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(54) **Title:** SINGLE CELL ANALYSIS USING SEQUENCE TAGS

(57) **Abstract:** The invention provides a method of making measurements on individual cells of a population by forming reactors containing single cells and a predetermined number, usually one, homogeneous sequence tag. In one aspect, the invention provides a method of making multiparameter measurements on individual cells of such a population by carrying out a polymerase cycling assembly (PCA) reaction to link their identifying nucleic acid sequences, such as sequence tag copies derived from a homogeneous sequence tag, to other cellular nucleic acids of interest, thereby forming fusion products. The fusion products of such PCA reactions are then sequenced and tabulated to generate multiparameter data for cells of the population.

