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P069 APPLICATION OF NAA IN WHOLE BLOOD OF DYSTROPHIN-DEFICIENT MDX MOUSE

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Small-sized animals are currently used on investigations for new medicines, vaccines or antibiotics before being tested in human. In this study the semi-parametric Neutron Activation Analysis [NAA] technique was used to determine simultaneously the whole blood concentrations of elements that are important for clinical analysis in the Dmd^{mdx} [Duchenne muscular dystrophy] mouse strain. The relevancy of this study is that blood represents the most important biological referential of circulatory system condition and alterations in its ion concentration represents an important tool for medical investigation. It permits also to check the similarities between this mouse strain and the human whole blood estimation values. Blood samples were collected by the retro–orbital venous plexus from eleven adult mice and the individual biological samples [100μl whole blood spread in a filter paper] were sealed into individual polyethylene bag, together with the Au detectors used for the measurement of the flux distribution, and irradiated in the nuclear reactor (IEA-R1, 2-4MW, pool type). The activated materials are gamma-counted using an HPGe spectrometer and the concentration obtained by using in-house software. According to these results, Br and K levels of this isogenic mouse are altered in relation to human reference values. This procedure is an efficient alternative to perform synchronized and quantitative analysis of several blood elements.

P070 DYNAMICS OF REDOX RELATING ELEMENTS AND OXIDATIVE STRESS BY SE-DEFICIENCY IN RAT

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Selenium (Se) is known as micro-nutrient, anti-inflammation, anticancer, and immunity against some diseases. Aerobic organisms are protected against oxidative damage under normal conditions. However, organisms are exposed to oxidative stress under Se deficient condition. Se is recognized to be one of the important elements related to digestion of reactive oxygen species (ROS). Recently, it has been also pointed out that mineral balance is important to aging. However, relation between oxidative stress and mineral balance has not been fully understood. In this work, the dynamics of redox relating elements (Mn, Fe, Co, Cu, Zn, and Se) in Se-deficient Wister male rat liver were studied as a function of rat age (4, 6, 8, 12, 16, 20, and 30 weeks). Activity levels of glutathione peroxidase (GSH-Px), catalase (CAT), superoxide dismutase (SOD), levels of glutathione (GSH), thiobarbituric acid reactive substance (TBARS), and H_2O_2 concentration were also assayed for the same liver homogenates. Relation among the redox relating elements, oxidative stress, and antioxidant status are demonstrated for the Se-deficiency.

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