UVB-induced p53 is reduced by a mixture of natural extracts

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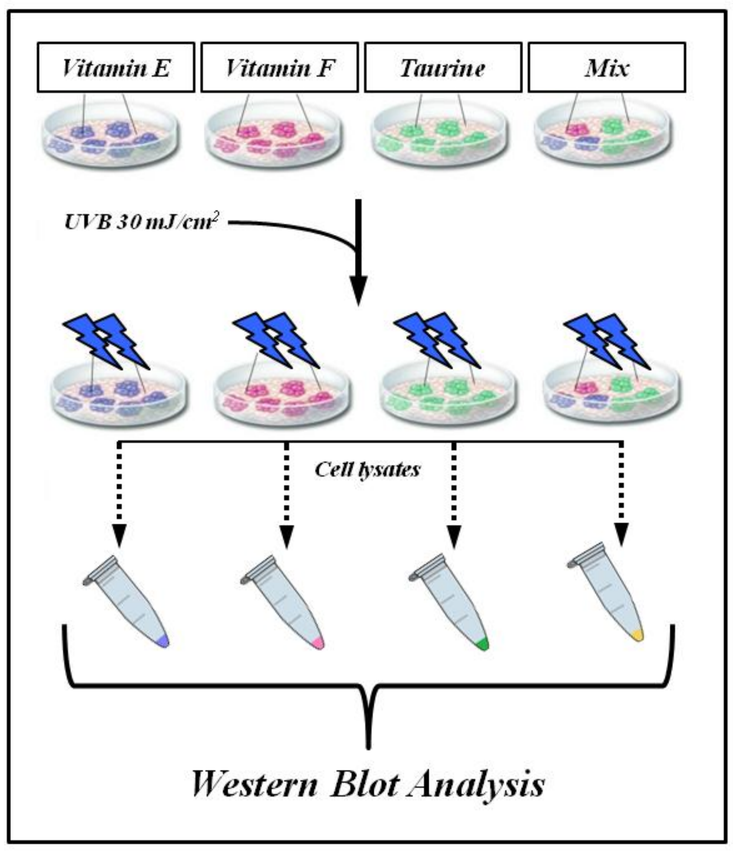
Aim of the study

To evaluate *in vitro*, the protective effects of Vitamin E, Vitamin F and Taurine, in UVB-irradiated keratinocytes.

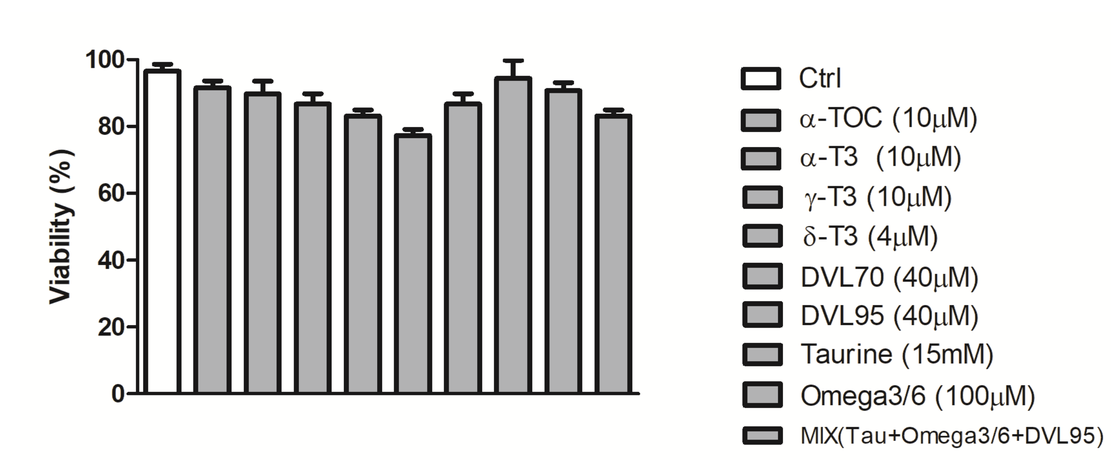
Materials and Methods

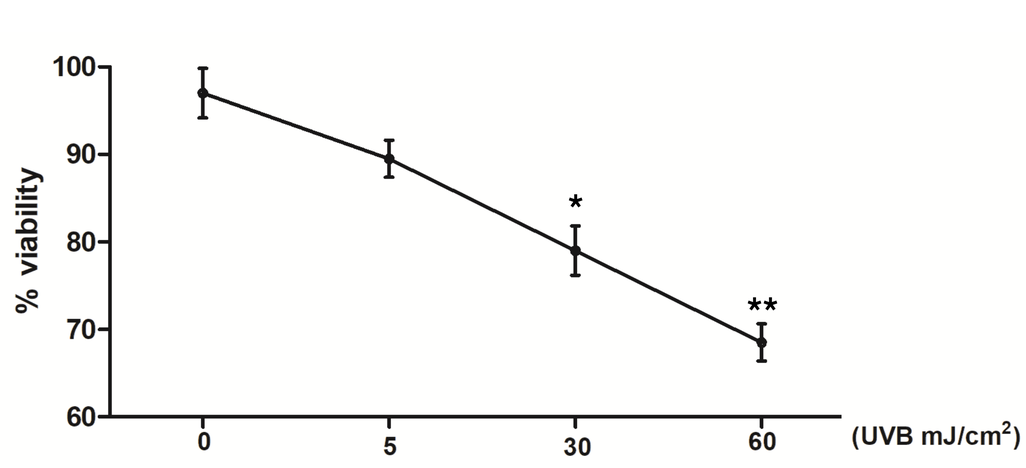
Immortalized human keratinocytes were pre-incubated for 2h with selected substances, singularly or in combination, and irradiated with UVB 30 mJ/cm^2. Substances toxicity was assessed through cell viability and their possible cytoprotective effects were explored analyzing p53 levels (western blot) 24h after UVB irradiation. The substances were:

