

Editorial

One objective of this Special Issue on Microbial Iron Transport, Storage and Metabolism was to highlight important developments in the field of microbial iron research. A conference with the same title was held in Paris in June 1–4, 2005, organized by Cecile Wandersman, Laurent Debarbieux (Institut Pasteur) and Klaus Hantke (University of Tuebingen) and a collection of excellent contributions from this conference will be displayed in this issue. I am very grateful to the guest editors and hope that the presented reviews herein will encourage and welcome further contributions of this type of research articles in BioMetals.

Although the Journal BioMetals has a much broader coverage we sometimes need to focus on special areas like iron where science is progressing so rapidly. The microbes teach us why and how metal ions are processed and handled by various mechanisms and we are often surprised how carefully metal ions are transported, stored and incorporated into proteins to enable iron homeostasis. Iron metabolism and its regulation has certainly the highest priority for all aerobic organisms. I am, therefore, glad to present this special issue on microbial iron metabolism in our BioMetals Journal.

You may remember when we started with the first Symposium on Iron Transport, Storage and Metabolism in Tuebingen, Germany 1985, followed by meetings in Austin, Texas, 1990, organized by Charles Earhart and Strasbourg, France, 1992, organized by Mohamed Abdallah and Anne-Marie Albrecht-Gary. We then decided to join the combined meetings of BioIron in Ashville, NC, 1995, Sorrento, Italy, 1999 and Bethesda MD, 2003. However, we sometimes need to focus on the microbial aspects of iron metabolism in more detail and the 7th Symposium on Microbial Iron Transport, Storage and Metabolism, held in Paris 2005 was a timely event in this regard.

Apart from these Iron meetings, we also have launched the so called “International Biometals Symposia (IBS)” which are meetings devoted to all kinds of metals with beneficial or toxic effects to living cells. The first conference of this type (IBS-1) was held at the University of Calgary, Canada,

organized by Edward Leishley and Larry Barton from the UNM, followed by IBS-2 in Tuebingen organized by myself, and IBS-3 in London with Bob Hider as the organizer and finally IBS-4 in Garmisch, Germany, organized by Berthold Matzanke.

The next International Biometals Symposium (IBS-5) is already announced to be held on 30 July–6 August 2006 in Portland, Oregon, USA, with Jorge Crosa as the organizer (visit: <http://www.ohsu.edu/biometals2006>). The idea behind the Biometals symposium series was to include besides iron also copper, zinc, manganese, cobalt and nickel, molybdenum and tungsten, vanadium and chromium, alkali and alkaline earth cations and a variety of toxic ions like cadmium and lead entering the environment and affecting human health. An overlap with inorganic biochemistry is obvious and of course welcome.

While the inorganic biochemists study the basic chemical understanding and mode of action of these metals with proteins or DNA, the biologists in addition try to record the sensitivity of cells to these metals, employ the traffic routes of uptake and distribution within the cell and most importantly analyze the genetic background for the expression of receptors, chaperones and storage proteins. So we are happy to be so close to the bioinorganic chemists and have much in common with their ICIC and EUROBIIC meetings. The same is true for the importance of metals in the development of certain diseases which requires the tight cooperation with medicine and biochemistry. Exchange of information to both sides is necessary and will help to unravel the secrets of life. As stated by H.B. Gray in his recent review about the biological inorganic chemistry “business is booming”.

I will close this editorial by saying that we have lost a brilliant scientist from the microbial metal community when Robert J. Kadner died unexpectedly on August 7, 2005. Therefore, a memorial was included in this Special Issue of BioMetals.

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