Title	Application of a UV–VIS detection-HPLC method for a rapid determination of lycopene and beta-carotene in vegetables
Author	A.I. Olives Barba, M. Cámara Hurtado, M.C. Sánchez Mata, V. Fernández Ruiz and M. López Sáenz de Tejada
Citation	Food Chemistry Volume 95, Issue 2, March 2006, Pages 328-336
Keyword	Lycopene; beta-carotene; HPLC; Vegetables

Abstract

The purpose of this paper is to optimize an HPLC method for the determination of lycopene and β-carotene in vegetables and compare it with a spectrophotometric standard method. Among the different conditions studied the most suitable ones for our samples were: extraction with hexane/acetone/ethanol (50:25:25 v/v/v), evaporation of the hexane layer, dissolution of the dry extract in THF/ACN/methanol (15:30:55 v/v/v) and injection on a C18 column with methanol/ACN (90:10 v/v) + TEA 9 μM as mobile phase (Φ = 0.9 ml/min) and $\lambda_{detection}$ = 475 nm. Samples considered for analysis were: tomato, carrot, pepper, watermelon, persimmon and medlar. The HPLC method proposed showed adequate reproducibility (RSD < 10.5%), accuracy (100–109% recovery) and sensitive detection limits (0.6 μM for lycopene; 0.3 μM for β-carotene), with a simple preparation of the samples (one step direct extraction) and short run times (10 min) for the quantification of lycopene and β-carotene.