

# Spectrometric pK Determination of Daphnetin, Chlorogenic Acid and Quercetin

N. Sauerwald<sup>a</sup>, M. Schwenk<sup>a</sup>, J. Polster<sup>a,\*</sup>, E. Bengsch<sup>b</sup>

<sup>a</sup> Lehrstuhl für Allgemeine Chemie und Biochemie, TU München - Weihenstephan,  
Vöttingerstraße 40, D-85350 Freising

<sup>b</sup> Centre de Biophysique Moléculaire, 1 rue Charles Sadron, 45071 F-Orleans

Z. Naturforsch. **53 b**, 315–321 (1998); received September 15, 1997

Daphnetin, Chlorogenic Acid, Quercetin

Polyphenols play an important role in the ‘immune system’ of plants. Since their charge is important for their physiological effect it is important to know their pK<sub>i</sub> values. Therefore, the pK<sub>i</sub> values of some plant contents such as daphnetin (pK = 7.36), chlorogenic acid (pK ≈ 8.5), and quercetin (pK<sub>1</sub> = 7.03, pK<sub>2</sub> = 9.15) were determined in the pH range 7 - 10 using UV/VIS spectroscopy. The decomposition kinetics of quercetin in alkaline solutions was taken into consideration by extrapolating the absorbance time curves to time zero ( $t = 0$ ). The graphic method of absorbance ( $A$ ) diagrams was used to determine the pK<sub>i</sub> values. In the case of quercetin the method of linear regression was also used for the determination.

\* Reprint requests to Prof. Dr. J. Polster.