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(54) Title: METHODS AND CONSTRUCTS FOR LOCATING AND PROFILING SINGLE CELLS IN A BIOLOGICAL SAMPLE

(57) Abstract: The present invention generally relates to preparation of biological samples for next generation sequencing. Particularly, the invention utilizes a combination of sequence barcodes and visible bead features such as fluorescent label combinations for identification of mRNA products originating from a single cell and for locating said single cell in the sample. To achieve this effect, the present invention provides a novel construct comprising a bead coupled to such visible feature, wherein said bead is further coupled to a first oligonucleotide by a cleavable, preferably photocleavable, linker, said first oligonucleotide comprising a) an amplification handle sequence, b) a barcode sequence specific to said bead feature and c) an anchor or capture sequence, preferably a poly-A sequence, for hybridizing to a complementary sequence.



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