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Title of Abstract Use of Extremely Low Frequency (ELF) Magnetic Fields in Cancer Treatment

Text of ABSTRACT

An intriguing hypothesis, based on published models and ongoing work, concerns the role of electric and magnetic fields in biochemical processes. Electrical disorders and varying behavior at biomolecular level are responsible for the altered mechanisms of cell survival. The use of static and extremely low frequency (ELF) magnetic fields has been shown to influence the movement of charges in the matter. As a result, a selective effect on cell signaling alters cell survival mechanisms, which are hypothetically linked to electrical disorder, such as for example tumor cell apoptosis [1]. Experimental data that originate from this approach are mostly available in the area of cancer research, where the use of electromagnetic fields has been proven to selectively exert effects at molecular/cellular of cancer cells/tissues without any measurable adverse effects on normal cells/tissues [2-6]. Considering the multiple overlapping between cancer, chronic inflammation and aging biology [8], this ELF analysis could contribute in an innovative and important way to develop tools contrasting degenerative processes such as cancer inflammation and aging.

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