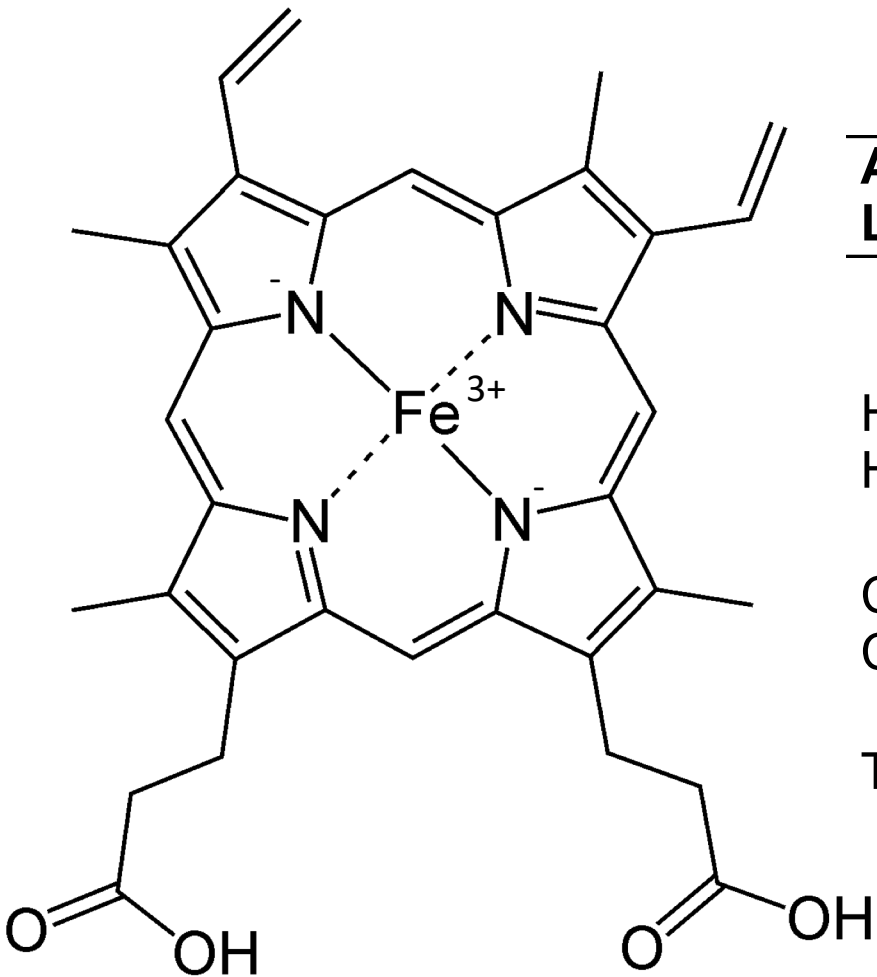


# Heme Proteins

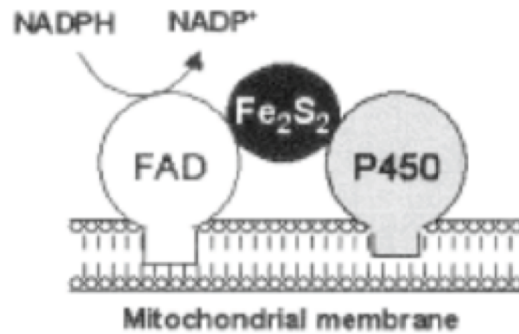


Axial Ligand	1 e <sup>-</sup> Oxidant	E°' (V)
	$Fe(H_2O)_6^{3+}$	E° = 0.77
His	Myoglobin• $Fe^{3+}$	E° = 0.05
His	Myeloperoxidase• $Fe^{3+}$	E°' = 0.03
Cys	Chloroperoxidase• $Fe^{3+}$	E° = -0.30
Cys	P-450• $Fe^{3+}$	E° = -0.30
Tyr	Catalase• $Fe^{3+}$	E° = -0.42

