

## The LC/MS<sup>2</sup> Detection Method of Chloroamphetamine

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In recent years, the problem of abuse drugs is day by day serious, especially to evade the legal punishment responsibility, some new types of abuse drugs appear unceasingly. Taking these abuse drugs, not only polices cannot arrest them, but the harm to human body is worse than the original abuse drug, which chloroamphetamine is a typical example. Therefore, we need to develop a detection method that can detect chloroamphetamine. The research is aimed at chloroamphetamine to develop LC/MS<sup>2</sup> detection method by ESI-IT detection mode. In this analysis method, we adopted operation method that used flunitrazepam (FM2) as internal standard. First, obtained chloroamphetamine and flunitrazepam's main daughter ions after CID reaction, the m/z values respectively are: flunitrazepam (314.2→268.1), chloroamphetamine (169.9→152.7). Then we adopted 0.01% TFA aqueous solution and 0.01% TFA methanol solution as two solvents of LC gradient elution process. At the same time, we used C18 analytical column as separation column to operate ion-paired chromatographic separation. This analysis result shows that when using flunitrazepam as internal standard to quantify chloroamphetamine, the calibration curve has good linearity. The calibration curve between 60 to 1000 ppb is  $Y = 0.0063X + 0.2475$ ,  $R^2 = 0.9955$ , compared with the data of previously using the same internal standard to detect methamphetamine is, the calibration curve between 2 to 60 ppb is  $Y = 0.0582X + 0.1362$ ,  $R^2 = 0.9888$ . For all of these results, we can find when increased a chlorine substituting group and lower the polarity of compound, the result for using reverse chromatographic separation and the electrospray ionization effect of ESI have apparently influence, so it leads the dynamic linear range raising a lot. But if this LC/MS<sup>2</sup> detection method had collocated with preconcentration column to operate the operation mode of low concentration sample concentrated process, it would also reduce the concentration range of detection limit.