

## RESEARCH REPORT

- (a) Outline of academic activities Discussions, lecture tour, etc.
- (b) Impressions and thoughts on the present state of science in Japan in your field
- (c) Comments or suggestions to HUTE, especially concerning this program
- (d) Other comments

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- a) During my stay in Hyogo University of Teacher Education (HUTE) Yashiro campus, I discussed a lot with Prof. Fukuda about the topic of The studies of the metal center of the hemerythrin from *Methylococcus capsulatus* (Bath). We have undertaken genomic sequencing and quantitative comparative analysis of the proteome in *M. capsulatus* (Bath) grown under different copper-to-biomass ratios by cICAT (cleavable isotope coded affinity tag) technology toward understanding the change in cellular metabolism. Hemerythrin is an iron-containing oxygen carrier typically found in marine organisms, but the bacterial fusion domain homologue is also known. This enzyme is over-produced together with the particulate methane monooxygenase (pMMO) under high copper concentrations in *Methylococcus capsulatus* (Bath). Since the structure and mechanism of eukaryotic hemerythrin have also been well studied and reviewed. While hemerythrin is thought to be present only in marine invertebrates in most of the current literature, several bacterial hemerythrin genes have recently been reported by genomic sequencing. As most information of these sequencing results has been listed in on-line supporting tables, the dissemination of our current knowledge on these bacterial hemerythrins has obviously been limited. Moreover, there does not appear to have been efforts to update these references. Accordingly, we have decided to working on the theory simulation cooperation research of gene mutant hemerythrin protein in *M. capsulatus* (Bath) with Professor Fukuda from HUTE.
- b) Japan is one of the most advanced country in the biochemistry and biological chemistry. It was regret that there was no international meeting in these filed during the staying. But I would like to participate an international meeting next time.
- c) The HUTE SHORT-TERM FELLOWSHIP PROGRAM is a nice program for international visitor. The international exchange house provided a wonderful accommodation experience in Japan. I was satisfied with the circumstances of HUTE such as the dormitory, fresh air. In the future, I believe that many of faculties and students from NPUE are very interest to visit HUTE.