

DISCRIMINATION OF GLIOBLASTOMA CANCER STEM LIKE CELLS BY UHF- DIELECTROPHORESIS CROSSOVER FREQUENCY

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CSCs appear as major biological and therapeutic targets, in particular for GBM. Heterogeneity of tumor cell population, leads to optimize characterization and sorting methods. It is actually based on the target of a set of biological markers, which are efficiently used to validate the stemness lineament. Besides the biological properties, physical characteristics of CSCs are expected to be a potential way to discriminate and sort CSC populations. These data summarize first's results glioblastoma cell lines' characterization; measuring their crossover frequencies by dielectrophoresis (DEP) technics in the UHF frequency range (above 50 MHz). LN18 line cell was cultured following different conditions, in order to achieve an enrichment of cancer stem cells (CSCs). Based on DEP electrokinetic method, CSCs were discriminated from the differentiated cells. In this study, microfluidic lab-on-chip systems implemented on Bipolar-Complementary Oxide Semiconductor (BiCMOS) technology is used allowing single cell handling and analysis. Based on measurements of their own intracellular specificities, the enriched CSCs population, cultured in dedicated define medium, have shown clear differences of DEP crossover frequency signatures compared to differentiated cells cultured in normal medium. That demonstrates the concept and validates the technique efficiency for CSC discrimination in glioblastoma.

BIOGRAPHY

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