

This article was downloaded by:

On: 29 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>

Phospholipid Profiles of Neoplastic Human Breast Tissues

T. E. Merchant^a; L. W. Gierke^b; P. Meneses^b; T. Glonek^b

^a Department of Pathology, Rijksuniversiteit Utrecht, Utrecht, The Netherlands ^b Department of Pathology and MR Laboratory, Chicago College of Osteopathic Medicine, Chicago, Illinois, USA

To cite this Article Merchant, T. E. , Gierke, L. W. , Meneses, P. and Glonek, T.(1990) 'Phospholipid Profiles of Neoplastic Human Breast Tissues', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 51: 1, 404

To link to this Article: DOI: 10.1080/10426509008040931

URL: <http://dx.doi.org/10.1080/10426509008040931>

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.

PHOSPHOLIPID PROFILES OF NEOPLASTIC HUMAN BREAST TISSUES

T.E.MERCHANT,^A L.W.GIERKE, P.MENESES, and T.GLONEK
Department of Pathology and MR Laboratory, Chicago
College of Osteopathic Medicine, 5200 S. Ellis Ave.,
Chicago, Illinois 60615, USA
^ADepartment of Pathology, Rijksuniversiteit Utrecht,
Pasteurstraat 2, 3511 HX, Utrecht, the Netherlands

Membrane phospholipids from malignant, benign and non-involved human breast tissues were extracted by chloroform-methanol (2:1) and analyzed by ^{31}P MR spectroscopy at 202.4 MHz. Fourteen phospholipids were identified as constituents of the profiles obtained among the 52 specimens of the three groups: PC, PC plas LPC, LPC plas, PE, PE plas, LPE, PS, SPH, PI, CL, PG, PA and one uncharacterized resonance at 0.13 δ . The relative P-lipid profile mole percentages of phosphorus and indices representing sums and ratios of individual or grouped P-lipids were computed and analyzed by one-way analysis of variance and were compared as simple and complex statistical contrasts. The analysis permitted differentiation among the three groups with the most poignant simple contrast being the relative absence of PA in normal tissues, followed by the significant mean mole percentage differences in PC plas between noninvolved (3.09 ± 0.41) and malignant (4.49 ± 0.23) tissues and between these same tissues in the value of the PC plas/PC index with mean values of 0.07 ± 0.01 and 0.10 ± 0.006 , respectively. Significant complex contrasts were seen between the combined neoplastic tissues and noninvolved tissue in PE plas, LPC plas, PC plas and the (PA/Total Phosphatides - PA) index. Differences were also seen between malignant and non-malignant tissues in LPC, the LPC/PC, LPE/PE and PC plas/PC indices. Differentiation among histologically classified human breast tissues is possible with phospholipid profile analysis and metabolic insight.