METODOLOGIA NUCLEAR PARA DETERMINAÇÃO DA CONCENTRAÇÃO DE METAIS E ÍONS EM SORO HUMANO: UMA COMPARAÇÃO COM OS MÉTODOS CONVENCIONAIS

NUCLEAR METHODOLOGY TO DETERMINE ELEMENTS CONCENTRATION IN HUMAN SERUM: A COMPARISON WITH THE CONVENTIONAL ANALYSES

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Summary

The determination of the concentration of Chlorine, Potassium and Sodium in the human organism is valuable for the clinical practice for the importance of these elements in the metabolism, hence the variety of available methods for the quantification of these elements. This work 40 samples of blood donors from Paulista Blood Bank. the serum was transferred to the filter paper, dried for few minutes using an infrared lamp and were irradiated with neutron, in the nuclear reactor IEA-R1 at IPEN/SP. The concentration for each element was obtained from software *ATIVAÇÃO.* The conventional methodology was realized: Ion Specific Electrode for sodium and potassium and Colorimetry for clorine. The reference values using Neutron Activation Analysis technique, i.é, Cl (96-105 mEq/L), K (3,3-4,8 mEq/L) and Na (133-145 mEq/L), are compatibles when compared with them of the conventional techniques, showing to the good performance of this nuclear method and its viability of use in clinical practical.

Keyword: serum, biochemistry analysis, Neutron Activation Analysis, Sodium, Potassium and Chlorine