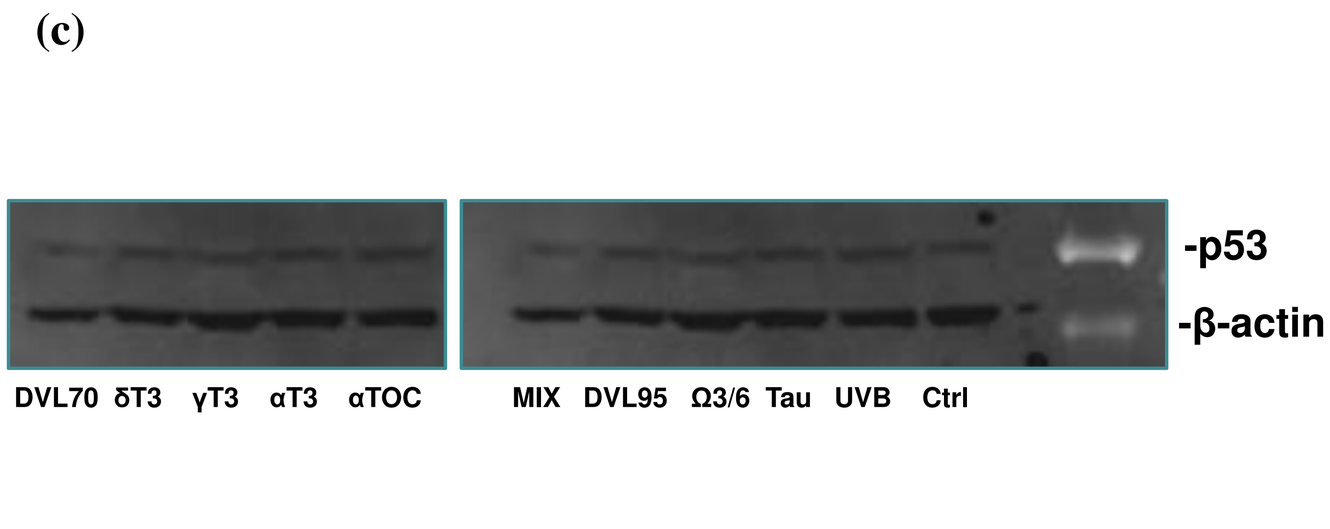
- **Vitamin E used in different single isoforms (αTOC, αT3, γT3, δT3) or as a mixture at different concentration rate (DVL70, DVL95). DVL70 is a mixture at 70% of Tocotrienols and Tocopherol. DVL95 is a mixture at 95% of Tocotrienols, Tocomonoenol and Tocopherol.**
- **Vitamin F composed of a mixture of two essential fatty acids: omega3/omega 6.**
- **Taurine or 2-aminoethanesulfonic acid, an organic compound**

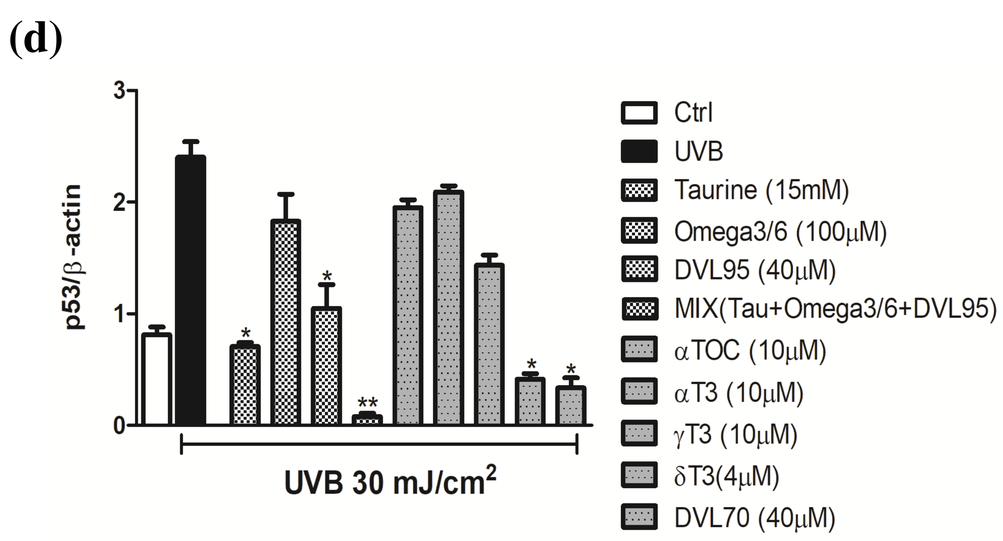


Results









(a) None of the tested substances, used alone or in combination, significantly affected cell viability *versus* untreated control cells; (b) UVB-induced cytotoxicity rate and statistical significance were determined respect to the 100% viability of untreated control cells; (c,d) Pre-treatment with combination of substances (MIX) was able to induce the most significant decrease of p53 levels (p<0.01). Significant results were found also with taurine, DVL95, δT3 and DVL70 pre-treatment in down-regulating p53 levels (*p<0.05).**

The results of our study indicate that Vitamin E, Vitamin F and Taurine have a synergistic action in protecting keratinocytes from UVB damage, representing an interesting option to improve or prevent photo-induced/aggravated skin conditions.