AOPCAT SKIN

Measure of CATALASE-like activity (H2O2 neutralization) in human skin cells

ANTI OXIDANT POWER

ASSAY TYPE

Cell-based efficacy assay

SPECIFICITY

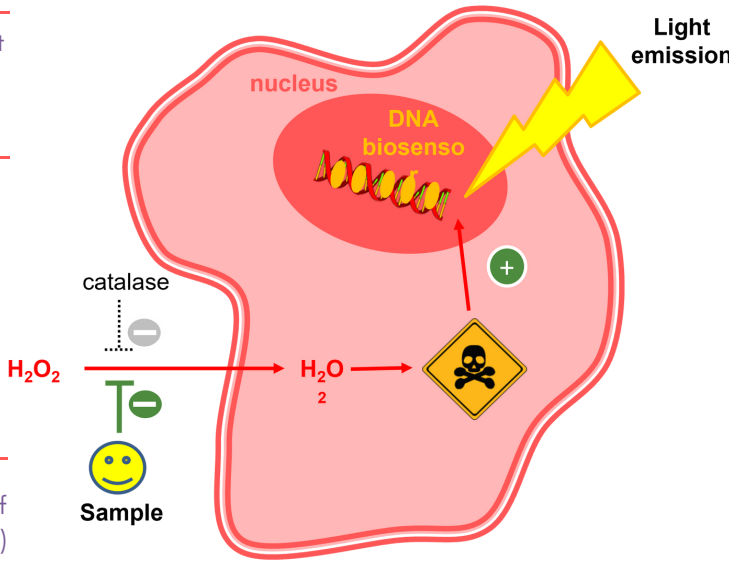
Evaluation of antioxidant catalase-like activity in human skin cells by direct measurement of hydrogen peroxide neutralization capacity of the sample.

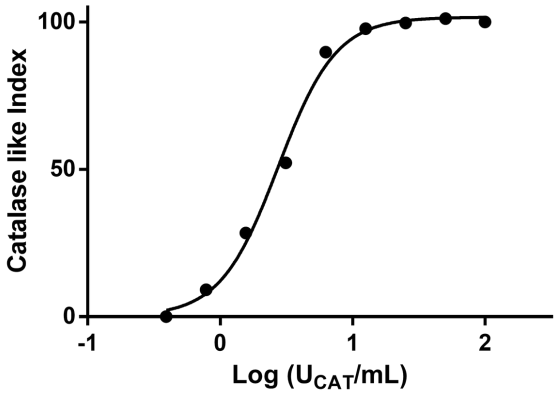
STUDY SPECIFICATIONS

- Full dose-effect study (nine doses, 4-log range)
- Evaluation of efficacy concentrations (EC10, EC50, EC90)
- At least two independent experiments
- Three end-point measurements (triplicate) for each dose
- Analytical report and monographs
- Comparison with EUK134 antioxidant

ASSAY PRINCIPLE

Reactive Oxygen Species (ROS) and free radicals are usually byproducts of the dioxygen reduction to water. This can happen within (mitochondria) and outside the cells. In living organisms, specific enzymes such as SOD and CAT catalyse this reduction, CAT being responsible of reduction of hydrogen peroxide (H2O2) to water. The assay is based on the intracellular presence of a DNA biosensor whose fluorescence increases in presence of H2O2. Decrease or time delayed increase of fluorescence indicates capacity of sample to neutralize H2O2 in a catalase-like reaction. Well-known antioxidants such as EUK134 for instance present this activity. Kinetic records allow for antioxidant index calculation. Dose-response curves fitting with sigmoid model allow for evaluation of efficacy standard concentrations (EC10, EC50, EC90) (patented technology). Bovine liver catalase provides a positive control.





DETECTION METHOD

Fluorescence (exc/em 505-535 nm)

ASSAY FORMAT

96-well cell culture plates

CELL MODEL

Human immortalized (HaCaT) or primary keratinocytes, dermal fibroblasts, or other cell types.

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