

BIOINORGANIC REACTION MECHANISMS

EDITOR-IN-CHIEF

Ivana Ivanović-Burmazović, Erlangen

CO-EDITORS

Shunichi Fukuzumi, Osaka

Richard Henderson, Newcastle-upon-Tyne

EDITORIAL BOARD

Mahdi M. Abu-Omar, West Lafayette, IN

Andreja Bakac, Ames, IA

Lisa Berreau, Logan, UT

Peter C. Ford, Santa Barbara, CA

Jeremy Harvey, Bristol

Willem Koppenol, Zürich

Julie Kovacs, Seattle, WA

Gabor Laurenczy, Lausanne

Wojciech Macyk, Krakow

Wonwoo Nam, Seoul

Christian Obinger, Vienna

Sven Rau, Erlangen

Marc Robert, Paris

Alexander D. Ryabov, Pittsburgh, PA

David Stanbury, Auburn, AL

Felix Tuczek, Kiel

Rudi van Eldik, Erlangen

DE GRUYTER

ABSTRACTED/INDEXED IN Chemical Abstracts, Current Contents, EBSCO Academic Search, Journal Citation Reports/Science Edition, Science Citation Index Expanded (SciSearch)

The publisher, together with the authors and editors, has taken great pains to ensure that all information presented in this work (programs, applications, amounts, dosages, etc.) reflects the standard of knowledge at the time of publication. Despite careful manuscript preparation and proof correction, errors can nevertheless occur. Authors, editors and publisher disclaim all responsibility for any errors or omissions of liability for the results obtained from use of the information, or parts thereof, contained in this work.

The citation of registered names, trade names, trademarks, etc. in this work does not imply, even in the absence of a specific statement, that such names are exempt from laws and regulations protecting trademarks etc. and therefore free for general use.

ISSN 2191-2483 · e-ISSN 2191-2491

All information regarding notes for contributors, subscriptions, Open access, back volumes and orders is available online at www.degruyter.com/birm

RESPONSIBLE EDITOR Prof. Dr. Ivana Ivanović-Burmazović, Lehrstuhl für Bioanorganische Chemie, Department Chemie und Pharmazie, Universität Erlangen-Nürnberg, Egerlandstraße 1, D-91058 Erlangen, Germany,
Tel. +49 (0)9131 85-25428, E-mail: Ivana.Ivanovic@chemie.uni-erlangen.de

JOURNAL MANAGER Dr. Torsten Krüger, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany,
Tel.: +49 (0)30 260 05 – 176, Fax: +49 (0)30 260 05 – 298, Email: birm.editorial@degruyter.com

RESPONSIBLE FOR ADVERTISEMENTS Panagiota Herbrand, De Gruyter, Mies-van-der-Rohe-Straße 1, 80807 München, Germany,
Tel.: +49 (0)89 769 02 – 394, Fax: +49 (0)89 769 02 – 350, Email: panagiota.herbrand@degruyter.com

© 2012 Walter de Gruyter GmbH & Co. KG, Berlin/Boston

TYPESETTING Compuscript Ltd., Shannon, Ireland

PRINTING Franz X. Stückle Druck und Verlag e.K., Ettenheim
Printed in Germany

COVER ILLUSTRATION Hemera/Thinkstock



Offenlegung der Inhaber und Beteiligungsverhältnisse gem. § 7a Abs. 1 Ziff. 1, Abs. 2 Ziff. 3 des Berliner Pressegesetzes: Gisela Cram, Rentnerin, Berlin; Dr. Annette Lubasch, Ärztin, Berlin; Elsbeth Cram, Pensionärin, Rosengarten-Alvesen; Margret Cram, Studienrätin i. R., Berlin; Brigitta Duvenbeck, Oberstudienrätin, Bad Homburg; Dr. Georg-Martin Cram, Unternehmens-Systemberater, Stadtbergen; Maike Cram, Berlin; Jens Cram, Mannheim; Renate Tran, Zürich; Gudula Gädeke M.A., Atemtherapeutin/Lehrerin, Tübingen; Martin Gädeke, Einzelunternehmer, Würzburg; John-Walter Siebert, Pfarrer, Walheim; Dr. Christa Schütz, Ärztin, Mannheim; Sonja Schütz, Berlin; Dorothee Seils, Apothekerin, Stuttgart; Gabriele Seils, Journalistin, Berlin; Ingrid Cram, Betriebsleiterin, Tuxpan / Michoacan (Mexiko); Sabina Cram, Mexico DF (Mexiko); Dr. Clara-Eugenie Seils, Oberstudienrätin i.R., Reppenstedt; Christoph Seils, Journalist, Berlin; Angelika Crisolli, kaufm. Angestellte, Hohenstein; Susanne Cram-Gomez, Mexico DF (Mexiko); Silke Cram, Wissenschaftlerin, Mexico DF (Mexiko); Björn Cram, Stadtbergen; Ella Anita Cram, Rentnerin, Berlin; Dr. Sven Fund, geschäftsführender Gesellschafter, Berlin; Walter de Gruyter Stiftung, Berlin.; Berit Cram, Stadtbergen; Walter Cram-Heydrich, Mexico DF (Mexico)

contents

Reviews

Richard A. Henderson

Rates of protonation of thiolate and sulfide ligands in mononuclear complexes and Fe-S-based clusters: implications for metalloenzymes — 1

Florian Kraus

Fluorine chemistry meets liquid ammonia — 29

Subrata Kundu, Matthias Schwalbe and Kallol Ray

Metal-oxo-mediated O-O bond formation reactions in chemistry and biology — 41

Alexander B. Sorokin

Diiron complexes on macrocyclic porphyrin-like platform as oxidation catalysts: reactivity and mechanistic considerations — 59