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SERIES 88

Dr. Ren YOSHITOMI

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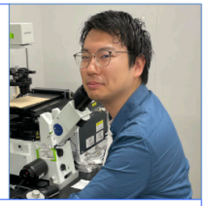

Series – 88

Date and Time - Oct. 20, 2023 (3:30 PM JST)
Venue - Zoom
Speaker – Dr. Ren YOSHITOMI
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Functional food pairing based on EGCG signaling

Despite numerous studies on the effectiveness of individual food components, the potential benefits of consuming multiple food components in combination (known as functional food pairing) are still largely unknown. The body has a system for detecting ingested food components, which play a critical role in regulating biological functions. (-)-Epigallocatechin-3-*O*-gallate (EGCG), a bioactive polyphenol in green tea, exerts diverse biological regulatory effects through 67-kDa Laminin Receptor (67LR). This study is focused on the signaling of EGCG and explores the impact of enhancing components on EGCG, notably α-glucosyl hesperidin - a polyphenol compound derived from citrus fruits.

EGCG exerts its anti-inflammatory effect by promoting cGMP production *via* 67LR and increasing Tollip expression. Thus, we investigated the combined effects of EGCG and gHes by measuring cGMP levels in mouse plasma. The study findings indicate that EGCG, at a dose of less than one-third (30 mg/kg b.w.) of its reported production-promoting capacity, in combination with gHes, can promote cGMP production. EGCG. Moreover, incorporating gHes and 30 mg/kg b.w. EGCG or its equivalent in a green tea extract produced the same Tollip-expressing and cGMP-promoting effects as a green tea extract containing 90 mg/kg b.w. Based on the findings, the effectiveness of a functional food combination of EGCG and gHes on anti-obesity was confirmed in a clinical study. The participants were administered either placebo barley tea or a combination of EGCG (146 mg/day) and gHes (178 mg/day) at doses that lacked any reported anti-obesity effect (green tea containing gHes) for a period of 12 weeks. The findings indicated that the surge in body weight, BMI, and visceral fat area observed in the placebo group were curbed by consuming green tea blended with gHes. The results suggest that gHes improves sensing of EGCG. The combined consumption of green tea and gHes is a beneficial food pairing that demonstrates anti-obesity effects in clinical trials involving humans.