Current Topics in Biophysics (Zagadnienia Biofizyki Współczesnej) vol. 18 (1), 1994, 26-28

Using very low frequency EPR to define bulk characteristics of pharmacologic compartments of specific tissues *in vivo*

Howard J.Halpern, Cheng Yu, Miroslav Peric, Eugene Barth, Beverly A.Teicher

The use of electron paramagnetic resonance (EPR) at frequencies significantly lower then 1 GHz allows radiofrequency (RF) penetration of living tissue samples with less loss of sensitivity than is commonly believed. Using a 250 MHz EPR spectrometer and novel partially deuterated nitroxide probes experiments were carried out probing physiologically significant aspects of the body water of tumors in living mice. The concentration of molecular oxygen in this compartment and parameters related to the microscopic viscosity were measured.