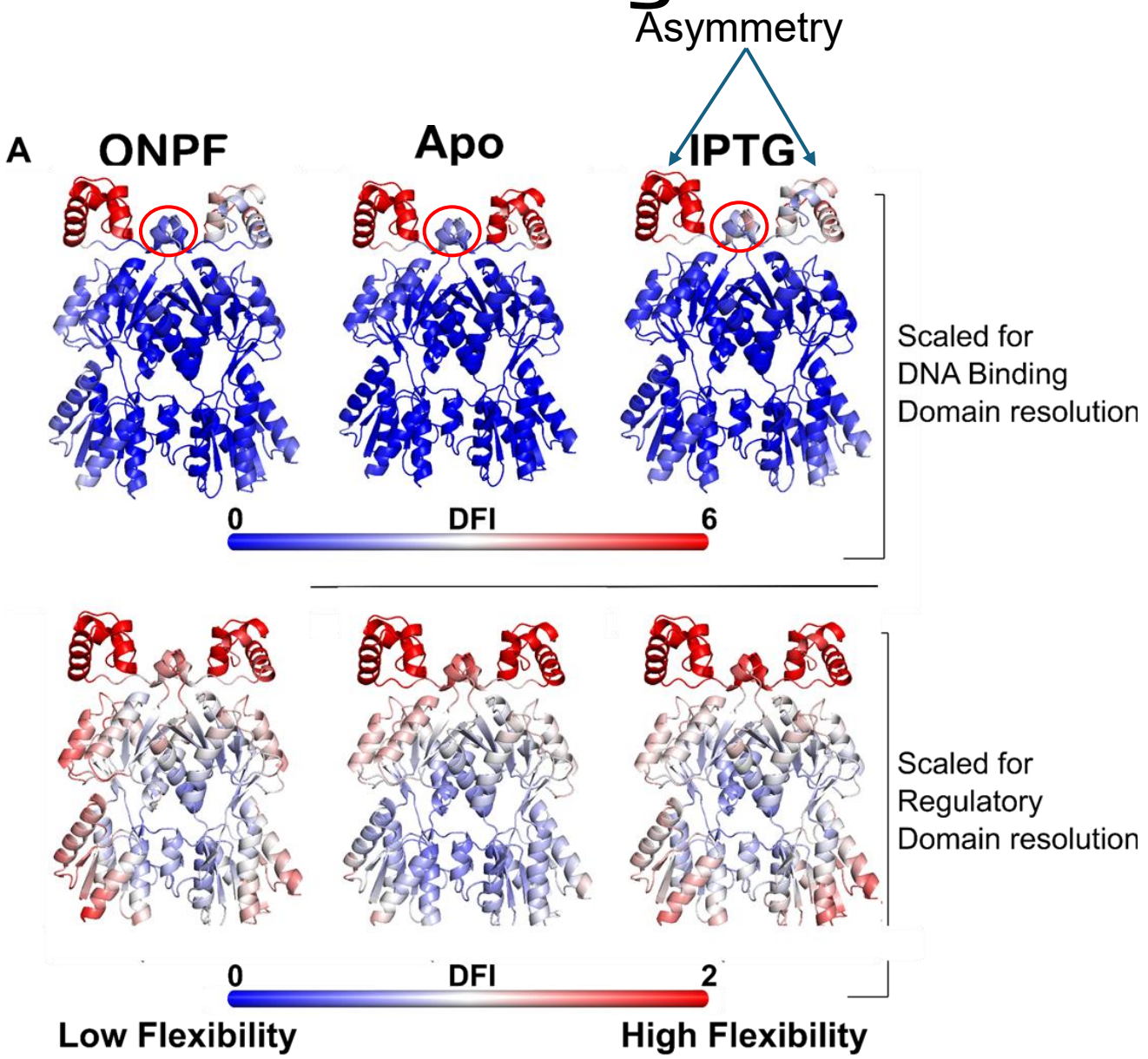
ONPF (Anti-Inducer)



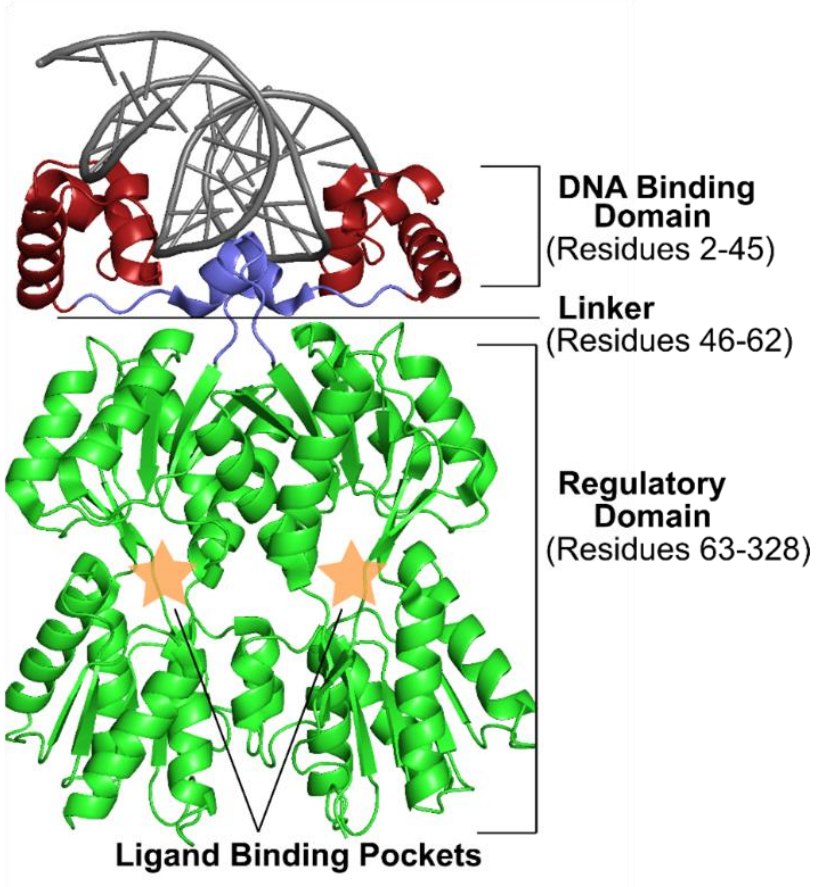
