

Health Technologies

Business Opportunities

Transdermal Patient Monitoring

Background

Control of blood glucose levels through glucose measurement and insulin injection can reduce the occurrence of complications in Type 1 diabetes and those Type 2 diabetics who test blood glucose daily. Methods such as the “finger-stick” technique have proven expensive, cumbersome and painful to use. In addition to diabetes, control of blood glucose levels, and that of some other small molecules, can also play a key role in some very important hospital based interventions, not least in intensive care monitoring. A team at the University of Strathclyde has pioneered the first programmable device for measuring blood glucose levels. It can also be used to detect other blood circulating molecules such as lactate.

Technology

The non-invasive reverse iontophoresis (RI) based transdermal patient monitoring technology is capable of detecting and measuring, either intermittently or continuously, one or more small molecules, e.g. glucose and lactate, in real time. The technique works by extracting small molecules, such as glucose and lactate, from the patient using a gel electrode site on the patient’s skin.

Key Benefits

- Increased patient convenience, no finger-sticking .
- Portable.
- Extracts a number of blood circulating molecules and ions for a wide variety of analytical uses.
- Will aid more successful monitoring due to increased patient compliance gained through the reduced need for painful injections.
- Home, clinic and hospital based applicability.
- Other small molecules may be detected transdermally by this method.

Markets and Applications

Two glucose monitoring markets have been identified – home testing for diabetics and hospital based clinical applications e.g. intensive care. A sports market also exists.

Licensing and Development

The University of Strathclyde is securing patent protection for this technology which was developed with assistance from Scottish Enterprise’s Proof of Concept Programme. Following a successful clinical study in a diabetic population contact is welcomed from organisations interested in developing, licensing or exploiting this technology.