

# Findings on Macrophage Activating Factor's Impact on Telomere Extension and Biological Age Unveiled

HONOLULU, HI, UNITED STATES, September 27, 2024 /EINPresswire.com/ -- Pioneering research conducted by Saisei Mirai Clinics in Japan has unveiled significant advancements in understanding the potential health benefits of <a href="Macrophage Activating Factor">Macrophage Activating Factor</a> (MAF). The comprehensive studies, encompassing human clinical trials and basic experiments in mice, shed light on the promising effects of MAF on telomere extension, DNA methylation, biological age, and more.

#### Telomere Extension

## **Human Clinical Study**

A clinical trial involving 161 participants revealed that the intake of Macrophage Activating Factor resulted in remarkable telomere extension, with an average increase of 12% at three months and 23% at six months. These findings are currently under submission.

## Basic Experiments in Mice

In mice, MAF significantly enhanced peripheral blood telomere length. This extension was associated with increased mRNA expression of TERT and TERC in both young and aged mice. These findings are also under submission.

#### Telomerase Activation

# Human Clinical Study in Indonesia

Ongoing studies in Indonesia aim to further explore the increase in TERT and TERC expression, as well as telomere length, associated with Macrophage Activating Factor.

# **DNA Methylation**

# **Human Clinical Study**

Aged individuals typically exhibit global hypomethylation and local hypermethylation in CpG islands. Astonishingly, six months of exposure to MAF restored global hypomethylation to levels observed in younger individuals.

# **Biological Age**

## **Human Clinical Study**

Epigenetic age analysis revealed a significant reduction in biological age, with male participants showing an average decrease of 1.35 years, while female participants exhibited a decrease of 1.36 years, suggesting a reversal of the biological aging clock.

## Neurodegenerative Disease

## **Human Clinical Study**

Participants over 60 years old without dementia demonstrated significant improvements in MCI screening scores six months after exposure to Macrophage Activating Factor. Furthermore, levels of advanced glycation end products (AGEs) were significantly reduced. These results were recently published in the journal \*Nutrients\* (16:2078, 2024).

## Anti-Inflammatory Effects

#### Basic Experiments in Mice

Macrophage Activating Factor markedly suppressed TNF- $\alpha$  and IL-1 $\beta$  production in response to LPS in both in vivo and in vitro studies involving mouse microglia cell lines (MG6 cells). These findings were published in \*Frontiers in Nutrition\* (9:85235, 2022).

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# □BMC/Springer

Effect of degalactosylated bovine glycoprotein formulations MAF and M capsules on lymphopenia and clinical outcomes in hospitalized COVID-19 patients: a randomized clinical trial

https://link.springer.com/article/10.1186/s12879-024-09286-0

#### □Nutrients

The Effects of Dietary Intervention and Macrophage-Activating Factor Supplementation on Cognitive Function in Elderly Users of Outpatient Rehabilitation <a href="https://www.mdpi.com/2072-6643/16/13/2078">https://www.mdpi.com/2072-6643/16/13/2078</a>

#### □Science Direct

Adjunctive use of oral MAF is associated with no disease progression or mortality in hospitalized patients with COVID-19 pneumonia: The single-arm COral-MAF1 prospective trial https://www.sciencedirect.com/science/article/pii/S075333222301692X

#### DFrontiers

Degalactosylated Whey Protein Suppresses Inflammatory Responses Induced by Lipopolysaccharide in Mice

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9101058/

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