Consortium

The coordinator

National Research Council of Italy (CNR)
Institute of Applied Sciences and Intelligent Systems (ISASI)
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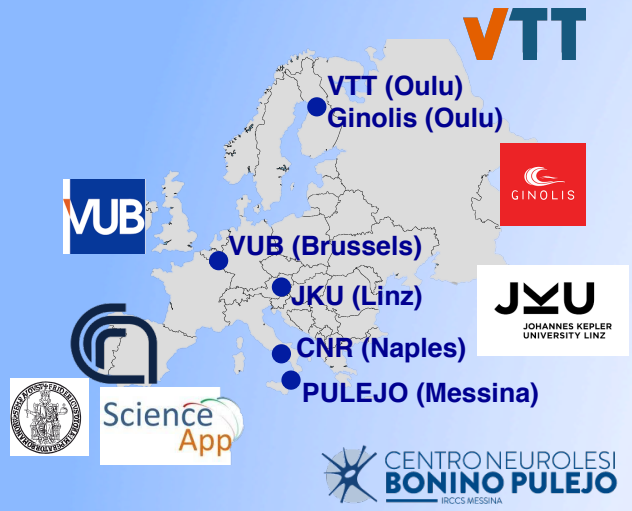
Partners

- Vrije Universiteit Brussel (Belgium)
- IRCCS Centre "Bonino Pulejo" (Italy)
- Johannes Kepler Universität Linz (Austria)
- VTT Technical Research Centre (Finland)
- Ginolis Ltd. (Finland)



The group of Pier Luca Maffettone (Department of Chemical, Materials and Production Engineering – University of Naples "Federico II") cooperates with CNR in the WP2.

General information

Start date

1st January 2019

End date

31st December 2021

Duration

3 years

Total funding

€ 3 287 562,50

Programme

H2020 – FET Open

Funding scheme

RIA

Follow the project on:

www.sensapp.eu

sensapp.H2020@gmail.com

@SensApp_H2020

SensApp

Super-sensitive detection of Alzheimer's disease biomarkers in plasma by an innovative droplet split-and-stack approach

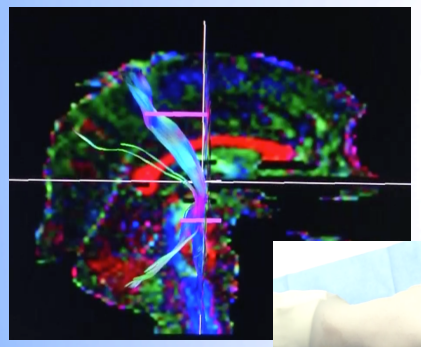
The SensApp project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 829104

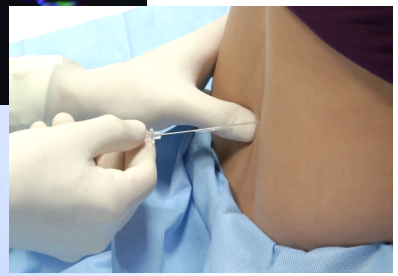
The Alzheimer's disease (AD)

AD is a neurodegenerative disorder that causes progressive and irreversible death of brain cells. The World Health Organization Report reports alarming growth estimates of dementia: 35.6 million cases in 2010 that will double in 2030 and triple in 2050 with 7.7 million new cases per year

The diagnosis

Clinicians make a diagnosis by detecting biomarkers (Tau, pTau and β Amyloid) in cerebrospinal fluid and by neuroimaging.



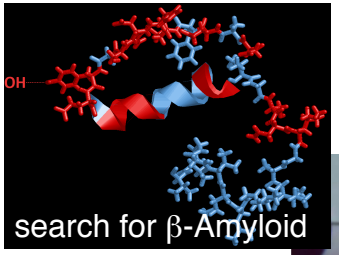


Limitations

- Diagnosis procedures are invasive;
- Clinicians cannot determine the AD biomarkers in blood due to low concentration (50-100 pg/mL).

Our mission

SensApp aims at developing a "super-sensor" with **sensitivity below 1 pg/mL**. The super-sensor will detect the AD biomarkers in human plasma.

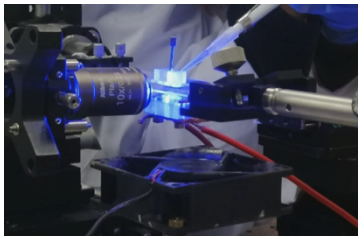


search for β-Amyloid


droplet-scale assay

The technology

Pyro-electric fields will force the immuno-reaction into sub-uL volumes. The biomarkers will be detected through an outstanding droplet-scale assay.



THE FUTURE

The super-sensor will allow you to make a faster and non-invasive diagnosis of AD simply through a routine blood test. Highly efficient screening programs among the population will be possible.

First year results

- Logo, webpage and social accounts for immediate visibility
- First specifications of the super-sensor, with a target sensitivity in plasma below 1 pg/mL
- Plan for managing the data produced by the project
- Inclusion in Zenodo repository of all public project data https://zenodo.org/communities/?p=sensapp
- Complete set of functional characteristics and design of the super-sensor
- Plan with clear strategies for promoting the project and for exploiting the deliverables
- Presentation of the project in more than 5 international events
- 1 master's thesis
- More than 5 press releases