

INTREPIDUS

Nanoporous-Membranes for Intrathecal (Pseudo)Delivery of Drugs

RESULTS OVERVIEW - 2023

In the last stage of the EURONANOMED project the implantable device, suitable for filtration of beta-amyloid from cerebrospinal fluid, was test *in vivo* in AD transgenic mice.

In this *in vivo* study we aimed to provide evidence of the new device and route of drug administration in terms of safety and efficacy (preventive effect), in combination with ab anti- A β drugs (mAbs).

The preclinical model for evaluating the effectiveness of nanoporous membranes was performed on transgenic mice, provided by the partner University of Oveido, consisting of 2 pairs of APP/PS1 transgenic mice, each pair consisting of a trio: 2 female and a male. After the quarantine period, the animals were mated to obtain the offspring needed for the experiments. Mating was performed between a wild-type male (wt) and a female carrying the mutant transgene (mt). The obtained offspring were divided into 6 experimental groups and subjected to behavioral tests. The selected behavioral tests were: Elevated Plus maze test (used to evaluate anxiety-related behavior in rodent models with CNS disorders) and respectively Y maze (behavioral test to measure the willingness of rodents to explore new environments), these being applied in 2 different days, as follows: day 1 – Elevated Zero maze test and Y Maze alternation test; day 2 – Y Maze short-memory test.

According to the experimental plan agreed in the consortium at the end of the experiment, organs and biological samples were harvested for further analysis.

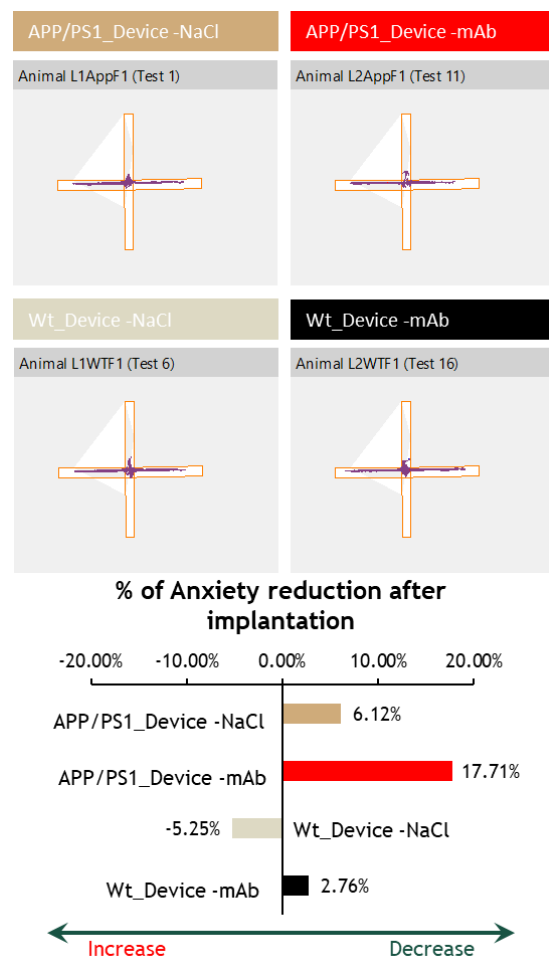


Figure 1 Graphic summary of the results obtained from the behavioural tests.