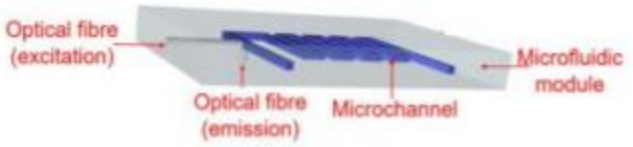
technology profile

AN ENZYME ELECTRODE FOR THE DETERMINATION AND MONITORING OF DOPAMINE CONCENTRATIONS

Ideas on utilisation

The electrode is made in the low-temperature technology of co-fired ceramics along with immobilised biological material and is intended for the determination of dopamine concentrations.

Currently, there is no competitive method in the market for the determination and monitoring of dopamine concentrations, which will allow for a quick and inexpensive measurement and an immediate test result.



Rysunek 1 Schemat elektrody enzymatycznej

Potential adopters of technology

Not determined

Advantages of technology

The enzyme electrode has the following advantages:
- small size - a designed electrode with a chemosensitive layer can serve as the basis for detecting dopamine in a ceramic fluorescent biosensor and is a miniature device: 1.9 x 1.1 cm2
- the cost of the device is approx. PLN 30 (20-30 measurements possible)
- result obtained immediately - the maximum time of receiving the result is 30 seconds
- the use of a ceramic body allows for measurements regardless of the chemical composition of the sample tested
- high sensitivity of the system - detection limit of 300 nM
- repeatability supported by test results
- the maximum sample volume used for the determination of catecholamines is 60 µl

Market and context of technology

The subject of the invention is an enzyme electrode for detecting dopamine, which is applied in medical diagnostics, in aqueous solutions. The electrode for the determination of dopamine concentrations can be used in:
- doctors' surgeries
- medical diagnostics

Preconditions in adopting enterprises

The use of chemical compounds in combination with electronics, the use of low-temperature co-burned ceramics technology.

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