

## **Supplementary Information**

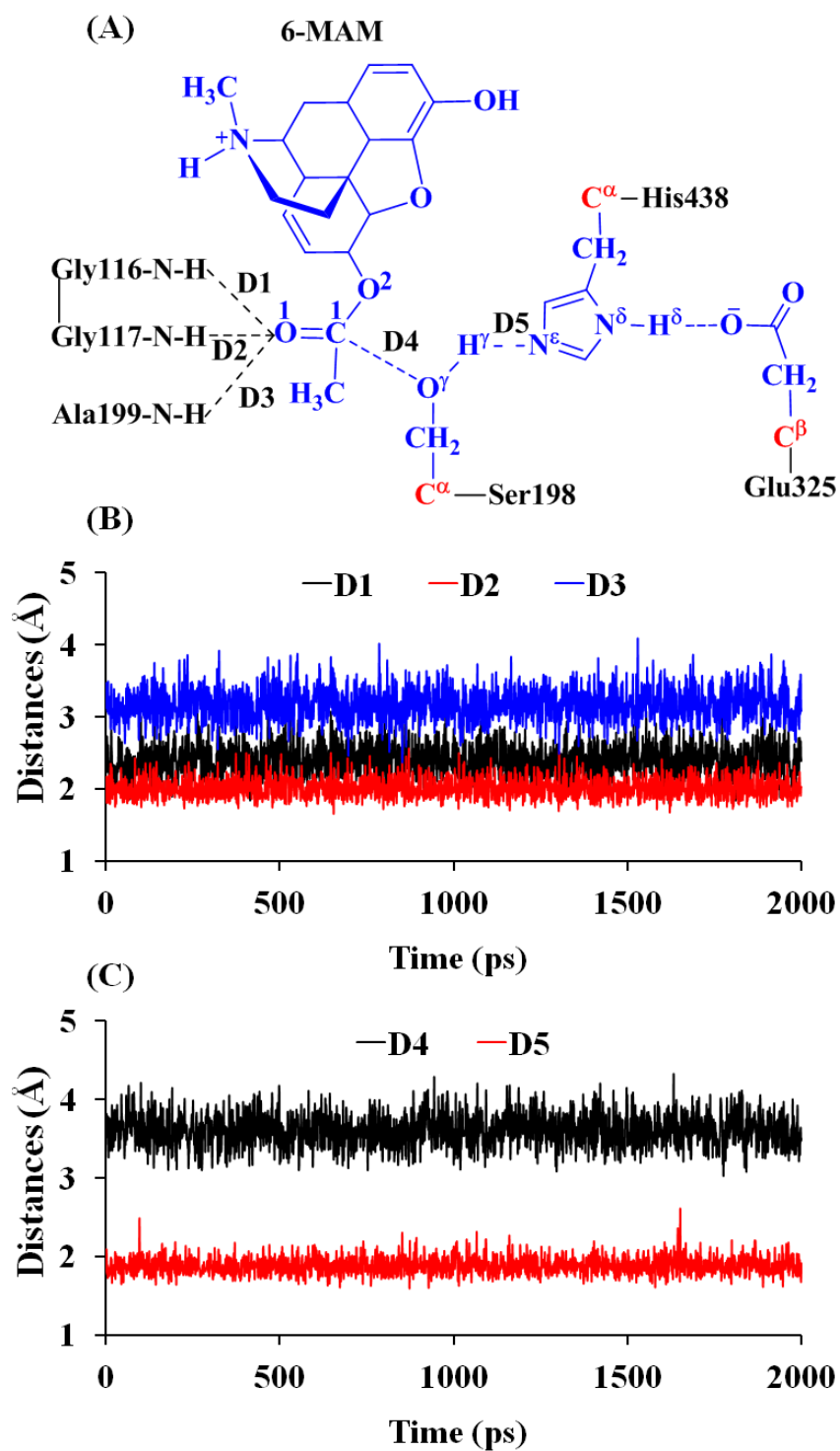
### **Reaction pathways and free energy profiles for cholinesterase-catalyzed hydrolysis of 6-monoacetylmorphine**

Yan Qiao,<sup>1,2</sup> Keli Han,<sup>1,\*</sup> and Chang-Guo Zhan<sup>2,\*</sup>

*<sup>1</sup>State Key Laboratory of Molecular Reaction Dynamics, Dalian Institute of Chemical Physics,  
Chinese Academy of Science, Zhongshan Road 457, Dalian 116023, P. R. China*

*<sup>2</sup>Department of Pharmaceutical Sciences, College of Pharmacy, University of Kentucky, 789  
South Limestone Street, Lexington, KY 40536.*

**Supplementary Information Available.** An additional figure for the plots of the key internuclear distances vs the simulation time in the MD-simulated BChE-6-MAM binding structure.



**Figure S1.** Key internuclear distances vs the simulation time in the MD-simulated BChE-6-MAM binding structure.