ABSTRACT

MICROFLUIDICS SORTER FOR CELL DETECTION AND ISOLATION

A method of detecting one or more diseased blood cells in a blood sample includes introducing a blood sample into at least one inlet of a microfluidic device comprising one or more linear channels wherein each channel has a length and a cross-section of a height and a width defining an aspect ratio adapted to isolate diseased blood cells along at least one portion of the cross-section of the channel based on reduced deformability of diseased blood cells as compared to non-diseased blood cells, wherein diseased blood cells flow along a first portion of the channel to a first outlet and non-diseased blood cells flow along a second portion of the channel to a second outlet. The one or more channels can be adapted to isolate cells along portions of the cross-section of the channel based on cell size. In some embodiments, the one or more channels can be spiral channels.

Figure 1A