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(54) Title: LABEL-FREE ELECTRICAL MONITORING OF CELL AGGREGATES

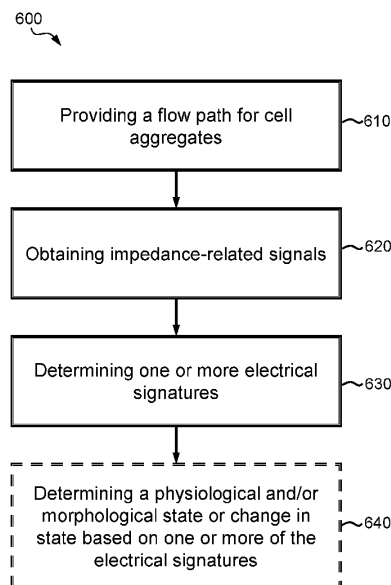


FIG. 18

(57) Abstract: A method of monitoring one or more cell aggregates, comprising providing a flow path in which the one or more cell aggregates are in a medium and the flow path being configured to pass through a collective sensing zone of a set of electrodes, obtaining impedance-related signals corresponding to each of the medium and one of the one or more cell aggregates in the medium, determining one or more electrical signatures for a cell aggregate, in which the one or more electrical signatures are based on impedance-related signals obtained from the set of electrodes. The method is one of dynamic testing at single-particle resolution. The electrical signatures may be an opacity and/or electrical size of the one or more cell aggregates, or electrical impedance spectroscopy-based electrical signatures. The cell aggregate is a spheroid, an encapsulated microcarrier, or a cell-adhered microcarrier. It is also to provide a microfluidic chip comprising a channel and electrodes for obtaining impedance-related signals.

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