

Selective Depletion of Phospholipid Interference Utilizing HybridSPE™-PPT Technology

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Analysis of biological samples is often hindered due to interferences carried through the sample preparation technique. Protein precipitation is a widely accepted sample preparation method for biological plasma samples due to simplicity and gross level removal of proteins. Though widely used, protein precipitation methods often result in chromatographic irregularities due to co-extracted endogenous species such as phospholipids that negatively affect chromatographic analysis. A more thorough sample cleanup can be achieved using solid phase extraction (SPE), but at a cost of time and method complexity.

In this poster a new platform was developed to process various plasma samples using a simplified two-step procedure to produce biological samples depleted of phospholipids prior to LC-MS-MS analysis. The HybridSPE-PPT platform employs the simplicity of standard protein precipitation with the added selectivity of SPE. The platform exhibits a high affinity towards phospholipids while remaining non-selective towards a broad range of basic, neutral and acidic compounds. The methodology and application examples, comparing results of protein precipitation and HybridSPE are displayed, showing cleaner extracts and more reliable recovery for the HybridSPE for most drug components.