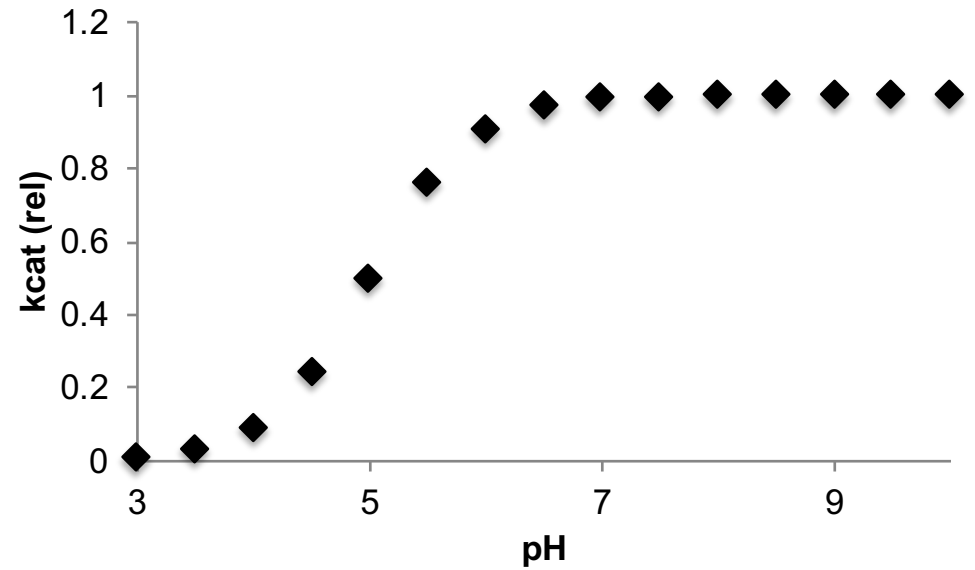
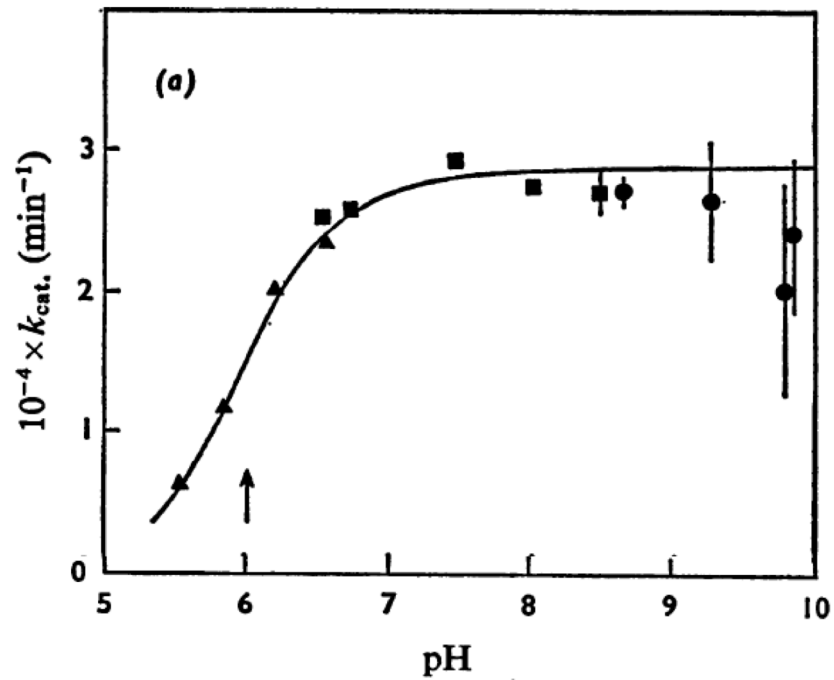
