

# Antioxidant Components in Roast Coffee

T. HOFMANN<sup>1</sup>, V. SOMOZA<sup>2</sup>

<sup>1</sup>Institut für Lebensmittelchemie, Westfälische Wilhelms-Universität, Corrensstrasse 45,  
48149 Münster

<sup>2</sup>Deutsche Forschungsanstalt für Lebensmittelchemie, Lichtenbergstrasse 4, 85748 Garching

## INTRODUCTION

With worldwide consumption of about 5 million tons in 2001 (USDA, 2002), coffee is one of the most popular beverages in the world. The habitual consumer highly appreciates coffee beverages for their salubrious, desirable aroma and taste as well as their stimulating properties. Historically, coffee consumption has frequently been related to unhealthy behaviours, such as smoking or a sedentary lifestyle. However, recent knowledge has put coffee into a more positive light, and to date there is growing evidence that moderate coffee consumption has health benefits, among these *in vivo* antioxidant and chemopreventive effects.

On the other hand, the antioxidant coffee components are believed to be a key driver for coffee stability, thus inhibiting lipid peroxidation or the degradation of odor-active thiols. For coffee beverages, the knowledge of the chemical structure and the antioxidant activities of these compounds open the possibility to tailor coffee quality and to extend the shelf-life of coffee products, such as, e.g. ready-to-drink beverages or canned coffee, by slowing down undesirable oxidation reactions.

At present, the strong interest in the antioxidant activity of compounds in coffee products as well as their *in vivo* antioxidant and chemopreventive activity promotes the research on antioxidants in coffee beverages. But as the mechanisms involved in inhibiting lipid peroxidation in the food strongly differ from the biomechanisms involved in antioxidant and chemopreventive activity in the human body, the research on antioxidants need to be carefully defined. The purpose of this paper is to provide a brief overview on the literature status on antioxidants in roast coffee and their activity in food as well as in biological systems.