

Lab 2: Infrared Spectrometry & identification of analgesic drugs

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Abstract

The objective of the experiment is to identify a type of unknown common analgesic drug by using Infrared spectrometry to identify functional groups of an organic compound from important peaks in the spectrum. From this experiment, common lab techniques like extractions, filtration and simple column chromatography were used to separate organic compounds from inorganic compounds and % recovery of the organic compound was calculated. The organic compound was determined to be acetaminophen and % recovery is 37.3%

Introduction

Methanol is a polar organic solvent. This means that polar molecules will dissolve readily in it, whereas nonpolar molecules will not want to dissolve. In over the counter

pain medications, the active ingredient contains functional groups, which make the overall molecule polar. This means that they will dissolve in the methanol. The inactive ingredients, such as the fillers and coating, are nonpolar, so they will not dissolve in the methanol. These nonpolar substances will then gather at the

bottom of the centrifuge tube

after it is centrifuged.

This allows us to gather the liquid at the top,

which just consists of

the methanol and the

active ingredient. All that

is left to do is evaporate

the methanol so

we are just left with the

active ingredient

Methanol is a polar

organic solvent. This