



## Evaluation the protective effect of sea cucumber extract (*Holothuria arenicola*) against injuries induced by electromagnetic field (50 Hz) on sperm parameters in male Balb/C mice

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### Abstract

**Introduction:** Now a day's exposure to electromagnetic fields (EMFs) has adverse effects on reproduction and fertility. Sea cucumber is a rich source of bioactive compounds with a wide range of therapeutic properties such as anti-bacterial, anti-inflammatory and antioxidant activities.

**Aims:** In this study we explore the protective effect of the Persian Gulf sea cucumber extract against injuries induced by 50 Hz electromagnetic field on sperm parameters in Balb/C mice.

**Methods:** In this experimental study, mice were divided into 6 groups including control, sham (under exposure with electromagnetic device, off) and experimental groups 1, 2, 3 and 4. The experimental groups were exposed 10 days, 4 h to EMFs daily. The experimental groups 2 to 4 received sea cucumber extract (50, 100, 200 mg/kg) 6 h before exposure while experimental groups 1 didn't receive any treatment. Then sperm morphology, motility and viability were measured. Statistical analysis was performed by using SPSS software, one way ANOVA ( $p < 0.05$ ).

**Results:** Electromagnetic fields induced abnormalities in sperm morphology, reduced sperm motility, viability in electromagnetic group as compared with control. In treated groups the sperm evaluations showed the reduction of sperm abnormalities, elevation of sperm motility and viability as compared with experimental group 1.

**Conclusion:** The results of this study demonstrated that sea cucumber extract have protective effect against detrimental effects of low frequency electromagnetic field in sperm parameters.

**Keywords:** sea cucumber, electromagnetic fields, infertility, testis, sperm