Tohoku Univ. Technology

Immunosuppressant/Weight gain inhibitor

Compound derived from slime mold having Immunosuppressive action and weight gain inhibitory action and its derivative

Overview

Previously, Ppc1, a small molecule compound derived from a cellular slime mold, was only known to inhibit the growth of cultured cells.

We have demonstrated that Ppc1 and its derivatives have inhibitory and uncoupling effects on IL-2 production.

Effects of this group of compounds

- Suppression of IL-2 production (mouse Jurkat cells).
- Antibody production inhibition (in mice)
- Uncoupling activity in mitochondria. No effect on ATP production itself.
- Inhibitory effect on weight gain (in mice)
- Little cytotoxicity.

IP Data

IP No.	:	JP2014-061647
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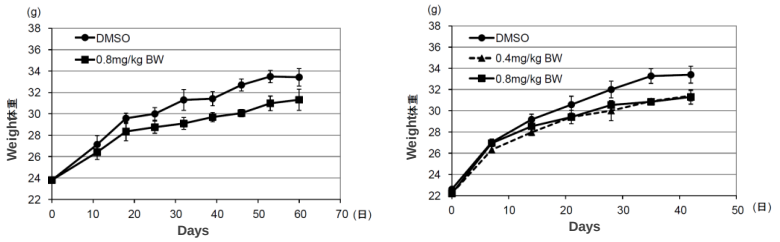
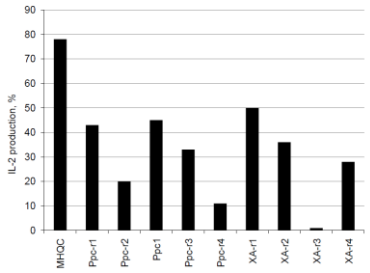
Admin No.	:	T12-045

Inhibitory effect of this compound on body weight gain (in mice)



☆Administration of this compound (Ppc-1 or XA-r3) to mice inhibited body weight gain.

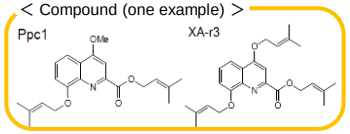
Immunosuppressive effect (cell) of the present invention



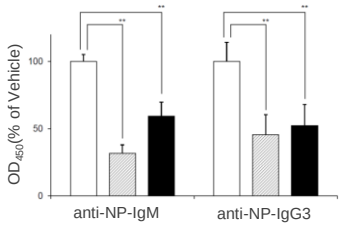
Mouse Jurkat cells
↓ Stimulated with Concanavalin A
↓ Compound addition (final concentration: 10μM) The amount of IL2 produced in the culture supernatant was measured.
（These values are shown relative to the amount of IL2 produced by the addition of DMSO at 100%.）

☆ All the compounds of the present invention showed IL2 inhibitory effects. In particular, XA-r3 showed significant IL-2 production inhibitory effects.

＜Compound (one example)＞



Effect on antibody production (in mice)



vehicle
FK506（dose 1mg/kg）
XA-r3（dose 0.5mg/kg）

Mice were treated with the compound, and the titers of antibodies in their sera were measured 1 week later.

☆At a dose of 1/2 of the immunosuppressant FK506, XA-r3 was as potent an immunosuppressant as FK506.

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