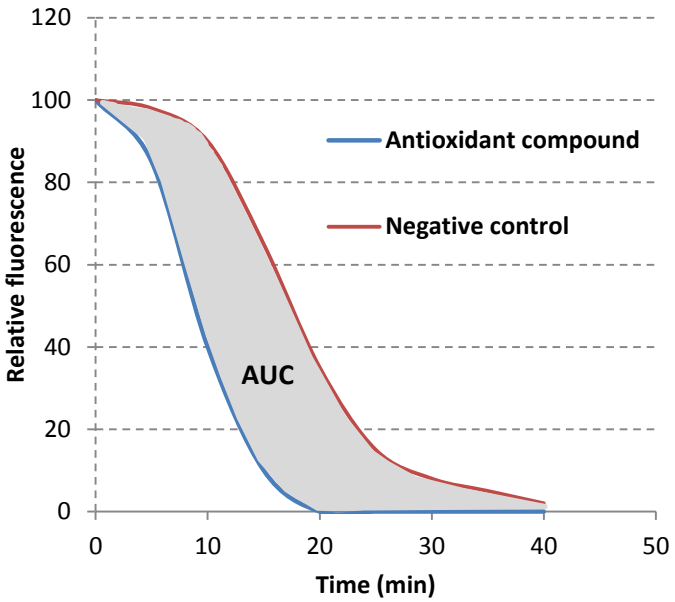
Antioxidant assessment
Oxygen Radical Absorbance Capacity ORAC

Purpose :

The ORAC test (Oxygen radical Absorbance Capacity) estimates the antioxidant potential of samples based on their ability to quench free radicals.

Method

This method allows evaluation of the ability of antioxidants from samples to prevent the oxidation of fluorescein, one chemical probe responsive to oxidation. The oxidative conditions are created by using a free radical initiator as AAPH. The oxidation of fluorescein could be followed by a decrease of fluorescence during time (excitation : 485 nm, emission : 520 nm). The antioxidant compounds delay this fluorescence decrease. The potential antioxidant of the sample is evaluated by the difference between Area Under Curve (AUC) of the sample and a control without antioxidant. The oxidant potential is expressed by using an oxidant reference, the trolox. This compound is cell-permeable, water-soluble and a derivative of vitamin E with potent antioxidant properties. One unit of ORAC is equivalent to 1 µmole of trolox / g or 100 g of extract.



Applications

The assay is applicable to plants (fruits, vegetables), derived products and pure compounds.

With a standardized protocol and the uses of 96 well plates, this ORAC test is a great routine tool to screen multiple antioxidant compounds.

Others available assays : DPPH, TEAC, FRAP

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