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## A Mechanism for Action of Oscillating Electric Fields on Cells

Dimitris J. Panagopoulos<sup>a, 1</sup>, Niki Messini<sup>a</sup>, Andreas Karabarbounis<sup>b</sup>, Alexandros L. Philippetis<sup>c</sup>, Lukas H. Margaritis<sup>a</sup>[Show more](#)

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## Abstract

The biological effects of electromagnetic fields have seriously concerned the scientific community and the public as well in the past decades as more and more evidence has accumulated about the hazardous consequences of so-called “electromagnetic pollution.” This theoretical model is based on the simple hypothesis that an oscillating external electric field will exert an oscillating force to each of the free ions that exist on both sides of all plasma membranes and that can move across the membranes through transmembrane proteins. This external oscillating force will cause a forced vibration of each free ion. When the amplitude of the ions' forced vibration transcends some critical value, the oscillating ions can give a false signal for opening or closing channels that are voltage gated (or even mechanically gated), in this way disordering the electrochemical balance of the plasma membrane and consequently the whole cell function.

## Keywords

oscillating electric fields; biological effects; action mechanism; ions' forced vibration

<sup>1</sup> To whom correspondence should be addressed at Department of Cell Biology and Biophysics, Faculty of Biology, Athens University, Panepistimiopolis, 15784, Athens, Greece. Fax: (301) 7231634. E-mail: dpanagop@cc.uoa.gr.

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