Details of Technology

Name of Technology	Development of cell growth regulators using Yamamarin derived from wild silk moth as a lead compound	Biotechnology
Name/Post/Faculty	Koichi Suzuki / Professor / Agro-bioscience Academic Group	
Key words	insect origin, peptide, cell growth regulation, insect growth regulation	

What kind of technology is this?

Outline

We found a novel pentapeptide in wild silk moth originated from Japan (*Antherae yamamai*) and clarified that the pentapeptide exhibited the inhibitory effect on the growth of rat liver cancer cells, which was the reversible effect, growth → rest → growth → rest.

【Research output contents】

Larval development is completed in the eggs of wild silk moth and the larvae pass the winter in a state of diapause for 8 months. We succeeded in the artificial reviviscence (1985 to 1989). We proposed a new model of diapause (1990) and devoted for a long time to find a substance for maintaining diapause. We finally clarified that the substance was a pentapeptide (DILRG-NH_2) and called it Yamamarin. We found that the pentapeptide inhibited the growth of rat liver cancer cells. We also clarified that C16-Yamamarin, a modified Yamamarin, had not only the more inhibitory effect on the cell growth but also the action of diapause hormone in the whole-body level (silk worm).

What are its applications?

The technology may be utilized for the cell growth regulators in various culture cells and the regulators for cancer cells. The technology may be applied also for the growth regulator of the harmful insects.

Related patents	Japanese Patent No. 3579711 (Cancer cell growth inhibitors)
Related materials	○ Koichi Suzuki and Yo Hei: Regulation of the cell growth and span of life by peptide derived from diapausing insects. Bioscience and Industry, 165(10), 21-25 (2007) ○ Adopted to "Interdisciplinary Research Support Project for the Creation of Bio-oriented Industry" (September 2007 to March 2012)

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