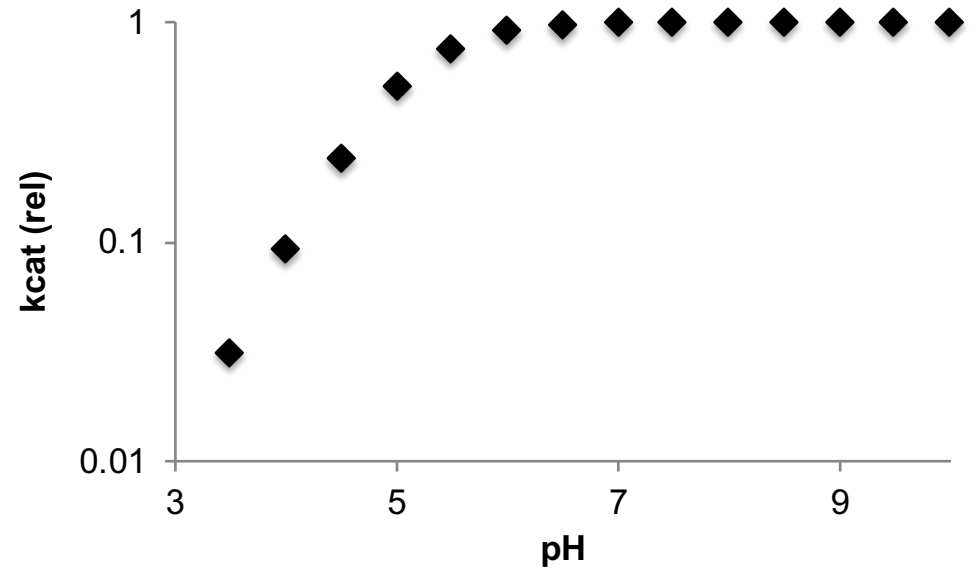
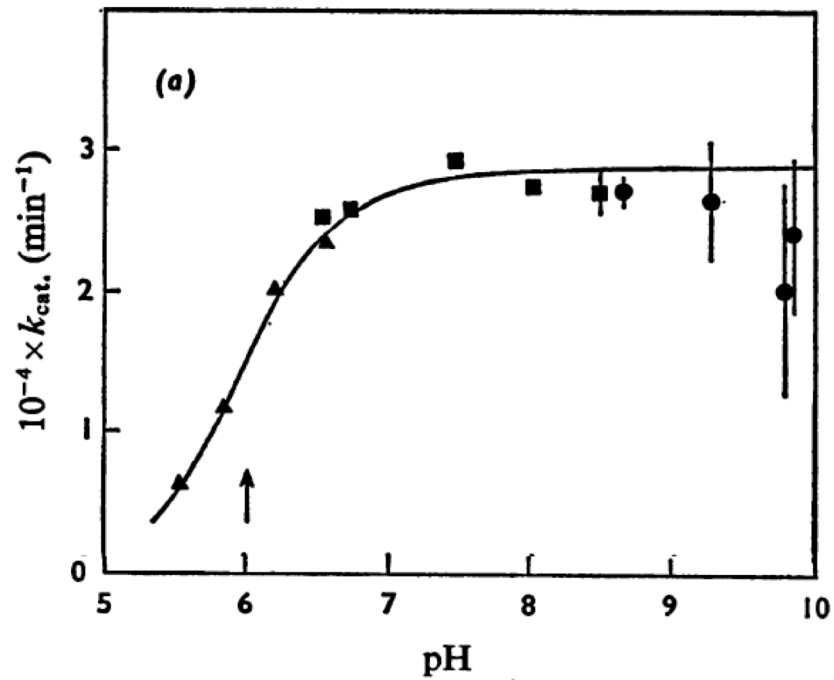