No Ligand (Apo)

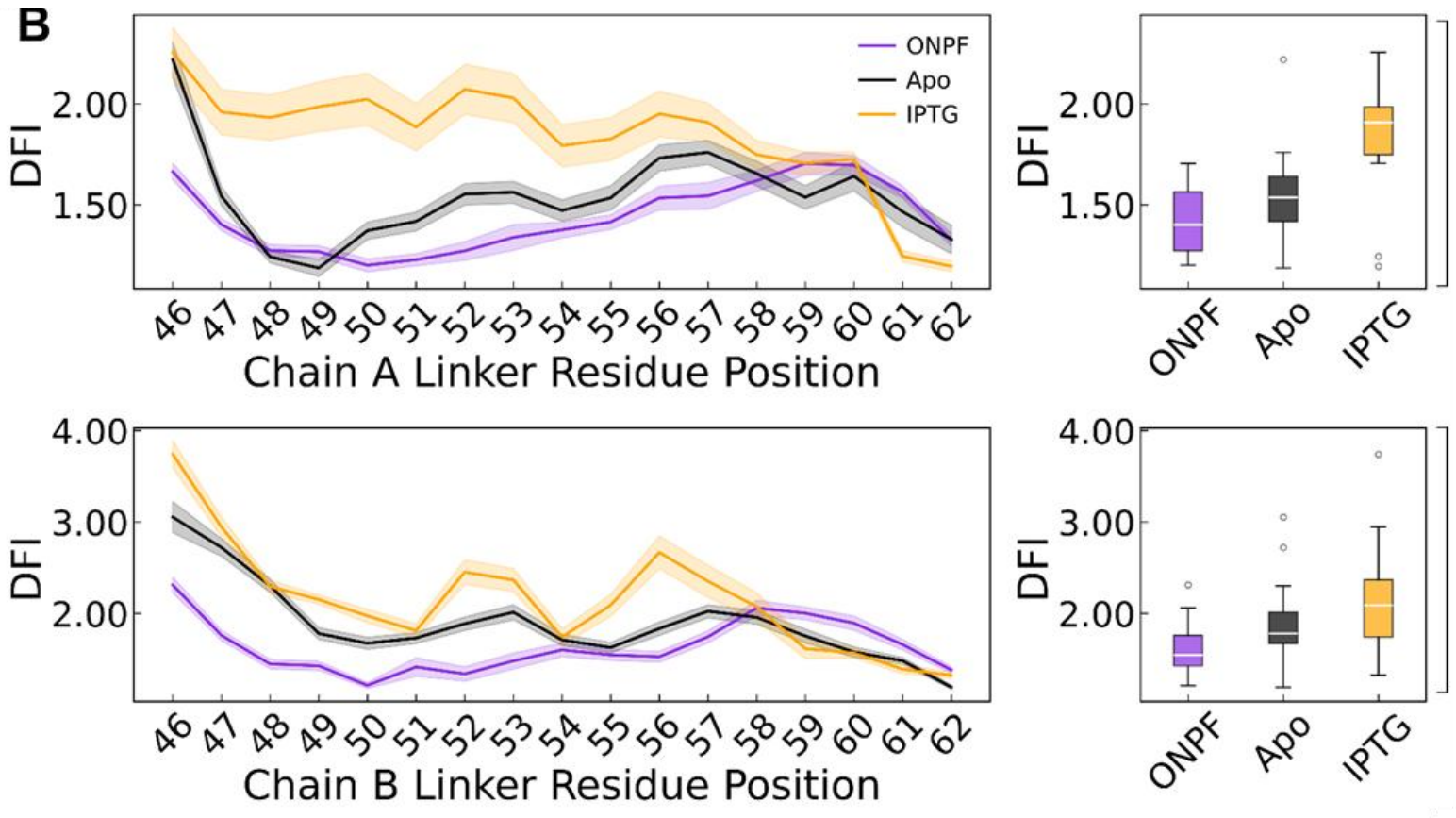
How does the Ligand affect Binding?