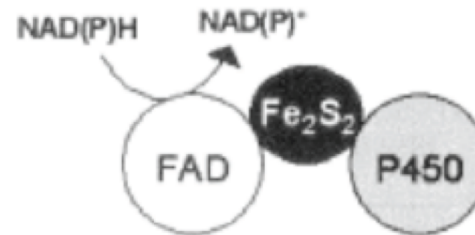
# P450 + Reductase Domains

## Class I: Iron-sulfur partners

*Adx/AdR*

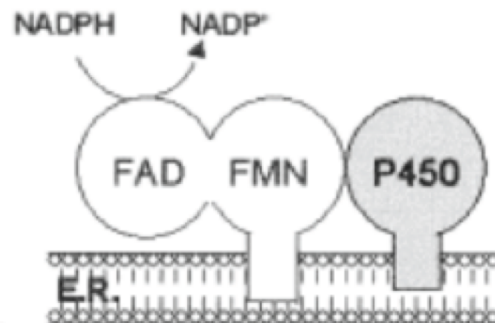


*Pdx/PdR*

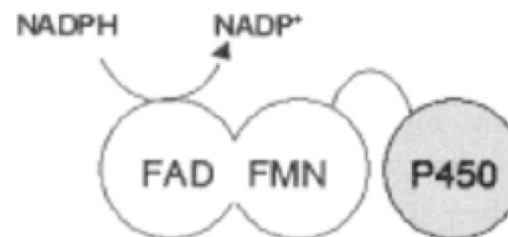


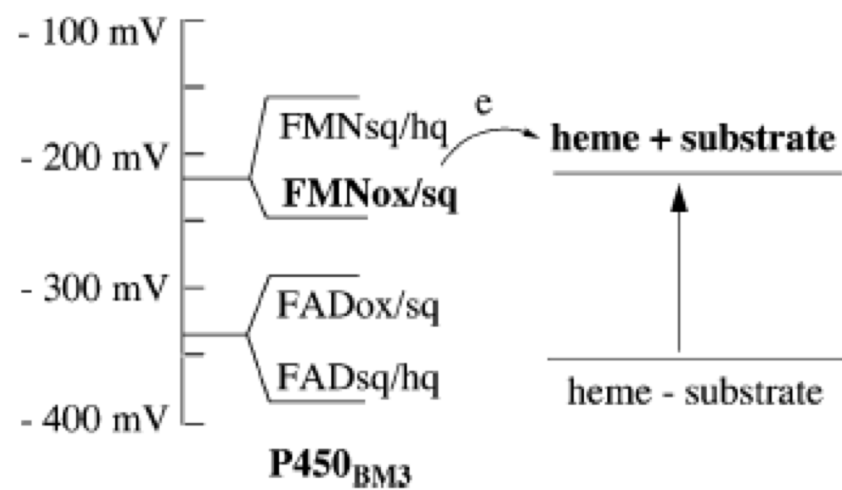
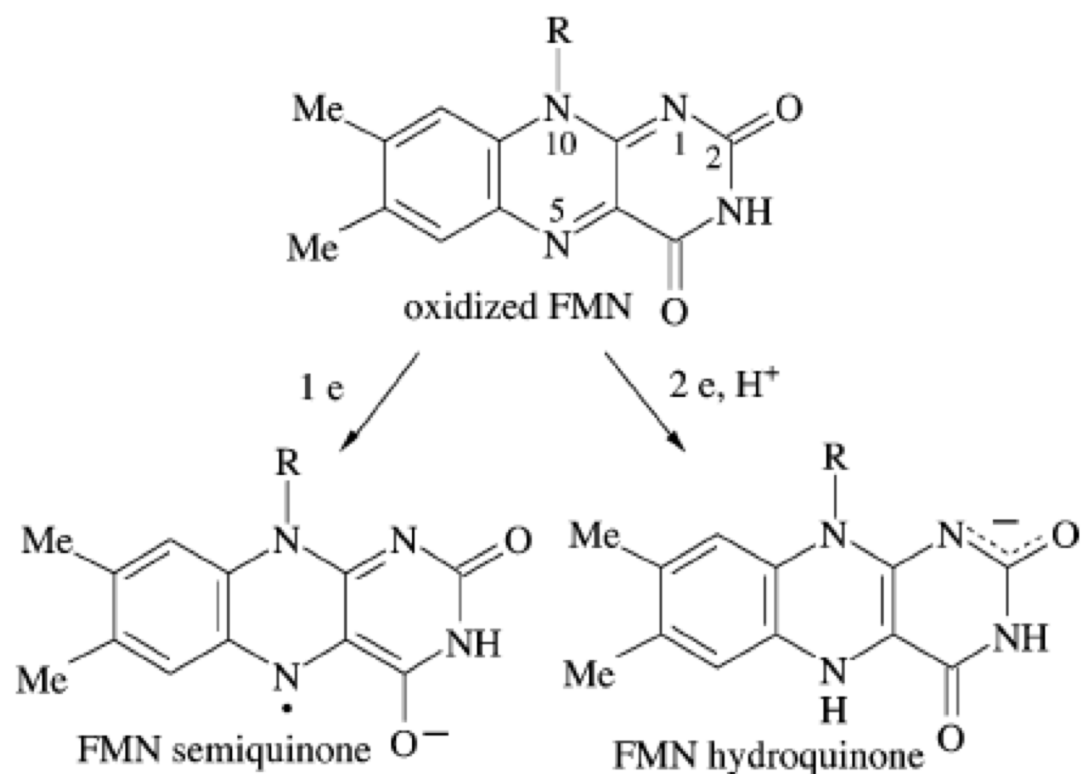
## Class II: Diflavin reductase partners

