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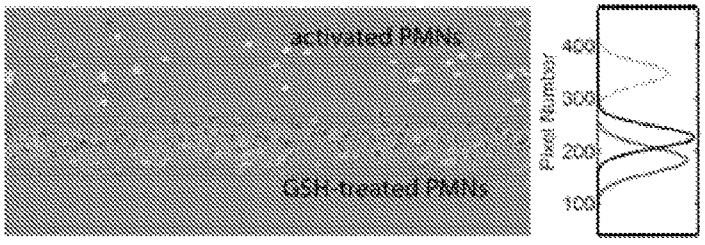
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(54) Title: SYSTEM AND METHOD FOR CELL LEVITATION AND MONITORING



(57) Abstract: Magnetic cell levitation and cell monitoring systems and methods are disclosed. A method for separating a heterogeneous population of cells is performed by placing a microcapillary channel containing the heterogeneous population of cells in a magnetically-responsive medium in the disclosed levitation system and separating the cells by balancing magnetic and corrected gravitational forces on the individual cells. A levitation system is also disclosed, having a microscope on which the microcapillary channel is placed and a set of two magnets between which the microcapillary channel is placed. Additionally, a method for monitoring cellular processes in real-time using the levitation system is disclosed.