

Title (en)
GLUCOSE BIOSENSOR

Title (de)
GLUKOSEBIOSENSOR

Title (fr)
BIOD TECTEUR DE GLUCOSE

Publication
EP 1212601 A1 20020612 (EN)

Application
EP 00957741 A 20000823

Priority
• US 0023194 W 20000823
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Abstract (en)
[origin: WO0116575A1] A biosensor (10) has a hydrogel (30) in a rigid and preferably biocompatible enclosure (20). The hydrogel (30) includes an immobilized GBM such as concanavalin A (Con A) and an immobilized hexose saccharide such as a-D-mannopyranoside. The immobilized hexose saccharide competitively binds with free glucose to the GBM, thus changing the number of crosslinks in the hydrogel (30), which changes hydrogel swelling tendency and the pressure of the hydrogel in its confined space in proportion to the concentration of free glucose. By measuring the change in hydrogel pressure with a pressure transducer (40), the biosensor (10) is able to accurately measure the concentration of the free glucose molecule without the problem of oxygen limitations and interference encountered by prior art biosensors. A battery (64) powered telemeter (60) operably engaged to the pressure transducer (40) sends a radio data signal to a receiver (66) containing an alarm system operably attached to a computer (62). Furthermore, an alarm system utilizes such a sensor to automatically notify a person that the blood glucose level is outside a predetermined parameter, and/or to automatically inject an agent such as glucose or glycogen which will raise blood glucose levels.

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G01N 15/06; C12M 1/34; A61K 9/22; G01N 33/53; A61B 5/00; G01N 33/66; G01N 33/487

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