[0005] Therefore, there is a need to provide a device and method for efficiently capturing and retrieving cells, particularly rare cells, that overcome, or at least ameliorate, one or more of the disadvantages described above. There is a need to optimize the efficiency of the retrieval of isolated rare cells using methods, materials and/or device configurations in such a way that the rare cells do not adhere to the components of the device and filters, so that the rare cells can be easily and efficiently retrieved for downstream procedures.

[0006] There is a need to provide less invasive screening test methods for the early detection of cancer.

SUMMARY

[0007] In a first aspect, there is provided an apparatus for capturing and retrieving a cell from a sample, comprising at least one column, the column comprising:

(i) an inner wall defining an inner chamber, the inner chamber having an inlet opening at a first end of the column for receiving the sample, and an outlet opening at a second end of the column;

(ii) a perforated plug disposed within the inner chamber adjacent to the second end of the column;

(iii) a sleeve insert having an opening at a first end and an opening at a second end, the sleeve insert comprising a channel tapered at the second end and disposed within the inner chamber with its second end adjacent to the perforated plug; and

(iv) a filtering means housed within the sleeve insert, the filtering means comprising a sieve sandwiched between two sealing means.

[0008] In a second aspect, there is provided a method of capturing and retrieving a cell from a sample, comprising the steps of:

(a) introducing the sample to the inlet opening of the apparatus as described herein to allow the sample to flow through the sleeve insert and filtering means of the apparatus; and

(b) collecting the residue retained on the surface of the sieve in the filtering means of the apparatus.

[0009] In a third aspect, there is provided an isolated cell population having the following characteristics:

(i) being endothelial cells derived from a tumor and isolated from blood;