# pH Profiles for TIM



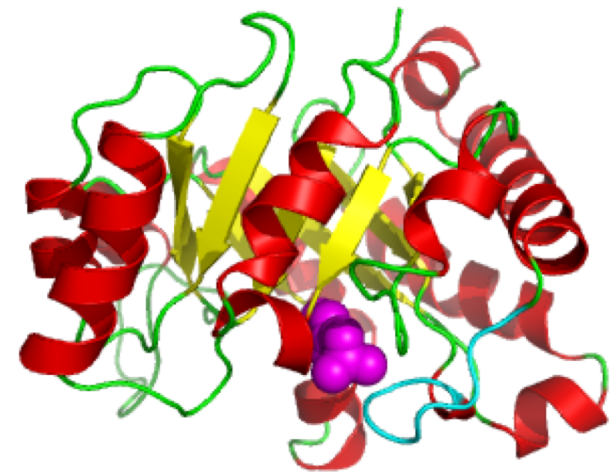
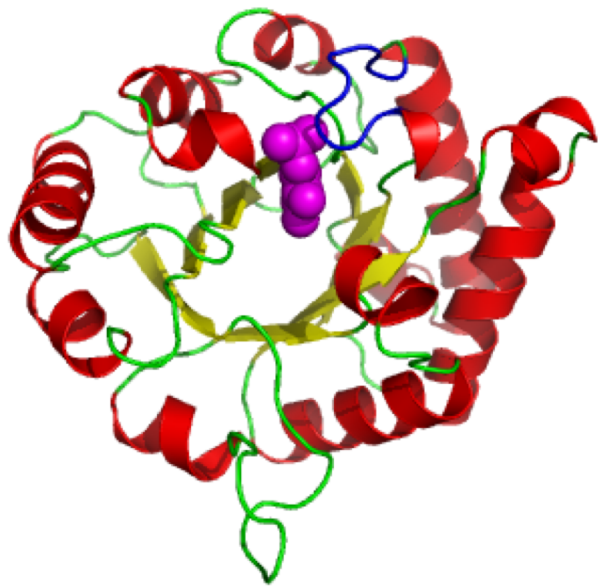
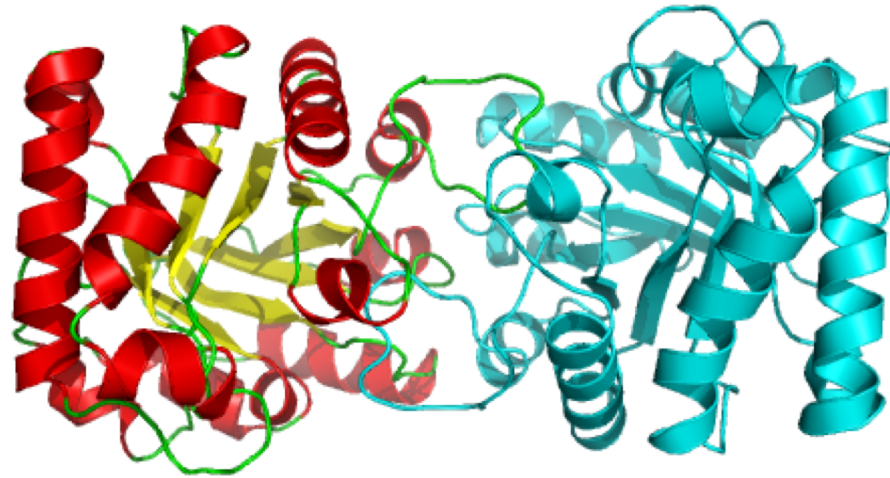
*Biochem. J.* (1972) **129**, 311–320

