ORAC Assay

Defined Product Quality

Oxigen Radical Absorbance Capacity (ORAC)

The ORAC value is a sum parameter which comprises all antioxidant active components of a raw material, a product, a mixture or an extract. In the past, attempts have been made to position a product statement (+/- "healthy") on food depending on the ORAC value measured. From a scientific point of view, this is not possible due to the lack of consideration for bioavailability.

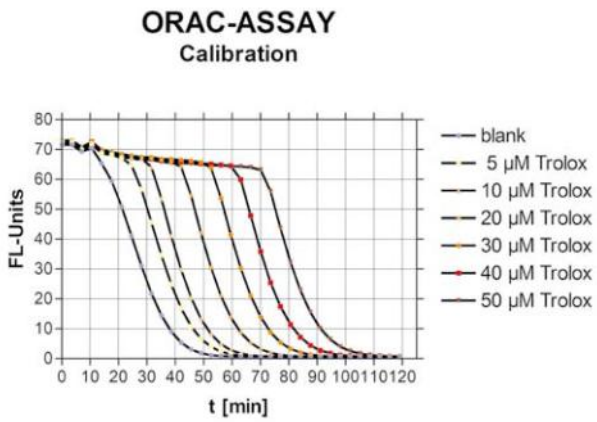
BioTeSys, however, sees the ORAC value as having wrongly fallen into disrepute: strongly corresponding with environmental factors such as temperature, humidity, mechanical processing etc., the very nature of a sum parameter lends itself particularly well to use in quality assurance of a biological-chemical product property.

A characteristic parameter for defining product quality

Each product consisting of ORAC-active components possesses a "characteristic" value. For blended products consisting of a multitude of starting products, the respective ORAC reference value is adjusted as a result of reactions between all active components of the mixture. Deviations from this reference value thus show up changes in the product (e.g. level of maturity), changes in the mixture or admixture of unknown substances with a high level of certainty. For this very reason, the method is particularly suitable for raw material testing as a characteristic parameter for defining product quality, monitoring of maturing processes, storage and transport conditions and for monitoring of manufacturing processes of sensitive products.

Accredited method implementation

ORAC assay is a recognized fluorescence spectrometric laboratory method whose reproducibility depends on a number of factors. Inhibition of oxidative degradation of a fluorescence dye (fluorescein) by antioxidants is determined (triggered by addition of a peroxyl radical generator). Quantification of the radical binding capacity of the sample is carried out by calibration with the water-soluble tocopherol derivate TROLOX. The result is expressed in TROLOX equivalents in µmol TROLOX/100 g sample. The method is validated and accredited at BioTeSys.



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