

A comparison of methods employed to evaluate antioxidant capabilities

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Abstract

Three different methodologies frequently employed to evaluate the indexes that report the antioxidant capabilities of pure compounds and/or complex mixtures of antioxidants are applied to a series of mono- and polyphenols, as well as to two wine (red and white) samples. These methodologies are based on the bleaching of a stable radical, the effect of the additive upon luminol chemiluminescence induced by peroxy radicals, and the effect of the additive upon the bleaching of the fluorescence from a dye molecule. Widely different responses are obtained from the different methodologies. These differences are interpreted in terms of the different factors (stoichiometric factors and/or reactivities) that determines the indexes evaluated by these different methodologies.