*CPR*

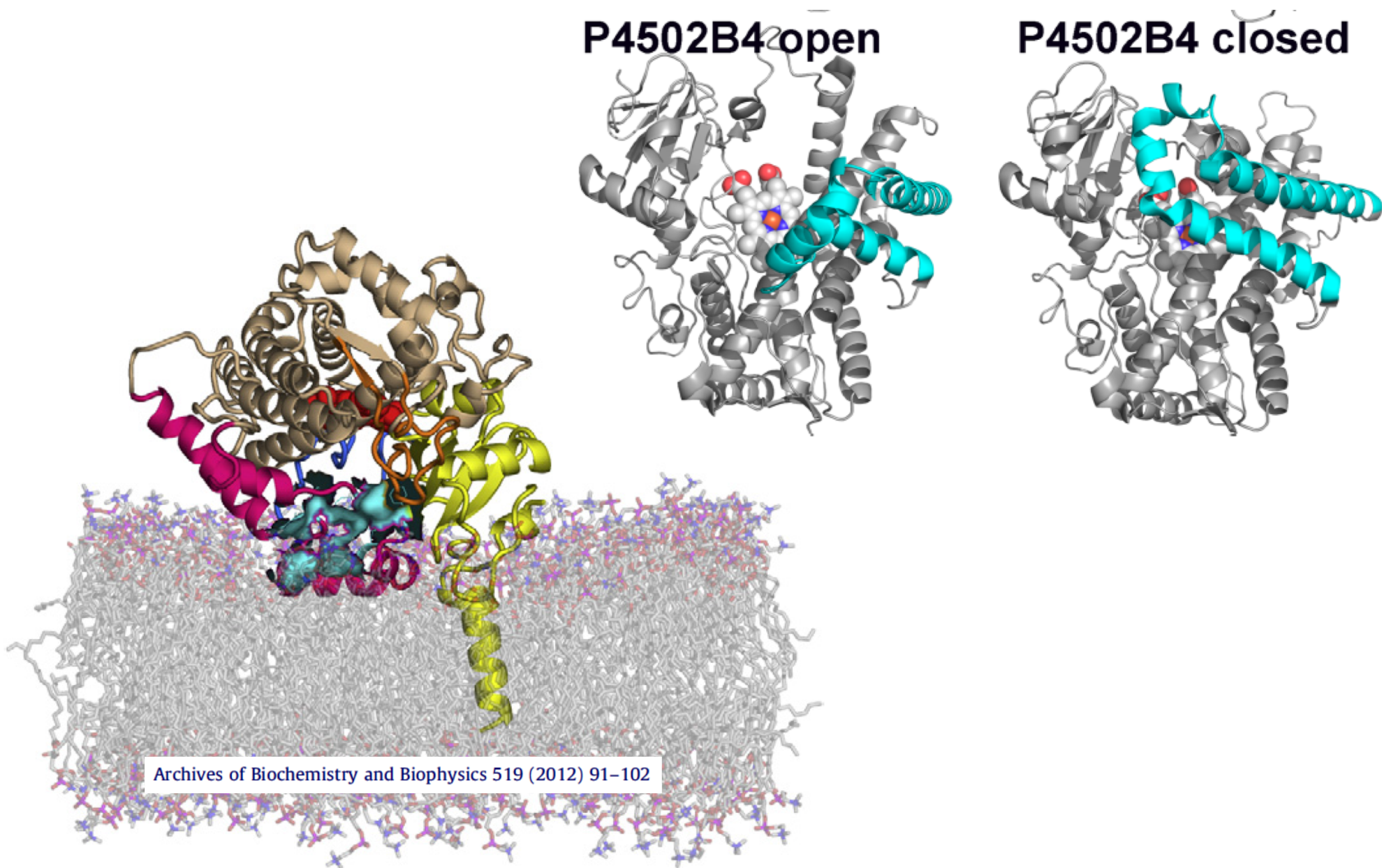


*CPR fusion*

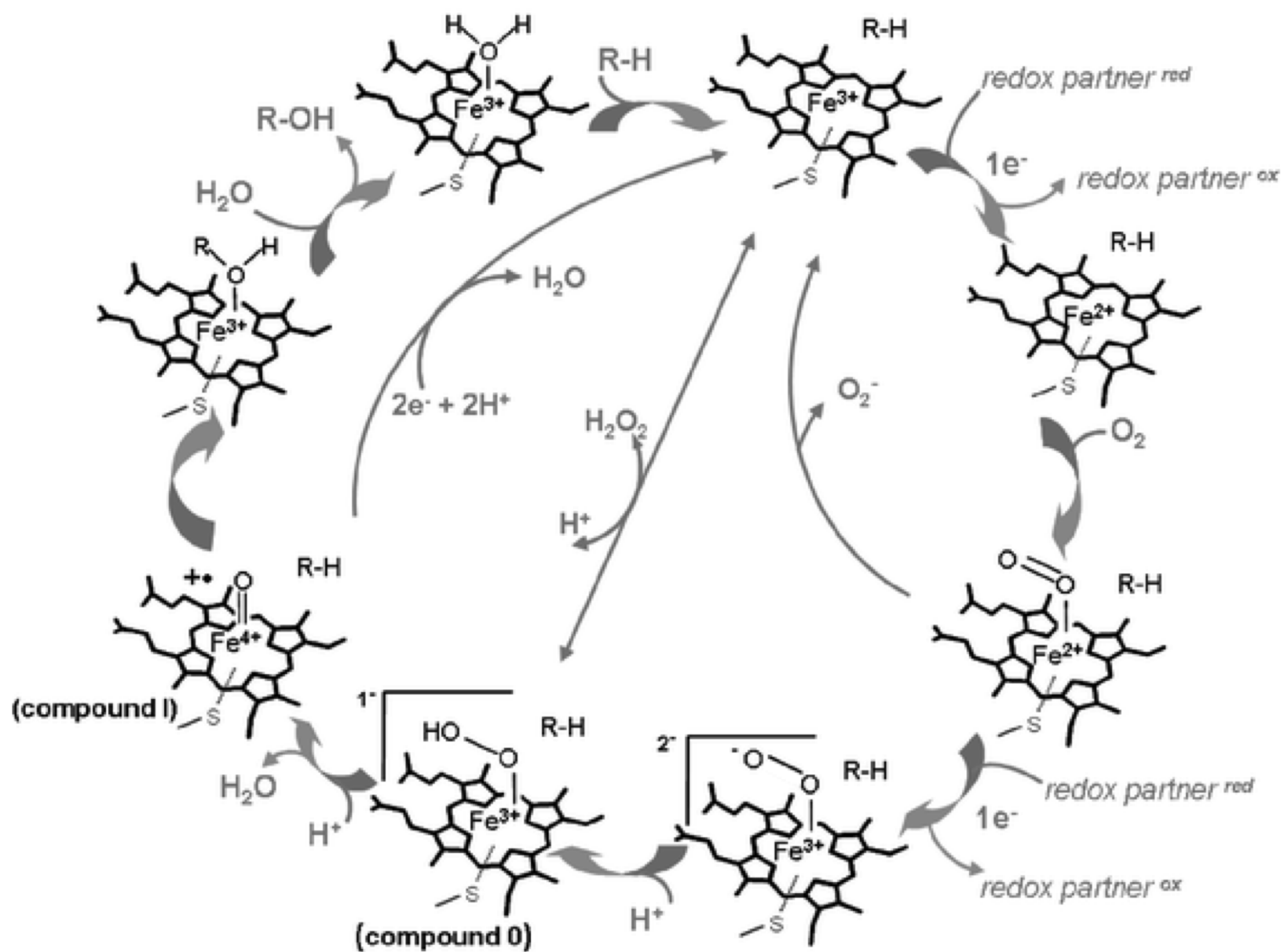




