

## Isoflavones in aglycone solution enhance ultraviolet B-induced DNA damage repair efficiency (Article)

Iovine, B.<sup>a</sup>, Garofalo, M.<sup>a</sup>, Orefice, M.<sup>a</sup>, Giannini, V.<sup>b</sup>, Gasparri, F.<sup>b</sup>, Monfrecola, G.<sup>c</sup>, Bevilacqua, M.A.<sup>a</sup>

<sup>a</sup> Department of Molecular Medicine and Medical Biotechnology, University of Naples Federico II, 80131 Naples, Italy

<sup>b</sup> Rottapharm-Madaus Dermo-Cosmetic R and D Division, Monza, Italy

<sup>c</sup> Section of Dermatology, Department of Clinical Medicine and Surgery, University of Naples Federico II, Naples, Italy

[View references \(10\)](#)

### Abstract

The isoflavones daidzein and genistein are natural compounds which have anti-inflammatory and photoprotective activities, and may be effective in the repair of ultraviolet (UV)-induced photodamage. In this study, an alcoholic solution of aglycone isoflavones with a genistein:daidzein ratio of 1:4 [Rottapharm (RPH)-aglycone] was examined for its effects on the repair of DNA damage induced by a single dose of UVB irradiation (20 mJ/cm<sup>2</sup>). For this purpose, human skin cells were first UVB-irradiated and then treated with RPH-aglycone. Comet assay analysis was used to estimate the UVB-induced DNA damage at different time points after treatment by measuring the tail moment parameter. We found that treatment with 10 µmol/L RPH-aglycone solution resulted in a significantly reduced tail moment at 1 h after treatment, and 34-35% enhancement of damage repair at 4 h after treatment. These results suggest that isoflavone aglycones are protective against UVB-induced DNA damage. © 2014 British Association of Dermatologists.