

The cysteine-rich whey protein supplement, Immunocal®, preserves brain glutathione and improves cognitive, motor, and histopathological indices of traumatic brain injury in a mouse model of controlled cortical impact

Elizabeth Ignowski, Aimee N. Winter, Nathan Duval, Holly Fleming, Tyler Wallace, Evan Manning, Lilia Koza, Kendra Huber, Natalie J. Serkova, Daniel A. Linseman



PII: S0891-5849(18)31117-1
DOI: <https://doi.org/10.1016/j.freeradbiomed.2018.06.026>
Reference: FRB13822

To appear in: *Free Radical Biology and Medicine*

Received date: 9 March 2018
Revised date: 8 June 2018
Accepted date: 22 June 2018

Cite this article as: Elizabeth Ignowski, Aimee N. Winter, Nathan Duval, Holly Fleming, Tyler Wallace, Evan Manning, Lilia Koza, Kendra Huber, Natalie J. Serkova and Daniel A. Linseman, The cysteine-rich whey protein supplement, Immunocal®, preserves brain glutathione and improves cognitive, motor, and histopathological indices of traumatic brain injury in a mouse model of controlled cortical impact, *Free Radical Biology and Medicine*, <https://doi.org/10.1016/j.freeradbiomed.2018.06.026>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

The cysteine-rich whey protein supplement, Immunocal®, preserves brain glutathione and improves cognitive, motor, and histopathological indices of traumatic brain injury in a mouse model of controlled cortical impact

Ms. Elizabeth Ignowski^{a1}, Dr. Aimee N. Winter^{a1}, Dr. Nathan Duval^b, Ms. Holly Fleming^b, Mr. Tyler

Wallace^a, Mr. Evan Manning^a, Ms. Lilia Koza^a, Ms. Kendra Huber^c, Dr. Natalie J. Serkova^c, Dr. Daniel A.

Linseman^{d*}

^aUniversity of Denver, Department of Biological Sciences, Denver, Colorado, 80208, United States,

^bUniversity of Denver, Knoebel Institute for Healthy Aging, Denver, Colorado, 80208, United States,

^cUniversity of Colorado Cancer Center, Aurora, Colorado, 80045, United States,

^dUniversity of Denver, Department of Biological Sciences and Knoebel Institute for Healthy Aging, 2155 E. Wesley Ave., Denver, Colorado, 80208, United States;

lizignowski@gmail.com

aimee.n.winter@gmail.com

ng.duval@gmail.com

holly.fleming@du.edu

tywall28@gmail.com

evan.manning@ucdenver.edu

koza.lilia@gmail.com

kendra.huber@ucdenver.edu

natalie.serkova@ucdenver.edu

daniel.linseman@du.edu

***Corresponding author.** 3038714663

Abstract

Traumatic brain injury (TBI)¹ is a major public health problem estimated to affect nearly 1.7 million people in the United States annually. Due to the often debilitating effects of TBI, novel preventative agents are highly desirable for at risk populations. Here, we tested a whey protein supplement, Immunocal®, for its potential to enhance resilience to TBI. Immunocal® is a non-denatured whey protein preparation which has been shown to act as a cysteine delivery system to increase levels of the essential antioxidant glutathione (GSH). Twice daily oral supplementation of CD1 mice with Immunocal® for 28

¹ These authors contributed equally to the manuscript.

Download English Version:

<https://daneshyari.com/en/article/8265203>

Download Persian Version:

<https://daneshyari.com/article/8265203>

[Daneshyari.com](https://daneshyari.com)