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**MICRO-HOMOGENEITY EVALUATION OF A BOVINE KIDNEY
CANDIDATE REFERENCE MATERIAL**

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Assessing the homogeneity is one of the critical steps in the process of preparing and certifying a reference material (RM). One of the parameters that must be estimated is the minimum sample intake for which the material remains homogeneous, that is, that the concentration and uncertainty values present in the certificate continue to be valid.

In general, the Certified Reference Materials (CRM) producers establish a minimum sample intake of 200mg, estimated in a conservative way, and useful for classical analytical methods that use sample masses greater than this value. From the appearance of analytical techniques that use less sample quantities, such as ICP, it became increasingly important to be able to clearly estimate which is the real minimum sample intake of the RM.

The present work describes the micro-homogeneity study of a bovine kidney candidate reference material.

In order to obtain an estimate of the minimum sample intake amount, assays were performed to determine the Kurfurst constant (HE), a parameter used for this purpose by several authors. Measurements should be carried out using a method that allows analyzing a low sample quantity, with good accuracy and low uncertainty. In this work was used Instrumental Neutron Activation Analysis, INAA, a reference technique for the evaluation of the degree of homogeneity of RM.

Ten sub-samples of approximately 1mg were analyzed to evaluate the HE for the elements Cl, K, Mn and Na, and ten sub-samples of approximately 2mg to evaluate the HE for Co, Fe, Mg, Se and Zn. Results obtained for HE in all the analyzed elements were satisfactory. The estimated minimum sample intake was between 1mg and 50mg, depending of the element.

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