Simple DPPHC-Based Electrochemical Assay for the Evaluation of the Antioxidant Capacity: a Thorough Comparison with Spectrophotometric Assays and Evaluation with Real-World Samples - DTU Orbit (09/12/2018)

Simple DPPHC-Based Electrochemical Assay for the Evaluation of the Antioxidant Capacity: a Thorough Comparison with Spectrophotometric Assays and Evaluation with Real-World Samples

An assay based on the electrochemical detection of 2,2-diphenyl-1-picrylhydrazyl radical (DPPHC) for the evaluation of the total antioxidant capacity (TAC) was optimized. The assay is interchangeable with the classic spectrophotometric tests for TAC based on the same radical. In addition, it can be used for the analysis of dilute samples with low antioxidant capacities. A good linear correlation (R²=0.97) was obtained between the results obtained with the proposed electrochemical assay and the Trolox Equivalent Antioxidant Capacity test based on ABTS radical. The assay was successfully used to evaluate the antioxidant capacity of two red wines obtained by six different maceration-fermentation techniques.

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