




بیست و یکمین کنگره بین المللی فیزیولوژی و فارماکولوژی ایران
 ۱ تا ۵ شهریور ۱۳۹۲
 دانشگاه علوم پزشکی تبریز

21st International Iranian Congress of Physiology and Pharmacology
 23-27 August 2013
 Tabriz University of Medical Sciences



ID :	9679
Themes :	علوم اعصاب
Title :	Effect of quercetin treatment on the lead-induced learning and memory deficits in prenatally lead exposed rats
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Abstract :	<p>Introduction: Lead is a persistent and common environmental contaminant. Decades of research characterizing the toxicology of lead have shown it to be a potent neurotoxin, especially during nervous system development. Lead exposure can cause severe learning and memory deficits as well as many other pathologic effects. Oxidative damage is one proposed mechanism for lead neurotoxicity. This heavy metal increases production of free radicals and decreases availability of antioxidant reserves. This study was carried out to investigate the protective effect of quercetin – a flavonoid antioxidant – against lead-induced passive avoidance learning and memory deficits.</p> <p>Methods: Pregnant female rats received 500 mg/liter lead acetate in their drinking water from 5th day of gestation up to 21st day post-partum, another group received the same dose of lead acetate as well as daily injections of 40mg/kg quercetin, and control group received deionized water. Fifty-day-old male rats – 6 for each group – were tested in a shuttle box for passive avoidance learning and memory. All data were analyzed using SPSS software.</p> <p>Results: Compared with the control group, the lead-exposed rats showed a significant learning deficit in shuttle box testing. Quercetin could not reverse the lead-induced learning and memory deficit.</p> <p>Conclusions: Although quercetin has potent antioxidant activity, it could not compensate the passive avoidance learning deficit in saturnism of rat.</p>
Keywords :	lead poisoning, passive avoidance learning, quercetin