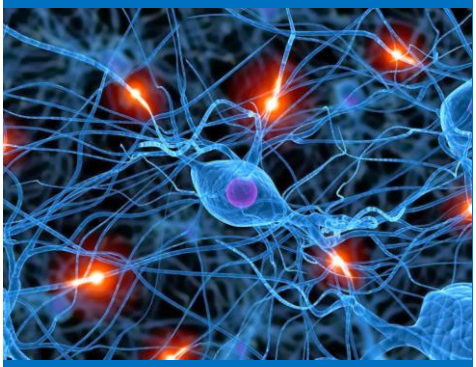
# NEWSLETTER:
# INTERREG. PROJECT 'HERINNERINGEN'

Issue 2, 01.2019

## RECENT PROGRESS:

1. The interference of risk factors with the performance of analytical tools assessed;
2. Exposure regimes assuring maximal cell viability and basal $Ca^{2+}$ signaling being optimized for each selected risk factor;
3. Protocols for handling, processing and analyzing biological samples available.



Interreg Vlaanderen-Nederland
Europees Fonds voor Regionale Ontwikkeling

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reMYND KU LEUVEN Maastricht University

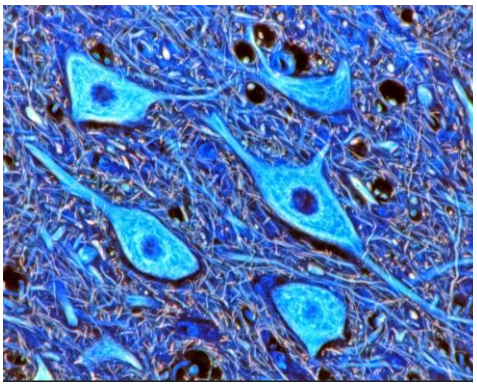
Financiers
AGENTSCHAP INNOVEREN & ONDERNEMEN Vlaanderen Provincie Antwerpen VLAAMS-BRABANT provincie limburg

## CONCERNS OF THE PUBLIC AND INTEREST AMONG UNIVERSITY STUDENTS AT THE PAS FESTIVAL IN MAASTRICHT (07-08.09.2018)

The annual Pleasure, Art and Science (PAS) Festival provides an accessible introduction to the research that is carried out at the Maastricht University. The project 'Herinneringen' was given the opportunity to explain why it is important to understand which processes in the brain - under the influence of environmental factors and lifestyle - can lead to forgetfulness and possibly dementia. All together 135 individuals engaged in lively discussions. Concerned by the poor diagnosis and treatment options, the *Public* wanted to know how this knowledge can improve quality of life of the affected persons and their families at an early stage. The *Scientists* focused on trying to understand how nonanimal methods can provide information that is relevant for human health.

*''Aberration in the brain immune system and cholesterol housekeeping increase the risk for Alzheimer's development.''*

*(Janssen et al. 2019. Nature Genetics)*



Contact Us at
www.toxgensolutions.eu

## SYMPOSIUM 2018 AT THE KATHOLIEKE UNIVERSITEIT LEUVEN (23.11.2018)

Francesca Pistollato from the *European Reference Laboratory – European Center for validation of Alternative methods to Animal Testing (EURL-ECVAM)* addressed as invited speaker the current challenges met by traditional Alzheimer's research, and the need for the paradigm shift that forms the basis of this project.

Special attention was given to external risk factors for sporadic Alzheimer's, cell-based methods for identification of molecular and cellular processes that may be involved in the onset and early development of Alzheimer's-related processes, and the strategies to scientifically validate the human relevance of the identified potential biomarkers.

## THE FOUNDATION FOR THE 2019 ACTIVITIES IS ESTABLISHED AND READY FOR APPLICATION

The cell models, clinical samples for retrospective evaluation, and the protocols for exposing cells, selecting human cohorts for the prospective evaluation, and handling, processing and analyzing the emerging biological samples are in place or are being finetuned.

Baseline experiments were initiated at various levels and will soon be followed by experiments allowing to assess the impact of the risk factors on human relevant biological processes.

1. https://herinneringen.eu

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Project expertise

***Icometrix*** (https://icometrix.com)

- Supporting prospective evaluation of selected biomarker signatures with Magnetic Resonance Imaging (MRI) for objective quantification of relevant brain structures in individual AD patients.

***Stem Cell Institute Leuven, Katholieke Universiteit Leuven*** (https://www.kuleuven.be/samenwerking/scil)

- Providing the necessary iPSC expertise required for the identification and handling of relevant human iPSC lines, as well as production and quality control of iPSC-derived human neuron cell models for testing.

***reMYND*** (https://www.remynd.com)

- Application of the genetic signatures to validate proprietary AD mouse models and to improve the assessment of *in-vivo* characteristics, pharmacokinetics, pharmacodynamics and the effects of experimental treatments.

***ToxGenSolutions*** (www.toxgensolutions.eu)

- Valorisation of (epi-)genetic biomarker signatures as novel methods for diagnosis, novel tools for follow-up of disease progression or response to treatment in humans, and novel drug development.

***Department of Biomedical Science, University of Antwerp*** (https://www.uantwerpen.be/nl/faculteiten/faculteit-fbd/onderzoek/departementen-en-ond/dept-biomedische-wetenschappen)

- Supporting evaluation of emerging biomarker signatures with well-characterized clinical samples (retrospective evaluation), and study cohorts (prospective evaluation).

***Department of ToxicGenomics, University of Maastricht*** (https://toxicogenomics-um.nl)

- Providing the required expertise in (epi-)genetic approaches for the identification of early-AD specific peripheral biomarker signatures.