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(54) Title: PREPARATION OF LONG READ NUCLEIC ACID LIBRARIES

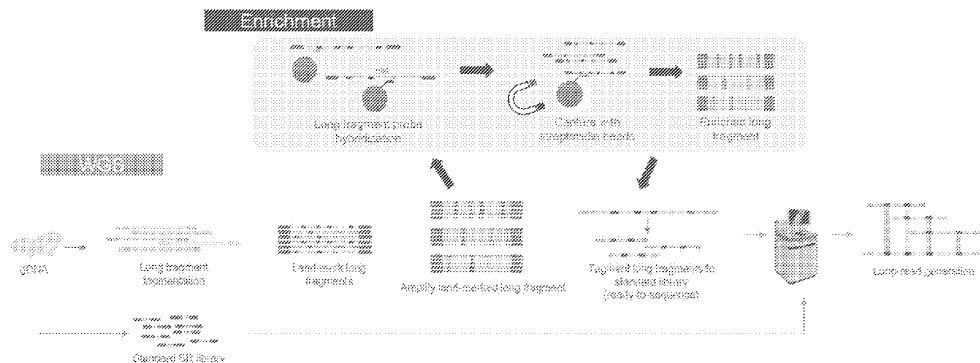


FIG. 32

(57) Abstract: Some embodiments of the methods and compositions provided herein relate to obtaining long read information from short reads of a target nucleic acid. Some embodiments include steps to selectively generate, mark, and amplify long nucleic acid fragments. Some embodiments include enriching for certain sequences in the long fragments with selection probes directed to certain genes throughout the genome and expressed regions with low mappability. Some embodiments also include fragmenting the long nucleic acid fragments into shorter fragments for sequencing, and informatically reconstructing a sequence of the target nucleic acid.

[Continued on next page]

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