

Abstract

The purpose of this study was to determine the quantity of Thebaine, Codeine, Morphine and Papaverine in different samples by using GC-MS. This research is helpful to determine the trait and geological source. It can help to generate chemical profiling and to combat drug trafficking.

Research methodology consisted of detection of major opium alkaloids (codeine, morphine, thebaine and papaverine) from plant material. Internal standard was used for the Quantitation of alkaloids in plant material. In beginning, GC-FID was used for analysis, but papaverine was not detected by GC-FID. GC-MS was used on SIM mode.

Suitable extraction procedure was followed and crushed plant material collected from different regions was analyzed for Quantitation of major alkaloids using GC-MS on SIM mode. Level of each alkaloid was examined. GC-MS method was established for the detection and Quantitation of opium alkaloids.

For evaluation of method, it was applied to analyze plant material for the detection of alkaloids. Extraction was done with methanol, 30 μ l of IS spiked. Samples sonicated and centrifuged at 10000 rpm. Extract was transferred to glass tube, dried and then derivatized by BSTFA and heated. Morphine, Codeine, Thebaine and Papaverine were identified in plant material. Amount of alkaloids varies sample to sample. Variation in results might be due to variety of soil, method of harvesting and weather conditions.

Codeine was detected with concentration ranges from 380-1425 μ g/g of plant material. Morphine was detected with conc. of 1250-5285 μ g/g of plant material. Concentration of thebaine ranges from 410-1390 μ g/g of plant material. Papaverine ranges from 410-1710 μ g/g of plant material.

In conclusion, GCMS on SIM mode is suitable method for the detection and Quantitation of opium alkaloids.