

## [3P]Alzheimer's Disease and Dementia

Fri. Jul 31, 2020 1:30 PM - 3:30 PM Poster Session

**\*Videos are available throughout the meeting period.**

### [3P-207]Effect of P2Y1 receptor on memory function decline in Alzheimer's disease model mice

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In order to evaluate memory learning ability under P2Y1 receptor deficiency, a test (CFC) in AD model mice was performed for 3 days. The experiment was designed based on a previous study using Alzheimer's disease model mice (Corcoran et al. 2002).

Regarding the cue test on the third day of CFC, the difference between APP and APP / P2Y1KO mice was evaluated. The interaction between the genotype and the time course between the two groups was significantly observed. In particular, at the beginning of the sound (129-256 sec), the APP / P2Y1KO mouse had a significantly higher Freezing time than the APP mouse. The main effects of genotype and time course were confirmed among the three groups. That is, the difference in the cognitive function responding to the sound was clearly confirmed.

In addition, a test (MWM) in AD model mice was performed for 9 days.

The design of the experiment was based on previous studies using Alzheimer's disease model mice (Bromley-Brits 2011). For the initial test from day 1 to day 5, the relationship between APP / P2Y1KO mice and APP mice was maintained between the two groups of AD model mice, and the interaction between genotype and time course between the two groups was significantly observed. Similarly, for the reversal test from day 7 to day 9, the relationship between APP / P2Y1KO mice and APP mice was maintained between the two groups of AD model mice, and the interaction between genotype and time course between the two groups was significantly observed.

Microglial immunostaining was performed to examine its relationship with glial cells. APP mice showed activated contractions, while APP / P2Y1KO mice showed finely elongated dendritic projections.

The effects of P2Y1R deficiency suggested that P2Y1R plays an important role in AD lesions. It is thought that the function of P2Y1R on astrocytes and P2Y1R involved in platelet aggregation acted to maintain the memory function of APP / P2Y1KO mice, suggesting that P2Y1R may be a target in research on Alzheimer's disease treatment.