# pH Profiles for TIM

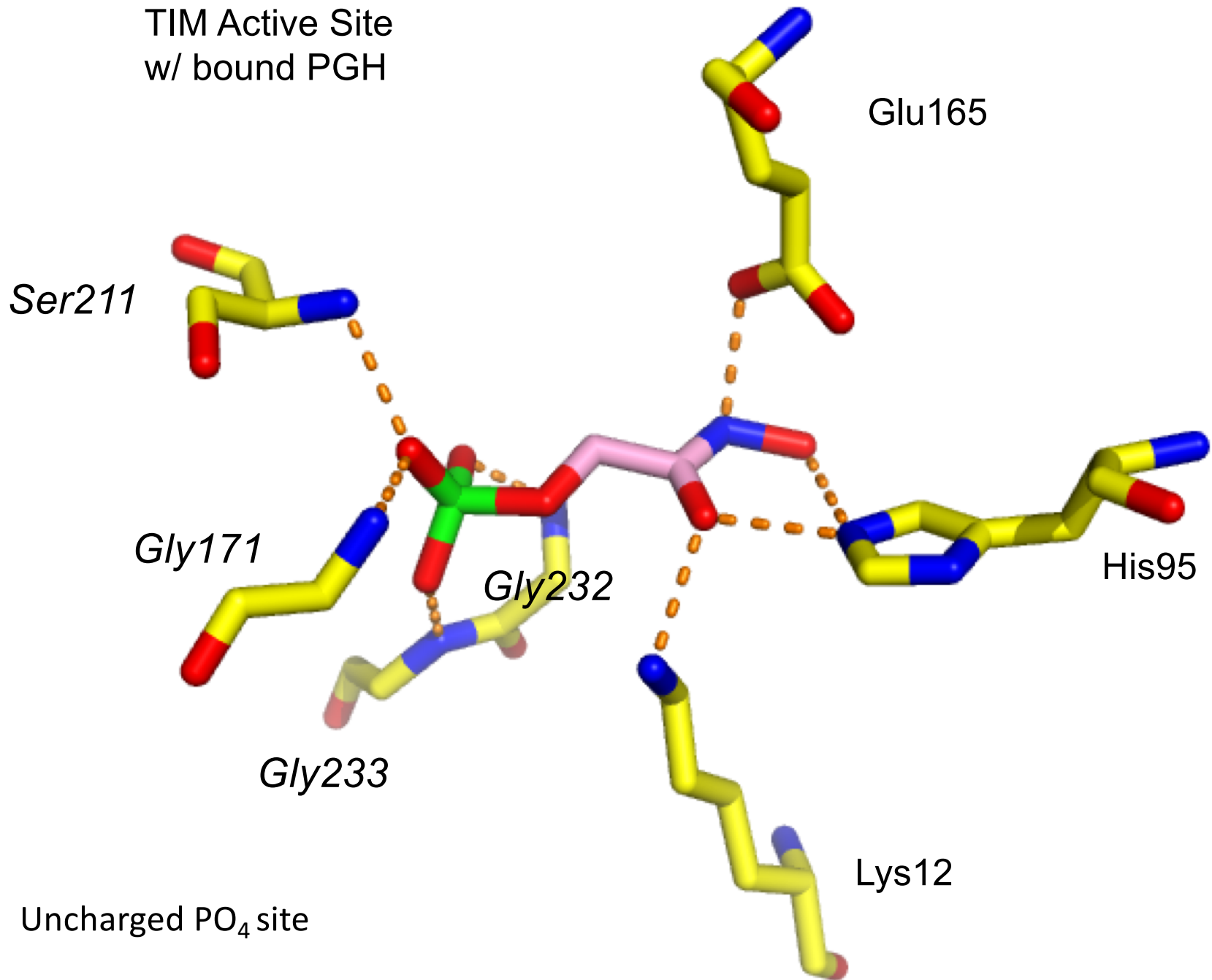


***Biochem. J.* (1972) 129, 311–320**

