

Abstract

Cytoprotective and Antioxidants in Peroxisomal Neurodegenerative Diseases [†]

Mustapha Cherkaoui-Malki ^{1,2,*}, Saad Shaaban ^{3,4}, Mounia Tahri-Joutey ^{1,2,5}, Ahmed Elshobaky ^{2,6}, Fatima-Ezzahra Saih ^{1,2,5}, Dominique Vervandier-Fasseur ^{1,7}, Claus Jacob ^{1,8}, Boubker Nasser ^{1,5}, Norbert Latruffe ^{1,2} and Pierre Andreoletti ^{1,2}

¹ NutRedOx Network (COST Action CA16112), 1050 Brussels, Belgium; mouniajoutey@gmail.com (M.T.-J.); f.z.saih@hotmail.com (F.-E.S.); dominique.vervandier-fasseur@u-bourgogne.fr (D.V.-F.); c.jacob@mx.uni-saarland.de (C.J.); boubker_nasser@hotmail.com (B.N.); Norbert.Latruffe@u-bourgogne.fr (N.L.); pierre.andreoletti@u-bourgogne.fr (P.A.)

² BioPeroXIL laboratory, Université de Bourgogne-Franche Comté, 6, Boulevard Gabriel, 21000 Dijon, France; dshobaky84@yahoo.com

³ Organic Chemistry Division, Department of Chemistry, Faculty of Science, Mansoura University, El-Gomhorya Street, 35516 Mansoura, Egypt; dr_saad_chem@mans.edu.eg

⁴ Institute of Organic Chemistry and Chemical Biology, Goethe-University Frankfurt, Max-von-Laue-Str. 7, 60438 Frankfurt/Main, Germany

⁵ Laboratoire de Biochimie et Neurosciences, Faculté des Sciences et Techniques, Université Hassan I, BP577, 26000 Settat, Morocco

⁶ Botany Department, Faculty of Science, Mansoura University, 35516 Mansoura, Egypt

⁷ Institut de Chimie Moléculaire de l'Université de Bourgogne-Franche Comté, UMR6302, CNRS, Université Bourgogne Franche Comté, F-21000 Dijon, France

⁸ Division of Bioorganic Chemistry, School of Pharmacy, Saarland University, Campus B2 1, D-66123 Saarbrücken, Germany

* Correspondence: malki@u-bourgogne.fr; Tel.: +333-8039-6205

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Abstract: Several of the peroxisomal neurodegenerative disorders are the consequence of a specific deficiency of an enzyme or a transporter involved in peroxisomal beta-oxidation of very long chain fatty acids [1,2]. One of the hallmarks in these peroxisomal rare neurodegenerative diseases and in other common demyelinating disorders is the accompanying oxidative damage and neuroinflammation [3]. Compelling data indicates that oxidative stress can activate microglia leading to the overproduction of pro-inflammatory molecules [4,5]. Thus, targeting oxidative stress to limit neuroinflammation may open a new pharmacological therapy window for these still incurable devastating peroxisomal diseases. Here, we present different natural (resveratrol) [6] and synthetic (organoselenides) [7] antioxidant compounds for their capacity of scavenging oxidative stress and in the perspective therapeutic use against oxidative damage in peroxisomal disorders.

Keywords: antioxidant; leukodystrophy; organoselenides; peroxisome; resveratrol

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