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**Molar concentration welcomes Avogadro in postgenomic analysis****A I Archakov, A V Lisitsa and E A Ponomarenko**  
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The researchers working with high-throughput methods of genomics, transcriptomics, and proteomics reconsider the concept of concentration and evaluate the data obtained in the number of copies of biomacromolecules. Measurement of copy number reflects a steady trend in increasing the sensitivity of postgenomic analytical methods, up to the level of a single molecule. In this paper we review the physical meaning of the terms molar concentration and Avogadro's number to establish a relationship between them. The relationship between the molar concentration and the number of copies of that same macromolecule in a certain volume is set through the reverse Avogadro's number, the value of which ( $\approx 10^{-24}$  M) characterizes the molar concentration of a single molecule in 1 liter. Using the reverse Avogadro's number, we deal with situations in analyzing homogeneous biological solutions and heterogeneous cellular material.

**Biography**

A I Archakov is a Full Member of the Russian Academy of Sciences and Professor & Scientific Advisor at Institute of Biomedical Chemistry. He has organized scientific school to study molecular organization and functioning of oxygenase cytochrome P450-containing systems, molecular mechanisms of the structure and function of membranes and biological oxidation. He has guided the institute's members in developing a fundamentally new pharmaceutical composition "Phosphogliv" with antiviral activity for the treatment of liver diseases of various etiology. He is the pioneer in the development of proteomics in Russia. Currently, he is the International "Human Proteome" Project Coordinator in Russia. He is one of the Russia's top 100 scientists with Hirsch number 27. He is the author of more than 700 scientific works including about 482 scientific articles, 6 monographs, 30 patents and author's certificates. He was Scientific Advisor for 15 Doctors' and more than 60 PhD theses. He is the winner of three state prizes of the USSR, the RSFSR and of the Russian Federation.

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