

# PEMF on Neuroblastoma Cells Previously Exposed to Antidepressants

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**Abstract—** Interaction between magnetic field and living systems is inevitable; in fact, we are immersed in an ocean of magnetic field due to the magnetic field of the earth and the technology developments. Interaction between magnetic field and living systems is inevitable; in fact, we are immersed in an ocean of magnetic field due to the magnetic field of the earth and the technology developments, this one already have medical applications, currently, the pulsed electromagnetic fields (PEMF) are an alternative option for the treatment of some mental illness as the depression or schizophrenia. In order to have estimation of the side effects from PMF and drugs used for treat this kind of disorders. In this work, it is presented a comparison of the effects of imipramine, a drug for the treatment of depression, and the effects of PMF on cells from the line SHSY5Y, which provide us a representative model of neuronal tissue. The assays were done in both ways, the separately effects and the jointly effects. The imipramine at high dosage for a short period (120 mg/mL, for 20 min) shows cell damage on both, the morphology and the metabolism. Meanwhile, the PMF (50 Hz, 7 mT for 8 h) shows a cell proliferation and a decrease of their metabolism. The jointly assay indicates that the PMF balances the morphological negative effects from imipramine. In the long term these results can impact a therapy that may be more efficient. However, more research is needed in this area.

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