DNA Sample Processing for Nanopore Sequencing

ID: 2024-017

Executive Statement:

This invention presents a novel method for enriching DNA samples, enhancing the accuracy and efficiency of nanopore sequencing.

Technology Overview:

The technology disclosed by BYU's Technology Transfer Office offers an advanced approach to DNA sample processing specifically for nanopore sequencing, utilizing a unique method that enriches DNA samples without introducing the biases and sensitivity issues common with PCR amplification. It leverages oligo probe design and a series of biochemical processes to prepare DNA samples for direct sequencing, maintaining the integrity and modifications of the DNA sequence.

Key Advantages:

- Enhances DNA sample enrichment accuracy and efficiency
- Avoids PCR amplification biases and sensitivity issues
- Preserves the integrity and modifications of the DNA sequence
- Facilitates direct sequencing of native DNA strands

Problems Addressed:

- Biases and sensitivity issues associated with PCR amplification in DNA sequencing
- Loss of sequence integrity and modifications in current enrichment techniques

Market Applications:

- Genomic research and diagnostics
- Personalized medicine and genetic testing
- Biotechnological and pharmaceutical development
- Agricultural genomics