Anti-inflammatory Compounds that Enhance the Effects of Cancer Immunotherapy

We are looking to out-license the technology for its commercialization.

Enhances the antitumor effects of immune checkpoint inhibitors in elderly cancer patients

♦ Background

Immune checkpoint inhibitors (ICIs) have achieved significant results in cancer treatment, but there is a challenge of lower response rates especially in elderly patients. This is believed to be due to age-related decline in immune function and excessive inflammatory responses, which suppress the effectiveness of ICIs.

◆Summary and Advantages

Kyoto University researchers have elucidated the mechanism of the inflammatory response that suppresses the effects of ICIs in elderly animals. Furthermore, they discovered that FAAH inhibitors can suppress this inflammatory response, and by combining FAAH inhibitors with ICIs, the efficacy of ICIs in elderly animals was enhanced (Figure 1).

Enhanced effect of ICIs in the old ages

The efficacy of the combination of a FAAH inhibitor and an ICI has been confirmed in-vivo.

Basic safety confirmed

FAAH inhibitors have been developed as treatments for chronic pain and post-traumatic stress disorder, and their basic safety has been confirmed.

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Orally available small molecule

FAAH inhibitors can be administered orally.







Days after tumor transplantation

Tumor on the 25th day



Figure 1. Effect of FAAH inhibitors in ICI therapy

Tumors were transplanted into young or aged mice, and anti-PD-L1 antibodies were administered as ICI therapy. FAAH inhibitors were co-administered, and tumor suppression effects were compared. In aged mice, ICI therapy ineffective, alone was but when combined with a FAAH inhibitor, the significant tumor suppression effect was observed (Δ), suggesting а synergistic effect of two treatments.

◆ Development Stage

- Discovered the mechanism of the inflammatory response that suppresses the effects of PD-(L)1 signal inhibition
- The enhancement of immune response and anti-tumor response by the administration of FAAH inhibitors confirmed in aged mice

◆ Applications Cancer Therapy

◆Intellectual Property PCT/JP2024/016599

♦ Offers

- Patent License
- Option for Patent License

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