ABSTRACT

A rapid, reliable and reproducible method for the quantitation of Heroin was developed and validated on a Gas Chromatograph coupled with Flame Ionization Detector using Nicotinamide as internal standard. The method was developed on Agilent 7890B GC-FID using Agilent HP-5% Phenyl Methyl Siloxane) Column. 99.9% pure Nitrogen was used as Carrier Gas. Method was validated for the quantification of Heroin Hydrochloride. The retention time of Heroin hydrochloride was found to be 6.06 ± 0.2 min. The method has been statistically validated and has showed goodLinearity (R^2 = 0.999) in the range of 0.05mg/ml – 95 mg/ml of Heroin Hydrochloride. 0.05 mg/ml and 0.1 mg/ml of Heroin hydrochloride were found as Limit of Detection and Limit of Quantitation, respectively. Precision and accuracy parameters showed with-in limit range using three different calibrationlevels (20 mg/ml, 50mg/ml and 95 mg/ml) came out to be in range of 90.0% to 108.3%, with no carry over.Specificity was also checked using other opiates. Method is very fast and rapid with 8.25 min run time of GC cycle. Forty five randomlyseized samples were analyzed by this method. All these samples were quantified and some adulterants were also identified. Purity of samples varied greatly among all samples. The developed method is rapid, precise and economical. It can be used for routine identification and quantification of Heroin.

Key words: Heroin, GC-FID, Seized samples