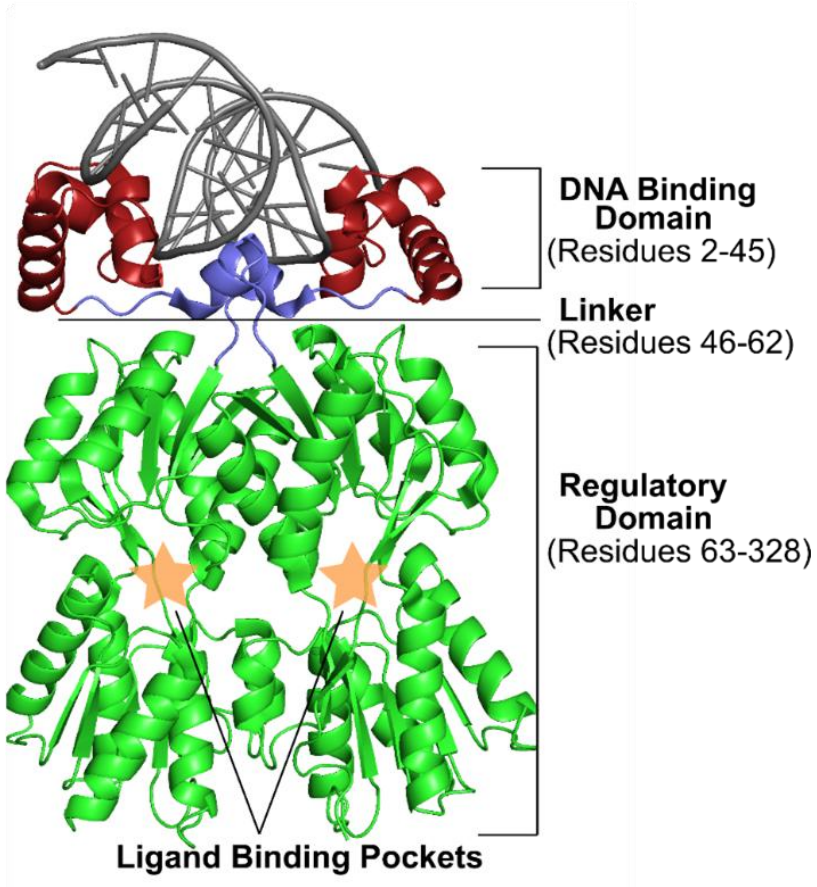


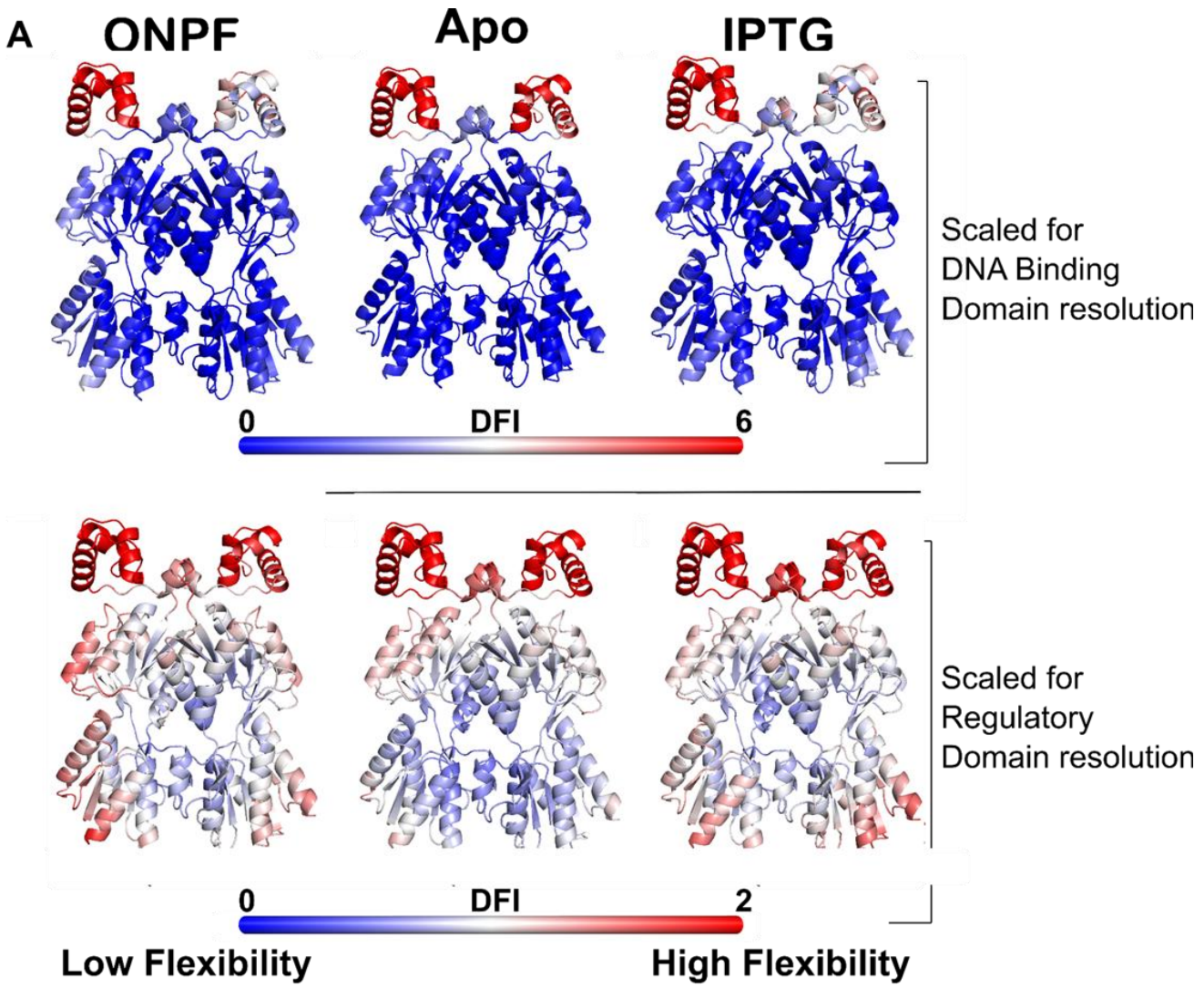
A closer look at the linker



