SMALL MOLECULES FOR USE IN PREVENTING AND/OR TREATMENT OF NEURODEGENERATIVE DISEASES

**KEYWORDS**

Human skin allergens, Nrf2 pathway, neurodegenerative diseases, Alzheimer’s Disease, treatment

**TECHNOLOGY DESCRIPTION**

A panel of skin allergens or their derivatives, which exhibit extreme or strong capacity in neuroprotection by targeting the Nrf2 signalling pathway, for the treatment and/or prevention of neurodegenerative diseases, namely Alzheimer’s Disease (AD).

Improvements:
- electrophilic properties that activates Nrf2, inducing the transcription of several protective genes
- no pain
- intranasal administration
- ability to cross the blood brain barrier
- increase antioxidant genes and decrease pro-inflammatory genes
- induce the translocation on Nrf2 transcription factor into the nucleus and its activation
- decrease the gene and the protein levels of iNOS and IL-1β
- induce a decrease in NO levels, an anti-inflammatory role
- low levels of Aβ peptides
- improves cognition in a transgenic mouse model of AD

![Diagram of Nrf2 pathway and Isoeugenol treatment](image)

Application of the molecules for activating the the Nrf2 signalling pathway for the treatment and/or prevention Alzheimer’s Disease (AD).

**ADVANTAGES OVER ALTERNATIVE TECHNOLOGIES**

There are no drugs for the treatment of Alzheimer’s disease
Only aducanab can be a competitor. However, it has modest clinical results

**APPLICATIONS**

Alzheimer’s Disease and other neurodegenerative diseases:
- treatment and/or prevention

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