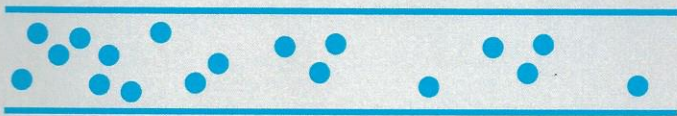


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Serial dilution method to determine enzymatic activity in a sequential injection analysis system

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Sample dilution is an important stage in any analytical method. Determine in a bioprocess high concentrations of metabolites at laboratory level require perform multiple dilutions in a sample. In a sequential injection analysis system it is necessary to carry out dilutions in a coil or a mixer chamber. Some sequential injection analysis systems have low dilution capability and an excessive amount of time is required. In a dilution it is necessary to be aware of the gradient concentration provoked by the dispersion factor, which changes with length and diameter of the tubing, and physical variables such as temperature, viscosity, flow, and temperature. Then in this contribution, we present a method to perform serial dilution in a sequential injection analysis system for on-line determination of p-nitrophenol, which is a chromophore used in spectrophotometric techniques to determine enzymatic activity. The proposed system is the combination of a holding coil and a container including a magnetic stirrer controlled by a computer. The Lab-made magnetic stirrer homogenizes the sample in a batch process and the hold coil is a reservoir of the sample, allowing perform successive dilutions. The system is able to perform dilutions up to 1000 times with a maximum error of $\pm 5.93\%$ in step interval of 10.

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