

## High impact factor papers-2016

**Neuroscience, 2016, 318, 122-33, Original Article, IF: 3.204**

**The impacts of diabetes in pregnancy on hippocampal synaptogenesis in rat neonates**

Vafaei-Nezhad S, Hami J, Sadeghi A, Ghaemi K, Hosseini M, Abedini MR, Haghiri H.

Abstract: Diabetes during the pregnancy period impairs hippocampal development, and is associated with neurocognitive and neurobehavioral problems in the offspring. Synaptogenesis is one of the most important events in the development of the nervous system, and is known as a mechanism by which the memory process takes place. Synaptophysin (SYP) is an integral membrane protein of synaptic vesicles in the hippocampus involved also in learning and memory. The present study aimed to examine the effects of maternal diabetes on the expression and distribution pattern of SYP, as a marker of synaptogenesis, in the developing rat hippocampus using Immunofluorescence staining and real-time PCR. Wistar female rats were maintained as diabetic from a week before pregnancy through parturition and male offspring was euthanized at postnatal day (P) 0, 7, and 14. Our results showed a significant down-regulation in mRNA expression of SYP in the offspring born to diabetic animals at P7, and P14. Regarding to the density of SYP expressing hippocampal neurons, we found a marked decrease in the distribution pattern of SYP in all hippocampal subfields of Streptozotocin (STZ)-D group rat neonates, especially in one and two weeks of

age. Moreover, the results revealed no significant changes in either gene expression or distribution pattern of SYP-positive neurons in insulin-treated group compared with the controls. The present study demonstrated that diabetes in pregnancy has negative impacts on synaptogenesis in the offspring's hippocampus. Furthermore, the rigid maternal glycaemia control by insulin treatment in most cases normalized these effects.

Keywords: Maternal Diabetes, Hippocampus, Synaptogenesis, Synaptophysin, Rat Newborn

<http://www.sciencedirect.com/science/article/pii/S0306452216000440>

**J Photochem Photobiol B, 2016, 159, 237-242, Original Article, IF: 3.18**

**A novel green one-step synthesis of gold nanoparticles using crocin and their anti-cancer activities**

Hoshyar R, Khayati GR, Poorgholami M, Kaykhaii M.

Abstract: Functionalized nanoparticles are specifically designed to deliver drugs at tumor cells and can potentially enhance anticancer activity of drugs such as crocin. In the present study, we have applied antioxidant crocin as a reducing agent for one pot green synthesis of controlled size gold nanoparticles (AuNPs). Spherical, stable and uniform AuNPs were synthesized using crocin. These AuNPs are characterized by UV-Vis, TEM and XRD techniques. The prepared AuNPs showed surface plasmon resonance centered at 520nm with the average particle size of about 4-10nm. The

anti-cancer effect of AuNPs was determined using MTT and LDH tests. The cellular data showed that these AuNPs significantly decreased cancerous cells' growth after 24 and 48 hours in a time- and dose-dependent manner. The results suggest that such AuNPs can be synthesized simply and quickly with invaluable clinical as well as pharmaceutical activities which can help to treat human breast cancer.

Keywords: Breast cancer, Crocin, Gold nanoparticles

<http://dx.doi.org/10.1016/j.jphotobiol.2016.03.056>

**Revista Española de Cardiología, 2016, (69)7,714-715, Letter to Editor, IF: 3.104**

**Multistate Models for Survival Analysis of Cardiovascular Disease Process**

Hajihosseini M, Kazemi T, Faradmali J

<http://www.revespcardiol.org/en/multistate-models-for-survival-analysis/articulo/90455586/>

**Tumor Biology, 2016, 37(3),3091-5, Original Article, IF: 2.904**

**Tissue expression levels of miR-29b and miR-422a in children, adolescents, and young adults' age groups and their association with prediction of poor prognosis in human osteosarcoma**

Bahador R, Taheriazam A, Mirghasemi A, Torkaman A, Shakeri M, Yahaghi Goudarzi, Karimi P.

Abstract: Osteosarcoma is the most common type of bone cancer in children and adolescents. MicroRNAs (miRNAs) play important roles in the development, differentiation, and function

of different cell types and in the pathogenesis of various human diseases. miRNAs are differentially expressed in normal and cancer cells. The investigation of miRNA expression between healthy subjects and patients with osteosarcoma is crucial for future clinical trials. In this study, the expression levels of miRNAs were detected by qRT-PCR. Correlation between expression levels of two miRNAs and different clinicopathological characteristics were analyzed using the  $\chi^2$  test. Survival rate was detected using the log-rank test and Kaplan–Meier method. qRT-PCR was shown that expression levels of miR-29b and miR-422a were strongly decreased in osteosarcoma bone tissue compared with noncancerous bone tissues. Our result indicated that the low expression levels of miR-29b and miR-422a showed strong correlation with large tumor size, advanced TNM stage, distant metastasis, and grade of tumor. Kaplan–Meier survival analysis showed that the low expressions of miR-29b/miR-422a were correlated with shorter time overall survival (log-rank test). Moreover, multivariate Cox proportional hazards model indicated that miR-29b and miR-422a were independent prognostic markers of overall survival of patients. Our result indicated that downregulation of miR-29b and miR-422a may be linked to the prediction of poor prognosis, indicating that miR-29b and miR-422a may be a valuable prognostic marker for osteosarcoma patients.

Keywords: miR-29b and miR-422a Survival PCR Osteosarcoma Pathology

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