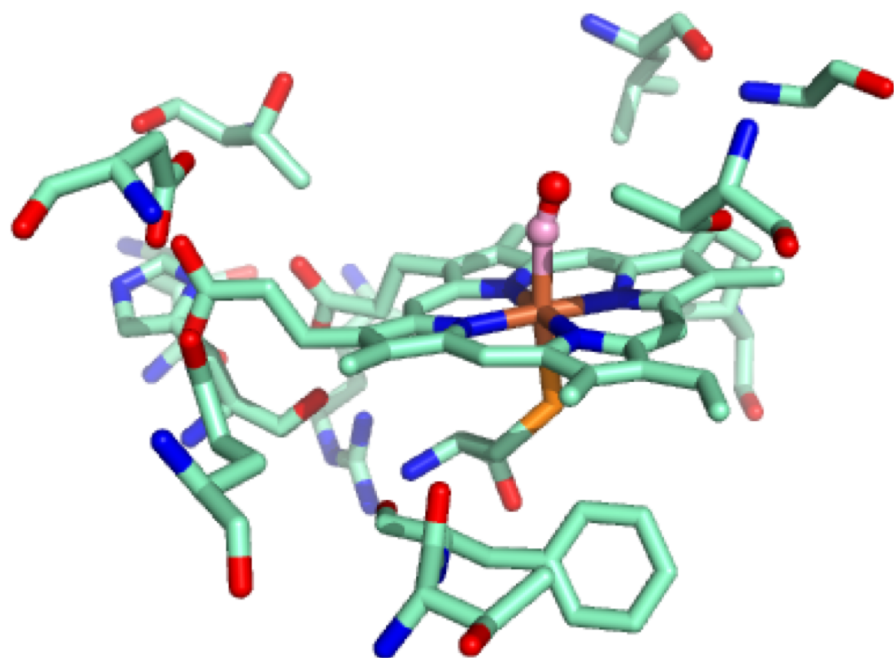
# Tertiary Structure of P450 Heme Domain



