

COMPARATIVE STUDY OF INORGANIC ELEMENTS DETERMINATION IN WHOLE BLOOD FROM Dmd^{mdx}/J MICE STRAIN BY EDXRF AND NAA ANALYTICAL TECHNIQUES

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Several diseases can be diagnosed observing the variation of specific electrolytes concentration in blood. Then, the determination of metals and ions in body fluids, such as Ca, Cl, K and Na, are relevant for clinical chemistry. Those elements are also important in veterinary medicine, specifically, in public health studies, which utilize animal models for medical diagnostic studies before testing human beings. Based on this, this study focuses on the anomalies caused by Duchenne Muscular Dystrophy (DMD), which is an illness of hereditary character. Its main characteristic is the degeneration of the membrane that involves the muscular cell, causing its death. All forms of muscular dystrophy are genetic; cannot be prevented or reverted. The DMD is the most common of them. In this work, whole blood samples of Dmd^{mdx}/J (9 males and 10 females) dystrophic mice and C57BL/6J (10 males) control group mice's model (genetically modified) used for muscular dystrophy investigations were analyzed by the EDXRF technique. The reference interval values were determined for Ca, Cl, K, Mg, Na and S elements and a comparative study with NAA results was outlined. The samples were obtained from Instituto de Pesquisas Energéticas e Nucleares, Instituto Butantan and Centro de Estudos do Genoma Humano do Instituto de Biociências (Research Centers, Brazil). The EDXRF and NAA analytical techniques, showed to be appropriate for whole blood sample analyses and offer a new contribution for studies in Veterinary Medicine related to biochemical analyses of blood.