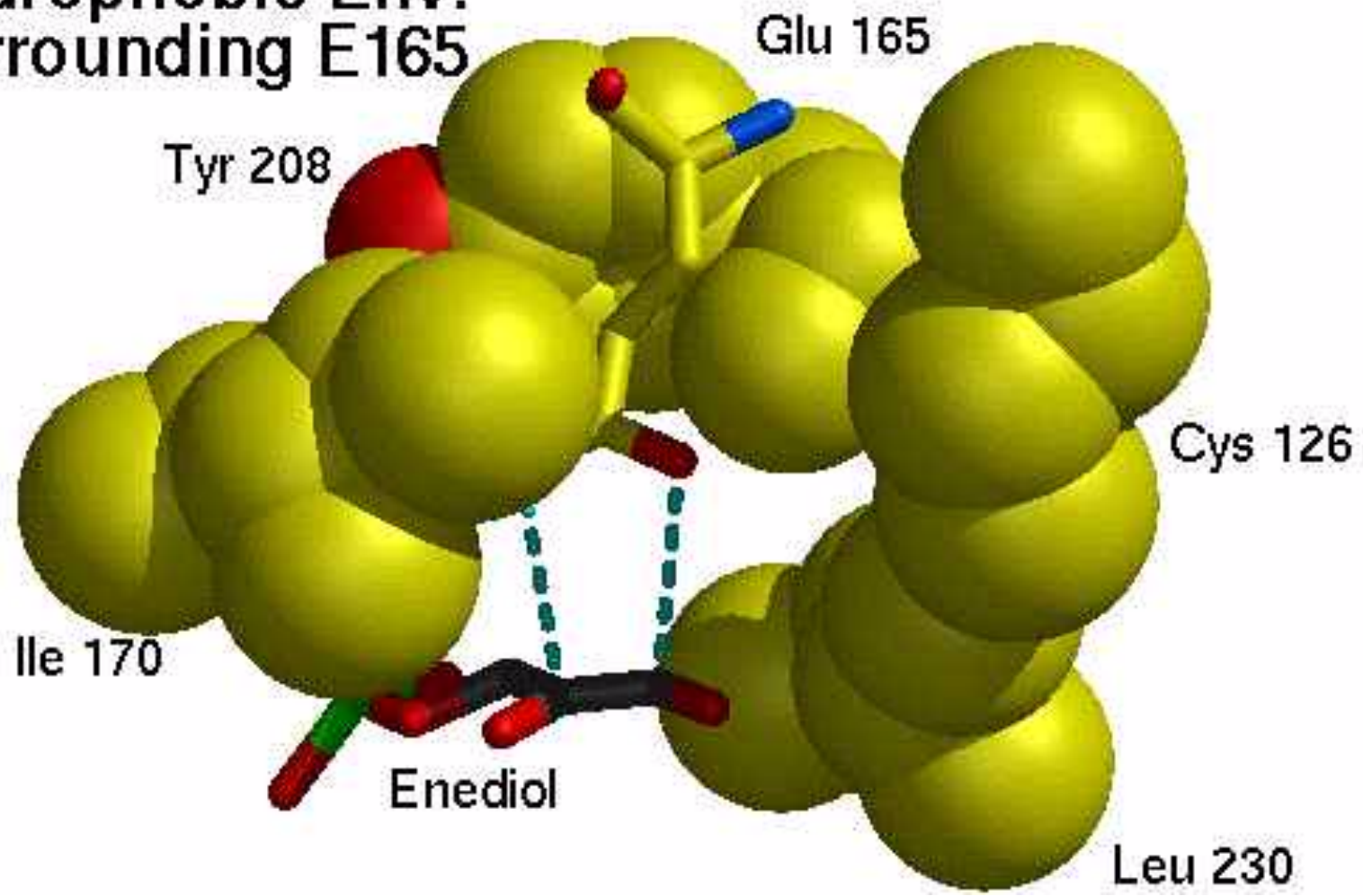
# Triose Phosphate Isomerase



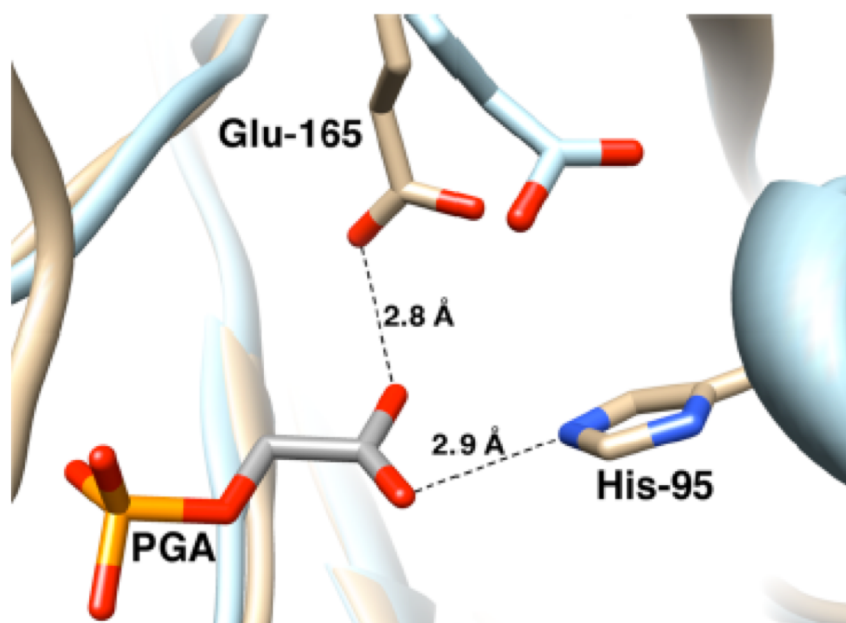
TIM Active Site  
