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(54) **Title:** METHODS AND SYSTEMS FOR DROPLET-BASED SINGLE CELL BARCODING

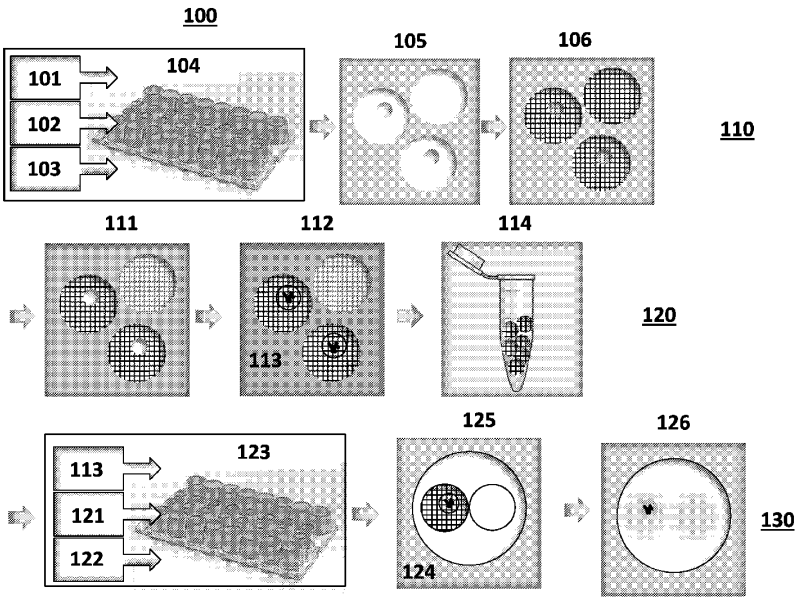

FIG. 1A

(57) **Abstract:** Provided herein are methods and systems for sample preparation techniques that allow amplification, e.g., whole genome amplification, reverse transcription, amplification of cellular nucleic acids, etc., and sequencing of single cells, which may be of interest. The methods and systems generally operate by bringing together a first liquid phase comprising a plurality of biological particles, a second liquid phase comprising gel beads, and a third immiscible phase. The liquid phases may interact to form partitions. The methods and systems may be configured to allow the implementation of a single operation or multi-operation chemical and/or biochemical processing within the partitions. Another aspect of the disclosure provides a composition comprising a cell bead of a plurality of cell beads and a barcode bead of a plurality of barcode beads. Also provided herein are kits for analyzing individual cells or viruses or small populations of cells or viruses.

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