

Investigation of Radical Scavenging Properties of *Espresso* Brews

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SUMMARY

A Trolox-equivalent antioxidant capacity assay which is based on the decolorization of ABTS^{•+} radical ions has been adapted to HPLC and GPC separation systems. The method permitted the elucidation of radical scavengers in coffee brews and espresso percolates. Results clearly indicate that the radical scavenging effectiveness of coffee brews is intensely dependant on the grind size. Analyses conducted on espressos revealed that more than 70% of the overall radical scavenging activity is recovered within the first 30 sec of percolation. Molecular weight distribution and anti-radical effectiveness of espresso melanoidins were determined by means of combined gel permeation chromatography with ABTS^{•+}-analysis (GPC-ABTS^{•+}). The results point out the importance of melanoidins as effective radical scavengers in coffee brews. Furthermore it is shown that the radical scavenging activity of melanoidins depend on the molecular weight.