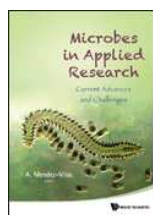


Home > All Publications > All Books > Microbes In Applied Research > 10.1142/9789814405041_0042

This Chapter



696pp Aug 2012

ISBN: 978-981-4405-03-4
(hardcover)

GBP131.00 [Buy Now](#)

ISBN: 978-981-4405-04-1
(ebook)

GBP170.00 [Buy Now](#)

[Add book to favorites](#)

Related Publications

Search for other articles

By keyword

- ☐ *Malus domestica*
- ☐ *Saccharomyces cerevisiae*
- ☐ antioxidants
- ☐ Microorganisms
- ☐ Applied Microbiology
- ☐ Environmental Microbiology
- ☐ Industrial Microbiology
- ☐ Microbial Biotechnology
- ☐ BioMicroWorld2011 Conference Proceedings Book
- ☐ Mendez-Vilas

By author

- ☐ R. Ferreira
- ☐ J. Agostinho
- ☐ I. Alves-Pereira

Search in

- ☐ World Scientific
- ☐ CrossRef

[Search](#)



Microbes In Applied Research

Current Advances and Challenges

Malaga, Spain, 14 – 16 September 2011

[< Previous Chapter](#)

Antioxidant power of *Malus domestica* juice partially reverses the oxidative effect of vanadium pentoxide in *Saccharomyces cerevisiae*

[Next Chapter >](#)

[Add to Favorites](#) | [Download to Citation Manager](#) | [Citation Alert](#)

[PDF \(210 KB\)](#)

J. Agostinho, R. Ferreira, and I. Alves-Pereira (2012) Antioxidant power of *Malus domestica* juice partially reverses the oxidative effect of vanadium pentoxide in *Saccharomyces cerevisiae*. *Microbes In Applied Research*: pp. 213-217.

doi: 10.1142/9789814405041_0042

Food Microbiology

Antioxidant power of *Malus domestica* juice partially reverses the oxidative effect of vanadium pentoxide in *Saccharomyces cerevisiae*

J. Agostinho

Department of Chemistry, School of Sciences and Technology, University of Évora, R. Romão Ramalho, 59, 7001-554 Évora, Portugal

R. Ferreira

Department of Chemistry, School of Sciences and Technology, University of Évora, R. Romão Ramalho, 59, 7001-554 Évora, Portugal

Institute of Mediterranean Agrarian Environmental Sciences (ICAAM), University of Évora, Núcleo da Mitra, 7002-774 Évora, Portugal

I. Alves-Pereira

Corresponding author. Phone: +351 266745311

Department of Chemistry, School of Sciences and Technology, University of Évora, R. Romão Ramalho, 59, 7001-554 Évora, Portugal

Institute of Mediterranean Agrarian Environmental Sciences (ICAAM), University of Évora, Núcleo da Mitra, 7002-774 Évora, Portugal

Apple juices are described as potential inhibitors of oxidative stress preventing chronic disorders such as cancer and cardiovascular disease. Accordingly, the main intention of this study was to evaluate the influence of Golden Delicious apple juice, from Beira Alta, Portugal on cell proliferation of *S. cerevisiae* UE-ME₃ exposed to oxidant, vanadium pentoxide. The results show that 2.0 mM vanadium pentoxide induced cell death, detected by a decrease in cell viability (cfu) and ALP activity, as well as, a significant increase of ROS and GSH contents, GSH/GSSG ratio and GR activity. Despite also occur a rise of free radical scavenger in citoplasm (DPPH) in cells exposed to vanadium, this response was not adequate to preserve its viability. Nevertheless, the apple juice caused a protector response, increasing cell viability and ALP activity, as well as, decreasing ROS content in *S.cerevisiae* grown in presence of V₂O₅. We assume that this partial reverse effect depends on phenolic compounds in apple juice, which amend the response mediated by glutathione.

Keywords: *Malus domestica*; *Saccharomyces cerevisiae*; antioxidants

Imperial College Press | Global Publishing | Asia-Pacific Biotech News | Innovation Magazine
Labcreations Co | World Century | WS education | Meeting Matters | National Academies Press

Copyright© 2013 World Scientific Publishing Co. All rights reserved.
Powered by Atypon® Literatum