

***In vitro* effects of 500 mJ/cm² UVB radiation on some normal skin cells (Note II)**

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Abstract

Background. Our observations regarding the effect of exposure to 100 mJ/cm² ultraviolet radiation (UVBR) on the viability of epidermal cells in isolated cultures of keratinocytes and melanocytes and co-cultures, respectively, and the protective antioxidant effect of Burgund Mare Recaş (BMR) grape seed extract determined us to study the influence of exposure to 500 mJ/cm² UVBR of the same cells under identical conditions.

Aims. We aimed to study: a) the effect of experimental oxidative stress by exposing cell cultures to UVB radiation (500 mJ/cm²/cell culture) and the effects on cell viability; b) the protective antioxidant effects of Burgund Mare Recaş (BMR) grape seed extract on cell viability.

Methods. Experiments were conducted on the following *groups*: individual cultures of keratinocytes, individual cultures of melanocytes, keratinocyte-melanocyte co-cultures. For each of these the following *subgroups* were made: control (nonirradiated, unprotected by BMR); exposed to 500 mJ/cm² UVBR; protected by BMR and then exposed to UVBR.

Results. Exposure of cell cultures to 500 mJ/cm² UVBR induced an increased prooxidant status, with cell death; the most affected were individually cultured keratinocytes, followed by cells in co-cultures; the application of the natural antioxidant BMR is a factor for the immediate protection of cultured cells against oxidative stress generated by irradiation.

Conclusions. BMR extract exerted an effective antioxidant protection on individually cultured keratinocytes, and also on cell co-cultures. Melanocytes in interaction with keratinocytes react *in vitro* as a local sensor to stress. Cell viability after irradiation with a 500 mJ/cm² dose is lower than that after irradiation with 100 mJ/cm².

Keywords: cultures of cells, keratinocytes, melanocytes, UVB radiation, oxidative stress, antioxidants.