w/ bound PGH



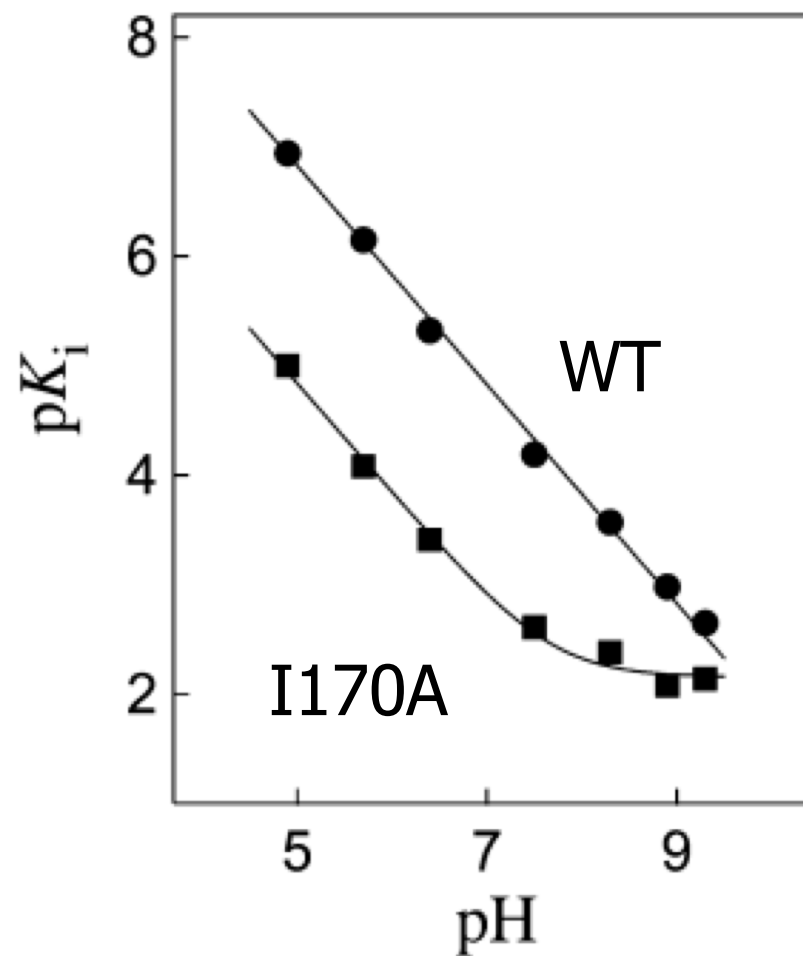
# Hydrophobic Env. Surrounding E165



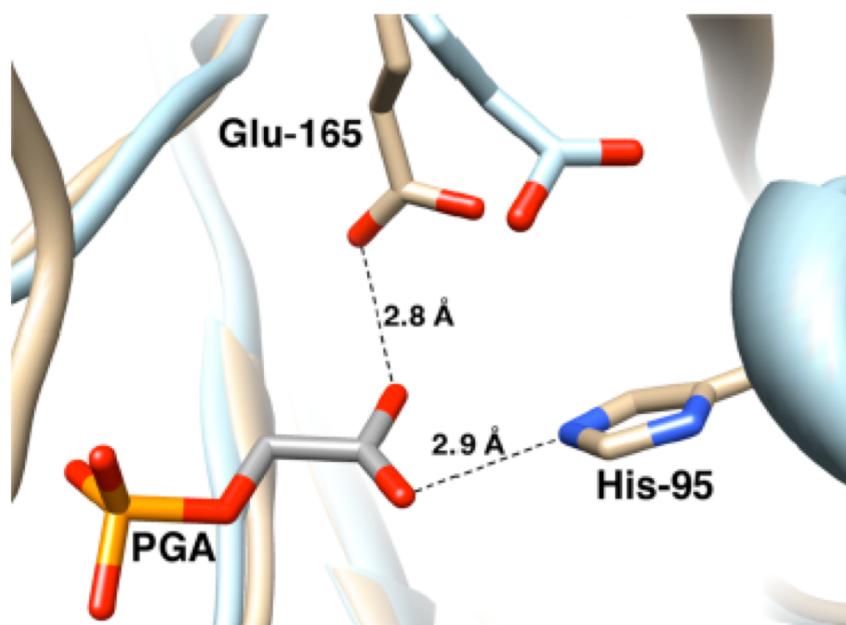
