

A Novel Approach to Phospholipid Removal

Abstract

A new, novel sample preparation device, the Ostro™ 96-well plates, is demonstrated to provide maximum phospholipid removal and recovery for a variety of analytes. The performance of this sample preparation device is compared to existing phospholipid removal devices, protein precipitation (PPT), liquid-liquid extract (LLE) and solid supported liquid-liquid extraction (SSLE) on the basis of lipid removal, reproducibility and analyte recovery. Using the Ostro 96-well plate, a simple pass through clean-up provides high analyte recoveries for a broad spectrum of acidic, basic and neutral compounds while removing more endogenous phospholipids than similar devices and techniques. In addition to the characterization experiments, performance of this plate is demonstrated with a Bioanalytical method for clopidogrel and ticlopidine. Method simplicity, reproducibility and highly efficient phospholipid removal make this new technology an attractive alternative to LLE or PPT for obtaining higher quality data from large numbers of samples. In addition, the generic nature of this device and the significant clean-up provided facilitate productivity increased by reducing instrument downtime.

Authors / Affiliations

Jessalynn Wheaton - Waters Corporation, Chemistry Applied Technology

Erin Chambers - Waters Corporation, Chemistry Applied Technology

Gary Mantha - Waters Corporation

John Martin - Waters Corporation

Diane Diehl - Waters Corporation