



**Supplementary information, Figure S1** The crystal structure of uracil-bound UraA in an occluded conformation.

(A) The lattice packing of UraA crystallized in the C222<sub>1</sub> space group. (B) The 2Fo-Fc electron density map for TM6 of UraA. The 2Fo-Fc electron density, shown in cyan mesh, is contoured at 1.0  $\sigma$  and shown in stereoview. (C) The “omit” electron density map for uracil contoured at 3.0  $\sigma$ . The surface electrostatic potential of the core domain is calculated in PyMOL.