Noblis Field-Portable Sequencing System

Using Noblis' field-portable DNA sequencing system, experts in the field can produce rapid genomics data when and where it matters for national defense, homeland security and bio surveillance applications. Our system reduces the need for facilities-based sample processing and full-scale high-performance computing infrastructures, drastically decreasing the turnaround time from sample collection to actionable insights.

Advantages:

- Field detects organism presence in less than 2 hours compared to shipping and testing in a fixed facility.
- Operates completely off-line using batteries.
- Analyzes single or mixed organism samples.
- Customizes analysis workflows, including detection of various genetic engineering types.
- Flexible configurations with both hard-sided and backpack field-portable kits.
- Accelerates field classification of samples through pre-computed databases
- Enables analysis without an internet connection.
- Provides unlimited number of reference genomes, such as antimicrobial resistance databases, select agents, pathogens.

Applications:

- Rapid pathogen identification in food, soil, surface wipes, water, animal or human samples.
- Demonstrated applications in:
  - Portable Sequencing System for SARS-CoV-2 Isolates
  - Field-Deployable Pan-genome Analysis Pipeline for Characterization of Genetic Variation and Identification of Novel Sequences

Features:

- Delivers DNA sequencing results in real time to monitor quality and progress.
- Displays results in a user-friendly table to easily classify samples.

Patent Information:

The following list summarizes the Noblis patents encompassed in the portable sequencing system:

- Compression and Transmission of Genomic Information
- Systems and Methods for Single Nucleotide Polymorphisms (SNP) Analysis and Genome Sequencing
- Rapid Genomic Sequence Classification Using Probabilistic Data Structures
- Portable Field-Deployable Nucleic Acid Sequencing Kit
- Systems and Methods for Configuring and Deploying a Portable Field-Deployable Bio surveillance Kit
- Primer Design Using Indexed Genomic Information

noblis
For the best of reasons

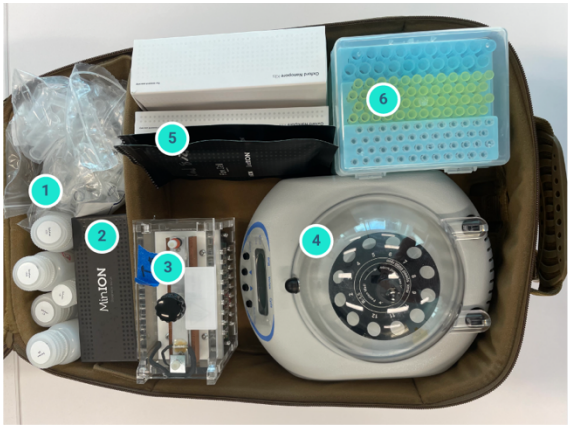
Hard-sided Field-Portable Kit

27 lbs., with exterior dimensions of 22 x 14 x 9 inches.

1. Extraction Reagents
2. Oxford Nanopore Technologies MinION Sequencer
3. Thermal Cycler
4. Centrifuge + Vortexer Combination
5. MinION Flowcells + Supplies
6. Pipette Tips
7. One 54000 mAh Battery Pack
8. Commercial Off-the-Shelf Laptop

Backpack Field-Portable Kit

21 lbs., with exterior dimensions of 18 (l) x 12 (w) x 9 (d) inches



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Not Pictured:
Two 54000 mAh Battery Packs
Commercial Off-the-Shelf Laptop

About Noblis

For more than 25 years, Noblis has been an innovator within the federal government, committed to enriching lives and making our nation safer while investing in the missions of tomorrow. As a nonprofit, Noblis works for the public good, providing independent and objective science, technology and engineering solutions. Together with our subsidiaries, we work with a wide range of government clients in the defense, homeland security, intelligence, law enforcement and federal civil sectors.

Learn more about this system and our research, including a video demo:

noblis.org/portable-dna-sequencing

Contact Us

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