

Ultra-microelectrode biosensors for brain monitoring

Health / Neuroscience / Biosensors



REFERENCE

BRAIN SENSOR [L1394]

KEYWORDS

NEUROLOGICAL DISORDERS / BRAIN / CENTRAL NERVOUS SYSTEM (CNS) / BIOSENSORS /



APPLICATIONS

- Brain monitoring activity in preclinical models : drug development tool, evaluation of drug candidates
- Neuromonitoring device in clinical settings :
 - Detection of neurological complications in head trauma patient
 - Brain tissue PO₂ follow up in brain injured patients



TARGET MARKETS

- Preclinical studies
- CNS disorders diagnosis and follow up
- Neurological diagnostic equipment

Technology readiness level

TRL 4



INTELLECTUAL PROPERTY

Patent pending FR1553413, PCT extended

CONTACT US

Tania CSAKI
+33(0)4 26 23 56 94
tania.csaki@pulsalys.fr

DESCRIPTION

Minimally invasive ultra-microelectrode biosensors with an outside diameter of 7 μm have been designed to measure electrochemical changes when implanted in the brain of laboratory animals. They allow brain monitoring of metabolites, neurotransmitters or intracerebral oxygen with minimal damage to the brain parenchyma and the blood-brain barrier. These devices are essential for pre-clinical studies in neurosciences and neuropharmacology, and could be applied to clinical neuromonitoring of brain injured patients in order to detect neurological complications like delayed ischemia.

COMPETITIVE ADVANTAGES

- No damage to the blood brain barrier, minimal lesions to the brain parenchyma & reduced inflammation
- Improved accuracy for brain tissue O₂ detection and interstitial concentrations of metabolites and neurotransmitters

DEVELOPMENT STATUS

- Prototype biosensors manufactured with platinized carbon fibers
- Tests performed on glucose detection show higher basal glucose interstitial concentration and slower glucose transport kinetics across the blood brain barrier (ie. Intact BBB)

PARTNERSHIP

PULSALYS is looking for industrial partners interested in using this technology through a licence agreement, and/or for co-development partners.



OUR OPPORTUNITIES

www.pulsalys.fr/entreprise/offres-technologies/

PULSALYS SATT LYON ST ETIENNE :
47 bd du 11 novembre 1918 - CS 90170
69625 Villeurbanne Cedex
FRANCE



PULSALYS
SATT LYON ST ETIENNE