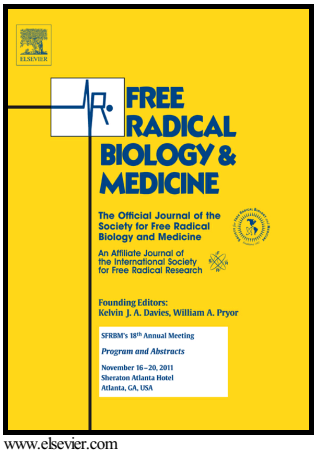

Caloric Restriction Protects Livers from Ischemia/Reperfusion Damage by Preventing Ca^{2+}-Induced Mitochondrial Permeability Transition

Sergio L. Menezes-Filho, Ignacio Amigo, Fernanda M. Prado, Natalie C. Ferreira, Marcia K. Koike, Isabella F.D. Pinto, Sayuri Miyamoto, Edna F.S. Montero, Marisa H.G. Medeiros, Alicia J. Kowaltowski

PII: S0891-5849(17)30646-9
DOI: http://dx.doi.org/10.1016/j.freeradbiomed.2017.06.013
Reference: FRB13367

To appear in: *Free Radical Biology and Medicine*

Received date: 24 February 2017
Revised date: 19 May 2017
Accepted date: 17 June 2017

Cite this article as: Sergio L. Menezes-Filho, Ignacio Amigo, Fernanda M Prado, Natalie C. Ferreira, Marcia K. Koike, Isabella F.D. Pinto, Sayur Miyamoto, Edna F.S. Montero, Marisa H.G. Medeiros and Alicia J Kowaltowski, Caloric Restriction Protects Livers from Ischemia/Reperfusio Damage by Preventing Ca^{2+}-Induced Mitochondrial Permeability Transition *Free Radical Biology and Medicine* http://dx.doi.org/10.1016/j.freeradbiomed.2017.06.013

Caloric Restriction Protects Livers from Ischemia/Reperfusion Damage by Preventing Ca^{2+}-Induced Mitochondrial Permeability Transition

Sergio L. Menezes-Filho[1], Ignacio Amigo[1], Fernanda M. Prado[1], Natalie C. Ferreira[2], Marcia K. Koike[2], Isabella F.D. Pinto[1], Sayuri Miyamoto[1], Edna F.S. Montero[2], Marisa H.G. Medeiros[1], Alicia J. Kowaltowski[1*]

[1]Departamento de Bioquímica, Instituto de Química, Universidade de São Paulo, São Paulo, SP, Brazil

[2]Disciplina de Cirurgia Geral e do Trauma, Laboratório de Fisiopatologia Cirúrgica-LIM-62, Faculdade de Medicina, Universidade de São Paulo, SP, Brazil

smenezes@iq.usp.br
iamigo@iq.usp.br
fmprado@iq.usp.br
natalie.chaves@gmail.com
mkoike@usp.br
isabellapinto@usp.br
miyamoto@iq.usp.br
efrassonsmontero@usp.br
mhgdmede@iq.usp.br
alicia@iq.usp.br

[*]Correspondence to: Av. Prof. Lineu Prestes, 748, Cidade Universitária 05508-900, São Paulo, SP, Brazil. Tel.:+55 11 30912922.

Abstract

Caloric restriction (CR) promotes lifespan extension and protects against many pathological conditions, including ischemia/reperfusion injury to the brain, heart and kidney. In the liver, ischemia/reperfusion damage is related to excessive mitochondrial Ca^{2+} accumulation, leading to the mitochondrial permeability transition. Indeed, liver mitochondria isolated from animals maintained on CR for 4