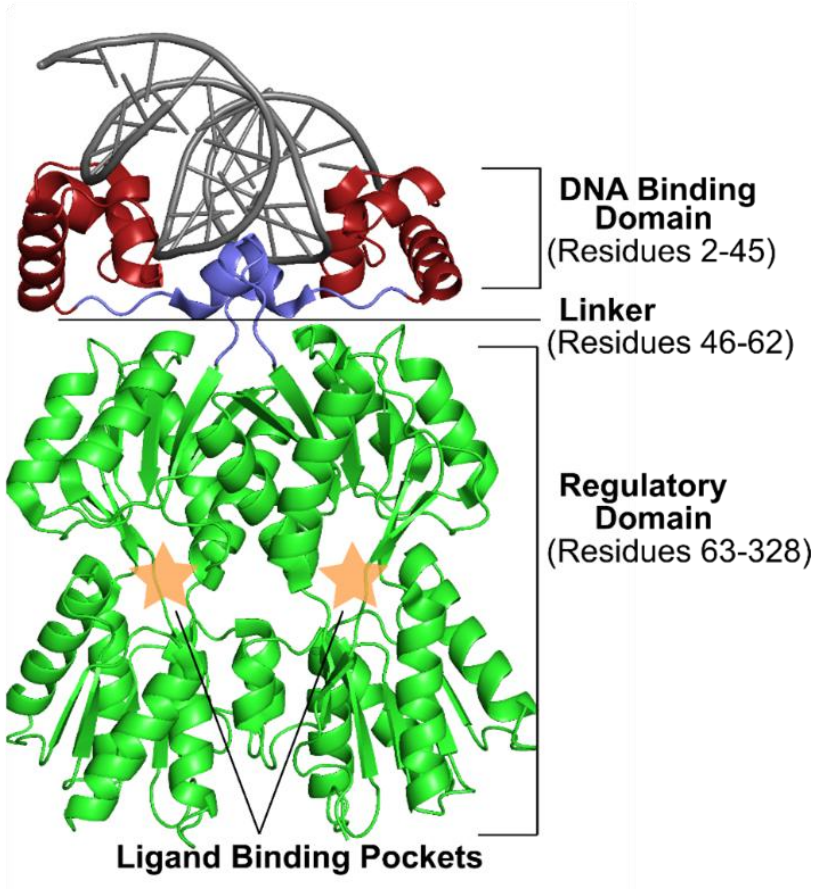


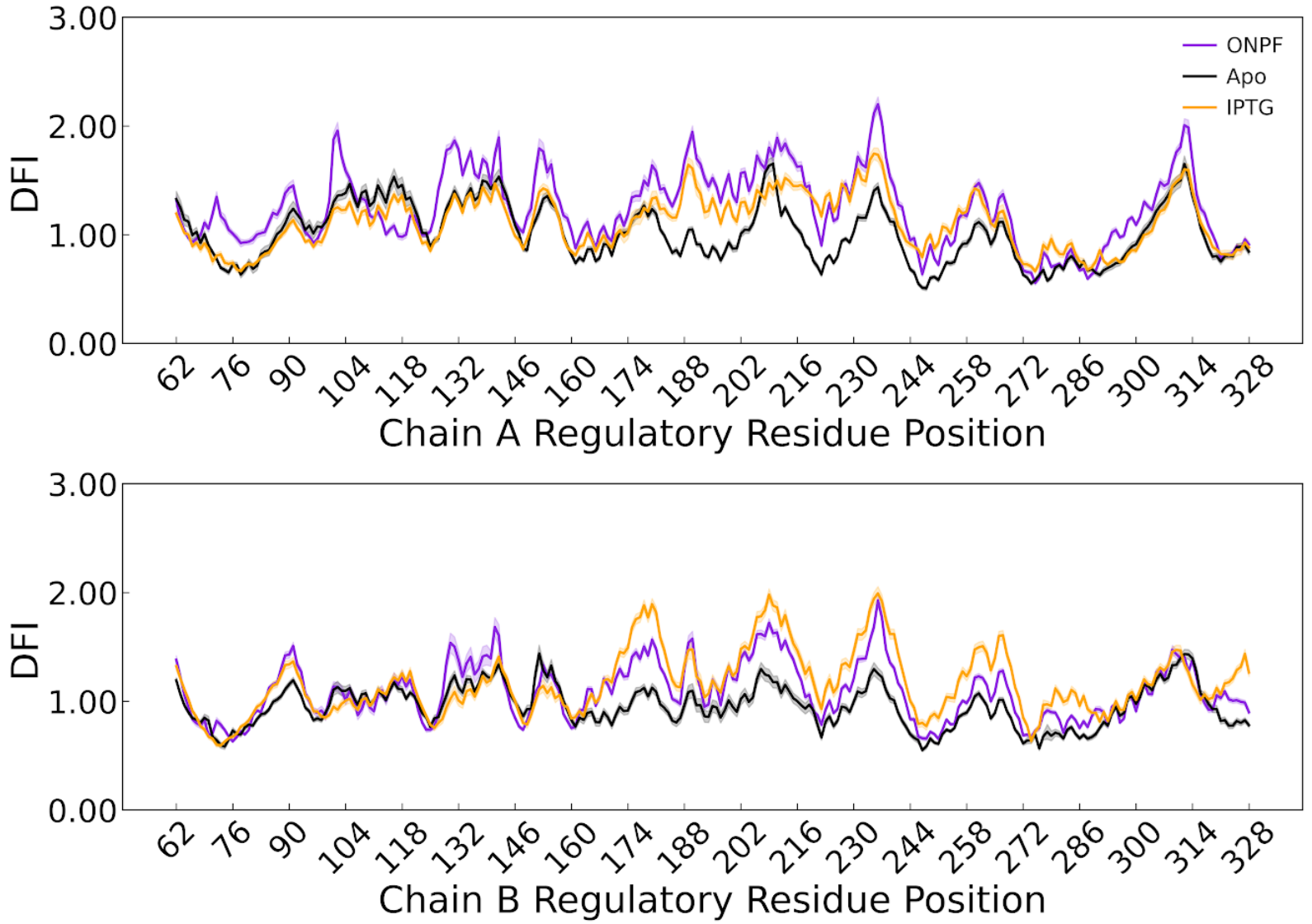
How does the Ligand affect Binding?





A closer look at the Regulatory Domain





Binding Creates Asymmetry in DFI