Sulfato de cobre melhora função cardiovascular e diminui glicemia no diabetes (inibe a alfa-glucosidase)

**[Copper compounds ameliorate cardiovascular dysfunction and diabetes in animals].**

[Article in Japanese]

Sakurai H. 

**Source**

Department of Pharmaceutical Sciences, Suzuka University of Medical Science, Mie, Japan. 
hanssakurai@i-next.ne.jp

**Abstract**

Copper (Cu) is essential for our daily life and it is found at approximately 110 mg in human adults with the body weight of 70 kg, in which this metal occurs at 46 mg in the bone and 26 mg in the muscle. Although Cu exists in the brain (approximately 5 mg/kg), liver (6 mg/kg), kidney (13 mg/kg), erythrocytes (90 mg/L), bile (6 mg/L) and serum (120 mg/L), its organ-specific distribution is not yet known. In metalloenzymes such as oxidoreductases, Cu is abundantly found and greatly contributes in life functions. In addition, intracellular Cu transport system has been revealed in connection with iron (Fe) and zinc (Zn) intracellular transport systems. In spite of such great contribution of Cu in life, no Cu-containing pharmaceutics have yet been known. Under such background, the author and his research group have tried to examine a possibility of Cu compounds as potential pharmaceutics. In the review, the following topics are concerned; (1) improvement of cardiovascular dysfunction in animals by di-nuclear Cu-asprinate complex on the basis of the results on its reactive oxygen scavenging (ROS) effect, (2) blood glucose-lowering effect of mono-nuclear Cu-picolinate complex in streptozotocin (STZ)-induced type 1-like diabetic animals, based on the results on in vitro insulinomimetic activity, and (3) anti-diabetic effect of copper sulfate in animals with regard to the inhibition of α-glucosidase activity. These results suggest that copper ion and its complexes are possible seeds for developing Cu-containing pharmaceutics in the future.

PMID: 22382831