

NATURAL OCCURRING ANTIOXIDANTS AND CHELATORS
AGAINST HARMFUL EFFECTS OF TRANSITION METALS

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In the present report we gathered our data on the protective and curative effects of vitamin E, bioflavonoid rutin and its complexes with copper and iron, and Bio-Normalizer (BN), the fermented extract from papaya fruits and tropical herbs, against Cu-, Fe-, Co- and Pb-associated toxicity. It was found that rutin, Cu-rutin, and Fe-rutin complexes were protective against the mutagenic effect of anticancer antibiotic bleomycin in cultured human lymphocytes and Cu-stimulated lipid peroxidation in plasma lipoproteins. Similar antioxidative and protective effects of flavonoids were found in the experimental model of iron overloading though rutin and its complexes were ineffective to induce the iron removal from the iron-over loaded organs and cells. Being used in the same model, BN sharply decreased both the iron content in the target organs and the intensity of free radical-mediated processes. BN also suppressed substantially the Co-induced free radical-mediated inflammation in the rat lungs. The pilot randomized clinical trial on the effect of BN in manual workers suffered from chronic lead poisoning revealed that BN released lead from the bone storages and improved hemoglobin synthesis. We suggested that the strategy in the long-term management of deleterious effects induced by redox active transition metals should include the combination of non-toxic natural compounds in order to increase the toxic metal release from the body, to diminish the levels of free radicals in the organism, and to form the redox inactive complexes with metal ions.