# Glu165 Has a High $pK_a$



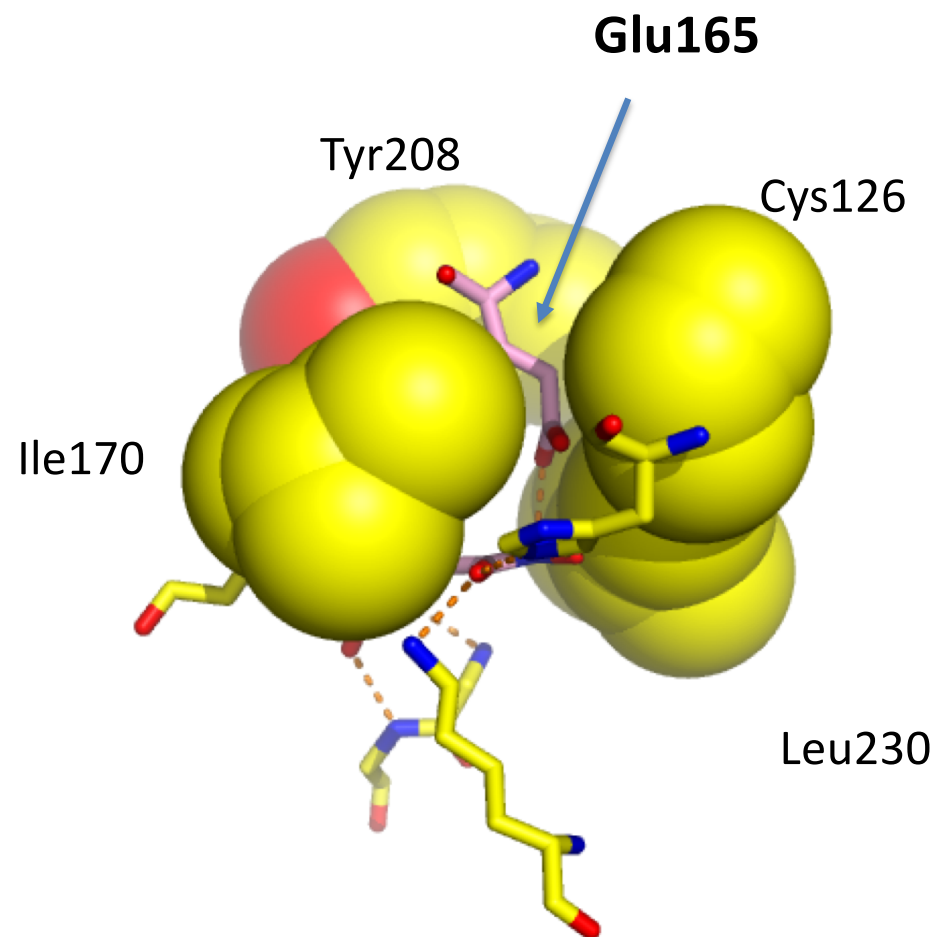
*J. Am. Chem. Soc.* 2013, 135, 5978–5981



