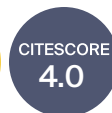




inorganics



Special Issue Reprint

Transition Metals in Catalysis

www.mdpi.com/books/reprint/3477

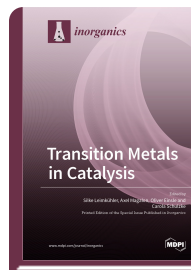
Edited by

Silke Leimkühler

Axel Magalon

Oliver Einsle

Carola Schulzke



ISBN 978-3-0365-0608-1 (Hardback)

ISBN 978-3-0365-0609-8 (PDF)

Iron–sulfur (FeS) centers are essential protein cofactors in all forms of life. They are involved in many key biological processes. In particular, Fe-S centers not only serve as enzyme cofactors in catalysis and electron transfer, they are also indispensable for the biosynthesis of complex metal-containing cofactors. Among these cofactors are the molybdenum (Moco) and tungsten (Wco) cofactors. Both Moco/Wco biosynthesis and Fe-S cluster assembly are highly conserved among all kingdoms of life. After formation, Fe-S clusters are transferred to carrier proteins, which insert them into recipient apo-proteins. Moco/Wco cofactors are composed of a tricyclic pterin compound, with the metal coordinated to its unique dithiolene group. Moco/Wco biosynthesis starts with an Fe-S cluster-dependent step involving radical/S-adenosylmethionine (SAM) chemistry. The current lack of knowledge of the connection of the assembly/biosynthesis of complex metal-containing cofactors is due to the sheer complexity of their synthesis with regard to both the (genetic) regulation and (chemical) metal center assembly. Studies on these metal-cofactors/cofactor-containing enzymes are important for understanding fundamental cellular processes. They will also provide a comprehensive view of the complex biosynthesis and the catalytic mechanism of metalloenzymes that underlie metal-related human diseases.



Order Your Print Copy

You can order print copies at

www.mdpi.com/books/reprint/3477

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.



Open Access

Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.



Author Focus

Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.



High Quality & Rapid Publication

MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.



High Visibility

Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis Lieferbarer Bücher (VLB).



Print on Demand and Multiple Formats

MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.