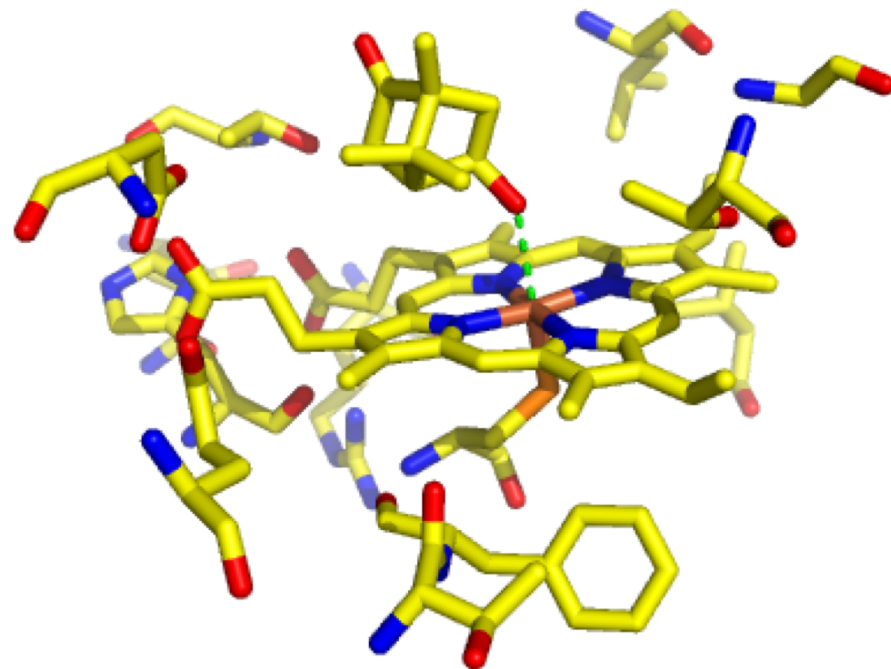




# CYP101 Hydroxylation of Camphor

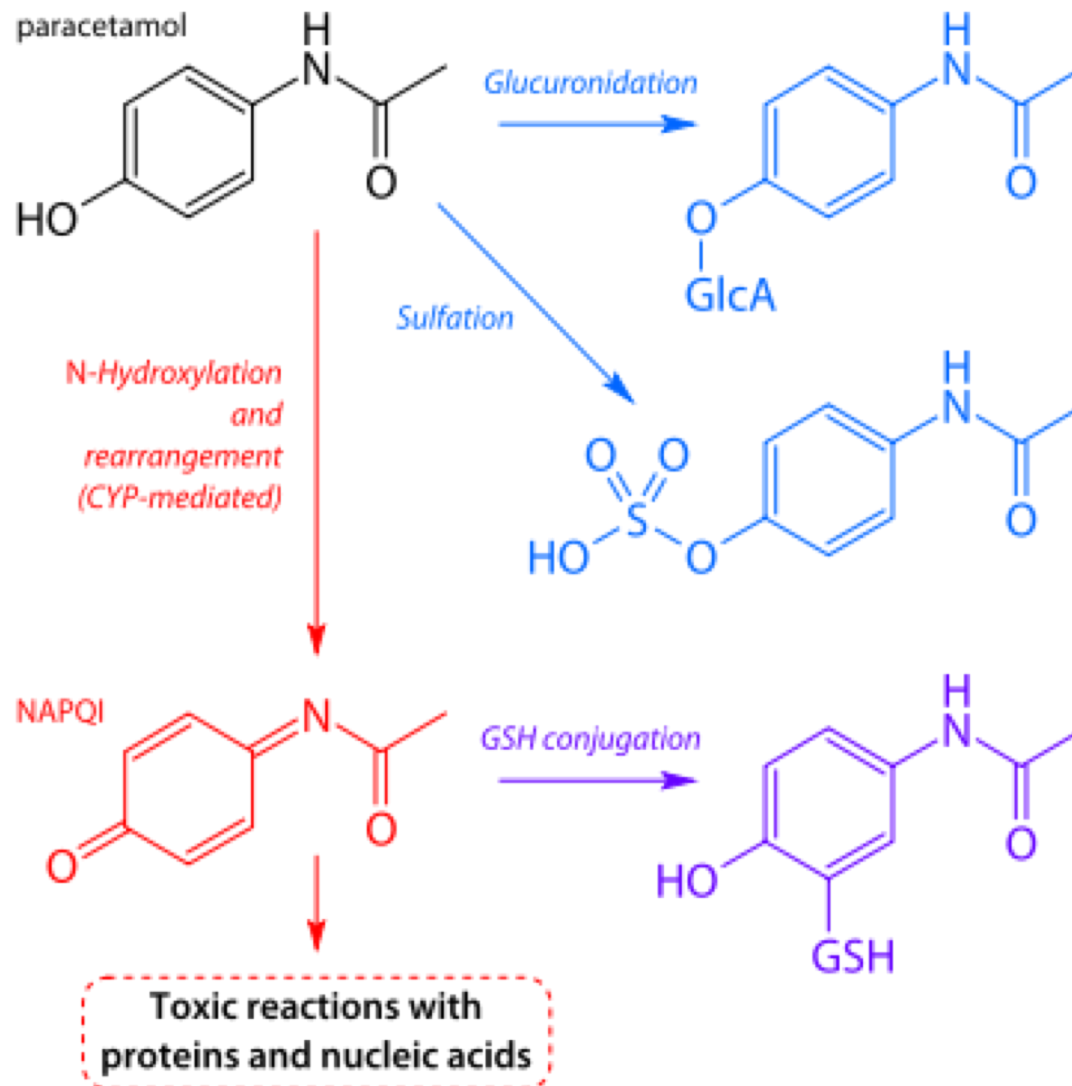


CO bound to heme

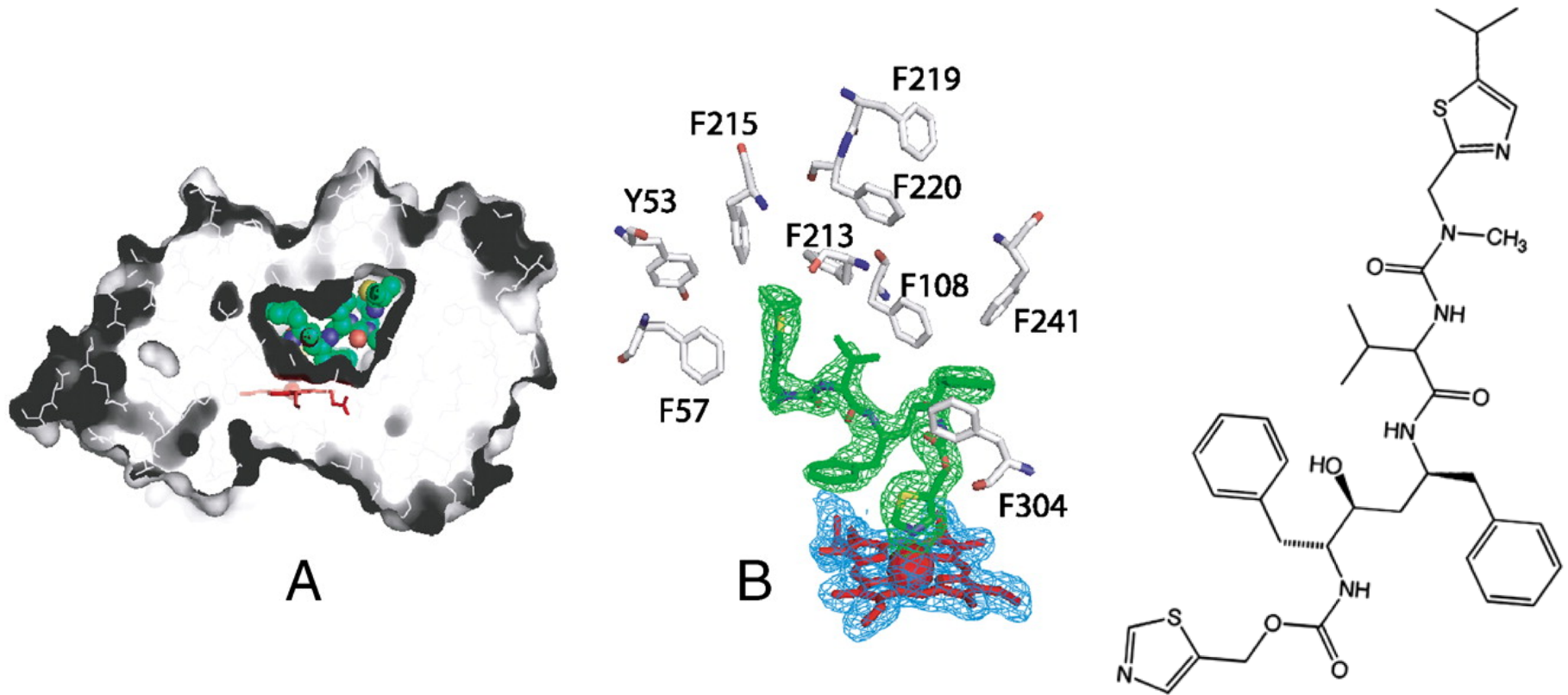


Hydroxylated Camphor

