

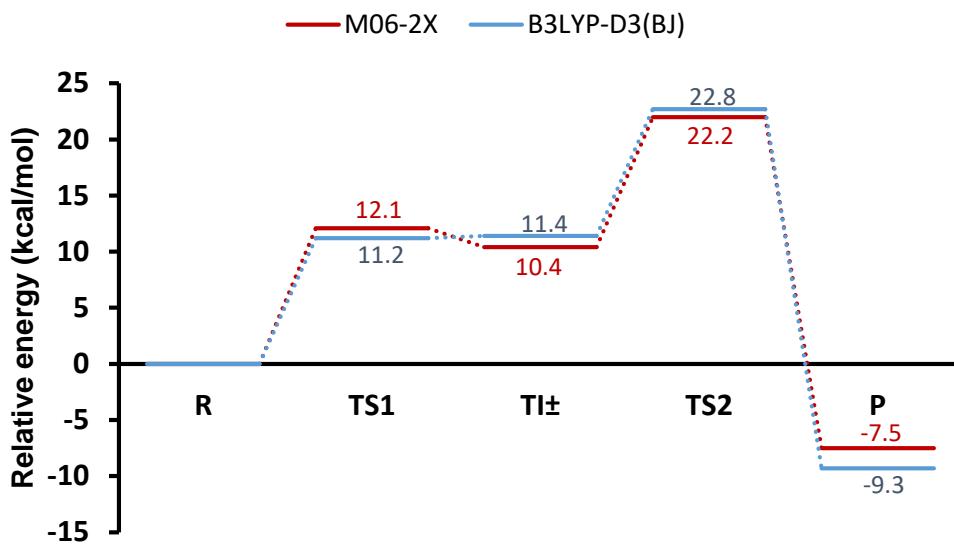
## **Supplementary Figures**

### **Mechanistic alternatives for peptide bond formation on the ribosome**

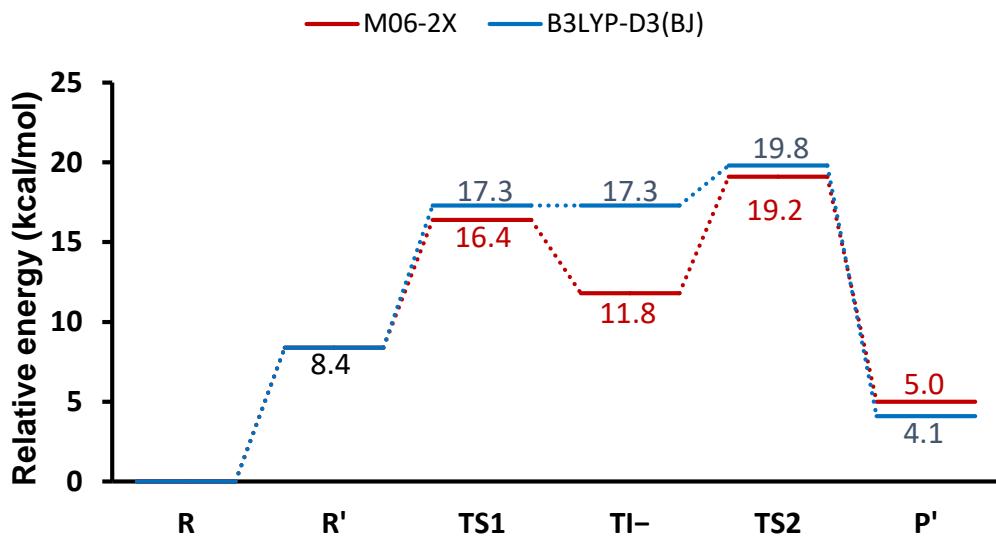
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**Figure S1.** Calculated energetics of the proton shuttle mechanism involving a ten-membered transition state with M06-2X and B3LYP functionals.



**Figure S2.** Calculated energetics of the general base catalyzed mechanism with M06-2X and B3LYP functionals.