Accepted Manuscript

Title: The Role of Genetic Background in Susceptibility to Chemical Warfare Nerve Agents Across Rodent and Non-Human Primate Models

Authors: Liana M. Matson, Hilary S. McCarren, C. Linn Cadieux, Douglas M. Cerasoli, John H. McDonough

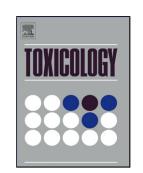
PII: S0300-483X(17)30326-8

DOI: https://doi.org/10.1016/j.tox.2017.11.003

Reference: TOX 51971

To appear in: *Toxicology*

Received date: 21-8-2017 Revised date: 13-10-2017 Accepted date: 2-11-2017



Please cite this article as: Matson, Liana M., McCarren, Hilary S., Cadieux, C.Linn, Cerasoli, Douglas M., McDonough, John H., The Role of Genetic Background in Susceptibility to Chemical Warfare Nerve Agents Across Rodent and Non-Human Primate Models. Toxicology https://doi.org/10.1016/j.tox.2017.11.003

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 proof before it is published in its final 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.

ACCEPTED MANUSCRIPT

The Role of Genetic Background in Susceptibility to Chemical Warfare Nerve Agents Across Rodent and Non-Human Primate Models

Liana M. Matson¹*, Hilary S. McCarren¹, C. Linn Cadieux¹, Douglas M. Cerasoli¹, John H. McDonough¹

 U.S. Army Medical Research Institute of Chemical Defense, 2900 Ricketts Point Rd, Aberdeen Proving Ground, MD 21010

*Corresponding author, liana.m.matson.mil@mail.mil, 410-436-4560

Author emails: hilary.mccarren.ctr@mail.mil, christena.l.cadieux.civ@mail.mil, john.h.mcdonough2.civ@mail.mil

Abstract

Genetics likely play a role in various responses to nerve agent exposure, as genetic background plays an important role in behavioral, neurological, and physiological responses to environmental stimuli. Mouse strains or selected lines can be used to identify susceptibility based on background genetic features to nerve agent exposure. Additional genetic techniques can then be used to identify mechanisms underlying resistance and sensitivity, with the ultimate goal of developing more effective and targeted therapies. Here, we discuss the available literature on strain and selected line differences in cholinesterase activity levels and response to nerve agent-induced toxicity and seizures. We also discuss the available cholinesterase and toxicity literature across different non-human primate species. The available data suggest that robust genetic differences exist in cholinesterase activity, nerve agent-induced toxicity, and chemical-induced seizures. Available cholinesterase data suggest that acetylcholinesterase activity differs across strains, but are limited

Download English Version:

https://daneshyari.com/en/article/8552883

Download Persian Version:

https://daneshyari.com/article/8552883

<u>Daneshyari.com</u>