# Acetaminophen & CYP3A4

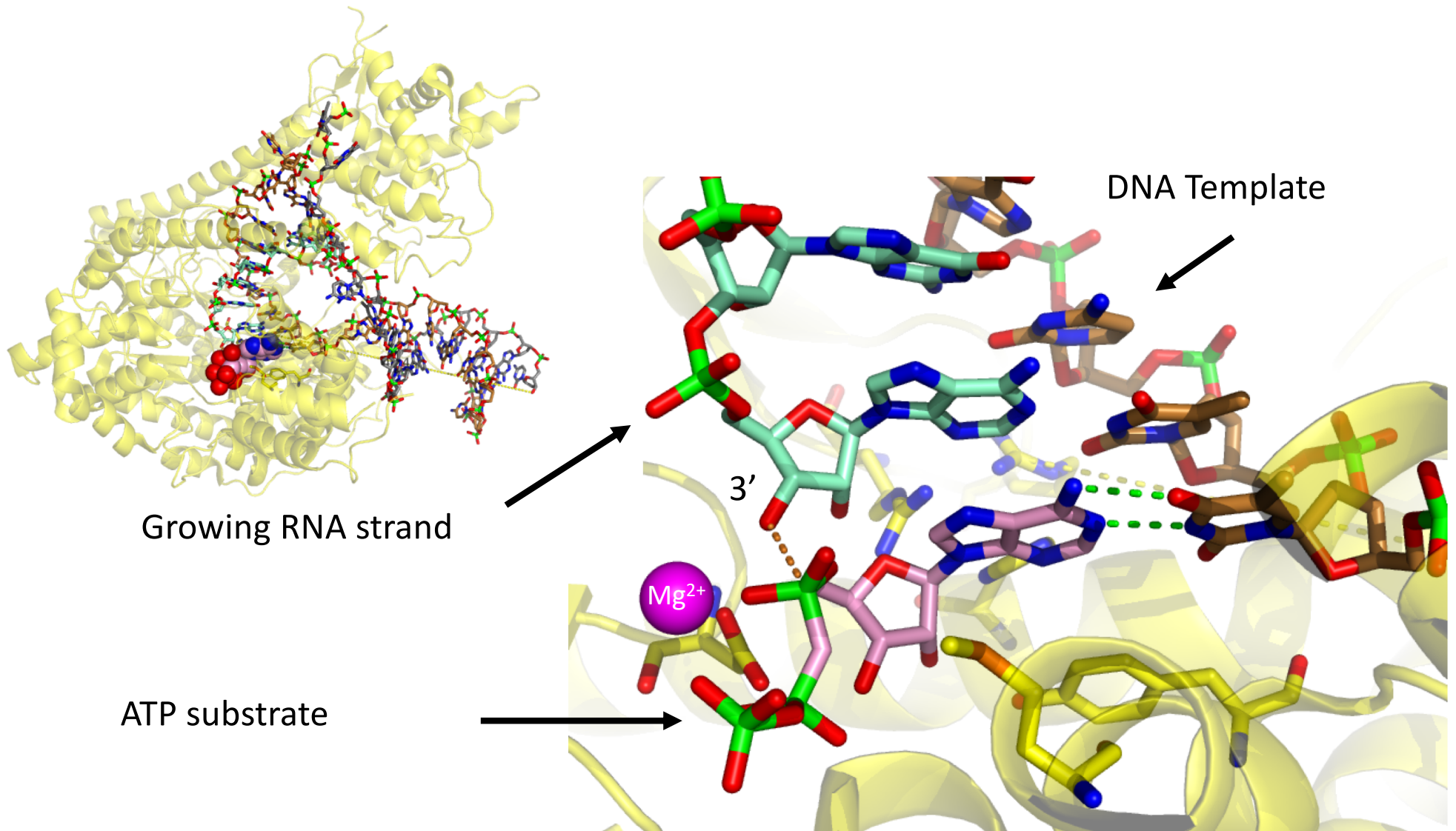


# Crystal structure of the CYP3A4-ritonavir complex.



Irina F. Sevrioukova, and Thomas L. Poulos PNAS  
2010;107:18422-18427

# T7 RNA Polymerase & Specificity



# The Genetic Code

## Second Base in Codon

		Second Base in Codon					
		U	C	A	G		
First Base in Codon	U	Phe Phe Leu Leu	Ser Ser Ser Ser	Tyr Tyr STOP STOP	Cys Cys STOP Trp	Third Base in Codon	U
	C	Leu Leu Leu Leu	Pro Pro Pro Pro	His His Gln Gln	Arg Arg Arg Arg		C
	A	Ile Ile Ile Met	Thr Thr Thr Thr	Asn Asn Lys Lys	Ser Ser Arg Arg		A
	G	Val Val Val Val	Ala Ala Ala Ala	Asp Asp Glu Glu	Gly Gly Gly Gly		G



# tRNA is the Adaptor Molecule

