Poster

Insights into the molecular mechanism of ParAB*S* system in chromosome partition by *Hp*ParA and *Hp*ParB

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The ParAB*S* system [1, 2], composed of ParA (an ATPase), ParB (a DNA binding protein), and *parS* (a centromere-like DNA), regulates bacterial chromosome partition. The ParB-*parS* partition complex interacts with the nucleoid-bound ParA to form the nucleoid-adaptor complex (NAC) [3]. In *Helicobacter pylori*, ParA and ParB homologs are encoded as *Hp*Soj and *Hp*Spo0J (*Hp*ParA and *Hp*ParB), respectively. We determined the crystal structures of the ATP hydrolysis deficient mutant, *Hp*ParAD41A, and the *Hp*ParAD41A-DNA complex. We assayed the CTPase activity of *Hp*ParB and identified two potential DNA binding modes of *Hp*ParB regulated by CTP, one is the specific DNA binding by the DNA binding domain and the other is the non-specific DNA binding through the C-terminal domain under CTP.

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