T17-024

## Tohoku University's Invention

# New method for screening mitochondrial function-enhancer

### Drug-screening method based on new regulatory mechanism of mitochondria & the products

#### Abstract

CNS degenerative disorders, including AD and PD, are increasingly believed to be caused due to mitochondrial disability leading to neuronal death. This inventor recently identified a novel intracellular regulatory factor XXX in the CNS neurons that contributes to mitochondrial homeostasis, and the inventor further developed a method for screening beneficial ability of chemicals to enhance mitochondrial function due to elevation of the XXX level.

#### Effects of YYY (a component of XXX) on mitochondrial ability & the related gene expression

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Effects of agents that differentially regulate the XXX level on mitochondrial function

#### Effect

- ✓ Increasing XXX level by neuron-specific gene transfer of YYY, a component of XXX, facilitated neuronal viability and mRNA expression of a mitochondrial key enzyme, COXI(cytochrome c oxidase subunit I), and elevated neuronal ATP production as well.
- Molecules A, B, C, and D showed all the ability to elevate COXI mRNA level and ATP content via increased endogenous XXX level.
- Inventor has a anti-YYY antibody beneficial for this drug-screening

#### Patent Information Application # : JP2018-058171 Inventor : YAMAKUNI Toru

