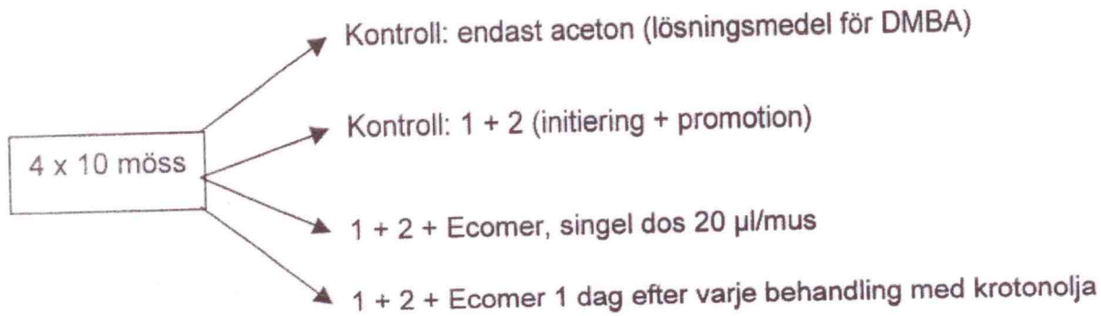
Joanna Miłoszewska

Studies on antipromoting effect of Ecomer

Department of Cell Biology
Institute of Oncology
Warsaw
Poland

Miloszewska: Study of antipromoting effect of Ecomer

1) DMBA - enkel dos (100 µg/mus) = initiering, dvs man startar canceromvandling av hudceller
2) En vecka senare: Kroton olja (10 µl) 2 ggr/vecka i 22 veckor = promotion, dvs utveckling av hudcancern



The final report from the studies on **„Studies on antipromoting effect of Ecomer"**

Introduction

Carcinogenesis is a pathologic process, which may be mimicked in experimental models. The entire process may be subdivided in three steps: initiation, promotion and progression. The three steps of this model is routinely generated in the mice skin using as initiator the carcinogen 7,12 dimethylbenz [a]anthracene (DMBA) and for promotion cocarcinogens such as 12-O-tetradecanoylphorbol-13-acetate (TPA), which is present in croton oil, or other diterpene esters. The aim of this study was to verify the effect of Ecomer on mouse skin papilloma development on the promoting step of carcinogenesis.

Material and methods

Animals

For the induction of skin papillomas inbred, 8-week-old female BALB/c mice were used. Mice were kept under standard conditions (room temperature 22°C, humidity 55%, constant light-dark rhythm) on standard diet with free access to food and water.

Induction of skin papillomas in mice by DMBA

Papillomas were initiated by painting the skin of mice on the back with acetone solution of carcinogen DMBA in single dose of 100µg/mouse. For the promotion of papilloma growth, croton oil (10µl for a single painting) dissolved in acetone was applied twice a week for 22 weeks. The application of croton oil was started a week after DMBA treatment. The animals were divided into 4 groups. In the first group the animals received the acetone only, in the second one croton oil (control), the third group was treated with Ecomer (20µl/mice for a single painting, dissolved in acetone) and the fourth one with croton oil and Ecomer a day after croton oil painting.

Results

TABLE 1. The effect of Ecomer on the induction of skin papillomas in BALB/c mice by DMBA

Compounds applied to mouse skin	Number of mice	Number of mice with papillomas	Total number of papillomas
acetone	10	0	0
croton oil	10	6	9
Ecomer	10	1	1
Ecomer and croton oil	10	2	3

Table 1 and Fig. 1 show that Ecomer, when applied on the mouse skin two times a week, a day after croton oil treatment decreased 3 times the number of papillomas found on the skin 24 weeks after initiation. Ecomer also prolong the period of latency from 7 to 10 weeks. When Ecomer was applied to mice treated DMBA, but without promotion with croton oil, within 24 weeks only one mouse developed papilloma.

Pictures of mice skin taken on 15th week of experiment show the papillomas on the skin of mice treated with croton oil and the irritation of the skin by croton oil. The skin of mice treated with croton oil and than with Ecomer is much less irritated. The skin of mice treated with Ecomer only is quite healthy.

Discussion

Croton oil has promotion effect on skin papilloma development. This group served as the control for the study of Ecomer effect. We checked also the effect of acetone, in which the compounds were dissolved. The one papilloma developed in group treated with Ecomer only can be treated as a random effect. In comparison to the control (croton oil treatment) we can state that Ecomer can not be promotor for papilloma growth. Results obtained for group of mice treated with croton oil and then with Ecomer show that Ecomer can have antipromoting effect.