Synopsis of Original Research Paper

Skin Lesion by Ultraviolet Ray and Chemicals on the Hairless Rats, and its Protection

Satoru Tani

Faculty of Pharmaceutical Science, and Life Science Research Center, Josai University

The protection of the skin from ultraviolet rays is the urgent issue, because the harmful sun's rays increase recently. However, there is no good and simple method for the evaluation of effects of ultraviolet rays on the skin. Then, I improved an animal model using the hairless rats, that were breeding in Life Science Research Center, Josai University.

After irradiation with ultraviolet rays on the back of hairless rats, the skin was turned to reddish like sunburn with passage of days. The skin color was recorded with a digital camera, and analyzed as the density by the NIH image software, after the images were changed to gray. The skin color increased during 3 days, and after 4 days the skin was gradually recovered from the lesion. Therefore, the degree of skin lesion was evaluated by measuring the skin color at 3rd day after irradiation with ultraviolet rays.

Using this method I investigated the fundamental study on hairless rat skin lesion induced by ultraviolet lay. In conclusion the skin lesion of hairless rat were different in each rat and the part of the back. Therefore, it is possible to evaluate the protective or accelerated effect of the chemical against ultraviolet ray by comparing the right and left skin lesion after one side treatment by the chemical. However, in cases of general administration of the chemical, we must statistically evaluate the results with enough amount of rats.