

ANALYTICAL METHOD DEVELOPMENT FOR HPLC QUANTITATION OF IBUPROFEN IN THREE PHARMACEUTICAL PRODUCTS

Introduction

Ibuprofen is present in different types of medicine such as Advil, Motrin and Nuprin. It belongs to nonsteroidal anti-inflammatory drugs (NSAID). NSAID is a drug class that is used for various purposes such as pain management, decreasing fever and reduction of inflammation. The NSAID has several side effects such as gastrointestinal ulcers, heart attack and kidney diseases. To determine the percentage of ibuprofen in selected products, including Advil, Motrin and Nuprin, we will use high-performance liquid chromatography (HPLC). HPLC is a powerful technique used in analytical chemistry to identify, determine and quantify the components of an unknown sample. HPLC is used in many fields, such as pharmaceutical and medical research and it has the ability to produce extremely high-quality results.

Method

Three pharmaceutical products containing ibuprofen were obtained and the quantity of ibuprofen in those samples was determined. Two

HPLC methods were developed for quantitation of ibuprofen in tablets using standard addition or external calibration. Method parameters such as sample preparation, type of column, and elution parameters were optimized. The accuracy and reproducibility of these methods were compared. In standard addition, the standard was directly added to unknown to minimize matrix effect. For external calibration, data from a standard curve was used to quantify HPLC peak area to analyte concentration.

Expected Results

I will determine the amount of ibuprofen present in different samples (tablets) using an accurate and reproducible HPLC method coupled with standard addition or external calibration.

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