Synopsis of Original Research Paper

Effect of the reduced form of neopterin (NPH4) on the skin injury induced by ultraviolet light

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Effect of the reduced form of neopterin (NPH4) on human fibroblast cell and mouse melanoma (B-16) cell injuries induced by long-wave length ultraviolet light (UV-A) irradiation was examined.

The reduced form of neopterin, NPH4, didn't inhibit the incorporation of ^{3}H-proline into collagen of human fibroblast cells induced by UV-A irradiation, but dose-dependently did the lowering of ^{3}H-thymidine (^{3}H- TdR) incorporation into DNA fraction of the B-16 cell injury. On the other hand, the oxidized form of neopterin, NP, drastically elevated the reduction of both precusors induced by UV-A irradiation at a high concentration. Radical oxygen species (ROS) which induced the cell injuries in B-16 cell. Among various kinds of ROS, scavengers, only ca ta lase, a scavenger for hydrogen peroxid, protected the cells from the injury, suggesting that hydrogen peroxide may involve in the cell injury induced by UV-A irradiation. In the in vitro analysis of chemiluminescence induced by hydrogen peroxide, NPH4 reduced the siginal intensity in dosedependent manner, while NP dramatically enhanced the signal intensity at a high concentration. In hydrogen peroxide-induced B-16 cell injury model, almost the same data were obtained as well as in UV-A irradiation. These results suggest that neopterin would be applicable to protecting skin from ultraviolet-induced injury and skin cancer therapy.