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Molar concentration welcomes Avogadro in postgenomic analytics

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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.

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