

COSMETICS

DPPH antioxidant assay

DPPH (2,2-diphenyl-1-picryl-hydrazyl-hydrate) free radical method is an antioxidant assay based on electron-transfer that produces a violet solution in methanol and provides a rapid way to evaluate antioxidants by spectrophotometry. Therefore, DPPH assay is very useful to assess the potential antioxidant activity of several products.

Test system: DPPH (2,2-diphenyl-1-picryl-hydrazyl-hydrate). **Main read-outs:** Absorbance at 515 nm.

Experimental number: Three wells per group in triplicate.

Reference Item: Ascorbic acid.

Validation Data

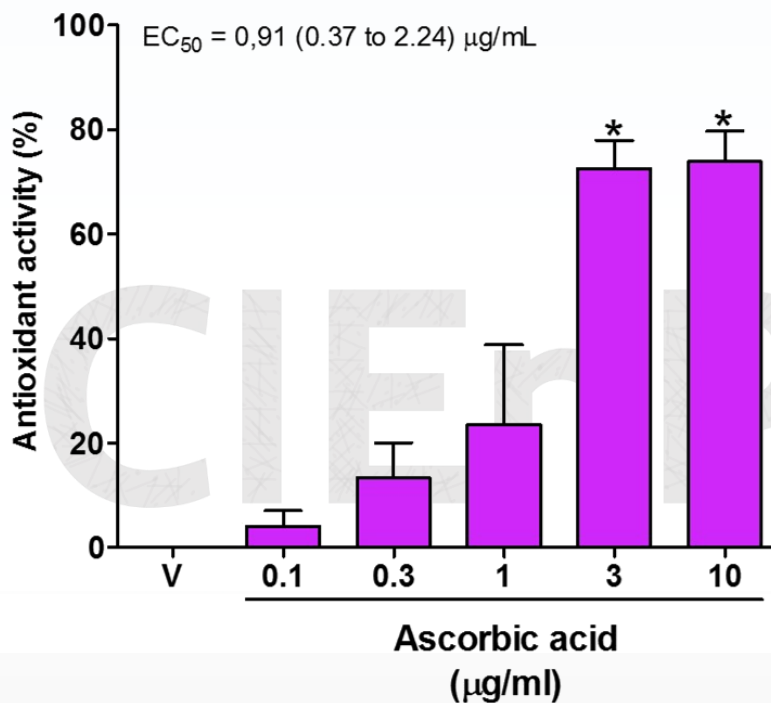


Figure: The evaluation of the DPPH radical scavenging activity of ascorbic acid. The figure represents the antioxidant activity of ascorbic acid compared with control group (vehicle). Each column represents the mean ± SEM of 3 experiments per group in triplicate. Statistical analyses used was one-way ANOVA with a post-hoc Dunnett's. *, P < 0.05, versus vehicle group. Concentration of the sample necessary to increase the oxidant activity by 50% (EC₅₀) under the experimental condition was calculated.

All in vitro experiments are performed in triplicate wells for each condition and repeated at least three times.

References:

¹DPPH antioxidant assay revisited. Om P. Sharma and Tej K. Bhat, Food Chemistry, Volume 113, Issue 4, 15 April 2009, Pages 1202–1205.

²Use of a free radical method to evaluate antioxidant activity. Williams, B; Cuvelier, M Berset LWT. Food Science and Technology Volume 28, Issue 1, 1995, Pages 25–30.