

ATP with standard chemotherapies may be utilized for inhibition of drug-resistance in leukemia cells.

**Keywords:** apoptosis, drug-resistance, extracellular ATP, K562, leukemia, survivin

#### P-10-1068-1

##### Lithium induce apoptosis in rat ovarian follicles through Wnt/ $\beta$ -catenin pathway

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It is well known that lithium, a drug used as a mood stabilizer, inhibits glycogen synthase kinase-3 $\beta$  (GSK-3 $\beta$ ), a key negative regulator of canonical Wnt signaling pathway. Recently, it has been shown that the components of this pathway are expressed in adult rodent ovary. In this study we use lithium chloride (LiCl) to activate Wnt pathway and the roles of this signaling pathway in ovarian follicular development were investigated in vivo. Immature female 23 day old Wistar rats were injected by PMSG (10 IU), to induce folliculogenesis. Starting at the time of PMSG injection, these rats were given four doses of 250 mg/kg LiCl every 12h. Ovaries were removed 48h after PMSG injection and prepared for routine histology and immunohistochemistry. Our results show that relative ovarian weights and size, folliculogenesis and estradiol synthesis were significantly decreased compared to those of controls. Further analysis showed that in LiCl treated rat ovaries, TUNEL positive nuclei were increased while PCNA (proliferation marker) positive nuclei were decreased significantly in contrast with those of control. To investigate whether lithium acts through inhibition of GSK-3 $\beta$ , the expression pattern of pGSK-3 $\beta$  and  $\beta$ -catenin were examined. Our results showed that in LiCl treated group, expression of pGSK-3 $\beta$  and active  $\beta$ -catenin were increased in contrast with control groups. All together, our results suggest that lithium decrease folliculogenesis by inducing apoptosis and inhibiting proliferation possibly through Wnt/ $\beta$ -catenin pathway.

**Keywords:** lithium chloride, Wnt/  $\beta$ -catenin, apoptosis, rat ovary

#### P-10-866-2

##### Induction of protein tyrosine phosphorylation during capacitation in the spermatozoa of normozoospermic men

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In mammals, capacitation is defined as series of molecular and biochemical events that enables spermatozoa to bind the oocyte by undergoing the acrosome reaction in response to the zona pellucida. Capacitation is generally accompanied by increases in phosphorylation of sperm proteins. We were interested in studying the tyrosine phosphorylation pattern during capacitation of sperm proteins isolated from normozoospermic men. We obtained semen samples from normozoospermic men referred to Avicenna Infertility Clinic in Tehran.

The samples were divided to an experimental group which were allowed for capacitation and control group without capacitation. The spermatozoa were isolated from semen samples, using percoll gradient centrifugation. Spermatozoa of experimental group were then incubated for 6h at 37°C with bovine serum albumin supplemented Ham's -F10 for capacitation following a standard protocol. Before and after capacitation incubation, total proteins from spermatozoa were extracted and subjected to SDS-PAGE. To evaluate protein tyrosine phosphorylation pattern, western blotting with specific antibody (PY99) against phosphorylated tyrosine residues was performed. The comparative analysis of results from western blotting experiment showed an increase in protein tyrosine phosphorylation in spermatozoa undergoing capacitation. Specifically, capacitation induced tyrosine phosphorylation in sets of sperm proteins (10-50kDa range). Our results demonstrate that this phosphoproteins are likely important in sperm functions.

**Keywords:** capacitation, tyrosine phosphorylation, normozoospermic men

#### P-10-1046-1

##### Association between the length of GGC repeat in the eRF3/GSPT1 and risk of breast cancer in Isfahan population

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Breast cancer is the most common cancer among women. The eukaryotic release factor 3 (eRF3) has multifunctional properties in eukaryotic cells. Beside its role in translation termination, this protein was also reported to be involved in cell cycle regulation, mRNA decay, recycle of ribosome and apoptosis. Because of its major role in cell survival, mutations and altered expression of this gene have been associated with cancer development. The aim of this study was to evaluate eRF3/GSPT1 gene as a potential genetic susceptibility associated locus for breast cancer, analyzing a stable GGC expansion in exon 1 encoding a polyglycine tract in the N-terminal domain of the protein. We studied the association of breast cancer with the polymorphic GGC repeat in 120 cases of breast cancer and 120 matched controls from Isfahan city of Iran. We applied a modified PCR protocol using betain and DMSO. After analyzing the PCR products on polyacrylamide gels, five different lengths of the GGC repeat in the range of 8 to 12 were observed. The most common genotype in controls and patients was homozygous with allele length of 10. Our findings demonstrate that women with at least one allele length of 12 repeat are significantly at a higher risk of developing breast cancer at an estimated odds ratio of 5.17. To our knowledge this is the first report about the association of GGC repeat in the eRF3/GSPT1 with the risk of breast cancer.

**Keywords:** breast cancer, eRF3/GSPT1, GGC repeat