**The role of Hha in copper homeostasis and virulence factor expression of uropathogenic *Proteus mirabilis***

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*Proteus mirabilis* is an important pathogen of the urinary tract. Copper is a component of human innate immune arsenal used to battle invading pathogens. Bacteria tightly regulate cytoplasmic Cu concentrations to minimize toxicity. Increasing evidence support that copper is involved in microbial pathogenesis and Cu resistance is crucial for virulence of many bacteria. Previously, in searching determinants for copper resistance, we isolated *hha* mutant exhibited increased copper sensitivity. The *hha* genes encode a toxin of the TomB-Hha toxin-antitoxin (TA) system. Preliminary data showed that Hha-TomB regulated virulence factors such as biofilm formation, urease activity and stress tolerance. Loss or overdose of Hha resulted in similar swimming defect and TomB expression can fix the effect of Hha overdose. Hha can bind the *flhDC* promoter DNA fragment. Moreover, copper can increase the *hha* m RNA level, together with those of *cpxP* and *rcsB*. This is the first study investigating the Hha-TomB system in copper resistance and virulence in *P. mirabilis*. Such a study will give an insight into the regulatory network of *P. mirabilis* Hha-TomB system in copper tolerance and virulence. This study will also provide clues for targeting Hha-TomB system in designing strategies to prevent and treat UTIs caused by *P. mirabilis*.