Hulya Ozdemir, J Pharm Drug Deliv Res 2016, 5:4(Suppl)
http://dx.doi.org/10.4172/2325-9604.C1.010

5th Annual European Pharma Congress

July 18-20, 2016 Berlin, Germany

Hulya Ozdemir

Yuzuncu Yil University, Turkey

The effect of dietary boron on learning and behavior in rats given Boric acid

This study was designed to investigate the effect of dietary boron on spatial learning, anxiety, some vitamin and oxidative parameter levels in rats given boric acid. Thirty two Wistar male rats average weight of 200±20 g were used in this study. Rats were divided in four equal groups (n=8), control group fed with a standard rodent diet and experimental groups fed with 250, 500 and 1000 ppm boric acid enriched diet (equivalent to 4.1, 8.2 and 15.0 mg B/kg body weight). In a five-week long study the elevated plus-maze was used for anxiety assessment and Morris water maze for evaluation of spatial learning. Additionally, blood samples were obtained at the end of the study and used to determine some vitamin and oxidative parameter levels. The dietary boron significantly increased weight gain ($p<0.001$) and food consuption in 250 and 500 ppm BA group ($p<0.05$). Although it did not affect learning process or anxiety related behaviour significantly, in 1000 ppm BA group it showed positive effects over memory consolidation ($p<0.05$). Biochemical analyses showed significant decrease of MDA ($p<0.05$) and increase of D3 vitamin levels ($p<0.01$) in 500 ppm BA group, significant increase in GSH-Px activity in 250 and 500 ppm BA group ($p<0.05$) whereas vitamin E decreased in all groups ($p<0.05$). Total serum antioxidant capacity and retinol levels of experimental groups were not found significantly different. As a result, our study demonstrate that dietary boron in given doses has positive effects on performance of rats, memory consolidation, lipid peroxidation, glutathione peroxidase activity and vitamin D3 levels and, therefore, can be beneficial for health if used in right dosage.

Biography

Hulya Ozdemir has completed her PhD in Faculty of Medicine. She is working as a Professor at the Medicine Faculty of Yuzuncu Yil University. She is the head of department of Pharmacology and Toxicology. She has published more than 70 papers and her research areas are mainly with plant therapy on the diabetes and cancer diseases, antioxidants and behavioural pharmacology.

hulyaozdemir39@gmail.com