PromethION sequencer

Bragato Research Institute has installed an **Oxford Nanopore PromethION sequencer** at the new Sequencing Facility in Lincoln to support research in grapevine improvement and other fields.

This capacity is available as a service, and BRI is offering a **limited number of flow cell grants** to collaborators to help build NZ expertise with this technology.

NANOPORE SEQUENCING

Nanopore sequencing works by passing molecules of DNA or RNA through tiny pores in a membrane and measuring changes in the electrical current flowing through the pores.

This allows much longer molecules to be read (up to a million bases and above), enabling complex parts of genomes and transcriptomes to be studied. The sequence data is generated in real time and base modifications, which can play a role in regulating gene expression, can be included.

PromethION offers increased throughput and reduced cost-per-gigabase for long-read sequencing in New Zealand.

CAPABILITY

KEY FEATURES:

- Capable of running up to 24 independent flow cells concurrently, generating up to 7 terabases (7 x 1012 bases) of sequence data from multiple sample types.

- Samples can be combined on a single flow cell by indexing.

- Onboard GPU-based hardware for live base calling.

- Fully supports new high-accuracy Q20+ sequencing protocols.

- High-speed data delivery via the REANNZ network.

APPLICATIONS

PromethION sequencing is suited to a wide variety of project types, including:

- Chromosome-level genome assembly

- Epigenetic base modifications of DNA / RNA

- Transcriptomic experiments, including isoform analysis

- Metagenome sequencing - complete genomes from mixed samples

- Targeted sequencing in real time (adaptive sampling)

- Population-scale genetic surveys

PROTOCOL DEVELOPMENT

BRI is collaborating with research teams to establish sequencing workflows.
If you are interested in trialling a new workflow, speak to us about flow cell grants.

For more information, or to discuss potential projects, contact: sequencing@bri.co.nz
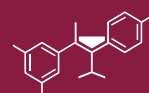
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