ABSTRACT

COMPOSITIONS AND METHODS FOR IDENTIFYING RARE CELLS

Disclosed herein are compositions and methods of fixing and staining rare cells. Farther, disclosed herein are methods of identifying circulating tumor cells (CTC). In some embodiments, the method includes: imaging a cell sample to identity a cell of interest; determining a first pixel intensity of a stained nuclear area; determining a second pixel intensity of a background area; calculating a ploidy status of the cell of interest by subtracting the second pixel intensity from the first pixel intensify; and determining whether the cell of interest is a CTC based on the ploidy status. The method may be computer implemented, such, that the method uses a machine learning algorithm to identify a feature; process the feature to extract a parameter of interest; analyze the parameter of interest; and when the parameter of interest is greater than or less than a predetermined threshold, classify the cell of interest as a CTC.

Figure 1