Tohoku Univ. Technology

Method for producing royal jelly fraction

Royal Jelly Strengthens the Brain's Defense System to Degrade Soluble Aβ Oligomers Causing Alzheimer's Disease

Overview

Soluble Aβ oligomers are known to cause Alzheimer's disease (AD). Soluble Aβ oligomers suppress CRE-dependent transcriptional activity essential for memory formation in the hippocampus, resulting in early AD symptoms such as forgetfulness. Neprilysin (NEP) and somatostatin (SST) neurons cooperate to degrade soluble Aβ oligomers. Therefore, if the function of this Aβ oligomer degradation system can be restored and strengthened, it may lead to the prevention of AD.

Previously, it was known that royal jelly (RJ) promotes CRE-dependent transcriptional activity, but the effect of RJ on the degradation system in vivo and which fraction of RJ is effective were not known. The inventors demonstrated the following in an in vivo study.

・RJ reverses the decreased expression of NEP and SST that occurs with brain aging and enhances the function of the soluble Aβ oligomer degradation system

・Establish a method for extracting high concentrations of components from RJ that contribute to the enhancement of the defense system against this Aβ oligomer

Product Application

- ☐ Food with functional label
- ☐ Drugs

IP Data

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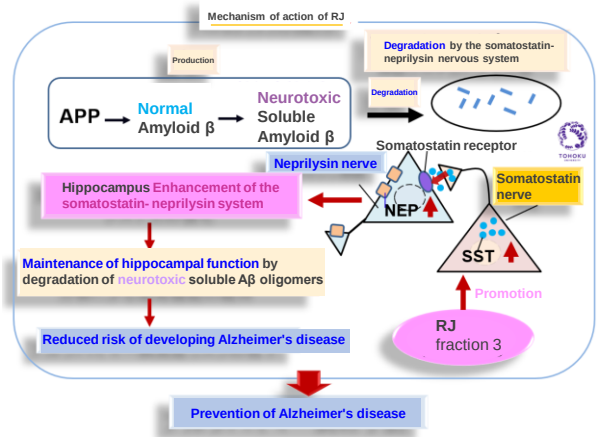
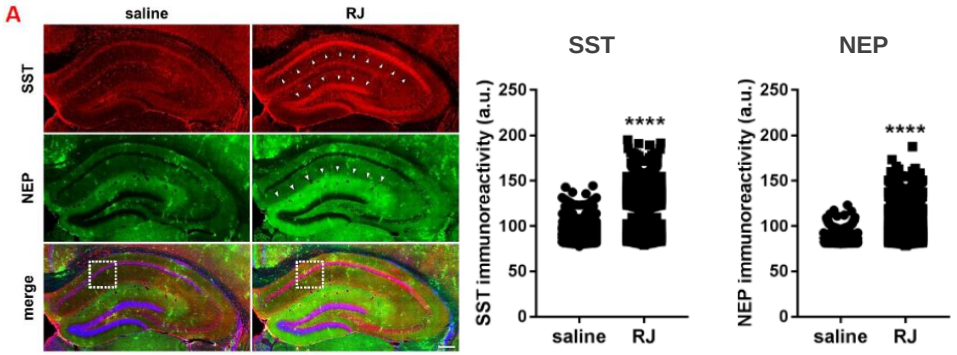


Expression Analysis of NEP and SST in the Hippocampus

Treatment of 17 month-old mice with RJ (0.5 g/kg/day) for 2 weeks



Red：Neprilysin （NEP）
Green：Somatostatin（SST）

These results suggest that NEP - SST enhances and restores the hippocampal defense system.

Related Works

[1] Journal of Functional Foods51 (2018) 28–38

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