

This study reports the effects of oral *Aloe vera* gel powder (AVGP) containing *Aloe* sterols on skin elasticity and the extracellular matrix in ultraviolet B (UVB)-irradiated hairless mice. Ten-week-old hairless mice were fed diets containing 0.3% AVGP for 8 weeks and irradiated UVB for 6 weeks. Mice treated with AVGP showed significant prevention of the UVB-induced decrease in skin elasticity. To investigate the mechanism underlying this suppression of skin elasticity loss, we measured the expression of matrix metalloproteinase (MMP)-2, -9, and -13. AVGP prevented both the UVB-induced increases in MMPs expressions. Moreover, we investigated hyaluronic acid (HA) content of mice dorsal skin and gene expression of HA synthase-2 (*Has2*). In the results, AVGP oral administration prevented UVB-induced decreasing in skin HA content and *Has2* expression and attenuates the UVB-induced decrease in serum adiponectin, which promotes *Has2* expression. These results suggested that AVGP has the ability to prevent the skin photoaging.

AVGP has the potent anti-photoaging activity via suppressing UVB-induced overexpression of MMPs and loss of hyaluronic acid.

