

ABSTRACT

GC-MS METHOD DEVELOPMENT FOR THE DETERMINATION OF ACETAMINOPHEN LEVELS IN HUMAN HAIR SPECIMEN

Drug compound monitoring in the body can be done through body fluids such as urine, sweat, saliva and blood. Hair can also be used as an option in the analysis of drug compounds in the body, especially in cases of drug abuse or poisoning that is chronic. Hair can be used as an option in the analysis of drug compounds in the body, especially in cases of drug abuse or poisoning that is chronic. There are previous researches that have aimed to develop the method for the determination of acetaminophen levels in specimens of human hair using GC-MS instrument. The data was taken from the hair samples that are 0-3 cm long, 0-6 cm long and 0-10 cm in 10 patients treated with paracetamol. Sample preparation consisted of decontamination, destruction, extraction and derivatization processes on each hair specimen. Then the extract was injected into the GC-MS system. The results showed that acetaminophen can be detected in hair specimens in the form of acetaminophen-TMS as a result of the derivatization treatment using BSTFA containing 1% of TMCS. At the 0-3 cm long hair specimens, it was obtained the concentration of 0.1761 to 0.3392 ng/mg of hair specimens; at the 0-6 cm long hair specimens, it was obtained the concentration of 0.2081 to 0.4845 ng/mg of hair specimens; and at the 0-10 cm long hair specimens, acetaminophen-TMS concentration in the sample was 0.2473 to 0.5782 ng/mg of hair specimens.

Keywords: acetaminophen, hair, Gas Chromatography - Mass Spectrometry