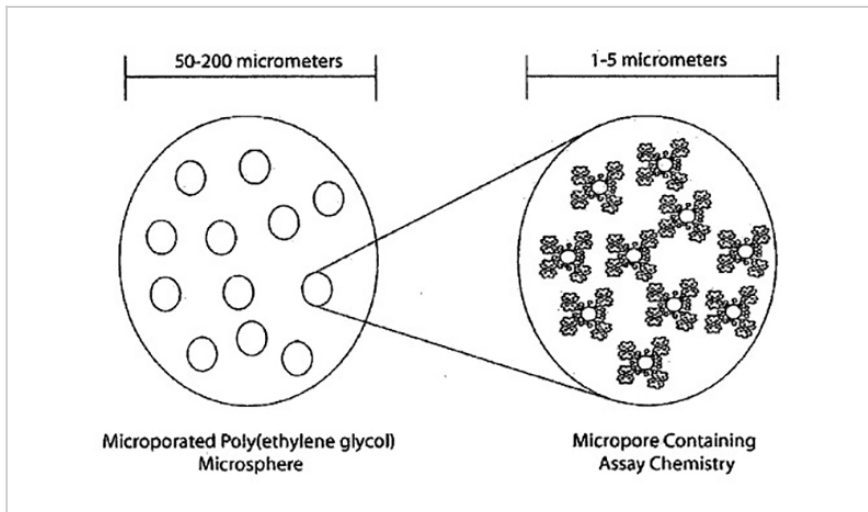


Dermally Implantable Optical Glucose Biosensors

ID# 2008-3479



Schematic of microporated microspheres

Technology Summary

Existing blood glucose sensors draw blood from the patient via forearm or finger pricking, resulting in pain to the patient and increased risk of infection. As a result, pricking methods have low patient compliance and lower than recommended monitoring frequencies. The disclosed invention includes both a novel method and apparatus for intradermal implantation of chemically sensitive particles and the monitoring of those particles for determining glucose readings in diabetics. The invention measures glucose using an affinity reaction coupled with a change in fluorescence. These changes can be monitored by an external electro-optic device. The new sensor technology dramatically improves performance over the prior art in implantable glucose sensing and has potential for use in both in vitro (i.e., cell culture monitoring) and in vivo (i.e., diabetic glucose monitoring) applications.

Application & Market Utility

This technology provides near-real-time readings via an external sensing device which is non-invasive and non-obtrusive. It can be equipped with an alarm that detects hypoglycemia and hyperglycemia. Dynamic range is increased by employing dendrimers.

Next Steps

Seeking research collaboration and licensing opportunities.

TECHNOLOGY READINESS LEVEL

4-7

Seeking

Investment | Licensing | Research

Keywords

- glucose sensors
- finger-prick alternative
- intradermal implant
- fluorescence readout
- diabetes monitoring

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