

**Effect of Lavender (*lavendular officinalis*) Essential Oil on
IFN-gamma Production in UVB-irradiated mice**

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UV-B로 조사된 마우스의 IFN-gamma 생성에 라벤더 오일이 미치는 영향

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Objectives

Interferon-gamma (IFN-gamma), a cytokine produced by activated T cells and natural killer cells, affects various cellular processes such as growth, differentiation, and immunoregulatory functions. The aim of this study is to evaluate the effects of essential oil from *Lavendular officinalis* on the production of UVB-irradiated-induced IFN-gamma, *in vivo* and *in vitro*.

Materials and Methods

○ Animals

C57BL/6 mouse (25 ~ 35 g), 6 weeks old age were obtained from Daehan laboratory animal center (Korea). The mice were housed in cages (40 × 25 × 17 cm), maintained at a temperature of 23 ± 2°C, humidity of 45 ± 5 %. The food (CJ co., Korea) and water is freely eaten.

○ Measurement of IFN-gamma

1) *In vitro* test

It was investigated to production of IFN-gamma in human fibroblast cells line CCD-986sk (2 × 10⁵ cell/well) after UVB-irradiation with or not of aroma oil (0.01, 0.1, and 1%).

2) *In vivo* test

It was investigated to production of IFN-gamma after UVB-irradiation with or not of aroma oil. The experimental groups were divided into four groups. All groups were used to 5 mice.

Results

All of the *in vitro* and *in vivo*, Aroma oil were affected production of IFN-gamma. It was concluded that Aroma oil will affect the immune response on the UVB-irradiation damage.

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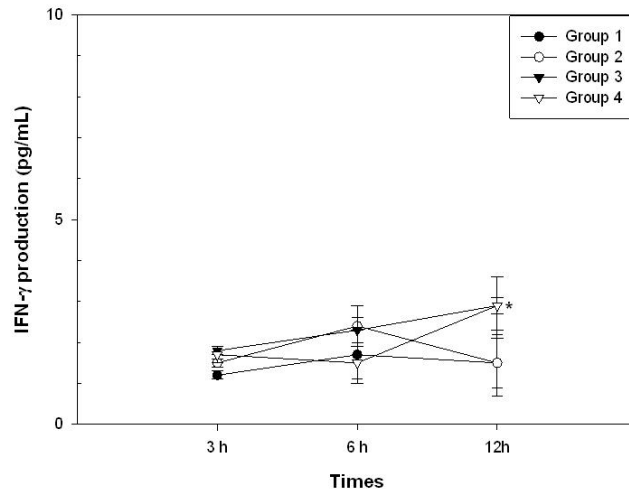


Figure 1. Effects of Aroma oils on the IFN-gamma production from CCD- 986sk fibroblast cell line as a function of concentration.

Each groups were cultured during the 3, 6, or 12 hours. And, IFN- gamma released into the culture Medium was assayed by ELISA kit. The results are expressed as compared with control (3 determinations, mean \pm SD, * $P < 0.05$ vs. Group 1).

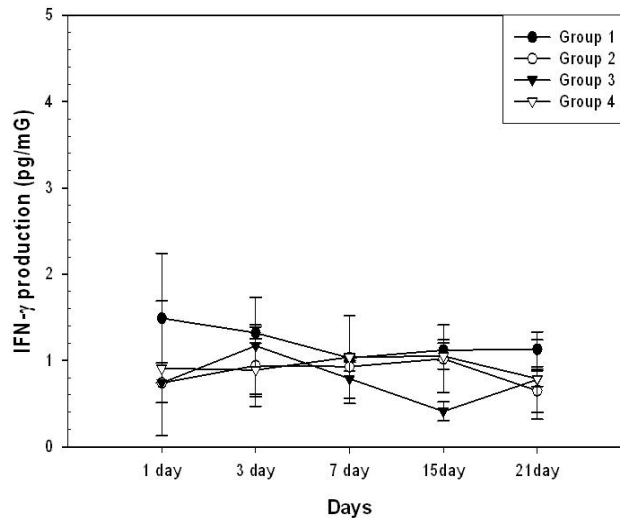


Figure 2. Effects of Aroma oils on the UVB-induced IFN-gamma production in the mice skins.

UVB was irradiated. And, each groups were measured during the 1, 3, 7, 15, or 21 days. Each group was used 5 mice. The results are expressed as compared with Group 2 (5 determinations, mean \pm SD).