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(54) Title: K-MER-BASED METHODS FOR ASSEMBLING POLYNUCLEOTIDE SEQUENCES

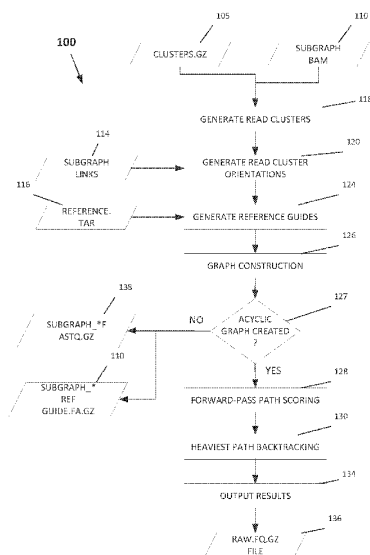


FIGURE 1

(57) Abstract: A method and system for polynucleotide sequencing and sequence assembly using a k-mer graph approach is disclosed. The methods may include receiving a sample comprising a nucleic acid sequence, fragmenting the sample into a plurality of shorter sequences, and aligning the shorter sequences to a reference genome to identify a k-mer sequence. The systems may include a processor, a memory, and a storage device configured to store the reference genome and the sample. The processor may be configured to execute the steps of the method, including aligning shorter sequences to a reference genome.

SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
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