Critical analysis of the impedance method for the evaluation of permittivity and conductivity of the plasma membrane.

Bonincontro, A., Gimsa, J., Risuleo, G., Rosa, V., 2000. Membr Cell Biol 14:129-135.

Abstract: We report a critical analysis of a typical method of dielectric spectroscopy consisting in impedance measurements as a function of frequency. Experimental data were obtained by measuring impedance on human erythrocyte suspensions. Since these cells do not have a nucleus they represent an ideal material for the application of the well established single shell model. This allows the evaluation of permittivity and conductivity of the plasma membrane. We discuss the influence on the reliability of results of parameters such as fractional volume, average dimensions and membrane thickness of cells.

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