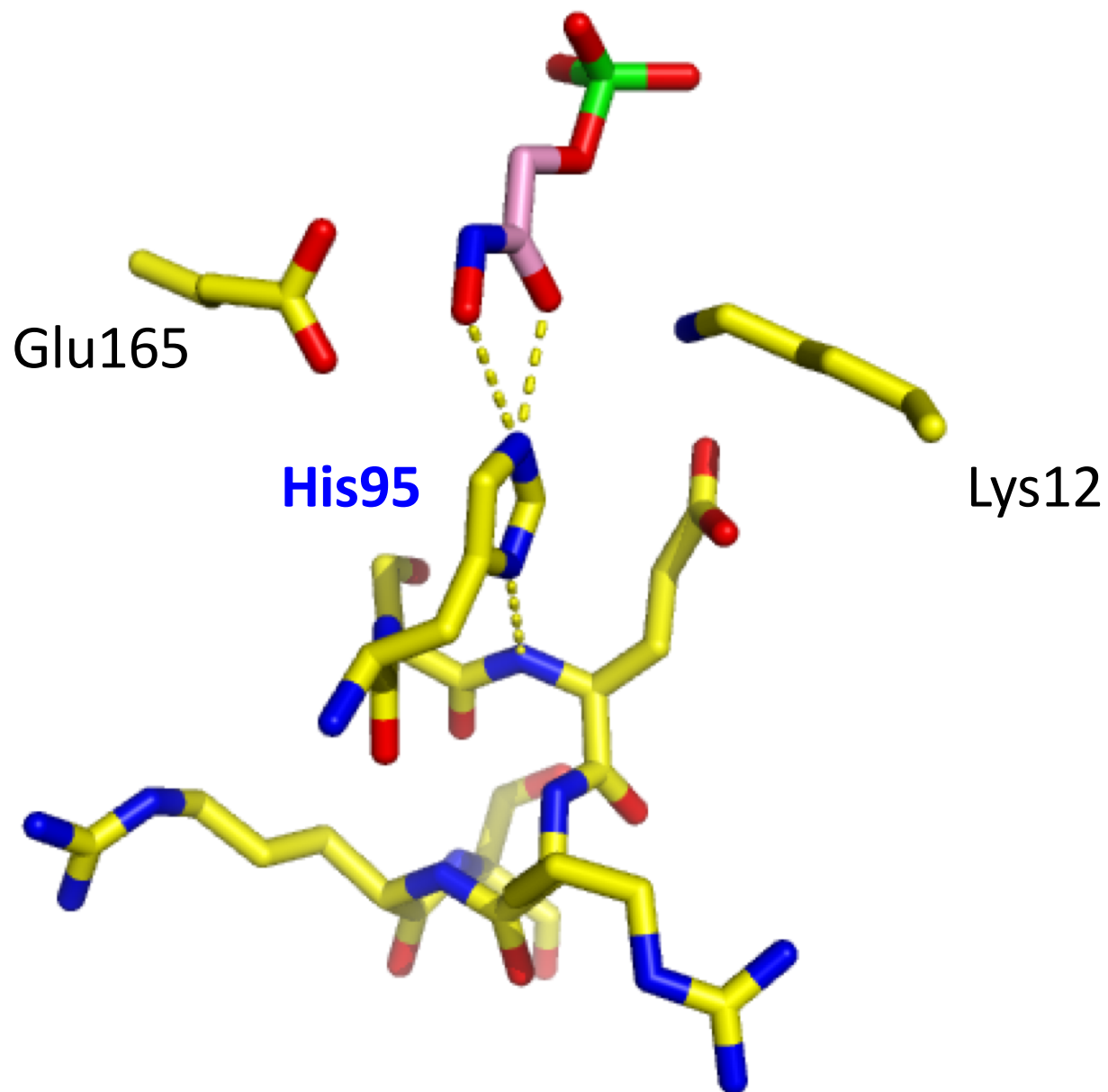
# Glu165 Has a High $pK_a$ Due to Grease Pocket



*J. Am. Chem. Soc.* 2013, 135, 5978–5981



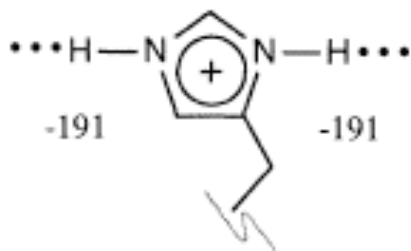
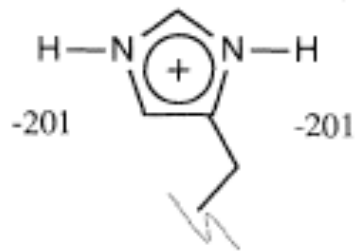
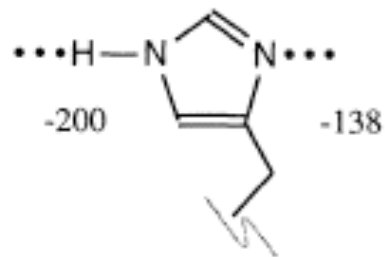
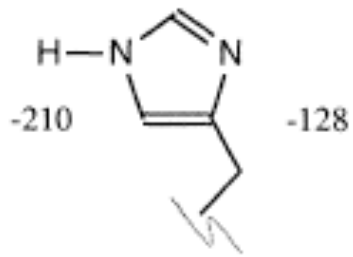
His95 is  
H-bonded  
to amide N





# His95 is Neutral

<sup>15</sup>N Chemical Shift for His in Different Environments



-214	un- liganded	-122	-204	plus PGH	-123
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Shifts do not change with pH  
In TIM active site.

