

Age dependent tissue dehydration as a reason of increase of biowaivers and decrease of biosimilars

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Although the age-induced tissue dehydration is accompanied by increase in the risk of different medical disorders, the messenger role of cell dehydration in generation of various diseases is not clear yet. As among the number of mechanisms involved in regulation of cell hydration Na/K pump and Na/Ca exchange have a fundamental role, in present work the age-dependence of correlation between these mechanisms' activity and cell hydration was studied. It was shown that there is a close correlation between cell hydration and a number of functionally active protein molecules in membrane having enzymatic receptors and channel properties. The cell swelling leads to increase, while shrinkage leads to the decrease in a number of these proteins. Therefore, the age-dependent decrease of cell metabolic activity is considered as a result of cell dehydration. The age-dependence of high affinity ouabain receptors was observed which is due to increase in intracellular Ca concentration in result of dysfunctioning of intracellular cyclic nucleotides systems. On the basis of obtained data the age-dependent tissue dehydration is considered as a reason of biowaivers increase and decrease of biosimilars.

Biography

Sinerik Ayrapetyan has completed his Ph.D. and postdoctoral studies from Ukraine Academy of Sciences. He is the president of Life Sciences International Postgraduate Educational Center and head of UNESCO Chair in Life Sciences. He is the author of 7 books and more than 185 papers in refereed journals, and is serving as a member of the Board of Associate Editors for the "*Electromagnetic Biology and Medicine Journal*", Associate Editor for Biomedical Research of "*Journal of International Dental and Medical Research*", editorial board member of *ISRN Biophysics*, *Advances in Life Sciences*, *Journal of Biavailability and Bioequivalence*, *Journal of Applied Pharmacy*, *European Journal of Biophysics*. His research area is in the metabolic regulation of excitable cell membrane function.

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