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## OXIDANTS AND ANTIOXIDANTS IN BIOLOGY

### BOOK OF ABSTRACTS

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## Antioxidant defense enzyme activities in the interscapular brown adipose tissue of rats treated with cadmium and coenzyme Q<sub>10</sub>

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In our study we investigated the effects of exogenous cadmium (Cd, 17 mg/day/kg b.m. in drinking water), coenzyme Q<sub>10</sub> (CoQ<sub>10</sub>, 16 mg/kg/dose CoQ<sub>10</sub> dissolved in olive oil, i.m., every fifth day) and Cd+CoQ<sub>10</sub> (in above mentioned amounts) on antioxidant defense enzyme activities (Total SOD, Mn SOD, CuZn SOD, CAT, GSH-Px, GST and GR) in interscapular brown adipose tissue (IBAT) of male two months old *Wistar albino* rats during 30 days.

Cd induces significantly increased Mn SOD activity, while concomitant treatment of animals with Cd+CoQ<sub>10</sub> reversed this change. The activity of CuZn SOD was significantly decreased both in Cd and Cd+CoQ<sub>10</sub> treated animals. CAT activity was significantly increased in rats treated with Cd, whereas Cd+CoQ<sub>10</sub> normalized the activity of this enzyme. The activity of GSH-Px was significantly increased in all investigated groups of animals. Cd induces an increased activity of GST, but by concomitant treatment of rats with Cd+CoQ<sub>10</sub> the GST activity was retained. The activity of GR was significantly increased in Cd treated animals, while in rats treated with Cd+CoQ<sub>10</sub> was significantly decreased.

It can be concluded that Cd induces oxidative stress and alter the activities of some antioxidant defense enzymes in IBAT of rats. It is also shown that CoQ<sub>10</sub> can normalized Mn SOD, CAT and GST activities after Cd-induced changes.