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(54) Title: MICROFLUIDICS SORTER FOR CELL DETECTION AND ISOLATION

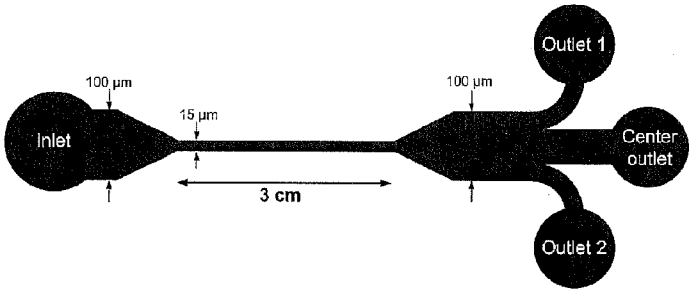


Figure 1A

(57) Abstract: 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.

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