

# Preparation and Scale-up of Phosphatidyl-tyrosol via Phospholipase D Transphosphatidylation

Víctor Casado, Guillermo Reglero, Carlos F. Torres. Departamento de producción y caracterización de nuevos alimentos. Instituto de Investigación en Ciencias de la Alimentación (CIAL) (CSIC–UAM), C/ Nicolás Cabrera nº9 Universidad Autónoma de Madrid. 28049 Cantoblanco, Madrid, Spain

## Abstract

Preparation of a highly purified phosphatidyl-tyrosol by a phospholipase D from *Actinamadure SP* transphosphatidylation in a GRAS biphasic medium and subsequent purification was developed. The reaction medium comprised of an aqueous phase and ethyl butyrate have been considered as an alternative to other biphasic systems utilizing more harmful organic solvents. The purpose of this study was to purify phosphatidyl-tyrosol from a transphosphatidylation reaction mixture in a procedure readily scalable to obtain a new valuable food ingredient. The modified phospholipid was initially purified by a fraction collector coupled to HPLC equipment that was used as a standard for HPLC analyses afterwards. Under optimal reaction conditions for two different PC concentrations, namely 83 and 166 mmol/L, PC conversion was ca. 97% and ca.94% (w/w) and the final phosphatidyl-tyrosol concentration was 81 and 157 mmol/L. Furthermore, purification of the phosphatidyl-tyrosol formed was successfully achieved by centrifugation without using organic solvent extraction, and a highly purified phosphatidyl-tyrosol (97% (w/w)) was obtained. On the other hand, the methodology described was also scale-up to obtain 40 g of purified phosphatidyl-tyrosol.