

THE EFFECT OF TRIBOMECHANICALLY ACTIVATED ZEOLITE (TMAZ) ON TOTAL ANTIOXIDANT STATUS OF HEALTHY INDIVIDUALS AND PATIENTS WITH MALIGNANT DISEASE

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Subject of study: Anticancer therapeutic protocols based on specific combination of various antioxidants are accepted. Here we present a new potential antioxidant tribomechanically activated zeolite TMAZ as a product of nanotechnology. TMAZ significantly increases total antioxidant status (TAS) and lower free radicals in blood, measured by Free Radicals Analysis System (FRAS). We have performed both tests on patients with malignant disease as well as healthy individuals. TMAZ is gained in the process called tribomechanical micronization and activation (nano-medicine-technology).

Patients, materials and methods: Total antioxidant status. By measuring Total Antioxidant Status we followed overall activity of three antioxidant enzymes Superoxide Dismutase (SOD), Glutathion Peroxidase (GPx) and Glutathion Reductase (GR). We used test system from Randox Laboratories Ltd, Crumlin, United Kingdom. Antioxidants in added sample cause inhibition of the radical (cation ABTS⁺) to a degree that is proportional to their concentration. Test has been performed on 45 individuals. 22 healthy (10 male, 12 female), 18 patients with malignant disease (7 male, 11 female), all in the age of 40—70, 5 individuals were in the control group. FRAS is a system which is able to dose all types of hydroperoxide present in a biological sample via a simple rapid, reliable and repeatable method using a mere drop of blood. We had 22 female patients and 24 male patients with malignant disease.

Summary: Our results indicate that tribomechanically activated zeolite, clinoptilolite is potentially a new antioxidant which seems to have bigger capacity than already known antioxidants. We have noticed that patients with malignant disease, who were taking TMAZ, have improved their general health condition. TMAZ also significantly increases TAS values.

Conclusion: TMAZ can be used as an adjuvans or roborans in any standard therapy of malignant disease, with the aim to improve the general health condition of patients and help them recover much easier and in a shorter period of time.