



## Archakov A I

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### Biography

Archakov A I Scientific Advisor of Institute of Biomedical Chemistry, was born January 10, 1940, in Kashin, Kalinin (Tver) region – scientist, biochemist. A.I. Archakov had organized a 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. Under the guidance of A. I. Archakov, the institute's members have developed a fundamentally new pharmaceutical composition "Phosphogliv" with antiviral activity for the treatment of liver diseases of various etiology. A.I. Archakov's present-day/current areas of expertise relate to research in the field of post-genomic technologies, nanobiotechnologies, proteomics, development of approaches to create personalized medicine of the future. A.I. Archakov is the pioneer in the development of proteomics in Russia. Currently, he is the international "Human proteome" project coordinator in Russia/ the coordinator representing Russia in the international "HP" project

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Note:

## MOLAR CONCENTRATION WELCOMES AVOGADRO IN POSTGENOMIC ANALYSIS

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 one liter. Using the reverse Avogadro's number, we deal with situations in analyzing homogeneous biological solutions and heterogeneous cellular material.