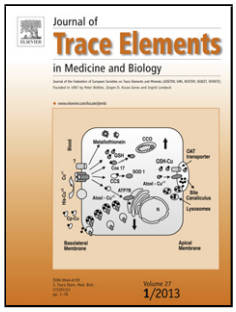
Accepted Manuscript



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PII: S0946-672X(18)30156-1
DOI: https://doi.org/10.1016/j.jtemb.2018.06.003
Reference: JTEMB 26158

To appear in:

Received date: 26-2-2018
Revised date: 10-5-2018
Accepted date: 1-6-2018

Please cite this article as: Donoiu I, Militaru C, Obleagă O, Hunter JM, Neamţu J, Biţă A, Scorei IR, Rogoveanu OC, Effects of Boron-Containing Compounds on Cardiovascular Disease Risk Factors – A Review, *Journal of Trace Elements in Medicine and Biology* (2018), https://doi.org/10.1016/j.jtemb.2018.06.003

Effects of Boron-Containing Compounds on Cardiovascular Disease Risk Factors – A Review

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The work has been carried out at the University of Medicine and Pharmacy of Craiova.

Short title: Boron On Heart Disease Risk Factors

ABSTRACT

Boron is considered to be a biological trace element but there is substantial and growing support for it to be classified as an essential nutrient for animals and humans, depending on its speciation. Boron-containing compounds have been reported to play an important role in biological systems. Although the exact biochemical functions of boron-containing compounds have not yet been fully elucidated, previous studies suggest an active involvement of these molecules in the mediation of inflammation and oxidative stress. Chronic inflammation and oxidative stress are known to amplify the effects of the main cardiovascular risk factors: smoking, diet, obesity, arterial hypertension, dyslipidemia, type 2 diabetes (as modifiable risk factors), and hyperhomocysteinemia and age (as independent risk factors). However, the role of boron-containing compounds in cardiovascular systems and disease prevention has yet to be established.

This paper is a review of boron-containing compounds' existence in nature and their possible functions in living organisms, with a special focus on certain cardiovascular risk factors that may be diminished by intake of these compounds, leading to a reduction of cardiovascular morbidity and/or mortality.