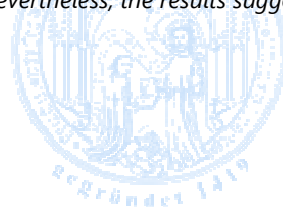


Can molecular properties of human red blood cells be accessed by electrorotation?

Sudsiri, J., Wachner, D., Donath, J., Gimsa, J., 2003. *Songklanakarin J. Sci. Technol.* 24:785–789.

Abstract: *Electrorotation (ER) is a single cell dielectric method which can be used to characterize the structural and electrical properties of biological cells at a high parameter resolution. The method has been applied to measure ER spectra of human red blood cells (HRBC) in rotating electric fields ranging from 100 kHz to 250 MHz and at external conductivities ranging from about 1 mS/m to 3 S/m. With increasing medium conductivity the anti- and the co-field peak of the spectra shifted towards higher frequencies. At external conductivities higher than 1 S/m only anti-field rotation has been observed. At these conductivities the peaks show distortions which could not be explained by the common single shell model normally applied to extract dielectric cell parameters. In this paper, we interpret the spectra by frequency dependent parameters for the cytoplasm. Nevertheless, the results suggest that also the membrane parameters are frequency dependent.*

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