

Poster

Broadband Electrical Detection of Individual Biological Cells

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Abstract

To resolve the dilemma of cell clogging or solution parasitics encountered by Coulter counters and to evolve a general-purpose electrical detection technique, we used broadband microwave measurements to overcome electrode polarization, AC dielectrophoresis to precisely place cells between narrowly spaced electrodes, and relatively wide microfluidic channels to prevent cell clogging. This unique combination of approaches resulted in reproducible sensing of single Jurkat and HEK cells, both live and dead, of different cultures at different times.