

Nanosystems for the early Diagnosis of Neurodegenerative diseases (NADINE)

<https://neurodegenerationresearch.eu/survey/nanosystems-for-the-early-diagnosis-of-neurodegenerative-diseases-nadine/>

Title of project or programme

Nanosystems for the early Diagnosis of Neurodegenerative diseases (NADINE)

Principal Investigators of project/programme grant

Title	Forname	Surname	Institution	Country
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Source of funding information

European Commission

Total sum awarded (Euro)

9000000

Start date of award

01-09-2010

Total duration of award in months

60

The project/programme is most relevant to

- Alzheimer's disease and other dementias
- Neurodegenerative disease in general

Keywords

Research abstract in English

NADINE will address this challenge of a critical need for novel reliable tools for the early, differential,

potentially predictive, and minimally invasive diagnosis of neurodegenerative disorders. To be widely usable, the system should be fully integrated and highly automated. It should also identify and quantify accurately a multiplicity of molecular biomarkers, as well as non-conventional supramolecular biomarkers such as nano-aggregates. Besides its obvious applications in diagnosis, this new technology will also have applications in drug development, for follow-up of complex biomarker signatures during disease evolution, and clinical trials. The scientific and technological objectives

1. Development of innovative nanoparticles for immuno-capturing and -detection
2. Improved micro-nanofluidic technologies
3. Improved electrophoretic separations and detection sensitivity on chip at the pico- or femtomolar level
4. Development of innovative microarrays on chip
5. Development of diagnostic signature approaches based on innovative bioinformatics tools
6. Integration of multimodal protein and peptide analysis in a single, fully integrated microfluidic system
7. Development of a fully integrated prototype for the minimally invasive diagnosis for neurodegenerative diseases
8. Societal and industrial objectives towards diagnostic instruments addressing major challenges in predictive medicine, and preparing next-generation bioanalysis technologies
9. Opening the route to new classes of applications not yet covered by microfluidic systems

Lay Summary