

The dynamics of action potential: the bioelectromagnetized interaction created by cell biology (I)

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Abstract

The bioelectric excitation of action potential is the essential character of the living state of eukaryotic organisms, and it is the principal groundwork of physiology. The science and technology are advancing with the progress of the times, however, the principle on action potential remain stalled at the apparent cognition of last century due to the restriction of that era. Based on the highly developed molecular cell biology researches, this work brings insight into the endogenous mechanism of action potential, detects the every detail of this dynamic system: the physical and chemical attributes of each participant and the prerequisites of layout; and especially, focuses on the intrinsic relation and interaction in it. It gives the bran-new presentation on action potential mechanism and its physical and chemical regulation, and importantly, investigates the in-depth insight on the principle of dynamic homeostasis performed by action potential.

The optimal way to operate action potential dynamic system is in the way of electromagnetic interaction: the action potential is the electric current formed by the motion of mobile charged ions, and the electromagnetic field that drives the motion of electric charges is the interaction between the gridding ground substance meshwork of cell and the mobile ions. Since the description of Maxwell's electromagnetic equations, it is first time that clearly illustrates the practical model for understanding the operation of the interaction between magnetism and electricity. It is the bioelectromagnetic mechanism created by the nature that highlights the prospect of practicable technology on the development of bioenergy resource.

Keywords

action potential, action potential dynamics, dynamic homeostasis, bioenergy resource

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