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ABISENS

Monitoring of Acquired Brain Injury and recovery biomarkers by the combined label-free nanoSensing of multiple circulating molecules

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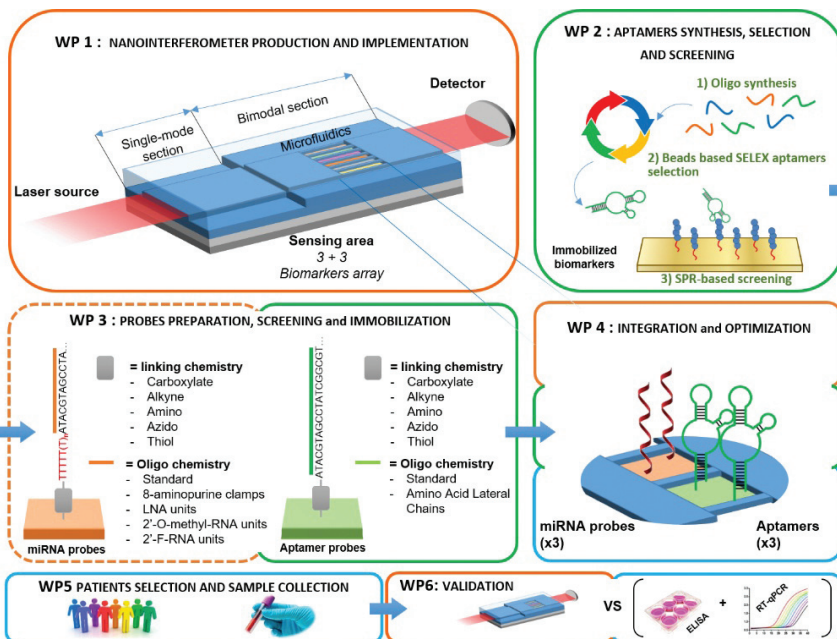
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The evaluation of patients after brain injuries, which produces severe impairments, remains a major unmet clinical need. Nowadays the diagnosis, prognosis and the efficacy of rehabilitation treatments are mainly assessed by clinical examinations, neuroimaging and electrophysiological tests during a long hospitalization stay. The aim of our proposal is to offer as an alternative a new nanobiosensor platform able to identify and quantify multiple brain biomarkers in blood with high sensitivity and in a short time.

The new biosensor platform will employ nanophotonic waveguide circuits in combination with oligonucleotide chemistry. The project will be characterized by a strong interdisciplinary and translational nature resulting from the meeting between real clinical needs and high-level technological integration of biosensing and biomolecular aspects. The final tool will be validated on samples from 40 brain injury patients.