Discovery of new 11 proteins from soft coral

Dr. Azizur Rahman (Senior Scientist)

University of the Ryukyus laboratory, Okinawa, Japan in where Dr. Azizur Rahman succeeded in extracting new proteins from the sclerites of soft coral

Medicine production, Environment and many other applications

The research conducted by Dr. Azizur Rahman who came from Bangladesh, presently working in the Faculty of Science, University of Ryukyus, Okinawa prefecture, Japan recently succeeded in extracting 11 kinds of new proteins from the sclerites of soft corals. Of these proteins, one (MPL-2), which has already been included at the international protein data bank as a new innovative protein upon justification by the European Bioinformatics Institute, University of Cambridge. This protein showed both calcium-binding and carbonic anhydrase enzyme activities and able to control carbon dioxide. There are many possibilities to apply of these new findings, such as drug pharmaceutical industry, biotechnological research, along with for solving the current burning question of environmental problems related to global warming.

As the soft corals research was not advanced excessively, not yet elucidation any protein for understanding their growth mechanisms and functions, and scientists around the world failed to separate proteins, Dr. Rahman interested to conduct research since 2001 regarding this important subject. He was the first to identify these proteins in soft coral. He developed a new and highly effective method for protein purification, and first he succeeded to extract proteins from soft corals in 2004. The new proteins of 11 types were

extracted from the two soft corals, *Sinularia polydactyla* [Japanese name: TAKOASHIKATA TOSAKA] and *Lobophytum crassum* [Japanese name: FUTOUNETAKE].

Professor Tetsuro Samata, molecular biology department, Azabu University, Kanagawa prefecture, Japan who is one of the famous scientists in this related field appreciates his effort to date and expect him to study more detailed in the gene level. He said that the proteins extracted by Dr. Rahman are very applicable for understanding current marine environmental problems and increased understanding calcification mechanisms of corals in the marine environment. Furthermore, MPL-2 contain carbonic anhydrase enzyme, which is a potential biomolecule for skeletal formation of corals and it could be used many purposes for natural benefit.

Dr. Rahman graduated from the University of Agriculture in Bangladesh. After that he completed his Masters leading to PhD (doctorate) in 2006 from the University of the Ryukyus, Japan. In September 2007, he got a special fellowship and research grant from Japan Society for the promotion of Science (JSPS). Very recently, he presented his new findings on new proteins at the International conference of Oceans 2008, which was held in Canada and after evaluation by the judges about the extraction and new functions of proteins, he won first prize award. He received total 12 awards for outstanding innovative research works in his laboratory from several international committees, conferences and Societies.

He presented enthusiastically about his future plans that he would like to render great contribution to his homeland and world development making good use of biotechnology. He is active in the field of biotechnology. Prof. Tamotsu Oomori, who is also a famous scientist in Japan and presently working with Dr. Rahman as a host researcher, highly appreciated his research works. Prof. Oomori said that Dr. Rahman worked hard and successfully purified proteins, as he trialed many times, because of contamination of the soft tissues and their high sensitivity to handling and that's why scientists around the world failed to identify proteins from soft corals. Furthermore, if this research continues, it has a high possibility to identify more new enzymes and proteins and he is expecting to conduct further studies with Dr. Rahman.