

DETERMINATION OF INORGANIC ELEMENTS IN BIOLOGICAL TISSUES OF DYSTROPHIC MICE STRAINS USING NAA

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Abstract

In this work the determination of inorganic elements in biological tissues (whole blood, bones and organs) of dystrophic mice, used as animal model of Duchenne Muscular Dystrophy (DMD), was performed using analytical nuclear technique. We investigated blood of dystrophic mice (spontaneous mutation) such as: A/J, Dmd^{mdx}/J and SJL/J. The aim of this work was to determine reference values of elements of clinical and nutritional relevance (such as, Br, Ca, Cl, K, Mg, Na, S, Fe) in whole blood, tibia, quadriceps and hearts from A/J, SJL/J and Dmd^{mdx}/J, dystrophic mice using Neutron Activation Analysis technique (NAA). To show in more details the alterations that this disease may cause in these biological tissues, correlations matrixes of DMD dystrophic mouse strain were generated and compared with C57BL/6J mouse control group. Furthermore, comparative analysis of blood between C57BL/6J, Dmd^{mdx}/J, A/J and SJL/J species showed a decrease in Ca blood levels emphasizing the need of its evaluation in other animal models with muscular dystrophy. The alteration in some concentration among the elements in the health and diseased status indicates a connection between these elements in whole blood, tibia, quadriceps and heart.