Abstracts

A Zeeman-Stark/Markov model approach to study the EM-RF exposure of a potassium channel

S. Bruna, M. Liberti, S. Giordano, E. Moggia, B. Bianco and G. D'Inzeo. "A Zeeman-Stark/Markov model approach to study the EM-RF exposure of a potassium channel." 2001 MTT-S International Microwave Symposium Digest 01.1 (2001 Vol. I [MWSYM]): 167-170 vol.1.

The extraordinary increase in the use of electromagnetic (EM) radiofrequency (RF) radiation has stimulated new researches concentrated on the study of the early steps of the EM interaction mechanisms. As most of the effects due to the exogenous exposure of biosystem has been associated with the cell membrane, these researches are mainly oriented toward the study of the molecular aspects of the interaction. Here, the authors introduce an integrated methodology of analysis, which involves cascading steps such as quantum modelling of the system constituted by a ligand ion (Ca/sup 2+/) and a protein receptor (Calmodulin) of the cell membrane and analysis of the protein channel activity by means of a stochastic model of the channel.

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