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Metal-ligand homeostasis of essential metals (Zn, Cu, Fe) in epidermis: Probable norm criteriaV I Petukhov¹, E V Dmitriev², L Kh Baumane³, A V Skalny⁴, Yu N Lobanova⁴ and A R Grabeklis⁴¹Vladimir State University, Russia²Institute of Numerical Mathematics - Russian Academy of Sciences, Russia³Latvian Institute of Organic Synthesis, Latvia⁴Centre for Biotic Medicine, Russia

The work is dedicated to the problem of the norm in the quantitative evaluation of metal content in the epidermal cells (hair) obtained by the method of spectrometry. Authors have analyzed the hair samples for Zn, Cu, and Fe content, which were obtained from 10000 healthy subjects (5000 males and 5000 females aged 20 to 45). The definition of the norm, in the authors' opinion, is closely related to the basic positions of the theory of self-organized criticality (SC). The observed shifts in the homeostasis of essential metals are local and therefore cannot serve as a criterion of sufficient (or insufficient) metal content throughout the body. The use of hair spectrometry for determination of metal content in epidermal cells has proven to be ineffective in diagnostics of latent ID forms. However, the spectrometric analysis may be suitable for detecting criticality (synchronization) as a normative (regulatory) criterion in the operation of membrane ATPases.

Biography

V I Petukhov was graduated from the Faculty of Therapy, 1st Leningrad Medical Institute and Post-graduation from Central Institute of Post-Diploma Education of Physicians, Moscow. His Doctor's field of specialization: Therapeutist – Hematologist. He has published more than 180 scientific works, including four monographs. Presently, he is a Professor of the Vladimir State University, Vladimir, Russia, and Emeritus Professor of the Baltic International Academy, Riga, Latvia.

vip-val@yandex.ru

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