

COSMETICS

Citotoxicity

In vitro methods, such as the colorimetric assays MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) and NRU (Neutral Red Uptake)^{1,2}, are used for hazard characterization or risk assessment of substances, especially cosmetics ingredients.

Test system: HEKn (primary human epidermal keratinocytes).

Experimental number: Three wells per group in triplicate.

Test Item: Cosmetic compound.

Main Read-outs:

Absorbance (570 nm);

Inhibitory concentration (IC₅₀);

Maximum inhibition.

Validation Data

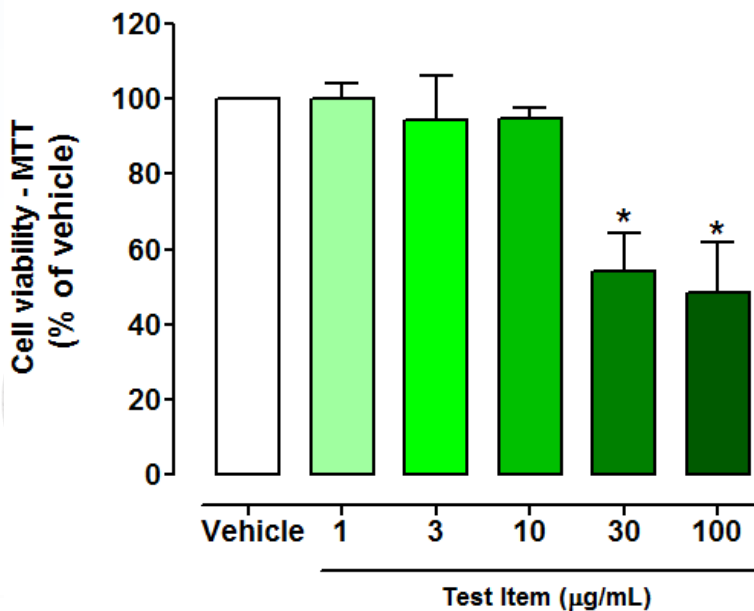


Figure: Citotoxicity evaluation of Test Item through MTT assay. The figure represents the citotoxic activity of Test Item through MTT assay in five concentrations compared with control group (vehicle). Each column represents the mean ± SEM of 3 wells per group in triplicate. Statistical analyses used was one-way ANOVA with a post-hoc Dunnett's. *P < 0.05 versus vehicle group.

To avoid bias and to allow reproducibility and reliability of all in vitro experiments we follow the “Guidance on Good Cell Culture Practice”³. All in vitro experiments are performed in triplicate wells for each condition and repeated at least three times.

References:

- ¹Borenfreund E; Puerner JA. Toxicity determined in vitro morphological alterations and neutral red absorption. Toxicol Lett. 1985, 24(2-3): 119-24.
- ²Mosmann T. Rapid colorimetric assay for cellular growth and survival: application to proliferation and cytotoxicity assays. J Immunol Methods. 1983 Dec 16;65(1-2):55-63.
- ³Coecke S; Balls M; Bowe G; Davis J; Gstraunthaler G, Hartung T, Hay R, Merten OW, Price A, Schechtman L, Stacey G, Stokes W. Guidance on good cell culture practice: a report of the second ECVAM task force on good cell culture practice. Altern Lab Anim. 2005, 33(3):261-87.