μSpore®

DNA preservation at room temperature

μSpore (microspore) is an innovative bioinspired technology for the transportation and long-term preservation of DNA at room temperature.

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nSpore mimics pollen grains

In nature, pollen grains tolerate desiccated harsh conditions for a long time and revive under favorable situations. This state of "life without water" or anhydrobiosis is possible owing to the presence of 'sporopollenin', a biopolymer in outer walls of pollens. Our discovery that sporopollenin is refractory to heat, humidity, UV, acids, alkalies, enzymes etc. confirmed its role in protecting intra-pollen contents including DNA.

μSpore technology exploits these unique properties of sporopollenin. Thus encapsulation of DNA in sporopollenin microcapsules is the core of this innovative technology.

Our patented process ensures easy isolation of sporopollenin microcapsules from pollens. The latter can be easily harvested on a large scale from any flowers using a specially designed device: 'pollen harvester'.

Sporopollenin microcapsules

μSpore technology caters to the need of an ever growing global market of non-cryogenic preservation DNA samples. It is currently estimated at $100 M/yr

This novel, first-of-its-kind technology, can be potentially used for preserving other biomolecules such as RNA, enzymes and peptides without resorting to conventional refrigeration methods.
A major challenge of DNA preservation is protecting its fidelity until its use. The existing methods of DNA preservation largely rely on cold storage (i.e., cryogenic methods). These methods are energy intensive, expensive, and are not suitable for transportation and long-term storage.

Therefore, there is a huge demand for environment-friendly, non-cryogenic, and inexpensive methods of DNA preservation and transportation.

Our technology-based products would bring a change in the way biological samples are preserved today.

Source & methods for pollen collection

Source of pollens – a special device, 'Pollen harvester' is used for collecting pollens from fresh flowers or used / discarded flowers from temples, wedding halls, etc. Bee-collected pollens from apiaries can also be used.

μSpore (fidelity) : for transportation and short-term preservation of DNA
μSpore (Infinity) : for long-term preservation of DNA

A novel technology 'μCap', can be easily and routinely used for DNA encapsulation in μSpore range of products. DNA recovery from the preserved samples is accomplished by addition of water or any of the routinely used buffers.

μSpore products protect DNA samples from the damaging effects of heat, UV radiation and long term storage.
A quick note.

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