

Lab-on-a-Chip Technology for Continuous Glucose Monitoring

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Abstract

The demand for continuous glucose monitoring systems is greater than ever. The microelectromechanical systems (MEMS) approach has the advantage of being relatively easy to upscale to a commercial level; the preferred MEMS technique would be to run several detectors at once and, through the improved statistics, get a both more accurate and more reliable device than is currently available. Lab-on-a-chip technology may be seen as a further development of MEMS technology for analytical sensors. Lab-on-a-chip systems may be used to obtain improvements on several important characteristics of a sensor system: remove or decrease cross-sensitivity, improve sensor stability, improve accuracy, and/or improve response time compared to similar laboratory-equipment methods.

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Abbreviations: (CGMS) continuous glucose monitoring systems, (ICU) intensive care unit, (MEMS) microelectromechanical systems, (TGC) tight glycemic control

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