



Libraries of Bacterial Genomic DNA Isolated from Alaskan Soils

WARF: P04104US

Inventors: Jo Handelsman, Lynn Williamson

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in 10 libraries of bacterial genomic DNA isolated directly from non-permafrost soils in an extremely cold and phosphorus-poor environment.

Overview

Cultured microorganisms produce an extraordinary array of structurally diverse and valuable organic compounds; however, microbes that can be brought into culture by standard techniques represent only a small fraction of the microbial diversity present in any natural environment. To more fully tap this vast reservoir of diversity, large amounts of microbial DNA can be isolated directly from soil and then screened for useful genes and gene products.

The Invention

UW-Madison researchers have compiled 10 libraries of bacterial genomic DNA isolated directly from non-permafrost soils in the floodplain of the Tanana River, an extremely cold and phosphorus poor environment near Fairbanks, Alaska. The 10 libraries, including nine bacterial artificial chromosome (BAC) libraries and one fosmid library, provide more than 63,000 clones with average insert sizes ranging from 1.5 to 47 kilobases in length. The largest inserts are over 150 kilobases in length. This collection of genomic DNA complements a collection of over 1,000 bacterial cultures isolated from the same Alaskan soils.

Applications

- Provides a potentially valuable source of new genes, antibiotics, metabolic processes and cold-adapted enzymes for food processing, medical and industrial applications

Key Benefits

- Microorganisms adapted to exceptionally harsh environments are a potentially vast source of novel metabolic processes, antibiotics, enzymes and other proteins.

Additional Information

For More Information About the Inventors

- [Jo Handelsman](#)

Related Technologies

- [See WARF reference number P03154US for information on a bacterial culture collection from Alaskan soils.](#)
- [See WARF reference number P05158US for six additional libraries of bacterial genomic DNA isolated from Alaskan soils.](#)

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| info@warf.org | 608.960.9850