

Insights on the Molecular Mechanisms Underlying the Anticancer Activity of Lactoferrin in Metastatic Cancer Cell Lines

[P7/30]

Joana P. Guedes^{1,2}, Cátia S. Pereira^{1,2}, Lígia R. Rodrigues², Manuela Côrte-Real¹

¹ Centre of Molecular and Environmental Biology (CBMA), Department of Biology, University of Minho, Braga, Portugal

² Centre of Biological Engineering, Department of Biological Engineer, University of Minho, Braga, Portugal

Lactoferrin (Lf) is an iron-binding protein derived from milk that is present in many tissues and biological fluids. It has been shown that this natural compound exhibits anticancer and anti-metastatic activities as well as cytotoxicity against several cancer cell lines. We have recently found that bovine lactoferrin (bLf) selectively triggers cell death in highly metastatic breast cancer cells through inhibition of the plasmalemmal proton pump V-H⁺-ATPase.¹ In the present study we aim to determine whether this mechanism of action underlies the anticancer/anti-metastatic activity of bLf in metastatic cancer cells other than breast cancer cells. To this end, we assessed bLf-induced inhibition of cell proliferation and intracellular acidification of a prostate and an osteosarcoma metastatic cell line and compared it with the effects on the previously used metastatic breast cancer cell line. The possibility of a common molecular target/mechanism of action of bLf underpinning its anticancer/anti-metastatic activity will be discussed.

References:

1. Cátia S. Pereira, Joana P. Guedes, Marília Gonçalves, Luís Loureiro, Lisandra Castro, Hernâni Gerós, Lígia R. Rodrigues, Manuela Côrte-Real: Lactoferrin selectively triggers apoptosis in highly metastatic breast cancer cells through inhibition of plasmalemmal V-H⁺-ATPase. *Oncotarget* 2016, 1-15.

Keywords: Lactoferrin cancer metastasis



BOOK OF ABSTRACTS

XIX NATIONAL CONGRESS OF BIOCHEMISTRY

UNIVERSITY OF MINHO
GUIMARÃES



Universidade do Minho
Escola de Ciências



CBMA
Centro de Biologia
Molecular e Ambiental



SPB2016

**BOOK OF
ABSTRACTS**

**XIX NATIONAL CONGRESS
OF BIOCHEMISTRY**

**UNIVERSITY OF MINHO
GUIMARÃES**

SPB2016 Book of Abstracts

Published by

SPB – Sociedade Portuguesa de Bioquímica
Universidade de Coimbra
Departamento de Bioquímica
Apartado 3126
3001 - 401 Coimbra, Portugal

CBMA – Centro de Biologia Molecular e Ambiental
Universidade do Minho
Departamento de Biologia
Campus de Gualtar
4710 - 057 Braga, Portugal

Copyright © 2016 SY4SCI Events, Lda. Printed in Portugal.

All rights reserved. This book, or parts thereof may not be reproduced in any form or by any means, electronic or mechanical, including photocopying, recording or any information storage and retrieval system now known or to be invented, without written permission from the Publishers.

Editor: Miguel Pinheiro
Proofreader: Lina Kakoulidou
Editing Services: SY4SCI Events, Lda.
Production Services: Copissaurio, Lda.

Interior Designer: Miguel Pinheiro
Cover Designer: Tomás Capa
Illustrator: Tomás Capa

November 2016: First edition (Print)
December 2016: Second edition (Web)

While every precaution has been taken in the preparation of this book, the publishers and the editor assume no responsibility for errors or omissions, or for damages resulting from the use of the information contained herein. This book presents information about scientific methods and materials that are constantly changing, and therefore it may contain errors and/or information that, while accurate when it was written, is no longer accurate by the time you read it. The content of this book represents the views and contributions of the authors only, and does not represent the views of SY4SCI Events, Lda.

For more information on the services provided by Synergy for Science, please visit www.synergy4science.com