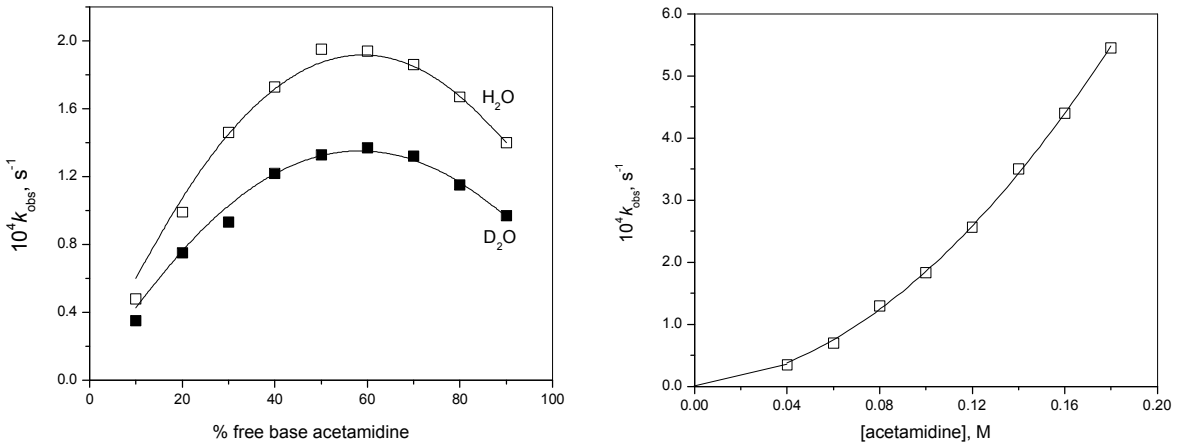
Supplementary Information

Mechanism of general acid-base catalysis in the cleavage of an RNA model phosphodiester studied with strongly basic catalysts

David O. Corona-Martínez, Olga Taran and Anatoly K. Yatsimirsky



A B

Figure S1. Catalysis of the hydrolysis of HPNP by 0.1 M acetamidine as a function of the fraction of free base (A) and as a function of total buffer concentration at 50% free base (B) in 80% vol DMSO, 37°C. Open symbols – results in DMSO/H_2O, solid symbols – results in DMSO/D_2O. Lines are calculated in accordance with equation (2).

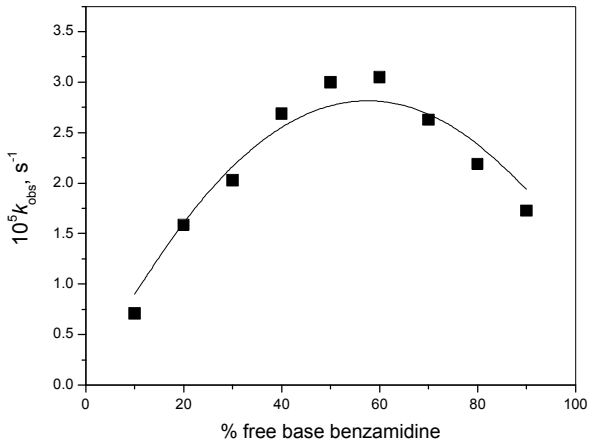
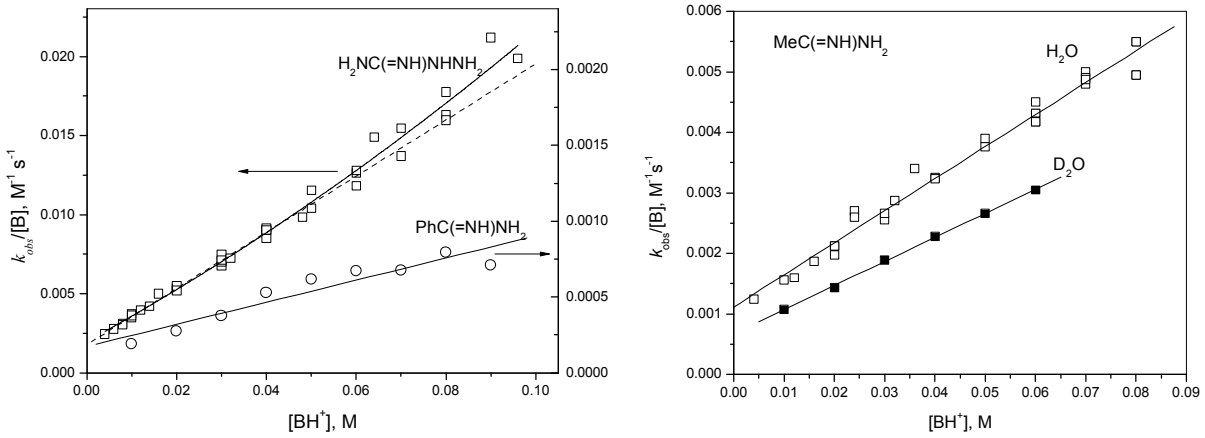


Figure S2. Catalysis of the hydrolysis of HPNP by 0.1 M benzamidine as a function of the fraction of free base) in 80% vol DMSO, 37°C. The line is calculated in accordance with equation (2).



A B

Figure S3. Results for catalysis of transesterification of HPNP by aminoguanidine, benzamidine (A) and acetamidine (B) in coordinates of equation (3). Open symbols – results in DMSO/H_2O, solid symbols – results in DMSO/D_2O.

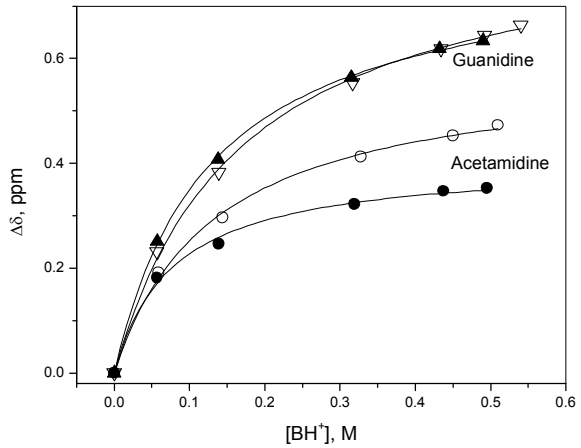


Figure S4. ^{31}P NMR titration of 0.01 M diphenylphosphate by guanidinium or acetamidinium chlorides in DMSO-d_6/H_2O (open symbols) or DMSO-d_6/D_2O (solid symbols).