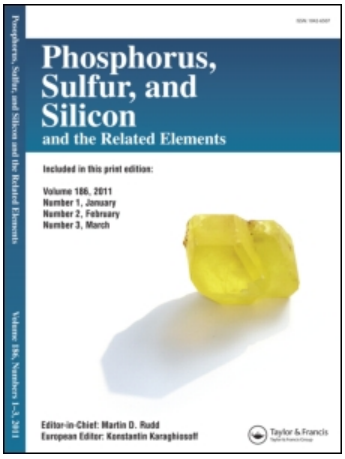
This article was downloaded by:
On: *28 January 2011*
Access details: *Access Details: Free Access*
Publisher *Taylor & Francis*
Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Phosphorus, Sulfur, and Silicon and the Related Elements

Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

Adsorption-Desorption Properties of Bisphosphonates

Oleg Aleksiuk[a]; Darlene Z. Gabriel[a]; Darko Kantoci[a]; E. David Murray Jr[a]; William J. Wechter[a]; Dan Borchard[b]; Frank H. Ebetino[c]

[a] Laboratory of Chemical Endocrinology, Loma Linda University, Loma Linda, California, USA [b] Department of Chemistry, University of California Riverside, Riverside, California, USA [c] Proctor & Gamble Pharmaceuticals, Health Care Research Center, Mason, Ohio, USA

To cite this Article Aleksiuk, Oleg , Gabriel, Darlene Z. , Kantoci, Darko , Murray Jr, E. David , Wechter, William J. , Borchard, Dan and Ebetino, Frank H.(1999) 'Adsorption-Desorption Properties of Bisphosphonates', Phosphorus, Sulfur, and Silicon and the Related Elements, 147: 1, 3

To link to this Article: DOI: 10.1080/10426509908053482

URL: http://dx.doi.org/10.1080/10426509908053482

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: http://www.informaworld.com/terms-and-conditions-of-access.pdf

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Phosphorus, Sulfur and Silicon, 1999, Vol. 147, pp. 3-3
Reprints available directly from the publisher
Photocopying permitted by license only

© 1999 OPA (Overseas Publishers Association) N.V.
Published by license under the
Gordon and Breach Science Publishers imprint.
Printed in Malaysia

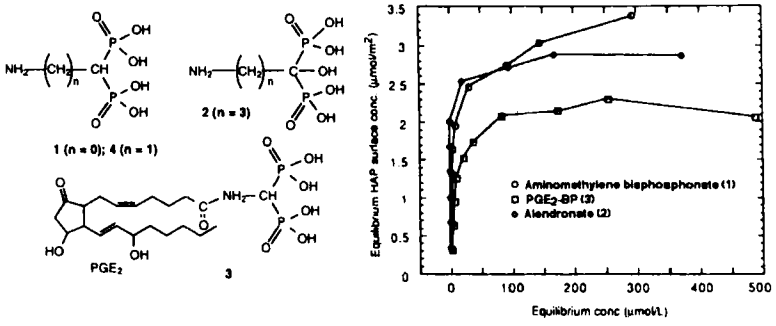
Downloaded At: 14:40 28 January 2011

Adsorption-Desorption Properties of Bisphosphonates

OLEG ALEKSIUK[a], DARLENE Z. GABRIEL[a], DARKO KANTOCI[a], E. DAVID MURRAY Jr[a], WILLIAM J. WECHTER[a], DAN BORCHARD[b] and FRANK H. EBETINO[c]

[a]*Laboratory of Chemical Endocrinology, Loma Linda University, Loma Linda, California 92354, USA,* [b]*Department of Chemistry, University of California Riverside, Riverside, California 92521, USA and* [c]*Proctor & Gamble Pharmaceuticals, Health Care Research Center, P.O. Box 8006, Mason, Ohio 45040–8006, USA.*

Aminobisphosphonates have generated substantial interest recently for the treatment of bone diseases and as plant growth regulators, both alone and as a carrier for other drugs, because of the high affinity to the hydroxyapatite (HAP). We are investigating the drug delivery action of bisphosphonates for the treatment of osteoporosis and other bone diseases. Current studies include analysis of the adsorption-desorption processes of bisphosphonate drug carriers to bone mineral, as well as the design and synthesis of new bisphosphonate derivatives. The HAP adsorption data of aminomethylenebis-phosphonate (AMBP) (**1**), alendronate (**2**), and the prostaglandin derivative of bisphosphonate (PGE_2-BP) (**3**) is shown on the graph.



A new aminobisphosphonate (**4**) resulted from the reaction of vinylbisphosphonate tetraethyl ether with ammonia in dioxane with hydrolysis following.