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Electromagnetic Biology and Medicine (formerly Electro- and Magnetobiology)

**Publisher:** Taylor & Francis**Issue:** Volume 24, Number 1 / 2005**Pages:** 9 - 21**URL:** [Linking Options](#)**DOI:** 10.1081/JBC-200054263**Control of Ehrlich Tumor Growth by Electromagnetic Waves at Resonance Frequency (In Vivo Studies)**M. A. Fadel <sup>A1</sup>, Reem H. El-Gebaly <sup>A1</sup>, Amany A. Aly <sup>A1</sup>, Fakhry F. Ibrahim <sup>A2</sup><sup>A1</sup> Department of Biophysics, Faculty of Science, Cairo University, Egypt<sup>A2</sup> Department of Clinical Pathology, Cairo University Hospitals, Egypt**Abstract:**

In this work, we confirmed our previously published value for the inhibiting resonance frequency (4.5 Hz) of electromagnetic radiation for solid tumor implanted in mice. The inhibiting electromagnetic waves penetrated deeply into the tumor tissue using amplitude modulated waves (AMW). Sixty female Balb/c mice carrying Ehrlich tumor in the thigh were divided into three equal groups. Group A was the control while Groups B and C were both exposed to 4.5 Hz square amplitude modulated waves (QAMW) for 10h (hrs) starting day 10 and day 16 post tumor implantation respectively. Tumor size, telomerase enzyme activity, histopathological examination, and dielectric relaxation of the tumor tissue were used to investigate the tumor activity of the treated and untreated groups of animals. The results indicated that irradiating the tumor tissue with 4.5 Hz QAMW for a period of 10h inhibited tumor growth. Early treatment of the tumor by extremely low frequency electromagnetic field (ELF-EMF) gave better results than delayed treatments.

**Keywords:**

Ehrlich tumor, ELFEMF, Telomerase activity, Tumor dielectrics, Tumor control

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